

IDK-LOK

Fittings & Valves

HD Series O-Ring Face Seal Fittings

No.01-10
May 2018



Tube to Tube Union

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What is HD Series O-Ring Face Seal Fittings?

HD Series O-Ring Face Seal Fittings is manufactured in strict accordance with the requirements of SAE J1453. HD Series O-Ring Face Seal Fittings are composed of Body, Nut, O-ring and Sleeve, and can be completely sealed by O-ring. A 90-degree expanded tubing or brazed sleeve compresses and seals the O-ring in the precision machined groove of the fitting body. This approach is suitable for higher pressure hydraulic systems and provides superior sealing performance. It is also suitable for piping systems with high vibration and continuous impact pressure. HD Series O-Ring Face Seal Fittings are available in a variety of sizes for tube diameters and wall thicknesses and are easily adaptable to tubes of inches and meters.

The outer diameter and the wall thickness of the tube is applicable please refer to Table 1.

Table 2. **Standard Material**

Part		Material
		Stainless Steel
Body	Bar Stock	ASTM A479 TYPE316
	Forging	ASTM A182 F316
Sleeve		ASTM A479 TYPE316
Brazed Sleeve		ASTM A262 TYPE316L
Nut		ASTM A479 TYPE316

Design and Construction

HD Series O-Ring Face Seal Fittings consist of four main parts: Body, Sleeve, O-ring and nut.

Body

- The fitting body can be suitably applied to the piping system by providing various shapes and flow paths.
- O-ring grooves on the body surface are machined precisely to ensure perfect sealing.
- In addition, O-ring grooves of all fitting bodies include an O-ring of an appropriate size basically for convenient use.
- Straight-line products are basically made of cold drawn bar stock, Elbow, Tee and Cross are forged to improve strength and extend life.
- O-ring grooves meet the improved dimensional requirements to prevent O-ring deviation of Style "B" of SAE J1453.

Sleeve for 90° expanded tubing

- This is a method of compressing the O-ring of the fitting body by expanding the tube end to 90°.
- With the sleeve in place, leaving the correct length for a 90° expansion at the end of the tube, use a 90° expander to expand the tube.
- When the tube is extended to 90°, the tube and the sleeve are fixed to each other, and the 90° expansion surface should have a good roughness.
- Tubes with poor surface roughness are damaged when they come into contact with the O-ring of the body, resulting in reduced sealing capacity and reduced service life.

Brazed sleeve

- It brazes and secures the tube and sleeve, and the sleeve compresses the O-ring of the fitting body.
- Since the sleeve surface contacts the O-ring of the fitting body, the sleeve itself should have good roughness.

Nut

- The screws of the body and the nut are manufactured according to ASME / ANSI B1.1.
- Stainless steel is silver plated on the threads of the nut to prevent galling of the screws during assembly.
- Carbon steel is basically galvanized.

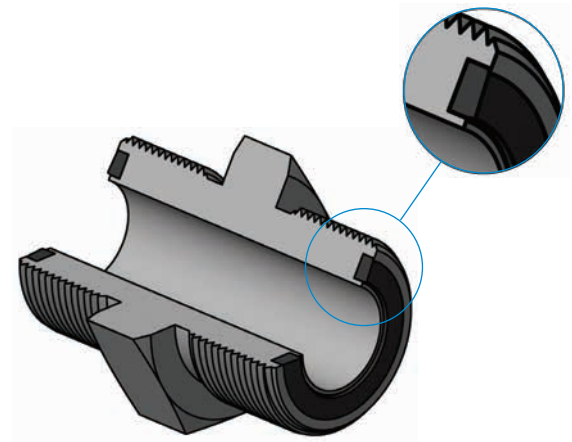


Fig. A1 - Captive O-ring Groove (CORG) Cutaway with DK-Lok's trap seal

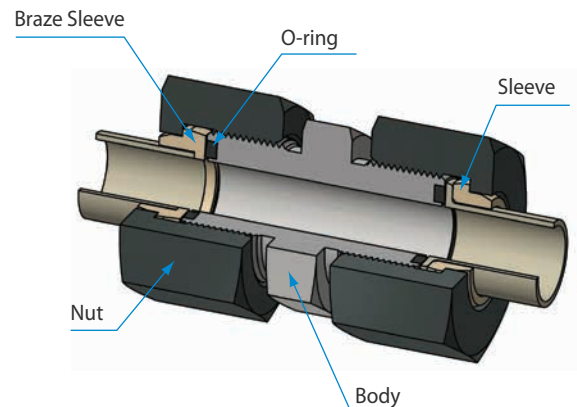
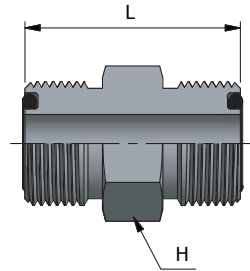
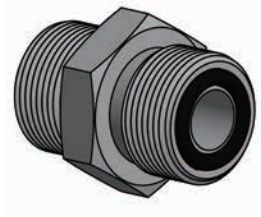


Fig. A1 - DK-Lok's Union cutaway with flanged and brazed assemblies

Union

HDU



Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)				
HDU-4T	1/4	1/4	5/8	27.4	9,200
HDU-6T	3/8	3/8	3/4	31.0	9,200
HDU6T-4T	3/8	1/4	3/4	30.0	9,200
HDU-8T	1/2	1/2	7/8	35.6	9,200
HDU8T-6T	1/2	3/8	7/8	33.5	9,200
HDU-10T	5/8	5/8	1 1/16	42.4	6,000
HDU10T-8T	5/8	1/2	1 1/16	39.9	6,000
HDU-12T	3/4	3/4	1 1/4	47.0	6,000
HDU12T-8T	3/4	1/2	1 1/4	42.9	6,000
HDU12T-10T	3/4	5/8	1 1/4	45.5	6,000
HDU-16T	1	1	1 1/2	49.5	6,000
HDU16T-12T	1	3/4	1 1/2	49.0	6,000
HDU-20T	1 1/4	1 1/4	1 3/4	51.6	6,000
HDU20T-16T	1 1/4	1	1 3/4	51.6	6,000
HDU-24T	1 1/2	1 1/2	2 1/8	53.1	5,000
HDU-32T	2	2	2 3/4	63.0	3,000

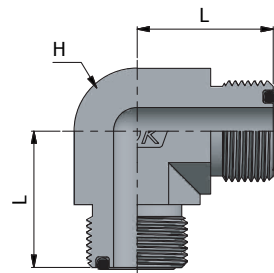
* Size 32 is not included in SAE J1453.

Metric

Part No.	End Size Tube O.D. (mm)	H HEX (mm)	L (mm)	Dynamic Pressure (psig)
HDU-6M	6	17	27.5	9,200
HDU-8M	8,10	19	31.0	9,200
HDU-12M	12	22	35.5	9,200
HDU-14M	14,15,16	27	42.5	6,000
HDU-18M	18,20	32	47.0	6,000
HDU-22M	22,25	41	49.5	6,000
HDU-28M	28,30,32	46	51.5	6,000
HDU-35M	35,38	55	53.0	5,000

Union Elbow

HDL



Fractional

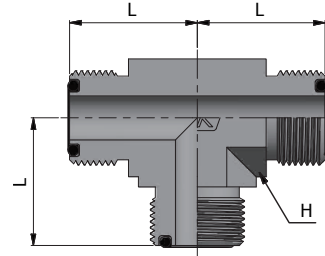
Part No.	End Size Tube O.D. (in.)	H HEX (in.)	L (mm)	Dynamic Pressure (psig)
HDL-4T	1/4	9/16	21.6	9,200
HDL-6T	3/8	3/4	24.9	9,200
HDL-8T	1/2	3/4	27.9	9,200
HDL-10T	5/8	1 1/16	33.5	6,000
HDL-12T	3/4	1 3/16	37.6	6,000
HDL-16T	1	1 7/16	41.4	6,000
HDL-20T	1 1/4	1 5/8	44.4	5,000
HDL-24T	1 1/2	1 7/8	49.0	4,000
HDL-32T	2	2 1/2	70.1	3,000

Metric

Part No.	End Size Tube O.D. (mm)	H HEX (mm)	L (mm)	Dynamic Pressure (psig)
HDL-6M	6	14	21.5	9,200
HDL-8M	8,10	19	25.0	9,200
HDL-12M	12	19	28.0	9,200
HDL-14M	14,15,16	27	33.5	6,000
HDL-18M	18,20	30	37.5	6,000
HDL-22M	22,25	36	41.5	6,000
HDL-28M	28,30,32	41	44.5	5,000
HDL-35M	35,38	50	49.0	4,000

Union Tee

HDT



Fractional

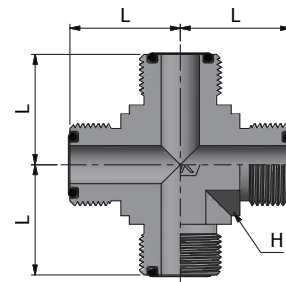
Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	Dynamic Pressure (psig)
HDT-4T	1/4	9/16	21.6	9,200
HDT-6T	3/8	3/4	24.9	9,200
HDT-8T	1/2	3/4	27.9	9,200
HDT-10T	5/8	1 1/16	33.5	6,000
HDT-12T	3/4	1 3/16	37.6	6,000
HDT-16T	1	1 7/16	41.4	6,000
HDT-20T	1 1/4	1 5/8	44.4	5,000
HDT-24T	1 1/2	1 7/8	49.0	4,000
HDT-32T	2	2 1/2	70.1	3,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	L (mm)	Dynamic Pressure (psig)
HDT-6M	6	14	21.5	9,200
HDT-8M	8,10	19	25.0	9,200
HDT-12M	12	19	28.0	9,200
HDT-14M	14,15,16	27	33.5	6,000
HDT-18M	18,20	30	37.5	6,000
HDT-22M	22,25	36	41.5	6,000
HDT-28M	28,30,32	41	44.5	5,000
HDT-35M	35,38	50	49.0	4,000

Union Cross

HDX

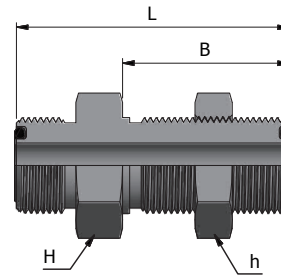
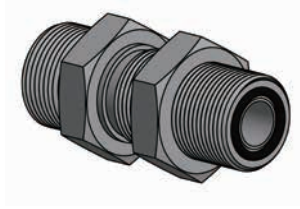


Fractional

Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	Dynamic Pressure (psig)
HDX-4T	1/4	9/16	21.6	9,200
HDX-6T	3/8	3/4	24.9	9,200
HDX-8T	1/2	3/4	27.9	9,200
HDX-10T	5/8	1 1/16	33.5	6,000
HDX-12T	3/4	1 3/16	37.6	6,000
HDX-16T	1	1 7/16	41.4	6,000
HDX-20T	1 1/4	1 5/8	44.4	5,000

Bulkhead Union

HDUB



Fractional

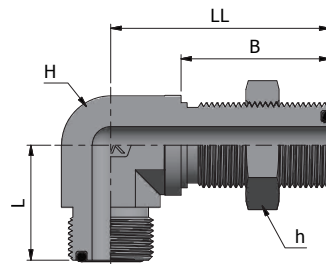
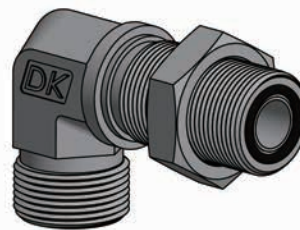
Part No.	End Size Tube O.D (in.)	H,h HEX (in.)	B (mm)	L (mm)	Dynamic Pressure (psig)
HDUB-4T	1/4	13/16	31.5	48.3	9,200
HDUB-6T	3/8	1	34.0	53.1	9,200
HDUB-8T	1/2	1 1/8	36.6	58.4	9,200
HDUB-10T	5/8	1 5/16	40.4	66.5	6,000
HDUB-12T	3/4	1 1/2	41.4	69.1	6,000
HDUB-16T	1	1 3/4	41.9	70.1	6,000
HDUB-20T	1 1/4	2	41.9	70.1	6,000
HDUB-24T	1 1/2	2 3/8	41.9	70.1	5,000

Metric

Part No.	End Size Tube O.D (mm)	H,h HEX (in.)	B (mm)	L (mm)	Dynamic Pressure (psig)
HDUB-6M	6	22	31.5	48.0	9,200
HDUB-8M	8,10	27	34.0	53.0	9,200
HDUB-12M	12	30	36.5	58.5	9,200
HDUB-14M	14,15,16	36	40.5	66.5	6,000
HDUB-18M	18,20	41	41.5	69.0	6,000
HDUB-22M	22,25	46	42.0	70.0	6,000
HDUB-28M	28,30,32	50	42.0	70.0	6,000
HDUB-35M	35,38	60	42.0	70.0	5,000

Bulkhead Elbow

HDBL



Fractional

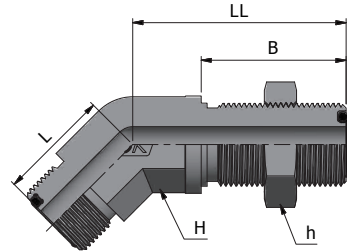
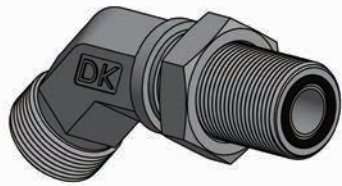
Part No.	End Size Tube O.D (in.)	h HEX (in.)	H HEX (in.)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBL-4T	1/4	13/16	9/16	31.5	22.6	47.0	9,200
HDBL-6T	3/8	1	3/4	34.0	25.9	52.1	9,200
HDBL-8T	1/2	1 1/8	3/4	36.6	29.0	55.6	9,200
HDBL-10T	5/8	1 5/16	1 1/16	40.4	34.5	63.0	6,000
HDBL-12T	3/4	1 1/2	1 3/16	41.4	38.6	67.1	6,000
HDBL-16T	1	1 3/4	1 7/16	41.9	42.4	71.1	6,000
HDBL-20T	1 1/4	2	1 5/8	41.9	45.5	75.4	5,000
HDBL-24T	1 1/2	2 3/8	1 7/8	41.9	49.5	79.5	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBL-6M	6	14	31.5	22.5	47.0	9,200
HDBL-8M	8,10	19	34.0	26.0	52.0	9,200
HDBL-12M	12	19	36.5	29.0	55.5	9,200
HDBL-14M	14,15,16	27	40.5	34.5	63.0	6,000
HDBL-18M	18,20	30	41.5	38.5	67.0	6,000
HDBL-22M	22,25	36	42.0	42.5	71.0	6,000
HDBL-28M	28,30,32	41	42.0	45.5	75.5	5,000
HDBL-35M	35,38	50	42.0	49.5	79.5	4,000

45°Bulkhead Elbow

HDBLB



Fractional

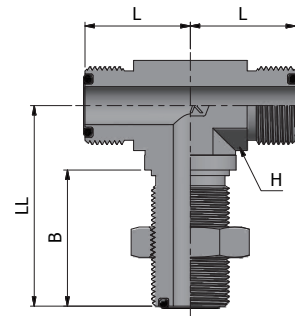
Part No.	End Size Tube O.D (in.)	h HEX (in.)	H HEX (in.)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBLB-4T	1/4	13/16	9/16	31.5	16.0	43.9	9,200
HDBLB-6T	3/8	1	3/4	34.0	19.0	48.5	9,200
HDBLB-8T	1/2	1 1/8	3/4	36.6	20.6	51.0	9,200
HDBLB-10T	5/8	1 5/16	1 1/16	40.4	23.6	56.4	6,000
HDBLB-12T	3/4	1 1/2	1 3/16	41.4	25.9	60.4	6,000
HDBLB-16T	1	1 3/4	1 7/16	41.9	30.0	65.0	6,000
HDBLB-20T	1 1/4	2	1 5/8	41.9	32.0	67.1	5,000
HDBLB-24T	1 1/2	2 3/8	1 7/8	41.9	37.1	67.1	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBLB-6M	6	14	31.5	16.0	44.0	9,200
HDBLB-8M	8,10	19	34.0	19.0	48.5	9,200
HDBLB-12M	12	19	36.5	20.5	51.0	9,200
HDBLB-14M	14,15,16	27	40.5	23.5	56.5	6,000
HDBLB-18M	18,20	30	41.5	26.0	60.5	6,000
HDBLB-22M	22,25	36	42.0	30.0	65.0	6,000
HDBLB-28M	28,30,32	41	42.0	32.0	67.0	5,000
HDBLB-35M	35,38	50	42.0	37.0	67.0	4,000

Bulkhead Branch Tee

HDBBT



Fractional

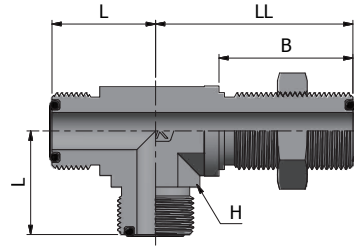
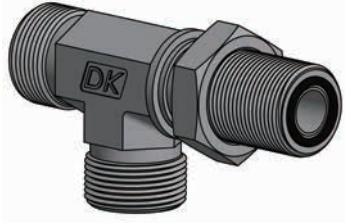
Part No.	End Size Tube O.D (in.)	H HEX (in.)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBBT-4T	1/4	9/16	31.5	22.6	47.0	9,200
HDBBT-6T	3/8	3/4	34.0	25.9	52.1	9,200
HDBBT-8T	1/2	3/4	36.6	29.0	55.6	9,200
HDBBT-10T	5/8	1 1/16	40.4	34.5	63.0	6,000
HDBBT-12T	3/4	1 3/16	41.4	38.6	67.1	6,000
HDBBT-16T	1	1 7/16	41.9	42.4	71.1	6,000
HDBLB-20T	1 1/4	1 5/8	41.9	32.0	67.1	5,000
HDBLB-24T	1 1/2	1 7/8	41.9	37.1	67.1	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDBBT-6M	6	14	31.5	22.5	47.0	9,200
HDBBT-8M	8,10	19	34.0	26.0	52.0	9,200
HDBBT-12M	12	19	36.5	29.0	55.5	9,200
HDBBT-14M	14,15,16	27	40.5	34.5	63.0	6,000
HDBBT-18M	18,20	30	41.5	38.5	67.0	6,000
HDBBT-22M	22,25	36	42.0	42.5	71.0	6,000
HDBBT-28M	28,30,32	41	42.0	45.5	75.5	5,000
HDBBT-35M	35,38	50	42.0	49.5	79.5	4,000

Bulkhead Run Tee

HDRBT



Fractional

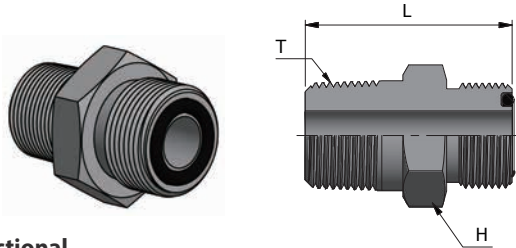
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HDRBT-4T	1/4	9/16	31.5	22.6	47.0	9,200
HDRBT-6T	3/8	3/4	34.0	25.9	52.1	9,200
HDRBT-8T	1/2	3/4	36.6	29.0	55.6	9,200
HDRBT-10T	5/8	1 1/16	40.4	34.5	63.0	6,000
HDRBT-12T	3/4	1 3/16	41.4	38.6	67.1	6,000
HDRBT-16T	1	1 7/16	41.9	42.4	71.1	6,000
HDRBT-20T	1 1/4	1 5/8	41.9	45.5	70.9	5,000
HDRBT-24T	1 1/2	1 7/8	41.9	49.5	79.5	4,000

Metric

Part No.	End Size Tube O.D (in.)	H HEX (mm)	B (mm)	L (mm)	LL (mm)	Dynamic Pressure (psig)
HDRBT-6M	6	14	31.5	22.5	47.0	9,200
HDRBT-8M	8,10	19	34.0	26.0	52.0	9,200
HDRBT-12M	12	19	36.5	29.0	55.5	9,200
HDRBT-14M	14,15,16	27	40.5	34.5	63.0	6,000
HDRBT-18M	18,20	30	41.5	38.5	67.0	6,000
HDRBT-22M	22,25	36	42.0	42.5	71.0	6,000
HDRBT-28M	28,30,32	41	42.0	45.5	71.0	5,000
HDRBT-35M	35,38	50	42.0	49.5	79.5	4,000

Male Connector

HDMC-N

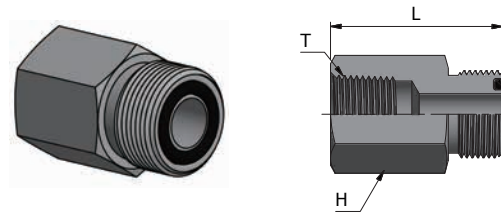


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T NPT			
HDMC4T-2N	1/4	1/8 - 27	5/8	27.2	6,000
HDMC4T-4N	1/4	1/4 - 18	5/8	32.0	6,000
HDMC4T-6N	1/4	3/8 - 18	3/4	33.5	6,000
HDMC4T-8N	1/4	1/2 - 14	7/8	38.6	6,000
HDMC6T-2N	3/8	1/8 - 27	3/4	29.5	6,000
HDMC6T-4N	3/8	1/4 - 18	3/4	31.7	6,000
HDMC6T-6N	3/8	3/8 - 18	3/4	34.0	6,000
HDMC6T-8N	3/8	1/2 - 14	7/8	39.4	6,000
HDMC8T-4N	1/2	1/4 - 18	7/8	37.6	6,000
HDMC8T-6N	1/2	3/8 - 18	7/8	37.6	6,000
HDMC8T-8N	1/2	1/2 - 14	7/8	41.7	6,000
HDMC8T-12N	1/2	3/4 - 14	1 1/8	42.9	6,000
HDMC10T-8N	5/8	1/2 - 14	1 1/16	46.2	6,000
HDMC10T-12N	5/8	3/4 - 14	1 1/8	46.2	5,500
HDMC12T-8N	3/4	1/2 - 14	1 1/4	49.0	6,000
HDMC12T-12N	3/4	3/4 - 14	1 1/4	49.0	6,000
HDMC12T-16N	3/4	1 - 11 1/2	1 3/8	54.1	4,500
HDMC16T-12N	1	3/4 - 14	1 1/2	50.8	5,500
HDMC16T-16N	1	1 - 11 1/2	1 1/2	55.6	4,500
HDMC16T-20N	1	1 1/4 - 11 1/2	1 3/4	58.4	3,000
HDMC20T-12N	1 1/4	3/4 - 14	7/8	51.3	4,500
HDMC20T-16N	1 1/4	1 - 11 1/2	1 7/8	57.7	4,500
HDMC20T-20N	1 1/4	1 1/4 - 11 1/2	1 7/8	58.4	4,000
HDMC24T-24N	1 1/2	1 1/2 - 11 1/2	2 1/8	61.0	3,000

Female Connector

HDCF-N

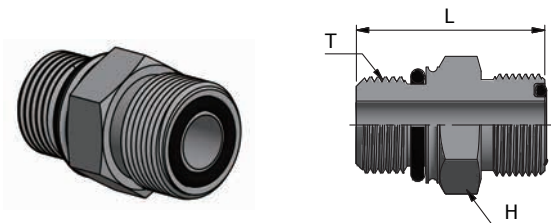


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T NPT			
HDCF4T-2N	1/4	1/8 - 27	5/8	26.2	6,000
HDCF4T-4N	1/4	1/4 - 18	3/4	31.7	6,000
HDCF6T-4N	3/8	1/4 - 18	3/4	33.0	6,000
HDCF6T-6N	3/8	3/8 - 18	7/8	34.0	6,000
HDCF8T-6N	1/2	3/8 - 18	7/8	34.0	6,000

Metric Straight Thread Connector

HDMC-MO

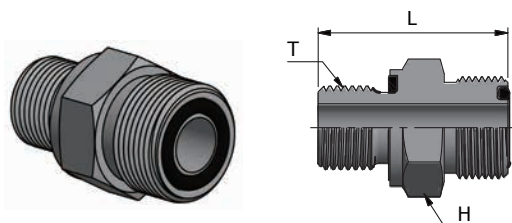


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D.		T Metric			
	(in.)	(mm)				
HDMC4T-12M150	1/4	6	M12X1.5	17	28.5	9,200
HDMC4T-14M150	1/4	6	M14X1.5	19	29.5	9,200
HDMC6T-12M150	3/8	8,10	M12X1.5	22	32.0	9,200
HDMC6T-14M150	3/8	8,10	M14X1.5	22	32.0	9,200
HDMC6T-16M150	3/8	8,10	M16X1.5	22	33.5	9,200
HDMC6T-18M150	3/8	8,10	M18X1.5	24	36.1	9,200
HDMC8T-14M150	1/2	12	M14X1.5	24	35.1	9,200
HDMC8T-16M150	1/2	12	M16X1.5	24	36.6	9,200
HDMC8T-18M150	1/2	12	M18X1.5	24	38.1	9,200
HDMC8T-22M150	1/2	12	M22X1.5	27	39.6	6,000
HDMC8T-27M200	1/2	12	M27X2.0	32	44.2	6,000
HDMC10T-18M150	5/8	14,15,16	M18X1.5	27	41.0	6,000
HDMC10T-22M150	5/8	14,15,16	M22X1.5	27	42.0	6,000
HDMC10T-27M200	5/8	14,15,16	M27X2.0	32	47.0	6,000
HDMC12T-22M150	3/4	18,20	M22X1.5	32	45.0	6,000
HDMC12T-27M200	3/4	18,20	M27X2.0	32	48.5	6,000
HDMC12T-33M200	3/4	18,20	M33X2.0	41	51.5	6,000
HDMC16T-27M200	1	22,25	M27X2.0	41	33.6	6,000
HDMC16T-33M200	1	22,25	M33X2.0	41	52.0	6,000
HDMC20T-33M200	1 1/4	28,30,32	M33X2.0	46	35.1	5,000
HDMC20T-42M200	1 1/4	28,30,32	M42X2.0	50	54.5	5,000
HDMC24T-48M200	1 1/2	35,38	M48X2.0	55	57.0	5,000

Male Connector

HDMC-GE

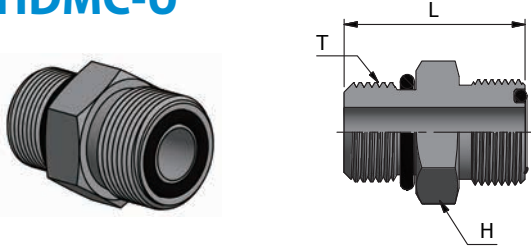


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D.		T PF			
	(in.)	(mm)				
HDMC4T-2GE	1/4	6	1/8 - 28	17	25.7	9,200
HDMC4T-4GE	1/4	6	1/4 - 19	19	30.5	9,200
HDMC4T-6GE	1/4	6	3/8 - 19	22	31.6	9,200
HDMC4T-8GE	1/4	6	1/2 - 14	27	35.4	6,000
HDMC6T-2GE	3/8	8,10	1/8 - 28	19	31.1	9,200
HDMC6T-4GE	3/8	8,10	1/4 - 19	19	31.9	9,200
HDMC6T-6GE	3/8	8,10	3/8 - 19	22	33.0	9,200
HDMC6T-8GE	3/8	8,10	1/2 - 14	27	36.5	6,000
HDMC6T-12GE	3/8	8,10	3/4 - 14	32	40.3	6,000
HDMC8T-4GE	1/2	12	1/4 - 19	22	37.5	9,200
HDMC8T-6GE	1/2	12	3/8 - 19	22	34.6	9,200
HDMC8T-8GE	1/2	12	1/2 - 14	27	38.4	6,000
HDMC8T-12GE	1/2	12	3/4 - 14	32	41.9	6,000
HDMC10T-6GE	5/8	14,15,16	3/8 - 19	27	42.4	9,200
HDMC10T-8GE	5/8	14,15,16	1/2 - 14	27	41.1	6,000
HDMC10T-12GE	5/8	14,15,16	3/4 - 14	32	44.3	6,000
HDMC12T-8GE	3/4	18,20	1/2 - 14	32	48.5	6,000
HDMC12T-12GE	3/4	18,20	3/4 - 14	32	46.1	6,000
HDMC12T-16GE	3/4	18,20	1 - 11	41	47.5	6,000
HDMC12T-20GE	3/4	18,19,20	1 1/4 - 11	50	53.0	6,000
HDMC16T-12GE	1	22,25	3/4 - 14	38	50.3	6,000
HDMC16T-16GE	1	22,25	1 - 11	41	49.8	6,000
HDMC16T-20GE	1	22,25	1 1/4 - 11	50	53.8	6,000
HDMC16T-24GE	1	22,25	1 1/2 - 11	55	57.5	5,000
HDMC20T-16GE	1 1/4	28,30,32	1 - 11	48	55.9	6,000
HDMC20T-20GE	1 1/4	28,30,32	1 1/4 - 11	50	53.8	6,000
HDMC20T-24GE	1 1/4	28,30,32	1 1/2 - 11	55	57.6	5,000
HDMC24T-24GE	1 1/2	38	1 1/2 - 11	55	57.6	5,000

Straight Thread Connector

HDMC-U

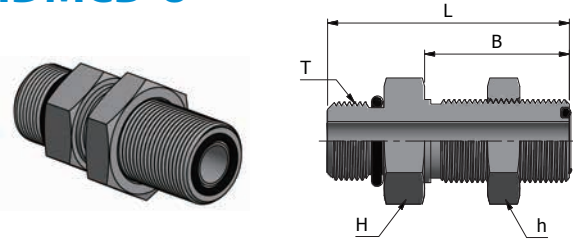


Fractional

Part No.	End Size		H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF			
HDMC4T-4U	1/4	7/16 - 20	5/8	28.7	9,200
HDMC4T-5U	1/4	1/2 - 20	5/8	29.5	9,200
HDMC4T-6U	1/4	9/16 - 18	3/4	30.5	9,200
HDMC4T-8U	1/4	3/4 - 16	7/8	33.5	9,200
HDMC6T-4U	3/8	7/16 - 20	3/4	34.0	9,200
HDMC6T-5U	3/8	1/2 - 20	3/4	31.0	9,200
HDMC6T-6U	3/8	9/16 - 18	3/4	32.0	9,200
HDMC6T-8U	3/8	3/4 - 16	7/8	35.0	9,200
HDMC6T-10U	3/8	7/8 - 14	1	38.6	9,200
HDMC6T-12U	3/8	1 1/16 - 12	1 1/4	42.4	9,200
HDMC8T-4U	1/2	7/16 - 20	7/8	36.6	9,200
HDMC8T-6U	1/2	9/16 - 18	7/8	37.6	6,000
HDMC8T-8U	1/2	3/4 - 16	7/8	36.6	9,200
HDMC8T-10U	1/2	7/8 - 14	1	40.4	6,000
HDMC8T-12U	1/2	1 1/16 - 12	1 1/4	44.4	6,000
HDMC8T-16U	1/2	1 5/16 - 12	1 1/2	45.5	6,000
HDMC10T-6U	5/8	9/16 - 18	1 1/16	41.4	6,000
HDMC10T-8U	5/8	3/4 - 16	1 1/16	45.0	6,000
HDMC10T-10U	5/8	7/8 - 14	1 1/16	42.9	6,000
HDMC10T-12U	5/8	1 1/16 - 12	1 1/4	47.0	6,000
HDMC10T-16U	5/8	1 5/16 - 12	1 1/2	48.0	6,000
HDMC12T-6U	3/4	9/16 - 16	1 1/4	45.0	6,000
HDMC12T-8U	3/4	3/4 - 16	1 1/4	48.5	6,000
HDMC12T-10U	3/4	7/8 - 14	1 1/4	50.5	6,000
HDMC12T-12U	3/4	1 1/16 - 12	1 1/4	48.5	6,000
HDMC12T-16U	3/4	1 5/16 - 12	1 1/2	49.5	6,000
HDMC14T-14U	7/8	1 3/16 - 12	1 3/8	48.5	6,000
HDMC16T-8U	1	3/4 - 16	1 1/2	49.8	6,000
HDMC16T-10U	1	7/8 - 14	1 1/2	52.1	6,000
HDMC16T-12U	1	1 1/16 - 12	1 1/2	54.6	6,000
HDMC16T-16U	1	1 5/16 - 12	1 1/2	50.0	6,000
HDMC16T-20U	1	1 5/8 - 12	1 7/8	52.6	6,000
HDMC16T-24U	1	1 7/8 - 12	2 1/8	54.1	6,000
HDMC20T-16U	1 1/4	1 5/16 - 12	1 7/8	57.9	6,000
HDMC20T-20U	1 1/4	1 5/8 - 12	1 7/8	52.6	6,000
HDMC20T-24U	1 1/4	1 7/8 - 12	2 1/8	54.1	5,000
HDMC24T-20U	1 1/2	1 5/8 - 12	2 1/8	59.4	5,000
HDMC24T-24U	1 1/2	1 7/8 - 12	2 1/8	54.1	5,000
HDMC32T-32U	2	2 1/2 - 12	2 3/4	58.9	3,000

Straight Thread Bulkhead Connector

HDMCB-U

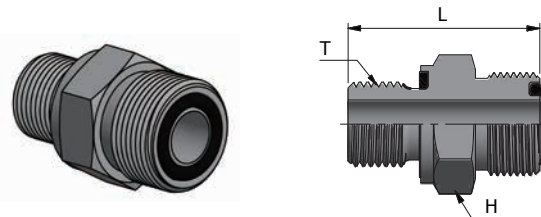


Fractional

Part No.	End Size		h HEX (in.)	H HEX (in.)	B (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF					
HDMCB4T-4U	1/4	7/16 - 20	13/16	13/16	31.5	54.4	9,200
HDMCB6T-6U	3/8	9/16 - 18	1	1	34.0	58.7	9,200
HDMCB8T-8U	1/2	3/4 - 16	1 1/8	1 1/8	36.6	66.0	9,200
HDMCB10T-10U	5/8	7/8 - 14	1 5/16	1 5/16	40.6	68.3	6,000
HDMCB12T-12U	3/4	1 1/16 - 12	1 1/2	1 1/2	41.7	73.4	6,000
HDMCB16T-16U	1	1 5/16 - 12	1 3/4	1 3/4	42.2	74.9	6,000

Male Connector

HDMC-ME

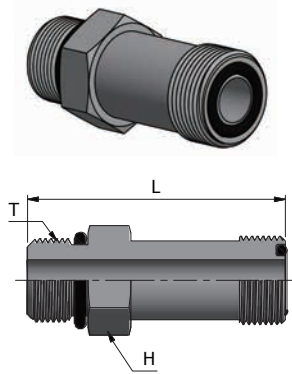


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D		T Metric			
	(in.)	(mm)				
HDMC4T-12M15E	1/4	6	M12X1.5	17	29.7	9,200
HDMC4T-14M15E	1/4	6	M14X1.5	19	30.5	9,200
HDMC6T-14M15E	3/8	8,10	M14X1.5	22	31.9	9,200
HDMC6T-16M15E	3/8	8,10	M16X1.5	22	31.9	9,200
HDMC8T-16M15E	1/2	12	M16X1.5	22	32.0	9,200
HDMC8T-18M15E	1/2	12	M18X1.5	24	34.6	9,200
HDMC10T-22M15E	5/8	14,15,16	M22X1.5	27	41.1	6,000
HDMC12T-22M15E	3/4	18,20	M22X1.5	32	42.7	6,000
HDMC12T-27M20E	3/4	18,20	M27X2.0	32	46.1	6,000
HDMC16T-33M20E	1	22,25	M33X2.0	41	49.8	6,000
HDMC20T-42M20E	1 1/4	28,30,32	M42X2.0	50	54.0	5,000

Long Straight Thread Connector

HDMCL-U

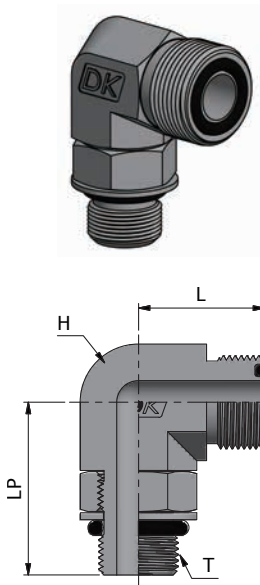


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)	T UN/UNF			
HDMCL4T-4U	1/4	7/16 - 20	5/8	52.6	9,200
HDMCL6T-4U	3/8	7/16 - 20	3/4	60.7	9,200
HDMCL6T-6U	3/8	9/16 - 18	3/4	57.7	9,200
HDMCL8T-8U	1/2	3/4 - 16	7/8	67.8	9,200
HDMCL10T-10U	5/8	7/8 - 14	1 1/16	79.8	6,000
HDMCL12T-12U	3/4	1 1/16 - 12	1 1/4	95.5	6,000
HDMCL16T-16U	1	1 5/16 - 12	1 1/2	105.2	6,000
HDMC20T-20U	1 1/4	1 5/8 - 12	1 7/8	120.9	6,000
HDMCL24T-24U	1 1/2	1 7/8 - 12	2 1/8	133.6	5,000

Straight Thread Elbow

HDLM-UP

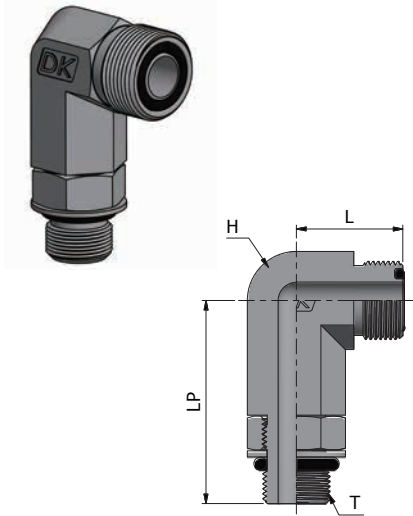


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)	T UN/UNF				
HDLM4T-4UP	1/4	7/16 - 20	9/16	21.6	33.02	6,000
HDLM4T-6UP	1/4	9/16 - 18	9/16	23.6	37.08	6,000
HDLM4T-8UP	1/4	3/4 - 16	3/4	24.9	40.39	6,000
HDLM6T-4UP	3/8	7/16 - 20	3/4	24.9	35.05	6,000
HDLM6T-5UP	3/8	1/2 - 20	3/4	24.9	35.05	6,000
HDLM6T-6UP	3/8	9/16 - 18	3/4	24.9	37.08	6,000
HDLM6T-8UP	3/8	3/4 - 16	3/4	26.4	40.39	6,000
HDLM6T-10UP	3/8	7/8 - 14	7/8	29.2	50.04	6,000
HDLM6T-12UP	3/8	1 1/16 - 12	1 1/16	32.5	55.12	6,000
HDLM8T-6UP	1/2	9/16 - 18	3/4	27.9	36.58	6,000
HDLM8T-8UP	1/2	3/4 - 16	3/4	27.9	40.39	6,000
HDLM8T-10UP	1/2	7/8 - 14	7/8	30.7	50.04	6,000
HDLM8T-12UP	1/2	1 1/16 - 12	1 3/16	33.5	55.12	6,000
HDLM10T-8UP	5/8	3/4 - 16	1 1/16	33.53	45.97	6,000
HDLM10T-10UP	5/8	7/8 - 14	1 1/16	33.5	50.04	6,000
HDLM10T-12UP	5/8	1 1/16 - 12	1 3/16	36.1	55.12	6,000
HDLM12T-12UP	3/4	1 1/16 - 12	1 3/16	37.6	55.12	6,000
HDLM12T-8UP	3/4	3/4 - 16	1 3/16	37.6	46.48	6,000
HDLM12T-10UP	3/4	7/8 - 14	1 3/16	37.6	51.05	6,000
HDLM12T-16UP	3/4	1 5/16 - 12	1 7/16	40.9	59.44	5,500
HDLM16T-12UP	1	1 1/16 - 12	1 7/16	41.4	58.42	6,000
HDLM16T-16UP	1	1 5/16 - 12	1 7/16	41.4	59.44	5,500
HDLM16T-20UP	1	1 5/8 - 12	1 5/8	44.4	61.98	4,000
HDLM20T-20UP	1 1/4	1 5/8 - 12	1 5/8	44.4	61.98	4,000
HDLM20T-16UP	1 1/4	1 5/16 - 12	1 5/8	44.4	61.98	4,000
HDLM20T-24UP	1 1/4	1 7/8 - 12	1 7/8	49.0	66.04	4,000
HDLM24T-20UP	1 1/2	1 5/8 - 12	1 7/8	49.0	66.04	4,000
HDLM24T-24UP	1 1/2	1 7/8 - 12	1 7/8	49.0	66.04	4,000
HDLM32T-32UP	2	2 1/2 - 12	2 1/2	70.1	77.98	2,500

Long Straight Thread Elbow

HDLLM-UP

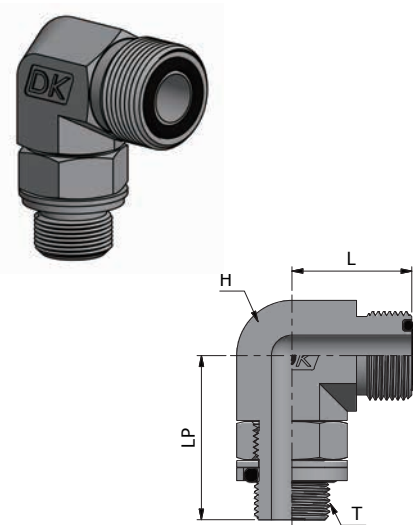


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)	T UN/UNF				
HDLLM4T-4UP	1/4	7/16 - 20	9/16	21.6	56.4	6,000
HDLLM6T-6UP	3/8	9/16 - 18	3/4	24.9	66.5	6,000
HDLLM8T-8UP	1/2	3/4 - 16	3/4	27.9	74.9	6,000
HDLLM10T-10UP	5/8	7/8 - 14	1 1/16	33.5	88.9	6,000
HDLLM12T-12UP	3/4	1 1/16 - 12	1 3/16	37.6	101.1	6,000
HDLLM16T-16UP	1	1 5/16 - 12	1 5/8	41.4	114.0	5,500

Male Elbow

HDLM-GP

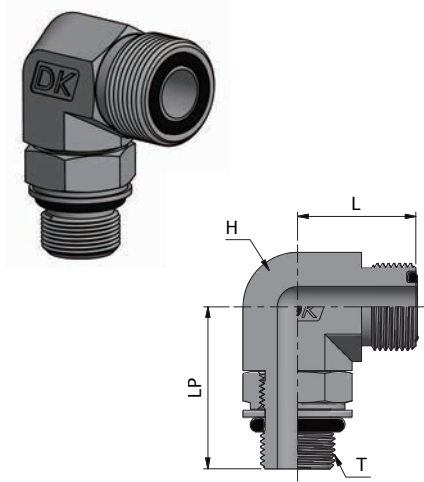


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D.		T PF				
	(in.)	(mm)					
HDLM4T-2GP	1/4	6	1/8 - 28	14	21.5	30.0	4,000
HDLM4T-4GP	1/4	6	1/4 - 19	19	23.5	36.0	4,000
HDLM4T-6GP	1/4	6	3/8 - 19	19	24.5	38.0	4,000
HDLM6T-4GP	3/8	8,10	1/4 - 19	19	25.0	36.0	4,000
HDLM6T-6GP	3/8	8,10	3/8 - 19	19	26.5	38.0	4,000
HDLM8T-4GP	1/2	12	1/4 - 19	19	28.0	35.5	4,000
HDLM8T-6GP	1/2	12	3/8 - 19	19	28.0	38.0	4,000
HDLM8T-8GP	1/2	12	1/2 - 14	27	31.0	48.5	4,000
HDLM8T-12GP	1/2	12	3/4 - 14	30	33.5	51.5	4,000
HDLM10T-6GP	5/8	14,15,16	3/8 - 19	27	33.5	40.5	4,000
HDLM10T-8GP	5/8	14,15,16	1/2 - 14	27	33.5	48.5	4,000
HDLM10T-12GP	5/8	14,15,16	3/4 - 14	30	36.0	51.5	4,000
HDLM10T-16GP	5/8	14,15,16	1 - 11	36	39.5	58.5	4,000
HDLM12T-8GP	3/4	18,20	1/2 - 14	30	37.5	49.5	4,000
HDLM12T-12GP	3/4	18,20	3/4 - 14	30	37.5	51.5	4,000
HDLM12T-16GP	3/4	18,20	1 - 11	36	41.0	58.5	4,000
HDLM16T-12GP	1	22,25	3/4 - 14	36	41.5	56.0	4,000
HDLM16T-16GP	1	22,25	1 - 11	36	41.5	58.5	4,000
HDLM16T-20GP	1	22,25	1 1/4 - 11	41	44.5	61.0	3,000
HDLM20T-16GP	1 1/4	28,30,32	1 - 11	41	44.5	61.0	4,000
HDLM20T-20GP	1 1/4	28,30,32	1 1/4 - 11	41	44.5	61.0	2,000
HDLM20T-24GP	1 1/4	28,30,32	1 1/2 - 11	50	49.0	64.5	2,000
HDLM24T-24GP	1 1/2	35,38	1 1/2 - 11	50	49.0	64.5	2,000

Metric Straight Thread Elbow

HDLM-MPH



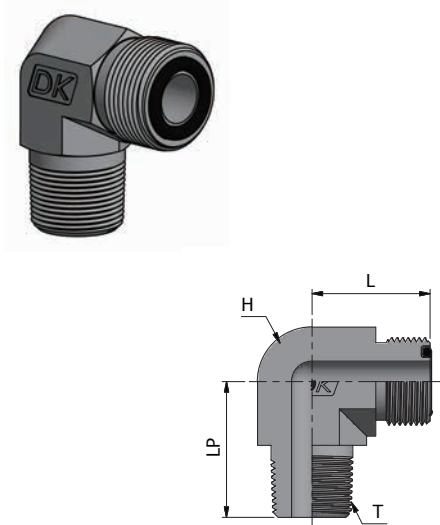
Fractional / Metric

Part No.	End Size		H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)	
	Tube O.D						T Metric
	(in.)	(mm)					
HDLM4T-12M15PH	1/4	6	M12X1.5	14	21.5	33.0	6,000
HDLM4T-14M15PH	1/4	6	M14X1.5	17	23.5	35.5	6,000
HDLM6T-12M15PH	3/8	8,10	M12X1.5	17	25.0	35.5	6,000
HDLM6T-14M15PH	3/8	8,10	M14X1.5	17	25.0	35.5	6,000
HDLM6T-16M15PH	3/8	8,10	M16X1.5	17	25.0	37.5	6,000
HDLM8T-14M15PH	1/2	12	M14X1.5	19	28.0	36.0	6,000
HDLM8T-18M15PH	1/2	12	M18X1.5	19	28.0	41.0	6,000
HDLM8T-22M15PH	1/2	12	M22X1.5	27	31.0	49.0	6,000
HDLM10T-18M15PH	5/8	14,15,16	M18X1.5	27	33.5	47.5	6,000
HDLM10T-22M15PH	5/8	14,15,16	M22X1.5	27	33.5	49.0	6,000
HDLM12T-22M15PH	3/4	18,20	M22X1.5	27	37.5	49.0	6,000
HDLM12T-27M20PH	3/4	18,20	M27X2.0	27	37.5	55.5	6,000
HDLM16T-33M20PH	1	22,25	M33X2.0	36	41.5	59.5	5,000
HDLM20T-38M20PH	1 1/4	28,30,32	M38X2.0	41	44.5	62.0	4,000
HDLM20T-42M20PH	1 1/4	28,30,32	M42X2.0	41	44.5	63.0	4,000
HDLM24T-48M20PH	1 1/2	35,38	M48X2.0	50	49.0	71.5	4,000

* For special M38x2 (ISO 6149-1 style) port. The current ISO 6149 does not include the M38 size.

Male Elbow

HDLM-N

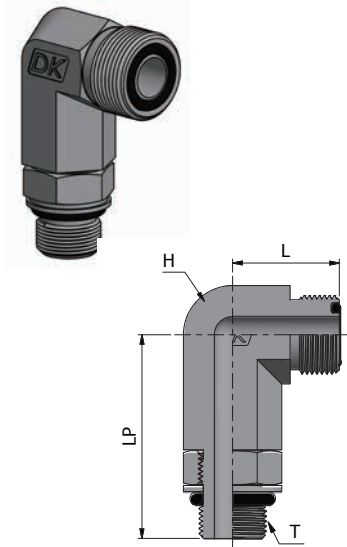


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T NPT				
HDLM4T-2N	1/4	1/8 - 27	9/16	20.3	21.6	6,000
HDLM4T-4N	1/4	1/4 - 18	9/16	28.4	21.6	6,000
HDLM4T-6N	1/4	3/8 - 18	3/4	31.0	24.6	6,000
HDLM4T-8N	1/4	1/2 - 14	7/8	37.3	27.2	6,000
HDLM6T-4N	3/8	1/4 - 18	3/4	27.7	24.9	6,000
HDLM6T-6N	3/8	3/8 - 18	3/4	31.0	24.9	6,000
HDLM6T-8N	3/8	1/2 - 14	7/8	37.3	29.2	6,000
HDLM8T-4N	1/2	1/4 - 18	3/4	31.0	27.9	6,000
HDLM8T-6N	1/2	3/8 - 18	3/4	31.0	27.9	6,000
HDLM8T-8N	1/2	1/2 - 14	7/8	37.3	27.9	6,000
HDLM8T-12N	1/2	3/4 - 14	1 1/16	40.4	33.5	4,000
HDLM10T-6N	5/8	3/8 - 18	1 1/16	32.5	33.3	6,000
HDLM10T-8N	5/8	1/2 - 14	1 1/16	37.3	33.3	6,000
HDLM10T-12N	5/8	3/4 - 14	1 3/16	40.4	35.8	4,000
HDLM12T-8N	3/4	1/2 - 14	1 3/16	40.4	37.3	6,000
HDLM12T-12N	3/4	3/4 - 14	1 3/16	40.4	37.3	4,000
HDLM12T-16N	3/4	1 - 11 1/2	1 5/16	50.0	41.1	3,000
HDLM16T-12N	1	3/4 - 14	1 7/16	45.2	41.7	4,000
HDLM16T-16N	1	1 - 11 1/2	1 7/16	50.0	41.7	3,000
HDLM20T-20N	1 1/4	1 1/4 - 11 1/2	1 5/8	60.4	44.7	2,500
HDLM24T-20N	1 1/2	1 1/4 - 11 1/2	1 7/8	66.3	48.8	2,500
HDLM24T-24N	1 1/2	1 1/2 - 11 1/2	1 7/8	67.1	48.8	2,500

Long Metric Straight Thread Elbow

HDLLM-MPH

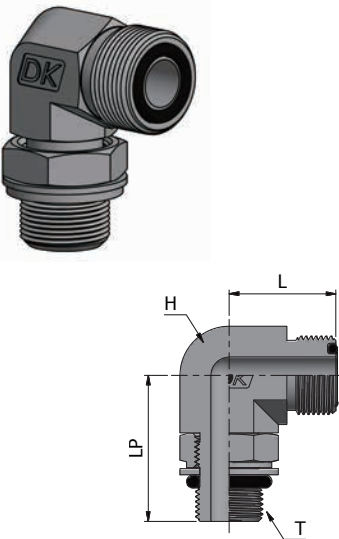


Fractional / Metric

Part No.	End Size		T Metric	H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D						
	(in.)	(mm)					
HDLLM4T-12M15PH	1/4	6	M12X1.5	14	21.5	56.5	6,000
HDLLM6T-14M15PH	3/8	8,10	M14X1.5	17	25.0	56.5	6,000
HDLLM6T-16M15PH	3/8	8,10	M16X1.5	17	25.0	66.5	6,000
HDLLM8T-18M15PH	1/2	12	M18X1.5	19	28.0	75.0	6,000
HDLLM8T-22M15PH	1/2	12	M22X1.5	27	31.5	88.0	6,000
HDLLM10T-22M15PH	5/8	14,15,16	M22X1.5	27	33.5	88.0	6,000
HDLLM12T-27M20PH	3/4	18,20	M27X2.0	27	37.5	100.5	6,000
HDLLM16T-33M20PH	1	22,25	M33X2.0	36	41.5	114.5	5,000
HDLLM20T-42M20PH	1 1/4	28,30,32	M42X2.0	41	44.5	126.5	4,000

Metric Straight Thread Elbow

HDLM-MP



Fractional / Metric

Part No.	End Size		T Metric	H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D						
	(in.)	(mm)					
HDLM4T-12M15P	1/4	6	M12X1.5	14	21.5	33.0	3,600
HDLM6T-12M15P	3/8	8,10	M12X1.5	17	25.0	35.5	3,600
HDLM6T-14M15P	3/8	8,10	M14X1.5	17	25.0	35.5	3,600
HDLM6T-16M15P	3/8	8,10	M16X1.5	17	25.0	37.5	3,600
HDLM8T-14M15P	1/2	12	M14X1.5	19	28.0	36.0	3,600
HDLM8T-18M15P	1/2	12	M18X1.5	19	28.0	41.0	3,600
HDLM8T-22M15P	1/2	12	M22X1.5	27	31.5	49.0	3,600
HDLM10T-22M15P	5/8	14,15,16	M22X1.5	27	33.5	49.0	3,600
HDLM12T-27M20P	3/4	18,20	M27X2	30	37.5	55.5	3,600
HDLM16T-33M20P	1	22,25	M33X2	36	41.5	59.5	2,500
HDLM20T-38M20P	1 1/4	28,30,32	M38X2	41	44.5	62.0	2,500
HDLM20T-42M20P	1 1/4	28,30,32	M42X2	41	44.5	63.0	2,500

45°Straight Thread Elbow

HDLBM-UP

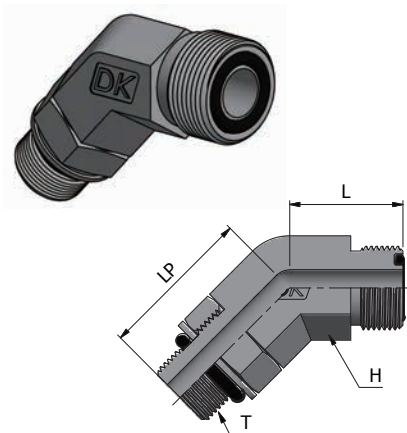


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF				
HDLBM4T-4UP	1/4	7/16 - 20	9/16	16.0	30.0	6,000
HDLBM4T-6UP	1/4	9/16 - 18	3/4	17.5	33.1	6,000
HDLBM6T-4UP	3/8	7/16 - 20	3/4	19.0	31.0	6,000
HDLBM6T-6UP	3/8	9/16 - 18	3/4	19.0	33.1	6,000
HDLBM6T-8UP	3/8	3/4 - 16	3/4	19.0	36.6	6,000
HDLBM8T-6UP	1/2	9/16 - 18	3/4	20.6	32.5	6,000
HDLBM8T-8UP	1/2	3/4 - 16	3/4	20.6	36.6	6,000
HDLBM8T-10UP	1/2	7/8 - 14	3/4	21.6	44.4	6,000
HDLBM10T-8UP	5/8	3/4 - 16	1 1/16	23.6	39.9	6,000
HDLBM10T-10UP	5/8	7/8 - 14	1 1/16	23.6	44.4	6,000
HDLBM10T-12UP	5/8	1 1/16 - 12	1 3/16	24.4	50.0	6,000
HDLBM12T-10UP	3/4	7/8 - 14	1 3/16	25.9	46.0	6,000
HDLBM12T-12UP	3/4	1 1/16 - 12	1 3/16	25.9	50.0	6,000
HDLBM12T-16UP	3/4	1 5/16 - 12	1 7/16	29.5	52.6	5,500
HDLBM16T-10UP	1	7/8 - 14	1 7/16	30.0	51.6	6,000
HDLBM16T-12UP	1	1 1/16 - 12	1 7/16	30.0	51.6	6,000
HDLBM16T-16UP	1	1 5/16 - 12	1 7/16	30.0	52.6	5,500
HDLBM16T-20UP	1	1 5/8 - 12	1 5/8	32.0	53.6	4,000
HDLBM20T-20UP	1 1/4	1 5/8 - 12	1 5/8	32.0	53.6	4,000
HDLBM24T-24UP	1 1/2	1 7/8 - 12	1 7/8	37.1	53.6	4,000

45°Metric Straight Thread Elbow

HDLBM-MPH

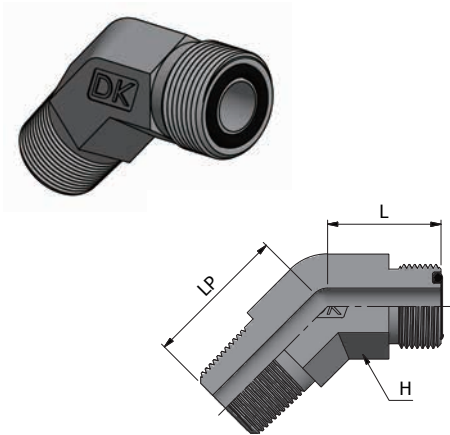


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D		T Metric				
	(in.)	(mm)					
HDLBM4T-12M15PH	1/4	6	M12X1.5	14	16.0	30.0	6,000
HDLBM4T-14M15PH	1/4	6	M14X1.5	17	17.5	31.5	6,000
HDLBM6T-16M15PH	3/8	8,10	M16X1.5	17	19.0	33.5	6,000
HDLBM8T-18M15PH	1/2	12	M18X1.5	19	20.5	37.0	6,000
HDLBM10T-22M15PH	5/8	14,15,16	M22X1.5	27	23.5	44.0	6,000
HDLBM12T-27M2PH	3/4	18,20	M27X2	27	26.0	50.5	6,000
HDLBM16T-33M2PH	1	22,25	M33X2	36	30.0	52.5	5,000
HDLBM20T-42M20PH	1 1/4	28,30,32	M42X2	41	32.0	54.0	4,000
HDLBM24T-48M20PH	1 1/2	35,38	M48X2	50	37.0	56.5	4,000

45° Male Elbow

HDLBM-N

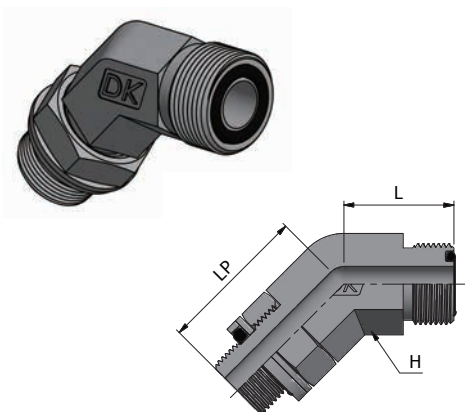


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T NPT				
HDLBM4T-2N	1/4	1/8 - 27	9/16	16.3	16.0	6,000
HDLBM4T-4N	1/4	1/4 - 18	9/16	21.8	17.3	6,000
HDLBM6T-4N	3/8	1/4 - 18	3/4	22.1	18.8	6,000
HDLBM6T-6N	3/8	3/8 - 18	3/4	22.1	18.8	6,000
HDLBM8T-6N	1/2	3/8 - 18	3/4	24.1	20.3	6,000
HDLBM8T-8N	1/2	1/2 - 14	7/8	29.7	21.8	6,000
HDLBM10T-8N	5/8	1/2 - 14	1 1/16	29.7	23.4	6,000
HDLBM12T-12N	3/4	3/4 - 14	1 5/16	33.0	25.9	4,000
HDLBM16T-16N	1	1 - 11.5	1 7/16	37.6	30.0	3,000
HDLBM20T-20N	1 1/4	1 1/4 - 11.5	1 5/8	42.4	32.0	2,500

45° Male Elbow

HDLBM-GP

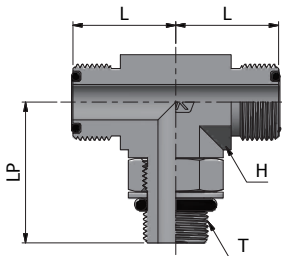


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D		T PF				
	(in.)	(mm)					
HDLBM4T-2GP	1/4	6	1/8 - 28	14	16.0	27.5	4,000
HDLBM4T-4GP	1/4	6	1/4 - 19	19	17.5	32.0	4,000
HDLBM6T-4GP	3/8	8,10	1/4 - 19	19	19.0	32.0	4,000
HDLBM6T-6GP	3/8	8,10	3/8 - 19	19	19.0	33.5	4,000
HDLBM6T-8GP	3/8	8,10	1/2 - 14	27	19.5	43.5	4,000
HDLBM8T-6GP	1/2	12	3/8 - 19	19	20.5	33.5	4,000
HDLBM8T-8GP	1/2	12	1/2 - 14	27	21.0	43.5	4,000
HDLBM10T-8GP	5/8	14,15,16	1/2 - 14	27	23.5	43.5	4,000
HDLBM10T-12GP	5/8	14,15,16	3/4 - 14	30	24.5	46.5	4,000
HDLBM12T-12GP	3/4	18,20	3/4 - 14	30	26.0	46.5	4,000
HDLBM12T-16GP	3/4	18,20	1 - 11	37	26.0	51.0	4,000
HDLBM16T-16GP	1	22,25	1 - 11	37	30.0	51.0	4,000

Straight Thread Branch Tee

HDTBM-UP

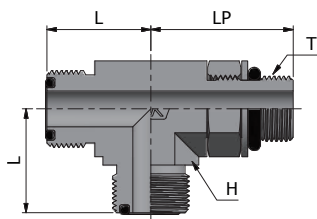


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)	T UN/UNF				
HDTBM4T-4UP	1/4	7/16 - 20	9/16	21.6	33.0	6,000
HDTBM4T-6UP	1/4	9/16 - 18	9/16	23.6	37.1	6,000
HDTBM6T-6UP	3/8	9/16 - 18	3/4	24.9	37.1	6,000
HDTBM6T-4UP	3/8	7/16 - 20	3/4	24.9	35.0	6,000
HDTBM6T-8UP	3/8	3/4 - 16	3/4	26.4	40.4	6,000
HDTBM8T-8UP	1/2	3/4 - 16	3/4	27.9	40.4	6,000
HDTBM8T-10UP	1/2	7/8 - 14	1 1/16	31.5	50.0	6,000
HDTBM8T-12UP	1/2	1 1/16 - 12	1 3/16	34.0	55.1	6,000
HDTBM10T-10UP	5/8	7/8 - 14	1 1/16	33.5	50.0	6,000
HDTBM10T-12UP	5/8	1 1/16 - 12	1 3/16	36.1	55.1	6,000
HDTBM12T-12UP	3/4	1 1/16 - 12	1 3/16	37.6	55.1	6,000
HDTBM12T-16UP	3/4	1 5/16 - 12	1 7/16	40.9	59.4	5,500
HDTBM16T-16UP	1	1 5/16 - 12	1 7/16	41.4	59.4	5,500
HDTBM16T-20UP	1	1 5/8 - 12	1 5/8	44.4	62.0	4,000
HDTBM20T-20UP	1 1/4	1 5/8 - 12	1 5/8	44.4	62.0	4,000
HDTBM24T-24UP	1 1/2	1 7/8 - 12	1 7/8	49.0	66.0	4,000

Straight Thread Run Tee

HDTRM-UP

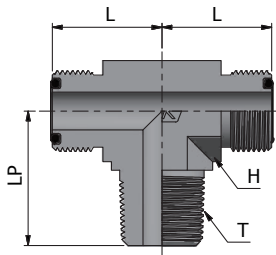


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D. (in.)	T UN/UNF				
HDTRM4T-4UP	1/4	7/16 - 20	9/16	21.6	33.0	6,000
HDTRM4T-6UP	1/4	9/16 - 18	3/4	23.4	37.1	6,000
HDTRM6T-6UP	3/8	9/16 - 18	3/4	24.9	37.1	6,000
HDTRM6T-8UP	3/8	3/4 - 16	3/4	26.4	40.4	6,000
HDTRM8T-8UP	1/2	3/4 - 16	3/4	27.9	40.4	6,000
HDTRM8T-10UP	1/2	7/8 - 14	1 1/16	31.5	50.0	6,000
HDTRM10T-10UP	5/8	7/8 - 14	1 1/16	33.5	50.0	6,000
HDTRM10T-12UP	5/8	1 1/16 - 12	1 3/16	36.1	55.1	6,000
HDTRM12T-12UP	3/4	1 1/16 - 12	1 3/16	37.6	55.1	6,000
HDTRM12T-16UP	3/4	1 5/16 - 12	1 7/16	40.9	59.4	5,500
HDTRM16T-16UP	1	1 5/16 - 12	1 7/16	41.4	59.4	5,500
HDTRM16T-20UP	1	1 5/8 - 12	1 5/8	44.4	62.0	4,000
HDTRM20T-20UP	1 1/4	1 5/8 - 12	1 5/8	44.4	62.0	4,000
HDTRM24T-24UP	1 1/2	1 7/8 - 12	1 7/8	49.0	66.0	4,000

Male Branch Tee

HDTBM-N

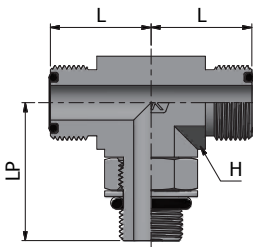


Fractional / Metric

Part No.	End Size		H HEX (in.)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T NPT				
HDTBM4T-4N	1/4	1/4 - 18	9/16	21.6	28.4	6,000
HDTBM6T-4N	3/8	1/4 - 18	3/4	24.9	27.7	6,000
HDTBM6T-6N	3/8	3/8 - 18	3/4	24.9	31.0	6,000
HDTBM8T-6N	1/2	3/8 - 18	3/4	27.9	31.0	6,000
HDTBM8T-8N	1/2	1/2 - 14	7/8	27.9	37.3	6,000
HDTBM10T-8N	5/8	1/2 - 14	1 1/16	33.3	37.3	6,000
HDTBM12T-12N	3/4	3/4 - 14	1 3/16	37.3	40.4	4,000
HDTBM16T-16N	1	1 - 11.5	1 7/16	41.7	50.0	3,000
HDTBM20T-20N	1 1/4	1 1/4 - 11.5	1 5/8	44.7	60.4	2,500

Metric Straight Thread Branch Tee

HDTBM-MPH

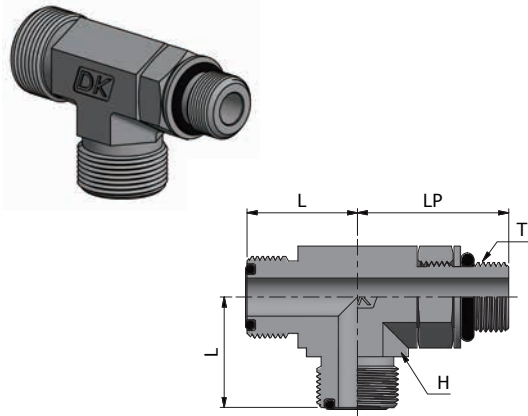


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D		T Metric				
	(in.)	(mm)					
HDTBM4T-12M15PH	1/4	6	M12X1.5	14	21.5	33.0	6,000
HDTBM4T-14M15PH	1/4	6	M14X1.5	19	23.5	35.5	6,000
HDTBM6T-14M15PH	3/8	8,10	M14X1.5	19	25.0	35.5	6,000
HDTBM6T-16M15PH	3/8	8,10	M16X1.5	19	25.0	37.5	6,000
HDTBM8T-14M15PH	1/2	12	M14X1.5	19	28.0	36.0	6,000
HDTBM8T-18M15PH	1/2	12	M18X1.5	19	28.0	41.0	6,000
HDTBM8T-22M15PH	1/2	12	M22X1.5	27	31.0	49.0	6,000
HDTBM10T-22M15PH	5/8	14,15,16	M22X1.5	27	33.5	49.0	6,000
HDTBM12T-27M20PH	3/4	18,20	M27X2.0	30	37.5	55.5	6,000
HDTBM16T-33M20PH	1	22,25	M33X2.0	36	41.5	59.5	5,100
HDTBM20T-42M20PH	1 1/4	28,30,32	M42X2.0	41	44.5	63.0	4,000
HDTBM24T-48M20PH	1 1/2	35,38	M48X2.0	50	49.0	71.5	4,000

Metric Straight Thread Run Tee

HDTRM-MPH

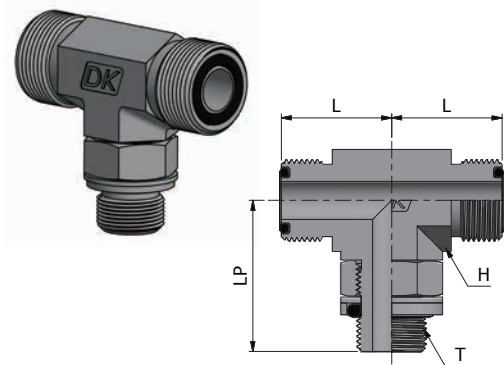


Fractional / Metric

Part No.	End Size		T Metric	H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D						
	(in.)	(mm)					
HDTRM4T-12M15PH	1/4	6	M12X1.5	14	21.5	33.0	6,000
HDTRM4T-14M15PH	1/4	6	M14X1.5	19	23.5	35.5	6,000
HDTRM6T-14M15PH	3/8	8,10	M14X1.5	19	25.0	35.5	6,000
HDTRM6T-16M15PH	3/8	8,10	M16X1.5	19	25.0	37.5	6,000
HDTRM8T-14M15PH	1/2	12	M14X1.5	19	28.0	36.0	6,000
HDTRM8T-18M15PH	1/2	12	M18X1.5	19	28.0	41.0	6,000
HDTRM8T-22M15PH	1/2	12	M22X1.5	27	31.0	49.0	6,000
HDTRM10T-22M15PH	5/8	14,15,16	M22X1.5	27	33.5	49.0	6,000
HDTRM12T-27M20PH	3/4	18,20	M27X2.0	30	37.5	55.5	6,000
HDTRM16T-32M20PH	1	22,25	M32X2.0	36	41.5	59.5	4,000
HDTRM20T-42M20PH	1 1/4	28,30,32	M42X2.0	41	44.5	63.0	4,000
HDTRM24T-48M20PH	1 1/2	35,38	M48X2.0	50	49.0	71.5	4,000

Male Branch Tee

HDTBM-GP

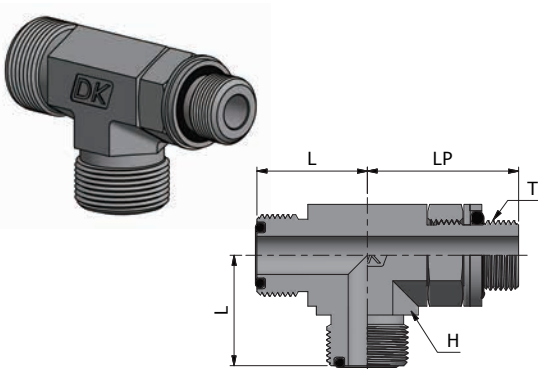


Fractional / Metric

Part No.	End Size		T PF	H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D						
	(in.)	(mm)					
HDTBM4T-2GP	1/4	6	1/8 - 28	14	21.5	30.0	4,000
HDTBM4T-4GP	1/4	6	1/4 - 19	19	23.5	36.0	4,000
HDTBM6T-4GP	3/8	8,10	1/4 - 19	19	25.0	36.0	4,000
HDTBM6T-6GP	3/8	8,10	3/8 - 19	19	26.5	38.0	4,000
HDTBM8T-6GP	1/2	12	3/8 - 19	19	28.0	38.0	4,000
HDTBM8T-8GP	1/2	12	1/2 - 14	27	31.0	48.5	4,000
HDTBM10T-8GP	5/8	14,15,16	1/2 - 14	27	33.5	48.5	4,000
HDTBM12T-12GP	3/4	18,20	3/4 - 14	30	37.5	51.5	4,000
HDTBM16T-16GP	1	22,25	1 - 11	36	41.5	58.5	4,000

Male Run Tee

HDTRM-GP

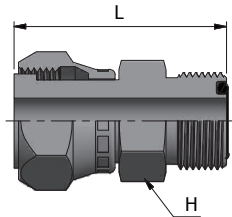
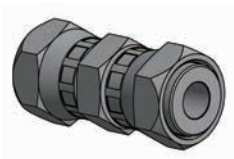


Fractional / Metric

Part No.	End Size		T PF	H HEX (mm)	L (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D						
	(in.)	(mm)					
HDTRM4T-2GP	1/4	6	1/8 - 28	14	21.5	30.0	4,000
HDTRM4T-4GP	1/4	6	1/4 - 19	19	23.5	36.0	4,000
HDTRM6T-4GP	3/8	8,10	1/4 - 19	19	25.0	36.0	4,000
HDTRM6T-6GP	3/8	8,10	3/8 - 19	19	26.5	38.0	4,000
HDTRM8T-6GP	1/2	12	3/8 - 19	19	28.0	38.0	4,000
HDTRM8T-8GP	1/2	12	1/2 - 14	27	31.0	48.5	4,000
HDTRM10T-8GP	5/8	14,15,16	1/2 - 14	27	33.5	45.2	4,000
HDTRM12T-12GP	3/4	18,20	3/4 - 14	30	37.5	51.5	4,000
HDTRM16T-16GP	1	22,25	1 - 11	37	41.5	58.5	4,000

Swivel Union

HDUS

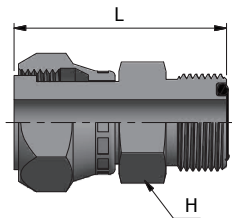
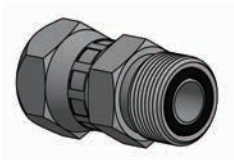


Fractional

Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	Dynamic Pressure (psig)
HDUS-4T	1/4	5/8	40.4	9,200
HDUS-6T	3/8	3/4	45.0	9,200
HDUS-8T	1/2	7/8	53.8	9,200
HDUS-10T	5/8	1 1/16	61.5	6,000
HDUS-12T	3/4	1 1/4	69.6	6,000
HDUS-16T	1	1 7/16	74.9	6,000

Tube End Extender / Expander

HDSU

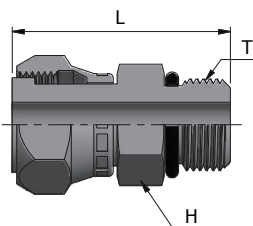
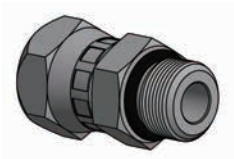


Fractional

Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	Dynamic Pressure (psig)
HDSU-4T	1/4	5/8	33.8	9,200
HDSU-6T	3/8	3/4	36.6	9,200
HDSU6T-4T	3/8	3/4	34.8	9,200
HDSU8T-6T	1/2	7/8	41.1	9,200
HDSU8T-8T	1/2	7/8	42.4	9,200
HDSU10T-8T	5/8	1 1/16	46.0	6,000
HDSU12T-10T	3/4	1 1/4	50.5	6,000
HDSU16T-12T	1	1 1/2	54.9	6,000
HDSU20T-16T	1 1/4	1 3/4	57.9	5,000
HDSU24T-20T	1 1/2	2 1/8	59.7	4,000

Straight Thread Swivel Connector

HDSMC-U

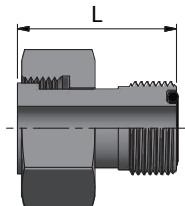
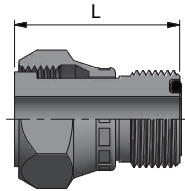


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF			
HDSMC4T-4U	1/4	7/16 - 20	5/8	37.1	9,200
HDSMC6T-6U	3/8	9/16 - 18	3/4	39.9	9,200
HDSMC8T-8U	1/2	3/4 - 16	7/8	49.5	9,200
HDSMC10T-10U	5/8	7/8 - 14	1 1/16	54.1	6,000
HDSMC12T-12U	3/4	1 1/16 - 12	1 1/4	59.4	6,000
HDSMC16T-16U	1	1 5/16 - 12	1 1/2	67.6	6,000
HDSMC20T-20U	1 1/4	1 5/8 - 12	1 7/8	67.6	5,000

Tube End Reducer

HDSR



Fractional

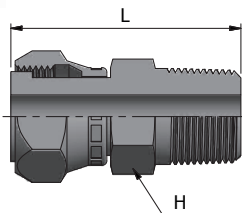
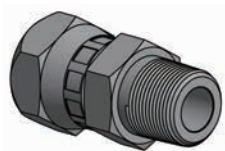
Part No.		End Size		L (mm)	Dynamic Pressure (psig)
HDSR		Tube O.D Swivel (in.)	Tube O.D (in.)		
*One Piece Design (With Crimp Nut)	**Two Piece Design (With Large Nut)				
HDSR6T-4T	-	3/8	1/4	19.6	9,200
-	HDSR8T-4T	1/2	1/4	22.1	9,200
HDSR8T-6T	-	1/2	3/8	22.6	9,200
-	HDSR10T-4T	5/8	1/4	23.1	6,000
-	HDSR10T-6T	5/8	3/8	23.9	6,000
-	HDSR10T-8T	5/8	1/2	25.4	6,000
-	HDSR12T-4T	3/4	1/4	24.9	6,000
-	HDSR12T-6T	3/4	3/8	25.9	6,000
-	HDSR12T-8T	3/4	1/2	27.4	6,000
HDSR12T-10T	-	3/4	5/8	29.5	6,000
-	HDSR16T-8T	1	1/2	29.0	6,000
-	HDSR16T-10T	1	5/8	32.0	6,000
HDSR16T-12T	-	1	3/4	33.0	6,000
-	HDSR20T-12T	1 1/4	3/4	33.5	5,000
HDSR20T-16T	-	1 1/4	1	34.0	5,000
-	HDSR24T-12T	1 1/2	3/4	33.5	4,000
-	HDSR24T-16T	1 1/2	1	34.0	4,000
-	HDSR24T-20T	1 1/2	1 1/4	34.0	4,000
-	HDSR32T-20T	2	1 1/4	36.1	3,000
-	HDSR32T-24T	2	1 1/2	36.1	3,000

* Assembled with swivel nut.

** Assembled with page HDN nut.

Swivel Male Connector

HDSMC-N

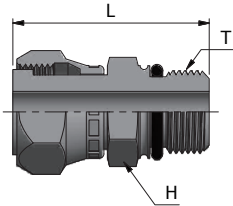
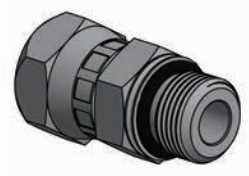


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D Swivel (in.)	T NPT			
HDSMC4T-2N	1/4	1/8 - 27	5/8	33.8	6,000
HDSMC4T-4N	1/4	1/4 - 18	5/8	38.6	6,000
HDSMC6T-4N	3/8	1/4 - 18	3/4	42.9	6,000
HDSMC6T-6N	3/8	3/8 - 18	3/4	42.4	6,000
HDSMC8T-6N	1/2	3/8 - 18	3/4	49.5	6,000
HDSMC8T-8N	1/2	1/2 - 14	7/8	54.4	6,000
HDSMC10T-8N	5/8	1/2 - 14	1 1/16	58.2	6,000
HDSMC12T-12N	3/4	3/4 - 14	1 1/4	60.2	5,500
HDSMC16T-16N	1	1 - 11.5	1 1/2	72.9	4,500

Swivel ISO 6149 Connector

HDSMC-MO

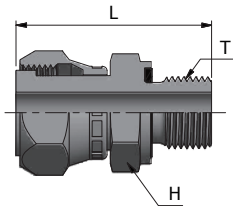
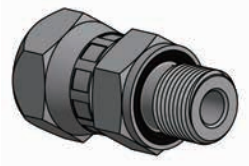


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D		T Metric			
	(in.)	(mm)				
HDSMC4T-12M15O	1/4	6	M12X1.5	17	37.0	9,200
HDSMC6T-12M15O	3/8	8,10	M12X1.5	17	39.0	9,200
HDSMC6T-14M15O	3/8	8,10	M14X1.5	19	38.0	9,200
HDSMC6T-16M15O	3/8	8,10	M16X1.5	22	43.5	9,200
HDSMC8T-16M15O	1/2	12	M16X1.5	22	48.0	9,200
HDSMC10T-22M15O	5/8	14,15,16	M22X1.5	27	53.0	6,000
HDSMC10T-27M20O	5/8	14,15,16	M27X2.0	32	57.0	6,000
HDSMC12T-27M20O	3/4	18,20	M27X2.0	32	59.5	6,000
HDSMC16T-33M20O	1	22,25	M33X2.0	41	67.5	6,000

Swivel Metric Connector

HDSMC-ME

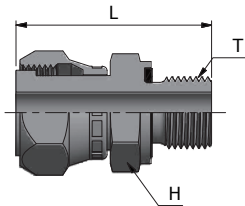
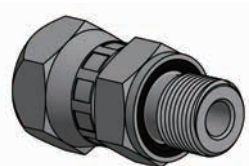


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D		T Metric			
	(in.)	(mm)				
HDSMC4T-12M15E	1/4	6	M12X1.5	17	38.2	9,200
HDSMC6T-14M15E	3/8	8,10	M14X1.5	19	40.2	9,200
HDSMC8T-16M15E	1/2	12	M16X1.5	22	47.3	9,200
HDSMC10T-22M15E	5/8	14,15,16	M22X1.5	27	51.8	6,000
HDSMC12T-27M20E	3/4	18,20	M27X2.0	32	57.2	6,000
HDSMC16T-33M20E	1	22,25	M33X2.0	41	67.0	6,000

Swivel BSPP Connector

HDSMC-GE

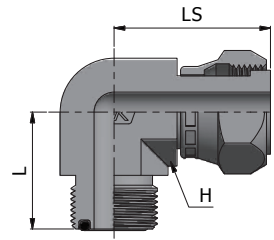


Fractional / Metric

Part No.	End Size			H HEX (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D		T PF			
	(in.)	(mm)				
HDSMC4T-2GE	1/4	6	1/8	14	34.0	7,200
HDSMC6T-4GE	3/8	8,10	1/4	19	40.2	9,200
HDSMC8T-6GE	1/2	12	3/8	22	47.3	9,200
HDSMC10T-8GE	5/8	14,15,16	1/2	27	51.8	6,000
HDSMC12T-12GE	3/4	18,20	3/4	32	57.2	6,000
HDSMC16T-16GE	1	22,25	1	46	67.0	6,000

Swivel Elbow

HDSL



Fractional

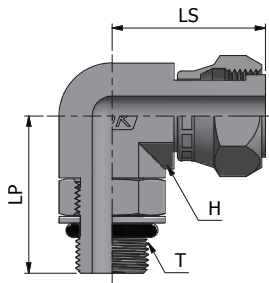
Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSL-4T	1/4	9/16	21.6	27.2	9,200
HDSL-6T	3/8	3/4	24.9	29.7	9,200
HDSL-8T	1/2	3/4	27.9	38.1	9,200
HDSL-10T	5/8	1 1/16	33.5	40.9	6,000
HDSL-12T	3/4	1 3/16	37.6	46.5	6,000
HDSL-16T	1	1 7/16	41.7	53.6	6,000
HDSL-20T	1 1/4	1 5/8	44.4	57.9	5,000
HDSL-24T	1 1/2	1 7/8	48.8	61.2	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSL6M-4T	6	14	21.5	27.2	9,200
HDSL8M-6T	8,10	19	25.0	29.7	9,200
HDSL12M-8T	12	19	28.0	38.0	9,200
HDSL14M-10T	14,15,16	27	33.5	41.0	6,000
HDSL18M-12T	18,20	30	37.5	46.5	6,000
HDSL22M-16T	22,25	36	41.6	53.5	6,000
HDSL28M-20T	28,30,32	41	44.5	58.0	4,000
HDSL35M-24T	35,38	50	48.8	61.0	4,000

Straight Thread Swivel Male Elbow

HDSL-UP

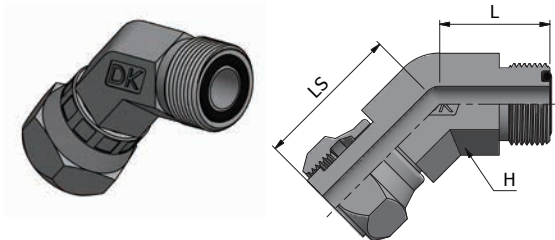


Fractional

Part No.	End Size		H HEX (in.)	LS (mm)	LP (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF				
HDSLM4T-4UP	1/4	7/16 - 20	9/16	26.4	33.0	6,000
HDSLM6T-6UP	3/8	9/16 - 18	3/4	29.7	37.1	6,000
HDSLM8T-8UP	1/2	3/4 - 16	3/4	38.1	40.4	6,000
HDSLM10T-10UP	5/8	7/8 - 14	1 1/16	41.9	50.0	6,000
HDSLM12T-12UP	3/4	1 1/16 - 12	1 1/16	45.5	55.1	6,000
HDSLM16T-16UP	1	1 5/16 - 12	1 5/16	52.6	59.4	5,500
HDSLM20T-20UP	1 1/4	1 5/8 - 12	1 5/8	57.9	62.0	4,000
HDSLM24T-24UP	1 1/2	1 7/8 - 12	1 7/8	61.0	66.0	4,000

45° Swivel Elbow

HDSL B

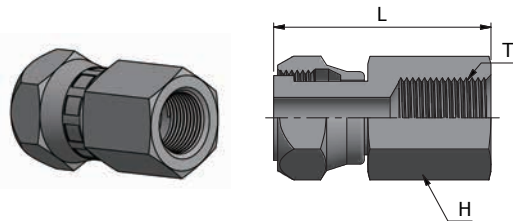


Fractional

Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSL B-4T	1/4	9/16	16.0	25.1	9,200
HDSL B-6T	3/8	3/4	18.8	28.4	9,200
HDSL B-8T	1/2	3/4	20.3	37.8	9,200
HDSL B-10T	5/8	1 1/16	23.4	38.9	6,000
HDSL B-12T	3/4	1 3/16	25.9	43.9	6,000
HDSL B-16T	1	1 7/16	30.0	47.5	6,000
HDSL B-20T	1 1/4	1 5/8	32.0	50.3	5,000
HDSL B-24T	1 1/2	1 7/8	36.8	52.3	4,000

Swivel Female Connector

HDSCF-N

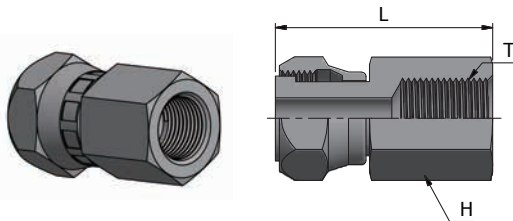


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF			
HDSCF4T-4N	1/4	1/4 - 18	3/4	37.6	6,000
HDSCF6T-4N	3/8	1/4 - 18	7/8	40.6	6,000
HDSCF8T-4N	1/2	1/4 - 18	7/8	44.4	6,000

Straight Thread Swivel Female Connector

HDSCF-U

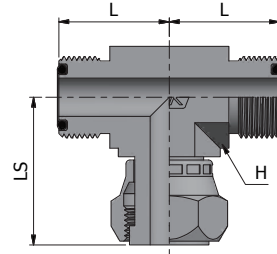


Fractional

Part No.	End Size		H HEX (in.)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	T UN/UNF			
HDSCF4T-4U	1/4	7/16 - 20	3/4	35.05	6,000
HDSCF4T-6U	1/4	9/16 - 18	13/16	36.83	6,000
HDSCF6T-4U	3/8	7/16 - 20	3/4	38.35	6,000
HDSCF8T-4U	1/2	7/16 - 20	7/8	39.88	6,000

Swivel Branch Tee

HDSBT



Fractional

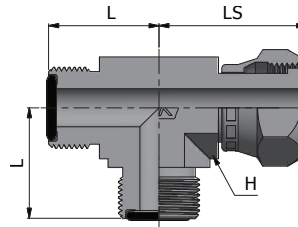
Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSBT-4T	1/4	9/16	21.6	27.18	9,200
HDSBT-6T	3/8	3/4	24.9	29.72	9,200
HDSBT-8T	1/2	3/4	27.9	38.10	9,200
HDSBT-10T	5/8	1 1/16	33.5	40.89	6,000
HDSBT-12T	3/4	1 3/16	37.6	46.48	6,000
HDSBT-16T	1	1 7/16	41.4	53.59	6,000
HDSBT-20T	1 1/4	1 5/8	44.4	57.91	5,000
HDSBT-24T	1 1/2	1 7/8	49.0	60.96	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSBT-6M	6	14	21.5	27.2	-
HDSBT-8M	8,10	19	25.0	29.7	9,200
HDSBT-12M	12	19	28.0	38.0	9,200
HDSBT-14M	14,15,16	27	33.5	41.0	6,000
HDSBT-18M	18,20	30	37.5	46.5	6,000
HDSBT-22M	22,25	36	41.5	53.5	6,000
HDSBT-28M	28,30,32	41	44.5	58.0	4,000
HDSBT-35M	35,38	50	49.0	61.0	4,000

Swivel Run Tee

HDSRT



Fractional

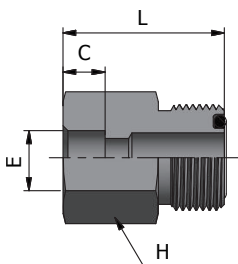
Part No.	End Size Tube O.D (in.)	H HEX (in.)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSRT-4T	1/4	9/16	21.6	27.2	9,200
HDSRT-6T	3/8	3/4	24.9	29.7	9,200
HDSRT-8T	1/2	3/4	27.9	38.1	9,200
HDSRT-10T	5/8	1 1/16	33.5	40.9	6,000
HDSRT-12T	3/4	1 3/16	37.6	46.5	6,000
HDSRT-16T	1	1 7/16	41.4	53.6	6,000
HDSRT-20T	1 1/4	1 5/8	44.4	57.9	5,000
HDSRT-24T	1 1/2	1 7/8	49.0	61.0	4,000

Metric

Part No.	End Size Tube O.D (mm)	H HEX (mm)	L (mm)	LS (mm)	Dynamic Pressure (psig)
HDSRT-6M	6	14	21.5	27.2	9,200
HDSRT-8M	8,10	19	25.0	29.7	9,200
HDSRT-12M	12	19	28.0	38.0	9,200
HDSRT-14M	14,15,16	27	33.5	41.0	6,000
HDSRT-18M	18,20	30	37.5	46.5	6,000
HDSRT-22M	22,25	36	41.6	53.5	6,000
HDSRT-28M	28,30,32	41	44.5	58.0	4,000
HDSRT-35M	35,38	50	48.8	61.0	4,000

Braze Connector

HDCF-TSW

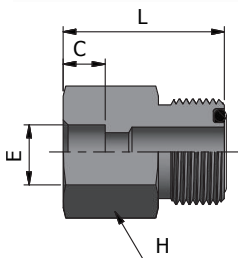


Fractional

Part No.	End Size		H HEX (in.)	C (mm)	E Tube Socket (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (in.)	SW (in.)					
HDCF4T-4TSW	1/4	1/4	5/8	13.5	6.6	21.8	9,200
HDCF4T-6TSW	1/4	3/8	5/8	13.5	9.6	21.8	9,200
HDCF6T-4TSW	3/8	1/4	3/4	14.5	6.6	22.9	9,200
HDCF6T-6TSW	3/8	3/8	3/4	14.5	9.6	22.9	9,200
HDCF6T-8TSW	3/8	1/2	3/4	14.5	12.9	22.9	9,200
HDCF8T-4TSW	1/2	1/4	7/8	16.3	6.6	24.6	9,200
HDCF8T-6TSW	1/2	3/8	7/8	16.0	9.6	24.6	9,200
HDCF8T-8TSW	1/2	1/2	7/8	16.0	12.9	24.6	9,200
HDCF8T-10TSW	1/2	5/8	7/8	16.0	16.0	24.6	6,000
HDCF8T-12TSW	1/2	3/4	1 1/16	17.0	19.3	29.5	6,000
HDCF10T-6TSW	5/8	3/8	1 1/16	18.8	9.6	27.2	6,000
HDCF10T-8TSW	5/8	1/2	1 1/16	18.8	12.9	27.2	6,000
HDCF10T-10TSW	5/8	5/8	1 1/16	18.8	16.0	27.2	6,000
HDCF10T-12TSW	5/8	3/4	1 1/16	18.8	19.3	31.2	6,000
HDCF12T-8TSW	3/4	1/2	1 1/4	21.1	12.9	29.5	6,000
HDCF12T-10TSW	3/4	5/8	1 1/4	21.1	16.0	29.5	6,000
HDCF12T-12TSW	3/4	3/4	1 1/4	21.1	19.3	33.5	6,000
HDCF12T-16TSW	3/4	1	1 1/2	21.1	25.6	35.0	6,000
HDCF16T-8TSW	1	1/2	1 1/2	24.6	12.9	33.0	6,000
HDCF16T-12TSW	1	3/4	1 1/2	24.6	19.3	37.1	6,000
HDCF16T-16TSW	1	1	1 1/2	24.6	25.6	38.6	6,000
HDCF16T-20TSW	1	1 1/4	1 3/4	24.4	32.0	38.6	6,000
HDCF20T-16TSW	1 1/4	1	1 3/4	24.6	25.6	38.6	6,000
HDCF20T-20TSW	1 1/4	1 1/4	1 3/4	24.6	32.0	38.6	6,000
HDCF20T-24TSW	1 1/4	1 1/2	2 1/8	24.6	38.3	38.6	5,000
HDCF24T-20TSW	1 1/2	1 1/4	2 1/8	24.6	32.0	38.6	5,000
HDCF24T-24TSW	1 1/2	1 1/2	2 1/8	24.6	38.3	38.6	5,000

Braze Connector

HDCF-MSW

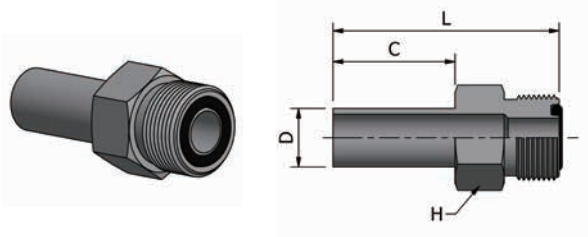


Metric

Part No.	End Size		H HEX (mm)	C (mm)	E Tube Socket (mm)	L (mm)	Dynamic Pressure (psig)
	Tube O.D (mm)	SW (mm)					
HDCF6M-6MSW	6	6	17	13.5	6.1	22.0	9,200
HDCF6M-8MSW	6	8	17	13.5	8.1	22.0	9,200
HDCF8M-10MSW	8,10	10	19	14.5	10.1	23.0	9,200
HDCF12M-12MSW	12	12	22	16.0	12.1	24.5	9,200
HDCF14M-16MSW	14,15,16	16	27	19.0	16.1	27.5	6,000
HDCF18M-20MSW	18,20	20	32	21.0	20.2	33.5	6,000
HDCF22M-25MSW	22,25	25	41	24.5	25.2	38.5	6,000
HDCF28M-30MSW	28,30,32	30	46	24.5	30.2	38.5	6,000
HDCF35M-38MSW	35,38	38	55	24.5	38.2	38.5	5,000

Tube Stub Connector

HDCW

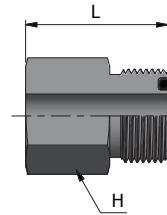


Fractional

Part No.	End Size Tube O.D (in.)	H HEX (in.)	C (mm)	D DIA (mm)	L (mm)	Dynamic Pressure (psig)
HDCW-4T	1/4	5/8	22.35	6.3	40.1	5,900
HDCW-6T	3/8	3/4	22.35	9.6	42.4	3,800
HDCW-8T	1/2	7/8	25.40	12.7	48.0	5,500
HDCW-12T	3/4	1 1/4	29.46	19.0	59.7	3,500
HDCW-16T	1	1 1/4	28.70	25.4	58.9	2,600
HDCW-16T61L	1	1 1/2	28.70	25.4	61.0	2,600

Plug

HDP



Fractional

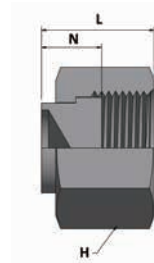
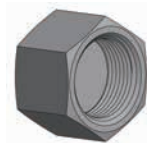
Part No.	End Size Tube O.D (in.)	H HEX (mm)	L (mm)	Dynamic Pressure (psig)
HDP-4T	1/4	5/8	16.5	9,200
HDP-6T	3/8	3/4	19.0	9,200
HDP-8T	1/2	7/8	22.1	9,200
HDP-10T	5/8	1 1/16	25.9	6,000
HDP-12T	3/4	1 1/4	27.4	6,000
HDP-14T	7/8	1 3/8	27.9	6,000
HDP-16T	1	1 1/2	27.9	6,000
HDP-20T	1 1/4	1 3/4	27.9	6,000
HDP-24T	1 1/2	2 1/8	27.9	5,000
HDP-32T	2	2 3/4	35.6	3,000

Metric

Part No.	End Size Tube O.D (in.)	H HEX (mm)	L (mm)	Dynamic Pressure (psig)
HDP-6M	6	17	16.5	9,200
HDP-8M	8,10	19	19.0	9,200
HDP-12M	12	22	22.0	9,200
HDP-14M	14,15,16	27	26.0	6,000
HDP-18M	18,20	32	27.5	6,000
HDP-22M	22,25	41	28.0	6,000
HDP-28M	28,30,32	46	28.0	6,000
HDP-38M	38	55	28.0	5,000

Cap

HDC



Fractional

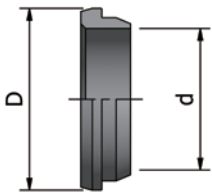
Part No.	End Size Tube O.D (in.)	Thread Size Swivel UN/UNF	H HEX (mm)	N (mm)	L (mm)	Dynamic Pressure (psig)
HDC-4T	1/4	9/16-18	11/16	8.9	16.8	9,200
HDC-6T	3/8	11/16-16	13/16	10.4	18.8	9,200
HDC-8T	1/2	13/16-16	15/16	11.9	22.1	9,200
HDC-10T	5/8	1-14	1 1/8	13.5	25.9	6,000
HDC-12T	3/4	1 3/16-12	1 3/8	15.0	28.4	6,000
HDC-14T	7/8	1 5/16-12	1 1/2	15.0	28.4	6,000
HDC-16T	1	1 7/16-12	1 5/8	16.0	29.5	6,000
HDC-20T	1 1/4	1 11/16-12	1 7/8	16.0	29.5	6,000
HDC-24T	1 1/2	2-12	2 1/4	16.0	29.5	5,000
HDC-32T	2	2 1/2-12	2 7/8	20.1	37.1	3,000

Metric

Part No.	End Size Tube O.D (mm)	Thread Size Swivel UN/UNF	H HEX (mm)	N (mm)	L (mm)	Dynamic Pressure (psig)
HDC-6M	6	9/16-18	17	9.0	16.8	9,200
HDC-8M	8,10	11/16-16	22	10.5	18.8	9,200
HDC-12M	12	13/16-16	24	12.0	22.0	9,200
HDC-14M	14,15,16	1-14	30	13.5	26.0	6,000
HDC-18M	18,20	1 3/16-12	36	15.0	28.6	6,000
HDC-22M	22,25	1 7/16-12	41	16.0	29.5	6,000
HDC-28M	28,30,32	1 11/16-12	50	16.0	29.5	6,000
HDC-35M	35,38	2-12	60	16.0	29.5	5,000

Sleeve

HDPS



Fractional

Part No.	End Size d (in.)	D (mm)	Dynamic Pressure (psig)
HDPS-4T	1/4	12.7	7.6
HDPS-6T	3/8	15.7	8.6
HDPS-8T	1/2	18.8	10.7
HDPS-10T	5/8	23.4	10.7
HDPS-12T	3/4	27.7	11.9
HDPS-16T	1	34.0	13.5
HDPS-20T	1 1/4	40.4	12.9
HDPS-24T	1 1/2	48.5	12.4
HDPS-32T	2	60.7	13.7

*Must be mechanically attached using Sleeve system.

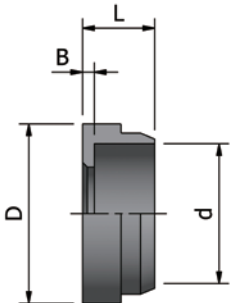
*Additional-S not required, HDPS-6M is complete part number.

Metric

Part No.	End Size d (mm)	D (mm)	Dynamic Pressure (psig)
HDPS-6M	6	12.7	7.5
HDPS-8M	8	15.7	8.5
HDPS-10M	10	15.7	8.5
HDPS-12M	12	18.9	10.5
HDPS-14M	14	23.5	10.5
HDPS-15M	15	23.5	10.5
HDPS-16M	16	23.5	10.5
HDPS-18M	18	27.8	12.0
HDPS-20M	20	27.8	12.0
HDPS-25M	25	34.0	13.5
HDPS-30M	30	40.5	13.0
HDPS-32M	32	40.5	13.0
HDPS-35M	35	48.5	12.5
HDPS-38M	38	48.5	12.5

Braze Reducer Sleeve

HDS



Fractional

Part No.	End Size		D (mm)	d (mm)	B (mm)	L (mm)
	Tube O.D (in.)					
HDS-4T	1/4	-	12.7	6.6	1.0	9.4
HDS-6T	3/8	-	15.7	9.6	1.0	9.4
HDS6T-4T	3/8	1/4	15.7	6.6	2.0	10.4
HDS-8T	1/2	-	19.0	12.9	1.0	9.4
HDS8T-4T	1/2	1/4	19.0	6.6	3.6	11.9
HDS8T-6T	1/2	3/8	19.0	9.6	3.6	11.9
HDS-10T	5/8	-	23.4	16.0	1.5	10.4
HDS10T-4T	5/8	1/4	23.4	6.6	5.1	13.5
HDS10T-6T	5/8	3/8	23.4	9.6	5.1	13.5
HDS10T-8T	5/8	1/2	23.4	12.9	5.1	13.5
HDS-12T	3/4	-	27.9	19.3	1.5	14.0
HDS12T-4T	3/4	1/4	27.9	6.6	6.1	14.5
HDS12T-6T	3/4	3/8	27.9	9.6	6.1	14.5
HDS12T-8T	3/4	1/2	27.9	12.9	6.1	14.5
HDS12T-10T	3/4	5/8	27.9	16.0	5.6	14.5
HDS12T-14T	3/4	7/8	27.9	22.3	1.5	16.5
HDS-14T	7/8	-	31.0	22.3	1.5	14.0
HDS-16T	1	-	34.3	25.6	1.5	15.5
HDS16T-8T	1	1/2	34.3	12.9	7.1	15.5
HDS16T-10T	1	5/8	34.3	16.0	6.6	15.5
HDS16T-12T	1	3/4	34.3	19.3	4.6	17.0
HDS16T-14T	1	7/8	34.3	22.3	4.6	17.0
HDS-20T	1 1/4	-	40.6	32.0	1.5	15.5
HDS20T-12T	1 1/4	3/4	40.6	19.3	7.1	19.6
HDS20T-16T	1 1/4	1	40.6	25.6	7.1	21.1
HDS-24T	1 1/2	-	48.5	38.3	1.5	15.5
HDS24T-16T	1 1/2	1	48.5	25.6	7.1	21.1
HDS24T-20T	1 1/2	1 1/4	48.5	32.0	7.1	21.1
HDS-32T	2	-	61.2	51.0	1.5	16.5

Unplated part, oil dipped for corrosion protection.

*D is for silver brazing.

** 12-14 HDS must be assembled with 12-14 HDN.

***Size 14 and 32 are not included in SAE J1453.

• Uses HDBR silver braze rings.

Metric

Part No.	End Size Tube O.D (mm)	D (mm)	d (mm)	B (mm)	L (mm)
HDS-6M	6	12.8	6	1.0	9.5
HDS-8M	8	15.8	8	1.0	9.5
HDS-10M	10	15.8	10	1.0	9.5
HDS-12M	12	18.9	12	1.0	9.5
HDS-16M	16	23.5	16	1.5	10.5
HDS-20M	20	27.9	20	1.5	14.0
HDS-25M	25	34.2	25	1.5	15.5
HDS-30M	30	40.6	30	1.5	15.5
HDS-38M	38	48.5	38	1.5	15.5

Unplated part, oil dipped for corrosion protection.

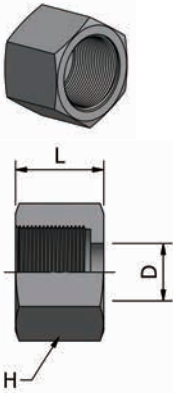
*D is for silver brazing.

• Uses HDBR (metric) silver braze rings.

• Stainless steel part number example: HDS-10M.

Nut

HDN



Fractional

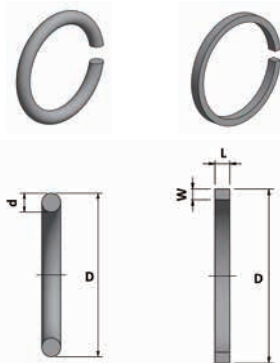
Part No.	End Size Tube O.D (in.)	Thread Size UNF/UNF	H HEX (in.)	D (mm)	L (mm)
HDN-4T	1/4	9/16-18	11/16	10.4	15.0
HDN-5T	5/16	5/8-18	3/4	11.9	16.0
HDN-6T	3/8	11/16-16	13/16	13.5	17.0
HDN-8T	1/2	13/16-16	15/16	16.5	20.1
HDN-10T	5/8	1-14	1 1/8	21.1	23.9
HDN-12T	3/4	1 3/16-12	1 3/8	24.1	26.4
HDN12T-14T	7/8	1 3/16-12	1 3/8	25.1	30.5
HDN-14T	7/8	1 5/16-12	1 1/2	27.3	26.4
HDN-16T	1	1 7/16-12	1 5/8	29.2	27.4
HDN-20T	1 1/4	1 11/16-12	1 7/8	36.1	27.4
HDN-24T	1 1/2	2-12	2 1/4	43.9	27.4
HDN-32T	2	2 1/2-12	2 7/8	56.4	33.0

Metric

Part No.	End Size Tube O.D (mm)	Thread Size UNF/UNF	H HEX (mm)	D (mm)	L (mm)
HDN-6M	6	9/16-18	17	10.5	15.0
HDN-8M	8,10	11/16-16	22	13.5	17.5
HDN-12M	12	13/16-16	24	16.6	20.0
HDN-14M	14,15,16	1-14	30	21.1	24.0
HDN-18M	18,20	1 3/16-12	36	24.1	26.5
HDN-22M	22,25	1 7/16-12	41	29.1	27.5
HDN-28M	28,30,32	1 11/16-12	50	36.0	27.5
HDN-35M	35,38	2-12	60	44.0	27.5

Braze Ring

HDBR



Fractional

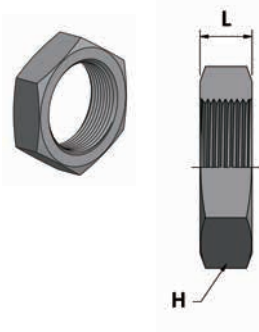
Part No.	End Size Tube O.D (in.)	d (mm)	D (mm)	w (mm)	L (mm)
HDBR-4T	1/4	1.3	6.6	-	-
HDBR-6T	3/8	-	9.9	1.8	0.8
HDBR-8T	1/2	-	13.1	1.8	0.8
HDBR-10T	5/8	-	16.3	1.8	0.8
HDBR-12T	3/4	-	19.4	2.0	1.0
HDBR-14T	7/8	1.5	22.6	-	-
HDBR-16T	1	-	25.8	2.0	1.0
HDBR-20T	1 1/4	-	32.1	2.0	1.0
HDBR-24T	1 1/2	-	38.5	2.0	1.0
HDBR-32T	2	2.3	51.2	-	-

Metric

Part No.	End Size Tube O.D (mm)	D (mm)	L (mm)
HDBR-6M	6	6.4	1.2
HDBR-8M	8	8.4	1.2
HDBR-10M	10	10.4	1.2
HDBR-12M	12	12.4	1.2
HDBR-16M	16	16.4	1.2
HDBR-20M	20	20.4	1.6
HDBR-25M	25	25.4	1.6
HDBR-30M	30	30.4	1.6
HDBR-38M	38	38.4	1.6

Bulkhead Locknut

HDBN



Fractional

Part No.	End Size Tube O.D (in.)	Thread Size UNF/UNF	H HEX (in.)	L (mm)
HDBN-4T	1/4	9/16-18	13/16	6.9
HDBN-6T	3/8	11/16-16	1	7.9
HDBN-8T	1/2	13/16-16	1 1/8	8.9
HDBN-10T	5/8	1-14	1 5/16	10.4
HDBN-12T	3/4	1 3/16-12	1 1/2	10.4
HDBN-14T	7/8	1 5/16-12	1 5/8	10.4
HDBN-16T	1	1 7/16-12	1 3/4	10.4
HDBN-20T	1 1/4	1 11/16-12	2	10.4
HDBN-24T	1 1/2	2-12	2 3/8	10.4

Metric

Part No.	End Size Tube O.D (mm)	Thread Size UNF/UNF	H HEX (mm)	L (mm)
HDBN-6M	6	9/16-18	22	7.0
HDBN-8M	8,10	11/16-16	27	8.0
HDBN-12M	12	13/16-16	30	9.0
HDBN-14M	14,15,16	1-14	36	10.5
HDBN-18M	18,20	1 3/16-12	41	10.5
HDBN-22M	22,25	1 7/16-12	46	10.5
HDBN-28M	28,30,32	1 11/16-12	50	10.5
HDBN-35M	35,38	2-12	60	10.5

