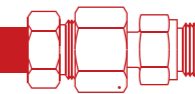




TUBE FITTING (DIN 2353, JIS)



Based Standard DIN 3851 SEKWANG HI-TECH. DIN fittings have been improved to comply with current standard requirements.



INFORMATION

General

Based Standard DIN 3851 SEKWANG HI-TECH. DIN fittings have been improved to comply with current standard requirements. They conform to installation standard DIN 2353 and all of their constituent parts are interchangeable with competitor products provided they comply to the basic standard requirements as applicable.

Our production facilities have many years of experience in the manufacture of precision products which in conjunction with stringent quality control from the starting material up to the finished component determines the quality of SEKWANG HI-TECH fittings.

Fitting materials

SEKWANG HI-TECH fittings are machined from drawn steel bar or steel forgings. Materials according to DIN 3859(technical specifications for tube fittings).

Nuts are either cold or hot pressed.

Fittings made of stainless steel.

X6CrNiMoTi17122 to DIN 17440, material No.1.4571, is also available for supply.

Caution!

The use of steel is permissible up to 120°C max. For any temperature higher than 120°C, use material 1.4571.

Pressure and temperature load Capability

Pressure specification are based on, given in our catalogue relate to steel fittings with a static load at a temperature up to 120°C and refer to

- Nominal pressure(PN) acc. to DIN 2401.
- The rated pressure has a safety factor of 4(DIN 3859)
- permissible working pressure (PB) of the operating pressure acc. to DIN 2401. The security factor for PB is 2,5 of 1,5 respectively.

Pressure Ranges

Series	Steel		1.4571 (SS316)	
	Size	Pressure	Size	Pressure
LL	4-12	100 bar	4-8	100 bar
	6-15	250 bar	6-15	250 bar
L	18-22	160 bar	18-22	160 bar
	28-42	100 bar	28-42	100 bar
S	6-14	630 bar	6-14	630 bar
	16-25	400 bar	16-25	400 bar
	30-38	250 bar	30-38	250 bar

Caution! For certain type of fittings the nominal pressure differ from those shown above, in which case the ratings indicated for the individual types should be observed!

Allowable working temperatures (TB)

A) For fittings materials

Material	Temperature
Steel	- 40°C up to +120°C (DIN 3859)
Brass	- 60°C up to +175°C
Stainless Steel	- 60°C up to + 400°C (DIN 17440)

Please refer to the information given in the section "Reduction of Pressure"

B) For seal-materials

Material	Temperature
NBR(e.g.Perbunan)	- 35°C up to +100°C
FPM(e.g.Viton)	- 25°C up to +200°C
PTFE(e.g.Teflon)	- 60°C up to +240°C

Caution!

If different fitting and sealing material are used, the lowest temperature as indicated for each material is applicable!

Pressure reduction with temperature

The following reduction of pressure compared with the catalogue specification for higher temperatures.

Materials of fittings	Temperature range	Reduction of pressure
Steel	- 40°C up to +120°C	-
Brass	- 60°C up to +175°C	30%
1.4571	- 60°C up to +20°C	-
1.4571	- 60°C up to +50°C	4%
1.4571	+ 100°C	11%
1.4571	+ 200°C	20%
1.4571	+ 300°C	29%
1.4571	+ 400°C	33%

For different material of tubes and fittings. The tubes must be tested separately concerning the allowed temperature range and the necessary reduction of pressure.

Surface protection

All range fittings are zinc chromate plated.

All weldable fittings are phosphated.

Nikel-plated on request for carbon steel.

Fluids

SEKWANG HI-TECH DIN fittings are designed for the use of commercial hydraulic oils.

If special fluids please contact our application engineers.

Ordering Information

Example 1. Tube to Tube Connection

HT - 12 S - S316
① ②③ ⑥

Example 3. Tube to Tube Port

HEW - 16 S - S316
① ②③ ⑥

Example 5. Banjo Fitting

HWH - 16 S - 04G - S316
① ②③ ④ ⑥

Example 2. Tube to Thread Connection

HMC - 10 L - 02G ED - S316
① ②③ ④⑤ ⑥

Example 4. Tube Port to Female Port

HMGE - 16 S - 04G ED - STEL
① ②③ ④⑤ ⑥

Example 6. Male / Female Adapter

MFAE - 04G - 04G - STEL
① ④ ⑥

- ① Name of Fitting : "Refer to Index"
- ② Tube O.D : See Tube O.D Designator
- ③ Series : See Series Designator
- ④ Thread Connection : See Thread Designator
- ⑤ Elastomer Seal : ED-Ring (Refer to seal materials)
- ⑥ Material : See Material Designator

Tube O.D Designator

Tube O.D	4mm	6mm	8mm	.....	38mm	42mm
Identifier	04	06	08	.....	38	42

Series Designator

Series	Very Light	Light	Heavy
Identifier	LL	L	S

Thread Designator (Pipe Thread)

Name Size	1/8"	1/4"	3/8"	1/2"	3/4"	1"	1 1/4"	1 1/2"
ANSI / ASME B1.20.1 NPT	02N	04N	06N	08N	12N	16N	20N	24N
DIN-ISO228(DIN 259) BSP/Parallel	02G	04G	06G	08G	12G	16G	20G	24G
DIN-2999 BSP Tapered	02R	04R	06R	08R	12R	16R	20R	24R

Thread Designator (Metric Thread)

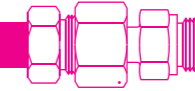
Metric Size	M8X1.0	M10X1.0	M12X1.5	M14X1.5	.....	M27X2.0	M33X2.0	M42X2.0	M48X2.0
DIN 158 Taper(Keg)	M8K	M10K	M12K	M14K	.....			
DIN-13 Parallel	M8	M10	M12	M12	.....	M27	M33	M42	M48

Thread Designator (Unified)

Size	7/16-20UNF	9/16-18UNF	3/4-16UNF	7/8-14UNF	1 1/16-12UN	1 5/16-12UN	1 5/8-12UN
Identifier	07U	09U	12U	14U	17U	21U	26U

Material Designator

Material	Carbon Steel (DIN 3859)	Stainless Steel		Brass
		DIN 17440/1.4571	ASTM A479 TYPE 316	
Identifier	STEL	4571	S316/316L	BRAS



INFORMATION

Tubing guide

- Seamless precision steel tube St 37.4

We recommend the use of seamless precision steel tubes with dimensions to DIN 2391, Part 1, Material St 37.4 to DIN 1630, type NBK. The following tube wall thickness are suitable for use :

Tube O.D (D)	Tolerance	Wall* Thickness(t)	Weight	Design Pressure	
				DIN 2413	
				I	III
4		0.5	0.047	313	274
4	±0.08	0.75	0.060	409	391
4		1	0.074	522	500
6		●0.75	0.103	333	289
6	±0.08	1	0.123	389	372
6		1.5	0.166	549	526
6		2	0.197	692	662
6		2.25	0.208	757	725
8	±0.08	1	0.173	333	288
8		1.5	0.240	431	412
8		2	0.296	549	526
8		2.5	0.339	658	630
10	±0.08	1	0.222	282	248
10		1.5	0.314	373	357
10		2	0.395	478	458
10		2.5	0.462	576	551
10		3	0.518	666	638
12		●1	0.271	235	209
12	±0.08	1.5	0.389	353	303
12		2	0.493	409	391
12		2.5	0.586	495	474
12		3	0.606	576	551
12	3.5	0.734	651	624	
15	±0.08	●1	0.345	188	171
15		1.5	0.499	282	248
15		2	0.641	336	321
15		2.5	0.771	409	391
15	3	0.888	478	458	
16	±0.08	●1	0.370	176	160
16		1.5	0.536	264	234
16		2	0.691	353	303
16		2.5	0.832	386	370
16	3	0.962	452	433	
18	±0.08	●1	0.419	157	143
18		1.5	0.610	235	209
18		2	0.789	313	273
18		2.5	0.956	348	333
18		3	1.110	409	391

Tube O.D (D)	Tolerance	Wall* Thickness(t)	Weight	Design Pressure	
				DIN 2413	
				I	III
20		●1.5	0.684	212	191
20	±0.08	2	0.888	282	249
20		2.5	1.08	353	303
20		3	1.26	373	357
20		3.5	1.424	426	408
20		4	1.578	478	458
22	±0.08	●1	0.518	128	118
22		1.5	0.758	192	174
22		2	0.986	256	227
22		2.5	1.202	320	278
22		3	1.406	343	328
25	±0.08	2	1.134	226	201
25		2.5	1.387	282	248
25		3	1.628	338	292
25		4	2.072	394	378
25		4.5	2.275	437	418
25		5	2.466	478	458
28	±0.08	1.5	0.980	151	139
28		2	1.282	201	181
28		2.5	1.572	252	223
28		3	1.850	302	264
28		4	2.368	357	342
28	5	2.836	434	415	
30	±0.08	●2	1.381	188	171
30		2.5	1.695	235	210
30		3	2.00	282	248
30		4	2.57	336	321
30		5	3.08	409	391
35	±0.15	2	1.63	161	147
35		2.5	2.00	201	181
35		3	2.37	242	215
35		4	3.06	322	280
35		5	3.69	357	342
35	6	4.29	419	401	
38	±0.15	●2.5	2.189	186	168
38		3	2.589	223	200
38		4	3.35	297	260
38		5	4.07	332	318
38		6	4.74	390	373
38	7	5.35	446	427	
42	±0.2	●2	1.973	134	124
42		3	2.89	201	181
42		4	3.75	269	237

- Reinforce tube inserts are recommended where thin walled tubes are subject to severe strains.
- *Permissible variation in wall thickness (DIN 2391)

Calculation Pressure :

- Calculated pressure to DIN 2413 part I for primarily static load conditions.

- Yield point (K) : 235 N/mm² (to DIN 1630)

- Safety factor (s) : 1.5

- Allowance factor (c) $P = \frac{20 \cdot K \cdot t \cdot c}{S \cdot D}$ (bar)

- Calculation Pressure to DIN 2413 part III for dynamic load conditions

- Yield point (K) : 225 N/mm² (DIN 2413 4.2.8)

- Safety factor (s) : 1.5

$P = \frac{20 \cdot K \cdot t \cdot c}{S \cdot (D + t \cdot c)}$ (bar)

Factor for consideration of wall thickness divergence for static and dynamic stress

Tube Range	4mm / 5mm	6mm / 8mm	Larger
Factor(c)	0.8	0.85	0.9

- Note : For a diameter ratio of O.D / I.D > 1.35, calculation made to DIM 2413 part III and based on a pulsation fatigue limit of 235 N /mm²
- Temperature range : - 40°C to +120°C without reduction in pressure.

Seamless precision stainless steel 1.4571

- Stainless steel tubes (e.g. 1.4571), code X6CrNiMoTi 17122, must be cold-drawn and seamless, heat-treated without formation of scales, type m to DIN 17458, provide tolerance to DIN 2391, Part 1. The following tube wall thickness are suitable for use :

Tube O.D (D)	Tolerance	Wall* Thickness(t)	Weight	Design Pressure	
				DIN 2413	
				I	III
4	±0.08	0.75	0.061	391	376
4		1	0.075	500	480
6	±0.08	1	0.125	372	357
6		1.5	0.168	526	505
6		2	0.200	662	637
6		2.25	0.211	725	696
8	±0.08	1	0.175	347	277
8		1.5	0.244	412	396
8		2	0.300	526	505
8	2.5	0.344	630	604	
10	±0.08	1	0.225	294	238
10		1.5	0.319	357	343
10		2	0.401	458	439
10		2.5	0.469	551	529
10		3	0.525	638	612
12	±0.08	●1	0.275	245	201
12		1.5	0.394	368	291
12		2	0.501	391	376
12		2.5	0.594	474	544
12		3	0.615	551	529
12		3.5	0.744	624	599
15	±0.08	1.5	0.507	294	238
15		2	0.651	321	309
15		2.5	0.782	391	376
15		3	0.901	458	439
16	±0.08	2	0.701	368	291
16		2.5	0.845	370	355
16		3	0.977	433	416
18	±0.08	●1.5	0.620	245	201
18		2	0.801	327	262
18		2.5	0.967	333	320
18		3	1.126	391	376

- Reinforce tube inserts are recommended where thin-walled tubes are subject to severe strains.
- *Permissible variation in wall thickness (DIN 2391)

Calculation Pressure :

- Calculated Pressures to DIN 2413 part I for Primarily static load conditions

- Yield point (K) : 245 N/mm² (to DIN 17458)

- Safety factor (s) : 1.5

- Allowance factor (c) $P = \frac{20 \cdot K \cdot t \cdot c}{S \cdot D}$ (bar)

- Calculated pressure to DIN 2413 part III for dynamic load conditions

- Yield point (K) : 216 N/mm² (assumed value)

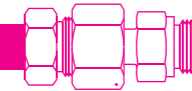
- Safety factor (s) : 1.5

$P = \frac{20 \cdot K \cdot t \cdot c}{S \cdot (D + t \cdot c)}$ (bar)

Factor for consideration of wall thickness divergence for static and dynamic stress

Tube Range	4mm / 5mm	6mm / 8mm	Larger
Factor(c)	0.8	0.85	0.9

- Note : For a diameter ratio of O.D / I.D > 1.35, calculation made to DIN 2413 part III and based on a pulsating fatigue limit of 225 N /mm²
- Temperature range : - 60°C to +400°C Reduction in pressure for higher temperatures (See page 1)



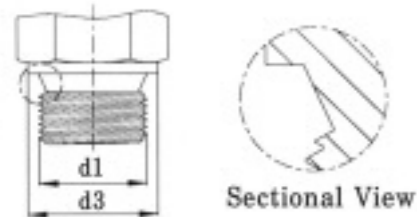
INFORMATION

Stud Ends & Tapped Hole Forms for tube Fittings

This standard specifies dimensions for stud ends and tapped holes with metric fine pitch thread and pipe thread for use with compression fittings, valves and screw plugs, general outlay for types.

Forms of Stud Ends

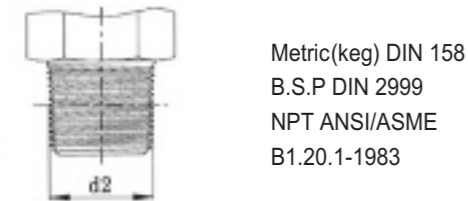
-Form A (DIN 3852 Part 1+2) with sealing by washer



-Form B (DIN 3852 Part 1+2) with sealing by compression against face



-Form C (DIN 3852 Part 1+2) with sealing in tapered thread



-Form E (DIN 3852 Part 11) with sealing by DIN 3852 ring seals (*ED-Ring)



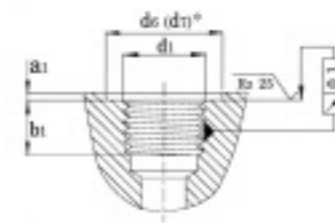
-Form F (DIN 3852 Part 3) with sealing by *O-Ring



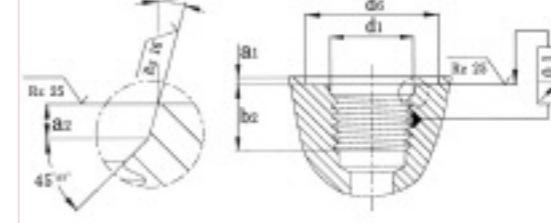
Thread size for		d ₃	d ₄ ^{±0.2}	d ₅ ^{±0.2}
Form A,B and E,F stud ends d ₁	Form C stud ends d ₂			
M8X 1.0	M8X 1.0 Keg.	-	-	10.9
M10X1.0	M10X1.0 Keg.	14	13.9	12.9
M12X1.5	M12X1.5 Keg.	17	16.9	16.9
M14X1.5	M14X1.5 Keg.	19	18.9	18.9
M16X1.5	M16X1.5 Keg.	21	20.9	20.9
M18X1.5	M18X1.5 Keg.	23	22.9	22.9
M20X1.5	M20X1.5 Keg.	25	24.9	24.9
M22X1.5	M22X1.5 Keg.	27	26.9	26.9
M26X1.5	-	31	30.9	30.9
M27X2.0	-	32	31.9	31.9
M33X2.0	-	39	37.9	37.9
M42X2.0	-	49	47.9	47.9
M48X2.0	-	55	54.9	54.9
G 1/8	1/8 NPT	14	13.9	-
G 1/4	1/4 NPT	18	18.9	-
G 3/8	3/8 NPT	22	21.9	-
G 1/2	1/2 NPT	26	26.9	-
G 3/4	3/4 NPT	32	31.9	-
G 1	1 NPT	39	39.9	-
G 1 1/4	1 1/4 NPT	49	49.9	-
G 1 1/2	1 1/2 NPT	55	54.9	-
7/16-20UNF	R 1/8	-	-	14.4
9/16-18UNF	R 1/4	-	-	17.6
3/4-160UNF	R 3/8	-	-	22.3
7/8-14UNF	R 1/2	-	-	25.5
1 1/16-12UNF	R 3/4	-	-	31.9
1 5/16-12UNF	R 1	-	-	38.2
1 5/8-12UNF	R 1 1/4	-	-	47.7
-	R 1 1/2	-	-	-

Forms of Tapped Holes

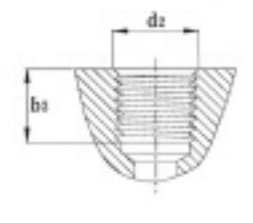
Form X (DIN 3852 Part 1+2) for parallel Stud Ends. (Form A,B) *d7 is for Stud Ends Form E



Form W (DIN 3852 Part 3) for Stud Ends with O-Ring. (Form F)

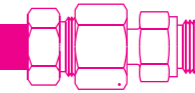


Form Z (DIN 3852 Part 1+2) for tapered thread Stud Ends.



Thread size for		d ₆ min	d ₇	d ₇ max	d ₂₀ ^{±0.4}	b ₁ min	b ₂ min	b ₃ min	α _{±1°}
Form X,W Tapped Holes d ₁	Form Z Tapped Holes d ₂								
M8 X 1.0	M8 X 1.0 keg.	13	-	1.0	1.6	-	10.0	5.5	12
M10X1.0	M10X1.0 keg.	15	15	1.0	1.6	8	10.0	5.5	12
M12X1.5	M12X1.5 keg.	18	18	1.5	2.4	12	11.5	8.5	12
M14X1.5	M14X1.5 keg.	20	20	1.5	2.4	12	11.5	8.5	15
M16X1.5	M16X1.5 keg.	22	23	1.5	2.4	12	13.0	8.5	15
M18X1.5	M18X1.5 keg.	24	25	2.0	2.4	12	14.5	8.5	15
M20X1.5	M20X1.5 keg.	26	27	2.0	2.4	14	14.0	10.5	15
M22X1.5	M22X1.5 keg.	28	28	2.5	2.4	14	15.5	10.5	15
M26X1.5	-	32	33	2.5	3.1	16	16.0	-	15
M27X2.0	-	33	33	2.5	3.1	16	19.0	-	15
M33X2.0	-	40	41	2.5	3.1	18	19.0	-	15
M42X2.0	-	50	51	2.5	3.1	20	19.5	-	15
M48X2.0	-	56	56	2.5	3.1	22	22.0	-	15
G 1/8	1/8 NPT	15	15	1.0	-	8	-	6.9	-
G 1/4	1/4 NPT	19	20	1.5	-	12	-	10.0	-
G 3/8	3/8 NPT	23	23	2.0	-	12	-	10.3	-
G 1/2	1/2 NPT	27	28	2.5	-	14	-	13.6	-
G 3/4	3/4 NPT	33	33	2.5	-	16	-	14.1	-
G 1	1 NPT	40	41	2.5	-	18	-	16.8	-
G 1 1/4	1 1/4 NPT	50	51	2.5	-	20	-	17.3	-
G 1 1/2	1 1/2 NPT	56	56	2.5	-	22	-	17.3	-
7/16-20UNF	R 1/8	21	-	1.6	2.4	-	11.5	5.5	12
9/16-18UNF	R 1/4	25	-	1.6	2.5	-	12.7	8.5	12
3/4-16UNF	R 3/8	30	-	2.4	2.5	-	14.3	8.5	15
7/8-140UNF	R 1/2	34	-	2.4	2.5	-	16.7	10.5	15
1 1/16-12UN	R 3/4	41	-	2.4	3.3	-	19.0	13.0	15
1 5/16-12UN	R 1	49	-	3.2	3.3	-	19.0	16.0	15
1 5/8-12UN	R11/4	58	-	3.2	3.3	-	19.0	17.0	15
-	R11/2	-	-	-	-	-	-	17.0	-

*ED-Ring & O-Ring Seals made of NBR Standard(-20°C to 90°C) Available made of Viton Upon Request(-20°C to 200°C)



INFORMATION

Tightening Torques for Studs

- Recommend tightening torques MA
The table below shows Nm value for studs with metal seal, form B, DIN 3852 or with captive sealing (ED-Ring) to avoid leakings.
- Sealing of taper thread
Taper threads are not self-sealing. To achieve a leakproof seals, an additional sealant is necessary. A well-established sealing-medium is a PTFE-tape (e.g. Teflon)
- Note :
The quoted figures relate to fitting out of steel(galvanized) and to counter parts face of steel.
For the Male / Female adapters (HFAD / HFAE), there apply the tightening torques for series "S"

Series	Tube O.D	Pipe Thread	MA(Nm)	Metric Thread ISO	MA(Nm)
L	6	G 1/8A	25	M10X1	25
	8	G 1/4A	50	M12X1.5	30
	10	G 1/4A	50	M14X1.5	50
	12	G 3/8A	80	M16X1.5	80
	15	G 1/2A	160	M18X1.5	90
	18	G 1/2A	105	M22X1.5	160
	22	G 3/4A	220	M26X1.5	285
	18	G 1A	370	M33X2.0	425
	35	G 1 1/4A	600	M42X2.0	600
	42	G 1 1/2A	800	M48X2.0	800
S	6	G 1/4A	60	M12X1.5	35
	8	G 1/4A	60	M14X1.5	60
	10	G 3/8A	110	M16X1.5	95
	12	G 3/8A	110	M18X1.5	120
	14	G 1/2A	170	M20X1.5	170
	16	G 1/2A	140	M22X1.5	190
	20	G 3/4A	320	M27X2.0	320
	25	G 1A	380	M33X2.0	500
	30	G 1 1/4A	600	M42X2.0	600
	38	G 1 1/2A	800	M48X2.0	800

Assembly Instruction

This assembly Instruction applicable to DIN 2353 fittings shows suitable make-up of fittings into seamless pipe in accordance with DIN 3859.

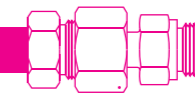
- The design including form A and B for DIN 3861
- Introducing how to install steel pipe of DIN 2391 part 1 and part 2.

3 Methods might be employed for assembling -

- Assembly by direct fitting body.
- Assembly by using pre-assembly tool.
- Assembly of standpipe & cone fitting with O-ring

Assembly of cutting ring fittings in direct fitting body

<p>1.0 Saw the tube at right angle. An angular offset 1/2° in relation to the tube axis is permissible.</p> <p>1.1 After clean, lightly deburr tube ends at the inside and outside edge.</p> <p>1.2 Don't use a tube cutter because this cause formation of considerable burrs and an angular cut. Use sawing machine or device instead.</p>	
<p>2.0 Lubricate thread and inside of fitting body also cutting ring and thread of nut. Don't use grease.</p> <p>2.1 Place nut and cutting ring in tube as shown. Ensure cutting ring and nut are facing the right way.</p>	
<p>3.0 Press tube into fitting body, up to tube abutment, then hand-tighten the nut.</p>	
<p>4.0 make sure the nut is in hand tight position, then the 1 1/2 turns with wrench by holding fitting body with a second wrench.(Never turn fitting body,hold body and turn nut)</p> <p>Caution! Any deviating number of tightening turns reduces the nominal pressure and the service life of the fitting and may cause leakages or slipping of the tube.</p>	



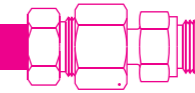
Assembly Instruction

<p>5.0 Check penetration of cutting edge. A visible ring of material should fill the space in front of the cutting ring and face. Cutting ring may turn on tube, but should not be capable of axial displacement.</p>	
<p>6.0 Each time the fitting is disassembled, the nut must be retightened firmly using the same torque as required for final assembly.</p>	
<p>7.0 Minimum length of straight tube and for tube bends, up to start of the bending radius must be at twice (2 X H) the nut length (H)</p>	

Assembly of cutting ring fittings in pre-assembly tool

<p>1.0 In order to ensure positive assembly HMIC DIN fitting should always be pre-assembly in on oiled pre-assembly tool. For direct assembly, torque-controlled assembly or mechanical pre-assembly, which are also possible. Please refer to separate assembly instructions.</p>	
<p>2.0 Saw the tube at right angle. An angular offset 1/2° in relation to the tube axis is permissible. 2.1 After clean, lightly sebur tube ends at the inside and outside edge. 2.2 Don't use a tube cutter because this would cause formation of considerable burrs and an angular cut. Use sawing machine or device instead.</p>	

<p>3.0 Lubricate thread and inside of fittings body also ring and thread of nut. Don't use grease. 3.1 Place nut and cutting ring on tube as shown. Ensure cutting ring and nut are facing the right way.</p>	
<p>4.0 Press tube into fitting body, up to tube abutment, then hand-tighten the nut.</p>	
<p>5.0 Make sure the nut is hand tight position, then the 1 1/4 turns with wrench by holding fitting body with a second wrench (Never turn fitting body, hold body and turn nut) Caution ! Application of deviating numbers of tightening turns reduce the nominal pressure rating and the life of the fitting which cause leakage or slipping of the tube.</p>	
<p>6.0 Check penetration of cutting edge. A visible ring of material should fill the space in front of the cutting ring and face. Cutting ring may turn on tube but should not be capable of axial displacement.</p>	
<p>7.0 Tighten nut until a noticeable increase in force is required. Beyond this point, tighten the nut by 1/4 turn with wrench for final assembly. Hold fitting body by means of a wrench. 7.1 With unfavorable mounting conditions and great tube dimensions, final assembly must be completed in via with the fitting body. Caution! Any deviating number of tightening turns reduces the nominal pressure and the service life of the fitting and may cause leakages or slipping off the fitting.</p>	



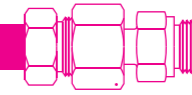
Assembly Instruction

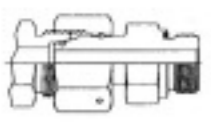

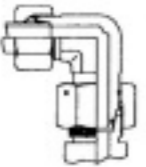
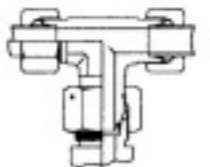
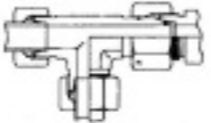
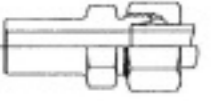
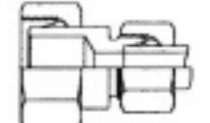
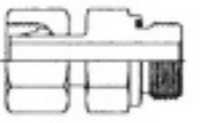
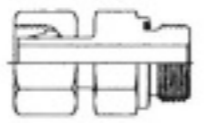
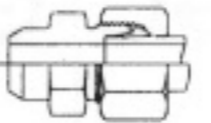
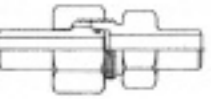
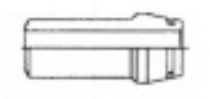
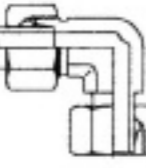
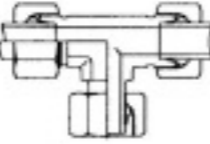
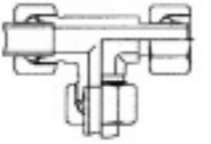
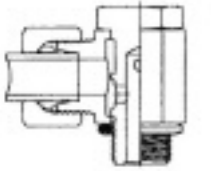
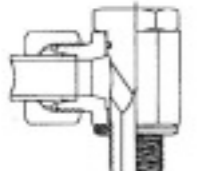
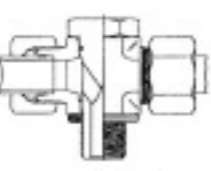
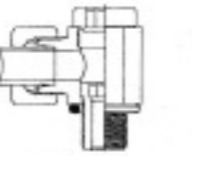
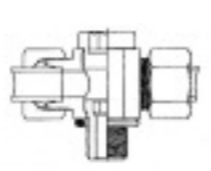
<p>8.0 Each time the fitting is disassembled, the nut must retightened firmly using the same torque as required for final assembly.</p>	
<p>9.0 Minimum length of straight tube and for tube bends, up to start of the bending radius must be at least twice(2XH)the nut length(H)</p>	

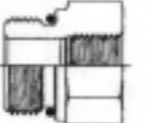

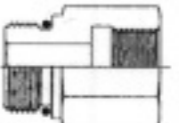
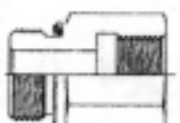
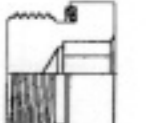

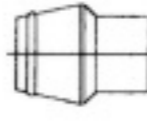
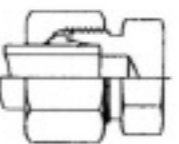



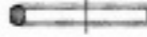

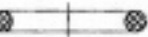
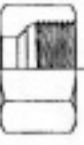
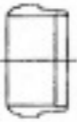
Assembly Instruction for standpipe & cone fitting with O-Ring

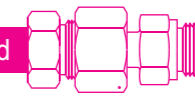
<p>1.0 Standpipes are generally supplied with pre-assembled cutting ring. Tighten the nut 1/4 turn with wrench beyond the point of a noticeable increase in force. Hold fitting body firmly by means of wrench.</p> <p>1.1 With unfavorable mounting conditions and great tube dimensions, final assembly must be completed in a vice with the fitting body to be subsequently installed.</p> <p>Caution! Any deviating number of tightening turns reduces the nominal pressure and the service life of the fitting and may cause leakages or slipping off the fitting.</p>	
<p>2.0 Oil O-Ring Tighten nut 1/4 of a turn beyond the point of a noticeable increase in force. Hold fitting body firmly by means of wrench.</p> <p>2.1 With unfavorable mounting conditions and great tube dimensions, final assembly must be completed in a vice with the fitting body to be subsequently installed.</p> <p>Caution! Any deviating number of tightening turns reduces the nominal pressure and the service life of the fitting and may cause leakages or slipping off the fitting.</p>	

<p>HMC-R</p> <p>P.30</p>	<p>HMC-N</p> <p>P.31</p>	<p>HFC-G</p> <p>P.32</p>	<p>HFC-M</p> <p>P.33</p>	<p>HLM-R/M</p> <p>P.34</p>
<p>HU</p> <p>P.35</p>	<p>HUR</p> <p>P.36</p>	<p>HBU</p> <p>P.37</p>	<p>HL</p> <p>P.38</p>	<p>HBL</p> <p>P.39</p>
<p>HT</p> <p>P.40</p>	<p>HTR</p> <p>P.41~42</p>	<p>HC</p> <p>P.43</p>	<p>HOM-G</p> <p>P.44~45</p>	<p>HOM-U</p> <p>P.46</p>
<p>HOM-M</p> <p>P.47</p>	<p>HOM-GED</p> <p>P.48</p>	<p>HOM-MED</p> <p>P.49</p>	<p>HOLM</p> <p>P.50</p>	<p>HRED</p> <p>P.51</p>



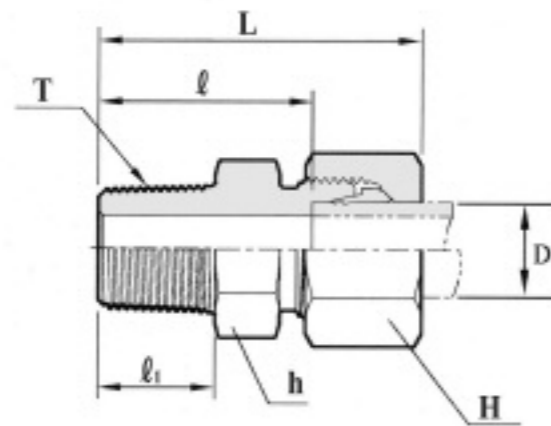
HEGE-G/M	HUE	HEW	HET	HEL
				
P.52~53	P.54	P.55	P.56	P.57
HR	HKOR	HA-GED	HA-MED	HAS
				
P.58	P.59~60	P.61	P.62	P.63
HASK	HAK	HLA	HBTA	HRTA
				
P.63	P.64	P.65	P.66	P.67
HSWVE-G/M	HWH-G/M	HTH-G/M	HSVW-G/M	HSVT-G/M
				
P.68~69	P.70~41	P.72~73	P.74~75	P.76

HFAD	HFAD-ED	HFAE	HFAE-ED	HVSTI-GED / MED
				
P.77	P.77	P.78	P.79	P.80
HVSTI	HVKA	HCA	HLN	HKA
				
P.80	P.81	P.81	P.82	P.82
HKAZ	HKI	KP-B-S	KP-B-HS	HN
				
P.82	P.83	P.83	P.83	P.84
HS				
				
P.84				



MALE CONNECTOR (BSP TAPERED)

HMC-R



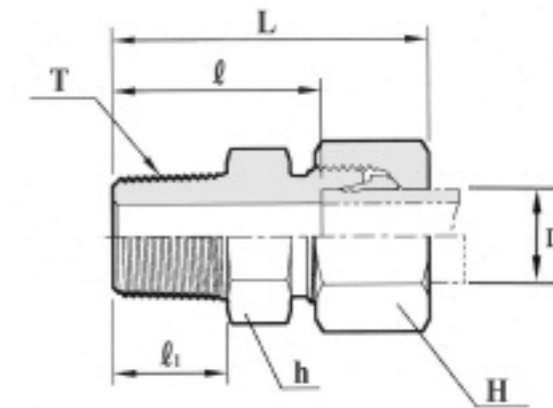
Form C stud end

Series	Part No.	Tube O.D.	h	H	L	ℓ	ℓ ₁	T (BSPT)
		D						
LL very light PN 100	HMC 04LL-02R	4	11	10	26	16	8	1/8
	HMC 06LL-02R	6	11	12	26	14.5	8	1/8
	HMC 08LL-02R	8	12	14	28	16.5	8	1/8
	HMC 08LL-04R	8	14	14	32	20.5	12	1/4
	HMC 10LL-04R	10	14	17	32	20.5	12	1/4
	HMC 12LL-04R	12	17	19	32	20	12	1/4
	HMC 12LL-06R	12	17	19	32	20	12	3/8
L light PN 250	HMC 06L -02R	6	12	14	30	15	8	1/8
	HMC 08L -04R	8	17	17	35	20	12	1/4
	HMC 10L -04R	10	17	19	36	21	12	1/4
	HMC 12L -04R	12	19	22	37	22	12	1/4
	HMC 12L -06R	12	19	22	37	22	12	3/8
	HMC 12L -08R	12	24	22	39	24	14	1/2
	HMC 15L -06R	15	24	27	38	23	12	3/8
PN 160	HMC 15L -08R	15	24	27	40	25	14	1/2
	HMC 18L -08R	18	27	32	41	25.5	14	1/2
	HMC 22L -12R	22	32	36	46	29.5	16	3/4

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

MALE CONNECTOR (NPT THREAD)

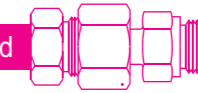
HMC-N



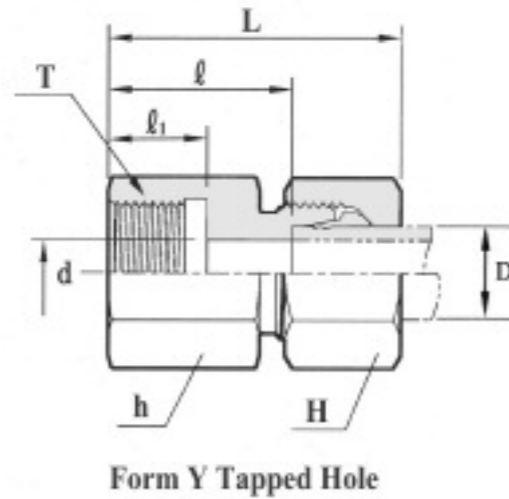
Form C stud end

Series	Part No.	Tube O.D.	h	H	L	ℓ	ℓ ₁	T (NPT)
		D						
LL very light PN 100	HMC 04LL-02N	4	11	10	28	18.5	9.9	1/8
	HMC 06LL-02N	6	11	12	28	16.5	9.9	1/8
	HMC 08LL-02N	8	12	14	30	18.5	9.9	1/8
L light PN 250	HMC 06L -02N	6	12	14	32	17	9.9	1/8
	HMC 06L -04N	6	17	14	38	23	14.2	1/4
	HMC 08L -04N	8	17	17	38	23	14.2	1/4
	HMC 10L -04N	10	17	19	39	24	14.2	1/4
	HMC 10L -06N	10	19	19	40	25	14.2	3/8
	HMC 12L -04N	12	19	22	40	25	14.2	1/4
	HMC 12L -06N	12	19	22	40	25	14.2	3/8
	HMC 12L -08N	12	22	22	45	30	19.1	1/2
PN 160	HMC 15L -08N	15	24	27	46	31	19.1	1/2
	HMC 18L -08N	18	27	32	48	31.5	19.1	1/2
PN 100	HMC 22L -12N	22	32	36	50	33.5	19.1	3/4
	HMC 28L -16N	28	41	41	56	39.5	23.9	1
PN 100	HMC 35L -20N	35	46	50	62	40.5	23.9	1 1/4
	HMC 42L -24N	42	55	60	65	42	25.4	1 1/2
	HMC 06S -04N	6	17	17	43	28	14.2	1/4
S Heavy PN 630	HMC 08S -04N	8	17	19	43	28	14.2	1/4
	HMC 10S -04N	10	19	22	44	27.5	14.2	1/4
	HMC 10S -06N	10	19	22	44	27.5	14.2	3/8
	HMC 12S -04N	12	22	24	46	29.5	14.2	1/4
	HMC 12S -06N	12	22	24	46	29.5	14.2	3/8
	HMC 12S -08N	12	22	24	51	34.5	19.1	1/2
	HMC 14S -08N	14	24	27	54	36	19.1	1/2
PN 400	HMC 16S -08N	16	27	30	54	35.5	19.1	1/2
	HMC 20S -12N	20	32	36	59	37.5	19.1	3/4
	HMC 25S -16N	25	41	46	69	45	23.9	1
PN 250	HMC 30S -20N	30	46	50	73	46.5	23.9	1 1/4
	HMC 38S -24N	38	55	60	80	49	25.4	1 1/2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.



FEMALE CONNECTOR (BSP PARALLEL) HFC-G

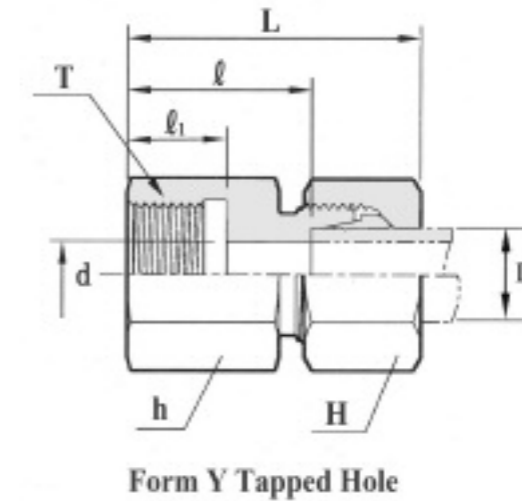


Form Y Tapped Hole

Series	Part No.	Tube O.D.	d	h	H	L	ℓ	ℓ ₁	T (BSPP)
		D							
L Light PN 250	HFC 06L-02G	6	4	14	14	34	19	12	1/8
	HFC 08L-04G	8	6	19	17	39	24	17	1/4
	HFC 08L-06G	8	6	24	17	40	25	17	3/8
	HFC 08L-08G	8	6	27	17	44	29	20	1/2
	HFC 10L-04G	10	8	19	19	40	25	17	1/4
	HFC 10L-06G	10	8	24	19	41	26	17	3/8
	HFC 10L-08G	10	8	27	19	45	30	20	1/2
	HFC 12L-06G	12	10	24	22	41	26	17	3/8
	HFC 12L-08G	12	10	27	22	45	30	20	1/2
PN 160	HFC 15L-08G	15	12	27	27	46	31	20	1/2
	HFC 18L-08G	18	15	27	32	47	30.5	20	1/2
PN 100	HFC 22L-12G	22	19	36	36	52	35.5	22	3/4
	HFC 28L-16G	28	24	41	41	55	38	24.5	1
S Heavy PN 630	HFC 35L-20G	35	30	55	50	63	41	26.5	1 1/4
	HFC 42L-24G	42	36	60	60	65	42.5	28.5	1 1/2
PN 400	HFC 06S-04G	6	4	19	17	41	26	17	1/4
	HFC 08S-04G	8	5	19	19	41	26	17	1/4
	HFC 10S-06G	10	7	24	22	43	26.5	17	3/8
PN 250	HFC 12S-06G	12	8	24	24	43	26.5	17	3/8
	HFC 14S-08G	14	10	30	27	50	32	20	1/2
	HFC 16S-08G	16	12	30	30	50	31.5	20	1/2
PN 250	HFC 20S-12G	20	16	36	36	56	34.5	22	3/4
	HFC 25S-16G	25	20	41	46	62	37.5	24.5	1
PN 250	HFC 30S-20G	30	25	55	50	69	42	26.5	1 1/4
	HFC 38S-24G	28	32	60	60	74	43.5	28.5	1 1/2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

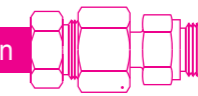
FEMALE CONNECTOR (METRIC PARALLEL) HFC-M



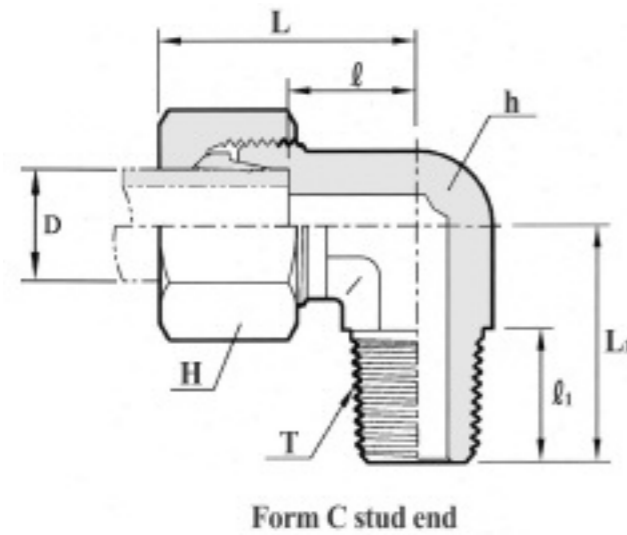
Form Y Tapped Hole

Series	Part No.	Tube O.D.	d	h	H	L	ℓ	ℓ ₁	T (Metric)
		D							
L Light PN 250	HFC 06L-M10	6	4	14	14	34	19.5	12.5	M 10X1
	HFC 08L-M12	8	6	17	17	39	24	17	M 12X1.5
	HFC 10L-M14	10	8	19	19	40	25	17	M 14X1.5
	HFC 12L-M16	12	10	22	22	41	26	17	M 16X1.5
	HFC 15L-M18	15	12	27	24	43	28	17	M 18X1.5
PN 160	HFC 18L-M22	18	15	32	30	46	29.5	19	M 22X1.5
	HFC 22L-M26	22	19	36	32	51	34.5	21	M 26X1.5
PN 100	HFC 28L-M33	28	24	41	41	54	37.5	24	M 33X2
	HFC 35L-M42	35	30	50	55	62	40.5	26	M 42X2
	HFC 42L-M48	42	36	60	60	65	42	28	M 48X2
S Heavy PN 630	HFC 06S-M12	6	4	17	17	41	26	17	M 12X1.5
	HFC 08S-M14	8	5	19	19	41	26	17	M 14X1.5
	HFC 10S-M16	10	7	22	22	43	26.5	17	M 16X1.5
	HFC 12S-M18	12	8	24	24	44	27.5	17	M 18X1.5
	HFC 14S-M20	14	10	27	27	49	31	19	M 20X1.5
PN 400	HFC 16S-M22	16	12	30	30	49	30.5	19	M 22X1.5
	HFC 20S-M27	20	16	36	36	56	34.5	22	M 27X2
	HFC 25S-M33	25	20	46	41	61	37	24	M 33X2
PN 250	HFC 30S-M42	30	25	50	55	68	41.5	26	M 42X2
	HFC 38S-M48	38	32	60	60	74	43	28	M 48X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.



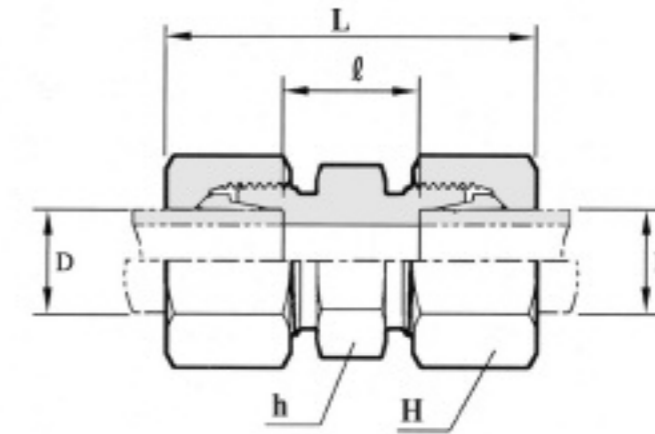
MALE ELBOW (BSP TAPERED/METRIC TAPERED) HLM-R/M



Series	Part No.		Tube O.D.	h	H	L	L ₁	ℓ	T Metric Taper	ℓ	ℓ ₁	T (BSPT)
			D									
LL very light PN 100	HLM 04LL-02R	HLM 04LL-M 8K	4	9	10	21	17	11	M8X1Keg	8	10	1/8
	HLM 06LL-02R	HLM 06LL-M10K	6	9	12	21	17	9.5	M10X1Keg	8	10	1/8
	HLM 08LL-02R	HLM 08LL-M10K	8	12	14	23	20	11.5	M10X1Keg	8	10	1/8
	HLM 10LL-04R	-	10	14	17	24	23	12.5	-	-	14	1/4
	HLM 12LL-04R	-	12	17	19	25	23	13	-	-	14	1/4
L light PN 250	HLM 06L -02R	HLM 06L -M10K	6	12	14	27	20	12	M10X1Keg	8	10	1/8
	HLM 08L -04R	HLM 08L -M12K	8	12	17	29	26	14	M12X1.5Keg	12	14	1/4
	HLM 10L -04R	HLM 10L -M14K	10	14	19	30	27	15	M14X1.5Keg	12	14	1/4
	HLM 12L -06R	HLM 12L -M16K	12	17	22	32	28	17	M16X1.5Keg	14	15	3/8
	HLM 15L -08R	HLM 15L -M18K	15	19	27	36	34	21	M18X1.5Keg	14	19	1/2
PN 100	HLM 18L -08R	HLM 18L -M22K	18	24	32	40	36	23.5	M22X1.5Keg	17	19	1/2
	HLM 06S -04R	HLM 06S -M12K	6	12	17	31	26	16	M12X1.5Keg	12	14	1/4
S Heavy PN 400	HLM 08S -04R	HLM 08S -M14K	8	14	19	32	27	17	M14X1.5Keg	12	14	1/4
	HLM 10S -06R	HLM 10S -M16K	10	17	22	34	28	17.5	M16X1.5Keg	12	15	3/8
	HLM 12S -06R	HLM 12S -M18K	12	17	24	38	28	21.5	M18X1.5Keg	12	15	3/8
	HLM 14S -08R	HLM 14S -M20K	14	19	27	40	32	22	M20X1.5Keg	14	19	1/2
PN 250	HLM 16S -08R	HLM 16S -M22K	16	24	30	43	32	24.5	M22X1.5Keg	17	19	1/2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

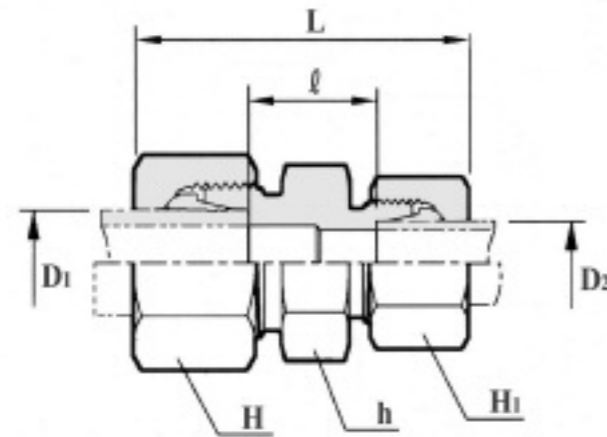
STRAIGHT UNION HU



Series	Part No.	Tube O.D.	h	H	L	ℓ
		D				
LL Very light PN 100	HU-04LL	4	9	10	31	12
	HU-06LL	6	11	12	32	9
	HU-08LL	8	12	14	35	12
	HU-10LL	10	14	17	35	12
	HU-12LL	12	17	19	35	11
L Light PN 250	HU-06L	6	12	14	39	10
	HU-08L	8	14	17	40	11
	HU-10L	10	17	19	42	13
	HU-12L	12	19	22	43	14
PN 160	HU-15L	15	24	27	46	16
	HU-18L	18	27	32	48	16
PN 100	HU-22L	22	32	36	52	20
	HU-28L	28	41	41	54	21
PN 100	HU-35L	35	46	50	63	20
	HU-42L	42	55	60	66	21
S Heavy PN 630	HU-06S	6	14	17	45	16
	HU-08S	8	17	19	47	18
	HU-10S	10	19	22	49	17
	HU-12S	12	22	24	51	19
	HU-14S	14	24	27	57	22
PN 400	HU-16S	16	27	30	57	21
	HU-20S	20	32	36	66	23
	HU-25S	25	41	46	74	26
PN 250	HU-30S	30	46	50	80	27
	HU-38S	38	55	60	90	29

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

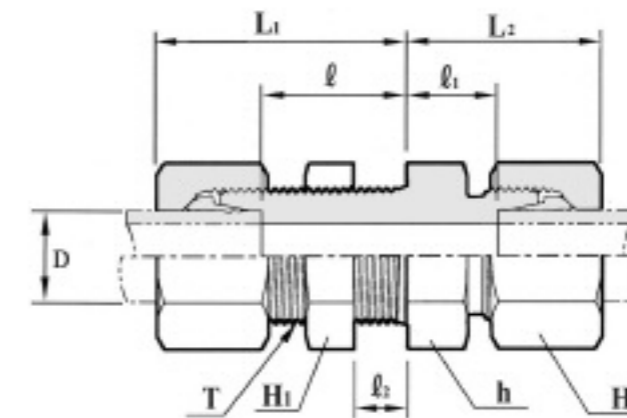
REDUCING UNION HUR



Series	Part No.	Tube O.D.		h	H	H ₁	L	ℓ
		D ₁	D ₂					
L light PN 250	HUR 08L-06L	8	6	14	17	14	40	11
	HUR 10L-06L	10	6	17	19	14	41	12
	HUR 10L-08L	10	8	17	19	17	41	12
	HUR 12L-06L	12	6	19	22	14	42	13
	HUR 12L-08L	12	8	19	22	17	42	13
	HUR 12L-10L	12	10	19	22	19	43	14
	HUR 15L-10L	15	10	24	27	19	45	15
HUR 15L-12L	15	12	24	27	22	45	15	
PN 160	HUR 18L-10L	18	10	27	32	19	46	15.5
	HUR 18L-12L	18	12	27	32	22	46	15.5
	HUR 18L-15L	18	15	27	32	27	48	16.5
	HUR 22L-12L	22	12	32	36	22	48	17.5
	HUR 22L-15L	22	15	32	36	27	50	18.5
PN 100	HUR 22L-18L	22	18	32	36	32	50	18
	HUR 28L-18L	28	18	41	41	32	52	19
	HUR 28L-22L	28	22	41	41	36	54	21
	HUR 35L-22L	35	22	46	50	36	59	21
	HUR 35L-28L	35	28	46	50	41	59	21
S Heavy PN 630	HUR 08S-06S	8	6	17	19	17	47	18
	HUR 10S-06S	10	6	19	22	17	48	17.5
	HUR 10S-08S	10	8	19	22	19	48	17.5
	HUR 12S-06S	12	6	22	24	17	50	19.5
	HUR 12S-08S	12	8	22	24	19	50	19.5
	HUR 12S-10S	12	10	22	24	22	51	19
	HUR 14S-10S	14	10	24	27	22	54	20.5
HUR 14S-12S	14	12	24	27	24	54	20.5	
PN 400	HUR 16S-12S	16	12	27	30	24	54	20
	HUR 16S-14S	16	14	27	30	27	57	21.5
	HUR 20S-10S	20	10	32	36	22	60	22
	HUR 20S-12S	20	12	32	36	24	60	22
	HUR 20S-16S	20	16	32	36	30	63	23
	HUR 25S-16S	25	16	41	46	30	68	25
	HUR 25S-20S	25	20	41	46	36	71	25.5
PN 250	HUR 30S-20S	30	20	46	50	36	74	26
	HUR 30S-25S	30	25	46	50	46	77	26.5
	HUR 38S-30S	38	30	55	60	50	87	29.5

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

BULKHEAD UNION HBU

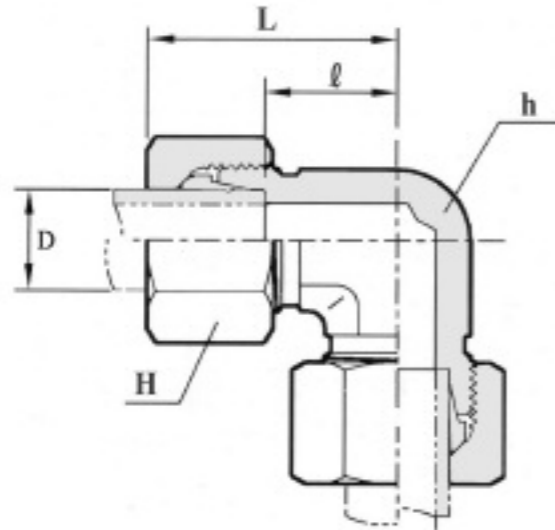


ℓ₂ = 16mm Max

Series	Part No.	Tube O.D. D	h	H	H ₁	L ₁	L ₂	ℓ	ℓ ₁	T
L light PN 250	HBU-06L	6	17	14	17	42	22	27	7	M 12X1.5
	HBU-08L	8	19	17	19	42	23	27	8	M 14X1.5
	HBU-10L	10	22	19	22	43	25	28	10	M 16X1.5
	HBU-12L	12	24	22	24	44	25	29	10	M 18X1.5
	HBU-15L	15	27	27	30	46	27	31	12	M 22X1.5
PN 160	HBU-18L	18	32	32	36	49	30	32.5	13.5	M 26X1.5
	HBU-22L	22	36	36	41	51	33	34.5	16.5	M 30X2
PN 100	HBU-28L	28	41	41	46	52	35	35.5	18.5	M 36X2
	HBU-35L	35	50	50	55	58	40	36.5	18.5	M 45X2
	HBU-42L	42	60	60	65	59	42	36	19	M 52X2
S Heavy PN 630	HBU-06S	6	19	17	19	44	27	29	12	M 14X1.5
	HBU-08S	8	22	19	22	44	28	29	13	M 16X1.5
	HBU-10S	10	24	22	24	46	31	29.5	14.5	M 18X1.5
	HBU-12S	12	27	24	27	47	31	30.5	14.5	M 20X1.5
PN 400	HBU-14S	14	30	27	30	50	35	32	17	M 22X1.5
	HBU-16S	16	32	30	32	50	35	31.5	16.5	M 24X1.5
	HBU-20S	20	41	36	41	55	39	33.5	17.5	M 30X2
	HBU-25S	25	46	46	46	59	44	35	20	M 36X2
PN 250	HBU-30S	30	50	50	50	64	48	37.5	21.5	M 42X2
	HBU-38S	38	65	60	65	68	53	37	22	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

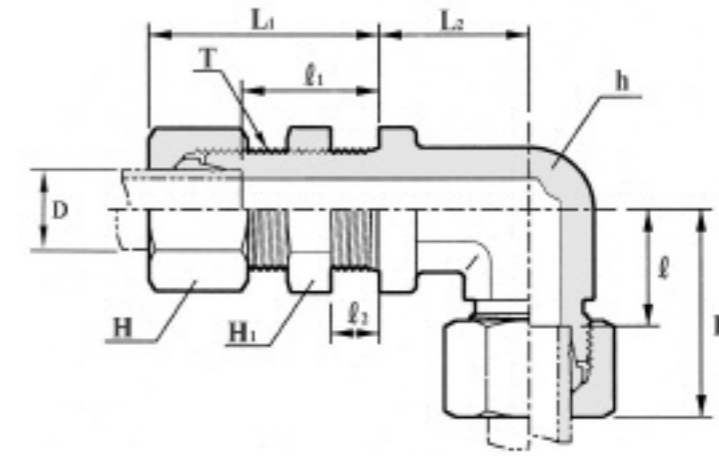
UNION ELBOW HL



Series	Part No.	Tube O.D.	h	H	L	ℓ
		D				
LL Very light PN 100	HL-04LL	4	9	10	21	11
	HL-06LL	6	9	12	21	9.5
	HL-08LL	8	12	14	23	11.5
	HL-10LL	10	14	17	24	12.5
	HL-12LL	12	17	19	25	13
L Light PN 250	HL-06L	6	12	14	27	12
	HL-08L	8	12	17	29	14
	HL-10L	10	14	19	30	15
	HL-12L	12	17	22	32	17
	HL-15L	15	19	27	36	21
PN 160	HL-18L	18	24	32	40	23.5
	HL-22L	22	27	36	44	27.5
PN 250	HL-28L	28	36	41	47	30.5
	HL-35L	35	41	50	56	34.5
PN 400	HL-42L	42	50	60	63	40
	HL-20S	20	27	36	48	26.5
S Heavy PN 630	HL-06S	6	12	17	31	16
	HL-08S	8	14	19	32	17
	HL-10S	10	17	22	34	17.5
	HL-12S	12	17	24	38	21.5
	HL-14S	14	19	27	40	22
PN 250	HL-30S	30	41	50	62	35.5
	HL-38S	38	50	60	72	41

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

BULKHEAD UNION ELBOW HBL

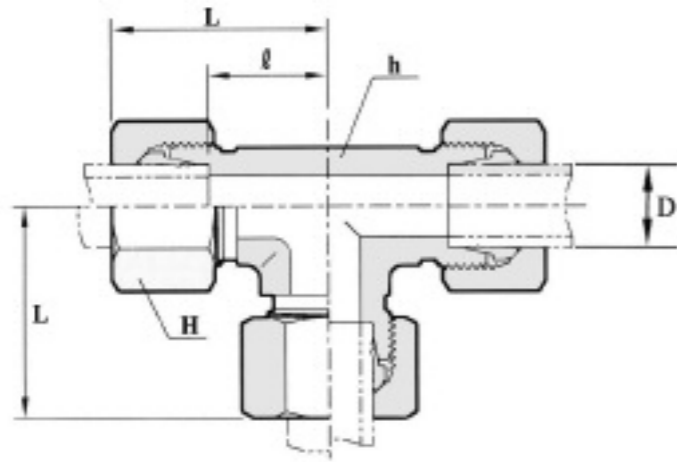


ℓ₂ = 16mm Max

Series	Part No.	Tube O.D.	h	H	H ₁	L	L ₁	L ₂	ℓ	ℓ ₁	T (Metric)
		D									
L light PN 250	HBL-06L	6	12	14	17	27	42	14	12	27	M 12X1.5
	HBL-08L	8	12	17	19	29	42	17	14	27	M 14X1.5
	HBL-10L	10	14	19	22	30	43	18	15	28	M 16X1.5
	HBL-12L	12	17	22	24	32	44	20	17	29	M 18X1.5
	HBL-15L	15	19	27	30	36	46	23	21	31	M 22X1.5
PN 160	HBL-18L	18	24	32	36	40	49	24	23.5	32.5	M 26X1.5
	HBL-22L	22	27	36	41	44	51	30	27.5	34.5	M 30X2
PN 100	HBL-28L	28	36	41	46	47	52	34	30.5	35.5	M 36X2
	HBL-35L	35	41	50	55	56	58	39	34.5	36.5	M 45X2
	HBL-42L	42	50	60	65	63	59	43	40	36	M 52X2
S heavy PN 630	HBL-06S	6	12	17	19	31	44	17	46	29	M 14X1.5
	HBL-08S	8	14	19	22	32	44	18	17	29	M 16X1.5
	HBL-10S	10	17	22	24	34	46	20	17.5	29.5	M 18X1.5
	HBL-12S	12	17	24	27	38	47	21	21.5	30.5	M 20X1.5
	HBL-14S	14	19	27	30	40	50	23	22	32	M 22X1.5
PN 400	HBL-16S	16	24	30	32	43	50	24	24.5	31.5	M 24X1.5
	HBL-20S	20	27	36	41	48	55	30	26.5	33.5	M 30X2
	HBL-25S	25	36	46	46	54	59	34	30	35	M 36X2
PN 250	HBL-30S	30	41	50	50	62	64	39	35.5	37.5	M 42X2
	HBL-38S	38	50	60	65	72	68	43	41	37	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

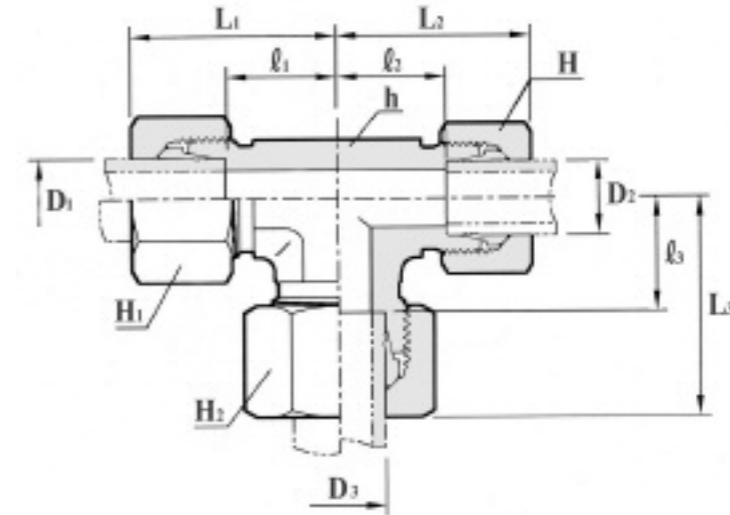
UNION TEE HT



Series	Part No.	Tube O.D.		h	H	L	ℓ
		D	D				
LL Very light PN 100	HT-04LL	4	4	9	10	21	11
	HT-06LL	6	6	9	12	21	9.5
	HT-08LL	8	8	12	14	23	11.5
	HT-10LL	10	10	14	17	24	12.5
	HT-12LL	12	12	14	19	27	15
L Light PN 250	HT-06L	6	6	12	14	27	12
	HT-08L	8	8	12	17	29	14
	HT-10L	10	10	14	19	30	15
	HT-12L	12	12	17	22	32	17
	HC-15L	15	15	19	27	36	21
PN 160	HT-18L	18	18	24	32	40	23.5
	HT-22L	22	22	27	36	44	27.5
PN 100	HT-28L	28	28	36	41	47	30.5
	HT-35L	35	35	41	50	56	34.5
	HT-42L	42	42	50	60	63	40
S Heavy PN 630	HT-06S	6	6	12	17	31	16
	HT-08S	8	8	14	19	32	17
	HT-10S	10	10	17	22	34	17.5
	HT-12S	12	12	17	24	38	21.5
	HT-14S	14	14	19	27	40	22
PN 400	HT-16S	16	16	24	30	43	24.5
	HT-20S	20	20	27	36	48	26.5
	HT-25S	25	25	36	46	54	30
PN 250	HT-30S	30	30	41	50	62	35.5
	HT-38S	38	38	50	60	72	41

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

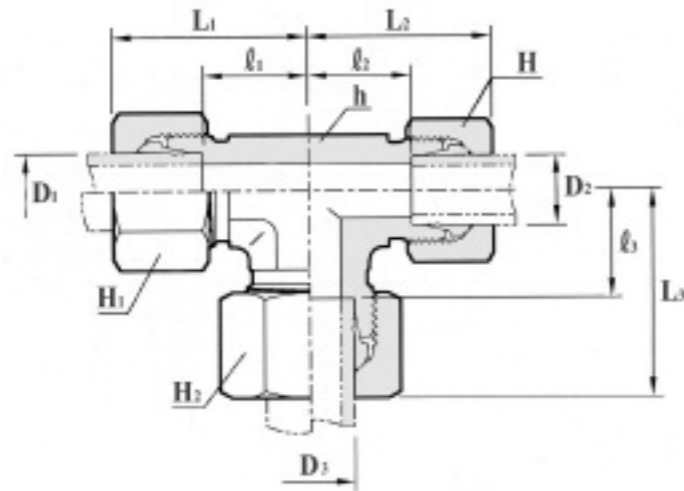
REDUCING UNION HTR



Series	Part No.	Tube O.D.			h	H	H ₁	H ₂	L ₁	L ₂	L ₃	ℓ ₁	ℓ ₂	ℓ ₃
		D ₁	D ₂	D ₃										
L light PN 316	HTR 06L-06L-08L	6	6	8	14	14	14	17	29	29	29	14	14	14
	HTR 08L-08L-06L	8	8	6	14	17	17	14	29	29	29	14	14	14
PN 250	HTR 06L-06L-10L	6	6	10	14	14	14	19	30	30	30	15	15	15
	HTR 08L-08L-10L	8	8	10	14	17	17	19	30	30	30	15	15	15
	HTR 10L-10L-06L	10	10	6	14	19	19	14	30	30	30	15	15	15
	HTR 10L-10L-08L	10	10	8	14	19	19	17	30	30	30	15	15	15
	HTR 10L-06L-10L	10	6	10	14	19	14	19	30	30	30	15	15	15
	HTR 10L-08L-10L	10	8	10	14	19	14	19	30	30	30	15	15	15
PN 250	HTR 08L-08L-12L	8	8	12	17	17	17	22	32	32	32	17	17	17
	HTR 12L-12L-06L	12	12	6	17	22	22	14	32	32	32	17	17	17
	HTR 12L-08L-08L	12	8	8	17	22	17	17	32	32	32	17	17	17
	HTR 12L-12L-08L	12	12	8	17	22	22	17	32	32	32	17	17	17
	HTR 12L-10L-10L	12	10	10	17	22	19	19	32	32	32	17	17	17
	HTR 12L-12L-10L	12	12	10	17	22	22	19	32	32	32	17	17	17
PN 250	HTR 12L-10L-12L	12	10	12	17	22	19	22	32	32	32	17	17	17
	HTR 10L-10L-15L	10	10	15	19	19	19	27	36	36	36	21	21	21
	HTR 12L-12L-15L	12	12	15	19	22	22	27	36	36	36	21	21	21
	HTR 15L-15L-06L	15	15	6	19	27	27	14	36	36	36	21	21	21
	HTR 15L-15L-10L	15	15	10	19	27	27	19	36	36	36	21	21	21
	HTR 15L-12L-12L	15	12	12	19	27	22	22	36	36	36	21	21	21
PN 160	HTR 15L-15L-12L	15	15	12	19	27	27	22	36	36	36	21	21	21
	HTR 15L-12L-15L	15	12	15	19	27	22	27	36	36	36	21	21	21
	HTR 12L-12L-18L	12	12	18	24	22	22	32	39	39	40	24	24	23.5
	HTR 18L-10L-10L	18	10	10	24	32	19	19	40	39	39	23.5	24	24
	HTR 18L-18L-10L	18	18	10	24	32	32	19	40	40	39	23.5	23.5	24
	HTR 18L-18L-12L	18	18	12	24	32	32	22	40	40	39	23.5	23.5	24
PN 160	HTR 18L-18L-15L	18	18	15	24	32	32	27	40	40	39	23.5	23.5	24
	HTR 18L-10L-18L	18	10	18	24	32	19	32	40	39	40	23.5	2	23.5

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

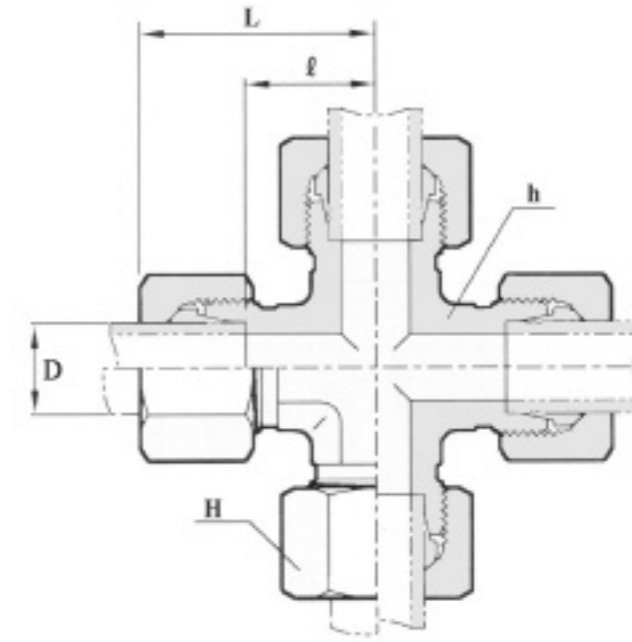
REDUCING UNION HTR



Series	Part No.	Tube O.D.			h	H ₁	H ₂	H ₃	L ₁	L ₂	L ₃	l ₁	l ₂	l ₃
		D ₁	D ₂	D ₃										
PN 160	HTR 22L-22L-10L	22	22	10	27	36	36	19	44	44	43	27.5	27.5	28
	HTR 22L-22L-12L	22	22	12	27	36	36	22	44	44	43	27.5	27.5	28
	HTR 22L-15L-15L	22	15	15	27	36	27	27	44	43	43	27.5	28	28
	HTR 22L-22L-15L	22	22	15	27	36	36	27	44	44	43	27.5	27.5	28
	HTR 22L-18L-18L	22	18	18	27	36	32	32	44	44	44	27.5	27.5	27.5
	HTR 22L-22L-18L	22	22	18	27	36	36	32	44	44	44	27.5	27.5	27.5
	HTR 22L-18L-22L	22	18	22	27	36	32	36	44	44	44	27.5	27.5	27.5
PN 100	HTR 28L-28L-10L	28	28	10	36	41	41	19	47	44	46	30.5	30.5	31
	HTR 28L-28L-12L	28	28	12	36	41	41	22	47	47	46	30.5	30.5	31
	HTR 28L-28L-15L	28	28	15	36	41	41	27	47	47	46	30.5	30.5	31
	HTR 28L-28L-18L	28	28	18	36	41	41	32	47	47	47	30.5	30.5	30.5
	HTR 28L-22L-22L	28	22	22	36	41	36	36	47	47	47	30.5	30.5	30.5
S PN 630	HTR 10S-10S-06S	10	10	6	17	22	22	17	34	34	33	17.5	17.5	18
	HTR 12S-08S-08S	12	8	8	17	24	19	19	38	37	37	21.5	22	22
	HTR 12S-12S-08S	12	12	8	17	24	24	19	38	38	37	21.5	21.5	22
PN 400	HTR 12S-12S-10S	12	12	10	17	24	24	22	38	38	38	21.5	21.5	21.5
	HTR 12S-12S-16S	12	12	16	24	24	24	30	42	42	43	25.5	25.5	24.5
	HTR 16S-16S-06S	16	16	6	24	30	30	17	43	43	41	24.5	24.5	26
	HTR 16S-16S-08S	16	16	8	24	30	30	19	43	43	41	24.5	24.5	26
	HTR 16S-16S-10S	16	16	10	24	30	30	22	43	43	42	24.5	24.5	25.5
PN 400	HTR 16S-16S-12S	16	16	12	24	30	30	24	43	43	42	24.5	24.5	25.5
	HTR 16S-16S-20S	16	16	20	27	30	30	36	47	47	48	28.5	28.5	26.5
	HTR 20S-20S-10S	20	20	10	27	36	36	22	48	48	46	26.5	26.5	29.5
	HTR 20S-20S-12S	20	20	12	27	36	36	24	48	48	46	26.5	26.5	29.5
PN 400	HTR 20S-20S-16S	20	20	16	27	36	36	30	48	48	47	26.5	26.5	28.5
	HTR 20S-20S-25S	20	20	25	36	36	36	46	53	53	54	31.5	31.5	30
	HTR 25S-25S-16S	25	25	16	36	46	46	30	54	54	52	30	30	33.5
PN 250	HTR 25S-25S-20S	25	25	20	36	46	46	36	54	54	53	30	30	31.5
	HTR 25S-25S-30S	25	25	30	41	46	46	50	61	61	62	37	37	35.5

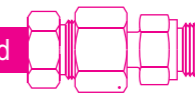
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

UNION CROSS HC

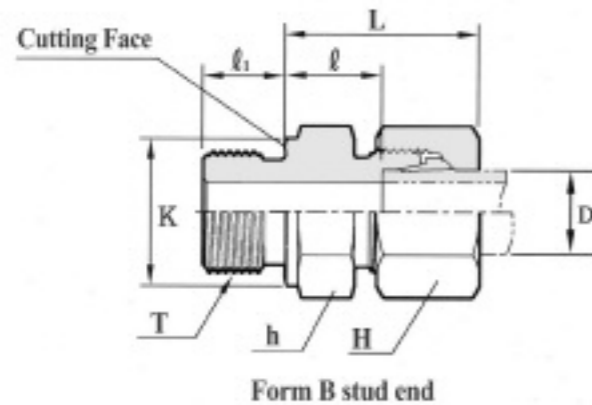


Series	Part No.	Tube O.D.	h	H	L	l
		D				
LL Very light PN 100	HC-04LL	4	9	10	21	11
	HC-06LL	6	9	12	21	9.5
	HC-08LL	8	12	14	23	11.5
	HC-10LL	10	14	17	24	12.5
L Light PN 250	HC-12LL	12	14	19	27	15
	HC-06L	6	12	14	27	12
	HC-08L	8	12	17	29	14
	HC-10L	10	14	19	30	15
PN 160	HC-12L	12	17	22	32	17
	HC-15L	15	19	27	36	21
	HC-18L	18	24	32	40	23.5
PN 100	HC-22L	22	27	36	44	27.5
	HC-28L	28	36	41	47	30.5
	HC-35L	35	41	50	56	34.5
S Heavy PN 630	HC-42L	42	50	60	63	40
	HC-06S	6	12	17	31	16
	HC-08S	8	14	19	32	17
	HC-10S	10	17	22	34	17.5
PN 400	HC-12S	12	17	24	38	21.5
	HC-14S	14	19	27	40	22
	HC-16S	16	24	30	43	24.5
	HC-20S	20	27	36	48	26.5
PN 250	HC-25S	25	36	46	54	30
	HC-30S	30	41	50	62	35.5
	HC-38S	38	50	60	72	41

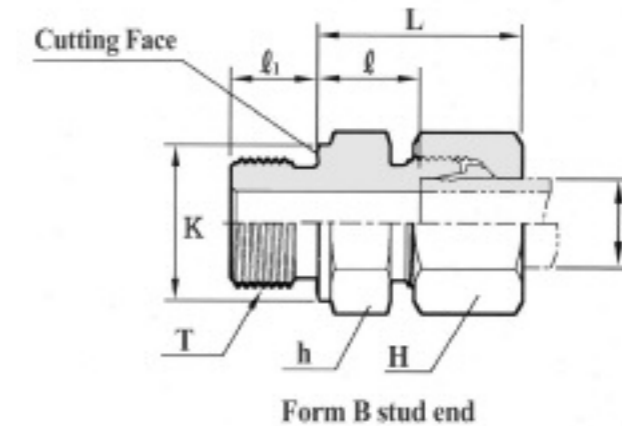
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.



MALE CONNECTOR (BSP PARALLEL)
HOM-G



MALE CONNECTOR (BSP PARALLEL)
HOM-G

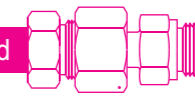


Series	Part No.	Tube O.D.	h	H	K	L	ℓ	ℓ ₁	T (BSPP)
		D							
L light PN 250	HOM 06L -02G	6	14	14	14	23	8.5	8	1/8
	HOM 06L -04G	6	19	14	18	25	10	12	1/4
	HOM 06L -06G	6	22	14	22	26	11.5	12	3/8
	HOM 06L -08G	6	27	14	26	27	12	14	1/2
	HOM 08L -02G	8	14	17	14	23	8.5	8	1/8
	HOM 08L -04G	8	19	17	18	25	10	12	1/4
	HOM 08L -02G	8	22	17	22	26	11.5	12	1/8
	HOM 08L -08G	8	27	17	26	27	12	14	1/2
	HOM 10L -04G	10	19	19	18	26	11	12	1/4
	HOM 10L -06G	10	22	19	22	27	12.5	12	3/8
	HOM 10L -08G	10	27	19	26	28	13	14	1/2
	HOM 12L -04G	12	19	22	18	27	12	12	1/4
	HOM 12L -06G	12	22	22	22	27	12.5	12	3/8
	HOM 12L -08G	12	27	22	26	28	13	14	1/2
	HOM 12L -12G	12	32	22	32	29	14	16	3/4
HOM 15L -06G	15	24	27	22	29	13.5	12	3/8	
HOM 15L -08G	15	27	27	26	29	14	14	1/2	
HOM 15L -12G	15	32	27	32	30	15	16	3/4	
PN 160	HOM 18L -06G	18	27	32	22	29.5	14	12	3/8
	HOM 18L -08G	18	27	32	26	31	14.5	14	1/2
	HOM 18L -12G	18	32	32	32	30	14.5	16	3/4
L light PN 100	HOM 22L -08G	22	32	36	26	33	16.5	14	1/2
	HOM 22L -12G	22	32	36	32	33	16.5	16	3/4
	HOM 28L -12G	28	41	41	32	34	17.5	16	3/4
	HOM 28L -16G	28	41	41	39	34	17.5	18	1
	HOM 35L -16G	35	46	50	39	39	17.5	18	1
HOM 35L -20G	35	50	50	49	39	17.5	20	1 1/4	
HOM 42L -24G	42	55	60	55	42	19	22	1 1/2	

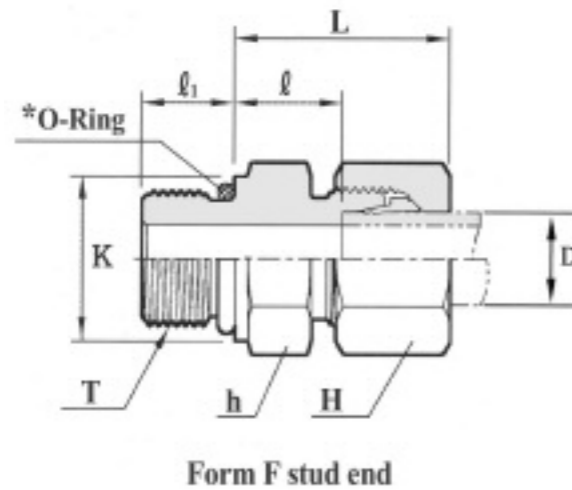
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

Series	Part No.	Tube O.D.	h	H	K	L	ℓ	ℓ ₁	T (BSPP)	
		D								
S Heavy PN 630	HOM 06S-04G	6	19	17	18	28	13	12	1/4	
	HOM 06S-08G	6	27	17	26	33	18	14	1/2	
	HOM 08S-04G	8	19	19	18	30	15	12	1/4	
	HOM 08S-06G	8	22	19	22	30	15.5	12	3/8	
	HOM 10S-04G	10	19	22	18	31	14.5	12	1/4	
	HOM 10S-06G	10	22	22	22	31	15	12	3/8	
	HOM 10S-08G	10	27	22	26	34	17.5	14	1/2	
	HOM 12S-04G	12	22	24	18	33	16.5	12	1/4	
	HOM 12S-06G	12	22	24	22	33	17	12	3/8	
	HOM 12S-08G	12	27	24	26	34	17.5	14	1/2	
	HOM 14S-06G	14	24	27	22	36	18.5	12	1/2	
	HOM 14S-08G	14	27	27	26	37	19	14	3/8	
	PN 400	HOM 16S-06G	16	27	30	22	36	18	12	3/8
		HOM 16S-08G	16	27	30	26	37	18.5	14	1/2
		HOM 16S-12G	16	32	30	32	39	20.5	16	3/4
PN 250	HOM 20S-08G	20	32	36	26	42	20.5	14	1/2	
	HOM 20S-12G	20	32	36	32	42	20.5	16	3/4	
PN 250	HOM 25S-12G	25	41	46	32	47	23	16	3/4	
	HOM 25S-16G	25	41	46	39	47	23	18	1	
	HOM 30S-16G	30	46	50	39	50	23.5	18	1	
	HOM 30S-20G	30	50	50	49	50	23.5	20	1 1/4	
	HOM 38S-20G	38	55	60	49	57	26	20	1 1/4	
HOM 38S-24G	38	55	60	55	57	26	22	1 1/2		

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.



MALE CONNECTOR (UNIFIED) WITH *O-RING HOM-U



Form F stud end

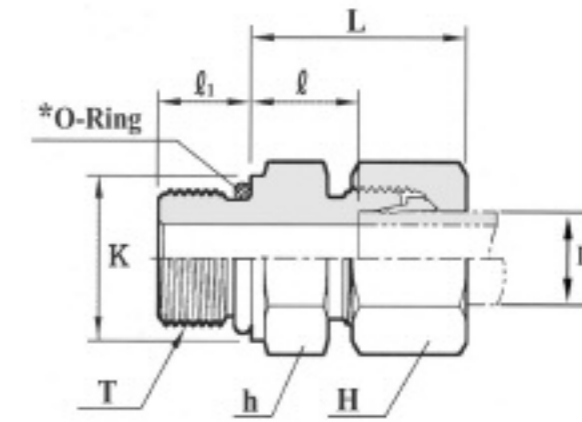
for Unified

Series	Part No.	Tube O.D. D	h	H	K	L	ℓ ₁	ℓ	T (Unified)
L light PN 250	HOM 08L-07U	8	17	17	14.4	25	9	10	7/16 UNF-2A
	HOM 10L-07U	10	17	19	14.4	26	10	11	7/16 UNF-2A
	HOM 12L-09U	12	19	22	17.6	26	10	11	9/16 UNF-2A
	HOM 12L-12U	12	24	22	22.3	28	11	13	3/4 UNF-2A
	HOM 12L-14U	12	27	22	25.5	29	12.7	14.3	7/8 UNF-2A
	HOM 15L-12U	15	24	27	22.3	29	11	14	3/4 UNF-2A
PN 160	HOM 15L-14U	15	27	27	25.5	30	12.7	15.3	7/8 UNF-2A
	HOM 18L-12U	18	27	32	22.3	31	11	14.5	3/4 UNF-2A
	HOM 18L-14U	18	27	32	25.5	31	12.7	14.8	7/8 UNF-2A
	HOM 22L-14U	22	32	36	25.5	33	12.7	16.8	7/8 UNF-2A
	HOM 22L-17U	22	32	36	31.9	33	15	16.5	1 1/16 UN-2A
	HOM 22L-21U	22	41	36	38.2	34	15	17.5	1 5/16 UN-2A
PN 100	HOM 28L-17U	28	41	41	31.9	34	15	17.5	1 1/16 UN-2A
	HOM 28L-21U	28	41	41	38.2	34	15	17.5	1 5/16 UN-2A
	HOM 35L-21U	35	46	50	38.2	39	15	17.5	1 5/16 UN-2A
	HOM 35L-26U	35	50	50	47.7	39	15	17.5	1 5/8 UN-2A
	HOM 42L-26U	42	55	60	47.7	42	15	19	1 5/8 UN-2A
	S heavy PN 630	HOM 08S-07U	8	17	19	16	30	9	15	7/16 UNF-2A
HOM 10S-09U		10	19	22	17.6	31	10	14.5	9/16 UNF-2A
HOM 12S-09U		12	22	24	17.6	31	10	14.5	9/16 UNF-2A
HOM 12S-12U		12	24	24	22.3	34	11	17.5	3/4 UNF-2A
HOM 16S-12U		16	24	30	22.3	34	11	15.5	3/4 UNF-2A
HOM 16S-14U		16	27	30	25.5	37	12.7	18.8	7/8 UNF-2A
PN 400	HOM 20S-12U	20	32	36	22.3	42	11	20.5	3/4 UNF-2A
	HOM 20S-14U	20	32	36	25.5	42	12.7	20.8	7/8 UNF-2A
	HOM 20S-17U	20	32	36	31.9	42	15	20.5	1 1/16 UN-2A
	HOM 25S-17U	25	36	46	31.9	47	15	23	1 1/16 UN-2A
	HOM 25S-21U	25	41	46	38.2	47	15	23	1 5/16 UN-2A
	PN 250	HOM 30S-21U	30	46	50	38.2	50	15	23.5	1 5/16 UN-2A
HOM 30S-26U		30	50	50	47.7	50	15	23.5	1 5/8 UN-2A
HOM 38S-26U		38	55	60	47.7	57	15	26	1 5/8 UN-2A

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)

MALE CONNECTOR (METRIC PARALLEL) WITH *O-RING HOM-M



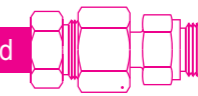
Form F stud end

for Metric Paralled

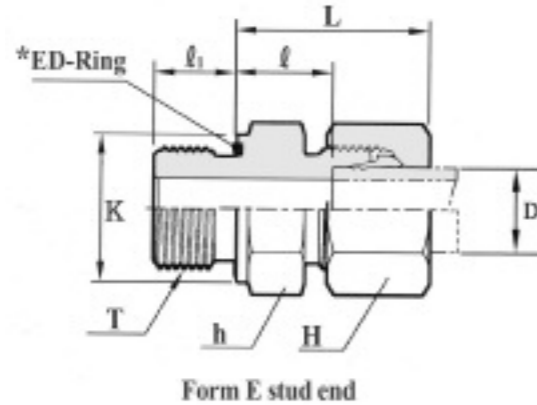
Series	Part No.	Tube O.D. D	H	h	K	L	ℓ ₁	ℓ	T (Metric)
L light PN 250	HOM 06L-M10	6	14	14	-	23	10	8.5	M 10X1
	HOM 08L-M12	8	17	17	-	25	11.5	10	M 12X1.5
	HOM 10L-M14	10	19	19	-	26	11.5	11	M 14X1.5
	HOM 12L-M16	12	22	22	-	27	13	12	M 16X1.5
	HOM 15L-M18	15	24	27	-	29	14.5	13.5	M 18X1.5
	PN 160	HOM 18L-M22	18	27	32	-	30	15.5	14	M 22X1.5
HOM 22L-M26		22	32	36	-	32	16	16	M 26X1.5
PN 100	HOM 28L-M33	28	41	41	38	34	19	17.5	M 33X2
	HOM 35L-M42	35	50	50	48	39	19.5	17.5	M 42X2
S heavy PN 630	HOM 06S-M12	6	17	17	-	27	11.5	12	M 12X1.5
	HOM 08S-M14	8	19	19	-	27	11.5	12	M 14X1.5
	HOM 10S-M16	10	22	22	-	29	13	12.5	M 16X1.5
	HOM 12S-M18	12	24	24	-	29	14.5	13	M 18X1.5
PN 400	HOM 16S-M22	16	27	30	-	33	15.5	15	M 22X1.5
	HOM 20S-M27	20	32	36	-	37	19	15	M 27X2
	HOM 25S-M33	25	41	46	38	41	19	17	M 33X2
PN 250	HOM 30S-M42	30	50	50	48	45	19.5	18.5	M 42X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)



MALE CONNECTOR (BSP PARALLEL) WITH *ED-RING HOM-GED

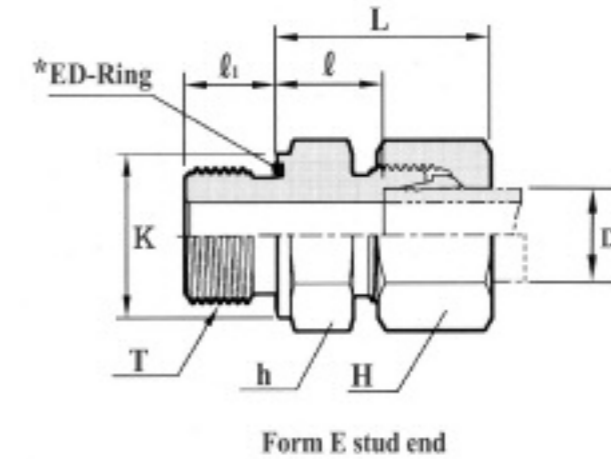


Series	Part No.	Tube O.D. D	H	h	K	L	ℓ	ℓ ₁	T (BSPP)	
L light PN 250	HOM 06L-02GED	6	14	14	14	23	8.5	8	1/8	
	HOM 06L-04GED	6	19	14	19	25	10	12	1/4	
	HOM 08L-02GED	8	14	17	14	24	9.5	8	1/8	
	HOM 08L-04GED	8	19	17	19	25	10	12	1/4	
	HOM 08L-06GED	8	22	17	22	26	11.5	12	3/8	
	HOM 10L-04GED	10	19	19	19	26	11	12	1/4	
	HOM 10L-06GED	10	22	19	22	27	12.5	12	3/8	
	HOM 10L-08GED	10	27	19	27	28	13	14	1/2	
	HOM 12L-04GED	12	19	22	19	27	12	12	1/4	
	HOM 12L-06GED	12	22	22	22	27	12.5	12	3/8	
	HOM 12L-08GED	12	27	22	27	28	13	14	1/2	
	HOM 15L-06GED	15	24	27	22	29	13.5	12	3/8	
	HOM 15L-08GED	15	27	27	27	29	14	14	1/2	
	PN 160	HOM 18L-08GED	18	27	32	27	31	14.5	14	1/2
		HOM 18L-12GED	18	32	32	32	31	14.5	16	3/4
HOM 22L-12GED		22	32	36	32	33	16.5	16	3/4	
PN 100	HOM 28L-16GED	28	41	41	40	34	17.5	18	1	
	HOM 35L-20GED	35	50	50	50	39	17.5	20	1 1/4	
	HOM 42L-24GED	42	55	60	55	42	19	22	1 1/2	
S Heavy PN 630	HOM 06S-04GED	6	19	17	19	28	13	12	1/4	
	HOM 08S-04GED	8	19	19	19	30	15	12	1/4	
	HOM 08S-06GED	8	22	19	22	30	15.5	12	3/8	
	HOM 10S-04GED	10	19	22	19	31	14.5	12	1/4	
	HOM 10S-06GED	10	22	22	22	31	15	12	3/8	
	HOM 10S-08GED	10	27	22	27	34	17.5	14	1/2	
	HOM 12S-04GED	12	22	24	19	33	16.5	12	1/4	
	HOM 12S-06GED	12	22	24	22	33	17	12	3/8	
	HOM 12S-08GED	12	27	24	32	34	17.5	14	1/2	
HOM 14S-08GED	14	27	27	27	37	19	14	1/2		
PN 400	HOM 16S-06GED	16	27	30	22	36	18	12	3/8	
	HOM 16S-08GED	16	27	30	27	37	18.5	14	1/2	
	HOM 16S-12GED	16	32	30	27	39	20.5	16	3/4	
	HOM 20S-12GED	20	32	36	32	42	20.5	16	3/4	
	HOM 25S-08GED	25	41	46	27	47	23	14	1/2	
	HOM 25S-12GED	25	41	46	32	47	23	16	3/4	
PN 250	HOM 25S-16GED	25	41	46	40	47	23	18	1	
	HOM 30S-20GED	30	50	50	50	50	23.5	20	1 1/4	
	HOM 38S-24GED	38	55	60	55	57	26	22	1 1/2	

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

*ED-Ring of NBR(e.g. Perbunan) standard, of FPM(e.g. Viton) on request (see page 16)

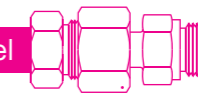
MALE CONNECTOR (METRIC PARALLEL) WITH *ED-RING HOM-MED



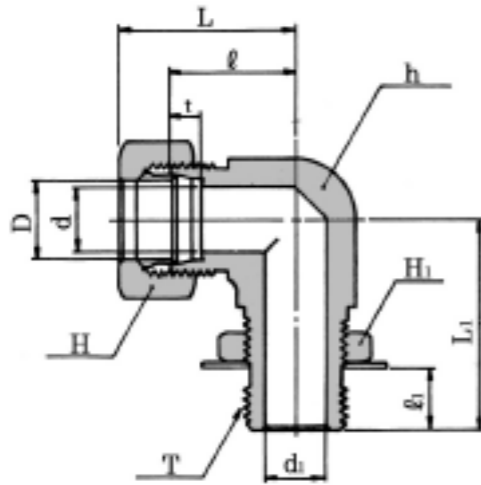
Series	Part No.	Tube O.D. D	H	h	K	L	ℓ	ℓ ₁	T (Metric)	
L Light PN 250	HOM 06L-M10ED	6	14	14	14	23	8.5	8	M 10X1	
	HOM 08L-M12ED	8	17	17	17	25	10	12	M 12X1.5	
	HOM 10L-M14ED	10	19	19	19	26	11	12	M 14X1.5	
	HOM 12L-M16ED	12	22	22	22	27	12.5	12	M 16X1.5	
	HOM 12L-M18ED	12	24	22	24	27	12.5	12	M 18X1.5	
	HOM 12L-M22ED	12	27	22	27	29	14	14	M 22X1.5	
	HOM 15L-M18ED	15	24	27	24	29	13.5	12	M 18X1.5	
	HOM 15L-M22ED	15	27	27	27	30	15	14	M 22X1.5	
	PN 160	HOM 18L-M22ED	18	27	27	27	31	14.5	14	M 22X1.5
		HOM 22L-M26ED	22	32	36	32	33	16.5	16	M 26X1.5
PN 100	HOM 28L-M33ED	28	41	41	40	34	17.5	18	M 33X2	
	HOM 35L-M42ED	35	50	50	50	39	17.5	20	M 42X2	
	HOM 42L-M48ED	42	55	60	55	42	19	22	M 48X2	
S Heavy PN 630	HOM 06S-M12ED	6	17	17	17	28	13	12	M 12X1.5	
	HOM 08S-M14ED	8	19	19	19	30	15	12	M 14X1.5	
	HOM 10S-M16ED	10	22	22	22	31	15	12	M 16X1.5	
	HOM 12S-M18ED	12	24	24	24	33	17	12	M 18X1.5	
PN 400	HOM 14S-M20ED	14	27	27	26	37	19	14	M 20X1.5	
	HOM 16S-M22ED	16	27	30	27	37	18.5	14	M 22X1.5	
	HOM 20S-M27ED	20	32	36	32	42	20.5	16	M 27X2	
PN 250	HOM 25S-M33ED	25	41	46	40	47	23	18	M 33X2	
	HOM 30S-M42ED	30	50	50	50	50	23.5	20	M 42X2	
	HOM 38S-M48ED	38	55	60	55	57	26	22	M 48X2	

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

*ED-Ring of NBR(e.g. Perbunan) standard, of FPM(e.g. Viton) on request (see page 16)

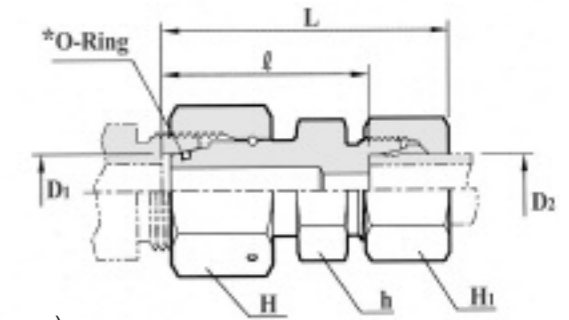


O-SEAL MALE ELBOW HOLM



Serie	Designations	Tube O.D. D	T (BSP)	Width across flat			l	l ₁	L	L ₁
				h	H	H ₁				
L Light PN 250	HOLM 06L-02G	6	1/8	14	14	17	20	10	30.5	30
	HOLM 08L-04G	8	1/4	14	17	19	23	12	33.5	34
	HOLM 10L-04G	10	1/4	19	19	22	23	12	34.5	35
	HOLM 12L-06G	12	3/8	19	22	24	24	12	35.5	36
	HOLM 15L-08G	15	1/2	24	27	30	29	16	41.5	46
PN 160	HOLM 18L-08G	18	1/2	27	32	36	32	16	44.5	46
	HOLM 22L-12G	22	3/4	32	36	41	34	17	46.5	52
PN 100	HOLM 28L-16G	28	1	41	41	46	44	21	55.0	62
	HOLM 35L-20G	35	1 1/4	41	50	55	46	21	63.5	57
	HOLM 42L-24G	42	1 1/2	50	60	65	50	21	69.5	73
S Heavy PN 630	HOLM 06S-04G	6	1/4	14	17	19	20	12	33.5	34
	HOLM 08S-04G	8	1/4	14	19	22	23	12	33.5	34
	HOLM 10S-06G	10	3/8	19	22	24	23	12	35.5	36
	HOLM 12S-06G	12	3/8	19	24	27	24	12	41.5	40
PN 400	HOLM 12S-08G	12	1/2	24	24	27	24	16	41.5	46
	HOLM 16S-08G	16	1/2	27	30	32	32	16	44.5	46
	HOLM 16S-12G	16	3/4	32	30	32	32	17	45.5	52
PN 250	HOLM 20S-12G	20	3/4	32	36	41	34	17	49.5	60
	HOLM 25S-16G	25	1	41	46	46	36	21	55.5	66
PN 250	HOLM 30S-20G	30	1 1/4	41	50	50	44	21	60.5	66
	HOLM 38S-24G	38	1 1/2	50	60	65	50	21	69.5	73

SWIVEL REDUCING ADAPTER WITH CONE HRED



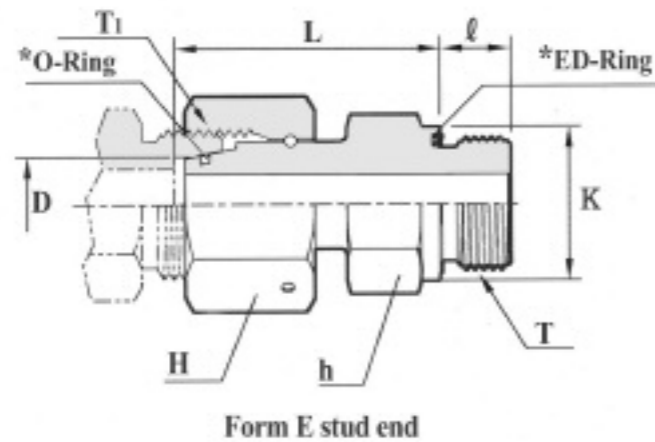
Series L(Light)

Series S(Heavy)

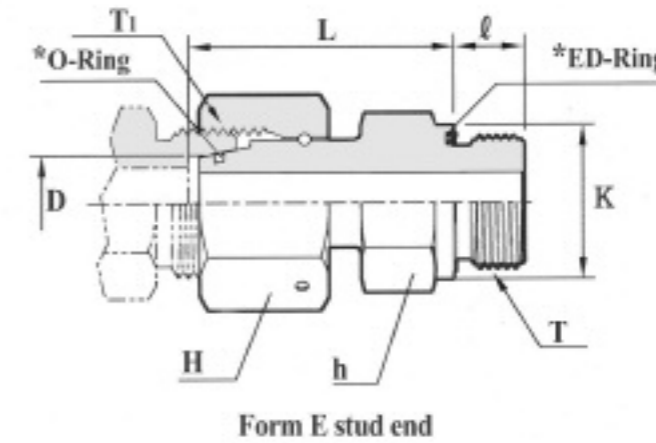
Series	Part No.	Tube O.D.		h	H	H ₁	L	l	Series	Part No.	Tube O.D.		h	H	H ₁	L	l	
		D ₁	D ₂								D ₁	D ₂						
PN 250	HRED 08L-06L	8	6	14	17	14	39	24.5	PN 630	HRED 08S-06S	8	6	17	19	17	44	28	
	HRED 10L-06L	10	6	17	19	14	39.5	24.5		HRED 10S-06S	10	6	17	22	17	44	29.5	
	HRED 10L-08L		8			17	39.5	24.5		HRED 10S-08S		8			19	44	29.5	
	HRED 12L-06L	12	6	17	22	14	40	25		HRED 12S-06S	12	6	19	24	17	45	30	
	HRED 12L-08L		8			17	40	25		HRED 12S-08S		8			19	45	30	
	HRED 12L-10L		10			19	41	26		HRED 12S-10S		10			22	46	29.5	
	HRED 15L-06L	15	6	22	27	14	42	27.5		PN 630	HRED 14S-06S	14	6	22	27	17	47.5	33
	HRED 15L-08L		8			17	42	27.5			HRED 14S-08S		8			19	47.5	33
	HRED 15L-10L		10			19	43	28.5			HRED 14S-10S		10			22	48.5	32.5
PN 160	HRED 15L-12L		12			22	43	28.5	PN 400	HRED 14S-12S		12			24	48.5	32.5	
	HRED 18L-06L	18	6	25	32	14	43	28		HRED 16S-06S	16	6	24	30	17	50.0	35	
	HRED 18L-08L		8			17	43	28		HRED 16S-08S		8			19	50	35	
	HRED 18L-10L		10			19	44.5	29.5		HRED 16S-10S		10			22	51	34.5	
	HRED 18L-12L		12			22	44.5	29.5		HRED 16S-12S		12			24	51	34.5	
	HRED 18L-15L		15			27	45.5	30.5		HRED 16S-14S		14			27	54	36	
	HRED 22L-06L	22	6	28.5	36	14	47	32		HRED 20S-06S	20	6	28.5	36	17	54	39	
	HRED 22L-08L		8			17	47	32		HRED 20S-08S		8			19	54	39	
	HRED 22L-10L		10			19	48	33		HRED 20S-10S		10			22	55	38.5	
PN 100	HRED 22L-12L		12			22	48	33	PN 400	HRED 20S-12S		12			24	55	38.5	
	HRED 22L-15L		15			27	49	34		HRED 20S-14S		14			27	58	40	
	HRED 22L-18L		18			32	50	33.5		HRED 20S-16S		16			30	58	39.5	
	HRED 28L-06L	28	6	36	41	14	49	34		HRED 25S-06S	25	6	36	46	17	58	43.5	
	HRED 28L-08L		8			17	49	34		HRED 25S-08S		8			19	58	43.5	
	HRED 28L-10L		10			19	50	35		HRED 25S-10S		10			22	59	43	
	HRED 28L-12L		12			22	50	35		HRED 25S-12S		12			24	59	43	
	HRED 28L-15L		15			27	51	36		HRED 25S-14S		14			27	62	44.5	
	HRED 28L-18L		18			32	52	35.5		HRED 25S-16S		16			30	62	44	
PN 100	HRED 28L-22L		22			36	54	37.5	HRED 25S-20S		20			36	66	44		
	HRED 35L-06L	35	6	46	50	14	55	40	PN 250	HRED 30S-06S	30	6	41	50	17	66	51	
	HRED 35L-08L		8			17	55	40		HRED 30S-08S		8			19	66	51	
	HRED 35L-10L		10			19	56	41		HRED 30S-10S		10			22	67	50.5	
	HRED 35L-12L		12			22	56	41		HRED 30S-12S		12			24	67	50.5	
	HRED 35L-15L		15			27	57	42		HRED 30S-14S		14			27	70	52	
	HRED 35L-18L		18			32	58	41.5		HRED 30S-16S		16			30	70	51.5	
	HRED 35L-22L		22			36	60	43.5		HRED 30S-20S		20			36	73	51.5	
	HRED 35L-28L		28			41	60	43.5		HRED 30S-25S		25			46	76	52	
PN 100	HRED 42L-06L	42	6	50	60	14	55	40.5		PN 250	HRED 38S-06S	38	6	50	60	17	70.5	56
	HRED 42L-08L		8			17	55	40.5	HRED 38S-08S			8			19	70.5	56	
	HRED 42L-10L		10			19	56	41.5	HRED 38S-10S			10			22	71.5	55.5	
	HRED 42L-12L		12			22	56	41.5	HRED 38S-12S			12			24	71.5	55.5	
	HRED 42L-15L		15			27	58	42.5	HRED 38S-14S			14			27	74.5	57	
	HRED 42L-18L		18			32	58	42	HRED 38S-16S			16			30	74.5	56.5	
	HRED 42L-22L		22			36	60	44	HRED 38S-20S			20			36	78.5	56.5	
	HRED 42L-28L		28			41	61	44	HRED 38S-25S			25			46	81.5	57	
	HRED 42L-35L		35			50	65	43	HRED 38S-30S			30			50	85.5	58.5	

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Please observe final assembly instruction on page 22. * O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

SWIVEL ADAPTER (BSP PARALLED) WITH CONE AND *ED-RING HEGE-G



SWIVEL ADAPTER (METRIC PARALLED) WITH CONE AND *ED-RING HEGE-M



for BSP Paralled

Series	Part No.	Tube O.D.	h	H	K	L	ℓ	T (BSPP)	T ₁ (Metric)
		D							
L Light PN 250	HEGE 06L-02G	6	14	14	14	24.5	8	1/8	M 12X1.5
	HEGE 08L-04G	8	17	17	19	29.5	12	1/4	M 14X1.5
	HEGE 10L-04G	10	19	19	19	27.5	12	1/4	M 16X1.5
	HEGE 12L-06G	12	22	22	22	34	12	3/8	M 18X1.5
	HEGE 15L-08G	15	24	27	27	32	14	1/2	M 22X1.5
PN 160	HEGE 18L-08G	18	27	32	27	31.5	14	1/2	M 26X1.5
	HEGE 22L-12G	22	32	36	32	32.5	16	3/4	M 30X2
PN 100	HEGE 28L-16G	28	41	41	40	35	18	1	M 36X2
	HEGE 35L-20G	35	50	50	50	42.5	20	1 1/4	M 45X2
	HEGE 42L-24G	42	55	60	55	46.5	22	1 1/2	M 52X2
S Heavy PN 630	HEGE 06S-04G	6	17	17	19	27	12	1/4	M 14X1.5
	HEGE 08S-04G	8	19	19	19	29.5	12	1/4	M 16X1.5
	HEGE 10S-06G	10	22	22	22	32	12	3/8	M 18X1.5
	HEGE 12S-06G	12	24	24	22	34	12	3/8	M 20X1.5
	HEGE 14S-08G	14	27	27	27	36.5	14	1/2	M 22X1.5
PN 400	HEGE 16S-08G	16	27	30	27	37	14	1/2	M 24X1.5
	HEGE 20S-12G	20	32	36	32	43	16	3/4	M 30X2
	HEGE 25S-16G	25	41	46	40	48	18	1	M 36X2
PN 250	HEGE 30S-20G	30	50	50	50	51	20	1 1/4	M 42X2
	HEGE 38S-24G	38	55	60	55	60	22	1 1/2	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22.

*ED-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

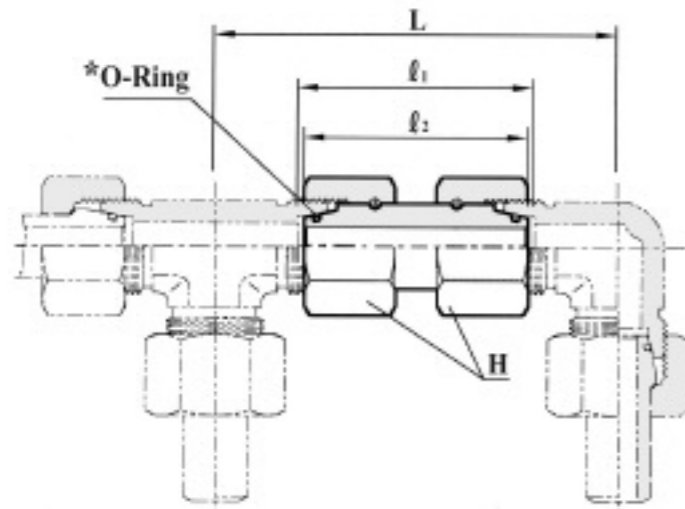
for Metric Paralled

Series	Part No.	Tube O.D.	h	H	K	L	ℓ	T (Metric)	T ₁ (Metric)
		D							
L Light PN 250	HEGE 06L-M10	6	14	14	14	24.5	8	M 10X1	M 12X1.5
	HEGE 08L-M12	8	19	17	17	26.5	12	M 12X1.5	M 14X1.5
	HEGE 10L-M14	10	19	19	19	27.5	12	M 14X1.5	M 16X1.5
	HEGE 12L-M16	12	22	22	22	30.5	12	M 16X1.5	M 18X1.5
	HEGE 15L-M18	15	24	27	24	31.5	12	M 18X1.5	M 22X1.5
PN 160	HEGE 18L-M22	18	27	32	27	31.5	14	M 22X1.5	M 26X1.5
	HEGE 22L-M26	22	32	36	32	32.5	16	M 26X1.5	M 30X2
PN 100	HEGE 28L-M33	28	41	41	40	35	18	M 33X2	M 36X2
	HEGE 35L-M42	35	50	50	50	42.5	20	M 42X2	M 45X2
	HEGE 42L-M48	42	55	60	55	46.5	22	M 48X2	M 52X2
S Heavy PN 630	HEGE 06S-M12	6	17	17	17	27	12	M 12X1.5	M 14X1.5
	HEGE 08S-M14	8	19	19	19	29.5	12	M 14X1.5	M 16X1.5
	HEGE 10S-M16	10	22	22	22	32	12	M 16X1.5	M 18X1.5
	HEGE 12S-M18	12	24	24	24	34	12	M 18X1.5	M 20X1.5
	HEGE 14S-M20	14	27	27	26	36.5	14	M 20X1.5	M 22X1.5
PN 400	HEGE 16S-M22	16	27	30	27	37	14	M 22X1.5	M 24X1.5
	HEGE 20S-M27	20	32	36	32	43	16	M 27X2	M 30X2
	HEGE 25S-M33	25	41	46	40	48	18	M 33X2	M 36X2
PN 250	HEGE 30S-M42	30	50	50	50	51	20	M 42X2	M 42X2
	HEGE 38S-M48	38	55	60	55	60	22	M 48X2	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

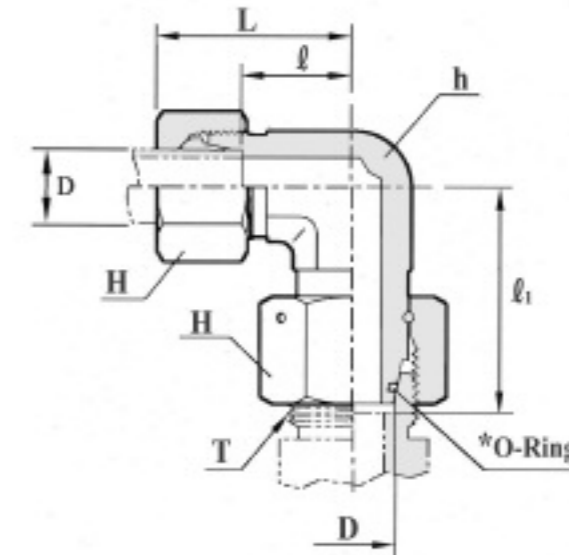
SWIVEL UNION WITH CONE HUE



Series	Part No.	Tube O.D. D	H	L	l ₁	l ₂
L Light PN 500	HUE-06L	6	14	64	36	34
	HUE-08L	8	17	64	36	34
	HUE-10L	10	19	67	37	36
PN 400	HUE-12L	12	22	71	37	36
	HUE-15L	15	27	82	40	39
	HUE-18L	18	32	89.5	42.5	40.5
PN 250	HUE-22L	22	36	102	47	45
	HUE-28L	28	41	110	49	47
	HUE-35L	35	50	127	58	53
	HUE-42L	42	60	139	59	53
S Heavy PN 800	HUE-06S	6	17	71	39	37
	HUE-08S	8	19	73	39	37
	HUE-10S	10	22	78	43	41
PN 630	HUE-12S	12	24	87	44	43
	HUE-14S	14	27	92	48	45
	HUE-16S	16	30	99	50	46
PN 400	HUE-20S	20	36	113	60	55
	HUE-25S	25	46	126	66	58
	HUE-30S	30	50	144	73	62
	HUE-38S	38	60	165	83	67

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22. * O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

SWIVEL ADJUSTABLE ELBOW WITH CONE HEW

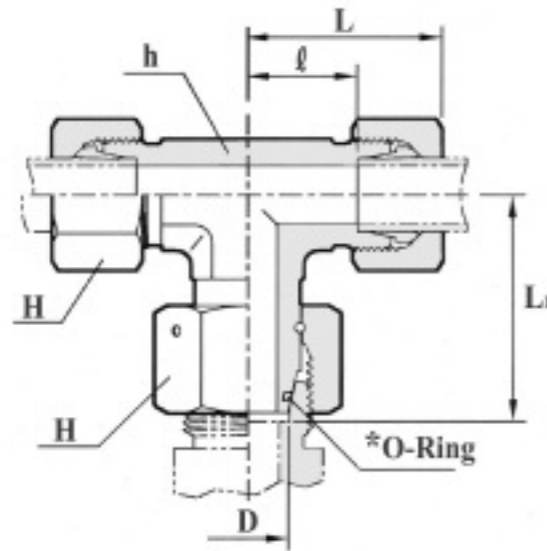


Series	Part No.	Tube O.D. D	h	H	L	l	l ₁	T (Metric)
L Light PN 250	HEW-06L	6	12	14	27	12	26	M 12X1.5
	HEW-08L	8	12	17	29	14	27.5	M 14X1.5
	HEW-10L	10	14	19	30	15	29	M 16X1.5
	HEW-12L	12	17	22	32	17	29.5	M 18X1.5
	HEW-15L	15	19	27	36	21	32.5	M 22X1.5
PN 160	HEW-18L	18	24	32	40	23.5	35.5	M 26X1.5
	HEW-22L	22	27	36	44	27.5	38.5	M 30X2
PN 100	HEW-28L	28	36	41	47	30.5	41.5	M 36X2
	HEW-35L	35	41	50	56	34.5	51	M 45X2
	HEW-42L	42	50	60	63	40	56	M 52X2
S Heavy PN 630	HEW-06S	6	12	17	31	16	27	M 14X1.5
	HEW-08S	8	14	19	32	17	27.5	M 16X1.5
	HEW-10S	10	17	22	34	17.5	30	M 18X1.5
	HEW-12S	12	17	24	38	21.5	31	M 20X1.5
PN 400	HEW-14S	14	19	27	40	22	35	M 22X1.5
	HEW-16S	16	24	30	43	24.5	36.5	M 24X1.5
	HEW-20S	20	27	36	48	26.5	44.5	M 30X2
	HEW-25S	25	36	46	54	30	50	M 36X2
	HEW-30S	30	41	50	62	35.5	55	M 42X2
PN 250	HEW-38S	38	50	60	72	41	63	M 52X2

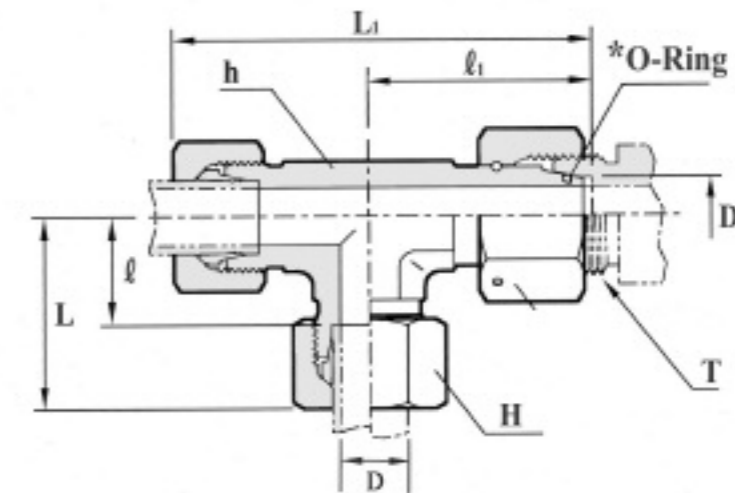
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22.

*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)

SWIVEL ADJUSTABLE BRANCH TEE WITH CONE HET



SWIVEL ADJUSTABLE RUN TEE WITH CONE HEL



Series	Part No.	Tube O.D.	h	H	L	L ₁	l	T (Metric)
		D						
L Light PN 250	HET-06L	6	12	14	27	26	12	M 12X1.5
	HET-08L	8	12	17	29	27.5	14	M 14X1.5
	HET-10L	10	14	19	30	29	15	M 16X1.5
	HET-12L	12	17	22	32	29.5	17	M 18X1.5
	HET-15L	15	19	27	36	32.5	21	M 22X1.5
PN 160	HET-18L	18	24	32	40	35.5	23.5	M 26X1.5
	HET-22L	22	27	36	44	38.5	27.5	M 30X2
PN 100	HET-28L	28	36	41	47	41.5	30.5	M 36X2
	HET-35L	35	41	50	56	51	34.5	M 45X2
	HET-42L	42	50	60	63	56	40	M 52X2
S Heavy PN 630	HET-06S	6	12	17	31	27	16	M 14X1.5
	HET-08S	8	14	19	32	27.5	17	M 16X1.5
	HET-10S	10	17	22	34	30	17.5	M 18X1.5
	HET-12S	12	17	24	38	31	21.5	M 20X1.5
	HET-14S	14	19	27	40	35	22	M 22X1.5
PN 400	HET-16S	16	24	30	43	36.5	24.5	M 24X1.5
	HET-20S	20	27	36	48	44.5	26.5	M 30X2
	HET-25S	25	36	46	54	50	30	M 36X2
PN 250	HET-30S	30	41	50	62	55	35.5	M 42X2
	HET-38S	38	50	60	72	63	41	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22.

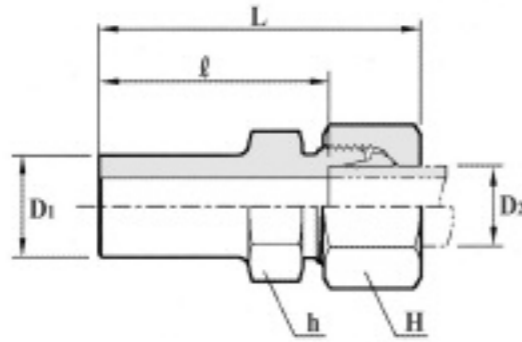
*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)

Series	Part No.	Tube O.D.	h	H	L	L ₁	l	l ₁	T (Metric)
		D							
L Light PN 250	HEL-06L	6	12	14	27	53	12	26	M 12X1.5
	HEL-08L	8	12	17	29	56	14	27.5	M 14X1.5
	HEL-10L	10	14	19	30	59	15	29	M 16X1.5
	HEL-12L	12	17	22	32	61	17	29.5	M 18X1.5
	HEL-15L	15	19	27	36	69	21	32.5	M 22X1.5
PN 160	HEL-18L	18	24	32	40	75	23.5	35.5	M 26X1.5
	HEL-22L	22	27	36	44	82	27.5	38.5	M 30X2
PN 100	HEL-28L	28	36	41	47	89	30.5	41.5	M 36X2
	HEL-35L	35	41	50	56	107	34.5	51	M 45X2
	HEL-42L	42	50	60	63	119	40	56	M 52X2
S Heavy PN 630	HEL-06S	6	12	17	31	58	16	27	M 14X1.5
	HEL-08S	8	14	19	32	59	17	27.5	M 16X1.5
	HEL-10S	10	17	22	34	64	17.5	30	M 18X1.5
	HEL-12S	12	17	24	38	69	21.5	31	M 20X1.5
	HEL-14S	14	19	27	40	75	22	35	M 22X1.5
PN 400	HEL-16S	16	24	30	43	79	24.5	36.5	M 24X1.5
	HEL-20S	20	27	36	48	93	26.5	44.5	M 30X2
	HEL-25S	25	36	46	54	104	30	50	M 36X2
PN 250	HEL-30S	30	41	50	62	117	35.5	55	M 42X2
	HEL-38S	38	50	60	72	135	41	63	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Please observe final assembly instruction on page 22.

*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)

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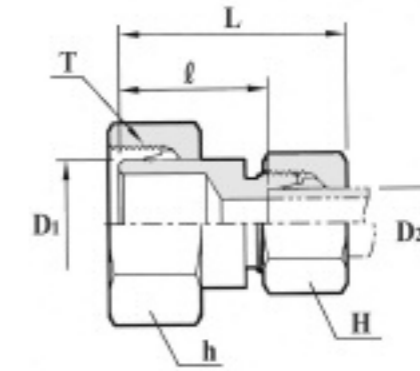
Series L(Light)

Series S(Heavy)

Series	Part No.	Tube O.D.		h	H	L	l	Series	Part No.	Tube O.D.		h	H	L	l
		D ₁	D ₂							D ₁	D ₂				
L Series PN 250	HR08L-06L	8	6	12	14	40	25.5	S Series PN 630	HR08S-06S	8	6	14	17	43	28
	HR10L-06L	10	6	12	14	42	27.5		HR10S-06S	10	6	14	17	45	30.5
	HR10L-08L	8	14	17	43	27.5	HR10S-08S		8	17	19	45	30.5		
	HR12L-06L	12	6	14	14	42	27.5		HR12S-06S	12	6	14	17	47	32.5
	HR12L-08L	8	14	17	43	27.5	HR12S-08S		8	17	19	47	32.5		
	HR12L-10L	10	17	19	44	28.5	HR12S-10S		10	19	22	48	32		
	HR15L-06L	15	6	19	14	44	29		HR14S-06S	14	6	17	17	51	36.5
	HR15L-08L	8	19	17	44	29	HR14S-08S		8	17	19	51	36.5		
	HR15L-10L	10	19	19	45	30	HR14S-10S		10	19	22	52	36		
	HR15L-12L	12	19	22	45	30	HR14S-12S		12	22	24	52	36		
PN 160	HR18L-06L	18	6	19	14	46	31	PN 400	HR16S-06S	16	6	17	17	53	38.5
	HR18L-08L	8	19	17	46	31	HR16S-08S		8	17	19	53	38.5		
	HR18L-10L	10	19	19	47	32	HR16S-10S		10	19	22	54	38		
	HR18L-12L	12	19	22	47	32	HR16S-12S		12	22	24	55	38.5		
	HR18L-15L	15	22	27	49	33	HR16S-14S		14	22	27	57	39.5		
PN 160	HR22L-06L	22	6	24	14	48	33	PN 400	HR20S-06S	20	6	22	17	58	43
	HR22L-08L	8	24	17	48	33	HR20S-08S		8	22	19	58	43		
	HR22L-10L	10	24	19	49	34	HR20S-10S		10	22	22	59	42.5		
	HR22L-12L	12	24	22	49	34	HR20S-12S		12	22	24	59	42.5		
	HR22L-15L	15	24	27	50	35	HR20S-14S		14	22	27	62	44		
	HR22L-18L	18	27	32	51	34.5	HR20S-16S		16	24	30	62	43.5		
PN 100	HR28L-06L	28	6	30	14	48	33	PN 400	HR25S-06S	25	6	27	17	62	47.5
	HR28L-08L	8	30	17	48	33	HR25S-08S		8	27	19	62	47.5		
	HR28L-10L	10	30	19	49	34	HR25S-10S		10	27	22	63	47		
	HR28L-12L	12	30	22	49	34	HR25S-12S		12	27	24	63	47		
	HR28L-15L	15	30	27	50	35	HR25S-14S		14	27	27	66	48.5		
	HR28L-18L	18	30	32	51	36	HR25S-16S		16	27	30	66	48		
	HR28L-22L	22	32	36	53	36.5	HR25S-20S		20	30	36	70	48		
	HR35L-06L	35	6	36	14	53	38.5		HR30S-06S	30	6	32	17	67	52
	HR35L-08L	8	36	17	53	38.5	HR30S-08S		8	32	19	67	52		
	HR35L-10L	10	36	19	55	39.5	HR30S-10S		10	32	22	68	51.5		
PN 250	HR35L-12L	12	36	22	55	39.5	HR30S-12S	12	32	24	68	51.5			
	HR35L-15L	15	36	27	56	40.5	HR30S-14S	14	32	27	71	53			
	HR35L-18L	18	36	32	56	40	HR30S-16S	16	32	30	71	52.5			
	HR35L-22L	22	36	36	58	42	HR30S-20S	20	32	36	74	52.5			
	HR35L-28L	36	41	59	42	HR30S-25S	25	36	46	77	53				
	HR42L-06L	42	6	46	14	56	41	HR38S-06S	38	6	41	17	72	57	
	HR42L-08L	8	46	17	56	41	HR38S-08S	18	41	19	72	57			
	HR42L-10L	10	46	19	58	42	HR38S-10S	10	41	22	73	56.5			
	HR42L-12L	12	46	22	58	42	HR38S-12S	12	41	24	73	56.5			
	HR42L-15L	15	46	27	60	43	HR38S-14S	14	41	27	76	58			
HR42L-18L	18	46	32	60	42.5	HR38S-16S	16	41	30	76	57.5				
HR42L-22L	22	46	36	62	44.5	HR38S-20S	20	41	36	79	57.5				
HR42L-28L	46	41	64	44.5	HR38S-25S	25	41	46	82	58					
HR42L-35L	35	46	50	67	43.5	HR38S-30S	30	46	50	89	58.5				

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

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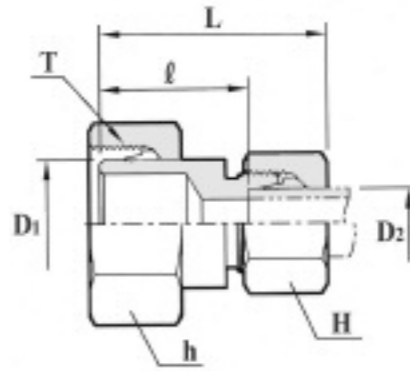


Series L(Light)

Series	Part No.	Tube O.D.		h	H	L	l	T
		D ₁	D ₂					
PN 250	HKOR 08L-06L	8	6	17	14	38	23.5	M 14X1.5
PN 250	HKOR 10L-06L	10	6	19	14	38	23.5	M 16X1.5
	HKOR 10L-08L	8	17	19	14	38	23.5	M 16X1.5
PN 250	HKOR 12L-06L	12	6	22	14	38	23.5	M 18X1.5
	HKOR 12L-08L	8	17	19	14	38	23.5	M 18X1.5
	HKOR 12L-10L	10	19	22	14	38	23.5	M 18X1.5
	HKOR 12L-12L	12	22	24	14	38	23.5	M 18X1.5
PN 250	HKOR 15L-06L	15	6	27	14	38	23.5	M 22X1.5
	HKOR 15L-08L	8	17	19	14	38	23.5	M 22X1.5
	HKOR 15L-10L	10	19	22	14	38	23.5	M 22X1.5
	HKOR 15L-12L	12	22	24	14	38	23.5	M 22X1.5
PN 160	HKOR 18L-06L	18	6	32	14	39	24.5	M 26X1.5
	HKOR 18L-08L	8	17	19	14	39	24.5	M 26X1.5
	HKOR 18L-10L	10	19	22	14	39	24.5	M 26X1.5
	HKOR 18L-12L	12	22	24	14	39	24.5	M 26X1.5
	HKOR 18L-15L	15	27	27	14	39	24.5	M 26X1.5
	HKOR 18L-18L	18	32	32	14	39	24.5	M 26X1.5
PN 160	HKOR 22L-06L	22	6	36	14	40	25.5	M 30X2
	HKOR 22L-08L	8	17	19	14	40	25.5	M 30X2
	HKOR 22L-10L	10	19	22	14	40	25.5	M 30X2
	HKOR 22L-12L	12	22	24	14	40	25.5	M 30X2
	HKOR 22L-15L	15	27	27	14	40	25.5	M 30X2
	HKOR 22L-18L	18	32	32	14	40	25.5	M 30X2
PN 100	HKOR 28L-06L	28	6	41	14	41	26.5	M 36X2
	HKOR 28L-08L	8	17	19	14	41	26.5	M 36X2
	HKOR 28L-10L	10	19	22	14	41	26.5	M 36X2
	HKOR 28L-12L	12	22	24	14	41	26.5	M 36X2
	HKOR 28L-15L	15	27	27	14	41	26.5	M 36X2
	HKOR 28L-18L	18	32	32	14	41	26.5	M 36X2
PN 100	HKOR 35L-06L	35	6	50	14	46	31.5	M 45X2
	HKOR 35L-08L	8	17	19	14	46	31.5	M 45X2
	HKOR 35L-10L	10	19	22	14	46	31.5	M 45X2
	HKOR 35L-12L	12	22	24	14	46	31.5	M 45X2
	HKOR 35L-15L	15	27	27	14	46	31.5	M 45X2
	HKOR 35L-18L	18	32	32	14	46	31.5	M 45X2
PN 100	HKOR 35L-22L	22	36	36	14	46	31.5	M 45X2
	HKOR 35L-28L	28	41	41	14	46	31.5	M 45X2
	HKOR 42L-10L	42	10	60	19	48	33.5	M 52X2
	HKOR 42L-12L	12	22	24	19	48	33.5	M 52X2
	HKOR 42L-15L	15	27	27	19	48	33.5	M 52X2
	HKOR 42L-18L	18	32	32	19	48	33.5	M 52X2
PN 100	HKOR 42L-22L	22	36	36	19	48	33.5	M 52X2
	HKOR 42L-28L	28	41	41	19	48	33.5	M 52X2
	HKOR 42L-35L	35	50	50	19	48	33.5	M 52X2
	HKOR 42L-10L	10	19	22	19	48	33.5	M 52X2
	HKOR 42L-12L	12	22	24	19	48	33.5	M 52X2
	HKOR 42L-15L	15	27	27	19	48	33.5	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Please observe final assembly instruction on page 22.

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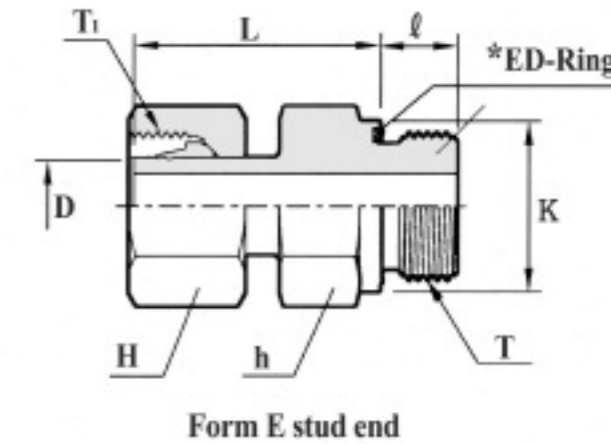


Series S(Heavy)

Series	Part No.	Tube O.D.		h	H	L	l	T (Metric)	
		D ₁	D ₂						
PN 630	HKOR 08S-06S	8	6	19	17	40	25	M 16X1.5	
PN 630	HKOR 10S-06S	10	6	22	17	41	26	M 18X1.5	
	HKOR 10S-08S		8	19	41	26			
PN 630	HKOR 12S-06S	12	6	24	17	42	27	M 20X1.5	
	HKOR 12S-08S		8	19	42	27			
	HKOR 12S-10S		10	22	43	26.5			
PN 630	HKOR 14S-06S	14	6	27	17	44	29	M 22X1.5	
	HKOR 14S-08S		8	19	44	29			
	HKOR 14S-10S		10	22	45	28.5			
	HKOR 14S-12S		12	24	45	28.5			
PN 400	HKOR 16S-06S	16	6	30	17	44	29	M 24X1.5	
	HKOR 16S-08S		8	19	44	29			
	HKOR 16S-10S		10	22	45	28.5			
	HKOR 16S-12S		12	24	45	28.5			
	HKOR 16S-14S		14	27	48	30			
PN 400	HKOR 20S-06S	20	6	36	17	49	34	M 30X2	
	HKOR 20S-08S		8	19	49	34			
	HKOR 20S-10S		10	22	50	33.5			
	HKOR 20S-12S		12	24	50	33.5			
	HKOR 20S-14S		14	27	53	35			
	HKOR 20S-16S		16	30	53	34.5			
PN 400	HKOR 25S-06S	25	6	46	17	52	37	M 36X2	
	HKOR 25S-08S		8	19	52	37			
	HKOR 25S-10S		10	22	53	36.5			
	HKOR 25S-12S		12	24	53	36.5			
	HKOR 25S-14S		14	27	55	37			
	HKOR 25S-16S		16	30	55	36.5			
PN 400	HKOR 25S-20S	20	20	36	59	37.5	M 42X2		
	HKOR 30S-06S		30	6	50	17		54	39
	HKOR 30S-08S			8	19	54		39	
	HKOR 30S-10S			10	22	55		38.5	
	HKOR 30S-12S			12	24	55		38.5	
HKOR 30S-14S	14	27		58	40				
PN 250	HKOR 30S-16S	30	16	30	58	39.5	M 52X2		
	HKOR 30S-20S		20	36	61	39.5			
	HKOR 30S-25S		25	46	64	40			
	HKOR 38S-06S		38	6	60	17		58	43
	HKOR 38S-08S			8	19	58		43	
	HKOR 38S-10S			10	22	59		42.5	
HKOR 38S-12S	12	24		59	42.5				
HKOR 38S-14S	14	27		62	44				
HKOR 38S-16S	16	30		62	43.5				
PN 250	HKOR 38S-20S	38	20	36	65	43.5	M 52X2		
	HKOR 38S-25S		25	46	68	44			
	HKOR 38S-30S		30	50	71	44.5			

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22.

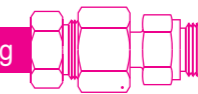
ADAPTER (BSP PARALLEL) WITH *ED-RING HA-GED



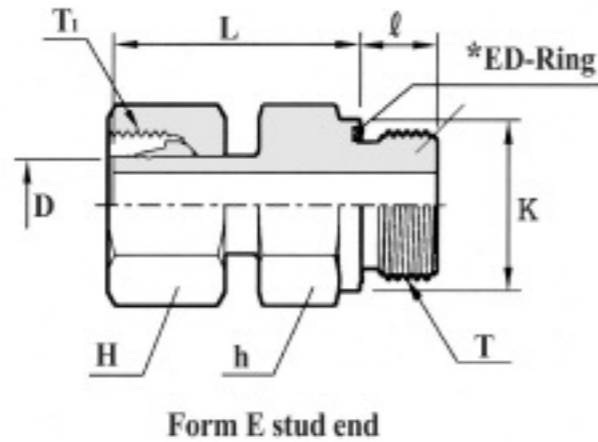
for BSP Paralleled

Series	Part No.	Tube O.D. D	h	H	K	L	l	T (BSPP)	T ₁ (Metric)
L Light PN 250	HA 06L-02GED	6	14	14	14	24.5	8	1/8	M 12X1.5
	HA 08L-04GED	8	19	17	19	29.5	12	1/4	M 14X1.5
	HA 10L-04GED	10	19	19	19	27.5	12	1/4	M 16X1.5
	HA 12L-06GED	12	22	22	22	34	12	3/8	M 18X1.5
	HA 15L-08GED	15	27	27	27	32	14	1/2	M 22X1.5
PN 160	HA 18L-08GED	18	27	32	27	31.5	14	1/2	M 26X1.5
	HA 22L-12GED	22	32	36	32	32.5	16	3/4	M 30X2
PN 100	HA 28L-16GED	28	41	41	40	35	18	1	M 36X2
	HA 35L-20GED	35	50	50	50	42.5	20	1 1/4	M 45X2
	HA 42L-24GED	42	55	60	55	46.5	22	1 1/2	M 52X2
S Heavy PN 630	HA 06S-04GED	6	19	17	19	27	12	1/4	M 14X1.5
	HA 08S-04GED	8	19	19	19	29.5	12	1/4	M 16X1.5
	HA 10S-06GED	10	22	22	22	32	12	3/8	M 18X1.5
	HA 12S-06GED	12	22	24	22	34	12	3/8	M 20X1.5
	HA 12S-08GED	12	27	24	27	34.5	14	1/2	M 20X1.5
	HA 14S-08GED	14	27	27	27	36.5	14	1/2	M 22X1.5
	HA 16S-08GED	16	27	30	27	37	14	1/2	M 24X1.5
PN 400	HA 16S-12GED	16	32	30	32	39	16	3/4	M 24X1.5
	HA 20S-13GED	20	32	36	32	43	16	3/4	M 30X2
	HA 25S-16GED	25	41	46	40	48	18	1	M 36X2
PN 250	HA 30S-20GED	30	50	50	50	51	20	1 1/4	M 42X2
	HA 38S-24GED	38	55	60	55	60	22	1 1/2	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22. *ED-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)



ADAPTER (METRIC PARALLELED) WITH *ED-RING HA-MED



Form E stud end

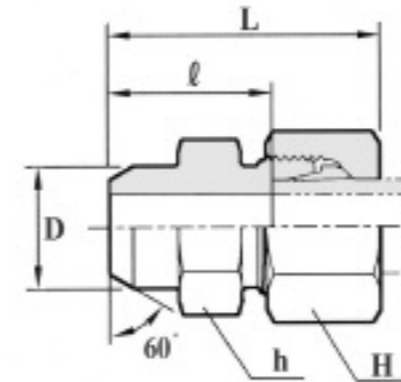
for Metric Paralleled

Series	Part No.	Tube O.D.	H	h	K	L	ℓ	T (Metric)	T1 (Metric)
		D							
L Light PN 250	HA 06L-M10ED	6	14	14	14	24.5	8	M 10X1	M 12X1.5
	HA 08L-M12ED	8	19	17	17	26.5	12	M 12X1.5	M 14X1.5
	HA 10L-M14ED	10	19	19	19	27.5	12	M 14X1.5	M 16X1.5
	HA 12L-M16ED	12	22	22	22	30.5	12	M 16X1.5	M 18X1.5
	HA 15L-M18ED	15	27	27	24	31.5	14	M 18X1.5	M 22X1.5
PN 160	HA 18L-M22ED	18	27	32	27	31.5	14	M 22X1.5	M 26X1.5
	HA 22L-M26ED	22	32	36	32	32.5	16	M 26X1.5	M 30X2
PN 100	HA 28L-M33ED	28	41	41	40	35	18	M 33X2	M 36X2
	HA 35L-M42ED	35	50	50	50	42.5	20	M 42X2	M 45X2
	HA 42L-M48ED	42	55	60	55	46.5	22	M 48X2	M 52X2
S Heavy PN 630	HA 06S-M12ED	6	19	17	17	27	12	M 12X1.5	M 14X1.5
	HA 08S-M14ED	8	22	19	19	29.5	12	M 14X1.5	M 16X1.5
	HA 10S-M16ED	10	22	22	22	32	12	M 16X1.5	M 18X1.5
	HA 12S-M18ED	12	27	24	24	34	12	M 18X1.5	M 20X1.5
	HA 14S-M20ED	14	27	27	27	36.5	14	M 20X1.5	M 22X1.5
PN 400	HA 16S-M22ED	16	32	30	27	37	14	M 22X1.5	M 24X1.5
	HA 20S-M27ED	20	32	36	32	43	16	M 27X2	M 30X2
	HA 25S-M33ED	25	41	46	40	48	18	M 33X2	M 36X2
PN 250	HA 30S-M42ED	30	50	50	50	51	20	M 42X2	M 42X2
	HA 38S-M48ED	38	55	60	55	60	22	M 48X2	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22.

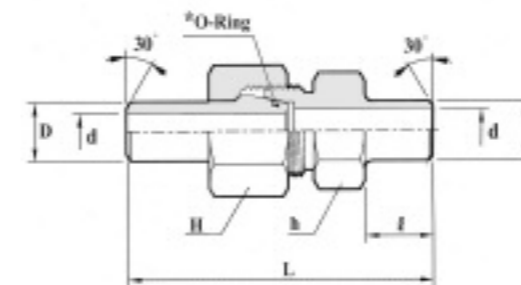
*ED-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

WELDING CONNECTOR HAS



Series	Part No.	Tube O.D.	D	H	h	L	ℓ
		D					
L Light PN 250	HAS-06L	6	10	14	12	29	14
	HAS-08L	8	12	17	14	31	16
	HAS-10L	10	14	19	17	33	18
	HAS-12L	12	16	22	19	33	18
	HAS-15L	15	19	27	22	37	22
PN 160	HAS-18L	18	22	32	27	40	23.5
	HAS-22L	22	27	36	32	45	28.5
PN 100	HAS-28L	28	32	41	41	47	30.5
	HAS-35L	35	40	50	46	54	32.5
	HAS-42L	42	46	60	55	58	35
S Heavy PN 630	HAS-06S	6	11	17	14	34	19
	HAS-08S	8	13	19	17	36	21
	HAS-10S	10	15	22	19	39	22.5
	HAS-12S	12	17	24	22	41	24.5
	HAS-14S	14	19	27	24	45	27
PN 400	HAS-16S	16	21	30	27	45	26.5
	HAS-20S	20	26	36	32	51	29.5
	HAS-25S	25	31	46	41	56	32
PN 250	HAS-30S	30	36	50	46	62	35.5
	HAS-38S	38	44	60	55	69	38

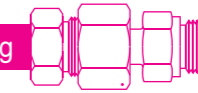
WELDING CONNECTOR WITH HAK HASK



Series S	Part No.	Tube O.D.	d	H	h	L	ℓ
		D					
Max. Pressure	PB 248	10	8	22	19	58	10
	PB 357		7				
	PB 458		6				
PB 303	HASK 10X1.0	12	9	24	22	65	15
	HASK 10X1.5		8				
	HASK 10X2.0		7				
	HASK 12X1.5	16	13	30	27	74.5	16.5
	HASK 12X2.0		12				
	HASK 12X2.5		11				
	HASK 16X1.5		10				
	HASK 16X2.0	20	16	36	32	84	19
	HASK 16X2.5		15				
	HASK 16X3.0		14				
PB 249	HASK 20X2.0	25	19	46	41	94.5	19.5
	HASK 20X2.5		17				
	HASK 20X3.0		15				
	HASK 20X4.0		12				
	HASK 25X3.0	30	24	50	46	102	23
PB 292	HASK 25X4.0		22				
	HASK 25X5.0		20				
	HASK 30X3.0		18				
	HASK 30X4.0	38	30	60	55	111	23
	HASK 30X5.0		28				
	HASK 30X6.0		26				
	HASK 38X4.0		24				
	HASK 38X7.0		24				

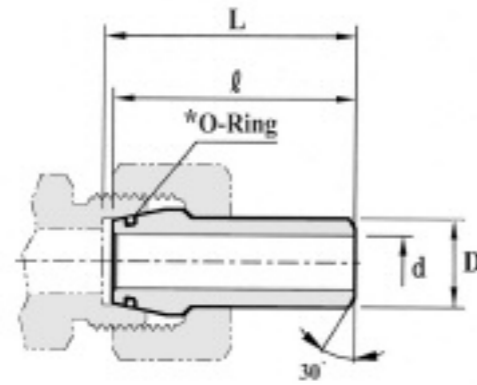
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)



WELDING NIPPLE WITH *O-RING

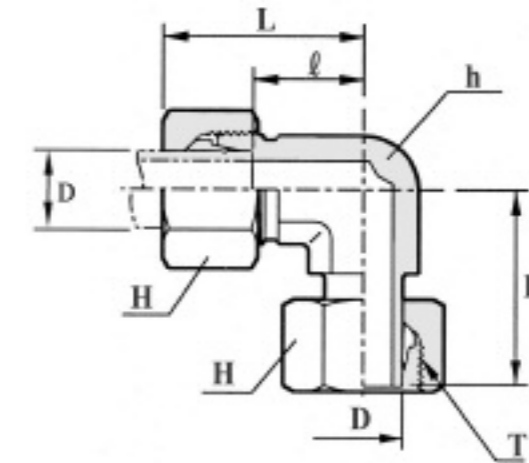
HAK



Fittings	Pressure Rating		Part No.	Tube O.D.	d	L	l
	HAK and Tube	D					
PN 630	PB 248	HAK 10X1.0	10	8	35.5	33	
	PB 357	HAK 10X1.5		7			
	PB 458	HAK 10X2.0		6			
PN 630	PB 303	HAK 12X1.5	12	9	35.5	33	
	PB 391	HAK 12X2.0		8			
	PB 474	HAK 12X2.5		7			
PN 400	PB 234	HAK 16X1.5	16	13	42.5	39	
	PB 303	HAK 16X2.0		12			
	PB 370	HAK 16X2.5		11			
PN 400	PB 433	HAK 16X3.0		10			
	PB 249	HAK 20X2.0	20	16	47.5	43.5	
	PB 303	HAK 20X2.5		15			
PN 400	PB 357	HAK 20X3.0		14			
	PB 458	HAK 20X4.0		12			
	PB 292	HAK 25X3.0	25	19	55	49.5	
PN 400	PB 378	HAK 25X4.0		17			
	PB 458	HAK 25X5.0		15			
	PB 248	HAK 30X3.0	30	24	58.5	51.5	
PN 250	PB 321	HAK 30X4.0		22			
	PB 391	HAK 30X5.0		20			
	PB 460	HAK 30X6.0		18			
PN 250	PB 260	HAK 38X4.0	38	30	66	56.5	
	PB 318	HAK 38X5.0		28			
	PB 373	HAK 38X6.0		26			
	PB 427	HAK 38X7.0		24			

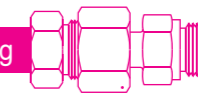
ADJUSTABLE ELBOW WITH STANDPIPE

HLA

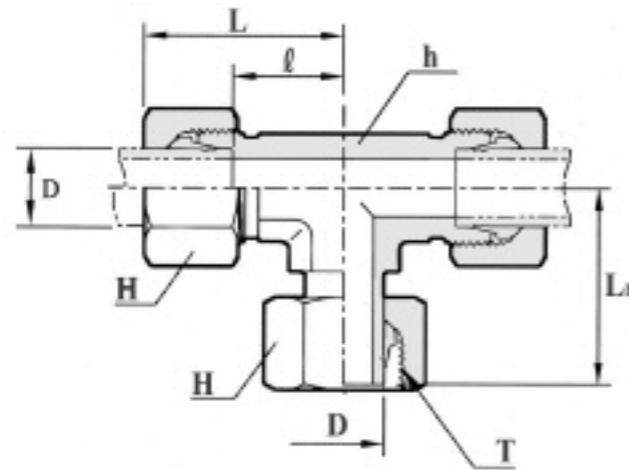


Series	Part No.	Tube O.D.	h	H	L	L1	l	T
		D						
L Light PN 250	HLA-06L	6	12	14	27	26	12	M 12X1.5
	HLA-08L	8	12	17	29	27.5	14	M 14X1.5
	HLA-10L	10	14	19	30	29	15	M 16X1.5
	HLA-12L	12	17	22	32	29.5	17	M 18X1.5
	HLA-15L	15	19	27	36	32.5	21	M 22X1.5
PN 160	HLA-18L	18	24	32	40	35.5	23.5	M 26X1.5
	HLA-22L	22	27	36	44	38.5	27.5	M 30X2
PN 100	HLA-28L	28	36	41	47	41.5	30.5	M 36X2
	HLA-35L	35	41	50	56	51	34.5	M 45X2
	HLA-42L	42	50	60	63	56	40	M 52X2
S Heavy PN 630	HLA-06S	6	12	17	31	27	16	M 14X1.5
	HLA-08S	8	14	19	32	27.5	17	M 16X1.5
	HLA-10S	10	17	22	34	30	17.5	M 18X1.5
	HLA-12S	12	17	24	38	31	21.5	M 20X1.5
PN 400	HLA-14S	14	19	27	40	35	22	M 22X1.5
	HLA-16S	16	24	30	43	36.5	24.5	M 24X1.5
	HLA-20S	20	27	36	48	44.5	26.5	M 30X2
	HLA-25S	25	36	46	54	50	30	M 36X2
PN 250	HLA-30S	30	41	50	62	55	35.5	M 42X2
	HLA-38S	38	50	60	72	63	41	M 52X2

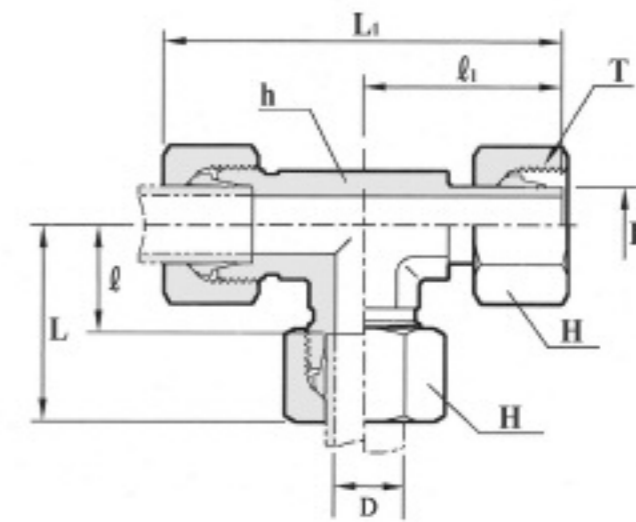
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22.



ADJUSTABLE BRANCH TEE WITH STANDPIPE HBTA



ADJUSTABLE RUN TEE WITH STANDPIPE HRTA



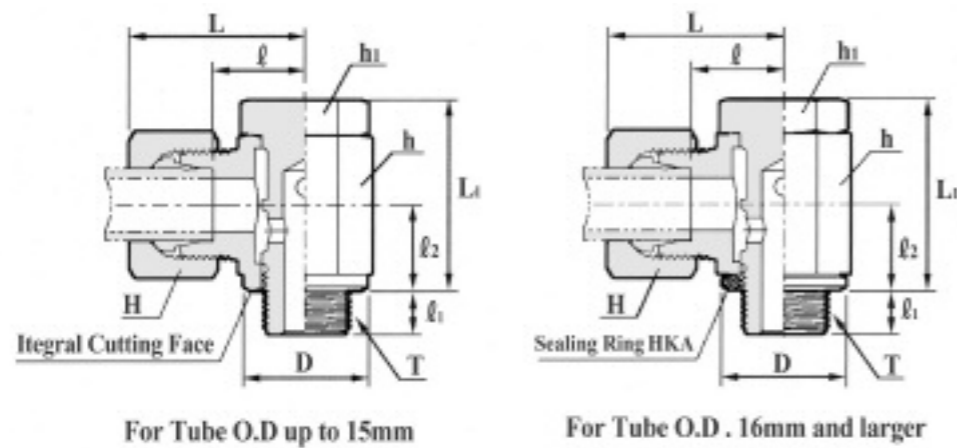
Series	Part No.	Tube O.D.	h	H	L	L ₁	ℓ	T (Metric)
		D						
L Light PN 250	HBTA-06L	6	12	14	27	26	12	M 12X1.5
	HBTA-08L	8	12	17	29	27.5	14	M 14X1.5
	HBTA-10L	10	14	19	30	29	15	M 16X1.5
	HBTA-12L	12	17	22	32	29.5	17	M 18X1.5
	HBTA-15L	15	19	27	36	32.5	21	M 22X1.5
PN 160	HBTA-18L	18	24	32	40	35.5	23.5	M 26X1.5
	HBTA-22L	22	27	36	44	38.5	27.5	M 30X2
PN 100	HBTA-28L	28	36	41	47	41.5	30.5	M 36X2
	HBTA-35L	35	41	50	56	51	34.5	M 45X2
	HBTA-42L	42	50	60	63	56	40	M 52X2
S Heavy PN 630	HBTA-06S	6	12	17	31	27	16	M 14X1.5
	HBTA-08S	8	14	19	32	27.5	17	M 16X1.5
	HBTA-10S	10	17	22	34	30	17.5	M 18X1.5
	HBTA-12S	12	17	24	38	31	21.5	M 20X1.5
	HBTA-14S	14	19	27	40	35	22	M 22X1.5
PN 400	HBTA-16S	16	24	30	43	36.5	24.5	M 24X1.5
	HBTA-20S	20	27	36	48	44.5	26.5	M 30X2
	HBTA-25S	25	36	46	54	50	30	M 36X2
PN 250	HBTA-30S	30	41	50	62	55	35.5	M 42X2
	HBTA-38S	38	50	60	72	63	41	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22.

Series	Part No.	Tube O.D.	h	H	L	L ₁	ℓ	ℓ ₁	T (Metric)
		D							
L Light PN 250	HRTA-06L	6	12	14	27	53	12	26	M 12X1.5
	HRTA-08L	8	12	17	29	56	14	27.5	M 14X1.5
	HRTA-10L	10	14	19	30	59	15	29	M 16X1.5
	HRTA-12L	12	17	22	32	62	17	29.5	M 18X1.5
	HRTA-15L	15	19	27	36	69	21	32.5	M 22X1.5
PN 160	HRTA-18L	18	24	32	40	75	23.5	35.5	M 26X1.5
	HRTA-22L	22	27	36	44	83	27.5	38.5	M 30X2
PN 100	HRTA-28L	28	36	41	47	91	30.5	41.5	M 36X2
	HRTA-35L	35	41	50	56	111	34.5	51	M 45X2
	HRTA-42L	42	50	60	63	123	40	56	M 52X2
S Heavy PN 630	HRTA-06S	6	12	17	31	58	16	27	M 14X1.5
	HRTA-08S	8	14	19	32	61	17	27.5	M 16X1.5
	HRTA-10S	10	17	22	34	66	17.5	30	M 18X1.5
	HRTA-12S	12	17	24	38	71	21.5	31	M 20X1.5
	HRTA-14S	14	19	27	40	75	22	35	M 22X1.5
PN 400	HRTA-16S	16	24	30	43	79	24.5	36.5	M 24X1.5
	HRTA-20S	20	27	36	48	93	26.5	44.5	M 30X2
	HRTA-25S	25	36	46	54	105	30	50	M 36X2
PN 250	HRTA-30S	30	41	50	62	119	35.5	55	M 42X2
	HRTA-38S	38	50	60	72	138	41	63	M 52X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change. Pre-set nut and cutting ring for connection. Please observe final assembly instruction on page 22.

BANJO FITTINGS (BSP PARALLEL/METRIC PARALLEL) WITH HKA-RING HSWVE-G/M



for BSP Paralled

Series	Part No.	Tube O.D. D	D	h	h ₁	H	L	L ₁	l	l ₁	l ₂	T (BSPP)	MA*
L light PN 250	HSWVE 06L-02G	6	14.5	14	14	14	25	21	10.5	6	10	1/8	20
	HSWVE 08L-04G	8	18.5	19	17	19	28	27	13	9	13	1/4	45
	HSWVE 10L-04G	10	18.5	19	19	19	29	27	14	9	13	1/4	45
	HSWVE 12L-06G	12	22.5	22	22	22	30	32	15.5	9	15	3/8	70
PN 160	HSWVE 15L-08G	15	26.5	27	27	27	34	37.5	19	11	18	1/2	100
	HSWVE 18L-08G	18	26	30	32	27	37	44	20.5	11	21.5	1/2	100
S heavy PN 630	HSWVE 22L-12G	22	32	36	36	32	42	49	25.5	13	24	3/4	140
	HSWVE 06S-04G	6	18.5	19	17	19	30	27	15	9	13	1/4	45
PN 400	HSWVE 08S-04G	8	18.5	19	19	19	30	27	15	9	13	1/4	45
	HSWVE 10S-06G	10	22.5	22	22	22	32	32	16	9	15	3/8	70
	HSWVE 12S-06G	12	22.5	24	24	24	33	37	17	9	18	3/8	70
PN 400	HSWVE 14S-08G	14	26.5	27	27	27	38	37	20	11	18	1/2	100
	HSWVE 16S-08G	16	26	30	30	27	40	44	21.5	11	21.5	1/2	100
	HSWVE 20S-12G	20	32	36	36	32	46	49	24.5	13	24	3/4	140

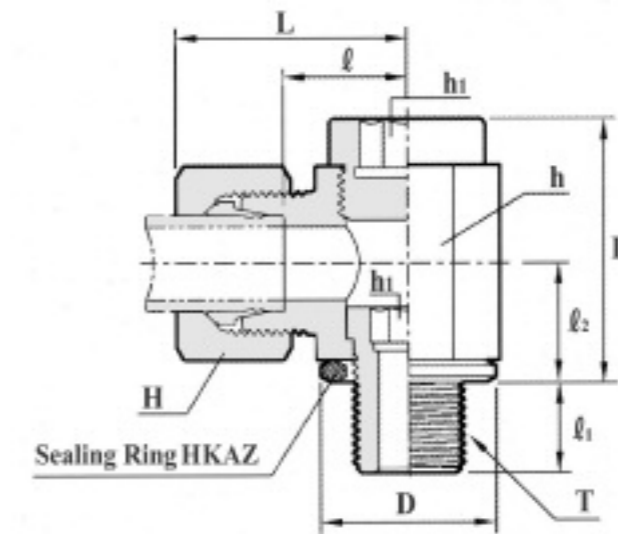
for Metric Paralled

Series	Part No.	Tube O.D. D	D	h	h ₁	H	L	L ₁	l	l ₁	l ₂	T (Metric)	MA*
L light PN 250	HSWVE 06L-M10	6	14.5	14	14	14	25	21.5	10.5	6	10	M 10X1	25
	HSWVE 08L-M12	8	17.5	17	17	17	27	25	12	9	12	M 12X1.5	40
	HSWVE 10L-M14	10	19.5	19	19	19	29	27	14	9	13	M 14X1.5	55
	HSWVE 12L-M16	12	21.5	22	22	22	30	32	15.5	9	15	M 16X1.5	65
	HSWVE 15L-M18	15	23.5	24	24	27	33	37.5	17.5	9	18	M 18X1.5	90
PN 160	HSWVE 18L-M22	18	27	30	27	32	37	44	20.5	11	21.5	M 22X1.5	130
	HSWVE 22L-M26	22	31	36	32	36	42	49	25.5	13	24	M 26X1.5	140
S heavy PN 630	HSWVE 06S-M12	6	17.5	17	17	17	29	25	14	9	12	M 12X1.5	40
	HSWVE 08S-M14	8	19.5	19	19	19	30	27	15	9	13	M 14X1.5	55
	HSWVE 10S-M16	10	21.5	22	22	22	32	32	16	9	15	M 16X1.5	65
	HSWVE 12S-M18	12	23.5	24	24	24	33	37	17	9	18	M 18X1.5	90
	HSWVE 14S-M20	14	25.5	27	27	27	38	37	20	11	18	M 20X1.5	120
PN 400	HSWVE 16S-M22	16	27	30	27	30	40	44	21.5	11	21.5	M 22X1.5	130
	HSWVE 20S-M27	20	32	36	32	36	46	49	24.5	13	24	M 27X2	150

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

*MA = Recommended tightening torques (in Nm) for male G and M

THROTTLEFREE BANJO FITTINGS (METRIC PARALLEL) WITH HKAZ-RING HSWVE-G/M

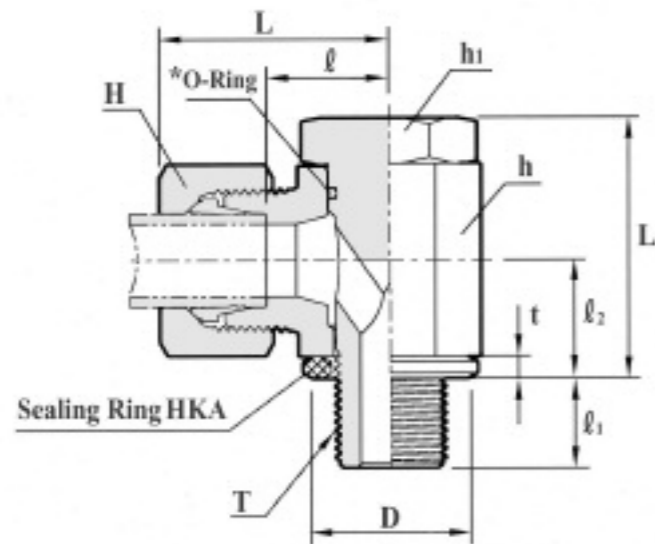


for Metric Paralled

Series	Part No.	Tube O.D. D	D	h	h ₁	H	L	L ₁	l	l ₁	l ₂	T (Metric)
L light PN 250	HSVW 06L-M10	6	14	19	6	14	27	24	12.5	8	12	M 10X1
	HSVW 08L-M12	8	17	22	6	17	29	30	14.5	12	15	M 12X1.5
	HSVW 10L-M14	10	19	22	8	19	30	30	15.5	12	16	M 14X1.5
	HSVW 12L-M16	12	21	27	10	22	33	37	18	12	18	M 16X1.5
PN 160	HSVW 15L-M18	15	23	30	12	27	36	40	21	12	20	M 18X1.5
	HSVW 18L-M22	18	27	36	14	32	38	46	21.5	14	23	M 22X1.5
PN 100	HSVW 22L-M26	22	31	41	17	36	42	51	26	16	25	M 26X1.5
	HSVW 28L-M33	28	39	50	22	41	48	64	31.5	18	32	M 33X2
S heavy PN 630	HSVW 35L-M42	35	49	60	27	50	57	76	35.5	20	37	M 42X2
	HSVW 42L-M48	42	55	65	32	60	63	85	40	22	42	M 48X2
	HSVW 06S-M12	6	17	22	6	17	31	30	16.5	12	15	M 12X1.5
	HSVW 08S-M14	8	19	22	8	19	31	30	16.5	12	16	M 14X1.5
	HSVW 10S-M16	10	21	27	10	22	35	37	18.5	12	18	M 16X1.5
PN 400	HSVW 12S-M18	12	23	30	12	24	37	41	20.5	12	20	M 18X1.5
	HSVW 14S-M20	14	25	32	12	27	41	42	23	14	21	M 20X1.5
	HSVW 16S-M22	16	27	36	14	30	41	46	22.5	14	23	M 22X1.5
PN 250	HSVW 20S-M27	20	32	46	17	36	49	58	27.5	16	28	M 27X2
	HSVW 25S-M33	25	39	50	22	46	55	64	31	18	32	M 33X2
	HSVW 30S-M42	30	49	60	27	50	63	76	36.5	20	37	M 42X2
	HSVW 38S-M48	38	55	70	32	60	72	85	41	22	42	M 48X2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

HIGH PRESSURE BANJO FITTINGS (METRIC PARALLED) WITH HKA-RING HWH-G/M



for Metric Parallel

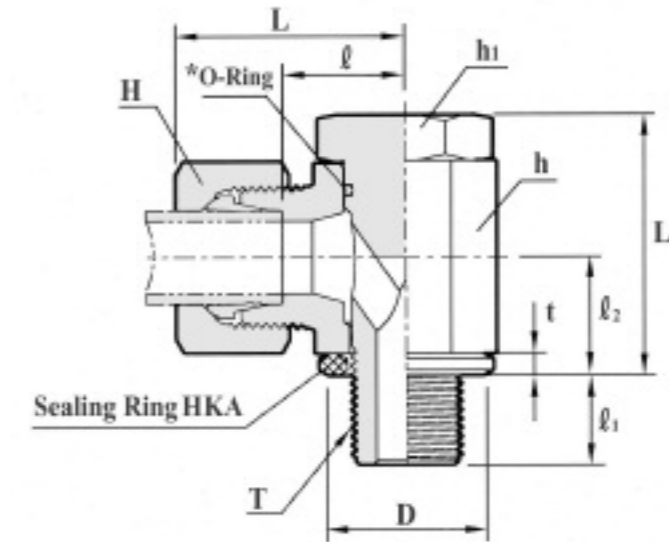
Series	Part No.	Tube O.D. D	D	h	h ₁	H	L	L ₁	ℓ	ℓ ₁	ℓ ₂	T	T (Metric)	MA*
L light PN 250	HWH 06L-M10	6	14	17	17	14	27	24	12	8	10.5	2.5	M 10X1	25
	HWH 08L-M12	8	17	22	19	17	29	30	14.5	12	14	3.0	M 12X1.5	50
	HWH 10L-M14	10	19	22	19	19	30	30	15.5	12	14	3.0	M 14X1.5	60
	HWH 12L-M16	12	21	27	24	22	33	36	18	12	16.5	3.0	M 16X1.5	90
	HWH 15L-M18	15	23	30	27	27	36	39.5	20.5	12	18.5	3.0	M 18X1.5	110
PN 160	HWH 18L-M22	18	27	32	30	32	37	45	21	14	21.5	4.5	M 22X1.5	150
	HWH 22L-M26	22	31	41	36	36	44	53	27.5	16	24	3.5	M 26X1.5	350
PN 100	HWH 28L-M33	28	39	50	46	41	49	66	32	18	30.5	3.5	M 33X2	400
	HWH 35L-M42	35	49	60	55	50	58	76	36	20	35.5	3.5	M 42X2	600
	HWH 42L-M48	42	55	70	60	60	63	87	40.5	22	40.5	3.5	M 48X2	800
S heavy PN 630	HWH 06S-M12	6	17	22	19	17	31	30	16.5	12	14	3.0	M 12X1.5	50
	HWH 08S-M14	8	19	22	19	19	31	30	16.5	12	14	3.0	M 14X1.5	60
	HWH 10S-M16	10	21	27	24	22	35	36	18.5	12	16.5	3.0	M 16X1.5	90
	HWH 12S-M18	12	23	30	27	24	36	39.5	20	12	18.5	3.0	M 18X1.5	110
PN 400	HWH 16S-M22	16	27	32	30	30	40	45	22	14	21.5	4.5	M 22X1.5	150
	HWH 20S-M27	20	32	41	36	36	48	53	26.5	16	24	3.5	M 27X2	350
	HWH 25S-M33	25	39	50	46	46	56	66	31.5	18	30.5	3.5	M 33X2	400
PN 250	HWH 30S-M42	30	49	60	55	50	64	76	37	20	35.5	3.5	M 42X2	600
	HWH 38S-M48	38	55	70	60	60	72	87	41.5	22	40.5	3.5	M 48X2	800

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

* MA = Recommended tightening torques (in Nm) for male G and M

HIGH PRESSURE BANJO FITTINGS (BSP PARALLED) WITH HKA-RING HWH-G/M



for BSP Parallel

Series	Part No.	Tube O.D. D	D	h	h ₁	H	L	L ₁	ℓ	ℓ ₁	ℓ ₂	T	T (BSPP)	MA*
L light PN 250	HWH 06L-02G	6	14	17	14	17	27	24	12	8	10.5	2.5	1/8	20
	HWH 08L-04G	8	18	19	17	22	29	30	14.5	12	14	3.0	1/4	50
	HWH 10L-04G	10	18	19	19	22	30	30	15.5	12	14	3.0	1/4	50
	HWH 12L-06G	12	22	24	22	27	33	36	18	12	16.5	3.0	3/8	75
	HWH 15L-08G	15	26	30	27	32	37	45	21.5	14	21.5	4.5	1/2	130
PN 160	HWH 18L-08G	18	26	30	32	32	37	45	21	14	21.5	4.5	1/2	130
	HWH 22L-12G	22	32	36	36	41	44	53	27.5	16	24	3.5	3/4	250
PN 100	HWH 28L-16G	28	39	46	41	50	49	66	32	18	30.5	3.5	1	350
	HWH 35L-20G	35	49	55	50	60	58	76	36	20	35.5	3.5	1 1/4	600
	HWH 42L-24G	42	55	60	60	70	63	87	40.5	22	40.5	3.5	1 1/2	800
S heavy PN 630	HWH 06S-04G	6	18	19	17	22	31	30	16.5	12	14	3.0	1/4	50
	HWH 08S-04G	8	18	19	19	22	31	30	16.5	12	14	3.0	1/4	50
	HWH 10S-06G	10	22	24	22	27	35	36	18.5	12	16.5	3.0	3/8	75
	HWH 12S-06G	12	22	24	24	27	35	36	18.5	12	16.5	3.0	3/8	75
PN 400	HWH 16S-08G	16	26	30	30	32	40	45	22	14	21.5	4.5	1/2	130
	HWH 20S-12G	20	32	36	36	41	48	53	26.5	16	24	3.5	3/4	250
	HWH 25S-16G	25	39	46	46	50	56	66	31.5	18	30.5	3.5	1	350
PN 250	HWH 30S-20G	30	49	55	50	60	64	76	37	20	34.5	3.5	1 1/4	600
	HWH 38S-24G	38	55	60	60	70	72	87	41.5	22	40.5	3.5	1 1/2	800

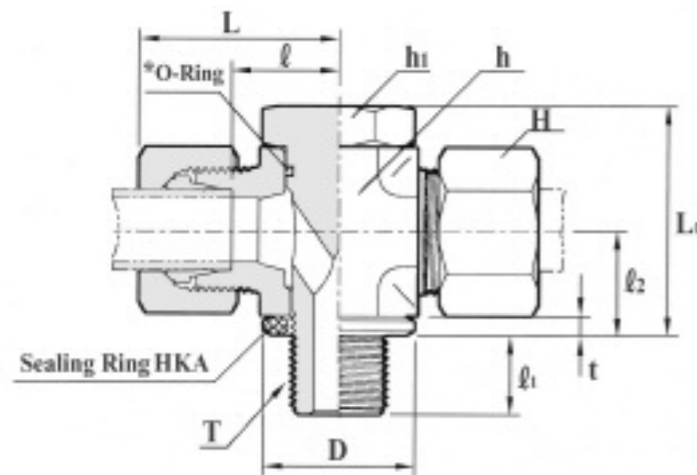
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

* MA = Recommended tightening torques (in Nm) for male G and M

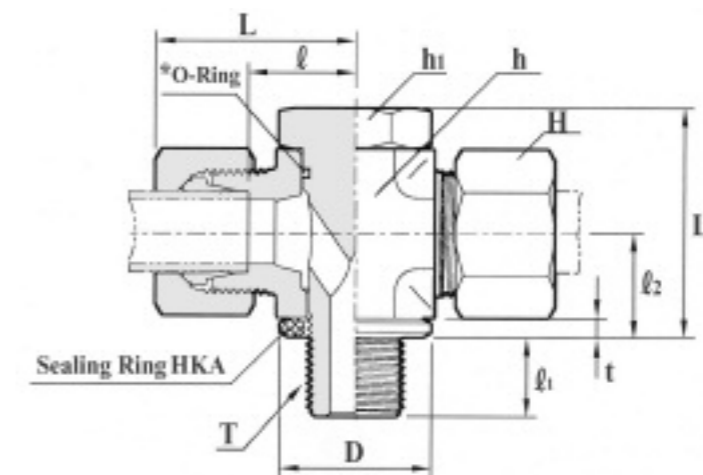
HIGH PRESSURE BANJO TEE (BSP PARALLED)

HTH-G/M



HIGH PRESSURE BANJO TEE (METRIC PARALLED)

HTH-G/M



for BSP Paralled

Series	Part No.	Tube O.D.		D	h	h ₁	H	L	L ₁	ℓ	ℓ ₁	ℓ ₂	T	T (BSPP)	MA*
		D	D												
L light PN 250	HTH 06L-02G	6	14	17	17	14	27	24	12	8	10.5	2.5	1/8	20	
	HTH 08L-04G	8	18	22	19	17	29	30	14.5	12	14	3.0	1/4	50	
	HTH 10L-04G	10	18	22	19	19	30	30	15.5	12	14	3.0	1/4	50	
	HTH 12L-06G	12	22	27	24	22	33	36	18	12	16.5	3.0	3/8	75	
	HTH 15L-08G	15	26	32	30	27	37	45	21.5	14	21.5	4.5	1/2	130	
PN 160	HTH 18L-08G	18	26	32	30	32	37	45	21	14	21.5	4.5	1/2	130	
	HTH 22L-12G	22	32	41	36	36	44	53	27.5	16	24	3.5	3/4	250	
PN 100	HTH 28L-16G	28	39	50	46	41	49	66	32	18	30.5	3.5	1	350	
	HTH 35L-20G	35	49	60	55	50	58	76	36	20	35.5	3.5	1 1/4	600	
	HTH 42L-24G	42	55	70	60	60	63	87	40.5	22	40.5	3.5	1 1/2	800	
S heavy PN 630	HTH 06S-04G	6	18	22	19	17	31	30	16.5	12	14	3.0	1/4	50	
	HTH 08S-04G	8	18	22	19	19	31	30	16.5	12	14	3.0	1/4	50	
	HTH 10S-06G	10	22	27	24	22	35	36	18.5	12	16.5	3.0	3/8	75	
	HTH 12S-06G	12	22	27	24	24	35	36	18.5	12	16.5	3.0	3/8	75	
PN 400	HTH 16S-08G	16	26	32	30	30	40	45	22	14	21.5	4.5	1/2	130	
	HTH 20S-12G	20	32	41	36	36	48	53	26.5	16	24	3.5	3/4	250	
	HTH 25S-16G	25	39	50	46	46	56	66	31.5	18	30.5	3.5	1	350	
PN 250	HTH 30S-20G	30	49	60	55	50	64	76	37	20	35.5	3.5	1 1/4	600	
	HTH 38S-24G	38	55	70	60	60	72	87	41.5	22	40.5	3.5	1 1/2	800	

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

* MA = Recommended tightening torques (in Nm) for male G and M

for Metric Paralled

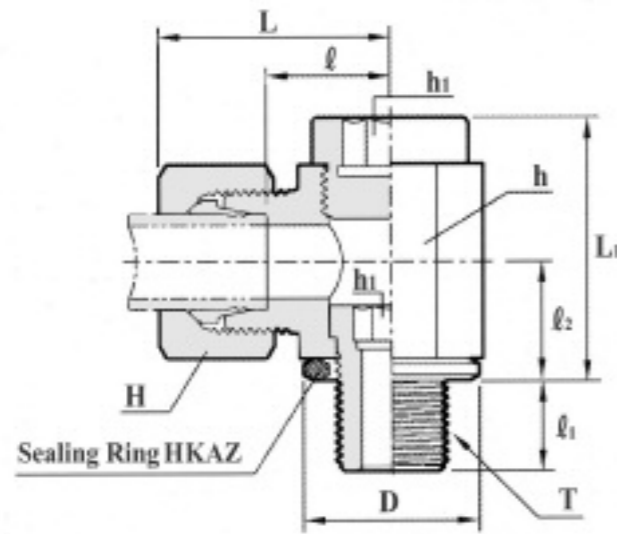
Series	Part No.	Tube O.D.		D	h	h ₁	H	L	L ₁	ℓ	ℓ ₁	ℓ ₂	T	T (Metric)	MA*
		D	D												
L light PN 250	HTH 06L-M10	6	14	17	17	14	27	24	12	8	10.5	2.5	M 10X1	25	
	HTH 08L-M12	8	17	22	19	17	29	30	14.5	12	14	3.0	M 12X1.5	50	
	HTH 10L-M14	10	19	22	19	19	30	30	15.5	12	14	3.0	M 14X1.5	60	
	HTH 12L-M16	12	21	27	24	22	33	36	18	12	16.5	3.0	M 16X1.5	90	
	HTH 15L-M18	15	23	30	27	27	36	39.5	20.5	12	18.5	3.0	M 18X1.5	110	
PN 160	HTH 18L-M22	18	27	32	30	32	37	45	21	14	21.5	4.5	M 22X1.5	150	
	HTH 22L-M26	22	31	41	36	36	44	53	27.5	16	24	3.5	M 26X1.5	350	
PN 100	HTH 28L-M33	28	39	50	46	41	49	66	32	18	30.5	3.5	M 33X2	400	
	HTH 35L-M42	35	49	60	55	50	58	76	36	20	35.5	3.5	M 42X2	600	
	HTH 42L-M48	42	55	70	60	60	63	87	40.5	22	40.5	3.5	M 48X2	800	
S heavy PN 630	HTH 06S-M12	6	17	22	19	17	31	30	16.5	12	14	3.0	M 12X1.5	50	
	HTH 08S-M14	8	19	22	19	19	31	30	16.5	12	14	3.0	M 14X1.5	60	
	HTH 10S-M16	10	21	27	24	22	35	36	18.5	12	16.5	3.0	M 16X1.5	90	
	HTH 12S-M18	12	23	30	27	24	36	39.5	20	12	18.5	3.0	M 18X1.5	110	
PN 400	HTH 16S-M22	16	27	32	30	30	40	45	22	14	21.5	4.5	M 22X1.5	150	
	HTH 20S-M27	20	32	41	36	36	48	53	26.5	16	24	3.5	M 27X2	350	
	HTH 25S-M33	25	39	50	46	46	56	66	31.5	18	30.5	3.5	M 33X2	400	
PN 250	HTH 30S-M42	30	49	60	55	50	64	76	37	20	35.5	3.5	M 42X2	600	
	HTH 38S-M48	38	55	70	60	60	72	87	41.5	22	40.5	3.5	M 48X2	800	

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

* O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

* MA = Recommended tightening torques (in Nm) for male G and M

THROTTLEFREE BANJO FITTINGS (BSP PARALLED) WITH HKAZ-RING HSVW-G/M

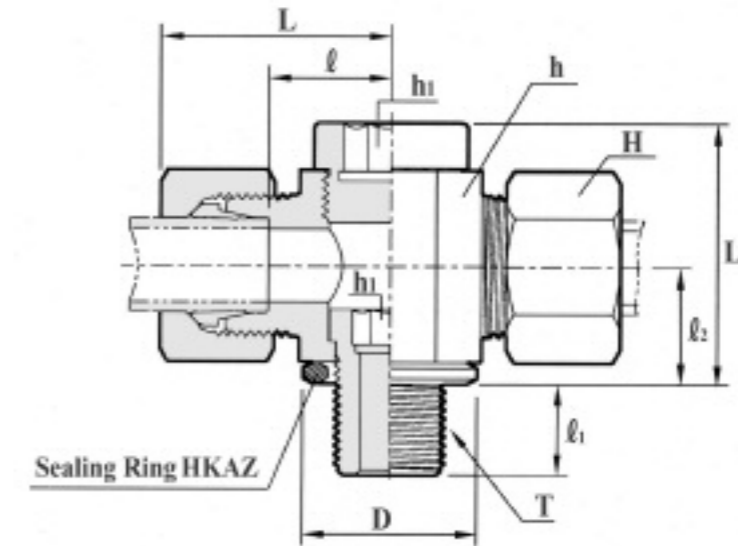


for BSP Paralled

Series	Part No.	Tube O.D.	D	h	h ₁	H	L	L ₁	l	l ₁	l ₂	T (BSPP)
		D										
L light PN 250	HSVW 06L-02G	6	14	19	6	14	27	24	12.5	8	12	1/8
	HSVW 08L-04G	8	18	22	8	17	29	30	14.5	12	16	1/4
	HSVW 10L-04G	10	18	22	8	19	30	30	15.5	12	16	1/4
	HSVW 12L-06G	12	22	27	10	22	33	37	18	12	18	3/8
	HSVW 15L-08G	15	26	32	12	27	37	42	22	14	21	1/2
PN 160	HSVW 18L-08G	18	26	36	12	32	38	46	21.5	14	23	1/2
	HSVW 22L-12G	22	32	46	17	36	45	58	28.5	16	28	3/4
	HSVW 28L-16G	28	39	50	22	41	48	64	31.5	18	32	1
PN 100	HSVW 35L-20G	35	49	60	27	50	57	76	35.58	20	37	1 1/4
	HSVW 42L-24G	42	55	65	32	60	63	85	40	22	42	1 1/2
	HSVW 06S-04G	6	18	22	8	17	31	30	16.5	12	16	1/4
S heavy PN 650	HSVW 08S-04G	8	18	22	8	19	31	30	16.5	12	16	1/4
	HSVW 10S-06G	10	22	27	10	22	35	37	18.5	12	18	3/8
	HSVW 12S-06G	12	22	27	10	24	35	37	18.5	12	18	3/8
	HSVW 14S-08G	14	26	32	12	27	41	42	23	14	21	1/2
	HSVW 16S-08G	16	26	36	12	30	41	46	22.5	14	23	1/2
PN 400	HSVW 20S-12G	20	32	46	17	36	49	58	27.5	16	28	3/4
	HSVW 25S-16G	25	39	50	22	46	55	64	31	18	32	1
	HSVW 30S-20G	30	49	60	27	50	63	76	36.5	20	37	1 1/4
PN 250	HSVW 38S-24G	38	55	70	32	60	72	85	41	22	42	1 1/2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

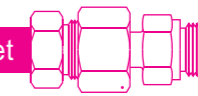
THROTTLEFREE BANJO FITTINGS (BSP PARALLED) WITH HKAZ-RING HSVT-G/M



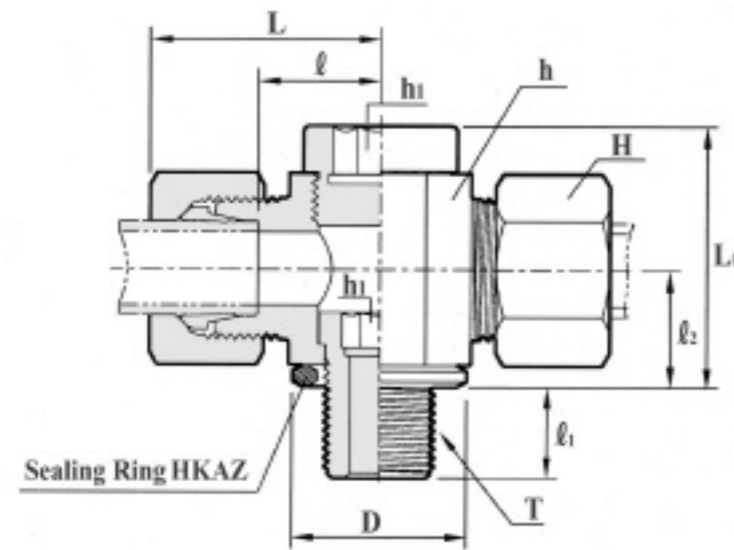
for BSP Paralled

Series	Part No.	Tube O.D.	D	h	h ₁	H	L	L ₁	l	l ₁	l ₂	T (BSPP)
		D										
L light PN 250	HSVT 06L-02G	6	14	18	6	14	27	24	12	8	12	1/8
	HSVT 08L-04G	8	18	22	8	17	29	30	14	12	15	1/4
	HSVT 10L-04G	10	18	22	8	19	30	30	15	12	15	1/4
	HSVT 12L-06G	12	22	27	10	22	32	36	17.5	12	18	3/8
	HSVT 15L-08G	15	26	30	12	27	35	40	20	14	20	1/2
PN 160	HSVT 18L-08G	18	26	30	12	32	36	40	19.5	14	20	1/2
	HSVT 22L-12G	22	32	41	17	36	43	52	27	16	25	3/4
	HSVT 28L-16G	28	39	46	22	41	46	58	29.5	18	29	1
PN 100	HSVT 35L-20G	35	49	55	27	50	55	69	33	20	34	1 1/4
	HSVT 42L-24G	42	55	65	32	60	63	84	40	22	41	1 1/2
	HSVT 06S-04G	6	18	22	8	17	31	30	16	12	15	1/4
S heavy PN 630	HSVT 08S-04G	8	18	22	8	19	31	30	16	12	15	1/4
	HSVT 10S-06G	10	22	27	10	22	34	36	18	12	18	3/8
	HSVT 12S-06G	12	22	27	10	24	34	36	18	12	18	3/8
	HSVT 14S-08G	14	26	32	12	27	40	42	22	14	21	1/2
	HSVT 16S-08G	16	26	32	12	30	40	42	21.5	14	21	1/2
PN 400	HSVT 20S-12G	20	32	46	17	36	50	57	28.5	16	28	3/4
	HSVT 25S-16G	25	39	50	22	46	55	62	31	18	31	1
	HSVT 30S-20G	30	49	60	27	50	63	74	36.5	20	36	1 1/4
PN 250	HSVT 38S-24G	38	55	70	32	60	72	84	41	22	41	1 1/2

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.



THROTTLEFREE BANJO TEE(METRIC PARALLEL) WITH HKAZ-RING HSVT-G/M

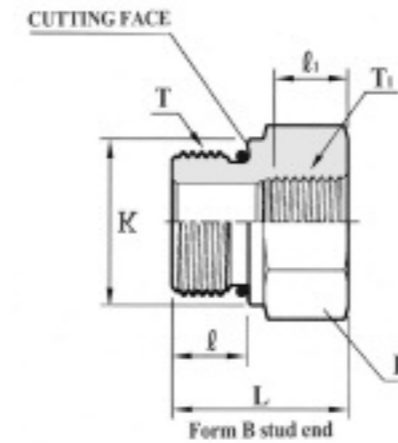


for Metric Parallel

Series	Part No.	Tube O.D.		D	h	h ₁	H	L	L ₁	ℓ	ℓ ₁	ℓ ₂	T (Metric)
		D	D										
L light PN 250	HSVT 06L-M10	6	14	18	6	14	27	24	12	8	12	M 10X1	
	HSVT 08L-M12	8	17	20	6	17	28	27	13	12	14	M 12X1.5	
	HSVT 10L-M14	10	19	22	8	19	30	30	15	12	15	M 14X1.5	
	HSVT 12L-M16	12	21	27	10	22	32	36	17.5	12	18	M 16X1.5	
	HSVT 15L-M18	15	23	30	12	27	35	39	20	12	19	M 18X1.5	
PN 160	HSVT 18L-M22	18	27	32	14	32	37	41	20.5	14	20	M 22X1.5	
	HSVT 22L-M26	22	31	36	17	36	41	46	24.5	16	22	M 26X1.5	
PN 100	HSVT 28L-M33	28	39	46	22	41	46	58	29.5	18	29	M 33X2	
	HSVT 35L-M42	35	49	55	27	50	55	69	33	20	33	M 42X2	
	HSVT 42L-M48	42	55	65	32	60	63	84	40	22	41	M 48X2	
S heavy PN 630	HSVT 06S-M12	6	17	20	6	17	30	27	15	12	14	M 12X1.5	
	HSVT 08S-M14	8	19	22	8	19	31	30	16	12	15	M 14X1.5	
	HSVT 10S-M16	10	21	27	10	22	34	36	18	12	18	M 16X1.5	
	HSVT 12S-M18	12	23	30	12	24	36	39	19.5	12	19	M 18X1.5	
	HSVT 14S-M20	14	25	32	12	27	40	41	22	14	20	M 20X1.5	
PN 400	HSVT 16S-M22	16	27	36	14	30	42	45	23.5	14	22	M 22X1.5	
	HSVT 20S-M27	20	32	46	17	36	50	58	28.5	16	28	M 27X2	
	HSVT 25S-M33	25	39	50	22	46	55	62	31	18	31	M 33X2	
PN 250	HSVT 30S-M42	30	49	60	27	50	63	74	36.5	20	36	M 42X2	
	HSVT 38S-M48	38	55	70	32	60	72	84	41	22	41	M 48X2	

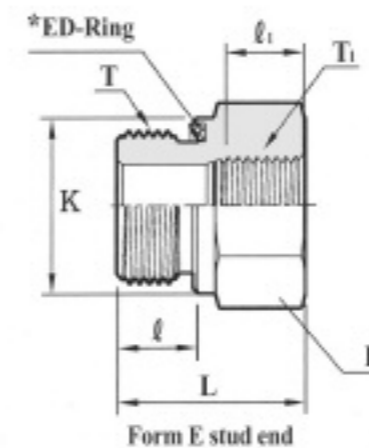
Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.

MALE FEMALE ADAPTER (BSP PARALLEL) HFAD



PB	Part No.	H	K	L	ℓ	ℓ ₁	T (BSPP)	T ₁ (BSPP)
PB630	HFAD 06G-02G	22	22	22.5	12	8	3/8	1/8
PB630	HFAD 08G-02G	27	26	24	14	8	1/2	1/8
PB400	HFAD 08G-04G	27	26	24	14	12	1/2	1/4
	HFAD 12G-04G	32	32	26	16	12	3/4	1/4
PB400	HFAD 12G-06G	32	32	26	16	12	3/4	3/8
	HFAD 16G-04G	41	39	29	18	12	1	1/4
	HFAD 16G-06G	41	39	29	18	12	1	3/8
PB250	HFAD 16G-08G	41	39	29	18	14	1	1/2
	HFAD 20G-08G	50	49	32	20	14	1 1/4	1/2
	HFAD 20G-12G	50	49	32	20	16	1 1/4	3/4
PB250	HFAD 24G-08G	55	55	36	22	14	1 1/2	1/2
	HFAD 24G-12G	55	55	36	22	16	1 1/2	3/4
	HFAD 24G-16G	55	55	36	22	18	1 1/2	1

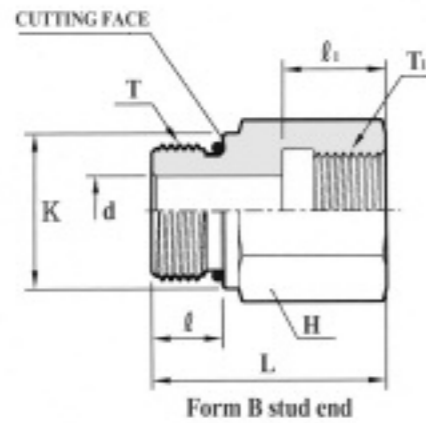
MALE FEMALE ADAPTER (BSP PARALLEL) WITH *ED-RING HFAD-ED



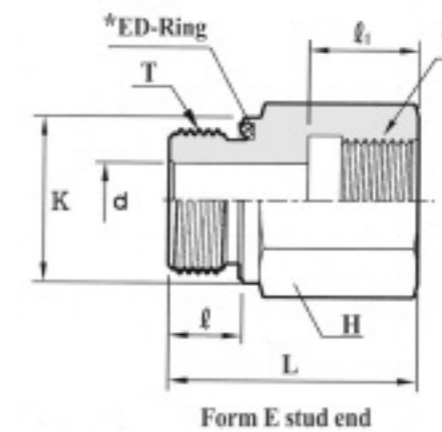
PB	Part No.	H	K	L	ℓ	ℓ ₁	T (BSPP)	T ₁ (BSPP)
PB630	HFAD 06GED-02G	22	22	22.5	12	8	3/8	1/8
PB630	HFAD 08GED-02G	27	26	24	14	8	1/2	1/8
PB400	HFAD 08GED-04G	27	26	24	14	12	1/2	1/4
	HFAD 12GED-04G	32	32	26	16	12	3/4	1/4
PB400	HFAD 12GED-06G	32	32	26	16	12	3/4	3/8
	HFAD 16GED-04G	41	39	29	18	12	1	1/4
	HFAD 16GED-06G	41	39	29	18	12	1	3/8
PB250	HFAD 16GED-08G	41	39	29	18	14	1	1/2
	HFAD 20GED-08G	50	49	32	20	14	1 1/4	1/2
	HFAD 20GED-12G	50	49	32	20	16	1 1/4	3/4
PB250	HFAD 24GED-08G	55	55	36	22	14	1 1/2	1/2
	HFAD 24GED-12G	55	55	36	22	16	1 1/2	3/4
	HFAD 24GED-16G	55	55	36	22	18	1 1/2	1



MALE FEMALE ADAPTER (BSP PARALLED) HFAE



MALE FEMALE ADAPTER (BSP PARALLED) WITH *ED-RING HFAE-ED



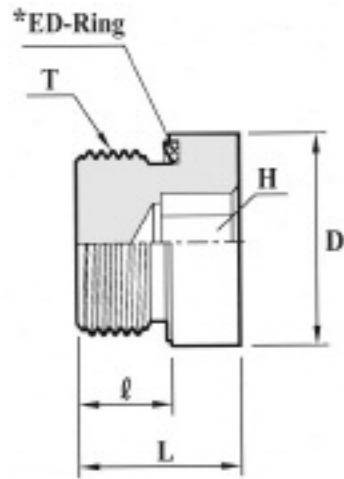
PB	Part No.	d	H	K	L	l	l ₁	T (BSPP)	T ₁ (BSPP)
PN 630	HFAE02G-04G	4	19	14	31	8	17	1/8	1/4
	HFAE02G-06G	4	24	14	32	8	17	1/8	3/8
PN 630	HFAE04G-02G	5	19	18	28	12	12	1/4	1/8
	HFAE04G-06G	5	24	18	36	12	17	1/4	3/8
	HFAE04G-08G	5	30	18	40	12	20	1/4	1/2
PN 400	HFAE04G-12G	5	36	18	43	12	22	1/4	3/4
PN 630	HFAE06G-04G	8	22	22	36	12	17	3/8	1/4
	HFAE06G-08G	8	30	22	41	12	20	3/8	1/2
PN 400	HFAE06G-12G	8	36	22	44	12	22	3/8	3/4
	HFAE08G-06G	12	27	26	36	14	17	1/2	3/8
	HFAE08G-12G	12	36	26	46	14	22	1/2	3/4
PN 250	HFAE08G-16G	12	41	26	49	14	24.5	1/2	1
	HFAE08G-20G	10	55	26	53	14	26.5	1/2	1 1/4
PN 400	HFAE12G-08G	16	32	32	41	16	20	3/4	1/2
	HFAE12G-16G	16	41	32	51	16	24.5	3/4	1
PN 250	HFAE12G-20G	16	55	32	55	16	26.5	3/4	1 1/4
	HFAE12G-24G	16	60	32	57	16	28.5	3/4	1 1/2
PN 400	HFAE16G-12G	20	41	39	47	18	22	1	3/4
	HFAE16G-20G	20	55	39	57	18	26.5	1	1 1/4
	HFAE16G-24G	20	60	39	59	18	28.5	1	1 1/2
	HFAE20G-16G	25	50	49	52	20	24.5	1 1/4	1
	HFAE20G-24G	25	60	49	60	20	28.5	1 1/4	1 1/2
PN 250	HFAE24G-20G	32	55	55	58	22	26.5	1 1/2	1 1/4
	HFAE32G-24G	40	70	68	62	24	28.5	2	1 1/2

Male / Female thread adaptors with metric and NPT thread on request.
All dimensions are in millimeters, for reference only subject to change.

PB	Part No.	d	H	K	L	l	l ₁	T (BSPP)	T ₁ (BSPP)
PN 630	HFAE 02GED-04G	4	19	14	31	8	17	1/8	1/4
	HFAE 02GED-06G	4	24	14	32	8	17	1/8	3/8
PN 630	HFAE 04GED-02G	5	19	18	28	12	12	1/4	1/8
	HFAE 04GED-06G	5	24	18	36	12	17	1/4	3/8
	HFAE 04GED-08G	5	30	18	40	12	20	1/4	1/2
PN 400	HFAE 04GED-12G	5	36	18	43	12	22	1/4	3/4
PN 630	HFAE 06GED-04G	8	22	22	36	12	17	3/8	1/4
	HFAE 06GED-08G	8	30	22	41	12	20	3/8	1/2
PN 400	HFAE 06GED-12G	8	36	22	44	12	22	3/8	3/4
	HFAE 08GED-06G	12	27	26	36	14	17	1/2	3/8
	HFAE 08GED-12G	12	36	26	46	14	22	1/2	3/4
PN 250	HFAE 08GED-16G	12	41	26	49	14	24.5	1/2	1
	HFAE 08GED-20G	10	55	26	53	14	26.5	1/2	1 1/4
PN 400	HFAE 12GED-08G	16	32	32	41	16	20	3/4	1/2
	HFAE 12GED-16G	16	41	32	51	16	24.5	3/4	1
PN 250	HFAE 12GED-20G	16	55	32	55	16	26.5	3/4	1 1/4
	HFAE 12GED-24G	16	60	32	57	16	28.5	3/4	1 1/2
PN 400	HFAE 16GED-12G	20	41	39	47	18	22	1	3/4
	HFAE 16GED-20G	20	55	39	57	18	26.5	1	1 1/4
	HFAE 16GED-24G	20	60	39	59	18	28.5	1	1 1/2
	HFAE 20GED-16G	25	50	49	52	20	24.5	1 1/4	1
	HFAE 20GED-24G	25	60	49	60	20	28.5	1 1/4	1 1/2
PN 250	HFAE 24GED-20G	32	55	55	58	22	26.5	1 1/2	1 1/4
	HFAE 32GED-24G	40	70	68	62	24	28.5	2	1 1/2

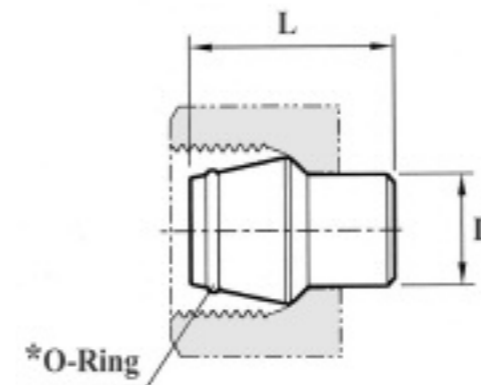
All dimensions are in millimeters, for reference only subject to change.
*ED-Ring and O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

BLANKING PLUGS FOR PORT WITH *ED-RING HVSTI-GED/MED



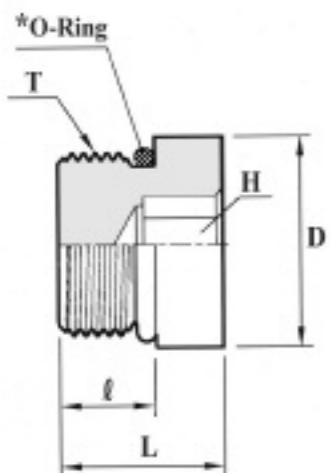
PB	Part No.(M)	Part No.(G)	T (Metric)	T (BSPP)	D	H	L	φ
PN 630	HVSTI-M10ED	HVSTI-02GED	M 10X1	1/8	14	5	12	8
	HVSTI-M12ED	-	M 12X1.5	-	17	6	17	12
	HVSTI-M14ED	HVSTI-04GED	M 14X1.5	1/4	19	6	17	12
	HVSTI-M16ED	HVSTI-06GED	M 16X1.5	3/8	22	8	17	12
	HVSTI-M18ED	-	M 18X1.5	-	23.9	8	17	12
	HVSTI-M20ED	-	M 20X1.5	-	25.9	10	19	14
	HVSTI-M22ED	HVSTI-08GED	M 22X1.5	1/2	27	10	19	14
	HVSTI-M26ED	-	M 26X1.5	-	31.9	12	21	16
PN 400	HVSTI-M27ED	HVSTI-12GED	M 27X2	3/4	32	12	21	16
	HVSTI-M33ED	HVSTI-16GED	M 33X2	1	39.9	17	22.5	16
PN 250	HVSTI-M42ED	HVSTI-20GED	M 42X2	1 1/4	49.9	22	22.5	16
	HVSTI-M48ED	HVSTI-24GED	M 48X2	1 1/2	55	24	22.5	16

BLANKING PLUG WITH *O-RING HVKA



Series	Part No.	Tube O.D.	L
		D	
L Light PN 250	HVKA-06L/S	6	18.5
	HVKA-08L/S	8	18.5
	HVKA-10L/S	10	20
	HVKA-12L/S	12	20.5
PN 160	HVKA-15L	15	20.5
	HVKA-18L	18	22.5
	HVKA-22L	22	25
PN 100	HVKA-28L	28	25.5
	HVKA-35L	35	30
	HVKA-42L	42	30
S Heavy PN 630	HVKA-14S	14	22.5
PN 400	HVKA-16S	16	23.5
	HVKA-20S	20	28.5
	HVKA-25S	25	29
PN 250	HVKA-30S	30	30.5
	HVKA-38S	38	33

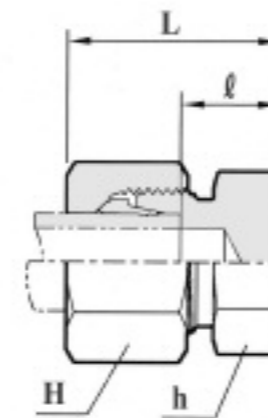
BLANKING PLUGS WITH *O-RING (ACCORD. TO ISO 6149-3/DIN 3585) HVSTI



PB	Part No.	T (Metric)	D	H	L	φ
PN 630	HVSTI-M10	M 10X1	13	5	14	10
	HVSTI-M12	M 12X1.5	17	6	16.5	11.5
	HVSTI-M14	M 14X1.5	19	6	16.5	11.5
PN 400	HVSTI-M16	M 16X1.5	21	6	18	13
	HVSTI-M18	M 18X1.5	23	8	19.5	14.5
	HVSTI-M22	M 22X1.5	27	10	20.5	15.5
PN 250	HVSTI-M26	M 26X1.5	31	12	21	16
	HVSTI-M27	M 27X2	32	12	24	19
	HVSTI-M33	M 33X2	38	17	25.5	19
	HVSTI-M42	M 42X2	48	22	26	19.5

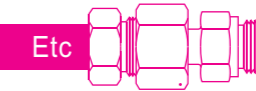
All dimensions are in millimeters, for reference only subject to change.
*ED-Ring and O-Ring of NBR(e.g.perbunan) standard, FRM(e.g.viton) on request (see page 16)

TUBE CAP HCA



Series	Part No.	Tube O.D.	H	h	L	φ
		D				
L Light PN 250	HCA-06L	6	14	12	22	7
	HCA-08L	8	17	14	23	8
	HCA-10L	10	19	17	24	9
	HCA-12L	12	22	19	25	10
PN 160	HCA-15L	15	27	24	26	11
	HCA-18L	18	32	27	28	11.5
PN 100	HCA-22L	22	36	32	30	13.5
	HCA-28L	28	41	41	31	14.5
S Heavy PN 630	HCA-35L	35	50	46	36	14.5
	HCA-42L	42	60	55	39	16
	HCA-06S	6	17	14	26	11
	HCA-08S	8	19	17	28	13
PN 400	HCA-10S	10	22	19	29	12.5
	HCA-12S	12	24	22	31	14.5
	HCA-14S	14	27	24	34	16
	HCA-16S	16	30	27	34	15.5
PN 250	HCA-20S	20	36	32	39	17.5
	HCA-25S	25	46	41	44	20
PN 250	HCA-30S	30	50	46	47	20.5
	HCA-38S	38	60	55	54	23

Dimensions given approximate length with tightened nut. All dimensions are in millimeters, for reference only subject to change.
*O-Ring of NBR(e.g.Perbunan)Standard, of FPM(e.g. Viton) on request (See Page 16)



*BULKHEAD LOCK NUT

HLN



Series	Part No.	Tube O.D.		H	L	T
		Light	Heavy			
L	HLN 06L	6	-	17	6	M12X1.5
L/S	HLN 08L-06S	8	6	19		M14X1.5
L/S	HLN 10L-08S	10	8	22		M16X1.5
L/S	HLN 12L-10S	12	10	24		M18X1.5
S	HLN 12S	-	12	27		M20X1.5
L/S	HLN 15L-14S	15	14	30	7	M22X1.5
S	HLN 16S	-	16	32		M24X1.5
L	HLN 18L	18	-	36	8	M26X1.5
L/S	HLN 22L-20	22	20	41		M30X2
L/S	HLN 28L-25S	28	25	46	9	M36X2
S	HLN 30S	-	30	50		M42X2
L	HLN 35L	35	-	55		M45X2
L/S	HLN 42L-38S	42	38	65	10	M52X2

*According to DIN 80705 for bulkhead screw-joint.
All dimensions are in millimeters, for reference only subject to change.

SEALING RINGS FOR HWH/HDT AND HSWVE

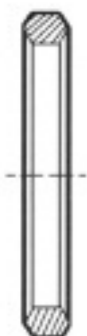
HKA



Part No.	External Thread	Part No.	External Thread
HKA-02G	BSPP 1/8	HKA-M10	M 10X1
HKA-04G	BSPP 1/4	HKA-M12	M 12X1.5
HKA-06G	BSPP 3/8	HKA-M14	M 14X1.5
HKA-08G	BSPP 1/2	HKA-M16	M 16X1.5
HKA-02GX4.5	BSPP 1/8	HKA-M18	M 18X1.5
HKA-12G	BSPP 3/4	HKA-M20	M 20X1.5
HKA-16G	BSPP 1	HKA-M22	M 22X1.5
HKA-20GM42	BSPP 1 1/4/M42X2	HKA-M22X4.5	M 22X1.5
HKA-24GM48	BSPP 1 1/2/M48X2	HKA-M26	M 26X1.5
		HKA-M26X3.5	M 26X1.5
		HKA-M27	M 26X2
		HKA-M33	M 33X2

SEALING RINGS FOR HSVW / HSVT

HKAZ



Part No.	External Thread	Part No.	External Thread
HKAZ-02G	BSPP 1/8	HKAZ-M10	M 10X1
HKAZ-04G	BSPP 1/4	HKAZ-M12	M 12X1.5
HKAZ-06G	BSPP 3/8	HKAZ-M14	M 14X1.5
HKAZ-08G	BSPP 1/2	HKAZ-M16	M 16X1.5
HKAZ-12G	BSPP 3/4	HKAZ-M18	M 18X1.5
HKAZ-16G	BSPP 1	HKAZ-M20	M 20X1.5
HKAZ-20GM42	BSPP 1 1/4/M42X2	HKAZ-M22	M 22X1.5
HKAZ-24GM48	BSPP 1 1/2/M48X2	HKAZ-M26	M 26X1.5
		HKAZ-M27	M 27X2
		HKAZ-M33	M 33X2

ED-Ring and O-Ring of NBR(e.g.Perbunen)standard, FPM(e.g.Viton)on request(See page 16)

SEALING RINGS FOR HGC

HKI



Part No.	Internal Thread
HKI-04G	BSPP 1/4
HKI-08G	BSPP 1/2

ED-RING

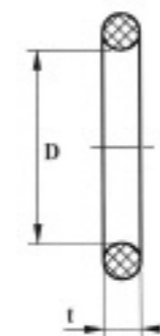
KP-B-S



Part No.	For Male Thread	
	Metric	G(BSPP)
HP-B-S M8	M 8X1	-
HP-B-S01G	M 10X1	1/8
HP-B-SM12	M 12X1.5	-
HP-B-S02G	M 14X1.5	1/4
HP-B-SM16	M 16X1.5	-
HP-B-S03G	-	3/8
HP-B-SM18	M 18X1.5	-
HP-B-SM20	M 20X1.5	-
HP-B-S04G	-	1/2
HP-B-SM22	M 22X1.5	-
HP-B-S06G	M 26X1.5	3/4
	M 27X2	-
HP-B-S08G	M 33X2	1
HP-B-S10G	M 42X2	1 1/4
HP-B-S12G	M 48X2	1 1/2

O-RINGS

KP-B-HS



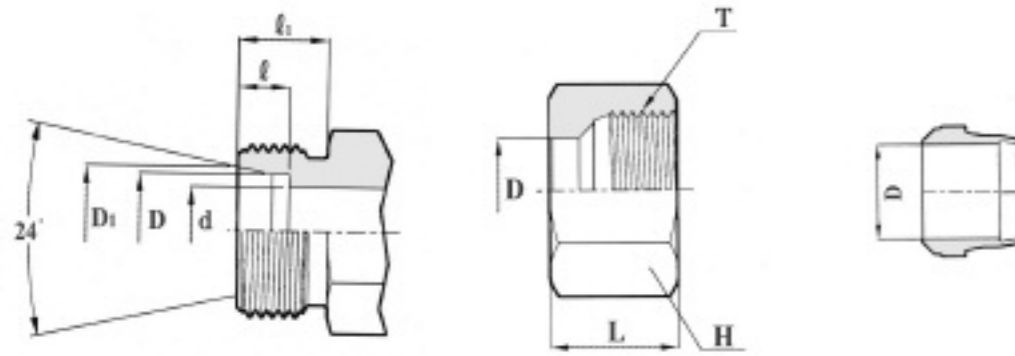
Part No.	D	T
HP-B-DS06	4	1.5
HP-B-DS08	6	1.5
HP-B-DS10	7.5	1.5
HP-B-DS12	9	1.5
HP-B-DS14	10	2
HP-B-DS16	12	2
HP-B-DS18	15	2
HP-B-DS20	16.3	2.4
HP-B-DS22	20	2
HP-B-DS25	20.3	2.4
HP-B-DS30	25.3	2.4
HP-B-DS28	26	2
HP-B-DS35	32	2.5
HP-B-DS38	33.3	2.4
HP-B-DS42	38	2.5

ED-Ring and O-Ring of NBR(e.g.Perbunen)standard, FPM(e.g.Viton)on request(See page 16)

TUBE END DIMENSION

NUT
HN

CUTTING RING
HS



Series	Part No. Nut	Part No. Cutting Ring	Tube O.D.	DN Size	D	D ₁	d	H	L	T (Metric)	ℓ	ℓ ₁
LL Very light	HN-04LL	HS-04LL	4	3	4	5	3	10	11.5	M 8X1.0	4	8
	HN-06LL	HS-06LL	6	4	6	7.5	4.5	12	12	M 10X1.0	5.5	8
	HN-08LL	HS-08LL	8	6	8	9.5	6	14	12.5	M 12X1.0	5.5	9
	HN-10LL	HS-10LL	10	8	10	11.5	8	17	12.5	M 14X1.0	6	9
	HN-12LL	HS-12LL	12	10	12	13.5	10	19	13	M 16X1.0	6	9
L light	HN-06L	HS-06L	6	4	6	8.1	4	14	15	M 12X1.5	7	10
	HN-08L	HS-08	8	6	8	10.1	6	17	15	M 14X1.5	7	10
	HN-10L	HS-10	10	8	10	12.3	8	19	16	M 16X1.5	7	11
	HN-12L	HS-12	12	10	12	14.3	10	22	16	M 18X1.5	7	11
	HN-15L	HS-15	15	12	15	17.3	12	27	17.5	M 22X1.5	7	12
	HN-18L	HS-18	18	16	18	20.3	15	32	18	M 26X1.5	7.5	12
	HN-22L	HS-22	22	20	22	24.3	19	36	20.5	M 30X2	7.5	14
	HN-28L	HS-28	28	25	28	30.3	24	41	21	M 36X2	7.5	14
	HN-35L	HS-35	35	32	35	38	30	50	24	M 45X2	10.5	16
HN-42L	HS-42	42	40	42	45	36	60	24	M 52X2	11	16	
S heavy	HN-06S	HS-06S	6	3	6	8.1	4	17	16.5	M 14X1.5	7	12
	HN-08S	HS-08	8	4	8	10.1	5	19	16.5	M 16X1.5	7	12
	HN-10S	HS-10	10	6	10	12.3	7	22	17.5	M 18X1.5	7.5	12
	HN-12S	HS-12	12	8	12	14.3	8	24	18	M 20X1.5	7.5	12
	HN-14S	HS-14	14	10	14	16.3	10	27	20.5	M 22X1.5	8	14
	HN-16S	HS-16	16	12	16	18.3	12	30	21	M 24X1.5	8.5	14
	HN-20S	HS-20	20	16	20	22.9	16	36	24	M 30X2	10.5	16
	HN-25S	HS-25	25	20	25	27.9	20	46	27	M 36X2	12	18
	HN-30S	HS-30	30	25	30	33	25	50	29.5	M 42X2	13.5	20
HN-38S	HS-38	38	32	38	41	32	60	32.5	M 52X2	16	22	

All dimensions are in millimeters, for reference only subject to change.