

# HYDRAULIC FITTINGS



# HYDRAULIC CRIMP FITTING

Quick identification of hydraulic connectors

## DIN 24° light (L) and heavy series (S) with O-ring

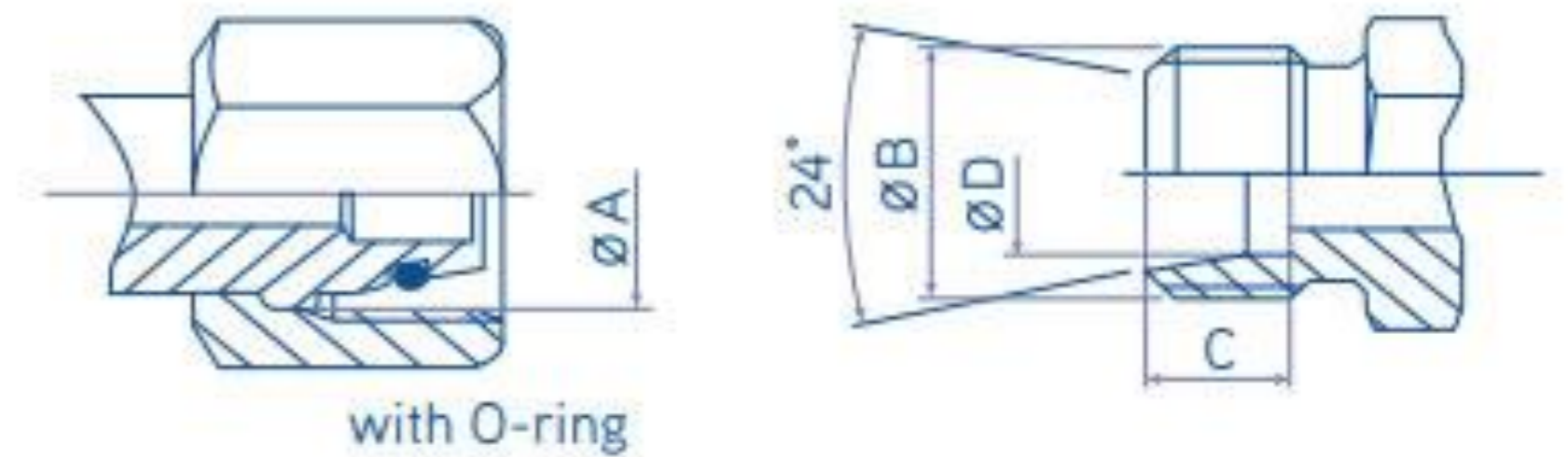
The male has a 24° sealing angle cone seat with straight metric threads. The female has a 24° convex cone with O-ring and a swivel straight metric threaded nut.

Standard: ISO 12151-2, ISO 8434-1, ISO 8434-4

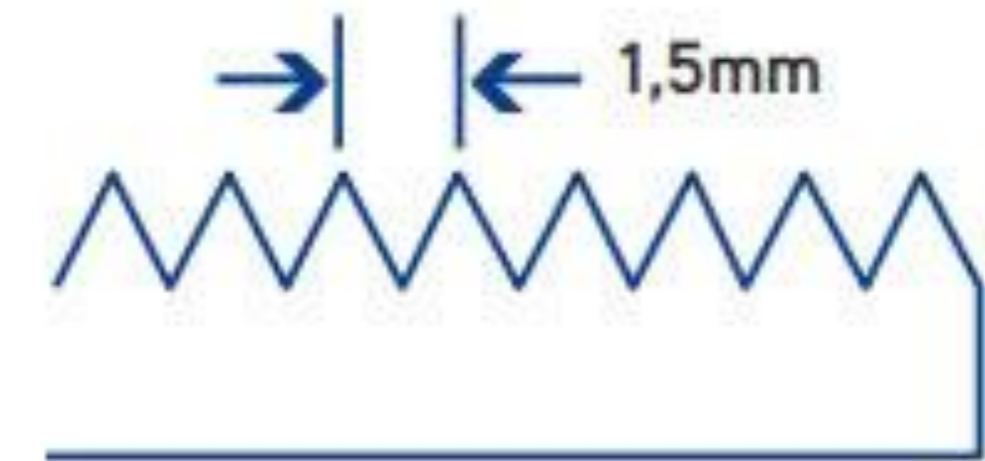
## Thread

Defined by the outside diameter and the pitch (distance between 2 crests of the thread)

example: M22x1.5 - pitch of 1.5mm.



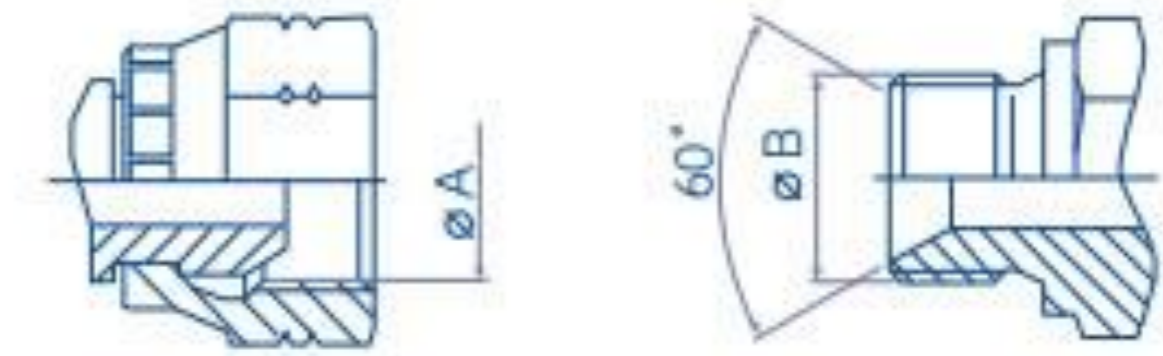
with O-ring



Tube O.D. (mm)	Tube type	Thread metric	ØA (mm)	ØB (mm)	C (mm)	ØD (mm)
6.00	6L	M12X1.5	10.50	12.00	7.00	6.20
6.00	6S	M14X1.5	12.50	14.00	7.00	6.20
8.00	8L	M14x1.5	12.50	14.00	7.00	8.20
8.00	8S	M16x1.5	14.50	16.00	7.00	8.20
10.00	10L	M16x1.5	14.50	16.00	7.00	0.20
10.00	10S	M18x1.5	16.50	18.00	7.50	0.20
12.0	12L	M18x1.5	16.50	18.00	7.00	2.20
12.0	12S	M20x1.5	18.50	20.00	7.50	2.20
14.0	14S	M22x1.5	20.50	22.00	8.00	14.20
15.0	15L	M22x1.5	20.50	22.00	7.00	15.20
16.0	16S	M24x1.5	22.5	24.0	8.5	16.20
18.0	18L	M26x1.5	24.5	26.0	7.50	18.20
20.0	20S	M30x2.0	27.9	30.0	10.50	20.20
22.0	22L	M30x2.0	27.9	30.0	7.50	22.20
25.0	25S	M36x2.0	33.9	36.0	12.00	25.20
28.0	28L	M36x2.0	33.9	36.0	7.50	28.20
30.0	30S	M42x2.0	39.9	42.0	13.50	30.20
35.0	35L	M45x2.0	42.9	45.0	10.50	35.20
38.0	38S	M52x2.0	49.9	52.0	16.00	38.30
42.0	42L	M52x2.0	49.9	52.0	11.00	42.30

## British Standard Pipe Parallel (BSPP)

Referred to as Whitworth threads, the BSP thread type fittings seal use metal-to-metal angled surfaces or a combination of metal-to-metal and an O-ring. The angle of the sealing surfaces is 60° for both forms. Standard: BS 5200 ISO 12151-6



## Thread

Identification is made by measuring the outside diameter of the thread and the number of threads per inch (25.4mm).

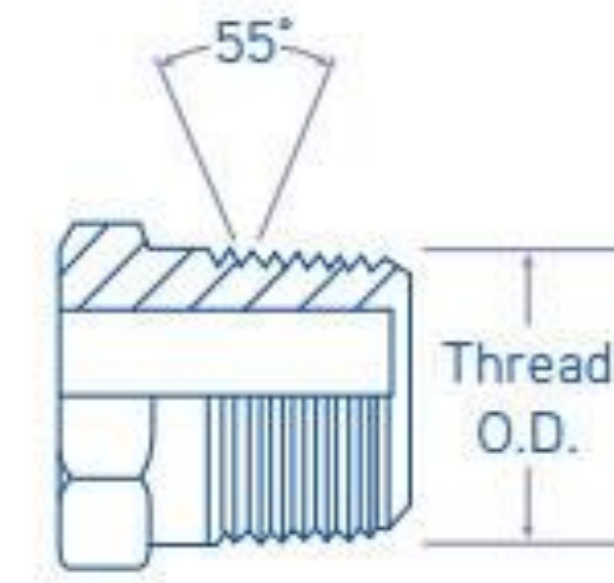


Tube I.D. (mm)	Tube O.D. (mm)	Size	Thread BSP	ØA (mm)	ØB (mm)
6	10	-2	1/8" -28	8.60	9.70
8	13	-4	1/4" -19	11.50	13.20
12	17	-6	3/8" -19	14.90	16.70
15	21	-8	1/2" -14	18.60	20.90
18	23	-10	5/8" -14	20.60	22.90
20	27	-12	3/4" -14	24.10	26.40
26	34	-16	1" -11	30.3	33.20
33	42	-20	1.1/4" -11	38.90	41.90
40	49	-24	1.1/2" -11	44.90	47.80
50	60	-32	2" -11	56.70	59.60



## British Standard Pipe Tapered (BSPT)

Fittings seal through the thread interface mechanism. Care should be taken not to confuse the BSPT fitting with the NPTF male fitting. BSPT has a 55° thread angle.



## Thread

Identification is made by measuring the outside diameter of the thread and the number of threads per inch (25.4mm).



Tube I.D. (mm)	Tube O.D. (mm)	Size	Thread BSPT	ØA (mm)
5	10	-2	1/8" -28	9.73
8	13	-4	1/4" -19	13.16
12	17	-6	3/8" -19	16.66
15	21	-8	1/2" -14	20.96
20	27	-10	5/8" -14	26.44
26	34	-12	3/4" -14	33.25
33	42	-16	1" -11	41.91
40	49	-20	1.1/4" -11	47.80
50	60	-24	1.1/2" -11	59.61
50	60	-32	2" -11	56.70

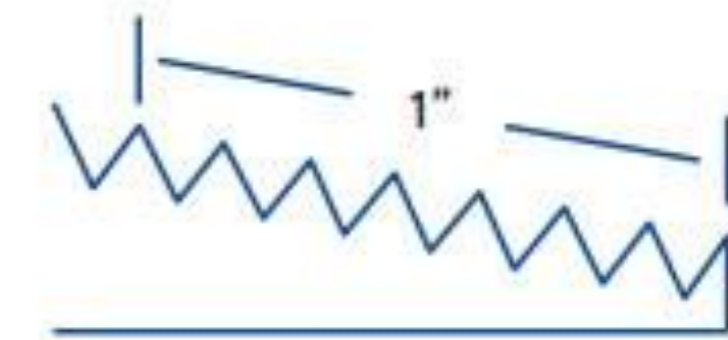
## BSP Flat Seal

These fittings have BSP parallel threads but the sealing surface is flat. The seal is made when the composite seal is compressed against the female flat face.



## Thread

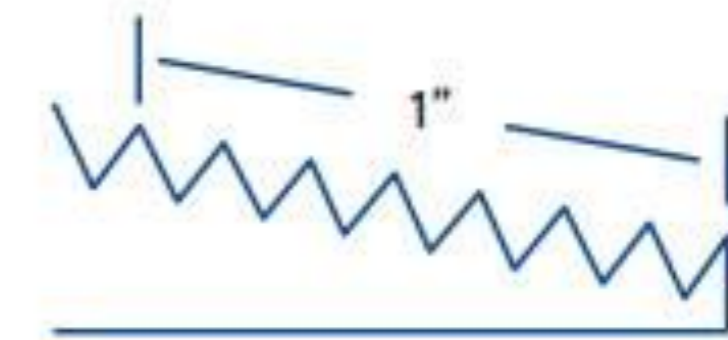
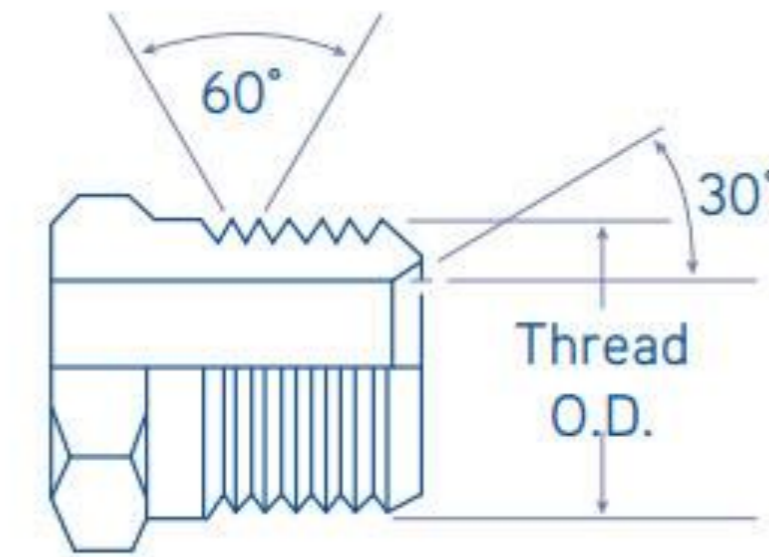
Identification is made by measuring the outside diameter of the thread and the number of threads per inch (25.4mm).



Tube I.D. (mm)	Tube O.D. (mm)	Size	Thread BSPT	ØA (mm)
6	10	-2	1/8" -28	8.60
8	13	-4	1/4" -19	11.50
12	17	-6	3/8" -19	14.90
15	21	-8	1/2" -14	18.60
18	27	-10	5/8" -14	20.60
20	34	-12	3/4" -14	24.10
26	42	-16	1" -11	30.30
33	49	-20	1.1/4" -11	38.90
40	60	-24	1.1/2" -11	44.90
50	60	-32	2" -11	56.70

## Dry Seal American Standard Taper Pipe Thread (NPTF)

This type of fitting uses the thread interface to seal and as such has a tapered thread that deforms and forms the seal. They have 30° sealing angle surfaces, forming a 60° inverted (concave) seat.



### Thread

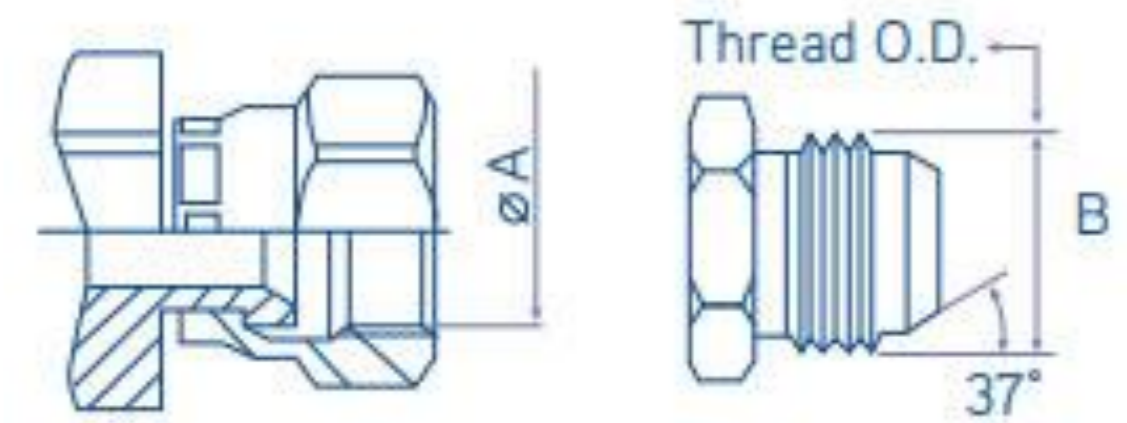
Identification is made by measuring the outside diameter of the thread and the number of threads per inch (25.4mm).

Tube I.D. (mm)	Tube O.D. (mm)	Size
-2	1/8" -27	10.24
-4	1/4" -18	13.61
-6	3/8" -18	17.05
-8	1/2" -14	21.22
-12	3/4" -14	26.56
-16	1" -11.5	33.22
-20	1.1/4" -11.5	41.98
-24	1.1/2" -11.5	48.05
-32	2" -11.5	60.09

## SAE JIC 37°

Commonly referred to as JIC fittings, these metal-to-metal sealing type fittings have a 37° flare (sealing surface angle) and straight United National Fine Threads (UNF). The original design specification for the fittings comes from the Society of Automotive Engineers (SAE).

Standard: ISO 12151-5, ISO 8434-2, SAE J516



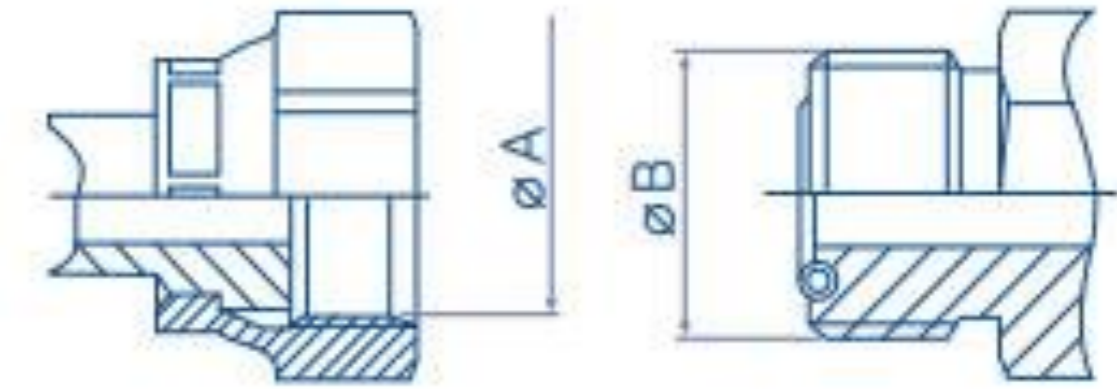
Tube O.D (inch)	Size	Thread UNF	ØA (mm)	ØB (mm)
1/4"	- 4	7/16" -20	10.00	11.10
5/16"	-5	1/2" -20	11.60	12.70
3/8"	-6	9/16" -18	13.00	14.30
1/2"	-8	3/4" -16	17.60	19.10
5/8"	-10	7/8" -14	20.50	22.20
3/4"	-12	1.1/16" -12	24.60	27.00
7/8"	-14	1.3/16" -12	28.30	30.10
1"	-16	1.5/16" -12	31.30	33.30
1.1/4"	-20	1.5/8" -12	39.20	41.30
1.1/2"	-24	1.7/8" -12	45.60	47.60
2"	-32	2.1/2" -12	61.50	63.50



## O-Ring Face Seal (ORFS)

This fitting type have high level of sealing and good vibration resistance. The fittings use the O-ring compression mechanism to seal. The female fittings have flat faces and straight threaded UNF swivel nuts. The male fittings have the O-ring in a groove in the flat face.

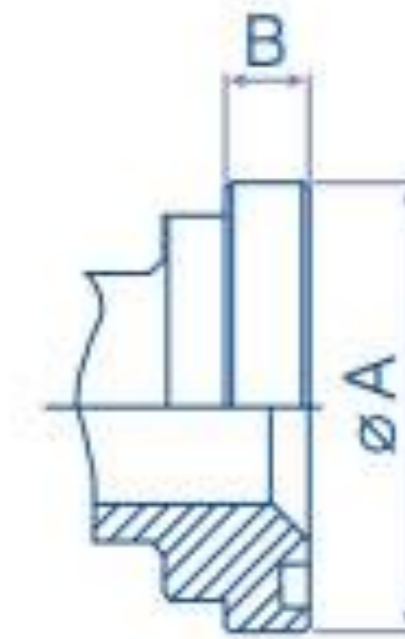
Standard: ISO 12151-1,ISO8434-3, SAE J516



Tube O.D (inch)	Size	Thread UNF	ØA (mm)	ØB (mm)
1/4"	- 4	9/16" -18	13.00	14.20
3/8"	-6	11/16" -16	15.90	17.50
1/2"	-8	13/16" -16	19.10	20.60
5/8"	-10	1" -14	23.80	25.40
3/4"	-12	1.3/16" -12	28.20	30.10
1"	-16	1.7/16" -12	34.15	36.50
1.1/4"	-20	1.11/16" -12	40.50	42.90
1.1/2"	-24	2" -12	48.80	50.80

## Flange 3000 psi and 6000 psi

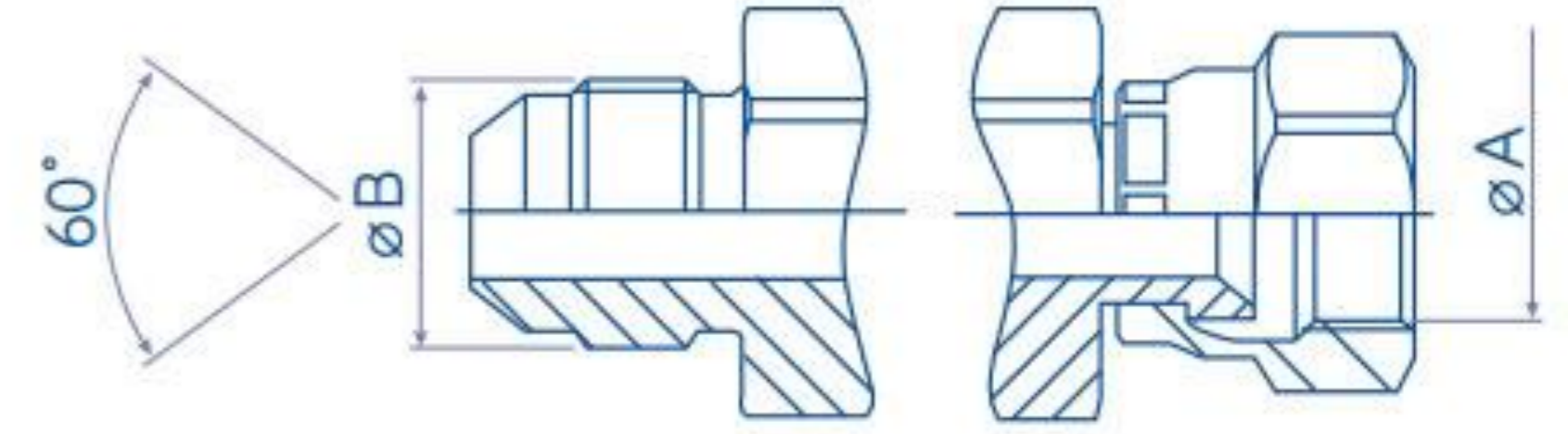
The sealing mechanism is through compression of the O-ring in the face of the flange head against the surface of the port connection. The flange fittings are generally separated into two pressure classes referred to as 21.0 MPa/ 3000 psi (SFL) or 42.0 MPa/ 6000 psi (SFS). In addition to these flanges, customer specific Komatsu and CATERPILLAR flanges can also be found in the market. Standard: ISO 6162-1,ISO 6162-2



Flange (inch)	Size	3000 psi			6000 psi			SuperCat		
		ØA (mm)	B (mm)	O-ring (mm)	ØA (mm)	B (mm)	O-ring (mm)	ØA (mm)	ØA (mm)	ØA (mm)
1/2"	-8	30.18	6.73	18.64x3.53	31.75	7.75	18.64x3.53			
5/8"*	-10	34.25	6.00	21.70x3.53						
3/4"	-12	38.10	6.73	24.99x3.53	41.28	8.76	24.99x3.53	41.28	14.22	24.99x3.53
1"	-16	44.45	8.00	32.92x3.53	47.63	9.53	32.92x3.53	47.63	14.22	32.92x3.53
1.1/4"	-20	50.80	8.00	37.69x3.53	53.98	10.29	37.69x3.53	53.98	14.22	37.69x3.53
1.1/2"	-24	60.33	8.00	47.22x3.53	63.50	12.57	47.22x3.53	63.50	14.22	47.22x3.53
2"	-32	71.42	9.53	56.74x3.53	79.38	12.57	56.74x3.53	79.38	14.22	56.74x3.53
2.1/2"	-40	84.12	9.53	69.44x3.53						
3"	-48	101.60	9.53	85.32x3.53						

## Japanese Industrial Standard (JIS)

The Japanese Industrial Standard (JIS) uses a 30° sealing angle seat and either British Standard Pipe Parallel or metric threads.



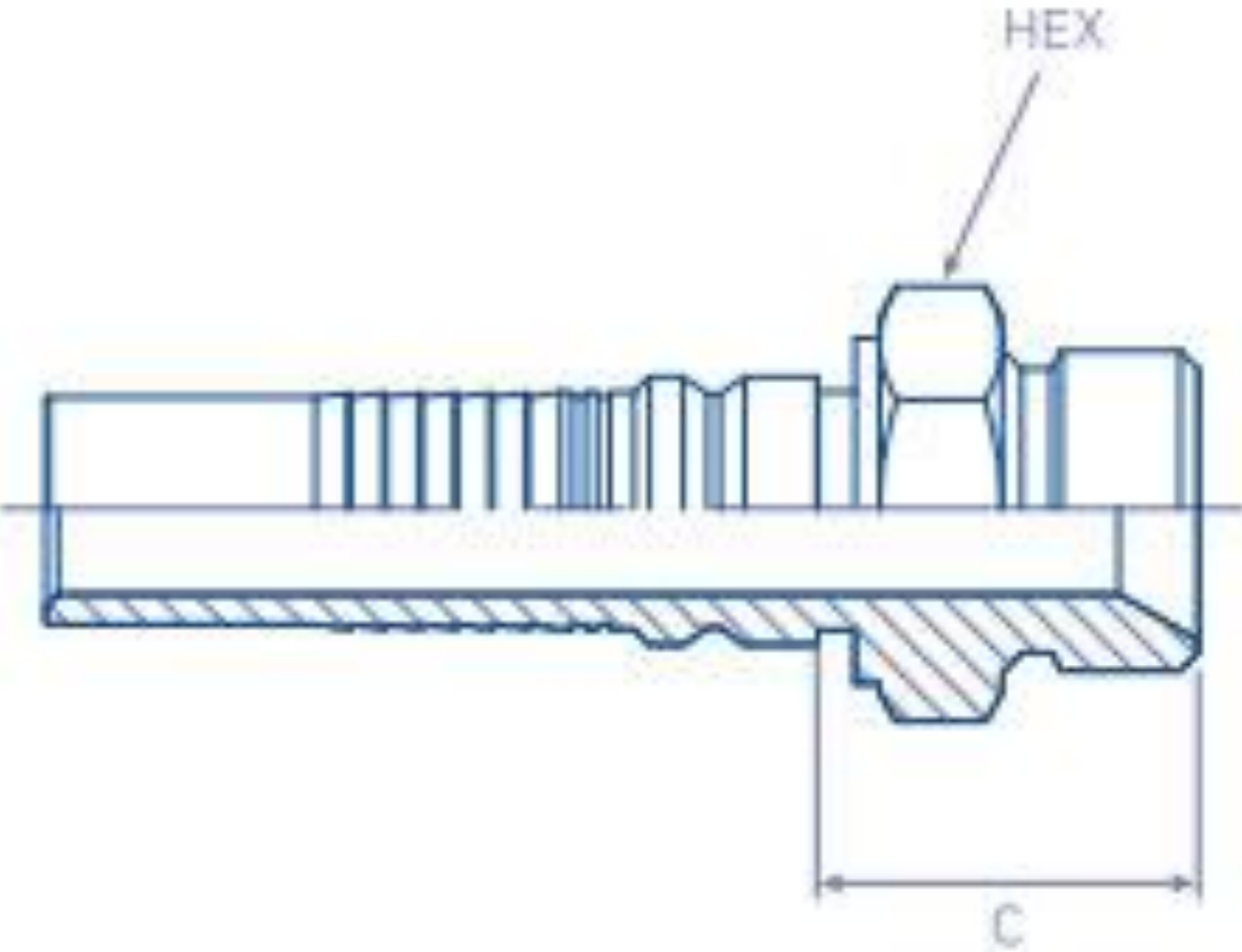
Thread metric	Size	Thread UNF	ØA (mm)	ØB (mm)
M14X1.5	12.50	14.00	1/4" -19	11.50
M18X1.5	16.50	18.00	3/8" -19	14.90
M16X1.5	14.50	16.00	1/2" -14	18.60
M18X1.5	16.50	18.00	3/4" -14	24.10
M22X1.5	20.50	22.00	1" -11	30.30
M24X1.5	22.50	24.00		
M30X1.5	28.50	30.00		
M33X2.0	31.00	33.00		
M42X2.0	40.00	42.00		

# HYDRAULIC FITTINGS

## HYDRAULIC INTERLOCK FITTING

### Interlock Male BSP Parallel Pipe (AGR)

Hose dash	hose Ø inch	Thread inch	C Cut Off mm	Hex mm
-12	3/4"	3/4"-14	36.5	32
-16	1"	1"-11	42.5	41
-20	1.1/4"	1.1/4"-11	46.7	50
-24	1.1/2"	1.1/2"-11	49.5	55
-32	2"	2"-11	56.5	70



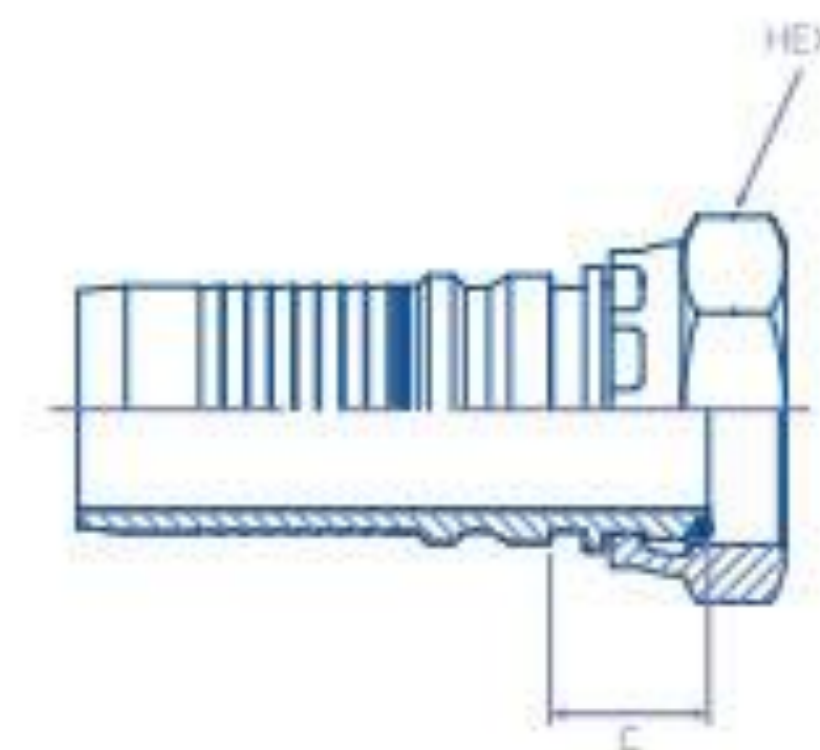
**STANDARDS:** ISO 12151-6 / ISO 8434-6 / BS 5200

**MATERIAL:** Carbon Steel  
**FINISH:** Chromium-(VI) Free plating

**VERSIONS:** Stainless Steel (add an 'S' at the end of the REFERENCE)

# Interlock Female BSP Parallel Pipe with O-ring Swivel (DKOR)

Hose dash	hose Ø inch	Thread inch	C Cut Off mm	Hex mm
-12	3/4"	3/4"-14	22.0	32
-16	1"	1"-11	25.2	41
-20	1.1/4"	1.1/4"-11	29.2	50
-24	1.1/2"	1.1/2"-11	30.5	55
-32	2"	2"-11	31.0	70



**STANDARDS:** ISO 12151-6 / ISO 8434-6 / BS 5200

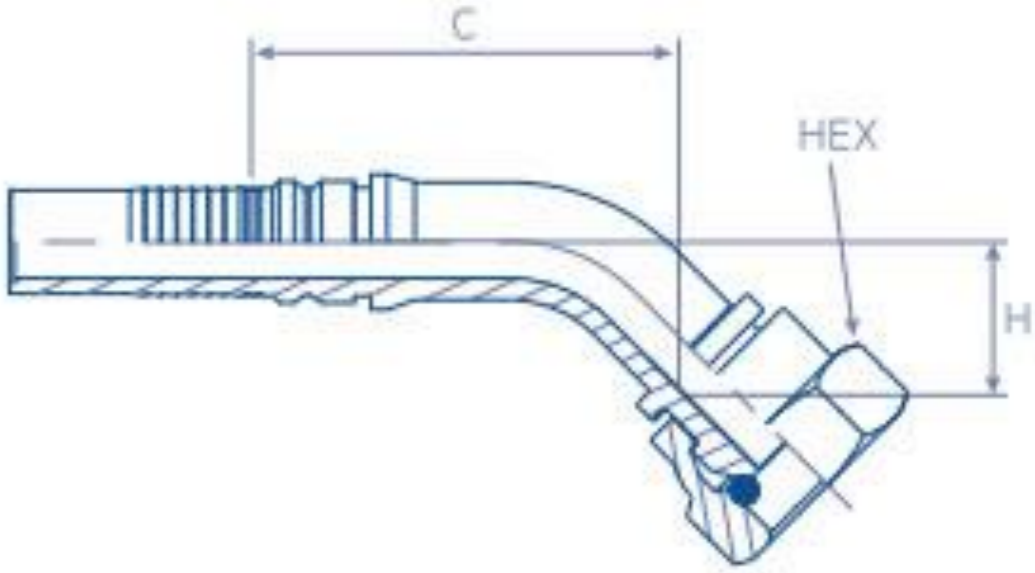
**MATERIAL:** Carbon Steel  
**FINISH:** Chromium-(VI) Free plating

**VERSIONS:** Stainless Steel (add an 'S' at the end of the REFERENCE)  
**NOTES:** On larger sizes nuts can be supplied with Trust-Wire Nut (W)



# Interlock 45° Swept Female BSP Parallel Pipe with O-ring Swivel (DKOR 45°)

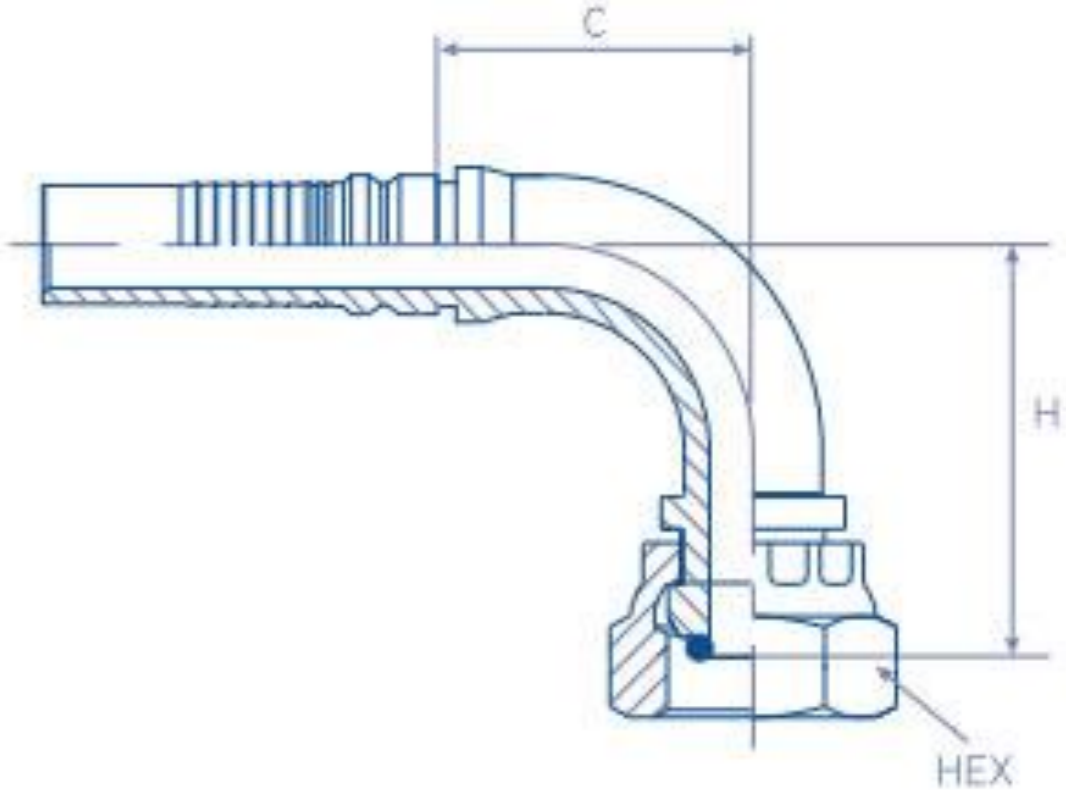
Hose dash	hose Ø inch	Thread inch	C Cut Off mm	H mm	Hex mm
-12	¾"	¾"-14	67.6	28.3	32
-16	1"	1"-11	80.7	33.8	38
-20	1.1/4"	1.1/4"-11	94.5	37.5	50
-24	1.1/2"	1.1/2"-11	116.5	49.2	55
-32	2"	2"-11	136.5	59.6	70



<p><b>STANDARDS:</b> ISO 12151-6 / ISO 8434-6 / BS 5200</p>	<p><b>MATERIAL:</b> Carbon Steel <b>FINISH:</b> Chromium-(VI) Free plating</p>	<p><b>VERSIONS:</b> Stainless Steel (add an 'S' at the end of the REFERENCE) <b>NOTES:</b> On larger sizes nuts can be supplied with Trust-Wire Nut (W)</p>
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# Interlock 90° Swept Female BSP Parallel Pipe with O-ring Swivel (DKOR 90°)

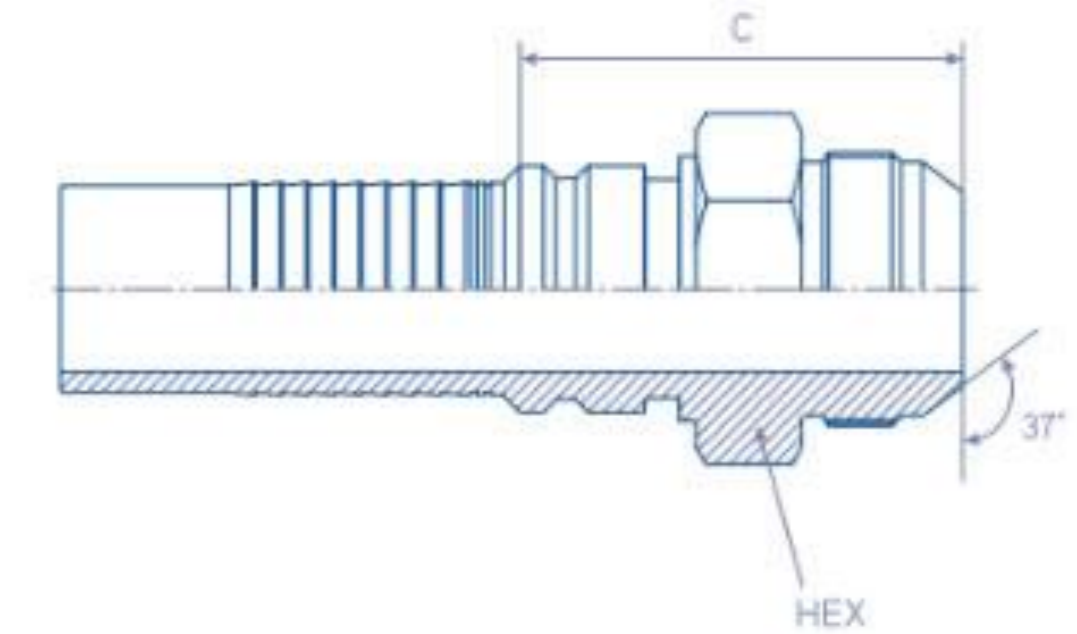
Hose dash	hose Ø inch	Thread inch	C Cut Off mm	H mm	Hex mm
-12	3/4"	3/4"-14	57.0	55.00	32
-16	1"	1"-11	73.0	71.0	38
-20	1.1/4"	1.1/4"-11	87.0	77.0	50
-24	1.1/2"	1.1/2"-11	105.0	100.0	55
-32	2"	2"-11	135.0	128.0	70



<p><b>STANDARDS:</b> ISO 12151-6 / ISO 8434-6 / BS 5200</p>	<p><b>MATERIAL:</b> Carbon Steel <b>FINISH:</b> Chromium-(VI) Free plating</p>	<p><b>VERSIONS:</b> Stainless Steel (add an 'S' at the end of the REFERENCE) <b>NOTES:</b> On larger sizes nuts can be supplied with Trust-Wire Nut (W)</p>
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# Interlock Male JIC 37° (AGJ)

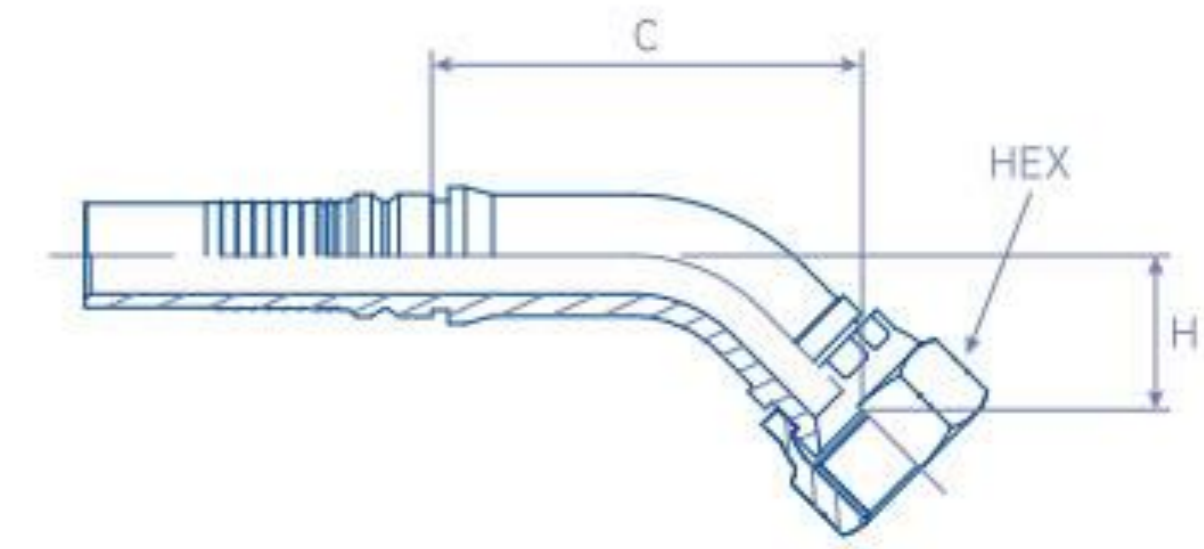
Hose dash	hose Ø inch	Thread inch	C Cut Off mm	Hex mm
-12	3/4"	1.1/16"-12	38.0	27
-16	1"	1.5/16" - 12	43.1	36
-20	1.1/4"	1.5/8" - 12	48.0	46
-24	1.1/2"	1.7/8" - 12	52.5	50
-32	2"	2.1/2" - 12	64.0	65



<p><b>STANDARDS:</b> ISO 12151-6 / ISO 8434-6 / BS 5200</p>	<p><b>MATERIAL:</b> Carbon Steel <b>FINISH:</b> Chromium-(VI) Free plating</p>	<p><b>VERSIONS:</b> Stainless Steel (add an 'S' at the end of the REFERENCE)</p>
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# Interlock 45° Swept Female JIC 37° Swivel (DKJ 45°)

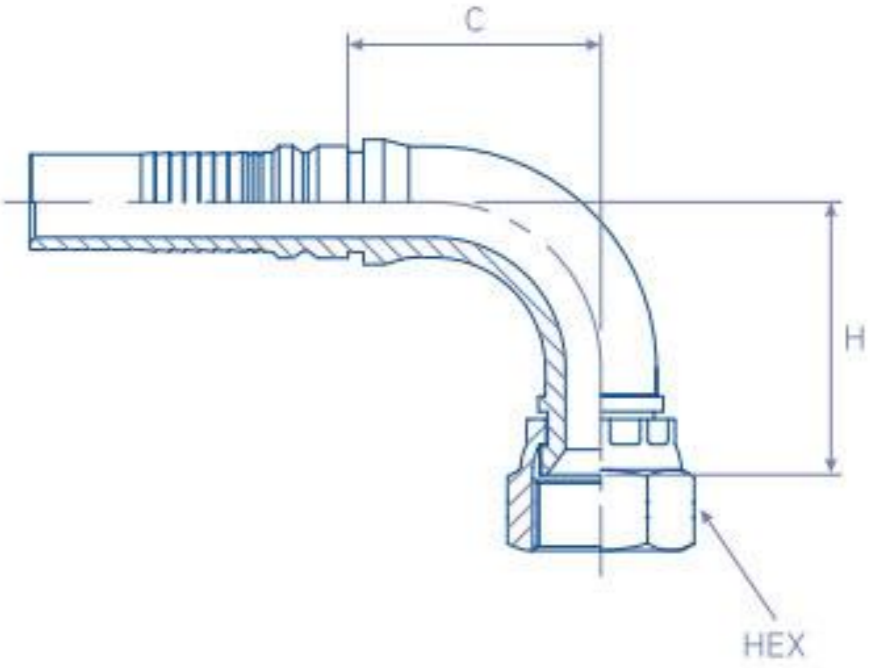
Hose dash	hose Ø inch	Thread inch	C Cut Off mm	H mm	Hex mm
-12	3/4"	1.1/16"-12	68.0	28.3	32
-16	1"	1.5/16" - 12	81.0	32.0	38
-20	1.1/4"	1.5/8" - 12	94.5	37.5	50
-24	1.1/2"	1.7/8" - 12	116.5	49.2	55
-32	2"	2.1/2" - 12	148.0	64.0	75



<b>STANDARDS:</b> ISO 12151-6 / ISO 8434-6 / BS 5200	<b>MATERIAL:</b> Carbon Steel <b>FINISH:</b> Chromium-(VI) Free plating	<b>VERSIONS:</b> Stainless Steel (add an 'S' at the end of the REFERENCE)
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# Interlock 90° Swept Female JIC 37° Swivel (DKJ 90°)

Hose dash	hose Ø inch	Thread inch	C Cut Off mm	H mm	Hex mm
-12	3/4"	1.1/16"-12	59.0	55.0	32
-16	1"	1.5/16" - 12	75.0	71.0	38
-20	1.1/4"	1.5/8" - 12	89.0	77.0	50
-24	1.1/2"	1.7/8" - 12	107.0	100.0	57
-32	2"	2.1/2" - 12	135.0	140.0	75



<p><b>STANDARDS:</b> ISO 12151-6 / ISO 8434-6 / BS 5200</p>	<p><b>MATERIAL:</b> Carbon Steel <b>FINISH:</b> Chromium-(VI) Free plating</p>	<p><b>NOTES:</b> Stainless Steel (add an 'S' at the end of the REFERENCE)</p>
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