DK-LOK
Fittings & Valves

No. CC-7
September. 2013

Products Condensed Catalog

DK-LOK Tube Fittings
DK-LOK Bite Type Fittings
DK-LOK Valves
DK-LOK Instrumentation Pipe & Weld Fittings
DK-LOK Hose & Quick Connectors

DK-LOK Tube Fittings

DK-Lok VR Series Tube Fitting

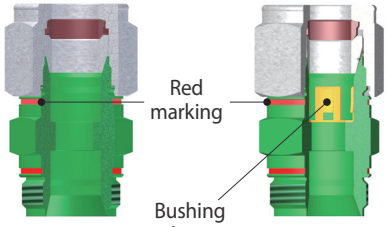
Patent Registration

VR Series hook type

- 1/4 – 1 in. OD.
- 8mm – 25mm OD.
- Heat-Code Traceability.
- Vibration Resistant design (Patent No. 10-2012-0042936)
- 1-1/4 turn (spanner-tight) guaranteed by visible detection of veiled red marking.
- Gauge-unnecessary Feature.
- Reusable.
- Leak-free performance across all applications in heavy vibration, high thermal stress, extreme impulse, and vacuum application.

VR Series
Hook type

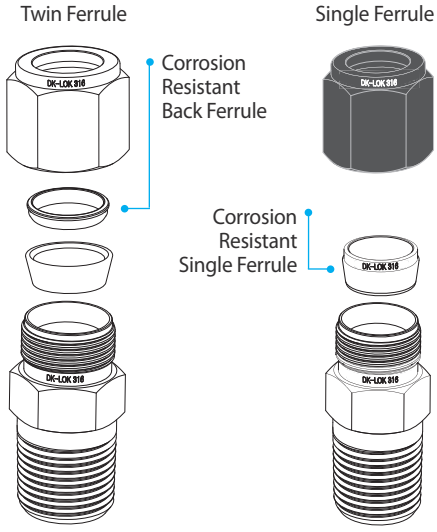
VR Series
with bushing sleeve



VR Series with bushing sleeve

- 1/4 – 1/2 in. OD.
- 8mm – 12mm OD.
- Heat-Code Traceability.
- Error proofing design (Patent No. 10-2011-0130057)
- Reusable.
- Gauge-unnecessary Feature.
- Leak-free performance across all applications in heavy vibration, high thermal stress, extreme impulse, and vacuum application.

DK-Lok Tube Fittings



Standard Features

- 1/16 - 2 in. OD.
- 2mm - 50mm OD.
- Heat-Code Traceability.
- Reusable.
- Gaugeable Feature.
- Rolled Male Thread Construction.
- Leak-free performance across all applications in heavy vibration, high thermal stress, extreme impulse, and vacuum application.

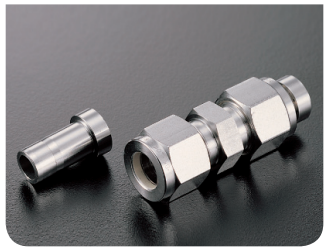
DK-Lok Corrosion-Resistant Ferrules provide;

- No formation of carbides for excellent corrosion resistance.
- Retention of Stainless steel non-magnetic characteristics.
- Service in chloride, sulfide and acid fluid proven to be superior to conventional selectively hardened ferrules.
- Excellent gripping and sealing integrity across tubing wall thickness and outside diameter combinations of stainless steel tubing.

DK-Lok Tube Fittings
Stainless Steel

DK-Lok Tube Fittings
Brass, Carbon Steel

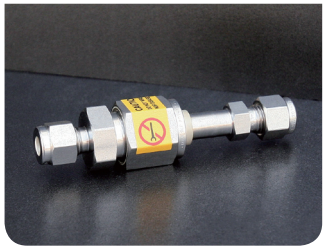
DK-Lok Tube Fittings
Fuse Plug



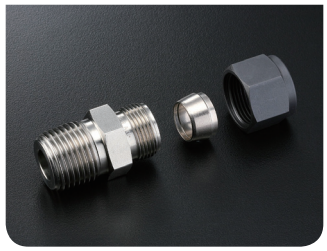
DK-Lok Tube Fittings
PTFE

DK-Lok Tube Fittings
Flanges

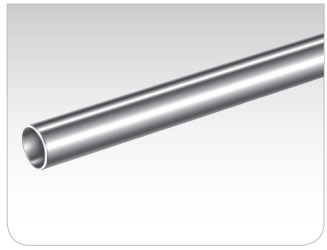
DK-Lok Tube Fittings
Dielectric Fittings



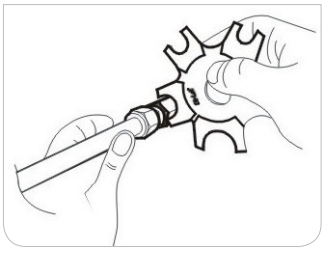
DK-Lok Z Series
Single Ferrule Fittings



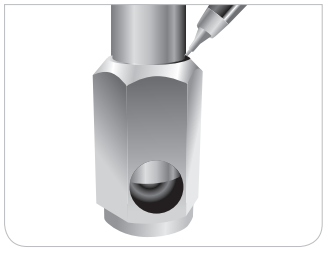
DK-Lok Tubing
Stainless Steel, Super Duplex, and 904L



DK-Lok
Gap Gauge



DK-Lok
Tube Depth Marking Tool



DK-Lok
Pre-Swaging Hand Tool

DK-Lok
Hydraulic Swaging Unit

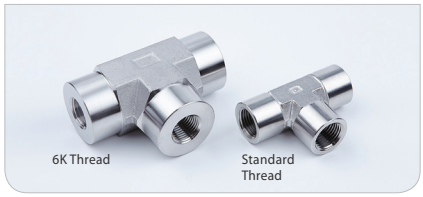
DK-Lok Instrumentation Pipe & Weld Fittings

DK-LOK® Instrumentation Pipe & Weld Fittings

Thread & Weld Fittings

- Pipe thread 1/8 - 1 in.
- Tube Socket Welding 1/8 - 1 in.
- SS316, Brass, and Carbon Steel

6K Thread Fittings for Over 1”



- Fixed Pressure Rating : 6,000 psig
- Pipe thread 1 1/4, 1 1/2, and 2 in.
- Stainless Steel

10K Thread Fittings

- Fixed Pressure Rating : 10,000 psig
- Pipe thread 1/8 - 1 in.
- Stainless Steel

DK-Lok Bite Type Tube Fittings / Hydraulic Pipe Fittings

DK-LOK® Bite Type Fittings

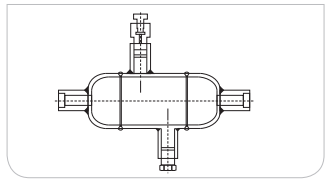
Bite Type Tube Fittings

- JIS B2351 & DIN 2353 Standard
- 6 to 42 mm OD
- Stainless Steel, Carbon Steel, and Brass

Hydraulic Pipe Fittings

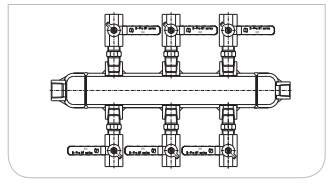
- ASME B16.11 Standard
- Class 2,000 / 3,000 / 6,000 / 9,000
- Stainless Steel and Carbon Steel
- Pipe thread 1/8 to 2 in.

CP Series



- Hydraulic Condensate Pot
- Stainless Steel and Carbon Steel

J Series

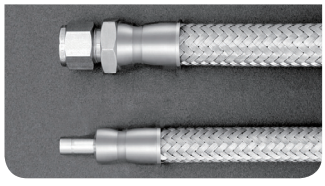


- Distribution Manifolds (Air Header)
- Stainless Steel and Carbon Steel

DK-Lok Hose & Quick Fittings

DK-LOK® Hose & Quick Connectors

High Pressure Metal flexible Hoses



- Up to 3,600 psig (248 bar)
- -325 to 800 °F (-200 to 426 °C)
- Stainless Steel
- DK-Lok 1/4 to 1/2 in. OD
- Male/Female 1/4 to 1/2 in. NPT

Medium Pressure Metal Flexible Hoses

- Up to 1,600 psig (110 bar)
- -325 to 800 °F (-200 to 426 °C)
- Stainless Steel
- DK-Lok 1/4 to 2 in. OD
- Male/Female 1/4 to 2 in. NPT

Hose Adapter Fittings

- Stainless Steel and Brass
- 1/8 to 1 in. Hoses

Push-On Hose Fittings

- Stainless Steel
- 1/4 to 1 in. Push-On Hoses

DQ Series Quick Connectors

- Bi-directional flow design
- Up to 3,000 psig
- Stainless Steel and Brass
- DK-Lok 1/8 to 1/2 in. OD
- Male/Female 1/8 to 1/2 in. NPT

DQ Series Keyed Connectors

- Key prevents Intermixing mechanically & visually.
- Applicable to multi-fluids and multi-pressure systems.

DQM Series

- Miniature Quick Connectors
- Bi-directional flow design
- Up to 4,000 psig
- Stainless Steel and Brass
- DK-Lok 1/16 to 1/8 in. OD
- Male/Female 1/16 to 1/8 in. NPT

DF Series

- Full Flow Quick Connectors
- Bi-directional flow design
- Up to 6,000 psig
- Stainless Steel and Brass
- DK-Lok 1/4 to 1 in. OD
- Male/Female 1/4 to 1 in. NPT

DK-Lok Check and Relief Valves

V33 Series
Poppet Check Valves

- Working Pressure : 3,000 psig
- Cracking Pressure : 1/3 to 100 psig
- Stainless Steel and Brass
- DK-Lok 1/8 to 1 in. OD.
- Pipe thread 1/8 to 1 in.

VP33 Series
One piece Check Valves

- Working Pressure : 3,000 psig
- Cracking Pressure : 1/3 to 25 psig
- Stainless Steel and Brass
- Pipe thread 1/4 to 1/2 in.

VH36 Series
High Pressure Check Valves

- Working Pressure : 6,000 psig
- Cracking Pressure : 1/3 to 25 psig
- Stainless Steel
- DK-Lok 1/8 to 1 in. OD
- Pipe thread 1/8 to 1 in.

VA33 Series One-Piece
Adjustable Check Valves

- Working Pressure : 3,000 psig
- Cracking Pressure : 3 to 600 psig
- Stainless Steel
- Pipe thread 1/4 to 1/2 in.

VDA33 Series
In-Line Adjustable Check Valves

- Working Pressure : 3,000 psig
- Cracking pressure : 3 to 600 psig
- Stainless Steel
- DK-Lok 1/4 in. 6mm, and 8mm OD

VL36 Series
Lift Check Valves

- Working Pressure : 6,000 psig
- Reverse flow closes the valve
- Up to 900 °F (482 °C)
- DK-Lok 1/4 to 3/4 in OD
- Pipe thread 1/8 to 1/2 in.

V63/V66 Series
Relief Valves

- Working Pressure : 6,000 psig
- Cracking pressure: 50 to 6,000 psig
- -18 to 400 °F (-28 to 204 °C)
- Stainless Steel with FKM seals
- DK-Lok 1/4 to1/2 in. OD
- Pipe thread 1/4 to 1/2 in.

V66T Series
Relief Valves

- Working Pressure : 6,000 psig
- Cracking Pressure : 540 to 640 psig
- -20 to 250 °F (-29 to 121 °C)
- Stainless Steel with FKM Seat
- Male to Female 1/4 in. NPT

DK-Lok Filters and Excess Flow Valves

V73/ V76 Series Filters

- Working Pressure
  - 6,000 psig for V76 Series
  - 3,000 psig for V73 Series
- Stainless Steel
- DK-Lok 1/8 to 1/2 in. OD
- Pipe thread 1/8 to 1/2 in.

VX36 Series Excess
Flow Valves

- Working Pressure : 6,000 psig
- Up to 204 °C (400 °F)
- Designed to stop uncontrolled release of system media.
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/8 to 1/2 in.

DK-Lok Valve for Offshore Platform

Double Block and
Bleed Valves

- Class 150 through 2,500 to ASME B16.5
- Up to 204 °C (400 °F)
- SS316
- Flange size 1/2 to 2 in. (DN15 – DN50)
- Blowout proof valve stem and needle
- Fire-tested to BS 6755 part

Monoflanges

- Class 150 through 2,500 to ASME B16.5
- Up to 204 °C (400 °F) – PTFE packing
- Up to 454 °C (850 °F) – graphite packing
- Flange size 1/2 to 2 in. (DN15 – DN50)

DK-Lok Bellows, Needle and Toggle Valves and Manifolds

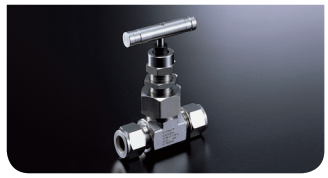
V13 Series Bellows Valves

- Working Pressure : 2,500 psig
- Vacuum and high pressure application
- Stainless Steel
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/4 to 1/2 in.

V15 Series Integral Bonnet Needle Valves

- Working Pressure : 5,000psig
- Regulating/Vee/Soft Seat
- Stainless Steel, Brass, and Exotic Alloys
- DK-Lok 1/8 to 3/4 in. OD
- Pipe thread 1/8 to 1/2 in.

V16 Series Severe Service Union Bonnet Valves



- Working Pressure : 6,000 psig
- Non-rotating globe stem tip
- Stainless Steel and Exotic Alloys
- DK-Lok 1/4 to 1 in. OD
- Pipe thread 1/8 to 1 in.
- Pipe socket weld 1/4 to 1/2 in.

VB16 Series Integral Bonnet Needle Valves

- Working Pressure : 6,000 psig
- Compact design
- Vee Tip / Soft Seat
- Stainless Steel
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/4 to 3/4 in.

VM Series Metering Valves

- Working Pressure:
  - 2,000 psig for VM1D Series
  - 1,000 psig for VM3D/VM6D Series
- Stainless Steel and Brass
- DK-Lok 1/16 to 3/8 in. OD
- Pipe thread 1/8 to 1/4 in.
- Panel mount with no handle removal.

V96 Series Rising Stem Plug Valves

- Working Pressure : 6,000 psig
- Acetal replaceable soft seat
- Straight-through roddable orifice
- Stainless Steel
- Pipe thread 1/4 to 3/4 in.

V46A Series Hex. Body Needle Valves

- Working Pressure : 10,000 psig
- Packing adjustment externally
- Stainless Steel and Carbon steel
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/4 to 3/4 in.

VEX110 Series Needle Valves

- Working Pressure : 10,000 psig
- Unique sealing cup design on packing
- Stainless Steel
- Pipe thread 1/4 to 1/2 in.

V103 Series Toggle Valves

- Working Pressure : 300 psig
- Instant open and close the valve for sampling and testing equipment
- Stainless Steel and Brass
- DK-Lok 1/8 to 1/2 in. OD
- Pipe thread 1/8 to 3/8 in.

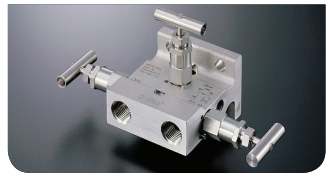
VD3 Series Diaphragm Valves

- Working Pressure : 3,500 psig
- Instant open and close the valve with no o-ring, no packing or no bellows in the flow stream
- Stainless Steel and Brass
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/4 to 3/8 in.

V56 Series Instrument Manifolds

- Working Pressure : 6,000 psig
- Vertical Direct / Remote mount
- Stainless Steel and Carbon Steel
- 2, 3, and 5 valve as standard

V56 Series Instrument Manifolds



- Working Pressure : 6,000 psig
- Single / Double Flange Direct mount
- Stainless Steel
- 2, 3, and 5 valve as standard

DK-Lok Bleed, Purge, Gauge Root and Block & Bleed Valves

VBV Series Bleed Valves

- Working Pressure : 10,000 psig
- Vent the signal line pressure to atmosphere to assist in calibration of control valves or multi-valve manifolds
- Stainless Steel and Carbon Steel
- Male pipe thread 1/8 to 1/2 in.

VPV Series Purge Valves

- Working Pressure : 4,000 psig
- For bleeding, venting, and draining of system fluids.
- Stainless Steel and Brass
- DK-Lok 1/8 to 1/2 in.
- Pipe thread 1/8 to 1/2 in.

V46 Series Gauge Root Valves

- Working Pressure : 6,000 psig
- Valve for pressure gauge with vent port.
- Stainless Steel and Carbon Steel
- Pipe thread 1/2 to 3/4 in.

V46V2 Series Block and Bleed Valves

- Working Pressure : 6,000 psig
- Bleeding, venting, and draining of system fluids
- Stainless Steel
- Male to female 1/2 in. NPT

DK-Lok CNG / NGV Valves

VC86 Series
CNG/NGV Ball Valves

- Working Pressure : 274 bar@120°C
- Dynamic seat design
- DK-Lok 1/2 to 3/4 in. OD
- Pipe thread: 1/2 to 1 in.

V64 Series
High Flow Relief Valves

- Working Pressure : 6,000 psig
- Cracking pressure : 15 to 5,500 psig
- Orifice: 0.404 in. (10.26 mm)
- Air, Gases, CNG, and Liquid
- Pipe thread: 1/2 to 1 in.

VCH86 Series Alternative
Fuel Service Ball Valves

- 2-way on-off valves
- Working Pressure : 274 bar@120°C
- Dynamic seat design
- Orifice: 12.0 mm (0.472 in.)
- DK-Lok 3/8 to 1 in. OD
- Pipe thread: 3/8 to 3/4 in.

VCT86 Series
Trunnion Ball Valves

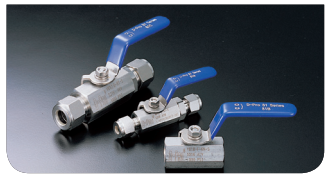
- 2-way on-off valves
- 3-way switching valves
- Working Pressure : 274 bar@120°C
- Stainless Steel
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/8 to 1/4 in.

DK-Lok Ball and Plug Valves

V23 Series Plug Valves

- Working Pressure : 3,000 psig
- Stainless Steel and Brass
- Forward flow throttling
- DK-Lok 1/8 to 1/2 in. OD
- Pipe thread 1/8 to 1/2 in.

V81 Series
General Purpose Ball Valves



- Working Pressure : 2,000 psig
- Stainless Steel and Brass
- DK-Lok 1/4 to 1 in. OD
- Pipe thread 1/4 to 1 in.

V82 Series
Lowest Dead Volume Ball Valves

- Working Pressure : 3,000 psig
- Stainless Steel and Brass
- 2-way and 3-way actuation
- DK-Lok 1/16 to 3/4 in. OD
- Pipe thread 1/8 to 1/2 in.

V824 Series
Lowest Dead Volume Ball Valves

- Crossover 4-way Ball valves
- Working Pressure : 2,500 psig
- Stainless Steel
- Pipe thread 1/8 - 1/2 inch

V825 Series
Lowest Dead Volume Ball Valves

- Switching 5-way Ball Valves
- Working Pressure : 2,500 psig
- Stainless Steel
- Pipe thread 1/8 - 1/2 in.

V83 Series
Swing-Out Ball Valves

- Working Pressure : 3,000 psig
- Stainless Steel and Carbon Steel
- DK-Lok 1/4 to 1 in. OD
- Pipe thread 1/8 to 1 in.

V86 Series
High Pressure Ball Valves

- 2-way on-off valves
- 3-way diverter valves
- Working Pressure : 10,000 psig
- Stainless Steel and Carbon Steel
- DK-Lok 1/4 to 1 in. OD
- Pipe thread 1/4 to 1 in.

VT86 /VTH86 Series
Trunnion Ball Valves

- 2-way on-off valves
- 3-way switching valves
- Working Pressure
  - 6,000 psig for VT86 Series
  - 10,000 psig for VTH86 Series
- Stainless Steel
- DK-Lok 1/4 to 1/2 in. OD
- Pipe thread 1/8 to 1/4 in.

VH86 Series
Multi-Purpose Ball Valves

- 2-way bi-directional valves
- 3-way diverter valves
- Working Pressure : 6,000 psig
- Stainless Steel
- DK-Lok 1/8 to 3/4 in. OD
- Pipe thread 1/4 to 1/2 in.

VH86 Valve with Actuator

- Pneumatic Actuator
- 90/180 degree actuation
- Single and Double return

V87 Series
DIN Standard Ball Valves

- Up to 7,250 psig (500bar)
- Up to 100°C (212°F)
- DIN 1.4404, SS316L
- DIN O.D 6mm ~ 38mm
- Pipe thread 1/8 ~ 1in.
- Ball valve to DIN standard.

Authorized DK-Lok
Distributor in your territory

DK-LOK Fittings & Valves
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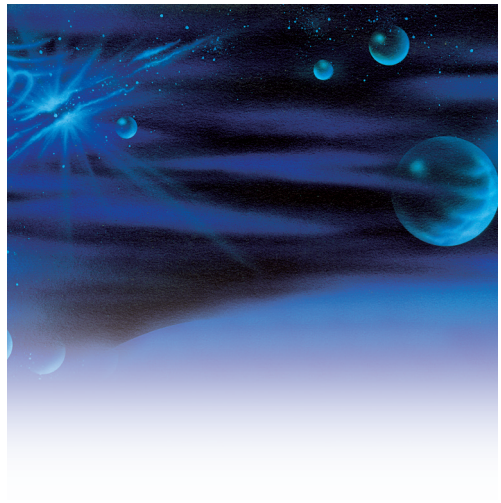
ASME N ASME NPT ASME NS ISO 9001 ISO 14001 OHSMS 18001 API



INSTRUMENTATION

DK-LOK

Tube Fittings

Catalog Number 01-5
November, 2009

DK Tech Corporation

www.dklok.com

Tube to Tube Union

Tube to Male Pipe

Tube to Female Pipe

Tube Stub Connector

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Dk-Lok Flanges

Tube to AN Tube

Tube to Non-Positionable O-seal End

Tube to Positionable Straight Thread

Tube to Weld End

Plug, Cap, Insert

Additional Products

Spare Parts

Tools

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

The Premium Quality Dk-Lok Tube Fittings

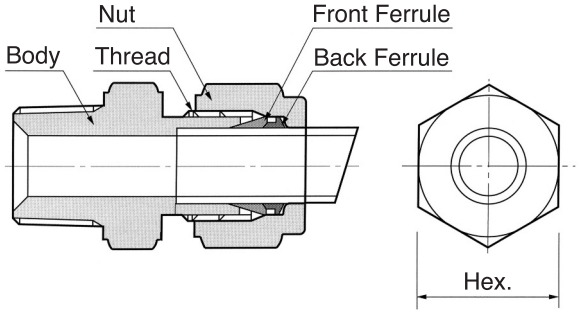
Dk-Lok Tube Fitting is designed using industrial codes and specifications with additional Cutting-Edge Engineering on swaging action and sealing integrity. Dk-Lok provides excellent leak-free sealing on high pressure gas, vacuum, impulse, thermal shock, heavy vibration, and many other stringent applications.

Dk-Lok brings you excellent quality, outstanding customer service, and availability.
Enjoy Dk-Lok tube fitting working on your application!

Construction of Dk-Lok Tube Fittings

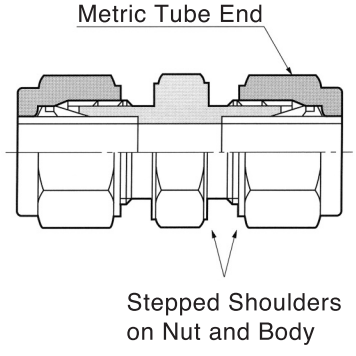
Dk-Lok Tube Fitting consists of body, front ferrule, back ferrule and nut. The features include;

- Excellent product range up to 2 in. and 38 mm OD.
- Additional engineering on sealing integrity and swaging action.
- Re-usable and predictable quality.
- Gaugable.
- Excellent leak-free sealing integrity on heavy vibration, vacuum and impulse.
- Heat-Code Traceability.
- No torque transferring to connective tubing during installation.



Identification of Metric Dk-Lok Tube Fitting

Metric Dk-Lok tube fitting has stepped shoulder on body and nut hex. Shaped fitting such as tee, elbow, and cross forging has such step on body as well.

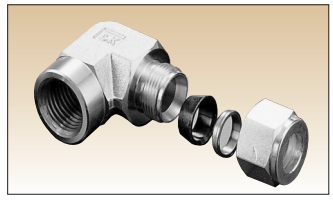


Dk-Lok Material Standards

Dk-Lok tube fitting are supplied in various materials to satisfy the needs of various applications including on shore oil & gas, refinery, offshore oil & gas, chemical, petrochemical, analytical instrumentation, steel mill, power plant, shipbuilding, pharmaceutical, and alternative fuel.

Table 1.

Material	Bar Stock	Forging
Stainless Steel 316	ASTM A276 Type 316 ASTM A479 Type 316 ASME SA479 Type 316 JIS G4303	ASTM A182 ASME SA182 JIS G3214
Brass	ASTM B16 UNS C36000 ASTM B453 UNS C35300 JIS H3250 Alloy C3604	ASTM B283 Alloy 37700 JIS H3250 Alloy C3771
Carbon Steel	ASTM A675 Gr.60-90 JIS G4051 S20C - S48C	ASTM A105 JIS G4051 S20C - S48C
Duplex	ASTM A276 S31803 ASTM A479 S31803	ASTM A182 F51
Super Duplex	ASTM A479 S32750	ASTM A182 F51
Aluminum	ASTM B211 Alloy 2024 T6	ASTM B247
Alloy 20	ASTM B473 UNS N08020	ASTM B462 UNS N08020
Hastelloy C276	ASTM B574 UNS N10276	ASTM B564 UNS N10276
Alloy 400	ASTM B164 UNS N04400	ASTM B564 UNS N04400
Alloy 600	ASTM B166 UNS N06600	ASTM B564 UNS N06600
Alloy 625	ASTM B446 UNS N06625	ASTM B564 UNS N06625
Alloy 825	ASTM B425 UNS N08825	ASTM B564 UNS N08825
Titanium Gr. 2	ASTM B348 Gr. 2	ASTM B381 F3
PTFE	ASTM D1710	ASTM D3293



Carbon Steel Dk-Lok Tube Fittings

Carbon steel fittings are white zinc plated. Every carbon steel fitting is supplied with SS316 back ferrule and Carbon steel front ferrule with black fast plated.

Product Cleaning

Every Dk-Lok tube fitting is cleaned to remove surface contamination, iron particles from cutting tools, oil from cutting fluid, and loose particles. For further information, refer to DK cleaning standard DC-01. Special cleaning for oxygen service application is available on request. Refer to special cleaning standard DC-11.

O-ring

Dk-Lok fitting pipe end with O-ring is supplied; 70 durometer NBR O-ring on Brass and Carbon steel fittings, 90 durometer FKM O-ring on Stainless steel fitting.
Other O-ring is available on request.

Dk-Lok Port Dimension

Dimensions on Dk-Lok Port in the catalog are approximate figures and shown in finger-tight position.

Alternative Fuels

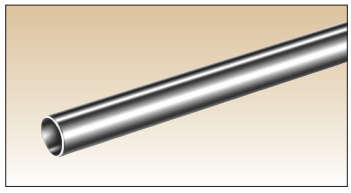
Stainless steel 316 Dk-Lok tube fitting are tested to the requirements of ECE R110, EIHP Draft, ECE R67 and certified by TUV.

Tubing

For safe, reliable and leak-free Dk-Lok fitting system, tubing should be considered as one of fitting components.

- Tubing is assembled by simple wrench make-up on Dk-Lok fitting. This results in less assembly and maintenance costs.
- Tubing assembly on Dk-Lok fitting is re-usable.
- Tubing is bendable. It allows lower pressure drop with fewer connections. This in turn reduces system costs because of less fabricating manpower.
- Pipe threading or welding is difficult to disassemble and re-assemble.
- Piping requires skilled worker for welding & threading.

1.Tubing Selection
2.Tubing Handling



1. Tubing Selection

Hardness

- Tubing must be softer than fitting material. The metal tubing must be fully annealed and suitable for bending and flaring.
- Tubing hardness must be selected according to the information in the table 2 to 13.

Surface

- Tubing must have a surface free from scratches, draw mark, dirt, dust and flat spots.

Ovality

- Tubing in oval or out-of-roundness may not fit into the fitting. Do not force the tubing into the fitting; it may damage the fitting sealing system on nut, ferrules, and body.

Wall thickness

- The table 2 to 13 list tubing working pressure ratings in a wide range of wall thickness. A too thin wall may collapse and a too thick wall may not properly be deformed by the ferrule action.
- Do not use tubing wall thickness not listed in the table 2 to 13.

Weld tubing

- Welded tubing should have a not measurable bead on its outside diameter.

2. Tubing Handling

Careful handling and storage practices will protect tubing from unnecessary scratches, nicks, or degrading the good tubing surface finish.

- Tubing ends should be capped so any foreign materials will not fall inside during transportation and storage.
- Do not drag across tubing rack, cement, gravel or any rough surface.
- Do use correct tube cutter for tube material. The wrong cutter may result in excessive deformation of the tube end.
- Do not cut deep with each turn of cutting.
- Tube cutters and hacksaws should be sharp enough.
- Hacksaw blades should have at least 32 teeth per inch.
- Do deburr tube ends before inserting in fittings.

Dk-Lok Tube Fitting Pressure Rating

The pressure rating of Dk-Lok Tube Fitting is rated to the working pressure of connective tubing.
The allowable working pressure of tubing in various materials is listed in the table 2 to 13.

Material

Using like tubing and fitting material is essential for leak-free sealing system.
Unlike material may have different mechanical properties that may adversely affect the fitting seal on tubing.
The only exception is copper tubing with brass Dk-Lok fitting.

Gas Application

Dk-Lok tube fitting is designed for a wide range of leak-free application including gas leak proof and vacuum tight service. Gases (helium, hydrogen, nitrogen, air, etc.) can escape even the most minute leak-path due to their very small molecules. Tube therefore must be handled not to have scratches, draw mark, nicks, flat spots, dirt, and dust.

Use NOT thin wall tubing for gas applications.
Heavier wall tubing resists the ferrule action whereas thin wall tubing may collapse with little resistance to ferrule action.

For Gas service, use the tubing wall listed on un-shadowed section in table 2 to 13.

Vacuum Application

Dk-Lok tube fittings have been proved to be excellent vacuum tight seal in many applications including analytical industry.
Dk-Lok Tube Fittings comply with the leakage requirements of TA-LUFT 2002.

Cryogenic Application

Dk-Lok Fittings in SS316 Stainless Steel provide highly reliable performance on cryogenic application.
Cryogenic temperature is considered to be temperatures below -100°F (-73°C).

High Pressure Application

Pressure 500 psig (34.5 bar) or higher is considered generally high pressure. In the high pressure system scratches, draw mark, nicks, flat spots, and dirt on tubing may cause leakage.

- For gas application, select the gas applicable tubing wall thickness from Table 2 to 13.
- Follow the suggestion on tubing selection, handling, and installation.

Table 2. Fractional Seamless Stainless Steel Tubing

Fully annealed austenitic Type 304 or 316 seamless tubing ASTM A269 or ASTM A213, or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 80 HRB or less.

OD	Wall Thickness (in.)														
in.	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	6,800	8,100	9,400	12,000											
1/8					8,500	10,900									
3/16					5,400	7,000	10,200					Working Pressure in PSIG			
1/4					4,000	5,100	7,500	10,200							
5/16						4,000	5,800	8,000							
3/8						3,300	4,800	6,500	8,600						
1/2						2,400	3,500	4,700	6,200						
5/8							2,900	4,000	5,200	6,000					
3/4							2,400	3,300	4,200	4,900	5,800	6,400			
7/8							2,000	2,800	3,600	4,200	4,800	5,400	6,100		
1								2,400	3,100	3,600	4,200	4,700	5,300		
1 1/4									2,400	2,800	3,300	3,600	4,100	4,900	
1 1/2										2,300	2,700	3,000	3,400	4,000	4,900
2											2,000	2,200	2,500	2,900	3,600

Table 3. Metric Seamless Stainless Steel Tubing

OD	Wall Thickness (mm)												
mm	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5
3	710												
6	330	420	520	670									
8		310	380	490						Working Pressure in Bar			
10		240	300	380									
12		200	240	310	380	430							
14		180	220	280	340	390	430						
15		170	200	260	320	360	400						
16			190	240	300	330	370						
18			170	210	260	290	320	370					
20			150	190	230	260	290	330	380				
22			130	170	210	230	260	300	340				
25					180	200	230	260	300	320			
28						180	200	230	260	280	330		
30						170	190	210	240	260	310		
32						160	170	200	230	240	290	330	
38							140	170	190	200	240	280	310

- According to the requirements of ASME B31.3 Process Piping Code and ASME B31.1 Power Piping Code, allowable working pressure calculated at -20 to 100°F (-28 to 37°C) using S valve of 20,000 psi.
- Pressure calculations are based on **maximum O.D. and minimum wall thickness** and no allowance is made for corrosion and erosion. i.e., ASTM A269 1/2 in. OD x 0.035 in.WT: OD tolerance ± 0.005 in., WT tolerance ± 15%. Calculations are based on 0.505 in.OD x 0.0298 in. WT.
- Safety Factor is 3.75 to 1, considering ultimate tensile strength of 75,000 psi.

Weld Stainless Steel Tubing Allowable Working Pressure

To determine the working pressure of weld tubing to the requirements of ASME B31.3 Code, de-rating factors below must be applied. For single weld tubing multiply by 0.80, and for double weld tubing multiply by 0.85.

Example: SS316 seamless 1/2 in. O.D. x 0.065 in. WT allowable working pressure: 4700 psi.
To determine the work pressure of the single weld tubing, multiply 4700 psi by 0.80.
4700 psig x 0.80 = 3760 psig at -20 to 100°F (-28 to 37°C).

Table 4. Fractional Seamless Copper Tubing

Soft annealed seamless copper tubing ASME B75 or equivalent. Soft annealed (Temper 0) copper water tube, type K or Type L ASTM B88. Recommended hardness: 60 HRB or less.

OD in.	Wall Thickness (in.)									
	0.010	0.012	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8			2,700	3,600						
3/16			1,800	2,300	3,400				Working Pressure in PSIG	
1/4			1,300	1,600	2,500	3,500				
5/16				1,300	1,900	2,700				
3/8				1,000	1,600	2,200				
1/2				800	1,100	1,600	2,100			
5/8					900	1,200	1,600	1,900		
3/4					700	1,000	1,300	1,500	1,800	
7/8					600	800	1,100	1,300	1,500	
1					500	700	900	1,100	1,300	1,500

Table 5. Metric Seamless Copper Tubing

OD mm	Wall Thickness (mm)										
	0.7	0.8	1.0	1.2	1.5	1.6	1.8	2.0	2.2	2.5	3.0
3	225	260									
4	165	191	244	295					Working Pressure in Bar		
6		122	157	192	245	263					
8		89	114	140	179	193					
10		70	89	109	140	150	172	193			
12		58	73	89	114	123	140	158			
14			62	76	96	103	118	133	148	171	209
16			54	66	83	89	102	114	127	147	180
18			48	58	74	79	90	101	112	129	159
22			39	47	59	64	72	81	90	103	126
25			34	41	52	56	63	71	78	90	110

- According to the requirements of ASME B31.3 Process Piping Code and ASME B31.1 Power Piping Code, allowable working pressure calculated at -20 to 100°F (-28 to 37°C) using S valve of 6000 psi.
- Safety Factor is 5 to 1, considering ultimate tensile strength of 30,000 psi.

Table 6. Fractional Seamless Carbon Steel Tubing

Soft annealed seamless carbon steel hydraulic tubing ASTM A179 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 72 HRB or less.

OD in.	Wall Thickness (in.)												
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.148	0.165	0.180	0.220
1/8	8,000	10,200											
3/16	5,100	6,600	9,600										
1/4	3,700	3,700	7,000	9,600						Working Pressure in PSIG			
5/16		3,800	5,500	7,600									
3/8		3,100	4,500	6,200									
1/2		2,300	3,300	4,500	5,900								
5/8		1,800	2,600	3,500	4,600	5,300							
3/4			2,100	2,900	3,700	4,300	5,100						
7/8			1,800	2,400	3,200	3,700	4,300						
1			1,500	2,100	2,700	3,200	3,700	4,100					
1 1/4				1,600	2,100	2,500	2,900	3,200	3,600	4,000	4,600	5,000	
1 1/2					1,800	2,000	2,400	2,600	3,000	3,300	3,700	4,100	5,100
2						1,500	1,700	1,900	2,200	2,400	2,700	3,000	3,700

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Table 7. Metric Seamless Carbon Steel Tubing

OD mm	Wall Thickness (mm)												
	0.8	1.0	1.2	1.5	1.8	2.0	2.2	2.5	2.8	3.0	3.5	4.0	4.5
3	670	830											
6	310	400	490	630									
8		290	360	460						Working Pressure in Bar			
10		230	280	360									
12		190	230	290	360	410	450						
14		160	190	250	300	340	380						
15		150	180	230	280	320	350						
16			170	210	260	290	330	380					
18			150	190	230	260	290	330					
20			130	170	200	230	250	290	330				
22			120	150	180	210	230	260	300				
25					160	180	200	230	260	280			
28						160	180	200	230	250	290		
30						150	160	190	210	230	270		
32						140	150	170	200	210	250	290	
38							130	140	160	180	210	240	280

- Allowable working pressure calculated at -20 to 100°F (-28 to 37°C) using S value of 15,700 psi according to ASME B31.3 Process Piping Code.
- Safety Factor is 3 to 1, considering ultimate tensile strength of 47,000 psi.
- To determine working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.85.

Table 8. Fractional Seamless Alloy 400 Tubing

Fully annealed seamless Alloy 400 tubing ASTM B165 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 75 HRB or less.

OD in.	Wall Thickness (in.)							
	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120
1/8	7,900	10,200						
1/4	3,700	4,800	7,000	9,600	Working Pressure in PSIG			
3/8		3,100	4,400	6,100				
1/2		2,300	3,300	4,400				
3/4			2,200	3,000	4,000	4,600		
1				2,200	2,900	3,400	3,900	4,300

- According to the requirements of ASME B31.3 Process Piping Code and ASME B31.1 Power Piping Code, allowable working pressure calculated at -20 to 100°F (-28 to 37°C) using S valve of 18,700 psi.
- Safety Factor is 3.74 to 1, considering ultimate tensile strength of 70,000 psi.

Table 9. Fractional Seamless Alloy C276 Tubing

Fully annealed seamless Alloy C276 tubing ASTM B622 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 100 HRB or less.

OD in.	Wall Thickness (in.)					
	0.02	0.028	0.035	0.049	0.065	0.083
1/8	8,200	12,000	15,300	Working Pressure in PSIG		
3/16	5,300	7,700	9,900	14,400		
1/4		5,600	7,200	10,600	14,400	
5/16			5,700	8,200	11,300	
3/8			4,700	6,700	9,200	
1/2			3,400	4,900	6,700	8,800

- According to the requirements of ASME B31.3 Process Piping Code and ASME B31.1 Power Piping Code, allowable working pressure calculated at ambient temperature using S valve of 27,300 psi.
- Safety Factor is 3.66 to 1, considering ultimate tensile strength of 100,000 psi.

Table 10. Fractional Seamless Alloy 825 Tubing

Fully annealed seamless Alloy 825 tubing ASTM B423 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 95 HRB or less.

OD in.	Wall Thickness (in.)					
	0.02	0.028	0.035	0.049	0.065	0.083
1/8	7,500	11,000	14,000	Working Pressure in PSIG		
3/16	4,800	7,000	9,000	13,000		
1/4		5,100	6,500	9,500	13,000	
5/16			5,100	7,400	10,100	
3/8			4,100	6,000	8,300	
1/2			3,000	4,400	6,000	7,900

- According to the requirements of ASME B31.3 Process Piping Code and ASME B31.1 Power Piping Code, allowable working pressure calculated at ambient temperature using S valve of 23,300 psi.
- Safety Factor is 3.64 to 1, considering ultimate tensile strength of 85,000 psi.

Table 11. Fractional Seamless Alloy 625 Tubing

Fully annealed seamless Alloy 625 tubing ASTM B444 Grade 1 or equivalent.
Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring.

OD in.	Wall Thickness (in.)					
	0.02	0.028	0.035	0.049	0.065	0.083
1/8	12,500	18,200	23,100	Working Pressure in PSIG		
3/16	8,000	11,600	14,900	21,500		
1/4		8,400	10,800	15,700	21,400	
5/16			8,400	12,200	16,800	
3/8			6,900	10,000	13,700	
1/2			4,200	6,000	8,200	10,700

- Allowable working pressure calculated at ambient temperature using S value of 40,000 psi according to ASME B31.3 Code.
- Safety Factor is 3 to 1, considering ultimate tensile strength of 120,000 psi.
- To determine working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.86.

Table 12. Fractional Seamless Super Duplex Tubing

Fully annealed Super Duplex tubing ASTM A789 S32750 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 32 HRC or less.

OD in.	Wall Thickness (in.)					
	0.028	0.035	0.049	0.065	0.083	0.095
1/4	7,700	9,900	15,000			
3/8		6,400	9,200	12,700		
1/2		5,000	7,200	10,000	12,900	
5/8			5,700	7,700	10,100	
3/4			4,700	6,300	8,200	10,000

- Allowable working pressure calculated at ambient temperature using S value of 38,700 psi according to ASME B31.3 Code.
- Safety Factor is 3 to 1, considering ultimate tensile strength of 116,000 psi.

Table 13. Fractional Seamless Alloy 20 Tubing

Fully annealed seamless Alloy 20 tubing ASTM B729 or equivalent. Tubing to be free from scratches, draw mark, dirt, dust, flat spots, and suitable for bending and flaring. Recommended hardness: 95 HRB or less.

OD in.	Wall Thickness (in.)					
	0.02	0.028	0.035	0.049	0.065	0.083
1/8	8,400	12,200	15,400			
3/16	5,300	7,700	9,900	14,400		
1/4		5,600	7,200	10,500	14,300	
5/16			5,600	8,200	11,200	
3/8			4,600	6,600	9,100	
1/2			2,800	4,000	5,400	7,200

- Allowable working pressure calculated at ambient temperature using S value of 23,300 psi according to ASME B31.3 Code.
- To determine working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.98.

Table 14.

Temp °F	Temp °C	Stainless 304	Stainless 316	C.steel A179	Copper B75	825 B423	C276 B622	625 B444	20 B729	400 B165	Super Duplex A789
100	38	1	1	1	1	1	1	1	1	1	1
200	93	1	1	0.96	0.8	0.92	1	1	0.9	0.88	0.9
300	149	1	1	0.9	0.78	0.87	1	1	0.86	0.79	0.85
400	204	0.94	0.97	0.86	0.5	0.83	1	1	0.83	0.79	0.82
500	260	0.88	0.9	0.82	0.13	0.79	0.98	0.97	0.79	0.79	0.81
600	316	0.82	0.85	0.77		0.76	0.93	0.95	0.77	0.79	0.8
700	371	0.8	0.82	0.73		0.74	0.87	0.93	0.76	0.79	
800	427	0.76	0.8	0.59		0.73	0.84	0.93	0.73	0.76	
900	482	0.73	0.78			0.73	0.81	0.93			
1000	538	0.69	0.77			0.71	0.79	0.93			
1200	649	0.3	0.37				0.35	0.33			

Temperature De-rating Factors

The pressure rating of Dk-Lok port is governed by the connective tubing pressure rating.

To determine allowable working pressure at elevated temperature, multiply working pressure by applicable factor shown in table 14.

Example: SS316 seamless tubing 1/2 in. O.D. x 0.065 in.WT at 700 F.
4700 psig x 0.82 = 3854 psi.

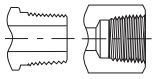
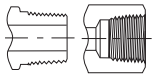
Allowable working pressure of SS316 seamless 1/2 in. O.D. x 0.065 in. WT is 3854 psi at 700 oF.

Dk-Lok Pipe End Pressure Rating

Pressure ratings of Dk-Lok tube port is governed by the connective tubing pressure rating. The allowable working pressure of those fittings with both Dk-Lok port and pipe end port are determined by the lower pressure port.

Table 15. Dk-Lok Pipe Thread Designator.

Legends
- DK : Dk-Lok pipe thread designator.
- E : Equivalent.

	DK	Reference Specification	Thread Configuration	E
Tapered Pipe Thread	N	ASME B1.20.1 (NPT) SAE AS71051		-
	R	ISO 7-1 BS EN 10226-1(BSPT) DIN 2999 (male thread only) JIS B0203 (PT)		RT
Parallel Pipe Thread	G	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) DIN 3852 FORM A		RS
	GB	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) DIN 3852 FORM B		RP
	GP	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) SAE J475 SAE J1926		PR
Parallel Pipe Thread	GG	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) EN 837-1& EN 837-3		RG
	GR	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) DIN 3852 FORM Z		RP
	GY	ISO 228-1 BS 2779 (BSPP) JIS B0202 (PF) DIN 3852 FORM Y		RJ
SAE Straight Thread	U	ASME B1.1 ISO R725 SAE J475 SAE J514		ST
	UO	ASME B1.1 ISO R725 SAE J475 SAE J514		OR
	UP	ASME B1.1, ISO R725 SAE J475 SAE J514		ST
	NO	ASME B1.20.1, SAE AS71051 SAE J514		OR

Pipe Thread Sealants

Pipe thread sealant for tapered pipe thread assembly is essential to ensure leak-free thread sealing. Sealant usually contains a lubricant. Thread sealant fills the voids between the threads and prevents thread galling.

Wrap PTFE tape clockwise from first thread. Do not overhang the first thread; the tape may get into the fluid system.

Pressure Equivalents :

1 bar = 100 kPa = 14.503 psi
1 psi = 0.069 bar = 6.89 kPa
1 kPa = 0.01 bar = 0.145 psi
1 kg/cm² = 0.98 bar = 14.22 psi

Table 16. Tapered Pipe Thread Pressure Ratings

Applicable to Dk-Lok thread designator: N and R

ISO/NPT Pipe Size	SS316 and Carbon Steel				Brass			
	Male		Female		Male		Female	
	pisg	bar	pisg	bar	pisg	bar	pisg	bar
S value	20ksi				10ksi			
1/16	14,000	965	6,600	455	7,400	510	3,300	227
1/8	10,000	689	6,400	441	5,000	345	3,200	220
1/4	8,300	572	6,500	448	4,100	282	3,200	220
3/8	8,000	551	5,200	358	4,000	275	2,600	179
1/2	7,800	537	4,800	331	3,900	269	2,400	165
3/4	7,500	517	4,600	317	3,700	255	2,300	158
1	5,300	365	4,400	303	2,600	179	2,200	152
1-1/4	6,200	427	5,000	345	3,100	214	2,500	172
1-1/2	5,100	351	4,500	310	2,500	172	2,200	152
2	4,000	276	3,900	269	2,000	138	1,900	131

Allowable Working Pressure

Dk-Lok ISO Parallel Male Pipe Thread End
Applicable to Dk-Lok thread designator: G, GB, and GP.

SS316 and carbon steel fitting thread ends up to 1 in. are rated to 5900 psi (406 bar)

Dk-Lok SAE Straight Thread End
Applicable to Dk-Lok thread designator: U, UO, and UP.

SS316 and carbon steel fitting thread ends up to 16U (1 5/16-12) are rated to 6000 psi (413 bar)

Dk-Lok Tube Socket Weld End
Applicable to Dk-Lok tube fitting part number: DCSW and DLSW.

SS316 and carbon steel fitting tube socket ends up to 1/2 in. (-8) are rated to 7000 psi (482 bar)

Dk-Lok Pipe Butt Weld End
Applicable to Dk-Lok tube fitting part number: DCW and DLW.

SS316 and carbon steel fitting pipe butt weld ends up to 3/4 in. (-12P) are rated to 6000 psi (413 bar)

- Pressure ratings are based on ASME B31.3 Process Piping Code, at ambient temperature.
- For further information about each size end rating, contact the authorized Dk-Lok distributor in your region.

Table 17. Elastomer seal temperature ratings

Elastomer O-ring	Rating
NBR	-40 to 110°C (-40 to 230°F)
FKM	-28 to 204°C (-18 to 400°F)
FFKM (Kalrez®)	-30 to 275°C (-22 to 527°F)

Care must be taken as fitting with elastomer O-ring seal may have lower temperature rating.

Kalrez® : TM Dupont

Odering Information

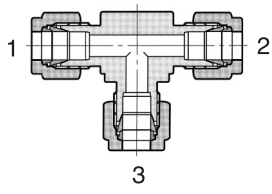
Suffix the material designator to the part number.

Example : DU-8-**S**

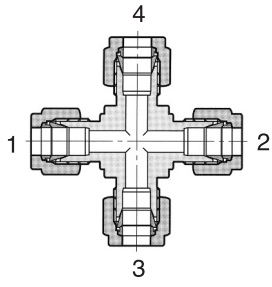
Table 18. Material Designor

Material	Designator
Stainless Steel 316/316L	S
Dual Grade	
Brass	B
Carbon Steel	C
Stainless Steel 310	310
Duplex	D
Super Duplex	SD
Aluminum	AL
Alloy 20	L20
Hastelloy C276	HC
Alloy 400	M
Alloy 600	IN
Alloy 625	L625
Alloy 825	L825
Titanium Gr. 2	TI
PTFE	PE

Tee & Cross Fittings



Tee fitting part number is described by first the run (1 and 2) and next the branch (3).



Cross fitting part number is described by first the run (1 and 2) and next the branch (3 and 4).

Table 19. Pipe Thread Size Designator

Nom. Size in.	1/16	1/8	1/4	3/8	1/2	3/4	1	1 1/4	1 1/2	2
Designator	1	2	4	6	8	12	16	20	24	32

Table 20. Tube O.D. Designator

OD in.	1/16	1/8	3/16	1/4	5/16	3/8	1/2	5/8	3/4	7/8	1	1 1/4	1 1/2	2
Designator	1	2	3	4	5	6	8	10	12	14	16	20	24	32
OD mm	2mm	3mm	4mm	6mm	8mm	10mm	12mm	16mm	20mm	22mm	25mm	28mm	32mm	38mm
Designator	2M	3M	4M	6M	8M	10M	12M	16M	20M	22M	25M	28M	32M	38M

Z series Dk-Lok

Dk-Lok Z Series single ferrule tube fitting is designed and manufactured to the highest quality standards.This fitting includes single ferrule with standard Dk-Lok fitting body and nut. To help identify Dk-Lok Z series from Dk-Lok Tube fitting, nut is black Molybdenum Disulfide (MoS2) coated.

Material

Dk-Lok Z Series single ferrule tube fitting is manufactured in stainless steel 316.

Pressure and Temperature Ratings

Dk-Lok Z Series fittings are identical to Dk-Lok Tube Fittings in pressure and temperature ratings.

Dimensions

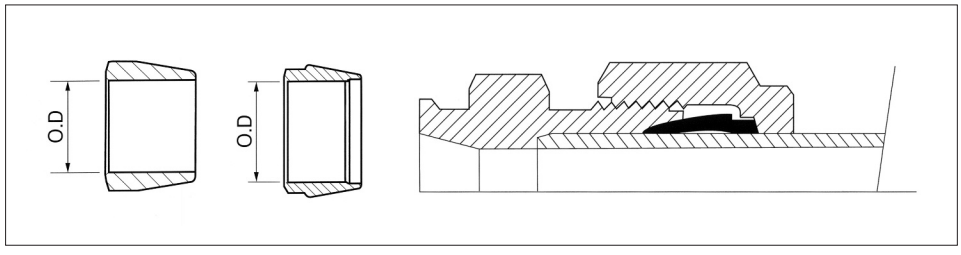
Dk-Lok Z Series fittings are dimensionally identical to Dk-Lok Tube Fittings.

Ordering Information

To order Z series, insert Z in the standard Dk-Lok tube fitting part number.
Examples : DU**Z**-8-S, DMC**Z**8-8N-S, DN**Z**-4-S

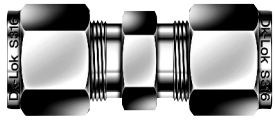
Z Series Ferrule

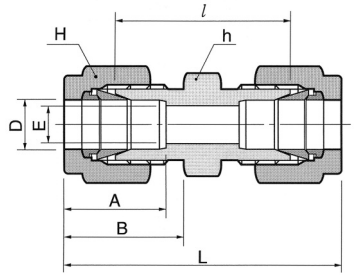
Z series Ferrule	
Part No.	Tube O.D.
DFZ-4	1/4
DFZ-6	3/8
DFZ-8	1/2
DFZ-12	3/4
DFZ-16	1



All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Union
DU





Connects fractional tube

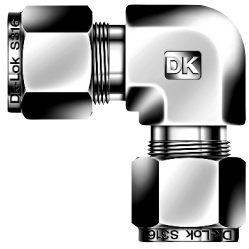
Part No.	Tube O.D. D		E Min.	Width across flat h		H		A	B	l	L
	in	mm		in	mm	in	mm				
DU-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	17.50	25.15
DU-2	1/8	3.17	2.28	7/16	11.11	7/16	11.11	12.70	15.24	22.35	35.56
DU-3	3/16	4.76	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.13	37.33
DU-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	26.16	40.89
DU-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	28.19	42.92
DU-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	30.22	44.95
DU-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	30.98	51.30
DU-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	52.07
DU-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	53.59
DU-14	7/8	22.22	18.28	1-3/16	30.16	1-1/4	31.75	25.90	21.84	35.05	55.37
DU-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	64.77
DU-20	1-1/4	31.75	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	48.00	92.20
DU-24	1-1/2	38.10	33.90	2-1/8	53.97	2-1/4	57.15	50.03	45.21	53.60	107.95
DU-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	74.70	149.35

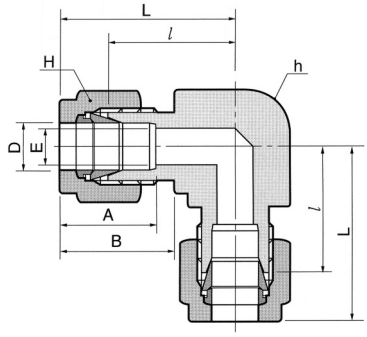
Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat h	H	A	B	l	L
DU-2M	2	1.7	12	12	12.9	15.3	22.4	35.6
DU-3M	3	2.4	12	12	12.9	15.3	22.1	35.3
DU-4M	4	2.4	12	12	13.7	16.1	24.1	37.3
DU-6M	6	4.8	14	14	15.3	17.7	26.2	41.0
DU-8M	8	6.4	15	16	16.2	18.6	28.2	43.2
DU-10M	10	7.9	18	19	17.2	19.5	31.0	46.2
DU-12M	12	9.5	22	22	22.8	22.0	31.0	51.2
DU-14M	14	11.1	24	25	24.4	22.0	31.8	52.0
DU-15M	15	11.9	24	25	24.4	22.0	31.8	52.0
DU-16M	16	12.7	24	25	24.4	22.0	31.8	52.0
DU-18M	18	15.1	27	30	24.4	22.0	33.3	53.5
DU-20M	20	15.9	30	32	26.0	22.0	34.8	55.0
DU-22M	22	18.3	30	32	26.0	22.0	34.8	55.0
DU-25M	25	21.8	35	38	31.3	26.5	40.4	65.0
DU-28M	28	21.8	41	46	36.6	36.6	43.4	85.0
DU-30M	30	26.2	46	50	39.7	39.3	49.5	92.9
DU-32M	32	28.6	46	50	42.0	41.6	51.3	97.3
DU-35M	35	31.5	50	55	42.1	41.7	51.3	97.6
DU-38M	38	33.7	55	60	49.4	47.9	58.4	113.6
DU-42M	42	36.8	60	65	49.3	47.8	58.4	113.4
DU-50M	50	45.2	70	76	65.0	60.2	74.7	146.0

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Union Elbow
DL





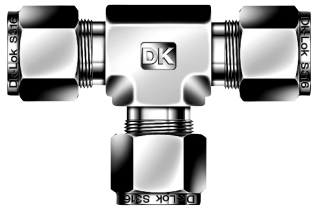
Connects fractional tube

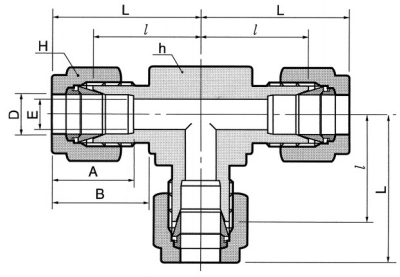
Part No.	Tube O.D. D		E Min.	Width across flat h		H		A	B	l	L
	in	mm		in	mm	in	mm				
DL-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
DL-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
DL-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
DL-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
DL-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
DL-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
DL-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
DL-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
DL-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
DL-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
DL-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
DL-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
DL-24	1-1/2	38.10	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
DL-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D. D	E Min.	Width across flat h	H	A	B	l	L
DL - 2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
DL - 3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
DL - 4M	4	2.4	12.7	12	13.7	16.4	18.8	25.4
DL - 6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
DL - 8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
DL - 10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
DL - 12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
DL - 15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
DL - 16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
DL - 18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
DL - 20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
DL - 22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
DL - 25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
DL - 28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
DL - 32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
DL - 38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0

Union Tee
DT





Connects fractional tube

Part No.	Tube O.D. D		E	Width across flat h		Width across flat H		A	B	l	L
	in	mm	Min.	in	mm	in	mm				
DT-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
DT-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
DT-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
DT-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
DT-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
DT-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
DT-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
DT-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
DT-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
DT-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
DT-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
DT-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
DT-24	1-1/2	38.10	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
DT-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

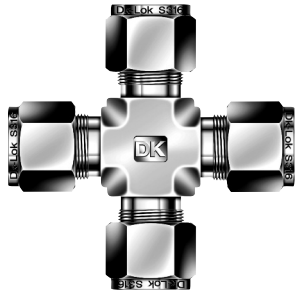
Connects metric tube

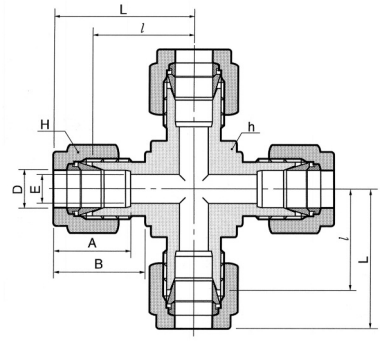
Part No.	Tube O.D. D	E Min.	Width across flat h	Width across flat H	A	B	l	L
DT - 2M	2	1.7	9.5	12	12.9	15.3	15.7	22.3
DT - 3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
DT - 4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
DT - 6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
DT - 8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
DT - 10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
DT - 12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
DT - 15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
DT - 16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
DT - 18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
DT - 20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
DT - 22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
DT - 25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
DT - 28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
DT - 32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
DT - 38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Union Cross
DX

Note :
Cross may be made out of bar stock.





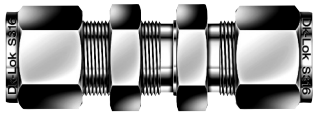
Connects fractional tube

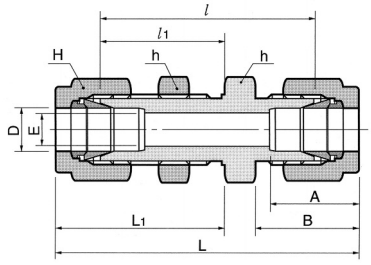
Part No.	Tube O.D. D		E	Width across flat				A	B	l	L
				h		H					
	in	mm	Min.	in	mm	in	mm				
DX-1	1/16	1.59	1.27	3/8	9.52	5/16	7.93	8.63	10.92	14.00	17.88
DX-2	1/8	3.17	2.28	3/8	9.52	7/16	11.11	12.70	15.24	15.74	22.35
DX-3	3/16	4.76	3.04	1/2	12.70	1/2	12.70	13.71	16.00	17.78	24.38
DX-4	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92
DX-5	5/16	7.93	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70
DX-6	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48
DX-8	1/2	12.70	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06
DX-10	5/8	15.87	12.70	15/16	23.81	1	25.40	24.38	21.84	28.70	38.80
DX-12	3/4	19.05	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87
DX-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70
DX-16	1	25.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02
DX-20	1-1/4	31.75	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54
DX-24	1-1/2	38.10	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97
DX-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18

Connects metric tube

Part No.	Tube O.D. D	E	Width across flat		A	B	l	L
		Min.	h	H				
DX-3M	3	2.4	9.5	12	12.9	15.3	15.7	22.3
DX-4M	4	2.4	12.7	12	13.7	16.1	18.8	25.4
DX-6M	6	4.8	12.7	14	15.3	17.7	19.6	27.0
DX-8M	8	6.4	14.3	16	16.2	18.6	21.3	28.8
DX-10M	10	7.9	17.5	19	17.2	19.5	23.9	31.5
DX-12M	12	9.5	20.6	22	22.8	22.0	25.9	36.0
DX-15M	15	11.9	25.4	25	24.4	22.0	28.7	38.8
DX-16M	16	12.7	25.4	25	24.4	22.0	28.7	38.8
DX-18M	18	15.1	27.0	30	24.4	22.0	29.7	39.8
DX-20M	20	15.9	34.92	32	26.0	22.0	32.5	42.6
DX-22M	22	18.3	34.92	32	26.0	22.0	32.5	42.6
DX-25M	25	21.8	34.92	38	31.3	26.5	36.8	49.1
DX-28M	28	21.8	41.0	46	36.6	36.6	43.2	64.0
DX-32M	32	28.6	46.0	50	42.0	41.6	49.3	72.3
DX-38M	38	33.7	50.8	60	49.4	47.9	56.4	84.0

Bulkhead Union
DUB





Connects fractional tube

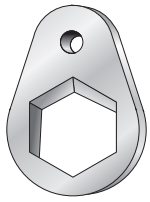
Part No.	Tube O.D. D		E	Width across flat				A	B	l	l_1	L	L1	Panel Hole Drill size	Panel Max Thickness
				h		H									
	in	mm	Min.	in	mm	in	mm								
DUB-1	1/16	1.59	1.27	5/16	7.93	5/16	7.93	8.63	10.92	23.87	13.46	31.50	17.27	5.16	3.05
DUB-2	1/8	3.17	2.28	1/2	12.70	7/16	11.11	12.70	15.24	38.10	24.63	51.30	31.24	8.33	12.70
DUB-3	3/16	4.76	3.04	9/16	14.28	1/2	12.70	13.71	16.00	40.38	25.40	53.59	32.00	9.92	12.70
DUB-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	17.78	42.92	26.16	57.65	33.52	11.50	10.16
DUB-5	5/16	7.93	6.35	11/16	17.46	5/8	15.87	16.25	18.54	45.97	28.44	60.70	35.81	13.09	11.17
DUB-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	19.30	47.49	29.46	62.23	36.83	14.68	11.17
DUB-8	1/2	12.70	10.41	15/16	23.81	7/8	22.22	22.86	21.84	50.80	31.75	71.12	41.91	19.44	12.70
DUB-10	5/8	15.87	12.70	1-1/16	26.98	1	25.40	24.38	21.84	52.32	32.51	72.64	42.67	22.62	12.70
DUB-12	3/4	19.05	15.74	1-3/16	30.16	1-1/8	28.58	24.38	21.84	58.67	37.33	78.99	47.49	25.79	16.76
DUB-14	7/8	22.22	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	64.26	42.92	84.58	53.08	28.97	19.05
DUB-16	1	25.40	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	71.37	45.21	95.75	57.40	33.73	19.05
DUB-20	1-1/4	31.75	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	78.99	47.75	123.19	69.85	41.67	19.05
DUB-24	1-1/2	38.10	33.90	2-1/4	57.15	2-1/4	57.15	50.03	45.21	84.83	49.27	139.19	76.45	49.61	19.05
DUB-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	62.73	105.66	56.38	180.34	93.72	57.94	19.05

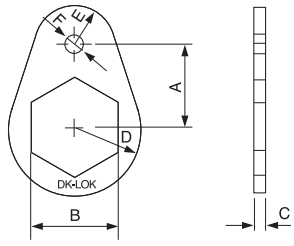
Connects metric tube

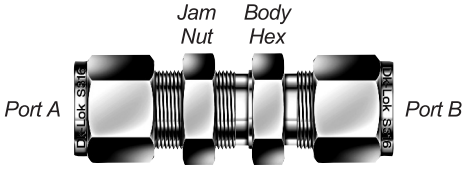
Part No.	Tube O.D. D	E	Width across flat		A	B	l	l_1	L	L1	Panel Hole Drill size	Panel Max Thickness
		Min.	h	H								
DUB - 3M	3	2.4	14	12	12.9	15.3	38.1	24.6	51.3	31.2	8.3	12.7
DUB - 4M	4	2.4	14	12	13.7	16.1	40.4	25.4	53.6	32.0	9.9	12.7
DUB - 6M	6	4.8	16	14	15.3	17.7	42.9	26.2	57.7	33.6	11.5	10.2
DUB - 8M	8	6.4	18	16	16.2	18.6	46.0	28.6	61.0	36.1	13.1	11.2
DUB - 10M	10	7.9	22	19	17.2	19.5	48.5	29.4	63.7	37.0	16.2	11.2
DUB - 12M	12	9.5	24	22	22.8	22.0	50.8	31.8	71.0	41.9	19.5	12.7
DUB - 15M	15	11.9	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
DUB - 16M	16	12.7	27	25	24.4	22.0	52.3	32.5	72.5	42.6	22.8	12.7
DUB - 18M	18	15.1	30	30	24.4	22.0	58.7	37.3	78.9	47.4	26.0	16.8
DUB - 20M	20	15.9	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	17.0
DUB - 22M	22	18.3	35	32	26.0	22.0	64.3	42.9	84.5	53.0	29.0	19.0
DUB - 25M	25	21.8	41.3	38	31.3	26.5	71.4	45.2	95.9	57.5	33.7	19.0
DUB - 32M	32	28.6	50	50	42.0	41.6	82.3	49.5	128.3	72.5	42.5	19.0
DUB - 38M	38	33.7	60	60	49.4	47.9	89.4	51.5	144.6	79.1	50.5	19.0

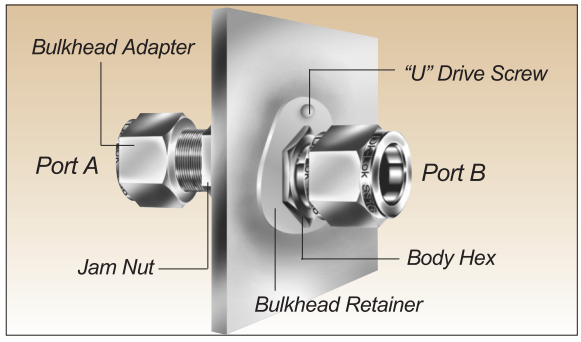
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Bulkhead Retainer
DBR







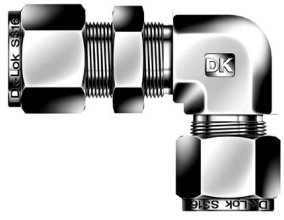


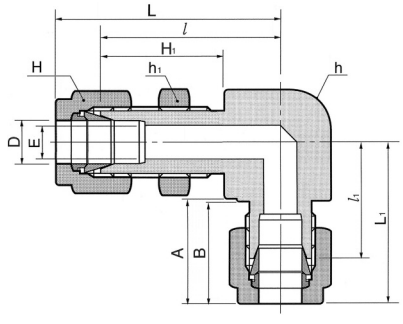
Bulkhead retainer acts as a backup wrench on panel construction.
This allows one person to tighten the jam nut on port A side and following tubing connection on port A and B without a backup wrench.

Connects fractional tube

Part No.	Dk-Lok O.D.		A	B	C	D	E	F	"U" Drive Screw	Drill Number	Drill Holl Dia
	in	mm									
DBR-1-S	1/16	-	9.52	7.94	3.18	7.94	3.97	3.97	#6-3/8	31	3.05
DBR-2-S	1/8	-	12.7	12.7	3.18	10.31	5.55	3.97	#6-3/8	31	3.05
DBR-3-S	3/16	3M,4M	14.28	14.28	3.18	11.90	6.35	3.97	#6-3/8	31	3.05
DBR-4-S	1/4	6M	15.87	15.87	3.18	12.7	7.14	3.97	#6-3/8	31	3.05
DBR-5-S	5/16	-	17.46	17.46	3.18	14.28	7.94	3.97	#6-3/8	31	3.05
DBR-8M-S		8M	17.46	18.0	3.18	14.28	7.94	3.97	#6-3/8	31	3.05
DBR-6-S	3/8	-	19.05	19.05	3.18	15.87	8.73	3.97	#6-3/8	31	3.05
DBR-10M-S		10M	23.81	22.0	3.18	19.05	10.31	5.55	#10-1/2	27	3.66
DBR-8-S	1/2	12M	23.81	23.81	3.18	19.05	10.31	5.55	#10-1/2	27	3.66
DBR-10-S	5/8	15M,16M	25.4	26.98	3.18	20.64	10.31	5.55	#10-1/2	27	3.66
DBR-12-S	3/4	18M	26.98	30.16	3.18	23.02	11.90	5.55	#10-1/2	27	3.66
DBR-14-S	7/8	-	28.57	33.33	3.18	26.19	13.49	5.55	#10-1/2	27	3.66
DBR-16-S	1	-	32.54	41.27	3.18	29.37	14.28	5.55	#10-1/2	27	3.66

Bulkhead Elbow Union
DBL

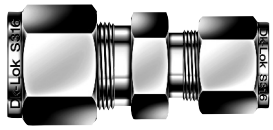


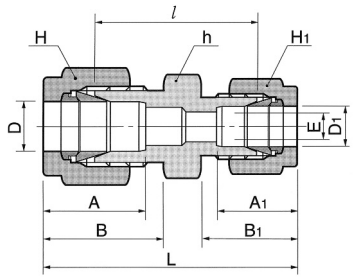


Connects metric tube

Part No.	Tube O.D. (mm)	E Min.	Width across flat			A	B	l	l_1	L	L_1	Panel Hole Drill size	Panel Max Thickness
			h	h_1	H								
DBL-6M	6	4.8	15.8	14.2	14.0	15.3	17.7	36.5	20.6	43.9	30.0	11.5	10.2
DBL-8M	8	6.4	17.4	17.4	16.0	18.6	46.0	40.9	23.2	48.4	30.7	13.1	11.2
DBL-10M	10	7.9	22.0	22.0	19.0	19.5	48.5	44.5	26.9	52.1	34.5	16.2	11.2
DBL-12M	12	9.5	24.0	23.8	22.0	22.0	50.8	46.9	26.9	57.0	37.0	19.5	12.7
DBL-16M	16	13.5	27.0	27.0	25.0	22.0	52.3	53.5	34.1	63.7	44.5	22.8	12.7
DBL-20M	20	15.9	34.9	35.0	32.0	26.0	22.0	68.4	39.0	78.2	48.7	29.0	17.0
DBL-25M	25	21.8	41.0	41.0	38.0	31.3	26.5	74.2	46.1	86.5	58.4	33.7	19.1

Reducing Union
DUR





Connects fractional tube

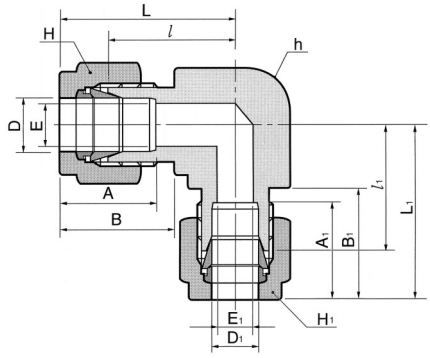
Part No.	Tube O.D. D		Tube O.D. D1		E Min.	Width across flat h		Width across flat H		Width across flat H1		A	A1	B	B1	l	L
	in	mm	in	mm		in	mm	in	mm	in	mm						
DUR 2-1	1/8	3.18	1/16	1.59	1.27	7/16	11.11	7/16	11.11	5/16	7.93	12.70	8.63	15.24	10.92	20.60	30.91
DUR 3-1	3/16	4.76	1/16	1.59	1.27	7/16	11.11	1/2	12.70	5/16	7.93	13.71	8.63	16.00	10.92	21.84	32.25
DUR 3-2	3/16	4.76	1/8	3.17	2.28	7/16	11.11	1/2	12.70	7/16	11.11	13.71	12.70	16.00	15.24	23.36	36.57
DUR 4-1	1/4	6.35	1/16	1.59	1.27	1/2	12.70	9/16	14.28	5/16	7.93	15.24	8.63	17.78	10.92	23.11	34.29
DUR 4-2	1/4	6.35	1/8	3.17	2.28	1/2	12.70	9/16	14.28	7/16	11.11	15.24	12.70	17.78	15.24	24.63	38.60
DUR 4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	1/2	12.70	15.24	13.71	17.78	16.00	25.40	39.37
DUR 5-2	5/16	7.93	1/8	3.17	2.28	9/16	14.28	5/8	15.87	7/16	11.11	16.25	12.70	18.54	15.24	25.90	39.87
DUR 5-4	5/16	7.93	1/4	6.35	4.82	9/16	14.28	5/8	15.87	9/16	14.28	16.25	15.24	18.54	17.78	27.43	42.16
DUR 6-1	3/8	9.52	1/16	1.59	1.27	5/8	15.87	11/16	17.46	5/16	7.93	16.76	8.63	19.30	10.92	25.40	36.57
DUR 6-2	3/8	9.52	1/8	3.17	2.28	5/8	15.87	11/16	17.46	7/16	11.11	16.76	12.70	19.30	15.24	26.92	40.89
DUR 6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	9/16	14.28	16.76	15.24	19.30	17.78	28.44	43.18
DUR 6-5	3/8	9.52	5/16	7.93	6.35	5/8	15.87	11/16	17.46	5/8	15.87	16.76	16.25	19.30	18.54	29.46	44.19
DUR 8-2	1/2	12.70	1/8	3.17	2.28	13/16	20.64	7/8	22.22	7/16	11.11	22.86	12.70	21.84	15.24	28.44	45.21
DUR 8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	9/16	14.28	22.86	15.24	21.84	17.78	29.46	46.99
DUR 8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	11/16	17.46	22.86	16.76	21.84	19.30	30.98	48.51
DUR 10-6	5/8	15.87	3/8	9.52	7.11	15/16	23.81	1	25.40	11/16	17.46	24.38	16.76	21.84	19.30	31.75	49.27
DUR 10-8	5/8	15.87	1/2	12.70	10.41	15/16	23.81	1	25.40	7/8	22.22	24.38	22.86	21.84	21.84	31.75	52.07
DUR 12-4	3/4	19.05	1/4	6.35	4.82	1-1/16	26.98	1-1/8	28.57	9/16	14.48	24.38	15.24	21.84	17.78	31.75	49.27
DUR 12-6	3/4	19.05	3/8	9.52	7.11	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.38	16.76	21.84	19.30	33.27	50.80
DUR 12-8	3/4	19.05	1/2	12.70	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	24.38	22.86	21.84	21.84	33.27	53.59
DUR 12-10	3/4	19.05	5/8	15.87	12.70	1-1/16	26.98	1-1/8	28.57	1	25.40	24.38	24.38	21.84	21.84	33.27	53.59
DUR 16-8	1	25.40	1/2	12.70	10.41	1-3/8	34.92	1-1/2	38.10	7/8	22.22	31.24	22.86	26.41	21.84	40.89	63.24
DUR 16-12	1	25.40	3/4	19.05	15.74	1-3/8	34.92	1-1/2	38.10	1-1/8	28.58	31.24	24.38	26.41	21.84	40.38	62.73

Connects metric tube

Part No.	Tube O.D. D	Tube O.D. D1	E Min.	Width across flat h	Width across flat H	Width across flat H1	A	A1	B	B1	l	L
DUR3M-2M	3	2	1.7	12	12	12	12.9	12.9	15.3	15.3	22.1	35.3
DUR6M-2M	6	2	1.7	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
DUR6M-3M	6	3	2.4	14	14	12	15.3	12.9	17.7	15.3	24.6	38.6
DUR6M-4M	6	4	2.4	14	14	12	15.3	13.7	17.7	16.1	25.4	39.4
DUR8M-6M	8	6	4.8	15	16	14	16.2	15.3	18.6	17.7	27.4	42.3
DUR10M-3M	10	3	2.4	18	19	12	17.2	12.9	19.5	15.3	27.7	41.9
DUR10M-4M	10	4	2.4	18	19	12	17.2	13.7	19.5	16.1	28.7	42.9
DUR10M-6M	10	6	4.8	18	19	14	17.2	15.3	19.5	17.7	29.5	44.5
DUR10M-8M	10	8	6.4	18	19	16	17.2	16.2	19.5	18.6	30.0	45.1
DUR12M-6M	12	6	4.8	22	22	14	22.8	15.3	22.0	17.7	29.5	47.0
DUR12M-8M	12	8	6.4	22	22	16	22.8	16.2	22.0	18.6	30.2	47.8
DUR12M-10M	12	10	7.9	22	22	19	22.8	17.2	22.0	19.5	31.0	48.7
DUR15M-12M	15	12	9.8	24	25	22	24.4	17.2	22.0	19.5	31.8	52.5
DUR16M-10M	16	10	7.9	24	25	19	24.4	17.2	22.0	19.5	31.8	49.5
DUR16M-12M	16	12	9.5	24	25	22	24.4	22.8	22.0	22.0	31.8	52.0
DUR18M-10M	18	10	7.9	27	30	19	24.4	17.2	22.0	19.5	33.0	51.0
DUR18M-12M	18	12	9.5	27	30	22	24.4	22.8	22.0	22.0	33.3	53.5
DUR25M-18M	25	18	15.1	35	38	30	31.3	24.4	26.5	22.0	38.6	61.0
DUR25M-20M	25	20	15.9	35	38	32	31.3	26.0	26.5	22.0	39.9	62.3
DUR30M-18M	30	18	15.1	46	50	30	39.7	24.4	39.3	22.0	43.7	75.4
DUR30M-20M	30	20	15.9	46	50	32	39.7	26.0	39.3	22.0	43.7	75.4
DUR30M-25M	30	25	21.8	46	50	38	39.7	31.3	39.3	26.5	46.2	80.1
DUR32M-18M	32	18	15.1	46	50	30	42.0	24.4	41.6	22.0	44.7	77.8
DUR32M-20M	32	20	15.9	46	50	32	42.0	26.0	41.6	22.0	44.7	77.8
DUR32M-25M	32	25	21.8	46	50	38	42.0	31.3	41.6	26.5	47.0	82.3
DUR38M-20M	38	20	15.9	55	60	32	49.4	26.0	47.9	22.0	49.8	87.5
DUR38M-25M	38	25	21.8	55	60	38	49.4	31.3	47.9	26.5	52.1	92.0
DUR38M-30M	30	30	26.2	55	60	50	49.4	39.7	47.9	39.3	55.4	104.6

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Reducing Union Elbow
DLR



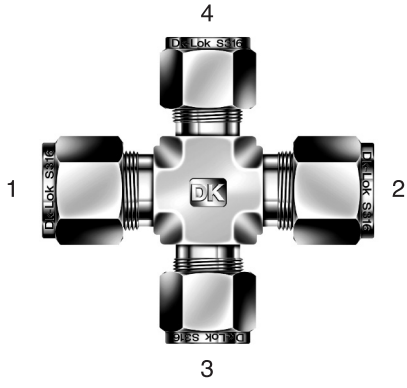
Connects fractional tube

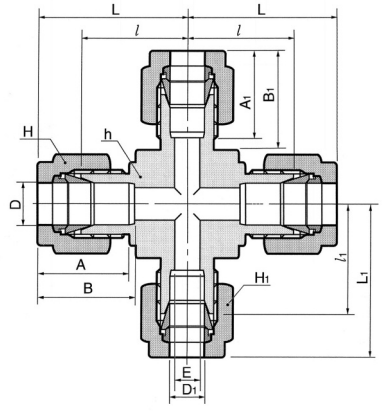
Part No.	Tube O.D. D		Tube O.D. D1		Width across flat h		Width across flat H		Width across flat H1		E	E1	A	A1	B	B1	l	l1	L	L1
	in	mm	in	mm	in	mm	in	mm	in	mm										
DLR 2-1	1/8	3.17	1/16	1.59	3/8	9.52	7/6	11.11	5/16	7.93	2.4	1.3	12.7	8.63	15.24	10.93	15.74	14.2	22.35	18.0
DLR 4-2	1/4	635	1/8	3.17	1/2	12.7	9/16	14.28	7/6	11.11	4.8	2.4	15.24	12.7	17.78	15.24	19.55	17.9	26.92	24.5
DLR 6-4	3/8	9.52	1/4	6.35	5/8	15.87	11/16	17.46	9/16	14.28	7.1	4.8	16.76	15.24	19.3	17.78	23.1	21.92	30.47	29.29
DLR 8-4	1/2	12.7	1/4	6.35	13/16	20.64	7/8	22.22	9/16	14.28	10.41	4.8	22.86	15.24	21.84	17.78	25.9	24.4	36.06	31.77
DLR 8-6	1/2	12.7	3/8	9.52	13/16	20.64	7/8	22.22	11/16	17.46	10.41	7.1	22.86	16.76	21.84	19.30	25.9	25.9	36.06	33.27

Connects metric tube

Part No.	Tube O.D. D	Tube O.D. D1		Width across flat h		Width across flat H		Width across flat H1		E	E1	A	A1	B	B1	l	l1	L	L1
		in	mm	in	mm	mm	in	mm											
DLR 8M-4	8	1/4	6.35	9/16	14.28	16	9/16	14.28	6.4	4.8	16.2	15.24	18.6	17.78	21.3	20.6	28.7	28.0

Reducing Union Cross
DXR





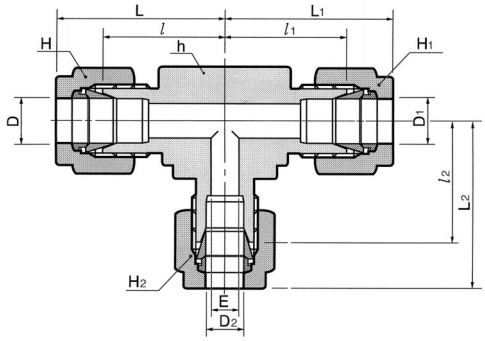
Connects fractional tube

Part No.	Port 1 Port 2 D		Port 3 Port 4 D1		E Min	Width across flat h		Width across flat H		Width across flat H1		A	A1	B	B1	l	l1	L	L1
	in	mm	in	mm		in	mm	in	mm	in	mm								
DXR 12-12-6-6	3/4	19.05	3/8	9.52	7.1	1-1/16	26.98	1-1/8	28.57	11/16	17.46	24.38	16.76	21.84	19.3	29.71	29.71	39.87	37.07

Connects metric tube

Part No.	Port 1 D	Port 2 Port 3 Port 4 D1	E Min	Width across flat h	Width across flat H	Width across flat H1	A	A1	B	B1	l	l1	L	L1
DXR 16M-6M-6M-6M	16	6	4.8	25.4	25	14	24.4	15.3	22.0	17.7	28.7	27.2	38.8	34.6

Reducing Union Tee
DTR



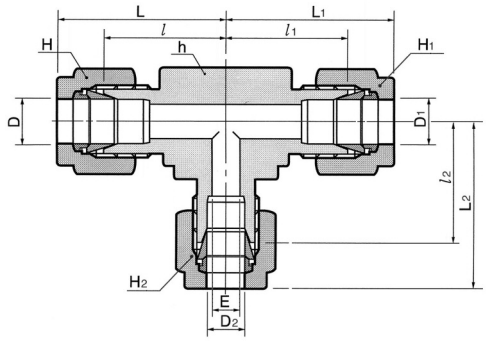
Connects fractional tube

Part No.	Port 1 D		Port 2 D_1		Port 3 D_2		E Min	Width across flat h		H		H_1		H_2		l	l_1	l_2	L	L_1	L_2
	in	mm	in	mm	in	mm		in	mm	in	mm	in	mm	in	mm						
DTR 4-4-2	1/4	6.35	1/4	6.35	1/8	3.17	2.4	1/2	12.7	9/16	14.28	9/16	14.28	7/16	11.11	19.55	19.55	17.9	26.91	26.91	24.5
DTR 4-4-6	1/4	6.35	1/4	6.35	3/8	9.52	4.8	5/8	15.87	9/16	14.28	9/16	14.28	11/16	17.46	21.92	21.92	23.1	29.28	29.28	30.46
DTR 4-8-8	1/4	6.35	1/2	12.7	1/2	12.7	4.8	13/16	20.64	9/16	14.28	7/8	22.22	7/8	22.22	24.4	25.9	25.9	31.76	36.06	36.06
DTR 6-4-6	3/8	9.52	1/4	6.35	3/8	9.52	4.8	5/8	15.87	11/16	17.46	9/16	14.28	11/16	17.46	23.1	21.92	23.1	30.46	29.28	30.46
DTR 6-6-4	3/8	9.52	3/8	9.52	1/4	6.35	4.8	5/8	15.87	11/16	17.46	11/16	17.46	9/16	14.28	23.1	23.1	21.92	30.46	30.46	29.28
DTR 6-6-8	3/8	9.52	3/8	9.52	1/2	12.7	7.1	13/16	20.64	11/16	17.46	11/16	17.46	7/8	22.22	25.9	25.9	25.9	33.26	33.26	36.06
DTR 8-4-6	1/2	12.7	1/4	6.35	3/8	9.52	4.8	13/16	20.64	7/8	22.22	9/16	14.28	11/16	17.46	25.9	25.9	25.9	36.06	33.26	33.26
DTR 8-4-8	1/2	12.7	1/4	6.35	1/2	12.7	7.1	13/16	20.64	7/8	22.22	9/16	14.28	7/8	22.22	25.9	24.4	25.9	36.06	31.76	36.06
DTR 8-6-6	1/2	12.7	3/8	9.52	3/8	9.52	7.1	13/16	20.64	7/8	22.22	11/16	17.46	11/16	17.46	25.9	25.9	25.9	36.06	33.26	33.26
DTR 8-8-4	1/2	12.7	1/2	12.7	1/4	6.35	4.8	13/16	20.64	7/8	22.22	7/8	22.22	9/16	14.28	25.9	25.9	24.4	36.06	36.06	31.76
DTR 8-8-6	1/2	12.7	1/2	12.7	3/8	9.52	7.1	13/16	20.64	7/8	22.22	7/8	22.22	11/16	17.46	25.9	25.9	25.9	36.06	36.06	33.26
DTR 10-10-6	5/8	15.87	5/8	15.87	3/8	9.52	7.1	15/16	23.81	1	25.4	1	25.4	11/16	17.46	28.7	28.7	28.7	38.86	38.86	36.06
DTR 12-8-12	3/4	19.05	1/2	12.7	3/4	19.05	10.41	1-1/16	26.98	1-1/8	28.57	7/8	22.22	1-1/8	28.57	29.71	29.71	29.71	39.87	39.87	39.87
DTR 12-12-4	3/4	19.05	3/4	19.05	1/4	6.35	4.8	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	9/16	14.28	29.71	29.71	28.21	39.87	39.87	35.57
DTR 12-12-6	3/4	19.05	3/4	19.05	3/8	9.52	7.1	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	11/16	17.46	29.71	29.71	29.71	39.87	39.87	35.57
DTR 12-12-8	3/4	19.05	3/4	19.05	1/2	12.7	10.41	1-1/16	26.98	1-1/8	28.57	1-1/8	28.57	7/8	22.22	29.71	29.71	29.71	39.87	39.87	38.37
DTR 12-12-16	3/4	19.05	3/4	19.05	1	25.4	16.0	1-3/8	34.92	1-1/8	28.57	1-1/8	28.57	1-1/2	38.10	34.43	34.43	36.83	49.02	49.02	45.7
DTR 12-12-20	3/4	19.05	3/4	19.05	1-1/4	31.75	16.0	1-11/16	42.86	1-1/8	28.57	1-1/8	28.57	1-7/8	47.63	39.41	39.41	44.45	49.57	49.57	66.55
DTR 14-14-8	7/8	22.22	7/8	22.22	1/2	12.7	10.41	1-1/4	31.75	1-1/4	31.75	1-1/4	31.75	7/8	22.22	34.54	34.54	34.54	44.7	44.7	44.7
DTR 16-12-12	1	25.4	3/4	19.05	3/4	19.05	16.0	1-3/8	34.92	1-1/2	38.10	1-1/8	28.57	1-1/8	28.57	36.83	35.54	35.54	49.02	45.7	45.7
DTR 16-16-4	1	25.4	1	25.4	1/4	6.35	4.8	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	9/16	14.28	36.83	36.83	33.04	49.02	49.02	40.4
DTR 16-16-6	1	25.4	1	25.4	3/8	9.52	7.1	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	11/16	17.46	36.83	36.83	34.54	49.02	49.02	41.9
DTR 16-16-8	1	25.4	1	25.4	1/2	12.7	10.41	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	7/8	22.22	36.83	36.83	34.54	49.02	49.02	44.7
DTR 16-16-12	1	25.4	1	25.4	3/4	19.05	16.0	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	1-1/8	28.57	36.83	36.83	35.54	49.02	49.02	45.7
DTR 20-12-12	1 1/4	31.75	3/4	19.05	3/4	19.05	16.0	1-11/16	42.86	1-7/8	47.63	1-1/8	28.57	1-1/8	28.57	44.45	39.41	39.41	66.55	49.57	49.57
DTR 20-20-12	1 1/4	31.75	1 1/4	31.75	3/4	19.05	16.0	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	1-1/8	28.57	44.45	44.45	39.41	66.55	66.55	49.57
DTR 24-20-20	1 1/2	38.10	1 1/4	31.75	1 1/4	31.75	27.69	2	50.8	2-1/4	57.15	1-7/8	47.63	1-7/8	47.63	50.8	49.62	49.62	77.97	71.72	71.72
DTR 24-24-8	1 1/2	38.10	1 1/2	38.10	1/2	12.7	10.41	2	50.8	2-1/4	57.15	2-1/4	57.15	7/8	22.22	50.8	50.8	44.58	77.97	77.97	54.74
DTR 24-24-12	1 1/2	38.10	1 1/2	38.10	3/4	19.05	16.0	2	50.8	2-1/4	57.15	2-1/4	57.15	1-1/8	28.57	50.8	50.8	44.58	77.97	77.97	54.74
DTR 24-24-16	1 1/2	38.10	1 1/2	38.10	1	25.4	22.3	2	50.8	2-1/4	57.15	2-1/4	57.15	1-1/2	38.10	50.8	50.8	47.75	77.97	77.97	59.94

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Reducing Union Tee

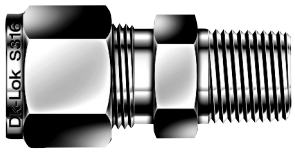
DTR

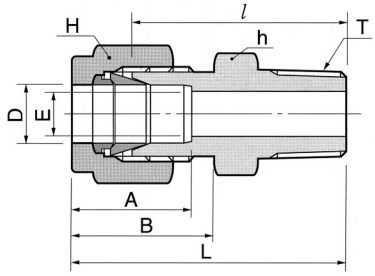


Connects metric tube

Part No.	Port 1	Port 2	Port 3	E	Width across flat				A	A1	A2	B	B1	B2	l	l 1	l 2	L	L 1	L 2
	D	D1	D2	Min	h	H	H1	H2												
DTR 3M-3M-6M	3	3	6	2.4	12.7	12	12	14	12.9	12.9	15.3	15.3	15.3	17.7	18.0	18.0	19.6	24.6	24.6	27.0
DTR 8M-8M-6M	8	8	6	4.8	15	16	16	14	16.2	16.2	15.3	18.6	18.6	17.7	21.3	21.3	20.5	28.8	28.8	28.0
DTR 10M-10M-6M	10	10	6	4.8	17.4	19	19	14	17.2	17.2	15.3	19.5	19.5	17.7	23.9	23.9	22.4	31.5	31.5	29.8
DTR 10M-10M-12M	10	10	12	7.9	20.6	19	19	22	17.2	17.2	22.8	19.5	19.5	22.0	25.9	25.9	25.9	33.5	33.5	36.0
DTR 12M-6M-10M	12	6	10	4.8	20.6	22	14	19	22.8	15.3	17.2	22.0	17.7	19.5	25.9	24.4	25.9	36.0	31.8	33.5
DTR 12M-6M-12M	12	6	12	4.8	20.6	22	14	22	22.8	15.3	22.8	22.0	17.7	22.0	25.9	24.4	25.9	36.0	31.8	36.0
DTR 12M-10M-10M	12	10	10	7.9	20.6	22	19	19	22.8	17.2	17.2	22.0	19.5	19.5	25.9	25.9	25.9	36.0	33.5	33.5
DTR 12M-12M-10M	12	12	10	7.9	20.6	22	22	19	22.8	22.8	17.2	22.0	22.0	19.5	25.9	25.9	25.9	36.0	36.0	33.5
DTR 12M-12M-6M	12	12	6	4.8	20.6	22	22	14	22.8	22.8	15.3	22.0	22.0	17.7	25.9	25.9	24.4	36.0	36.0	31.8
DTR 15M-15M-12M	15	15	12	9.8	25.4	25	25	22	24.4	24.4	22.8	22.0	22.0	22.0	28.7	28.7	28.7	38.8	38.8	38.8
DTR 16M-16M-12M	16	16	12	9.8	25.4	25	25	22	24.4	24.4	22.8	22.0	22.0	22.0	28.7	28.7	28.7	38.8	38.8	38.8
DTR 18M-18M-12M	18	18	12	9.8	27	30	30	22	24.4	24.4	22.8	22.0	22.0	22.0	29.7	29.7	28.2	39.8	39.8	38.3
DTR 20M-12M-20M	20	12	20	9.8	34.9	32	22	32	26.0	22.8	26.0	22.0	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6
DTR 20M-20M-6M	20	20	6	4.8	34.9	32	32	14	26.0	26.0	15.3	22.0	22.0	17.7	32.5	32.5	31.0	42.6	42.6	38.4
DTR 20M-20M-10M	20	20	10	7.9	34.9	32	32	19	26.0	26.0	17.2	22.0	22.0	19.5	32.5	32.5	32.5	42.6	42.6	40.1
DTR 20M-20M-12M	20	20	12	9.8	34.9	32	32	22	26.0	26.0	22.8	22.0	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6
DTR 20M-20M-25M	20	20	25	15.9	34.9	32	32	38	26.0	26.0	31.3	22.0	22.0	26.5	34.3	34.3	36.8	44.4	44.4	49.1
DTR 20M-20M-32M	20	20	32	15.9	46	32	32	50	26.0	26.0	42.0	22.0	22.0	41.6	42.5	42.5	49.3	52.6	52.6	72.3
DTR 22M-22M-12M	22	22	12	9.8	34.9	32	32	22	26.0	26.0	22.8	22.0	22.0	22.0	32.5	32.5	32.5	42.6	42.6	42.6
DTR 25M-20M-20M	25	20	20	15.9	34.9	38	32	32	31.3	26.0	26.0	26.5	22.0	22.0	36.8	34.3	34.3	49.1	44.4	44.4
DTR 25M-25M-10M	25	25	10	7.9	34.9	38	38	19	31.3	31.3	17.2	26.5	26.5	19.5	36.8	36.8	34.3	49.1	49.1	38.9
DTR 25M-25M-12M	25	25	12	9.8	34.9	38	38	22	31.3	31.3	22.8	26.5	26.5	22.0	36.8	36.8	34.3	49.1	49.1	44.4
DTR 25M-25M-20M	25	25	20	15.9	34.9	38	38	32	31.3	31.3	26.0	26.5	26.5	22.0	36.8	36.8	34.3	49.1	49.1	44.4
DTR 32M-32M-20M	32	32	20	15.9	46	38	38	32	42.0	42.0	26.0	41.6	41.6	22.0	49.3	49.3	42.5	72.3	72.3	52.6
DTR 38M-32M-32M	38	32	32	28.6	50.8	60	38	38	49.4	42.0	42.0	47.9	41.6	41.6	56.4	54.7	54.7	84.0	77.7	77.7
DTR 38M-38M-20M	38	38	20	15.9	50.8	60	60	32	49.4	49.4	26.0	47.9	47.9	22.0	56.4	56.4	47.9	84.0	84.0	58.0
DTR 38M-38M-25M	38	38	25	21.8	50.8	60	60	38	49.4	49.4	31.3	47.9	47.9	26.5	56.4	56.4	50.4	84.0	84.0	62.7

Male Connector
DMC-N



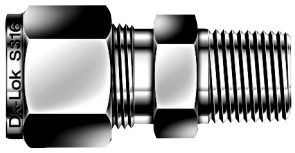


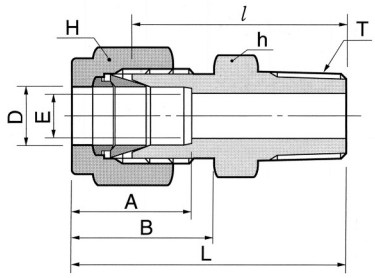
Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		H		A	B	l	L
	in	mm			in	mm	in	mm				
DMC1-1N	1/16	1.59	1/16	1.27	5/16	7.93	5/16	7.93	8.63	10.92	20.00	23.83
DMC1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	22.35	26.23
DMC1-4N	1/16	1.59	1/4	1.27	9/16	14.28	5/16	7.93	8.63	10.92	27.17	30.98
DMC2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.11	29.71
DMC2-2N	1/8	3.17	1/8	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	30.48
DMC2-4N	1/8	3.17	1/4	2.28	9/16	14.28	7/16	11.11	12.70	15.24	28.95	35.56
DMC2-6N	1/8	3.17	3/8	2.28	11/16	17.46	7/16	11.11	12.70	15.24	29.21	35.81
DMC2-8N	1/8	3.17	1/2	2.28	7/8	22.22	7/16	11.11	12.70	15.24	35.56	42.16
DMC3-2N	3/16	4.76	1/8	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	31.24
DMC3-4N	3/16	4.76	1/4	3.04	9/16	14.28	1/2	12.70	13.71	16.00	29.71	36.32
DMC4-1N	1/4	6.35	1/16	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
DMC4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
DMC4-4N	1/4	6.35	1/4	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	37.84
DMC4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	30.98	38.35
DMC4-8N	1/4	6.35	1/2	4.82	7/8	22.22	9/16	14.28	15.24	17.78	37.33	44.70
DMC4-12N	1/4	6.35	3/4	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	38.86	46.22
DMC5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	26.67	34.03
DMC5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	38.60
DMC5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	31.75	39.11
DMC5-8N	5/16	7.93	1/2	6.35	7/8	22.22	5/8	15.87	16.25	18.54	38.11	45.60
DMC6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	27.94	35.30
DMC6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	39.87
DMC6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	39.87
DMC6-8N	3/8	9.52	1/2	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	46.22
DMC6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	47.75
DMC6-16N	3/8	9.52	1	7.11	1-3/8	34.92	11/16	17.46	16.76	19.30	47.0	54.37
DMC8-2N	1/2	12.70	1/8	4.82	13/16	20.64	7/8	22.22	22.86	21.84	28.70	38.86
DMC8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
DMC8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
DMC8-8N	1/2	12.70	1/2	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	49.02
DMC8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	50.54
DMC8-16N	1/2	12.70	1	10.41	1-3/8	34.92	7/8	22.22	22.86	21.84	46.99	57.15
DMC10-4N	5/8	15.87	1/4	6.35	15/16	23.81	1	25.40	24.38	21.84	33.80	43.96
DMC10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	34.03	44.19
DMC10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	38.86	49.02
DMC10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	40.38	50.54
DMC12-6N	3/4	19.05	3/8	9.65	1-1/16	26.98	1-1/8	28.58	24.38	21.84	34.03	44.19
DMC12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
DMC12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
DMC12-16N	3/4	19.05	1	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	46.99	57.15
DMC14-8N	7/8	22.22	1/2	11.9	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
DMC14-12N	7/8	22.22	3/4	15.74	1-3/16	30.16	1-1/4	31.75	25.90	21.84	40.38	50.54
DMC14-16N	7/8	22.22	1	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	46.99	57.15
DMC16-6N	1	25.40	3/8	9.65	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.30	52.49
DMC16-8N	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
DMC16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
DMC16-16N	1	25.40	1	22.35	1-3/8	34.62	1-1/2	38.10	31.24	26.41	50.03	62.23
DMC20-16N	1-1/4	31.75	1	22.35	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
DMC20-20N	1-1/4	31.75	1-1/4	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
DMC20-24N	1-1/4	31.75	1-1/2	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	60.54	82.64
DMC24-16N	1-1/2	38.10	1	22.30	2-1/8	53.98	2-1/4	57.15	50.03	45.21	59.42	86.60
DMC24-20N	1-1/2	38.10	1-1/4	27.68	2-1/8	53.98	2-1/4	57.15	50.03	45.21	59.42	86.60
DMC24-24N	1-1/2	38.10	1-1/2	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	88.90
DMC24-32N	1-1/2	38.10	2	33.90	2-3/4	69.85	2-1/4	57.15	50.03	45.21	62.42	99.75
DMC32-8N	2	50.80	1/2	11.93	2-3/4	69.85	3	76.20	67.56	62.73	68.40	105.73
DMC32-20N	2	50.80	1-1/4	45.97	2-3/4	69.85	3	76.20	67.56	62.73	71.40	108.73
DMC32-24N	2	50.80	1-1/2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	75.50	112.83
DMC32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	113.53

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Connector
DMC-N

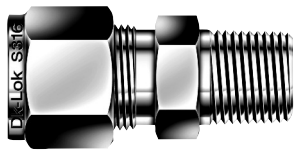


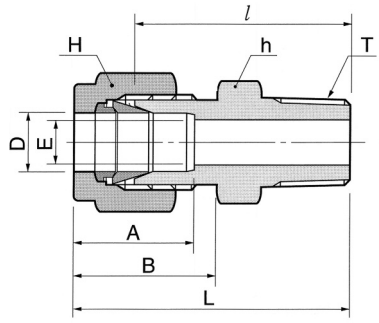


Connects metric tube to female NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	l	L
DMC2M-2N	2	1/8	1.7	12	12	12.9	15.3	23.9	30.5
DMC3M-2N	3	1/8	2.4	12	12	12.9	15.3	23.1	29.7
DMC3M-4N	3	1/4	2.4	14	12	12.9	15.3	29.0	35.6
DMC4M-2N	4	1/8	2.4	12	12	13.7	16.1	24.6	31.2
DMC4M-4N	4	1/4	2.4	14	12	13.7	16.1	29.7	36.3
DMC6M-2N	6	1/8	4.8	14	14	15.3	17.7	25.4	32.8
DMC6M-4N	6	1/4	4.8	14	14	15.3	17.7	30.2	37.6
DMC6M-6N	6	3/8	4.8	18	14	15.3	17.7	31.0	38.4
DMC6M-8N	6	1/2	4.8	22	14	15.3	17.7	37.3	44.0
DMC8M-2N	8	1/8	4.8	15	16	16.2	18.6	26.7	34.2
DMC8M-4N	8	1/4	6.4	15	16	16.2	18.6	31.2	38.7
DMC8M-6N	8	3/8	6.4	18	16	16.2	18.6	31.8	39.2
DMC8M-8N	8	1/2	6.4	22	16	16.2	18.6	37.3	44.8
DMC10M-2N	10	1/8	4.8	18	19	17.2	19.5	28.7	36.3
DMC10M-4N	10	1/4	7.1	18	19	17.2	19.5	33.3	40.9
DMC10M-6N	10	3/8	7.9	18	19	17.2	19.5	33.3	40.9
DMC10M-8N	10	1/2	7.9	22	19	17.2	19.5	38.1	45.7
DMC10M-12N	10	3/4	7.9	27	19	17.2	19.5	38.9	46.5
DMC12M-2N	12	1/8	4.8	22	22	22.8	22.0	28.7	38.8
DMC12M-4N	12	1/4	7.1	22	22	22.8	22.0	33.3	43.4
DMC12M-6N	12	3/8	9.5	22	22	22.8	22.0	33.3	43.4
DMC12M-8N	12	1/2	9.5	22	22	22.8	22.0	38.1	48.2
DMC12M-12N	12	3/4	9.5	27	22	22.8	22.0	38.9	49.0
DMC14M-4N	14	1/4	6.4	24	25	24.4	22.0	34.0	44.1
DMC14M-6N	14	3/8	9.5	24	25	24.4	22.0	34.0	44.1
DMC14M-8N	14	1/2	11.1	24	25	24.4	22.0	34.0	44.1
DMC15M-8N	15	1/2	11.9	24	25	24.4	22.0	38.9	49.0
DMC16M-4N	16	1/4	7.1	24	25	24.4	22.0	34.0	44.1
DMC16M-6N	16	3/8	9.5	24	25	24.4	22.0	34.0	44.1
DMC16M-8N	16	1/2	11.9	24	25	24.4	22.0	38.9	49.0
DMC16M-12N	16	3/4	12.7	27	25	24.4	22.0	38.9	49.0
DMC18M-8N	18	1/2	11.9	27	30	24.4	22.0	40.4	50.5
DMC18M-12N	18	3/4	15.1	27	30	24.4	22.0	40.4	50.5
DMC20M-8N	20	1/2	11.9	30	32	26.0	22.0	42.2	52.3
DMC20M-12N	20	3/4	15.9	30	32	26.0	22.0	42.2	52.3
DMC22M-12N	22	3/4	15.9	30	32	26.0	22.0	42.2	52.3
DMC22M-16N	22	1	18.3	35	32	26.0	22.0	47.8	57.9
DMC25M-8N	25	1/2	11.9	35	38	31.3	26.5	45.2	57.5
DMC25M-12N	25	3/4	15.9	35	38	31.3	26.5	45.2	57.5
DMC25M-16N	25	1	21.8	35	38	31.3	26.5	50.0	62.3
DMC28M-16N	28	1	21.8	41	46	36.6	36.6	51.6	72.4
DMC28M-20N	28	1-1/4	21.8	46	46	36.6	36.6	52.3	73.1
DMC30M-20N	30	1-1/4	26.2	46	50	39.6	39.2	55.6	77.2
DMC32M-20N	32	1-1/4	28.6	46	50	42.0	41.6	56.6	79.6
DMC38M-24N	38	1-1/2	33.7	55	60	49.4	47.9	64.0	91.6

Male Connector
DMC-R

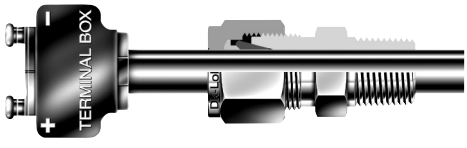




Connects fractional tube to female ISO tapered thread

Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L
	in	mm	PT	Min.	in	mm	in	mm				
DMC2-2R	1/8	3.17	1/8	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	30.48
DMC2-4R	1/8	3.17	1/4	2.28	9/16	14.28	7/16	11.11	12.70	15.24	28.95	35.56
DMC4-2R	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	32.76
DMC4-4R	1/4	6.35	1/4	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	37.84
DMC4-6R	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	30.98	38.35
DMC4-8R	1/4	6.35	1/2	4.82	7/8	22.22	9/16	14.28	15.24	17.78	37.33	44.70
DMC5-2R	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	26.67	34.03
DMC5-4R	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	38.60
DMC5-16R	5/16	7.93	1	6.35	1-3/8	34.92	5/8	15.87	16.25	18.54	46.2	50.0
DMC6-2R	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	27.94	35.30
DMC6-4R	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	39.87
DMC6-6R	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	39.87
DMC6-8R	3/8	9.52	1/2	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	46.22
DMC6-12R	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	40.38	47.75
DMC8-2R	1/2	12.70	1/8	4.82	13/16	20.64	7/8	22.22	22.86	21.84	28.70	38.86
DMC8-4R	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
DMC8-6R	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	33.27	43.43
DMC8-8R	1/2	12.70	1/2	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	49.02
DMC8-12R	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	50.54
DMC8-16R	1/2	12.70	1	10.41	1-3/8	34.92	7/8	22.22	22.86	21.84	46.99	57.15
DMC10-6R	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	34.03	44.19
DMC10-8R	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	38.86	49.02
DMC10-12R	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	40.38	50.54
DMC12-8R	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
DMC12-12R	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	50.54
DMC12-16R	3/4	19.05	1	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	46.99	57.15
DMC16-12R	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	45.21	57.40
DMC16-16R	1	25.40	1	22.35	1-3/8	34.62	1-1/2	38.10	31.24	26.41	50.03	62.23
DMC20-12R	1-1/4	31.75	3/4	15.74	1-3/4	44.45	1-7/8	47.63	41.14	38.86	50.0	72.10
DMC20-16R	1-1/4	31.75	1	22.35	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
DMC20-20R	1-1/4	31.75	1-1/4	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.11	77.21
DMC32-32R	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	76.20	113.53

Thermocouple Connector
DMCT



Most Dk-Lok male connectors can be bored-through thermocouple fittings except those fittings with small male thread like 1/8 in.
To order, insert **T** in DMC male connector part number. Example: DMC**T**8-8N-S

Dk-Lok bored-through fittings have no shoulder or sizing angle inside the body. This allows thermocouples or dip tubes to pass beyond the fitting male thread.

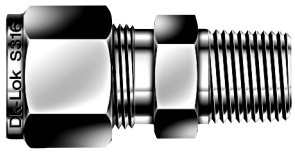
Assembly Instructions

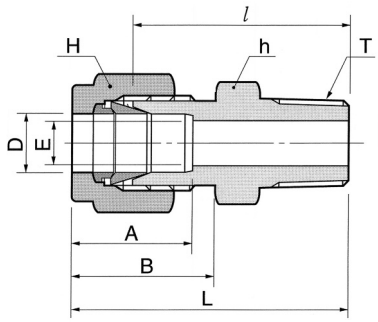
1. Position the length of thermocouple to pass through fitting male thread and hold it to prevent shifting during assembly.
2. Wrench tightens the nut 1 1/4 turns from finger tight position, keeping the body steady with backup wrench.
   - Tighten the nut 3/4 turn for 1/8, and 3/16; 3, and 4mm tube fittings.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Connector

DMC-R

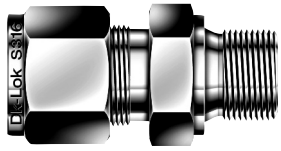


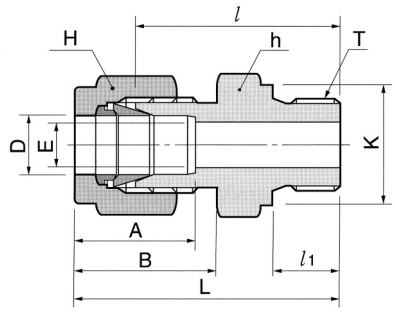


Connects metric tube to female ISO tapered thread

Part No.	Tube O.D. D	T PT	E Min.	Width across flat h	Width across flat H	A	B	l	L
DMC2M-2R	2	1/8	1.7	12	12	12.9	15.3	23.9	30.5
DMC3M-2R	3	1/8	2.4	12	12	12.9	15.3	23.1	29.7
DMC3M-4R	3	1/4	2.4	14	12	12.9	15.3	29.0	35.6
DMC4M-2R	4	1/8	2.4	12	12	13.7	16.1	24.6	31.2
DMC4M-4R	4	1/4	2.4	14	12	13.7	16.1	29.7	36.3
DMC6M-2R	6	1/8	4.8	14	14	15.3	17.7	25.4	32.8
DMC6M-4R	6	1/4	4.8	14	14	15.3	17.7	30.2	37.6
DMC6M-6R	6	3/8	4.8	18	14	15.3	17.7	31.0	38.4
DMC6M-8R	6	1/2	4.8	22	14	15.3	17.7	37.3	44.0
DMC8M-2R	8	1/8	4.8	15	16	16.2	18.6	26.7	34.2
DMC8M-4R	8	1/4	6.4	15	16	16.2	18.6	31.2	38.7
DMC8M-6R	8	3/8	6.4	18	16	16.2	18.6	31.8	39.2
DMC8M-8R	8	1/2	6.4	22	16	16.2	18.6	37.3	44.8
DMC10M-2R	10	1/8	4.8	18	19	17.2	19.5	28.7	36.3
DMC10M-4R	10	1/4	7.1	18	19	17.2	19.5	33.3	40.9
DMC10M-6R	10	3/8	7.9	18	19	17.2	19.5	33.3	40.9
DMC10M-8R	10	1/2	7.9	22	19	17.2	19.5	38.1	45.7
DMC10M-12R	10	3/4	7.9	27	19	17.2	19.5	38.9	46.5
DMC12M-4R	12	1/4	7.1	22	22	22.8	22.0	33.3	43.4
DMC12M-6R	12	3/8	9.5	22	22	22.8	22.0	33.3	43.4
DMC12M-8R	12	1/2	9.5	22	22	22.8	22.0	38.1	48.2
DMC12M-12R	12	3/4	9.5	27	22	22.8	22.0	38.9	49.0
DMC14M-6R	14	3/8	9.5	24	25	24.4	22.0	34.0	44.1
DMC14M-8R	14	1/2	11.1	24	25	24.4	22.0	34.0	44.1
DMC15M-6R	15	3/8	9.5	24	25	24.4	22.0	34.0	44.1
DMC15M-8R	15	1/2	11.9	24	25	24.4	22.0	38.9	49.0
DMC16M-4R	16	1/4	7.1	24	25	24.4	22.0	34.0	44.1
DMC16M-6R	16	3/8	9.5	24	25	24.4	22.0	34.0	44.1
DMC16M-8R	16	1/2	11.9	24	25	24.4	22.0	38.9	49.0
DMC16M-12R	16	3/4	12.7	27	25	24.4	22.0	38.9	49.0
DMC18M-8R	18	1/2	11.9	27	30	24.4	22.0	40.4	50.5
DMC18M-12R	18	3/4	15.1	27	30	24.4	22.0	40.4	50.5
DMC20M-8R	20	1/2	11.9	30	32	26.0	22.0	42.2	52.3
DMC20M-12R	20	3/4	15.9	30	32	26.0	22.0	42.2	52.3
DMC22M-8R	22	1/2	11.9	30	32	26.0	22.0	42.2	52.3
DMC22M-12R	22	3/4	15.9	30	32	26.0	22.0	42.2	52.3
DMC22M-16R	22	1	18.3	35	32	26.0	22.0	47.8	57.9
DMC25M-8R	25	1/2	11.9	35	38	31.3	26.5	45.2	57.5
DMC25M-12R	25	3/4	15.9	35	38	31.3	26.5	45.2	57.5
DMC25M-16R	25	1	21.8	35	38	31.3	26.5	50.0	62.3
DMC28M-16R	28	1	21.8	41	46	36.6	36.6	51.6	72.4
DMC28M-20R	28	1-1/4	21.8	46	46	36.6	36.6	52.3	73.1
DMC30M-20R	30	1-1/4	26.2	46	50	39.6	39.2	55.6	77.2
DMC32M-20R	32	1-1/4	28.6	46	50	42.0	41.6	56.6	79.6
DMC38M-24R	38	1-1/2	33.7	55	60	49.4	47.9	64.0	91.6

Male Connector for Bonded Gasket Seal
DMC-G

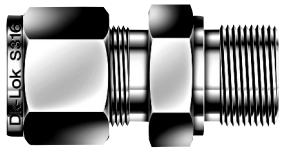


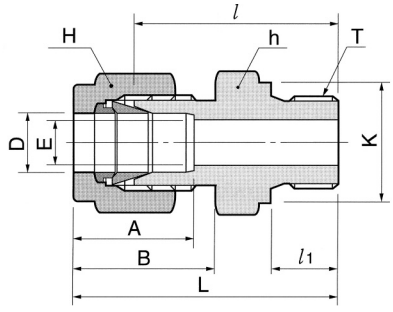


Connects fractional tube to female ISO parallel thread

Part No.	Tube O.D. D		T PF	E Min.	Width across flat h		H		A	B	l	l1	L	K
	in	mm			in	mm	in	mm						
DMC2-2G	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.80
DMC2-4G	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.00
DMC2-6G	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.80
DMC4-2G	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.80
DMC4-4G	1/4	6.35	1/4	4.8	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.00
DMC4-6G	1/4	6.35	3/8	4.8	7/8	22.22	9/16	14.28	15.24	17.78	31.50	11.18	38.86	21.80
DMC4-8G	1/4	6.35	1/2	4.8	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.70	26.00
DMC6-2G	3/8	9.52	1/8	4.8	5/8	15.87	11/16	17.46	16.76	19.30	26.40	7.11	33.77	13.80
DMC6-4G	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.00
DMC6-6G	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.80
DMC6-8G	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	26.00
DMC8-4G	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.00
DMC8-6G	1/2	12.70	3/8	7.90	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.80
DMC8-8G	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	26.00
DMC12-8G	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	26.00
DMC12-12G	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.00
DMC16-8G	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	26.00
DMC16-12G	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	15.75	55.88	32.00
DMC16-16G	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.00
DMC20-20G	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
DMC24-24G	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	54.70

Male Connector for Metal Gasket (previously **DOM**)
DMC-GB





Connects fractional tube to female ISO parallel thread

Part No.	Tube O.D. D		T PF	E Min.	Width across flat h		H		A	B	l	l1	L	K
	in	mm			in	mm	in	mm						
DMC 2-2GB	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	23.37	7.11	29.97	13.72
DMC 2-4GB	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	28.70	11.18	35.31	18.03
DMC 2-6GB	1/8	3.17	3/8	2.28	7/8	22.22	7/16	11.11	12.70	15.24	29.72	11.18	36.21	21.84
DMC 4-2GB	1/4	6.35	1/8	2.28	9/16	14.28	9/16	14.28	15.24	17.78	24.89	7.11	32.26	13.72
DMC 4-4GB	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.23	11.18	37.59	18.03
DMC 4-6GB	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	31.50	11.18	38.86	21.84
DMC 4-8GB	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	37.34	14.22	44.70	25.91
DMC 6-4GB	3/8	9.53	1/4	4.82	3/4	19.05	11/16	17.46	16.76	19.30	31.75	11.18	39.12	18.03
DMC 6-6GB	3/8	9.53	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	33.02	11.18	40.39	21.84
DMC 6-8GB	3/8	9.53	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	38.86	14.22	46.23	25.91
DMC 8-4GB	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	32.51	11.18	42.67	18.03
DMC 8-6GB	1/2	12.70	3/8	9.65	7/8	22.22	7/8	22.22	22.86	21.84	33.02	11.18	43.18	21.84
DMC 8-8GB	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	38.86	14.22	49.02	25.91
DMC 12-8GB	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	38.86	14.22	49.02	25.91
DMC 12-12GB	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	42.67	15.75	52.83	32.00
DMC 16-8GB	1	25.40	1/2	11.93	1-3/8	34.92	1-1/2	38.10	31.24	26.41	43.69	14.22	55.88	25.91
DMC 16-16GB	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	47.75	18.29	59.94	39.12
DMC 20-20GB	1-1/4	31.75	1-1/4	27.68	2	50.80	1-7/8	47.63	41.14	38.86	51.16	20.00	73.26	49.00
DMC 24-24GB	1-1/2	38.10	1-1/2	34.03	2-1/4	57.15	2-1/4	57.15	50.03	45.21	57.57	22.00	84.75	54.70

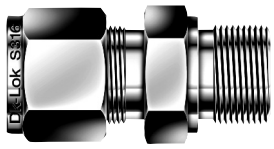
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Connector for Metal Gasket (previously **DOM**)

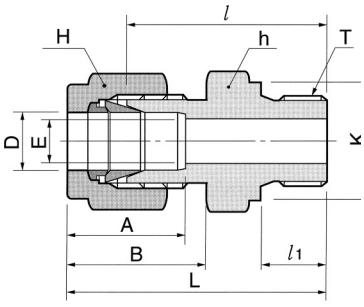
DMC-GB

Male Connector for Bonded Gasket Seal

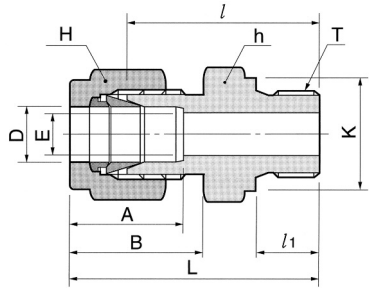
DMC-G



DMC-GB



DMC-G



Connects metric tube to female ISO parallel thread

Part No.	Tube O.D. D	T PF	E Min.	Width across flat h	Width across flat H	A	B	l	l_1	L	K
DMC3M-2GB(-2G)	3	1/8	2.4	14	12	12.9	15.3	23.4	7.1	30.0	13.8
DMC3M-4GB(-4G)	3	1/4	2.4	19	12	12.9	15.3	28.7	11.2	35.3	18.0
DMC4M-2GB(-2G)	4	1/8	2.4	14	12	13.7	16.1	24.1	7.1	30.7	13.8
DMC6M-2GB(-2G)	6	1/8	4.0	14	14	15.3	17.7	24.9	7.1	32.3	13.8
DMC6M-4GB(-4G)	6	1/4	4.8	19	14	15.3	17.7	30.2	11.2	37.6	18.0
DMC6M-6GB(-6G)	6	3/8	4.8	22	14	15.3	17.7	31.5	11.2	38.9	21.8
DMC6M-8GB(-8G)	6	1/2	4.8	27	14	15.3	17.7	37.3	14.2	44.7	26.0
DMC8M-2GB(-2G)	8	1/8	4.0	15	16	16.2	18.6	25.7	7.1	33.2	13.8
DMC8M-4GB(-4G)	8	1/4	6.4	19	16	16.2	18.6	31.0	11.2	38.5	13.8
DMC8M-6GB(-6G)	8	3/8	6.4	22	16	16.2	18.6	32.3	11.2	39.8	21.8
DMC8M-8GB(-8G)	8	1/2	6.4	27	16	16.2	18.6	38.1	14.2	45.6	26.0
DMC10M-4GB(-4G)	10	1/4	5.9	19	19	17.2	19.5	31.8	11.2	39.4	18.0
DMC10M-6GB(-6G)	10	3/8	7.9	22	19	17.2	19.5	33.0	11.2	40.6	21.8
DMC10M-8GB(-8G)	10	1/2	7.9	27	19	17.2	19.5	38.9	14.2	46.5	26.0
DMC12M-4GB(-4G)	12	1/4	5.9	22	22	22.8	22.0	32.5	11.2	42.6	18.0
DMC12M-6GB(-6G)	12	3/8	7.9	22	22	22.8	22.0	33.0	11.2	43.1	21.8
DMC12M-8GB(-8G)	12	1/2	9.5	27	22	22.8	22.0	38.9	14.2	49.0	26.0
DMC12M-12GB(-12G)	12	3/4	9.5	35	22	22.8	22.0	42.7	15.7	52.8	32.0
DMC15M-8GB(-8G)	15	1/2	11.9	27	25	24.4	22.0	33.9	14.2	49.0	26.0
DMC16M-6GB(-6G)	16	3/8	7.9	24	25	24.4	22.0	33.8	11.2	43.9	21.8
DMC16M-8GB(-8G)	16	1/2	11.9	27	25	24.4	22.0	38.9	14.2	49.0	26.0
DMC18M-8GB(-8G)	18	1/2	11.9	27	30	24.4	22.0	38.9	14.2	49.0	26.0
DMC18M-12GB(-12G)	18	3/4	15.1	35	30	24.4	22.0	42.7	15.7	52.8	32.0
DMC20M-8GB(-8G)	20	1/2	11.9	30	32	26.0	22.0	40.4	14.2	50.5	26.0
DMC20M-12GB(-12G)	20	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
DMC22M-12GB(-12G)	22	3/4	15.9	35	32	26.0	22.0	42.7	15.7	52.8	32.0
DMC22M-16GB(-16G)	22	1	18.3	41	32	26.0	22.0	45.2	18.3	55.3	39.0
DMC25M-12GB(-12G)	25	3/4	15.9	35	38	31.3	26.5	45.2	15.7	57.5	32.0
DMC25M-16GB(-16G)	25	1	19.8	41	38	31.3	26.5	47.8	18.3	60.1	39.0
DMC28M-16GB(-16G)	28	1	19.8	41	46	36.6	36.6	49.3	18.3	70.1	39.0
DMC28M-20GB(-20G)	28	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0
DMC30M-20GB(-20G)	30	1-1/4	21.8	50	46	36.6	36.6	53.1	19.8	73.9	49.0
DMC32M-20GB(-20G)	32	1-1/4	28.6	50	50	42.0	41.6	55.9	19.8	78.9	49.0
DMC38M-24GB(-24G)	38	1-1/2	31.8	55	60	49.4	47.9	61.7	20.6	89.3	54.7

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

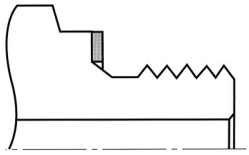
ISO Pipe Thread

The International Standards Organization prepares the ISO 228-1 and ISO 7-1 international standard to standardize the nomenclature of several international pipe threads.

ISO 228-1

ISO 228-1 represents internal and external parallel pipe threads where pressure-tight joints are not made on the threads. Compressing two tightening surfaces outside the threads or interposing a gasket seal will make the internal and external thread assembly pressure-tight joint.

ISO 228-1 standardizes the following international pipe threads.
1. BS 2779 (BSPP) 2. DIN-ISO 228/1 3. JIS B0202 (PF)



Sealing by compression against face of the female threaded component.

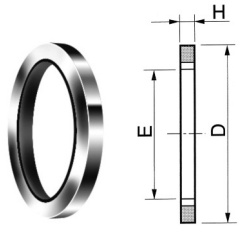
Reference DIN 3852 Form A

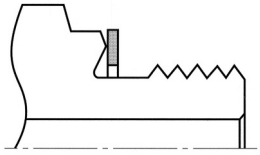
See page on **9** for G end connection

A self-centering taper is constructed at male thread end. This taper centers a bonded gasket to seal up on the face of the female threaded component.

DGB: NBR inner ring bonded to carbon steel outer ring.
DGV: FKM inner ring bonded to stainless steel outer ring.

Part Number		E (mm)	E (in.)	H (mm)	H (in.)	D (mm)	D (in.)
DGB-2-C	DGV-2-S	10.4	0.41	2.0	0.08	16.0	0.63
DGB-4-C	DGV-4-S	13.7	0.54	2.0	0.08	20.6	0.81
DGB-6-C	DGV-6-S	17.3	0.68	2.0	0.08	23.9	0.94
DGB-8-C	DGV-8-S	21.6	0.85	2.5	0.10	28.7	1.13
DGB-12-C	DGV-12-S	26.9	1.06	2.5	0.10	35.1	1.38
DGB-16-C	DGV-16-S	33.8	1.33	2.5	0.10	42.9	1.69
DGB-20-C	DGV-20-S	42.4	1.67	2.5	0.10	51.05	2.01
DGB-24-C	DGV-24-S	48.8	1.92	2.5	0.10	59.18	2.33





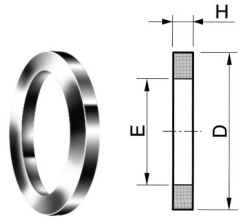
Sealing by gasket.
Reference DIN 3852 Form B

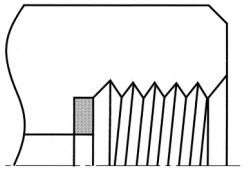
See page on **9** for GB end connection

A metal gasket performs the sealing between the reverse bevel of the fitting and the face of the female threaded component.

DGC Copper Gasket

Part Number	E (mm)	E (in.)	H (mm)	H (in.)	D (mm)	D (in.)
DGC-2-G	9.9	0.39	1.0	0.04	15.0	0.59
DGC-4-G	13.2	0.52	1.5	0.06	19.1	0.75
DGC-6-G	16.8	0.66	1.5	0.06	23.1	0.91
DGC-8-G	21.1	0.83	1.5	0.06	26.9	1.06
DGC-12-G	26.7	1.05	2.0	0.08	33.0	1.30
DGC-16-G	33.3	1.31	2.0	0.08	40.1	1.58
DGC-20-G	42.2	1.66	2.0	0.08	49.8	1.96
DGC-24-G	48.0	1.89	2.0	0.08	58.4	2.30





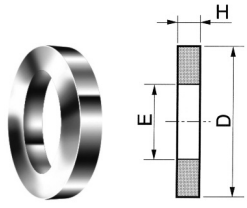
Sealing by gasket.
Reference DIN 3852 Form Y

See page on **9** for GY end connection

A gasket is dropped into the flat bottom of the female thread. The face of the male thread exerts a load on the gasket to seal.

DGG Copper Gasket

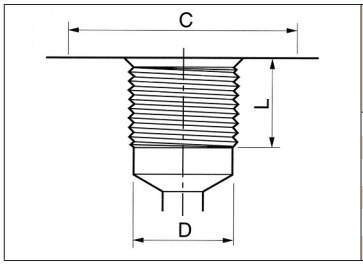
Part Number	E (mm)	E (in.)	H (mm)	H (in.)	D (mm)	D (in.)
DGG-4-	7.6	0.30	1.8	0.07	10.7	0.42
DGG-6-	8.6	0.34	2.3	0.09	14.2	0.56
DGG-8-	9.1	0.36	2.5	0.10	17.8	0.70



Gasket Temperature Ratings	Gasket	Material	Ratings
	DGB	NBR	-40 to 110°C (-40 to 230°F)
	DGV	FKM	-28 to 204°C (-20 to 400°F)
	DGC, DGG	Copper	-198 to 204°C (-325 to 400°F)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

ISO Internal Parallel Pipe Thread



Dk-Lok Pipe Thread Designator	ISO Female Parallel Pipe Size	Minimum Full Thread Depth L	Thread Minor Diameter D	Minimum Flat Diameter for DGB & DGC C
2	1/8	0.31	0.337 / 0.348	0.59
4	1/4	0.47	0.450 / 0.468	0.75
6	3/8	0.47	0.588 / 0.606	0.91
8	1/2	0.55	0.733 / 0.755	1.06
12	3/4	0.63	0.949 / 0.971	1.30
16	1	0.71	1.193 / 1.218	1.58

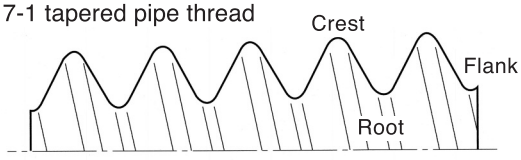
ISO 7-1

ISO 7-1 represents internal and external pipe tapered threads where pressure-tight joints are made by interference fit. This thread requires sealant to fill the voids between male and female threads that also prevents galling on threads. The sealant usually contains lubricant.

ISO 7-1 standardizes the following international pipe threads.

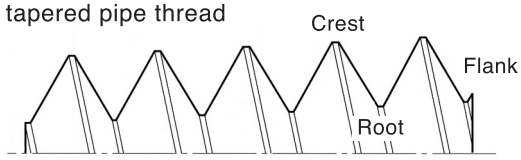
1. BS 21(BSPT) 2. JIS B0203(PT) 3.DIN 2999 (male thread only)

ISO 7-1 tapered pipe thread



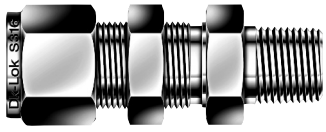
* 55° thread angle
* Pitch measured in millimeters
* Truncation of root and crest are round
* Taper angle 1° 47'

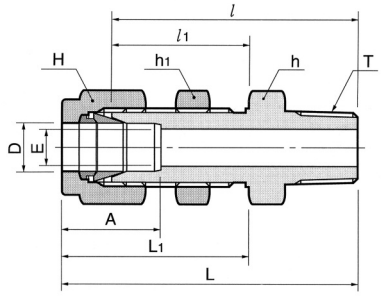
NPT tapered pipe thread



* 60° thread angle
* Pitch measured in Inches
* Truncation of root and crest are flat
* Taper angle 1°47'

Bulkhead
Male Connector
DMCB-N

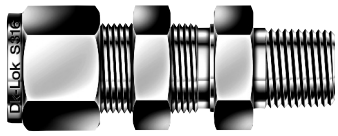


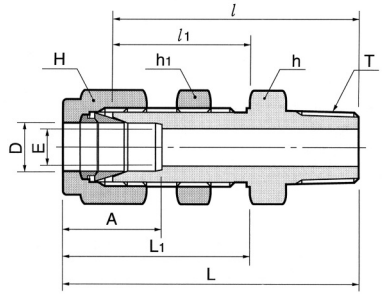


Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		h1		H		A	l	l1	L	L1	Panel Hole Drill size	Panel Max Thickness
	in	mm			in	mm	in	mm	in	mm							
DMCB 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	1/2	12.70	7/16	11.11	12.70	39.87	24.63	46.48	31.24	8.33	12.70
DMCB 4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	42.16	26.16	49.53	33.52	11.50	10.16
DMCB 4-4N	1/4	6.35	1/4	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
DMCB 4-6N	1/4	6.35	3/8	4.8	3/4	19.05	5/8	15.87	9/16	14.28	15.24	45.97	26.16	53.34	33.52	11.50	10.16
DMCB 4-8N	1/4	6.35	1/2	4.8	7/8	22.22	5/8	15.87	9/16	14.28	15.24	53.08	26.16	60.45	33.52	11.50	10.16
DMCB 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
DMCB 6-6N	3/8	9.52	3/8	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	50.03	29.46	57.40	36.83	14.68	11.17
DMCB 6-8N	3/8	9.52	1/2	7.11	7/8	22.22	3/4	19.05	11/16	17.46	16.76	56.38	29.46	63.75	36.83	14.68	11.17
DMCB 8-6N	1/2	12.70	3/8	9.39	15/16	23.81	15/16	23.81	7/8	22.22	22.86	53.08	31.75	63.24	41.91	19.44	12.70
DMCB 8-8N	1/2	12.70	1/2	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	58.67	31.75	68.83	41.91	19.44	12.70
DMCB 10-6N	5/8	15.87	3/8	7.93	1-1/16	26.98	1-1/16	26.98	1	25.4	24.38	54.52	32.51	64.68	42.67	22.62	12.70
DMCB 12-12N	3/4	19.05	3/4	15.74	1-3/16	30.16	1-3/16	30.16	1-1/8	28.58	24.38	66.04	37.33	76.20	47.49	25.76	16.76
DMCB 16-16N	1	25.40	1	22.35	1-5/8	41.28	1-5/8	41.28	1-1/2	38.10	31.24	81.02	45.21	93.21	57.40	33.73	19.05
DMCB 20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	85.97	47.75	108.07	69.85	41.67	19.05
DMCB 24-24N	1-1/2	38.10	1-1/2	33.90	2-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	93.03	49.27	120.21	76.45	49.61	19.05
DMCB 32-32N	2	50.80	2	45.97	2-3/4	69.85	2-3/4	69.85	3	76.20	67.56	107.29	56.38	144.62	93.71	16.27	19.05

Bulkhead Male Connector
DMCB-N

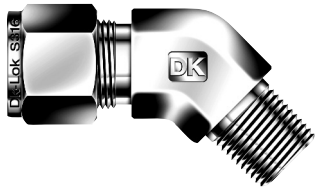


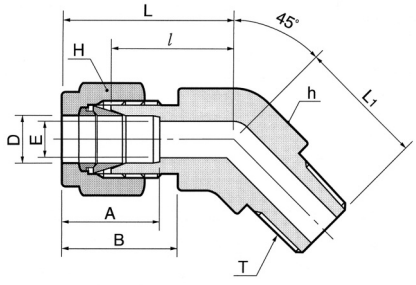


Connects metric tube to female NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat			A	l	l_1	L	L_1	Panel Hole Drill size	Panel Max Thickness
				h	h_1	H							
DMCB 6M-2N	6	1/8	4.8	16	16	14	15.3	42.2	26.2	49.6	33.6	11.5	10.2
DMCB 6M-4N	6	1/4	4.8	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
DMCB 6M-6N	6	3/8	4.8	16	16	14	15.3	46.2	26.2	53.6	33.6	11.5	10.2
DMCB 6M-8N	6	1/2	4.8	16	16	14	15.3	52.6	26.2	60.0	33.6	11.5	10.2
DMCB 8M-6N	8	3/8	6.4	18	18	16	16.2	50.0	28.6	57.5	36.1	13.1	11.2
DMCB 10M-4N	10	1/4	7.1	22	22	19	17.2	50.0	29.4	57.5	37.0	16.2	11.2
DMCB 10M-6N	10	3/8	7.9	22	22	19	17.2	50.0	29.4	57.5	37.0	16.2	11.2
DMCB 10M-8N	10	1/2	7.9	22	22	19	17.2	55.9	29.4	63.5	37.0	16.2	11.2
DMCB 12M-6N	12	3/8	9.8	24	24	22	22.8	53.3	31.8	63.4	41.9	19.5	12.7
DMCB 12M-8N	12	1/2	9.8	24	24	22	22.8	58.7	31.8	68.8	41.9	19.5	12.7

45° Male Elbow
DLBM





Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T NPT	E Min.	Width across flat				A	B	l	L	L_1
					h		H						
	in	mm			in	mm	in	mm					
DLBM 2-2N	1/8	3.17	1/8	2.4	1/2	12.70	7/16	11.11	12.70	15.24	15.77	22.38	16.51
DLBM 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	16.51
DLBM 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	17.27	24.63	21.08
DLBM 6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	18.28
DLBM 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	20.57	27.94	22.86
DLBM 6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	21.84	29.21	24.13
DLBM 8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	24.13
DLBM 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	21.84	32.00	28.95
DLBM 12-12N	3/4	19.05	3/4	15.74	1-1/8	28.58	1-1/8	28.58	24.38	21.84	23.87	34.03	30.98
DLBM 16-16N	1	25.40	1	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	28.19	40.38	37.84

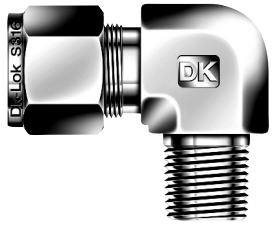
Connects metric tube to female NPT thread

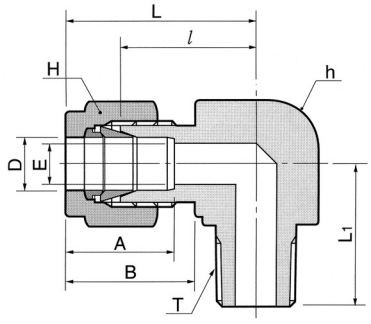
Part No.	Tube O.D. D	T NPT	E Min.	Width across flat		A	B	l	L	L_1
				h	H					
DLBM 6M-4N	6	1/4	4.8	12.7	14.0	15.3	17.7	21.8	29.4	22.9
DLBM 12M-8N	12	1/2	9.5	20.64	22.0	22.8	22.0	21.8	31.9	29.0

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Elbow

DLM-N

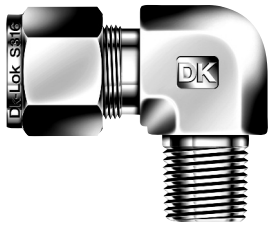


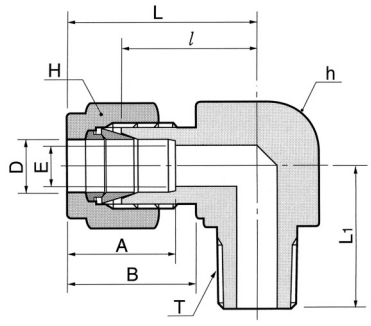


Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	NPT	Min.	in	mm	in	mm					
DLM 1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DLM 1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DLM 2-1N	1/8	3.17	1/16	2.28	7/16	11.11	7/16	11.11	12.70	15.24	17.02	23.63	17.78
DLM 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
DLM 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.26
DLM 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	18.79
DLM 3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
DLM 4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
DLM 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.47	18.79
DLM 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
DLM 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
DLM 4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
DLM 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.81
DLM 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
DLM 5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
DLM 6-2N	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	20.60
DLM 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
DLM 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
DLM 6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
DLM 6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
DLM 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DLM 8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DLM 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DLM 8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
DLM 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
DLM 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
DLM 10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
DLM 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	37.00
DLM 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	36.83
DLM 14-12N	7/8	22.22	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
DLM 16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
DLM 16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
DLM 20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
DLM 24-24N	1-1/2	38.10	1-1/2	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
DLM 32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	62.73	63.73	69.80	107.18	70.61

Male Elbow
DLM-N





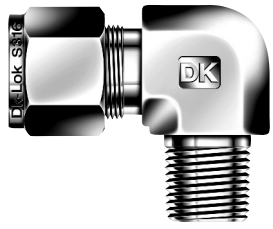
Connects metric tube to female NPT thread

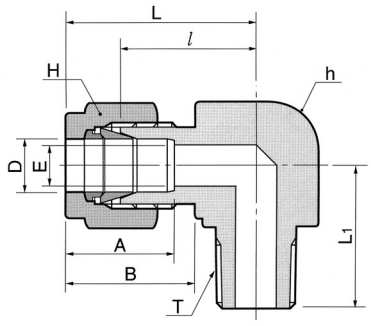
Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	l	L	L1
DLM 3M-1N	3	1/16	2.4	11.1	12	12.9	15.3	17.0	23.6	17.8
DLM 3M-2N	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
DLM 3M-4N	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
DLM 4M-2N	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
DLM 4M-4N	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
DLM 6M-2N	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
DLM 6M-4N	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
DLM 6M-6N	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
DLM 6M-8N	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
DLM 8M-2N	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
DLM 8M-4N	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
DLM 8M-6N	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
DLM 8M-8N	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
DLM 10M-2N	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
DLM 10M-4N	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
DLM 10M-6N	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
DLM 10M-8N	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
DLM 12M-4N	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
DLM 12M-6N	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
DLM 12M-8N	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
DLM 12M-12N	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
DLM 15M-6N	15	3/8	9.5	23.81	25	24.4	22.0	27.9	38.0	30.2
DLM 15M-8N	15	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
DLM 16M-6N	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
DLM 16M-8N	16	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
DLM 16M-12N	16	3/4	12.7	23.81	25	24.4	22.0	29.7	39.8	36.8
DLM 18M-8N	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
DLM 18M-12N	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
DLM 20M-8N	20	1/2	11.9	34.9	32	26.0	22.0	34.5	44.6	41.7
DLM 20M-12N	20	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
DLM 22M-8N	22	1/2	11.9	34.9	32	26.0	22.0	32.5	42.6	39.6
DLM 22M-12N	22	3/4	15.9	34.9	32	26.0	22.0	34.5	44.6	41.7
DLM 22M-16N	22	1	18.3	34.9	32	26.0	22.0	34.5	44.6	46.5
DLM 25M-12N	25	3/4	15.9	34.9	38	31.3	26.5	36.8	49.1	41.7
DLM 25M-16N	25	1	21.8	34.9	38	31.3	26.5	36.8	49.1	46.5
DLM 28M-16N	28	1	21.8	41.0	46	36.6	36.6	43.2	64.0	53.7
DLM 30M-20N	30	1-1/4	26.2	46.0	50	39.6	39.2	48.3	69.9	53.1
DLM 32M-20N	32	1-1/4	27.8	46.0	50	42.0	41.6	49.3	72.3	53.1
DLM 38M-24N	38	1-1/4	33.7	50.8	60	49.4	47.9	56.4	84.0	60.4

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Elbow

DLM-R

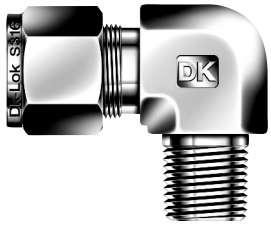


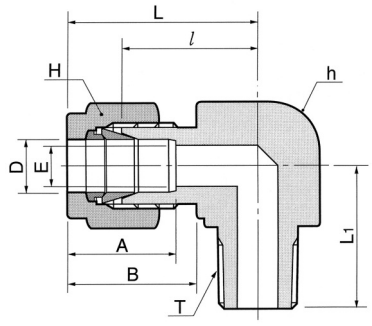


Connects fractional tube to female ISO tapered thread

Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	PT	Min.	in	mm	in	mm					
DLM 2-2R	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
DLM 2-4R	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.26
DLM 3-4R	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
DLM 4-2R	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.47	18.79
DLM 4-4R	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.81	27.18	23.87
DLM 4-6R	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	26.20
DLM 4-8R	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	33.02
DLM 5-4R	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	29.77	24.50
DLM 5-6R	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	26.20
DLM 6-2R	3/8	9.52	1/8	4.82	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	20.60
DLM 6-4R	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
DLM 6-6R	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	26.20
DLM 6-8R	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	31.42	33.02
DLM 6-12R	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
DLM 8-4R	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DLM 8-6R	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DLM 8-8R	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DLM 8-12R	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
DLM 10-6R	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	30.22
DLM 10-8R	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	28.00	37.06	35.10
DLM 10-12R	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
DLM 12-8R	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	37.00
DLM 12-12R	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	29.71	39.87	36.83
DLM 12-16R	3/4	19.05	1	16.0	1-3/8	34.92	1-1/8	28.57	24.38	21.84	34.54	44.59	46.48
DLM 16-12R	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
DLM 16-16R	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
DLM 20-12R	1-1/4	31.75	3/4	15.74	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	42.95
DLM 20-20R	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75

Male Elbow
DLM-R





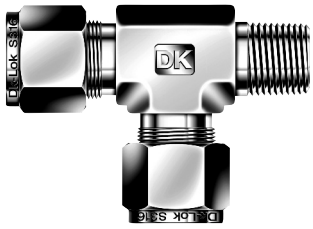
Connects metric tube to female ISO tapered thread

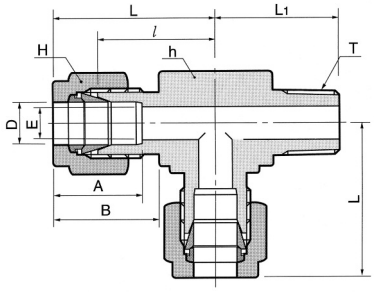
Part No.	Tube O.D. D	T PT	E Min.	Width across flat h	Width across flat H	A	B	l	L	L1
DLM 3M-1R	3	1/16	2.4	11.1	12	12.9	15.3	17.0	23.6	17.8
DLM 3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
DLM 3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
DLM 4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
DLM 4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
DLM 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
DLM 6M-4R	6	1/4	4.8	12.7	14	15.3	17.7	19.6	27.0	23.4
DLM 6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
DLM 6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
DLM 8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
DLM 8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
DLM 8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
DLM 8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
DLM 10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
DLM 10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
DLM 10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
DLM 10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
DLM 12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
DLM 12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
DLM 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
DLM 12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
DLM 12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
DLM 14M-8R	14	1/2	11.1	23.81	25	24.4	22.0	27.9	38.0	30.2
DLM 15M-6R	15	3/8	9.5	23.81	25	24.4	22.0	27.9	38.0	30.2
DLM 15M-8R	15	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
DLM 16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
DLM 16M-8R	16	1/2	11.9	23.81	25	24.4	22.0	27.9	38.0	35.1
DLM 18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
DLM 18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
DLM 20M-8R	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DLM 20M-12R	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DLM 22M-8R	22	1/2	11.9	34.92	32	26.0	22.0	32.5	42.6	39.6
DLM 22M-12R	22	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DLM 22M-16R	22	1	18.3	34.92	32	26.0	22.0	34.5	44.6	46.5
DLM 25M-8R	25	1/2	11.9	34.92	38	31.3	26.5	36.8	49.1	41.7
DLM 25M-12R	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
DLM 25M-16R	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5
DLM 28M-16R	28	1	21.8	41.0	46	36.6	36.6	43.2	64.0	53.7

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Run Tee

DTRM-N



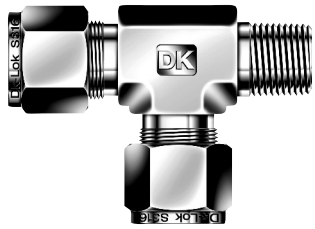


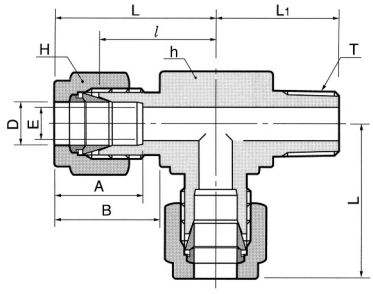
Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm			in	mm	in	mm					
DTRM 1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DTRM 1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DTRM 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
DTRM 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
DTRM 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
DTRM 3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
DTRM 4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
DTRM 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	18.79
DTRM 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
DTRM 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
DTRM 4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	35.10
DTRM 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	19.81
DTRM 5-4N	5/16	7.94	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
DTRM 5-6N	5/16	7.94	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	28.40
DTRM 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	1/16	17.46	16.76	19.30	23.11	30.48	25.40
DTRM 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
DTRM 6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	33.02
DTRM 6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
DTRM 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTRM 8-6N	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTRM 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DTRM 8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.84	36.83
DTRM 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	29.40
DTRM 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00
DTRM 10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
DTRM 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
DTRM 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.81	36.83
DTRM 14-12N	7/8	22.23	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
DTRM 16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
DTRM 16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
DTRM 20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
DTRM 24-24N	1-1/2	38.10	1-1/2	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
DTRM 32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18	70.61

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Run Tee
DTRM-R





Connects fractional tube to female ISO tapered thread

Part No.	Tube O.D. D		T	E	Width across flat				A	B	*l*	L	L1
					h		H						
	in	mm	PT	Min.	in	mm	in	mm					
DTRM 6-4R	3/8	9.52	1/4	7.11	5/8	15.87	1/16	17.46	16.76	19.30	23.11	30.48	25.40
DTRM 8-6R	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTRM 8-8R	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DTRM 10-8R	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00

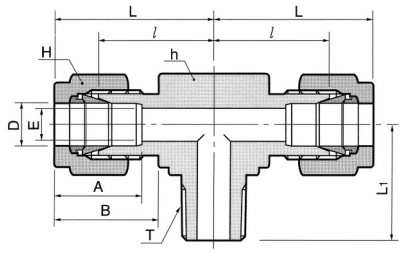
Connects metric tube to female ISO tapered thread

Part No.	Tube O.D. D	T	E	Width across flat		A	B	*l*	L	L1
				h	H					
		PT	Min.							
DTRM 3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
DTRM 3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
DTRM 4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
DTRM 4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
DTRM 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
DTRM 6M-4R	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
DTRM 6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
DTRM 6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
DTRM 8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
DTRM 8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
DTRM 8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
DTRM 8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
DTRM 10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
DTRM 10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
DTRM 10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
DTRM 10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
DTRM 12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
DTRM 12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
DTRM 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
DTRM 12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
DTRM 12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
DTRM 16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
DTRM 16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
DTRM 16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
DTRM 18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
DTRM 18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
DTRM 20M-8R	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTRM 20M-12R	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTRM 22M-12R	22	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTRM 22M-16R	22	1	18.3	34.92	32	26.0	22.0	34.5	44.6	46.5
DTRM 25M-12R	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
DTRM 25M-16R	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Branch Tee

DTBM-N, -R



Connects fractional tube to female NPT thread

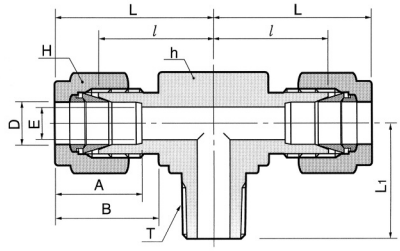
Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	NPT	Min.	in	mm	in	mm					
DTBM 1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DTBM 1-2N	1/16	1.59	1/8	1.27	7/16	11.11	5/16	7.93	8.63	10.92	15.24	19.05	17.78
DTBM 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	18.90
DTBM 2-4N	1/8	3.17	1/4	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.30	24.91	23.36
DTBM 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	24.38	18.79
DTBM 3-4N	3/16	4.76	1/4	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	23.36
DTBM 4-1N	1/4	6.35	1/16	3.04	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.90	18.79
DTBM 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.10
DTBM 4-4N	1/4	6.35	1/4	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	27.08	23.87
DTBM 4-6N	1/4	6.35	3/8	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	28.40
DTBM 4-8N	1/4	6.35	1/2	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.60	31.97	35.10
DTBM 5-2N	5/16	7.93	1/8	4.82	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.71	19.81
DTBM 5-4N	5/16	7.93	1/4	6.35	9/16	14.28	5/8	15.87	16.25	18.54	22.35	29.77	24.50
DTBM 5-6N	5/16	7.93	3/8	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	28.40
DTBM 6-4N	3/8	9.52	1/4	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	25.40
DTBM 6-6N	3/8	9.52	3/8	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	28.44
DTBM 6-8N	3/8	9.52	1/2	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	33.02
DTBM 6-12N	3/8	9.52	3/4	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	29.71	37.08	36.83
DTBM 8-4N	1/2	12.70	1/4	7.11	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTBM 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTBM 8-8N	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DTBM 8-12N	1/2	12.70	3/4	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	29.71	39.87	36.83
DTBM 10-6N	5/8	15.87	3/8	9.65	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	29.40
DTBM 10-8N	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00
DTBM 10-12N	5/8	15.87	3/4	12.70	1-1/16	26.98	1	25.40	24.38	21.84	29.71	39.87	36.83
DTBM 12-8N	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	37.00
DTBM 12-12N	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	36.83
DTBM 14-12N	7/8	22.22	3/4	15.74	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	41.65
DTBM 16-12N	1	25.40	3/4	15.74	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	42.20
DTBM 16-16N	1	25.40	1	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	46.70
DTBM 20-20N	1-1/4	31.75	1-1/4	27.68	1-11/16	42.86	1-7/8	47.63	41.14	38.86	44.50	66.54	47.75
DTBM 24-24N	1-1/2	38.10	1-1/2	33.90	2	50.80	2-1/4	57.15	50.03	45.21	50.80	77.97	60.45
DTBM 32-32N	2	50.80	2	45.97	2-3/4	69.85	3	76.20	67.56	62.73	69.80	107.18	70.61

Connects fractional tube to female ISO tapered thread

Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	PT	Min.	in	mm	in	mm					
DTBM 6-4R	3/8	9.52	1/4	7.11	5/8	15.87	1/16	17.46	16.76	19.30	23.11	30.48	25.40
DTBM 8-6R	1/2	12.70	3/8	9.65	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	28.30
DTBM 8-8R	1/2	12.70	1/2	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	33.02
DTBM 10-8R	5/8	15.87	1/2	11.93	15/16	23.81	1	25.40	24.38	21.84	27.90	38.10	34.00

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Branch Tee
DTBM-N



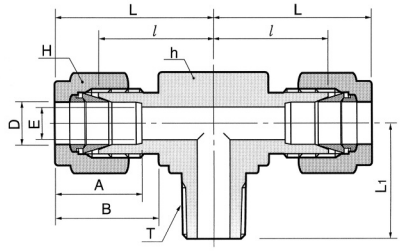
Connects metric tube to female NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	*l*	L	L1
DTBM 3M-2N	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
DTBM 3M-4N	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
DTBM 4M-2N	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
DTBM 4M-4N	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
DTBM 6M-2N	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
DTBM 6M-4N	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
DTBM 6M-6N	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
DTBM 6M-8N	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
DTBM 8M-2N	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
DTBM 8M-4N	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
DTBM 8M-6N	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
DTBM 8M-8N	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
DTBM 10M-2N	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
DTBM 10M-4N	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
DTBM 10M-6N	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
DTBM 10M-8N	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
DTBM 12M-2N	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
DTBM 12M-4N	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
DTBM 12M-6N	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
DTBM 12M-8N	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
DTBM 12M-12N	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
DTBM 16M-6N	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
DTBM 16M-8N	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
DTBM 16M-12N	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
DTBM 18M-8N	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
DTBM 18M-12N	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
DTBM 20M-8N	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 20M-12N	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 22M-12N	22	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 22M-16N	22	1	18.3	34.92	32	26.0	22.0	34.5	44.6	46.5
DTBM 25M-12N	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
DTBM 25M-16N	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Branch Tee

DTBM-R

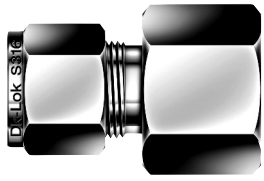


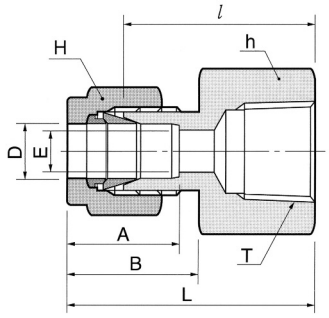
Connects metric tube to female ISO tapered thread

Part No.	Tube O.D. D	T PT	E Min.	Width across flat h	Width across flat H	A	B	l	L	L1
DTBM 3M-2R	3	1/8	2.4	12.7	12	12.9	15.3	17.0	23.6	17.8
DTBM 3M-4R	3	1/4	2.4	12.7	12	12.9	15.3	18.0	24.6	23.4
DTBM 4M-2R	4	1/8	2.4	12.7	12	13.7	16.1	18.8	25.4	18.8
DTBM 4M-4R	4	1/4	2.4	12.7	12	13.7	16.1	18.8	25.4	23.4
DTBM 6M-2R	6	1/8	4.8	12.7	14	15.3	17.7	19.6	27.0	18.8
DTBM 6M-4R	6	1/4	4.8	14.2	14	15.3	17.7	19.6	27.0	23.4
DTBM 6M-6R	6	3/8	4.8	17.5	14	15.3	17.7	22.4	29.8	26.2
DTBM 6M-8R	6	1/2	4.8	20.6	14	15.3	17.7	24.4	31.8	33.0
DTBM 8M-2R	8	1/8	4.8	14.3	16	16.2	18.6	21.3	28.8	19.8
DTBM 8M-4R	8	1/4	6.4	14.3	16	16.2	18.6	21.3	28.8	24.4
DTBM 8M-6R	8	3/8	6.4	17.5	16	16.2	18.6	23.1	30.6	26.2
DTBM 8M-8R	8	1/2	6.4	20.6	16	16.2	18.6	25.1	32.6	33.0
DTBM 10M-2R	10	1/8	4.8	17.5	19	17.2	19.5	23.9	31.5	23.6
DTBM 10M-4R	10	1/4	7.1	17.5	19	17.2	19.5	23.9	31.5	26.2
DTBM 10M-6R	10	3/8	7.9	17.5	19	17.2	19.5	23.9	31.5	26.2
DTBM 10M-8R	10	1/2	7.9	20.6	19	17.2	19.5	25.9	33.5	33.0
DTBM 12M-2R	12	1/8	4.8	20.6	22	22.8	22.0	25.9	36.0	23.6
DTBM 12M-4R	12	1/4	7.1	20.6	22	22.8	22.0	25.9	36.0	28.2
DTBM 12M-6R	12	3/8	9.5	20.6	22	22.8	22.0	25.9	36.0	28.2
DTBM 12M-8R	12	1/2	9.5	20.6	22	22.8	22.0	25.9	36.0	33.0
DTBM 12M-12R	12	3/4	9.5	27.0	22	22.8	22.0	29.7	39.8	36.8
DTBM 16M-6R	16	3/8	9.5	25.4	25	24.4	22.0	27.9	38.0	30.2
DTBM 16M-8R	16	1/2	11.9	25.4	25	24.4	22.0	27.9	38.0	35.1
DTBM 16M-12R	16	3/4	12.7	27.0	25	24.4	22.0	29.7	39.8	36.8
DTBM 18M-8R	18	1/2	11.9	27.0	30	24.4	22.0	29.7	39.8	36.8
DTBM 18M-12R	18	3/4	15.1	27.0	30	24.4	22.0	29.7	39.8	36.8
DTBM 20M-8R	20	1/2	11.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 20M-12R	20	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 22M-12R	22	3/4	15.9	34.92	32	26.0	22.0	34.5	44.6	41.7
DTBM 22M-16R	22	1	18.3	34.92	32	26.0	22.0	34.5	44.6	46.5
DTBM 25M-12R	25	3/4	15.9	34.92	38	31.3	26.5	36.8	49.1	41.7
DTBM 25M-16R	25	1	21.8	34.92	38	31.3	26.5	36.8	49.1	46.5

Female Connector

DCF-N





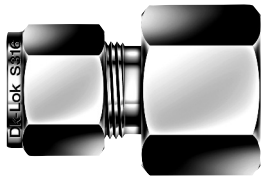
Connects fractional tube to male NPT thread

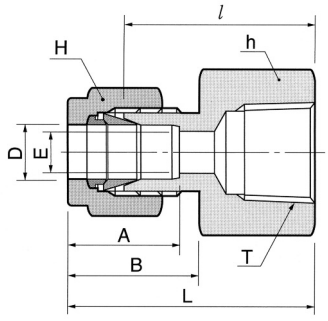
Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		Width across flat H		A	B	l	L
	in	mm			in	mm	in	mm				
DCF 1-1N	1/16	1.59	1/16	1.27	7/16	11.11	5/16	7.93	8.63	10.92	19.81	23.62
DCF 1-2N	1/16	1.59	1/8	1.27	9/16	14.28	5/16	7.93	8.63	10.92	20.57	24.38
DCF 2-2N	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	22.09	28.70
DCF 2-4N	1/8	3.17	1/4	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.92	33.52
DCF 3-2N	3/16	4.76	1/8	3.04	9/16	14.28	1/2	12.70	13.71	16.00	23.11	29.71
DCF 4-2N	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	23.87	31.24
DCF 4-4N	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	28.44	35.81
DCF 4-6N	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	37.59
DCF 4-8N	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	35.05	42.41
DCF 5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	24.63	32.00
DCF 5-4N	5/16	7.93	1/4	6.35	3/4	19.05	5/8	15.87	16.25	18.54	29.46	36.83
DCF 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	25.40	32.76
DCF 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	30.22	37.59
DCF 6-6N	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	39.11
DCF 6-8N	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	36.57	43.94
DCF 6-12N	3/8	9.52	3/4	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	40.38	47.75
DCF 8-4N	1/2	12.70	1/4	10.41	1-3/16	20.64	7/8	22.22	22.86	21.84	30.22	40.38
DCF 8-6N	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	41.91
DCF 8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	36.57	46.73
DCF 8-12N	1/2	12.70	3/4	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	38.10	48.26
DCF 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	41.91
DCF 10-8N	5/8	15.87	1/2	12.70	1-1/16	26.98	1	25.40	24.38	21.84	36.57	46.73
DCF 10-12N	5/8	15.87	3/4	12.70	1-5/16	33.33	1	25.40	24.38	21.84	38.10	48.26
DCF 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	36.57	46.73
DCF 12-12N	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	38.10	48.26
DCF 14-12N	7/8	22.22	3/4	18.28	1-5/16	33.33	1-1/4	31.75	25.90	21.84	39.62	49.78
DCF 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	53.34
DCF 16-16N	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	50.03	62.23
DCF 20-20N	1-1/4	31.75	1-1/4	27.68	2-1/8	53.98	1-7/8	47.63	41.14	38.86	52.57	74.67
DCF 24-24N	1-1/2	38.10	1-1/2	33.90	2-3/8	60.33	2-1/4	57.15	50.03	45.21	56.13	83.31
DCF 32-32N	2	50.80	2	45.97	2-1/8	73.03	3	76.20	67.56	62.73	64.26	101.60

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Connector

DCF-N

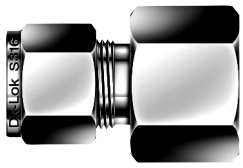


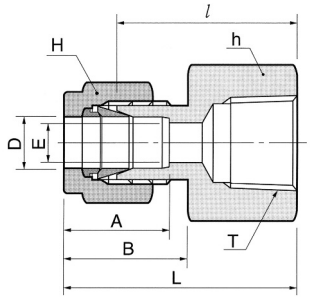


Connects metric tube to male NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	l	L
DCF 3M-2N	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
DCF 3M-4N	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
DCF 4M-2N	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
DCF 6M-2N	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
DCF 6M-4N	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
DCF 6M-6N	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
DCF 6M-8N	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
DCF 8M-2N	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
DCF 8M-4N	8	1/4	6.4	19	16	16.2	18.6	29.5	37.0
DCF 8M-6N	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
DCF 8M-8N	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
DCF 10M-2N	10	1/8	7.9	18	19	17.2	19.5	25.4	33.0
DCF 10M-4N	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
DCF 10M-6N	10	3/8	7.9	22	19	17.2	19.5	31.0	38.6
DCF 10M-8N	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
DCF 12M-2N	12	1/8	8.3	22	22	22.8	22.0	28.4	38.5
DCF 12M-4N	12	1/4	9.5	22	22	22.8	22.0	30.2	40.3
DCF 12M-6N	12	3/8	9.5	22	22	22.8	22.0	31.0	41.1
DCF 12M-8N	12	1/2	9.5	27	22	22.8	22.0	36.6	46.7
DCF 12M-12N	12	3/4	9.5	35	22	22.8	22.0	38.9	49.0
DCF 15M-8N	15	1/2	11.9	27	25	24.4	22.0	36.6	46.7
DCF 16M-8N	16	1/2	12.7	27	25	24.4	22.0	36.8	46.9
DCF 20M-8N	20	1/2	15.9	30	32	26.0	22.0	37.8	47.9
DCF 20M-12N	20	3/4	15.9	35	32	26.0	22.0	39.6	49.7
DCF 22M-12N	22	3/4	18.3	35	32	26.0	22.0	39.6	49.7
DCF 22M-16N	22	1	18.3	41	32	26.0	22.0	47.8	57.9
DCF 25M-12N	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
DCF 25M-16N	25	1	21.8	41	38	31.3	26.5	50.0	62.3

Female Connector
DCF-R





Connects fractional tube to male ISO tapered thread

Part No.	Tube O.D. D		T PT	E Min.	Width across flat h		H		A	B	l	L
	in	mm			in	mm	in	mm				
DCF 2-2R	1/8	3.17	1/8	2.28	9/16	14.28	7/16	11.11	12.70	15.24	22.09	28.70
DCF 4-2R	1/4	6.35	1/8	4.82	9/16	14.28	9/16	14.28	15.24	17.78	23.87	31.24
DCF 4-4R	1/4	6.35	1/4	4.82	3/4	19.05	9/16	14.28	15.24	17.78	28.44	35.81
DCF 4-6R	1/4	6.35	3/8	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	37.59
DCF 4-8R	1/4	6.35	1/2	4.82	1-1/16	26.98	9/16	14.28	15.24	17.78	35.05	42.41
DCF 6-4R	3/8	9.52	1/4	7.11	3/4	19.05	11/16	17.46	16.76	19.30	30.22	37.59
DCF 6-6R	3/8	9.52	3/8	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	39.11
DCF 6-8R	3/8	9.52	1/2	7.11	1-1/16	26.98	11/16	17.46	16.76	19.30	36.57	43.94
DCF 8-2R	1/2	12.70	1/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.40	35.56
DCF 8-4R	1/2	12.70	1/4	10.41	1-3/16	20.64	7/8	22.22	22.86	21.84	30.22	40.38
DCF 8-6R	1/2	12.70	3/8	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	41.91
DCF 8-8R	1/2	12.70	1/2	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	36.57	46.73
DCF 8-12R	1/2	12.70	3/4	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	38.10	48.26
DCF 10-6R	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	31.75	41.91
DCF 10-8R	5/8	15.87	1/2	12.70	1-1/16	26.98	1	25.40	24.38	21.84	36.57	46.73
DCF 10-12R	5/8	15.87	3/4	12.70	1-5/16	33.33	1	25.40	24.38	21.84	38.10	48.26
DCF 12-8R	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	36.57	46.73
DCF 12-12R	3/4	19.05	3/4	15.74	1-5/16	33.33	1-1/8	28.58	24.38	21.84	38.10	48.26
DCF 16-12R	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	53.34
DCF 16-16R	1	25.40	1	22.35	1-5/8	41.27	1-1/2	38.10	31.24	26.41	50.03	62.23
DCF 20-16R	1-1/4	31.75	1	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	52.57	74.67
DCF 20-20R	1-1/4	31.75	1-1/4	27.68	2-1/8	53.98	1-7/8	47.63	41.14	38.86	52.57	74.67
DCF 24-24R	1-1/2	38.10	1-1/2	33.90	2-3/8	60.33	2-1/4	57.15	50.03	45.21	56.13	83.81

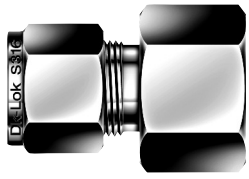
Connects metric tube to male ISO tapered thread

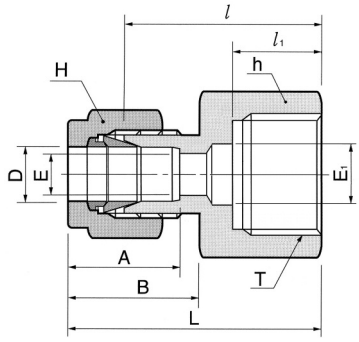
Part No.	Tube O.D. D	T PT	E Min.	Width across flat h	H	A	B	l	L
DCF 3M-2R	3	1/8	2.4	14	12	12.9	15.3	22.1	28.7
DCF 3M-4R	3	1/4	2.4	19	12	12.9	15.3	26.9	33.5
DCF 4M-2R	4	1/8	2.4	14	12	13.7	16.1	23.1	29.7
DCF 6M-2R	6	1/8	4.8	14	14	15.3	17.7	23.9	31.3
DCF 6M-4R	6	1/4	4.8	19	14	15.3	17.7	28.4	35.8
DCF 6M-6R	6	3/8	4.8	22	14	15.3	17.7	29.5	36.9
DCF 6M-8R	6	1/2	4.8	27	14	15.3	17.7	35.1	42.5
DCF 8M-2R	8	1/8	6.4	15	16	16.2	18.6	24.6	32.1
DCF 8M-4R	8	1/4	6.4	19	16	16.2	18.6	29.5	37.0
DCF 8M-6R	8	3/8	6.4	22	16	16.2	18.6	30.2	37.7
DCF 8M-8R	8	1/2	6.4	27	16	16.2	18.6	35.8	43.3
DCF 10M-2R	10	1/8	7.9	18	19	17.2	19.5	25.4	33.0
DCF 10M-4R	10	1/4	7.9	19	19	17.2	19.5	30.2	37.8
DCF 10M-6R	10	3/8	7.9	22	19	17.2	19.5	31.0	38.6
DCF 10M-8R	10	1/2	7.9	27	19	17.2	19.5	36.6	44.2
DCF 12M-2R	12	1/8	8.3	22	22	22.8	22.0	28.4	38.5
DCF 12M-4R	12	1/4	9.5	22	22	22.8	22.0	30.2	40.3
DCF 12M-6R	12	3/8	9.5	22	22	22.8	22.0	31.0	41.1
DCF 12M-8R	12	1/2	9.5	27	22	22.8	22.0	36.6	46.7
DCF 12M-12R	12	3/4	9.5	35	22	22.8	22.0	38.9	49.0
DCF 15M-8R	15	1/2	11.9	27	25	24.4	22.0	36.6	46.7
DCF 16M-8R	16	1/2	12.7	27	25	24.4	22.0	36.8	46.9
DCF 20M-8R	20	1/2	15.9	30	32	26.0	22.0	37.8	47.9
DCF 20M-12R	20	3/4	15.9	35	32	26.0	22.0	39.6	49.7
DCF 22M-8R	22	1/2	18.3	30	32	26.0	22.0	38.0	48.1
DCF 22M-12R	22	3/4	18.3	35	32	26.0	22.0	39.6	49.7
DCF 22M-16R	22	1	18.3	41	32	26.0	22.0	47.8	57.9
DCF 25M-8R	25	1/2	21.8	35	38	31.3	26.5	41.1	53.4
DCF 25M-12R	25	3/4	21.8	35	38	31.3	26.5	41.1	53.4
DCF 25M-16R	25	1	21.8	41	38	31.3	26.5	50.0	62.3

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Gauge Connector
(Previously **DCG**)

DCF-GG





Connects fractional tube to Gauge (male ISO parallel thread)

Part No.	Tube O.D. D		T PF	E Min.	E_1	Width across flat h		Width across flat H		A	B	l	l_1	L
	in	mm				in	mm	in	mm					
DCF 2-4GG	1/8	3.17	1/4	2.4	5.5	3/4	19.05	7/16	11.11	12.70	15.24	28.70	13.00	35.31
DCF 4-2GG	1/4	6.35	1/8	4.82	-	9/16	14.28	9/16	14.28	15.24	17.78	26.30	12.00	33.55
DCF 4-4GG	1/4	6.35	1/4	4.82	5.5	3/4	19.05	9/16	14.28	15.24	17.78	30.22	13.00	37.59
DCF 4-6GG	1/4	6.35	3/8	4.82	6.5	15/16	23.81	9/16	14.28	15.24	17.78	30.22	14.22	37.59
DCF 4-8GG	1/4	6.35	1/2	4.82	7.0	1-1/16	26.98	9/16	14.28	15.24	17.78	30.07	18.80	43.43
DCF 5-4GG	5/16	7.93	1/4	5.58	5.5	3/4	19.05	5/8	15.87	16.25	18.54	30.98	13.00	38.35
DCF 5-8GG	5/16	7.93	1/2	7.11	7.0	1-1/16	26.98	5/8	15.87	16.25	18.54	33.02	18.80	40.38
DCF 6-4GG	3/8	9.52	1/4	5.58	5.5	3/4	19.05	11/16	17.46	16.76	19.30	31.75	12.95	39.12
DCF 6-6GG	3/8	9.52	3/8	6.60	6.5	15/16	23.81	11/16	17.46	16.76	19.30	31.24	14.22	38.61
DCF 6-8GG	3/8	9.52	1/2	7.11	7.0	1-1/16	26.98	11/16	17.46	16.76	19.30	34.54	18.80	41.91
DCF 8-4GG	1/2	12.70	1/4	5.50	5.5	7/8	22.22	7/8	22.22	22.86	21.84	31.80	13.00	41.95
DCF 8-6GG	1/2	12.70	3/8	6.60	6.5	15/16	23.81	7/8	22.22	22.86	21.84	34.29	14.24	44.45
DCF 8-8GG	1/2	12.70	1/2	7.11	7.0	1-1/16	26.98	7/8	22.22	22.86	21.84	38.10	18.80	48.26

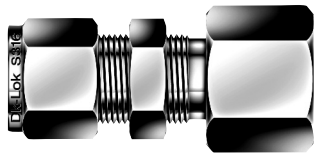
Connects metric tube to Gauge (male ISO parallel thread)

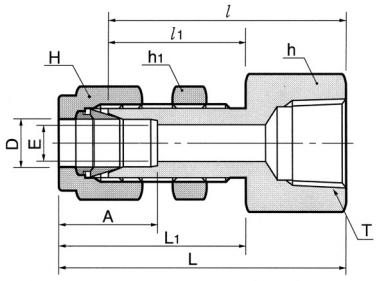
Part No.	Tube O.D. D	T PF	E Min.	E_1	Width across flat h	Width across flat H	A	B	l	l_1	L
DCF 3M-4GG	3	1/4	2.4	5.5	19	12	12.9	15.3	28.7	13	35.3
DCF 6M-4GG	6	1/4	4.8	5.5	19	14	15.3	17.7	30.2	13	37.6
DCF 6M-6GG	6	3/8	4.8	6.5	24	14	15.3	17.7	30.2	14	37.6
DCF 6M-8GG	6	1/2	4.8	7.0	27	14	15.3	17.7	36.3	19	43.0
DCF 8M-4GG	8	1/4	5.5	5.5	19	16	16.2	18.6	31.0	13	38.5
DCF 8M-6GG	8	3/8	6.5	6.5	24	16	16.2	18.6	28.7	14	36.2
DCF 8M-8GG	8	1/2	7.0	7.0	27	16	16.2	18.6	33.0	19	40.5
DCF 10M-4GG	10	1/4	5.5	5.5	19	19	17.2	19.5	31.8	13	39.4
DCF 10M-6GG	10	3/8	6.5	6.5	24	19	17.2	19.5	31.2	14	38.8
DCF 10M-8GG	10	1/2	7.0	7.0	27	19	17.2	19.5	33.8	19	41.4
DCF 12M-4GG	12	1/4	5.5	5.5	22	22	22.8	22.0	31.8	13	41.9
DCF 12M-6GG	12	3/8	6.5	6.5	24	22	22.8	22.0	34.3	14	44.4
DCF 12M-8GG	12	1/2	7.0	7.0	27	22	22.8	22.0	38.1	19	48.2
DCF 20M-8GG	20	1/2	7.0	7.0	30	32	26.0	22.0	44.2	19	54.3
DCF 22M-8GG	22	1/2	7.0	7.0	30	32	26.0	22.0	44.2	19	54.3

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Bulkhead
Female Connector

DCBF-N





Connects fractional tube to male NPT thread

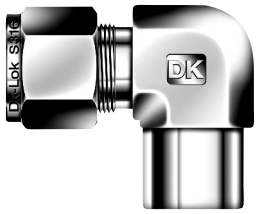
Part No.	Tube O.D. D		T	E	Width across flat h		h1		H		A	l	l1	L	L1	Panel Hole Drill Size	Panel Max Thickness
	in	mm	NPT	Min.	in	mm	in	mm	in	mm							
DCBF 2-2N	1/8	3.17	1/8	2.28	9/16	14.28	1/2	12.70	7/16	11.11	12.70	38.10	24.63	44.70	31.24	8.33	12.70
DCBF 4-2N	1/4	6.35	1/8	4.82	5/8	15.87	5/8	15.87	9/16	14.28	15.24	39.62	26.16	46.99	33.52	11.50	10.16
DCBF 4-4N	1/4	6.35	1/4	4.82	3/4	19.05	5/8	15.87	9/16	14.28	15.24	44.45	26.16	51.81	33.52	11.50	10.16
DCBF 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	3/4	19.05	11/16	17.46	16.76	47.75	29.46	55.11	36.83	14.68	11.17
DCBF 6-6N	3/8	9.52	3/8	7.11	7/8	22.22	3/4	19.05	11/16	17.46	16.76	49.41	29.46	56.77	36.83	14.68	11.17
DCBF 8-6N	1/2	12.70	3/8	10.41	15/16	23.81	15/16	23.81	7/8	22.22	22.86	51.56	31.75	61.72	41.91	19.44	12.70
DCBF 8-8N	1/2	12.70	1/2	10.41	1-1/16	26.98	15/16	23.81	7/8	22.22	22.86	56.38	31.75	66.54	41.91	19.44	12.70
DCBF 12-12N	3/4	19.05	3/4	15.74	1-1/4	31.75	1-3/16	30.16	1-1/8	28.57	24.38	63.60	38.30	73.51	47.21	25.79	16.76
DCBF 16-16N	1	25.40	1	22.35	1-5/8	41.27	1-5/8	41.27	1-1/2	38.10	31.24	81.04	45.21	93.23	57.40	33.73	19.05
DCBF 20-20N	1-1/4	31.75	1-1/4	27.68	1-7/8	47.63	1-7/8	47.63	1-7/8	47.63	41.14	83.49	47.75	105.59	69.85	41.67	19.05
DCBF 24-24N	1-1/2	38.10	1-1/2	33.90	1-1/4	57.15	2-1/4	57.15	2-1/4	57.15	50.03	87.39	49.27	114.57	76.45	49.61	19.05
DCBF 32-32N	2	50.80	2	45.97	1-3/4	69.85	2-3/4	69.85	3	76.20	67.56	95.30	56.38	132.63	93.71	57.94	19.05

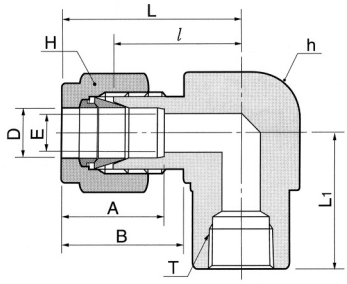
Connects metric tube to male NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	h1	H	A	l	l1	L	L1	Panel Hole Drill Size	Panel Max Thickness
DCBF 6M-2N	6	1/8	4.8	15.8	15.8	14	15.3	39.6	26.2	46.90	35.00	11.5	10.2
DCBF 6M-4N	6	1/4	4.8	19.0	16.0	14	15.3	44.4	26.2	51.80	33.60	11.5	10.2
DCBF 8M-4N	8	1/4	6.3	19.0	17.4	16	16.2	46.7	28.6	53.85	35.55	13.1	11.2
DCBF 12M-8N	12	1/2	9.5	27.0	24.0	22	22.8	56.4	31.8	66.50	41.90	19.5	12.7

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Elbow
DLF-N





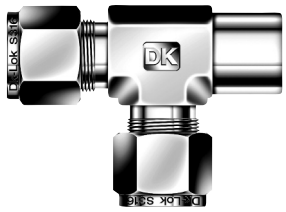
Connects fractional tube to male NPT thread

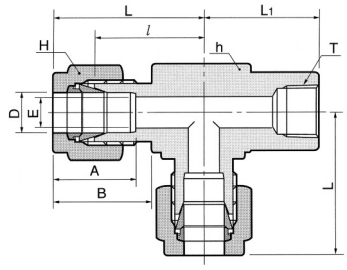
Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	NPT	Min.	in	mm	in	mm					
DLF 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.63	19.05
DLF 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
DLF 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
DLF 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
DLF 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
DLF 4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
DLF 4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
DLF 5-2N	5/16	7.93	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
DLF 5-4N	5/16	7.93	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
DLF 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
DLF 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
DLF 6-6N	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
DLF 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
DLF 8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DLF 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DLF 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	28.70	38.86	28.44
DLF 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
DLF 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	29.71	39.87	28.44
DLF 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
DLF 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
DLF 14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	31.75
DLF 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
DLF 16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	50.29	38.10

Connects metric tube to male NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	l	L	L1
DLF 6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
DLF 6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
DLF 6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
DLF 6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.6	28.40
DLF 8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
DLF 8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
DLF 8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
DLF 10M-2N	10	1/8	7.9	17.46	19	17.2	19.5	23.9	31.5	19.00
DLF 10M-4N	10	1/4	7.9	17.46	19	17.2	19.5	25.9	33.5	22.35
DLF 10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
DLF 10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	28.7	36.1	28.40
DLF 12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
DLF 12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.2	22.35
DLF 12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	28.7	38.8	28.40
DLF 16M-8N	16	1/2	12.7	26.98	25	24.4	22.0	29.7	39.5	28.40

Female Run Tee
DTRF-N





Connects fractional tube to male NPT thread

Part No.	Tube O.D. D		T	E	Width across flat h		Width across flat H		A	B	l	L	L1
	in	mm	NPT	Min.	in	mm	in	mm					
DTRF 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.63	19.05
DTRF 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
DTRF 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
DTRF 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
DTRF 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.86	29.71	22.35
DTRF 4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
DTRF 4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
DTRF 5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
DTRF 5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
DTRF 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
DTRF 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
DTRF 6-6N	3/8	9.52	3/8	6.35	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
DTRF 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
DTRF 8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DTRF 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DTRF 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
DTRF 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
DTRF 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
DTRF 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
DTRF 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
DTRF 14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	31.75	21.84	34.54	44.70	31.75
DTRF 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	38.10	26.41	36.83	49.02	31.75
DTRF 16-16N	1	25.40	1	22.35	1-1/16	42.86	1-1/2	38.10	38.10	26.41	41.40	50.29	38.10

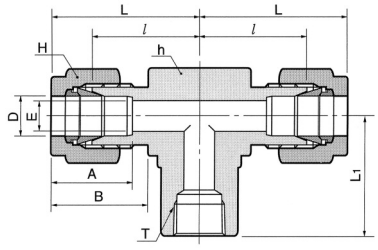
Connects metric tube to male NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	Width across flat H	A	B	l	L	L1
DTRF 6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
DTRF 6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
DTRF 6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
DTRF 6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
DTRF 8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
DTRF 8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
DTRF 8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
DTRF 8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
DTRF 10M-2N	10	1/8	7.9	20.64	19	17.2	19.5	23.9	31.5	19.00
DTRF 10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
DTRF 10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.6	22.40
DTRF 10M-8N	10	1/2	7.9	25.40	19	17.2	19.5	26.2	33.6	28.40
DTRF 12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
DTRF 12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
DTRF 12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
DTRF 16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.40

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Branch Tee

DTBF-N



Connects fractional tube to male NPT thread

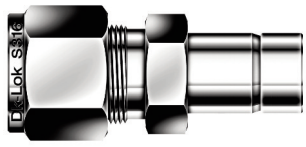
Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		H		A	B	l	L	L1
	in	mm			in	mm	in	mm					
DTBF 2-2N	1/8	3.17	1/8	2.28	1/2	12.70	7/16	11.11	12.70	15.24	18.03	24.38	19.05
DTBF 2-4N	1/8	3.17	1/4	2.28	11/16	17.46	7/16	11.11	12.70	15.24	20.82	27.43	22.35
DTBF 3-2N	3/16	4.76	1/8	3.04	1/2	12.70	1/2	12.70	13.71	16.00	18.79	25.40	19.05
DTBF 4-2N	1/4	6.35	1/8	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	26.92	19.05
DTBF 4-4N	1/4	6.35	1/4	4.82	11/16	17.46	9/16	14.28	15.24	17.78	22.35	29.71	22.35
DTBF 4-6N	1/4	6.35	3/8	4.82	13/16	20.64	9/16	14.28	15.24	17.78	24.38	31.75	22.35
DTBF 4-8N	1/4	6.35	1/2	4.82	1	25.40	9/16	14.28	15.24	17.78	27.17	34.54	28.44
DTBF 5-2N	5/16	7.94	1/8	6.35	9/16	14.28	5/8	15.87	16.25	18.54	21.33	28.70	19.05
DTBF 5-4N	5/16	7.94	1/4	6.35	11/16	17.46	5/8	15.87	16.25	18.54	23.11	30.48	22.35
DTBF 6-2N	3/8	9.52	1/8	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	30.48	19.05
DTBF 6-4N	3/8	9.52	1/4	7.11	11/16	17.46	11/16	17.46	16.76	19.30	23.87	31.24	22.35
DTBF 6-6N	3/8	9.52	3/8	6.35	13/16	20.64	11/16	17.46	16.76	19.30	25.90	33.27	22.35
DTBF 6-8N	3/8	9.52	1/2	7.11	1	25.40	11/16	17.46	16.76	19.30	28.70	36.06	28.44
DTBF 8-4N	1/2	12.70	1/4	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DTBF 8-6N	1/2	12.70	3/8	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	36.06	22.35
DTBF 8-8N	1/2	12.70	1/2	10.41	1	25.40	7/8	22.22	22.86	21.84	29.71	39.87	28.44
DTBF 10-6N	5/8	15.87	3/8	12.70	15/16	23.81	1	25.40	24.38	21.84	27.94	38.10	22.35
DTBF 10-8N	5/8	15.87	1/2	12.70	1	25.40	1	25.40	24.38	21.84	28.70	38.86	28.44
DTBF 12-8N	3/4	19.05	1/2	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	39.87	28.44
DTBF 12-12N	3/4	19.05	3/4	15.74	1-3/8	34.92	1-1/8	28.58	24.38	21.84	34.54	44.70	31.75
DTBF 14-12N	7/8	22.22	3/4	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	34.54	44.70	31.75
DTBF 16-12N	1	25.40	3/4	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	36.83	49.02	31.75
DTBF 16-16N	1	25.40	1	22.35	1-11/16	42.86	1-1/2	38.10	31.24	26.41	41.40	53.59	38.10

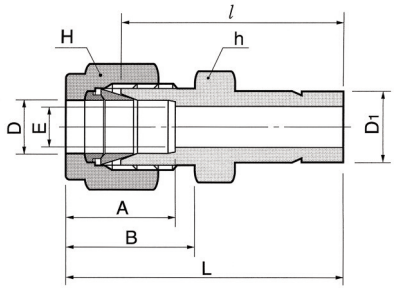
Connects metric tube to male NPT thread

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	H	A	B	l	L	L1
DTBF 6M-2N	6	1/8	4.8	12.70	14	15.3	17.7	19.6	27.0	19.00
DTBF 6M-4N	6	1/4	4.8	17.46	14	15.3	17.7	22.4	29.8	22.40
DTBF 6M-6N	6	3/8	4.8	20.64	14	15.3	17.7	24.4	31.7	22.40
DTBF 6M-8N	6	1/2	4.8	25.40	14	15.3	17.7	27.2	34.5	28.40
DTBF 8M-2N	8	1/8	6.4	15.87	16	16.2	18.6	23.1	29.9	19.00
DTBF 8M-4N	8	1/4	6.4	17.46	16	16.2	18.6	23.1	30.6	22.40
DTBF 8M-6N	8	3/8	6.4	20.64	16	16.2	18.6	25.2	32.4	22.40
DTBF 8M-8N	8	1/2	6.4	25.40	16	16.2	18.6	28.0	35.2	28.40
DTBF 10M-2N	10	1/8	7.9	17.50	19	17.2	19.5	23.9	31.5	19.00
DTBF 10M-4N	10	1/4	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
DTBF 10M-6N	10	3/8	7.9	20.64	19	17.2	19.5	25.9	33.5	22.40
DTBF 10M-8N	10	1/2	9.5	25.40	19	17.2	19.5	26.2	33.6	22.40
DTBF 12M-4N	12	1/4	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
DTBF 12M-6N	12	3/8	9.5	20.64	22	22.8	22.0	25.9	36.0	22.40
DTBF 12M-8N	12	1/2	9.5	25.40	22	22.8	22.0	29.7	40.0	28.40
DTBF 16M-8N	16	1/2	12.7	25.40	25	24.4	22.0	29.7	40.0	28.70

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Reducer
DR



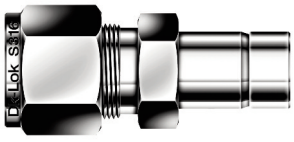


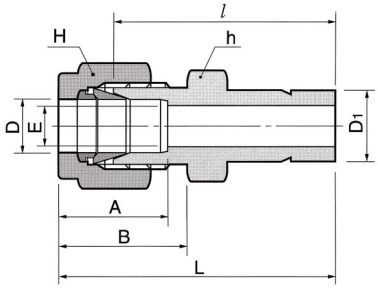
Connects fractional tube to frational Dk-Lok *port*

Part No.	Tube O.D. D		Tube O.D. D_1		E Min.	Width across flat h		Width across flat H		A	B	l	L
	in	mm	in	mm		in	mm	in	mm				
DR 1-2	1/16	1.59	1/8	3.17	1.27	5/16	7.93	5/16	7.93	8.63	10.92	25.40	29.21
DR 1-4	1/16	1.59	1/4	6.35	1.27	5/16	7.93	5/16	7.93	8.63	10.92	27.68	31.49
DR 2-1	1/8	3.17	1/16	1.59	1.76	7/16	11.11	7/16	11.11	12.70	15.24	22.35	28.95
DR 2-2	1/8	3.17	1/8	3.17	2.03	7/16	11.11	7/16	11.11	12.70	15.24	26.92	33.52
DR 2-3	1/8	3.17	3/16	4.76	2.28	7/16	11.11	7/16	11.11	12.70	15.24	27.68	34.29
DR 2-4	1/8	3.17	1/4	6.35	2.28	7/16	11.11	7/16	11.11	12.70	15.24	29.46	36.06
DR 2-6	1/8	3.17	3/8	9.52	2.28	7/16	11.11	7/16	11.11	12.70	15.24	30.98	37.59
DR 2-8	1/8	3.17	1/2	12.70	2.28	9/16	14.28	7/16	11.11	12.70	15.24	37.59	44.19
DR 3-2	3/16	4.76	1/8	3.17	2.03	7/16	11.11	1/2	12.70	13.71	16.00	28.19	34.79
DR 3-4	3/16	4.76	1/4	6.35	3.04	7/16	11.11	1/2	12.70	13.71	16.00	30.48	37.08
DR 4-2	1/4	6.35	1/8	3.17	2.03	1/2	12.70	9/16	14.28	15.24	17.78	29.46	36.83
DR 4-3	1/4	6.35	3/16	4.76	3.04	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
DR 4-4	1/4	6.35	1/4	6.35	4.82	1/2	12.70	9/16	14.28	15.24	17.78	31.75	39.11
DR 4-5	1/4	6.35	5/16	7.93	4.82	1/2	12.70	9/16	14.28	15.24	17.78	32.51	39.87
DR 4-6	1/4	6.35	3/8	9.52	4.82	1/2	12.70	9/16	14.28	15.24	17.78	33.27	40.64
DR 4-8	1/4	6.35	1/2	12.70	4.82	9/16	14.28	9/16	14.28	15.24	17.78	38.86	46.22
DR 4-10	1/4	6.35	5/8	15.87	4.82	11/16	17.46	9/16	14.28	15.24	17.78	40.64	48.00
DR 4-12	1/4	6.35	3/4	19.05	4.82	13/16	20.64	9/16	14.28	15.24	17.78	40.38	47.75
DR 5-6	5/16	7.93	3/8	9.52	6.35	9/16	14.28	5/8	15.87	16.25	18.54	34.54	41.91
DR 5-8	5/16	7.93	1/2	12.70	6.35	9/16	14.28	5/8	15.87	16.25	18.54	40.13	47.49
DR 6-4	3/8	9.52	1/4	6.35	4.82	5/8	15.87	11/16	17.46	16.76	19.30	34.03	41.40
DR 6-6	3/8	9.52	3/8	9.52	7.11	5/8	15.87	11/16	17.46	16.76	19.30	35.81	43.18
DR 6-8	3/8	9.52	1/2	12.70	7.11	5/8	15.87	11/16	17.46	16.76	19.30	41.14	48.51
DR 6-10	3/8	9.52	5/8	15.87	7.11	11/16	17.46	11/16	17.46	16.76	19.30	42.92	50.29
DR 6-12	3/8	9.52	3/4	19.05	7.11	13/16	20.64	11/16	17.46	16.76	19.30	42.92	50.29
DR 8-4	1/2	12.70	1/4	6.35	4.82	13/16	20.64	7/8	22.22	22.86	21.84	34.79	44.95
DR 8-6	1/2	12.70	3/8	9.52	7.11	13/16	20.64	7/8	22.22	22.86	21.84	36.57	46.73
DR 8-8	1/2	12.70	1/2	12.70	9.90	13/16	20.64	7/8	22.22	22.86	21.84	42.16	52.32
DR 8-10	1/2	12.70	5/8	15.87	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
DR 8-12	1/2	12.70	3/4	19.05	10.41	13/16	20.64	7/8	22.22	22.86	21.84	43.68	53.84
DR 8-16	1/2	12.70	1	25.40	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	50.03	60.19
DR10-12	5/8	15.87	3/4	19.05	12.70	15/16	23.81	1	25.40	24.38	21.84	44.45	54.61
DR10-14	5/8	15.87	7/8	22.22	12.70	15/16	23.81	1	25.40	24.38	21.84	45.97	56.13
DR10-16	5/8	15.87	1	25.40	12.70	1-1/16	26.98	1	25.40	24.38	21.84	50.80	60.96
DR12-8	3/4	19.05	1/2	12.70	9.90	1-1/16	26.98	1-1/8	28.57	24.38	21.84	44.45	54.61
DR12-16	3/4	19.05	1	25.40	15.74	1-1/16	26.98	1-1/8	28.57	24.38	21.84	52.32	62.48
DR16-20	1	25.40	1-1/4	31.75	22.35	1-3/8	34.93	1-1/2	38.10	31.24	26.41	68.32	80.51
DR16-24	1	25.40	1-1/2	38.10	22.35	1-5/8	41.28	1-1/2	38.10	31.24	26.41	76.96	89.15
DR16-32	1	25.40	2	50.80	22.35	2-1/8	53.98	1-1/2	38.10	31.24	26.41	100.33	112.52
DR20-24	1-1/4	31.75	1-1/2	38.10	27.68	1-7/8	47.63	1-7/8	57.15	41.14	38.86	82.04	104.14
DR20-32	1-1/4	31.75	2	50.80	27.68	1-7/8	47.63	1-7/8	76.20	41.14	38.86	103.12	125.22
DR24-32	1-1/2	38.10	2	50.80	33.90	2-1/4	57.15	2-1/4	76.20	50.03	45.21	104.14	131.31

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Reducer
DR





Connects metric tube to fractional Dk-Lok *port*

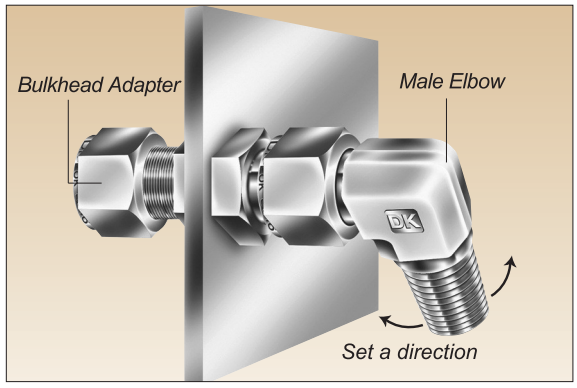
Part No.	Tube O.D. D	Tube O.D. D1 in	Tube O.D. D1 mm	E Min.	Width across flat h	Width across flat H	A	B	l	L
DR 2M-2	2	1/8	3.17	1.7	12	12	12.9	15.3	26.9	33.5
DR 3M-2	3	1/8	3.17	2.0	12	12	12.9	15.3	26.9	33.5
DR 3M-4	3	1/4	6.35	2.4	12	12	12.9	15.3	29.5	36.1
DR 4M-4	4	1/4	6.35	2.4	12	12	13.7	16.1	30.5	37.1
DR 6M-2	6	1/8	3.18	2.0	14	14	15.3	17.7	29.5	36.9
DR 6M-4	6	1/4	6.35	4.8	14	14	15.3	17.7	31.8	39.2
DR 6M-5	6	5/16	7.93	4.8	14	14	15.3	17.7	32.5	39.9
DR 6M-6	6	3/8	9.52	4.8	14	14	15.3	17.7	33.3	40.7
DR 6M-8	6	1/2	12.70	4.8	14	14	15.3	17.7	38.9	46.3
DR 8M-6	8	3/8	9.52	6.4	15	16	16.2	18.6	34.5	42.0
DR 8M-8	8	1/2	12.70	6.4	15	16	16.2	18.6	40.1	47.6
DR 10M-6	10	3/8	9.52	7.1	18	19	17.2	19.5	36.6	44.2
DR 10M-8	10	1/2	12.70	7.9	18	19	17.2	19.5	42.2	49.8
DR 12M-8	12	1/2	12.70	9.5	22	22	22.8	22.0	42.2	52.3
DR 12M-12	12	3/4	19.05	9.5	22	22	22.8	22.0	43.7	53.8
DR 18M-12	18	3/4	19.05	15.1	27	30	24.4	22.0	46.0	56.1
DR 18M-16	18	1	25.40	15.1	27	30	24.4	22.0	52.3	62.4
DR 25M-16	25	1	25.40	20.2	35	38	31.3	26.5	57.2	69.5

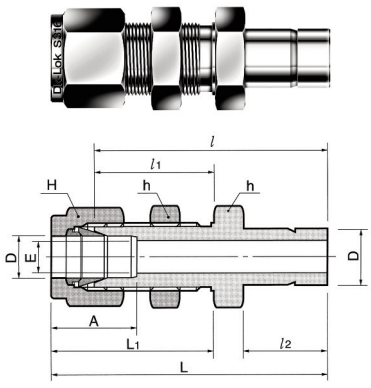
Connects metric tube to metric Dk-Lok *port*

Part No.	Tube O.D. D	Tube O.D. D1	E Min.	Width across flat h	Width across flat H	A	B	l	L
DR 2M-3M	2	3	1.7	12	12	12.9	15.3	26.9	35.3
DR 3M-4M	3	4	2.4	12	12	12.9	15.3	28.4	35.0
DR 3M-6M	3	6	2.4	12	12	12.9	15.3	29.5	36.1
DR 3M-10M	3	10	2.4	12	12	12.9	15.3	31.8	38.4
DR 4M-6M	4	6	2.4	12	12	13.7	16.1	30.5	37.1
DR 6M-3M	6	3	1.8	14	14	15.3	17.7	29.5	36.9
DR 6M-8M	6	8	4.8	14	14	15.3	17.7	32.5	39.9
DR 6M-10M	6	10	4.8	14	14	15.3	17.7	33.3	40.7
DR 6M-12M	6	12	4.8	14	14	15.3	17.7	38.9	46.3
DR 8M-6M	8	6	4.6	15	16	16.2	18.6	32.8	40.3
DR 8M-10M	8	10	6.4	15	16	16.2	18.6	34.5	42.0
DR 8M-12M	8	12	6.4	15	16	16.2	18.6	40.1	47.6
DR 10M-6M	10	6	4.6	18	19	17.2	19.5	34.8	42.4
DR 10M-12M	10	12	7.9	18	19	17.2	19.5	42.2	49.8
DR 10M-15M	10	15	7.9	18	19	17.2	19.5	43.7	51.3
DR 10M-18M	10	18	7.9	19	19	17.2	19.5	43.7	51.3
DR 12M-6M	12	6	4.6	22	22	22.8	22.0	34.8	44.9
DR 12M-10M	12	10	7.7	22	22	22.8	22.0	36.6	46.7
DR 12M-16M	12	16	9.5	22	22	22.8	22.0	43.7	53.8
DR 12M-18M	12	18	9.5	22	22	22.8	22.0	43.7	53.8
DR 12M-20M	12	20	9.5	22	22	22.8	22.0	46.0	56.1
DR 12M-22M	12	22	9.5	24	22	22.8	22.0	46.0	56.1
DR 12M-25M	12	25	9.5	27	22	22.8	22.0	52.3	62.4
DR 16M-12M	16	12	9.1	24	25	24.4	22.0	42.9	53.0
DR 18M-12M	18	12	9.1	27	30	24.4	22.0	44.5	54.6
DR 18M-16M	18	16	12.7	27	30	24.4	22.0	46.0	56.1
DR 18M-20M	18	20	15.1	27	30	24.4	22.0	47.5	57.6
DR 18M-22M	18	22	15.1	27	30	24.4	22.0	47.5	57.6
DR 18M-25M	18	25	15.1	27	30	24.4	22.0	52.3	62.4
DR 20M-16M	20	16	12.7	30	32	26.0	22.0	47.8	57.9
DR 20M-18M	20	18	13.9	30	32	26.0	22.0	47.8	57.9
DR 20M-22M	20	22	15.8	30	32	26.0	22.0	49.3	59.4
DR 20M-25M	20	25	15.8	30	32	26.0	22.0	54.1	64.2
DR 22M-18M	22	18	13.9	30	32	26.0	22.0	47.8	57.9
DR 22M-20M	22	20	15.1	30	32	26.0	22.0	49.3	59.4
DR 22M-25M	22	25	18.3	30	32	26.0	22.0	54.1	64.2
DR 25M-18M	25	18	13.9	35	38	31.3	26.5	50.8	63.1
DR 25M-20M	25	20	15.1	35	38	31.3	26.5	52.3	64.6

Bulkhead Adapter
DAB

The bulkhead adapter is useful to help set a direction through panel construction.

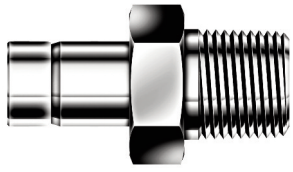


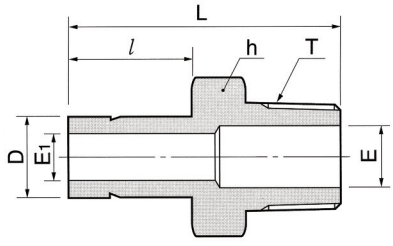


Connects fractional tube to fractional Dk-Lok *port*

Part No.	Tube O.D. D		E Min.	Width across flat h		Width across flat H		A	l	l1	l2	L	L1	Panel Hole Drill Size	Panel Max Thickness
	in	mm		in	mm	in	mm								
DAB 2-2	1/8	3.17	2.03	1/2	12.70	7/16	11.11	12.70	42.92	24.63	13.45	49.53	31.24	8.33	12.70
DAB 4-4	1/4	6.35	4.82	5/8	15.87	9/16	14.28	15.24	48.51	26.16	15.74	55.88	33.52	11.50	10.16
DAB 6-6	3/8	9.52	7.11	3/4	19.05	11/16	17.46	16.76	53.84	29.46	17.50	61.21	36.83	14.68	11.17
DAB 8-8	1/2	12.70	10.41	15/16	23.81	7/8	22.22	22.86	62.73	31.75	23.11	72.89	41.91	19.44	12.70
DAB10-10	5/8	15.87	12.70	1-1/16	26.98	1	25.40	24.38	65.02	32.51	24.70	75.18	42.67	22.62	12.70
DAB16-16	1	25.40	20.32	1-5/8	41.28	1-1/2	38.10	31.24	88.13	45.21	31.70	100.33	57.40	33.73	19.05
DAB20-20	1-1/4	31.75	27.68	1-7/8	47.63	1-7/8	47.63	41.14	102.07	47.75	40.00	124.17	69.85	41.67	19.05
DAB24-24	1-1/2	38.10	33.90	2-1/4	57.15	2-1/4	57.15	50.03	118.33	49.27	51.50	145.51	76.45	49.61	19.05
DAB32-32	2	50.80	45.97	2-3/4	69.85	3	76.20	67.56	148.79	56.38	68.40	185.82	93.71	57.94	19.05

Male Adapter
DAM-N



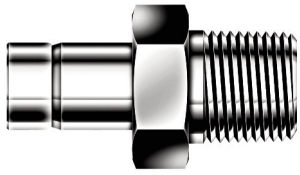


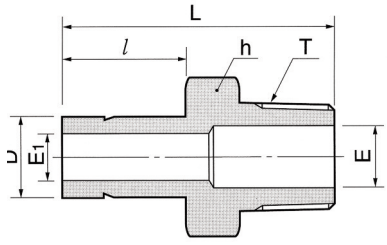
Connects metric Dk-Lok *port to female NPT thread*

Part No.	Tube O.D. D	T PT	E Min.	E1 Min.	Width across flat h	l	L
DAM 3M-2N	3	1/8	4.0	1.8	12	13.15	29.4
DAM 6M-2N	6	1/8	4.6	4.6	12	15.70	32.8
DAM 6M-4N	6	1/4	4.6	4.6	14	15.70	38.1
DAM 8M-4N	8	1/4	6.3	6.3	14	16.80	39.1
DAM 10M-4N	10	1/4	7.7	7.7	14	17.50	39.9
DAM 10M-6N	10	3/8	7.7	7.7	17	17.50	40.6
DAM 10M-8N	10	1/2	11.9	7.7	22	17.50	45.2
DAM 12M-4N	12	1/4	7.1	9.1	14	23.10	46.5
DAM 12M-6N	12	3/8	9.1	9.1	17	23.10	46.5
DAM 12M-8N	12	1/2	11.9	9.1	22	23.10	51.8
DAM 18M-8N	18	1/2	11.9	13.9	22	24.60	53.2
DAM 18M-12N	18	3/4	15.9	13.9	27	24.60	53.2
DAM 28M-16N	28	1	22.2	-	35	31.70	74.7
DAM 28M-20N	28	1-1/4	23.8	-	46	31.70	76.2
DAM 32M-20N	32	1-1/4	27.4	-	46	40.00	81.0
DAM 38M-24N	38	1-1/2	33.3	-	55	51.50	92.2

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Adapter
DAM-N

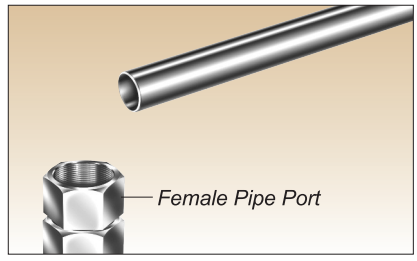




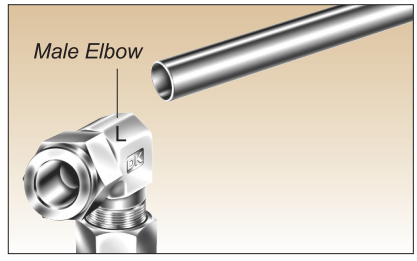
Connects fractional Dk-Lok *port to female NPT thread*

Part No.	Tube O.D. D		T	E	E_1	Width across flat h		l	L
	in	mm	NPT	Min.		in	mm		
DAM 2-2N	1/8	3.17	1/8	4.57	1.77	7/16	11.11	13.45	29.50
DAM 2-4N	1/8	3.17	1/4	7.11	1.77	9/16	14.28	13.45	34.80
DAM 3-2N	3/16	4.76	1/8	4.57	3.04	7/16	11.11	14.20	30.22
DAM 3-4N	3/16	4.76	1/4	7.11	3.04	9/16	14.28	14.20	35.56
DAM 4-2N	1/4	6.35	1/8	4.57	4.57	7/16	11.11	15.75	31.80
DAM 4-4N	1/4	6.35	1/4	7.11	4.57	9/16	14.28	15.75	37.08
DAM 4-6N	1/4	6.35	3/8	10.41	4.57	11/16	17.46	15.75	37.84
DAM 4-8N	1/4	6.35	1/2	12.70	4.57	7/8	22.22	15.75	43.43
DAM 5-2N	5/16	7.93	1/8	4.57	6.35	7/16	11.11	16.80	32.76
DAM 5-4N	5/16	7.93	1/4	7.11	6.35	9/16	14.28	16.80	38.10
DAM 6-2N	3/8	9.52	1/8	4.57	7.11	7/16	11.11	17.50	33.50
DAM 6-4N	3/8	9.52	1/4	7.11	7.11	9/16	14.28	17.50	38.90
DAM 6-6N	3/8	9.52	3/8	10.41	7.11	11/16	17.46	17.50	39.60
DAM 6-8N	3/8	9.52	1/2	12.70	7.11	7/8	22.22	17.50	45.20
DAM 8-4N	1/2	12.70	1/4	7.11	9.90	9/16	14.28	23.20	44.50
DAM 8-6N	1/2	12.70	3/8	10.41	9.90	11/16	17.46	23.20	45.20
DAM 8-8N	1/2	12.70	1/2	12.70	9.90	7/8	22.22	23.20	50.50
DAM 10-6N	5/8	15.87	3/8	10.41	12.70	11/16	17.46	24.70	47.40
DAM 10-8N	5/8	15.87	1/2	12.70	12.70	7/8	22.22	24.70	52.30
DAM 10-12N	5/8	15.87	3/4	18.28	12.70	1-1/16	26.98	24.70	52.30
DAM 12-8N	3/4	19.05	1/2	12.70	14.98	7/8	22.22	24.70	52.30
DAM 12-12N	3/4	19.05	3/4	18.28	14.98	1-1/16	26.98	24.70	52.30
DAM 12-16N	3/4	19.05	1	22.35	14.98	1-3/8	34.92	24.70	57.91
DAM 14-12N	7/8	22.22	3/4	18.28	17.27	1-1/16	26.98	26.70	54.30
DAM 16-12N	1	25.40	3/4	18.28	20.06	1-1/16	26.98	31.70	58.70
DAM 16-16N	1	25.40	1	22.35	20.06	1-3/8	34.92	31.70	66.00
DAM 20-20N	1-1/4	31.75	1-1/4	27.68	-	1-3/4	44.45	40.00	80.26
DAM 24-24N	1-1/2	38.10	1-1/2	33.27	-	2-1/8	53.98	51.50	94.48
DAM 32-32N	2	50.80	2	44.45	-	2-3/4	69.85	68.40	119.38

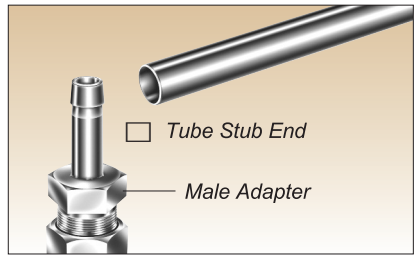
Dk-Lok *Tube Stub Adapter eliminates alignment problems*



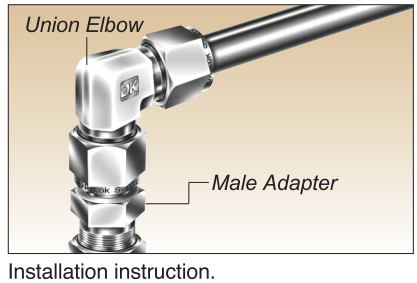
In the direction shown the female port is required to connect with tubing.



The male elbow is positioning in the wrong direction.



To eliminate the problem, use a male adapter into the female port.

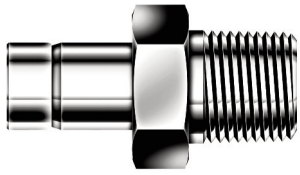


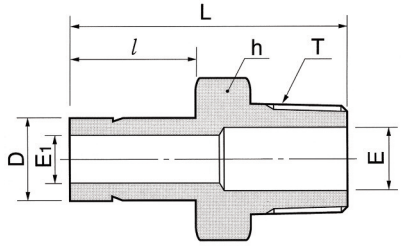
Installation instruction.

1. Insert the tube stub end into the Dk-Lok port
   - Make sure that the tube stub end bottoms on the fitting body shoulder.
2. Spanner-tighten the nut 1 1/4 turns beyond the finger tight position.
   - Tighten the nut 3/4 turn for 1/8, and 3/16 in.; 3, and 4 mm tube fittings.

Note: For re-use, see re-assembly instruction.

Male Adapter
DAM-R





Connects fractional Dk-Lok *port to female ISO tapered thread*

Part No.	Tube O.D. D		T PT	E Min.	E_1	Width across flat h		l	L
	in	mm				in	mm		
DAM 2-2R	1/8	3.17	1/8	4.57	1.77	7/16	11.11	13.45	29.50
DAM 2-4R	1/8	3.17	1/4	7.11	1.77	9/16	14.28	13.45	34.80
DAM 4-2R	1/4	6.35	1/8	4.57	4.57	7/16	11.11	15.75	31.80
DAM 4-4R	1/4	6.35	1/4	7.11	4.57	9/16	14.28	15.75	37.08
DAM 4-6R	1/4	6.35	3/8	10.41	4.57	11/16	17.46	15.75	37.84
DAM 6-4R	3/8	9.52	1/4	7.11	7.11	9/16	14.28	17.50	38.90
DAM 6-6R	3/8	9.52	3/8	10.41	7.11	11/16	17.46	17.50	39.60
DAM 6-8R	3/8	9.52	1/2	12.70	7.11	7/8	22.22	17.50	45.20
DAM 8-4R	1/2	12.70	1/4	7.11	9.90	9/16	14.28	23.10	44.50
DAM 8-6R	1/2	12.70	3/8	10.41	9.90	11/16	17.46	23.10	45.20
DAM 8-8R	1/2	12.70	1/2	12.70	9.90	7/8	22.22	23.10	50.50
DAM 8-12R	1/2	12.70	3/4	15.74	9.90	1-1/16	26.98	23.10	50.70
DAM 12-8R	3/4	19.05	1/2	12.70	14.98	7/8	22.22	24.70	52.30
DAM 12-12R	3/4	19.05	3/4	14.98	14.98	1-1/16	26.98	24.70	52.30

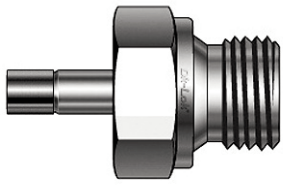
Connects metric Dk-Lok *port to female ISO tapered thread*

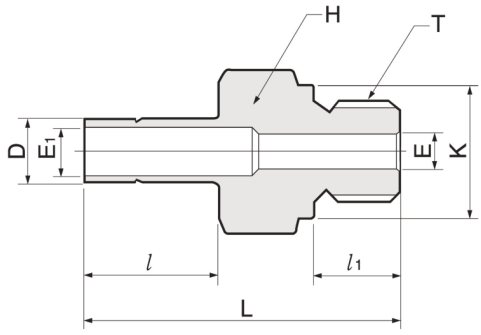
Part No.	Tube O.D. D	T PT	E Min.	E_1	Width across flat h	l	L
DAM 3M-2R	3	1/8	4.0	1.8	12	13.15	29.4
DAM 6M-2R	6	1/8	4.6	4.6	12	15.70	32.8
DAM 6M-4R	6	1/4	4.6	4.6	14	15.70	38.1
DAM 8M-4R	8	1/4	6.3	6.3	14	16.80	39.1
DAM 10M-4R	10	1/4	7.7	7.7	14	17.50	39.9
DAM 10M-6R	10	3/8	7.7	7.7	17	17.50	40.6
DAM 10M-8R	10	1/2	11.9	7.7	22	17.50	45.2
DAM 12M-4R	12	1/4	7.1	9.1	14	23.10	46.5
DAM 12M-6R	12	3/8	9.1	9.1	17	23.10	46.5
DAM 12M-8R	12	1/2	11.9	9.1	22	23.10	51.8
DAM 18M-8R	18	1/2	11.9	13.9	22	24.60	53.2
DAM 18M-12R	18	3/4	15.9	13.9	27	24.60	53.2
DAM 25M-16R	25	1	19.8	19.8	35	31.70	66.0
DAM 28M-16R	28	1	22.2	-	35	31.70	74.7
DAM 28M-20R	28	1-1/4	23.8	-	46	31.70	76.2
DAM 30M-20R	30	1-1/4	24.6	-	46	40.60	80.0
DAM 32M-20R	32	1-1/4	27.4	-	46	40.00	81.0
DAM 38M-24R	38	1-1/2	33.3	-	55	51.50	92.2

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Adapter

DAM-G





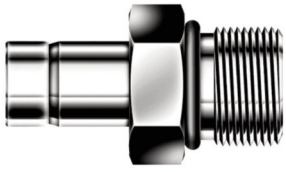
Connects fractional Dk-Lok *port to female ISO parallel thread*

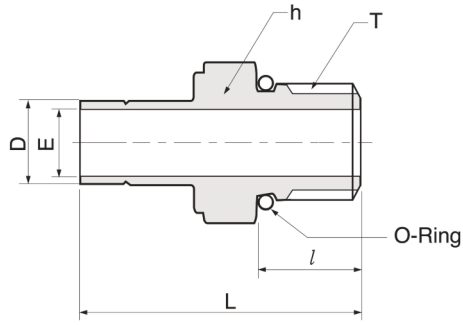
Part No.	Tube O.D. D		T PF	E Min.	E_1	Width across flat h		l	l_1	L	K
	in	mm				in	mm				
DAM 2-2G	1/8	3.17	1/8	1.77	1.77	9/16	14.28	13.45	7.10	40.0	13.8
DAM 2-4G	1/8	3.17	1/4	6.4	1.77	3/4	19.05	13.45	11.2	35.8	18.0
DAM 4-2G	1/4	6.35	1/8	4.57	4.57	9/16	14.28	15.75	7.10	33.27	13.8
DAM 4-4G	1/4	6.35	1/4	4.57	4.57	3/4	19.05	15.75	11.2	38.1	18.0
DAM 6-4G	3/8	9.52	1/4	5.9	7.1	3/4	19.05	17.50	11.2	39.8	18.0
DAM 6-6G	3/8	9.52	3/8	7.11	7.11	7/8	22.22	17.5	11.2	40.64	21.8
DAM 8-4G	1/2	12.70	1/4	5.9	9.9	3/4	19.05	23.1	11.2	45.5	18.0
DAM 8-6G	1/2	12.70	3/8	7.9	9.9	7/8	22.22	23.1	11.2	46.2	21.8
DAM 8-8G	1/2	12.70	1/2	11.9	9.9	1-1/16	26.98	23.1	14.2	49.3	26.0
DAM 12-12G	3/4	19.05	3/4	14.98	14.98	1-5/16	33.33	24.7	15.7	54.86	32.0
DAM 16-16G	1	25.40	1	20.06	20.06	1-5/8	41.28	31.7	18.3	64.5	39.0

Connects metric Dk-Lok *port to female ISO parallel thread*

Part No.	Tube O.D. D	T PF	E Min.	E_1	Width across flat h	l	l_1	L	K
DAM 6M-2G	6	1/8	4.6	4.6	14	15.7	7.1	34.3	13.8
DAM 6M-4G	6	1/4	4.6	4.6	19	15.7	11.2	39.1	18.0
DAM 8M-4G	8	1/4	5.9	5.9	19	16.8	11.2	40.1	18.0
DAM 10M-4G	10	1/4	5.9	7.7	19	17.5	11.2	40.9	18.0
DAM 10M-6G	10	3/8	7.7	7.7	22	17.5	11.2	41.7	21.8
DAM 10M-8G	10	1/2	7.7	7.7	27	17.5	14.2	44.7	26.0
DAM 12M-4G	12	1/4	5.9	9.1	19	23.1	11.2	46.7	18.0
DAM 12M-6G	12	3/8	7.9	9.1	22	23.1	11.2	47.2	21.8
DAM 12M-8G	12	1/2	9.1	9.1	27	23.1	14.2	50.5	26.0
DAM 18M-8G	18	1/2	11.9	13.9	27	24.6	14.2	52.1	26.0
DAM 18M-12G	18	3/4	15.9	13.9	35	24.6	15.7	56.1	32.0
DAM 22M-12G	22	3/4	15.9	18.3	35	26.6	15.7	57.4	32.0
DAM 25M-16G	25	1	19.8	19.8	41	31.7	18.3	67.1	39.0
DAM 28M-16G	28	1	19.8	22.2	41	37.5	18.3	72.9	39.0
DAM 28M-20G	28	1-1/4	23.8	23.8	50	37.5	19.8	77.0	49.0
DAM 30M-20G	30	1-1/4	24.6	24.6	50	40.66	19.8	80.8	49.0
DAM 32M-20G	32	1-1/4	25.0	25.0	50	40.0	19.8	81.8	49.0
DAM 38M-24G	38	1-1/2	31.8	31.8	55	50.4	22.1	94.5	54.7

Male Adapter
DAM-U

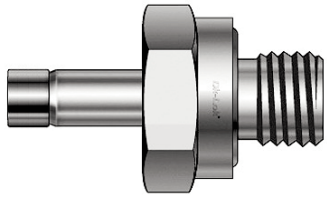


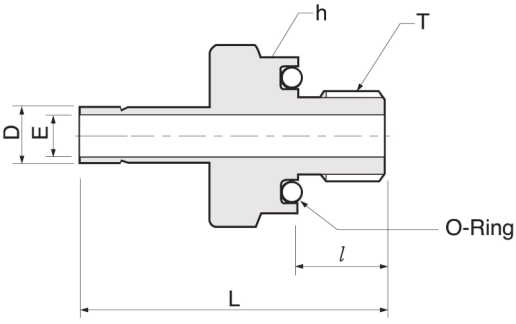


Connects fractional Dk-Lok *port to SAE straight thread boss*

Part No.	Tube O.D. D		T U	E Min.	Width across flat h		l	L	o-ring Uniform Size Number
	in	mm			in	mm			
DAM 2-2U	1/8	3.17	5/16-24	2.03	7/16	11.11	7.62	30.48	-902
DAM 4-4U	1/4	6.35	7/16-20	4.31	9/16	14.28	9.14	35.30	-904
DAM 6-4U	3/8	9.52	7/16-20	5.08	9/16	14.28	9.14	37.08	-904
DAM 6-6U	3/8	9.52	9/16-18	6.85	11/16	17.46	9.90	38.60	-906
DAM 6-8U	3/8	9.52	3/4-16	6.85	7/8	22.22	11.17	40.64	-908
DAM 8-6U	1/2	12.70	9/16-18	7.11	11/16	17.46	9.90	44.20	-906
DAM 8-8U	1/2	12.70	3/4-16	9.9	7/8	22.22	11.17	46.22	-908
DAM 12-12U	3/4	19.05	1-1/16-12	14.98	1-1/4	31.75	14.98	53.34	-912
DAM 16-16U	1	25.4	1-5/16-12	20.31	1-1/2	38.1	14.98	61.21	-916

Male Adapter
DAM-UO



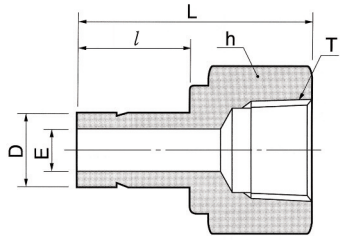


Connects fractional Dk-Lok *port to SAE straight thread boss*

Part No.	Tube O.D. D		T U	E Min.	Width across flat h		l	L	o-ring Uniform Size Number
	in	mm			in	mm			
DAM 2-2UO	1/8	3.17	5/16-24	2.03	9/16	14.28	8.63	32.51	-011
DAM 3-3UO	3/16	4.76	3/8-24	3.05	5/8	15.87	9.65	35.05	-012
DAM 4-4UO	1/4	6.35	7/16-20	4.32	3/4	19.05	10.41	39.11	-013
DAM 5-5UO	5/16	7.93	1/2-20	5.59	7/8	22.22	11.17	41.65	-112
DAM 6-6UO	3/8	9.52	9/16-18	6.85	15/16	23.81	11.93	43.18	-113
DAM 8-8UO	1/2	12.7	3/4-16	9.40	1-1/8	28.57	11.93	49.53	-116

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Adapter
DAF-N



Connects fractional Dk-Lok *port to male NPT thread*

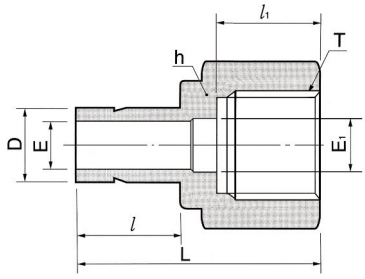
Part No.	Tube O.D. D		T NPT	E Min.	Width across flat h		l	L
	in	mm			in	mm		
DAF 2-2N	1/8	3.17	1/8	1.77	9/16	14.28	13.45	31.50
DAF 2-4N	1/8	3.17	1/4	1.77	3/4	19.05	13.45	35.30
DAF 3-2N	3/16	4.76	1/8	3.04	9/16	14.28	14.20	32.00
DAF 3-4N	3/16	4.76	1/4	3.04	3/4	19.05	14.20	35.81
DAF 4-2N	1/4	6.35	1/8	4.57	9/16	14.28	15.75	33.02
DAF 4-4N	1/4	6.35	1/4	4.57	3/4	19.05	15.75	37.10
DAF 4-6N	1/4	6.35	3/8	4.57	7/8	22.22	15.75	39.37
DAF 4-8N	1/4	6.35	1/2	4.57	1-1/16	26.98	15.75	45.50
DAF 5-2N	5/16	7.93	1/8	6.35	9/16	14.28	16.80	34.29
DAF 5-4N	5/16	7.93	1/4	6.35	3/4	19.05	16.80	37.59
DAF 6-2N	3/8	9.52	1/8	7.11	9/16	14.28	17.50	34.29
DAF 6-4N	3/8	9.52	1/4	7.11	3/4	19.05	17.50	38.10
DAF 6-6N	3/8	9.52	3/8	7.11	7/8	22.22	17.50	40.38
DAF 6-8N	3/8	9.52	1/2	7.11	1-1/16	26.98	17.50	46.73
DAF 8-4N	1/2	12.70	1/4	9.90	3/4	19.05	23.20	43.43
DAF 8-6N	1/2	12.70	3/8	9.90	7/8	22.22	23.20	45.46
DAF 8-8N	1/2	12.70	1/2	9.90	1-1/16	26.98	23.20	51.80
DAF 10-6N	5/8	15.87	3/8	12.70	7/8	22.22	24.70	48.26
DAF 10-8N	5/8	15.87	1/2	12.70	1-1/16	26.98	24.70	53.84
DAF 10-12N	5/8	15.87	3/4	12.70	1-5/16	33.33	24.70	55.37
DAF 12-8N	3/4	19.05	1/2	14.98	1-1/16	26.98	24.70	52.83
DAF 12-12N	3/4	19.05	3/4	14.98	1-5/16	33.33	24.70	54.86
DAF 12-16N	3/4	19.05	1	14.98	1-5/8	41.27	24.70	58.42
DAF 14-12N	7/8	22.22	3/4	17.27	1-5/16	33.33	26.70	57.15
DAF 16-12N	1	25.40	3/4	20.06	1-5/16	33.33	31.70	60.70
DAF 16-16N	1	25.40	1	20.06	1-5/8	41.27	31.70	64.26
DAF 20-20N	1-1/4	31.75	1-1/4	27.68	2-1/8	53.98	40.00	77.72
DAF 24-24N	1-1/2	38.10	1-1/2	33.27	2-3/8	60.33	51.50	88.90
DAF 32-32N	2	50.80	2	44.45	2-7/8	73.03	68.40	107.44

Connects metric Dk-Lok *port to male NPT thread*

Part No.	Tube O.D. D	T NPT	E Min.	Width across flat h	l	L
DAF 6M-2N	6	1/8	4.6	14	15.70	32.50
DAF 6M-4N	6	1/4	4.6	19	15.70	37.10
DAF 8M-4N	8	1/4	6.3	19	16.80	37.60
DAF 10M-4N	10	1/4	7.7	19	17.50	38.10
DAF 10M-6N	10	3/8	7.7	22	17.50	40.10
DAF 10M-8N	10	1/2	7.7	27	17.50	46.50
DAF 12M-4N	12	1/4	9.1	19	23.10	43.70
DAF 12M-6N	12	3/8	9.1	22	23.10	46.00
DAF 12M-8N	12	1/2	9.1	27	23.10	52.30

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Adapter
DAF-R



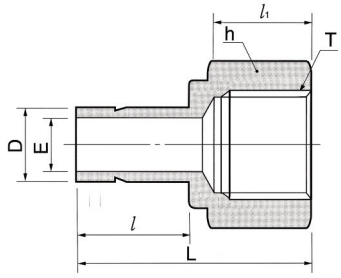
Connects fractional Dk-Lok *port to male ISO tapered thread*

Part No.	Tube O.D. D		T PT	E Min.	Width across flat h		l	L
	in	mm			in	mm		
DAF 4-2R	1/4	6.35	1/8	4.57	9/16	14.28	15.75	33.02
DAF 4-4R	1/4	6.35	1/4	4.57	3/4	19.05	15.75	37.10
DAF 6-4R	3/8	9.52	1/4	7.11	3/4	19.05	17.50	38.10
DAF 6-6R	3/8	9.52	3/8	7.11	7/8	22.22	17.50	40.38
DAF 8-4R	1/2	12.70	1/4	9.90	3/4	19.05	23.20	43.43
DAF 8-6R	1/2	12.70	3/8	9.90	7/8	22.22	23.20	45.46
DAF 8-8R	1/2	12.70	1/2	9.90	1-1/16	26.98	23.20	51.80
DAF10-8R	5/8	15.87	1/2	12.70	1-1/16	26.98	24.70	53.84
DAF12-8R	3/4	19.05	1/2	14.98	1-1/16	26.98	24.70	52.83
DAF12-12R	3/4	19.05	3/4	14.98	1-5/16	33.33	24.70	54.86
DAF 16-16R	1	25.40	1	20.06	1-5/8	41.27	31.70	64.26

Connects metric Dk-Lok *port to male ISO tapered thread*

Part No.	Tube O.D. D	T PT	E Min.	Width across flat h	l	L
DAF 6M-2R	6	1/8	4.6	14	15.70	32.50
DAF 6M-4R	6	1/4	4.6	19	15.70	37.10
DAF 8M-4R	8	1/4	6.3	19	16.80	37.60
DAF 10M-4R	10	1/4	7.7	19	17.50	38.10
DAF 10M-6R	10	3/8	7.7	22	17.50	40.10
DAF 12M-4R	12	1/4	9.1	19	23.10	43.70
DAF 12M-6R	12	3/8	9.1	22	23.10	46.00
DAF 12M-8R	12	1/2	9.1	27	23.10	52.30

Female Adapter
DAF-GR



Connects fractional Dk-Lok *port to male ISO parallel thread*

Part No.	Tube O.D. D		T PF	E Min.	Width across flat h		l	l1	L
	in	mm			in	mm			
DAF 4-2GR	1/4	6.35	1/8	4.57	9/16	14.28	15.75	13.0	31.75
DAF 4-4GR	1/4	6.35	1/4	4.57	3/4	19.05	15.75	18.5	38.10
DAF 6-4GR	3/8	9.52	1/4	7.11	3/4	19.05	17.50	18.5	39.40
DAF 6-6GR	3/8	9.52	3/8	7.11	7/8	22.22	17.50	18.5	39.90
DAF 8-8GR	1/2	12.70	1/2	9.90	1-1/16	26.98	23.20	22.1	49.50

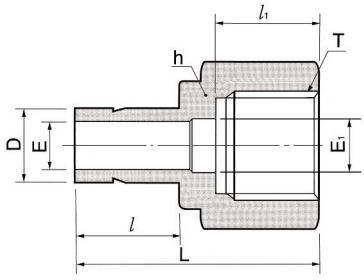
Connects metric Dk-Lok *port to male ISO parallel thread*

Part No.	Tube O.D. D	T PF	E Min.	Width across flat h	l	l1	L
DAF 6M-2GR	6	1/8	4.6	14	15.70	13.0	32.50
DAF 6M-4GR	6	1/4	4.6	19	15.70	18.5	37.80
DAF 12M-8GR	12	1/2	9.1	27	23.10	22.1	49.50

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Female Gauge Adapter
(previously **DAG**)

DAF-GG



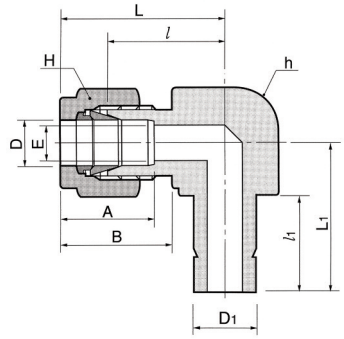
Connects fractional Dk-Lok *port to Gauge (Male ISO parallel thread)*

Part No.	Tube O.D. D		T G(PF)	E Min.	E_1	Width across flat h		l	l_1	L
	in	mm				in	mm			
DAF 4-2GG	1/4	6.35	1/8	4.57	4.57	9/16	14.28	15.75	12.0	32.00
DAF 4-4GG	1/4	6.35	1/4	4.57	5.5	3/4-	19.05	15.75	12.9	35.30
DAF 6-6GG	3/8	9.52	3/8	6.60	6.5	15/16	23.81	17.50	14.1	39.37
DAF 8-8GG	1/2	12.7	1/2	7.11	7.0	1-1/16	26.98	23.20	18.9	45.72

Connects metric Dk-Lok *port to Gauge (Male ISO parallel thread)*

Part No.	Tube O.D. D	T G(PF)	E Min.	E_1	Width across flat h	l	l_1	L
DAF 6M-2GG	6M	1/8	4.0	4.0	14	15.7	12.0	32.0
DAF 6M-4GG	6M	1/4	4.0	5.5	19	15.7	13.0	35.3
DAF 6M-6GG	6M	3/8	4.0	6.5	24	15.7	14.22	38.4
DAF 6M-8GG	6M	1/2	4.0	7.0	27	15.7	18.9	42.9
DAF 8M-4GG	8M	1/4	5.6	5.5	19	16.8	13.0	33.0
DAF 8M-6GG	8M	3/8	5.6	6.5	24	16.8	14.22	39.3
DAF 8M-8GG	8M	1/2	5.6	7.0	27	16.8	18.9	43.7
DAF 10M-4GG	10M	1/4	7.7	5.5	19	17.5	13.0	34.5
DAF 10M-6GG	10M	3/8	7.7	6.5	24	17.5	14.22	39.3
DAF 10M-8GG	10M	1/2	7.7	7.0	27	17.5	18.9	40.1
DAF 12M-4GG	12M	1/4	9.1	5.5	19	23.1	13.0	40.1
DAF 12M-6GG	12M	3/8	9.1	6.5	24	23.1	14.22	44.9
DAF 12M-8GG	12M	1/2	9.1	7.0	27	23.1	18.9	48.8
DAF 15M-8GG	15M	1/2	12.0	7.0	27	24.65	18.9	49.0
DAF 16M-8GG	16M	1/2	12.0	7.0	27	24.6	18.9	49.0
DAF 18M-8GG	18M	1/2	13.9	7.0	27	24.9	18.9	49.3
DAF 22M-8GG	22M	1/2	18.3	7.0	27	26.6	18.9	52.0
DAF 25M-8GG	25M	1/2	19.8	7.0	30	31.7	18.9	56.1

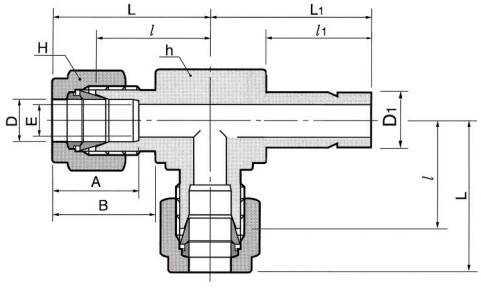
Elbow Adapter
DLA



Connects metric tube to metric Dk-Lok *port.*

Part No.	Tube O.D. D	D_1	E Min.	Width across flat h	Width across flat H	A	B	l	l_1	L	L_1
DLA-6M	6	6	4.6	12.7	14	15.3	17.7	19.6	15.7	27.0	25.0
DLA-8M	8	8	6.4	15.8	16	16.2	18.6	21.3	16.8	28.8	27.05
DLA-10M	10	10	7.7	17.4	19	17.2	19.5	23.9	17.5	31.5	30.0
DLA-12M	12	12	9.1	20.6	22	22.8	22.0	25.9	23.1	36.0	37.3
DLA-14M	14	14	11.1	25.4	25	24.4	22.0	28.7	24.6	38.8	41.5
DLA-15M	15	15	11.9	25.4	25	24.4	22.0	28.7	24.65	38.8	41.55
DLA-16M	16	16	12.7	25.4	25	24.4	22.0	28.7	24.6	38.8	41.5
DLA-18M	18	18	13.9	26.9	30	24.4	22.0	29.7	24.6	39.8	42.5
DLA-20M	20	20	15.1	31.8	32	26.0	22.0	32.5	26.2	42.6	47.0
DLA-22M	22	22	18.3	31.8	32	26.0	22.0	32.5	26.6	42.6	47.15
DLA-25M	25	25	19.8	34.9	38	31.3	26.5	36.8	31.7	49.1	55.2
DLA-28M	28	28	21.8	41.0	46	36.6	36.6	43.2	37.5	64.0	64.9

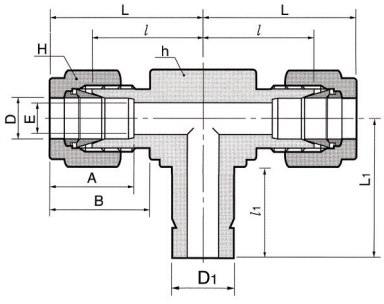
Run Tee Adapter
DTRA



Connects metric tube to metric Dk-Lok *port.*

Part No.	Tube O.D. D	D_1	E Min.	Width across flat h	Width across flat H	A	B	l	l_1	L	L_1
DTRA-8M	8	8	6.4	15.8	16	16.2	18.6	21.3	16.8	28.8	27.5
DTRA-10M	10	10	7.9	17.4	19	17.2	19.5	23.9	17.5	31.5	30.0

Branch Tee Adapter
DTBA

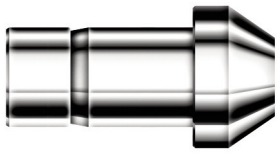


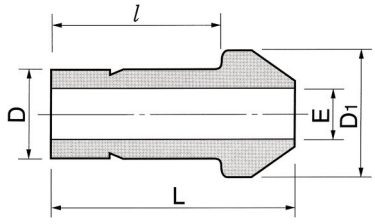
Connects metric tube to metric Dk-Lok *ports*

Part No.	Tube O.D. D	D_1	E Min.	Width across flat h	Width across flat H	A	B	l	l_1	L	L_1
DTBA-8M	8	8	6.4	15.8	16	16.2	18.6	21.3	16.8	28.8	27.5

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Port Connector
DCP/DCPZ





Connects two fractional Dk-Lok *ports*

Part No.	Tube O.D. D		E Min.	D_1	l	L
	in	mm				
DCP-1	1/16	1.59	1.00	3.30	10.66	13.72
DCP-2	1/8	3.17	1.77	6.09	15.75	22.35
DCP-4	1/4	6.35	4.57	9.39	18.79	24.64
DCP-5	5/16	7.93	6.35	10.92	20.06	25.90
DCP-6	3/8	9.52	7.11	12.70	20.32	26.16
DCP-8	1/2	12.70	9.90	15.74	25.90	35.81
DCP-12	3/4	19.05	14.98	22.09	27.68	37.33
DCP-16	1	25.40	20.06	28.44	34.54	48.00
DCPZ-1	1/16	1.59	1.00	3.30	10.66	13.72
DCPZ-2	1/8	3.17	1.77	6.09	15.75	22.35
DCPZ-4	1/4	6.35	4.57	9.39	18.79	24.64
DCPZ-5	5/16	7.93	6.35	10.92	20.06	25.90
DCPZ-6	3/8	9.52	7.11	12.70	20.32	26.16
DCPZ-8	1/2	12.70	9.90	15.74	25.90	35.81
DCPZ-12	3/4	19.05	14.98	22.09	27.68	37.33
DCPZ-16	1	25.40	20.06	28.44	34.54	48.00

Connects two metric Dk-Lok *ports*

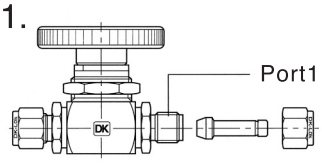
Part No.	Tube O.D. D	E Min.	D_1	l	L
DCP-3M	3	2.1	6.0	15.70	22.20
DCP-4M	4	2.2	7.0	16.67	25.81
DCP-6M	6	4.4	9.0	18.70	24.60
DCP-8M	8	6.2	11.0	20.00	25.90
DCP-10M	10	8.2	13.1	20.20	26.10
DCP-12M	12	9.1	15.0	26.00	35.80
DCP-15M	15	12.7	19.0	27.78	37.40
DCP-16M	16	12.7	19.0	27.60	37.40
DCP-18M	18	13.9	21.0	27.91	37.40
DCP-20M	20	15.1	23.0	29.20	38.90
DCP-22M	22	17.9	24.97	29.30	39.20
DCP-25M	25	19.8	28.0	35.60	49.50
DCP-28M	28	23.8	34.3	48.30	63.50
DCP-32M	32	27.4	39.5	52.40	69.70
DCP-38M	38	33.3	47.1	61.40	81.90

Installation Instructions

Machined Ferrule End and Tube Stub End

Port connector is useful for close connection of two Dk-Lok ports.

1.



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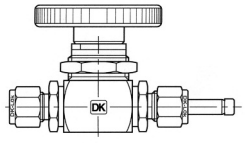

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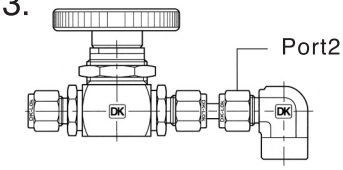


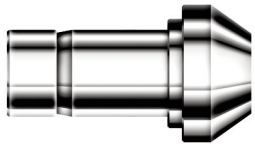
Be aware that Port Connector consists of machined ferrule end, and tube stub end.
These two ends require different installation.

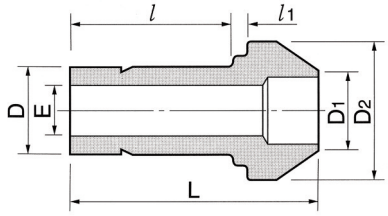
Machined Ferrule End
Refers to Fig. 1 & 2.
1. Remove the nut and ferrules from Dk-Lok port 1.
2. Place the nut over the machined ferrule end of the port connector.
3. Finger-tighten the nut onto the port 1.
4. Wrench-tighten the nut 1/4 turn, keeping the body steady with a backup wrench.
   - Do not tighten 1 1/4 turns. This is not the standard ferrule.
   - Tightens 1/8 turn for 1/16, and 1/8 in.; 3, and 4mm tube fittings.

Tube Stub End
Refers to Fig. 3.

1. Insert the tube stub end into the port 2 until it is bottomed on the shoulder of the body.
2. Finger-tighten the nut on port 2.
3. Wrench-tighten the nut 1 1/4 turns, keeping the port 2 body steady with a backup wrench.
   - Tighten the nut 3/4 turn for 1/16. and 1/8 in.; and 3, and 4mm tube fittings.
   - For re-use, see re-assembly instruction.

Reducing Port Connector
DCRP





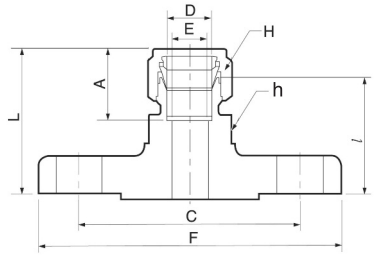
Connects two fractional Dk-Lok *ports*

Part No.	Tube O.D. D1 in	Tube O.D. D1 mm	Tube O.D. D in	Tube O.D. D mm	E Min.	D2	l	l1	L
DCRP 2-1	1/8	3.17	1/16	1.59	1.00	6.10	8.64	2.03	17.27
DCRP 4-2	1/4	6.35	1/8	3.17	2.28	9.39	13.45	3.30	22.60
DCRP 6-2	3/8	9.52	1/8	3.17	2.28	12.70	13.45	3.81	23.11
DCRP 6-4	3/8	9.52	1/4	6.35	4.82	12.70	15.75	3.30	24.89
DCRP 8-4	1/2	12.70	1/4	6.35	4.82	15.74	15.75	3.81	29.21
DCRP 8-6	1/2	12.70	3/8	9.52	7.11	15.74	17.67	3.30	30.48
DCRP 12-8	3/4	19.05	1/2	12.70	9.90	22.09	23.20	3.81	37.85
DCRP 16-8	1	25.40	1/2	12.70	9.90	28.40	24.47	4.82	42.67
DCRP 16-12	1	25.40	3/4	19.05	14.98	28.40	25.90	4.06	43.43

Connects two metric Dk-Lok *ports*

Part No.	Tube O.D. D1	Tube O.D. D	E Min.	D2	l	l1	L
DCRP 6M-3M	6	3	2.2	9.0	13.50	3.2	22.60
DCRP 8M-6M	8	6	4.6	11.0	15.70	3.1	24.70
DCRP 10M-6M	10	6	4.6	13.1	15.70	3.4	25.00
DCRP 10M-8M	10	8	6.4	13.1	16.80	3.1	26.00
DCRP 12M-6M	12	6	4.6	15.0	15.70	3.6	29.10
DCRP 12M-8M	12	8	6.4	15.0	16.80	3.4	29.80
DCRP 12M-10M	12	10	7.7	15.0	17.50	3.1	30.40
DCRP 16M-6M	16	6	4.6	19.0	15.75	3.6	30.40
DCRP 16M-12M	16	12	9.1	19.0	23.10	3.4	36.20
DCRP 28M-25M	28	25	19.8	34.3	33.00	8.2	56.50
DCRP 32M-25M	32	25	19.8	39.5	33.00	9.9	60.30
DCRP 38M-25M	38	25	19.8	47.1	33.00	12.3	65.80

Dk-Lok *Flanges ANSI B16.5*
DF

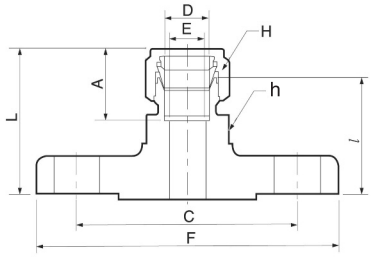


Pressure Class Ratings 150 to 2500
Nominal Flange Sizes NPS 1/2 to 2 in.
Connects ANSI flange to fractional tube

Part No.	Tube O.D. D in	Tube O.D. D mm	ANSI Flange NPS	ANSI Class	E	Wrench Flat h	A	l	L	C	F
DF-4TF8-150	1/4	6.35	1/2	150	4.82	20.64	15.24	33.52	40.89	60.45	88.9
DF-4TF16-150			1	150	4.82	20.64	15.24	36.35	43.71	79.2	108
DF-6TF8-150	3/8	9.52	1/2	150	4.82	20.64	16.76	34.85	42.21	60.45	88.9
DF-6TF8-300			1/2	300	7.11	20.64	16.76	38.1	45.46	66.54	95.25
DF-6TF16-150			1	150	7.11	20.64	16.76	37.85	45.21	79.2	108
DF-8TF8-150	1/2	12.7	1/2	150	10.41	20.64	22.86	30.05	45.21	60.45	88.9
DF-8TF8-300			1/2	300	10.41	20.64	22.86	37.85	48.01	66.54	95.25
DF-8TF8-1500			1/2	1500	10.41	20.64	22.86	46.05	56.21	82.6	121
DF-8TF16-150			1	150	10.41	20.64	22.86	38.1	48.26	79.24	48.26
DF-8TF32-150			2	150	10.41	20.64	22.86	42.92	53.08	42.92	53.08
DF-12TF16-150	3/4	19.05	1	150	15.74	31.75	24.38	40.13	50.29	79.24	107.95
DF-12TF16-900			1	900	15.74	31.75	24.38	46.05	56.21	101.6	149
DF-16TF16-150	1	25.4	1	150	22.35	34.92	31.24	48.26	60.45	79.24	107.95
DF-24TF32-150	1-1/2	38.1	2	150	34.03	53.97	50.03	59.18	86.36	120.65	152.4
DF-32TF32-150	2	50.8	2	150	45.97	69.85	67.56	67.05	104.39	120.65	152.4

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Dk-Lok *Flanges*
DIN 2526 / DIN 2501
DF



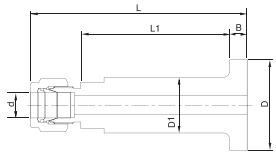
Pressure Class Rating PN 40 to 320, Nominal Flange Sizes DN 15 to 50
Connects DIN flange to metric tube

Part No.	Tube O.D. D	DIN Flange Size, DN	DIN CLASS	E	Wrench Flat h	A	*l*	L	C	F
DF-6MF25M-40	6 mm	25	40	4.8	20	15.3	40.1	47.5	85.0	115.0
DF-12MF15M-40	12 mm	15	40	9.5	20	22.8	38.4	48.5	65.0	95.0
DF-12MF25M-40		25	40	9.5	20	22.8	40.4	50.5	85.0	115.0
DF-12MF50M-40		50	40	9.5	20	22.8	45.2	55.3	125.0	165.0
DF-18MF15M-40	18 mm	15	40	15.1	32	24.4	41.7	51.8	65.0	95.0
DF-18MF25M-40		25	40	15.1	32	24.4	43.7	53.8	85.0	115.0
DF-25MF25M-40	25 mm	25	40	21.8	35	31.3	51.8	64.0	85.0	115.0
DF-38MF50M-40	38 mm	50	40	33.7	55	49.4	62.7	90.4	125.0	165.0
DF-50MF50M-40	50 mm	50	40	45.2	70	65.0	66.3	103.0	125.0	165.0

JIS B 2220 : Pressure Class Rating 10 to 63K, Nominal Flange Sizes DN 15 to 50
Connects JIS flange to fractional or metric tube

Part No.	Tube O.D. D		JIS Flange Size, DN	JIS Class	E	Wrench Flat h	A	*l*	L	C	F
	in	mm									
DF-4T15A10RF	1/4	6.35	15	10K	4.82	23.81	15.24	34.79	42.16	70.10	94.99
DF-6T15A10RF	3/8	9.52	15	10K	7.11	23.81	16.76	36.32	43.68	70.10	94.99
DF-8T15A10RF	1/2	12.7	15	10K	10.41	23.81	22.86	36.32	46.48	70.10	94.99
DF-12T15A10RF	3/4	19.05	15	10K	15.74	31.75	24.38	38.35	48.51	70.10	94.99
DF-16T25A10RF	1	25.4	25	10K	22.35	34.91	31.24	48.76	60.96	89.91	124.96
DF-32T50A10RF	2	50.8	50	10K	45.97	69.85	67.56	64.51	101.85	119.88	154.94
DF-12M15A10FF	12 mm		15	10K	9.5	20	22.8	36.3	46.5	70.0	95.0
DF-18M15A10RF	18 mm		15	10K	15.1	32	24.4	38.4	48.5	70.0	95.0
DF-25M25A10RF	25 mm		25	10K	21.8	35	31.3	48.8	61.0	90.0	125.0

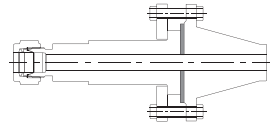
Lab Joint
Flange Connector
DLJ



Connects Flange to fractional tube

Part No.	Tube O.D.		Dimension					
	in	mm	L	L_1	*l*	D	D_1	d min
Serrated Seal Face Flange								
DLJ-4T8F-SR-S	1/4	6.35	80.8	56.5	6.5	35	22.2	4.8
DLJ-6T8F-SR-S	3/8	9.52	82.3	56.5	6.5	35	22.2	7.1
DLJ-8T8F-SR-S	1/2	12.70	84.8	56.5	6.5	35	22.2	10.4
Smooth Seal Face Flange								
DLJ-4T8F-SM-S	1/4	6.35	80.8	56.5	6.5	35	22.2	4.8
DLJ-6T8F-SM-S	3/8	9.52	82.3	56.5	6.5	35	22.2	7.1
DLJ-8T8F-SM-S	1/2	12.70	84.8	56.5	6.5	35	22.2	10.4

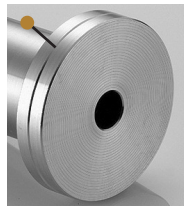
Installation



Lap joint flange connector installation with slip-on and welding neck flanges, using sealing gasket on the flange seal face.

Lap joint flange connector is designed to connect process flange to instrument. Dk-Lok port is constructed integrally out of ANSI B16.5 Class 2500 flange. “Smooth” and “Concentric Serrated” flange seal face are available. External groove is provided to identify the serrated face.

Flange Seal Face

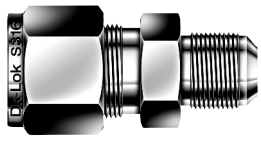


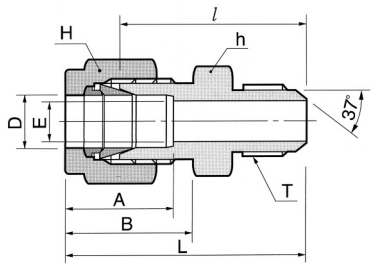
□ External Groove
Concentric Serrated : SR
Seal Face Roughness :
Ra 6.3 to 12.5 Micrometer

Smooth : SM

Seal Face Roughness :
Ra 3.2 to 6.3 Micrometer

AN Union
DUA

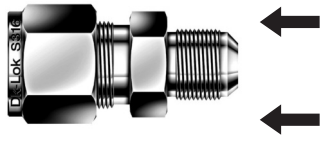


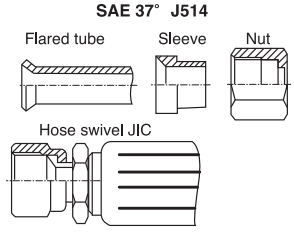


Connects fractional tube to AN flared tube

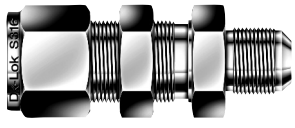
Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	E Min.	Width across flat h		Width across flat H		A	B	l	L
	in	mm	in	mm			in	mm	in	mm				
DUA 1-2	1/16	1.59	1/8	3.17	5/16-24	1.27	7/16	11.11	5/16	7.93	8.63	10.92	23.36	27.17
DUA 2-2	1/8	3.17	1/8	3.17	5/16-24	1.52	7/16	11.11	7/16	11.11	12.70	15.24	24.89	31.49
DUA 2-4	1/8	3.17	1/4	6.35	7/16-20	2.28	1/2	12.70	7/16	11.11	12.70	15.24	28.44	35.05
DUA 4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	1/2	12.70	9/16	14.28	15.24	17.78	30.22	37.59
DUA 5-5	5/16	7.93	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	16.25	18.54	30.98	38.35
DUA 6-4	3/8	9.52	1/4	6.35	7/16-20	4.31	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
DUA 6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.25	39.62
DUA 8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	13/16	20.64	7/8	22.22	22.86	21.84	35.81	45.97
DUA 12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-1/8	28.58	1-1/8	28.58	24.38	21.84	43.18	53.34
DUA 16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-3/8	34.92	1-1/2	38.10	31.24	26.41	49.27	61.46
DUA 20-20	1-1/4	31.75	1-1/4	31.75	1-5/8-12	27.68	1-3/4	44.45	1-7/8	47.63	41.14	38.86	55.46	77.56
DUA 24-24	1-1/2	38.10	1-1/2	38.10	1-7/8-12	33.90	2-1/8	53.97	2-1/4	57.15	50.03	45.21	63.07	90.25
DUA 32-32	2	50.80	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	62.73	83.24	120.57

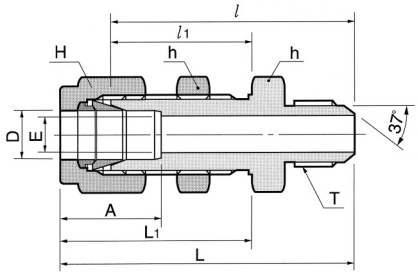
Dk-Lok AN fitting 37 Flare is designed to SAE J514 standard. **AN** fittings are used normally in **A**rmy and **N**avy instrumentation.





AN Bulkhead Union
DUBA



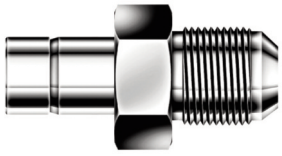


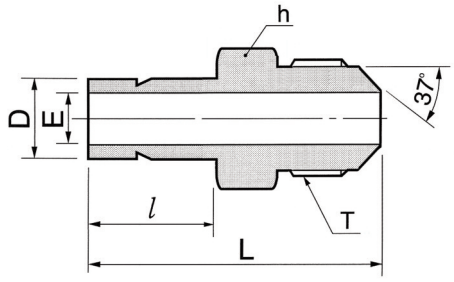
Connects fractional tube to AN flared tube

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	E Min.	Width across flat h			Width across flat H		A	l	l1	L	L1	Panel Hole Drill Size	Panel Max Thickness
	in	mm	in	mm			in	mm		in	mm							
DUBA 2-2	1/8	3.17	1/8	3.17	5/16-24	1.77	1/2	12.70	7/16	11.11		13.71	40.85	24.63	47.45	31.23	8.33	12.70
DUBA 4-4	1/4	6.35	1/4	6.35	7/16-20	4.31	5/8	15.87	9/16	14.28		15.24	46.48	26.16	53.84	33.52	11.50	10.16
DUBA 6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	3/4	19.05	11/16	17.46		16.76	49.78	29.46	57.15	36.83	14.68	11.17
DUBA 8-8	1/2	12.70	1/2	12.70	3/4-16	9.90	5/16	23.81	7/8	22.22		22.86	55.62	31.75	65.78	41.91	19.44	12.70
DUBA 12-12	3/4	19.05	3/4	19.05	1-1/16-12	15.49	1-3/16	30.16	1-1/8	28.58		24.38	68.83	37.33	78.99	47.49	25.79	16.76
DUBA 16-16	1	25.40	1	25.40	1-5/16-12	21.33	1-5/8	41.27	1-1/2	38.10		31.24	80.26	45.21	92.45	57.40	33.73	19.05
DUBA 20-20	1-1/4	31.75	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.63	1-7/8	47.63		41.14	86.37	47.75	108.47	69.85	41.67	19.05
DUBA 24-24	1-1/2	38.10	1-1/2	38.10	1-7/8-12	33.90	2-1/4	57.15	2-1/4	57.15		50.03	94.33	49.27	121.51	76.45	49.61	19.05
DUBA 32-32	2	50.80	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20		67.56	114.29	56.38	151.62	93.71	16.27	19.05

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male AN Adapter
DMAA

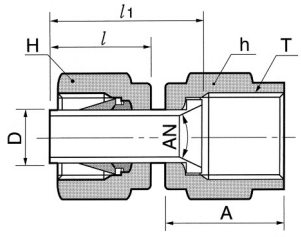




Connects fractional Dk-Lok *port to AN flared tube*

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	E Min.	Width across flat h		l	L
	in	mm	in	mm			in	mm		
DMAA 4-4	1/4	6.35	1/4	6.35	7/16-20	4.57	1/2	12.7	15.75	37.1
DMAA 6-6	3/8	9.52	3/8	9.52	9/16-18	7.11	5/8	15.87	17.5	39.63
DMAA 8-6	1/2	12.70	3/8	9.52	9/16-18	7.11	5/8	15.87	23.1	45.7
DMAA 8-8	1/2	12.70	1/2	12.70	3/4-16	9.9	13/16	20.64	23.1	48.52
DMAA 8-10	1/2	12.70	5/8	15.87	7/8-14	9.9	15/16	23.81	23.1	52.0
DMAA 10-10	5/8	15.87	5/8	15.87	7/8-14	12.3	15/16	23.81	27.68	56.13
DMAA 12-12	3/4	19.05	3/4	19.05	1-1/16-12	14.98	1-1/8	28.57	24.7	56.13
DMAA 16-16	1	25.4	1	25.4	1-5/16-12	20.06	1-3/8	34.92	31.7	65.33

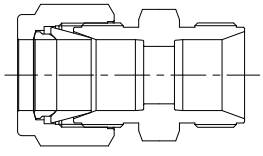
AN Adapter
DAA

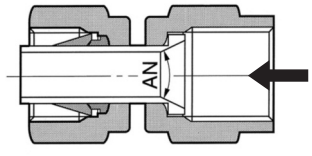


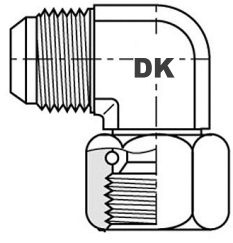
Connects fractional Dk-Lok *port tube to AN male*

Part No.	Tube O.D. D		AN Tube Flare Size		Straight Thread T(U)	Width across flat h		Width across flat H		A	l	l1
	in	mm	in	mm		in	mm	in	mm			
DAA 2-2	1/8	3.17	1/8	3.17	5/16-24	3/8	9.52	7/16	11.11	13.71	13.46	18.54
DAA 2-4	1/8	3.17	1/4	6.35	7/16-20	9/16	14.28	7/16	11.11	15.74	13.46	19.05
DAA 4-4	1/4	6.35	1/4	6.35	7/16-20	9/16	14.28	9/16	14.28	15.74	15.74	21.33
DAA 6-6	3/8	9.52	3/8	9.52	9/16-18	11/16	17.46	11/16	17.46	18.28	17.52	24.89
DAA 8-8	1/2	12.70	1/2	12.70	3/4-16	7/8	22.22	7/8	22.22	21.59	23.11	31.75

AN adapter is useful to connects Dk-Lok port to SAE JIC 514 37 male Fitting.

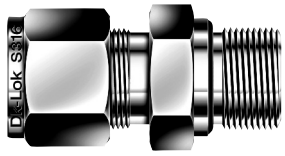


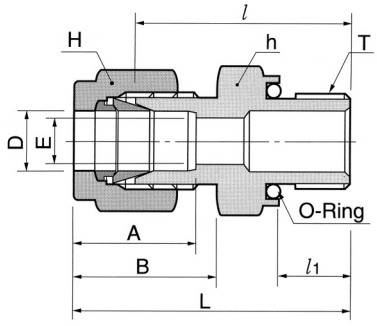




O-Seal Straight Thread Connector (previously **DCOS-U**)

DMC-UO



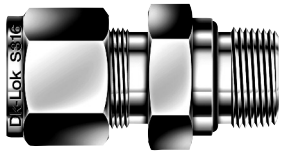


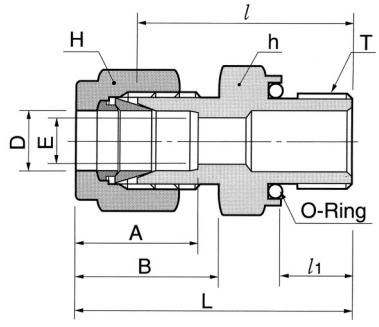
Connects fractional tube to female Straight thread

Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		A	B	l	l1	L	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm						
DMC 2-2UO	1/8	3.17	5/16-20	2.28	9/16	14.28	7/16	11.11	12.70	15.24	26.16	8.63	32.76	-011
DMC 3-3UO	3/16	4.76	3/8-24	3.04	5/8	15.87	1/2	12.70	13.71	16.00	27.68	9.65	34.29	-012
DMC 4-4UO	1/4	6.35	7/16-20	4.82	3/4	19.05	9/16	14.28	15.24	17.78	30.98	10.41	38.35	-013
DMC 5-5UO	5/16	7.93	1/2-20	6.35	7/8	22.22	5/8	15.87	16.25	18.54	33.27	11.17	40.64	-112
DMC 6-6UO	3/8	9.52	9/16-18	7.11	15/16	23.81	11/16	17.46	16.76	19.30	35.05	11.93	42.41	-113
DMC 8-8UO	1/2	12.70	3/4-16	10.41	1-1/8	28.57	7/8	22.22	22.86	21.84	35.81	11.93	45.97	-116
DMC 12-12UO	3/4	19.05	1-1/16-12	15.74	1-1/2	38.10	1-1/8	28.58	24.38	21.84	42.16	14.22	52.32	-121
DMC 16-16UO	1	25.40	1-5/16-12	22.35	1-3/4	44.45	1-1/2	38.10	31.24	26.41	45.97	14.22	58.16	-125

O-Seal Pipe Thread Connector (previously **DCOP**)

DMC-NO





Connects fractional tube to female NPT thread

Part No.	Tube O.D. D		T *(NPT)	E Min.	Width across flat h		H		A	B	l	l1	L	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm						
DMC 2-2NO	1/8	3.17	1/8	2.28	3/4	19.05	7/16	11.11	12.70	15.24	26.16	7.11	32.76	-013
DMC 4-2NO	1/4	6.35	1/8	4.82	3/4	19.05	9/16	14.28	15.24	17.78	27.68	7.11	35.05	-013
DMC 4-4NO	1/4	6.35	1/4	4.82	15/16	23.81	9/16	14.28	15.24	17.78	30.98	9.65	38.35	-113
DMC 6-4NO	3/8	9.52	1/4	7.11	15/16	23.81	11/16	17.46	16.76	19.30	32.51	9.65	39.87	-113
DMC 6-6NO	3/8	9.52	3/8	7.11	1-1/8	28.58	11/16	17.46	16.76	19.30	34.03	10.41	41.40	-116
DMC 6-8NO	3/8	9.52	1/2	7.11	1-5/16	33.33	11/16	17.46	16.76	19.30	39.62	13.46	46.99	-118
DMC 8-8NO	1/2	12.70	1/2	10.41	1-5/16	33.33	7/8	22.22	22.86	21.84	39.62	13.46	49.78	-118

Installation Instructions

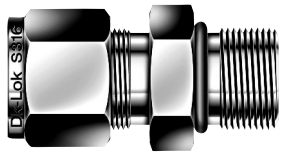
O-seal Connectors

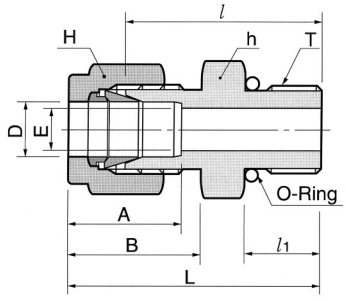
1. Lubricate O-ring with a lubricant compatible with the O-ring material and the system fluid.
2. Finger-tighten the O-seal connector into the female port.
3. Hand-tighten until the O-ring squeezing on the face of the female port is felt.
4. Tighten slightly further with a wrench to completely compress the O-ring
   - Keep the O-seal body still during connecting or disconnecting.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Non-Positionable
SAE Male Connector

DMCS-U





Connects fractional tube to SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		A	B	l	l1	L	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm						
DMCS 2-2U	1/8	3.17	5/16-24	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.26	7.62	29.97	-902
DMCS 4-4U	1/4	6.35	7/16-20	4.82	9/16	14.28	9/16	14.28	15.24	17.78	26.67	9.14	34.03	-904
DMCS 4-6U	1/4	6.35	9/16-18	4.82	11/16	17.46	9/16	14.28	15.24	17.78	28.19	9.90	35.56	-906
DMCS 4-8U	1/4	6.35	3/4-16	4.82	7/8	22.22	9/16	14.28	15.24	17.78	30.22	11.17	37.59	-908
DMCS 4-10U	1/4	6.35	7/8-14	4.82	1	25.40	9/16	14.28	15.24	17.78	33.27	12.70	40.64	-910
DMCS 5-5U	5/16	7.93	1/2-20	5.84	5/8	15.87	5/8	15.87	16.25	18.54	27.43	9.14	34.79	-905
DMCS 6-4U	3/8	9.52	7/16-20	5.08	5/8	15.87	11/16	17.46	16.76	19.30	28.19	9.14	35.56	-904
DMCS 6-6U	3/8	9.52	9/16-18	7.11	11/16	17.46	11/16	17.46	16.76	19.30	29.71	9.90	37.08	-906
DMCS 6-8U	3/8	9.52	3/4-16	7.11	7/8	22.22	11/16	17.46	16.76	19.30	31.75	11.17	39.11	-908
DMCS 6-10U	3/8	9.52	7/8-14	7.11	1	25.40	11/16	17.46	16.76	19.30	34.79	12.70	42.16	-910
DMCS 8-6U	1/2	12.70	9/16-18	7.11	13/16	20.64	7/8	22.22	22.86	21.84	28.95	9.90	39.11	-906
DMCS 8-8U	1/2	12.70	3/4-16	10.41	7/8	22.22	7/8	22.22	22.86	21.84	31.75	11.17	41.91	-908
DMCS 8-10U	1/2	12.70	7/8-14	10.41	1	25.40	7/8	22.22	22.86	21.84	34.79	12.70	44.95	-910
DMCS 8-12U	1/2	12.70	1-1/16-12	10.41	1-1/4	31.75	7/8	22.22	22.86	21.84	38.86	14.98	49.02	-912
DMCS 10-8U	5/8	15.87	3/4-16	10.66	15/16	23.81	1	25.40	24.38	21.84	31.75	11.17	41.91	-908
DMCS 10-10U	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	24.38	21.84	35.05	12.70	45.21	-910
DMCS 12-8U	3/4	19.05	3/4-16	10.66	1-1/16	26.98	1-1/8	28.57	24.38	21.84	35.81	11.17	45.97	-908
DMCS 12-12U	3/4	19.05	1-1/16-12	15.74	1-1/4	31.75	1-1/8	28.57	24.38	21.84	38.86	14.98	49.02	-912
DMCS 14-14U	7/8	22.22	1-3/16-12	18.28	1-3/8	34.92	1-1/4	31.75	25.90	21.84	38.86	14.98	49.02	-914
DMCS 16-12U	1	25.40	1-1/16-12	16.76	1-3/8	34.92	1-1/2	38.10	31.24	26.41	41.14	14.98	53.34	-912
DMCS 16-16U	1	25.40	1-5/16-12	22.35	1-1/2	38.10	1-1/2	38.10	31.24	26.41	42.16	14.98	54.35	-916
DMCS 20-20U	1-1/4	31.75	1-5/8-12	27.68	1-7/8	47.63	1-7/8	47.63	41.14	38.86	46.22	14.98	68.32	-920
DMCS 24-24U	1-1/2	38.10	1-7/8-12	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	50.54	14.98	77.72	-924
DMCS 32-32U	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	67.56	62.73	64.26	14.98	101.60	-932

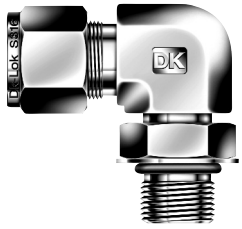
Connects metric tube to SAE straight thread boss

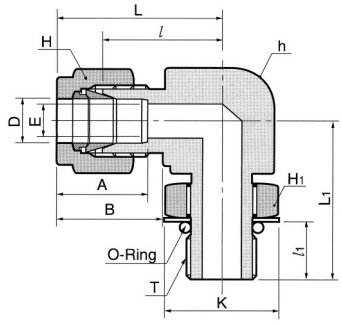
Part No.	Tube O.D. D	Straight Thread T(U)	E Min.	Width across flat h	H	A	B	l	l1	L	O-Ring Uniform Size Number
DMCS 6M-6U	6	9/16-18	4.8	18	14	15.3	17.7	28.2	9.90	36.5	-906
DMCS 10M-6U	10	9/16-18	7.9	18	19	17.2	19.5	29.7	9.90	37.3	-906
DMCS 10M-8U	10	3/4-16	7.9	22	19	17.2	19.5	31.8	11.17	39.4	-908
DMCS 12M-4U	12	7/16-20	5.2	22	22	22.8	22.0	28.2	9.14	38.3	-904
DMCS 12M-6U	12	9/16-18	7.5	22	22	22.8	22.0	29.0	9.90	39.1	-906

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Positionable
SAE Male Elbow

DLS-UP



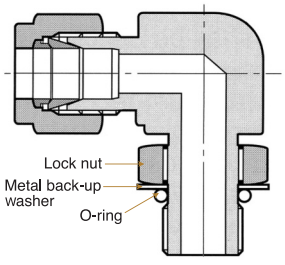


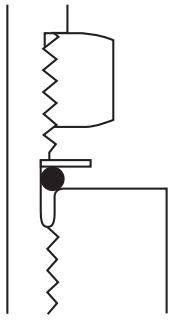
Connects fractional tube to SAE straight thread boss

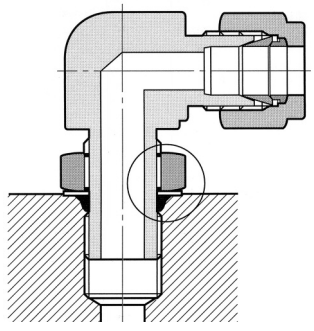
Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		H_1		A	B	l	l_1	L	L_1	K	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm	in	mm								
DLS 4-4UP	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
DLS 5-5UP	5/16	7.93	1/2-20	5.84	9/16	14.28	5/8	15.87	5/8	15.87	16.25	18.54	22.86	9.90	30.22	29.46	18.28	-905
DLS 6-6UP	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
DLS 6-8UP	3/8	9.52	3/4-16	7.11	13/16	20.64	11/16	17.46	7/8	22.22	16.76	19.30	27.43	12.70	34.79	37.84	25.65	-908
DLS 8-8UP	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
DLS 10-10UP	5/8	15.87	7/8-14	12.70	1	25.40	1	25.40	1	25.40	24.38	21.84	29.46	14.22	39.62	43.43	29.46	-910
DLS 12-12UP	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.57	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
DLS 14-14UP	7/8	22.22	1-3/16-12	18.28	1-1/4	31.75	1-1/4	31.75	1-3/8	34.92	25.90	21.84	33.02	16.76	43.18	50.54	40.38	-914
DLS 16-16UP	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.59	43.94	-916
DLS 20-20UP	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.76	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
DLS 24-24UP	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
DLS 32-32UP	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

Installation Instructions

SAE and ISO parallel Thread Fittings





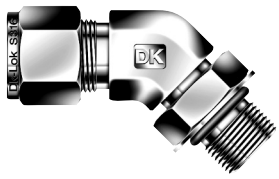


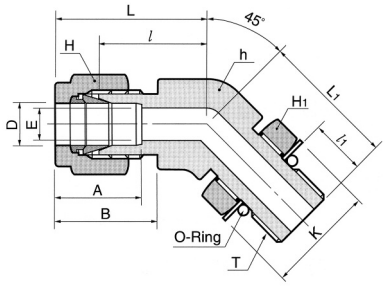
1. Lubricate O-ring with a lubricant compatible with the O-ring material and the system fluid.
2. Back the locknut out.
3. Finger-tighten the fitting into the straight thread boss until the metal backup washer contacts the face of the boss.
4. Position the fitting by backing it out until the fitting end is positioned in the desired direction.
   - No more than one turn backing out.
5. Hold the fitting in the direction and wrench-tighten the locknut until the washer contacts the face of the boss.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Positionable 45°SAE Male Elbow (previously **DLBS-U**)

DLBS-UP



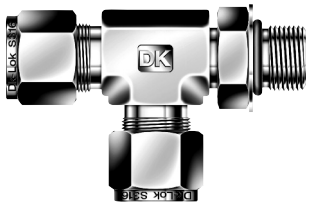


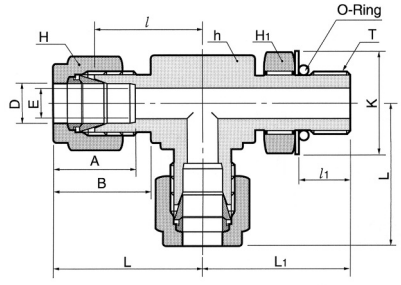
Connects fractional tube to SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		H1		A	B	l	l1	L	L1	K	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm	in	mm								
DLBS 4-4UP	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	18.28	9.90	25.65	25.65	16.51	-904
DLBS 6-6UP	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	20.57	11.17	27.94	28.19	20.06	-906
DLBS 8-8UP	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	21.84	12.70	32.00	32.25	25.65	-908
DLBS12-12UP	3/4	19.05	1-1/16-12	15.74	1-1/8	28.58	1-1/8	28.58	1-1/4	31.75	24.38	21.84	29.71	16.76	39.87	47.24	36.57	-912
DLBS16-16UP	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	35.30	16.76	47.49	50.54	43.94	-916

Positionable SAE Male Run Tee (previously **DTRS-U**)

DTRS-UP



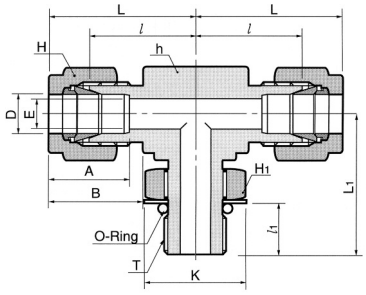


Connects fractional tube to SAE straight thread boss

Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		H1		A	B	l	l1	L	L1	K	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm	in	mm								
DTRS 4-4UP	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
DTRS 6-6UP	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
DTRS 8-8UP	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
DTRS 12-12UP	3/4	19.05	1-1/16-12	15.74	1-1/8	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
DTRS 16-16UP	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	50.54	43.94	-916
DTRS 20-20UP	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
DTRS 24-24UP	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
DTRS 32-32UP	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

Positionable SAE Male Branch Tee (previously **DTBS-U**)

DTBS-UP



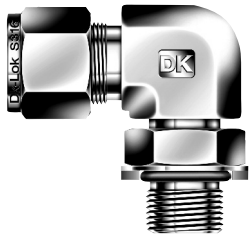
Connects fractional tube to SAE straight thread boss

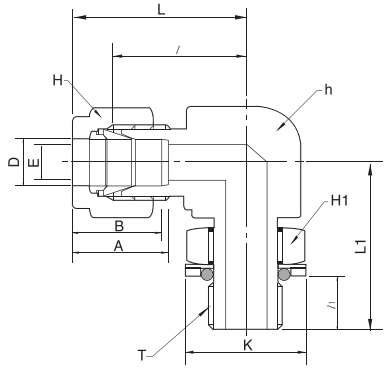
Part No.	Tube O.D. D		Straight Thread T(U)	E Min.	Width across flat h		H		H1		A	B	l	l1	L	L1	K	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm	in	mm								
DTBS 4-4UP	1/4	6.35	7/16-20	4.82	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	21.08	9.90	28.44	28.44	16.51	-904
DTBS 6-6UP	3/8	9.52	9/16-18	7.11	5/8	15.87	11/16	17.46	11/16	17.46	16.76	19.30	24.63	11.17	32.00	32.25	20.06	-906
DTBS 8-8UP	1/2	12.70	3/4-16	10.41	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	27.43	12.70	37.59	37.84	25.65	-908
DTBS 12-12UP	3/4	19.05	1-1/16-12	15.74	1-1/16	26.98	1-1/8	28.58	1-1/4	31.75	24.38	21.84	31.24	16.76	41.40	48.76	36.57	-912
DTBS 16-16UP	1	25.40	1-5/16-12	22.35	1-3/8	34.92	1-1/2	38.10	1-1/2	38.10	31.24	26.41	38.35	16.76	50.54	53.59	43.94	-916
DTBS 20-20UP	1-1/4	31.75	1-5/8-12	27.68	1-11/16	42.86	1-7/8	47.63	1-7/8	47.63	41.14	38.86	45.72	16.76	67.81	58.16	54.86	-920
DTBS 24-24UP	1-1/2	38.10	1-7/8-12	33.90	2	50.80	2-1/4	57.15	2-1/8	53.98	50.03	45.21	50.80	16.76	77.97	60.45	62.23	-924
DTBS 32-32UP	2	50.80	2-1/2-12	45.97	2-3/4	69.85	3	76.20	2-3/4	69.85	67.56	62.73	69.85	16.76	107.18	71.62	80.26	-932

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Positionable
Male Elbow
ISO Parallel Thread

DLM-GP





Connects fractional tube to ISO parallel thread

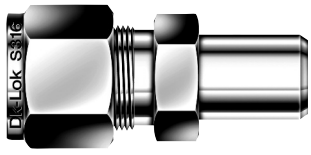
Part No.	Tube O.D. D		T G(PF)	E Min.	Width across flat h		H		H_1		A	B	l	l_1	L	L_1	K	O-Ring Uniform Size Number
	in	mm			in	mm	in	mm	in	mm								
DLM 4-2GP	1/4	6.35	1/8	4.06	1/2	12.70	9/16	14.28	9/16	14.28	15.24	17.78	19.6	8.12	26.92	26.42	15.20	P8
DLM 4-4GP	1/4	6.35	1/4	4.82	5/8	15.87	11/16	17.46	3/4	19.05	15.24	17.78	21.6	9.14	28.95	32.30	20.30	-111
DLM 6-4GP	3/8	9.52	1/4	5.84	5/8	15.87	11/16	17.46	3/4	19.05	16.76	19.30	23.1	9.14	30.48	32.30	20.30	-111
DLM 6-6GP	3/8	9.52	3/8	7.11	13/16	20.64	11/16	17.46	3/4	19.05	16.76	19.30	25.9	9.39	33.27	37.10	24.40	-113
DLM 8-4GP	1/2	12.70	1/4	5.84	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.9	9.14	36.06	35.10	20.30	-111
DLM 8-6GP	1/2	12.70	3/8	7.87	13/16	20.64	7/8	22.22	7/8	22.22	22.86	21.84	25.9	9.39	36.06	37.10	24.40	-113
DLM 8-8GP	1/2	12.70	1/2	10.41	15/16	23.81	7/8	22.22	1-1/16	26.98	22.86	21.84	27.9	12.95	38.10	43.40	29.50	P18
DLM 12-8GP	3/4	19.05	1/2	11.93	1-1/16	26.98	1-1/8	28.57	1-1/16	26.98	24.38	21.84	29.7	12.95	39.87	45.21	29.50	P18
DLM 12-12GP	3/4	19.05	3/4	15.74	1-1/16	26.98	1-1/8	28.57	1-3/8	34.92	24.38	21.84	29.7	12.95	39.87	48.77	36.30	-119
DLM 16-16GP	1	25.40	1	19.81	1-3/8	34.92	1-1/2	38.10	1-5/8	41.28	31.24	26.41	36.8	13.97	49.02	53.60	46.20	-217

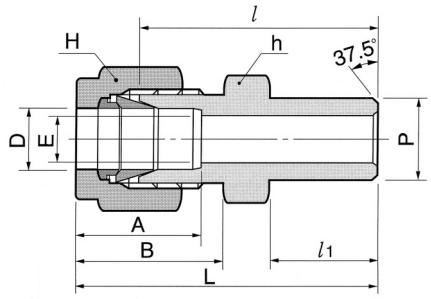
Connects metric tube to ISO parallel thread

Part No.	Tube O.D. D	T G(PF)	E Min.	Width across flat h	H	H_1	A	B	l	l_1	L	L_1	K	O-Ring Uniform Size Number
DLM 6M-2GP	6	1/8	4.0	12.7	14	14.28	15.3	17.7	19.6	8.1	27.0	26.4	15.20	P8
DLM 6M-4GP	6	1/4	4.8	15.8	14	19.05	15.3	17.7	21.6	9.1	29.0	32.3	20.30	-111
DLM 6M-6GP	6	3/8	4.8	20.6	14	22.22	15.3	17.7	24.4	9.4	31.8	37.1	24.40	-113
DLM 8M-2GP	8	1/8	4.0	14.2	16	14.28	16.2	18.6	21.3	8.1	28.8	27.4	15.20	P8
DLM 8M-4GP	8	1/4	5.9	15.8	16	19.05	16.2	18.6	22.4	9.1	29.9	32.2	20.30	-111
DLM 10M-4GP	10	1/4	5.9	20.6	19	19.05	17.2	19.5	25.9	9.1	33.5	35.0	20.30	-113
DLM 10M-6GP	10	3/8	7.9	20.6	19	22.22	17.2	19.5	25.9	9.4	33.5	37.1	24.40	-111
DLM 12M-4GP	12	1/4	5.9	20.6	22	19.05	22.8	22.0	25.9	9.1	36.0	35.0	20.30	-113
DLM 12M-6GP	12	3/8	7.9	20.6	22	22.22	22.8	22.0	25.9	9.4	36.0	37.1	24.40	-113
DLM 12M-8GP	12	1/2	9.5	23.8	22	26.98	22.8	22.0	27.9	13.0	38.0	43.4	29.50	P18

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Male Pipe
Weld Connector
DCW





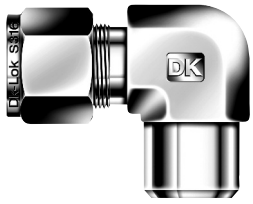
Connects fractional tube to pipe

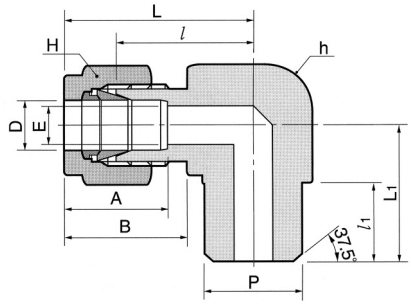
Part No.	Tube O.D. D		Male Pipe Size P		E Min.	Width across flat h		H		A	B	l	l1	L
	in	mm	Nom.	O.D.		in	mm	in	mm					
DCW 2-2P	1/8	3.17	1/8	10.29	2.28	7/16	11.11	7/16	11.11	12.70	15.24	23.87	9.65	31.24
DCW 3-2P	3/16	4.76	1/8	10.29	3.04	7/16	11.11	1/2	12.70	13.71	16.00	24.63	9.65	31.24
DCW 4-2P	1/4	6.35	1/8	10.29	4.82	1/2	12.70	9/16	14.28	15.24	17.78	25.40	9.65	32.76
DCW 4-4P	1/4	6.35	1/4	13.72	4.82	9/16	14.28	9/16	14.28	15.24	17.78	30.48	14.22	37.84
DCW 5-2P	5/16	7.93	1/8	10.29	5.08	9/16	14.28	5/8	15.87	16.25	18.54	26.67	9.65	34.03
DCW 5-4P	5/16	7.93	1/4	13.72	6.35	9/16	14.28	5/8	15.87	16.25	18.54	31.24	14.22	38.60
DCW 6-4P	3/8	9.52	1/4	13.72	7.11	5/8	15.87	11/16	17.46	16.76	19.30	32.51	14.22	39.87
DCW 6-6P	3/8	9.52	3/8	17.15	7.11	11/16	17.46	11/16	17.46	16.76	19.30	32.51	14.22	39.87
DCW 6-8P	3/8	9.52	1/2	21.34	7.11	7/8	22.22	11/16	17.46	16.76	19.30	38.86	11.05	43.23
DCW 8-6P	1/2	12.70	3/8	17.15	10.41	13/16	20.64	7/8	22.22	22.86	21.84	33.27	14.22	43.43
DCW 8-8P	1/2	12.70	1/2	21.34	10.41	7/8	22.22	7/8	22.22	22.86	21.84	38.86	19.05	49.02
DCW 8-12P	1/2	12.70	3/4	26.67	10.41	1-1/16	26.98	7/8	22.22	22.86	21.84	40.38	19.05	50.54
DCW 10-8P	5/8	15.87	1/2	21.34	12.70	15/16	23.81	1	25.40	24.38	21.84	38.86	19.05	49.02
DCW 12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	40.38	19.05	50.54
DCW 16-16P	1	25.40	1	33.40	22.35	1-3/8	34.92	1-1/2	38.10	31.24	26.41	50.03	23.87	62.23
DCW 20-20P	1-1/4	31.75	1-1/4	42.16	27.68	1-3/4	44.45	2	50.80	41.14	38.86	55.11	23.87	77.21
DCW 24-24P	1-1/2	38.10	1-1/2	48.26	33.90	2-1/8	53.98	2-1/4	57.15	50.03	45.21	61.72	26.16	88.90
DCW 32-32P	2	50.80	2	60.33	47.75	2-3/4	69.85	3	76.20	67.56	62.73	76.20	26.92	113.53

Connects metric tube to pipe

Part No.	Tube O.D. D	Male Pipe Size P		E Min.	Width across flat h	H	A	B	l	l1	L
		Nom.	O.D.								
DCW 3M-2P	3	1/8	10.29	2.4	12	12	12.9	15.3	23.1	9.7	29.7
DCW 4M-2P	4	1/8	10.29	2.4	12	12	13.7	16.1	24.1	9.7	30.7
DCW 6M-2P	6	1/8	10.29	4.8	14	14	15.3	17.7	25.4	9.7	32.8
DCW 6M-4P	6	1/4	13.72	4.8	14	14	15.3	17.7	30.2	14.2	37.6
DCW 8M-2P	8	1/8	10.29	5.1	15	16	16.2	18.6	26.7	9.7	34.2
DCW 8M-4P	8	1/4	13.72	6.4	15	16	16.2	18.6	31.2	14.2	38.7
DCW 8M-8P	8	1/2	21.34	6.4	22	16	16.2	18.6	37.3	19.0	44.8
DCW 10M-4P	10	1/4	13.72	7.1	18	19	17.2	19.5	33.3	14.2	40.9
DCW 10M-6P	10	3/8	17.15	7.9	18	19	17.2	19.5	32.5	14.2	40.1
DCW 10M-8P	10	1/2	21.34	7.9	22	19	17.2	19.5	38.1	19.0	45.7
DCW 12M-4P	12	1/4	13.72	7.1	22	22	22.8	22.0	33.3	14.2	43.4
DCW 12M-6P	12	3/8	17.15	9.5	22	22	22.8	22.0	33.3	14.2	43.4
DCW 12M-8P	12	1/2	21.34	9.5	22	22	22.8	22.0	38.1	19.0	48.2
DCW 14M-6P	14	3/8	17.15	10.3	24	25	24.4	22.0	34.0	14.2	44.1
DCW 15M-8P	15	1/2	21.34	11.9	24	25	24.4	22.0	38.9	19.0	49.0
DCW 16M-8P	16	1/2	21.34	12.7	24	25	24.4	22.0	38.9	19.0	49.0
DCW 18M-8P	18	1/2	21.34	13.5	27	30	24.4	22.0	40.4	19.0	50.5
DCW 32M-20P	32	1-1/4	42.16	28.6	46	50	42.0	41.6	56.6	23.9	79.6
DCW 38M-24P	38	1-1/2	48.26	33.7	55	60	49.4	47.9	64.0	26.2	91.6

Male Pipe Weld Elbow
DLW

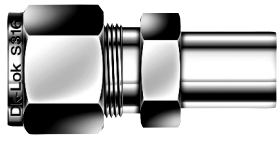


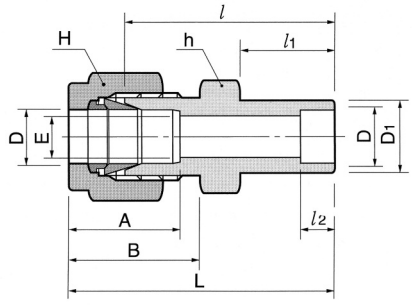


Connects fractional tube to pipe

Part No.	Tube O.D. D		Male Pipe Size P		E Min.	Width across flat h		Width across flat H		A	B	l	l1	L	L1
	in	mm	Nom.	O.D.		in	mm	in	mm						
DLW 2-2P	1/8	3.17	1/8	10.29	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	9.65	26.92	18.79
DLW 4-4P	1/4	6.35	1/4	13.72	4.82	1/2	12.70	9/16	14.28	15.24	17.78	19.55	14.22	26.92	23.36
DLW 6-4P	3/8	9.52	1/4	13.72	7.11	5/8	15.87	11/16	17.46	16.76	19.30	23.11	14.22	30.48	25.40
DLW 8-8P	1/2	12.70	1/2	21.34	10.41	13/16	20.64	7/8	22.22	22.86	21.84	25.90	19.05	36.06	33.02
DLW 12-12P	3/4	19.05	3/4	26.67	15.74	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	19.05	39.87	36.83

Tube Socket Weld Connector
DCSW





Connects fractional tubes

Part No.	Tube O.D. D		E Min.	D1	Width across flat h		Width across flat H		A	B	l	l1	l2	L
	in	mm			in	mm	in	mm						
DCSW 2-2	1/8	3.17	2.28	7.87	7/16	11.11	7/16	11.11	12.70	15.24	22.35	8.63	6.35	28.95
DCSW 4-4	1/4	6.35	4.82	11.17	1/2	12.70	9/16	14.28	15.24	17.78	26.16	10.41	7.87	33.52
DCSW 6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	30.22	11.93	9.65	37.59
DCSW 8-8	1/2	12.70	10.41	19.05	13/16	20.64	7/8	22.22	22.86	21.84	30.98	11.93	12.70	41.14
DCSW 12-12	3/4	19.05	15.74	26.67	1-1/16	26.98	1-1/8	28.58	24.38	21.84	33.27	11.93	14.22	43.43
DCSW 16-16	1	25.40	22.35	33.27	1-3/8	34.92	1-1/2	38.10	31.24	26.41	40.38	14.22	19.05	52.57

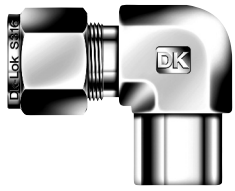
Dk-Lok Welding information

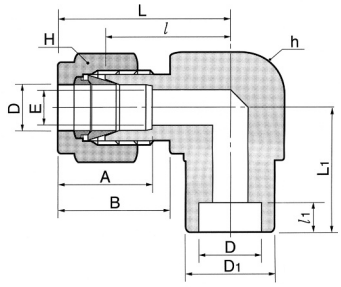
Dk-Lok weld ends are constructed to SCH. 80 or greater.

1. Remove the nut and ferrules from the Dk-Lok port.
   - This protects the nut and ferrules from weld heat.
2. Cover the Dk-Lok port threads with a protective device such as Dk-Lok Plug (DP).
   - This protects threads and sealing surface on the Dk-Lok port.
   - Finger-tighten the DP to use it many times.
3. Tack weld at four positions 90 degree apart.
   - This holds the fitting in alignment and concentricity.
4. Complete the welding.
5. Remove the protective device and replace the nut and ferrules.

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Tube Socket Weld Elbow
DLSW

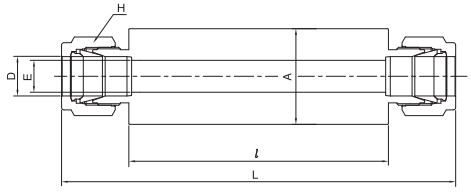




Connects fractional tubes

Part No.	Tube O.D. D		E Min.	D1	Width across flat h		H		A	B	l	l1	L	L1
	in	mm			in	mm	in	mm						
DLSW 4-4	1/4	6.35	4.82	12.70	1/2	12.70	9/16	14.28	15.24	17.78	19.55	7.87	26.92	19.55
DLSW 6-6	3/8	9.52	7.11	15.74	5/8	15.87	11/16	17.46	16.76	19.30	23.11	9.65	30.48	23.11
DLSW 8-8	1/2	12.70	10.41	20.57	13/16	20.64	7/8	22.22	22.86	21.84	25.90	12.70	36.06	25.90
DLSW12-12	3/4	19.05	15.74	26.92	1-1/16	26.98	1-1/8	28.58	24.38	21.84	29.71	14.22	39.87	29.71
DLSW16-16	1	25.40	22.35	35.05	1-3/8	34.93	1-1/2	38.10	31.24	26.41	36.83	19.05	49.02	36.83

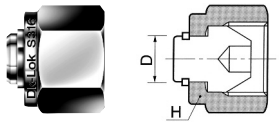
Welding Bulkhead Union
DBUW



Connects fractional tubes

Part No.	Tube O.D. D		E Min.	A Diameter	Width across flat H		l	L
	in	mm			in	mm		
DBUW-4	1/4	6.35	4.8	16.0	9/16	14.28	80.0	115.4
DBUW-6	3/8	9.52	7.1	19.0	11/16	17.46	80.0	118.4
DBUW-8	1/2	12.70	10.41	22.0	7/8	22.22	80.0	124.0

Plug
DP

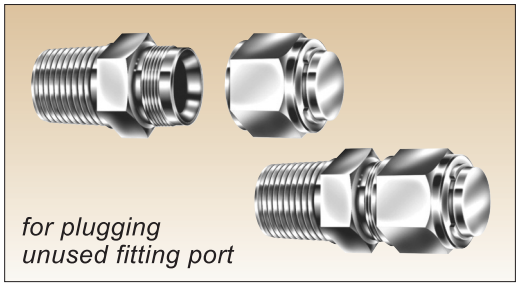


Plugs fractional Dk-Lok *port*

Part No.	Tube O.D. D		Width across flat H	
	in	mm	in	mm
DP-1	1/16	1.59	5/16	7.93
DP-2	1/8	3.17	7/16	11.11
DP-3	3/16	4.76	1/2	12.70
DP-4	1/4	6.35	9/16	14.28
DP-5	5/16	7.93	5/8	15.87
DP-6	3/8	9.52	11/16	17.46
DP-8	1/2	12.70	7/8	22.22
DP-10	5/8	15.87	1	25.40
DP-12	3/4	19.05	1-1/8	28.58
DP-14	7/8	22.22	1-1/4	31.75
DP-16	1	25.40	1-1/2	38.10
DP-20	1-1/4	31.75	1-7/8	47.63
DP-24	1-1/2	38.10	2-1/4	57.15
DP-32	2	50.80	3	76.20

Plugs metric Dk-Lok *port*

Part No.	Tube O.D. D	Width across flat H
DP-2M	2	12
DP-3M	3	12
DP-4M	4	12
DP-6M	6	14
DP-8M	8	16
DP-10M	10	19
DP-12M	12	22
DP-15M	15	25
DP-16M	16	25
DP-18M	18	30
DP-20M	20	32
DP-22M	22	32
DP-25M	25	38
DP-28M	28	46
DP-32M	32	50
DP-38M	38	60

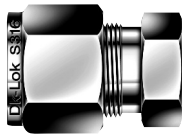


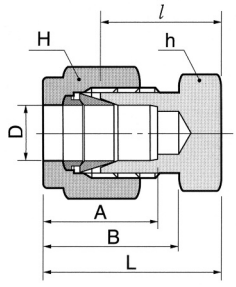
Installation Instructions

Plug is for plugging un-used Dk-Lok port.

1. Remove the nut and ferrules from the Dk-Lok fitting body.
2. Finger-tighten the plug.
3. Tighten the plug 1/4 turn beyond the finger-tight position, keeping the fitting body steady with a backup wrench.
   - Do not tighten 1 1/4 turns as this has machined ferrule not the standard ferrules.
   - Tighten 1/8 turn for 1/16, 1/8, and 3/16 in.; 2, 3, and 4 mm tube Fittings.

Cap
DC





Caps fractional tube end

Part No.	Tube O.D. D		Width across flat h		H		A	B	l	L
	in	mm	in	mm	in	mm				
DC-1	1/16	1.59	5/16	7.93	5/16	7.93	8.63	10.92	11.20	14.18
DC-2	1/8	3.17	7/16	11.11	7/16	11.11	12.70	15.24	13.46	20.06
DC-3	3/16	4.76	7/16	11.11	1/2	12.70	13.71	16.00	14.73	21.33
DC-4	1/4	6.35	1/2	12.70	9/16	14.28	15.24	17.78	16.00	23.26
DC-5	5/16	7.93	9/16	14.28	5/8	15.87	16.25	18.54	17.01	24.38
DC-6	3/8	9.52	5/8	15.87	11/16	17.46	16.76	19.30	18.28	25.65
DC-8	1/2	12.70	13/16	20.63	7/8	22.22	22.86	21.84	19.05	29.21
DC-10	5/8	15.87	15/16	23.81	1	25.40	24.38	21.84	19.81	29.97
DC-12	3/4	19.05	1-1/16	26.98	1-1/8	28.57	24.38	21.84	21.33	31.49
DC-14	7/8	22.22	1-3/16	30.16	1-1/4	31.75	25.90	21.84	23.87	34.03
DC-16	1	25.40	1-3/8	34.92	1-1/2	38.10	31.24	26.41	26.16	38.35
DC-20	1-1/4	31.75	1-3/4	44.45	1-7/8	47.63	41.14	38.86	31.24	53.34
DC-24	1-1/2	38.10	2-1/8	53.98	2-1/4	57.15	50.15	45.21	37.33	64.51
DC-32	2	50.80	2-3/4	69.85	3	76.20	67.56	62.73	49.27	86.61

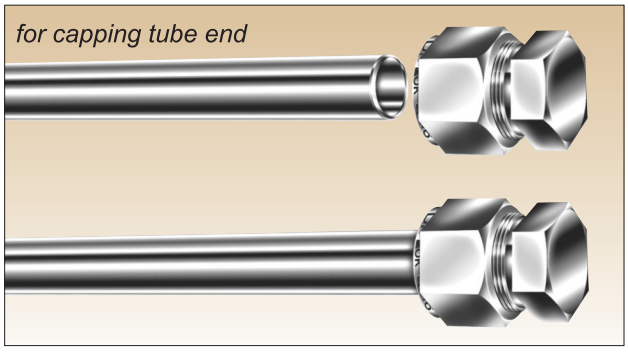
Caps metric tube ends

Part No.	Tube O.D. D	Width across flat h	H	A	B	l	L
DC-2M	2	12	12	12.9	15.3	13.5	20.1
DC-3M	3	12	12	12.9	15.3	13.5	20.1
DC-4M	4	12	12	13.7	16.1	14.7	21.3
DC-6M	6	14	14	15.3	17.7	15.7	23.1
DC-8M	8	15	16	16.2	18.6	17.0	24.5
DC-10M	10	18	19	17.2	19.5	19.0	26.6
DC-12M	12	22	22	22.8	22.0	19.0	29.1
DC-15M	15	24	25	24.4	22.0	19.8	29.9
DC-16M	16	24	25	24.4	22.0	19.8	29.9
DC-18M	18	27	30	24.4	22.0	21.3	31.4
DC-20M	20	30	32	26.0	22.0	23.9	34.0
DC-22M	22	30	32	26.0	22.0	23.9	34.0
DC-25M	25	35	38	31.3	26.5	26.2	38.5
DC-28M	28	41	46	36.6	36.6	27.7	48.5
DC-32M	32	46	50	42.0	41.6	32.8	55.8
DC-38M	38	55	60	49.4	47.9	37.8	65.4

Installation Instructions

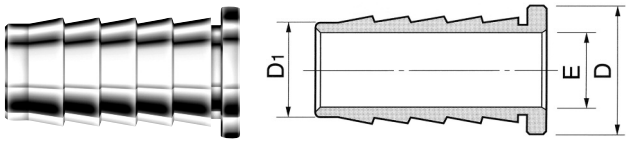
Cap

Dk-Lok Cap is for capping tubing end.



1. Insert tube end into the cap
   - Make sure tube end bottoms on the shoulder of the cap.
2. Finger-tighten the nut
3. Wrench-tighten the nut 1 1/4 turns beyond the finger tight position, keeping the body steady with a backup wrench.
   - Tightens 3/4 turns for 1/16, 1/8, and 3/16 in.; 2,3, and 4mm fittings.
   - For re-use, see re-assembly instruction.

Tube Insert
DI



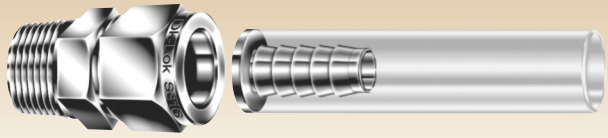
fractional

Part No.	Plastic Tube D(Tube OD) in	D(Tube OD) mm	D_1(Tube ID) in	D_1(Tube ID) mm	E
DI 3-2	3/16	4.76	1/8	3.17	2.28
DI 4-2	1/4	6.35	1/8	3.17	2.28
DI 4-3	1/4	6.35	3/16	4.76	3.55
DI 5-2	5/16	7.93	1/8	3.17	2.28
DI 5-3	5/16	7.93	3/16	4.76	3.04
DI 5-4	5/16	7.93	1/4	6.35	4.82
DI 6-3	3/8	9.52	3/16	4.76	3.04
DI 6-4	3/8	9.52	1/4	6.35	4.82
DI 8-4	1/2	12.7	1/4	6.35	4.82
DI 8-6	1/2	12.7	3/8	9.52	7.87
DI 10-6	5/8	15.87	3/8	9.52	7.87
DI 10-8	5/8	15.87	1/2	12.70	11.17
DI 12-8	3/4	19.05	1/2	12.70	11.17
DI 12-10	3/4	19.05	5/8	15.87	14.22
DI 16-12	1	25.4	3/4	19.05	17.52

Installation Instructions

Tube Insert

for Nylon or Soft Plastic Tubing



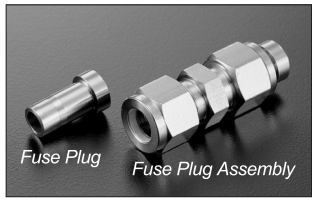
Dk-Lok tube insert supports the soft plastic tube internally. This helps the soft tube to connect to Dk-Lok port with no collapse.

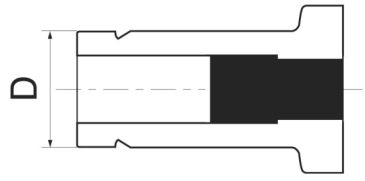
1. Fully insert the tube insert into the soft tube end.
2. Insert the soft tube end into the Dk-Lok port.
3. Finger-tighten the nut.
4. Tighten the nut 1 1/4 turns with a wrench, keeping the body steady with a backup wrench.
   - Tighten 3/4 turn for 3/16 in. tube fittings.

metric

Part No.	Plastic Tube D(Tube OD)	D_1(Tube ID)	E
DI 6M-4M	6	4	2.8
DI 8M-6M	8	6	4.4
DI 10M-8M	10	8	6.4
DI 12M-8M	12	8	6.4
DI 12M-10M	12	10	8.3

Fuse Plug
DFA





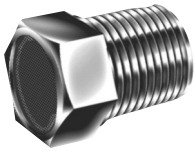
Dk-Lok fuse plug is applicable where heat could initiate fire or an explosive chemical reaction. Fuse plug alloy metal melts or yields at the rated temperature. This is designed to use with Dk-Lok port 3/8 in. OD.

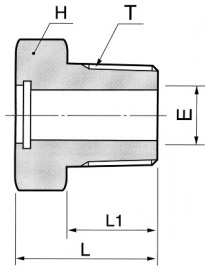
- Maximum applicable instrument pressure: 10 bar (145 psig)

Connects Dk-Lok *port 3/8 in. OD*

Part No.	Tube O.D. D in	D mm	Temperature Designator	Nominal Temperature Rating
DFA-6-160-S	3/8	9.52	160	160°F(71°C)
DFA-6-201-S	3/8	9.52	201	201°F(94°C)
DFA-6-255-S	3/8	9.52	255	255°F(124°C)
DFA-6-281-S	3/8	9.52	281	281°F(138°C)

Vent Protector
DMD





Connects to female NPT thread

Part No.	T NPT	E Min.	H in	H mm	L	L1
DMD-4N	1/4	7.11	9/16	15.87	20.57	14.22
DMD-6N	3/8	10.40	11/16	17.46	20.57	14.22
DMD-8N	1/2	12.70	7/8	23.81	26.92	19.05
DMD-12N	3/4	16.00	1-1/16	26.98	28.70	19.05

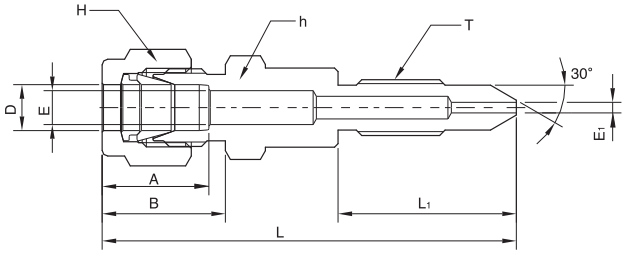
Construction with bored-through pipe plug and stainless steel 40 x 40 mesh, 0.010 in. diameter.

Dk-Lok vent protector known as bug protector protects foreign particles like insects or debris from entering open ends of instruments or outlet vents.

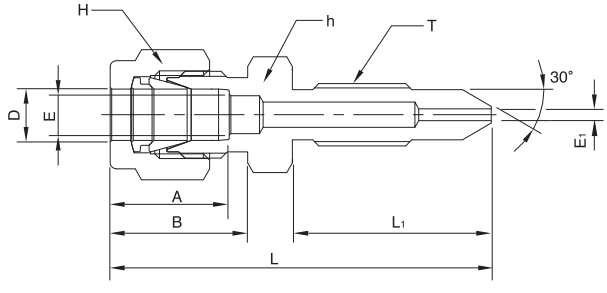
Calibration Fittings
DPCM

DP Transmitter Calibration fittings

Dk-Lok Calibration fitting connects directly to the bleed port of a differential pressure transmitter. This helps simplify the calibration process. Two sizes of threads are available to fit the vent port of Yokogawa/Rosemount, and Honeywell differential pressure transmitters. The conical metal-to-metal sealing face on the straight thread requires no PTFE tape.



2U thread calibration fitting for Yokogawa/Rosemount DP transmitters



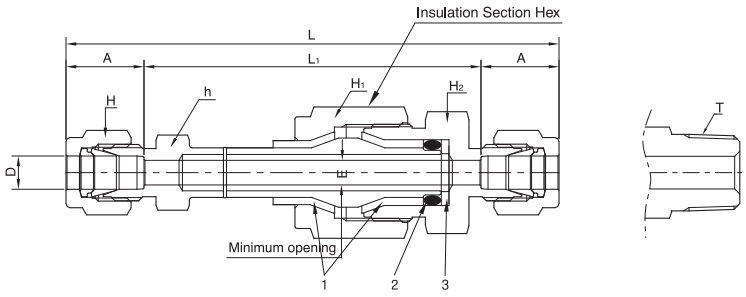
1U thread calibration fitting for Honeywell DP transmitters

Part No.	Tube O.D. D		Straight Thread	E	E1 Min.	Width across flat h		Width across flat H		A	B	L	L1
	in	mm	T(U)			in	mm	in	mm				
DPCM 4-1U-S	1/4	6.35	1/4-28	4.8	1.5	1/2	12.7	9/16	14.28	15.24	17.78	43.08	19.90
DPCM 4-2U-S	1/4	6.35	5/16-24	4.8	1.5	1/2	12.7	9/16	14.28	15.24	17.78	59.23	35.75

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Dielectric Fittings

DEU



Materials & Technical Information

- Insulator: Molded Thermoplastic
- Standard O-ring & Back Up Ring : 90 Durometer FKM / Virgin PTFE for Temperature Rating of -40 to 200°F (-40 to 93°C)
- Optional Application : **Low Temperature Rating** of -76 to 200°F **(-60 to 93°C)**
- Pressure Rating: 4,000 psig (275 bar) @ 70°F (21°C)
- Electrical Resistance at 70°F(21°C): 10x10⁶Ω @ 10 Volts DC, voltage breakdown resistance 3,000 Volts DC.
- Body, Ferrules, Nuts: Stainless Steel 316

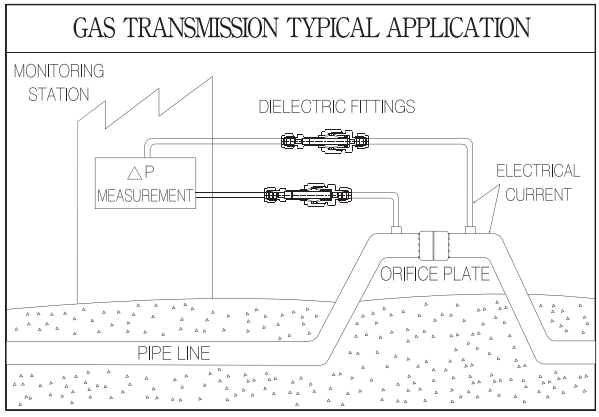
Ordering Information

To order, select part Number listed below. Example : **DEU10M-S**
To order, Low Temperature(-60C) application, Insert designator **-LT(Low Temperature)** into the basic Part Number. Example : DEU10M-**LT**-S

Part No.	Tube O.D. D		Pipe Thread	E Min		A	L	L1	Width across flat							
									h		H		H1		H2	
	in	mm	T(NPT)	in	mm				in	mm	in	mm	in	mm	in	mm
DEU 4	1/4	6.35		0.19	4.8	15.21	100.8	70.3	1/2	12.7	9/16	14.28	7/8	22.22	13/16	20.64
DEU 6	3/8	9.52		0.28	7.1	16.78	104.3	70.8	5/8	15.87	11/16	17.46				
DEU 8	1/2	12.7				22.85	110.9	65.2	13/16	20.6	7/8	22.22				
DEU 10M		10.0				17.03	106.2	72.2		18		19				
DEU 12M		12.0				21.84	109.4	65.7		22		22				22
DEMC 6-4N	3/8	9.52	1/4			16.87	99.72	-	5/8	15.87	11/16	17.46			13/16	20.64
Special Internal Bore																
DEU8-E10M	1/2	12.7			10.0	22.84	111.4	65.7		20.64		22.22	1	25.4	7/8	22.22
DEU6M-E4M		6.00			4.0	15.23	100.8	70.3		14		14	7/8	22.22	13/16	20.64
DEU8M-E6M		8.00			6.0	16.00	104.20	72.20		15		16	7/8	22.22	13/16	20.64
DEU10M-E8M		10.00			8.0	17.03	106.20	72.10		18		19	1	25.40		22
DEU12M-E10M		12.00			10.0	21.84	109.42	65.73		22		22	1	25.40		22
DEU14M-E10M		14.00			10.0	24.4	113.1	64.2		24		25	1	25.4		24

Di-electric tube fitting is designed to apply where electrical current flowing through a pipe or tubing line must be interrupted to protect instruments.

Di-electric Tube fitting is commonly used in the natural gas transmission station where installed on impulse lines ahead of stations. This fitting interrupts cathodic current flow while permitting full fluid flow.



Function

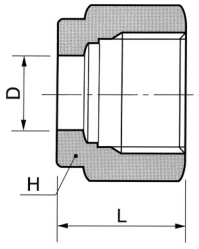
- The insulation function is performed by thermoplastic insulators.
- FKM O-ring and PTFE back up ring provide fluid containment function within the fitting.
- Dk-Lok twin ferrule system provides reliable sealing in the impulse line tubing.

Caution

CAUTION
DO NOT WRENCH THIS HEX
NOR DISASSEMBLE THIS CONNECTION

This “NO wrenching label” is placed on the insulation section hex. This insulation connection must not be disconnected.

Nut
DN



fractional

Part No.	Tube O.D. D		Width across flat H		L
	in	mm	in	mm	
DN-1	1/16	1.59	5/16	7.93	7.90
DN-2	1/8	3.17	7/16	11.11	11.93
DN-3	3/16	4.76	1/2	12.70	11.93
DN-4	1/4	6.35	9/16	14.28	12.70
DN-5	5/16	7.93	5/8	15.87	13.46
DN-6	3/8	9.52	11/16	17.46	14.22
DN-8	1/2	12.70	7/8	22.22	17.52
DN-10	5/8	15.87	1	25.40	17.52
DN-12	3/4	19.05	1-1/8	28.57	17.52
DN-14	7/8	22.22	1-1/4	31.75	17.52
DN-16	1	25.40	1-1/2	38.10	20.57
DN-20	1-1/4	31.75	1-7/8	47.63	31.75
DN-24	1-1/2	38.10	2-1/4	57.15	38.10
DN-32	2	50.80	3	76.20	52.32

metric

Part No.	Tube O.D. D	Width across flat H	L
DN - 2M	2	12	11.90
DN - 3M	3	12	11.90
DN - 4M	4	12	11.90
DN - 6M	6	14	12.70
DN - 8M	8	16	13.50
DN - 10M	10	19	15.10
DN - 12M	12	22	17.40
DN - 15M	15	25	17.40
DN - 16M	16	25	17.40
DN - 18M	18	30	17.40
DN - 20M	20	32	17.40
DN - 22M	22	32	17.40
DN - 25M	25	38	20.60
DN - 28M	28	46	30.60
DN - 32M	32	50	34.40
DN - 38M	38	60	40.60

Ferrule Set
DFS

fractional

Part No.	Tube O.D.	
	in	mm
DFS-1	1/16	1.59
DFS-2	1/8	3.17
DFS-3	3/16	4.76
DFS-4	1/4	6.35
DFS-5	5/16	7.93
DFS-6	3/8	9.52
DFS-8	1/2	12.70
DFS-10	5/8	15.87
DFS-12	3/4	19.05
DFS-14	7/8	22.22
DFS-16	1	25.40
DFS-20	1-1/4	31.75
DFS-24	1-1/2	38.10
DFS-32	2	50.80

metric

Part No.	Tube O.D.
DFS-2M	2
DFS-3M	3
DFS-4M	4
DFS-6M	6
DFS-8M	8
DFS-10M	10
DFS-12M	12
DFS-14M	14
DFS-15M	15
DFS-16M	16
DFS-18M	18
DFS-20M	20
DFS-22M	22
DFS-25M	25
DFS-28M	28
DFS-30M	30
DFS-32M	32
DFS-38M	38

Nut-Ferrule Set
DFSN

fractional

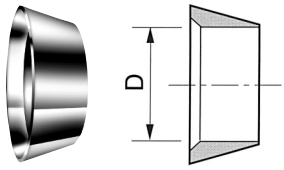
Part No.	Tube O.D. (in.)
DFSN-1	1/16
DFSN-2	1/8
DFSN-3	3/16
DFSN-4	1/4
DFSN-5	5/16
DFSN-6	3/8
DFSN-8	1/2
DFSN-10	5/8
DFSN-12	3/4
DFSN-14	7/8
DFSN-16	1
DFSN-20	1-1/4
DFSN-24	1-1/2
DFSN-32	2

metric

Part No.	Tube O.D. (mm)
DFSN-2M	2
DFSN-3M	3
DFSN-4M	4
DFSN-6M	6
DFSN-8M	8
DFSN-10M	10
DFSN-12M	12
DFSN-14M	14
DFSN-15M	15
DFSN-16M	16
DFSN-18M	18
DFSN-20M	20
DFSN-22M	22
DFSN-25M	25
DFSN-28M	28
DFSN-30M	30
DFSN-32M	32
DFSN-38M	38

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

Front Ferrule DFF



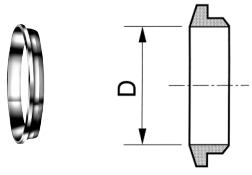
fractional

Part No.	Tube O.D. D	
	in	mm
DFF-1	1/16	1.59
DFF-2	1/8	3.17
DFF-3	3/16	4.76
DFF-4	1/4	6.35
DFF-5	5/16	7.93
DFF-6	3/8	9.52
DFF-8	1/2	12.70
DFF-10	5/8	15.87
DFF-12	3/4	19.05
DFF-14	7/8	22.22
DFF-16	1	25.40
DFF-20	1-1/4	31.75
DFF-24	1-1/2	38.10
DFF-32	2	50.80

metric

Part No.	Tube O.D. D
DFF-2M	2
DFF-3M	3
DFF-4M	4
DFF-6M	6
DFF-8M	8
DFF-10M	10
DFF-12M	12
DFF-15M	15
DFF-16M	16
DFF-18M	18
DFF-20M	20
DFF-22M	22
DFF-25M	25
DFF-28M	28
DFF-32M	32
DFF-38M	38

Back Ferrule DFB



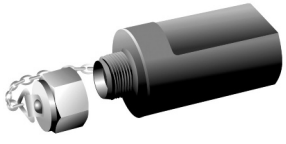
fractional

Part No.	Tube O.D. D	
	in	mm
DFB-1	1/16	1.59
DFB-2	1/8	3.17
DFB-3	3/16	4.76
DFB-4	1/4	6.35
DFB-5	5/16	7.93
DFB-6	3/8	9.52
DFB-8	1/2	12.70
DFB-10	5/8	15.87
DFB-12	3/4	19.05
DFB-14	7/8	22.22
DFB-16	1	25.40
DFB-20	1-1/4	31.75
DFB-24	1-1/2	38.10
DFB-32	2	50.80

metric

Part No.	Tube O.D. D
DFB-2M	2
DFB-3M	3
DFB-4M	4
DFB-6M	6
DFB-8M	8
DFB-10M	10
DFB-12M	12
DFB-15M	15
DFB-16M	16
DFB-18M	18
DFB-20M	20
DFB-22M	22
DFB-25M	25
DFB-28M	28
DFB-32M	32
DFB-38M	38

Preswaging Tool DPS



Fractional Dk-Lok

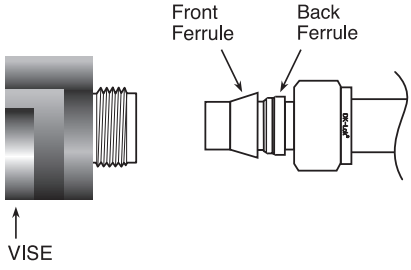
Part No.	Tube O.D. (in.)
DPS-4-C	1/4
DPS-5-C	5/16
DPS-6-C	3/8
DPS-8-C	1/2
DPS-12-C	3/4

metric Dk-Lok

Part No.	Tube O.D. (mm)
DPS-3M-C	3
DPS-6M-C	6
DPS-8M-C	8
DPS-10M-C	10
DPS-12M-C	12
DPS-16M-C	16
DPS-18M-C	18
DPS-20M-C	20

Operation Instructions

Pre-swaging Tool (DPS)



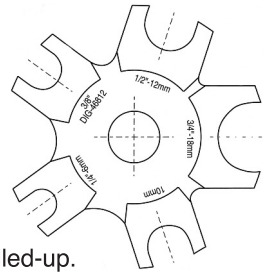
Operation on Pre-Swaging Tool

1. Clamp the DPS on the VISE steadily.
2. Install the Dk-Lok nut, ferrules onto the tubing.
3. Insert the loose ferrules and loose nut installed tubing end into the DPS until it is bottomed on the shoulder of the DPS.
4. Finger-tighten the nut.
5. Scribe the nut at the 6 o'clock position.
6. Wrench-tighten the nut 1 1/4 turns to the 9 o'clock position.
   - Tighten the nut 3/4 turn to the 3 o'clock position for 1/16, 1/8, and 3/16 in.; 2, 3, and 4 mm tube fittings.
7. Un-thread the nut.
8. Remove the tubing with pre-swaged ferrules from the DPS.
   - In case the tubing is difficult to remove from DPS, gently rock the tubing back and forth. Do not rotate the tubing.

Assembly on Fitting

1. Insert the ferrule pre-swaged tubing into the fitting body until the front ferrule seats.
2. Hand-tighten the nut.
3. Wrench-tighten the nut to the previously pulled-up position; at this point, a sharp rise in torque is felt.
4. Tighten slightly with a wrench.

Gap Gauge
DIG

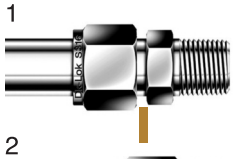


This no-go gap gauge is useful tool to inspect the Dk-Lok initially pulled-up.

Operation Instructions

On initial assembly, apply Dk-Lok no-go gap inspection gauge to make sure that the make-up distance is sufficiently pulled-up.

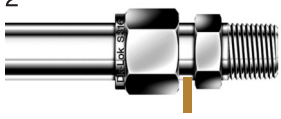
1



Refer to Fig 1.

1. The gap gauge does not fit the gap between the nut and the body hex. This ensures that the fitting is sufficiently tightened on initial assembly.

2



Refer to Fig 2.

2. The gap gauge fits the gap between the nut and the body hex. The fitting requires an additional tightening.

Part No.	Fitting Size	
	in.	mm
DIG-46812	This gauge works on eight sizes	
	1/4, 3/8, 1/2, and 3/4.	6, 10, 12, and 18
DIG-5	5/16	-
DIG-12	3/4	-
DIG-16	1	25

Tube Depth Marking Tool
DTM

Marking on tubing prior to make-up with Dk-Lok.

Operation Instruction

1. Insert tubing into DTM until it is bottomed on tool.
2. Mark the tube at the top of the DTM with a pen.
3. Remove the tube from the DTM and insert into Dk-Lok fitting until it is bottomed on the shoulder of the fitting body.
4. If the marking can be seen above the fitting nut, it indicates the tube not fully bottomed inside the fitting.

Fractional

Part No.	Tube O.D. (in.)
DTM-4-C	1/4
DTM-6-C	3/8
DTM-8-C	1/2
DTM-10-C	5/8
DTM-12-C	3/4
DTM-16-C	1

metric

Part No.	Tube O.D. (mm)
DTM-6M-C	6
DTM-8M-C	8
DTM-10M-C	10
DTM-12M-C	12
DTM-16M-C	16
DTM-25M-C	25

Pre-Swaging Units

Hydraulic Swaging Unit
DHS-2A

Electric Swaging Unit
DES-1A

Model:
Model No.:

Pre-swaging units for Dk-Lok ferrules onto tubing.

in.	1/2, 5/8, 3/4, 1, 1 1/4, 1 1/2, and 2.
mm	12, 14, 15, 16, 18, 20, 22, 25, 28, 30, 32, and 38.

Pre-swaging unit must be used to install 1 1/4, 1 1/2, and 2 in. and 28, 30, 32, and 38 mm fittings.

Contact Dk-Lok authorized distributor for operating manuals of DHA-2A and DES-1A.

INSTALLATION INSTRUCTIONS

This instruction applies to Dk-Lok Tube Fittings as well as Dk-Lok Z series Tube Fittings.

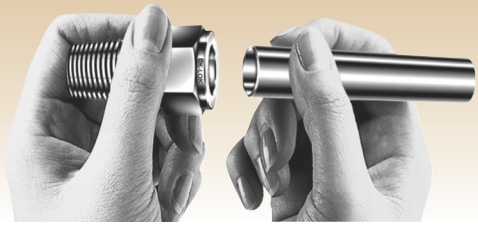
Dk-Lok is supplied finger-tight and ready for immediate use. Therefore fitting disassembly is not necessary for installation.

Tube-end preparation

Prior to installation, make sure to have tube-end cut 90 degree, and remove burrs from inside and outside tube ends.

Use proper cutter and maintain a sharp cutting wheel on it.

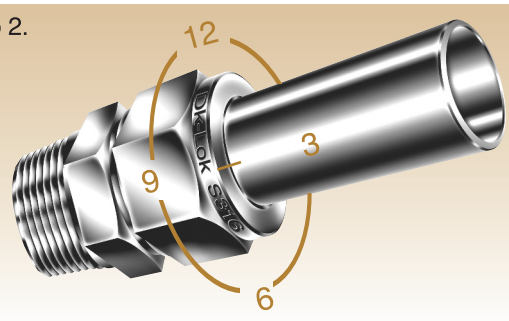
Step 1.



Insert the tubing into the Dk-Lok tube fitting until the tubing end bottoms on the shoulder of the fitting body.

- Make sure the nut finger-tight.

Step 2.



Scribe the nut at the 6 o'clock position and wrench-tighten the nut 1 1/4 turns to the 9 o'clock position, holding the body with a back up wrench.

- Tighten the nut 3/4 turn to the 3 o'clock position for 1/16, 1/8, and 3/16 in.; 2, 3, and 4mm tube fittings.

Dk-Lok Installation for High Pressure or High Safety Applications

1. Insert tubing on the Dk-Lok tube fitting until the tubing end bottoms on the shoulder of the fitting body.
2. Wrench-tighten the nut until the tubing does not rotate by hand or moves axially in the fitting.
3. Scribe the nut at 6 o'clock position.
4. Wrench-tighten the nut to the 9 o'clock position, holding the body with a back up wrench.
   - Only 3/4 turn to the 3 o'clock position is required for 1/16, 1/8, and 3/16 in.; 2, 3 and 4mm tube fittings.

Inspection of Gaugeable Dk-Lok fitting initially pulled-up

Dk-Lok tube fittings are gaugeable. This allows installer to inspect that the make-up distance is sufficiently pulled-up on initial assembly.

Refer to page on 77 for Gap Gauge Operation Instructions.

- Dk-Lok Gap Gauge is applicable to those Dk-Lok fittings made out of SS316, Carbon steel, Brass, and Exotic alloy materials.

Re-assembly Instructions

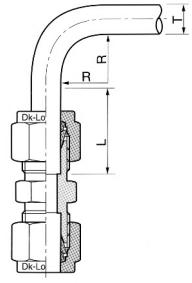
Dk-Lok can be used many times.
Prior to re-assembly, ensure the components are clean and free of defects.

1. Insert the ferrules swaged tubing into the body until the front ferrule seats firmly.
2. Hand-tighten the nut.
3. Wrench-tighten the nut to the previously pulled-up position; at this point, a sharp rise in torque is felt.
4. Tighten slightly with a wrench.

Tube handling during installation

Do not force the tubing into the fitting when it does not smoothly go in. It may be a deformed oval.

Tube installation



T : Tube O.D.

R : Radius

L : Straight tube length

In case tube bend is too close to a fitting, the bend section shall enter the fitting. This may not allow the tube to be bottomed in the fitting, resulting in leaks.

Keep the proper straight length of tube as shown in the tables.

- Do not bend a tube in the fitting. Use tube bender prior to installation onto fitting.

Fractional tube, in.	
T	L
1/16	1/2
1/8	23/32
3/16	3/4
1/4	13/16
5/16	7/8
3/8	15/16
1/2	1 3/16
5/8	1 1/4
3/4	1 1/4
7/8	1 5/16
1	1 1/2
1 1/4	2
1 1/2	2 13/32
2	3 1/4

Metric tube, mm	
T	L
3	19
6	21
8	23
10	25
12	31
14	32
15	32
16	32
18	32
20	34
22	34
25	40
28	46
30	50
32	54
38	63
50	80

DK-LOK Tube Fittings

DK-LOK Valves

DK-LOK Instrumentation Pipe & Weld Fittings

Quality System Certifications

ISO 9001:2000	AP1149
ISO 14001:2004	CL-K-E-1149
OHSMS 18001	HSBSK-S006
API Spec Q1	6D-0593
KEPIC-MN	MN-466
PED 97/23/EC Module D	HSBI-10-11-046
PED 97/23/EC Module H	HSBI-11-03-010
PED 97/23/EC Annex I	07-202-1326WZ-0941/10

Nuclear System and Product Certifications

ASME N	N-3185
ASME NPT	N-3186
ASME NS	N-3342
ASME NB	N-3185

Pressure Equipment Directive 97/23/EC

Module B&D	HSBI-10-11-045

DK-Lok Flange Adapter Leakproof Test per TA Luft requirements

TUV Rheinland	973-10014584

CRN

CRN	0A4788.2
CRN	0C07988.2
CRN	0C09275.2
CRN	0E07988.2
CRN	0C5191.2
CRN	0C07988.2

GOST

GOST	POCC KR.AB28.B02325
GOST	POCC KR.AB28.B02327

Type Approval Certifications

ABS	01-BK218882/3-PDA 09-BK522012-PDA BK720958-X
BV	14034/A1 BV
DNV	P-13044 P-13052
GL	47 924-03HH 47 925-03HH 40 504-01HH 40 505-01HH
KR	CWN80397-PE001
LR	01/10047 01/10048
NK	06FV101B

CNG Certifications

TUV Rheinland : AF-2009-0903-01		TUV SUD : 07-000026-PA-GMB-01
ECE R110	67-01	ECE Regulation NO. 110
ISO 15500-19	15500-15916	ECE Regulation NO. 67-02
ANSI	AGA NGV 3.1-1995,CGA NGV 12.3-M95	Compressed Gaseous Hydrogen (CGH2)
ANSI	AGA NGV 4.1-1999,CSA 125.M99	Liquid Hydrogen(LH2)
Draft ECE Compressed Gaseous Hydrogen Regulation,		
Revision 12b, 10/12/03.		
State of the art		

The information shown in this catalog are not for design purpose, but for reference only.
The accuracy of information is not the liability of our company.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance. Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user.
DK Tech accepts no liability for any improper selection, installation, operation or maintenance.

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DK Tech Corporation

DK-LOK®
Tube Fittings

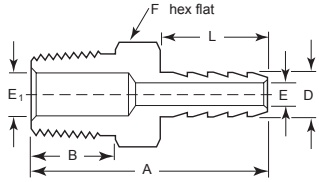
Hose Adapter Fittings

No.DHA-2
July 2013

DK-Lok Hose Adapter Fittings are designed for use with soft plastic or rubber tubing.

Features

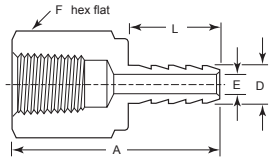
- Standard hose barb design is for use with hose sleeve or hose clamp.
- DK-Lok hose adapter fittings are reusable.
- Stainless steel and brass construction.



Male Adapter

Part No.	End Connections		Dimensions, in.						
	Hose ID	Male NPT	A	B	D	E	E1	F	L
DHAM 2-2N	1/8	1/8	1.08	0.38	0.15	0.08	0.19	7/16	0.40
DHAM 2-4N	1/8	1/4	1.26	0.56	0.15	0.08	0.28	9/16	0.40
DHAM 3-2N	3/16	1/8	1.27	0.38	0.23	0.12	0.12	7/16	0.59
DHAM 3-4N	3/16	1/4	1.45	0.56	0.23	0.12	0.28	9/16	0.59
DHAM 4-2N	1/4	1/8	1.47	0.38	0.30	0.19	0.19	7/16	0.79
DHAM 4-4N	1/4	1/4	1.65	0.56	0.30	0.19	0.19	9/16	0.79
DHAM 4-6N	1/4	3/8	1.66	0.56	0.30	0.19	0.19	11/16	0.79
DHAM 4-8N	1/4	1/2	1.85	0.75	0.30	0.19	0.47	7/8	0.79
DHAM 5-2N	5/16	1/8	1.55	0.38	0.38	0.19	0.19	7/16	0.87
DHAM 5-4N	5/16	1/4	1.73	0.56	0.38	0.19	0.19	9/16	0.87
DHAM 5-6N	5/16	3/8	1.74	0.56	0.38	0.19	0.19	11/16	0.87
DHAM 5-8N	5/16	1/2	1.96	0.75	0.38	0.19	0.47	7/8	0.87
DHAM 6-4N	3/8	1/4	1.73	0.56	0.45	0.30	0.30	9/16	0.87
DHAM 6-6N	3/8	3/8	1.74	0.56	0.45	0.30	0.30	11/16	0.87
DHAM 6-8N	3/8	1/2	1.96	0.75	0.45	0.30	0.30	7/8	0.87
DHAM 8-4N	1/2	1/4	1.80	0.56	0.60	0.38	0.28	11/16	0.94
DHAM 8-6N	1/2	3/8	1.81	0.56	0.60	0.38	0.38	11/16	0.94
DHAM 8-8N	1/2	1/2	2.03	0.75	0.60	0.38	0.38	7/8	0.94
DHAM 10-6N	5/8	3/8	1.88	0.56	0.75	0.50	0.38	1 1/16	0.98
DHAM 10-8N	5/8	1/2	2.07	0.75	0.75	0.47	0.47	1 1/16	0.98
DHAM 10-12N	5/8	3/4	2.07	0.75	0.75	0.50	0.63	1 1/16	0.98
DHAM 12-8N	3/4	1/2	2.14	0.75	0.90	0.63	0.47	1 1/16	1.05
DHAM 12-12N	3/4	3/4	2.14	0.75	0.90	0.63	0.63	1 1/16	1.05
DHAM 12-16N	3/4	1	2.13	0.94	0.90	0.63	0.88	1 3/8	1.05
DHAM 16-12N	1	3/4	2.38	0.75	1.20	0.88	0.63	1 3/8	1.19
DHAM 16-16N	1	1	2.57	0.94	1.20	0.88	0.88	1 3/8	1.19
Part No.	**Hose ID**	**Male ISO 7-1**	**A**	**B**	**D**	**E**	**E1**	**F**	**L**
DHAM 2-2R	1/8	1/8	1.28	0.38	0.15	0.08	0.19	7/16	0.40
DHAM 4-2R	1/4	1/8	1.47	0.38	0.30	0.19	0.19	7/16	0.79
DHAM 4-4R	1/4	1/4	1.65	0.56	0.30	0.19	0.19	9/16	0.79
DHAM 4-6R	1/4	3/8	1.66	0.56	0.30	0.19	0.19	11/16	0.79
DHAM 6-4R	3/8	1/4	1.73	0.56	0.45	0.30	0.30	9/16	0.87
DHAM 6-6R	3/8	3/8	1.74	0.56	0.45	0.30	0.30	11/16	0.87
DHAM 6-8R	3/8	1/2	1.96	0.75	0.45	0.30	0.30	7/8	0.87
DHAM 8-8R	1/2	1/2	2.03	0.75	0.60	0.38	0.47	7/8	0.94

Female Adapter



Part No.	End Connections		Dimensions, in.				
	Hose ID	NPT Size	A	D	E	F	L
DHAF 2-2N	1/8	1/8	1.11	0.15	0.08	9/16	0.40
DHAF 2-4N	1/8	1/4	1.26	0.15	0.08	3/4	0.40
DHAF 3-2N	3/16	1/8	1.29	0.23	0.12	9/16	0.59
DHAF 3-4N	3/16	1/4	1.44	0.23	0.12	3/4	0.59
DHAF 4-2N	1/4	1/8	1.47	0.30	0.19	9/16	0.79
DHAF 4-4N	1/4	1/4	1.64	0.30	0.19	3/4	0.79
DHAF 4-6N	1/4	3/8	1.71	0.30	0.19	7/8	0.79
DHAF 5-4N	5/16	1/4	1.73	0.38	0.19	3/4	0.87
DHAF 5-6N	5/16	3/8	1.82	0.38	0.19	7/8	0.87
DHAF 6-4N	3/8	1/4	1.69	0.45	0.30	3/4	0.87
DHAF 6-6N	3/8	3/8	1.78	0.45	0.30	7/8	0.87
DHAF 6-8N	3/8	1/2	2.03	0.45	0.30	1 1/16	0.87
DHAF 8-8N	1/2	1/2	2.13	0.60	0.38	1 1/16	0.94

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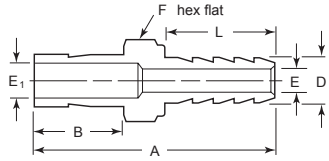
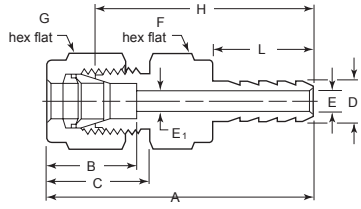
Tube Adapter



Part No.	End Connections		Dimensions, in.						
	Hose ID	Tube Size	A	B	D	E	E1	F	L
DHAT 2-2T	1/8	1/8	1.36	0.54	0.15	0.08	0.09	5/16	0.40
DHAT 2-4T	1/8	1/4	1.46	0.64	0.15	0.08	0.19	3/8	0.40
DHAT 4-4T	1/4	1/4	1.85	0.64	0.30	0.19	0.19	7/16	0.79
DHAT4-6T	1/4	3/8	1.91	0.70	0.30	0.19	0.28	7/16	0.79
DHAT 4-6MT	1/4	6mm	1.88	0.64	0.30	0.19	0.18	7/16	0.79
DHAT 5-4T	5/16	1/4	1.93	0.64	0.37	0.19	0.19	7/16	0.87
DHAT 6-4T	3/8	1/4	1.93	0.64	0.45	0.30	0.17	9/16	0.87
DHAT 6-6T	3/8	3/8	1.99	0.70	0.45	0.30	0.28	9/16	0.87
DHAT 6-8T	3/8	1/2	2.25	0.96	0.45	0.30	0.39	5/8	0.87
DHAT 8-6T	1/2	3/8	2.06	0.70	0.60	0.38	0.28	11/16	0.94
DHAT 8-8T	1/2	1/2	2.32	0.96	0.60	0.38	0.39	11/16	0.94
DHAT 12-12T	3/4	3/4	2.49	1.02	0.90	0.63	0.59	1 3/16	1.05
DHAT 16-16T	1	1	3.02	1.30	1.20	0.88	0.80	1 3/8	1.19

Dk-Lok Tube Fitting Adapter

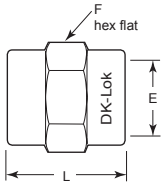


Part No.	End Connections		Dimensions, in.								
	Hose ID	Tube OD	A	B	D	E	E1	F	G	H	L
DHAD 2-2-	1/8	1/8	1.46	0.60	0.15	0.08	0.08	7/16	7/16	1.17	0.40
DHAD 4-2-	1/4	1/8	1.85	0.70	0.30	0.09	0.19	7/16	7/16	1.56	0.79
DHAD 4-4-	1/4	1/4	1.94	0.70	0.30	0.19	0.19	9/16	9/16	1.63	0.79
DHAD 6-4-	3/8	1/4	2.01	0.76	0.45	0.19	0.30	9/16	9/16	1.70	0.87
DHAD 6-6-	3/8	3/8	2.06	0.76	0.45	0.30	0.30	3/4	11/16	1.77	0.87
DHAD 8-8-	1/2	1/2	2.24	0.86	0.60	0.38	0.41	7/8	7/8	1.84	0.94

Hose Sleeve

Secure soft plastic or rubber hose using a hose sleeve.

- Light weight aluminum construction.
- Easy and quick installation with a wrench.
- Reusable.



Part No.	End Connections		Dimensions, in.		
	Hose ID	Hose OD	E	F	L
DHAS 2-4-AL	1/8	1/4	0.26	3/8	0.40
DHAS 4-6-AL	1/4	3/8	0.41	9/16	0.79
DHAS 4-7-AL	1/4	7/16	0.46	5/8	0.79
DHAS 4-8-AL	1/4	1/2	0.52	11/16	0.79
DHAS 5-7-AL	5/16	7/16	0.48	5/8	0.87
DHAS 6-8-AL	3/8	1/2	0.55	11/16	0.87
DHAS 6-9-AL	3/8	9/16	0.61	3/4	0.87
DHAS 7-10-AL	7/16	5/8	0.69	13/16	0.94
DHAS 8-11-AL	1/2	11/16	0.76	7/8	0.94
DHAS 12-16-AL	3/4	1	1.10	1 1/4	1.07

Field Assembly

1. Cut hose cleanly and squarely to the desired length.
2. Slide hose sleeve or clamp on hose
3. Lubricate hose.
4. Push hose on fitting barb end until hose bottoms up against fitting body hex.
4. Using a wrench tighten hose sleeve up to hose fitting hex. Or position hose clamp and secure with a screwdriver.

Note : Allow minimum 1/8" distance between hose clamp and body hex. to make sure of clamp being positioned on barbs.

Ordering information : Suffix **S** for stainless steel and **B** for brass fittings. Example : DHAD 4-4-**S.**

Safe Component Selection

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IDK-LOK

Fittings & Valves

Instrumentation Pipe & Weld Fittings

No.03-8
July 2013

ASME N ASME NPT ISO 9001 ISO 14001 OHSMS 18001 API Kepic Lloyd's Register Automotive CE ABS ABSA GL DNV RWTÜV KHNP

IDK-LOK®
Instrumentation Pipe & Weld Fittings

Technical Information

Thread Fittings

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

10K Thread Fittings

Thread Fittings for Over1"

Weld Fittings

Instrumentation Pipe & Weld Fittings

6000psig, 10000psig and standard rating

DK-Lok Thread Fittings

Three different ratings are available to fit your specific application.

- Standard rating : page 3
- 10,000 psig : page 12
- 6,000 psig : page 15

DK-Lok Weld Fittings

See page 16

- Tube Socket Weld
- Pipe Butt-weld

Features of DK-Lok Thread Fittings

- Wrench flat body design allowing standard Hex. wrench assembly.
- Attractive finishes to suit precision equipment.
- Much less-weight design compared to Class 3000 pipe fittings.
- Fine pipe thread construction equals or exceeds the requirement of ASME B1.20.1 to ensure maximum thread engagement.
- Male pipe threads capped for protection from damages.
- Fitting materials available in SS316, Brass and Carbon Steel.

Thread Fittings - Standard Rating

DK-Lok Thread Fittings - Standard Rating are designed to the requirements of ASME B31.3 process piping code.
The pipe thread sizes are available 1/8″ to 1″

Table 1. **Pressure Ratings**

Size Designator	NPT/ISO Pipe Size	Stainless Steel 316				Brass				Carbon Steel			
		Male		Female		Male		Female		Male		Female	
		bar	psig	bar	psig	bar	psig	bar	psig	bar	psig	bar	psig
2	1/8	689	10,000	420	6,100	337	4,900	207	3,000	689	10,000	420	6,100
4	1/4	558	8,100	434	6,300	275	4,000	214	3,200	558	8,100	434	6,300
6	3/8	524	7,600	345	5,000	262	3,800	172	2,500	524	7,600	345	5,000
8	1/2	517	7,500	324	4,700	255	3,700	158	2,300	517	7,500	324	4,700
12	3/4	496	7,200	303	4,400	248	3,600	152	2,200	496	7,200	303	4,400
16	1	365	5,300	296	4,300	172	2,500	145	2,100	365	5,300	296	4,300

- Pressure ratings listed are for temperature up to 37℃ (100℉)
- Pressure rating is calculated at -28 to 37℃ (-20 to 100℉) using allowable stress value of 20,000psi for SS316, 10,000psi for Brass, and 20,000psi for Carbon Steel as per ASME B31.3 Process Piping Code.
- To determine the working pressure of ASME B31.1 Power Piping Code, multiply the ASME B31.3 rating by 0.94. Brass pressure ratings remain the same.
- The pressure ratings of reducing hex bushing (GHB), pipe plug (GP), and shaped fittings such as Elbow, Tee, Crosses are not covered in this table. See the pressure rating in the dimensional table.

Table 2. **Material Standards and Temperature Range**

Materials	Bar Stock	Forgings	Maximum Temperature
Stainless Steel 316	ASTM A276 Type 316 / ASTM A479 Type 316	ASTM A182 F316	537℃ (1000℉)
Brass	JIS H3250 C3604 / ASTM B453 C35300	JIS H3250 C3771 / ASTM B283 C37700	204 ℃ (400℉)
Carbon Steel	ASTM A108 / JIS G4051 S20C - S48C	ASTM A105 / JIS G4051 S20C - S48C	190 ℃ (375 ℉)

Table 3. **Temperature De-rating Factors**

Temp.	℉	100	200	300	400	500	600	700	800	900	1,000	1,200
	℃	38	93	149	204	260	316	371	427	482	538	649
Factor	Stainless Steel	1.00	1.00	1.00	0.97	0.90	0.85	0.82	0.80	0.78	0.77	0.49
	Brass	1.00	0.78	0.69	0.13							
	Carbon Steel	1.00	0.94	0.91	0.88							

To determine the allowable working pressure at a specific temperature, multiply the working pressure by the applicable factor shown in table 3. Example: The working pressure of GNC-2N-S at 700 ℉. 10 000 psig x 0.82 = 8200 psig.

Table 4. **Temperature Ratings of O-ring, Gasket Materials**
System temperature may be limited by the O-ring, Gasket material or thread sealant.

Component	Applicable Part #	Material	Temperature Ratings
O-ring	Designator : BN	NBR	-20 to 105℃ (-4 to 221℉)
	Designator : VT	FKM	-28 to 204℃ (-18 to 400℉)
	Designator : KZ	FFKM	-30 to 275℃ (-22 to 527℉)
Copper Gasket	DGC-	Copper	-198 to 204℃ (-324 to 400℉)
NBR bonded Gasket	DGB-	NBR bonded Carbon Steel Ring	-40 to 110℃ (-40 to 230℉)
FKM bonded Gasket	DGV-	FKM bonded bonded Stainless Steel Ring	-28 to 204℃ (-20 to 400℉)

Table 5. **Pipe Thread Designator**

Designator	Pipe	NPT ASME B1.20.1	ISO Thread	
			Tapered ISO 7-1	Parallel ISO 228-1
2	1/8	2N	2R	2G
4	1/4	4N	4R	4G
6	3/8	6N	6R	6G
8	1/2	8N	8R	8G
12	3/4	12N	12R	12G
16	1	16N	16R	16G

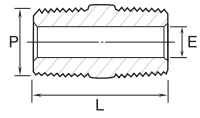
How to order

Select the desired fitting basic part number, and add a material designator below. Example: GL-2N-S

Material	SS 316 / 316L Dual Grade	Carbon Steel	Brass
Material Designator	S	C	B

CLOSE NIPPLE

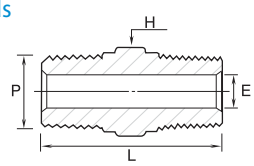
GNC Male NPT both ends



Part Number	P NPT in.	L mm	E mm
GNC- 2N	1/8	19.05	4.8
GNC- 4N	1/4	28.4	7.1
GNC- 6N	3/8	28.4	9.6
GNC- 8N	1/2	38.1	11.9
GNC-12N	3/4	38.1	15.7
GNC-16N	1	47.8	22.4

HEX NIPPLE

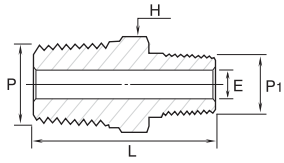
GNH Male NPT both ends



Part Number	P NPT in.	L mm	E mm	H Hex mm
GNH- 2N	1/8	25.65	4.8	11.1
GNH- 4N	1/4	35.56	7.1	14.2
GNH- 6N	3/8	36.32	9.6	17.4
GNH- 8N	1/2	46.73	11.9	22.2
GNH-12N	3/4	46.73	15.7	26.9
GNH-16N	1	58.92	22.3	34.9

HEX REDUCING NIPPLE

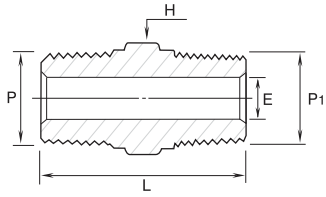
GNR Male NPT to reduced male NPT



Part Number	P NPT in.	P1 Reduced NPT in.	L mm	E mm	H Hex mm
GNR 4-2N	1/4	1/8	30.7	4.8	14.2
GNR 6-2N	3/8	1/8	32.0	4.8	17.4
GNR 6-4N	3/8	1/4	36.1	7.1	17.4
GNR 8-2N	1/2	1/8	37.2	4.8	22.2
GNR 8-4N	1/2	1/4	41.7	7.1	22.2
GNR 8-6N	1/2	3/8	41.7	9.6	22.2
GNR 12-4N	3/4	1/4	41.7	7.1	26.9
GNR 12-8N	3/4	1/2	46.7	11.9	26.9
GNR 16-4N	1	1/4	49.3	7.1	34.9
GNR 16-8N	1	1/2	54.1	11.9	34.9

HEX NIPPLE

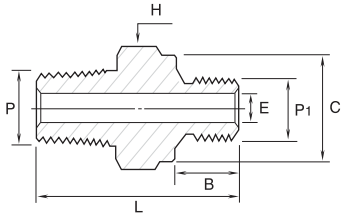
GNH Male NPT to ISO tapered



Part Number	P NPT in.	P1 ISO Thread Size	L mm	E mm	H Hex mm
GNH- 2NR	1/8	1/8-28 (7-1)	24.6	4.8	11.1
GNH- 4NR	1/4	1/4-19 (7-1)	35.6	7.1	14.2
GNH- 6NR	3/8	3/8-19 (7-1)	36.3	9.6	17.4
GNH- 8NR	1/2	1/2-14 (7-1)	46.7	11.9	22.2
GNH-12NR	3/4	3/4-14 (7-1)	46.7	15.7	26.9
GNH-16NR	1	1-11 (7-1)	58.9	22.4	34.9

HEX NIPPLE

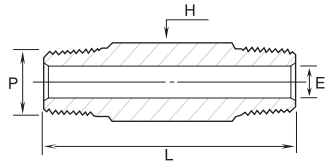
GNH Male NPT to male ISO parallel



Part Number	P NPT in.	P1 ISO Thread Size	L mm	B mm	C mm	E mm	H Hex mm
GNH- 2NG	1/8	1/8-28 (228-1)	27.4	7.1	13.7	4.1	14.2
GNH- 4NG	1/4	1/4-19 (228-1)	36.8	11.2	17.8	5.8	19.05
GNH- 6NG	3/8	3/8-19 (228-1)	37.6	11.2	21.8	7.9	22.2
GNH- 8NG	1/2	1/2-14 (228-1)	45.0	14.2	26.1	11.9	26.9
GNH-12NG	3/4	3/4-14 (228-1)	49.0	15.7	31.5	15.7	33.3
GNH-16NG	1	1-11 (228-1)	56.9	18.3	38.9	19.8	41

HEX LONG NIPPLE

GNL Male NPT both ends



Part Number	P NPT in.	L mm	E mm	H Hex mm
GNL- 2N	1/8	★	4.8	11.1
GNL- 4N	1/4	★	7.1	14.2
GNL- 6N	3/8	★	9.7	17.4
GNL- 8N	1/2	★	11.9	22.2
GNL-12N	3/4	★	15.7	26.9
GNL-16N	1	★	22.4	34.9

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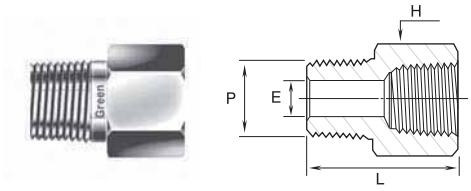
ADAPTER

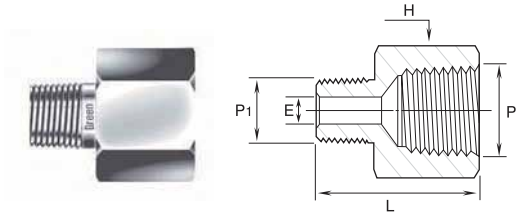
GAAMF Male NPT to equal female NPT



Part Number	P NPT in.	L mm	E mm	H Hex mm
GAAMF- 2N	1/8	27.94	4.8	14.2
GAAMF- 4N	1/4	35.56	7.1	19.05
GAAMF- 6N	3/8	38.35	9.6	22.2
GAAMF- 8N	1/2	49.27	11.9	26.9
GAAMF-12N	3/4	51.3	15.7	33.3
GAAMF-16N	1	57.91	22.3	41.2

REDUCING ADAPTER

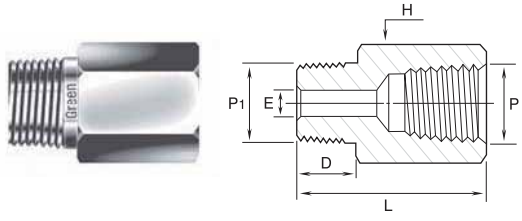
GABMF Male NPT to larger female NPT



Part Number	P1 Male NPT in.	P Female NPT in.	L mm	E mm	H Hex mm
GABMF 2- 4N	1/8	1/4	31.5	4.8	19.05
GABMF 2- 6N	1/8	3/8	33.5	4.8	22.2
GABMF 4- 6N	1/4	3/8	37.8	7.1	22.2
GABMF 2- 8N	1/8	1/2	40.0	4.8	26.9
GABMF 4- 8N	1/4	1/2	44.5	7.1	26.9
GABMF 6- 8N	3/8	1/2	44.5	9.6	26.9
GABMF 4-12N	1/4	3/4	45.7	7.1	33.3
GABMF 6-12N	3/8	3/4	45.7	9.6	33.3
GABMF 8-12N	1/2	3/4	51.1	11.9	33.3
GABMF 4-16N	1/4	1	50.8	7.1	41.2
GABMF 8-16N	1/2	1	54.9	11.9	41.2
GABMF 12-16N	3/4	1	55.1	15.7	41.2

ADAPTER

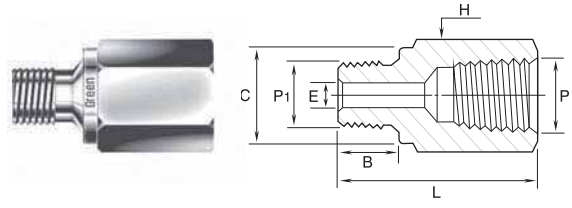
GACMF Male ISO tapered to Female NPT



Part Number	P NPT in.	P1 ISO Thread Size	L mm	D mm	E mm	H Hex mm
GACMF- 2RN	1/8	1/8-28 (7-1)	27.4	9.7	4.8	14.2
GACMF- 4RN	1/4	1/4-19 (7-1)	35.8	14.2	7.1	19.05
GACMF- 6RN	3/8	3/8-19 (7-1)	37.6	14.2	9.7	22.2
GACMF- 8RN	1/2	1/2-14 (7-1)	49.0	19.1	11.9	26.9
GACMF-12RN	3/4	3/4-14 (7-1)	50.3	19.1	15.7	33.3
GACMF-16RN	1	1-11 (7-1)	58.0	23.9	22.3	41.2

ADAPTER

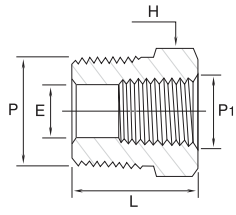
GADMF Male ISO parallel to female NPT



Part Number	P NPT in.	P1 ISO Thread Size	L mm	B mm	C mm	E mm	H Hex mm
GADMF- 2GN	1/8	1/8-28 (228-1)	24.9	7.1	13.7	4.1	14.2
GADMF- 4GN	1/4	1/4-19 (228-1)	33.3	11.2	17.8	5.8	19.05
GADMF- 6GN	3/8	3/8-19 (228-1)	37.8	11.2	21.8	7.9	22.2
GADMF- 8GN	1/2	1/2-14 (228-1)	43.9	14.2	26.1	11.9	26.9
GADMF-12GN	3/4	3/4-14 (228-1)	50.8	15.7	31.5	15.7	33.3
GADMF-16GN	1	1-11 (228-1)	53.1	18.3	38.9	19.8	41.2

REDUCING HEX BUSHING

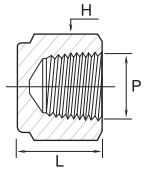
GHB Male NPT to reduced female NPT



Part Number	P Male NPT in.	P1 Female NPT in.	L mm	E mm	H Hex mm	Working Pressure bar (psig)	
						SS316,C.Steel	Brass
GHB 4- 2N	1/4	1/8	26.7	7.1	14.2	447 (6400)	227 (3200)
GHB 6- 2N	3/8	1/8	21.8	8.5	17.4	633 (9100)	323 (4600)
GHB 6- 4N	3/8	1/4	30.0	9.6	19.05	454 (6500)	227 (3200)
GHB 8- 2N	1/2	1/8	27.4	8.5	22.2	840 (12100)	427 (6100)
GHB 8- 4N	1/2	1/4	27.4	11.7	22.2	571 (8200)	303 (4300)
GHB 8- 6N	1/2	3/8	35.6	11.9	22.2	365 (5200)	179 (2500)
GHB12- 4N	3/4	1/4	27.4	11.4	26.9	826 (11900)	413 (5900)
GHB12- 6N	3/4	3/8	27.4	15.0	26.9	564 (8100)	296 (4200)
GHB12- 8N	3/4	1/2	41.4	15.7	26.9	337 (4800)	165 (2300)
GHB16- 4N	1	1/4	34.8	11.4	34.9	999 (14400)	509 (7300)
GHB16- 8N	1	1/2	34.8	18.5	34.9	592 (8500)	296 (4200)
GHB16-12N	1	3/4	34.8	22.4	34.9	365 (5200)	179 (2500)

PIPE CAP

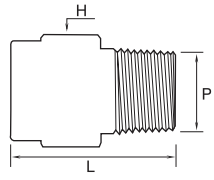
GC Female NPT



Part Number	P NPT in.	L mm	H Hex mm
GC- 2N	1/8	19.1	14.2
GC- 4N	1/4	22.9	19.05
GC- 6N	3/8	26.2	22.2
GC- 8N	1/2	34.0	26.9
GC-12N	3/4	36.6	33.3
GC-16N	1	41.1	41.2

PIPE PLUG

GP Male NPT

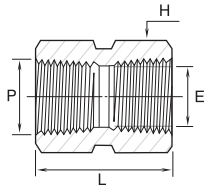


Part Number	P NPT in.	L mm	H Hex mm
GP- 2N	1/8	19.05	11.1
GP- 4N	1/4	24.1	14.2
GP- 6N	3/8	25	17.4
GP- 8N	1/2	30.5	22.2
GP-12N	3/4	30.5	26.9
GP-16N	1	38.1	34.9

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

HEX COUPLING

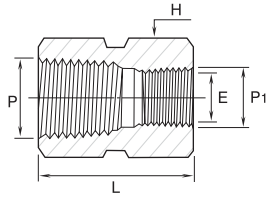
GCG Female NPT both ends



Part Number	P NPT in.	L mm	E mm	H Hex mm
GCG- 2N	1/8	20.57	8.9	14.2
GCG- 4N	1/4	30.22	10.87	19.05
GCG- 6N	3/8	33.27	15.0	22.2
GCG- 8N	1/2	39.62	18.7	26.9
GCG-12N	3/4	41.14	23.5	33.3
GCG-16N	1	50.8	29.7	41.2

HEX REDUCING COUPLING

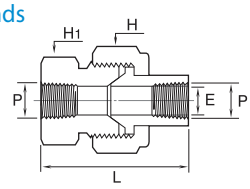
GCGR Female NPT to reduced female NPT



Part Number	P NPT in.	P1 Reduced NPT in.	L mm	E mm	H Hex mm
GCGR 4- 2N	1/4	1/8	31.2	8.9	19.05
GCGR 6- 4N	3/8	1/4	34.8	11.7	22.2
GCGR 8- 2N	1/2	1/8	39.4	8.7	26.9
GCGR 8- 4N	1/2	1/4	44.2	11.7	26.9
GCGR 8- 6N	1/2	3/8	45.0	15.0	26.9
GCGR 12- 4N	3/4	1/4	45.7	11.7	33.3
GCGR 16-12N	1	3/4	57.0	23.5	41.2

UNION BALL JOINT

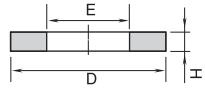
GJU Female NPT both ends



Part Number	P NPT in.	L mm	E mm	H Hex mm	H1 Wrench Flat mm
GJU- 2N	1/8	45.7	6.9	28.6	23.8
GJU- 4N	1/4	59.4	9.1	34.9	30.2
GJU- 6N	3/8	63.5	13.2	38.1	33.3
GJU- 8N	1/2	68.6	15.7	44.5	41.3
GJU-12N	3/4	79.2	22.4	50.8	47.6
GJU-16N	1	90.4	26.2	63.5	60.3

ISO PARALLEL COPPER GASKET

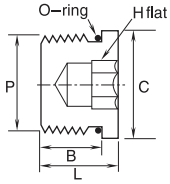
DGC For ISO Parallel male thread



Part Number	ISO 228-1	E mm	H mm	D mm
DGC- 2	1/8	9.9	1.0	15.0
DGC- 4	1/4	13.2	1.5	19.1
DGC- 6	3/8	16.8	1.5	23.1
DGC- 8	1/2	21.1	1.5	26.9
DGC-12	3/4	26.7	2.0	33.0
DGC-16	1	33.3	2.0	40.1

HOLLOW HEX PLUG

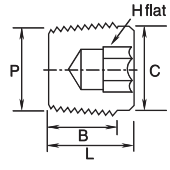
GPA Male SAE/MS Straight Thread



Part Number	P SAE/MS Thread	L mm	B mm	C mm	H mm	Uniform O-ring Size
GPA- 4U	7/16-20	11.4	9.1	14.2	4.76	-904
GPA- 6U	9/16-18	12.2	9.9	17.5	6.35	-906
GPA- 8U	3/4-16	14.2	11.2	22.4	7.93	-908
GPA-12U	1 1/16-12	19.1	15.0	31.8	14.28	-912
GPA-16U	1 5/16-12	19.1	15.0	38.1	15.87	-916

HOLLOW HEX PLUG

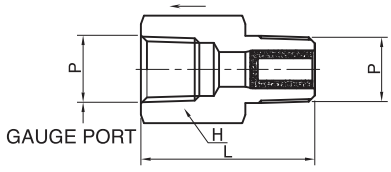
GPB Male NPT



Part Number	P NPT in.	L mm	B mm	C mm	H mm
GPB - 2N	1/8	10.4	7.4	9.4	4.76
GPB - 4N	1/4	15.5	12.4	12.1	6.35
GPB - 6N	3/8	15.0	11.9	15.7	7.93
GPB - 8N	1/2	19.3	16.2	19.3	9.52

SNUBBER FITTING GS

Snubber fitting consists of fitting and sintered SS316 element. This protects pressure gauge or instruments from system pressure surge and shock.
The sintered element damps (snubs) the line pressure shock but It eventually allows the gauge to readout the line pressure, reducing the gauge's response time.

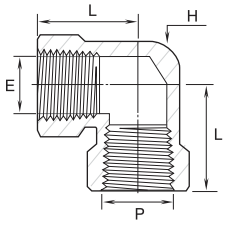


Part Number	P NPT in.	L mm	H mm	Working Pressure at 20°C (70°F) bar(psig)	
				SS316	Brass
GS-MF-4N-05*	1/4	35.6	3/4	303 (4400)	151 (2200)
GS-MF-8N-05*	1/2	49.3	1 1/16	337 (4900)	165 (2400)

Element Designator*	Pore Size Range,㎛	Element Porosity	Cv
05	0.5 - 2	17%	0.046
2	1 - 4	22%	0.056
7	5 - 10	27%	0.12
15	11 - 25	36%	0.13
60	50 - 75	44%	0.38
90	75 - 110	45%	0.50

ELBOW

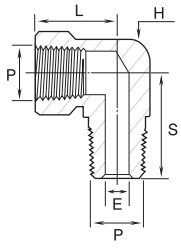
GL Female NPT both ends



Part Number	P NPT in.	L mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
					SS316, C.Steel	Brass
GL- 2N	1/8	24.1	8.9	12.7	6200 (427)	3100 (213)
GL- 4N	1/4	29.0	11.7	17.5	7200 (496)	3600 (248)
GL- 6N	3/8	34.5	15.0	20.6	5600 (385)	2800 (192)
GL- 8N	1/2	37.0	18.7	25.4	5600 (385)	2800 (192)
GL-12N	3/4	46.5	23.5	31.8	5100 (351)	2500 (172)
GL-16N	1	48.8	29.7	42.9	6400 (440)	3200 (220)

STREET ELBOW

GLS Female to male NPT

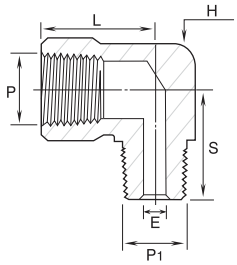


Part Number	P NPT in.	L mm	S mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
						SS316, C.Steel	Brass
GLS- 2N	1/8	24.1	19.6	4.8	12.7	6200 (427)	3100 (213)
GLS- 4N	1/4	29.0	26.5	7.1	17.5	7200 (496)	3600 (248)
GLS- 6N	3/8	34.5	28.2	9.6	20.6	5600 (385)	2800 (192)
GLS- 8N	1/2	37.0	35.3	11.9	25.4	5600 (385)	2800 (192)
GLS-12N	3/4	46.5	39.6	15.7	31.8	5100 (351)	2500 (172)
GLS-16N	1	48.8	49.2	22.3	42.9	5300 (365)	2600 (179)

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

REDUCING STREET ELBOW

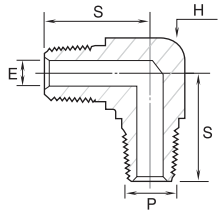
GLSR Female to reduced Male NPT



Part Number	P NPT in.	P1 Male NPT in.	L mm	S mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
							SS316, C.Steel	Brass
GLSR 4-2N	1/4	1/8	29.0	22.4	4.8	17.5	7200 (496)	3600 (248)
GLSR 6-4N	3/8	1/4	34.5	28.2	7.1	20.6	5600 (385)	2800 (192)
GLSR 8-4N	1/2	1/4	37.0	30.5	7.1	25.4	5600 (385)	2800 (192)
GLSR 8-6N	1/2	3/8	37.0	30.5	9.6	25.4	5600 (385)	2800 (192)
GLSR12-8N	3/4	1/2	46.5	41.6	11.9	31.8	5100 (351)	2500 (172)
GLSR16-8N	1	1/2	48.8	45.5	11.9	42.9	5300 (365)	2600 (179)

MALE ELBOW

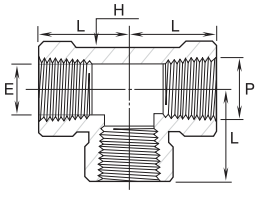
GLM Male NPT both ends



Part Number	P NPT in.	S mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
					SS316, C.Steel	Brass
GLM - 2N	1/8	19.05	4.8	12.7	10000 (689)	5000 (344)
GLM - 4N	1/4	24.5	7.1	12.7	8000 (551)	4000 (275)
GLM - 6N	3/8	26.9	9.6	17.5	7800 (537)	3900 (268)
GLM - 8N	1/2	33.2	11.9	20.6	7700 (530)	3800 (261)
GLM - 12N	3/4	35.3	15.7	25.4	7300 (502)	3600 (248)
GLM - 16N	1	44.5	22.3	31.8	5300 (365)	2600 (179)

TEE

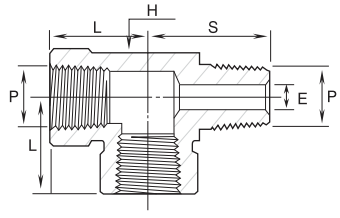
GT Female NPT



Part Number	P NPT in.	L mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
					SS316, C.Steel	Brass
GT- 2N	1/8	24.1	8.9	12.7	6200 (437)	3100 (213)
GT- 4N	1/4	29.0	11.7	17.5	7200 (496)	3600 (248)
GT- 6N	3/8	34.5	15.0	20.6	5600 (385)	2800 (192)
GT- 8N	1/2	37.0	18.7	25.4	5600 (385)	2800 (192)
GT-12N	3/4	46.5	23.5	31.8	5100 (351)	2500 (172)
GT-16N	1	48.8	29.7	42.9	6400 (440)	3200 (220)

RUN TEE

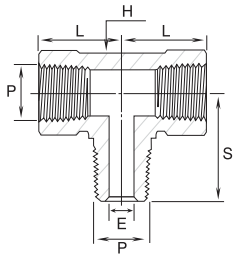
GTR Female to male to female NPT



Part Number	P NPT in.	L mm	S mm	E mm	H Wrench Flat mm	Pressure Rating psi (bar)	
						SS316, C.Steel	Brass
GTR- 2N	1/8	24.1	19.6	4.8	12.7	6200 (427)	3100 (213)
GTR- 4N	1/4	29.0	26.5	7.1	17.5	7200 (496)	3600 (248)
GTR- 6N	3/8	34.5	28.2	9.6	20.6	5600 (385)	2800 (192)
GTR- 8N	1/2	37.0	35.3	11.9	25.4	5600 (385)	2800 (192)
GTR-12N	3/4	46.5	39.6	15.7	31.8	5100 (351)	2500 (172)
GTR-16N	1	48.8	49.2	22.3	42.9	5300 (365)	2600 (179)

BRANCH TEE

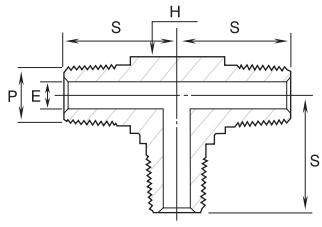
GTB Female to female to male NPT



Part Number	P NPT in.	L mm	S mm	E mm	H Wrench Flat mm	Pressure Ratings, psig(bar)	
						SS316, C.Steel	Brass
GTB- 2N	1/8	24.1	19.6	4.8	12.7	6200 (427)	3100 (213)
GTB- 4N	1/4	29.0	26.5	7.1	17.5	7200 (496)	3600 (248)
GTB- 6N	3/8	34.5	28.2	9.6	20.6	5600 (385)	2800 (192)
GTB- 8N	1/2	37.0	35.3	11.9	25.4	5600 (385)	2800 (192)
GTB-12N	3/4	46.5	39.6	15.7	31.8	5100 (351)	2500 (172)
GTB-16N	1	48.8	49.2	22.3	42.9	5300 (365)	2600 (179)

MALE TEE

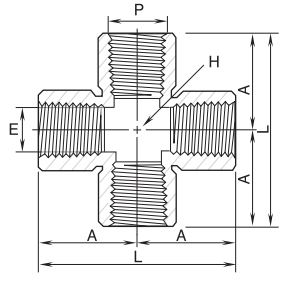
GTM Male NPT



Part Number	P NPT in.	S mm	E mm	H Wrench Flat mm	Pressure Ratings, psig(bar)	
					SS316, C.Steel	Brass
GTM- 2N	1/8	19.05	4.8	12.7	10000 (689)	5000 (344)
GTM- 4N	1/4	24.5	7.1	12.7	8000 (551)	4000 (275)
GTM- 6N	3/8	26.9	9.6	17.5	7800 (537)	3900 (268)
GTM- 8N	1/2	33.2	11.9	20.6	7700 (530)	3800 (261)
GTM-12N	3/4	35.3	15.7	25.4	7300 (502)	3600 (248)
GTM-16N	1	44.5	22.3	31.8	5300 (365)	2600 (179)

CROSS

GX Female NPT



Part Number	P NPT in.	L mm	E mm	H Wrench Flat mm	Pressure Ratings, psig(bar)	
					SS316, C.Steel	Brass
GX- 2N	1/8	48.2	8.6	12.7	6200 (427)	3100 (213)
GX- 4N	1/4	58.0	11.4	17.5	7200 (496)	3600 (248)
GX- 6N	3/8	69.0	15.0	20.6	5600 (385)	2800 (192)
GX- 8N	1/2	74.0	18.5	25.4	5600 (385)	2800 (192)
GX-12N	3/4	93.0	23.9	31.8	5100 (351)	2500 (172)
GX-16N	1	97.6	29.7	42.9	5300 (365)	2600 (179)

10K Thread Fittings

Pressure Rating : 10,000 psi (690 bar)

DK-LOK®
Instrumentation Pipe & Weld Fittings

10K Rating | Standard Rating

DK-Lok 10K Thread Fittings are especially designed to assure safe service in the high pressure application of 10 000psig.

The 10,000 psig working pressure satisfy the design requirements of ASME B31.3 Processing Pipe Code.

Features

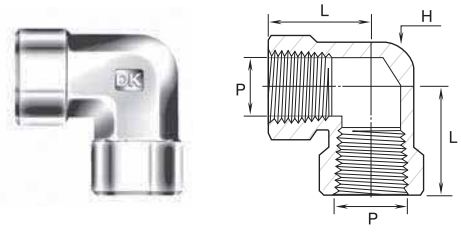
- The fittings are available in 1/8" through 1" pipe threads.
- The Male Pipe Threads are precisely rolled for a high pressure application.
- Fittings are available only in stainless steel material. Therefore the part numbers of these fittings include the material designator -S.

Table 5. **Material Standards**

Material	Form	Standards
Stainless Steel 316	Bar Stock	ASTM A276 Type 316 / ASTM A479 Type 316
	Forging	ASTM A182 F316

ELBOW

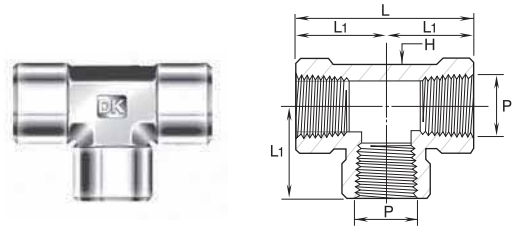
GL-10K Female NPT both ends



Part Number	P NPT in.	H Wrench flat in.(mm)	L mm
GL-2N-10K-S	1/8	13/16(20.65)	26.0
GL-4N-10K-S	1/4	1(25.4)	37.0
GL-6N-10K-S	3/8	1-1/4(31.75)	46.5
GL-8N-10K-S	1/2	1-11/16(42.86)	50.0
GL-12N-10K-S	3/4	50	57.0
GL-16N-10K-S	1	55	57.0

TEE

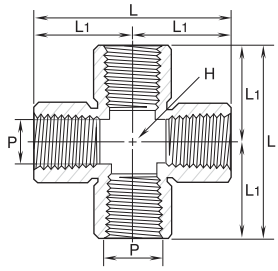
GT-10K Female NPT



Part Number	P NPT in.	H Wrench flat in.(mm)	L mm	L1 mm
GT-2N-10K-S	1/8	13/16(20.65)	52	26
GT-4N-10K-S	1/4	1(25.4)	74	37
GT-6N-10K-S	3/8	1-1/4(31.75)	93	46.5
GT-8N-10K-S	1/2	1-11/16(42.86)	100	50
GT-12N-10K-S	3/4	50	114	57
GT-16N-10K-S	1	55	114	57

CROSS

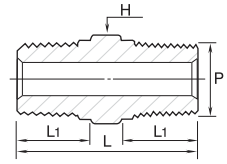
GX-10K Female NPT both ends



Part Number	P NPT in.	H Wrench flat in.(mm)	L mm	L1 mm
GX-2N-10K-S	1/8	13/16 (20.65)	52	26
GX-4N-10K-S	1/4	1 (25.4)	74	37
GX-6N-10K-S	3/8	1-1/4 (31.75)	93	46.5
GX-8N-10K-S	1/2	1-11/16 (42.86)	100	50
GX-12N-10K-S	3/4	50	114	57
GX-16N-10K-S	1	55	114	57

HEX NIPPLE

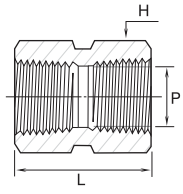
GNH-10K Male NPT both ends



Part Number	P NPT in.	H HEX in.(mm)	L mm	L1 mm
GNH-2N-10K-S	1/8	7/16 (11.11)	25.6	7.4
GNH-4N-10K-S	1/4	9/16 (14.28)	35.5	14.2
GNH-6N-10K-S	3/8	11/16 (17.46)	36.3	19.1
GNH-8N-10K-S	1/2	7/8 (22.2)	46.7	19.1
GNH-12N-10K-S	3/4	1-1/16 (26.98)	46.7	19.1
GNH-16N-10K-S	1	1-3/8 (34.92)	58.9	23.9

HEX COUPLING

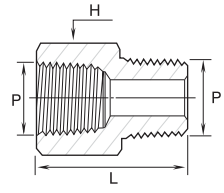
GCG-10K Female NPT both ends



Part Number	P NPT in.	H HEX in.(mm)	L mm
GCG-2N-10K-S	1/8	13/16 (20.65)	20.5
GCG-4N-10K-S	1/4	1 (25.4)	30.2
GCG-6N-10K-S	3/8	1-1/4 (31.75)	33.2
GCG-8N-10K-S	1/2	1-1/2 (38.1)	39.6
GCG-12N-10K-S	3/4	1-3/4 (44.4)	41.1
GCG-16N-10K-S	1	2-1/8 (53.9)	50.8

ADAPTER

GAAMF-10K Female NPT to male NPT

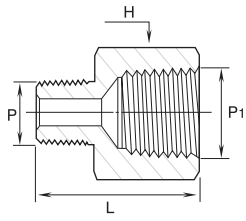


Part Number	P NPT in.	H HEX in.(mm)	L mm
GAAMF-2N-10K-S	1/8	13/16 (20.65)	27.9
GAAMF-4N-10K-S	1/4	1 (25.4)	36.7
GAAMF-6N-10K-S	3/8	1-1/4 (31.75)	38.5
GAAMF-8N-10K-S	1/2	1-1/2 (38.1)	51.3
GAAMF-12N-10K-S	3/4	1-3/4 (44.4)	52.1
GAAMF-16N-10K-S	1	2-1/8 (53.9)	58.7

All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

REDUCING ADAPTER

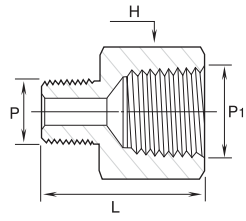
GABMF-10K Male NPT to larger female NPT



Part Number	P NPT in.	P1 NPT in.	H HEX in.(mm)	L mm
GABMF2-4N-10K-S	1/8	1/4	1 (25.4)	32.2
GABMF4-6N-10K-S	1/4	3/8	1-1/4 (31.75)	38.5
GABMF4-8N-10K-S	1/4	1/2	1-1/2 (38.1)	46.4
GABMF4-12N-10K-S	1/4	3/4	1-3/4 (44.4)	47.2
GABMF6-8N-10K-S	3/8	1/2	1-1/2 (38.1)	46
GABMF6-12N-10K-S	3/8	3/4	1-3/4 (44.4)	47.2
GABMF6-16N-10K-S	3/8	1	2-1/8 (53.9)	49
GABMF8-12N-10K-S	1/2	3/4	1-3/4 (44.4)	52.1
GABMF8-16N-10K-S	1/2	1	2-1/8 (53.9)	53.9
GABMF12-16N-10K-S	3/4	1	2-1/8 (53.9)	53.9

REDUCING ADAPTER

GAMF-10K Male NPT to reduced female NPT



Part Number	P NPT in.	P1 NPT in.	H HEX in.(mm)	L mm
GAMF4-2N-10K-S	1/4	1/8	13/16 (20.65)	32.4
GAMF6-2N-10K-S	3/8	1/8	13/16 (20.65)	32.4
GAMF6-4N-10K-S	3/8	1/4	1 (25.4)	36.3
GAMF8-2N-10K-S	1/2	1/8	7/8 (22.2)	37.3
GAMF8-4N-10K-S	1/2	1/4	1 (25.4)	41.2
GAMF8-6N-10K-S	1/2	3/8	1-1/4 (31.75)	43.4
GAMF12-4N-10K-S	3/4	1/4	1-1/16 (26.98)	41.6
GAMF12-6N-10K-S	3/4	3/8	1-1/4 (31.75)	43.4
GAMF12-8N-10K-S	3/4	1/2	1-1/2 (38.1)	51.3
GAMF16-4N-10K-S	1	1/4	1-3/8 (34.92)	46.4
GAMF16-8N-10K-S	1	1/2	1-1/2 (38.1)	55.7
GAMF16-12N-10K-S	1	3/4	1-3/4 (44.4)	56.9

Thread Fittings for Over 1"

Pressure Rating : 6,000 psi (413 bar)

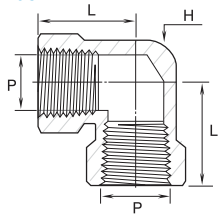
DK-Lok 6K Thread Fittings are developed especially for over 1" piping system where 6,000 psig pressure rating is required. The 6,000 psig fittings are designed and rated specifically for 6,000 psi working pressure meeting the requirements of ASME B31.3 Processing Pipe Code.

Features

- The fittings are available in 1 1/4", 1 1/2" and 2" pipe threads.
- Fittings are available only in stainless steel material. Therefore the part numbers of these fittings include the material designator -S.

ELBOW

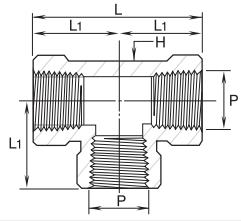
GL-6K Female NPT both ends



Part Number	Working Pressure	P NPT in.	H Wrench flat in.(mm)	L mm
GL-20N-6K-S	6,000 psi 413 bar	1-1/4	2-3/4 (69.85)	70
GL-24N-6K-S	6,000 psi 413 bar	1-1/2	2-3/4 (69.85)	70
GL-32N-6K-S	6,000 psi 413 bar	2	3 (76.2)	70

TEE

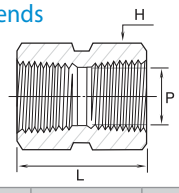
GT-6K Female NPT



Part Number	Working Pressure	P NPT in.	H Wrench flat in.(mm)	L mm	L1 mm
GT-20N-6K-S	6,000 psi 413 bar	1-1/4	2-3/4 (69.85)	140	70
GT-24N-6K-S	6,000 psi 413 bar	1-1/2	2-3/4 (69.85)	140	70
GT-32N-6K-S	6,000 psi 413 bar	2	3 (76.2)	140	70

HEX COUPLING

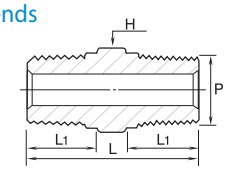
GCG-6K Female NPT both ends



Part Number	Working Pressure	P NPT in.	H HEX in.(mm)	L mm
GCG-20N-6K-S	6,000 psi 413 bar	1-1/4	2-1/8 (53.9)	66.55
GCG-24N-6K-S	6,000 psi 413 bar	1-1/2	2-3/8 (60.32)	66.55
GCG-32N-6K-S	6,000 psi 413 bar	2	3 (76.2)	66.55

HEX NIPPLE

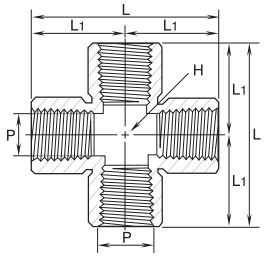
GNH-6K Male NPT both ends



Part Number	Working Pressure	P NPT in.	H HEX in.(mm)	L mm	L1 mm
GNH-20N-6K-S	6,000 psi 413 bar	1-1/4	1-3/4 (44.45)	61.21	23.9
GNH-24N-6K-S	6,000 psi 413 bar	1-1/2	2 (50.8)	68	26.2
GNH-32N-6K-S	6,000 psi 413 bar	2	2-3/4 (69.85)	69.8	26.9

CROSS

GX-6K Female NPT



Part Number	Working Pressure	P NPT in.	H HEX in.(mm)	L mm	L1 mm
GX-20N-6K-S	6,000 psi 413 bar	1-1/4	2-3/4 (69.85)	140	70
GX-24N-6K-S	6,000 psi 413 bar	1-1/2	2-3/4 (69.85)	140	70
GX-32N-6K-S	6,000 psi 413 bar	2	3 (76.2)	140	70

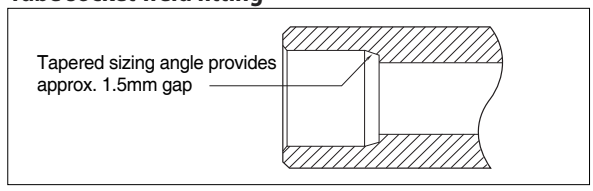
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

DK-Lok weld fittings are designed to provide permanent weld connections in pressure impulse, system vibration, and temperature cycling. Tube socket end design meets and exceeds the requirments of ASME B16.11 for ease of tube socket welding.

Features

- DK-Lok weld tube socket ports have a tapered sizing angle at the end that holds tubing properly and provides approx. 1.5mm(0.08") welding gap as specified in ASME B16.11. This feature allows consistent welding assembly as well as pre-assembly of many tubing runs before welding.
- Fittings are available in stainless steel only. Thus the part number of table below contains the material designator-S.

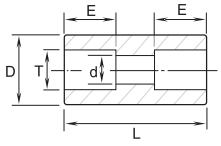
Tube socket weld fitting



Technical information

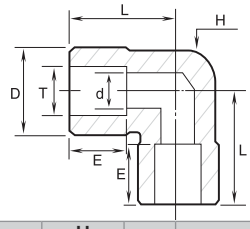
Use like tubing and fitting material. This ensure the same coefficient of expansion & reduction in the thermal cycle and the same corrosion resistance.
Standard fitting material is Stainless steel ASTM A276 type 316 of bar stock and ASTM A182 F316 of forging.
Pressure ratings shown in the dimensional tables are calculated in accordance with the requirements of ASME B31.3

UNION
GUSW Tube to Tube



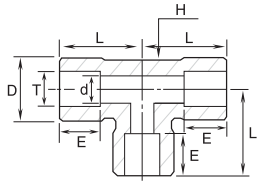
Part Number	T Tube O.D	d mm	D mm	E mm	L mm	Working psig	Pressure bar
GUSW- 4T-S	1/4	4.6	13.0	7.1	19.0	10,000	689
GUSW- 6T-S	3/8	7.1	15.8	7.9	22.4	7,600	523
GUSW- 8T-S	1/2	10.2	19.0	9.7	26.9	6,200	427
GUSW-10T-S	5/8	12.7	24.0	10.4	30.2	6,400	440
GUSW-12T-S	3/4	15.7	26.9	11.2	33.3	5,500	378
GUSW-16T-S	1	22.1	35.0	15.7	36.6	5,200	358

UNION ELBOW
GLSW Tube to Tube



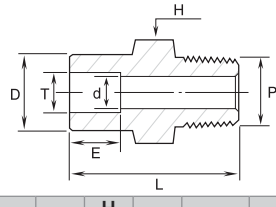
Part Number	T Tube O.D	d mm	D mm	E mm	H Wrench Flat mm	L mm	Working psig	Pressure bar
GLSW- 4T-S	1/4	4.6	13.4	7.1	12.7	21.8	11,300	778
GLSW- 6T-S	3/8	7.1	15.8	7.9	12.7	24.5	8,400	578
GLSW- 8T-S	1/2	10.2	20.6	9.7	17.4	29.0	7,800	537
GLSW-10T-S	5/8	12.7	23.8	10.4	20.6	34.5	6,700	461
GLSW-12T-S	3/4	15.7	28.6	11.2	25.4	37.0	6,700	461
GLSW-16T-S	1	22.1	35.0	15.7	31.8	46.5	5,800	400

UNION TEE
GTSW Tubes



Part Number	T Tube O.D	d mm	D mm	E mm	H Wrench Flat mm	L mm	Working psig	Pressure bar
GTSW- 2T-S	1/8	2.3	13.4	2.5	12.7	15.0	11,800	813
GTSW- 4T-S	1/4	4.6	13.4	7.1	12.7	21.8	11,300	778
GTSW- 6T-S	3/8	7.1	15.8	7.9	12.7	24.0	8,400	578
GTSW- 8T-S	1/2	10.2	20.6	9.7	17.4	29.0	7,800	537
GTSW-10T-S	5/8	12.7	23.8	10.4	20.6	34.5	6,700	461
GTSW-12T-S	3/4	15.7	28.6	11.2	25.4	37.0	6,700	461
GTSW-16T-S	1	22.1	35.0	15.7	31.8	46.5	5,800	400

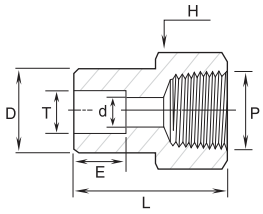
MALE CONNECTOR
GCMSW



Part Number	T Tube O.D	P NPT in.	d mm	D mm	E mm	H Hex mm	L mm	Working psig	Pressure bar
GCMSW4T- 4N-S	1/4	1/4	4.6	12.2	7.1	14.2	29.2	7,500	516
GCMSW6T- 4N-S	3/8	1/4	7.1	15.3	7.9	15.8	31.8	7,500	516
GCMSW6T- 6N-S	3/8	3/8	7.1	15.3	7.9	17.4	31.8	7,300	502
GCMSW6T- 8N-S	3/8	1/2	7.1	15.3	7.9	22.2	37.8	7,200	496
GCMSW8T- 4N-S	1/2	1/4	7.1	18.5	9.7	19.05	33.3	6,200	427
GCMSW8T- 6N-S	1/2	3/8	9.4	18.5	9.7	19.05	33.3	6,200	427
GCMSW8T- 8N-S	1/2	1/2	10.2	18.5	9.7	22.2	38.9	6,200	427

FEMALE CONNECTOR

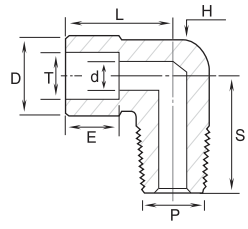
GCFSW Tube to female NPT



Part Number	T Tube O.D	P-NPT	d mm	D mm	E mm	H Hex mm	L mm	Working psig	Pressure bar
GCFSW 2T- 2N-S	1/8	1/8	2.3	7.4	2.5	14.2	21.1	6100	420
GCFSW 4T- 2N-S	1/4	1/8	4.6	12.2	7.1	14.2	26.7	6100	420
GCFSW 4T- 4N-S	1/4	1/4	4.6	12.2	7.1	19.05	30.0	6200	427
GCFSW 6T- 4N-S	3/8	1/4	7.1	15.3	7.9	19.05	31.5	6200	427
GCFSW 8T- 6N-S	1/2	3/8	10.2	18.5	9.7	22.2	34.5	5000	344
GCFSW 8T- 8N-S	1/2	1/2	10.2	18.5	9.7	26.9	40.4	4600	316
GCFSW10T- 8N-S	5/8	1/2	12.7	23.4	10.4	26.9	41.9	4600	316
GCFSW12T-12N-S	3/4	3/4	15.7	26.7	11.2	33.3	43.9	4300	296

MALE ELBOW

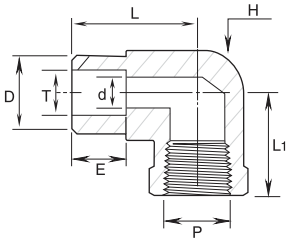
GLMSW Tube to male NPT



Part Number	T Tube O.D	P-NPT	d mm	D mm	E mm	H Wrench Flat mm	L mm	S mm	Working psig	Pressure bar
GLMSW 4T- 4N-S	1/4	1/4	4.6	15.8	7.1	12.7	20.1	24.5	7500	516
GLMSW 6T- 4N-S	3/8	1/4	7.1	15.8	7.9	12.7	24.1	24.5	7500	516
GLMSW 6T- 6N-S	3/8	3/8	7.1	20.6	7.9	17.4	24.6	29.0	7300	502
GLMSW 6T- 8N-S	3/8	1/2	7.1	23.8	7.9	20.6	25.9	34.5	7200	496
GLMSW 8T- 8N-S	1/2	1/2	10.2	23.8	9.7	20.6	27.4	34.5	6200	427
GLMSW12T-12N-S	3/4	3/4	15.7	28.6	11.2	25.4	37.0	37.0	6700	461

FEMALE ELBOW

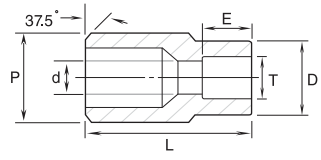
GLFSW Tube to female NPT



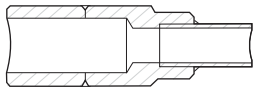
Part Number	T Tube O.D	P-NPT	d mm	D mm	E mm	H Wrench Flat mm	L mm	L1 mm	Working Pressure	
									psig	bar
GLFSW4T-4N-S	1/4	1/4	4.6	12.2	7.1	17.4	22.9	29.7	6200	427
GLFSW6T-4N-S	3/8	1/4	7.1	15.3	7.9	17.4	25.1	29.7	7000	482
GLFSW6T-8N-S	3/8	1/2	7.1	15.3	7.9	25.4	28.7	37.0	5400	372
GLFSW8T-8N-S	1/2	1/2	10.2	18.5	9.7	25.4	30.2	37.0	5400	372

PIPE TO TUBE SOCKET WELD

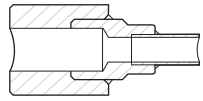
GUWSW



Pipe to Tube



Pipe to Tube

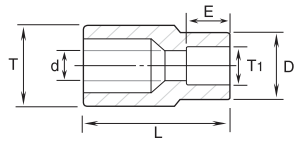


Part Number	P Pipe Size	T Tube Socket O.D	d mm	D mm	E mm	L mm	Working Pressure	
							psig	bar
GUWSW4P-4T-S	1/4	1/4	4.6	13.7	7.1	22.4	9600	661
GUWSW6P-6T-S	3/8	3/8	7.1	15.3	7.9	26.2	7600	523
GUWSW6P-8T-S	3/8	1/2	10.2	18.5	9.7	27.9	6200	427
GUWSW8P-4T-S	1/2	1/4	4.6	12.2	7.1	28.4	7300	502
GUWSW8P-6T-S	1/2	3/8	7.1	15.3	7.9	28.4	7300	502
GUWSW8P-8T-S	1/2	1/2	10.2	18.5	9.7	30.2	6200	427
GUWSW12P-6T-S	3/4	3/8	7.1	15.3	7.9	38.1	6200	427
GUWSW12P-8T-S	3/4	1/2	10.2	18.5	9.7	38.1	6200	427

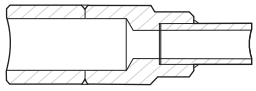
All dimensions are in millimeters unless otherwise specified and only for reference subject to change.

TUBE TO TUBE SOCKET WELD

GUTWSW



Tube to Tube



Part Number	T Tube O.D	T1 Tube Socket O.D	d mm	D mm	E mm	L mm	Working Pressure	
							psig	bar
GUTWSW 4T-2T-S	1/4	1/8	2.3	7.4	2.5	14.2	11800	813
GUTWSW 6T-4T-S	3/8	1/4	4.6	12.2	7.1	19.1	7700	530
GUTWSW 8T-4T-S	1/2	1/4	4.6	12.7	7.1	22.4	7000	482
GUTWSW 8T-6T-S	1/2	3/8	8.1	15.7	7.9	22.4	7000	482
GUTWSW 12T-8T-S	3/4	1/2	10.2	18.5	9.7	28.4	5900	406
GUTWSW 16T-8T-S	1	1/2	10.2	18.5	9.7	35.1	5600	386

NOTE

All dimensions are in millimeters unless otherwise specified and only for reference. All dimensions are subject to change.
All dimensions are subject to change. All the dimensions shown in this catalog are not for design purpose, but for reference only and the accuracy of information here is not the liability of our company.

Safe Component Selection

The selection of component for any applications or system design must be considered to ensure safe performance. Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK
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DK-LOK®
Tube Fittings

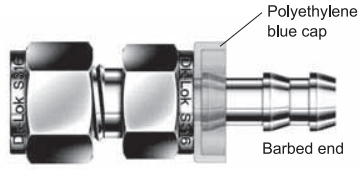
Push-On Hose Fittings

No.DPH-2
July 2013

DK-Lok Push-On hose fittings are designed for use with high-quality and low-pressure elastomeric compound hose such as textile braid reinforced synthetic rubber hose.

Features

- No special tools or clamps are required for installation.
- Assemblies can be done in seconds.
- DK-Lok Push-On fittings are reusable. Just replace the hose with no special tools.
- Faster and easier maintenance.



Design

Blue cap and barbed end of DK-Lok Push-On fittings are designed to use with low-pressure elastomeric hoses in table 1.

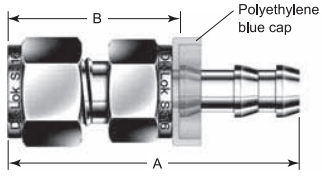
Table 1. **Hose dimensional and technical data**

Hose Size Designator	Nominal Hose Size inch	Average I.D		Average O.D.		Max. Working Pressure	
		inch	mm	inch	mm	psig	bar
4	1/4	1/4	6.3	0.50	12.7	350	24
6	3/8	3/8	10	0.63	16	300	20
8	1/2	1/2	12.5	0.78	20	300	20
10	5/8	5/8	16	0.91	23	300	20
12	3/4	3/4	19	1.03	26	300	20
16	1	1	25	1.28	32.6	175	12

Pressure ranges
Low pressure as indicated in Table 1.

Temperature ranges
It depends on the materials of hose in use.

Applications
Instrument air system, vacuum, and general industrial applications.
Note: Use in the extreme pulsations is not recommended.



Dimensions are in inch unless otherwise specified.

DK-Lok Tube Fittings

Part No.	End Connections		Dimensions				
	Hose Nominal Sizes	DK-Lok Tube Fittings	Blue Cap OD	Body Hex	Nut Hex	A	B
			inch (mm)				
DPHD 4-4-S	1/4	1/4	0.68 (17.4)	1/2	9/16	1.97 (50.0)	1.21 (30.7)
DPHD 6-6-S	3/8	3/8	0.84 (21.5)	5/8	11/16	2.11 (53.6)	1.24 (31.5)
DPHD 8-8-S	1/2	1/2	0.98 (24.9)	13/16	7/8	2.47 (62.7)	1.42 (36.1)

Tube Adapters

Part No.	End Connections		Dimensions in. (mm)			
	Hose Nominal Sizes	DK-Lok Tube Adapter	Blue Cap OD	Body Hex	A	B
DPHA 4-4T-S	1/4	1/4	0.68 (17.4)	9/16	1.93 (49.0)	1.17 (29.7)
DPHA 6-6T-S	3/8	3/8	0.84 (21.5)	3/4	2.03 (51.6)	1.16 (29.5)
DPHA 8-8T-S	1/2	1/2	0.98 (24.9)	7/8	2.47 (62.7)	1.42 (36.1)
DPHA 12-12T-S	3/4	3/4	1.26 (32.2)	1-1/16	3.14 (79.8)	1.48 (37.6)
DPHA 4-6M-S	1/4 in.	6 mm	0.68 (17.4)	9/16	1.93 (49.0)	1.17 (29.7)
DPHA 4-8M-S		8 mm	0.68 (17.4)	9/16	1.97 (50.1)	1.16 (29.5)
DPHA 6-8M-S	3/8 in.		0.84 (21.5)	3/4	2.0 (50.9)	1.18 (30.0)
DPHA 6-10M-S		10 mm	0.84 (21.5)	3/4	2.03 (51.6)	1.16 (29.5)
DPHA 8-12M-S	1/2 in.	12 mm	0.98 (24.9)	7/8	2.47 (62.7)	1.42 (36.1)
DPHA 12-18M-S	3/4 in.	18 mm	1.26 (32.2)	1-1/16	3.14 (79.8)	1.48 (37.6)

Unions

Part No.	End Connections	Dimensions			
	Hose Nominal Sizes	Blue Cap OD	Body Hex	A	B
				inch (mm)	
DPHU 4-4-S	1/4	0.68 (17.4)	9/16	2.07 (52.6)	1.41 (36.0)
DPHU 6-6-S	3/8	0.84 (21.5)	3/4	2.25 (57.2)	1.38 (35.2)
DPHU 8-8-S	1/2	0.98 (24.9)	7/8	2.61 (66.3)	1.56 (39.8)
DPHU 12-12-S	3/4	1.26 (32.2)	1-1/16	3.87 (98.4)	2.21 (56.2)

DK-LOK Corporation
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DK-LOK® Push-on Hose Fittings

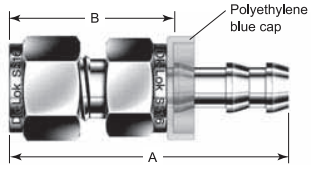
Male Connectors

Part No.	End Connections		Dimensions in. (mm)			
	Hose Nominal Sizes	Male Pipe Thread	Blue Cap OD	Body Hex	A	B
DPHM 4-4N-S	1/4	1/4 NPT	0.68 (17.4)	9/16	1.68 (42.7)	0.92 (23.4)
DPHM 6-4N-S	3/8		0.84 (21.5)	11/16	1.80 (45.7)	0.93 (23.7)
DPHM 6-6N-S		3/8 NPT		11/16		
DPHM 8-8N-S	1/2	1/2 NPT	0.98 (24.9)	7/8	2.19 (55.6)	1.14 (29.1)
DPHM 12-12N-S	3/4	3/4 NPT	1.26 (32.2)	1-1/16	2.81 (71.4)	1.15 (29.2)
DPHM 4-4R-S	1/4	1/4 BSPT	0.68 (17.4)	9/16	1.68 (42.7)	0.92 (23.4)
DPHM 6-6R-S	3/8	3/8 BSPT	0.84 (21.5)	11/16	1.80 (45.7)	0.93 (23.7)
DPHM 8-8R-S	1/2	1/2 BSPT	0.98 (24.9)	7/8	2.19 (55.6)	1.14 (29.1)
DPHM 12-12R-S	3/4	3/4 BSPT	1.26 (32.2)	1-1/16	2.81 (71.4)	1.15 (29.2)

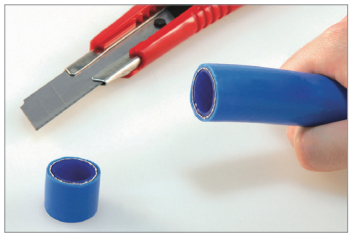
Field Assembly

Hose Length

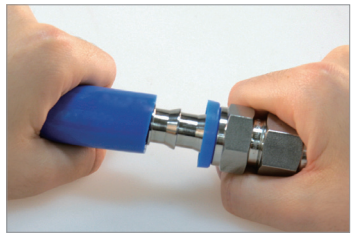
To determine the hose cut length out of bulk hose, subtract dimension B from the desired overall fitting and hose assembly length.



Assembly



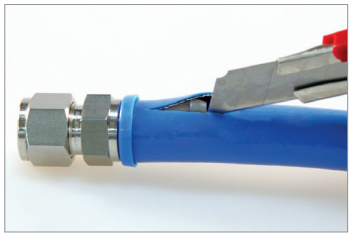
❶ Using a sharp knife, cut hose end cleanly and squarely.



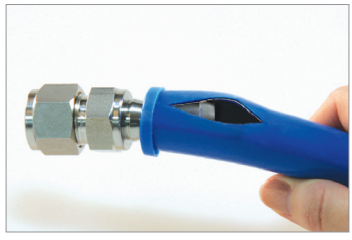
❷ With a light oil or soapy water, lubricate the barb end and/or hose I.D.
Note: Do not use heavy oil or grease to lubricate.
❸ Insert fitting barb end into hose until first barb is engaged in the hose.

❹ Hold fitting end against a flat surface. Grip hose approximately one inch from blue cap and push with a steady force until the hose bottoms inside the blue cap firmly.

Disassembly



❶ Place fitting and hose assembly in place and cut hose lengthwise from the blue cap approximately one inch.
Note: Not to nick barbs during cutting the hose.



❷ Grip hose and bend to expose barbs, then remove hose with a sharp downward tug.

Ordering Information

DPHD			4-4	S
DK-Lok Identification	Push-On Fitting Designator	End Connection Designator	Size Designator	Material Designator
D	PH	**D** : DK-Lok Tube Fitting **A** : DK-Lok Tube Adapter **U** : Barb to Barb **M** : Male Pipe Thread	• 4: 1/4″ • 10: 5/8″ • 5: 5/16″ • 12: 3/4″ • 6: 3/8″ • 16: 1″ • 8: 1/2″	**S** : SS316

The dimensions shown in this catalog are for reference only and are subject to change.

Safe Component Selection

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E-mail : dklok@dklok.com

DK-LOK Valves

V103 Series Toggle Valves

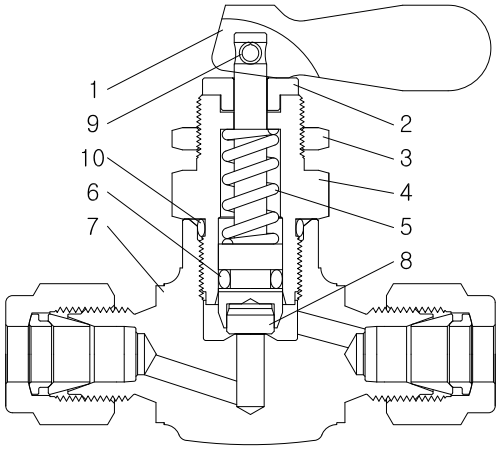
No.V103-4
December 2013

Pressure Rating up to 300 psig (20.6 bar)

Toggle Valves for Quick Shut-Off

Features

- Quick open and close
- Soft seat for repetitive shut-off
- Sturdy Aluminum handle
- Standard panel mounting



Materials of Construction

Component	Valve Body Material	
	SS316	Brass
	Grade/ASTM Specification	
1. Handle	Aluminium Black Anodized	
2. Washer	Aluminium Black Anodized	
3. Panel Nut	SS316/A276	Brass 360/B16
4. Packing nut		
5. Spring	Stainless Steel 302	
6. Stem O-ring	FKM	
7. Body	SS316/A182	Brass 337/B283
8. Stem tip	PTFE/D1710	
9. Handle Pin	Stainless Steel	
10. Body O-Ring	FKM (V103C only)	

Wetted component listed in blue and silicon based lubricdant.

Operation

- To open the valve, lift the handle.
- Spring forces the valve to close.
- Soft seat provides leak-tight sealing under positive pressure and vacuum conditions.
- Stem O-ring seal eliminates packing adjustment.

Design

- Valves are designed for use in gas sampling, analysis systems and test equipment.
- In-line and angle flow pattern.
- O-ring seal below stem spring protects the spring from contamination.

Technical Data

Pressure and Temperature Ratings

Valve Series	Orifice		Pressure Rating @ 100 °F (37 °C) for SS316, Brass body	Temperature Rating
	inch	mm		
V103A	0.080	2.00	300 psig	FKM O-ring -20 to 200 °F (-28 to 93 °C)
V103B	0.125	3.20		
V103C	0.250	6.40	200 psig	

Optional O-Ring Material

FKM O-rings are standard
and other materials are Buna C, EPDM and Kalrez.

Low Temperature Service

O-ring	Temperature Range, °F(°C)
Buna C	-65 to 200 (-53 to 93)

Factory test

Every valve is factory tested at 200psig (13 bar) with nitrogen gas at the seat and seal.

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

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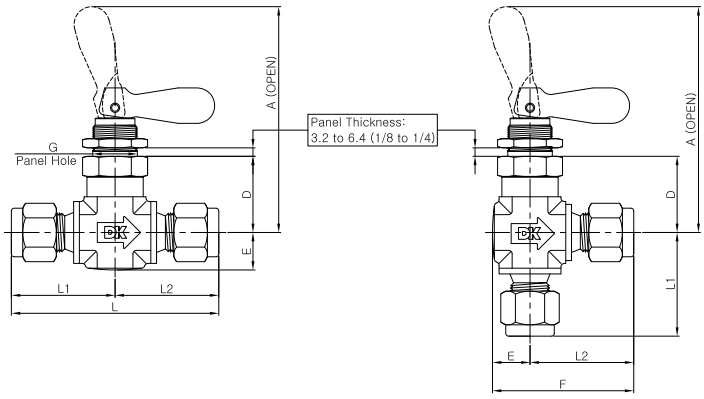

In-line Pattern **Angle Pattern**

Ordering Information and Dimensions

Basic Ordering Number		End Connection Inlet	End Connection Outlet	Orifice in.	Orifice mm	Cv	Dimensions mm (in.) L	L1	L2	D	E	F	G	A
V103A-	M-2N-	1/8 in. Male NPT		0.08	2	0.11	38.1 (1.5)	19.05 (0.75)	19.05 (0.75)	23.4 (0.92)	10.6 (0.42)	27.0 (1.06)	13.5 (0.53)	72.9 (2.87)
	D-2T-	1/8 in. DK-Lok					49.8 (1.96)	24.9 (0.98)	24.9 (0.98)			32.8 (1.29)		
	D-3M-	3 mm DK-Lok												
	MD-2N2T-	1/8 in. Male NPT	1/8 in. DK-Lok				43.9 (1.73)	19.05 (0.75)	24.9 (0.98)					
V103B	F-2N-	1/8 in. Female NPT		0.125	3.2	0.2	41.4 (1.63)	20.6 (0.81)	20.6 (0.81)	21.8 (0.86)	9.5 (0.38)	30.2 (1.19)	13.5 (0.53)	71.4 (2.81)
	M-2N-	1/8 in. Male NPT					43.7 (1.72)	21.8 (0.86)	21.8 (0.86)			31.2 (1.23)		
	M-4N-	1/4 in. Male NPT					49.8 (1.96)	24.9 (0.98)	24.9 (0.98)			34.5 (1.36)		
	D-4T-	1/4 in. DK-Lok					57.4 (2.26)	28.7 (1.13)	28.7 (1.13)			38.1 (1.5)		
	D-6M-	6 mm DK-Lok					57.4 (2.26)	28.7 (1.13)	28.7 (1.13)			38.1 (1.5)		
	D-8M-	8 mm DK-Lok					56.4 (2.22)	28.2 (1.11)	28.2 (1.11)			37.6 (1.48)		
	MF-2N-	1/8 in. Male NPT	1/8 in. Female NPT				41.4 (1.63)	20.6 (0.81)	20.6 (0.81)			30.2 (1.19)		
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok				53.6 (2.11)	24.9 (0.98)	28.7 (1.13)			38.1 (1.5)		
V103C-	F-4N-	1/4 in. Female NPT		0.25	6.4	0.7	53.8 (2.12)	26.9 (1.06)	26.9 (1.06)	26.9 (1.06)	12.7 (0.5)	39.6 (1.56)	16.8 (0.66)	90.4 (3.56)
	M-6N-	3/8 in. Male NPT					57.2 (2.25)	28.4 (1.12)	28.4 (1.12)			41.1 (1.62)		
	D-6T-	3/8 in. DK-Lok					65.5 (2.58)	32.8 (1.29)	32.8 (1.29)			45.5 (1.79)		
	D-8T-	1/2 in. DK-Lok					71.1 (2.8)	35.6 (1.4)	35.6 (1.4)			48.3 (1.9)		
	D-10M-	10 mm DK-Lok					69.1 (2.72)	34.5 (1.36)	34.5 (1.36)			47.2 (1.86)		
	D-12M-	12 mm DK-Lok					74.2 (2.92)	37.1 (1.46)	37.1 (1.46)			49.8 (1.96)		

All dimensions shown are for reference only and subject to change. Dimensions with Dk-Lok nuts are in finger-tight position.

How to Order

Select basic ordering number, applicable valve pattern, O-ring and body material designators listed below.

V103B-D-4T **-A** **-BC** **-S**

Valve Pattern	O-ring Designator	Body Material
• Nil: Inline pattern • A : Angle pattern	• Nil : FKM • KZ : Kalrez • BC : Buna-C • EP : EPDM	• S : SS316 • B : Brass

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For International customers
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E-mail : dklok@dklok.com

DK-LOK®
Valves

V13W Series Bellows Valves

No.V13-2
July 2013

Severe Service Bellows Valves, Double Sealed
Working Pressure up to 2,500 psig (172 bar)

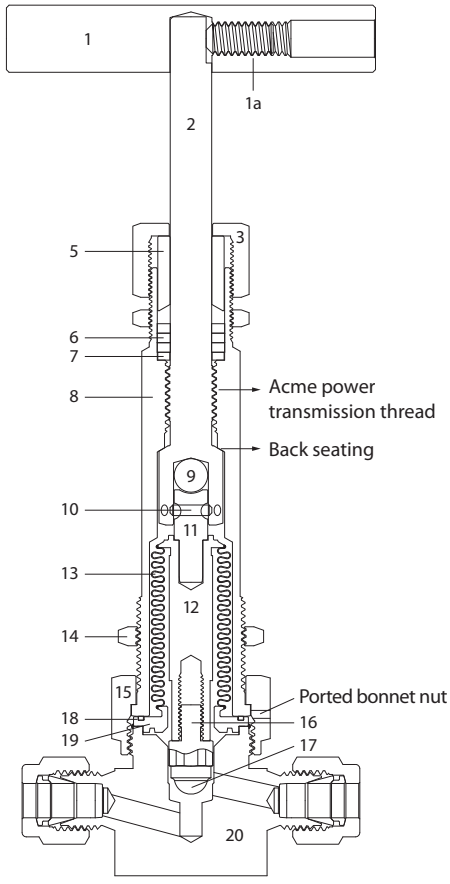
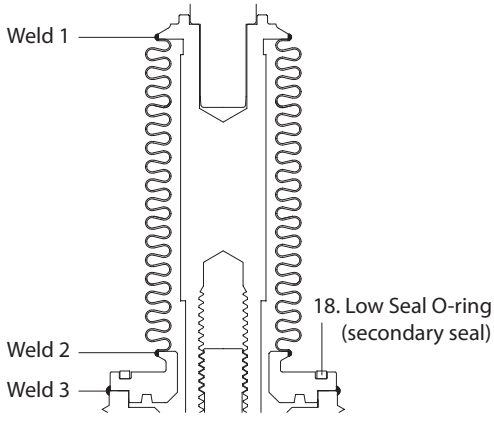


Figure 1.
Bellows Subassembly (Primary Seal)



Features

V13W series bellows valve offers the most difficult fluid handling applications. This design with the secondary sealing system fits to the need for a safe and reliable system.

Applications include cryogenic to high temperatures, high pressure to vacuum in power plants, instrumentation, panels, and critical sampling system for toxic, radioactive, and hazardous fluids.

Bellows subassembly (Figure 1)
Welding upper end of the bellows to 12. stem (weld 1) and the other end to 19. stem weld ring (weld 2), this bellows is then welded to the valve body (weld 3).

Bellows subassembly with the three places of welding provides all metal, hermetical sealed valve. This primary seal offers a complete sealing between the system and atmosphere where leakage is not accepted.

Secondary seal (6), (18).
All welded stainless steel valves with secondary seal makes this valve for the most difficult fluid containment applications.
Secondary sealing prevents leakage to atmosphere in the event of a bellows rupture due to excessive pressurization. Leakage past the primary seal is contained by secondary seal.

Actuator threads (2)
Hardened 440C stainless steel actuator is for maximum strength, wear resistance, and positive stem retraction.
Acme power transmission threads constructed on actuator (2) and the bonnet (8) for low operation torque and to handle the extreme force transmitted to the threads in high pressure bellows valve. The threads are not in contact with the process fluid and are protected from atmospheric containments by the packing (6).

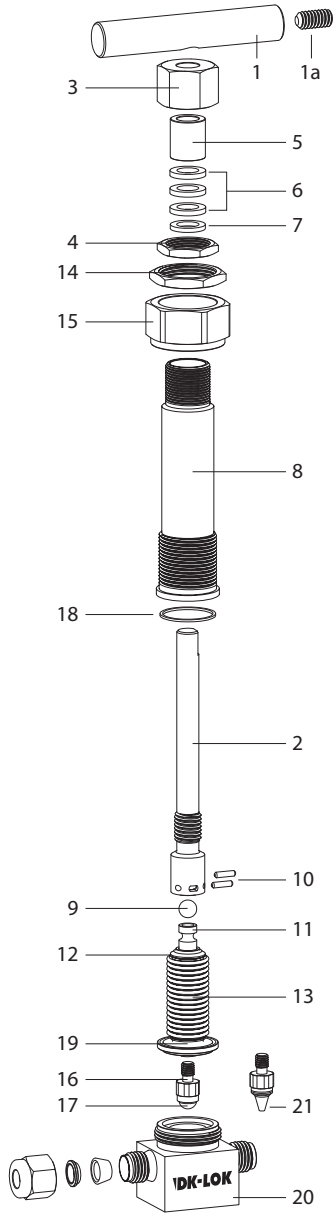
Valve actuation
Valves in high pressure tend to stick in the closed position. The ball bearing (9), and double pin (10) on a shoulder of stem extension (11) provide positive lifting of stem (12) and stem retraction.
Compressing or stretching the bellows allows linear motion of the stem with the convolutions.

Ported bonnet nut (15)
This allows monitoring sealing condition of weld 3 (Figure 1) and low seal O-ring (18).

Turns to Open
Bellows valves operated by manual actuating bar handle requires around 1 3/4 turns on the V13WA series and 2 1/2 turns on the V13WB & V13WC series to open the vales to full flow.

A jam nut (4) is provided for locking the gland nut (3).

Additional Features
- Non-rotating stem disc (17).
- Standard panel (14) and bottom mounting.
- Union bonnet construction allows packing (6) replacement for maintenance.
- Safety back-seat sealing in the valve closed position.
- DK-Lok tube fitting and socket or butt weld end connections.
- Regulating stem disc for V13WA series.



Materials of Construction

Component	Material Grade/ASTM specification
1. Handle	Aluminum Blue-anodized /B211
1a. Set Screw	Alloy Steel/ANSI 18.3
2. Actuator	440C SS/A276
3. Gland Nut	316SS/A479 or A276
4. Jam Nut	316SS/A479 or A276
5. Gland	316SS/A479 or A276
6. Packing	GRAFOIL, optional PTFE/D1710
7. Spacer	316SS/A479 or A276
8. Bonnet	316SS/A479 or A276
9. Ball Bearing	316SS/A479 or A276
10. Pin (2)	416SS
11. Stem Extension	440CSS/A276 or A276
12. Stem	316SS/A479 or A276
13. Bellows	Type 321 /A240 or 1.4541-DIN EN10028-7
14. Panel Mount Nut	316SS/A479 or A276
15. Bonnet Nut	316SS/A479 or A276
16. Stem Adapter	316SS/A479 or A276
17. Spherical stem disc	Cobalt alloy/AMS 5373
21. Optional regulating stem disc	316SS/A479 or A276
18. Low Seal O-Ring	316SS/A479
19. Stem Weld Ring	316SS/A479
20. Body	316SS/A479

Wetted parts and lubricants are listed in blue.

Lubricants
Spherical stem disc : Fluorinated-based.
Non-wetted lubricant : Silicon based

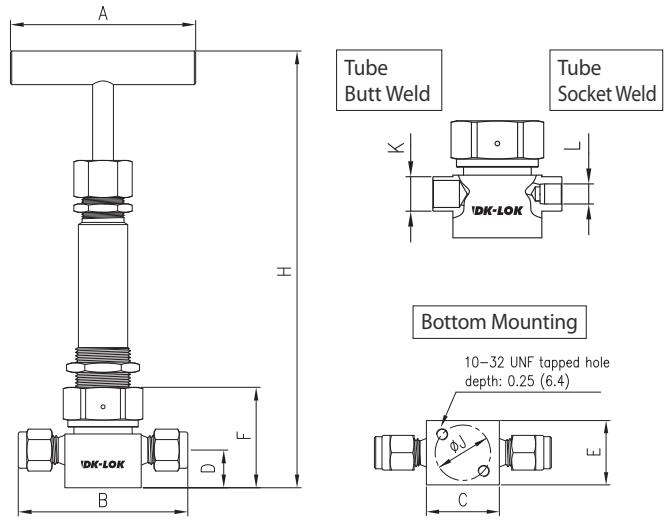
Factory test

Every bellows valve is vacuum-tested with helium at room temperature for 5s to a maximum leak rate of 4 x 10^{-9} std cm^3/s at the seat, envelope, and all seals.

Cleaning and Packaging

Every bellows valve is cleaned and packaged in accordance with DK-Lok Corporation cleaning standard DC-01.
Optional DC-11 cleaning for oxygen application is available on request.

Ordering Information and Dimensions



Basic Ordering Number		End Connections Inlet	Outlet	Orifice	Dimensions, in (mm) B	C	D	E	F	H	J	K	L	A
V13WA-	D4T-	1/4 in. DK-Lok		0.172 (4.37)	2.46 (62.5)	1.13 (28.7)	0.56 (14.2)	1.00 (25.4)	1.49 (37.8)	6.45 (164)	1.00 (25.4)	-	-	2.75 (69.9)
	D6M-	6mm DK-Lok		0.172 (4.37)	2.46 (62.5)							-	-	
	SW4T-	1/4 in. Tube Socket Weld		0.156 (3.96)	1.68 (42.7)							0.38 (9.7)	0.25 (6.4)	
	W6T-	3/8 in. Tube Butt Weld		0.156 (3.96)	1.68 (42.7)									
V13WB-	D6T-	3/8 in. DK-Lok		0.265 (6.73)	3.09 (78.5)	1.57 (39.9)	0.50 (12.7)	1.13 (28.7)	1.61 (40.9)	6.59 (167)	1.13 (28.7)	-	-	
	D10M-	10mm DK-Lok		0.281 (7.14)	3.11 (79.0)							-	-	
	SW6T-	3/8 in. Tube Socket Weld		0.281 (7.14)	2.27 (57.7)							0.50 (12.7)	0.38 (9.7)	
	W8T-	1/2 in. Tube Butt Weld		0.281 (7.14)	2.27 (57.7)									
V13WC-	D8T-	1/2 in. DK-Lok		0.312 (7.92)	3.30 (83.8)	1.57 (39.9)	0.50 (12.7)	1.13 (28.7)	1.61 (40.9)	6.59 (167)	1.13 (28.7)	-	-	
	D12M-	12mm DK-Lok		0.281 (7.14)	3.30 (83.8)							-	-	
	SW8T-	1/2 in. Tube Socket Weld		0.312 (7.92)	2.27 (57.7)							0.75 (19.1)	0.50 (12.7)	
	W12T-	3/4 in. Tube Butt Weld		0.312 (7.92)	2.27 (57.7)									

Ordering information.
Select the desired valve basic ordering number, and optional disc.

Note :
Optional regulating disc is applicable only to V13WA series

V13WA-D4T- -R -S

Stem Disc Designator	Valve Material Designator
Nil : Spherical stem disc **R** : Regulating stem disc	**S** : stainless steel 316

Pressure-Temperature Ratings

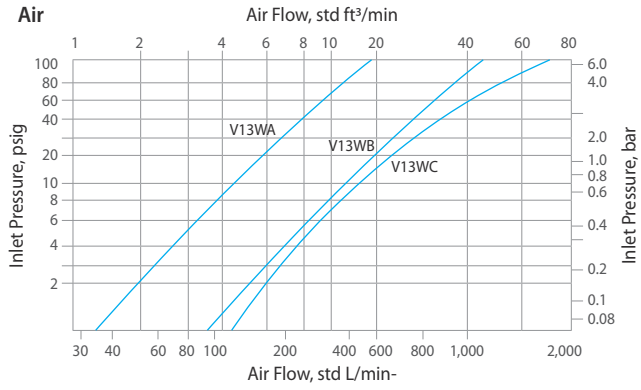
Ratings are for SS316 valves with spherical and regulating stem disc.

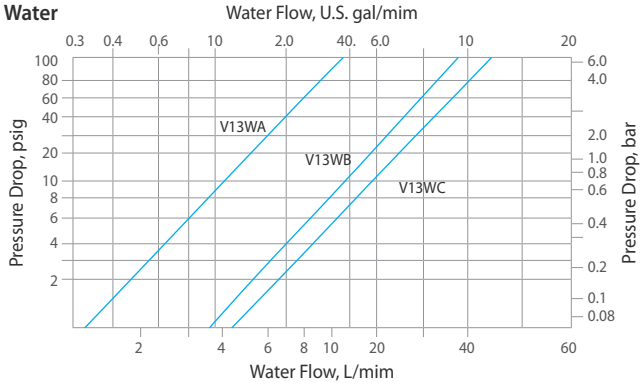
Temperature, ℉(℃)	Working Pressure, psig (bar)
-20 to 650 (-28 to 343)	2500 (172)
700 (371)	2120 (146)
750 (398)	1740 (119)
800 (426)	1360 (93.7)
850 (454)	980 (67.5)
900 (482)	600 (41.3)
950 (510)	540 (37.2)
1000 (537)	480 (33.0)
1050 (565)	425 (29.2)
1100 (593)	360 (24.8)
1150 (621)	300 (20.6)
1200 (648)	250(17.2)

Technical Data

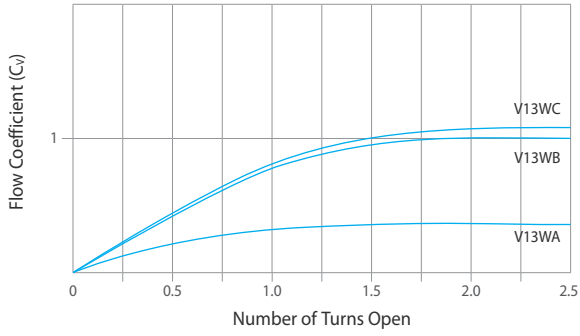
Valve series	Stem disc	Cv	Internal Volume in.3(cm3)
V13WA	Standard spherical	0.36	0.11 (1.8)
V13WB		1.0	0.25 (4.1)
V13WC		1.2	0.27 (4.4)
V13WA	Optional regulating	0.36	0.11 (1.8)

Flow Data @ 70 °F (20 °C)





Flow Coefficient at Turns Open



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DK-LOK Valves

V15 Series Needle Valves

No.V15-7
July 2013

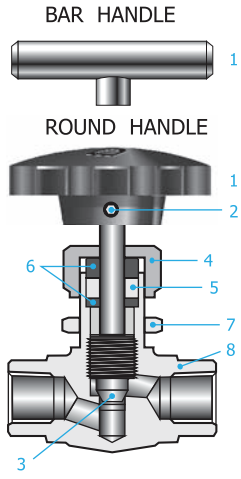
Forged body, Pressure Rating up to 5000psig (345bar)

Integral Bonnet Needle Valves For regulating and shut-off

Stem
Hard chrome plated stem threads assures extended service life

Choice of Fluid Control
- Metal to metal Vee & Regulating stems for elevated temperatures
- Repetitive soft seat for gas leak-tight

Variety of end connections
- Reliable DK-Lok Tube Fitting Ends
- NPT & ISO Male & Female



Positive Driven Handle
Choice of Round handle and Bar handle

Packing Nut
Allows external adjustments of packing

Panel Nut
Allows panel installation

Integral Bonnet Design
To eliminate inadvertent stem back-out

Packing
- Low operating torque.
- Standard PTFE
- Optional Chevron PEEK for high temperature

Materials of Construction

Components		VALVE BODY MATERIALS Material Grade/ASTM Specification		
		SS316	BRASS	ALLOY 400
1	Round handle	Nylon with brass insert		
	Bar handle	SS316/A276		
2	Set Screw	SS304/A276		
3	Standard Vee Stem	SS316/A276 Hard Chrome-plated on stem tip and threads		Alloy R-405
	Optional Regulating stem	SS316/A276 Hard Chrome-plated on threads		
	Optional Soft Seat Stem	PCTFE		
4	Packing Nut	SS316/A276	Brass/B16	Alloy R-405/B164
5	Packing	Standard PTFE, Optional PEEK		
6	Packing Gland	SS316/A276	Brass/B16	Alloy R-405/B164
7	Panel Nut	SS316/A276	Brass/B16	SS316/A276
8	Body	SS316/A182	Brass/B283	Alloy 400/B564

Wetted parts and lubricant are listed in blue.

Lubrication : Molybdenum disulfide with hydrocarbon coating

Design

- Designed for a wide range of general purpose in gas and liquid applications
- Forged Body with Inline and Angle pattern
- Integral Bonnet design to eliminate inadvertent stem back-out
- Standard metal seal for pressure tightness at elevated temperatures
- Standard PTFE packing, and optional PEEK packing for higher temperature service
- Packing nut allows external packing adjustment to ensure leak-free packing on stem
- Broad choices of end connections include reliable DK-Lok, NPT & ISO Male & Female pipe threads

Operation

- Pressure rating up to 5,000psig (345bar) @100°F (38°C)
- Temperature rating up to 450°F (232°C) with standard PTFE packing; up to 600°F (315°C) with optional PEEK packing
- Panel mounting without packing disruption
- Standard SS316 and Brass material valve construction
- DK-Lok Gap gauge allows easy inspection for sufficient tube pull-up before a system is pressurized
- Valves for Sour Gas Service meeting the requirements of NACE MR0175 are available

Factory Test

Every valve is tested with the nitrogen @1,000psig (68bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. The packing is tested for no detectable leakage.

Panel mounting

How to mount the valve on panel.

Panel hole drill and thickness mm (in)			
Valve Series	Panel Hole Drill	Panel Thickness Min.	Panel Thickness Max.
V15A	13.5 (0.53)	3.17 (0.125)	6.35 (0.25)
V15B	13.5 (0.53)		
V15C	20.0 (0.79)		
V15D	26.2 (1.03)		

Disassembly

1.Un-tighten the handle set screw using an allen key and remove the handle.

• Handle Set Screw Allen Key

Valve Series	Allen Key	
	Round Handle	Bar Handle
V15A & V15B	Hex.2.5mm	Hex. 4.0mm
V15C	Hex.3.0mm	
V15D		Hex. 5.0mm

2.Remove the packing nut & panel nut and set aside for later use.
3.Place the valve bonnet in the panel hole.

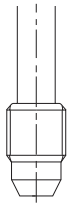
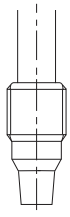
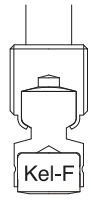
Reassembly

4. Tighten the panel nut onto the valve bonnet.
   Keep the panel nut always on the external portion of the panel.
5. Finger tighten the packing nut onto the valve body.
6. Place the round handle on the stem. Align the set screw with the groove on the side of the stem. Tighten the set screw.
7. Fully close the valve and retract the stem two or three turns before torque the packing nut to the torque below.

• Packing Nut Torque Table

Valve Series	Torque	
	lbf · ft	kgf · cm
V15A, V15B	5.2	71.9
V15C	10.6	146.6
V15D	25.1	347

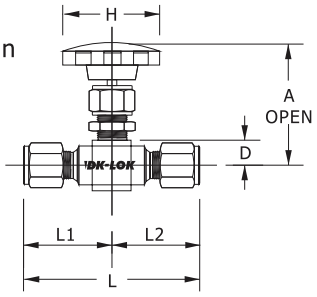
Choice of Stem Tip

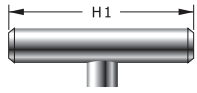
Vee Stem	Regulating Stem	Non-Rotating Soft Seat
		
Metal to metal Vee stem for pressure tightness at elevated temperature.	Regulating stem for flow rate control	Non-rotating PCTFE soft seat for repetitive shut-off on gas. • Round Handle is recommended for soft seat valve.

Note : Soft seat packing adjustment may be required during service to compensate the physical compression of soft seat after repeated shut-off.

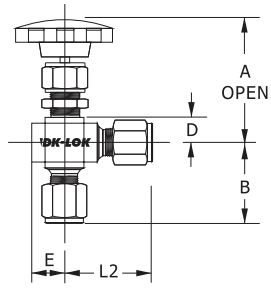
Ordering Information and Table of Dimensions

Inline Pattern





Angle Pattern



Unit : mm (in.)

Valve Basic Ordering Number		End Connections Inlet	End Connections Outlet	Orifice	Cv	Dimensions A	B	L	L1	L2	E	D	H	H1
V15A	F-2N-	1/8" Female NPT		2.0 (0.08)	0.09	60 (2.36)	21(0.83)	42(1.65)	21(0.83)	20(0.79)	9.5 (0.37)	11 (0.43)	36 (1.42)	32 (1.26)
	M-2N-	1/8" Male NPT												
	MD-2N2T	1/8" Male NPT	1/8" DK-Lok					47(1.85)		26(1.02)				
	D-2T-	1/8" DK-Lok					26(1.02)	52(2.05)	26(1.02)					
	D-3M-	3mm DK-Lok												
V15B	F-2N-	1/8" Female NPT		4.3 (0.17)	0.37	60 (2.36)	21(0.83)	42(1.65)	21(0.83)		9.5 (0.37)	11 (0.43)	36 (1.42)	45 (1.77)
	M-2N-	1/8" Male NPT												
	M-4N-	1/4" Male NPT					25(0.98)	50(1.97)	25(0.98)	25(0.98)				
	MD-4N4T-	1/4" Male NPT	1/4" DK-Lok					54(2.13)		28.8(1.13)				
	D-6M-	6mm DK-Lok					29(1.14)	57.6(2.27)	28.8(1.13)					
	D-4T-	1/4" DK-Lok												
	D-8M-	8mm DK-Lok					30(1.18)	59.2(2.33)	29.6(1.16)					
V15C	F-4N-	1/4" Female NPT		6.4 (0.252)	0.73	71 (2.80)	28(1.10)	56(2.20)	28(1.10)	28(1.10)	13 (0.51)	13.5 (0.53)	50 (1.97)	64 (2.52)
	F-4R-	1/4" Female ISO Tapered												
	MF-4N-	1/4" Male NPT	1/4" Female NPT					61.2(2.41)		33.2(1.31)				
	MD-4N6T-	1/4" Male NPT	3/8" DK-Lok					58(2.28)		29(1.14)				
	M-6N-	3/8" Male NPT					29(1.14)	62.2(2.45)	29(1.14)	33.2(1.31)				
	MD-6N6T-	3/8" Male NPT	3/8" DK-Lok					65(2.56)		36(1.42)				
	MD-6N8T-	3/8" Male NPT	1/2" DK-Lok											
	D-10M-	10mm DK-Lok					33(1.30)	66(2.60)	33.2(1.31)	33.2(1.31)				
	D-6T-	3/8" DK-Lok												
	D-12M-	12mm DK-Lok					36(1.42)	72(2.83)	36(1.42)	36(1.42)				
	D-8T-	1/2" DK-Lok												
V15D	F-6N-	3/8" Female NPT		9.5 (0.374)	1.80	99 (3.90)	38(1.50)	76(2.99)	38(1.50)	38(1.50)	19 (0.75)	19 (0.75)	66 (2.60)	76 (3.00)
	F-6R-	3/8" Female ISO Tapered												
	F-8N-	1/2" Female NPT												
	F-8R-	1/2" Female ISO Tapered												
	M-8N-	1/2" Male NPT												
	MF-8N-	1/2" Male NPT	1/2" Female NPT											
	D-8T-	1/2" DK-Lok					49(1.93)	97(3.82)	48.5(1.91)					
	D-12T-	3/4" DK-Lok												

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.
Patterns: To order angle pattern, use –A as a suffix to the valve ordering number. Example: V15A-F-2N-A

Table 1. Pressure-Temperature Ratings for valves with standard PTFE packing

Pressure rating of valves with PCTFE soft seat is limited to 200°F (93°C).

ASME Material Group		TABLE 2-2.2		N/A		TABLE 2-3.4	
Material Name		SS316		Brass		Alloy 400	
ASME Class Rating		2,080		N/A		1,500	
Temperature @ pressure		psig	bar	psig	bar	psig	bar
-65F (-54°C) to	100°F (38°C)	5,000	345	3,000	207	3,000	207
	200°F (93°C)	4,293	296	2,353	162	2,640	182
	300°F (148°C)	3,877	267	2,059	142	2,470	170
	350°F (176°C)	3,719	256	1,471	101	2,430	167
	400°F (204°C)	3,562	246	392	27	2,390	165
	450°F (232°C)	3,437	237	-		2,380	164

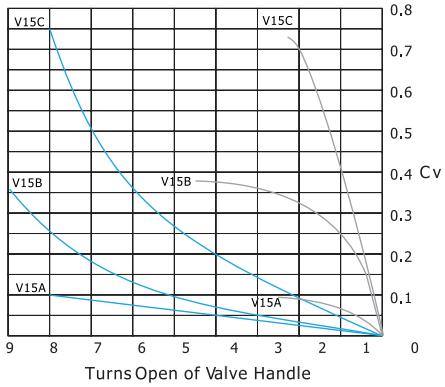
Note : Pressure rating of valve may be limited to the working pressure of pipe ends and the tubing connected.
Refer to DK-Lok Tube Fitting catalog for the details of working pressures in various tubing sizes, materials and wall thickness.

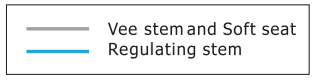
Table 2. Pressure-Temperature Ratings for valves with optional PEEK packing

Valve Material	Packing	Stem	Pressure –Temperature Rating °F (°C)
SS316	PEEK	Metal to metal (Vee & Regulating)	-65 to 600 (-54 to 315) @ 3,130 psig (215 bar)
Brass			-65 to 400 (-54 to 204) @ 3,000 psig (207 bar)
Alloy 400			-65 to 500 (-54 to 260) @ 2,370 psig (163 bar)

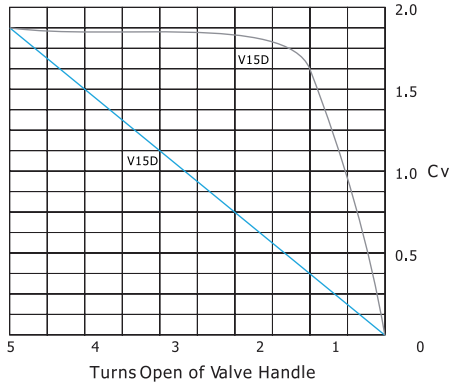
Flow Curves

For V15A, 15B & 15C





For V15D



How to order

Select applicable Valve Pattern, Stem type, Handle and Body material from designators listed below.

V15B-F-2N
V15B-F-2N

-A	-PK	-R	-BH	-S -S
Valve Pattern	Stem Packing Designator	Stem Designator	Handle Designator	Body Material Designator
Nil : Inline pattern **A** : Angle pattern	**Nil** : Standard PTFE **PK** : PEEK	**Nil** : Standard Vee stem tip **R** : Regulating tip **K** : PCTFE (Kel-F) soft seat	**Nil** : Nylon Round Handle **BH** : Bar Handle	**S** : SS316 **B** : Brass **M** : Alloy 400
	Handle for Soft Seat Nylon Round Handle is recommended for soft seat valve. This helps prevent the soft seat from damage.			

We reserve the right to change specifications stated in this catalog for our continuing Program of improvement.

Safe Valve Selection

The Selection of a Valve for any application or system design must be considered to ensure safe performance. Valve function, Valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK Valves

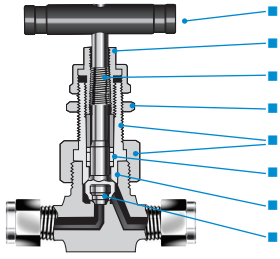
V16 Series Severe Service Union Bonnet Valves

Pressure Rating up to 6,000psig (413 bar)

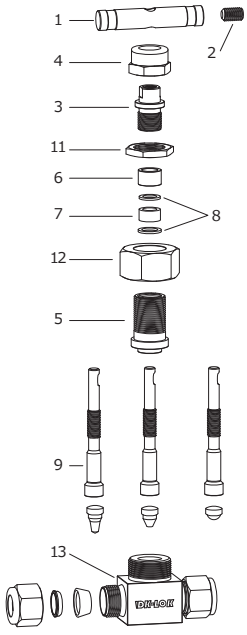
No.V16-6
November 2013

Features

- Pressure Rating up to 6,000 psig (413 bar) @ 100°F (38 °C).
- Temperature Rating up to 449°F (232°C) with standard PTFE packing; up to 1,200°F (648°C) with Grafoil packing.
- Standard 316 stainless steel, optional Alloy 400, and Alloy C276 construction.
- Valve stem back seating against the bevelled edge of bonnet in fully open position prevents maximum leakage through bonnet when packing fails.
- Standard non-rotating stem disc and stem packing below the threads design.



- **Handle-** Standard SS316 bar handle, optional aluminum bar handle.
- **External Packing Bolt-** allows packing adjustment without the valve disassembly.
- **Roll threaded and hard chrome plated stem-** is for long valve life.
- **Panel Mounting Nut-** is standard and permits valve to panel or actuator.
- **Union Nut-** prevents accidental disassembly of the valve in service.
- **Stem Packing below the threads-** prevents media contamination and thread lubricant washout.
- **Stem Back Seating-** in fully open position.
- **Non-Rotating Stem Disc at Closure-** is for maximum metal seat life and positive seal.



Materials of Construction

Component	Valve Body Materials		
	SS316	Alloy 400	Alloy C276
	Material Grade/ASTM Specification		
1. Bar handle	SS316/A276, optional anodized aluminum handle		
2. Set screw	SS304, Grade B8/A193		
3. Packing bolt	SS316/A276 or A479		
4. Cap nut	SS316/A276 or A479		
5. Bonnet	SS316/A276 or A479	Alloy 400/B164	C276/B574
6. Gland	SS316/A276 or A479	Alloy 400/B164	C276/B574
7. Packing (2)	PTFE/D1710, optional PEEK & Grafoil		
8. Packing supports (2)	SS316/A276 or A479	Alloy 400/B164	C276/B574
9. Stem	Hard Chrome-plated SS316/A276 or A479	Alloy 400/B164	C276/B574
10. Standard globe disc, optional globe ball & regulating disc.	TYPE630/A564	Alloy 400/B164	C276/B574
11. Panel nut	SS316/A276 or A479		
12. Union nut	SS316/A276 or A479		
13. Body	SS316/A276 or A479	Alloy 400/B164	C276/B574

Wetted parts and lubricants are listed in blue.

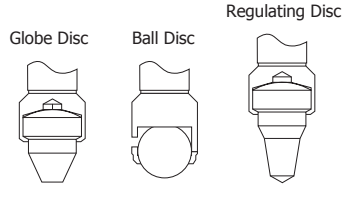
Lubrication :

- Nickel anti-seize lubricant (hydrocarbon carrier).
- Ball disc: hydrocarbon-based.

Technical Data

Ratings below are for valves with standard PTFE packing. Refer to valve ratings with optional packing on Page 3.

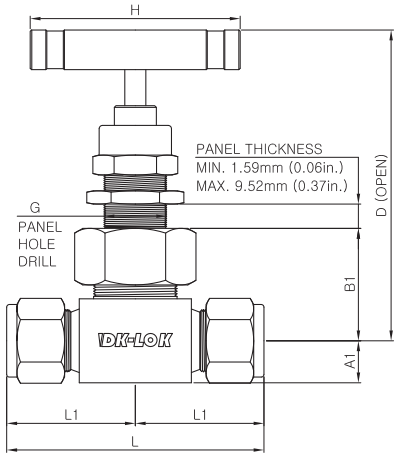
Valve Material	Stem Disc Designator	Temperature Rating °F(°C)	Pressure Rating @ -65 to 100°F (-53 to 38°C)
SS316 Alloy 400 Alloy C276	Globe: Nil. Regulating: -R Ball: -B	-65 to 450 (-53 to 232)	6,000 psig (413 bar)

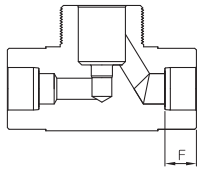


Factory Test and Cleaning

Every valve is tested with the nitrogen gas @ 1,000 psig (68.9 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. The packing is tested for no detectable leakage. Optional hydrostatic shell test with additional cost is performed with pure water at 1.5 times the working pressure. Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01.

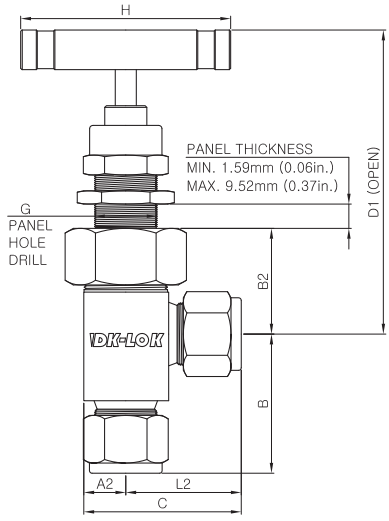
■ In-line pattern





■ Socket weld end

■ Angle pattern



Basic Ordering Number		End connections		Orifice	Cv	Dimensions, mm (inch)												
		Inlet	Outlet	mm (in.)		L	L1	L2	B	C	B1	B2	A1	A2	H	G	D	D1	F
V16A-	F2N-	1/8 Female NPT		4.0 (0.156)	0.35	50.8(2.00)	25.4(1.00)	22.6(0.89)	25.4(1.00)	32.3(1.27)	27.7(1.09)	27.7(1.09)	9.7(0.38)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	F4N-	1/4 Female NPT				52.3(2.06)	26.2(1.03)	22.6(0.89)	25.4(1.00)	32.3(1.27)	27.7(1.09)	27.7(1.09)	9.7(0.39)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	M4N-	1/4 Male NPT				50.8(2.00)	25.4(1.00)	25.4(1.00)	25.4(1.00)	35.1(1.38)	27.7(1.09)	27.7(1.09)	9.7(0.38)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	MF4N-	1/4 Male to Female NPT				51.6(2.03)	26.2(1.03)	22.6(0.89)	25.4(1.00)	32.3(1.27)	27.7(1.09)	27.7(1.09)	9.7(0.39)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	D6M-	6mm DK-Lok				61.0(2.40)	30.5(1.20)	29.5(1.16)	37.6(1.48)	39.1(1.54)	27.7(1.09)	27.7(1.09)	9.7(0.38)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	D4T-	1/4 DK-Lok				61.0(2.40)	30.5(1.20)	29.5(1.16)	37.6(1.48)	39.1(1.54)	27.7(1.09)	27.7(1.09)	9.7(0.38)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	-
	SW4T-	1/4 TSW				46.2(1.82)	23.1(0.91)	22.4(0.88)	30.2(1.19)	31.8(1.25)	27.7(1.09)	27.7(1.09)	9.7(0.38)	9.7(0.38)	44.4(1.75)	15.1(19/32)	77.2(3.04)	77.2(3.04)	7.1(0.28)
	D8M-	8 mm DK-Lok				61.0(2.40)	30.5(1.20)	-	-	-	27.7(1.09)	-	9.7(0.38)	-	44.4(1.75)	15.1(19/32)	77.2(3.04)	-	-
V16B-	F4N-	1/4 Female NPT		6.4 (0.25)	0.86	57.2(2.25)	28.4(1.12)	25.4(1.00)	28.4(1.12)	38.1(1.50)	34.0(1.34)	37.3(1.47)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	F6N-	3/8 Female NPT				57.2(2.25)	28.4(1.12)	25.4(1.00)	28.4(1.12)	38.1(1.50)	34.0(1.34)	37.3(1.47)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	D10M-	10mm DK-Lok				72.4(2.85)	36.1(1.42)	33.0(1.30)	39.4(1.55)	45.7(1.80)	34.0(1.34)	34.3(1.35)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	D6T-	3/8 DK-Lok				71.9(2.83)	35.8(1.41)	32.8(1.29)	42.2(1.66)	45.5(1.79)	34.0(1.34)	31.0(1.22)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	D12M-	12mm DK-Lok				77.2(3.04)	38.6(1.52)	35.6(1.40)	41.9(1.65)	48.3(1.90)	34.0(1.34)	34.0(1.34)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	D8T-	1/2 DK-Lok				77.2(3.04)	38.6(1.52)	35.6(1.40)	41.9(1.65)	48.3(1.90)	34.0(1.34)	34.0(1.34)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	-
	SW4P-	1/4 PSW				57.2(2.25)	28.4(1.12)	25.4(1.00)	28.4(1.12)	38.1(1.50)	34.0(1.34)	37.3(1.47)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	9.5(0.37)
	SW6T-	3/8 TSW				57.2(2.25)	28.4(1.12)	25.4(1.00)	31.8(1.25)	38.1(1.50)	34.0(1.34)	34.0(1.34)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	7.9(0.31)
	SW8T-	1/2 TSW				57.2(2.25)	28.4(1.12)	25.4(1.00)	25.4(1.00)	38.1(1.50)	34.0(1.34)	35.6(1.40)	12.7(0.50)	12.7(0.50)	63.5(2.50)	19.8(25/32)	92(3.62)	92(3.62)	9.5(0.37)
V16C-	F8N-	1/2 Female NPT		11.1 (0.437)	2.20	79.2(3.12)	39.6(1.56)	33.3(1.31)	39.6(1.56)	50.8(2.00)	46.2(1.82)	50.8(2.00)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	126(4.97)	-
	F12N-	3/4 Female NPT				82.6(3.25)	41.1(1.62)	-	-	-	48.5(1.91)	-	19.8(0.78)	-	88.9(3.50)	26.2(1-1/32)	124(4.88)	-	-
	F16N-	1" Female NPT				91.9(3.62)	46.0(1.81)	-	-	-	54.1(2.13)	-	25.4(1.00)	-	88.9(3.50)	26.2(1-1/32)	129(5.10)	-	-
	MF8N-	1/2 Male to Female NPT				79.2(3.12)	39.6(1.56)	33.3(1.31)	39.6(1.56)	50.8(2.00)	46.2(1.82)	50.8(2.00)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	126(4.97)	-
	MF12N-	3/4 Male to Female NPT				82.6(3.25)	41.1(1.62)	36.5(1.43)	41.3(1.62)	56.4(2.22)	48.5(1.91)	50.8(2.0)	19.8(0.78)	19.8(0.78)	88.9(3.50)	26.2(1-1/32)	124(4.88)	126(4.97)	-
	MF16N-	1" Male to Female NPT				91.9(3.62)	46.0(1.81)	-	-	-	54.1(2.13)	-	25.4(1.00)	-	88.9(3.50)	26.2(1-1/32)	129(5.10)	-	-
	D12M-	DK-Lok 12mm				99.6(3.92)	49.8(1.96)	42.7(1.68)	52.8(2.08)	60.2(2.37)	46.2(1.82)	47.8(1.88)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	123(4.85)	-
	D8T-	1/2 DK-Lok				99.6(3.92)	49.8(1.96)	42.7(1.68)	52.8(2.08)	60.2(2.37)	46.2(1.82)	47.8(1.88)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	123(4.85)	-
	D12T-	3/4 DK-Lok				99.0(3.89)	49.5(1.94)	42.7(1.68)	52.8(2.08)	60.2(2.37)	46.2(1.82)	47.8(1.88)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	123(4.85)	-
	D16T-	1 DK-Lok				104(4.09)	51.8(2.04)	-	-	-	47.8(1.88)	-	17.5(0.69)	-	88.9(3.50)	26.2(1-1/32)	123(4.85)	-	-
	SW8P-	1/2 PSW				79.2(3.12)	39.6(1.56)	33.3(1.31)	39.6(1.56)	50.8(2.00)	47.8(1.88)	50.8(2.00)	17.5(0.69)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	123(4.85)	126(4.97)	9.5(0.37)
	SW8T-	1/2 TSW				79.2(3.12)	39.6(1.56)	33.3(1.31)	42.9(1.69)	50.8(2.00)	46.2(1.82)	47.8(1.88)	15.7(0.62)	17.5(0.69)	88.9(3.50)	26.2(1-1/32)	121(4.78)	123(4.85)	9.5(0.37)
	SW12T-	3/4 TSW				79.2(3.12)	39.6(1.56)	-	-	-	46.2(1.82)	-	15.7(0.62)	-	88.9(3.50)	26.2(1-1/32)	121(4.78)	-	11.2(0.44)

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

- Non-rotating globe disc providing repetitive leak tight shut-off is standard.
- To order Angle Pattern, insert –A in the basic ordering number. Refer to the ordering information on page 3.

Pressure-Temperature Ratings

Ratings are based on valves with optional Grafoil packing.

ASME Class	2500		N/A
Material Group	2.2	3.4	N/A
Material Name	SS316	Alloy 400	Alloy C-276
Temperature, °F (°C)	Working pressure, psig (bar)		
–65 (–53) to 100 (38)	6000 (413)	5000 (344)	6000 (413)
200 (93)	5160 (355)	4400 (303)	6000 (413)
300 (148)	4660 (321)	4120 (283)	6000 (413)
400 (204)	4280 (294)	3980 (274)	5880 (405)
500 (260)	3980 (274)	3960 (272)	5540 (381)
600 (315)	3760 (259)	-	5040 (347)
700 (371)	3600 (248)	-	4730 (325)
800 (426)	3460 (238)	-	4230 (291)
900 (482)	3280 (225)	-	3745 (258)
1000 (537)	3030 (208)	-	3030 (208)
1100 (593)	2685 (184)	-	2685 (184)
1200 (648)	1715 (118)	-	1545 (106)

Grafoil packing information

Grafoil is a high temperature packing material that requires a load on the material to generate a seal.
In air, Grafoil maximum temperature is 973°F (523°C), in steam, Grafoil goes up to the maximum temperature of 1,200°F (648° C). Grafoil packing is not for use with pneumatic actuating valves.

Valve ratings with DK-Lok end connections

Valve ratings may be limited to the maximum working pressure of connective pipe and tubing. For valve rating with DK-Lok tube fitting end connections, refer to DK-Lok catalog providing suggested working pressures in various tubing OD, wall thicknesses, and materials.

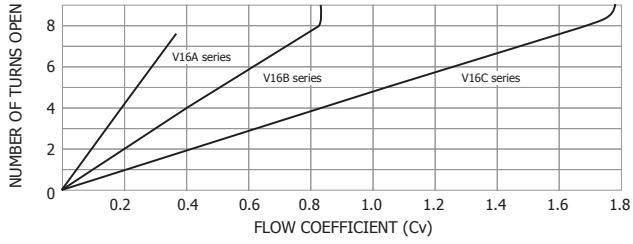
Packing adjustment and actuation torque

Extreme temperature fluctuations while valve in service may require packing adjustment. Valves that have not been actuated for a period of time may have a higher initial actuation torque.

Valve ratings with optional PEEK packing

SS316 and C276 valve with PEEK packing is limited to maximum 600 °F (315 °C) rating ; Alloy 400 valve with PEEK packing is limited to maximum 500 °F (260 °C) rating.

Flow Data @ 100°F (38°C) for valves with regulating disc



Globe and Ball Disc

Valve with standard globe and ball disc is designed for use in a fully open or fully closed position.
Refer to Cv in the ordering information and dimensions table on Page 2.

Cv reduction

Valve flow may be reduced by the restriction of pipe and tubing connected.

Sour Gas Valves

Valves for use in sour gas are available. Valve wetted components are selected to the requirements of NACE MR0175 for sulfide stress cracking resistant materials. To order, insert -SG in the basic ordering number.

Optional Handles

SS316 bar handle is standard. Optional anodized black aluminum bar handle is available.
To order valve with factory-assembled optional aluminum handle, insert designator -AH in the ordering number.
To order handle for field assembly, select desired handle ordering number from the table.

Valve Series	Field Assembly Bar Handle	
	SS316	Aluminum
V16A	V16A-BH	V16A-AH
V16B	V16B-BH	V16B-AH
V16C	V16C-BH	V16C-AH

Ordering Information

Select the desired valve basic ordering number, options and body material.

V16B-D-6T-
V16C-MF-12N-

A	**-PK** **GF**	**-B**	**-AH**	**-SG**	**-BD**	**-S**
Valve Pattern Designator	Packing Material Designator	Stem Disc Designator	Handle Designator	Sour Gas Designator	Pneumatic Double Acting Actuator	Valve Material Designator
Nil : In-line **A** : Angle	**Nil** : PTFE **PK** : PEEK **GF** : Grafoil*	**Nil** : Globe **R** : Regulating **B** : Ball	**Nil** : SS316 bar handle **AH** : Aluminum Bar handle	**Nil** : no Sour Gas **SG** : Sour Gas	**AD** : V16A series valves **BD** : V16B series valves	**S** : SS316 **M** : Alloy 400 **HC** : Alloy C276

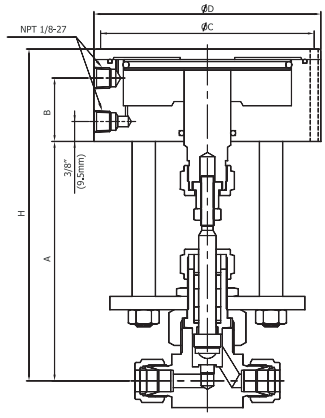
* Grafoil TM UCAR

We reserve the right to change the specifications stated in this catalog for our continuing program of improvement.

Double Acting Pneumatic Actuator

V16 series Pneumatic actuators are designed to actuate valves remotely. V16A and V16B series are available to be equipped with pneumatic actuators in double acting.

Double Acting Dimensions



Valve Series	Dimensions in. (mm)				
	A	H	D	C	B
V16A	4.22 (107)	5.91 (150)	3.25 (82.6)	3.25 (82.6)	1.12 (28.4)
V16B	4.47 (114)	6.22 (158)	4.25 (108)	3.81 (96.8)	1.19 (30.2)

All dimensions are reference only and subject to change.

Double Acting Actuator Technical Data

Maximum applicable pressure	Temperature ratings °F (°C)
150 psig (10.4 bar)	-20 to 300 (-28 to 204)

Pneumatic Actuator Applicability

V16A and V16B series valves with PTFE or PEEK packing are applicable to pneumatic actuator. Those valves with Grafoil packing are not applicable to pneumatic actuator.

Operation Information

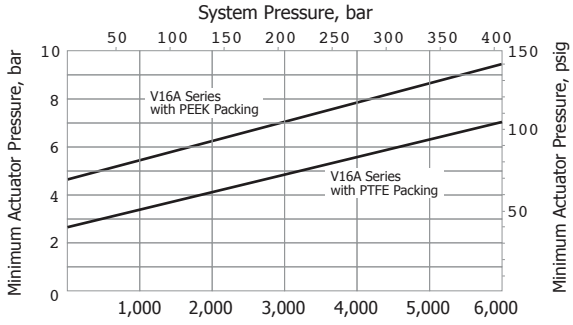
Curve 1 and 2 indicate the minimum actuator pressure to open or close double acting actuator against system pressure.
To prolong valve life, actuators should be operated at minimum air actuator pressures.

Curves shown are based on packing bolt factory adjustment.

Packing bolt adjustment may be required to maintain the valve leak-tight.
If the packing bolt is over-tightened, the actuating pressure can not overcome the friction force between the over-tightened packing and the stem. If the packing bolt is under-tightened for low system pressures, it may leak at high system pressures.
However, packing bolt torque must be sufficiently maintained to prevent packing from leakage.

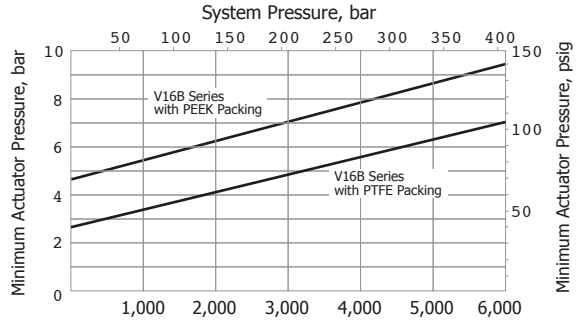
Curve 1

V16A series with Double Acting Actuator -AD



Curve 1

V16B series with Double Acting Actuator - BD



Actuator Ordering Information

To order valves with a pneumatic double acting actuator, insert the desired actuator designator from the chart in the valve ordering number.
Example: V16B-D6T-PK-B-**BD**-S

Valve Series	Double Acting Designator
V16A	AD
V16B	BD

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK® Valves

V23 Series Plug Valves

No.V23-2
July 2013

Pressure Rating up to 3,000 psig (206 bar)

Features

- Quarter-turn operation
- Unique forward flow throttling
- Low torque operation
- Unidirectional flow

Materials of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Grade/ASTM Specification	
1. Body	SS316/ A479 or A276	Brass / B16
2. Plug	PTFE-coated SS316/ A479 or A276	PTFE-coated Brass / B16
3. O-ring	PTFE-coated FKM	
4. Handle	Nylon	
5. Pin	SS316/A276	
6. Snap ring	Stainless Steel	

- Wetted parts and lubricants listed in blue
- Lubricant is silicone-based

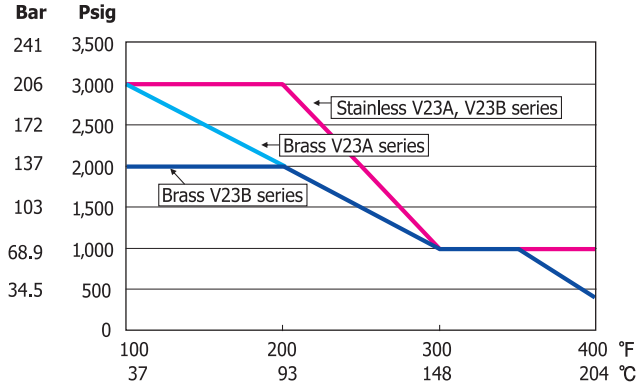
Technical Data

Series	Valve Material	Pressure Rating psig	Pressure Rating bar	Temperature Rating	Plug Orifice mm (in.)
V23A	SS316	3,000	206	-10 to 400 °F (-23 to 204 °C)	4.4 (.17)
	Brass				
V23B	SS316				7.2 (.28)
	Brass	2,000	137		

- Differential pressure is limited to maximum 150 psig (10.3bar) when reverse flow occurs.
- Throttling reverse flow may damage O-ring.

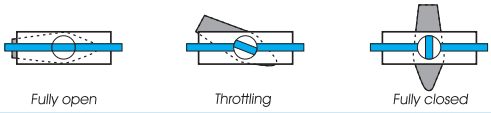
Pressure - Temperature Curves

with standard FKM O-ring

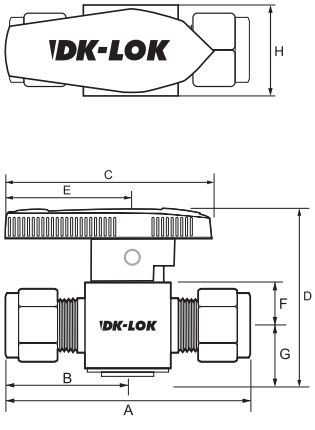


Operation

- DK-Lok plug valves provide positive shut-off, high flow capacity, and quick quarter-turn operation.
- DK-Lok plug valve provides flow throttling capability.



Ordering Information and Dimensions



Basic Ordering Number		End Connections Inlet	End Connections Outlet H	Dimensions mm (inches) A	B	C	D	E	F	G	H
V23A	D-2T-	1/8 in. DK-Lok		50.5 (1.99)	19.8 (0.78)	47.8 (1.88)	38.6 (1.52)	29.0 (1.14)	9.4 (0.37)	11.7 (0.46)	19.1 (0.75)
	D-4T-	1/4 in. DK-Lok		55.1 (2.17)							
	D-6T-	3/8 in. DK-Lok		58.2 (2.29)							
	D-6M-	6mm DK-Lok		55.1 (2.17)							
	M-2N-	1/8 in. Male NPT		38.9 (1.53)							
	M-4N-	1/4 in. Male NPT		48.3 (1.90)							
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok	51.7 (2.03)							
	MF-4N-	1/4 in. Male NPT	1/4 in. female NPT	50.8 (2.00)							
	F-2N-	1/8 in. Female NPT		45.2 (1.78)							
	F-4N-	1/4 in. Female NPT		53.1 (2.09)							
	F-4R-	1/4 in. Female ISO Tapered		56.1 (2.21)							
V23B-	D-6T-	3/8 in. DK-Lok		67.6 (2.66)	29.0 (1.14)	63.2 (2.49)	54.1 (2.13)	38.1 (1.50)	14.2 (0.56)	16.8 (0.66)	28.4 (1.12)
	D-8T-	1/2 in. DK-Lok		73.2 (2.88)							
	D-8M-	8mm DK-Lok		67.6 (2.66)							
	D-10M-	10mm DK-Lok		68.1 (2.68)							
	D-12M-	12mm DK-Lok		75.2 (2.96)							
	M-8N-	1/2 in. Male NPT		67.1 (2.64)							
	F-6N-	3/8 in. Female NPT		60.5 (2.38)							
	F-8N-	1/2 in. Female NPT		73.2 (2.88)							
	F-8R-	1/2 in. Female ISO Tapered		79.8 (3.14)							

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

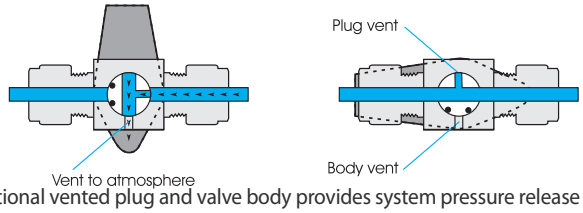
DK-LOK Corporation
www.dklok.com

Factory Test

- Every V23 series plug valve is factory tested for shutoff at 600psig (41.3 bar).

Optional Downstream Vent

Vent to atmosphere when valve is closed **valve open**



Optional vented plug and valve body provides system pressure release to atmosphere when valve is closed.

- This option reduces the maximum operation pressure to 150 psig (10.3 bar).
- To order, use designator - VH. See how to order.

Optional O-ring material

PTFE-coated FKM is standard. Choose optional O-ring material for fluid compatibility and system temperatures.

O-ring material	O-ring Designator	Temperature Range
Standard PTFE-coated FKM	EV	-20 to 400 °F (-28 to 204 °C)
PTFE-coated Buna-N	EB	-68 to 221 °F (-20 to 105 °C)
PTFE-coated EPDM	EE	-49 to 275 °F (-45 to 135 °C)

Flow Data

Basic Ordering Number		End Connections Inlet	End Connections Outlet	Cv	Pressure Drop to Atmosphere, psi (bar) Air Flow, std ft3/min (L/min) @ 70 °F (21 °C) 1 (0.068)	5 (0.34)	10 (0.68)	Water Flow, US gal/min(L/min) @ 70 °F (21 °C) 1 (0.068)	5 (0.34)	10 (0.68)
V23A-	D-2T-	1/8 in. DK-Lok		0.1	0.3 (8.4)	0.8 (22)	1.1 (31)	0.1 (0.37)	0.2 (0.75)	0.3 (1.1)
	D-4T-	1/4 in. DK-Lok		1.6	6.0 (169)	13 (368)	18 (509)	1.6 (6.0)	3.6 (13.6)	5.1 (19.3)
	D-6T-	3/8 in. DK-Lok		1.1	4.1 (116)	8.9 (252)	12.4 (351)	1.1 (4.1)	2.5 (9.4)	3.5 (13.2)
	D-6M-	6mm DK-Lok		1.6	6.0 (169)	13 (368)	18 (509)	1.6 (6.0)	3.6 (13.6)	5.1 (19.3)
	M-2N-	1/8 in. Male NPT		1.0	3.7 (104)	8.1 (229)	11.3 (320)	1.0 (3.7)	2.2 (8.3)	3.2 (12.1)
	M-4N-	1/4 in. Male NPT								
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok	0.9	3.3 (93)	7.3 (206)	10.1 (286)	0 .9 (3.4)	2.0 (7.5)	2.8 (10.8)
	MF-4N-	1/4 in. Male NPT	1/4 in. female NPT	1.0	3.7 (104)	8.1 (229)	11.3 (320)	1.0 (3.7)	2.2 (8.3)	3.2 (12.1)
	F-2N-	1/8 in. Female NPT		1.2	4.4 (124)	9.7 (274)	13.5 (382)	1.2 (4.5)	2.7 (10.2)	3.8 (14.3)
	F-4N-	1/4 in. Female NPT		0.9	3.3 (93)	7.3 (206)	10.1 (286)	0.9 (3.4)	2.0 (7.5)	2.8 (10.8)
	F-4R-	1/4 in. Female ISO Tapered								
V23B-	D-6T-	3/8 in. DK-Lok		6.4	23.9 (676)	52.0 (1470)	72.3 (2040)	6.4 (24.2)	14.3 (54.1)	20.2 (76.4)
	D-8T-	1/2 in. DK-Lok		4.4	16.4 (464)	35.7 (1010)	49.7 (1400)	4.4 (16.6)	9.8 (37.0)	13.9 (52.6)
	D-8M-	8mm DK-Lok		6.4	23.9 (676)	52.0 (1470)	72.3 (2040)	6.4 (24.2)	14.3 (54.1)	20.2 (76.4)
	D-10M-	10mm DK-Lok								
	D-12M-	12mm DK-Lok		4.8	17.9 (506)	39.0 (1100)	54.2 (1530)	4.8 (18.1)	10.7 (40.4)	15.2 (57.5)
	M-8N-	1/2 in. Male NPT		2.4	9.0 (254)	19.5 (552)	27.1 (767)	2.4 (9.0)	5.4 (20.4)	7.6 (28.7)
	F-6N-	3/8 in. Female NPT		4.3	16.0 (453)	34.9 (988)	48.6 (1370)	4.3 (16.2)	9.6 (36.3)	13.6 (51.4)
	F-8N-	1/2 in. Female NPT		2.7	10.1 (286)	21.9 (620)	30.5 (863)	2.7 (10.2)	6.0 (22.7)	8.5 (32.1)
	F-8R-	1/2 in. Female ISO Tapered								

How to Order

Select the desired valve basic ordering number, options and body material.

V23A-D-4T- EB - VH - -B
V23B-F-8N- S

O-ring Material Designator	Downstream Vent Option	Body Material Designator
Nil : PTFE-coated Viton **EB** : PTFE-coated Buna-N **EE** : PTFE-coated EPDM	**Nil** : no vent **VH** : Vent	**S** : SS316 **B** : Brass

We reserve the right to change the specifications stated in this catalog for our continuing program of improvement.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK® Fittings & Valves
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Check Valves

V33, VP33, VA33, VDA33, VH36 and VL36 Series
VCH36 Series for CNG/NGV applications
Pressures up to 3000 psig (206 bar) and 6000 psig (413 bar)

Catalog No. V336-7
December 2011

Features

- Fixed cracking pressure valves: V33, VP33, VH36, VCH36 Series
- Adjustable cracking pressure valves: VA33, VDA33 Series
- Lift Check valves: VL36 Series

Technical Information

Valve Series	V33 Series			VP33 Series	VA33 & VDA33 Series	VH36 Series	
	V33A, V33B, V33C, V33D	V33E, V33F		VP33A, VP33B	VA33A, VA33B, VDA33	VH36A, VH36B	VH36C
Materials	SS316 & Brass	SS316	Brass	SS316 & Brass	SS316 & Brass	SS316	SS316
Working Pressure @70˚F (21˚C) Unit: psi (bar)	3000 (206)	2000 (137)	1500 (103)	3000 (206)	3000 (206)	6000 (413)	5000 (344)
Temperature Ratings ˚F (˚C)	Seal Material	Designator		Rating	Seal Material	Designator	Rating
	FKM O-ring	VT		-10 to 375 (-23 to 190) (a)	EPDM O-ring	EP	-50 to 300 (-45 to 148)
	NBR O-ring	BN		-10 to 250 (-23 to 121)	FFKM O-ring	KZ	-22 to 410 (-30 to 210)
	(a)VH36 Series with FKM O-ring: -10 to 400˚F (-23 to 204˚C) • FKM is standard for SS316 valves. • NBR is standard for Brass valves.						
Cracking Pressure	Refer to spring table of each valve series						

Cracking, Reseal and Back Pressure @ 70˚F(21˚C)

- **Cracking Pressure**: Valve poppet is actuated when the pressure difference between the inlet (upstream) and the outlet (downstream) reaches the range of cracking pressure.
- **Reseal Pressure**: Valves that have higher cracking pressure can be resealed to bubble-tight by the spring force. The reseal pressure is the pressure at the same flow direction, but lower than the cracking pressure.
- **Back Pressure**: Valves that have cracking pressure of 5 psig (0.34 bar) and lower may not be able to return to the bubble-tight seal. This may require back pressure to press the seal to form a bubble-tight contact in addition to the spring force.

Class Ratings

Valve Series	V33 Series				VP33, VA33, VDA33 Series		VH36 Series	
	V33A, V33B, V33C, V33D		V33E, V33F		VP33A, VP33B, VA33A, VA33B, VDA33		VH36A, VH36B	VH36C
Temperature, ˚F (˚C)	Working Pressure, psig (bar)							
	SS316	Brass	SS316	Brass	SS316	Brass	SS316	Brass
-18 to 100 (-28 to 38)	3000 (206)	3000 (206)	2000 (137)	1500 (103)	3000 (206)	3000 (206)	6000 (413)	5000 (344)
200 (93)	2575 (177)	2600 (179)	1715 (118)	1300 (89)	2575 (177)	2600 (179)	5160 (355)	4290 (295)
225 (175)	2510 (172)	2500 (172)	1670 (115)	1250 (86)	2510 (172)	2500 (172)	5030 (346)	4180 (288)
250 (121)	2450 (168)	2405 (165)	1630 (112)	1200 (82)	2450 (168)	2405 (165)	4910 (338)	4080 (281)
300 (148)	2325 (160)	-	1545 (106)	-	2325 (160)	-	4660 (321)	3875 (267)
350 (176)	2255 (155)	-	1490 (102)	-	2255 (155)	-	4470 (308)	3720 (256)
375 (190)	2185 (150)	-	1450 (99)	-	2185 (150)	-	4375 (301)	3640 (250)
400 (204)	-	-	-	-	-	-	4280 (294)	3560 (245)

Quality Assurance System Certificate
Nuclear Quality Assurance System Certificate
DK Tech Fittings Type Approval Certificate
Canadian Certificate
DK Tech Corporation
www.dklok.com

DK-LOK® Check Valves

Operation

- Valves that have not been actuated for a period of time may require a higher cracking pressure than the set cracking pressure.
- DK-LOK check valves prevent reverse flow in circuits. Do not use them as relief valves.
- DK-LOK check valves are designed to prevent loss of media caused by failed connections and for uni-directional flow control of fluids in chemical processing, power generation, oil and gas industries.

Factory Test, Cleaning and Packaging

- Every valve is factory tested for cracking and reseals performance.
- Every valve is cleaned, and packaged in accordance with DK-LOK cleaning standard of DC-01.
- Special cleaning and packaging in accordance with DK-LOK DC-11 in compliance with ASTM G93 Level C is available on request.

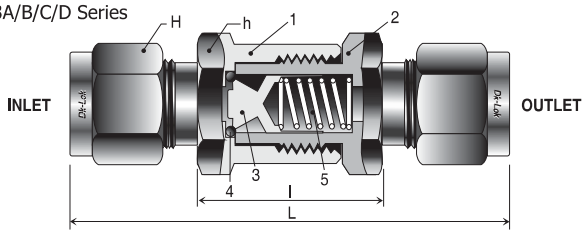
V33 series

- Working pressure up to 3000 psig (206 bar)

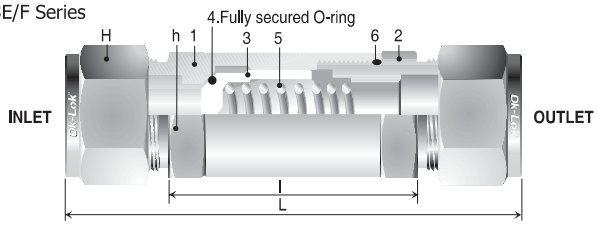
V33 Series Poppet Check Valves

- Feature: Working pressure up to 3000 psig (206 bar)

V33A/B/C/D Series



V33E/F Series



Material of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Material Grade/ASTM	
1. Body	SS316 /A276, A479	Brass 360 /B16
2. Connector		
3. Poppet		
4. O-ring*	FKM	NBR
5. Spring	SS302/A313	
6. O-ring seal	FKM	NBR

- Wetted parts are listed in blue.
  4. O-ring* on V33E & V33F Series is secured in poppet groove.

Lubrication :
- Silicon-based Lubricant for Poppet.
- Molybdenum Dry Film Lubricant for SS316 Body Threads.

V33 Series Ordering Information and Dimensions

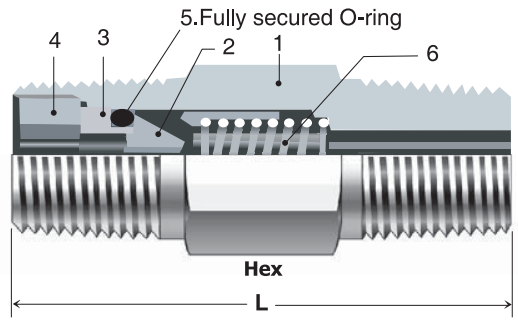
Basic Ordering Number		End Connections Inlet	Outlet	Orifice mm (in.)	Cv	Dimensions mm (inch) h-Hex	H-Hex	L	l
V33A-	D-2T-	1/8 in. Dk-Lok		4.8 (0.19)	0.16	15.88 (5/8)	11.11 (7/16)	55.60 (2.19)	25.00 (0.98)
	M-2N-	1/8 in. Male NPT			0.47		-	44.40 (1.75)	-
	F-2N-	1/8 in. Female NPT					-	46.50 (1.83)	25.00 (0.98)
	D-4T-	1/4 in. Dk-Lok					14.29 (9/16)	60.00 (2.36)	
	D-6M-	6 mm Dk-Lok					14.00		
	MD-4N4T-	1/4 in. Male NPT	1/4 in. Dk-Lok				14.29 (9/16)	56.40 (2.22)	
	M-4N-	1/4 in. Male NPT					-	53.40 (2.10)	
V33B-	F-4N-	1/4 in. Female NPT		7.1 (0.28)	1.48	19.05 (3/4)	-	56.80 (2.24)	-
	D-6T-	3/8 in. Dk-Lok					17.46 (11/16)	65.50 (2.58)	27.10 (1.07)
	D-10M-	10 mm Dk-Lok					19.00		
	M-6N-	3/8 in. Male NPT					-	55.50 (2.19)	
V33C-	F-6N-	3/8 in. Female NPT		10.0 (0.39)	1.7	22.22 (7/8)	-	63.80 (2.51)	-
	D-8T-	1/2 in. Dk-Lok					22.22 (7/8)	80.20 (3.16)	36.20 (1.43)
	D-12M-	12 mm Dk-Lok					22.00		
	M-8N-	1/2 in. Male NPT					-	74.40 (2.93)	
V33D-	F-8N-	1/2 in. Female NPT		13.5 (0.53)	2.6	28.58 (1-1/8)	-	84.70 (3.33)	-
	D-10T-	5/8 in. Dk-Lok					25.40 (1)	91.80 (3.61)	48.10 (1.89)
V33E-	D-12T-	3/4 in. Dk-Lok		16.0 (0.63)	5.2	31.75 (1-1/4)	28.58(1-1/8)	110.70 (4.35)	67.00 (2.64)
	M-12N-	3/4 in. Male NPT					-	105.30 (4.15)	
	F-12N-	3/4 in. Female NPT					-	103.00 (4.06)	-
V33F-	D-16T-	1 in. Dk-Lok		18.0 (0.71)	8.0	34.93 (1-3/8)	38.1 (1-1/2)	121.10 (4.77)	68.40 (2.69)
	M-16N-	1 in. Male NPT					-	116.20 (4.57)	
	F-16N-	1 in. Female NPT				41.28 (1-5/8)	-	111.40 (4.39)	

Table 1. **Spring Cracking, Reseal and Back Pressure @ 70°F (21°C)**

Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges Min. Pressure		Max. Pressure		Reseal Pressures psi (bar)
psi	bar	psi	bar	psi	bar	
1/3	0.02	0	0	3	0.21	Up to 6 (0.41) Back pressure
1	0.07	0	0	4	0.28	Up to 6 (0.41) Back pressure
3	0.21	2	0.14	7	0.48	Up to 4 (0.28) Back pressure
10	0.69	7	0.48	15	1.03	Minimum 3 (0.21) Reseal pressure
25	1.72	20	1.38	30	2.07	Minimum 17 (1.17) Reseal pressure
50	3.45	40	2.76	60	4.14	Minimum 35 (2.41) Reseal pressure
75	5.17	60	4.14	90	6.20	Minimum 53 (3.65) Reseal pressure
100	6.89	80	5.51	120	8.27	Minimum 70 (4.82) Reseal pressure

VP33 Series One-Piece Check Valves

- Features:
  - O-ring seal blow-out proof design
  - One piece body construction.
  - Working pressure up to 3000 psig (206 bar)



Materials of Construction

Component	Valve Body Materials	
	Stainless Steel	Brass
	Material Grade/ASTM	
1. Body	SS316 /A276, A479	Brass 360 /B16
2. Poppet		
3. O-ring Holder		
4. Locking Screw		
5. O-ring	FKM	NBR
6. Spring	SS302/A313	

Wetted parts are listed in blue.

Lubrication:
- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Locking Screw.

VP33 Series Ordering Information and Dimensions

Basic Ordering Number		End Connections		Cv	Dimensions mm (inch)	
		Inlet	Outlet		L	Hex.
VP33A-	M-4N-	1/4 in. Male NPT		0.35	41 (1.62)	14.28 (9/16)
	M-4R-	1/4 in. ISO Male Tapered				
	F-4N-	1/4 in. Female NPT			61 (2.41)	19.05 (3/4)
	F-4R-	1/4 in. ISO Female Tapered			64 (2.54)	
	MF-4N-	1/4 in. Male NPT	1/4 in. Female NPT		44 (1.75)	
	FM-4N-	1/4 in. Female NPT	1/4 in. Male NPT		58 (2.28)	
VP33B-	M-8N-	1/2 in. Male NPT		1.20	58 (2.28)	22.22 (7/8)
	F-8N-	1/2 in. Female NPT			94 (3.71)	26.98 (1-1/16)
	MF-8N-	1/2 in. Male NPT	1/2 in. Male NPT		72 (2.83)	

Table 2. **Spring Cracking, Reseal and Back Pressure @ 70°F (21 ℃)**

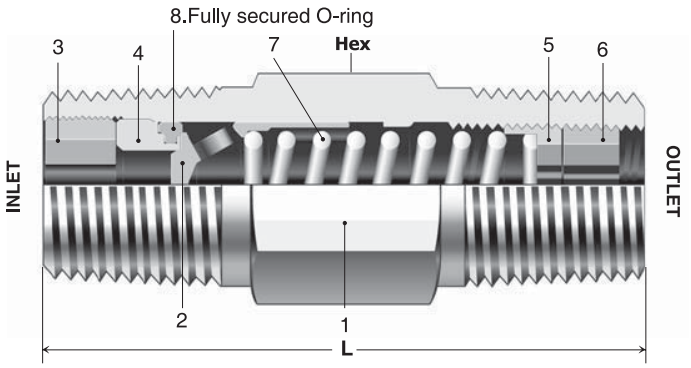
Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges				Reseal Pressures psi (bar)
		Min. Pressure		Max. Pressure		
psi	bar	psig	bar	psig	bar	
1/3	0.02	0	0	3	0.21	6 to 20 (0.41 to 1.38) back pressure
1	0.07	0	0	4	0.28	5 to 20 (0.34 to 1.38) back pressure
10	0.69	7	0.48	13	0.90	3 to 10 (0.21 to 0.69) back pressure
25	1.72	21	1.45	29	2.00	Minimum 5 (0.34) Reseal pressure

VA33 Series One-Piece Adjustable Check Valves
VDA33 Series In-Line Adjustable Check Valves

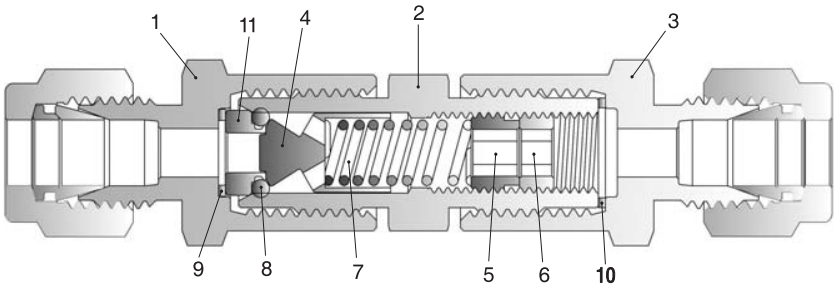
VA33 & VDA33 Series Features

- Cracking pressure adjustable from 3 to 600 psig (0.2 to 41.3 bar)
- Working pressure up to 3000 psig (206 bar)
- Temperature up to 190℃ (375°F)with FKM O-ring
- Standard materials : 316 stainless steel and brass.

VA33 Series



VDA33 Series



Materials of Construction

Component		Valve Body Materials	
		Stainless Steel	Brass
		Material Grade/ASTM	
VA33 Series	VDA33 Series		
1. Body	1. Inlet body 2. Center body 3. Outlet body	SS316 /A276, A479	Brass 360 / B16
2. Poppet	4. Poppet		
3. Insert locking screw	-		
4. Insert	11. Insert		
5. Adjustable screw	5. Adjustable screw		
6. Locking screw	6. Locking screw		
7. Spring	7. Spring	SS302/A313	
8. O-ring	8. O-ring	FKM, Optional FFKM	NBR
	9. Inlet gasket 10. Outlet gasket	TFE coated SS316	

Wetted parts are listed in blue.

Lubrication:
- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Locking Screw and Insert Locking Screw.

VA33 Series Ordering Information and Dimensions

Basic Ordering Number		End Connections	Cv	L		Hex
				mm	inch	
VA33A-	F-4N-	1/4 in. Female NPT	0.35	75.7	2.98	3/4
	M-4N-	1/4 in. Male NPT		41.1	1.62	9/16
	M-4R-	1/4 in. ISO Male Tappered		41.1	1.62	9/16
VA33B-	M-8N-	1/2 in. Male NPT	1.2	65.0	2.56	7/8
	M-8R-	1/2 in. ISO Male Tappered		65.0	2.56	7/8

VDA33 Series Ordering Information and Dimensions

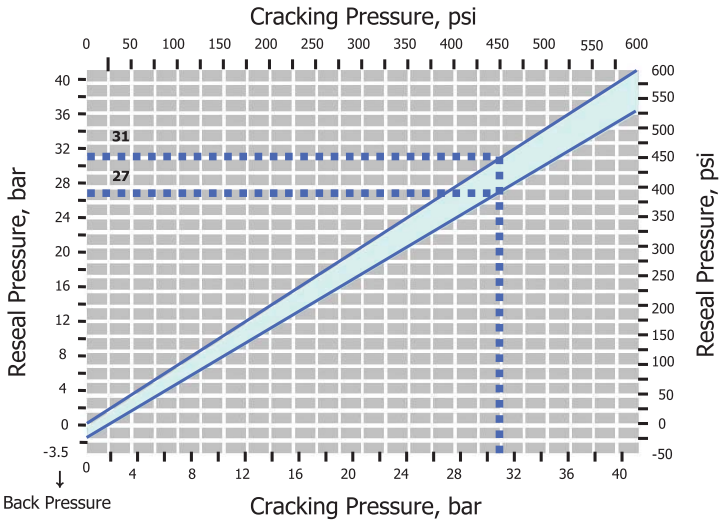
Basic Ordering Number		End Connections		Cv	Dimensions mm(inch)		
		Inlet	Outlet		L	H	h
VDA33	D-4T-S	1/4 in. DK-LOK		0.37	82.0(3.23)	9/16 in.	5/8 in.
	D-6M-S	6mm DK-LOK			82.0(3.23)	14mm	
	D-8M-S	8mm DK-LOK			84.3(3.32)	16mm	
	MD-4N4T-S	1/4 in. Male NPT	1/4 in. DK-LOK		79.2(3.12)	9/16 in.	

Table 3. **VA33 & VDA33 Series**
Spring Cracking Pressure Range Designator

Cracking Pressure Range @21˚C (70˚F)		Designator
psig	Bar	
3 to 50	0.2 to 3.4	3
50 to 150	3.4 to 10.3	50
150 to 350	10.3 to 24.1	150
350 to 600	24.1 to 41.3	350

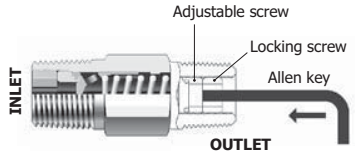
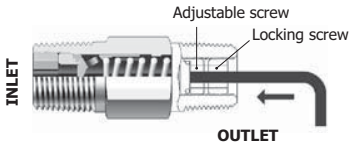
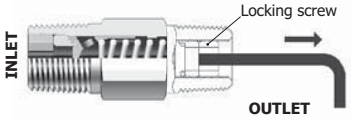
Cracking Pressure vs. Reseal pressure

VA33 and VDA33 Series valves set to crack at 20 psig(1.3 bar) or lower may require back pressure(downstream pressure) to reseal the valve bubble tight.



Example shown : For a valve set to crack at 31 bar (450 psig), the minimum reseal pressure would be 27 bar (390psig).

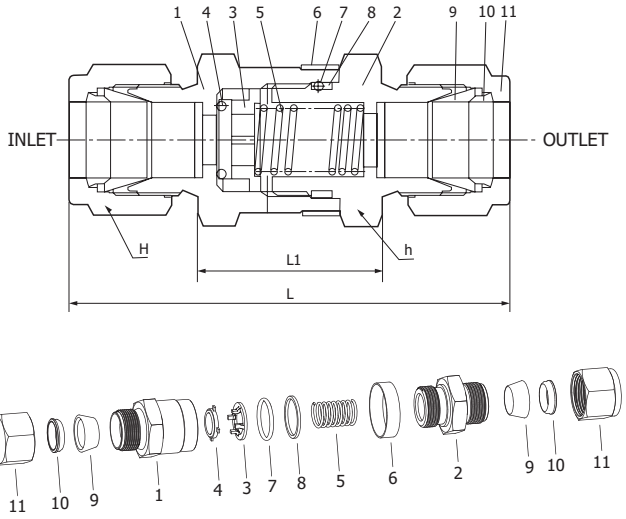
How to adjust cracking pressure

Step 1	Step 2	Step 3
 Slightly unscrew the locking screw counter-clockwise.	 1. Gently slide the allen key up to adjustable screw position. 2. Adjust cracking pressure. ● To increase cracking pressure, turn adjustable screw clockwise. ● To decrease cracking pressure, turn adjustable screw counter-clockwise.	 1. Move out the allen key up to the locking screw position. 2. To lock out the locking screw, turn the allen key clockwise.

VH36 Series High Pressure Check Valves
VCH36 Series CNG/NGV Check Valves

Features

- High pressure 6000 psig (413 batr)
- Seal blow-out proof design with the bonded seal on poppet.



Materials of Construction

Component	Valve Body Material
	Stainless Steel
	Material Grade/ASTM
1. Body	SS316 /A479, A276
2. Connector	
3. Poppet stop	
4. Poppet with bonded seal	**Poppet** : SS316 /A479, A276 **Bonded Seal** : FKM, optional EPDM & Kalrez HNBR standard for VCH36 series.
5. Spring	SS302 /A313
6. Indicator ring*	SS316 /A276
7. O-ring	FKM. HNBR standard for VCH36 Series.
8. Backup ring	PTFE /D1710
9. 10. 11. Dk-Lok Front & Back Ferrule and Nut	SS316 /A479, A276

Wetted parts are listed in blue.
*Indicator ring bears the information of spring designator.

Lubrication:
- Silicon-based Lubricant on Poppet
- Molybdenum Dry Film Lubricant on SS316 Connector threads

CNG Certifications

VCH36 Series check valve with CNG compatible HNBR O-ring are available with CNG certifications.

Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ISO 15500
Certificate No.	110R-000186	2010-REPORT-014 (00)	2010-REPORT-013 (00)
Classification	Class 0	Check valve	Check valve
Temperature	-40 to 120 ˚C (-40 to 250 ˚F)	-40 to 121 ˚C (-40 to 250 ˚F)	-40 to 121 ˚C (-40 to 250 ˚F)
Working Pressure	274 bar @ 120 ˚C	273 bar @ 121 ˚C	273 bar @ 121 ˚C

VH36 Series Ordering Information and Dimensions

Note: The basic ordering numbers indicated in blus are not for CNG/NGV applicable VCH36 Series vavlves.

Basic Ordering Number		End Connections	Cv	Dimensions mm (inch)				Pressure Rating psig (bar)
				L	L1	H	h	
VH36A- VCH36A-	D-2T-	1/8 in. Dk-Lok	0.67	57.7 (2.27)	26.4 (1.04)	7/16	11/16	6000 (413)
	D-4T-	1/4 in. Dk-Lok		61.7 (2.43)	26.4 (1.04)	9/16		
	D-6M-	6 mm Dk-Lok		61.7 (2.43)	26.4 (1.04)	14		
	F-4N-	1/4 in. Female NPT		54.1 (2.13)	-	-		
	M-2N-	1/8 in. Male NPT		45.5 (1.79)	26.4 (1.04)	-		
	M-4N-	1/4 in. Male NPT		55.1 (2.17)	26.4 (1.04)	-		
VH36B- VCH36B-	D-6T-	3/8 in. Dk-Lok	1.8	69.9 (2.75)	31.2 (1.23)	11/16	1	6000 (413)
	D-8T-	1/2 in. Dk-Lok		75.2 (2.96)	31.2 (1.23)	7/8	1	
	D-8M-	8 mm Dk-Lok		68.6 (2.70)	31.2 (1.23)	16	1	
	D-10M-	10 mm Dk-Lok		71.1 (2.80)	31.2 (1.23)	19	1	
	D-12M-	12 mm Dk-Lok		75.2 (2.96)	31.2 (1.23)	22	1	
	F-6N-	3/8 in. Female NPT		64.8 (2.55)	-	-	1	
	F-8N-	1/2 in. Female NPT		77.0 (3.03)	-	-	1-1/16	
	M-6N-	3/8 in. Male NPT		59.9 (2.36)	31.2 (1.23)	-	1	
	M-8N-	1/2 in. Male NPT		69.3 (2.73)	31.2 (1.23)	-	1	
VH36C- VCH36C-	D-12T-	3/4 in. Dk-Lok	4.7	89.4 (3.52)	45.2 (1.78)	1-1/8	1-5/8	5000 (344)
	D-16T-	1 in. Dk-Lok		98.6 (3.88)	45.5 (1.79)	1-1/2		
	D-22M-	22 mm Dk-Lok		88.4 (3.48)	45.5 (1.79)	32		
	D-25M-	25 mm Dk-Lok		98.6 (3.88)	45.5 (1.79)	40		
	F-12N-	3/4 in. Female NPT		82.0 (3.23)	82.0 (3.23)	-		
	F-16N-	1 in. Female NPT		97.3 (3.83)	97.3 (3.83)	-		
	M-12N-	3/4" Male NPT		83.6 (3.29)	45.5 (1.79)	-		
	M-16N-	1 in. Male NPT		93.2 (3.67)	45.7 (1.80)	-		

Table 4. **Spring Cracking, Reseal and Back Pressure @ 70 °F (21 °C)**

Spring Nominal Cracking Pressure Designator		Cracking Pressure Ranges				Reseal Pressures psi (bar)
		Min. Pressure		Max. Pressure		
psi	bar	psi	bar	psi	bar	
1/3	0.02	0	0	3	0.21	Up to 6 (0.41) back pressure
1	0.07	0	0	4	0.28	Up to 5 (0.35) back pressure
5	0.34	3	0.21	9	0.62	Up to 2 (0.14) back pressure
10	0.69	7	0.48	15	1.03	Minimum 3 (0.21) Reseal pressure
25	1.72	20	1.38	30	2.07	Minimum 17 (1.2) Reseal pressure

Sour Gas Service

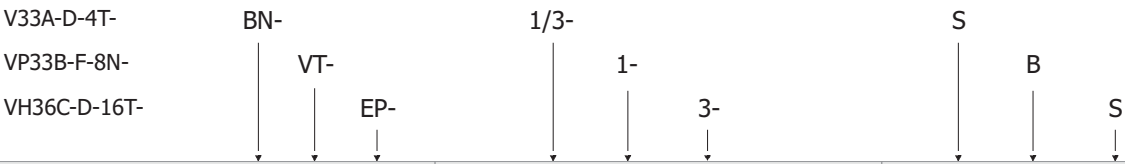
Materials of VH36 series valves for sour gas service are selected in accordance with the requirements of NACE MR0175

- Spring: alloy X-750/AMS5699
- Nominal Cracking Pressure: 1/3, 1, and 5 psi (0.03, 0.07 and 0.035 bar)
- Seal: ethylene propylene.

To order, insert-SG in the ordering number. i.e., VH36B-D-8T-SG-S

How to Order

Select valve basic ordering number, applicable seal, spring nominal cracking pressure, and body material.



Seal Material Designator	Spring Nominal Cracking Pressure Designator	Valve Body Material Designator
• FKM: Nil for SS316 Valve • NBR: Nil for Brass Valve • HNBR: Nil for VCH36 CNG valves • FKM: VT • NBR: BN • EPDM: EP • FFKM: KZ	• 1/3: 1/3 psi • 1: 1 psi • 3: 3 psi • 10: 10 psi • 25: 25 psi Note: Select the spring designator from Table 1, 2, 3 and 4 of each valve Series.	• S: 316 stainless steel • B: Brass

Spare Kits for Field Assembly

Spring
Prefix "9SPR" and select an applicable valve series and the designator of the spring nominal cracking pressure.

9SPR-(Valve series)-(spring designator)-2
Example: 9SPR-V33A-1/3-2

How to order VH36 Series spring kit.
VH36 spring kit contains a spring and an indicator ring.

Select an applicable valve series and the designator of the spring nominal cracking pressure.

(Valve series)-RINGSPR-(spring designator)-SA
Example:VH36A-RINGSPR-5-SA

O-ring
Prefix "9ORG", select an applicable valve series and seal material designator.
Example: 9ORG-V33A-BN

How to order VH36 Series seal kit.
VH36 seal kit contains (Refer to VH36 Materials of Construction) #4. Poppet with bonded seal, #7. O-ring and #8. Backup ring.

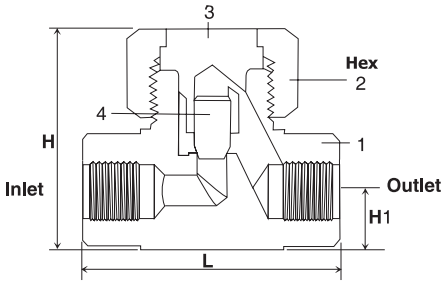
Select an applicable valve series and seal material designator

SK-(valve series)-(seal material designator)
Examples: SK-VH36A-VT, SK-VH36B-BN.

VL36 Series Lift Check Valves

Features
- Working pressure up to 6000 psig (413 bar)
- Temperature up to 900˚F (482˚C)
- Metal to metal seat

Operation
- Operation of this valve heavily depends on gravity assistance. Thus mounting horizontally with bonnet nut upward to allow poppet to operate vertically.
- Reverse flow closes the valve, keeping poppet in the orifice.
- Forward flow opens the valve, lifting the poppet
- Lift check valve is primarily for use in liquid systems. If a slight amount of leakage can be tolerated it can be used with heavy gases.
- Reverse flow Cv is limited to less than 0.1% of forward Cv.



Materials of Construction

Component	Valve Body Material
	Stainless Steel
	Material Grade/ASTM
1 Body	SS316/A276 or A479
2 Bonnet Nut	SS316/A276 or A479
3 Bonnet	TYPE630/A564
4 Poppet	SS316/A276 or A479

Complete Ordering Number and Dimensions

Complete Ordering Number		End Connection	Orifice mm	Orifice inch	Cv	Dimensions mm (in.) L	H	H1	Hex
VL36A-	D4T-S	1/4 in. DK-LOK	4.0	0.156	0.30	61.0 (2.40)	37.3 (1.47)	9.9 (.39)	7/8
	D6M-S	6 mm DK-LOK				50.8 (2.00)			
	F2N-S	1/8 in. Female NPT				46.0 (1.81)			
	F4N-S	1/4 in. Female NPT							
	SW4T-S	1/4 in. tube socket weld							
VL36B-	D6T-S	3/8 in. DK-LOK	6.4	0.250	0.64	71.9(2.83)	47.0 (1.85)	12.7 (.50)	1 1/4
	F4N-S	1/4 in. Female NPT				57.2 (2.25)			
	SW6T-S	3/8 in. Tube Socket Weld							
	SW8T-S	1/2 in. Tube Socket Weld							
VL36C-	D8T-S	1/2 in. DK-LOK	11.1	0.437	2.20	99.6 (3.92)	62.0 (2.44)	15.7 (.62)	1 1/2
	D12T-S	3/4 in. DK-LOK							
	F6N-S	3/8 in. Female NPT				79.2(3.12)			
	F8N-S	1/2 in. Female NPT							
	SW8T-S	1/2 in. Tube Socket Weld				79.5 (3.13)			

Pressure-Temperature Ratings

ASME Class	2500
Material Group	2.2
Material Name	SS316
Temp. ˚F (˚C)	Working Pressure psig (bar)
-65 to 100 (-53 to 37)	6000 (413)
200 (93)	5160 (355)
300 (148)	4660 (321)
400 (204)	4280 (294)
500 (260)	3980 (274)
600 (315)	3760 (259)
700 (371)	3600 (248)
800 (426)	3460 (238)
900 (482)	3280 (225)

How to order: Select a complete ordering number. i.e., VL36A-D-4T-S.

All dimensions shown are for reference only and subject to change. Dimensions with DK-LOK are in finger-tight position.
We reserve the right to change specification stated in this catalog for our continuing program of product improvemenr.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. Dk Tech accepts no liability for any improper selection, installation, operation or maintenance.

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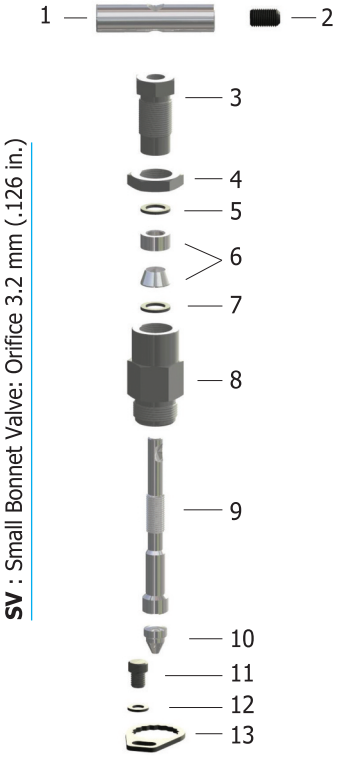
V46 series Gauge Root Valves
V56 series Instrument Manifolds

Pressure Rating up to 6000 psig (413 bar)

Catalog No. V56/V46-5
Feb. 2008

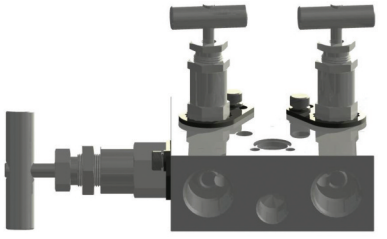


Materials of Construction

Component	Valve Body Materials	
	Stainless steel	Carbon steel
	Bonnet Valve	
	Grade/ASTM specification	
1. Handle	Stainless steel	Aluminiun black anodized
2. Set screw	SS316/A276 or A479	SS316/A276 or A479
3. Packing bolt		C.Steel/A108
4. Lock nut		
5. Upper gland		SS316/A276 or A479
6. Packing	Standard chevron PTFE packing, optional Grafoil	
7. Lower gland	SS316/A276 or A479	SS316/A276 or A479
8. Bonnet		C.Steel/A108
9. Stem		SS316/A276 or A479
10. Non-rotating stem tip	SS630/A564	
11. Lock plate bolt	Stainless steel	
12. Spring washer	Stainless steel	
13. Lock plate	Stainless steel	Carbon steel
14. Body	SS316/A276 or A479	C.Steel/A108 or A105, Yellow zinc galvanized
Flange seals (not shown)	PTFE/D1710, optional Grafoil and florocarbon FKM O-ring	
Flange bolts (not shown)	Stainless steel/A193	Carbon steel/A193
Lubricant	Fluorinated base with PTFE and tungsten disulfide	
	Hydrocarbon based	

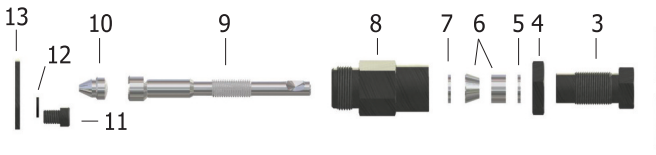
Wetted components are listed in blue.

Grafoil: TM UCAR



Model shown: VBR56-5V8N-S

LV : Large Bonnet Valve: Orifice 6.4 mm (.251 in.)



MV : Medium Bonnet Valve
Orifice 5.0 mm (.196 in.)

Features

- **Non-rotating** stem tip at closure for long-life and leak-tight shutoff.
- **Chevron PTFE packing** design provides far improved sealing integrity.
- **Packing** below stem threads is to isolate **threads** from system fluid and lubricant washout.
- Packing bolt permits stem **packing adjustment.**
- Standard **Lock plate** ensures the valve fastened to the body even excessive operating torque is applied.
- **One piece body construction** provides strength.
- Burr-free internal surface.

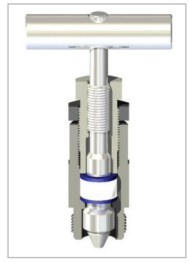
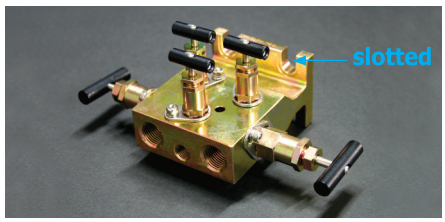


Image shown:
Bonnet Valve.

Feature of packing below stem thread maintains in small, medium and large bonnet valve on manifolds as well as on gauge root valves.



VES56 series **slotted flange** feature facilitates manifolds mounting with long stud hex nut.

Model shown: VES56-5V1F8N-C

Quality Assurance System Certificate: API, ISO 9001 ISO 14001 OHSMS 18001

Nuclear Quality Assurance System Certificate: ASME N, ASME NPT, ASME NS, KHNP, Kepic

DK Tech Fittings Type Approval Certificate: ABS, GL, DNV, Lloyd's Register, KR

Canadian Certificate: CRN

DK Tech Corporation
www.dklok.com

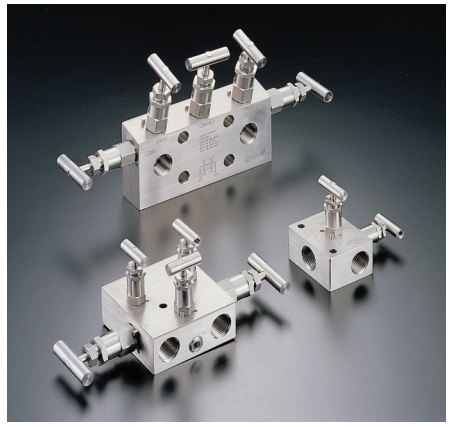
Pressure-Temperature Ratings

Manifolds and Gauge Root Valves

Body Material	Packing material	Temperature Rating	Pressure Rating @ 37 °C (100 °F)	Pressure Rating @ Max. Temp.
Stainless steel	PTFE	- 54 to 232 °C (-65 to 450 °F)	413 bar (6000 psig)	285 bar@232 °C 4130 psig@450 °F
	Grafoil	-54 to 648 °C (1) (-65 to 1200 °F)		118 bar@648 °C 1715 psig @ 1200 °F
Carbon steel	PTFE	- 29 to 176 °C (-20 to 350 °F)	413 bar (6000 psig)	360 bar @ 176 °C (5230 psig @ 350 °F)
	Grafoil	- 29 to 176 °C (-20 to 350 °F)		

(1) Grafoil packing rating is limited to 537 °C (1000 °F) with flange end connection. In air, Grafoil rating is limited to 523 °C (975 °F), in steam it can go up to the maximum temperature of 648 °C (1200 °F).

- -28 to 204 °C (-18 to 399 °F) with optional fluorocarbon FKM flange seals.



Design

- D-Pro Manifolds and Gauge root valves are designed to ASME B16.34 Class 2500 for pressure-temperature ratings.
- Pressure boundary wetted parts are selected to Chapter III, 123 Materials of ASME B31.1.
- Valve ratings are based on ASME process piping code B31.3.
- To determine pressure rating at 37 °C (100 °F) in accordance with Power piping code B31.1, multiply by 0.94 for stainless steel.

Factory test

- Every manifolds and gauge root valve is factory tested with nitrogen @ 69 bar (1000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
- Stem packing is tested for no detectable leakage.
- Optional hydrostatic shell test is performed with pure water at 1.5 times the working pressure.

Packing adjustment and Actuation Torque

- Extreme or rapid temperature cycle while valve in service may require packing adjustment. Tighten the packing bolt 1/16 turn clockwise.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.

Sour Gas Service

- For use valve in sour gas, materials for wetted components are selected in accordance with NACE MR0175 latest revision.

Ordering and Technical Information

Manifolds		Basic Ordering Number	End Connections		Orifice mm (in.)	Weight Kg (lb.)
			Process	Instrument		
Remote Mount		VBR56-2V8N-	1/2 in. Female NPT		3.2 (.126)	0.8 (1.8)
		VBR56-3V8N-			6.4 (.251)	2.0 (4.4)
		VBR56-5V8N-				2.2 (4.9)
Direct Mount	Single Flange	VE56-2V1F8N-	1/2 in. Female NPT to Flange. Flange design meets MSS SP-99.		3.2 (.126)	1.0 (2.2)
		VE56-3V1F8N-			6.4 (.251)	2.2 (4.9)
		VE56-5V1F8N-				2.7 (6.0)
	Double Flange	VE56-3V2F-	Flange to Flange. Flange design meets MSS SP-99		6.4 (.251)	2.5 (5.5)
		VE56-5V2F-				2.7 (6.0)
	Single Flange with slotted feature	VES56-2V1F8N-	1/2 in. Female NPT to Flange. Flange design meets MSS SP-99.		3.2 (.126)	1.0 (2.2)
		VES56-3V1F8N-			6.4 (.251)	2.2 (4.9)
		VES56-5V1F8N-				2.7 (6.0)
	Double Flange with slotted feature	VES56-3V2F-	Flange to Flange. Flange design meets MSS SP-99		6.4 (.251)	2.5 (5.5)
		VES56-5V2F-				2.7 (6.0)
	Vertical	VBD56-2V8N-	1/2 in. Female NPT to Flange. Flange design meets MSS SP-99.		3.2 (.126)	1.6 (3.5)
		VBD56-3V8N-			5.0 (.196)	1.7 (3.8)
		VBD56-5V8N-			6.4 (.251)	3.3 (7.3)
		VBD56S-5V8N-			5.0 (.196)	2.7 (6.0)

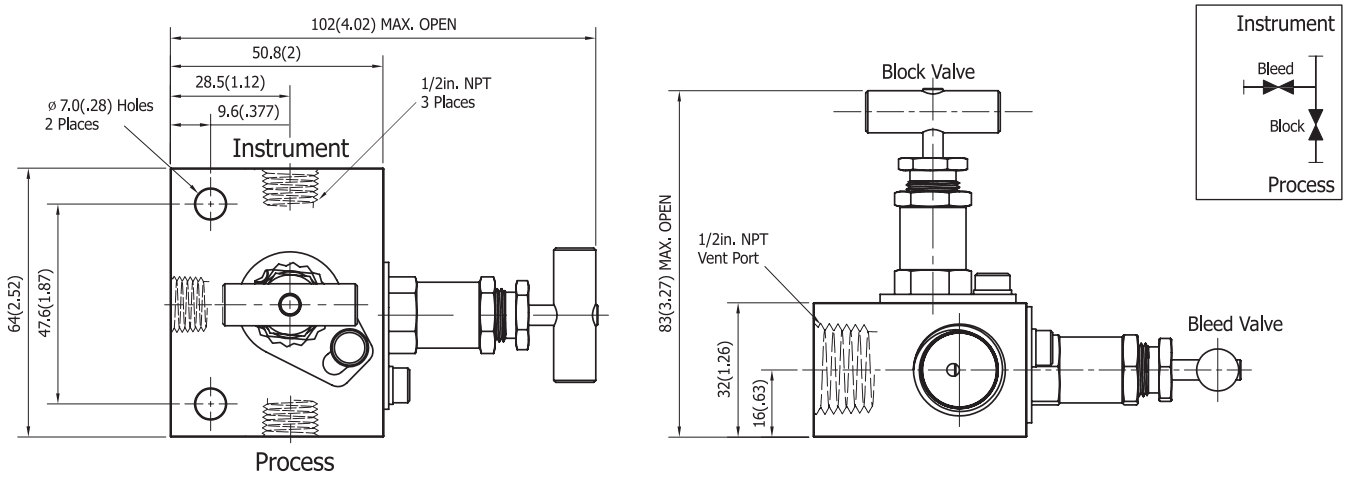
How to order manifolds with options

- To order the optional Grafoil packing, add -GF to the ordering number. i.e., VES56-3V1F8N-GF-
- To order sour gas service valve, add-SG to the ordering number. i.e., VES56-3V1F8N-GF-SG-
- To order optional GRAFOIL or FKM O-ring flange seal, add -GF or -VT to the ordering number/ i.e., VES56-3V1F8N-GF-SG-GF(or- VT)- Flange seal designators: -GF for Grafoil, - VT for FKM O-ring.
- To complete the ordering number, select valve body material designator: - S for SS316, - C for Carbon steel. i.e., VES56-3V1F8N-GF-SG-VT-S.

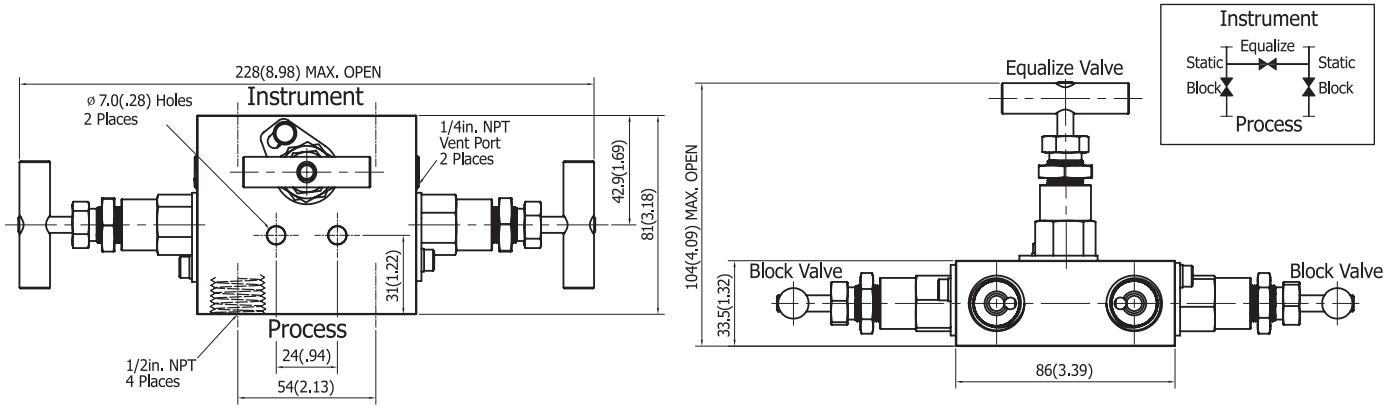
Remote mount

Unit: mm (in.)

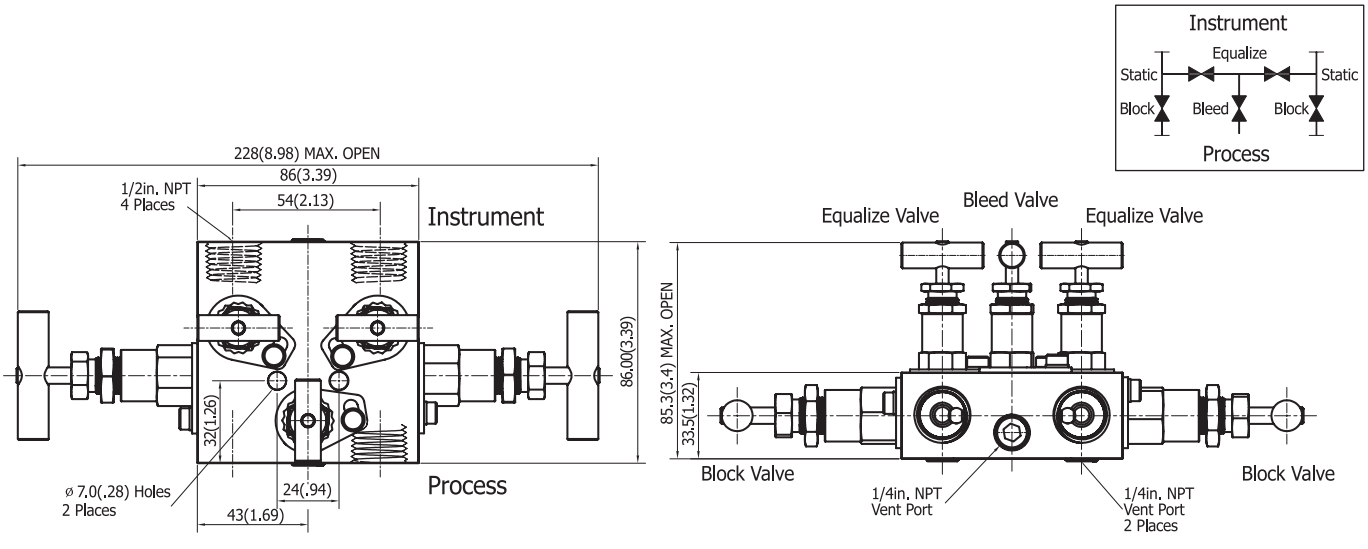
VBR56-2V8N-



VBR56-3V8N-



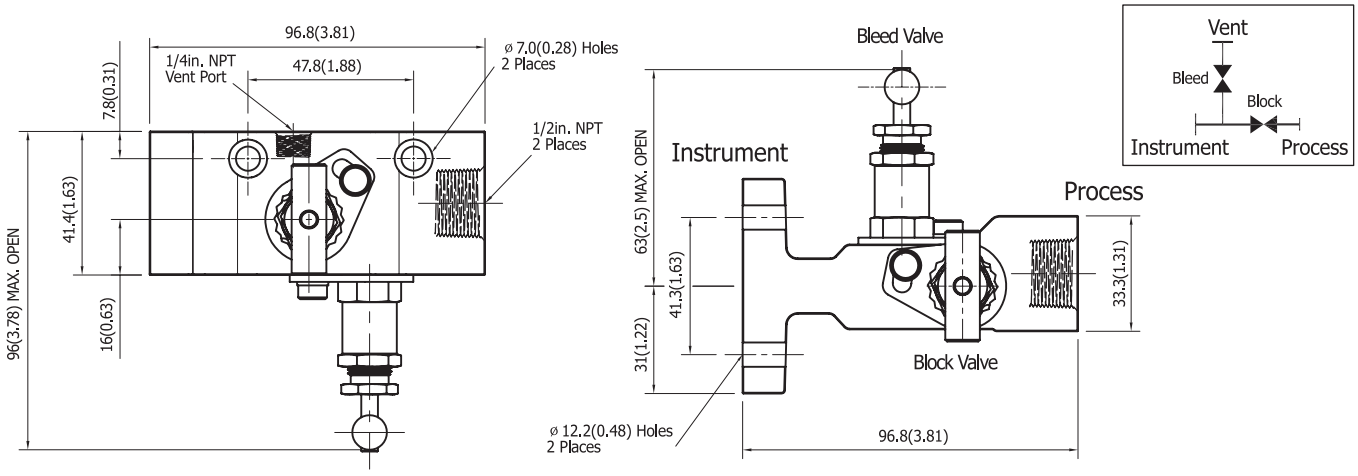
VBR56-5V8N-



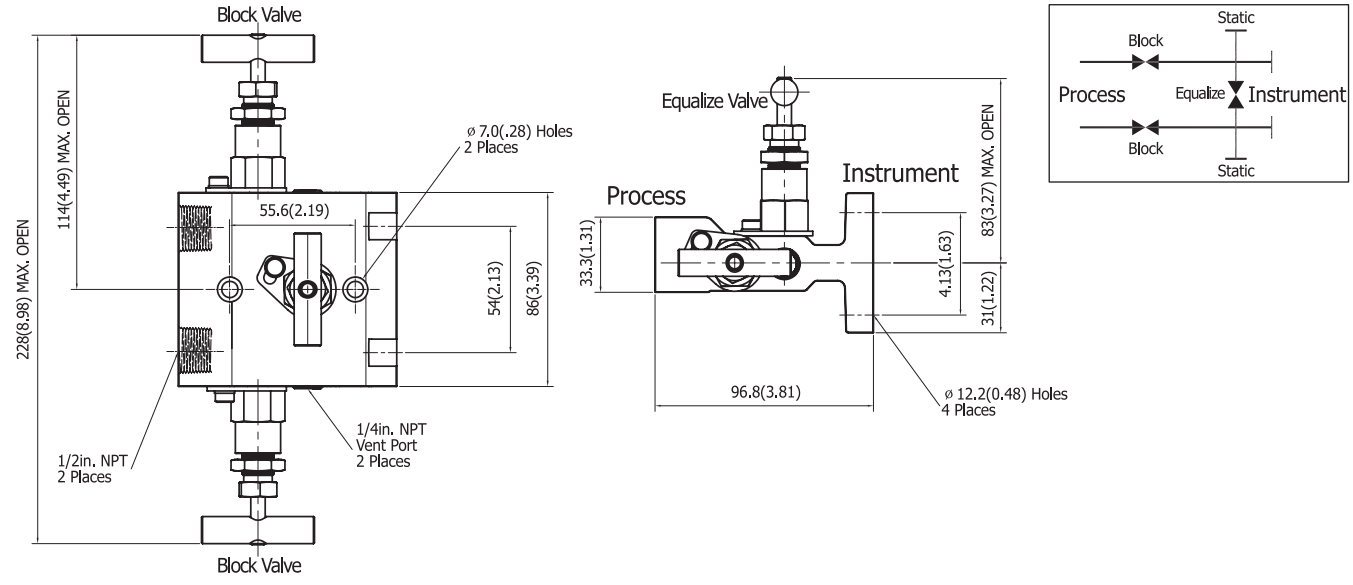
Single Flange Direct Mount

Unit: mm (in.)

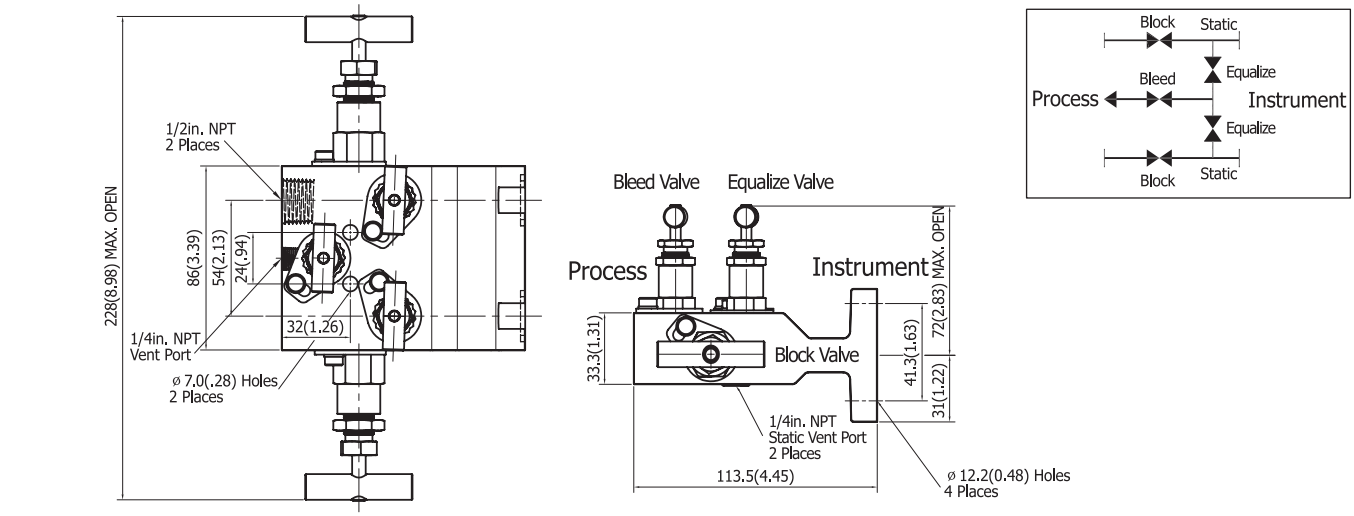
VE56-2V1F8N- / VES56-2V1F8N-



VE56-3V1F8N- / VES56-3V1F8N-



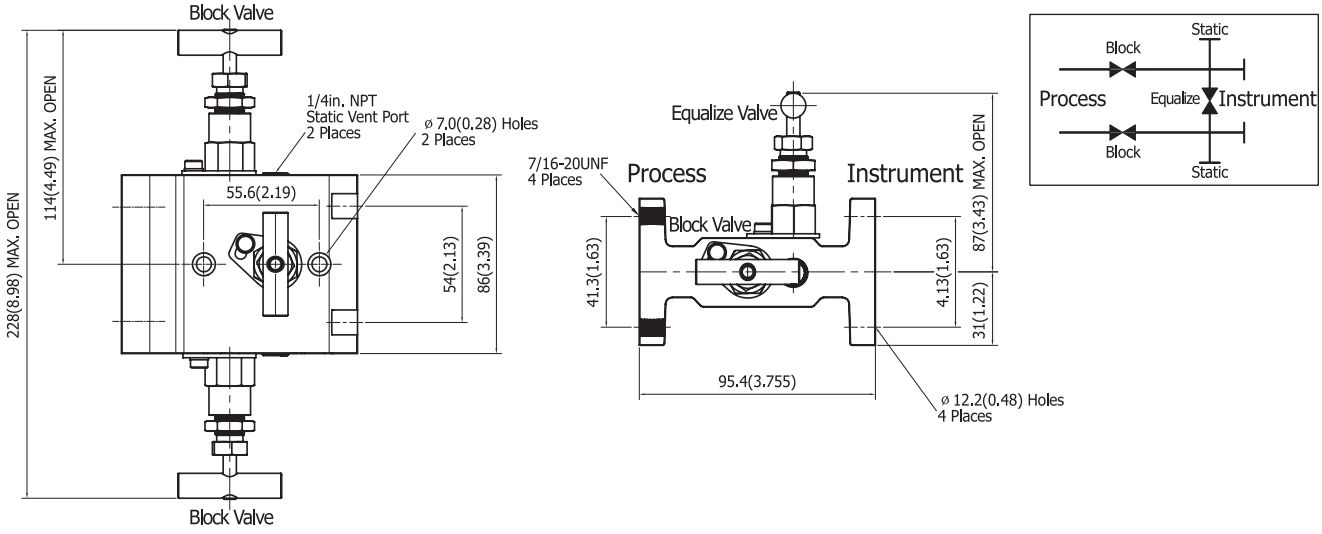
VE56-5V1F8N- / VES56-5V1F8N-



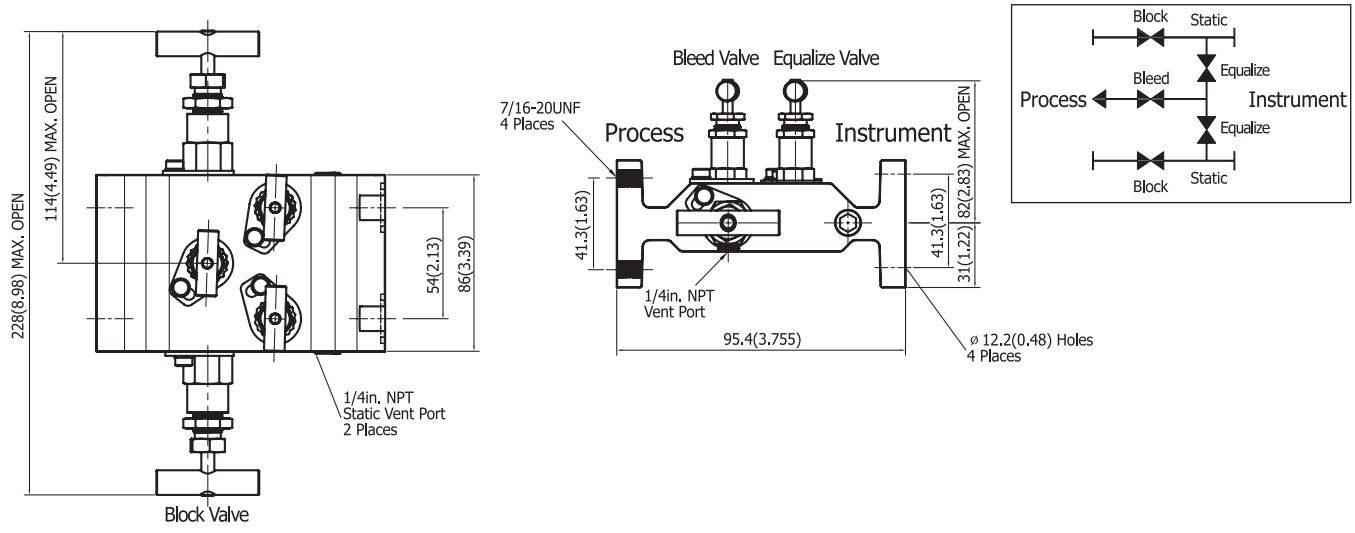
Double Flange Direct Mount

Unit: mm (in.)

VE56-3V2F- / VES56-3V2F-



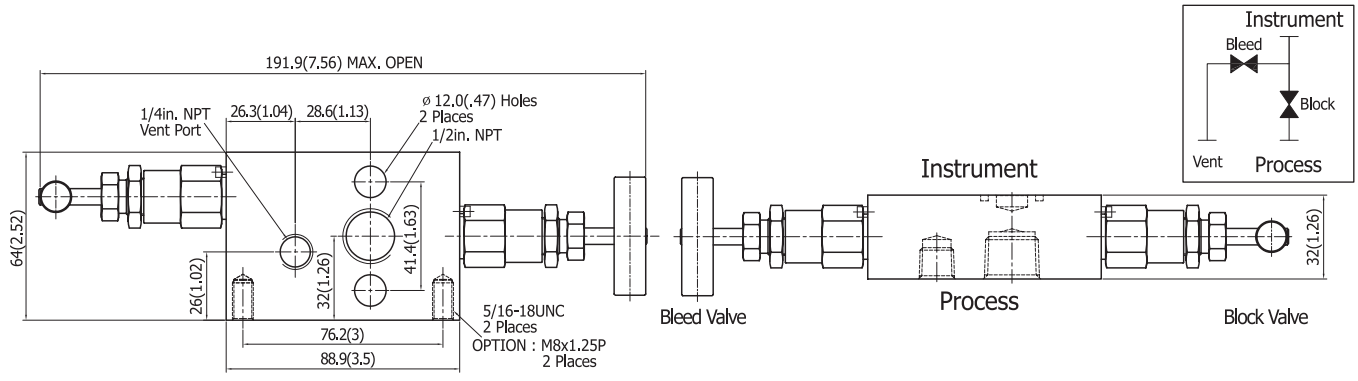
VE56-5V2F- / VES56-5V2F-



Vertical Direct Mount

Unit: mm (in.)

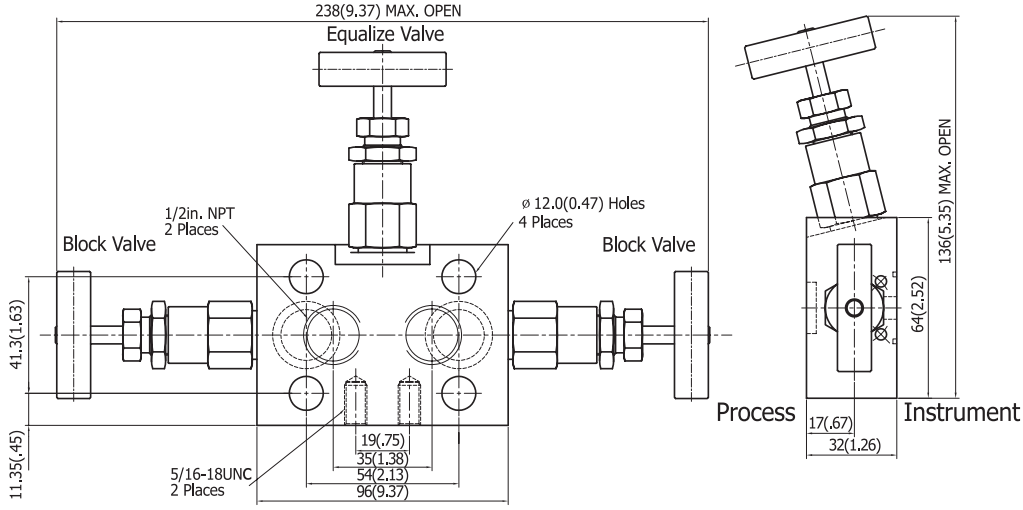
VBD56-2V8N-

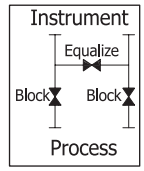


Vertical Direct Mount

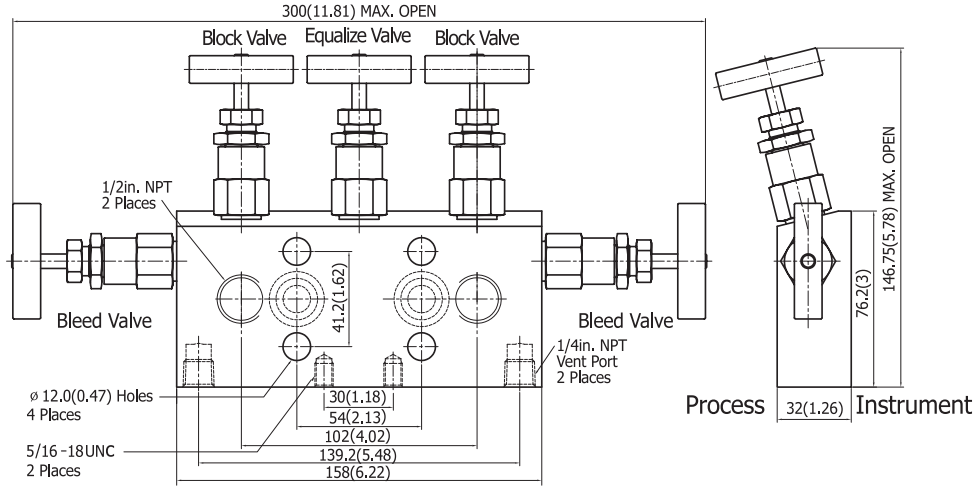
Unit: mm (in.)

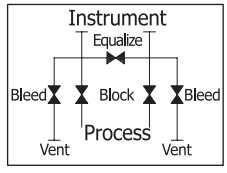
VBD56-3V8N-



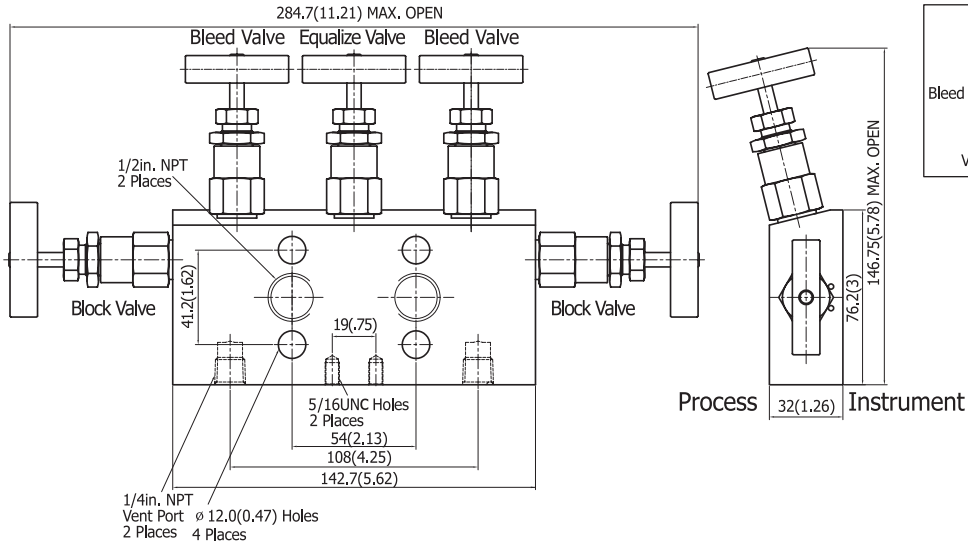


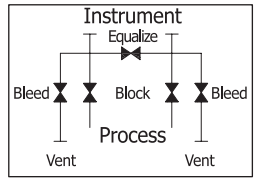
VBD56-5V8N-





VBD56S-5V8N-





■ Manifolds Accessories

Flange Bolts

For special mounting applications optional long and short bolts are available. See flange bolt specification below.

Flange Bolt	Threads	Length mm (in.)	Hex Size mm (in.)	Basic Ordering Number	Bolt Material Designator
Standard hex bolt	7/16-20	45.0 (1.77)	15.87 (5/8)	Z56BM-	Stainless steel: S Carbon steel: C
Long stud hex nut	7/16-20	58.0 (2.28)		Z56BL-	
Short hex head bolt	7/16-20	25.0 (.98)		Z56BS-	

To order, add the material designator to the bolt ordering number. i.e., Z56BM-**S**

- Slotted flange manifolds is supplied with long stud hex nut: Z56BL-

Flange Seals

Flange seals are available in standard PTFE, Grafoil and fluorocarbon FKM O-ring for system compatibility.

Seal Material	Temperature Rating °C (°F)	Ordering Number
PTFE	-53 to 121 (-65 to 250)	Z56PE
Grafoil	-53 to 537 (-65 to 1000)	Z56GF
Fluorocarbon FKM (Viton)	-28 to 204 (-18 to 399)	Z56VT

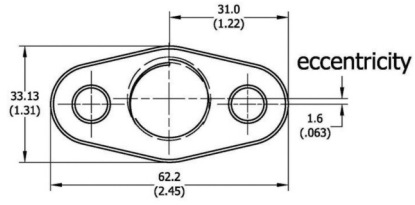
To order, use the ordering number. i.e., Z56PE.

■ Oval Flange & Pipe Nipple

Eccentric Flanges and Pipe Nipple allow connections of flange-to-flange manifolds to process flange taps or process root valves.

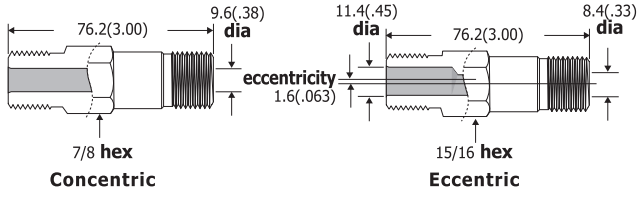
Oval Flange Ordering Number and Technical Information

Material	End Connection	End Connection Size	Ordering Number
Stainless steel	Female NPT	1/2 in. NPT	V56OF-8N-S
Carbon steel			V56OF-8N-C



Pipe Nipple Ordering Number and Technical Information

Material	Ordering Number	Type	Pressure Rating @20°C(70°F)bar(psig)	Temperature Rating°C(°F)	Pressure Rating @ Max. Temp.
Stainless steel /A276	G56NE-8N-S	Eccentric	516 (7 500)	-53 to 648 (-65 to 1200)	147 bar @648 °C (2140 psig @1200 °F)
	G56NC-8N-S	Concentric	689 (10 000)		196 bar @648 °C (2850 psig @1200 °F)

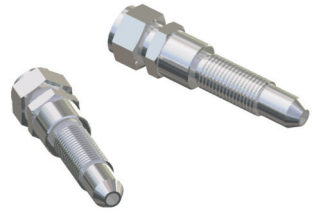


■ Calibration Fittings

Select DK-LOK differential pressure calibration fitting depending on the bleed port of the transmitter plug.

Ordering Number

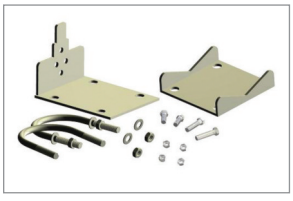
Material	Ordering Number	DK-LOK OD	Straight Male Thread
Stainless steel /A276	DPCM4-1U-S	1/4 in.	1/4-28UNF
	DPCM4-2U-S		5/16-24UNF



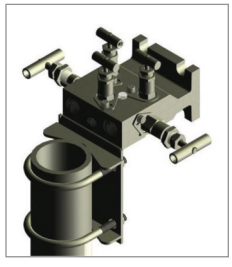
■ Mounting Bracket Kit

Bracket kit containing bracket, U-bolt, bolt, nut and washer allows horizontal and vertical manifold mounting.

Material	Ordering number
Stainless steel	Z56MBK-S
Carbon steel	Z56MBK-C



Manifold Mounting



■ Bonnet Valve Kit

Bonnet valves are available for field assembly.

Bonnet Valve	Basic Ordering Number	Packing Material Designator	Bonnet Valve Material Designator
Small Bonnet Valve	V56SV-	PTFE: Nil Grafoil: GF	Stainless steel: S Carbon steel: C
Medium Bonnet Valve	V56MV-		
Large Bonnet Valve	V56LV-		

- Kit contains bonnet valve, lock plate and set screw.

How to order

Select designator for the desired packing and valve material.
i.e., V56SV-GF-S

D-Pro V46 series Gauge Root Valves

D-Pro Gauge Root Valves offer a safe way of positioning gauges and installing pressure switches.

Features

- 1/2 in. and 3/4 in. male to 1/2 in. female end connections.
- 1/2 in. female gauge ports standard.
- Minimum schedule 160 pipe wall on valve inlet.

Ordering Information and Technical Data

Valve Ordering Number	End Connection NPT	Orifice mm (in.)	Body Length mm (in.) L	MAX. OPEN mm (in.) H	SQ mm (in.)	G mm (in.)	A mm (in.)
V46G-8N-S	1/2 Male to 1/2 in. Female	5.0 (0.20)	90.0 (3.54)	85.9(3.38)	32(1.26)	-	50.00(1.97)
V46GR-8N-S	1/2 Male to 1/2 in. Female		136.0 (5.35)			38.10(1.50)	
V46GR-12N8N-S	3/4 Male to 1/2 in. Female		136.0 (5.35)				
V46GRL-8N-S	1/2 Male to 1/2 in. Female		184.0 (7.24)				
V46GRL-12N8N-S	3/4 Male to 1/2 in. Female		184.0 (7.24)				
V46V2-8N-S	1/2 Male to 1/2 in. Female		119.0 (4.68)				
V46V2-F-8N-S	1/2 Female to 1/2 in. Female		109.0 (4.29)				

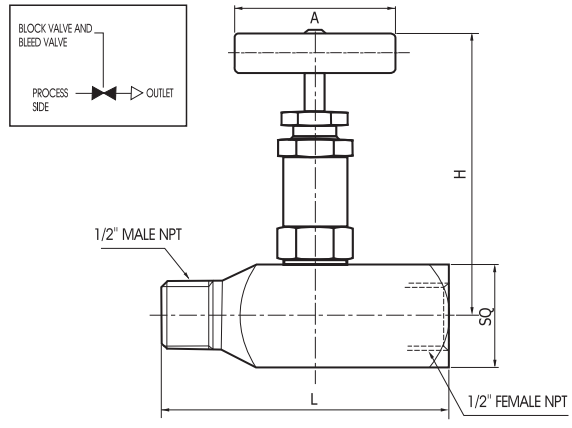
- V46GRL has an extended 4.8 inch of pipe insulation.
- V46 series uses Medium Bonnet Valve: Orifice 5.0 mm (.196in.)

How to order

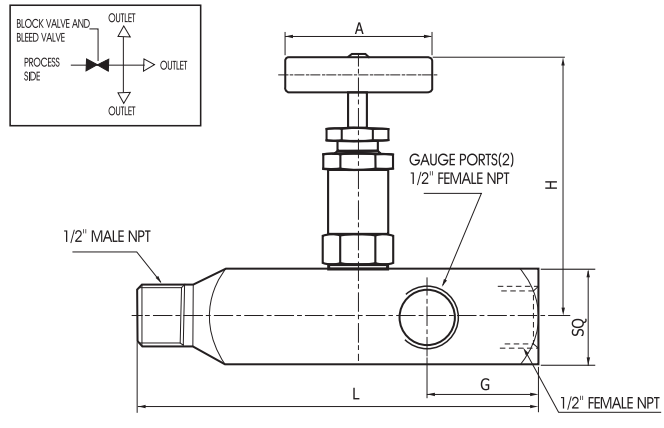
- To order Grafoil option, insert -GF in the ordering number. i.e., V46G-8N-**GF**-S
- To order sour gas service valve, insert -SG in the ordering number. i.e., V46G-8N-GF-**SG**-S

Unit: mm (in.)

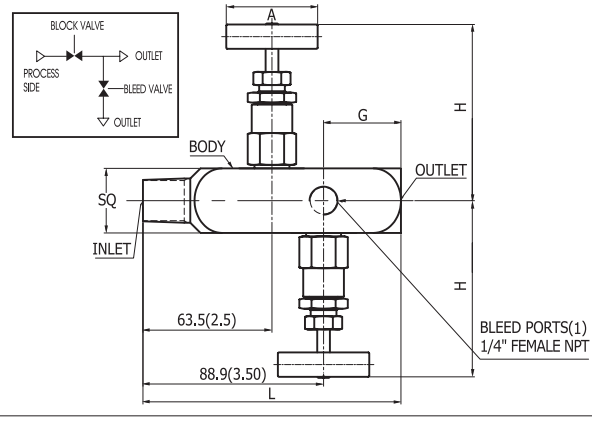
V46G Gauge Valve



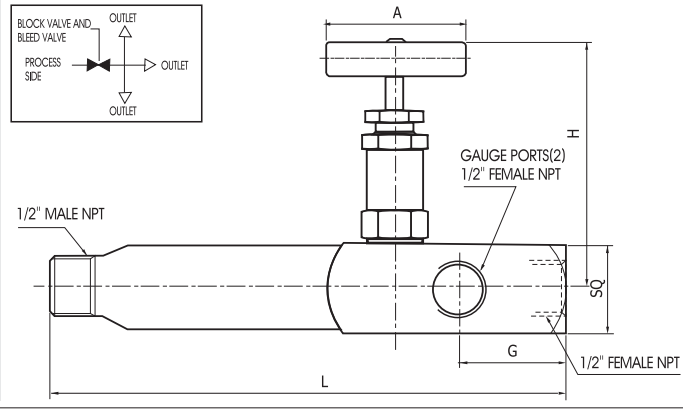
V46GR Gauge Root Valve



V46V2 Valve



V46GRL Extended Gauge Root Valve



Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. Dk Tech accepts no liability for any improper selection, installation, operation or maintenance.

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V61 Series Vent Relief valves

Pressure up to 150 psig (10.4 bar)

Catalog #: VRV-0
June. 2012

Features

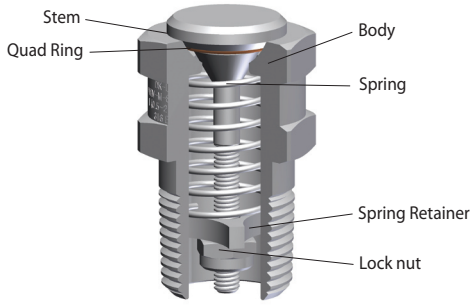
- Precise cracking pressure with high reliability.
- Keeping the sealing to 95~98% of Set Pressure at least.
- Reliable Reseal performance.
- Tamper proof design.

Design and applocation

V61 Series Vent relief valves is designed to vent out the excess pressure from the line automatically to keep the required line pressure safely when the line pressure is exceeded over the limitation unusually. This valves can be used in the case that the working fluid is not harmful when vented out. The level of cracking pressure should be set by adjusting the force of the spring in the valve before this valve is installed in the system.

Installation and Operation

This valve should be positioned perpendicularly to the direction of fluid flow in the line and that position should be considered and the vented fluid should be not directed to the personnel operating and the parts that has any influences on that. The line system should be run to check the performance of the valve after the personnel operating move to the safty zone. Because this valve is opened automatically when the excess of the required Line pressure.



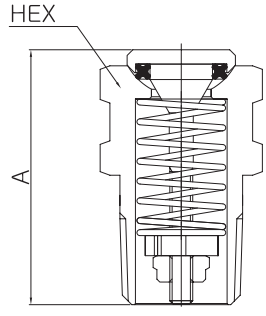
Materials of construction

Components	Valve Body Materials	
	SS316 Stainless	Brass
Body	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360 (Nickel plated)
Stem	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360
Quad-Ring	FKM	NBR
Spring	STAINLESS STEEL 302	STAINLESS STEEL 302
Spring retainer	ASTM A276 / A479 TYPE 316	ASTM B16 / Brass 360
Lock nut	STAINLESS STEEL	STAINLESS STEEL

* Lubricants listed in blue.

Ordering Number and Table of Dimensions

Basic Ordering No.	Pipe Size NPT	Orifice mm(inch)	Dimension mm(inch)	
			A	HEX.
V61-M-2N	1/8" Male NPT	4.74 (0.187)	24.6 (0.97)	12.7(1/2)
V61-M--4N	1/4" Male NPT	6.98 (0.275)	30.48 (1.2)	15.87 (5/8)
V61-M-6N	3/8" Male NPT	8.76 (0.345)	31.5 (1.24)	19.05 (3/4)
V61-M-8N	1/2" Male NPT	10.41 (0.41)	44.5 (1.75)	25.4 (1.0)
V61-M-12N	3/4" Male NPT	14.47 (0.57)	57.15 (2.25)	28.57 (1-1/8)
V61-M-16N	" Male NPT	19.94 (0.785)	79.25 (3.12)	38.1 (1-1/2)



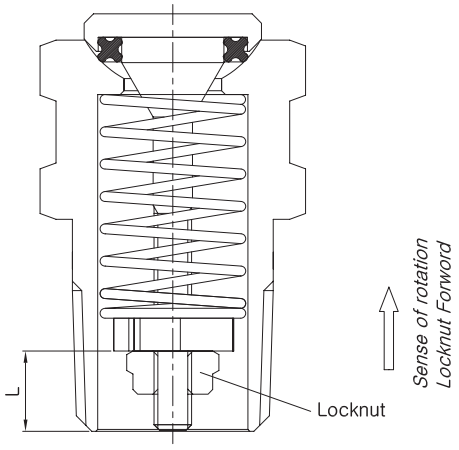
Technical Data

1. Set Pressure Range : 0.5 to 150 psig (0.03 to 10.4 bar)
2. Temperature Range : -45° to 400°F (-195°C to 204°C)

Material	Designator	Temperature Rating
FKM	VT	-18 to 400°F (-28°C to 204°C)
NBR	BN	-4 to 221°F (-20°C to 105°C)
EPDM	EP	-49 to 275°F (-45°C to 135°C)
FFKM	KZ	-22 to 599°F (-20°C to 315°C)

IDK-LOK VENT Relief valve

Technical Data



According to system line's requested pressure,
Turn the locknut(with JIG as picture.1)as picture and set the cracking pressure.

JIG Reference <picture.1>

V61 Series Spring Cracking Pressure Range Designator

Designator	Cracking pressure range @20°C(70°F)		Standard set cracking pressure (The Middle point setting)	
	psig	bar	psig	bar
1	0.5 - 2.5	0.03 - 0.17	1.6	0.11
5	2.6 - 7.5	0.18 - 0.51	5.0	0.34
10	7.6 - 15	0.52 - 1.03	11.5	0.79
20	16 - 35	1.1 - 2.41	26	1.79
50	36 - 75	2.48 - 5.17	56	3.86
100	76 - 125	5.24 - 8.61	100	6.89
150	126 - 150	8.68 - 10.4	138	9.5

Factory Test

Every valve is factory tested for cracking and performance.

How to Order

Select valve basic ordering number, applicable seal, spring nominal cracking pressure, and body material.

V61 - NIL- / KZ- / EP- - 1- - S / B

Seal Material Designator	Spring Nominal Cracking Pressure Designator	Valve Body Material Designator
● FKM : Nil for SS316 Valve ● NBR : Nil for Brass Valve ● FKM : VT ● NBR : BN ● EPDM : EP ● FFKM : KZ	"Note: Select the spring designtor 1 ,5, 10, 20, 50, 100, 150"	● S : 316 stainless steel ● B : Brass

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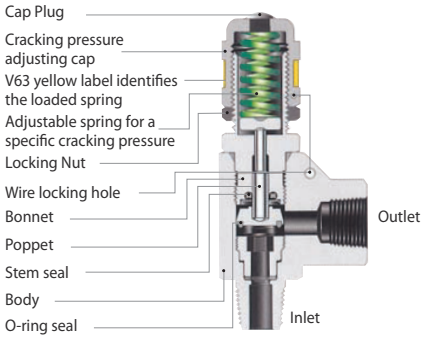
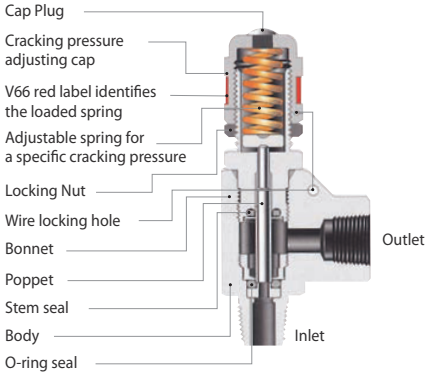
V63 & V66 Series Relief Valves

No.V63&V66-6
October 2013

V63 Series for working pressure 300 psig (20.6 bar)



V66 Series for working pressure 6,000 psig (413 bar)



Technical Data

V63 Series Technical Data

- Maximum working pressure : 300 psig @ 68°F (20.6 bar @ 20°C)
- Cracking pressure range : 10 to 225 psig (0.68 to 15.5 bar)

Table 1. **V63 Series Spring Designator**

Spring Designator	Cracking Pressure		Color Code
	psig	bar	
RVS-L	10 to 225	0.68 to 15.5	Red

- Orifice : 4.8 mm (0.19 in.)

V63/66 Series Temperature Rating

Seal Material	Temperature Rating, °C (°F)	
	V63 Series	V66 Series
FKM (Viton)	-12 ~ -135 (10.4 ~ 275)	-4 ~ 121 (24.8 ~ 250)
Buna N	-23 ~ 148 (-9.4 ~ 298)	-17 ~ 121 (1.4 ~ 250)
Ethylene Propylene (EPDM)	-40 ~ 148 (-40 ~ 298)	-1 ~ 121 (30.2 ~ 250)

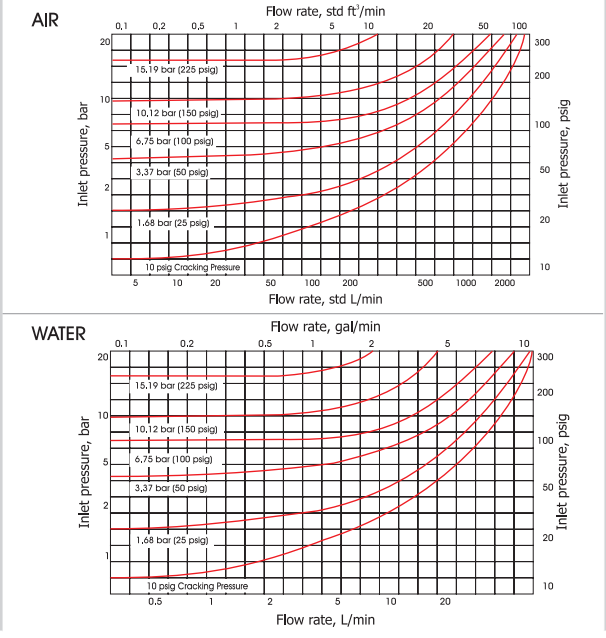
V66 Series Technical Data

- Maximum working pressure : 6,000 psig @ 68°F (413 bar @ 20°C)
- Orifice size : 3.4 mm (0.13 in.)
- Cracking pressure range : 220 to 6,000 psig (15.1 to 413 bar)

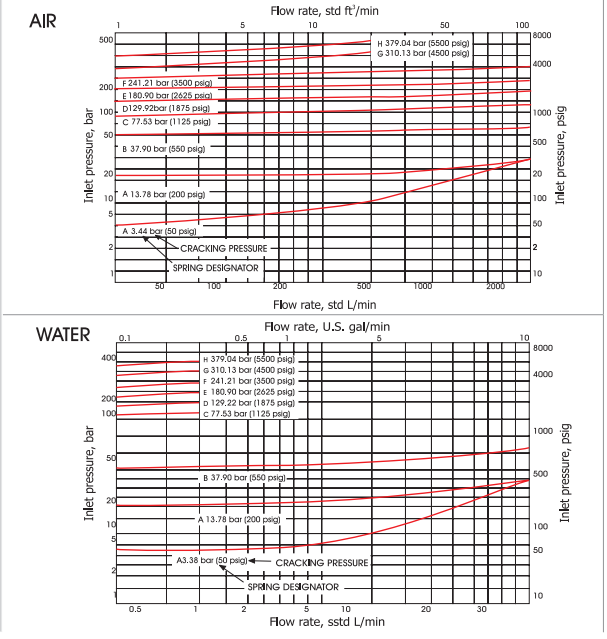
Table 2. **V66 Series Spring Designators**

Spring Designator	Cracking Pressure		Color Code	Spring Designator	Cracking Pressure		Color Code
	psig	bar			psig	bar	
RVS-A	220 to 350	15.1 to 24	WHITE	RVS-E	2250 to 3000	155 to 206	GREEN
RVS-B	350 to 750	24 to 51.6	BLUE	RVS-F	3000 to 4000	206 to 275	YELLOW
RVS-C	750 to 1500	51.6 to 103	CLEAR	RVS-G	4000 to 5000	275 to 344	BROWN
RVS-D	1500 to 2250	103 to 155	BLACK	RVS-H	5000 to 6000	344 to 413	ORANGE

V63 Series Flow Rate



V66 Series Flow Rate



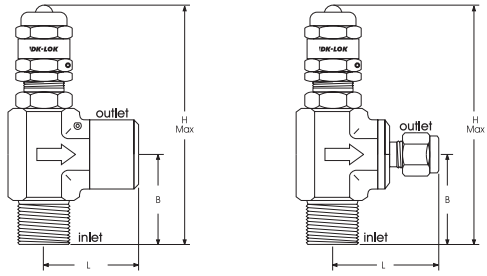
Factory Test

Every valve is factory tested for cracking and reseal performance.

How To Adjust Valve Cracking Pressure

The valve user shall set a specific cracking pressure of the valve supplied.

1. To increase the cracking pressure of the valve, turn the adjusting cap clockwise to compress the spring.
2. To reduce the cracking pressure, turn counterclockwise.
3. Start the pump with the spring relaxed (eight threads showing with the Locking Nut at bottom), with the discharging port open, check the gauge pressure as you turn the adjusting cap clockwise to increase the pressure to the desired operating range.
4. If the system has more than one outlet, set the valve pressure with one outlet open, and then check again with all outlets open to make sure that the set pressure is within the desired operating range.
5. Set the Locking Nut and the wire to maintain the set cracking pressure.



Operation

- Install the valve between the pump outlet as close as possible, and any shut-off device in the discharge line. The preferable mounting position is vertical with the adjusting cap at the top.
- D-Pro relief valve bypasses the system fluid to prevent instrument or sensitive gauge in the system from excess pressure.
- When the inlet pressure overcomes the set spring pressure on the poppet, the poppet lifts off the valve seat, allowing flow to bypass and thereby balance the system pressure.
- If the valve has not been actuated for a period of time, it may initially crack above the set cracking pressure.
- Cracking pressure is only sensitive to inlet pressure, and is not affected by outlet pressure.
- Cv reduction : Valve flow may be reduced by the restriction of pipe and tubing connected.

Material of Construction	
Cap Plug	Polypropylene
Adjusting Cap	ASTM A276 / A479 Type 316
Spring	Stainless Steel 302
Locking Nut	ASTM A276 / A479 Type 316
Bonnet	
Poppet	
Stem & O-ring seal	Standard Viton, optional EPDM and Buna N
Body	ASTM A182 F316

Ordering information and Dimensions

Basic Ordering Number		End Connections Inlet	End Connections Outlet	Orifice mm (in.)	Dimensions mm (in.) H	B	L
V63- and V66-	D-4T-	1/4 DK-Lok		V63 : 4.8 (0.19) V66 : 3.4 (0.13)	100 (3.93)	37 (1.45)	39 (1.53)
	D-6M-	6 mm DK-Lok				38 (1.49)	40 (1.57)
	D-8M-	8 mm DK-Lok			105 (4.13)	44 (1.73)	42 (1.65)
	D-8T-	1/2 DK-Lok					
	D-12M-	12 mm DK-Lok			98 (3.85)	36 (1.41)	42 (1.65)
	MD-8N8T-	1/2 Male NPT	1/2 DK-Lok				
	MD-8N12M-	1/2 Male NPT	12 mm DK-Lok				
	MF-4N-	1/4 Male NPT	1/4 Female NPT		94 (3.70)	32 (1.25)	30 (1.18)
	MF-4R-	1/4 Male ISO 7/1	1/4 Female ISO 7/1				35 (1.37)
	MF-6N-	3/8 Male NPT	3/8 Female NPT				
	MF-6R-	3/8 Male ISO 7/1	3/8 Female ISO 7/1				
	MF-8N-	1/2 Male NPT	1/2 Female NPT		98 (3.85)	36 (1.41)	38 (1.49)
	MF-8R-	1/2 Male ISO 7/1	1/2 Female ISO				

Model Shown :
V66-MF-4N-A

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

How to order

Please select the desired valve basic ordering number, the applicable seal, spring designator and CE certified option from the table below.

Example : V66-D-4T

- BN	- B	- CE
Seat Designator	Spring Designator	CE certified
Nil : Standard Viton **BN** : Buna N **EP** : EPDM	Refer to Table 1, Table 2 for spring designator	**CE** : valve to 97/23/EC

Factory pressure set valve

To order, specify the set pressure on the valve ordering number.
Example : V66-D-4T-60BAR or V66-D-4T-870PSI

Valve without spring installed

To order, do not specify spring designator on the ordering number.
Example : V66-D-4T
Note : The valve with no spring installed is supplied with the label stated "NO SPRING INSTALLED" on the adjusting cap.

Spring for field assembly

To order, select an applicable spring from the spring designator table 1 & 2. Spring kit includes spring, sticker and wire Example : RVS-A

Safe Valve Selectionn

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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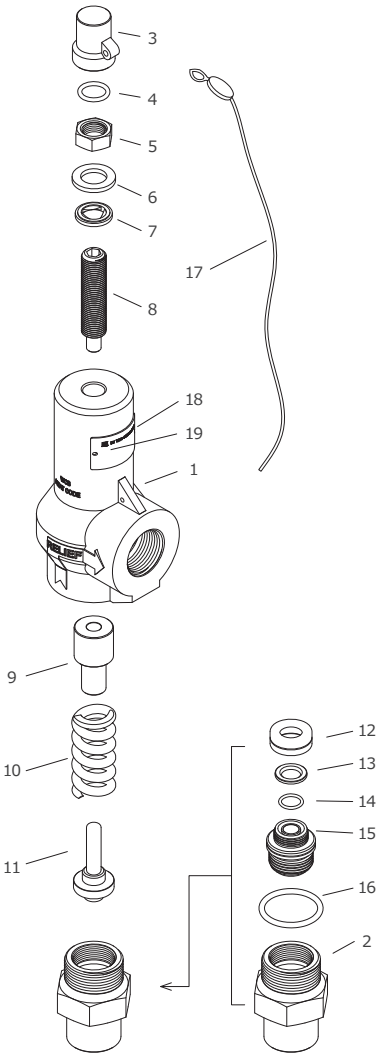
DK-LOK® Valves

V64 Series

PED Certified Relief Valves

No.V64-4
July 2013



Features

- **Wide Media Applications :** Air, Gases, CNG, and Liquid relief applications.
- **High Performance Soft Seat :** provides repetitive & reliable bubble-tight seal.
- **Orifice** : 0.404 in. (10.26 mm)
- **Working Pressure** : 6,000 psi (413 bar)
- **Cracking Pressure Range** : 15 to 5,500 psig (1.03 to 379 bar)

Valves are supplied with protective painted surface.

Table 1. **Materials of Construction**

No.	Component	Valve Body Materials	
		Carbon Steel	Stainless Steel
1	Body	ASTM A216 Gr. WCB	ASTM A351 CF3M
2	Seat Frame	ASTM A105 or Equivalent	ASTM A479/A276 Type316
3	Cap	Carbon Steel	Stainless Steel
4	Cap O-Ring	Rubber	
5	Jam Nut	Carbon Steel	Stainless Steel
6	Flat Washer	Carbon Steel	Stainless Steel
7	Bonded Seal	NBR inner ring bonded to carbon steel outer ring	
8	Adjustable Screw	Carbon Steel with Cr Plated	Stainless Steel
9	Spring Keeper	Stainless Steel	
10	Spring	AISI 1086 or Equivalent	
11	Disc	ASTM A479/A276 Type316	
12	Seat Cap	ASTM A479/A276 Type316	
13	Seat Support	ASTM A479/A276 Type316	
14	Seat O-Ring	FKM (see Table 2 for optional O-rings)	
15	Insert Holder	ASTM A479/A276 Type316	
16	Body O-Ring	FKM (see Table 2 for optional O-rings)	
17	Lead Seal Wire	Stainless Steel	
18	Name Plate	Stainless Steel	
19	Rivet Bolt	Stainless Steel	

• Wetted parts are listed in blue.

V64 Series Technical Data

Working Pressure	Cracking Pressure Range	Orifice	Orifice Area
6,000 psig (413 bar)	15 to 5,500 psig (1.03 to 379 bar)	0.404 in. (10.26 mm)	0.128 in.² (82.58 mm²)

Table 2. **Elastomer O-ring Technical Information**

Component	Temp. Rating °F (°C)		Recommended Media
	Min.	Max.	
FKM (Viton)	-15 (-26)	400 (204)	Hydrocarbons, H_2S, Mineral Oil/Grease, Silicone Oil/Grease, Fuels, Chlorinated Hydrocarbons.
HNBR	-25 (-31)	325 (162)	Hydrocarbons, CO_2, Dilute Acids, Water and Steam Less than 300 °F.
EPDM	-70 (-56)	250 (121)	Glycols, Organic Acids, Inorganic Acids, Hydraulic Fluids, Solvents.

Operation

When the inlet pressure overcomes the spring set pressure, it causes the valve to open, releasing flow to bypass and thereby balance the system pressure.

Factory Test

Every valve is factory tested for cracking and reseal performance.

Pressure Equipment Directive 97/23/EC Certifications

Module	B	D
Certificate No	HSBI-10-11-045	HSBI-10-11-046

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

DK-LOK Corporation
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Ordering Number and Dimensions

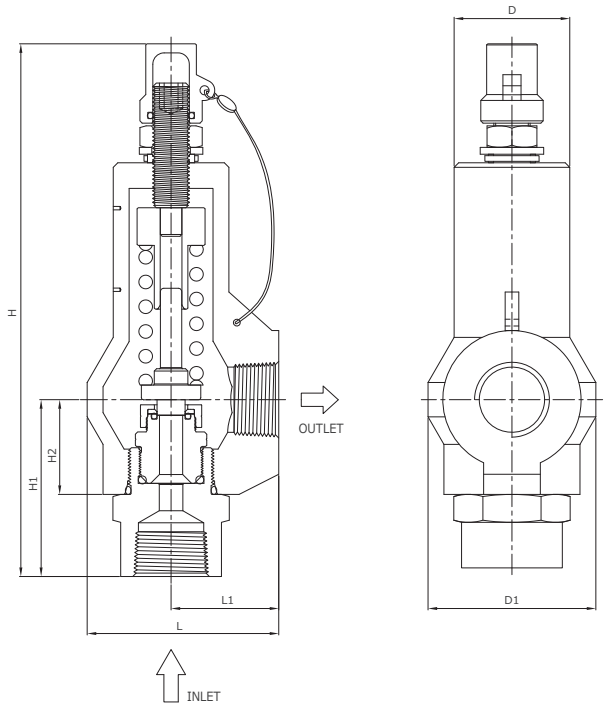

Table 3. **Flow Rate**

Flow rate measured by overpressure of 110% or 3 psig.

Media	Air	Gas	Water
Density	0.0764	0.0458	62.306
SG	1	0.6	1
Temp.	60 °F	60 °F	70 °F
Factor	Kd Factor 0.838	Kd Factor 0.838	K Factor 0.62
Set Pressure psig (bar)	SCFM	SCFM	GPM
15 (1.03)	64	80	13
20 (1.3)	74	93	14
25 (1.7)	84	105	16
30 (2.0)	94	117	17
50 (3.4)	137	171	22
100 (6.8)	245	306	32
150 (10.3)	353	441	39
200 (13.7)	462	576	45
250 (17.2)	570	711	50
300 (20.6)	678	846	55
400 (27.5)	894	1117	63
500 (34.4)	1111	1387	71
600 (41.3)	1327	1657	77
700 (48.2)	1543	1927	84
900 (62.0)	1976	2467	95
1000 (68.9)	2192	2737	100
1500 (103)	3274	4088	122
1750 (120)	3815	4763	132
2000 (137)	4355	5438	141
2500 (172)	5437	6789	158
3000 (206)	6519	8139	173
4000 (275)	8682	10840	200
4500 (310)	9763	12191	212
5000 (344)	10845	13541	224
5500 (379)	11927	14892	235

Table 4. **Basic Ordering Number and Dimensions**

Basic Ordering Number		End Connections		Dimensions in. (mm)						
		Inlet	Outlet	H	H1	H2	L	L1	D	D1
V64-	F8N16N-	1/2 in. Female NPT	1 in. Female NPT	9.25 (235)	3.07 (78.0)	1.64 (41.8)	3.32 (84.50)	1.87 (47.5)	2.00 (51.0)	2.36 (60.0)
	F12N16N-	3/4 in. Female NPT								
	MF8N16N-	1/2 in. Male NPT								
	MF12N16N-	3/4 in. Male NPT								
	MF16N-	1 in. Male NPT								

Ordering Information

Select the desired valve basic ordering number in the table 4, applicable O-Ring designator, Spring designator, and Valve body material in the table below.

O-Ring Material Designators	Spring Set Pressure Designators Unit: psig	Valve Body Material Designators	Example of a complete ordering Number.
Applicable to components number of 14, and 16 in the table 1. • Nil: Standard FKM O-Ring • HBN: HNBR • EP: EPDM	• 1 : 15-40(Brown) • 2 : 41-100(Light Blue) • 3 : 101-215(Yellow) • 4 : 216-350(Light Green) • 5 : 351-750(Red) • 6 : 751 - 1000(Orange) • 7 : 1001 - 1800(Silver) • 8 : 1801 - 2800(Black) • 9 : 2801 - 3700(Non) • 10 : 3700 - 5500(Dark Brown)	• C: Carbon Steel • S: Stainless Steel	V64-F12N16N-**EP-8-C** **Factory Set Valve** To order, specify the set pressure on the valve ordering number. i.e., V64-F-8N16N-**1200**-C

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valves function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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V73 Series In-Line Filters
V76 Series Tee Filters

No.V736-7
March 2014

Pressure Rating up to 3000 psig (206 bar), 6000 psig (413 bar)

Filters for System Purity

V73 Series In-line Filters

V76 Series Tee Filters

Features

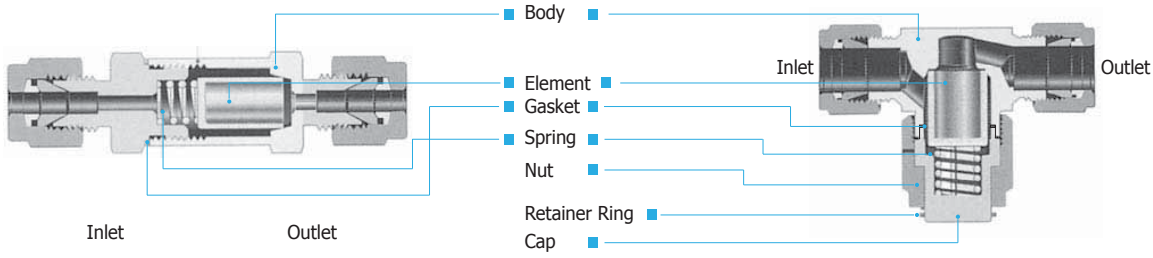
- Traps fine contamination to maintain system purity
- Gas and liquid filtration
- Standard micron filtering ranges
- Sintered Elements : 0.5, 2, 7, 15, 60 and 90 micron
- Strainer Elements : 40,140,230 and 440 micron
- Replaceable SS316 sintered and starainer elements
- SS316 and Brass body construction
- Choice of reliable DK-Lok, NPT & ISO pipe end connections
- Heat Code Traceability

V73 Series In-line Filters

- In-line filters are applicable where space is limited and elements don't have to be replaced often.
- Compact in-line design with large filtration area
- Maximum working pressure 3,000 psig @100°F(206 bar @38°C)

V76 Series Tee Filters

- Filter Element replaceable with the valve in-line.
- Safety union bonnet design for high pressure rating
- Optional Bypass for sampling or purging of process fluid.
- Maximum working pressure 6,000 psig @100 °F(413 bar @38°C)



Materials of Construction

Component	V73 Series		V76 Series	
	Grade/ASTM Specification			
Body	SS316 / A276	Brass / B16	SS316 / A276	Brass / B16
Nut	-	-	SS316 / A276	Brass / B16
Cap	-	-	SS316 / A276	Brass / B16
Retainer Ring	-	-	Stainless Steel	
Element	SS316 (Sintered, Strainer)			
Spring	SS302			
Gasket	SS316 / A240 silver plated			

Wetted components are listed in blue.

Filtration Definitions

- **Filter Element :**
  The component within the filter which traps media contamination.
- **Filtration Area :**
  The actual surface area of the filter element available to trap contamination.
- **Micron :**
  A unit of measure to describe the mean pore diameter of the filter element or the mean particle diameter of media contamination. One micron = 0.001mm or 0.00004 inch

V76 Series Tee Filter CNG Certifications

Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGA NGV 12.3-M95	ISO 15500
Certificate No	110R-000196	2010-REPORT-032 (01)	2010-REPORT-031(00)
Classification	Class 0	CNG-Filter	CNG-Filter
Temperature	-40°C to 120°C (-40°F to 250°F)	-40°C to 121°C (-40°F to 250°F)	-40°C to 121°C (-40°F to 250°F)
Working Pressure	200 bar @ 120°C	273 bar @ 121°C	273 bar @ 121°C

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

DK-LOK Corporation
www.dklok.com

Sintered Elements Technical Information

- Stainless steel 316 sintered
- High heat resistance and thermal stability up to 1,500°F(815°C)
- High permeability with low-pressure drop.
- Shape-stability with self-supporting structural elements
- Suitable for compression, vibration, and high impulse pressures.
- Precise filtration because pore size and distribution are exact and uniform.
- Chemical resistance against acids and caustic solutions in various ranges of pH.

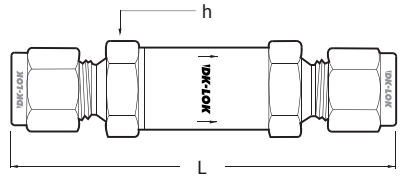
Element Designator	Nominal Pore Size, µm	Pore Size Range, µm	Element Porosity	Cv Factor	Max. Pressure Differential Across Clean Filters at 70°F (21°C)
05	0.5	0.5 - 2	17%	0.046	1160 psig (80.0 bar)
2	2	1 - 4	22%	0.056	
7	7	5 - 10	27%	0.12	
15	15	11 - 25	36%	0.13	
60	60	50 - 75	44%	0.38	
90	90	75 - 110	45%	0.50	

Element Replacement

- The sintered elements don't permit the contaminants in the gas and liquid to pass through the elements when they are bigger than the pore size of micron.
- Contaminants are trapped by element pores and it results in pressure buildup.
- Contamination comes earlier when flow volume is high and media is not clean.
- The filtering elements need to be replaced for minimum pressure drop as well as system purity.

Note : Clean filter valve components whenever the element is replaced.

V73 Series In-line Filters



Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet and Outlet	Orifice inch (mm)	Dimensions. mm (in.) L	H
V73A-	D-2T-	1/8 in. DK-Lok	0.09 (2.4)	59.7(2.35)	9/16
	F-2N-	1/8 in. Female NPT		54.9(2.16)	
	D-3M-	3mm DK-Lok		60.5(2.38)	
V73B-	D-4T-	1/4 in. DK-Lok	0.19 (4.7)	74.9(2.95)	3/4
	M-4N-	1/4 in. Male NPT		68.3(2.69)	
	F-4N-	1/4 in. Female NPT		72.9(2.87)	
	D-6M-	6mm DK-Lok		75.2(2.96)	
V73C-	M-8N-	1/2 in. Male NPT	0.28 (7.1)	81.3(3.20)	1
	D-6T-	3/8 in. DK-Lok		81.5(3.21)	
V73D-	D-8T-	1/2 in. DK-Lok	0.41 (10.3)	88.6(3.49)	1

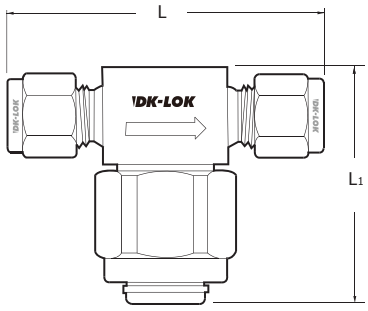
Flow Capacities

Filter Series	Nominal Pore Micron	Pressure Drop 20 psi	60 psi	120 psi
		Water GPM @70°F (21°C)		
73A Series	05	0.01	0.44	0.13
	2	0.11	0.26	0.44
	7	0.14	0.33	0.53
	15	0.17	0.39	0.64
	60	0.21	0.55	0.77
	90	0.28	0.55	0.66
73B Series	05	0.06	0.19	0.32
	2	0.34	0.94	1.42
	7	0.57	1.42	2.19
	15	0.71	1.42	2.30
	60	1.27	3.61	5.04
	90	1.70	4.60	6.68
73C Series 73D Series	05	0.13	0.44	0.83
	2	0.37	1.20	1.75
	7	0.91	2.41	3.83
	15	1.19	2.85	4.49
	60	2.83	7.34	10.95
	90	3.25	8.32	12.05
	40,140, 230, 440	2.7	6.04	9.4

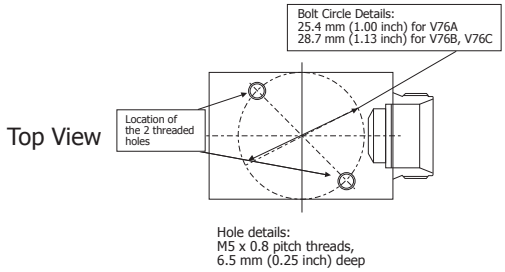
Technical Information

Filter Series	Pressure Rating @100 °F (38 °C), psig (bar)		Temperature Rating, °F (°C)		Filtration Area in.² (mm²)	
Body Material	SS316	Brass	SS316	Brass	Sintered	Strainer
V73A	3000 (206)	3000 (206)	-20 to 900 (-28 to 482)	-20 to 300 (-28 to 148)	0.55(350)	-
V73B					1.30(830)	1.0(640)
V73C, V73D	2500 (172)	2000 (137)			2.0(1280)	1.7(1090)

V76 Series Tee Filters



Top mounting



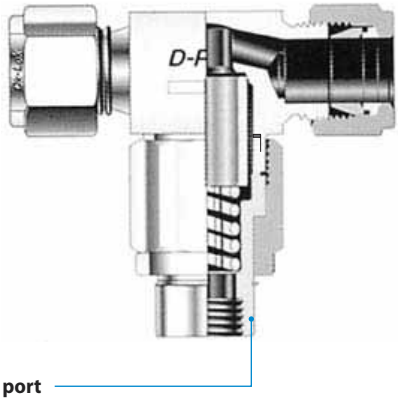
Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet & Outlet	Orifice mm (in.)	Dimensions, mm (in.) L	L1	H
V76A	F-2N-	1/8 in. Female NPT	4.4 (0.17)	50.8(2.0)	47.5 (1.87)	-
	D-2T-	1/8 in. DK-Lok		57.7(2.27)		7/16
	D-4T-	1/4 in. DK-Lok		62.7(2.47)		9/16
	M-4N-	1/4 in. Male NPT		54.1(2.13)		1″
	F-4N-	1/4 in. Female NPT		54.1(2.13)		-
	D-6M-	6mm DK-Lok		62.5(2.46)		14mm
V76B	D-6T-	3/8 in. DK-Lok	5.4 (0.21)	72.1(2.84)	56 (2.2)	11/16
	D-8M-	8mm DK-Lok		72.1(2.84)		1-1/8″
V76C	M-6N-	3/8 in. Male NPT	6.4 (0.25)	60.5(2.38)	56 (2.2)	-
	D-10M-	10mm DK-Lok		72.6(2.86)		19mm
	D-12M-	12mm DK-Lok		77.2(3.04)		1-1/8″
	D-8T-	1/2 in. DK-Lok		77.2(3.04)		7/8
	M-8N-	1/2 in. Male NPT		69.9(2.75)		-

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

Technical Information

Filter Series	Pressure Rating @100 °F (38 °C), psig (bar)		Temperature Rating, °F (°C)		Filtration Area in.² (mm²)	
	SS316	Brass	SS316	Brass	Sintered	Strainer
V76A, V76B	6000(413)	2000(137)	-20 to 900 (-28 to 482)	-20 to 300 (-28 to 148)	1.3(830)	1.0(640)
V76C	6000(413)	2000(137)			2.0(1280)	1.7(1090)



By-pass port

By-pass port of female 1/8 in. or 1/4 in. NPT is available for sampling and purging of process fluid.
To use, replace the cap on Tee filter with the by-pass port.

Operation

Keep the cap downwards to prevent contaminants from entering the system during element replacement

Flow Capacities

Filter Series	Nom. Pore Micron	Pressure Drop 20 psi	60 psi	120 psi
		Water GPM @ 70 °F(21 °C)		
V76A-F-2N V76A-D-2T	05	0.06	0.19	0.32
	2	0.11	0.26	0.44
	7	0.14	0.33	0.53
	15	0.17	0.39	0.64
	60	0.21	0.55	0.77
	90	0.28	0.55	0.66
V76A-D-4T V76A-M-4N V76A-F-4N	05	0.06	0.19	0.32
	2	0.34	0.94	1.42
	7	0.57	1.42	2.19
	15	0.71	1.42	2.30
	60	1.13	2.96	4.27
	90	1.56	3.72	5.37
V76A-D-6M V76A-D-6T V76B Series V76C Series	05	0.13	0.44	0.83
	2	0.37	1.20	1.75
	7	0.91	2.41	3.83
	15	1.19	2.85	4.49
	60	2.12	5.26	7.34
	90	2.40	6.02	8.33
	40,140, 230, 440	0.28	0.55	0.66

Ordering information

Select desired basic ordering number, element designator, option and body material listed below.

V76A-D-4T -7 -BF2N -S
V76B-D-6T -NE -B

Element			Filter with no element	By-pass	Body Material
Element Type	Element Designator	Nominal Micron	**NE** : Filter with no element Note : NE option is applicable to V76 series Tee filter only.	**Nil** : No By-pass option **BF2N** : 1/8 in. Female NPT **BF4N** : 1/4 in. Female NPT	**S** : SS316 **B** : Brass
Sintered	0.5	0.5			
	2	2			
	7	7			
	15	15			
	60	60			
	90	90			
Strainer	40	40			
	140	140			
	230	230			
	440	440			

Field Assembly Kit

Element Kits

To order, select desired kit basic ordering number and element designator. Example : FE73A-05

Element Kit Basic Ordering Number		Element Designator	Nominal Pore Size, µm	Pore Size Range, µm	Kit applicable Filter Series	
Sintered	FE73A- FE73B- FE73C-	05	0.5	05 - 2	FE73A-	V73A
		2	2	1 - 4		
		7	7	5 - 10	FE73B-	V73B V76A
		15	15	11 - 25		
		60	60	50 - 75	FE73C-	V73C, V73D V76B, V76C
		90	90	75 - 110		
Strainer	FES73C-	40	40	-	FES73C-	V73C, V73D V76B, V76C
		140	140	-		
		230	230	-		
		440	440	-		

Gasket and Spring Kits

To order, select desired gasket or spring kit ordering number

Filter Series	Gasket Kit Ordering Number	Spring Kit Ordering Number	Kit applicable Filter Series
V73 Stainless Brass	9WSH-73A-S	9SPR-73A-2	V73A
	9WSH-73B-S	9SPR-73B-2	V73B
	9WSH-73C-S	9SPR-73C-S	V73C
	9WSH-73D-S	9SPR-73D-2	V73D
V76 Stainless Brass	9WSH-76A-S	9SPR-76A-2	V76A
	9WSH-76B-S	9SPR-76B-2	V76B
	9WSH-76C-S	9SPR-76C-2	V76C

We reserve the right to change specifications stated in this catalog for our continuing program of improvement.

Safe Filter Selection

The Selection of a Filter for any application or system design must be considered to ensure safe performance. Filter function, Filter rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK Valves

V81 Series Ball Valve

No.V81-7
March 2014

Pressures rating of 68.9 bar (1000 psig) and 137 bar (2000 psig)

Valve with lever handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats : 137 bar (2000 psig)

Valve with butterfly handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats not applicable

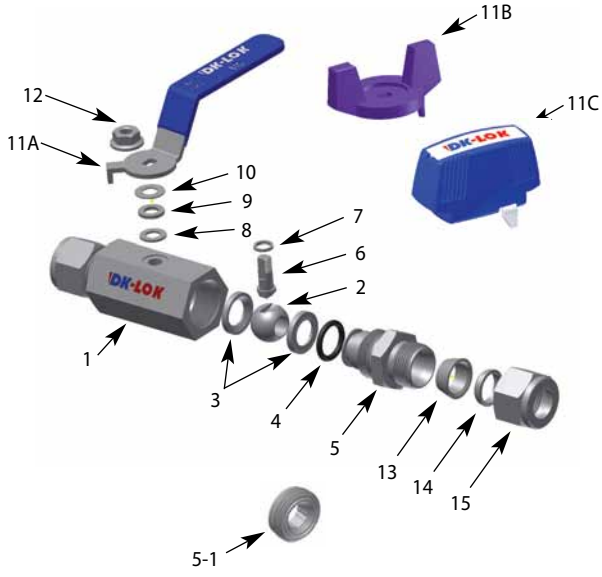
Valve with dielectric handle
Working pressure
- PTFE seats : 68.9 bar (1000 psig)
- TFM seats : 137 bar (2000 psig)

Design Features

- Compact barstock construction for high integrity
- Blow-out proof design with internally loaded stem
- Floating Ball design providing seat wear compensation
- Micro-finished ball ensures a leak-tight shut-off on pressure
- Standard lever handle, optional butterfly and dielectric handle.

Applications

V81 series ball valve offers a safe and reliable performance for a wide range of onshore and offshore applications: water, oil, gas, petrochemical and general duty applications.

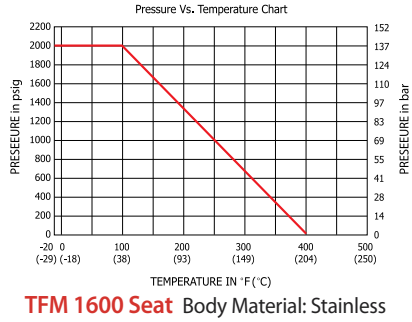


Materials of Construction

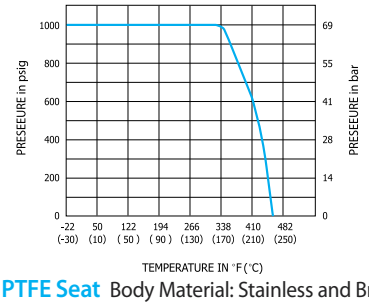
Component	Valve Body Materials	
	Stainless Steel	Brass
1. Body	ASTM A276 / A479 TYPE316	ASTM B16 or JIS H3250
2. Ball	ASTM A276 TYPE316	
3. Seat (2)	PTFE / D1710 for pressure 68.9 bar (1000 psig) TFM 1600 for pressure 137 bar (2000 psig)	
4. O-Ring	FKM	NBR
5. End Connector	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
5-1. Insert		
6. Stem	ASTM A276/A479 TYPE316	
7. Lower Packing	PTFE / D1710	
8. Upper Packing	PTFE / D1710	
9. Gland	ASTM A276/A479 TYPE316	
10. Washer	Stainless Steel	
11A. Handle	Stainless Steel Lever handle with vinyle sleeve	
11B. Handle	ZINC / ASTM B240 Butterfly handle, Nickel-plated	
11C. Handle	Dielectric Handle with Nylon(Black, Red, Blue)	
12. Lock Nut	Stainless Steel	Stainless Steel
13. Front Ferrule	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
14. Backing Ferrule	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250
15. Nut	ASTM A276/A479 TYPE316	ASTM B16 or JIS H3250

1. V81D, V81E Locking device lever handle Type : Body Material is ASTM A351 CF8M
4. O-Ring is applicable to end connector type.
5. End Connector is for DK-Lok end connection standard, male pipe thread available.
5-1. Insert is for female pipe thread end connection.
* TFM 1600 seat is usable only with body in stainless steel.
* Wetted parts are listed in Blue.

Pressure -Temperature Curves



TFM 1600 Seat Body Material: Stainless



PTFE Seat Body Material: Stainless and Brass

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

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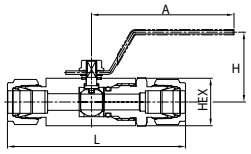
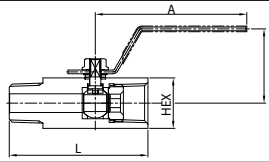
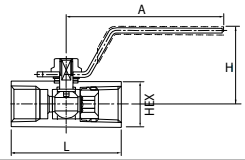
DK-Lok to DK-Lok
Lever Handle



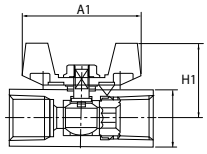
Male Pipe Thread to
Female Pipe Thread
Lever Handle



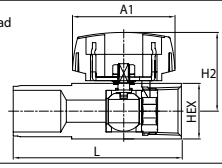
Female Pipe Thread to
Female Pipe Thread
Lever Handle



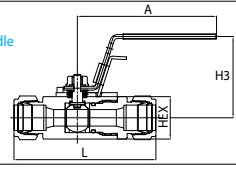
Female Pipe Thread to
Female Pipe Thread
Butterfly Handle



Weld End to Female Pipe Thread
Dielectric Handle



DK-Lok to DK-Lok
Locking device Lever Handle



Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections Inlet / Outlet	Orifice mm (in.)	Cv	Dimensions, mm (in.)								
					L	H	HEX	A	A1	A2	H1	H2	H3
V81A-	D-6M	6mm DK-Lok	5 (0.2)	1.25	79 (3.11)	27.6 (1.09)	17 (11/16)	59.5 (2.34)	30.5 (1.20)	41.8 (1.65)	23.5 (0.93)	33.8 (1.33)	35.6 (1.4)
	D-4T	1/4 in. DK-Lok		1.25	79 (3.11)								
	F-4N	1/4 in. Female NPT		1.35	41.9 (1.65)								
	MF-4N	1/4 in. M/F NPT		1.35	52.4 (2.06)								
V81B-	D-10M	10mm DK-Lok	7.5 (0.3)	2.6	91.7 (3.61)	36.5 (1.44)	20.64 (13/16)	81 (3.19)	42 (1.65)	44.5 (1.75)	30 (1.18)	38.3 (1.5)	39.5 (1.56)
	D-6T	3/8 in. DK-Lok		2.5	91.3 (3.59)								
	F-6N	3/8 in. Female NPT		2.6	47 (1.85)								
	MF-6N	3/8 in. M/F NPT		2.6	53.5 (2.1)								
V81C-	D-12M	12mm DK-Lok	9 (0.35)	9.25	99.2 (3.9)	39.7 (1.56)	27 (1-1/16)	81 (3.19)	46 (1.81)	46.5 (1.83)	35.7 (1.41)	43.5 (1.71)	44.7 (1.76)
	D-8T	1/2 in. DK-Lok		9.25	101 (3.98)								
	F-8N	1/2 in. Female NPT		9.25	56.15 (2.21)								
	MF-8N	1/2 in. M/F-NPT		9.25	66.6 (2.62)								
	WF-15A8N	1/2 in. Welding/F-NPT		9.25	95.0 (3.74)								
V81D-	D-16M	16mm DK-Lok	12.5 (0.49)	10.6	107 (4.24)	44.85 (1.76)	32 (1-1/4)	102.5 (4.04)	49.5 (1.95)	56 (2.2)	38.1 (1.50)	47.2 (1.86)	-
	D-10T	5/8 in. DK-Lok		10.6	108 (4.25)								
	F-12N	3/4 in. Female NPT		12.65	63 (2.48)								
	D-12T	3/4 in. DK-Lok		12.65	107 (4.22)								
	MF-12N	3/4 in. M/F-NPT		12.65	75.9 (2.99)								
	WF-20A12N	3/4 in. Welding/F-NPT		12.65	100 (3.93)								
V81E-	D-16T	1 in. DK-Lok	16 (0.63)	17.35	133 (5.23)	49.75 (1.95)	38 (1-1/2)	102.5 (4.04)	68 (2.68)	70.1 (2.76)	45 (1.77)	53.7 (2.11)	-
	F-16N	1 in. Female NPT		17.35	78.1 (3.07)								
	WF-25A16N	1 in. Welding/F-NPT		17.35	115 (4.53)								

Dimensions shown are for reference only, subject to change. Dimensions with DK-Lok nuts are in finger-tight position

Factory Test

Every valve is factory tested with nitrogen gas @41 bar (600 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
The packing is tested with nitrogen for no detectable leakage.

How to Order

Select valve ordering number, applicable option(s) from designator tables listed below.
Examples

V81A-D-6M- **VT-** TF- BF- BK S

O-ring	Seat Material	Handle	Handle Color	Body material
Nil : FKM O-ring is standard for SS316 body. **Nil** : NBR O-ring is standard for Brass body. **VT** : FKM O-ring for Brass body **BN** : NBR O-ring for Stainless Steel **NOTE** : O-ring is required for DK-Lok end connection.	**Nil** : Standard PTFE seats for 68.9 bar (1000 psig) working pressure. **TF** : Optional TFM1600 for 137 bar (2000 psig) working pressure. **NOTE** : TFM1600 seat is not applicable to Brass valve.	**Nil** : Standard lever handle **BF** : Optional butterfly handle **DH** : Dielectric handle **LD** : Locking device lever handle **NOTE** : BF option is not applicable to the valve with TF seat	**BK** : Black **BL** : Blue **RD** : Red	**S** : SS316 **B** : Brass **M** : Monel **L20** : Alloy 20 **HC** : Hastelloy C276

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. Dk Tech accepts no liability for any improper selection, installation, operation or maintenance.

DK-LOK® Fittings & Valves
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DK-LOK®
Valves

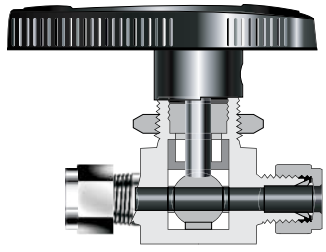
V82 Series Ball Valves

No.V82-5
March 2014

Pressure Rating up to 3,000psig

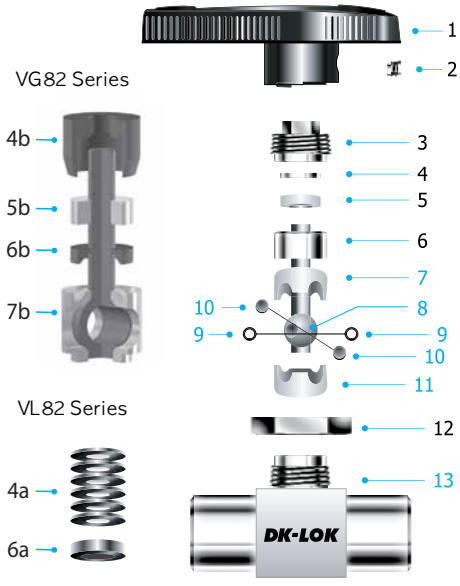
Features of V82 Series

V82 series Ball valves are classified into 3 types according to the temperature range in use. V82 series is for general use and VL82 is adequate to the low temperature range. VG82 can be used in the widen temperature range from low to high temperature. The exact temperature range of each type is referred to the technical data of the type.



- Sealing is achieved without system pressure
- Bi-directional flow
- Pressure up to 3000 psig (206 bar)
- Lowest dead space design
- Nylon Directional handle - indicates the flow through the valve.
- Panel mounting nut - is standard and permits valve to panel or actuator.
- Top-loaded packing - allows packing adjustment with the valve in-line.
- Capsule packing - fills voids in the valve body and prevents fluid entrapment.
  - allows lowest dead space.
- Support rings and discs - retains the capsule packing and prevent cold flow.
- Integral ball stem - machined from single piece bar stock.
  - eliminates the backlash during handle actuation.
- One-piece body - reduces the number of potential leak points.

Materials of Construction



Component	Valve Body Materials	
	Stainless Steel	Brass
	Grade/ASTM Specification	
1. Handle	Nylon with brass insert	
2. Set Screw	stainless steel 30	
3. Packing bolt *	SS316/A276 or A479	Brass C3604
4. Upper Gland	SS316/A276 or A479	
4a. Packing Spring (VL82 series)	17-4PH/A693	
4b. Gland (VG82 series)	SS316/A276 or A479	
5. Bushing	PTFE/D1710 type 1, Grade 1, Class B	
5b. Packing (VG82 series)	PTFE/D1710 type 1, Grade 1, Class B	
6. Lower gland	SS316/A276	Brass C3604
6a. Packing Gland (VL82 series)	SS316/A276	
6b. Lower Gland (VG82 series)	SS316/A276	Brass C3604
7 & 11. Upper & Lower Packing	PTFE/D1710 type 1	
7b. Integrated Seat (VG82 series)	PFA	
8. Ball stem	SS316/A276	
9. Support rings	SS316 powered metal/B783 (fluorocarbon coating)	
10. Side discs		
12. Panel nut	SS316/A276	Brass C3604
13. Body	SS316/A276 or A479	

* Molybdenum disulfide with hydrocarbon coating.

- Note : 1. Wetted parts and lubricants are listed in blue.
  2. Lubricant is Fluorinated-based. Lubricants are available for a specific application.

Operation & Packing Adjustment

- V82 valves are designed to control fluid in full open and closed position; using V82 valves to throttle the flow may reduce the valve life.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- Every valve working pressure is adjusted for factory test at 1,000 psig (68.9 bar) @ 21°C (70°F). For use in higher pressure or lower temperature range, the valve packing may be required for re-adjustment.
- Packing adjustment may be required during the valve in service.

Application

- Analytical market requiring a valve with lowest dead volume to prevent fluid entrapment which can cause contamination.
- Control Sampling Systems, and Process Instrumentation market requiring a valve with compact size, high flow capacity and directional indication of flow.

Factory Test and Packaging

- Every valve is factory tested with nitrogen gas at 1,000 psig (68.9 bar) for leakage at seat to a maximum allowable leak rate of 0.1 SCCM.The packing is tested with nitrogen gas for no detectable leakage.
- Every valve is cleaned and packaged in accordance with DK cleaning standard DC-01

Quality System Approvals | DK-Lok Tube Fitting Certification Listing | DK-Lok Valve Certification Listing

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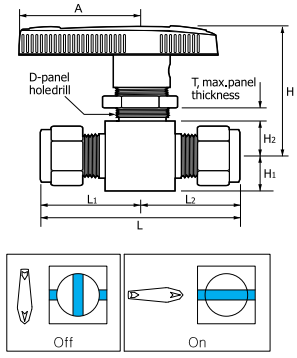
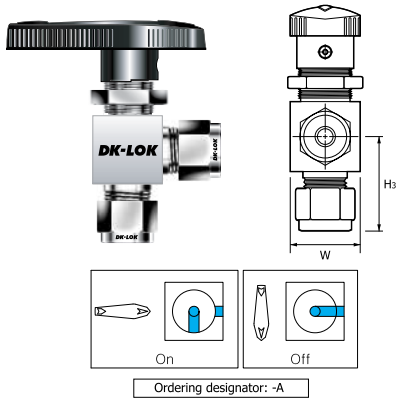
2-way On-off Valves

■ In-line pattern



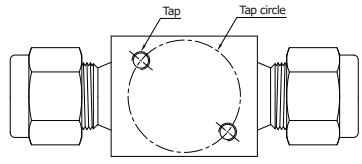
① min.panel thickness : 3.2mm(1/8inch)

■ Angle pattern



Ordering designator: -A

■ Botton mounting option (In-line Only)



Size	Tap	Tap Depth	Tap circle
V82C	M5x0.8P	5.0 mm (0.2 inch)	Ø28.7 mm (1.13 inch.)
V82D			Ø38.1 mm (1.5 inch.)

Ordering designator: -TM

Technical Data for V82 Series with Standard PTFE Seat

Valve Series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
V82A, V82C, V82D	V82A-A, V82B-A	2500	172	10°C to 65°C 50°C to 150°F
V82B	-	3000	206	
-	V82C-A, V82D-A	1500	103	

Technical Data for VL82 Series with Standard PFA Seat

Valve Series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
VL82A, VL82C, VL82D	VL82A-A, VL82B-A	2500	172	-54°C to 65°C -65°C to 150°F
VL82B	-	3000	206	
-	VL82C-A, VL82D-A	1500	103	

Technical Data for VG82 Series with Integrated PFA Seat

Valve Series		Working Pressure		Temp. Range
In-line	Angle	psig	bar	
VL82A, VL82C, VL82D	VG82A-A, VG82B-A	2500	172	-54°C to 150°C -65°C to 302°F
VG82B	-	3000	206	
-	VG82C-A, VG82D-A	1500	103	

Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections		Orifice		Cv		Dimensions mm (inches)										
		Inlet	Outlet	mm	inch	Inline	Angle	L	L1	L2	H3	H2	H1	A	T①	D	H	W
V82A-(VG82A)	D1T-	1/16"	DK-Lok	1.3	0.052	0.1	-	42.7(1.68)	21.3(0.84)	21.3(0.84)	-	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D2T-	1/8"	DK-Lok	2.4	0.093	0.2	0.15	51.1(2.01)	25.7(1.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D3M-	3mm	DK-Lok	2.4	0.093	0.2	0.15	51.1(2.01)	25.7(1.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D4T-	1/4"	DK-Lok	3.2	0.125	0.6	0.35	56.1(2.21)	27.9(1.10)	27.9(1.10)	27.2(1.07)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	D6M-	6mm	DK-Lok	3.2	0.125	0.6	0.35	56.1(2.21)	27.9(1.10)	27.9(1.10)	27.2(1.07)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
	F2N-	1/8"	Female NPT	3.2	0.125	0.5	0.3	41.1(1.62)	20.6(0.81)	20.6(0.81)	20.6(0.81)	8.6(0.34)	7.1(0.28)	28.4(1.12)	6.4(1/4)	15.1(19/32)	34.5(1.36)	14.7(0.58)
V82B-(VG82B)	D4T-	1/4"	DK-Lok	4.8	0.187	1.4	0.9	59.9(2.36)	30.0(1.18)	30.0(1.18)	29.7(1.17)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6T-	3/8"	DK-Lok	4.8	0.187	1.5	0.9	65.5(2.58)	32.8(1.29)	32.8(1.29)	32.8(1.29)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6M-	6mm	DK-Lok	4.8	0.187	1.4	0.9	60.7(2.39)	30.5(1.20)	30.5(1.20)	29.7(1.17)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D8M-	8mm	DK-Lok	4.8	0.187	1.5	0.9	62.5(2.46)	31.2(1.23)	31.2(1.23)	30.5(1.20)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F2N-	1/8"	Female NPT	4.8	0.187	1.2	0.7	50.8(2.00)	25.4(1.00)	25.4(1.00)	25.4(1.00)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4N-	1/4"	Female NPT	4.8	0.187	0.9	0.75	52.3(2.06)	26.2(1.03)	26.2(1.03)	26.2(1.03)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	M4N-	1/4"	Male NPT	4.8	0.187	1.2	0.75	50.8(2.00)	25.4(1.00)	25.4(1.00)	26.2(1.03)	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4R-	1/4"	ISO Female Tapered	4.8	0.187	0.9	-	52.3(2.06)	26.2(1.03)	26.2(1.03)	-	11.2(0.44)	9.7(0.38)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
V82C	D6T-	3/8"	DK-Lok	7.1	0.281	6.0	2.0	77.5(3.05)	38.6(1.52)	38.6(1.52)	38.2(1.5)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	D10M-	10mm	DK-Lok	7.1	0.281	6.0	2.0	78.0(3.07)	38.9(1.53)	38.9(1.53)	39(1.53)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F4N-	1/4"	Female NPT	7.1	0.281	3.0	1.7	63.5(2.50)	31.8(1.25)	31.8(1.25)	31.8(1.25)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F6N-	3/8"	Female NPT	7.1	0.281	2.6	1.5	63.5(2.50)	31.8(1.25)	31.8(1.25)	31.8(1.25)	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
	F6R-	3/8"	ISO Female Tapered	7.1	0.281	2.6	-	63.5(2.50)	31.8(1.25)	31.8(1.25)	-	14.2(0.56)	14.2(0.56)	50.8(2.00)	9.5(3/8)	28.6(1-1/8)	52.6(2.07)	28.4(1.12)
V82D-	D8T-	1/2"	DK-Lok	10.3	0.406	12.0	4.6	99.6(3.92)	49.8(1.96)	49.8(1.96)	49.8(1.96)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12T-	3/4"	DK-Lok	10.3	0.406	6.4	3.8	99.6(3.92)	49.8(1.96)	49.8(1.96)	49.5(1.94)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12M-	12mm	DK-Lok	9.5	0.375	12.0	4.6	99.6(3.92)	49.8(1.96)	49.8(1.96)	48.7(1.91)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8N-	1/2"	Female NPT	10.3	0.406	6.3	3.5	79.2(3.12)	39.6(1.56)	39.6(1.56)	39.6(1.56)	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8R-	1/2"	ISO Female Tapered	10.3	0.406	6.3	-	79.2(3.12)	39.6(1.56)	39.6(1.56)	-	17.5(0.69)	17.5(0.69)	76.2(3.00)	9.5(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)

All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

Patterns: To order angle pattern, use -A as a suffix to the basic ordering number. Example: V82B-D-4T-A-S

Top mounting: To order Top mounting option, use -TM as a suffix to the basic ordering number. Example: V82C-D-6T-TM-S

3-way Switching Valves

Technical Data for V82 Series with Standard PTFE Seat

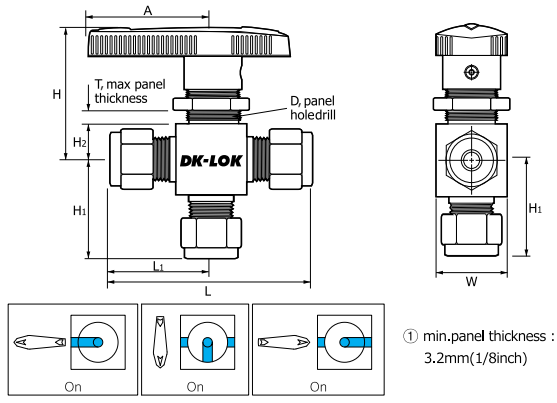
Valve Series 3-way	Working Pressure psig	Working Pressure bar	Temp. Range
V823A, V823B	2500	172	10°C to 65°C
V823C, V823D	1500	103	50°C to 150°F

Technical Data for VL82 Series with Standard PTFE Seat

Valve Series 3-way	Working Pressure psig	Working Pressure bar	Temp. Range
VL823A, VL823B	2500	172	-54°C to 65°C
VL823C, VL823D	1500	103	-65°C to 150°F

Technical Data for VG82 Series with Standard PTFE Seat

Valve Series 3-way	Working Pressure psig	Working Pressure bar	Temp. Range
VG823A, VG823B	2500	172	-54°C to 150°C
VG823C, VG823D	1500	103	-65°C to 302°F



① min.panel thickness : 3.2mm(1/8inch)

Ordering Information and Table of Dimensions

Basic Ordering Number		End Connections Inlet	End Connections Outlet	Orifice mm	Orifice inch	Cv	Dimensions mm (inches) L	L1	H1	H2	A	T①	D	H	W
V823A-(VG823A)	D1T-	1/16" DK-Lok		1.3	0.052	0.1	42.7(1.68)	21.3(0.84)	20.6(0.81)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D2T-	1/8" DK-Lok		2.4	0.093	0.2	51.1(2.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D3M-	3mm DK-Lok		2.4	0.093	0.2	56.1(2.21)	27.9(1.10)	27.2(1.07)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D4T-	1/4" DK-Lok		3.2	0.125	0.6	51.1(2.01)	25.7(1.01)	24.6(0.97)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	D6M-	6mm DK-Lok		3.2	0.125	0.6	56.1(2.21)	27.9(1.10)	27.2(1.07)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
	F2N-	1/8" Female NPT		3.2	0.125	0.5	41.4(1.63)	20.6(0.81)	20.6(0.81)	8.6(0.34)	28.7(1.13)	6.4(1/4)	15.0(19/32)	34.5(1.36)	14.7(0.58)
V823B-(VG823B)	D4T-	1/4" DK-Lok		4.8	0.187	1.4	60.7(2.39)	30.5(1.20)	29.7(1.17)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D6M-	6mm DK-Lok		4.8	0.187	1.4	60.7(2.39)	30.5(1.20)	29.7(1.17)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	D8M-	8mm DK-Lok		4.8	0.187	1.5	62.5(2.46)	31.2(1.23)	30.5(1.20)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4N-	1/4" Female NPT		4.8	0.187	0.9	52.3(2.06)	26.2(1.03)	26.2(1.03)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
	F4R-	1/4" ISO Female Tapered		4.8	0.187	0.9	52.3(2.06)	26.2(1.03)	26.2(1.03)	11.2(0.44)	38.9(1.53)	4.8(3/16)	19.8(25/32)	39.6(1.56)	19.8(0.78)
V823C	D6T-	3/8" DK-Lok		7.1	0.281	6.0	73.4(2.89)	36.8(1.45)	36.3(1.43)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	D10M-	10mm DK-Lok		7.1	0.281	6.0	78(3.07)	39(1.53)	39(1.53)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F4N-	1/4" Female NPT		7.1	0.281	3.0	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F6N-	3/8" Female NPT		7.1	0.281	2.6	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
	F6R-	3/8" ISO Female Tapered		7.1	0.281	2.6	63.5(2.50)	31.8(1.25)	31.8(1.25)	14.2(0.56)	50.8(2.00)	9.7(3/8)	28.7(1-1/8)	52.6(2.07)	28.4(1.12)
V823D	D8T-	1/2" DK-Lok		10.3	0.406	12.0	88.4(3.48)	44.2(1.74)	44.2(1.74)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12T-	3/4" DK-Lok		10.3	0.406	6.4	88.4(3.48)	44.2(1.74)	44.2(1.74)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	D12M-	12mm DK-Lok		9.5	0.375	12.0	86.5(3.40)	43.2(1.70)	43.2(1.70)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8N-	1/2" Female NPT		10.3	0.406	6.3	79.5(3.13)	39.6(1.56)	39.6(1.56)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)
	F8R-	1/2" ISO Female Tapered		10.3	0.406	6.3	79.5(3.13)	39.6(1.56)	39.6(1.56)	17.5(0.69)	76.2(3.00)	9.7(3/8)	38.1(1-1/2)	66.3(2.61)	38.1(1.50)

All dimensions shown are for reference only and are subject to change. Dimensions with Dk-Lok nuts are in finger-tight position.

Flow Data

2-way

Cv	Water US GPM (L/min). @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar) 10(0.7)	50 (3.5)	100 (7.0)	Air SCFM (NL/min.) @21°C (70°F) 10 (0.7)	50 (3.5)	100 (7.0)
0.1	0.3(1.1)	0.7 (2.6)	1.0 (3.8)	1.1 (31)	3.0 (85)	5.3 (150)
0.2	0.6(2.3)	1.4 (5.3)	2.0 (7.6)	2.3 (76)	6.0 (215)	11.0 (396)
0.5	1.6 (5.7)	3.5 (13.2)	5.0 (18.9)	5.6 (195)	15.0 (538)	27.0 (963)
0.6	1.9 (7.2)	4.2 (15.9)	6.0 (22.7)	6.8 (235)	18.0 (651)	32.0 (1161)
0.9	2.8 (10.6)	6.4 (23.8)	9.0 (34.0)	10.0 (340)	27.0 (963)	48.0 (1720)
1.2	3.8 (14.0)	8.5 (31.8)	12.0 (45.4)	14.0 (481)	36.0 (1303)	64.0 (2294)
1.5	4.7 (17.8)	11.0 (41.6)	15.0 (56.8)	17.0 (595)	45.0 (1614)	80.0 (2832)
2.4	7.6 (28.4)	17.0 (64.3)	24.0 (90.8)	27.0 (935)	72.0 (2606)	120.0 (4531)
2.6	8.2 (31.0)	18.0 (68.1)	26.0 (98.4)	29.0 (1020)	78.0 (2804)	140.0 (5098)
3.0	9.5 (35.6)	21.2 (79.5)	30.0 (113.6)	34.0 (1189)	90.0 (3115)	160.0 (5664)
6.0	19.0 (71.9)	42.0 (159.0)	60.0 (227.1)	68.0 (2351)	180.0 (6514)	320.0 (11611)
6.3	19.9 (75.5)	44.5 (170.3)	63.0 (237.0)	71.0 (2464)	190.0 (6797)	340.0 (12178)
6.4	20.2 (75.7)	45.3 (170.3)	64.0 (242.2)	72.0 (2520)	190.0 (6797)	340.0 (12178)
12.0	37.9 (143.8)	84.9 (321.7)	120.0 (454.2)	130.0 (4814)	360.0 (13027)	640.0 (22939)

2-way angle pattern and 3-way

Cv	Water US GPM (L/min). @21°C (70°F) Pressure Drop to Atmosphere (Δp) psi (bar) 10(0.7)	50 (3.5)	100 (7.0)	Air SCFM (NL/min.) @21°C (70°F) 10 (0.7)	50 (3.5)	100 (7.0)
0.08	0.3 (1.1)	0.6 (2.3)	0.8 (3.0)	0.9 (26)	2.4 (68)	4.3 (122)
0.15	0.4 (1.5)	1.0 (3.8)	1.5 (5.7)	1.7 (57)	4.5 (161)	8.0 (286)
0.30	0.9 (3.4)	2.1 (7.9)	3.0 (11.4)	3.4 (116)	9.0 (312)	16.0 (566)
0.35	1.1 (4.2)	2.4 (9.1)	3.5 (13.2)	4.0 (136)	10.0 (368)	19.0 (680)
0.75	2.3 (8,7)	5.3 (20.1)	7.5 (28.4)	8.5 (283)	22.0 (821)	40.0 (1444)
0.80	2.5 (9.5)	5.6 (21.2)	8.0 (30.3)	9.0 (312)	24.0 (878)	42.0 (1529)
0.90	2.8 (10.6)	6.3 (23.8)	9.0 (34.1)	10.0 (340)	27.0 (963)	48.0 (1728)
1.5	4.7 (17.8)	11.0 (41.6)	15.0 (56.8)	17.0 (595)	45.0 (1614)	80.0 (2832)
1.7	5.3 (20.1)	12.0 (45.4)	17.0 (64.3)	19.0 (680)	51.0 (1841)	90.0 (3115)
2.0	6.3 (23.8)	14.0 (53.0)	20.0 (75.7)	22.0 (793)	60.0 (2181)	100.0 (3965)
3.5	11.0 (41.6)	25.0 (94.6)	35.0 (132.5)	39.0 (1359)	100.0 (3682)	180.0 (6797)
3.8	12.0 (45.4)	27.0 (102.2)	38.0 (143.8)	43.0 (1501)	110.0 (3965)	200.0 (7363)
4.6	15.0 (56.8)	33.0 (124.9)	46.0 (174.1)	52.0 (1812)	140.0 (5098)	240.0 (8779)

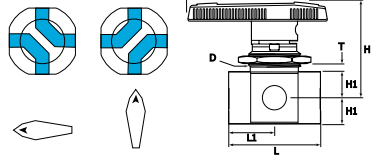
V824 Crossover 4-way Ball Valves

Features

- Crossover of two streams
- Mechanical stop ensures positive port positioning

Technical Data with standard PTFE, PFA and integrated PFA seat

Valve Series	Pressure Rating psig	Pressure Rating bar	SEAT material	Temperature Range
V824A	2500	172	PTFE	10°C to 65°C 50°F to 150°F
V824B	1500	103		
VL824A	2500	172	PFA	-54°C to 65°C -65°F to 150 °F
VL824B	1500	103		
VG824A	2500	172	"Integrated PFA"	-54°C to 150°C -65°F to 302°F
VG824B	1500	103		



Ordering Information and Table of Dimensions

Ordering Number		End Connection	Cv	Orifice mm	Orifice inch	Dimensions, mm(in.) L	L1	H1	A	T*	D	H
V(L, G)824A-	F2N-S	1/8 in. Female NPT	0.08	1.6	0.062	39.4 (1.55)	19.8 (0.78)	11.2 (0.44)	38.9 (1.53)	4.8 (3/16)	23.1 (29/32)	42.7 (1.68)
V(L, G)824B-	F8N-S	1/2 in. Female NPT	1.6	7.1	0.281	79.5 (3.13)	39.6 (1.56)	17.5 (0.69)	76.2 (3.00)	9.7 (3/8)	38.1 (1 1/2)	61.7 (2.43)

T* indicates maximum panel thickness D : Panel Hole

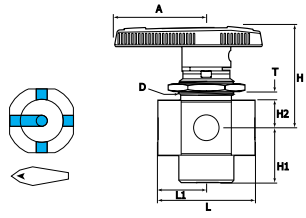
V825 Switching 5-way Ball Valves

Features

- Flow switches from a single port to multiple ports or from multiple ports to a single port.
- Spring-loaded detent ensures exact port positioning.

Technical Data with standard PTFE, PFA and integrated PFA seat

Valve Series	Pressure Rating psig	Pressure Rating bar	SEAT material	Temperature Range
V825A	2500	172	PTFE	10°C to 65°C 50°F to 150°F
V825B	1500	103		
VL825A	2500	172	PFA	-54°C to 65°C -65°F to 150 °F
VL825B	1500	103		
VG825A	2500	172	Integrated PFA	-54°C to 150°C -65°F to 302°F
VG825B	1500	103		



Ordering Information and Table of Dimensions

Ordering Number		End Connection	Cv	Orifice mm	Orifice inch	Dimensions, mm(in.) L	L1	H1	H2	A	T*	D	H
V(L, G)825A-	F2N-S	1/8 in. Female NPT	0.07	1.6	0.062	39.4 (1.94)	19.8 (0.78)	22.4 (0.88)	38.9 (1.53)	38.9 (1.53)	4.1 (5/32)	23.1 (29/32)	42.9 (1.69)
	F2G-S	1/8 in. ISO Parallel Threads											
V(L, G)825B-	F8N-S	1/2 in. Female NPT	3.5	10.3	0.406	79.5 (3.13)	39.6 (1.56)	17.5 (0.69)	76.2 (3.00)	76.2 (3.00)	9.7 (3/8)	38.1 (1 1/2)	61.7 (2.43)

T* indicates the maximum panel thickness. 3.2 mm (1/8 in.) minimum panel thickness. D : Panel Hole

Handle Options

Aluminum Bar
Add-AH to the valve ordering number.
Example:V824A-F-2N-AH-S

Stainless Bar
Add-BH to the valve ordering number.
Example:V824A-F-2N-BH-S

How to Order

Select applicable valve pattern, options and body material from designators listed below.

V824A-F2N
V82B-D4T
VG82A-D2T

-A **-NL** **-AH** **-B** **-S**

2-way	Botton mounting	Valve with no lubricant	Bar handle	Body material
A : 2-way angle pattern	**TM** : Botton mounting **Note** : Botton mounting option is applicable only to the in-line pattern 2-way valves.	**NL** : No lubricant Valve **Note** : Valve with no lubricant is factory tested at 200 psig (13 bar). This valve pressure rating is 200 psig (13 bar).	**Nil** : Standard Nylon handle **AH** : Aluminum bar handle **BH** : Stainless bar handle	**S** : SS316 **B** : Brass

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK®
Valves

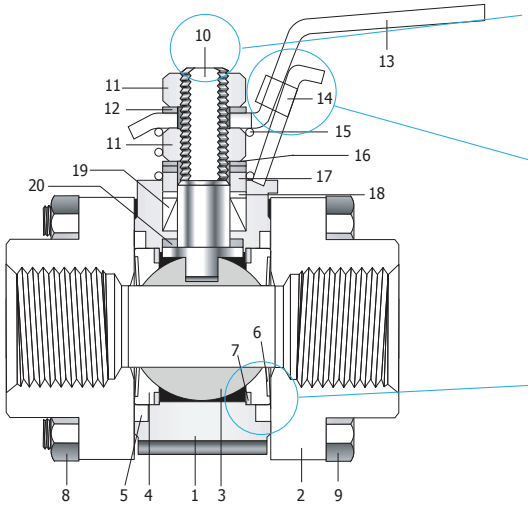
V83 Series Swing-Out Ball Valves

No.V83-5
July 2013

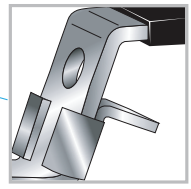
Pressure Rating up to 3,000 psig (206 bar)

Features

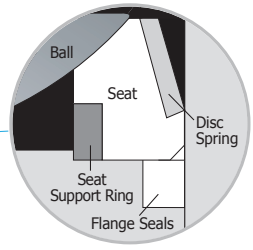
- Pressure and temperature compensation seat design.
- Swing-out design for fast and easy maintenance with the valve in-line.
- Chevron packing design.
- 2-way (on-off) valves with quarter-turn actuation.



Two flats on stem (10) and lever handle (13) indicate open or closed position of the valve.



Built-in manual locking device (14) allows locking the valve with a detent either in open or closed position. You may also apply a pad-lock to this device. Pad-lock hole: 8 mm (0.314 in.)



Compensation seat design requires no pressure to create a seal.
Under high pressure, seats react on the ball movement for sealing at upstream and downstream.

Table 1. **Material of Construction**

Component	Valve Body Materials	
	Stainless steel	Carbon Steel
	Grade / ASTM Specification	
1. Body	CF3M / A351	WCB / A216
2. Flanges (2)	CF3M / A351	WCB / A216
3. Ball	Type 316 / A276	
4. Seats (2)	See Table 2.	
5. Flange Seals (2)	PTFE	
6. Disc Spring (2)	Strain Hardened SS316	
7. Seat support rings (2)	Type 316 / A276	
8. Body fasteners (4)	SS316 Gr.B8M/ A193	
9. Body hex nuts (4)	SS316 Gr.8M/ A194	
10. Stem	Type 316 / A276, A479	
11. Stem Nuts (2)	SS316	
12. Tooth Washer	Stainless steel	
13. Handle	SS304 with Vinyl sleeve	
14. Locking Device	SS304	
15. Grounding spring	SS312 / A313	
16. Stem Springs (2)	Strain Hardened SS316 / A240	
17. Gland	Type 316 / A276	
18. Packing Support	PEEK (Polyetheretherketone)	
19. Upper & Lower Packing	Reinforced PTFE	
20. Stem Bearing	PEEK, Optional X750	

· Wetted parts and lubricants are listed in blue.

Table 2. **Seat Materials**
Pressure - Temperature Ratings

Seats	Valve Series	Pressure Rating @ -28 to 38 °C (-20 to 100 °F)	Pressure @ Max. Temperature	Lubricants
Standard Reinforced PTFE	V83A	151 bar (2200 psig)	7 bar @ 232°C 100 psig @450°F	Silicon based and PTFE based
	V83B			
	V83C			
Virgin PTFE	V83A	103 bar (1500 psig)	7 bar @ 232°C 100 psig @450°F	
	V83B			
	V83C			
Carbon PTFE	V83A	172 bar (2500 psig)	7 bar @ 232°C 100 psig @450°F	
	V83B			
	V83C			
PEEK	V83A	206 bar (3000 psig)	55 bar @ 232°C 800 psig @ 450°F	PTFE based
	V83B	172 bar (2500 psig)		
	V83C			
UHMWPE	V83A	206 bar (3000 psig)	17 bar @ 121°C 250 psig @ 250°F	Hydrocarbon based and PTFE based
	V83B	172 bar (2500 psig)		
	V83C			

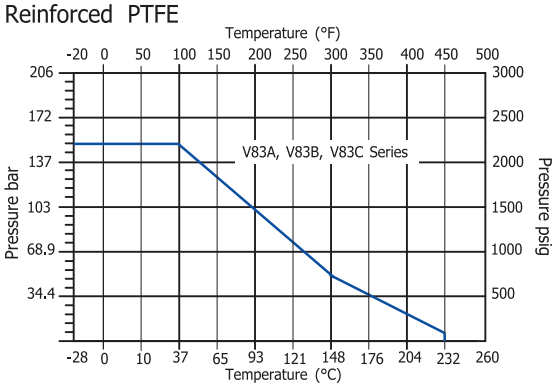
Factory Test

Every valve is tested with nitrogen @ 68.9 bar (1,000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
Shell test with nitrogen @ 68.9 bar (1,000 psig) is performed to a requirement of no detectable leakage with a liquid leak detector.
Shell test with water at 1.5 times the working pressure is performed on request with extra cost.

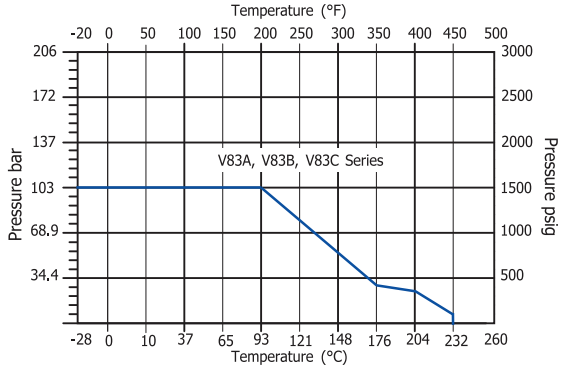
DK-LOK Corporation
www.dklok.com

PRESSURE-TEMPEATURE GRAPH

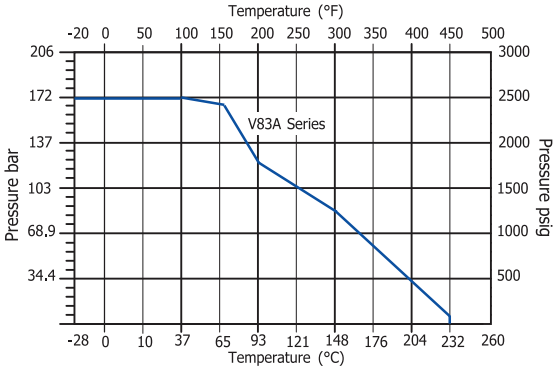
Reinforced PTFE



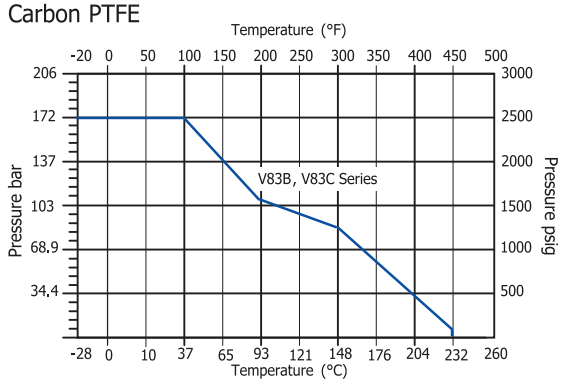
PTFE



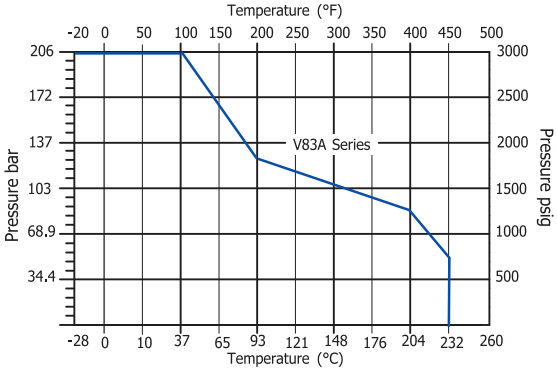
Carbon PTFE



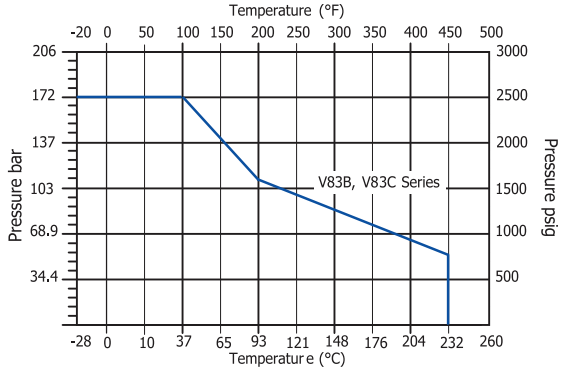
Carbon PTFE



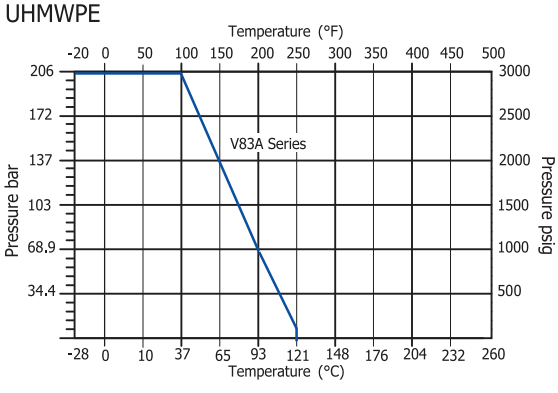
PEEK



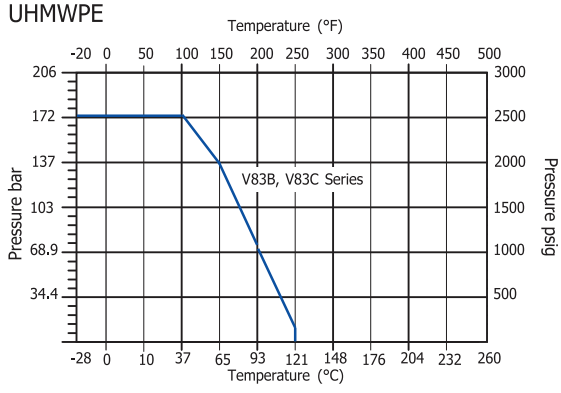
PEEK



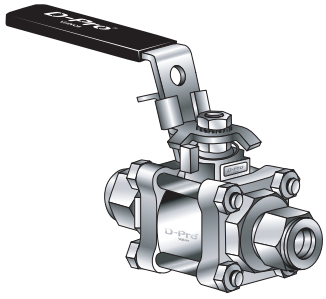
UHMWPE

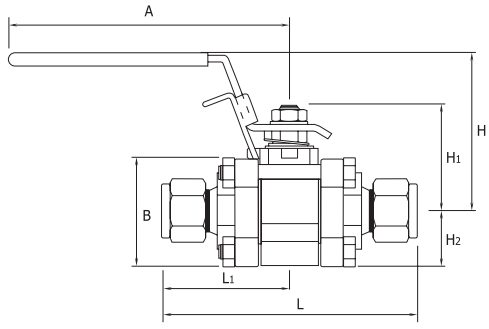


UHMWPE



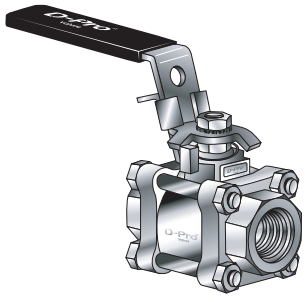
▪ DK-Lok Tube Fitting End Connections

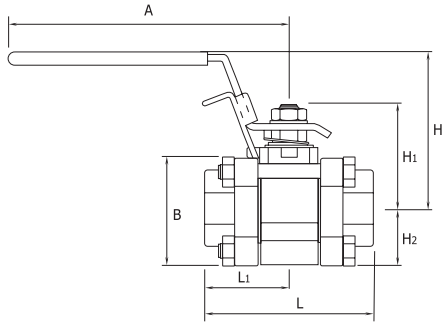




Basic Ordering number	End Connection	Orifice mm	Orifice in.	Cv	Dimension mm (in.) L	L1	H	H1	H2	A	B
Fractional DK-Lok											
V83A-D4T-	1/4 in.	4.8	0.188	1.2	80.8 (3.18)	40.40 (1.59)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-D6T-	3/8 in.	7.1	0.281	3.8							
V83B-D8T-	1/2 in.	10.4	0.411	7.5	103.8 (4.09)	51.90 (2.04)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83B-D12T-	3/4 in.	13.1	0.516	13.6							
V83C-D16T-	1 in.	22.2	0.875	40.0	136.7 (5.38)	68.35 (2.69)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
Metric DK-Lok											
V83A-D6M-	6 mm	4.8	0.188	1.2	80.8 (3.18)	40.40 (1.59)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-D8M-	8 mm	6.4	0.250	2.5							
V83A-D10M-	10 mm	7.1	0.281	3.8							
V83B-D12M-	12 mm	10.4	0.411	7.5	103.8 (4.09)	51.90 (2.04)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-D25M-	25 mm	22.2	0.875	40.0	136.7 (5.38)	68.35 (2.69)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)

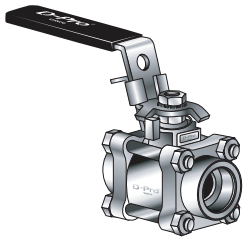
▪ Female Pipe Thread End Connections

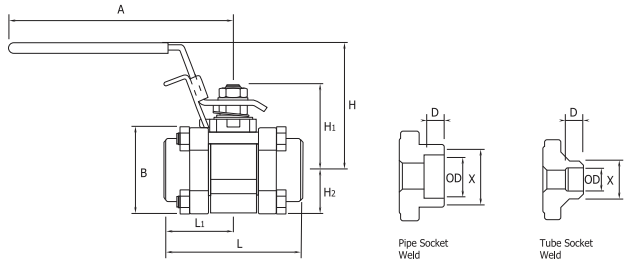




Basic Ordering number	End Connection	Orifice mm	Orifice in.	Cv	Dimension mm (in.) L	L1	H	H1	H2	A	B
Female NPT Ends											
V83A-F2N-	1/8 in.	7.1	0.281	3.8	55.4 (2.18)	27.70 (1.09)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-F4N-	1/4 in.										
V83B-F6N-	3/8 in.	13.1	0.516	12.0	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83B-F8N-	1/2 in.										
V83C-F12N-	3/4 in.	22.2	0.875	31.0	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-F16N-	1 in.			38.0							
Female ISO Tapered Ends											
V83A-F4R-	1/4 in.	7.1	0.281	3.8	55.4 (2.18)	27.70 (1.09)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-F8R-	1/2 in.	13.1	0.516	12.0	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-F12R-	3/4 in.	22.2	0.875	31.0	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-F16R-	1 in.			38.0	114.3 (4.50)	57.15 (2.25)					

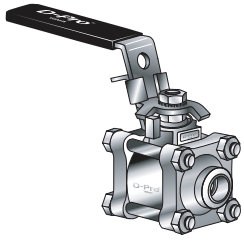
▪ Tube and Pipe Socket Weld End Connections

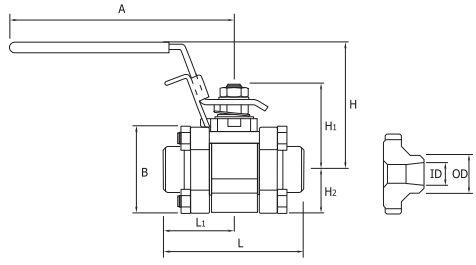




Basic Ordering numbera	End Connection	Orifice		Cv	Dimension mm (in.)									
		mm	in.		OD	X	D	L	L1	H	H1	H2	A	B
Tube Socket Weld														
V83A-SW4T-	1/4 in.	4.8	0.188	1.2	6.50 (0.26)	13.70 (0.54)	7.1 (0.28)	55.4 (2.18)	27.70 (1.09)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-SW6T-	3/8 in.	7.1	0.281	3.8	9.70 (0.38)	17.10 (0.67)	7.9 (0.31)							
V83B-SW8T-	1/2 in.	10.4	0.411	7.5	12.90 (0.51)	21.30 (0.84)	9.7 (0.38)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83B-SW12T-	3/4 in.	13.1	0.516	13.6	19.20 (0.76)	26.70 (1.05)	11.2 (0.44)							
V83C-SW16T-	1 in.	22.2	0.875	40.0	25.65 (1.01)	33.40 (1.31)	16.0 (0.63)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
Pipe Socket Weld														
V83A-D6M-	1/2 in.	13.1	0.516	15.0	21.80 (0.86)	31.20 (1.23)	9.7 (0.38)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83A-D8M-	3/4 in.	22.2	0.875	36.0	27.20 (1.07)	42.16 (1.66)	12.7 (0.50)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83A-D10M-	1 in.			42.0	33.90 (1.33)	45.30 (1.78)								

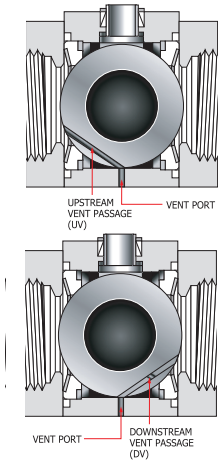
▪ Pipe Butt Weld End Connections





Basic Ordering number	End Connection	Orifice		Cv	Dimension mm (in.)								
		mm	in.		OD	ID	L	L1	H	H1	H2	A	B
Schedule 10													
V83A-W4P10-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	10.40 (0.41)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-W8P10-	1/2 in.	13.1	0.516	15.0	21.30 (0.84)	17.10 (0.67)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-W12P10-	3/4 in.	22.2	0.875	36.0	26.67 (1.05)	22.45 (0.88)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-W16P10-	1 in.			40.0	33.40 (1.31)	27.90 (1.10)	88.9 (3.50)	44.45 (1.75)					
Schedule 40													
V83A-W4P40-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	9.20 (0.36)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83B-W8P40-	1/2 in.	13.1	0.516	15.0	21.30 (0.84)	15.80 (0.62)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83C-W12P40-	3/4 in.	22.2	0.875	36.0	26.67 (1.05)	20.93 (0.82)	92.0 (3.62)	46.00 (1.81)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)
V83C-W16P40-	1 in.			40.0	33.40 (1.31)	26.60 (1.05)	88.9 (3.50)	44.45 (1.75)					
Schedule 80													
V83A-W4P80-	1/4 in.	4.8	0.188	1.2	13.70 (0.54)	7.70 (0.30)	52.4 (2.06)	26.20 (1.03)	47.7 (1.88)	31.8 (1.25)	16.75 (0.66)	57.2 (2.25)	33.0 (1.30)
V83A-W6P80-	3/8 in.	7.1	0.281	3.8	17.10 (0.67)	10.70 (0.42)							
V83B-W8P80-	1/2 in.	10.4	0.411	7.5	21.30 (0.84)	13.90 (0.55)	68.9 (2.71)	34.45 (1.36)	64.8 (2.55)	44.2 (1.74)	22.25 (0.88)	111.0 (4.37)	44.5 (1.75)
V83B-W12P80-	3/4 in.	13.1	0.516	13.6	26.70 (1.05)	18.80 (0.74)							
V83C-W16P80-	1 in.	22.2	0.875	40.0	33.40 (1.31)	23.90 (0.94)	88.9 (3.50)	44.45 (1.75)	79.0 (3.11)	61.9 (2.44)	31.00 (1.22)	149.4 (5.88)	62.0 (2.44)

External Vent Options

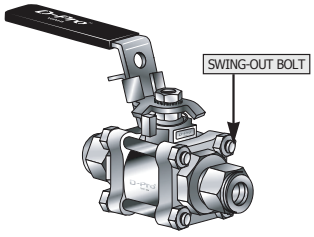


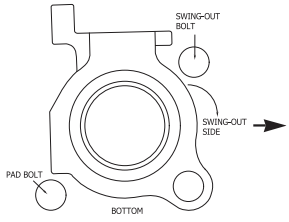
The vent passage is isolated from the ball bore. The valve in closed position, system fluids vent through vent passage to the vent port.
The valve in open position, no venting occurs, system fluids flow through the valve.
Choose either the Downstream Vent (DV) or Upstream Vent (UP) option.

External Vented Valve Rating
Upstream and downstream

Seat Material	Valve Series	Pressure, bar (psi)	Pressure @ Max. Temp.
Reinforced PTFE Virgin PTFE Carbon PTFE	V83A V83B V83C	68.9 (1000) @ -28 to 37°C (-20 to 100°F)	7 bar @ 232°C (100 psig @ 450°F)
PEEK	V83A		7 bar @ 232°C (100 psig @ 450°F)
	V83B V83C		55 bar @ 232°C (800 psig @ 450°F)
UHMWPE	V83A V83B V83C		17 bar @ 121°C (250 psig @ 450°F)

Maintenance Kits





Unscrew the swing-out bolt and loosen other three bolts. This allows users to swing-out the body, keeping the valve in-line.

Seat Seal Kits

Kit contains each two pieces of seats, seat support rings, disc springs and flange seals.

Valve Series	Seat Material Designator	Flange Seal Designator
V83A- V83B- V83C-	**Nil** : Reinforced PTFE **VP** : Virgin PTFE **CP** : Carbon PTFE **PK** : PEEK **UH** : UHMWPE	**Nil** : Reinforced PTFE

To order, add - SEAT as a suffix to the ordering number. i.e., V83B-PK-SEAT

Packing Seal Kits

Kit contains each one piece of upper & lower packing, packing gland, packing support and stem bearing.

Valve Series	Packing Material Designator	Stem Bearing Designator
V83A- V83B- V83C-	**Nil** : Reinforced PTFE	**PK** : PEEK 7 : X750

To order, add - PKG as a suffix to the ordering number. i.e., V83B-PK-PKG

Flange Seal Kits

Kit contains two flange seals.

Valve Series	Flange Seal Designator
V83A- V83B- V83C-	**Nil** : Reinforced PTFE

To order, add - FL as a suffix to the ordering number.
i.e., V83A-FL

Fastener Kits

Kit contains each four pieces of body fasteners, body hex nuts and one stem nut.

Valve Series	Flange Seal Designator
V83A- V83B- V83C-	Gr. B8M

To order, add - BOLT as a suffix to the ordering number.
i.e., V83A-BOLT

- **All dimensions shown in this catalog are for reference only and are subject to change.**
- **Dimensions with DK-Lok nuts are in finger-tight position.**
- **We reserve the right to change specifications stated in this catalog for our continuing program of improvement.**

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

P series Rack and Pinion Pneumatic Actuator

Model shown:

V83A single
V83A double
V83B double

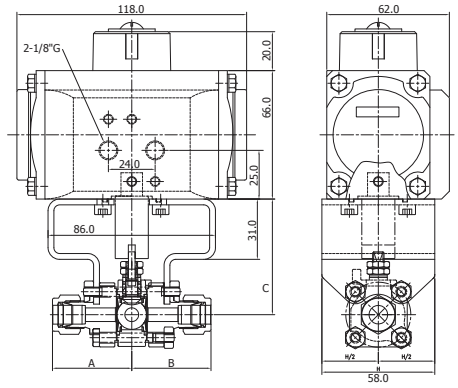
A,B dimension

V83A: 40.71
V83B: 52.24

C dimension

V83A: 61.45
V83B: 65.62

Unit: mm



Actuator Material of Construction

Parts	Standard Matetial
Body	Extruded Aluminum Alloy with external & internal corrosion protection.
Piston (Rack)	Die Cast Aluminum Alloy Anodized.
Drive Shaft (Pinion)	Steel Alloy Nickel Plated.
Spring	Spring Alloy Steel Nickel Plated. (min. 5, max. 12 spring)
End Cap	Die Cast Aluminum Alloy Polyester Coated.
O-Ring	NBR is standard. Optional FKM and Silicon.

Table 1. **Technical Information**

Actuator operating temperature (°C)

- Standard : NBR O-Ring -40 to 80.
- Low Temperature : Silicon O-Ring -55 to 80 (Designator : **LT**).
- High Temperature : FKM O-Ring -15 to 150 (Designator : **HT**).
- Air-pressure : Min. 2.5 bar, Max. 8 bar.
- Air supply end connection: Female G 1/8 inch (ISO 228-1).
- Position indicator is standard.

Table 2. **Single Return 90 Deg. Actuator**

Valve series	Ordering Number		Dimensions	Weight	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
	Normal Close	Normal Open	L x H x W unit: mm	Kg	Nm	Liter		
V83A	PCS1	POS1	118x86x62	0.9	3.5	0.10	V83A-SMB	Nill: Standard Temp.
V83B	PCS3	POS3	140.5x89x70.5	1.13	7.4	0.15	V83B-SMB	LT: Low Temp.
V83C	PCS4	POS4	210.5x122x94.5	3.09	17.7	0.49	V83C-SMB	HT: High Temp.

Table 3. **Double Return 90 Deg. Actuator**

Valve series	Ordering Number	Weight Unit: Kg	L x H x W unit: mm	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Mounting Bracket Ordering Number
				Nm	Liter		
V83A	PD1	0.75	118x86x62	14.4	0.10	V83A-DMB	Nill: Standard Temp.
V83B	PD1	0.75	118x86x62	14.4	0.10	V83B-DMB	LT: Low Temp.
V83C	PD2	1.03	140.5x89x70.5	19.9	0.15	V83C-DMB	HT: High Temp.

Mount bracket : Field assembly kit includes mount bracket, valve to actuator connector, special size of valve body fasteners, fastener washers, bracket bolts and assembly manual.

How to Order

Select applicable valve pattern, seat options, pneumatic actuator, and the actuator temperature option from designator listed below.

V83A-D4T
V83C-D25M

- PK - 7					-PCS1 -PD2	-HT	-S -S
Seat Material	**Stem Bearing**	**Flange Seals**	**External Vent**	**Handle**	**Factory Assembled Actuator**	**Actuator Temperature Options**	**Body & Flange Material**
Nil : Reinforced PTFE **VP** : Virgin PTFE **CP** : Carbon PTFE **PK** : PEEK **UH** : UHMWPE	**Nil** : PEEK **7** : X750	**Nil** : Standard PTFE	**UV** : External Upstream **DV** : External Downstream	**Nil** : Lever Handle **OH** : Oval Handle	· Single return, see Table 2. · Double return, see Table 3.	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.	**S** : A351 CF8M **L** : A351 CF3M **C** : A216 Gr. WCB

DK-LOK® Fittings & Valves
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DK-LOK Valves

V86 Series Ball Valves
VC86 Series CNG/NGV Valves

No. V86-8
July 2013

Pressure Rating up to 689 bar (10,000psig)

Features

- High pressure up to 10,000 psi (689 bar).
- Blowout proof design with internally loaded stem.
- Handle indicates the flow direction.
- Positive stop with a robust stop pin.
- High flow rate with maximum orifice.
- Various end ports including DK-Lok tube port.
- Various flow control with side and bottom inlet port on 3-way diverter valves.

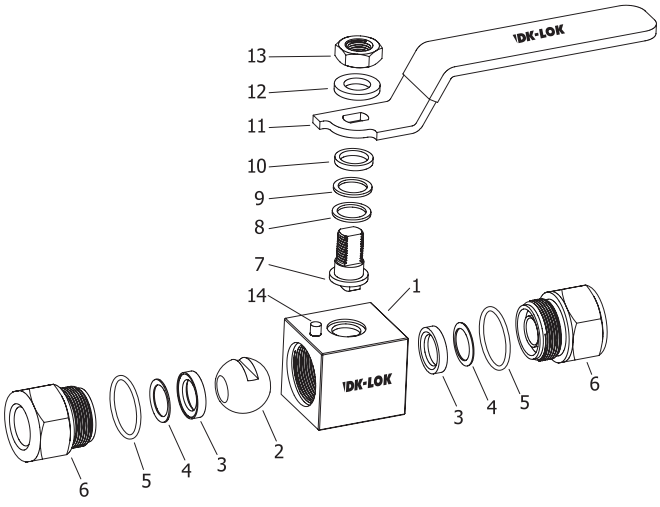


Table 1. **Materials of Construction**

Component		Materials Grade/ASTM Specification
1	Body	SS316/A276 or A479
2	Ball	
3	Seat (2)	PVDF, standard for V86 Series Optional PCTFE PEEK, standard for VC86 Series
4	Disc Spring (2)	Type 630/A564, applicable to VC86 Series
5	End Seal (2)	FKM Oring for V86 Series HNBR O-ring for VC86 Series
6	End Connector (2)	SS316/A276 or A479
7	Stem	
8	Bearing	PTFE
9	Packing	
10	Gland	SS316/ ASTM A276 or ASTM A479
11	Lever Handle Optional Oval Handle	SS304 handle with vinyl sleeve
12	Washer	SS304
13	Stem Nut	SS304
14	Stop Pin	SS304

- Wetted parts and lubricants listed in blue.
- Fluorinated-based lubricant

CNC/NGV Certifications

VC86 Series with PEEK seat and HNBR O-rings are available with CNG/NGV certifications.
The sealing material of seat and O-rings are selected for compatible with CNG.
VC86 Series with the live loaded compensation disc spring reacts on ball movement in both low and high pressure systems in CNG and NGV applications.

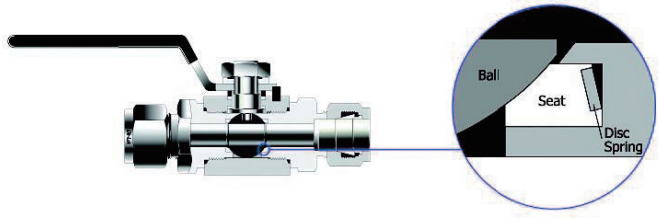


Table 2. **Pressure - Temperature Rating for CNG Service**

Valve Series	Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ANSI / IAS NGV 4.6-1999 CSA 12.56-M99	ISO 15500
VC86 Series 2-way ball valves	Certificate No.	110R-000181	2010-REPORT-002 (00)	2010-REPORT-003 (00)	2010-REPORT-001- (00)
	Classification	Class 0	manual valve	manual valve (Class B)	manual valve
	Temperature	-40 to 120 °C (-40 to 250 °F)	-40 to 121 °C (-40 to 250 °F)	-40 to 65 °C (-40 to 150 °F)	-40 to 121 °C (-40 to 250 °F)
	Working Pressure	274 bar @ 120 °C	273 bar @ 121 °C	293 bar @ 65 °C	273 bar @ 121 °C

Operation

- 2-way positive shut off and 3-way directional control of fluids in process, power and instrument application.
- Valves are designed to control fluids in full open or full closed position.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- Valves must be in open position during system test not to damage the valve seat.
- Sour Gas Service NACE MR0175 available.

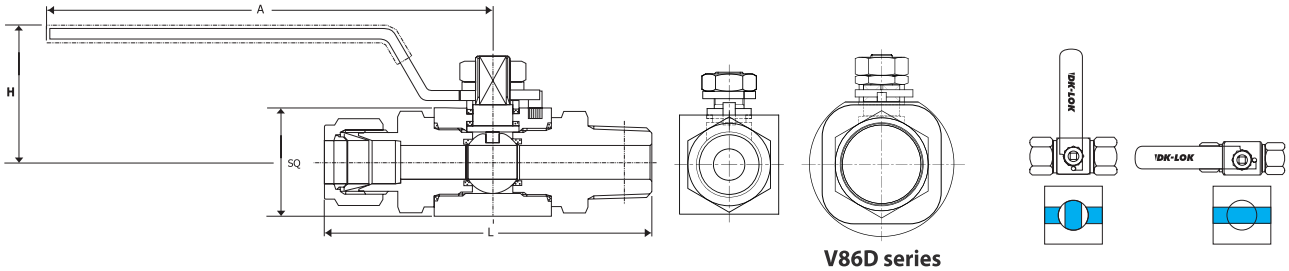
Factory Test

Every valve is tested with nitrogen gas @1,000 psig (68 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. The stem packing is tested with nitrogen gas @1,000 psig for no detectable leakage.

Cleaning and Packaging

Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available for valves with PCTFE seat.

2-Way On-off Valves



V86D series

Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet & Outlet	Orifice mm (in.)	Cv	Dimensions mm (in.) A	H	L	SQ
V86A- VC86A-	D-4T	1/4 in. Dk-Lok	4.8 (0.19)	1.2	108.3 (4.26)	38.4 (1.52)	97.12 (3.82)	32.0 (1.26)
	D-6T	3/8 in. Dk-Lok	7.1 (0.28)	3.7			104.5 (4.11)	
	D-8T	1/2 in. Dk-Lok	10.0 (0.39)	7.5			109.6 (4.31)	
	F-4N	1/4 in. Female NPT					74.0 (2.91)	
	F-6N	3/8 in. Female NPT					77.0 (3.03)	
	F-8N	1/2 in. Female NPT					85.0 (3.35)	
	M-4N	1/4 in. Male NPT	7.1 (0.28)	3.7			95.4 (3.76)	
	M-6N	3/8 in. Male NPT	10.0 (0.39)	7.2			95.4 (3.76)	
	M-8N	1/2 in. Male NPT		7.5			100.2 (3.94)	
V86B- VC86B-	F-8N	1/2 in. Female NPT	12.7 (0.50)	10.1	149.0 (5.86)	50.8 (2.0)	89.0 (3.50)	40.0 (1.57)
	F-12N	3/4 in. Female NPT					90.0 (3.54)	
	D-12M	12mm DK-Lok	10.0 (0.39)				112.6 (4.43)	
	D-16M	16mm DK-Lok	12.7 (0.50)				115.0 (4.53)	
	D-8T	1/2 in. DK-Lok	10.4 (0.41)				114.6 (4.51)	
	D-10T	5/8 in. DK-Lok	12.7 (0.50)				114.4 (4.5)	
	D-12T	3/4 in. DK-Lok					114.8 (4.52)	
V86C- VC86C-	F-12N	3/4 in. Female NPT	19.0 (0.75)	30.0	149.0 (5.86)	56.0 (2.2)	96.0 (3.78)	50.0 (1.97)
	F-16N	1 in. Female NPT					111.0 (4.37)	
	D-12T	3/4 in. DK-Lok	15.7 (0.62)	19.0			125.0 (4.92)	
	D-16T	1 in. DK-Lok	19.0 (0.75)	30.0			134.0 (5.27)	
	M-12N	3/4 in. Male NPT	15.7 (0.62)	19.0			119.0 (4.68)	
	M-16N	1 in. Male NPT	19.0 (0.75)	30.0			129.0 (5.07)	
VC86D-	F -16N	1 in. Female NPT	25.0 (0.98)	Full Bore	193.7 (7.62)	84.1 (3.31)	112.90 (4.44)	70 (2.76)

CNG valve ordering number :
The basic ordering number listed in black are not for CNG/NGV applicable valves.

Table 3. **2-Way Valve Actuation Torque**

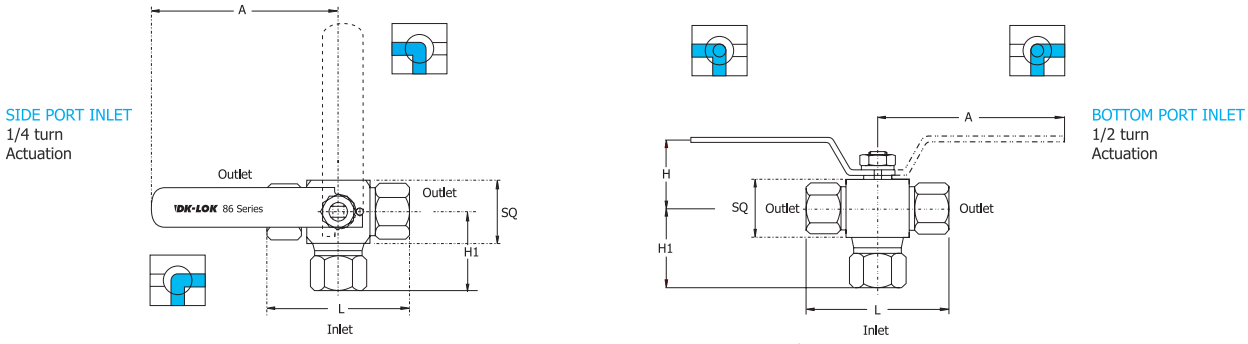
Standard Valves

Valve Series	System Pressures, bar (psig) 0 (0)	334 (5000)	413 (6000)
	Torque	Unit: Nm	
V86A	3.92 (2.89)	-	6.37 (4.69)
V86B	7.35 (5.42)	10.30 (7.59)	-
V86C	12.26 (9.04)	19.61 (14.46)	-

CNG/NGV Valves

Valve Series	System Pressures, bar (psig) 0 (0)	344 (5000)
	Torque	Unit: Nm
VC86B	5.19	10.59
VC86C	2.15	5.88
VC86D	7.35	9.80

3-Way Diverter Valves



V86 3-way ball valve is designed to switch media through the inlet port and direct it to out of two outlet ports.

Ordering Information and Dimensions

Basic Ordering Number		End Connections	Orifice mm (in.)	Dimensions mm (in.) A	H	H1	L	SQ
V86A-	3*- D-4T-	1/4 in. DK-Lok	4.8 (0.19)	108.3 (4.26)	38.4 (1.52)	50.9 (2.0)	97.12 (3.82)	32.0 (1.26)
	3*- D-6T-	3/8 in. DK-Lok	7.1 (0.28)			53.0 (2.09)	104.5 (4.11)	
	3*- D-8T-	1/2 in. DK-Lok	10.0 (0.39)			55.8 (2.2)	109.6 (4.31)	
	3*- F-4N -	1/4 in. Female NPT				40.0 (1.57)	74.0 (2.91)	
	3*- F-6N-	3/8 in. Female NPT				41.5 (1.64)	77.0 (3.03)	
	3*- F-8N-	1/2 in. Female NPT				45.5 (1.79)	85.0 (3.35)	
V86B-	3*- F-8N-	1/2 in. Female NPT	12.7 (0.50)	149.0 (5.86)	50.8 (2.00)	55.0 (2.17)	89.0 (3.5)	40.0 (1.57)
	3*- F-12N-	3/4 in. Female NPT				55.0 (2.17)	90.0 (3.54)	
	3*- D-10T-	5/8 in. DK-Lok				67.2 (2.66)	114.4 (4.5)	
	3*- D-12T-	3/4 in. DK-Lok				67.7 (2.66)	115.0 (4.53)	
V86C-	3*- D-12T-	3/4 in. DK-Lok	15.7 (0.62)	149.0 (5.86)	56.0 (2.2)	75.3 (2.96)	125.0 (4.92)	50.0 (1.97)
	3*- D-16T-	1 in. DK-Lok	19.0 (0.75)			80.0 (3.15)	134.0 (5.27)	
	3*- F-12N-	3/4 in. Female NPT				59.5 (2.34)	96.0 (3.78)	
	3*- F-16N-	1 in. Female NPT				67.0 (2.64)	111.0 (4.37)	

All dimensions shown are for reference only and are subject to change.

Side and Bottom Port Valve Ordering Information

To order side port entry valve, replace * with S, to order bottom port entry valve, replace * with B.
Examples : V86A-3S-D-4T-S, V86A-3B-D-4T-S.

Table 4. **3-way Valve Actuation Torque**

Valve Series	System Pressures, bar (psig) 0 (0)	206 (3000)	275 (4000)
	Torque Unit: Nm		
V86A	3.92	-	4.90
V86B	7.35	7.85	-

Table 5. **2-way Valve Pressure and Temperature Rating**

Valve Series	Seat Material	Maximum Working Pressure at -54 ~ 21°C (-65 ~ 70°F) psig(bar)	Temperature Rating °C(°F)
V86A	PVDF	6,000 (413)	-30 to 130 (-22 to 266)
	PCTFE		-30 to 180 (-22 to 356)
	PEEK	10,000 (689)	-54 to 260 (-65 to 500)
V86B V86C	PVDF	5,000 (344)	-23 to 191 (-10 to 375)
	PCTFE		-23 to 191 (-10 to 375)
	PEEK	6,000 (413)	-23 to 191 (-10 to 375)
V86D	PCTFE	6,000 (413)	-40 to 160 (-40 to 320)

Note : Refer to table 2 for VC86 series's Pressure and Temperature Rating

Table 6. **3-way Valve Pressure and Temperature Rating**

Valve Series	Seat	Allowable Working Pressure at ambient temperature psig(bar)	Temperature Rating °C(°F)
V86A-3*	PVDF	4,000 (275)	-30 to 130 (-22 to 266)
	PCTFE		-30 to 180 (-22 to 356)
	PEEK	6,000 (413)	-40 to 230 (-40 to 446)
V86B-3* V86C-3*	PVDF	3,000 (206)	-23 to 191 (-10 to 379)
	PCTFE		-23 to 191 (-10 to 379)
	PEEK	4,000 (275)	-23 to 191 (-10 to 379)

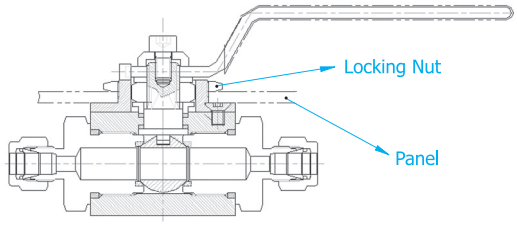
Options

Locking Nut & Panel Mounting

Ordering designator : **P1**
Addition locking nut below handle makes the valve panel mountable.
Disassemble the handle prior to panel mounting.

mm (in.)

Valve Series	Panel Hole Drill	Panel Thickness
V86A	30.0 (1.18)	Max. 4.0 (0.157)
V86B	38.0 (1.50)	
V86C	38.0 (1.50)	

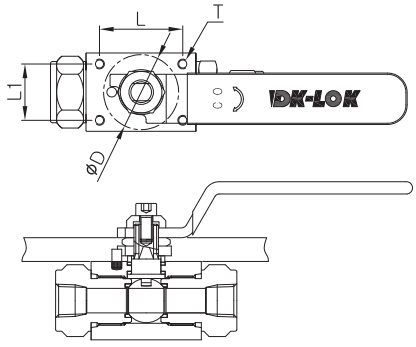


Screw Hole for Panel Mounting

Ordering Designator : **P2**
Additional four (4) screw holes on the top of valve makes the valve panel mountable.
Disassemble the handle prior to panel mounting.

mm (in.)

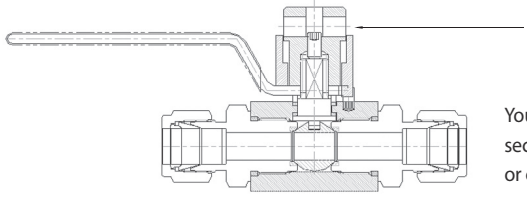
Valve Series	L	L1	T	D
V86A	34.0 (1.33)	23.0 (0.91)	M4×0.7P	30.0 (1.18)
V86B	36.0 (1.42)	29.0 (1.14)	M5×0.8P	38.0 (1.50)
V86C	40.0 (1.57)	35.0 (1.37)	M6×10.P	38.0 (1.50)



" Lift-Turn" Locking Device

Ordering Designator : **LD**
Dk Tech patented "Lift-Turn" safety locking device allows you to lock the valve manually either in open or close position.
The locking device consists of study upper and lower locking detents made out of stainless steel.

Note : LD option applicable to 2-way valves.



Pad-Lock applicable 7.2mm (0.28in) hole constructed on upper locking detent.

You may apply a pad-lock to secure the valve in the open or close position.

Ordering Information

Select the desired basic ordering number, and options from designators listed below.

V86A-D-4T - **PC** - **OH** - **S**
V86B-F-12N - **LD** - **S**
VC86B-D-12M - **PC** - **S**

Seat	Panel Mounting	Locking Device	Handle	Body Material
Nil : PEEK, standard for VC86 series **Nil** : PVDF, standard for V86 series **PC** : PCTFE **PK** : PEEK **PV** : PVDF	**P1** : Locking nut & panel mounting **P2** : Screw hole for panel mounting	**LD** : Locking Device	**Nil** : Standard Lever Handle **OH** : Oval Handle OH option is applicable to 2-way V86A Series valves.	**S** : SS316

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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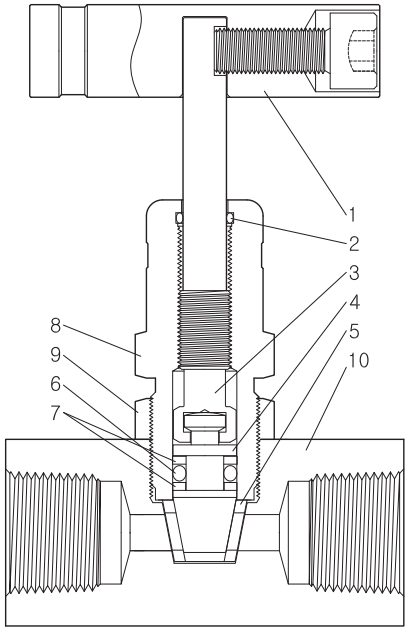
DK-LOK®
Valves

V96 Series Rising Stem Plug Valves

No.V96-5
July 2013

Pressure Ratings up to 6,000 psig (413 bar)

Features



- Bi-directional flow control.
- Straight-through orifice hence roddable for easy cleaning.
- Acetal seat standard, optional PEEK and PFA.
- Non-rotating Stem Tip for positive sealing and maximum soft seat life.
- Internal bonnet O-ring protects threads from external contamination.
- Isolated threads located above bonnet O-ring prevents media contamination and thread lubricant washout.

Materials of Construction

Component	Grade/ASTM Specification
1. Handle, Set screw	SS316 / A276
2. Bonnet O-ring	FKM O-ring
3. Stem Shank	SS316 / A276 or A479
4. Stem Tip	
5. Seat	Acetal/D4181, optional PEEK, PFA
6. Stem tip O-ring	FKM O-ring
7. Backup rings (2)	PTFE/D1710
8. Bonnet	SS316/A276
9. Locking nut	
10. Body	SS316/A276 or A479

Wetted components are listed in blue.

Lubrication : Fluorocarbon base on threads, silicone base on soft parts

Technical Information

Pressure-Temperature

Ratings are based on standard stem tip of FKM O-ring and PTFE backup rings.

Body Material	SS316		
Seat	Acetal	PEEK	PFA
Temperature °F (°C)	Working Pressure, psig (bar)		
-20 to 100 (-28 to 37)	6,000 (413)	6,000 (413)	750 (51.6)
200 (93)	2,650 (182)	3,000 (206)	625 (43.0)
250 (121)	1,000 (68.9)	1,600 (110)	450 (31.0)
300 (148)	-	1,300 (89.5)	300 (20.6)
350 (176)	-	1,200 (82.6)	200 (13.7)
400 (204)	-	1,000 (68.9)	100 (6.8)

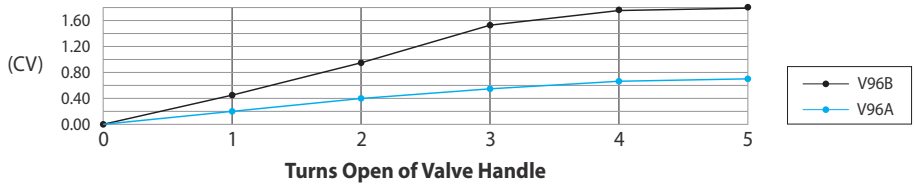
Valve with Acetal seat : For water and steam application, standard valve with Acetal seat is not recommended for application of greater than 200 °F (93 °C) temperature.

Temperature Range
Optional O-ring materials

O-ring Material	Designator	Temperature Range °F (°C)
Buna C	BC	-65 to 250 (-53 to 121)
Buna N	BN	-20 to 250 (-28 to 121)
EPDM	EP	-20 to 250 (-28 to 121)
Kalrez	KZ	-20 to 400 (-28 to 204)

Flow Coefficiency at 100° F (37 °C)

Flow Curves



Turns Open of Valve Handle

Testing

Every valve is factory tested with the nitrogen gas @ 1,000 psig (68 bar) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM. Stem seals are tested to a requirement of no detectable leakage using a liquid leak detector.

Quality System Approvals | DK-Lok Tube Fitting Certification Listing | DK-Lok Valve Certification Listing

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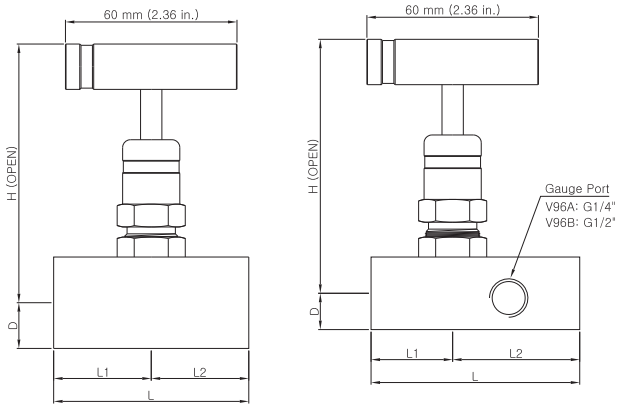

Ordering information and Dimensions

Basic Ordering Number		End Connections		Orifice mm(in.)	Cv	Dimensions, mm(in.)				
		Inlet	Outlet			L	L1	L2	D	H
V96A-	F-4N	1/4 in. Female NPT		4.8 (0.187)	0.63	56.9 (2.24)	28.4 (1.12)	28.4 (1.12)	12.7 (0.5)	95.8 (3.77)
	MF-4N	1/4 in. Male NPT	1/4 in. Female NPT			73.4 (2.90)	45.2 (1.78)			
	MF-8N4N	1/2 in. Male NPT	1/4 in. Female NPT			76.5 (3.01)	48.0 (1.89)			
V96A-G4*-	F-4N	1/4 in. Female NPT				72.9 (2.87)	28.4 (1.12)	44.4 (1.75)		
	MF-8N4N	1/2 in. Male NPT	1/4 in. Female NPT			124 (4.87)	79.2 (3.12)			
V96B	F-8N	1/2 in. Female NPT		6.4 (0.25)	1.8	67.6 (2.66)	33.8 (1.33)	33.8 (1.33)	16.0 (0.63)	97.3 (3.83)
	MF-8N	1/2 in. Male NPT	1/2 in. Female NPT			88.6(3.49)	54.9 (2.16)			
	MF-12N8N	3/4 in. Male NPT	1/2 in. Female NPT							
V96B-G8*-	F-8N	1/2 in. Female NPT				90.9 (3.58)	33.8 (1.33)	57.2 (2.25)		
	MF-8N	1/2 in. Male NPT	1/2 in. Female NPT			142 (5.58)	84.6 (3.33)			
	MF-12N8N	3/4 in. Male NPT	1/2 in. Female NPT							

All dimensions shown are for reference only and are subject to change.

- V96A-G4* gauge port: 1/4 in. Female NPT, V96B-G8*: 1/2 in. Female NPT.
- Gauge port valves with pipe insulation extended body of 2.0 in. (50 mm) are listed in blue.

Panel Mounting option

Panel hole drill size 25/32 in. (19.8 mm), max. panel thickness 1/2 in. (12.7 mm).
To order, add - **PM** as a suffix to the valve ordering number. Example: V96A-F-4N-**PM**

Sour Gas Service option

Materials are selected in accordance with NACE standards.
To order, add - **SG** as a suffix to the ordering number. Example: V96A-F-4N-**SG**

How to order

Select desired valve basic ordering number, and applicable options from designators listed below.

Example: V96A-F-4N

- PK	-EP	-PM	- SG	- S
Seat Designator	Stem tip O-ring Designator	Panel mounting Designator	Sour Gas Designator	Body Material Designator
Nil : Acetal **PK** : PEEK **PA** : Teflon PFA	**Nil** : FKM O-ring **EP** : EPDM **KZ** : Kalrez **BC** : Buna C **BN** : Buna N	**PM** : Panel Mounting	**SG** : Sour Gas	**S** : SS316

We reserve the right to change specifications stated in this catalog for our continuing program of improvement.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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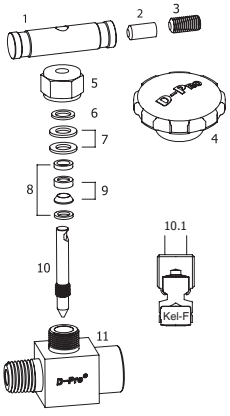
DK-LOK Valves

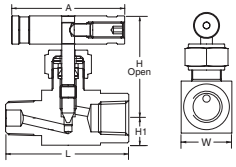
VB16 Series Integral Bonnet Needle Valves

No.VB16-5
July 2013

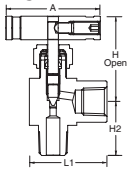
Pressure Rating up to 6,000 psig



In-Line Pattern



Angle Pattern



Features

Two-piece chevron PFA stem packing design with compensating spring packing.

- improves sealing integrity.
- high pressure valve but with compact design.

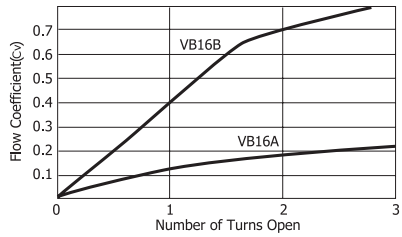
Flow Data

Cv are measured at the valve. Therefore restrictions at end connections may reduce flow.

Materials of Construction

	Components	Material Grade
1	Bar Handle	SS316/ASTM A276
2	Position Pin	
3	Set Screw	Grade B8 TYPE 304/A193
4	Optional Round Handle	Nylon with brass insert
5	Cap Nut	SS316/ASTM A276
6	Gland	
7	Spring Packing (2)	S17700/A693
8	Upper / Lower Gland (2)	SS316/ASTM A276
9	Chevron Packing (2)	PFA/D3307
10	Standard Vee Stem	SS316/ASTM A276
10.1	Optional Soft Stem	Kel-F (PCTFE)
11	Body	SS316/ASTM A276

Flow Coefficient at Turns Open



Pressure-Temperature Ratings

Temperature rating of VB16A & B series with nonrotating Kel-F soft seat -65 to 200 °F (-53 to 93 °C), Vee stem metal seat -65 to 450 °F (-53 to 232 °C).
Non-rotating soft seat for repetitive shut-off on gas

ASME Class	2500
Material Group	2.2
Material	SS316
Temperature °F (°C)	Working Pressure, psig (bar)
-65 to 100 (-53 to 37)	6000 (413)
200 (93)	5160 (355)
250 (121)	4910 (338)
300 (148)	4660 (321)

Ordering Information and Dimensions

Ordering Number		End Connection		Dimensions, mm(in.) Orifice/Cv	H	H1	H2	L	L1	A	W
VB16A-	D4T-S	1/4 in. DK-Lok		3.2 (0.125) Cv 0.21	43.1 (1.69)	10.7 (0.42)	29.5 (1.16)	62.5 (2.46)	39.9 (1.57)	44.5 (1.75)	21.6 (0.85)
	F4N-S	1/4 in. Female NPT				10.7 (0.42)	25.4 (1.00)	47.8 (1.88)	36.6 (1.44)		
	M4N-S	1/4 in. Male NPT					-	49.3 (1.94)	-	*36.0 (1.42)	
	MF4N-S	1/4 in. Male	1/4 in. Female				26.2 (1.03)	48.5 (1.91)	36.6 (1.44)		
VB16B-	D6T-S	3/8 in. DK-Lok		6.4 (0.25) Cv 0.73	58.0 (2.28)	16.8 (0.66)	-	78.2 (3.08)	-	64.0 (2.52)	32.0 (1.26)
	D8T-S	1/2 in. DK-Lok					-	83.8 (3.30)	-		
	F6N-S	3/8 in. Female NPT					-	63.5 (2.50)	-		
	F8N-S	1/2 in. Female NPT					35.8 (1.41)		52.3 (2.06)	*50.0 (1.97)	
	MF6N-S	3/8 in. Male NPT	3/8 in. Female NPT				31.0 (1.22)				
	MF8N-S	1/2 in. Male NPT	1/2 in. Female NPT				35.8 (1.41)	64.8 (2.55)			
	MF12N8N-S	3/4 in. Male NPT	1/2 in. Female NPT				-	63.5 (2.50)	-		

Angle Pattern : Valves with L1 dimension available for Angle Pattern. * Round handle diameter.
To order a valve with soft stem, insert -K in the ordering number. i.e., VB16A-D4T-K-S

Factory Test

Every valve is tested with the nitrogen @ 68 bar (1,000 psig) for leakage at the seat to a maximum allowance leak rate of 0.1 scc /min. The stem packing is tested for no detectable leakage.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance Remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

Quality System Approvals | DK-Lok Tube Fitting Certification Listing | DK-Lok Valve Certification Listing

DK-LOK Corporation
www.dklok.com

DK-LOK® Valves

V46A series Hex. Body Needle Valves

No.V46A-3
July 2013

Pressure rating up to 10,000 psig

Features

- **Packing bolt** permits packing adjustment externally.
- **Chevron PTFE packing** design provides far improved sealing integrity.
- **Packing** below stem threads is to isolate **threads** from system fluid and lubricant washout.
- **Non-rotating** stem tip at closure for long-life and leak-tight shutoff.
- **Lock plate** ensures the valve fastened to the body.
- **NACE** MR0175/ISO 15156-3 applicable

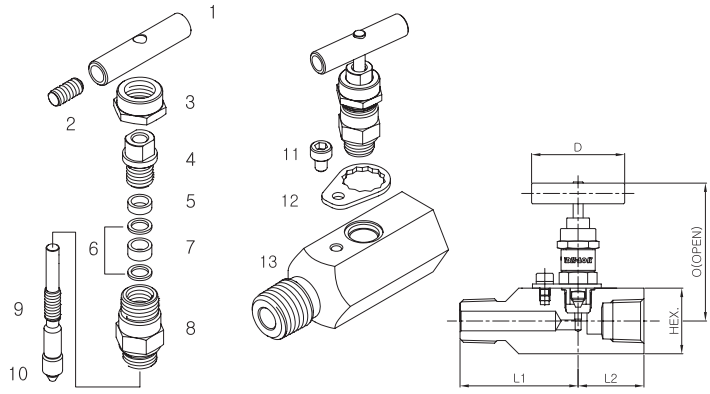
Pressure-Temperature Ratings

Body Material	Packing material	Temperature Rating	Pressure Rating @ 38 °C (100 °F)	Pressure Rating @ Max. Temp.
Stainless steel	PTFE	- 54 to 232 °C (-65 to 450 °F)	689 bar (10,000 psig)	285 bar @ 232 °C 4,130 psig @ 450 °F
	Grafoil	-54 to 648 °C (-65 to 1,200 °F)		118 bar @ 648 °C 1,715 psig @ 1,200 °F
Carbon steel	PTFE	- 29 to 176 °C (-20 to 350 °F)	689 bar (10,000 psig)	360 bar @ 176 °C (5,230 psig @ 350 °F)
	Grafoil	- 29 to 176 °C (-20 to 350 °F)		

Materials of Construction

Component	Valve Body Materials	
	Stainless steel	Carbon steel
	Grade/ASTM specification	
1. Handle	Stainless steel	Carbon steel
2. Set screw	SS316/A276 or A479	Carbon steel
3. Cap nut		C.Steel/JIS G4051
4. Packing bolt		
5. Gland		SS316/A276 or A479
6. Packing supports	Standard chevron PTFE packing. Optional Grafoil.	
7. Packing	SS316/A276 or A479	SS316/A276 or A479
8. Bonnet		C.Steel/JIS G4051
9. Stem		SS316/A276 or A479
10. stem disc	SS630/A564	
11. Lock bolt	Stainless steel	
12. Lock plate		
13. Body	SS316/A276 or A479	C.Steel/ JIS G4051, White zinc galvanized.

Wetted components listed in blue. Grafoil : TM UCAR



Ordering Information and Dimensions

Basic Ordering No.		End Connection Inlet	End Connection Outlet	Orifice in. (mm)	Cv	Dimensions, in.(mm) L	L1	L2	Hex	D	O
V46A-	D-4T-	1/4 DK-Lok		0.185 (4.7)	0.37	3.21 (81.5)	1.59 (40.4)	1.62 (41.1)	1.25 (31.75)	1.77 (45)	2.64 (67.2)
	D-6T-	3/8 DK-Lok			0.64	3.33 (84.5)	1.65 (41.9)	1.68 (42.6)			
	D-8T-	1/2 DK-Lok			0.83	3.54 (90.0)	1.76 (44.7)	1.78 (45.3)			
	F-4N-	1/4 Female NPT			0.83	3.0 ((76.2)	1.75 (44.4)	1.25 (31.8)			
	F-6N-	3/8 Female NPT									
	F-8N-	1/2 Female NPT									
	MF-8N-	1/2 Male NPT	1/2 Female NPT			3.5 (88.9)	2.25 (57.1)				
	MF-12N8N-	1/2 Male NPT	1/2 Female NPT				2.25 (57.1)				

Dimensions shown are for reference only and subject to change.

How to order

- To complete ordering number, add material designator **S** for stainless steel or **C** for carbon steel. Example V46A-F8N-**S**
- To order optional Grafoil packing, insert **GF** to the ordering number. Example V46A-F8N-**GF**-S
- To order NACE applicable valve, insert **SG** to the ordering number. Example V46A-F8N-GF-**SG**-S

Factory test, cleaning and packaging

- Every valve is factory tested with nitrogen @ 69 bar (1,000 psig) for leakage at the seat to a maximum allowable leak rate of 0.1 SCCM.
- Stem packing is tested for no detectable leakage.
- Every valve is cleaned and packaged in accordance with DK Tech Corporation cleaning standard DC-01. Optional DC-11 cleaning for oxygen application is available on request.

Packing adjustment and Actuation Torque

- Extreme or rapid temperature cycle while valve in service may require packing adjustment.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance Remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

Quality System Approvals | DK-Lok Tube Fitting Certification Listing | DK-Lok Valve Certification Listing

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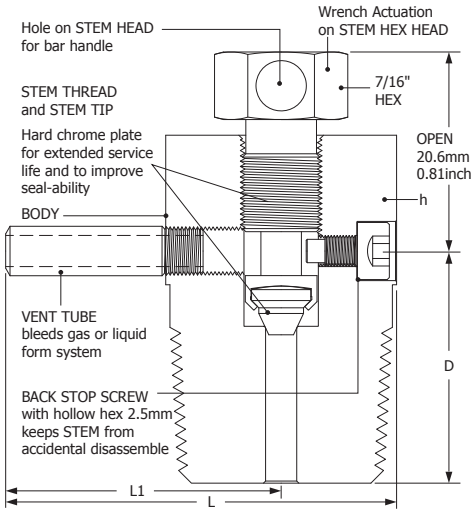
DK-LOK® Valves

VBV Series Bleed Valves

No. VBV-2
July 2013



Design and Applications

DK-Lok VBV Series Bleed Valves are designed to vent the signal line pressure to atmosphere before an instrument is removed and to assist in calibration of control devices.
These are for use on instrumentation devices such as gauge root valves and multi-valve manifolds. Optional barbed vent tube enables containment of fluid vented. The VBV Series are also ideal in bleeding hydraulic systems.

Installation and Operation

Position the vent tube so that system fluid is not directed to personnel operating.
Slowly open the valve. This valve has no stem seal packing;
small amounts of fluid will go through the stem thread when they are opened.
Therefore suitable measures should be taken to protect personnel operating.

Materials of Construction

Components	VALVE BODY MATERIALS	
	SS316 Stainless	Carbon Steel
	GRADE / ASTM and JIS SPECIFICATION	
Stem	SS316 / A 276	
Stem Tip	S630 / A564	
Body*	SS316 / A 276	S20C-S45C / G4051
Back Stop Screw	SS316 / A 276	
Vent Tube	SS316 / A 269	

* Carbon Steel bodies are white galvanized for corrosion resistance.

Technical Data

Material	Temperature Rating	Pressure Rating
SS316	-65°F to 850°F (-54°C to 454°C)	10,000 psi (689 bar) @ 100°F (38°C)
Carbon Steel	-20°F to 450°F (-29°C to 232°C)	

Ordering Number and Table of Dimensions

Basic Ordering No.	End Connection		Orifice	Cv	Dimensions in. (mm)			
	Inlet	Outlet	in.(mm)		L	L1	D	h Hex
VBV-M-2N-	1/8" Male NPT	O.D. 3/16" Tube Stub	0.125 (3.2)	0.25	1.34 (34.03)	0.94 (23.87)	0.75 (19.05)	5/8 (15.87)
VBV-M-4N-	1/4" Male NPT						0.69 (17.52)	
VBV-M-6N-	3/8" Male NPT				1.47 (37.33)	1.03 (26.16)	0.75 (19.05)	7/8 (22.22)
VBV-M-8N-	1/2" Male NPT						0.69 (17.52)	

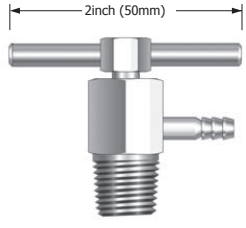
All dimensions shown are for reference only and are subject to change.

CNG Certifications

Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGA NGV 12.3-M95	ISO 15500
Certificate No	110R-000197	2010-REPORT-030 (01)	2010-REPORT-030 (01)
Classification	Class 0	CNG-VBV	CNG-VBV
Temperature	-40°C to 120°C (-40°F to 250°F)	-40°C to 121°C (-40°F to 250°F)	-40°C to 121°C (-40°F to 250°F)
Working Pressure	200 bar @ 120°C	273 bar @ 121°C	273 bar @ 120°C

How to Order

To order, add the valve body material as a suffix to the basic ordering number. S: Stainless, C: Steel. Example: VBV-M-2N-S



Options

Bar handle : Optional bar handle allows wrench-less actuation
- Bar handle ordering number : BH

Barbed Vent Tube : Optional barbed vent tube enables containment of fluid vented.
- 3/16" OD barbed vent tube ordering number : HT

To order, use the option ordering number as a suffix to the valve basic ordering number.
Examples: VBV-M-2N-BH-S, VBV-M-2N-HT-S.

Factory Test

Every valve is tested with the nitrogen @ 68 bar (1,000 psi) for leakage at the seat to a maximum allowable leak rate of 0.1 scc/min.

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

DK-LOK Corporation
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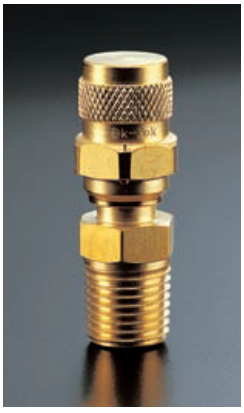
DK-LOK® Valves

VPV Series Purge Valves

No. VPV-3
July 2013



Design

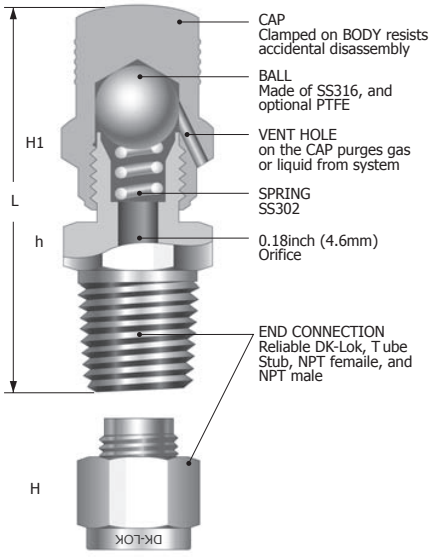
DK-Lok VPV Series Purge Valves are designed for manually bleeding, venting, or draining system fluids.
The cap is clamped to the valve body for safety in use.
The 0.063 inch (1.6 mm) diameter vent hole is constructed on the cap.

Operation and Installation Instruction

DK-Lok VPV series purge valve requires a quarter turn of cap with a wrench from finger-tight for a leak-tight seal on the first make-up.
To ensure seal to the rated pressure, snug with a wrench.
Always open the valve slowly.
These valves have no seal on cap. Therefore media may flow through the cap thread when the valves are opened.
Operating personnel should take suitable measures to be protected from system fluids.

MATERIALS OF CONSTRUCTION

Valve Material	Pressure Rating @ 100°F (38°C)		Temperature Range	
	psig	bar	°F	°C
SS316	4000	275	-65 ~ 600	-54 ~ 315
Brass	3000	206	-65 ~ 400	-54 ~ 204



Materials of Construction

Components	VALVE BODY MATERIALS	
	SS316	Brass
	Grade / ASTM Specification	
Cap	SS316/A479 or A276	Brass/B16
Body		
Ball	SS316/A276	
Spring	SS302/A313	

Ordering Information and Table of Dimensions

Basic Ordering Number		End Connection	L - closed		h	H	H1
			inch	mm	Hex	Hex	Hex
VPV-	F-2N-	1/8" Female NPT	1.50	38.1	9/16	-	5/8
	F-4N-	1/4" Female NPT	1.69	42.9	3/4	-	
	F-6N-	3/8" Female NPT	1.75	44.5	7/8	-	
	F-8N-	1/2" Female NPT	1.92	48.8	1-1/16	-	
	M-2N	1/8" Male NPT	1.56	39.6	1/2	-	
	M-4N	1/4" Male NPT	1.75	44.5	9/16	-	
	M-6N	3/8" Male NPT	1.78	45.2	11/16	-	
	M-8N	1/2" Male NPT	2.03	51.6	7/8	-	
	D-2T-	1/8" DK-Lok	1.78	45.2	1/2	7/16	
	D-4T-	1/4" DK-Lok	1.88	47.8	1/2	9/16	
	D-6T-	3/8" DK-Lok	1.97	50.0	5/8	11/16	
	D-8T-	1/2" DK-Lok	2.13	54.1	13/16	7/8	
	D-6M-	6mm DK-Lok	1.88	47.8	14mm	9/16	
	D-8M-	8mm DK-Lok	1.94	49.3	15mm	5/8	
	T-4T-	6mm Tube Stub	1.81	46.0	1/2	-	
	T-6T-	3/8" Tube Stub	1.88	47.8	1/2	-	
	T-8T-	1/2" Tube Stub	2.09	53.1	9/16		

Options and How to order

Optional PTFE ball is available. Valve with Teflon ball does not require wrench but only finger-tight for leak-tight shut-off.
- Removable cap for PTEE ball replacement
- Pressure rating : 200 psig @ 100 °F (13.7 bar @ 37 °C)
- Maximum Temperature : 350 °F (176 °C)

To order, add the valve body material as a suffix to the basic ordering number. S: Stainless, B: Brass. Example: VPV-M-2N-S
To order PTFE ball valve, add PE to the basic ordering number. Example: VPV-M-4N-PE-B

Factory Test

Every valve is tested with the nitrogen @ 68 bar (1,000 psi) for leakage at the seat to a maximum allowable leak rate of 0.1 scc/min.
The valve with PTFE ball is tested at 0.69 bar (10 psi) for leakage at the seat to a maximum allowance leak rate of 0.1 scc/min.

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DK-LOK Valves

VD3 Series Diaphragm Valves

No.VD3-1
November 2013

VD3 Series Pressure Rating up to 241bar (3,500 psig)

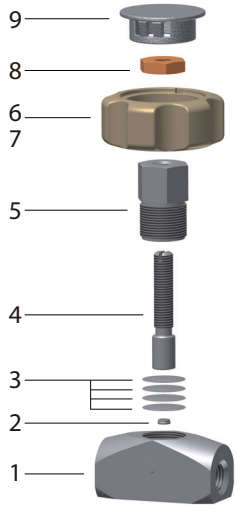
Features

- It is featured that the diaphragm valve serves economical, high performance and high cycle life time.
- The diaphragm valve is used for shut-off, isolation in gas control systems, and analyzer sampling systems.
- The valve ensures positive and consistent shut-off with manual and offers a metal to metal seal to atmosphere for leak integrity with thin plate diaphragm.

Technical Data

Body Material	Seat Material	Temperature Rating °F (°C)	Pressure Rating @ -40 ~ 160 °F (-40 ~ 70°C)	Control Volume
SS316L/A276	PCTFE	-40 ~ 150 (-40 ~ 66)	0 ~ 3,500 psig (241 barg)	1 cc
BRASS/B16	PCTFE	-40 ~ 150 (-40 ~ 66)	0 ~ 3,500 psig (241 barg)	1 cc

Ordering Information



No.	Component	VD3 Series (Standard)
1	BODY	SS316L(A276) / Brass (B16)
2	SEAT	PCTFE
3	DIAPHRAGM	SS316L
4	STEM	SS316L
5	BONNET	SS316L
6	KNOB NUT	SS316L
7	KNOB	ABS
8	LOCK NUT	SS316L
9	KNOB CAP	ABS

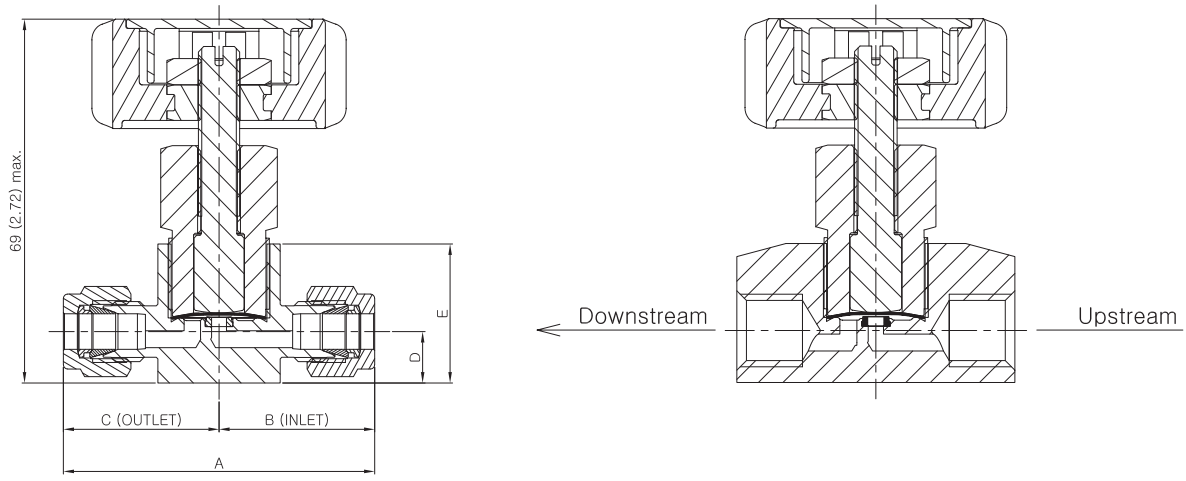
Factory Test

Every valve is factory tested with nitrogen gas @1,000 psig (68.9 barg) for leakage to a maximum allowable leak rate of 0.1 SCCM at seat. Hydraulic shell test is optionally performed at 1.5 times the working pressure to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request for valves with PCTFE and PTFE seats.

Dimensions and Port Layout



Basic Ordering Number		End Connections		Dimensions mm (inches)					
		Inlet (B)	Outlet (C)	Orifice	A	B	C	D	E
VD3-	D-4T-	1/4 in. DK-Lok		2.8 (0.11)	58.6 (2.31)	29.3 (1.15)	29.3 (1.15)	9.4 (0.37)	25.4 (1.00)
	M-4N-	1/4 in. Male NPT			48.4 (1.91)	24.2 (0.95)	24.2 (0.95)		
	F-4N-	1/4 in. Female NPT			50.8 (2.00)	25.4 (1.00)	25.4 (1.00)		
	DF-4T4N-	1/4 in. DK-Lok	1/4 in. Female NPT		54.7 (2.15)	29.3 (1.15)	25.4 (1.00)		
	FD-4N4T-	1/4 in. Female NPT	1/4 in. DK-Lok			25.4 (1.00)	29.3 (1.15)		
	DM-4T4N-	1/4 in. DK-Lok	1/4 in. Male NPT		53.5 (2.11)	29.3 (1.15)	24.2 (0.95)		
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok			24.2 (0.95)	29.3 (1.15)		
	MF-4N4N-	1/4 in. Male NPT	1/4 in. Female NPT		49.6 (1.95)	24.2 (0.95)	25.4 (1.00)		
	FM-4N4N-	1/4 in. Female NPT	1/4 in. Male NPT			25.4 (1.00)	24.2 (0.95)		

How to Order

Select applicable valve basic ordering number, options and body material designator listed below.

VD3-F-4N **- A** **- PK** **- NI** **- S** **- B**

Handle Type	Seat Materials	Plating of Body	Body Material
Nil : Handwheel **A** : Indicating Arrow **L** : Lever	**Nil** : Standard PCTFE **PK** : PEEK	**Nil** : Not Applicable **NI** : Nickel-plated	**S** : 316L stainless steel **B** : Brass

Safe Valve Selection

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DK-LOK Valves

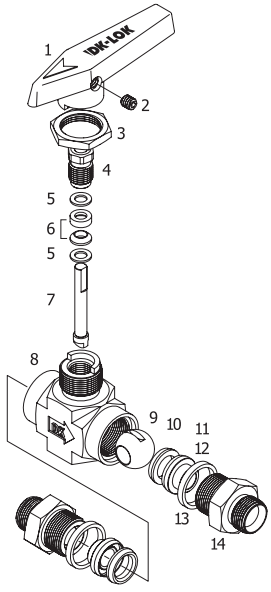
VH86 Series

No.VH86-5
July 2013

High Pressure Multi Purpose Ball Valves

Features

- High flow in a compact design.
- High pressure capacity designed for blow-out proof with internally loaded ball stem.
- Micro-finished ball provides a positive seal.
- 90 degree actuation for 2-way and 180 degree actuation for 3-way ball valves.
- Panel mounting as standard.
- Chevron stem seal, adjustable with the handle disassembled.
- Handle indicates flow direction.
- Low operating torques and positive handle stops.
- Optional pneumatic actuation.



Material of Construction

Components	Valve Body Material Stainless Steel Grade/ASTM Specification
1. Handle	Nylon with brass insert
2. Set Screw	Stainless steel
3. Panel Nut	SS316/A276
4. Packing bolt*	
5. Upper / Lower Gland	
6. Stem Chevron Packing	PTFE/D1710 type 1, Grade 1, Class B
7. Stem	SS316/A276
8. Body	SS316/A182 Type F316
9. Ball	SS316/A276
10. Seat (2)	Standard PCTFE (Kel-F), optional PTFE, PEEK
11. Retainer (2)	SS316/A276
12. Retainer Seal (2)	PTFE/D1710 type 1, Grade 1, Class B
13. End Connector Seal (2)	
14. End Connector (2)	SS316/A276

* Molybdenum disulfide with hydrocarbon coating
- Wetted parts and lubricants are listed in blue.
- Lubricant is Fluorinated-based.

Operation and Packing Adjustment

- VH86 valves are designed to control fluid in full open and closed position, using VH86 valves to throttle the flow may reduce the valve life.
- Stem packing can be adjustable with the handle disassembled. Tighten packing bolt clockwise to tighten the stem packing.
- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- If the valve system needs to be tested at higher pressure than the valve maximum pressure, the valve must be in open position during the test so as not to damage the valve seat.
- Optional Sour Gas Service applicable.

Application

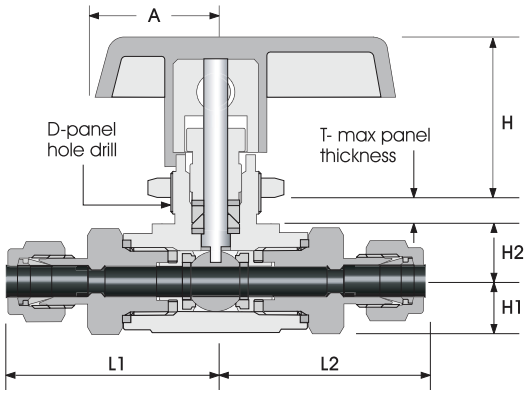
VH86 series ball valve offers a safe and reliable performance in a wide range of onshore and offshore applications: Water, oil, gas, petrochemical in heavy duty applications.

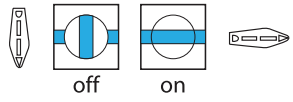
Factory Test, Cleaning and Packaging

- Every valve is factory tested with nitrogen gas at 1,000 psig (68.9 bar) for leakage at seat to a maximum allowable leak rate of 0.1 SCCM. The packing is tested with nitrogen gas for no detectable leakage.
- Every valve is cleaned and packaged in accordance with DK cleaning standard DC-01.

Bi-directional 2-way Ball Valves

In-line patten





Technical Data

Valve Series	Sealing Materials			Pressure Rating @-27 to 37 °C (-20 to 100 °F)	Temperature Rating
	Seat	Stem Packing	Retainer / End Seal		
VH86A, VH86B, and VH86C series	PCTFE	PTFE	PTFE	6,000 psig (413 bar)	-30 to 180 °C (-22 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)

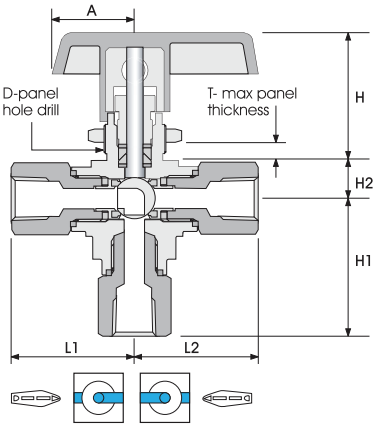
• PCTFE is standard seat material.

Ordering Information and Dimensions

Basic Ordering Number		End Connections		Orifice		Cv	Dimensions mm (in.)							
		Inlet	Outlet	mm	inch		L1	L2	H1	H2	H	A	D	T
VH86A-	D-1T-	1/16″ DK-Lok		1.3	0.052	0.06	33.0(1.30)	33.0(1.30)	9.5 (0.37)	8.5 (0.33)	24.8 (0.98)	19.1 (0.75)	14.7 (0.58)	3.3 (0.13)
	D-2T-	1/8″ DK-Lok		2.4	0.0945	0.21	34.5(1.36)	34.5(1.36)						
	F-2N-	1/8″ Female NPT		4.2	0.165	0.43	27.2(1.07)	27.2(1.07)						
	M-2N-	1/8″ Male NPT		4.2	0.165	0.43	30.0(1.18)	30.0(1.18)						
	D-4T-	1/4″ DK-Lok		4.2	0.165	0.43	37.6(1.48)	37.6(1.48)						
	M-4N-	1/4″ Male NPT		4.2	0.165	0.43	34.3(1.35)	34.3(1.35)						
	D-3M-	3mm DK-Lok		2.2	0.086	0.18	34.8(1.37)	34.8(1.37)						
VH86B-	D-2T-	1/8″ DK-Lok		2.4	0.0945	0.26	41.9(1.65)	41.9(1.65)	10.7 (0.42)	11.9 (0.47)	38.9 (1.53)	25.4 (1.00)	19.6 (0.77)	6.4 (0.25)
	D-4T-	1/4″ DK-Lok		4.7	0.185	1.04	44.2(1.74)	44.2(1.74)						
	MD-4N4T-	1/4″ Male NPT	1/4″ DK-Lok					41.1(1.62)						
	FD-4F4T-	1/4″ Female NPT	1/4″ DK-Lok					38.4(1.51)						
	F-4N-	1/4″ Female NPT		6.4	0.252	2.34	38.4(1.51)	38.4(1.51)						
	M-4N-	1/4″ Male NPT					41.1(1.62)	41.1(1.62)						
	MF-4N-	1/4″ Male NPT	1/4″ Female NPT				38.4(1.51)							
	MD-4N6T-	1/4″ Male NPT	3/8″ DK-Lok				45.7(1.8)							
	FD-4N6T-	1/4″ Female NPT	3/8″ DK-Lok					38.4(1.51)						
	D-6T-	3/8″ DK-Lok						45.7(1.8)						
	M-6N-	3/8″ Male NPT					82.2(3.24)							
	D-6M-	6 mm DK-Lok		4.7	0.185	1.04	89.0(3.50)							
	D-8M-	8 mm DK-Lok		6.4	0.252	2.34	90.4(3.56)							
	D-10M-	10 mm DK-Lok					92.0(3.62)							
VH86C-	F-6N-	3/8″ Female NPT		10.3	0.406	6.42	99.0(3.90)		17.5 (0.69)	17.8 (0.70)	44.2 (1.74)	38.1 (1.50)	22.9 (0.90)	9.7 (0.38)
	F-8N-	1/2″ Female NPT					109.20(4.30)							
	D-8T-	1/2″ DK-Lok					118.8(4.68)							
	M-8N-	1/2″ Male NPT					112.8(4.44)							
	D-12T-	3/4″ DK-Lok					118.4(4.66)							
	D-12M-	12 mm DK-Lok		9.5	0.375	5.57	116.68(4.59)							
	D-16M-	16 mm DK-Lok		10.3	0.406	6.42	118.4(4.66)							

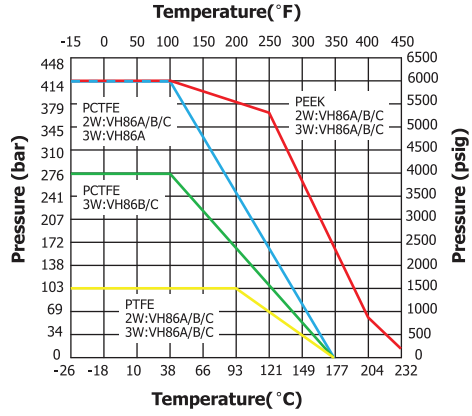
All dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

3-way Diverter Ball Valves



VH86 3-way Ball Valve is designed to switch media through the bottom port and direct it to out of two outlet ports.

Pressure-Temperature Curve



Legend : 2W:2-Way VH86 ball valves
3W:3-Way VH86 ball valves

Technical Data

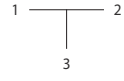
Valve Series	Sealing Materials			Pressure Rating @ -27 to 37 °C (-20 to 100 °F)	Temperature Rating °C (°F)
	Seat	Stem Packing	Retainer / End Seal		
VH86A-3B	PCTFE	PTFE	PTFE	6,000 psig (413 bar)	-30 to 180 °C (-22 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)
VH86B-3B VH86C-3B	PCTFE	PTFE	PTFE	4,000 psig (276 bar)	-50 to 180 °C (-58 to 356 °F)
	PEEK	PTFE	PTFE	6,000 psig (413 bar)	-54 to 230 °C (-65 to 446 °F)
	PTFE	PTFE	PTFE	1,500 psig (103 bar)	-30 to 176 °C (-22 to 349 °F)

Ordering Information and Dimensions

Basic Ordering Number		End Connections	Orifice		Cv	Dimensions mm (in.)							
			mm	Inch		L1	L2	H1	H2	H	A	D	T
VH86A-3B-	D-1T-	1/16″ DK-Lok	1.3	0.052	0.06	33.0 (1.30)	33.0 (1.30)	35.3(1.39)	8.4 (0.33)	24.8 (0.98)	19.1 (0.75)	14.7 (0.58)	3.3 (0.13)
	D-2T-	1/8″ DK-Lok	2.4	0.093	0.21	34.5 (1.36)	34.5 (1.36)	36.8(1.45)					
	F-2N-	1/8″ Female NPT	4.2	0.165	0.63	27.2 (1.07)	27.2 (1.07)	29.2(1.15)					
	M-2N-	1/8″ Male NPT	4.2	0.165	0.59	30.0 (1.18)	30.0 (1.18)	32.0(1.26)					
	D-4T-	1/4″ DK-Lok	4.2	0.165	0.63	37.6 (1.48)	37.6 (1.48)	39.6(1.56)					
	M-4N-	1/4″ Male NPT	4.2	0.165	0.59	34.3 (1.35)	34.3 (1.35)	36.3(1.43)					
VH86B-3B-	D-2T-	1/8″ DK-Lok	2.4	0.093	0.21	41.9 (1.65)	41.9 (1.65)	45.5(1.79)	11.9 (0.47)	38.9 (1.53)	25.4 (1.00)	19.6 (0.77)	6.4 (0.25)
	D-4T-	1/4″ DK-Lok	4.7	0.187	0.70	44.2 (1.74)	44.2 (1.74)	47.8 (1.88)					
	F-4N-	1/4″ Female NPT	5.0	0.196	0.87	38.4 (1.51)	38.4 (1.51)	41.9 (1.65)					
	DDM-T4N-*	1/4″ DK-Lok, 1/4″ Male NPT	4.7	0.187	0.70	44.2 (1.74)	44.2 (1.74)	47.8 (1.88)					
	M-4N-	1/4″ Male NPT	5.0	0.196	0.87	41.1 (1.62)	41.1 (1.62)	44.7 (1.76)					
	D-6T-	3/8″ DK-Lok				45.7 (1.8)	45.7 (1.8)	49.3 (1.94)					
	M-6N-	3/8″ Male NPT				41.1 (1.62)	41.1 (1.62)	44.7 (1.76)					
	D-6M-	6 mm DK-Lok	4.7	0.187	0.70	44.5 (1.75)	44.5 (1.75)	47.8 (1.88)					
	D-8M-	8 mm DK-Lok	5.0	0.196	0.87	45.2 (1.78)	45.2 (1.78)	48.5 (1.91)					
	D-10M-	10 mm DK-Lok				46.0 (1.81)	46.0 (1.81)	49.5 (1.95)					
VH86C-3B-	F-6N-	3/8″ Female NPT	10.3	0.406	3.62	49.5 (1.95)	49.5 (1.95)	58.2 (2.29)	17.8 (0.70)	44.2 (1.74)	38.1 (1.50)	22.9 (0.90)	9.7 (0.38)
	F-8N-	1/2″ Female NPT				54.6 (2.15)	54.6 (2.15)	63.2 (2.49)					
	D-8T-	1/2″ DK-Lok				59.4 (2.34)	59.4 (2.34)	68.1 (2.68)					
	DDF-8T8F-*	1/2″ DK-Lok, 1/2″ Female NPT						63.2 (2.49)					
	M-8N-	1/2″ Male NPT				56.4 (2.22)	56.4 (2.22)	65.8 (2.59)					
	D-12T-	3/4″ DK-Lok				58.9 (2.32)	58.9 (2.32)	68.1 (2.68)					
	D-12M-	12 mm DK-Lok	9.5	0.375	3.46			67.8 (2.67)					
	D-16M-	16 mm DK-Lok	10.3	0.406	3.62	59.2 (2.34)	59.2 (2.34)	65.5 (2.58)					

- All dimensions shown are for reference only and are subject to change.
- Dimensions with DK-Lok nuts are in finger-tight position.

* VH86 3-way ball valves are described by first the outlet ports (1) and (2) and next the bottom inlet port (3).



P series Rack and Pinion Pneumatic Actuator

Model shown
VH86B/C series

A dimension
VH86B: 25.00
VH86C: 27.50

B dimension
VH86B: 62.00
VH86C: 90.90

Unit: mm

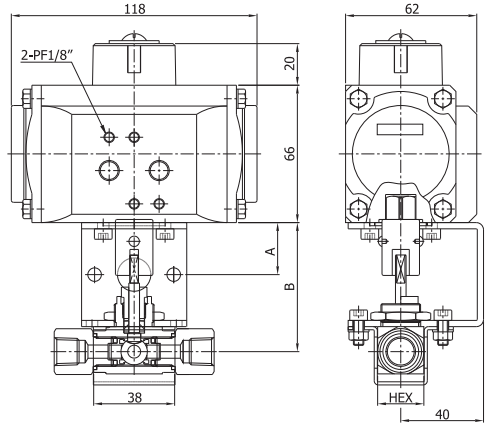


Table 1. **Actuator Material of Construction**

Parts	Standard Material
Body	Extruded Aluminum Alloy with external & internal corrosion protection.
Piston (Rack)	Die Cast Aluminum Alloy Anodized.
Drive Shaft (Pinion)	Steel Alloy Nickel Plated.
Spring	Spring Alloy Steel Nickel Plated. (min. 5, max. 12 spring)
End Cap	Die Cast Aluminum Alloy Polyester Coated.
O-Ring	NBR is standard. Optional FKM and Silicon.

Technical Information

Actuator operating temperature (°C)
- Standard : NBR O-Ring - 20 to 80.
- Low Temperature : Silicon O-Ring -40 to 80 (Designator : **LT**).
- High Temperature : FKM O-Ring -15 to 150 (Designator : **HT**).
- Air-pressure : Min. 2.5 bar, Max. 8 bar.
- Air supply end connection : Female G 1/8 inch (ISO 228-1).
- Position indicator is standard.

Table 2. **Single Return 90 Deg. Actuator**

Valve series	Ordering Number		Dimensions	Weight	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
	Normal Close	Normal Open	L x H x W unit: mm	Kg	Nm	Liter		
VH86A	PCS1	POS1	118x86x62	0.9	3.5	0.1	VH86A-SMB	**Nil** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.
VH86B							VH86B-SMB	
VH86C	PCS2	POS2			5.0		VH86C-SMB	

Table 3. **Double Return 90 Deg. Actuator**

Valve series	Normal Close	Normal Open	L x H x W unit: mm	Moment Values P=6 bar	Air Consumption	Mounting Bracket Ordering Number	Actuator Operating Temperature Options
				Nm	Liter		
VH86A	PD1	0.75	118x86x62	14.4	0.1	VH86A-DMB	**Nill** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.
VH86B						VH86B-DMB	
VH86C						VH86C-DMB	

Mount bracket : Field assembly kit includes mount bracket, valve to actuator, bracket bolts and assembly manual.

How to Order

Select applicable valve pattern, seat options, pneumatic actuator, and the actuator temperature option from designator listed below.

VH86B-D-6T- **- PK**
VH86C-D-12T

- SG **- PCS1** **-HT** **-S** **-S**

Seat Material	Sour Gas	Factory Assembled Actuator	Actuator Temperature Options	Valve Body Material
Nil : PCTFE **PK** : PEEK **PE** : PTFE	**SG** : Sour Gas	For single return, see Table 2. For double return, see Table 3.	**Nill** : Standard Temp. **LT** : Low Temp. **HT** : High Temp.	**S** : S316

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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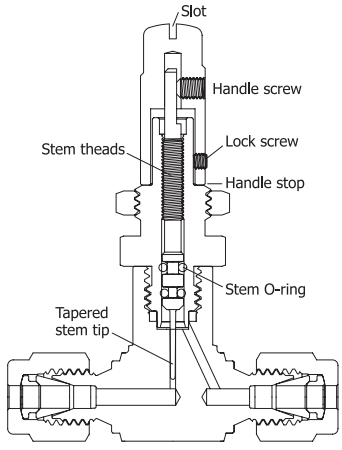
DK-LOK® Valves

Metering Valves

VM 1D, 3D, and 6D Series

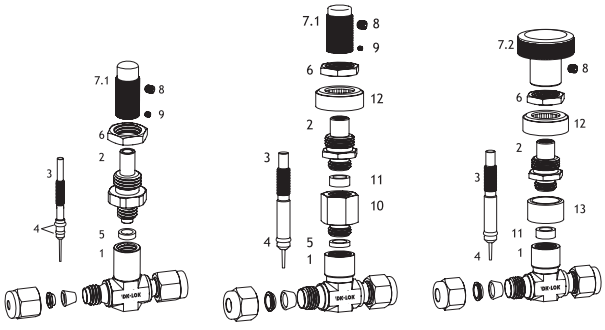
No.VM-2
July 2013

Features



- **Slotted handle**
  allows flow setting adjustment with a screwdriver.
- **Lock screw**
  locks out flow setting.
- **Stem threads**
  are isolated from system fluid.
- **Handle stop**
  mechanically helps prevent damage to stem and orifice.
- **Stem O-ring**
  seals system fluids
- **Tapered stem tip**
  controls gas or liquid flow rates accurately.
- **Body materials**
  are forged stainless steel 316 or brass.

  Straight and angle **patterns.**
  Standard **Panel mounting.**



VM1D VM3D VM6D

Panel mount : VM1D & 3D series with standard L and optional SL handle allow valve panel mount with no handle removal.

Table 1. **Material of Construction**

Component	Valve Body Materials Grade/ASTM Specification	
	Stainless Steel	Brass
1. Body	F316/A182	C37700/B283
2. Bonnet	316SS/A479	C34500/B453
3. Stem	S17400/A564 for VM1D, 316SS/A479 for VM3D & VM6D	
4. Stem o-ring	FKM	Buna N
5. Body seal	PTFE	
6. Panel nut	316SS/A479	C36000/B16
7-1. Handle	300SS/A479	C36000/B16
7-2. Round handle	Aluminum 6061	
8. Handle set screw	Alloy steel	
9. Lock screw	Alloy steel	
10. Body extension	316SS/A479	C34500/B453
11. Stem guide ring	Glass-filled PTFE	
12. Bonnet sleeve	Sintered 316SS	
13. Body support ring	316SS/A479	

- Wetted components listed in blue.
- **Lubricant** : Molybdenum disulfide-based; silicon-based.

Factory Test

Every valve is factory tested with nitrogen gas at 68.9bar (1,000 psig) for leakage to a maximum allowable leak rate of 0.1SCCM at seat.
Hydraulic shell test is optionally performed at 1.5 times the working pressure to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

Every valve is cleaned and packaged in accordance with DK -Lok Corporation cleaning standard of DC-01. Optional DC-11 cleaning for oxygen application is available on request.

Table 2. **Temperature Rating**

Standard O-ring material	Designator	Temperature Rating °F (°C)
FKM standard for SS316 body	VT	-10 to 400 (-23 to 204)
NBR standard for brass body	BN	-10 to 300 (-23 to 148)
Optional Kalrez®	KZ	0 to 300 (-17 to 148)

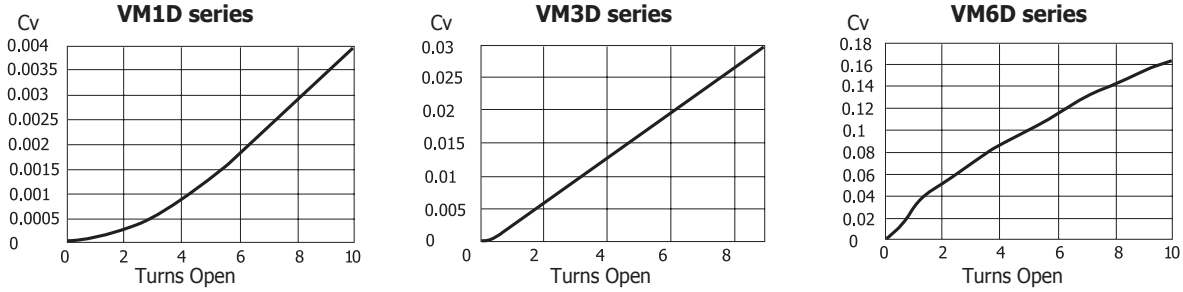
Table 3. **Technical Data**

Series	VM1D	VM3D	VM6D
Working pressure psig (bar)	2,000 (137)	1,000 (68.9)*	
Orifice in. (mm)	0.032 (0.81)	0.056 (1.42)	0.128 (3.25)
Stem taper	1°	3°	6°
Cv	0.004	0.03	0.16
Turns to Open	8 to 12	8 to 10	10 to 11
Internal volume cu.in (cu.mm)	0.006 (98)	0.028 (460)	0.035 (570)
Flow shut off	No	No	Yes**

* While valve is adjusted at pressure, 500 psig (34.4 bar) is max downstream pressure due to mechanical strength limit of the finepitch threads and high operation torque.
** VM6D series in use for shutoff in vacuum or gas, or for repetitive shutoff in liquid are not recommendable.

Table 4. Turns Open and Flow Data

Cv vs. Turns Open



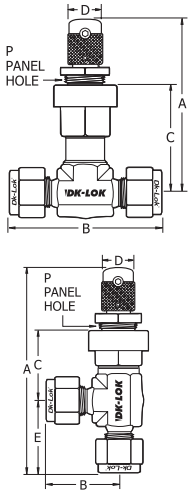
Flow Data

Pressure Drop @ Atmosphere psi(bar)	Air Flow Std. ft³/min. (std.L/min.)	Water Flow gal/min. (L/min.)
10 (0.68)	0.04 (1.1)	0.01 (0.03)
50 (3.4)	0.10 (2.8)	0.02 (0.07)
100 (6.8)	0.20 (5.6)	0.04 (0.15)

Pressure Drop @ Atmosphere psi(bar)	Air Flow Std. ft³/min. (std.L/min.)	Water Flow gal/min. (L/min.)
10 (0.68)	0.33 (9.3)	0.09 (0.34)
50 (3.4)	0.90 (25.4)	0.21 (0.79)
100 (6.8)	1.50 (42.4)	0.30 (1.1)

Pressure Drop @ Atmosphere psi(bar)	Air Flow Std. ft³/min. (std.L/min.)	Water Flow gal/min. (L/min.)
10 (0.68)	2.0 (56.6)	0.51 (1.9)
50 (3.4)	6.4 (181)	1.2 (4.5)
100 (6.8)	11.4 (323)	1.7 (6.4)

Ordering Information and Dimensions



VM series	P	Max Panel Thickness
1D	0.45 (11.4)	0.16 (4.1)
3D	0.58 (14.7)	0.13 (3.3)
6D		

Basic Ordering Number		Angle pattern	End Connections Inlet & Outlet	Dimensions in. (mm) A	B	C	D	E
VM1D-	D1T-		1/16 in. DK-Lok	2.34 (59.4)	1.56 (39.6)	0.92 (23.4)	0.38 (9.6)	-
	D2T-		1/8 in. DK-Lok		1.90 (48.3)			
	D4T-		1/4 in. DK-Lok		2.04 (51.8)			
	D3M-		3mm DK-Lok		1.90 (48.3)			
	D6M-		6mm DK-Lok		2.04 (51.8)			
	D1T-	A-	1/16 in. DK-Lok	3.22 (81.8)	0.81 (20.6)			0.88 (22.4)
	D2T-	A-	1/8 in. DK-Lok	3.32 (84.3)	0.98 (24.9)			0.98 (24.9)
VM3D-	D2T-		1/8 in. DK-Lok	2.78 (70.6)	2.02 (51.3)	1.56 (39.6)	0.50 (12.7)	-
	D4T-		1/4 in. DK-Lok		2.20 (55.9)			
	D3M-		3mm DK-Lok		2.02 (51.3)			
	D6M-		6mm DK-Lok		2.20 (55.9)			
	D2T-	A-	1/8 in. DK-Lok	3.30 (83.8)	1.01 (25.7)	1.07 (27.2)		1.01 (25.7)
	D4T-	A-	1/4 in. DK-Lok	3.39 (86.1)	1.10 (27.9)			1.10 (27.9)
	M2N-		1/8 in. Male NPT	2.78 (70.6)	1.50 (38.1)	1.56 (39.6)		-
	M4N-		1/4 in. Male NPT		1.96 (49.8)			
	F2N-		1/8 in. Female NPT	2.78 (70.6)	1.94 (49.3)			
	F2N-	A-	1/8 in. Female NPT	3.26 (82.8)	0.98 (24.9)	1.07 (27.2)		0.97 (24.6)
VM6D-	D4T-		1/4 in. DK-Lok	2.82 (71.6)	2.34 (59.4)	1.26 (32.0)	1.13 (28.7)	-
	D6T-		3/8 in. DK-Lok		2.46 (62.5)			
	D6M-		6mm DK-Lok		2.34 (59.4)			
	D4T-	A-	1/4 in. DK-Lok	3.77 (95.8)	1.17 (29.7)	1.04 (26.4)		1.17 (29.7)
	M4N-		1/4 in. Male NPT	2.82 (71.6)	2.00 (50.8)	1.26 (32.0)		-

Dimensions shown are for reference only and are subject to change. Dimensions with DK-Lok nuts are in finger-tight position.

Standard and Optional Handles

Lock screw handle allows locking the set flow, standard for 1D and 3D series.

Slotted handle helps flow setting adjustment with a screwdriver.

Vernier handle made out of aluminum helps ensure repeatable flow setting in readings accurate to 1/25th turn.

Adjustable-torque handle enhances control for setting flows with two top-mounted adjustment screws.

How to Order Select desired valve basic ordering number, optional handle, O-ring and body material designators.

VM1D-D2T - V - KZ - S

Handle Designators

L	V	SL	A
			
Lock screw handle	Vernier handle	Slotted handle	Adjustable-Torque handle

Nil : L is standard for 1D and 3D series
V : Optional to 1D,3D, and 6D series
SL : Optional to 1D and 3D series
A : Optional to 1D series
Nil : Round handle (designator -R) standard for 6D series

Note : Chrome plated brass handle supplied on brass valve.

O-ring Designators	Body material Designators
Nil : VT standard for stainless body. **Nil** : BN standard for brass body. • VT : Vition • BN : NBR • KZ : Kalrez	**S** : SS316 **B** : Brass

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VR6 Series High Pressure Regulator Valves

No.VR6-0
October 2012

VR6 Series Pressure Rating up to 413bar (6,000 psig)

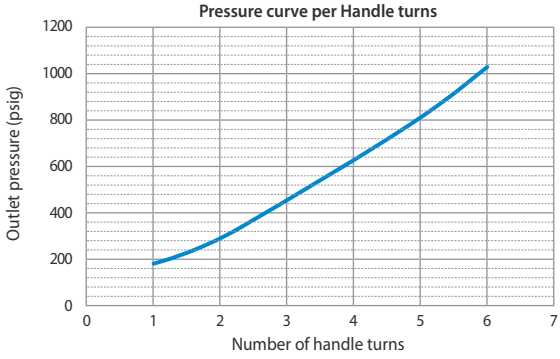
Features

- The High Pressure Regulator valve is featured by controlling the pressure toward downstream from zero to 1,000 psig (68.9 barg) precisely and keeping the downstream pressure constantly after adjusting, though the upstream pressure may be fluctuated unexpectedly.
- The diaphragm made of thin plate of stainless steel is positioned between the body and housing to make sure of stable sealing characteristics and keep the control volume.

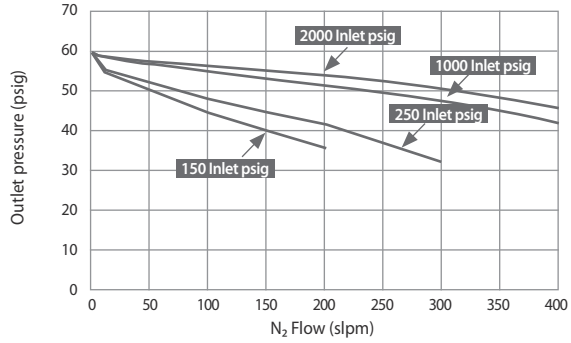
Technical Data

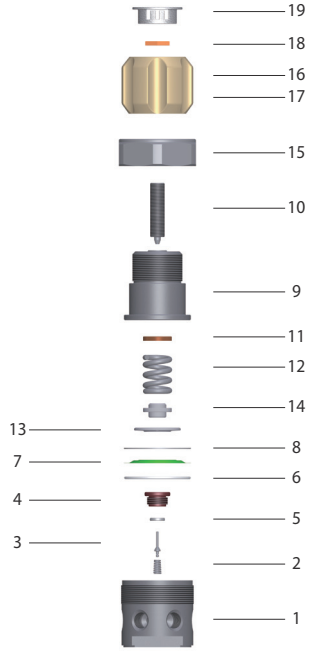
Body Material	Seat Material	Temperature Rating °F (°C)	Pressure Rating @ -40 ~ 160 °F (-40 ~ 70°C)	Control Volume
SS316L/A276	PCTFE	-40 ~ 160 (-40 ~ 70)	0 ~ 6,000 psig (420 barg)	4 cc

Graph 1. **Control Pressure per Handle turns**



Graph 2. **Flow Curves**





Material of Construction

Components	VR6 Series (Standard)
1. BODY	SS316L/A276
2. SPRING-RETURN	SS316L
3. VALVE	SS316L
4. SEAT HOUSIG	SS316L
5. SEAT	PCTFE
6. SEAL BODY	EPDM
7. DIAPHRAGM	SS316L
8. WASHER	SS316L
9. HOUSING	SS316L/A276
10. ADJUST SCREW	SS316L
11. CAP SCREW	BRASS
12. SPRING CONTROL	SS316L
13. STOPPER	SS316L
14. PLUNGER	BRASS
15. NUT HOUSING	SS316L
16. HANDLE	ABS
17. HANDLE NUT	SS316L
18. LOCK NUT	SS316L
19. HANDLE CAP	ABS

Quality System Approvals

DK-Lok Tube Fitting Certification Listing

DK-Lok Valve Certification Listing

DK-LOK Corporation
www.dklok.com

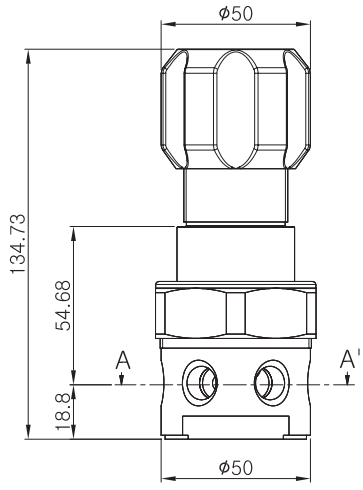
Factory Test

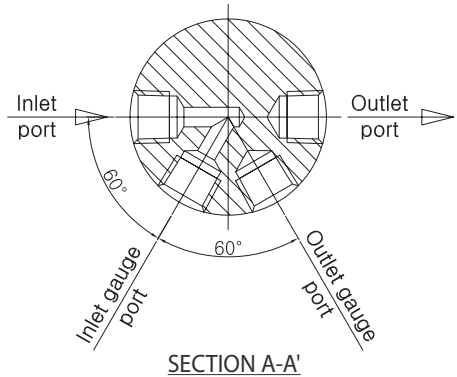
Every valve is factory tested with nitrogen gas @1,000 psig (68.9 barg) for leakage to a maximum allowable leak rate of 0.1 SCCM at seat. Hydraulic shell test is optionally performed at 1.5 times the working pressure to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request for valves with PCTFE and PTFE seats.

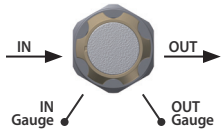
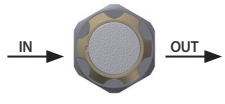
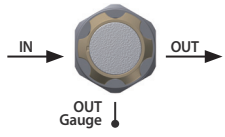
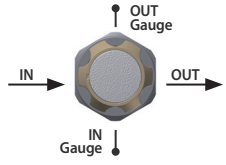
Dimensions and Port Layout





SECTION A-A'
Ports Layout

Designation for Port Layout

Port Layout				
	IN OUT IN Gauge OUT Gauge	IN OUT	IN OUT OUT Gauge	OUT Gauge IN OUT IN Gauge
Designation	Nil	0	3	X4

How to order

Select applicable valve basic ordering number, options and body material designator listed below.

VR6-F-4N - S

Port Layout	Seat Materials	Self-Vent Options	Body Material
Nil : 4 ports (60° per port) **0** : None of gauge port **3** : 3 port (1 for Gauge) **X4** : 4 ports (90° per port)	**Nil** : Standard PCTFE **PK** : PEEK	**Nil** : None	**S** : 316L Stainless steel

Safe Valve Selectionn

The selection of a valve for any application or system design must be considered to ensure safe performance. Valve Function, valve rating, material compatibility, proper installation, operation and maintenance retain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK®
Valves

VT86 Series Trunnion Ball Valves

No.VT86-4
June 2013

VT86 Series Pressure Rating up to 413bar (6,000 psig)
VTH86 Series pressure Rating up to 689bar (10,000 psig)
VCT86 Series CNG/NGV Valves

Features

- The Trunnion ball valve is featured by blowout-proof design with cylindrical extensions at the top and bottom of the ball.
- The trunnion prevents the ball from shifting and permits the ball to rotate on a vertical axis.
- Integral ball stem machined from single piece of bar stock eliminates the backlash during handle actuation.
- Panel mounting nut is standard permitting valve to panel or actuator.

Technical Data

Valve Series	Seat Material	Temperature Rating °C (°F)	Pressure Rating at 37 °C (100°F)
VT86	PCTFE	-17 to 121 (0 to 250)	413bar (6,000psig)
	PEEK	- 17 to 232 (0 to 450)	413bar (6,000psig)
	PTFE		103bar (1,500psig)
VTH86	PEEK	-17 to 232 (0 to 450)	413 to 689bar (6,000 to 10,000psig)

Operation

- Valves that have not been actuated for a period of time may have a higher initial actuation torque.
- VT86 Series ball valves are designed to control fluid in full open and full closed position.

Factory Test

Every valve is factory tested with nitrogen gas at 68.9bar (1,000psig) for leakage to a maximum allowable leak rate of 0.1 SCCM at seat. Hydraulic shell test is optionally performed at 1.5 times the working pressure to a requirement of no detectable leakage with a liquid leak detector.

Cleaning and Packaging

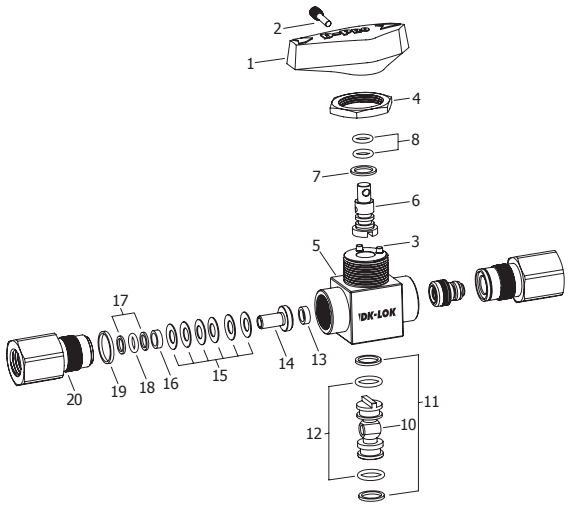
Every valve is cleaned and packaged in accordance with DK-Lok cleaning standard DC-01. Special cleaning and packaging in accordance with DK-Lok standard DC-11 ensures compliance with product cleaning of ASTM G93 Level C is available on request for valves with PCTFE and PTFE seats.

CNG/NGV Certifications

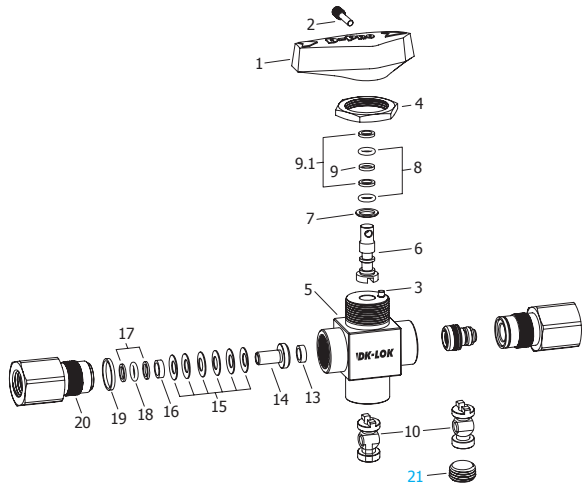
VCT86 and VCT863 Series valve provides leak-tight integrity in both low and high pressure systems in CNG and NGV applications. Valves with PAI seat and HNBR O-ring are compatible with CNG fluid.

Valve Series	Certificates	ECE R110	ANSI / AGA NGV 3.1-1995 CGV NGV 12.3-M95	ANSI /IAS NGV 4.6-1999 CSA 12.56-M99	ISO 15500
VCT86 Series 2-way ball valves	Certificate No.	110R-000184	2010-REPORT-005 (00)	2010-REPORT-006 (00)	2010-REPORT-004 (00)
	Classification	Class 0	manual valve	manual valve (Class B)	manual valve
	Temperature	-40 to 120 °C (-40 to 250 °F)	- 40 to 121 °C (-40 to 250 °F)	-40 to 65 °C (-40 to 150 °F)	- 40 to 121 °C (-40 to 250 °F)
	Working Pressure	274 bar @ 120 °C	273 bar @ 121 °C	293 bar @ 65 °C	273 bar @ 121 °C
VCT863 Series 3-way ball valves	Certificate No.	110R-000185	2010-REPORT-011 (00)	2010-REPORT-012 (00)	2010-REPORT-010 (00)
	Classification	Class 0	manual valve	manual valve (Class B)	manual valve
	Temperature	40 to 120 °C	- 40 to 121 °C	-40 to 65 °C	- 40 to 121 °C
	Working Pressure	274 bar @ 120 °C	273 bar @ 121 °C	293bar @ 65 °C	273 bar @ 121 °C

VT86 / VCT86 Series For 2-Way



VT86 / VCT86 Series For 3-Way & VTH86 Series For 2-Way, 3-Way



VTH86 Series For 2-Way

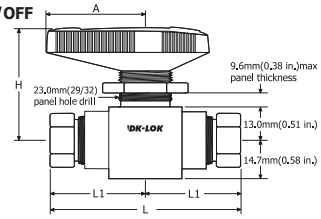
3-Way valve with an arrow marking on the top of 6. stem.
The arrow marking helps set a direction of the valve handle after the handle is removed from its mounting panel.

Materials of Construction

Component	VT86/VCT86 Series		VTH86 Series	
	2-Way	3-Way	2-Way	3-Way
	Grade/ASTM Specification			
1. Handle	Nylon with brass insert			
2. Set screw	SS316/A276			
3. Stop pin (2-Way - 2, 3-Way - 1)	SS316			
4. Panel nut	SS316/A479 or A276			
5. Body	SS316/A479 or A276			
6. Stem	SS316/A479 or A276			
7. Stem bearing	PEEK			
8. Stem O-rings (2)	FKM O-ring (HNBR for VCT86/VCT863 Series)		FKM O-ring	
9. Stem support ring	-	PEEK		
9.1. Stem backup rings (2)	-	PTFE/D1710, type 1		
10. Trunnion ball	SS316/A479 or A276			
11. Trunnion ball back-up rings (2)	Reinforced PTFE	-		
12. Trunnion ball O-rings (2)	FKM O-ring (HNBR for VCT86 Series)	-		
13. Seats (2)	PCTFE, optional PTFE, PEEK (PAI for VCT86/VCT863 Series)		PEEK	
14. Seat carriers (2)	SS316/A479 or A276			
15. Seat springs (12)	Alloy X-750/AMS 5542			
16. Seat carrier guides (2)	SS316/A479 or A276			
17. Seat carrier back-up rings (4)	Reinforced PTFE			
18. Seat carrier O-rings (2)	FKM O-ring (HNBR for VCT86/VCT863 Series)		FKM O-ring	
19. End connector seals (2)	PTFE/D1710,type 1			
20. End connectors (2)	SS316/A479 or A276			
21. Plug	-		SS316/A479 or A276	-

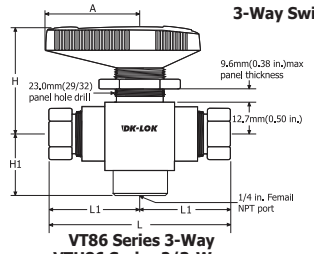
- Wetted components and lubricants are listed in BLUE.
- **Lubricants** : Molybdenum disulfide and fluorinated based.

2-Way ON/OFF



VT86 Series 2-Way

3-Way Switching



VT86 Series 3-Way
VTH86 Series 2/3-Way

Ordering Information and Dimensions

VT86 Series Basic Ordering Number		Cv	Orifice mm (in.)	VTH86 Series Basic Ordering Number		Cv	Orifice mm (in.)	End Connection	Dimensions, mm (in.)			
									L	L1	H	A
2-Way				2-Way								
VT86- VCT86-	F2N-	1.2	4.75 (0.187)	VTH86-	F2N-	1.2	4.75 (0.187)	1/8 in. Female NPT	76.2(3)	3.81(1.5)	46.7 (1.83)	38.0 (1.50)
	F4N-	1			-	1		1/4 in. Female NPT				
	-	-			F4N-	1		1/4 in. Female NPT	98.5(3.88)	49.3(1.94)		
	F8N-	1.2			-	-		1/2 in. Female NPT	81.2(3.2)	40.6(1.6)		
	D4T-	1.6			D4T-	1.6		1/4 in. DK-Lok	105 (4.14)	52.6 (2.07)		
	D6T-	1.4			D6T-	1.4		3/8 in. DK-Lok	112 (4.39)	55.6 (2.19)		
	D8T-	1			D8T-	1		1/2 in. DK-Lok	117 (4.60)	58.4 (2.30)		
	D6M-	1.6			D6M-	1.6		6mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D8M-	1.5			D8M-	1.5		8mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D10M-	1.3			D10M-	1.3		10mm DK-Lok	112 (4.41)	55.9 (2.20)		
	D12M-	1			D12M-	1		12mm DK-Lok	117(4.6)	58.4(2.3)		
3-Way				3-Way								
VT863- VCT863-	F2N-	0.75	4.75 (0.187)	VTH863-	F2N-	0.75	4.75 (0.187)	1/8 in. Female NPT	76.2(3)	3.81(1.5)	46.7 (1.83)	38.0 (1.50)
	F4N-				-			1/4 in. Female NPT	76.2(3)	38.1(1.5)		
	-				F4N-			1/4 in. Female NPT	81.2(3.2)	40.6(1.6)		
	D4T-				D4T-			1/4 in. DK-Lok	105 (4.14)	52.6 (2.07)		
	D6T-				D6T-			3/8 in. DK-Lok	112 (4.39)	55.6 (2.19)		
	D8T-				D8T-			1/2 in. DK-Lok	117 (4.60)	58.4 (2.30)		
	D6M-				D6M-			6mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D8M-				D8M-			8mm DK-Lok	105 (4.14)	52.6 (2.07)		
	D10M-				D10M-			10mm DK-Lok	112 (4.41)	55.9 (2.20)		
	D12M-				D12M-			12mm DK-Lok	117(4.6)	58.4(2.3)		

All dimensions shown are for reference only and are subject to change. Dimension with DK-Lok nuts are in finger-tight position.
* **CNG/NGV valve ordering number** : Basic ordering numbers listed in blue are for CNG/NGV valves as well.

Flow Rate

VT86 series Flow Data @ 21 °C (70 °F)

Flow Rate	Pressure Drop to Atmosphere (ΔP) in bar (psig)	3-Way	2-Way					
		Cv 0.75	Cv 1	Cv 1.2	Cv 1.3	Cv 1.4	Cv 1.5	Cv 1.6
Water L/min (U.S.GPM)	0.68 (10)	9.0(2.4)	12.1 (3.2)	14.3 (3.8)	15.5 (4.1)	17.8 (4.4)	17.8 (4.7)	19.3 (5.1)
	3.4 (50)	20.0 (5.3)	26.8 (7.1)	32.1 (8.5)	34.8 (9.2)	37.4 (9.9)	40.1 (10.6)	42.7 (11.3)
	6.8 (100)	28.3 (7.5)	37.8 (10.0)	45.4 (12.0)	49.2 (13.0)	53.0 (14.0)	56.7 (15.0)	60.5 (16.0)
Air std L/min (SCFM)	0.68 (10)	226 (8.0)	311 (11.0)	396 (14.0)	424 (15.0)	453 (16.0)	481 (17.0)	509 (18.0)
	3.4 (50)	651 (23.0)	849 (30.0)	1019 (36.0)	1104 (39.0)	1189 (42.0)	1274 (45.0)	1359 (48.0)
	6.8 (100)	1132 (40.0)	1500 (53.0)	1812 (64.0)	1953 (69.0)	2095 (74.0)	2265 (80.0)	2406 (85.0)

VTH86 series Flow Data @21 °C (70°F)

Flow Rate	Pressure Drop to Atmosphere (ΔP) in bar (psig)	3-Way	2-Way					
		Cv 0.75	Cv 1	Cv 1.2	Cv 1.3	Cv 1.4	Cv 1.5	Cv 1.6
Water L/min (U.S.GPM)	10.3 (150)	34.8 (9.2)	45.4 (12)	56.7 (15)	60.5 (16)	64.3 (17)	68.1 (18)	74.1 (19.6)
	41.3 (600)	69.1 (18)	94 (25)	109 (29)	121 (32)	128 (34)	140 (37)	147 (39)
	68.9 (1000)	90.8 (24)	143 (38)	143 (38)	155 (41)	166 (44)	178 (47)	189 (50)
Air std L/min (SCFM)	10.3 (150)	1614 (57)	2152 (76)	2805 (92)	2803 (99)	3029 (107)	3256 (115)	3454 (122)
	41.3 (600)	5946 (210)	8070 (285)	9627 (340)	10 505 (371)	11 298 (399)	12 119 (428)	12 912 (456)
	68.9 (1000)	9912 (350)	13 308(470)	16 140 (570)	17 272 (610)	18 688 (660)	19 821 (700)	21 321 (750)

VT86 Series Pressure-Temperature Ratings

Body material		316 Stainless steel					
Seat material		PCTFE		PTFE		PEEK	
Temperature		bar	psig	bar	psig	bar	psig
°C	°F	Working Pressure					
-17 to 37	0 to 100	413	6000	103	1500	413	6000
65	150	206	3000	77.5	1125	399	5800
93	200	137	2000	51.6	750	344	5000
121	250	69	1000	43	625	282	4100
148	300	-	-	34.4	500	220	3200
176	350	-	-	25.8	375	158	2300
204	400	-	-	17.2	250	96.4	1400
232	450	-	-	8.6	125	34.4	500

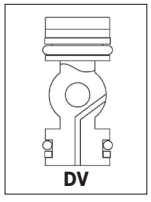
VTH86 Series Pressure-Temperature Ratings

Body material		316 Stainless steel							
End Connection	DK-Lok	6M, 1/4 in.		8M, 3/8 in.		12M, 1/2 in.		10M	
	Female NPT	1/8, 1/4 in.		-		-		-	
Seat Material		PEEK							
Temperature		Working Pressure							
°C	°F	bar	psig	bar	psig	bar	psig	bar	psig
-17 to 37	0 to 100	689	10000	516	7500	454	6600	413	6000
65	150	516	7500	516	7500	454	6600	406	5900
93	200	344	5000	344	5000	344	5000	344	5000
121	250	282	4100	282	4100	282	4100	282	4100
148	300	220	3200	220	3200	220	3200	220	3200
176	350	158	2300	158	2300	158	2300	158	2300
204	400	96.4	1400	96.4	1400	96.4	1400	96.4	1400
232	450	34.4	500	34.4	500	34.4	500	34.4	500

Options

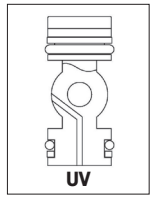
VT86 Series 2-Way Valve External Vent Options

A downstream or upstream vent option on VT86 Series 2-Way ball valve is available. The vent port is constructed on trunnion ball. The vent port activates when the valve is in closed position. This option reduces the valve pressure rating to 34.4bar (500 psig).



Downstream Vent
Ordering designator - DV

When a downstream vent valve in closed position, shutoff at the upstream seat occurs. Downstream system media flows into the vent hole and vents out to atmosphere through the valve bottom.



Upstream Vent
Ordering designator - UV

When a upstream vent valve in closed position, shutoff at the downstream seat occurs. Upstream system media flows into the vent hole and vents out to atmosphere through the valve bottom.

Service Kit

For field assembly, service kit with a maintenance instruction is available. Service kit contains wetted parts including trunnion ball, stem assembly and seat carrier assembly.
To order the service kit, prefix SK- to the valve series. i.e., SK-VCT863, SK-VTH863.

How to Order

Select applicable valve basic ordering number, options and body material designator listed below.

VT86-D4T VTH86-D12M VCT86-F4N	-PK	-DV	-S -S -S
Seat Materials	**O-ring Materials**	**External Vent Options**	**Body Material**
Nil : Standard PCTFE for VT86 Series **Nil** : Standard PEEK for VTH86 Series **Nil** : Standard PAI for VCT86 Series **PC** : PCTFE **PK** : PEEK **PE** : PTFE **PI** : PAI	**Nil** : Standard FKM for VT86 and VTH86 Series **Nil** : Standard HNBR for VCT86 Series Note : Optional O-rings applicable to; 8. Stem O-rings 12. Trunnion ball O-rings 18. Seat carrier O-rings	**DV** : Downstream Vent **UV** : Upstream Vent Note : Vent option available on VT86 2-Way ball valves.	**S** : Stainless steel 316

Safe Valve Selection

The selection of a valve for any application or system design must be considered to ensure safe performance.
Valve function, valve rating, material compatibility, proper installation, operation and maintenance remain the sole responsibillty of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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DK-LOK®
Valves

VX36 Series Excess Flow Valves

No.VX36-1
October 2013

Pressures up to 6,000 psig (413 bar)

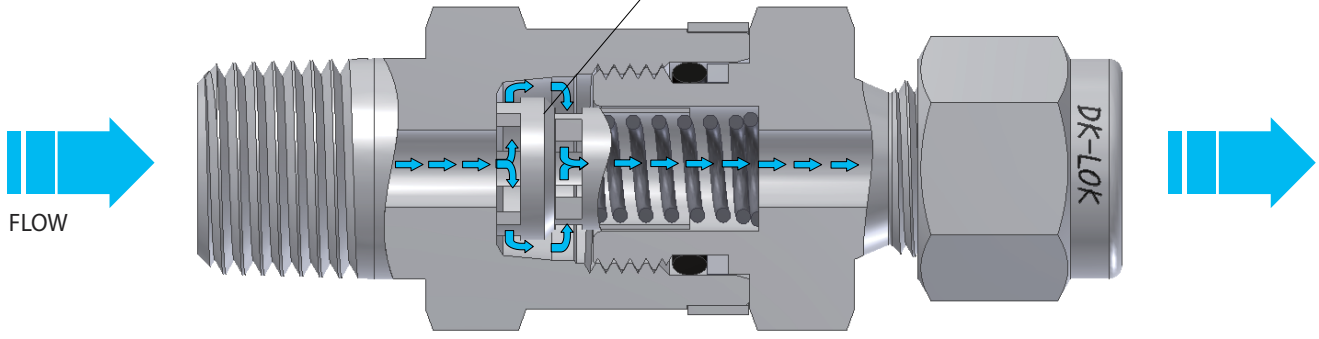
Features

- Designed to stop uncontrolled release of system fluid on downstream line rupture.
- Pressure up to 6,000 psig (413 bar)
- Temperature rating up to 400 °F (204 °C)
- Stainless steel construction
- DK-Lok and PIPE END connections up to 1/2 in.

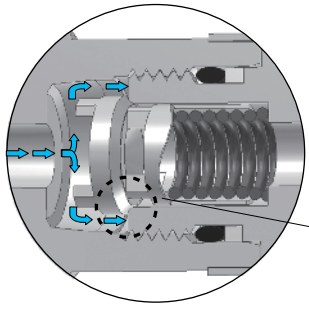
Poppet

- High flow performance
- Bleed vent integrated
- Reliable tripping

Valve in Open Position

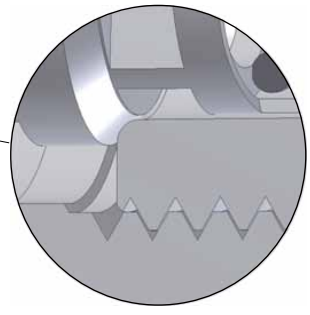


Valve in Tripped Position



Metal Seat

- Durable and repeatable
- Minimal maintenance



Bleed Vent integrated on Poppet

- Pressure equalization
- Reset the poppet to re-open the valve

Operation

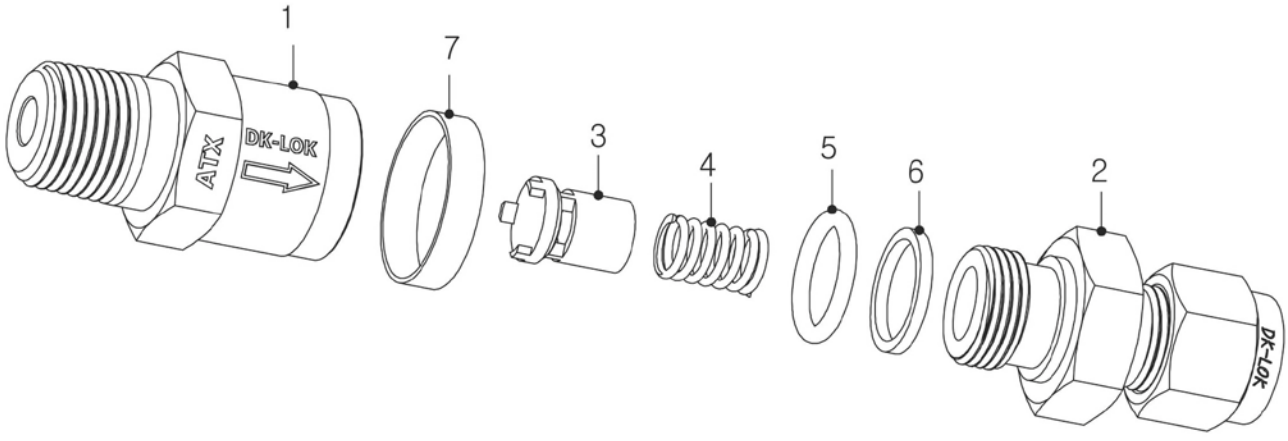
The spring loaded poppet keeps the valve open position in the normal operation.
When an excess flow occurs downstream, the poppet immediately moves to the tripped position to stop rapid release of system fluid.

The valve returns to open position when pressure equalizes through the bleed vent constructed on poppet. The spring in the poppet resets the valve to open position. The least volume of flow goes through the bleed vent that is less than 1% of the valve flow rate while the valve in the tripped position.

Spring-loaded poppet design allows valve for use in vertical, horizontal or in any orientation.

Factory Test, Cleaning and Packaging

- Every valve is factory tested for performance in the tripped and open position.
- Valves are cleaned and packaged as per the requirements of DK Tech's product cleaning standard of DC-01.
- Oil free special cleaning and packaging in compliance with ASTM G93 Level C is available on request.



Materials of Construction

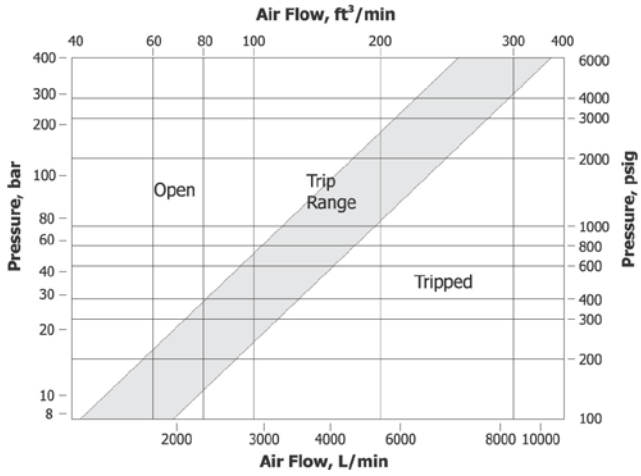
Component	Material
* 1. Body	SS316/ASTM A276 or ASTM A479
* 2. Connector	
* 3. Poppet	
* 4. Spring	SS302/ASTM A313
* 5. O-ring	Standard FKM O-ring Optional NBR, EPDM, and FFKM
6. Backup ring	Standard PTFE / ASTM D1710 Optional PEEK
7. Indicator ring	Red-color anodized Aluminium

* Wetted parts and lubricants listed in blue.

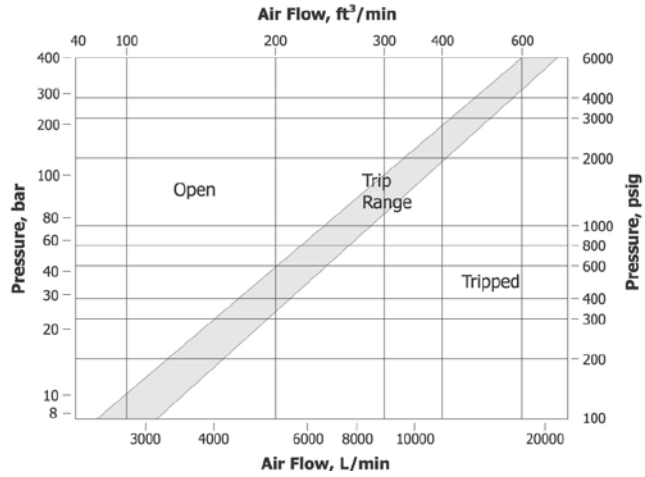
VX36 Series Flow Rate @ 70 °F (20 °C)

The valve stops rapid release of system fluid if a line rupture or similar thing occurs on the downstream by poppet's tripping into the metal seat position when flow volume through the valve increases to a set value.

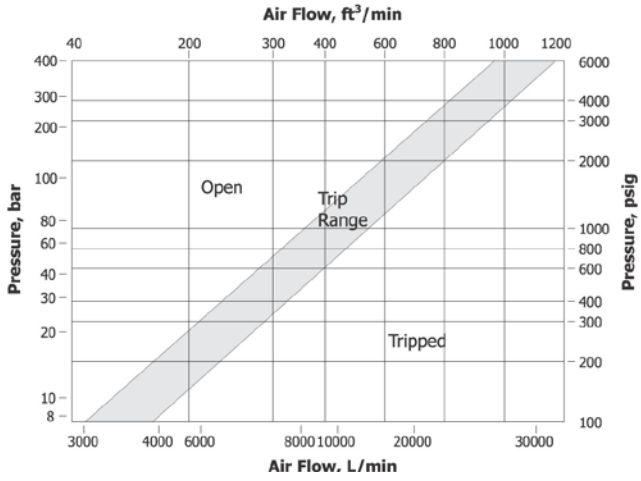
VX36A Series Air



VX36B Series Air



VX36C Series Air



VX36A, B,C Series Water

Series	Cv	Trip Range U.S. gal/min (L/min)
VX36A	0.5	3.9 to 5.8 (14.7 to 21.9)
VX36B	1.1	8.2 to 10.0 (31.0 to 37.8)
VX36C		11.2 to 14.9 (42.3 to 56.3)

Pressure-Temperature Ratings

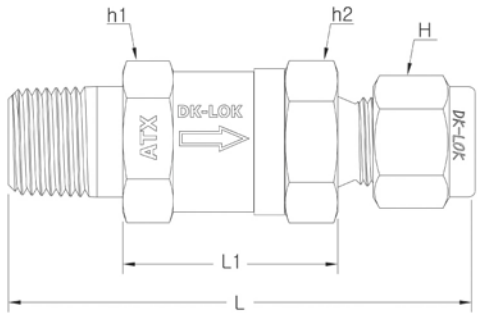
- Rating based on valve with standard FKM O-Ring.

ASME Class / Material Group	2500 / 2.2
Material	Stainless Steel 316
Temp. °F(°C)	Working Pressure psig (bar)
-10 (-23)~100 (37)	6,000 (413)
200 (93)	5,160 (355)
250 (121)	4,910 (338)
300 (148)	4,660 (321)
400 (204)	4,280 (294)

Optional O-ring Materials

- FKM O-Rings are standard. Add the designator to the ordering number for valve with optional O-ring material.

O-ring Materials	Designator	Temperature Rating °F(°C)
FKM	Nil	-10 ~ 400 (-23 ~204)
NBR	BN	-4 ~ 221 (-20 ~ 105)
EPDM	EP	-50 ~ 300 (-45 ~ 148)
FFKM	KZ	-10 ~ 400 (-23 ~ 204)



Ordering Information and Dimensions

Basic Ordering Number		End Connections Inlet	End Connections Outlet	Cv	Dimensions, mm (in.) L	L1	H	h1	h2
VX36A-	D-4T-	1/4 in. DK-Lok		0.5	61.7 (2.43)	26.4 (1.04)	9/16 in.	11/16 in.	
	D-6M	6 mm DK-Lok			61.7 (2.43)	26.4 (1.04)	14 mm	11/16 in.	
	M-2N-	1/8 in. Male NPT			45.5 (1.79)	26.4 (1.04)	-	11/16 in.	
	F-2N--	1/8 in. Female NPT			47.5 (1.87)	-	-	11/16 in.	
	M-4N	1/4 in. Male NPT			55.1 (2.17)	26.4 (1.04)	-	11/16 in.	
	M-4R	1/4 in. Male PT			55.1 (2.17)	26.4 (1.04)	-	11/16 in.	
	F-4N	1/4 in. Female NPT			54.1 (2.13)	-	-	11/16 in.	
	MD-4N4T-	1/4 in. Male NPT	1/4 in. DK-Lok		58.4 (2.3)	26.4 (1.04)	9/16 in.	11/16 in.	
	MF-4N	1/4 in. Male NPT	1/4 in. Female NPT		54.6 (2.15)	-	-	11/16 in.	
VX36B-	D-6T-	3/8 in. DK-Lok		1.1	69.9 (2.75)	31.2 (1.23)	11/16 in.	1 in.	
	D-8M	8 mm DK-Lok			68.6 (2.70)	31.2 (1.23)	16 mm	1 in.	
	M-6N-	3/8 in. Male NPT			59.9 (2.36)	31.2 (1.23)	-	1 in.	
	F-6N-	3/8 in. Female NPT			64.8 (2.55)	-	-	1 in.	
	MD-6N6T-	3/8 in. Male NPT	3/8 in. DK-Lok		64.9 (2.56)	31.2 (1.23	11/16 in.	1 in.	
	MF-6N6T-	3/8 in. Male NPT	3/8 in. Female NPT		62.4 (2.45)	-	-	1 in.	
VX36C-	D-8T-	1/2 in. DK-Lok		1.1	75.2 (2.96)	31.2 (1.23)	7/8 in.	1 in.	
	D-12M-	12 mm DK-Lok			75.2 (2.96)	31.2 (1.23)	22 mm	1 in.	
	M-8N-	1/2 in. Male NPT			69.3 (2.73)	31.2 (1.23)	-	1 in.	
	M-8R-	1/2 in. Male PT			69.6 (2.74)	31.2 (1.23)	-	1 in.	
	F-8N-	1/2 in. Female NPT			77.0 (3.03)	-	-	1-1/16 in.	
	F-8R-	1/2 in. Female PT			83.6 (3.29)	-	-	1-1/16 in.	
	MD-8N8T-	1/2 in. Male NPT	1/2 in. DK-Lok		72.6 (2.86)	31.2 (1.23)	7/8 in.	1 in.	
	MF-8N8T-	1/2 in. Male NPT	1/2 in. Female NPT		69.7 (2.53)	-	-	1 in.	1-1/16 in.

All dimensions shown are for reference only and subject to change. Dimensions with DK-Lok are in finger-tight position.

How to order

Select valve basic ordering number, applicable options, and body material.

VX36A-D-4T- **BN-** **S**
VX36A-D-4T- **EP-** **S**
VX36C-D-8T- **KZ-** **PK-** **S**

O-ring Material Designator	Backup Ring	Valve Body Material Designator
Nil : FKM	**Nil** : PTFE	**S** : 316 stainless steel
BN : NBR	**PK** : PEEK	
EP : EPDM		
KZ : FFKM (Kalrez)		

Safe Valve Selection

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DK-LOK®
Quick Connectors

Quick Connectors

DQ, DQM, and DF Series

No.DQF-5
July 2013

- No tools required to couple and uncouple.
- Bi-directional flow design.
- Versatile options of both-end shutoff (DV), single-end shutoff (SV), and both end open (DF Series).

DQ Series Quick Connectors

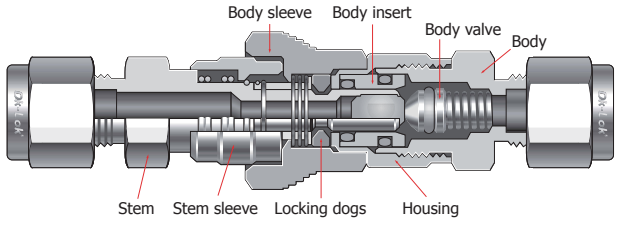
Features

- Bi-directional flow design.
- Simple to operate.
- SS316 construction with standard FKM O-ring.
- Brass construction with standard NBR O-ring.
- No tools required to couple and uncouple.
- Compact and light-weight design.

Operation

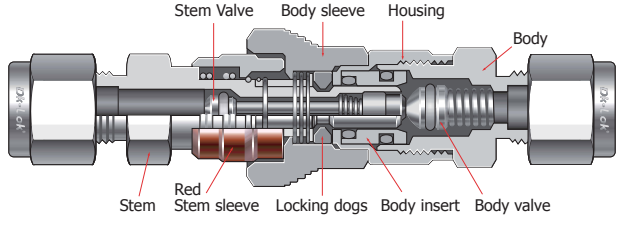
- Coupling
  1. Align the stem with the body in the identical Series.
  2. Push the stem into the body until it clicks.
- Uncoupling
  1. Pull the body sleeve toward stem.
  2. Remove stem from body.
- Do not couple or uncouple at pressures exceeding 250 psig (17.2 bar).

SV: Single valve coupled



Bi-Directional Flow
Stem has no valve

DV: Double valve coupled



Bi-Directional Flow
Stem has valve

Materials of Construction

Component	Material	
	SS316	Brass
Body, Housing Body valve Body insert Body sleeve	SS316/ ASTM A276	JIS H3250 C3604
Locking dogs	Xylan™-coated SS316 powered	
Stem Stem sleeve Stem valve	SS316 / ASTM A276	JIS H3250 C3604
O-rings	FKM	NBR
Springs	SS302/ASTM A313	
Lubricants	Silicon and TFE based	

Wetted parts indicated in blue.

Pressure-Temperature Ratings

DQ Stem and Body	SS316 FKM O-rings			Brass NBR O-rings		
	DQA	DQB	DQC	DQA	DQB	DQC
	psi (bar) @ °F (°C)					
Coupled	3000 (206) @ 70 (21)	1500 (103) @ 70 (21)	750 (51.6) @ 70 (21)	2000 (137) @ 70 (21)	1000 (68.9) @ 70 (21)	500 (34.4) @ 70 (21)
	250 (17.2) @ 400 (204)			250 (17.2) @ 250 (121)		
Uncoupled	250 (17.2) @ 70 (21)					
When coupling and uncoupling	250 (17.2) @ 70 (21)					

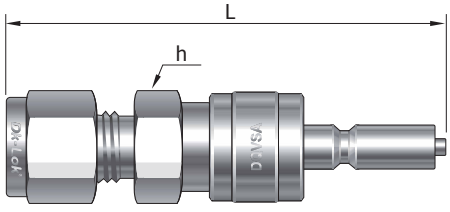
Spillage and Air Inclusion

- Spillage is the volume of system fluid that escapes while a quick connector is uncoupled.
- Air inclusion is the volume of air trapped that comes in while a quick connector is coupled.

unit : cm^3

DQ Series	Spillage	Air Inclusion
DQ A	0.3	0.3
DQ B	1.0	1.0
DQ C	3.0	3.0

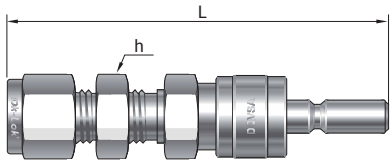
Ordering Information and Dimensions Stems



DV : Stem has a valve
SV : Stem has no valve

Series	End Connection	Basic Ordering Number		Cv			L mm (in.)		h Hex. in.
		SV	DV	SV	DV	Full Flow	SV	DV	
DQA	1/8 in. DK-Lok	DQSA-D-2T-	DQVSA-D-2T-	0.08	0.08	0.08	58.9 (2.32)	70.4 (2.77)	5/8
	1/4 in. DK-Lok	DQSA-D-4T-	DQVSA-D-4T-	0.3	0.2	0.4	59.9 (2.36)	61.5 (2.42)	5/8
	6 mm DK-Lok	DQSA-D-6M-	DQVSA-D-6M-	0.3	0.2	0.4	59.9 (2.36)	61.5 (2.42)	5/8
	1/8 in. Male NPT	DQSA-M-2N-	DQVSA-M-2N-	0.3	0.2	0.4	52.6 (2.07)	54.1 (2.13)	5/8
	1/4 in. Male NPT	DQSA-M-4N-	DQVSA-M-4N-	0.3	0.2	0.4	56.4 (2.22)	57.9 (2.28)	5/8
	1/8 in. Female NPT	DQSA-F-2N-	DQVSA-F-2N-	0.3	0.2	0.4	51.1 (2.01)	52.6 (2.07)	5/8
	1/4 in. Female NPT	DQSA-F-4N-	DQVSA-F-4N-	0.3	0.2	0.4	57.4 (2.26)	58.9 (2.32)	3/4
DQB	3/8 in. DK-Lok	DQSB-D-6T-	DQVSB-D-6T-	1.0	0.5	1.5	64.0 (2.52)	67.1 (2.64)	3/4
	10 mm DK-Lok	DQSB-D-10M-	DQVSB-D-10M-	1.0	0.5	1.5	67.3 (2.65)	70.4 (2.77)	3/4
	1/4 in. Male NPT	DQSB-M-4N-	DQVSB-M-4N-	0.9	0.5	1.5	58.9 (2.32)	61.9 (2.44)	3/4
	3/8 in. Male NPT	DQSB-M-6N-	DQVSB-M-6N-	0.8	0.5	1.6	59.7 (2.35)	62.7 (2.47)	3/4
	1/4 in. Female NPT	DQSB-F-4N-	DQVSB-F-4N-	0.9	0.5	1.5	59.7 (2.35)	62.7 (2.47)	3/4
	3/8 in. Female NPT	DQSB-F-6N-	DQVSB-F-6N-	0.8	0.5	1.6	59.7 (2.35)	62.7 (2.47)	7/8
DQC	1/2 in. DK-Lok	DQSC-D-8T-	DQVSC-D-8T-	2.4	1.5	3.3	75.2 (2.96)	80.3 (3.16)	15/16
	12 mm DK-Lok	DQSC-D-12M-	DQVSC-D-12M-	2.4	1.5	3.3	75.2 (2.96)	60.3 (3.16)	15/16
	1/2 in. Male NPT	DQSC-M-8N-	DQVSC-M-8N-	2.0	1.3	3.1	72.1 (2.84)	77.2 (3.04)	15/16
	1/2 in. Female NPT	DQSC-F-8N-	DQVSC-F-8N-	2.0	1.3	3.1	71.6 (2.82)	76.7 (3.02)	1 1/16

Stems-Bulkhead



DV : Stem has a valve
SV : Stem has no valve

Series	End Connection	Basic Ordering Number		Panel Thickness Max. mm (in.)	Panel Hole Dia. Min. mm (in.)	L mm (in.)		h Hex. in.
		SV	DV			SV	DV	
DQA	1/4 in. DK-Lok	DQSA-BH-D-4T-	DQVSA-BH-D-4T-	6.4 (0.25)	11.9 (15/32)	69.6 (2.74)	71.1 (2.80)	5/8
	6 mm DK-Lok	DQSA-BH-D-6M-	DQVSA-BH-D-6M-	6.4 (0.25)	11.5 (29.64)	69.6 (2.74)	71.1 (2.80)	16 mm
DQB	3/8 in. DK-Lok	DQSB-BH-D-6T-	DQVSB-BH-D-6T-	6.9 (0.27)	15.1 (19/32)	74.2 (2.92)	76.0 (3.07)	3/4
	10 mm DK-Lok	DQSB-BH-D-10M-	DQVSB-BH-D-10M-	6.9 (0.27)	16.7 (21/32)	77.7 (3.06)	78.7 (3.10)	22 mm
DQC	1/2 in. DK-Lok	DQSC-BH-D-8T-	DQVSC-BH-D-8T-	6.6 (0.26)	19.8 (25/32)	87.1 (3.43)	92.2 (3.63)	15/16
	12 mm DK-Lok	DQSC-BH-D-12M-	DQVSC-BH-D-12M-	6.6 (0.26)	19.4 (49/64)	87.1 (3.43)	92.2 (3.63)	24 mm

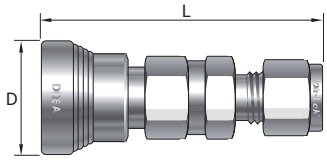
Insertion depth and Overall length

To have an overall length in coupled position, subtract the insertion depth from the combination length of the stem and the body.

Insertion Depth

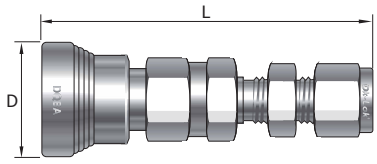
DQ Series	Depth mm (in.)	
	SV	DV
DQA	27.7 (1.09)	29.2 (1.15)
DQB	30.0 (1.18)	33.0 (1.30)
DQC	37.6 (1.48)	42.7 (1.68)

Bodies



Series	End Connection	Basic Ordering Number	L mm (in.)	D mm (in.)
DQA	1/8 in. DK-Lok	DQBA-D-2T-	57.4 (2.26)	23.1 (0.91)
	1/4 in. DK-Lok	DQBA-D-4T-	56.4 (2.30)	23.1 (0.91)
	6 mm DK-Lok	DQBA-D-6M-	58.4 (2.30)	23.1 (0.91)
	1/8 in. Male NPT	DQBA-M-2N-	51.1 (2.01)	23.1 (0.91)
	1/4 in. Male NPT	DQBA-M-4N-	54.9 (2.16)	23.1 (0.91)
	1/4 in. Male ISO	DQBA-M-4R-	54.9 (2.16)	23.1 (0.91)
	1/8 in. Female NPT	DQBA-F-2N-	54.9 (2.16)	23.1 (0.91)
	1/4 in. Female NPT	DQBA-F-4N-	61.5 (2.42)	23.1 (0.91)
	1/4 in. Female ISO	DQBA-F-4R-	61.5 (2.42)	23.1 (0.91)
DQB	3/8 in. DK-Lok	DQBB-D-6T-	65.5 (2.58)	26.2 (1.03)
	10 mm DK-Lok	DQBB-D-10M-	68.1 (2.68)	26.2 (1.03)
	1/4 in. Male NPT	DQBB-M-4N-	60.5 (2.38)	26.2 (1.03)
	3/8 in. Male NPT	DQBB-M-6N-	60.5 (2.38)	26.2 (1.03)
	3/8 in. Male ISO	DQBB-M-6R-	60.5 (2.38)	26.2 (1.03)
	1/4 in. Female NPT	DQBB-F-4N-	64.5 (2.54)	26.2 (1.03)
	3/8 in. Female NPT	DQBB-F-6N-	65.3 (2.57)	26.2 (1.03)
	3/8 in. Female ISO	DQBB-F-6R-	65.3 (2.57)	26.2 (1.03)
DQC	1/2 in. DK-Lok	DQBC-D-8T-	78.5 (3.09)	30.7 (1.21)
	12 mm DK-Lok	DQBC-D-12M-	78.5 (3.09)	30.7 (1.21)
	1/2 in. Male NPT	DQBC-M-8N-	75.4 (2.97)	30.7 (1.21)
	1/2 in. Male ISO	DQBC-M-8R-	75.4 (2.97)	30.7 (1.21)
	1/2 in. Female NPT	DQBC-F-8N-	81.8 (3.22)	30.7 (1.21)
	1/2 in. Female ISO	DQBC-F-8R-	81.8 (3.22)	30.7 (1.21)

Bodies-Bulkhead



Series	End Connection	Basic Ordering Number	Panel Thickness Max.	Panel Hole Dia. Min.	L	D
			mm (in.)			
DQA	1/4 in. DK-Lok	DQBA-BH-D-4T-	6.4 (0.25)	11.9 (15/32)	67.8 (2.67)	23.1 (0.91)
	6 mm DK-Lok	DQBA-BH-D-6M-	6.4 (0.25)	11.9 (15/32)	67.8 (2.67)	23.1 (0.91)
DQB	3/8 in. DK-Lok	DQBB-BH-D-6T-	6.9 (0.27)	15.1 (19/32)	75.7 (2.98)	26.2 (1.03)
	10 mm DK-Lok	DQBB-BH-D-10M-	6.9 (0.27)	16.7 (21/32)	75.9 (2.99)	26.2 (1.03)
DQC	1/2 in. DK-Lok	DQBC-BH-D-8T-	6.6 (0.26)	19.8 (25/32)	90.4 (3.56)	30.7 (1.21)
	12 mm DK-Lok	DQBC-BH-D-12M-	6.6 (0.26)	19.4 (49/64)	90.4 (3.56)	30.7 (1.21)

How to Order

Add "SA" for SS316 or "BA" for Brass as a suffix to the Basic Ordering Number.
Examples : DQSA-D-4T-SA, DQBA-D-4T-BA.

O-ring Designators

Nil : Standard FKM for SS316 quick connector
Nil : Standard NBR for Brass quick connector
FKM : VT
NBR : BN
FFKM : KZ
EPDM : EP

How to Order an Optional O-ring Connector

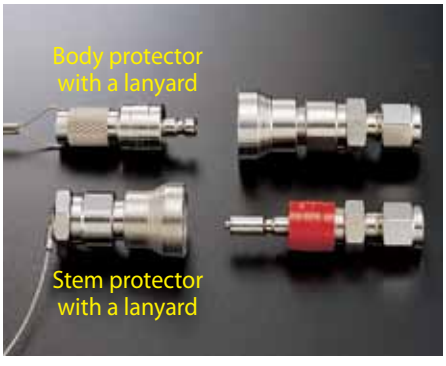
Insert O-ring designator to the basic ordering number.
Examples: DQVSA-D-2T-KZ-SA, DQVSA-D-2T-EP-BA

How to Order a Full Flow DQ Series Connector

A full flow DQ series consists of a SV stem and a full flow body.

To order a full flow body, select an applicable Basic Ordering Number, add "FF" and a material designator.
Examples : DQBA-D-4T-FF-SA, DQBB-D-6T-FF-SA.

Options



DQ Protectors

Body and Stem Protector are available to protect body and stem from damage and contamination while they are uncoupled.

Field Assembly Protector Ordering Number

Stem Protector	Body Protector
DQSA-CP-	DQBA-PG-
DQSB-CP-	DQBB-PG-
DQSC-CP-	DQBC-PG-

To complete ordering number, add a material designator "SA" for SS316, "BA" for Brass as a suffix to the protector ordering number.
Examples : DQSA-CP-SA, DQBA-PG-BA

Note : Stem Protector is applicable to both SV stem and DV stem.

Pressure Retaining Protectors

DQ Protectors are not pressure retaining devices.
To order the pressure retaining protector, add "P" as a suffix to the protector ordering number.
Examples : DQSA-CPP-, DQBA-PGP-.

How to order FACTORY ASSEMBLED PROTECTOR on to DQ stem and body.

Select an applicable STEM or BODY ordering number, and insert "CP" or "PG" in the ordering number.
Examples : DQVSC-D-12M-CP-SA, DQBC-D-12M-PG-SA.

Materials of Construction

Protector: Stainless steel or Brass
Lanyard: Stainless steel
Lanyard clamp: Stainless steel

DQ color coded "Keyed" quick connectors

Features

- DQ Keyed quick connectors prevent intermixing of different keys mechanically as well as allow visual identification by color coding.
- Eight (8) different keys on each DQ series are available with its own Key number.
- DQ keys are useful to control multi-fluid or multi-pressure systems.

Operation

- Select stem and body keyed in the same DQ series.
- Coupling : Align stem with body. Push stem into body until it clicks.
- Uncoupling : Pull body sleeve toward stem. Remove stem.

DQ Key Ordering Numbers and Sleeve Outside Diameter

Key Number	Key Color	DQA				DQB				DQC			
		Body Sleeve		Stem Sleeve		Body Sleeve		Stem Sleeve		Body Sleeve		Stem Sleeve	
		mm	inch	mm	inch	mm	inch	mm	inch	mm	inch	mm	inch
K1	Black	24.5	0.96	20.9	0.82	28.7	1.13	25.1	0.99	32.0	1.26	27.9	1.10
K2	Orange	25.0	0.99	21.6	0.85	29.5	1.16	25.8	1.02	32.8	1.29	28.9	1.14
K3	Green	26.0	1.02	22.4	0.88	30.2	1.19	26.6	1.05	33.6	1.32	29.7	1.17
K4	Yellow	26.8	1.05	23.2	0.91	31.0	1.22	27.4	1.08	34.3	1.35	30.4	1.20
K5	Blue	27.5	1.08	23.9	0.94	31.5	1.24	28.1	1.11	35.1	1.38	31.2	1.23
K6	White	28.3	1.11	24.7	0.97	32.5	1.28	28.9	1.14	35.8	1.41	32.0	1.26
K7	Purple	29.1	1.14	25.4	1.00	33.3	1.31	29.7	1.17	36.6	1.44	32.7	1.29
K8	Brown	29.8	1.17	26.2	1.03	34.0	1.34	30.4	1.20	37.4	1.47	33.5	1.32
Standard DQ Body Sleeve Dia.		23.1	0.91			26.2	1.03			30.7	1.21		

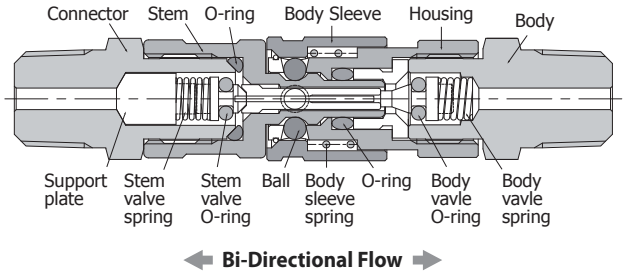
How to Order

Add the Key number as a suffix to the DQ series Ordering Number.
Examples : DQSB-D-6T-**K1**-SA.

DQM Series Miniature Quick Connectors

Features

- Bi-directional flow design.
- Miniature design for max. 4000 psi working pressure.
- Stainless steel and brass construction.



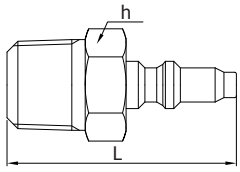
Materials of Construction

Component	Material	
	Stainless	Brass
Body, Housing, Stem, Connector, Body sleeve	SS316/ ASTM A276	JIS H3250 C3604
Support plate, Left & Right fin	Stainless Steel	
Body valve, Stem valve	SS316/ ASTM A276	
Springs	SS302/ASTM A313	
O-rings	FKM	NBR
Locking ball	SS316	
Lubricants	Silicon and TFE based	

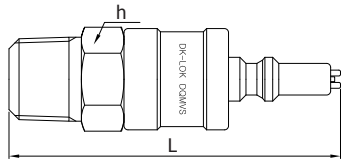
Wetted parts indicated in blue.

Ordering Information and Dimensions

Stems



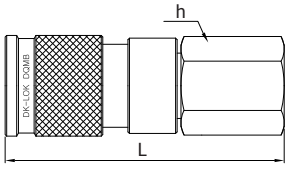
SV : Stem has no valve



DV : Stem has a valve

End Connection	Basic Ordering Number		Cv			L mm (in.)		h Hex. in.
	SV	DV	SV	DV	Full Flow	SV	DV	
1/16 in. DK-LOK	DQMS-D-1T-	DQMVS-D-1T-	0.06	0.05	0.06	30.0 (1.18)	44.7 (1.76)	7/16
1/16 in. Male NPT	DQMS-M-1N-	DQMVS-M-1N-	0.06	0.05	0.06	26.2 (1.03)	40.9 (1.61)	7/16
1/16 in. Female NPT	DQMS-F-1N-	DQMVS-F-1N-	0.06	0.05	0.06	26.2 (1.03)	40.9 (1.61)	7/16
1/8 in. DK-LOK	DQMS-D-2T-	DQMVS-D-2T-	0.06	0.05	0.06	32.8 (1.29)	47.5 (1.87)	7/16
1/8 in. Male NPT	DQMS-M-2N-	DQMVS-M-2N-	0.06	0.05	0.06	26.2 (1.03)	40.9 (1.61)	7/16
1/8 in. Female NPT	DQMS-F-2N-	DQMVS-F-2N-	0.06	0.05	0.06	26.2 (1.03)	46.0 (1.81)	9/16

Body



Basic Ordering Number	End Connection	L mm (in.)	h Hex. in.
DQMB-D-1T-	1/16 in. DK-Lok	38.1 (1.50)	7/16
DQMB-D-2T-	1/8 in. DK-Lok	43.2 (1.70)	7/16
DQMB-M-1N-	1/16 in. Male NPT	36.1 (1.42)	7/16
DQMB-M-2N-	1/8 in. Male NPT	36.6 (1.44)	7/16
DQMB-F-1N-	1/16 in. Female NPT	36.3 (1.43)	7/16
DQMB-F-2N-	1/8 in. Female NPT	41.1 (1.62)	9/16
DQMB-BH*-D-2T-	1/8 in. DK-Lok	53.1 (2.09)	7/16

* BH : Bulkhead

How to Order a Full Flow DQM Quick Connector

A full flow DQM series consists of a SV stem and a full flow body.

To order a full flow body, select an applicable basic ordering number, add "FF" and a material designator. i.e., DQMB-D-2T-**FF**-SA

Pressure- Temperature Ratings

DQM Stem and Body	SS316 FKM O-rings	Brass NBR O-rings
	Pressure Rating psi (bar) @ °F (°C)	
Coupled	4000 (275) @ 70 (21)	2000 (137) @ 70 (21)
	100 (6.8) @ 400 (204)	100 (6.8) @ 250 (121)
Uncoupled	100 (6.8) @ 70 (21)	
When coupling & uncoupling	100 (6.8) @ 70 (21)	

Spillage and Air Inclusion 0.1 cm³

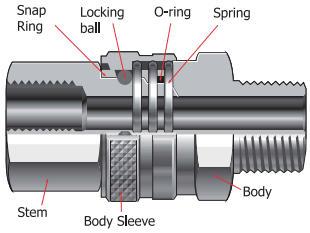
Insertion Depth SV : 11.9 mm (0.47 in.)
DV : 13.5 mm (0.53 in.)

Operation : To couple, to uncouple, pull body sleeve.

Insertion depth and Overall length
To have an overall length in coupled position, subtract the insertion depth from the combination length of the stem and the body.

How to Order
Add "**SA**" for SS316 or "**BA**" for brass as a suffix to the basic ordering number. Example : DQMS-D-1T-**SA**.

DF Series Full Flow Quick Connectors



Bi-Directional Flow

Features

- Bi-directional flow design.
- Applicable to maximum flow
- Lowest pressure drop
- No tools required to connect & disconnect

Materials of Construction

Component	Materials	
	SS316	Brass
Body, Stem	SS316/ASTM A276	JIS H3250 C3604
Sleeve		
Snap ring	SS316	SS316
Spring, Locking Ball	Stainless Steel	
O-ring	FKM	NBR
Lubricant	Silicon-based and PTFE-based lubricants	

Wetted parts and lubrication are indicated in blue.

Max. Pressure @ 410°F (210°C)

DF Series	SS316	Brass
	psig (bar)	psig (bar)
DFA	6000 (413)	4000 (275)
DFB		3000 (206)
DFC	4000 (275)	2000 (137)
DFD		

Max. Temperature Rating

DF Materials	O-ring Material	Max. Temp. Rating	Pressure Rating @ Max. Temp.
SS316	FKM	400 F (204°C)	100 psig (6.8 bar)
Brass	NBR	250 F (121°C)	100 psig (6.8 bar)

Cleaning and Packaging

Every connector is cleaned, and packed in a plastic sealing bag to keep them from dust, and then boxed for protection from damage during transportation and storage.

Operation

Coupling

1. Align stem with body.
2. Pull the body sleeve back.
3. Insert stem into body until it bottoms.
4. Return body sleeve to its original position.

Uncoupling

1. Pull the body sleeve back completely.
2. Remove stem from body.

Caution : Do not uncouple under pressure.

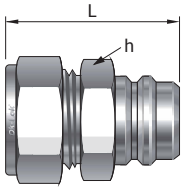
Note :

Couple the identical Series of stem and body.

Example : Any DFB**A** series body will fit any DFS**A** series stem.

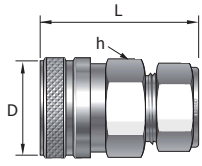
Ordering Information and Dimensions

Stems



Basic Ordering Number		End Connection	Cv	Orifice Min.	L	h
				mm (in.)		in.
DFSA-	D-4T-	1/4 in. DK-Lok	2.2	4.8 (0.19)	45.0 (1.77)	9/16
	D-6T-	3/8 in. DK-Lok	2.8	6.1 (0.24)	45.0 (1.77)	11/16
	D-6M-	6 mm DK-Lok	2.2	4.8 (0.19)	45.0 (1.77)	9/16
	M-4N-	1/4 in. Male NPT	1.7	6.1 (0.24)	40.4 (1.59)	9/16
	M-6N-	3/8 in. Male NPT	1.7	6.1 (0.24)	40.4 (1.59)	11/16
	F-4N-	1/4 in. Female NPT	1.7	6.1 (0.24)	40.6 (1.60)	3/4
	F-6N-	3/8 in. Female NPT	1.7	6.1 (0.24)	42.4 (1.67)	7/8
DFSB-	D-6T-	3/8 in. DK-Lok	2.9	7.1 (0.28)	47.8 (1.88)	7/8
	D-8T-	1/2 in. DK-Lok	13.0	10.4 (0.41)	50.5 (1.99)	7/8
	M-6N-	3/8 in. Male NPT	7.1	10.4 (0.41)	40.4 (1.59)	7/8
	M-8N-	1/2 in. Male NPT	11.5	12.7 (0.50)	46.7 (1.84)	7/8
	F-6N-	3/8 in. Female NPT	7.1	11.9 (0.47)	40.4 (1.59)	1 1/16
	F-8N-	1/2 in. Female NPT	11.5	12.7 (0.50)	46.2 (1.82)	1 1/16
DFSC-	D-12T-	3/4 in. DK-Lok	26.0	15.7 (0.62)	54.6 (2.15)	1 1/16
	M-12N-	3/4 in. Male NPT	23.6	18.3 (0.72)	51.6 (2.03)	1 1/16
	F-12N-	3/4 in. Female NPT	23.6	18.3 (0.72)	52.8 (2.08)	1 5/16
DFSD-	D-16T-	1 in. DK-Lok	45.0	22.4 (0.88)	62.2 (2.45)	1 3/8
	M-16N-	1 in. Male NPT	39.0	22.4 (0.88)	59.7 (2.35)	1 3/8
	F-16N-	1 in. Female NPT	39.0	22.4 (0.88)	63.2 (2.49)	1 5/8

Bodies



Basic Ordering Number		End Connection	Orifice Min.	L	D	h
			mm (in.)			in.
DFBA-	D-4T-	1/4 in. DK-Lok	4.8 (0.19)	45.7 (1.80)	22.1 (0.87)	1 1/16
	D-6T-	3/8 in. DK-Lok	7.1 (0.28)	46.0 (1.81)	22.1 (0.87)	1 1/16
	D-6M-	6 mm DK-Lok	4.8 (0.19)	45.7 (1.80)	22.1 (0.87)	11/16
	M-4N-	1/4 in. Male NPT	6.4 (0.25)	39.9 (1.57)	22.1 (0.87)	11/16
	M-6N-	3/8 in. Male NPT	9.4 (0.37)	39.9 (1.57)	22.1 (0.87)	11/16
	F-4N-	1/4 in. Female NPT	9.7 (0.38)	38.1 (1.50)	22.1 (0.87)	3/4
	F-6N-	3/8 in. Female NPT	9.7 (0.38)	41.4 (1.63)	22.1 (0.87)	7/8
DFBB-	D-6T-	3/8 in. DK-Lok	7.1 (0.28)	55.1 (2.17)	33.0 (1.30)	1 1/16
	D-8T-	1/2 in. DK-Lok	11.9 (0.47)	56.6 (2.23)	33.0 (1.30)	1 1/16
	M-6N-	3/8 in. Male NPT	10.4 (0.41)	46.5 (1.83)	33.0 (1.30)	1 1/16
	M-8N-	1/2 in. Male NPT	12.7 (0.50)	52.8 (2.08)	33.0 (1.30)	1 1/16
	F-6N-	3/8 in. Female NPT	15.0 (0.59)	43.9 (1.73)	33.0 (1.30)	1 1/16
	F-8N-	1/2 in. Female NPT	16.0 (0.63)	43.9 (1.73)	33.0 (1.30)	1 1/16
DFBC-	D-12T-	3/4 in. DK-Lok	15.7 (0.62)	62.2 (2.45)	42.2 (1.66)	1 1/2
	M-12N-	3/4 in. Male NPT	18.3 (0.72)	59.2 (2.33)	42.2 (1.66)	1 1/2
	F-12N-	3/4 in. Female NPT	22.4 (0.88)	48.0 (1,89)	42.2 (1.66)	1 1/2
DFBD-	D-16T-	1 in. DK-Lok	22.4 (0.88)	69.9 (2.75)	47.8 (1.88)	1 11/16
	M-16N-	1 in. Male NPT	22.4 (0.88)	67.3 (2.65)	47.8 (1.88)	1 11/16
	F-16N-	1 in. Female NPT	26.9 (1.06)	53.8 (2.12)	47.8 (1.88)	1 11/16

DF Protectors

Body and Stem Protector are available to protect body and stem from damage and contamination while they are uncoupled.

Field Assembly Protector Ordering Number

Stem Protector	Body Protector
DFSA-CP-	DFBA-PG-
DFSB-CP-	DFBB-PG-
DFSC-CP-	DFBC-PG-
DFSD-CP-	DFBD-PG-

To complete ordering number, add a material designator "**SA**" for SS316, "**BA**" for Brass as a suffix to the protector ordering number.

Examples : DFSA-CP-**SA**, DFBA-PG-**BA**.

Insertion Depth

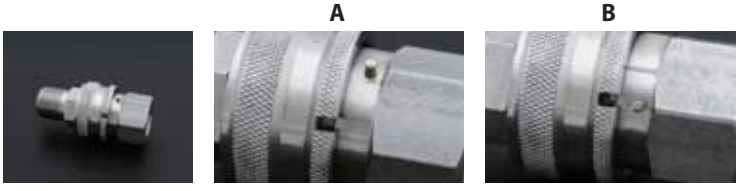
Unit : mm (in.)

DF Series	Depth
DFA	19.8 (0.78)
DFB	20.6 (0.81)
DFC	22.9 (0.90)
DFD	23.9 (0.94)

How to order FACTORY ASSEMBLED PROTECTOR on to DF stem and body.

Select an applicable STEM or BODY ordering number, and insert "CP" or "PG" in the ordering number.
Examples : DFSA-D-4T-**CP**-SA, DFBA-D-4T-**PG**-SA

Safety Pin Option on DF series



A. A safety pin on body with a holding groove on sleeve prevents accidental uncoupling.
B. To Uncouple, rotate body sleeve for the pin to fit into the groove and pull the body sleeve back.

To order Safety Pin DF body, insert "P" in the ordering number. Example: DFBC-D-12T-**P**-SA

All dimensious shown are for reference only and subject to change. Dimensions with DK-Lok Tube Fitting are finger-tight position.
We reserve the right to change specification stated in this catalog for our continuing program of product improvement.

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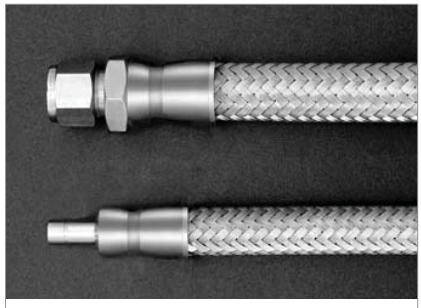
Metal Flexible Hoses

No.MFH/FH/PFH-4
January 2014



High Pressure
- MFH Series : 1page

Medium Pressure
- FH Series : 5page

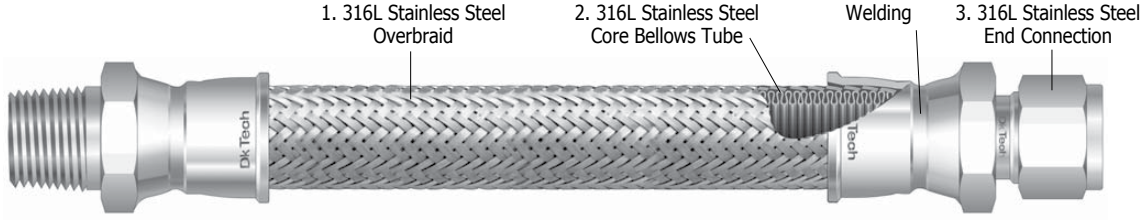
PTFE Lined
- PFH Series : 7page

Factory Test, Cleaning and Packaging

Using cleaned and passivated parts, the hoses and end connection are welded. Every hose assembly of MFH, FH & PFH Series is factory tested using nitrogen or clean air @1000 psig (68 bar) at the room temperature, and individually packed in a plastic sealing bag with an external label. The hydrostatic test of 1.1 times the working pressure or helium leak test is optional.

High-Pressure - MFH Series

Pressure Rating up to 3,600psig (248bar)



Materials of Construction

1. Wire braid	ASTM A313 Type316L
2. Core Bellows Tube	ASTM A240 Type 316L
3. End Connection	ASTM A479 or A276 Type 316

Features

- High Pressure Application Up to 3600 psig with 316 Stainless Steel Construction.
- High Temperature Application up to 850°F (454°C).
- Wide Choices of End Connections of DK-Lok Tube Port, DK-Lok Tube Stub Adapter, Swivel 37 degree Female, Male and Female NPT/ISO Tapered thread.
- Products Type Approved by DNV : Certificate No. P-12877

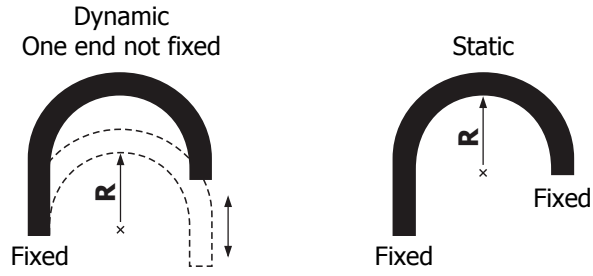
Applications

- Air, Gas, Steam, Vacuum and Water line.

Table 1. **Working and Burst Pressure at Temperature**

Nominal Hose Size, in. (mm)	MFH Series Designator	Temperate Range	Working Pressure psig (bar)	Burst Pressure Minimum psig (bar)	Bending Radius (1) Minimum in (mm)	
			@ -325 to 100°F (-200 to 37°C)	@ 70°F(20°C)	Static	Dynamic
1/4 (6.35)	MFH4	-325 to 850°F (-200 to 454°C)	3600 (248)	14 400 (992)	2.25 (57.2)	10.0 (254.0)
3/8 (9.52)	MFH6		2500 (172)	10 000 (689)	3.00 (76.2)	12.0 (305.0)
1/2 (12.70)	MFH8		2200 (151)	8 800 (606)	4.50 (114.3)	16.0 (406.4)

(1) Radius measured to inside of bend



Pressure Temperature Ratings

To determine an allowable pressure at a specific temperature, multiply the working pressure on table 1 by an applicable factor shown on table 2. Example: MFH6 Series at 500°F(260°C). 2500 psig x 0.65 = 1,625psig

Table 2. **Temperature De-rating Factors**

Temperature, °F	-325	100	200	300	400	500	600	700	800	850
Temperature, °C	-200	37	93	148	204	260	315	371	426	454
Factors	1.00	1.00	0.84	0.76	0.70	0.65	0.62	0.59	0.57	0.56

Ordering Information and Table of Dimensions

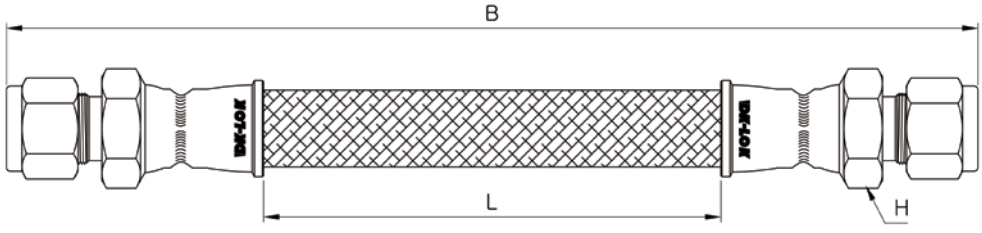


Table 3. **Hose Assembly of DK-Lok Tube Fittings at both Ends.**

Ordering Number		END Connections DK-Lok Tube Fittings	Overall Length B in. (cm)	Live Length L in. (cm)	Min. I.D. in. (mm)	Hex. Flat H in.
MFH4-	DL4DL4-12-S	1/4	12.0 (30.5)	8.12 (20.6)	0.19 (4.8)	13/16
	DL4DL4-36-S		36.0 (91.4)	32.1 (81.5)		
	DL4DL4-48-S		48.0 (122)	44.1 (112)		
MFH6-	DL6DL6-18-S	3/8	18.0 (45.7)	14.0 (35.6)	0.28 (7.1)	15/16
	DL6DL6-36-S		36.0 (91.4)	32.0 (81.3)		
	DL6DL6-48-S		48.0 (122)	44.1 (112)		
MFH8-	DL8DL8-18-S	1/2	18.0 (45.7)	13.5 (34.3)	0.40 (10.2)	1 1/16
	DL8DL8-48-S		48.0 (122)	43.5 (110)		

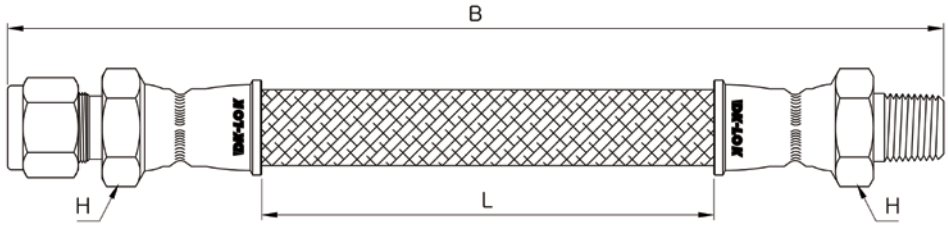


Table 4. **Hose Assembly of DK-Lok Tube Fitting end to Male NPT end**

Ordering Number		END Connections		Overall Length B in. (cm)	Live Length L in. (cm)	Min. I.D. in. (mm)	Hex. Flat H in.
		DK-Lok Tube Fittings	NPT Thread				
MFH4-	DL4M4N-12-S	1/4	1/4	12.0 (30.5)	8.26 (21.0)	0.19 (4.8)	13/16
	DL4M4N-36-S			36.0 (91.4)	32.3 (82.0)		
	DL4M4N-48-S			48.0 (122)	44.3 (112.5)		
MFH6-	DL6M6N-18-S	3/8	3/8	18.0 (45.7)	14.2 (36.1)	0.28 (7.1)	15/16
	DL6M6N-36-S			36.0 (91.4)	32.2 (81.8)		
	DL6M6N-48-S			48.0 (122)	44.2 (112.3)		
MFH8-	DL8M8N-18-S	1/2	1/2	18.0 (45.7)	13.6 (34.5)	0.40 (10.2)	1 1/16
	DL8M8N-48-S			48.0 (122)	43.6 (111.0)		

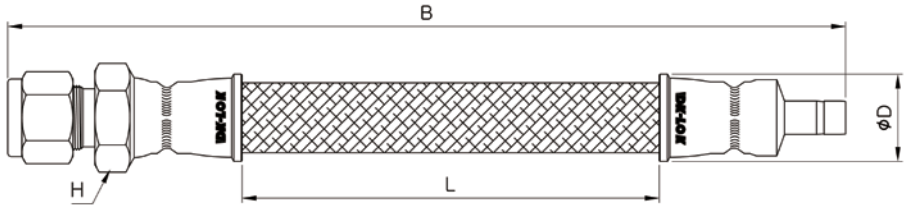


Table 5. **Hose Assembly of DK-Lok Tube Fitting end to Tube Stub Adapter end**

Ordering Number		END Connections		Overall Length B in. (cm)	Live Length L in. (cm)	Min. I.D. in. (mm)	Hex. Flat H in.	O.D. D in. (mm)
		DK-Lok Tube Fittings	Tube Stub Adapter					
MFH4-	DL4TA4-12-S	1/4	1/4	12.0 (30.5)	8.26 (21.0)	0.16 (4.1)	13/16	19.0 (0.75)
	DL4TA4-24-S			24.0 (61.0)	20.3 (51.5)			
	DL4TA4-36-S			36.0 (91.4)	32.3 (82.0)			
	DL4TA4-48-S			48.0 (122)	44.3 (112.5)			
MFH8-	DL8TA8-12-S	1/2	1/2	12.0 (30.5)	7.5 (19.0)	0.37 (9.40)	1 1/16	26.7 (1.05)
	DL8TA8-24-S			24.0 (61.0)	19.5 (49.0)			
	DL8TA8-36-S			36.0 (91.4)	31.5 (80.0)			
	DL8TA8-48-S			48.0 (122)	43.5 (110)			

End Connections

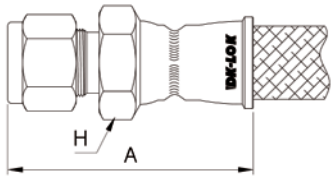


Table 6. **DK-Lok Tube Fitting Ends**

Applicable Hose Series	Designator	DK-LOK Tube Fittings	Dimensions, in. (mm)		
			Length A	Hex. Flat H	Min. I.D.
MFH4-	DL4	1/4	1.94 (49.3)	13/16 in.	0.19 (4.8)
MFH6-	DL6	3/8	2.02 (51.3)	15/16 in.	0.28 (7.1)
MFH8-	DL8	1/2	2.24 (56.9)	1 1/16 in.	0.41 (10.4)
MFH4-	DM6M	6M	2.45 (62.2)	13/16 in.	0.19 (4.8)
MFH6-	DM8M	8M	2.49 (63.2)	15/16 in.	0.25 (6.4)
MFH6-	DM10M	10M	2.03 (51.6)	15/16 in.	0.31 (7.9)
MFH8-	DM12M	12M	2.24 (56.9)	1 1/16 in	0.38 (9.7)

End Connections

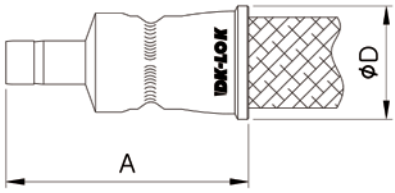


Table 7. **Tube Stub Adapter Ends**

Applicable Hose Series	Designator	Tube OD Size	Dimensions, in. (mm)		
			Length A	O.D. D	Min. I.D.
Fractional					
MFH4	TA4	1/4	1.76 (44.7)	19.0 (0.75)	0.16 (4.1)
MFH6	TA6	3/8	1.82 (46.2)	23.6 (0.93)	0.27 (6.9)
MFH8	TA8	1/2	2.22 (56.4)	26.7 (1.05)	0.37 (9.4)
Metric					
MFH4	TM6	6M	1.75 (44.4)	19.0 (0.75)	0.16 (4.1)
MFH6	TM10	10M	1.85 (47.0)	23.6 (0.93)	0.28 (7.1)
MFH8	TM12	12M	2.25 (57.2)	26.7 (1.05)	0.35 (8.9)

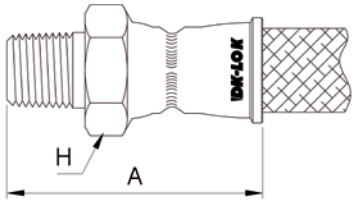


Table 8. **Male Pipe Ends**

Applicable Hose Series	Designator	Pipe Size	Dimensions, in. (mm)		
			Length A	Hex. Flat H	Min. I.D.
NPT Threads					
MFH4	M4N	1/4	1.80 (45.7)	13/16 in.	0.19 (4.8)
MFH6			1.81 (46.0)	15/16 in.	
MFH6	M6N	3/8	1.81 (46.0)	15/16 in.	0.38 (9.7)
MFH8	M8N	1/2	2.15 (54.5)	1 1/16 in.	0.47 (11.9)
BSP/ISO Threads					
MFH4	M4R	1/4	1.80 (45.7)	13/16 in.	0.28 (7.1)
MFH8	M8R	1/2	2.16 (54.9)	1 1/16 in.	0.47 (11.9)

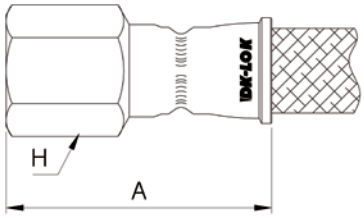


Table 9. **Female Pipe Ends**

Applicable Hose Series	Designator	NPT Thread Size	Dimensions, in. (mm)		
			Length A	Hex. Flat H	Min. I.D.
MFH4	F4N	1/4	1.81 (46.0)	13/16 in.	0.28 (7.1)
MFH6	F6N	3/8	1.85 (47.0)	15/16 in.	0.38 (9.7)
MFH8	F8N	1/2	2.18 (55.5)	1 1/16 in.	0.47 (11.9)

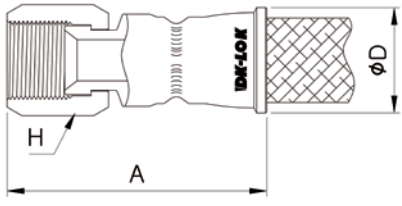


Table 10. **SAE J514, 37 degree Swivel Ends**

Applicable Hose Series	Designator	Female Size	Dimensions, in. (mm)		
			Length A	O.D. D	Min. I.D.
MFH4	KS4	1/4	1.87 (47.5)	19.0 (0.75)	0.17 (4.3)
MFH6	KS6	3/8	1.97 (50.0)	23.6 (0.93)	0.28 (7.1)
MFH8	KS8	1/2	2.15 (54.6)	26.7 (1.05)	0.42 (10.7)

Medium-Pressure - FH Series

Pressure Rating up to 1,600psig (110bar)

Features

- Designed for general purpose including positive pressure and vacuum service.
- Stainless steel construction of core bellows tube, wire braid, and end connection.
- Single braid layer for pressure containment.
- Custom length available.

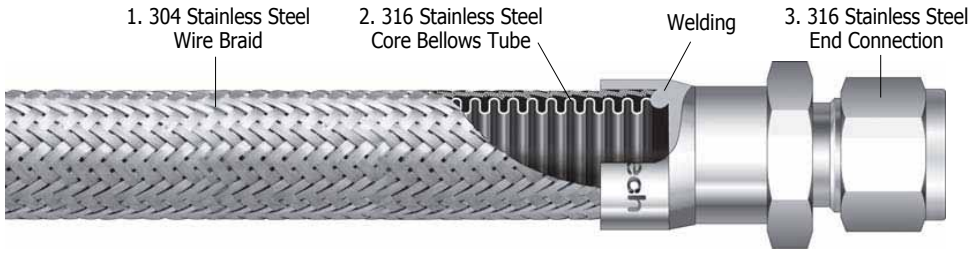


Table 11. **Working / Burst Pressure and Temperature**

Nominal Hose Size, in. (mm)	FH Series	Temperature Range	Working Pressure psig (bar)	Burst Pressure psig (bar)	Minimum Bending Radius in (mm)	
			@ -325 to 300°F (-200 to 148°C)	@ 70°F (20°C)	Static	Dynamic
1/4 (6.35)	FH4	-325 to 800°F (-200 to 426°C)	1600 (110)	6400 (440)	0.75 (19.0)	4.33 (110)
3/8 (9.52)	FH6		1470 (101)	6000 (413)	0.87 (22.1)	5.91 (150)
1/2 (12.70)	FH8		1110 (76.4)	4500 (310)	1.04 (26.4)	6.50 (165)
3/4 (19.05)	FH12		860 (59.2)	3500 (241)	1.61 (40.9)	8.86 (225)
1 (25.4)	FH16		680 (46.8)	2680 (184)	1.89 (48.0)	10.2 (259)
1 1/4 (31.75)	FH20		680 (46.8)	2600 (179)	2.16 (54.9)	11.8 (300)
1 1/2 (38.10)	FH24		520 (35.8)	2200 (151)	2.33 (59.2)	13.4 (340)
2 (50.80)	FH32		450 (31.0)	1800 (124)	3.10 (78.7)	15.4 (391)

Table 12. **Temperature De-rating Factors**

To determine an allowable pressure at a specific temperature, multiply the working pressure on table 11 by an applicable factor shown on table 12.

Example : FH4 Series at 500°F(260°C). 1600 psig x 0.86 = 1,376psig

Temperature, °F	-325 to 300	400	500	600	700	750	800
Temperature, °C	-200 to 148	204	260	315	371	398	426
Factors	1.00	0.93	0.86	0.81	0.77	0.75	0.74

Ordering Information and Table of Dimensions

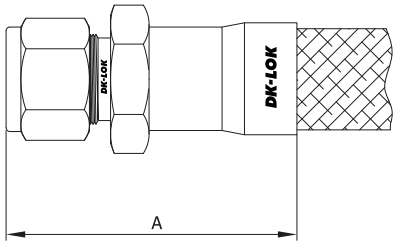


Table 13. **Hose Assembly of DK-LOK Tube Fittings at both Ends.**

Ordering Number		End Connections DK-LOK Tube Fittings		Overall Length in. (cm)	A in. (mm)
FH4-	DL4DL4-12-S	1/4	1/4	12.0 (30.5)	1.87 (47.5)
FH6-	DL6DL6-18-S	3/8	3/8	18.0 (45.7)	2.07 (52.6)
FH8-	DL8DL8-36-S	1/2	1/2	36.0 (91.4)	2.43 (61.7)
FH12-	DL12DL12-48-S	3/4	3/4	48.0 (122)	2.62 (66.6)
FH16-	DL16DL16-12-S	1	1	12.0 (30.5)	3.20 (81.3)
FH20-	DL20DL20-18-S	1 1/4	1 1/4	18.0 (45.7)	3.79 (96.3)
FH24-	DL24DL24-36-S	1 1/2	1 1/2	36.0 (91.4)	4.25 (108)
FH32-	DL32-DL32-48-S	2	2	48.0 (122)	5.22 (133)

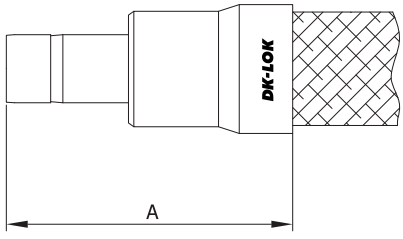


Table 14. **Hose Assembly of DK-LOK Tube Stub Adapter at both Ends.**

Ordering Number		End Connections Tube Adapter		Overall Length in. (cm)	A in. (mm)
FH4-	TA4TA4-12-S	1/4	1/4	12.0 (30.5)	1.52 (38.6)
FH6-	TA6TA6-18-S	3/8	3/8	18.0 (45.7)	1.81 (46.0)
FH8-	TA8TA8-36-S	1/2	1/2	36.0 (91.4)	2.16 (54.9)
FH12-	TA12TA12-48-S	3/4	3/4	48.0 (122)	2.50 (63.5)
FH16-	TA16TA16-12-S	1	1	12.0 (30.5)	2.99 (75.9)
FH20-	TA20TA20-18-S	1 1/4	1 1/4	18.0 (45.7)	3.91 (99.3)
FH24-	TA24TA24-36-S	1 1/2	1 1/2	36.0 (91.4)	4.47 (114)
FH32-	TA32TA32-48-S	2	2	48.0 (122)	5.45 (138)

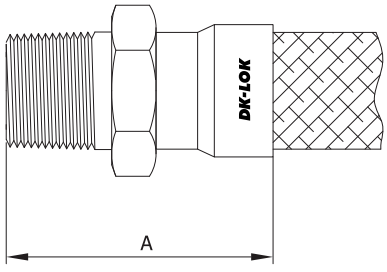


Table 15. **Hose Assembly of Male Pipe at both Ends.**

Ordering Number		End Connections Male NPT		Overall Length in. (cm)	A in. (mm)
FH4-	M4NM4N-12-S	1/4	1/4	12.0 (30.5)	1.70 (43.2)
FH6-	M6NM6N-18-S	3/8	3/8	18.0 (45.7)	1.90 (48.5)
FH8-	M8NM8N-36-S	1/2	1/2	36.0 (91.4)	2.32 (58.9)
FH12-	M12NM12N-48-S	3/4	3/4	48.0 (122)	2.45 (62.2)
FH16-	M16NM16N-12-S	1	1	12.0 (30.5)	3.05 (77.5)
FH20-	M20NM20N-18-S	1 1/4	1 1/4	18.0 (45.7)	3.14 (79.8)
FH24-	M24NM24N-36-S	1 1/2	1 1/2	36.0 (91.4)	3.38 (85.9)
FH32-	M32NM32N-48-S	2	2	48.0 (122)	3.63 (92.2)

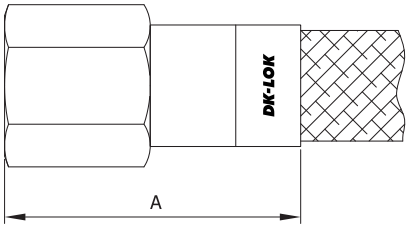
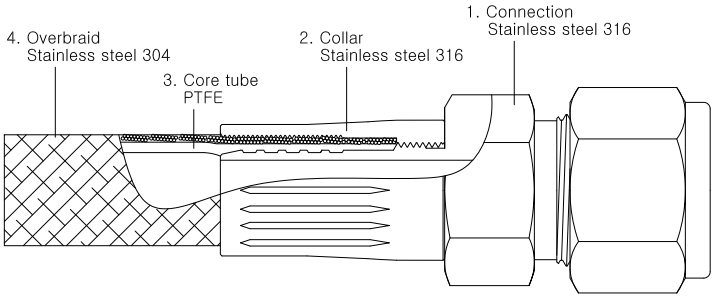


Table 16. **Hose Assembly of Male Pipe end to Female Pipe end**

Ordering Number		End Connections		Overall Length in. (cm)	A in. (cm)
		Male NPT	Female NPT		
FH4-	M4NF4N-12-S	1/4	1/4	12.0 (30.5)	1.87 (47.5)
FH6-	M6NF6N-18-S	3/8	3/8	18.0 (45.7)	2.07 (52.6)
FH8-	M8NF8N-36-S	1/2	1/2	36.0 (91.4)	2.43 (61.7)
FH12-	M12NF12N-48-S	1/4	1/4	48.0 (122)	2.62 (66.6)
FH16-	M12NF12N-12-S	1	1	12.0 (30.5)	3.20 (81.3)
FH20-	M20NF20N-18-S	1 1/4	1 1/4	18.0 (45.7)	3.79 (96.3)
FH24-	M24NF24N-36-S	1 1/2	1 1/2	36.0 (91.4)	4.25 (108)
FH32-	M32NF32N-48-S	2	2	48.0 (122)	5.22 (133)

PFH Series PTFE Flexible Metal Hose



Features

- High pressure application up to 3,000 psig (206 bar)
- PTFE hose material has improve permeation resistant
- Applied with stainless steel 304 wire braid, its improve the internal pressure and protect the wear.
- Variable end connection available

Table 17. **Working / Burst Pressure at Temperature**

Nominal Hose Size, in. (mm)	PFH Series Designator	Temperature Range	Working Pressure psig (bar) @70°F (20°C)	Burst Pressure Minimum psig (bar) @ 70°F (20°C)	Bending Radius Minimum in. (cm)	
					Static	Dynamic
1/4 (6.35)	PFH4	-65 to 450°F (-53 to 230°C)	3000 (206)	1200 (826)	1.5 (3.8)	2.0 (5.1)
3/8 (9.52)	PFH6		2500 (172)	1000 (689)	3.5 (8.9)	5.0 (12.7)

Table 18. **Pressure-Temperature Ratings**

Temperature, °F	-65	0	100	200	300	400	450
Temperature, °C	-53	-17	37	93	148	204	230
Factors	0.75	1	1	0.58	0.52	0.48	0.46

Ordering Information and Table of Dimensions

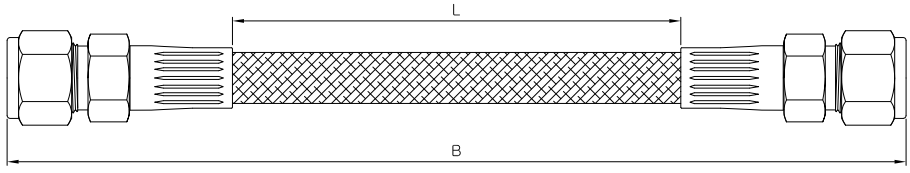


Table 19. **Hose Assembly of DK-LOK Tube Fittings at Both Ends**

Ordering Number		END Connections DK-Lok Tube Fittings	Overall Length B in. (cm)	Live Length L in. (cm)	Hose I.D Minimum in. (cm)	Hex. Flat Max. O.D on the assembly
PFH4-	DL4DL4-6	1/4"	8.0 (20.3)	5.97 (15.2)	0.16 (4.1)	9/16 (14.28)
	DL4DL4-12		14.0 (35.6)	12.0 (30.5)		
	DL4DL4-18		20.0 (50.8)	18.0 (45.7)		
	DL4DL4-24		26.0 (66.0)	24.0 (61.0)		
	DL4DL4-36		38.0 (96.5)	36.0 (91.4)		
	DL4DL4-48		50.0 (127.0)	48.0 (122.0)		
	DL4DL4-60		62.0 (157.0)	60.0 (152.0)		
	DL4DL4-72		74.0 (188.0)	72.0 (183.0)		
	DL4DL4-120		122.0 (310.0)	120.0 (305.0)		
PFH6-	DL6DL6-12	3/8"	14.0 (35.6)	11.8 (30.0)	0.27 (6.9)	13/16 (20.64)
	DL6DL6-18		20.0 (50.8)	17.8 (45.2)		
	DL6DL6-24		26.0 (66.0)	23.8 (60.5)		
	DL6DL6-36		38.0 (96.5)	35.8 (90.9)		
	DL6DL6-48		50.0 (127.0)	47.8 (121.0)		
	DL6DL6-60		62.0 (157.0)	59.8 (152.0)		
	DL6DL6-72		74.0 (188.0)	71.8 (182.0)		
	DL6DL6-96		98.0 (249.0)	95.8 (243.0)		
	DL6DL6-120		122.0 (310.0)	120.0 (305.0)		

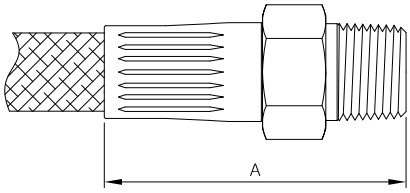


Table 20. **Male Pipe Ends**

Applicable Hose Series	Male Pipe End Conection				
	Designator	Pipe Size	Length A in. (mm)	Hex. Flat as a max. O.D	I.D Minimum in. (mm)
PFH4	M4N	1/4"	1.88 (47.8)	13/16"	0.16 (4.1)
PFH6	M6N	3/8"	1.98 (50.3)	15/16"	0.27 (6.9)

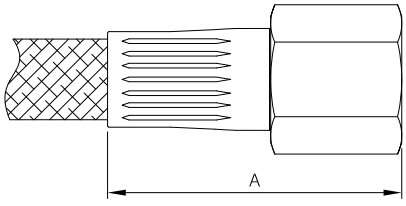


Table 21. **Female Pipe Ends**

Applicable Hose Series	Female Pipe End Conection				
	Designator	Pipe Size	Length A in. (mm)	Hex. Flat as a max. O.D	I.D Minimum in. (mm)
PFH4	F4N	1/4"	1.88 (47.8)	13/16"	0.16 (4.1)
PFH6	F6N	3/8"	2.02 (51.3)	15/16"	0.27 (6.9)

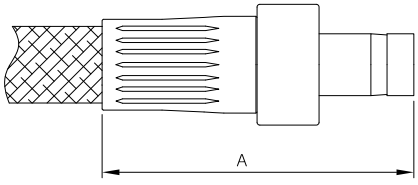


Table 22. **Tube Stub Adapter Ends**

Applicable Hose Series	Tube Stub Adapter End Conection				
	Designator	Pipe Size	Length A in. (mm)	Hex. Flat as a max. O.D	I.D Minimum in. (mm)
PFH4	TA4	1/4"	1.64 (41.7)	13/16"	0.16 (4.1)
PFH6	TA6	3/8"	1.81 (46.0)	15/16"	0.27 (6.9)

Ordering Information for MFH & FH Series

Hose Series	End Connection and Overall Length			Material Designator
MFH4- MFH6- MFH8-	Standard End Connections and Standard Overall Length	Custom End Connections	Custom Overall Length	- S : SS316
FH4- FH6- FH8- FH12- FH16- FH20- FH24- FH32-	Select the applicable order number from the hose assembly Table 3 to 5 for MFH Series and Table 13 to 16 for FH Series and Table 19 to 22 for PFH Series.	Select the designators of your hose assembly's both end connections from Table 6 to 10 for MFH Series and Table 13 to 16 for FH Series and Table 19 to 22 PFH Series Insert them into your order No. For MFH Series, i.e., MFH4-**KS4F4N**-12- For FH Series, i.e., FH4-**DL4TA4**-12-	When order in cm, use the unit of "CM", when order in inch, do not use "inch" on your order No. Examples: For 100cm overall length, MFH4-DL4DL4-**100CM**- For 10 inch overall length, MFH4-DL4DL4-**10**-	
PFH4- PFH6-		For PFH Series, i.e., PFH4-**DL4M4N**-12-		

All dimensions shown in this catalog are for reference only and are subject to change. We reserve the right to change specifications stated in this catalog for our continuing program of product improvement.

Safe Component Selection

The Selection of component for any applications or system design must be considered to ensure safe performance. Component function, material compatibility, component ratings, proper installation, operation and maintenance remain the sole responsibility of the system designer and the user. DK-Lok accepts no liability for any improper selection, installation, operation or maintenance.

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Stainless Steel Instrumentation Fractional / Metric Tubing

TS-04-S
2011

Tubing benefits

Tubing has many benefits against piping.

- Pipe threading or welding is difficult to disassemble and re-assemble.
- Piping requires skilled worker for welding & threading.
- Piping is bulky.

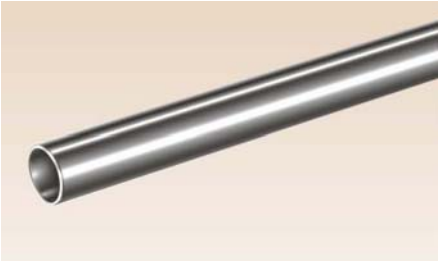
- Tubing is assembled by simple wrench make-up on DK-LOK tube fittings reducing assembly time and the overall cost of installation.

- Tubing is bendable, allowing lower pressure drop with fewer connections. This in turn reduces costs with less fabricating manpower.

For safe, reliable and leak-free tubing system for use with DK-LOK fittings, tubing should be considered as one of fitting components.

The following parameters should be considered when ordering instrumentation bright annealed seamless and welded tubing.

1. Tubing Selection
2. Tubing Handling
3. Tubing Installation
4. System Pressure
5. Welded Tubing Working Pressure



DK-LOK Tubing Features

For the best performance with DK-LOK fittings, DK offers ASTM A269 and A213 bright annealed DK-LOK tubing 1/8 in. to 1 in. OD with the following features:

- Seamless and suitable for bending and flaring.
- Free of scratches, drawing, dirt, and dust and other contamination.
- Chemically cleaned and passivated surface.
- Cold drawn and bright annealed.
- Hardness 80 HRB or less.

DK-LOK tubing marking and packaging

- Marking on tubing includes OD, wall thickness(WT), material grade, specification, heat code, and country of origin.
- Tubing ends to be capped.
- A certain quantity to be packaged in a protective cover and then packed in a wooden crate.

DK-LOK tubing standard length

6 meter tubing cut length variations as per the requirement of ASTM A450 standard.

DK-LOK tubing ovality in OD and variations in WT

ASTM A269 specifies permissible variation in tubing OD and WT, reads:

Tube O.D. In.	Permissible variation in OD, In. (mm)	Permissible variation in WT, %
Up to 1/2	+/- 0.005 (0.13)	+/- 15%
1/2 to 1 1/2, excl.	+/- 0.005 (0.13)	+/- 10%

Tubing ovality variation in OD as per the requirements of ASTM A269. For tubing OD 1/8 in. and smaller, DK supplies +/- 0.003 inch variations for the leak-free performance with stainless steel 316 DK-LOK fittings.

Tubing WT variations as specified in the ASTM A269 standard. See Table 4 and 5.

Heat Treatment

Solution annealed.

Surface Condition

Bright annealed with thermocouple clean level on the inside surface as per ASTM A632 S3.

1). Tubing Selection

Hardness

1. Tubing must be softer than fitting material. The metal tubing must be fully annealed and suitable for bending and flaring.

2. Tubing hardness must be selected according to the information in the table 4 and 5.

Surface

3. Tubing must have a surface free from scratches, draw mark, dirt, durst and flat spots.

Ovality

4. Tubing in oval or out-of-roundness may not fit into the fitting. Do not force the tubing into the fitting; it may damage the fitting sealing system on the nut, ferrules, and body.

5. Material

Using like tubing and fitting material is essential for the thermal compatibility and corrosion resistance. Different materials have different hardness level that may adversely affect the fitting seal on tubing. The only exception is copper tubing with brass DK-LOK fittings.

6. Wall thickness

The table 4 and 5 show tubing working pressure ratings in a wide range of wall thickness. A too thin of a wall may collapse and too thick wall may not properly be deformed by the ferrule action.
DK-LOK fittings are **not** recommended for tube wall thickness not listed in the table 4 and 5.

7. Wall thickness for gas application

Gases such as nitrogen, air, hydrogen and helium, can escape even the most minute leak path due to their small molecules. Heavy wall tubing resists ferrule action by coining out minor defects of the tube surface whereas a thin wall may collapse with little resistance to ferrule action. For gas service, use heavy wall **in white** in table 4 and 5.

8. Weld tubing

The weld bead should not be noticeable visually on the outside of the tube.

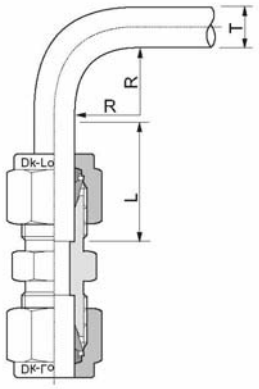
Note:
Tubing of ornamental, structural or mechanical grade should not be used for fluid system.

2). Tubing Handling

Careful handling and storage practices will protect tubing from unnecessary scratches, nicks and or degrading good tubing surface finish.

- Tubing ends should be capped so any foreign materials will not fall inside during transportation and storage.
- Do not drag across tubing rack, cement, gravel or any rough surface.
- Do use correct tube cutter for tube material. The wrong cutter may result in excessive deformation of the tube end.
- Do not cut deep with each turn of cutter.
- Tube cutters and hacksaws should be sharp enough.
- Hacksaw blades should have at least 32 teeth per inch.
- Deburring tube ends before inserting in the tube fittings helps prevent against system containments.

3). Tubing Installation



T: Tube OD

R: Radius

L: Straight tube length

When tube bend is too close to a fitting, the bend section shall enter the fitting. This may not allow the tube to be bottomed out in the fitting, and may result in leakage.

Keep the proper straight length of tube as shown in table 1 below.

- Do not bend a tube in the fitting. Use tube bender.

Table 1.

Fractional tube, in.	
T	**L**
1/16	1/2
1/8	23/32
3/16	3/4
1/4	13/16
5/16	7/8
3/8	15/16
1/2	1-3/16
5/8	1-1/4
3/4	1-1/4
7/8	1-5/16
1	1-1/2
1-1/4	2
1-1/2	2-13/32
2	3-1/4

Metric tube, mm	
T	**L**
3	19
6	21
8	23
10	25
12	31
14	32
15	32
16	32
18	32
20	34
22	34
25	40
28	46
30	50
32	54
38	63
50	80

4). System pressure

DK-LOK fitting pressure ratings are governed by the connective tubing pressure rating. To determine allowable working pressure at elevated temperature, multiply the working pressure at ambient temperature shown in table 4 and 5 by the factor shown in table 2.

Example:
SS316 seamless tubing 1/2 in. O.D. x 0.065 in.WT at 700 F. 4700 psig x 0.82 = 3854 psig.
Therefore 3854 psig is the maximum allowable working pressure at 700 °F for SS316 seamless 1/2 in. O.D. x 0.065 in. wall thickness tubing.

Table 2. Temperature De-rating Factors

Temperature		Stainless steel ASTM A269	
°F	°C	SS304	SS316
100	38	1	1
200	93	1	1
300	149	1	1
400	204	0.94	0.97
500	260	0.88	0.9
600	316	0.82	0.85
700	371	0.8	0.82
800	427	0.76	0.8
900	482	0.73	0.78
1000	538	0.69	0.77
1200	649	0.3	0.37

Table 3. Elastomer seal working temperature

Elastomer Seals	Working Temperature
NBR	-40 to 110C (-40 to 230˚F)
FKM	-20 to 200℃(-4 to 392˚F)
FFKM (Kalrez®)	-30 to 275℃(-22 to 527˚F)

When Elastomer seal is used in the system, care must be taken for allowable working temperature. See Table 3.

Kalrez®: TM Dupont

5). Welded Tubing Working Pressure

As per ASME B31.3 Code for weld tubing working pressure, de-rating factors below must be applied.
For double butt weld tubing multiply by 0.85 and for single butt weld tubing multiply by 0.80.

Example:
SS316 single butt weld tubing 1/2 in. O.D. x 0.065 in. 4700 psig x 0.80 = 3760 psig at -20 to 100˚F (-28 to 37℃).

6). Cryogenic Service

SS316 DK-LOK fittings provide highly reliable performance from cryogenic to high temperature.
SS316 DK-LOK fitting and tubing temperature Rating: -425 to 1200˚F (-253 to 649 °C)
Cryogenic temperature are considered temperatures below -100˚F (-73 °C)

Table 4. Tubing Material Grade and Chemical Requirements

		ASTM Standards			
Material Grade	**ASTM**	**A269**		**A213 (a) / A249**	
	UNS	S31600	S31603	S31600	S31603
	Grade	TP316	TP316L	TP316	TP316L
Chemical %	Chromium	16.0 to 18.0			
	Nickel	10.0 to 14.0		11.0 to 14.0	10.0 to 15.0
	Molybdenum	2.00 to 3.00			
	Manganese	2.00 max			
	Silicon	1.00		0.75 max	0.75 max **(b)**
	Carbon	0.08 max	0.035 max **(c)**	0.08 max	0.035 max **(c)**
	Phosphorus	0.045 max		0.040 max	
	Sulfur	0.030 max			

(a) Nominal wall thickness, not minimum wall thickness.

(b) For seamless TP316L tube, the silicon maximum shall be 1.00%.

(c) For smaller diameter or thin walls, or both, where many drawing passes are required, a carbon maximum of 0.040 % is necessary in grade TP316L. This is applicable tubing size less than 1/2 in. OD and less than 0.049 in. (1.2 mm) in WT.

Stainless Steel Tubing

Fully annealed austenitic Type 304 or 316 seamless tubing ASTM A269 or A213, or equivalent. Tubing to be free from scratches, draw mark, dirt, durst and flat spots. Suitable for bending and flaring.

Table 5. Seamless Stainless Steel Fractional Tubing
Recommended hardness: 80 HRB (180 HV) or less.

Tube OD in.	**Tube Wall Thickness,** in.														
	0.012	0.014	0.016	0.020	0.028	0.035	0.049	0.065	0.083	0.095	0.109	0.120	0.134	0.156	0.188
1/16	6800	8100	9400	12000											
1/8					8500	10900									
3/16					5400	7000	10200								
1/4					4000	5100	7500	10200			Working Pressure in PSIG				
5/16						4000	5800	8000							
3/8						3300	4800	6500	8600						
1/2						2400	3500	4700	6200						
5/8							2900	4000	5200	6000					
3/4							2400	3300	4200	4900	5800	6400			
7/8							2000	2800	3600	4200	4800	5400	6100		
1								2400	3100	3600	4200	4700	5300	6200	
1 1/4									2400	2800	3300	3600	4100	4900	
1 1/2										2300	2700	3000	3400	4000	4900
2											2000	2200	2500	2900	3600

Table 6. Seamless Stainless Steel Metric Tubing
Recommended hardness: 80 HRB (180 HV) or less.

Tube OD	Tube Wall Thickness, mm												
mm	0.8	1	1.2	1.5	1.8	2	2.2	2.5	2.8	3	3.5	4	4.5
3	710												
6	330	420	520	670									
8		310	380	490							Working Pressure in Bar		
10		240	300	380									
12		200	240	310	380	430							
14		180	220	280	340	390	430						
15		170	200	260	320	360	400						
16			190	240	300	330	370						
18			170	210	260	290	320	370					
20			150	190	230	260	290	330	380				
22			130	170	210	230	260	300	340				
25					180	200	230	260	300	320			
28						180	200	230	260	280	330		
30						170	190	210	240	260	310		
32						160	170	200	230	240	290	330	
38							140	170	190	200	240	280	310

- ASTM A269 tubing allowable working pressure is calculated at -20 to 100˚F (-28 to 37℃) using allowable stress value of 20,000 psi according to ASME B31.3 Code.
- Pressure calculations are based on **maximum O.D. and minimum wall thickness** and no allowance is made for corrosion and erosion. i.e., ASTM A269 1/2 in. OD x 0.035 in.: OD tolerance ± 0.005 in., WT tolerance ± 15%. Calculations are based on 0.505 in.OD x 0.0298 in. WT.
- Safety Factor is 3.75 to 1, considering ultimate tensile strength of 75,000 psi.
- For working pressure according to ASME B31.1, multiply the ASME 31.3 rating by 0.94.

Ordering infromation

DK-LOK A269/A213 seamless bright annealed stainless steel grade TP316/316L tubing.

Tube OD in.	Nominal Wall Thickness in.	Ordering Number
1/8	0.028	TL2-028-x-S
	0.035	TL2-035-x-S
1/4	0.028	TL4-028-x-S
	0.035	TL4-035-x-S
	0.049	TL4-049-x-S
	0.065	TL4-065-x-S
3/8	0.035	TL6-035-x-S
	0.049	TL6-049-x-S
	0.065	TL6-065-x-S
	0.083	TL6-083-x-S
1/2	0.035	TL8-035-x-S
	0.049	TL8-049-x-S
	0.065	TL8-065-x-S
	0.083	TL8-083-x-S
3/4	0.065	TL12-065-x-S
	0.083	TL12-083-x-S
	0.095	TL12-095-x-S
	0.109	TL12-109-x-S
	0.120	TL12-120-x-S
1	0.083	TL16-083-x-S
	0.095	TL16-095-x-S
	0.109	TL16-109-x-S
	0.120	TL16-120-x-S
	0.134	TL16-134-x-S
	0.156	TL16-156-x-S

Tube OD mm	Nominal Wall Thickness mm	Ordering Number
6	1.00	TL6M-1.0-x-S
	1.20	TL6M-1.2-x-S
	1.50	TL6M-1.5-x-S
8	1.00	TL8M-1.0-x-S
	1.20	TL8M-1.2-x-S
	1.50	TL8M-1.5-x-S
10	1.00	TL10M-1.0-x-S
	1.20	TL10M-1.2-x-S
	1.50	TL10M-1.5-x-S
12	1.20	TL12M-1.2-x-S
	1.50	TL12M-1.5-x-S
	1.80	TL12M-1.8-x-S
	2.00	TL12M-2.0-x-S
20	1.80	TL20M-1.8-x-S
	2.00	TL20M-2.0-x-S
	2.20	TL20M-2.2-x-S
	2.50	TL20M-2.5-x-S
	2.80	TL20M-2.8-x-S
25	1.80	TL25M-1.8-x-S
	2.00	TL25M-2.0-x-S
	2.50	TL25M-2.5-x-S
	2.80	TL25M-2.8-x-S
	3.00	TL25M-3.0-x-S

To order tubing in 6 meter length, insert “6M” into the ordering number. Example: TL8-035-**6M**-S
To order tubing in 20 feet length, insert “20” into the ordering number. Example: TL8-035-**20**-S

To order weld tubing remove “L” after T in the ordering number. Example: **T8**-035-6M-S
To order annealed & pickled A269 seamless SS316 tubing, insert “AP” in the ordering number. Example: TL8-083-6M-**AP**-S

Reference Documents

- ASTM A213 — Seamless Ferritic and Austenitic Alloy-Steel Boiler, Superheater, and Heat-Exchanger Tubes
- ASTM A249 — Welded Austenitic Steel Boiler, Superheater, Heat Exchanger, and Condenser Tubes
- ASTM A269 — Seamless and Welded Austenitic Stainless Tubing for General Service.
- ASTM A450 — General Requirements for Carbon, Ferritic Alloy, and Austenitic Alloy Steel Tubes
- ASTM A632 — Seamless and welded Austenitic Stainless Steel Tubing (Small-Diameter) for General Service
- DIN 2391/EN10305 — Precision Seamless Tubes
- DIN 17458/2462 — Seamless Circular Tubes of Austenitic Stainless Steels with Special Quality Requirements

Electric Swaging Unit

DES-1A

DEC.2011 Rev.1

Dk-Lok's Auto Pre-swaging

Setup and Operating Instructions

DK-LOK
Fittings & Valves

826, Naesam-Ri, Juchon-Myeon, Gimhae-City, Gyeongnam Korea 621-841
TEL : (055) 338-0114
FAX : (055) 338-6743
http://www.dklok.com

◈Contents◈

1. Health and Safety information

Safety warnings

Always comply with the following precaution and usage tips to avoid dangerous.

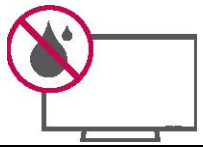
WARNING! Wear proper personal protective gear when operating or working near the swaging unit.

Follow all safety precautions to avoid personal injury or property damage during system operation.

Dk-Lok can't be responsible for damage or injury resulting from unsafe use, lack of maintenance or incorrect product and/or system operation.

Contact your authorized **Dk-Lok** distributor when in doubt as to the safety precaution and operations.

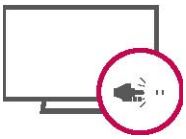
1. Do not use this apparatus near water.



2. Clean only with dry cloth.

3. Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.

4. Unplug this apparatus when unused for long periods of time.



5. Refer all servicing to qualified service personnel, servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has exposed to rain or moisture, dose not operate normally, or has been dropped.

6. Mains plug is the disconnecting device. The plug must remain readily operable.

2. General Information

DES-1A , Dk-Lok'S Auto Hydraulic Pre-swaging Machine, design for use for all Dk-Lok tub fitting range 1/2" – 2"(12mm-38mm), The unit may therefore be used for a variety of different applications.
The standard verison is for 220V supply, a 110V verion is also available on request.
Ferrules, nut and tube being properly pre-assembled, tube end shall rest on die shoulder, tapered face of front ferrule shall contact swaging cone, and nut shall be fixed to swaging jig.
Press the "start" switch, initiating the swaging process. The piston with the swaging cone advances.
Once the set pressure has been reached the swaging process is concluded. The piston with the swaging cone automatically returns to its initial position and the hydraulic pump unit switches off.
Now, pre-swaging is completed.

3. Feathers

- re-swage **Dk-Lok** ferrules onto tubing
- Fractional: 1/2" , 3/4" , 1" , 1-1/4" ,1-1/2" , 2"
- Metric: 12mm , 20mm , 28mm , 32mm , 38mm
- Standard 220V & Optional 110V
- Assure consistent makeup free from the manual pull-up torque
- Reduce installation time
- Easy to use by one operation
- Different size can be pre-swaged just by replacing Die & Jig
- Portable in sturdy plastic case

4. Standard Components & Accessories


Swaging unit


Fixture


Jig

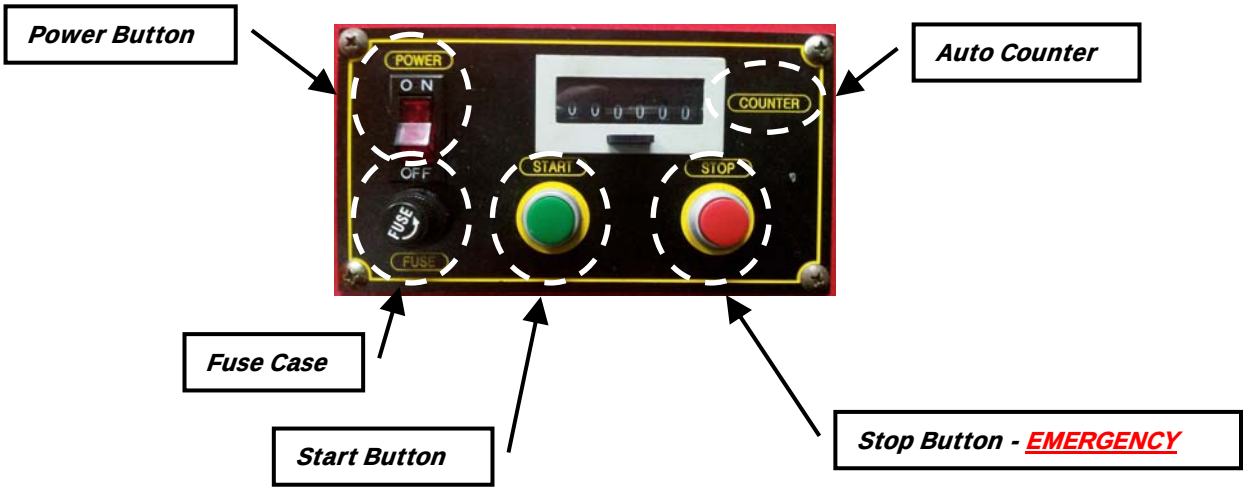

Die


Die fixing bolt


Allen key


Wrench

5. Front Box Lay Out



6. Technical data

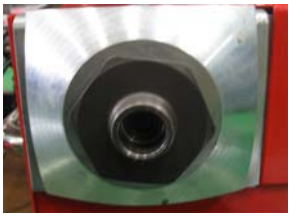
The standard version is for 220V supply and a 110V version is also available on request.

Hydraulic pump	**0.35 – 2.01 kW /min**
Operation pressure	**0 ~ 600 bar**
Connection	**220V/110V/1phase 50-60 Hz/2.5A**
Dimension	**400 * 400 * 230mm**
Weight	**20kg**
Fuse	

7. Setup Instructions

1. Install swaging jig of desired size firmly to the pre-installed fixture using wrench.

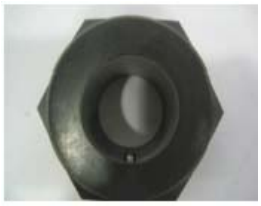
Fixture



Swaging jig

2. Insert swaging die into swaging jig. Jig key should fit in swaging slot.

Swaging die



Jig key

Swaging die slot

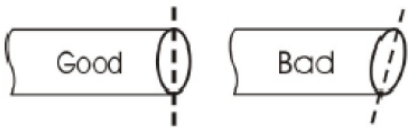
3. Position bolt in the center of swaging die and tighten it 6 mm Allen key to fix swaging die onto piston

8. Prepare Tubing

1. Check if tube O.D , wall thickness , circularity, hardness and their tolerance are within specifications for your application. Also check if surface is free from scratches and dirt.

2. Make a square cut.

3. Remove burs from inner and outer edges of tube.



9. Operating Instructions

1. Set up the swaging pressure as tabulated in **Table 1** for each tube size.

2. Assemble front ferrule, back ferrule and nut onto tube.

3. Insert pre-assembled nut, ferrules and tube into swaging jig and hand-tighten the nut.

4. Switch on the power
5. Keeping tube end in contact with die shoulder, press “start” button until pre-swaging completed you may push the red “stop” button in case of emergency.

6. Unscrew nut from swaging jig. Remove pre-swaging tube by gently rocking it up and down if necessary.

7. Insert the pre-swaged tube into a fitting body and make sure the ferrule set seats in the fitting . Tighten the nut on the fitting on the fitting body until finger-tightened.

8. Tighten the nut with wrench further to the turn show in **Table 2** for each tube size.
9. For continuous operation, return to step 2.
10. Turn the pressure setting handle to zero.
11. Turn off the power

10. Gauging Instructions

Position Dk-Lok no-go gap gauge in the gap between the nut and body hex.

When the gauge does not enter the gap, the fitting is sufficiently tightened.
When the gauge enter the gap, additional tightening is required.

11. Precaution

1. The pressure must be set as per the tabulation adhered on the swaging unit.
   Incorrect pressure setting lead to faulty swaging.
2. Long tube length must be supported during the swaging process
3. Dirt, chip and others may interfere with swaging process.
   The swaging dies should be thoroughly cleaned after each use.

Table 1

Fitting size			**Swaging Pressure(Bar)**			
Fraction	Metric	Thickness	Fraction		Metric	
		Unit: mm	stainless	carbon	stainless	carbon
1/2”	12mm	2	80		80	
3/4”	20mm	2	120		120	
1”	25mm	2	150		150	
1-1/4”	32mm	3	140		140	
1-1/2”	38mm	3	200		200	
2“	50mm	3	220		220	

Table 2

Fitting size		**Turn**
Fraction	Metric	
1/2”	12mm	1/2
3/4”	20mm	1/2
1”	25mm	1/2
1-1/4”	32mm	5/8
1-1/2”	38mm	5/8
2“	50mm	3/4

12. Trouble-Shooting

No.	Problems	Solutions
1	The Dk-Lok swaging machine will not start	Make sure to press the Start/Stop button
2	The machine is not receiving power.	Check the power cord connection. Check the power switch and the power source.
3	When the swaging is not screwed into the fixture smoothly.	It may occur because of the jig key Interfering with the jig thread. You need to screw in the jig key so that it dose not interfere.
4	When tubing is not well swaged.	You need to change the swaging pressure up and down from The Values show in Table 1. In case ferrules grip too strongly, you may set the pressure down. In case ferrule does not grip enough, you may increase the pressure. If you still have the problems unsolved, you may ask to authorized distributor or **Dk-Lok** head office in South Korea.

13. Storage Instruction

1. Unscrew the die fixing bolt and remove the jig and die with wrench.
2. Clean all components and swaging unit body.
3. Wind the power cord around the red holder on the back.
4. Keep all of components and accessories in the supplied sturdy plastic case.

14. “Swaging Unit” Internal Components List

No.	Name	Manufacturing company	Specification	Q’ty	Remark
1	Electro Hydraulic Pump	NITTOH ZOHKI	-	1	UP-35RH
2	Timing Relay	KUN HUNG ELECTRIC	ISO 9001	2	KTM-3M
3	General Purpose Relay	HAN KUN RELAY	CE	2	
4	Toggle switch	WOO JIN ELECTRIC	-	1	WJT6210
5	Toggle switch	WOO JIN ELECTRIC	-	1	WJT6203
6	Pressure Gauge	-	-	1	
7	Magnetic auto counter	HAN SEUNG AUTOMATIC	-	1	
8	Transformer	-	-	1	

DK-LOK

Fittings & Valves

Hydraulic Swaging Unit DHS-2A
Setup and Operating Instruction

Manual # DHS-2A Oct. 2003

DK Tech Corporation
www.dklok.com

DK-LOK

Fittings & Valves

Hydraulic Swaging Unit

Setup and Operating Instructions

Standard Steel Carrying Case
Ordering No. : - SCC
Example: DHS-2A-SCC

Sturdy Plastic Carrying Case
Ordering No. : - PCC
Example: DHS-2A-PCC

SAFETY ISSUES

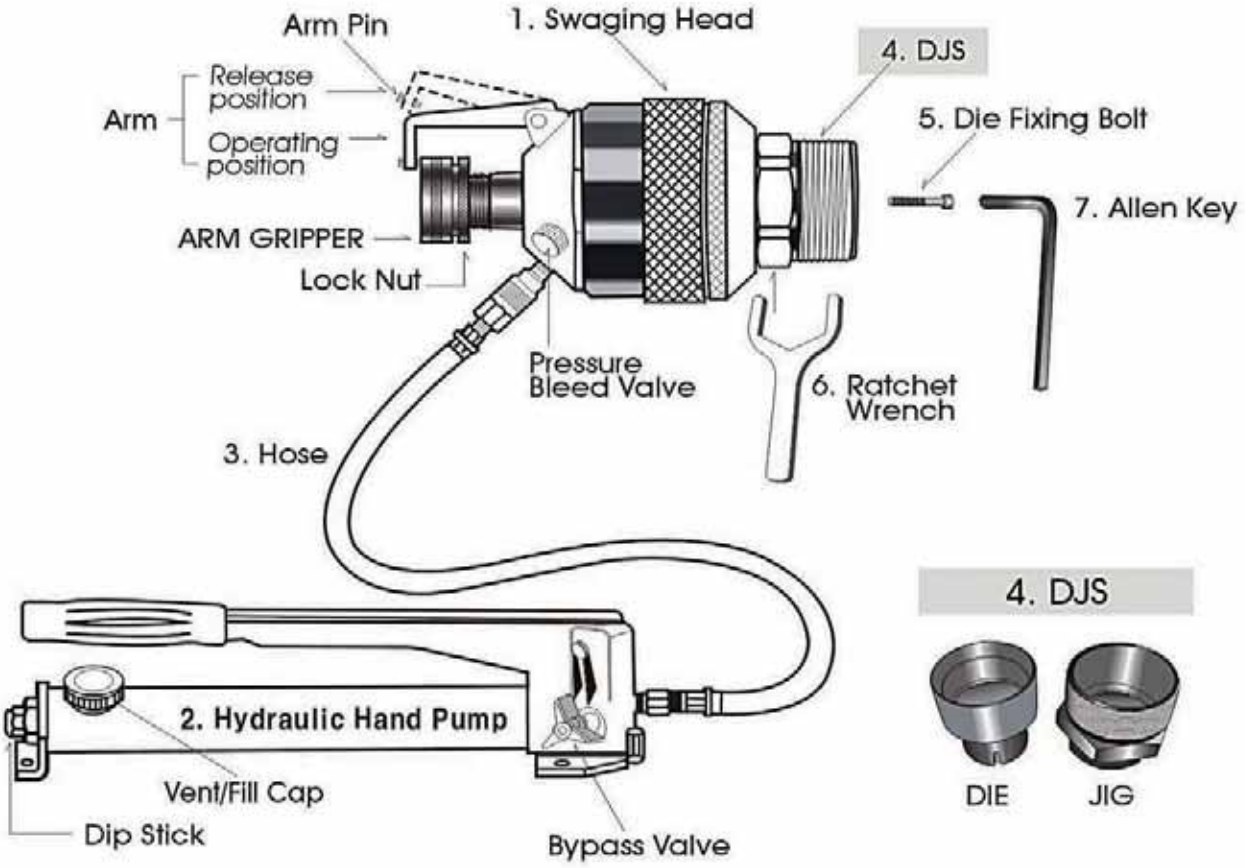
You are duly requested to read and understand these Instructions as well as the ENERPAC Instruction Sheet of the Hydraulic Hand Pump before using the DHS-2A. Follow all safety precautions to avoid personal injury or property damage during system operation. Dk Tech cannot be responsible for damage or injury resulting from unsafe product use, lack of maintenance or incorrect product and/or system operation. Contact your authorized Dk-Lok distributor when in doubt as to the safety precautions and operations.

WARNING! Wear proper personal protective gear when operating or working near the DHS-2A unit.

Features

- Pre-Swages Dk-Lok Ferrules onto Tubing;
  Fractional: 1/2, 5/8, 3/4, 1, 1-1/4, 1-1/2, and 2 in.
  Metric: 12, 14, 15, 16, 18, 20, 22, 25, 28, 30, 32, 38 and 50 mm
- Assures consistent make-up with only about 30% of the manual pull-up torque
- Reduces installation time
- Easy to use by one operator
- Different sizes can be pre-swaged just by replacing Die & Jig
- Portable with wheels on sturdy plastic carrying case

DHS-2A Standard Components



DHS-2A Standard Components and Accessories

1	Swaging Head
2	Hydraulic Hand Pump
3	Hose
4	DJS consisting of DIE and JIG
5	Die Fixing Bolt
6	Ratchet Wrench
7	Allen Key
8	DHS-2A Instructions
9	Enerpac Pump Instruction Sheet

Setup Instructions

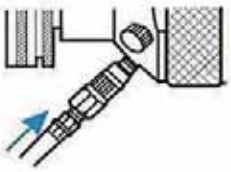
1. Check Hydraulic Oil Level Regularly

Please refer to "7.1 Adding Oil to the Pump"of the Enerpac Pump Instruction sheet enclosed herewith.

2. Unit setup

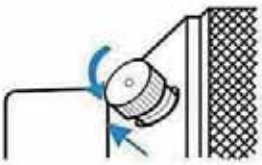
1) Open Bypass Valve

2) Connect Hand Pump to the Swaging Head



3) Place Swaging Head above Hand Pump

4) Open the Pressure Bleed Valve one turn to bleed air from the Swaging Head



5) Close Bypass Valve

6) Pump Handle until Pump Oil is Free of Air Bubbles. Removing Air from the Hydraulic System will Help the Cylinder Advance and Retract Smoothly.

7) Close Pressure Bleed Valve by Finger Tight

3. Swaging Head Setup

1) Select DJS

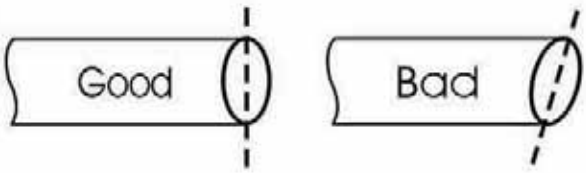
2) Hand tighten DJS into the Swaging Head and Tighten Completely with a Ratchet Wrench

3) Lock out the DJS screwing die-fixing bolt onto the Swaging Head with the Allen Key

4) Turn Arm Gripper until the Arm Pin is Held Tight and Lock up Arm Gripper with Lock Nut

4. Tube Preparation

1) Cut Tubing Squarely:



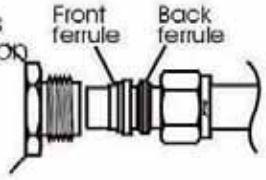
2) Deburr ID and OD

Operating Instructions

5. Operation

1) Place Swaging Head Arm in an Upward Position

2) Put the Dk-Lok Nut and Ferrules on the Tubing in right Orientation and Sequence.

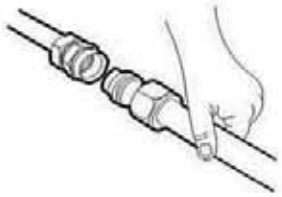


3) Hand-Tighten Nut onto the DJS making sure that the Tubing is bottomed out.

4) Pump slowly keeping the Tubing Bottomed until the Arm releases

5) Open the Bypass Valve by Pressing the Arm Gently Downwards to its Re-Operating Position, and unthread the Nut and Remove the Pre-Swaged Assembly

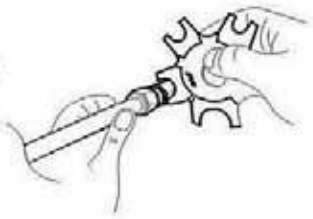
6) Hand tighten the Pre-Swaged Assembly into the Fitting Body. While holding the body steady with a back-up wrench, tighten the nut until a sharp rise in torque is felt and then snug slightly.



Gauging Instructions

Apply Dk-Lok no-go Gap Gauge (DIG-) between the Nut and Body Hex.

- When the DIG does not enter the gap, the fitting is sufficiently tightened.
- When the DIG enters the gap, the fitting is required to tighten additionally.



6. Re-operation

1) Close Bypass Valve

2) Maintain Swaging Head Arm in an Upward Position

3) Follow the instructions **5. Operation** 2) through 6)

Trouble Shooting

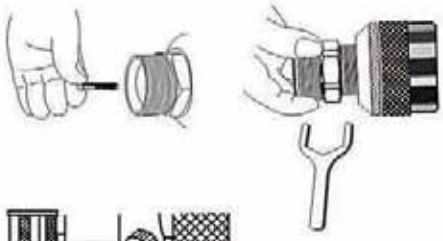
1. If Tubing is difficult to remove from DHS-2A after Pre-Swaging, Gently Rock the Tubing Back and Forth to remove it
2. If the unit Fails to Swage sufficiently, check the Oil level first, then follow the instructions **3. Swaging Head setup** 2) through 4)
3. If oil is leaking from the swaging head, return the unit to your authorized Dk-Lok distributor

STORAGE INSTRUCTION

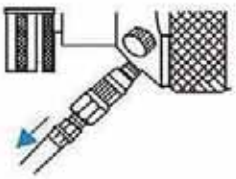
7. Dismantle Unit and Store

1) Open Bypass Valve

2) Unscrew the Die fixing bolt, and remove the DJS with the Ratchet Wrench



3) Disconnect Pump from the Swaging Head



4) Plug up the Female Quick Coupler on the Swaging Head

5) Clean all Components & Accessories

6) Keep all of the components & accessories in the supplied DHS-2A Case

7) Lay the case horizontally down whenever possible

Recommended Tubing Wall Thickness for use with DHS-2A unit and DJS Ordering Number

For Dk-Lok OD (in.)	S316 Seamless Tubing Wall Thickness		DJS Ordering Number
	Min. (in.)	Max. (in.)	
1/2	0.049	0.083	DJS-8
5/8	0.065	0.095	DJS-10
3/4	0.065	0.109	DJS-12
1	0.083	0.120	DJS-16
1-1/4	0.083	0.156	DJS-20
1-1/2	0.095	0.188	DJS-24
2	0.109	0.188	DJS-32

For Dk-Lok OD (mm)	S316 Seamless Tubing Wall Thickness		DJS Ordering Number
	Min. (mm)	Max.(mm)	
12	1.2	2.0	DJS-12M
14	1.5	2.2	DJS-14M
15	1.5	2.2	DJS-15M
16	1.5	2.2	DJS-16M
18	1.5	2.5	DJS-18M
20	1.8	2.8	DJS-20M
22	1.8	2.8	DJS-22M
25	2.2	3.0	DJS-25M
28	2.5	3.5	DJS-28M
30	2.5	3.5	DJS-30M
32	2.8	4.0	DJS-32M
38	3.0	4.5	DJS-38M

Safe Product Selection

When selecting a product, the total system design must be considered to ensure safe performance. Product function, material compatibility, adequate ratings, proper installation, operation, and maintenance are the sole responsibility of the system designer and user.

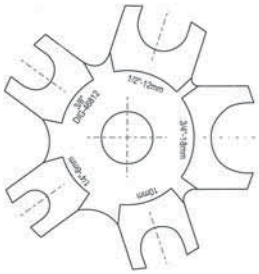
Product Warranty

Dk Tech hereby warrants to the purchaser of this Product that the components of the product shall be free from defects in material and workmanship for twelve months from the date of purchase. Manufacturer shall be liable only if the product is used as specified in the current catalog and written instructions.

The purchaser's remedies shall be limited to replacement and installation of any parts that fail through a defect in material or workmanship.

MANUFACTURER SPECIFICALLY DISAVOWS ANY OTHER REPRESENTATION, EXPRESS OR IMPLIED, WARRANTY, OR LIABILITY RELATING TO THE CONDITION PURCHASE, OR ANY THIRD PARTY, FOR ANY DIRECT OR INDIRECT CONSEQUENTIAL OR INCIDENTAL DAMAGES.

Gap Gauge
DIG

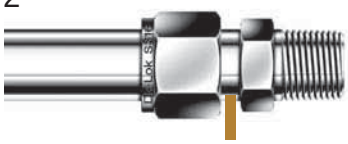


This no-go gap gauge is useful tool to inspect the Dk-Lok initially pulled-up.

Operation Instructions

1

2



On initial assembly, apply Dk-Lok no-go gap inspection gauge to make sure that the make-up distance is sufficiently pulled-up.

Refer to Fig 1.

1. The gap gauge does not fit the gap between the nut and the body hex. This ensures that the fitting is sufficiently tightened on initial assembly.

Refer to Fig 2.

2. The gap gauge fits the gap between the nut and the body hex. The fitting requires an additional tightening.

Part No.	Fitting Size	
	in.	mm
DIG-468	This gauge works on eight sizes	
	1/4, 3/8, 1/2, and 3/4.	6, 10, 12, and 18
DIG-5	5/16	-
DIG-12	3/4	-
DIG-16	1	25

Tube Depth Marking Tool
DTM

Marking on tubing prior to make-up with Dk-Lok.

Operation Instruction

1. Insert tubing into DTM until it is bottomed on tool.
2. Mark the tube at the top of the DTM with a pen.
3. Remove the tube from the DTM and insert into Dk-Lok fitting until it is bottomed on the shoulder of the fitting body.
4. If the marking can be seen above the fitting nut, it indicates the tube not fully bottomed inside the fitting.

Fractional

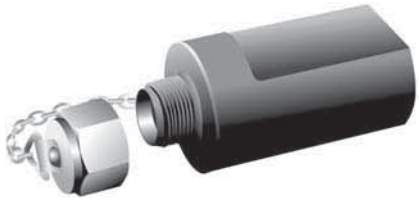
Part No.	Tube O.D. (in.)
DTM-4-C	1/4
DTM-6-C	3/8
DTM-8-C	1/2
DTM-10-C	5/8
DTM-12-C	3/4
DTM-16-C	1

metric

Part No.	Tube O.D. (mm)
DTM-6M-C	6
DTM-8M-C	8
DTM-10M-C	10
DTM-12M-C	12
DTM-16M-C	16
DTM-25M-C	25

Preswaging Tool

DPS



Fractional Dk-Lok

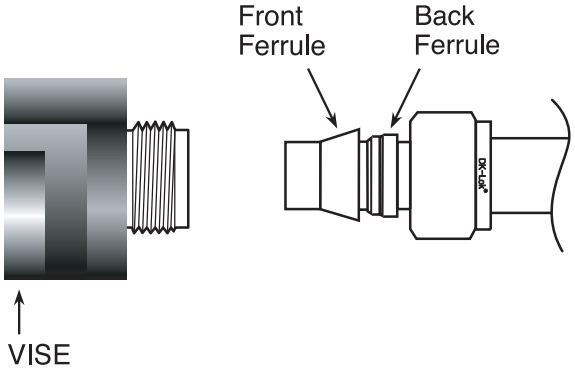
Part No.	Tube O.D. (in.)
DPS-4-C	1/4
DPS-5-C	5/16
DPS-6-C	3/8
DPS-8-C	5/8
DPS-12-C	3/4

metric Dk-Lok

Part No.	Tube O.D. (mm)
DPS-3M-C	3
DPS-6M-C	6
DPS-8M-C	8
DPS-10M-C	10
DPS-12M-C	12
DPS-16M-C	16
DPS-18M-C	18
DPS-20M-C	20

Operation Instructions

Pre-swaging Tool (DPS)



Assembly on Fitting

1. Insert the ferrule pre-swaged tubing into the fitting body until the front ferrule seats.
2. Hand-tighten the nut.
3. Wrench-tighten the nut to the previously pulled-up position; at this point, a sharp rise in torque is felt.
4. Tighten slightly with a wrench.

Operation on Pre-Swaging Tool

1. Clamp the DPS on the VISE steadily.
2. Install the Dk-Lok nut, ferrules onto the tubing.
3. Insert the loose ferrules and loose nut installed tubing end into the DPS until it is bottomed on the shoulder of the DPS.
4. Finger-tighten the nut.
5. Scribe the nut at the 6 o'clock position.
6. Wrench-tighten the nut 1 1/4 turns to the 9 o'clock position.
   - Tighten the nut 3/4 turn to the 3 o'clock position for 1/16, 1/8, and 3/16 in.; 2, 3, and 4 mm tube fittings.
7. Un-thread the nut.
8. Remove the tubing with pre-swaged ferrules from the DPS.
   - In case the tubing is difficult to remove from DPS, gently rock the tubing back and forth. Do not rotate the tubing.