

HYDRAULIC THREAD IDENTIFICATION CHART



DETERMINE SEAL

Mated angle seat with **O-ring**

This type of seal is found on BSP and DIN terminations. It uses both the O-ring and the mated angle to make the seal.

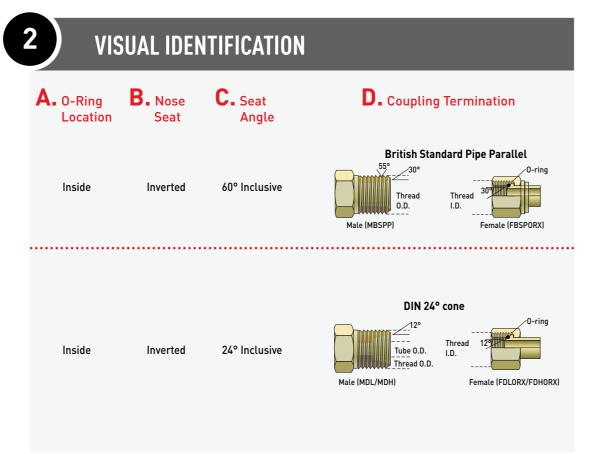
O-ring face seal

This type of seal is found on O-ring boss, flat-face O-ring, British flat-face O-ring and O-ring flange couplings. O-ring boss couplings have straight threads with the O-ring on the outside of the threads next to the large hex nut. Generally the O-ring will not be present on a used coupling but the groove for the

Flat-face and British flat-face O-ring couplings have straight threads. The female has a flat face; the male has a flat face with a groove to accept the O-ring. Differences between flat-face and British flat-face are determined when measuring thread size.

O-ring will be present.

O-ring flange couplings have no threads but do have a flat face with a groove to accept the O-ring. The connection is made with two flange half boots that go over the O-ring flange and are bolted to the port.

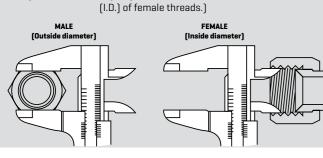


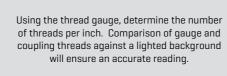
A. O-Ring Location	B. Nose Seat	C. Seat Angle D. Coupling Termination
O-ring located in flange groove	flat face	S.A.E. O-ring flange Flange 0.D. Flange head Flange head
0-ring located outside	flat face	S.A.E. O-ring boss Thread Thread O.D. I.D. Male (MB) Female (FB)
O-ring located at nose seat	flat face	O-ring face seal Thread O.D. Thread I.D. Male (MFFOR) Female Swivel (FFORX)

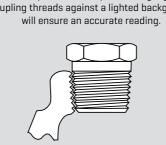
3 ME	ASURE			
Dash Size	Nominal Size (ins)	No. Threads per Inch	Male Thread O.D. (mm) MBSPP	Female Thread I.D.(mm FBSPORX
-4	1/4"	19	13.0	11.7
-6	3/8"	19	16.5	15.2
-8	1/2"	14	20.8	18.9
-10	5/8"	14	22.8	20.9
-12	3/4"	14	26.3	24.4
-16	1"	11	33.1	30.6
-20	1.1/4"	11	41.8	39.3
-24	1.1/2"	11	47.7	45.2
-32	2"	11	59.5	59.5
Metric Thread size	Tube O.D. Light Series	Tube O.D. Heavy Series	Male Thread O.D. (mm)	Female Thread I.D.(mm
			MDL/MDH	FDLORX/FDHORX
M12 X 1.5	6	-	MDL/MDH 12.0	FDLORX/FDHORX 10.5
M12 X 1.5 M14 X 1.5	6 8	-		
=			12.0	10.5
M14 X 1.5	8	-	12.0 14.0	10.5 12.5
M14 X 1.5 M16 X 1.5	8 10	- 8	12.0 14.0 16.0	10.5 12.5 14.5
M14 X 1.5 M16 X 1.5 M18 X 1.5	8 10 12	- 8 10	12.0 14.0 16.0 18.0	10.5 12.5 14.5 16.5
M14 X 1.5 M16 X 1.5 M18 X 1.5 M20 X 1.5	8 10 12 14	- 8 10 12	12.0 14.0 16.0 18.0 20.0	10.5 12.5 14.5 16.5 18.5
M14 X 1.5 M16 X 1.5 M18 X 1.5 M20 X 1.5 M22 X 1.5	8 10 12 14 15	- 8 10 12 14	12.0 14.0 16.0 18.0 20.0 22.0	10.5 12.5 14.5 16.5 18.5 20.5
M14 X 1.5 M16 X 1.5 M18 X 1.5 M20 X 1.5 M22 X 1.5 M24 X 1.5	8 10 12 14 15	- 8 10 12 14 16	12.0 14.0 16.0 18.0 20.0 22.0 24.0	10.5 12.5 14.5 16.5 18.5 20.5 22.5
M14 X 1.5 M16 X 1.5 M18 X 1.5 M20 X 1.5 M22 X 1.5 M24 X 1.5 M26 X 1.5	8 10 12 14 15 -	- 8 10 12 14 16 -	12.0 14.0 16.0 18.0 20.0 22.0 24.0 26.0	10.5 12.5 14.5 16.5 18.5 20.5 22.5 24.5
M14 X 1.5 M16 X 1.5 M18 X 1.5 M20 X 1.5 M22 X 1.5 M24 X 1.5 M26 X 1.5 M30 X 2.0	8 10 12 14 15 - 18 22	- 8 10 12 14 16 - 20	12.0 14.0 16.0 18.0 20.0 22.0 24.0 26.0 30.0	10.5 12.5 14.5 16.5 18.5 20.5 22.5 24.5 28.0

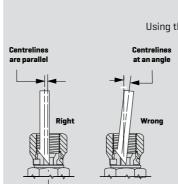
	14140	A 2.0	55		1		~	5.0	40.	.0	
Code 61 - FL	M52	X 2.0	42			38	5	2.0			
Code 61 - FL									•		
Code 61 - FL	Dash Size	Nominal Siz	e Flange	O.D.	Flange H	ead	"Δ"	"B"		"C"	
Code 61 - FL State	Dusii Size	Nominat 512		n)							
Second S			(,		,,	()	()		(,	
-8 1/2" 30.2 6.7 38.1 8.7 7.7 -12 3/4" 38.1 6.7 47.6 11.1 10.1 -16 1" 44.5 8.0 52.3 13.1 12.1 -20 1.1/4" 50.8 8.0 58.7 15.1 14.1 -24 1.1/2" 60.3 8.0 69.8 11.8 11.8 -24 1.1/2" 60.3 8.0 69.8 11.8 -25 71.4 9.7 77.7 20.4 20.4 -26 71.4 9.7 77.7 20.4 20.4 -27 71.4 9.7 77.7 20.4 20.4 -28 77.7 40.5 9.1 8.1 -4 1.1 1.1 10.9 -4 41.4 14.2 50.8 11.9 -4 1.2 79.4 18.2 17.3 -5 63.5 12.6 79.4 18.2 17.3 -6 63.5 12.6 79.4 18.2 17.3 -6 3/8" 18 14.1 12.9 -5 5/16" 20 11.0 -6 3/8" 18 14.1 12.9 -7 1.8 1/2" 16 18.9 -7 1.9 1.9 -8 1/2" 16 18.9 14.1 -8 1/2" 16 18.9 14.1 -9 -12 3/4" 12 26.9 24.4 -12 3/4" 12 26.9 24.4 -13 3/8" 18 14.1 12.9 -14 7/8" 12 33.2 31.3 -20 1.1/4" 12 41.2 39.2 -4 1.1/2" 12 41.2 39.2 -6 3/8" 14 22.1 20.5 -6 3/8" 14 22.1 20.5 -14 7/8" 12 33.2 31.3 -10 5/8" 14 22.1 20.5 -14 7/8" 12 33.2 31.3 -17 -20 1.1/4" 12 41.2 -28 1/2" 16 18.9 17.5 -38 1/2" 16 18.9 17.5 -40 1.1/4" 12 41.2 39.2 -41 1.1/2" 12 47.6 45.5 -42 1.1/2" 12 47.6 45.5 -43 3/8" 18 14.1 12.9 -44 1.1/2" 12 47.6 45.5 -45 3/8" 18 14.1 12.9 -47 -48 1/2" 16 18.9 -48 1/2" 16 18.9 17.5 -49 1.1/4" 12 41.2 -40 1.1/4" 12 41.2 -40 1.1/4" 12 41.2 -41 17 17 12 -42 3/4" 12 33.2 31.3 -43 3.3 -44 3/8" 14 39.2 -45 3/8" 18 34.1 -47 3/8" 37.5 -48 3/8" 37.5 -49 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5 -40 3/8" 37.5											
1-12 3/4" 38.1 6.7 47.6 11.1 10.1 -16						Co					
-16		1/2"									
-20			38.	5			47.6 52.3				
-24 1.1/2" 60.3 8.0 69.8 17.8 16.9 20.4 20			50.	8			58.7	15.1			
Flange F	-24	1.1/2"	60.	3	8.0		69.8	17.8		16.9	
O.D. Thickness (mm) (m										20.4	
(mm)											
Code 62 - FLH		Thickness	(mm)	(mm)	(mm)		Thickne	ss (mm	i) (mm)	(mm)	
31.8	(mm)					(mm)					
41.3 8.8 50.8 11.9 10.9 41.4 14.2 50.8 11.9 10.9 47.6 9.5 57.1 13.9 12.9 47.6 14.2 57.1 13.9 12.9 54.0 10.3 66.7 15.9 14.9 54.0 14.2 79.4 63.5 12.6 79.4 18.2 17.3 63.5 14.2 79.4 12.6 96.8 22.2 21.1 79.5 14.2 79.6			_					Code 62 - FLO			
47.6 9.5 57.1 13.9 12.9 47.6 14.2 57.1 13.9 12.9 54.0 10.3 66.7 15.9 14.9 54.0 14.2 66.7 15.9 14.9 63.5 12.6 79.4 18.2 17.3 63.5 14.2 79.4 18.2 17.2 79.4 12.6 96.8 22.2 21.1 79.5 14.2 79.4 18.2 17.2 79.4 12.6 96.8 22.2 21.1 79.5 14.2 79.4 18.2 17.2 79.4 12.6 96.8 22.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 21.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 22.2 23.2 23.5 11.0	31.8		40.5			/4 /	4/0	F0.0	110	10.0	
54.0 10.3 66.7 15.9 14.9 54.0 14.2 66.7 15.9 14.9 63.5 12.6 79.4 18.2 17.3 63.5 14.2 79.4 18.2 17.2 79.4 12.6 96.8 22.2 21.1 79.5 14.2 96.8 22.2 21.1 Dash Size Nominal Size No. Threads per Inch Male Thread 0.D. Female Thread 0-Ring I.D.(mm) -2 1/8" 24 7,9 6.8 6.0 -3 3/16" 24 9,5 8.3 7.6 -4 1/4" 20 11.0 9.9 8.9 -5 5/16" 20 12.5 11.5 10.5 -6 3/8" 18 14.1 12.9 11.9 -8 1/2" 16 18.9 17.5 16.3 -10 5/8" 14 22.1 20.5 19.2 -14 7/8" 12	41.3	8.8		11.9	10.9						
63.5 12.6 79.4 18.2 17.3 63.5 14.2 79.4 18.2 17.2 79.4 12.6 96.8 22.2 21.1 79.5 14.2 79.4 18.2 21.2 21.2 Obsh Size No. Threads per Inch Male Thread 0.D. (mm) MB LD.(mm) FB O-Ring I.D.(mm) FB -2 1/8" 24 7,9 6.8 6.0 -3 3/16" 24 9,5 8.3 7.6 -4 1/4" 20 11.0 9.9 8.9 -5 5/16" 20 12.5 11.5 10.5 -6 3/8" 18 14.1 12.9 11.9 -8 1/2" 16 18.9 17.5 16.3 -10 5/8" 14 22.1 20.5 19.2 -12 3/4" 12 26.9 24.4 23.5 -14 7/8" 12 30.0 28.2 26.6 -16	54.N		66.7	15.7			14.2		7 15.9		
Dash Size	63.5	12.6	79.4	18.2	17.3	63.5	14.2	79.4	18.2	17.2	
Color Colo	79.4	12.6	96.8	22.2	21.1	79.5	14.2	96.8	3 22.2	21.2	
Column C	Dash S	ize	Nominal Size	No. Thr	reads per Inch	Male Thre	ad O.D.	Female Thread	i O-Ring	J.D.(mm)	
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-5 5/16" 20 12.5 11.5 10.5 -6 3/8" 18 14.1 12.9 11.9 -8 1/2" 16 18.9 17.5 16.3 -10 5/8" 14 22.1 20.5 19.2 -12 3/4" 12 26.9 24.4 23.5 -14 7/8" 12 30.0 28.2 26.6 -16 1" 12 33.2 31.3 29.7 -20 1.1/4" 12 41.2 39.2 37.5 -24 1.1/2" 12 47.6 45.5 43.7 -32 2" 12 63.5 61.4 59.4 Dash Size Nominal Size (ins) No. Threads per Inch Male Thread 0.D. (mm) Female Thread I.D. (mm) -6 3/8" 16 17.3 15.9 -8 1/2" 16 22.0 19.1 -10 5/8" 14 25.3 23.6 -12 3/4" 12 30.0 28,0 -16 1" 12 36.3 34.4 -20 1.1/4" 12 42.6 40.5					24	9,5	5	8.3		7.6	
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Dash Size Nominal Size (ins) No. Threads per Inch Male Thread 0.D. (mm) MFFOR Female Thread I.D. (mm FFORX) -4 1/4" 18 14.1 12.9 -6 3/8" 16 17.3 15.9 -8 1/2" 16 22.0 19.1 -10 5/8" 14 25.3 23.6 -12 3/4" 12 30.0 28,0 -16 1" 12 36.3 34.4 -20 1.1/4" 12 42.6 40.5											
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-20 1.1/4" 12 42.6 40.5					_		+				
			· .								
-24 1.1/2" 12 50.6 48.5					+				-		
	-2	24	1.1/2			12	5	U.6	48.	.5	

Measuring threads With the calliper measure the thread diameter of the largest point. (Outside diameter (O.D.) of male threads. Inside diameter (I.D.) of female threads.) FEMALE MALE









Metric Stand Pipe



Dash Size

-4

-5

-8

-10

-12

-16

Dash Size

-8

-10

-12

-16

-20

-12

-16

-20

-24

-32

1/2"

5/8"

3/4"

1.1/4"

3/4"

1"

1.1/4"

1.1/2"

Nominal Size (Ins)

1/2"

5/8"

3/4"

1"

1.1/4"

NOTE: Thread binding will occur when different thread configurations are used.

DO NOT mix thread configurations. Coupling thread identification kits containing reference charts, vernier, seat gauges and thread gauges are available. Order reference: 7369-4318.

Nominal Size

1/4"

5/16"

3/8"

1/2"

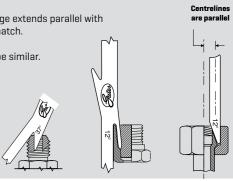
No. Threads per Inch

20

20

18

16



Female Thread I.D.(mm)

9.9

11.5

12.9

17.5

Male Thread O.D. (mm)

11.0

12.5

14.1

18.9

Mechanical joint or mated angle

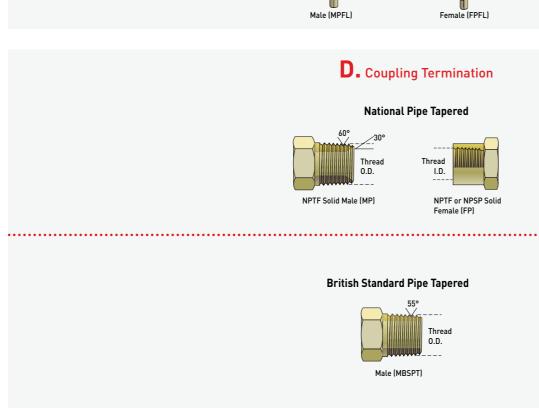
This type of seal is found on National Pipe Straight Mechanical (NPSM), British Standard Pipe Parallel (BSPP), JIC, SAE, JIS, Komatsu, DIN, North American Stand Pipe, Metric Stand Pipe, Inverted Flare and Kobelco. Different angles are used to create the seal, but the angles are cut two different ways, Standard and Inverted.

Standard seat couplings have the nose angle of the male on the outer surface of the coupling. These couplings are: JIC, SAE, JIS, Komatsu.

Inverted seat couplings contain the nose angle of the male on the inside bore of the coupling. These couplings are: (NPSM) National Pipe Straight Mechanical, (BSPP) British Standard Pipe Parallel, DIN, North American Stand Pipe, Metric Stand Pipe, Inverted Flare and Kobelco.

C. Seat **B.** Nose A. O-Ring D. Coupling Termination Location Seat **Angle** JIC 37° Flare None Standard 37° Female Swivel (FJX) SAE 45° Flare None Standard Japanese Industrial Standard & Komatsu Standard Female (FJISX or FKX) Male (MJIS or MK)

None	Inverted		Thread 0.D. Bite Sleeve Nu Solid Male (MFA)	
None	Inverted	30°	National Pi 60° Thread 0.D. Male (MP)	pe Straight Thread 30° I.D. Female (FPX)
None	Inverted	45°	S.A.E. Inv 45° Thread 0.D. Male (MIX)	Thread I.D. Female (FI)
None, Except -20	Inverted	24° Inclusive	French Ga Male (MFG)	az 24° cone Female (FFGX)
	•••••	•	French Gaz 24° hiç	gh pressure flange



24° Inclusive

Standard

None

		_	= /o#	 					00.5
	-10		5/8"	14		22.1			20.5
	-12		3/4"	12	T	26.9			25.0
	-14		7/8"	12		30.0		28.2	
	-16								
			12		33.2		31.3		
-20 1.1/4"		12		41.2		39.2			
	-24		1.1/2"	12	Ţ	47.6		45.5	
	-32		2"	12		63.3			61.4
					v Inch		(mm)	Compl	
	Dash Size	No	minal Size	No. Threads pe	er inch	Male Thread O.D.	(MM)	remale	Thread I.D.(mm)
						MS			FSX
	-4		1/4"	20		11.0			9.9
				+					
	-5		5/16"	20		12.5			11.5
	-6		3/8"	18		15.9			14.3
				1		40.4			
	-8		1/2"	16		19.1			17.5
	-10		5/8"	14		22.1			20.5
	10		3/4"	14		26.9			25.0
	-12								
Dash	Nominal	No. Threads	Male Thread	Female Thread	Nomina	l Metric	Male T		Female Thread
Size	Size	per Inch	O.D. (mm)	I.D.(mm)	Size	Thread Size	O.D. ((mm)	I.D.(mm)
			MJIS	FJISX	(mm)		М	K	FKX
-4	1/4"	19	13.5	11.7	6.3	M14x1.5	14		12.5
-6	3/8"	19	16.7	15.2	9,5	M18x1.5	18		16.5
-8	1/2"	14	20.5	18.9	13.0	M22x1.5	22		20.5
	5/8"	14							22.5
-10	3/4"		23.1	20.5	16.0	M24x1.5	24		
-12	1"	14	26.3	24.4	19.0	M30x1.5	30		28.5
-16		11	33.4	30.6	25.0	M33x1.5	33	_	31.5
-20	11/4"	11	42.1	38.9	32.0	M36x1.5	36		34.5
-24	11/2"	11	47.6	45.3	38.0	M42x1.5	42	.U	40.5
-32	2"	11	59.6	56.4					
				Metric Stand		Metric Nut			Metric Nut
				DIN Tube O.D.	(mm)	Thread - Ligh	nt	Th	read - Heavy
				MSP					
				6.0		M12 x 1.5	5		
				8.0		M14 x 1.5		,	116 x 1.5
				10.0		M16 x 1.5		N.	118 x 1.5
				12.0		M18 x 1.5			120 x 1.5
				15.0		M22 x 1.5	5		-
				16.0		-		N	124 x 1.5
				18.0		M26 x 1.5	5		-
				20.0		-		N	130 x 2.0
				22.0		M30 x 2.0)		-
				25.0		-		N	136 x 2.0
				28.0		M36 x 2.0)		-
				30.0		-		N	145 x 2.0
				25.0		M45 x 2.0)		-
				38.0		-		N	152 x 2.0
				42.0		M52 x 2.0)		
	Dash Size	Nomii	nal Size (Ins)	No. Threads pe	er Inch	Male Thread O.D.	(mm)	Female	Thread I.D.(mm)
						MP			FPX
	-2		1/8"	27		10.3			9,1
	-4		1/4"	18		13.9			11.9
	-6		3/8"	18		17.3			15.1
	-8		1/2"	14		21.6			19.0
	-12		3/4"	14		27.0			24.2
	-16		1"	11.1/2		33.7			30.6
	-20		1.1/4"	11.1/2		42.5			38.9
	-24		1.1/2"	11.1/2		48.6			45.2
	-32		2"	11.1/2		60.7			57.2
	Dash Size	Nomi	nal Size (Ins)	No. Threads pe		Male Thread O.D.	(mm)	Female	Thread I.D. (mm
	Alon One	Nonill	(III)	No. Inicaus po	7.111011	MIX	(111111)	Tomato	FI
	C		4 /0"						
	-2		1/8"	28		7,9			7.1
	-3		3/16"	24		9,5			8.3
	-4		1/4"	24		11.0			9.9
	-5		5/16"	20		12.5			11.5
	-6		3/8"	18		15.7			14.7
	-7		7/16"	18		17.4			15.9
	-8		1/2"	18		18.9			17.9
	-10		5/8"	18		22.1			20.6
	-12		3/4"	16		26.8			25.4
	Dash Size	Nomi	nal Size (Ins)	Metric Thread	l Size	Male Thread O.D.	(mm)	Fomale	Thread I.D.(mm)
	Dasii Size	NUIIII	iat Jizë (IIIS)	Metric Tillead	JIZE		(1111111)	remate	
						MFG			FFGX
	-4		1/4"	M20x1.		20.0			18.5
	-5		5/16"	M20x1.	5	20.0			18.5
			3/8"	M20x1.	5 1	20.0			18.5
	-6		3/0	IVIZUX I.	<u> </u>				10.0

	Dash Size	Nominal Size	No. Threads per Inch	Male Thread O.D. (mm) MP	Female Thread I.D.(mm) FP
	-2	1/8"	27	10.3	9,1
	-4	1/4"	18	13.9	11.9
	-6	3/8"	18	17.3	15.1
	-8	1/2"	14	21.6	19.0
	-12	3/4"	14	27.0	24.2
	-16	1"	11.1/2"	33.7	30.6
	-20	1.1/4"	11.1/2"	42.5	38.9
	-24	1.1/2"	11.1/2"	48.6	45.2
	-32	2"	11.1/2"	60.7	57.2
	Dash Size	Nominal Size	No. Threads per Inch	Male Thread O.D. (mm) MBSPT	
Г	-2	1/8"	28	10.1	
	-4	1/4"	19	13.6	
	-6	3/8"	19	17.1	
	-8	1/2"	14	21.5	
	-10	5/8"	14	23.4	

14

11

11

11

M24x1.5

M30x1.5

M36x1.5

M45x1.5

M52x1.5

24.0

30.0

36.0

45.0

52.0

27.0

33.9

42.6

48.5 60.5

"X" Dia (mm) MPFL

17.0

21.0

27.0

34.0

42.0

22.5

28.5

34.5

43.5

50.5

"X" Dia (mm) FPFL

17.0

21.0

27.0

34.0

42.0

Thread interface

This type of seal is found on the (NPTF) National Pipe Tapered for Fuel or the (BSPT) British Standard Pipe Taper. Characteristics of this thread is the male has a smaller diameter at the end, tapering to a larger diameter at the hexagon. When the male is screwed into the female the thread deforms, thus creating the seal.