IDK-LOK

Fittings & Valves

DKF Series Medium Pressure Tube Fittings

Index

Technical Information

DKF Series Medium Pressure Tube Fittings

DKF Series Medium Pressure Tube Fittings are made for applications requiring higher flow rate performance. High tensile strength cold worked Designed for up to 15,000 psi using 316 stainless steel material as standard. We also offer larger ID tubes for maximum flow performance.

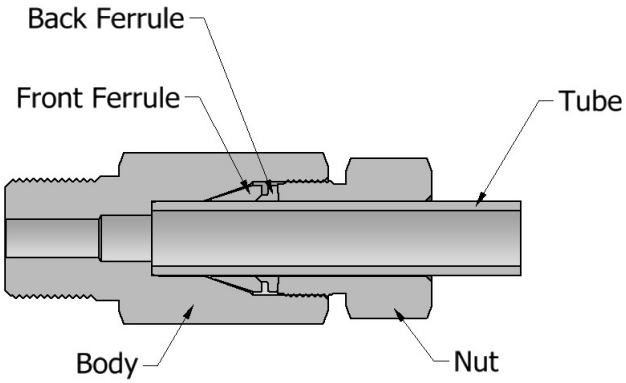
Construction of DKF Series Tube Fittings

DKF Series Medium Pressure Tube Fitting consists of body, front ferrule, back ferrule and nut. The features include.

- Applied to medium pressure gas piping and equipment industry, applied to hydrogen lines (15k)
- Excellent product range up to 3/4 in OD.
- Additional engineering on sealing integrity and swaging action.
- Heat-Code Traceability.
- No torque transferring to connective tubing during installation.
- **1-1/2 turns** past finger tight.

Advanced Features

Every DKF Series Fitting has the features shown below:



1. Front ferrule with corrosion-resistant heat treatment Forms a seal between the tube, body, and ferrule. also Provides mechanical holding force to the tube.
2. Back ferrule with corrosion-resistant heat treatment Provides strong mechanical fixation to the tube.
3. The thread area is longer, improving resistance to pressure and Load into ferrule.
4. Molybdenum disulfide coated inversion nut helps prevent. galling, provides easier assembly
5. Long tube support area improves resistance to vibration and Line load.

Table 1. Material Standard

DKF Series Medium Pressure 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.

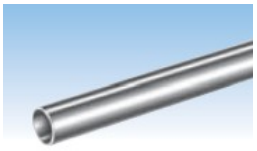
Material	Bar stock
Stainless Steel 316	ASTM A276
	ASTM A479
	ASTM SA479

DKF Series Port Dimension

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

Tubing

For safe, reliable and leak-free DKF Series Medium Pressure Tube fitting system, tubing should be considered as one of fitting components.



- DKF Tubing is indicated with "DKF" and is designed to provide optimal performance for DKF fittings. DKF tubing nominal OD.
- As tube size increases, larger wrenches are required for assembly.
- Tube assemblies of DKF series fittings are not reusable.
- Tubes are not bendable and allow for higher pressure drops with fewer connections.
- Piping requires skilled workers for threading.
- (±.003") 316 seamless stainless steel, cold drawn – 1/8 hard (cold drawn) tubing. Tensile strength is approximately 40% higher than Annealing tube.

Tubing Selection

DK-Lok's DKF fittings are engineered and Manufactured to provide consistently high levels of reliability. Annealed and medium pressure cold drawn high quality tubing – 1/8 hard material. Using a tube other than the intended tube may result in product leakage and tube dislodgement.
DK-Lok's DKF fittings are designed to operate over a wide range. Various "medium pressure" applications available up to 15,000 psi.

Tubing Handling

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

- 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.

Table 2. **Stainless Steel Tubing**

Allowable operating pressures are specified at an S value of 35,000 psi (241 MPa) at -20 to 100°F (-28 to 37°C) for ASME B31.3, If using tubing at temperatures above 37°C (100°F), see Temperature Rise Factor. Coned or threaded tubing is 1/8-hard 316 seamless stainless steel tubing with a nominal outside diameter to aid in coning and threading operations when the tubing is used with fittings.

Tube OD in.	Nominal OD in. (mm)	Nominal Wall Thickness in. (mm)	Pressure Rating ASME B31.3 Psig (bar)
1/4"	0.250 (6.35)	0.070 (1.78)	15,000 (1,034)
3/8"	0.375 (9.52)	0.086 (2.18)	15,000 (1,034)
1/2"	0.500 (12.70)	0.109 (2.77)	15,000 (1,034)
9/16"	0.562 (14.29)	0.125 (3.18)	15,000 (1,034)
3/4"	0.750 (19.05)	0.156 (3.96)	15,000 (1,034)

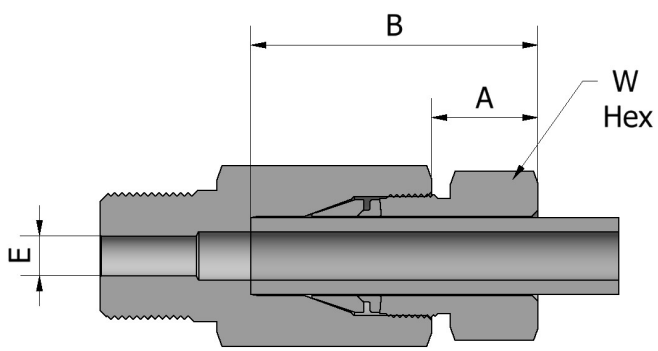
Recommended ordering information is cold drawn 1/8 hard high quality 316 stainless steel tubing. OD tolerance is ± 0.005 inches/± 0.127 mm and wall thickness tolerance is ± 10%. Minimum tensile strength of 105,000 psi (723.5 MPa) and minimum yield strength of 75,000 psi (516.8 MPa), minimum elongation of 20%, and hardness not to exceed 30 HRC. Suitable for bending and flaring with no scratches or damage to the tube.

Table 3. **Tube Recommended Minimum Bend Radius**

Tube OD in.	Nominal OD in. (mm)	Nominal Wall Thickness in. (mm)	Recommended Minimum Bend Radius in. (mm)
1/4"	0.250 (6.35)	0.070 (1.78)	1.25 (31.8)
3/8"	0.375 (9.52)	0.086 (2.18)	1.75 (44.5)
1/2"	0.500 (12.70)	0.109 (2.77)	1.40 (36.0)
9/16"	0.562 (14.29)	0.125 (3.18)	3.50 (88.9)
3/4"	0.750 (19.05)	0.156 (3.96)	4.63 (117.6)

Table 4. **Tube End Dimensional Data**

Dimension A and B are for hand tightened positon. Dimensions in inches are for reference only. However, this may change.



Inches						
Size	Tube O.D	Straight Threads	A	B	E	W Hex
4	1/4	1/2 - 20	0.51	1.36	3.3	9/16
6	3/8	5/8 - 20	0.62	1.58	6.35	11/16
8	1/2	13/16 – 20	0.68	1.84	7.9	15/16
9	9/16	7/8 – 20	0.75	1.92	9.65	1
12	3/4	1-1/8 - 18	0.89	2.27	13.2	1-1/4

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.

Application

The application includes where thermal shock, extreme impulse such ad power generation, equipment, where leak-tight service must be in place such as hazardous gas and offshore industries.

Ordering Information

Suffix the material designator to the park number

Example: DKFU-8-S

→ DKF(Model Name) + U(Union)
+ 8(1/2" Tube) + S(Stainless steel)

Material Designator

Material	Designator
Stainless Steel 316	S

Dedication to Quality

Our resources and vast product line are available through our worldwide distribution network. For more information regarding our products and services, please contact your authorized DK-Lok Instrumentation Distributor.

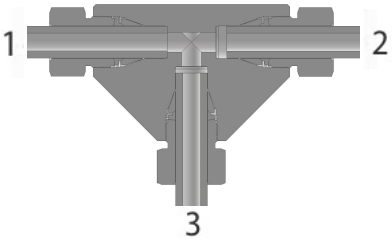
Table 5. Temperature Derating Factors

Temperature		Derating Factors
°F	°C	Cold-Drawn 1/8 Hard 316 SS Tubing
150	66	1
200	93	1
250	121	0.98
300	149	0.97
400	204	0.96
500	260	0.96
600	316	0.96
700	371	0.93
800	427	0.92
900	482	0.88
1000	538	0.84

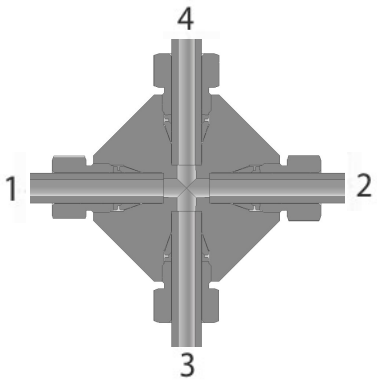
Elevated temperature factor = suggested allowable working pressure at elevated temperature / suggested allowable working pressure at room temperature.

EX) The elevated temperature factor for 700°F (371°C) is 0.93:
15,000 psig (1034 bar) × 0.93 = 13,950 psig (962 bar)

Table 6. Tee and Cross Fitting



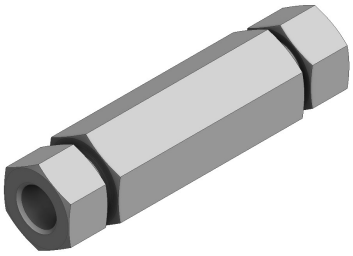
Tee Fitting part number is Described by first the run (1 and 2) and next the Branch (3).

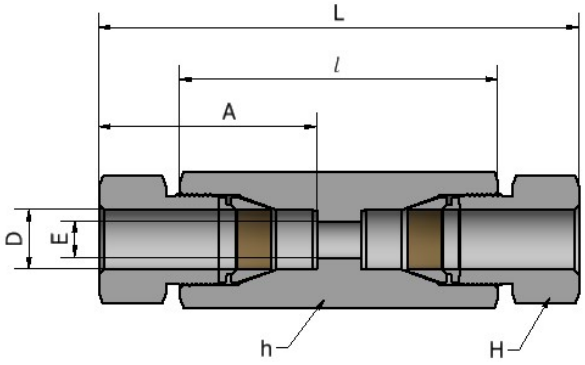


Cross fitting part number is Described by first the run (1 and 2) and next the Branch (3 and 4)

Union

DKFU



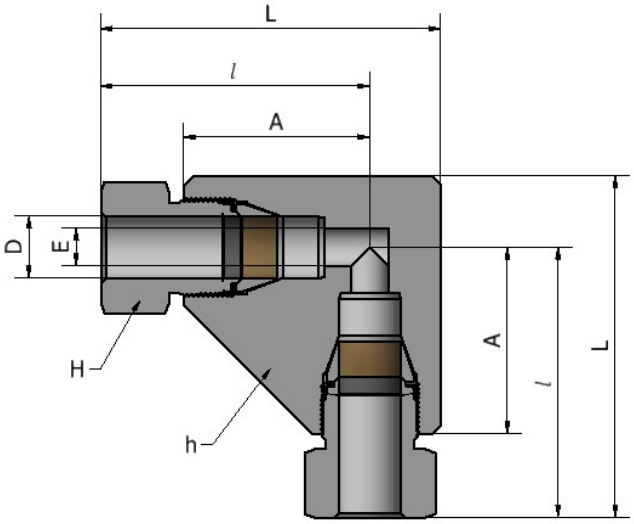


Fractional

Part No.	Tube O.D D		E Min.	Width across flat				l	L
				H		h			
	In.	mm		In.	mm	In.	mm		
DKFU-4	1/4	6.35	3.3	9/16	14.28	5/8	15.87	47.8	73.78
DKFU-6	3/8	9.53	6.35	11/16	17.46	3/4	19.05	55.6	87.2
DKFU-8	1/2	12.7	7.9	15/16	23.81	1	25.4	68.45	103.15
DKFU-9	9/16	14.29	9.65	1	25.4	1-1/16	26.98	68.5	106.65
DKFU-12	3/4	19.05	13.2	1-1/4	31.75	1-3/8	34.92	84.2	129.29

Union Elbow

DKFL

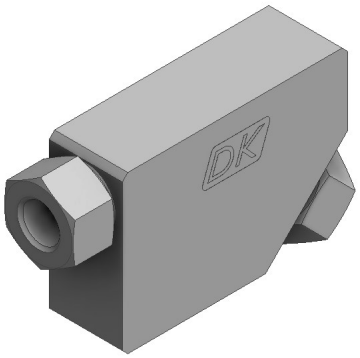


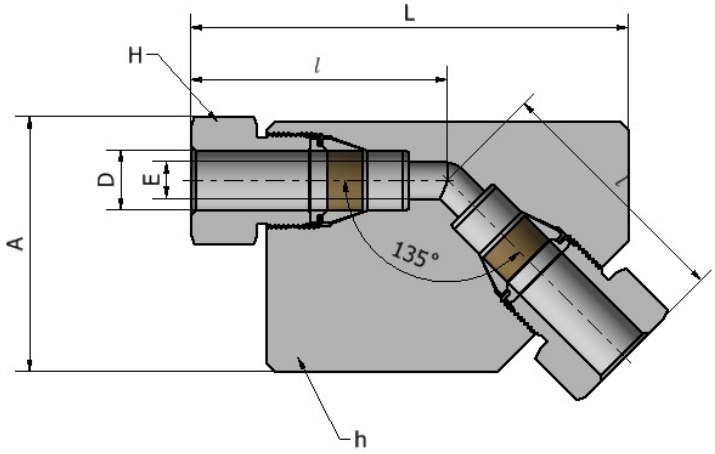
Fractional

Part No.	Tube O.D D		E Min.	Width across flat				A	l	L
				H		h				
	In.	mm		In.	mm	In.	mm			
DKFL-4	1/4	6.35	3.3	9/16	14.28	5/8	15.87	26.16	38.86	47.75
DKFL-6	3/8	9.53	6.35	11/16	17.46	3/4	19.05	31.5	47.24	57.15
DKFL-8	1/2	12.7	7.9	15/16	23.81	1	25.4	39.12	56.4	71.37
DKFL-9	9/16	14.29	9.65	1	25.4	1-1/16	26.98	39.12	58.2	73.15
DKFL-12	3/4	19.05	13.2	1-1/4	31.75	1-3/8	34.92	49.3	71.63	89.15

45° Union Elbow

DKFLB



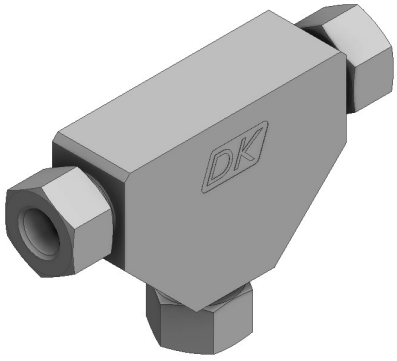


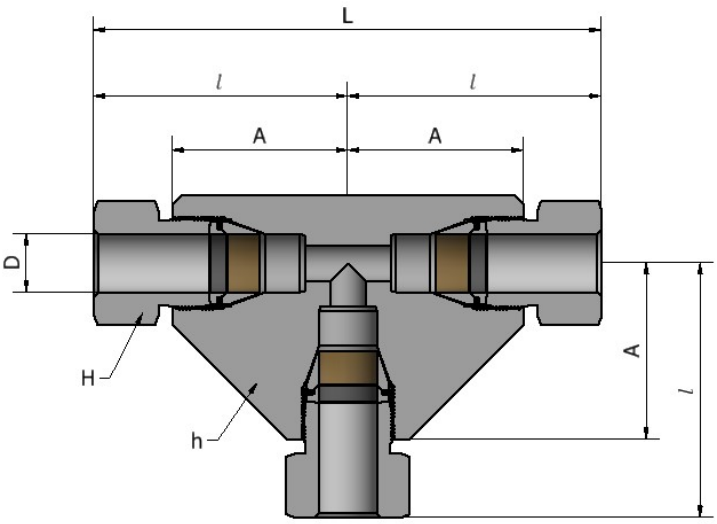
Fractional

Part No.	Tube O.D D		E Min.	Width across flat				A	l	L
				H		h				
	In.	mm		In.	mm	In.	mm			
DKFLB-4	1/4	6.35	3.3	9/16	14.28	5/8	15.87	35.05	38.1	65.02
DKFLB-6	3/8	9.53	6.35	11/16	17.46	3/4	19.05	41.4	45.97	78.74
DKFLB-8	1/2	12.7	7.9	15/16	23.81	1	25.4	54.1	55.37	95.5
DKFLB-9	9/16	14.29	9.65	1	25.4	1-1/16	26.98	54.1	56.9	97.03
DKFLB-12	3/4	19.05	13.2	1-1/4	31.75	1-3/8	34.92	66.8	71.63	120.9

Union Tee

DKFT



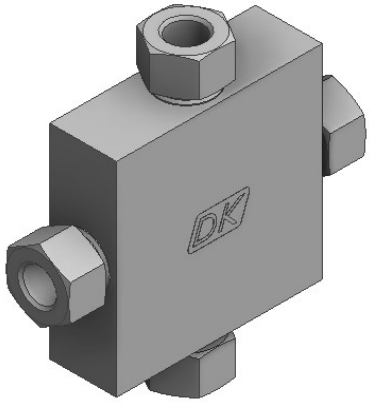


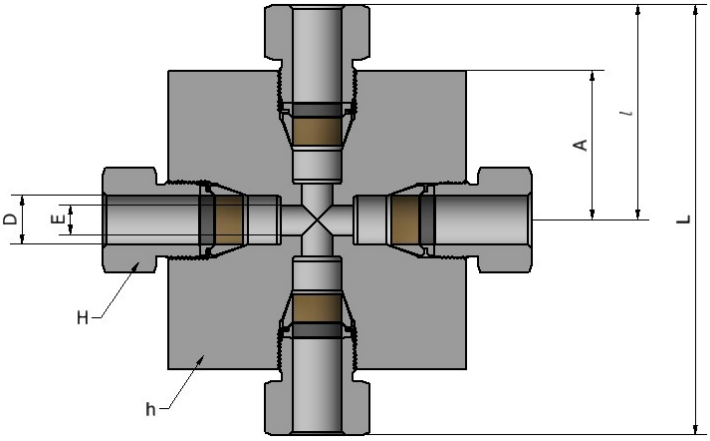
Fractional

Part No.	Tube O.D D		E Min.	Width across flat				A	l	L
				H		h				
	In.	mm		In.	mm	In.	mm			
DKFT-4	1/4	6.35	3.3	9/16	14.28	5/8	15.87	26.16	38.86	77.72
DKFT-6	3/8	9.53	6.35	11/16	17.46	3/4	19.05	31.5	47.24	94.49
DKFT-8	1/2	12.7	7.9	15/16	23.81	1	25.4	39.12	56.39	113.03
DKFT-9	9/16	14.29	9.65	1	25.4	1-1/16	26.98	39.12	58.17	116.08
DKFT-12	3/4	19.05	13.2	1-1/4	31.75	1-3/8	34.92	49.3	71.63	143.26

Union Cross

DKFX



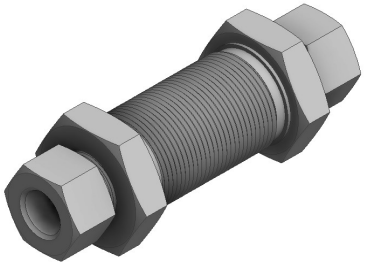


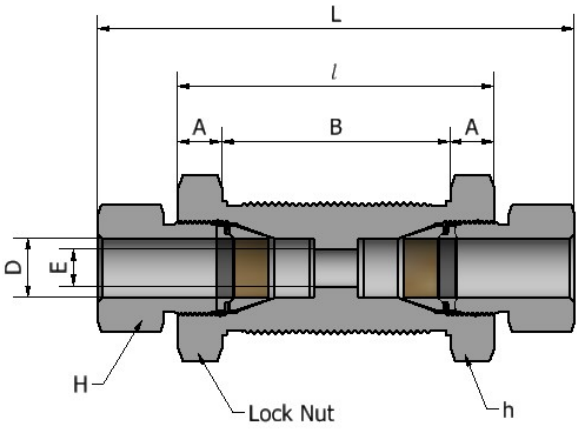
Fractional

Part No.	Tube O.D D		E Min.	Width across flat				A	l	L
				H		h				
	In.	mm		In.	mm	In.	mm			
DKFX-4	1/4	6.35	3.3	9/16	14.28	5/8	15.87	26.16	38.86	77.72
DKFX-6	3/8	9.53	6.35	11/16	17.46	3/4	19.05	31.5	47.24	94.49
DKFX-8	1/2	12.7	7.9	15/16	23.81	1	25.4	39.12	56.4	113.03
DKFX-9	9/16	14.29	9.65	1	25.4	1-1/16	26.98	39.12	58.2	116.08
DKFX-12	3/4	19.05	13.2	1-1/4	31.75	1-3/8	34.92	49.3	71.63	143.26

Bulkhead Union Connector

DKFUB



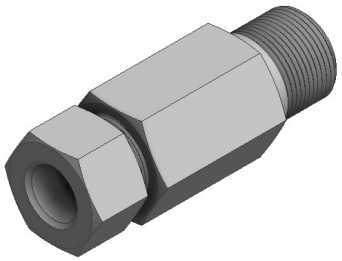


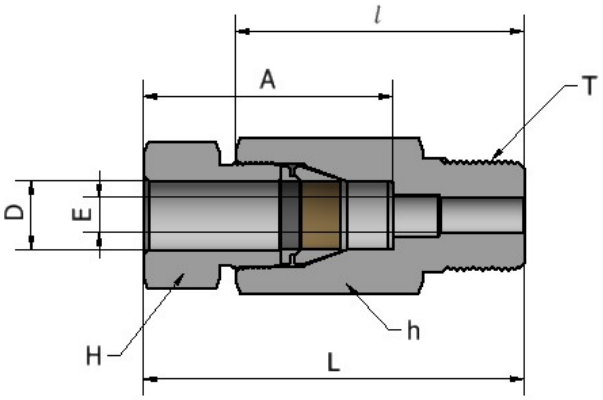
Fractional

Part No.	Tube O.D D		E Min.	Width across flat				R, Thread	A	B, Max	l	L
				H		h						
	In.	mm		In.	mm	In.	mm					
DKFUB-4	1/4	6.35	3.3	9/16	14.28	1	25.4	3/4-20	12.7	22.35	47.75	73.15
DKFUB-6	3/8	9.53	6.35	11/16	17.46	1-1/8	28.57	7/8-20	14.22	27.18	55.63	87.38
DKFUB-8	1/2	12.7	7.9	15/16	23.81	1-3/8	34.92	1-1/8-20	17.53	33.53	68.58	103.38
DKFUB-9	9/16	14.29	9.65	1	25.4	1-3/8	34.92	1-1/8-20	17.53	33.53	68.58	106.68
DKFUB-12	3/4	19.05	13.2	1-1/4	31.75	1-7/8	47.62	1-7/16-18	22.35	39.62	84.07	129.03

Male Connector

DKFMC-N



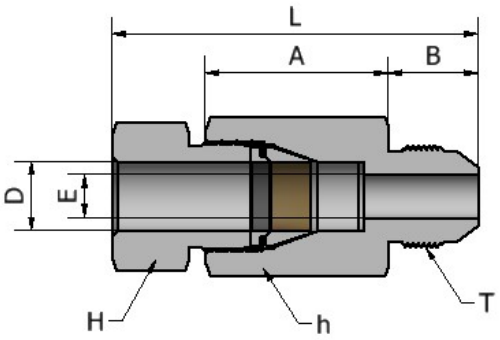


Fractional

Part No.	Tube O.D D		T NPT	E Min.	Width across flat				l	L
					H		h			
	In.	mm			In.	mm	In.	mm		
DKFMC4-8N	1/4	6.35	1/2	3.3	9/16	14.28	7/8	22.22	42.4	55.41
DKFMC6-8N	3/8	9.53	1/2	6.35	11/16	17.46	7/8	22.22	47.2	63
DKFMC8-8N	1/2	12.7	1/2	7.9	15/16	23.81	1	25.4	54.1	71.45
DKFMC9-8N	9/16	14.29	1/2	9.65	1	25.4	1-1/16	26.98	58.2	77.28
DKFMC12-8N	3/4	19.05	1/2	13.2	1-1/4	31.75	1-3/8	34.92	75.4	97.94

AN Union

DKFUA

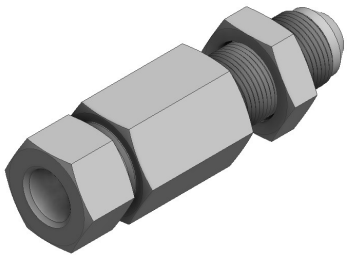


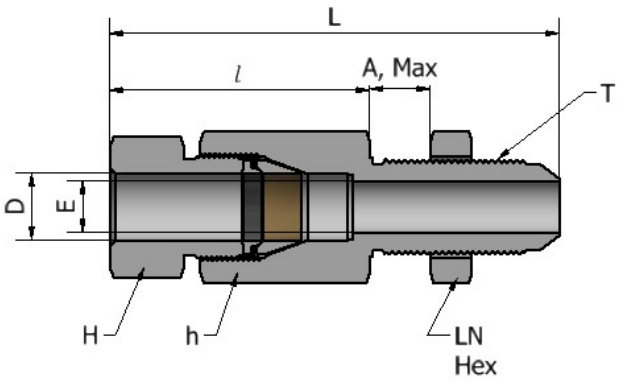
Fractional

Part No.	Tube O.D D		AN Flare Adapter	Straight Thread T(U)	E Min.	Width across flat				B	A	L
						H		h				
	In.	mm				In.	mm	In.	mm			
DKFUA4-4	1/4	6.35	1/4	7/16-20	3.3	9/16	14.28	5/8	15.87	13.97	26.16	52.83
DKFUA4-6	3/8	9.53	1/4	7/16-20	6.35	11/16	17.46	3/4	19.05	13.97	34.8	64.52
DKFUA4-8	1/2	12.7	1/4	7/16-20	7.9	15/16	23.81	1	25.4	13.97	42.16	73.66
DKFUA6-4	1/4	6.35	3/8	9/16-18	3.3	9/16	14.28	5/8	15.87	14.22	23.37	50.04
DKFUA6-6	3/8	9.53	3/8	9/16-18	6.35	11/16	17.46	3/4	19.05	14.22	26.92	56.9
DKFUA6-8	1/2	12.7	3/8	9/16-18	7.9	15/16	23.81	1	25.4	14.22	42.16	73.66
DKFUA8-6	3/8	9.53	1/2	3/4-16	6.35	11/16	17.46	3/4	19.05	16.76	26.92	59.44
DKFUA8-8	1/2	12.7	1/2	3/4-16	7.9	15/16	23.81	1	25.4	16.76	34.04	68.33

AN Bulkhead Union

DKFUBA



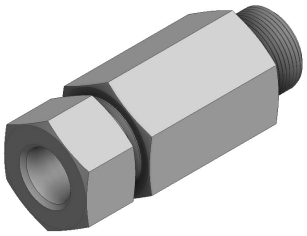


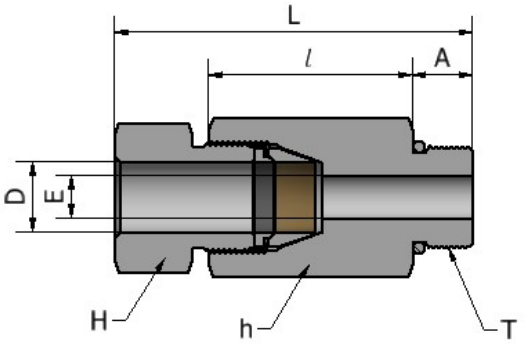
Fractional

Part No.	Tube O.D D		AN Flare Adapter	Straight Thread T(U)	E Min.	Width across flat				LN Hex	A, Max	l	L
						H		h					
	In.	mm				In.	mm	In.	mm				
DKFUBA4-4	1/4	6.35	1/4	7/16-20	3.3	9/16	14.28	5/8	15.87	11/16	10.16	38.86	70.1
DKFUBA6-6	3/8	9.53	3/8	9/16-18	6.35	11/16	17.46	3/4	19.05	13/16	12.19	49.02	82.3
DKFUBA8-8	1/2	12.7	1/2	3/4-16	7.9	15/16	23.81	1	25.4	1	12.7	50.04	87.38
DKFUBA9-8	9/16	14.29	1/2	3/4-16	9.65	1	25.4	1-1/16	26.98	1	12.7	58.17	95.5

SAE Male O-ring Connector

DKFMCS-U



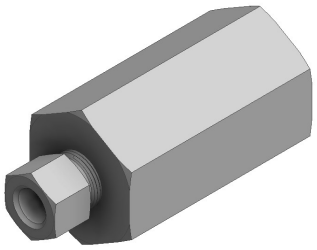


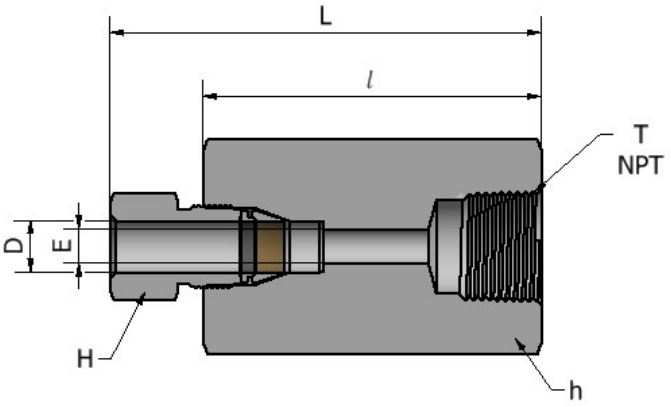
Fractional

Part No.	Tube O.D D		Straight Thread T(U)	E Min.	Width across flat				A	l	L
					H		h				
	In.	mm			In.	mm	In.	mm			
DKFMCS4-4U	1/4	6.35	7/16-20	3.3	9/16	14.28	5/8	15.87	10.92	24.64	48.26
DKFMCS4-6U	1/4	6.35	9/16-18	3.3	9/16	14.28	11/16	17.46	11.94	24.64	49.28
DKFMCS4-8U	1/4	6.35	3/4-16	3.3	9/16	14.28	7/8	22.22	13.97	23.11	50.04
DKFMCS6-4U	3/8	9.53	7/16-20	6.35	11/16	17.46	3/4	19.05	10.92	34.29	61.21
DKFMCS6-6U	3/8	9.53	9/16-18	6.35	11/16	17.46	3/4	19.05	11.94	27.94	55.88
DKFMCS6-8U	3/8	9.53	3/4-16	6.35	11/16	17.46	7/8	22.22	13.97	26.67	56.64
DKFMCS8-4U	1/2	12.7	7/16-20	6.35	15/16	23.81	1	25.4	10.92	42.93	71.37
DKFMCS8-6U	1/2	12.7	9/16-18	7.9	15/16	23.81	1	25.4	11.94	42.16	71.63
DKFMCS8-8U	1/2	12.7	3/4-16	7.9	15/16	23.81	1	25.4	13.97	34.54	66.04
DKFMCS9-6U	9/16	14.29	9/16-18	9.65	1	25.4	1-1/16	31.75	11.94	42.42	73.41
DKFMCS9-8U	9/16	14.29	3/4-16	9.65	1	25.4	1-1/16	31.75	13.97	40.39	73.41

Female Connector

DKFCF-N



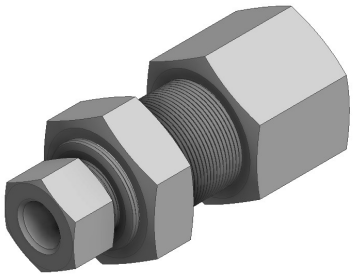


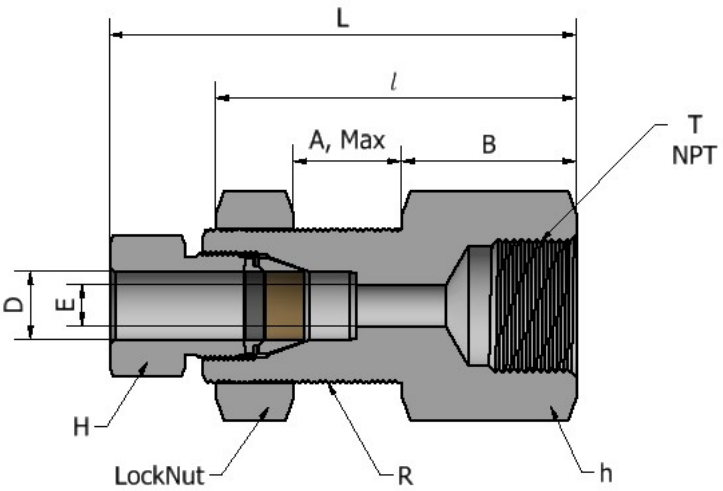
Fractional

Part No.	Tube O.D D		T NPT	E Min.	Width across flat				l	L
					H		h			
	In.	mm			In.	mm	In.	mm		
DKFCF4-2N	1/4	6.35	1/8-27	3.3	9/16	14.28	13/16	20.64	39.62	52.32
DKFCF4-4N	1/4	6.35	1/4-18	3.3	9/16	14.28	1	25.4	44.45	57.15
DKFCF4-6N	1/4	6.35	3/8-18	3.3	9/16	14.28	1-1/8	28.57	46.99	59.69
DKFCF4-8N	1/4	6.35	1/2-14	3.3	9/16	14.28	1-3/8	34.92	52.83	65.53
DKFCF6-2N	3/8	9.53	1/8-27	6.35	11/16	17.46	13/16	20.64	44.2	60.2
DKFCF6-4N	3/8	9.53	1/4-18	6.35	11/16	17.46	1	25.4	49.02	65.02
DKFCF6-6N	3/8	9.53	3/8-18	6.35	11/16	17.46	1-1/8	28.57	51.56	67.56
DKFCF6-8N	3/8	9.53	1/2-14	6.35	11/16	17.46	1-3/8	34.92	56.9	72.9
DKFCF8-4N	1/2	12.7	1/4-18	7.9	15/16	23.81	1	25.4	55.88	73.41
DKFCF8-6N	1/2	12.7	3/8-18	7.9	15/16	23.81	1-1/8	28.57	58.42	75.95
DKFCF8-8N	1/2	12.7	1/2-14	7.9	15/16	23.81	1-3/8	34.92	63.75	81.28
DKFCF9-4N	9/16	14.29	1/4-18	9.65	1	25.4	1-3/8	34.92	55.37	68.07
DKFCF9-6N	9/16	14.29	3/8-18	9.65	1	25.4	1-1/8	28.57	58.42	74.42
DKFCF9-8N	9/16	14.29	1/2-14	9.65	1	25.4	1-3/8	34.92	63.75	82.8
DKFCF12-8N	3/4	19.05	1/2-14	13.2	1-1/4	31.75	1-3/8	34.92	71.63	93.98

Bulkhead Female Connector

DKFCBF-N



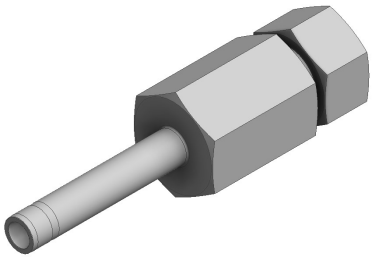


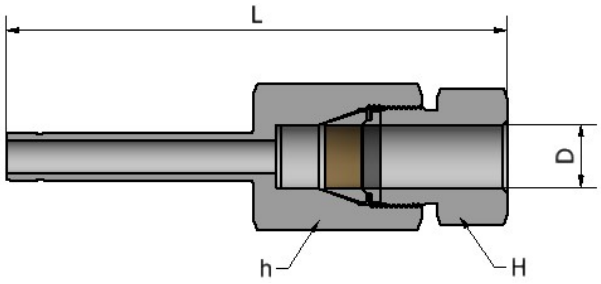
Fractional

Part No.	Tube O.D D		T NPT	E Min.	Width across flat				R	A, Max	B	l	L
					H		h						
	In.	mm			In.	mm	In.	mm					
DKFCBF4-4N	1/4	6.35	1/4-18	3.3	9/16	14.28	1	25.4	3/4-20	16	19.05	47.75	60.45
DKFCBF6-8N	3/8	9.53	1/2-14	6.35	11/16	17.46	1-3/8	34.92	7/8-20	17.53	31.75	63.5	79.5
DKFCBF6-12N	3/8	9.53	3/4-14	6.35	11/16	17.46	1-1/2	38.1	7/8-20	17.53	33.27	65.02	81.03
DKFCBF8-12N	1/2	12.7	3/4-14	7.9	15/16	23.81	1-1/2	38.1	1-1/8-20	20.57	33.27	71.37	88.9
DKFCBF9-4N	9/16	14.29	1/4-18	9.65	1	25.4	1-3/8	34.92	1-1/8-20	17.78	17.53	52.58	71.63

Reducer

DKFR



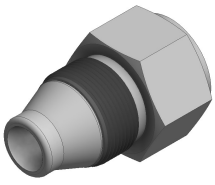


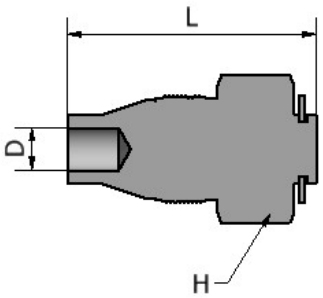
Fractional

Part No.	Tube O.D D		Width across flat H		Width across flat h		L
	In.	mm	In.	mm	In.	mm	
DKFR4-6	3/8	9.53	11/16	17.46	3/4	19.05	88.65
DKFR4-8	1/2	12.7	15/16	23.81	1	25.4	100.08
DKFR4-9	9/16	14.29	1	25.4	1-1/16	26.98	101.6
DKFR6-4	1/4	6.35	9/16	14.28	5/8	15.87	83.82
DKFR6-8	3/8	9.53	11/16	17.46	1	25.4	105.92
DKFR6-9	9/16	14.29	1	25.4	1-1/16	26.98	107.7
DKFR8-4	1/4	6.35	9/16	14.28	5/8	15.87	90.42
DKFR8-6	3.8	9.53	11/16	17.46	3/4	19.05	101.35
DKFR9-4	1/4	6.35	9/16	14.28	5/8	15.87	92.2
DKFR9-6	3/8	9.53	11/16	17.46	3/4	19.05	103.12
DKFR9-12	3/4	19.05	1-1/4	31.75	1-3/8	34.92	126.24
DKFR12-4	1/4	6.35	9/16	14.28	13/16	20.64	105.92
DKFR12-6	3/8	9.35	11/16	17.46	13/16	20.64	112.27
DKFR12-9	9/16	14.29	1	25.4	1-1/16	26.98	122.43

Plug

DKFP



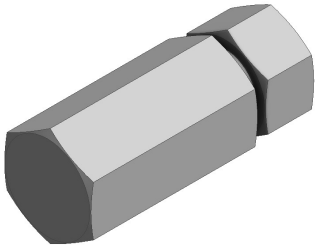


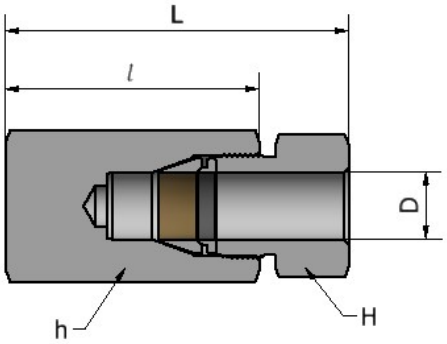
Fractional

Part No.	Tube O.D D		Width across flat H		L
	In.	mm	In.	mm	
DKFP-4	1/4	6.35	9/16	14.28	35.81
DKFP-6	3/8	9.52	11/16	17.46	41.91
DKFP-8	1/2	12.7	15/16	23.81	49.28
DKFP-9	9/16	14.29	1	25.4	50.8
DKFP-12	3/4	19.05	1-1/4	31.75	75.18

Cap

DKFC



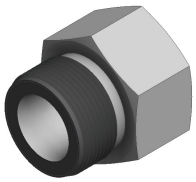


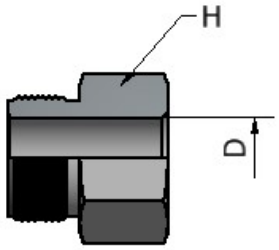
Fractional

Part No.	Tube O.D D		Width across flat H		Width across flat h		l	L
	In.	mm	In.	mm	In.	mm		
DKFC-4	1/4	6.35	9/16	14.28	5/8	15.87	30.23	42.93
DKFC-6	3/8	9.53	11/16	17.46	3/4	19.05	37.85	53.85
DKFC-8	1/2	12.7	15/16	23.81	1	25.4	49.02	66.55
DKFC-9	9/16	14.29	1	25.4	1-1/16	26.98	50.8	69.85
DKFC-12	3/4	19.05	1-1/4	31.75	1-3/8	34.92	67.06	89.66

Nut

DKFN



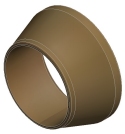


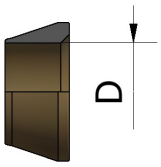
Fractional

Part No.	Tube O.D D		Width across flat H	
	In.	mm	In.	mm
DKFN-4	1/4	6.35	9/16	14.28
DKFN-6	3/8	9.53	11/16	17.46
DKFN-8	1/2	12.7	15/16	23.81
DKFN-9	9/16	14.29	1	25.4
DKFN-12	3/4	19.05	1-1/4	31.75

Front Ferrule

DKFF



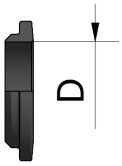


Fractional

Part No.	Tube O.D D	
	In.	mm
DKFF-4	1/4	6.35
DKFF-6	3/8	9.53
DKFF-8	1/2	12.7
DKFF-9	9/16	14.29
DKFF-12	3/4	19.05

Back Ferrule

DKFB



Fractional

Part No.	Tube O.D D	
	In.	mm
DKFB-4	1/4	6.35
DKFB-6	3/8	9.53
DKFB-8	1/2	12.7
DKFB-9	9/16	14.29
DKFB-12	3/4	19.05