

GS-Hydro in brief

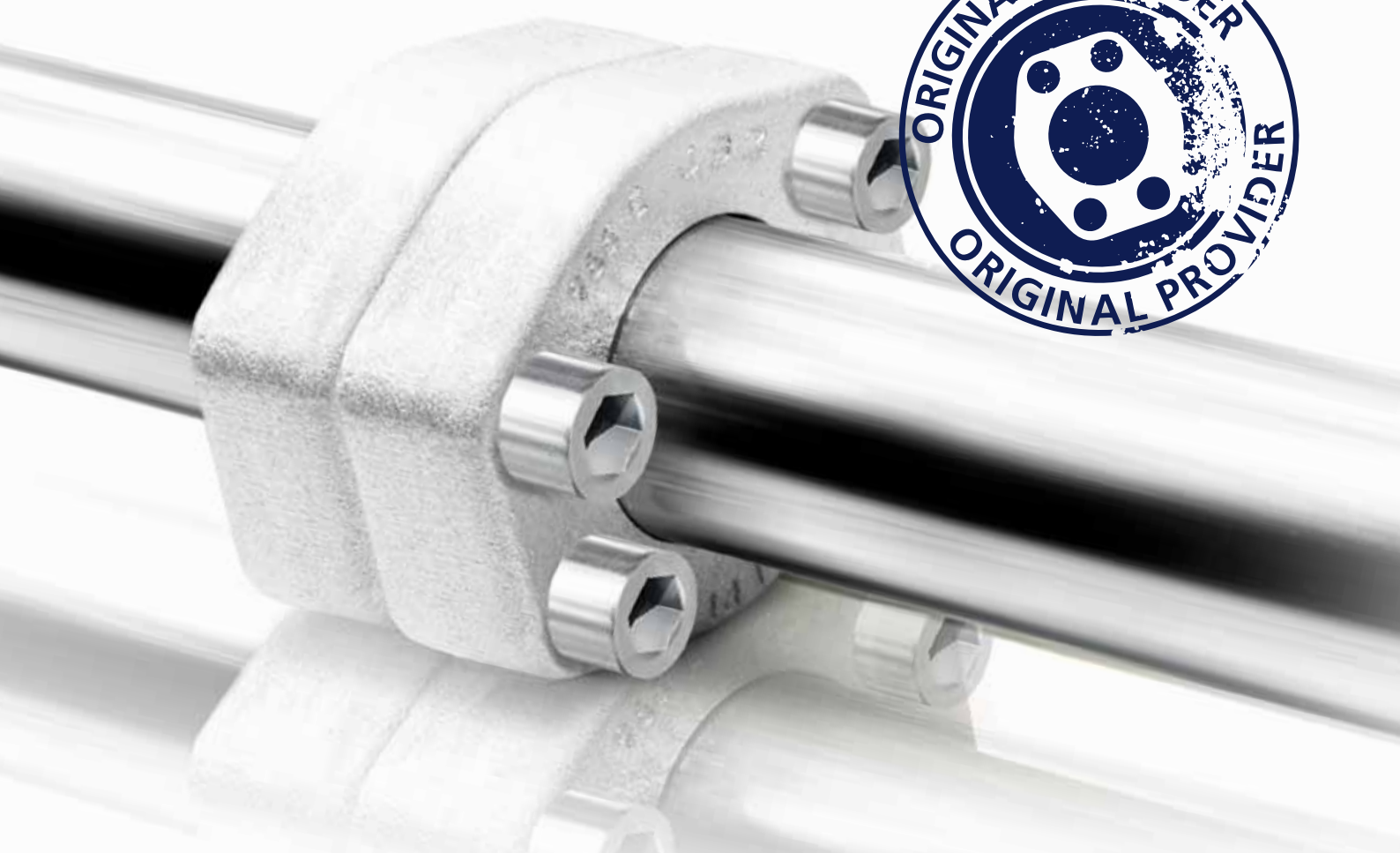
GS-Hydro is the world's leading supplier of non-welded piping systems. Operations began in 1974 with the commercialization of an innovative flange, which allowed the rapid and secure connection of pipes without the need for welding. Investing in continuous product and systems development, GS-Hydro now offers the broadest range of non-welded piping solutions on the market. Our core technology has been validated in thousands of applications for over four decades and has been taken to virtually every corner of the globe.

The main application for our technology is in hydraulics, where the high pressures place stringent requirements on pipe connections. However, we also meet the needs of all markets where customer requirements demand any one of the many benefits our technology provides over welding, such as superior cleanliness, serviceability, prefabrication, rapid installation or zero-fire hazard.

The ORIGINAL GS-Piping System consists of three flange systems, which allow piping systems with working pressures from 10 to 690 bar and pipe diameters between 16 and 600 mm to be assembled without welding. The Retain Ring and 37° Flare Flange systems are used for high pressure connections and the 90° Flare Flange connection for low pressure applications.

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GS Flange connections

Retain Ring System

The GS Retain Ring system is used for piping with a maximum allowable working pressure up to 350–400 bar. In special applications, the retain ring system can be used with working pressures as high as 690 bar. Extensive testing programs have shown the suitability of the retain ring jointing method for high pressure piping systems in a wide range of different materials ranging from carbon and stainless steel to duplex and titanium and all other quality pipe materials with an elongation above 20%.



	SAE 50	SAE 3000	SAE 6000	ISO 6164
pressure [bar]	50	210–350	420	210–690
vacuum pressure [mbar]	170 mbar			
temperature [°C]	-40 °C - +200 °C			
size, pipe	50x3 – 273x6	26x6 – 97x12	26x6 – 97x12	60.3x11.04 – 355.6x41.4
size, flange	1 1/2" – 10"	1/2" – 3"	1/2" – 3"	2" – 14"
material, pipe	carbon steel, galvanised steel, duplex, super duplex, titanium (materials having elongation above 20%)			
material, flange	electric zinc coated carbon steel, hot dip galvanized carbon steel, stainless steel or titanium			
material, seal	NBR, FPM (Viton®)			
material, retain ring	stainless steel			

37° Flare Flange System

The 37° flare flange system is used for piping with a maximum allowable working pressure of 420 bar. The 37° flare flange jointing method is suitable for high pressure piping systems in a wide range of different materials ranging from carbon steel to tungum.



	SAE 50	SAE 3000	SAE 6000	ISO 6164
pressure [bar]	50	210 – 350	420	350–400
vacuum pressure [mbar]	170 mbar			
temperature [°C]	-40 °C - +200 °C			
size, pipe	50x3 – 273x6	16x2 – 90x5	16x2 – 90x9	50x5 – 115x15
size, flange	1 1/2" – 10"	1/2" – 3"	1/2" – 3"	1 1/2" – 4"
material, pipe	carbon steel, galvanised steel, copper-nickel, aluminium/brass duplex, super duplex, titanium, tungum (materials having elongation above 20%)			
material, flange	electric zinc coated carbon steel, hot dip galvanized carbon steel, stainless steel			
material, seal	NBR, FPM (Viton®)			

90° Flare Flange System

The 90° flare flange system is used for class II piping with a maximum allowable working pressure of 20 bar. The 90° flare flange jointing method is suitable for low pressure piping systems in a wide range of different materials ranging from carbon steel to super duplex.



	SAE	ANSI/JIS/BS/DIN/COST
pressure [bar]	10 – 40	10 – 40
temperature [°C]	-10 °C - +300 °C	
size, pipe	16x1.5 – 220x6	21.3x2.1 – 608x12.5
size, flange	1/2" – 8"	1/2" – 24"
material, pipe	carbon steel, galvanised steel, copper-nickel, aluminium/brass duplex, super duplex, titanium, tungum (materials having elongation above 20%)	
material, flange	electric zinc coated carbon steel, hot dip galvanized carbon steel, stainless steel or titanium	
material, seal	based on media inside pipe (example Klinger® SIL C-4430)	

Type approvals and pressure classes

Type Approvals

GS-Hydro flange systems are type approved by the following classification companies:

Institute		37° Flaring 50–420 bar	Retain Ring 50–420 bar	Retain Ring 690 bar	90° Flaring 10–40 bar
DNV GL	DNV GL Group	x	x	x	x
LR	Lloyds Register MEA	x	x		x
ABS	American Bureau of Shipping	x	x		x
BV	Bureau Veritas	x	x		x
RINA	Registro Italiano Navale	x	x		x
RS	Russian Maritime Register of Shipping	x	x		x
NKK	Nippon Kaiji Kyokai	x	x		x
CCS	China Classification Society	x	x		x
KR	Korean Register	x	x		x

GS-pressure classes

GS-Hydro’s flange systems are divided into pressure classes. The pressure class is selected based on the working pressure of the piping system. Each pressure class contains then all the GS-components needed for the piping system with that specific working pressure.

- 10–40 bar 90° flare flanges and sealings
- SAE 50 bar SAE-dimensioned low pressure piping components for 37° flaring and retain ring connection
- SAE 3000 psi Components for metric pipes and connection components for schedule series pipes according to SAE-standard J518C code 61
- SAE 6000 psi Components for metric pipes and connection components for schedule series pipes according to SAE-standard J518C code 62
- 350–400 bar Components for metric pipes and connection components for schedule series pipes according to ISO 6164 standard
- SAE 10000 psi Components for schedule series pipes drilled to SAE-standard J518C code 62



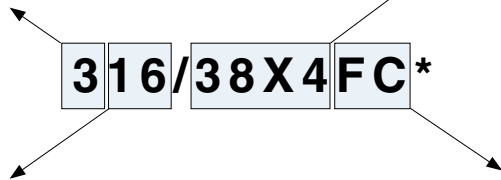
GS-code key – 37° flare flange connection

Part No

Flange Code	Face Type	Pressure	Size
1	ISO 6162-1	50 bar	1 1/2" – 5"
1/2	round	50 bar	6" – 10"
3	ISO 6162-1	210 bar (3000 psi)	1/2" – 3"
6	ISO 6162-2	420 bar (6000 psi)	1/2" – 3"

Pipe Size

38X4
Pipe O.D. x wall thickness [mm]



*) 316/38X4FC includes:
 316F 1 pc
 16/38X4FC 1 pc
 1629 1 pc
 OR30X1.0 1 pc

GS-size code

08	12	16	20	24	32	40
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
48	56	60	64	80	96	28
3"	3 1/2"	3 3/4"	4"	5"	6"	8"

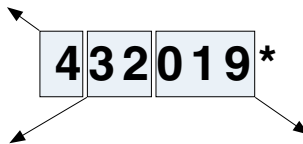
Insert Cone Code

Insert Cone Code	Sealing Surface
FA	O-ring groove
FB	Flat face
FC	Bonded seal groove
FD	Straight coupling

GS-code key – retain ring flange connection

Part No

Flange Code	Face Type	Pressure	Size
1	ISO 6162-1	50 bar	1 1/2" – 5"
1/2	round	50 bar	6" – 10"
3	ISO 6162-1	210 bar (3000 psi)	1/2" – 3"
4	ISO 6164	400 bar	2" – 4"
6	ISO 6162-2	420 bar (6000 psi)	1/2" – 3"
8	round	210–350 bar	4 1/2" – 14"
9	ISO 6162-2	690 bar (10000 psi)	1/2" – 3" (8")



*) 432019 includes:
 432 2 pcs
 32019 1 pc
 32 2 pcs
 3219 2 pc

GS-size code

08	12	16	20	24	32	40
1/2"	3/4"	1"	1 1/4"	1 1/2"	2"	2 1/2"
48	56	60	64	80	96	160
3"	4"	4 1/2"	5"	6"	8"	10"
224/323.9	224/355.6					
12"	14"					

Designation

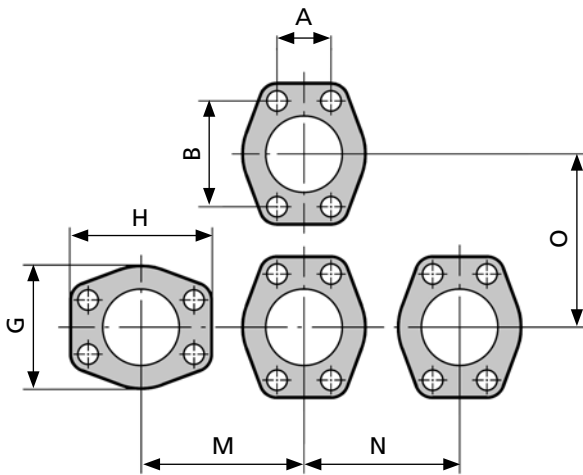
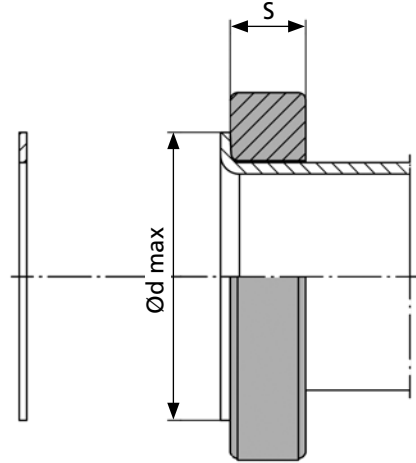
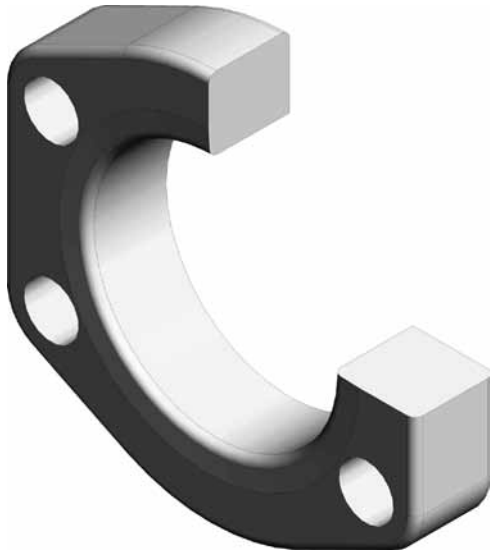
001 Flange for welding	022 Hose insert, 45°
002 Flange for welding	035 Tee between (BSP 1/4")
003 Flange for welding	036 Tee between (BSP 1/2")
004 Flange for welding	037 Tee between (BSP 3/4")
005 Flange for welding	082 Flange for welding
006 Flange for welding	083 Flange for welding
007 Flange for welding	084 Flange for welding
008 Flange for welding	085 Flange for welding
009 Flange for welding	086 Flange for welding
010 Flange for welding	099 Adaptor
011 Flange for welding	113 Female thread flange (NPT)
013 Female thread flange (BSP)	114 Male thread flange (NPT)
014 Male thread flange (BSP)	115 Elbow block
015 Elbow flange	116 Tee block
016 Tee flange	125 Blind flange
018 Flange bend	129 Ball valve flange
019 Bulkhead flange	135 Non-return valve
020 Hose insert, straight	150 Tailstock
021 Hose insert, 90°	214 Male thread flange (UNF)



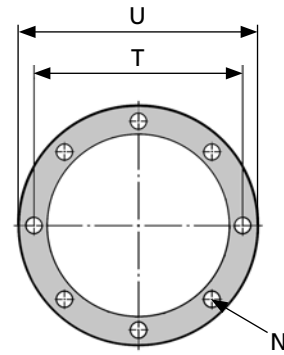
GS-90° Flare flanges – Drilled to SAE J 518 Code 61	8
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GS-90 Flared flange – 16 bar

Drilled to ISO 6162-1 (SAE J 518 Code 61)



308N–180N



196N–228N

Port dimensions for flange connections according to ISO 6162-1.

Size	Pipe O.D.	Part no	ID Code	A	B	G	H	Weight [kg]	Bolt DIN 912, 8.8	d	M	N	O	S	Gasket Part No	Gasket ID Code
1/2"	25	308N	1105002090	17,5	38,1	46	54	0,2	M8 x 55	33,0	55	51	59	20	08NG	2701299000
3/4"	30	312N	1105002100	22,2	47,6	52	66	0,2	M10 x 60	41,5	63	57	70	20	12NG	2701299200
1"	38	316N	1105002110	26,2	52,4	59	70	0,2	M10 x 65	47,3	69	64	75	20	16NG	2701299400
1 1/4"	42	320N	1105002120	30,2	58,7	73	79	0,4	M10 x 65	54,0	81	78	84	20	20NG	2701299600
1 1/2"	50	124N	1105001100	35,7	69,9	83	94	0,5	M12 x 70	65,3	93	87	99	20	24NG	2701300000
2"	60	132N	1105001110	42,9	77,8	97	102	0,7	M12 x 70	76,0	104	102	107	20	32NG	2701302000
2 1/2"	73	140N	1105001140	50,8	88,9	109	114	0,8	M12 x 70	90,0	117	114	120	20	40NG	2701303000
3"	90	148N	1105001160	61,9	106,4	131	135	1,4	M16 x 80	106,6	138	136	141	25	48NG	2701304000
4"	115	164N	1105001180	77,8	130,2	152	162	2,0	M16 x 90	135,0	162	157	168	30	64NG	2701306000
5"	140	180N	1105001190	92,1	152,4	180	184	3,2	M16 x 110	161,5	188	186	190	40	80NG	2701307000
				T	U							N				
6"	165	196N	1105001220	208,0	236,0			6,2	M16 x 100	191,5		6		40	96NG	2701308000
8"	220	228N	1105001230	275,0	317,0			11	M20 x 120	254,0		8		40	28NG	2701301000

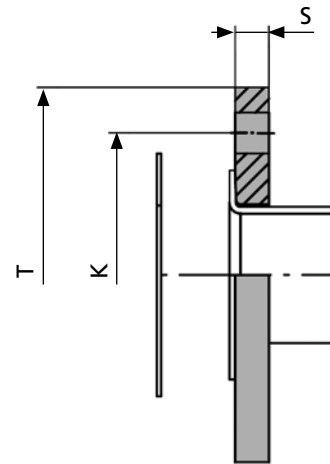
Material possibilities:
 Standard= carbon steel, zinc plated
 Carbon steel, hot dip galvanized= add HDG after Part No
 Stainless steel= add S5 after Part No
 Other materials and pipe sizes on request.

Manufacturing tolerance for flange thickness (S) ±5%.

Gasket material:
 Standard= KJ INGERSI I @ C-4430
 Other materials on request.

GS-90 Flared flange for DIN 2501

Drilled to EN 1092-1 (DIN 2501)



10-40 BAR

Size	Pipe O.D. [mm]	Part No Standard	ID Code Standard	ID Code HDG-surface	ID Code ZN-surface	PN 10/40				Weight [kg]	Gasket Part No	Gasket ID Code
						T	K	S	Bolts DIN 931			
1 1/4"	38.0	GEN-PN10/40-DN32/38	1106103100	1116103100	1106303100	140	100	18	4 x M16x60(40)	1.9	DN32PN10-40	2701401000
	42.4	GEN-PN10/40-DN32/42.4	1106103200	1116103200	1106303200	140	100	18	4 x M16x60(40)	1.8	DN32PN10-40	2701401000
1 1/2"	44.5	GEN-PN10/40-DN40/44.5	1106104000	1116104000	1106304000	150	110	18	4 x M16x60(40)	2.1	DN40PN10-40	2701402000
	48.3	GEN-PN10/40-DN40/48.3	1106104100	1116104100	1106304100	150	110	18	4 x M16x60(40)	2.0	DN40PN10-40	2701402000
2"	57.0	GEN-PN10/40-DN50/57	1106105100	1116105100	1106305100	165	125	20	4 x M16x70(45)	2.6	DN50PN10-40	2701403000
	60.3	GEN-PN10/40-DN50/60.3	1106105200	1116105200	1106305200	165	125	20	4 x M16x70(45)	2.5	DN50PN10-40	2701403000
2 1/2"	73.0	GEN-PN10/16-DN65/73	1106106000	1116106000	1106306000	185	145	20	4 x M16x70(45)	3.0	DN65PN10-40	2701404000
	76.1	GEN-PN10/16-DN65/76.1	1106106100	1116106100	1106306100	185	145	20	4 x M16x70(45)	2.9	DN65PN10-40	2701404000
	73.0	GEN-PN25/40-DN65/73	1106106200	1116106200	1106306200	185	145	22	8 x M16x70(45)	3.1	DN65PN10-40	2701404000
	76.1	GEN-PN25/40-DN65/76.1	1106106300	1116106300	1106306300	185	145	22	8 x M16x70(45)	3.0	DN65PN10-40	2701404000
3"	88.9	GEN-PN10/16-DN80/88.9	1106107000	1116107000	1106307000	200	160	20	8 x M16x70(45)	3.4	DN80PN10-40	2701405000
	88.9	GEN-PN25/40-DN80/88.9	1106107100	1116107100	1106307100	200	160	24	8 x M16x80(45)	3.5	DN80PN10-40	2701405000
4"	108.0	GEN-PN10/16-DN100/108	1106108000	1116108000	1106308000	220	180	22	8 x M16x70(45)	4.7	DN100PN10-16	2701406000
	114.3	GEN-PN10/16-DN100/114.3	1106108100	1116108100	1106308100	220	180	22	8 x M16x70(45)	4.5	DN100PN10-16	2701406000
	114.3	GEN-PN25/40-DN100/114.3	1106108200	1116108200	1106308200	235	190	26	8 x M20x90(55)	5.9	DN100PN25-40	2701406200
5"	133.0	GEN-PN10/16-DN125/133	1106109000	1116109000	1106309000	250	210	22	8 x M16x80(45)	5.8	DN125PN10-16	2701407000
	139.7	GEN-PN10/16-DN125/139.7	1106109100	1116109100	1106309100	250	210	22	8 x M16x80(45)	5.5	DN125PN10-16	2701407000
	139.7	GEN-PN25/40-DN125/139.7	1106109200	1116109200	1106309200	270	220	28	8 x M24x100(65)	6.9	DN125PN25-40	2701407500
6"	159.0	GEN-PN10/16-DN150/159	1106110000	1116110000	1106310000	285	240	24	8 x M20x80(55)	7.5	DN150PN10-16	2701408000
	168.3	GEN-PN10/16-DN150/168.3	1106110100	1116110100	1106310100	285	240	24	8 x M20x80(55)	7.0	DN150PN10-16	2701408000
	168.3	GEN-PN25-40-DN150/168.3	1106110200	1116110200	1106310200	300	250	30	8 x M24x100(65)	13.9	DN150PN25-40	2701408200
8"	219.1	GEN-PN10-DN200/219.1	1106111000	1116111000	1106311000	340	295	24	8 x M20x90(60)	9.5	DN200PN10-16	2701409000
	219.1	GEN-PN16-DN200/219.1	1106111100	1116111100	1106311100	340	295	26	12 x M20x90(60)	9.2	DN200PN10-16	2701409000
	219.1	GEN-PN25-DN200/219.1	1106111200	1116111200	1106311200	360	310	32	12 x M24x110(70)	18.1	DN200PN25	2701409200
10"	273.0	GEN-PN10-DN250/273	1106112000	1116112000	1106312000	395	350	26	12 x M20x90(60)	11.1	DN250PN10	2701410000
	273.0	GEN-PN16-DN250/273	1106112100	1116112100	1106312100	405	355	29	12 x M24x100(70)	15.1	DN250PN16	2701410100
12"	323.9	GEN-PN10-DN300/323.9	1106112200	1116112200	1106312200	445	400	26	12 x M20x90(60)	12.7	DN300PN10	2701411000
	323.9	GEN-PN16-DN300/323.9	1106113000	1116113000	1106313000	460	410	32	12 x M24x110(70)	18.0	DN300PN16	2701411200
14"	355.6	GEN-PN10-DN350/355.6	1106113100	1116113100	1106313100	505	460	30	16 x M20x100(65)	26.0	DN350PN10	2701412000
	355.6	GEN-PN16-DN350/355.6	1106113200	1116113200	1106313200	520	470	35	16 x M24x120(75)	28.7	DN350PN16	2701412200
16"	406.4	GEN-PN10-DN400/406.4	1106114000	1116114000	1106314000	565	515	32	16 x M24x110(70)	35.2	DN400PN10	2701413000
	406.4	GEN-PN16-DN400/406.4	1106114100	1116114100	1106314100	580	525	38	16 x M27x130(80)	38.6	DN400PN16	2701413200

Part numbers for three different surface treatment (others on request):
 - Standard – plain metal without coating
 - HDG – hot dip galvanized (add HDG after Part No)
 - ZN – electric zined (add ZN after Part No)
 Component material: Carbon steel S235, other materials on request.

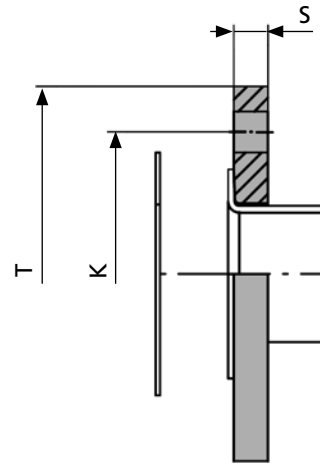
Manufacturing tolerance for flange thickness (S) ±5%.

L= flange to flange (L)= flange to block

Gasket material: Standard= KLINGERSIL® C-430 Other materials on request.

GS-90 Flared flange for ANSI Class 150 psi

Drilled to ANSI B 16.5



Size	Pipe O.D. [mm]	Part No	ID Code	ANSI Class 150 psi Flanges				Weight [kg]	Gasket Part No	Gasket ID Code
				T	K	S	Stud bolts			
1/2"	16.0	GS-CLASS150-NPS15/16HDG	1119001000	90	60.3	11.2	4 x 1/2" x 55 mm	0.4	CLASS150NPS15	2701471000
	21.3	GS-CLASS150-NPS15/21.3HDG	1119001100	90	60.3	11.2	4 x 1/2" x 55 mm	0.4	CLASS150NPS15	2701471000
3/4"	25.0	GS-CLASS150-NPS20/25HDG	1119002000	100	69.9	12.7	4 x 1/2" x 65 mm	0.7	CLASS150NPS20	2701471200
	26.7	GS-CLASS150-NPS20/26.7HDG	1119002100	100	69.9	12.7	4 x 1/2" x 65 mm	0.7	CLASS150NPS20	2701471200
1"	30.0	GS-CLASS150-NPS25/30HDG	1119003000	110	79.4	14.3	4 x 1/2" x 65 mm	0.8	CLASS150NPS25	2701471400
	33.4	GS-CLASS150-NPS25/33.4HDG	1119003100	110	79.4	14.3	4 x 1/2" x 65 mm	0.8	CLASS150NPS25	2701471400
1 1/4"	38.0	GS-CLASS150-NPS32/38HDG	1119004000	115	88.9	15.9	4 x 1/2" x 70 mm	1.1	CLASS150NPS32	2701471600
	42.2	GS-CLASS150-NPS32/42.2HDG	1119004100	115	88.9	15.9	4 x 1/2" x 70 mm	1.1	CLASS150NPS32	2701471600
1 1/2"	44.5	GS-CLASS150-NPS40/44.5HDG	1119005000	125	98.4	17.5	4 x 1/2" x 70 mm	1.4	CLASS150NPS40	2701471800
	48.3	GS-CLASS150-NPS40/48.3HDG	1119005100	125	98.4	17.5	4 x 1/2" x 70 mm	1.4	CLASS150NPS40	2701471800
2"	57.0	GS-CLASS150-NPS50/57HDG	1119006000	150	120.7	19.1	4 x 5/8" x 85 mm	2.2	CLASS150NPS50	2701472000
	60.3	GS-CLASS150-NPS50/60.3HDG	1119006100	150	120.7	19.1	4 x 5/8" x 85 mm	2.2	CLASS150NPS50	2701472000
2 1/2"	73.0	GS-CLASS150-NPS65/73HDG	1119007000	180	139.7	22.3	4 x 5/8" x 90 mm	3.6	CLASS150NPS65	2701472200
	76.1	GS-CLASS150-NPS65/76.1HDG	1119007100	180	139.7	22.3	4 x 5/8" x 90 mm	3.6	CLASS150NPS65	2701472200
3"	88.9	GS-CLASS150-NPS80/88.9HDG	1119008000	190	152.4	23.9	4 x 5/8" x 90 mm	4.1	CLASS150NPS80	2701472400
4"	108.0	GS-CLASS150-NPS100/108HDG	1119009000	230	190.5	23.9	4 x 5/8" x 90 mm	5.6	CLASS150NPS100	2701472600
	114.3	GS-CLASS150-NPS100/114.3HDG	1119009100	230	190.5	23.9	4 x 5/8" x 90 mm	5.6	CLASS150NPS100	2701472600
5"	139.7	GS-CLASS150-NPS125/139.7HDG	1119010000	255	215.9	23.9	8 x 3/4" x 95 mm	6.3	CLASS150NPS125	2701472800
	141.3	GS-CLASS150-NPS125/141.3HDG	1119010100	255	215.9	23.9	8 x 3/4" x 95 mm	6.3	CLASS150NPS125	2701472800
6"	159.0	GS-CLASS150-NPS150/159HDG	1119011000	280	241.3	25.4	8 x 3/4" x 100 mm	7.5	CLASS150NPS150	2701473000
	168.3	GS-CLASS150-NPS150/168.3HDG	1119011100	280	241.3	25.4	8 x 3/4" x 100 mm	7.5	CLASS150NPS150	2701473000
8"	219.1	GS-CLASS150-NPS200/219.1HDG	1119012000	345	298.5	28.6	8 x 3/4" x 110 mm	12.6	CLASS150NPS200	2701473200
10"	267.0	GS-CLASS150-NPS250/267HDG	1119013000	405	362.0	30.2	12 x 7/8" x 115 mm	18.5	CLASS150NPS250	2701473400
	273.0	GS-CLASS150-NPS250/273HDG	1119013100	405	362.0	30.2	12 x 7/8" x 115 mm	18.5	CLASS150NPS250	2701473400
12"	323.9	GS-CLASS150-NPS300/323.9HDG	1119014000	485	431.8	31.8	12 x 7/8" x 120 mm	28.0	CLASS150NPS300	2701473600
14"	355.6	GS-CLASS150-NPS350/355.6HDG	1119015000	535	476.3	35.0	12 x 1" x 135 mm	36.0	CLASS150NPS350	2701473800
	368	GS-CLASS150-NPS350/368HDG	1119015100	535	476.3	35.0	12 x 1" x 135 mm	36.0	CLASS150NPS350	2701473800
16"	406.4	GS-CLASS150-NPS400/406.4HDG	1119016000	595	539.8	36.6	16 x 1" x 135 mm	46.0	CLASS150NPS400	2701474000
	419.0	GS-CLASS150-NPS400/419HDG	1119016100	595	539.8	36.6	16 x 1" x 135 mm	46.0	CLASS150NPS400	2701474000

Component material:
 - Carbon steel S235, other materials on request.
 Surface treatment:
 - Hot dip galvanized, others on request

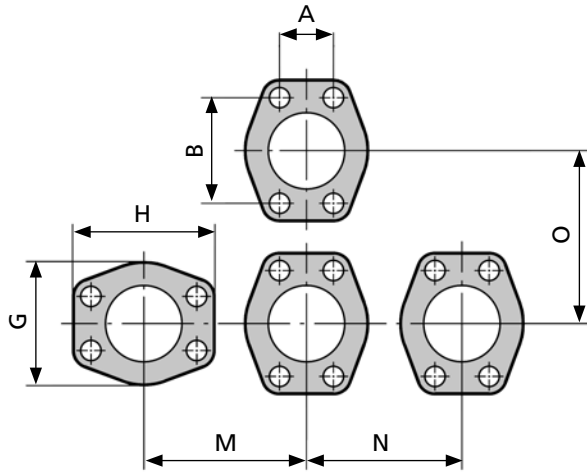
Manufacturing tolerance for
 flange thickness (S) ±5%.

Gasket material:
 Standard= KLINGERSIL® C-4430
 Other materials on request.

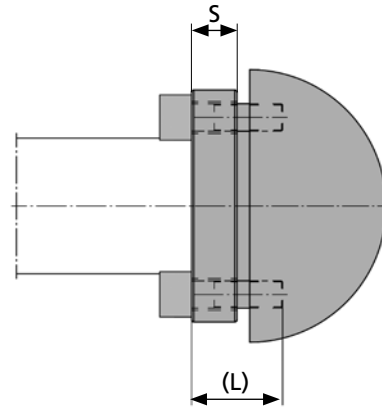
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Flange dimensions

Drilled to ISO 6162-1 (SAE J 518 Code 61)

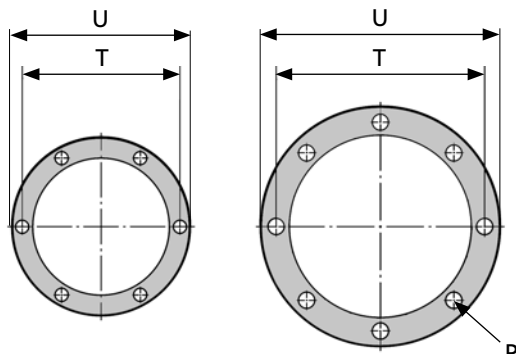


124–180

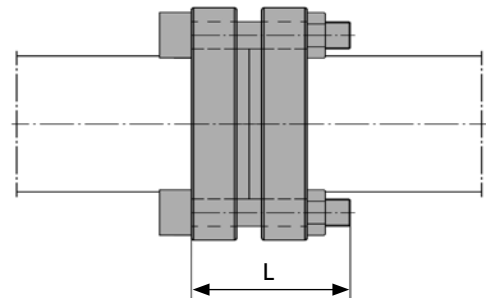


Flange to block

Port dimensions for flange connections according to ISO 6162-1.



196–292



Flange to flange

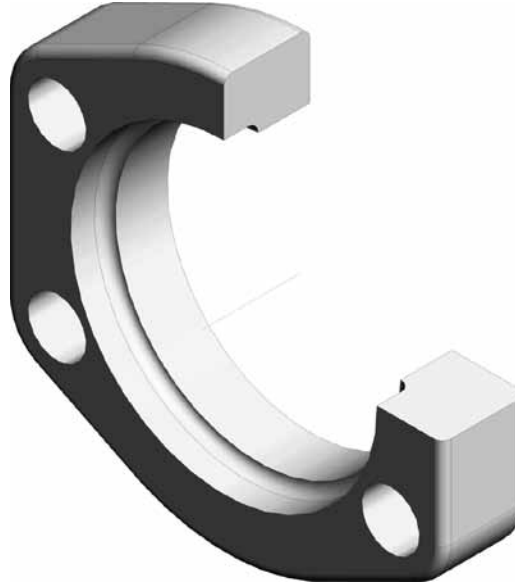
Size	GS-flange type	A	B	G	H	M	N	O	P	T	U	S	Bolt L DIN 912, 8.8	W.P. [bar]
1 1/2"	124	35.7	69.9	83	94	93	87	99	4			20	M12x70(40)	50
2"	132	42.9	77.8	97	102	104	102	107	4			20	M12x70(40)	50
2 1/2"	140	50.8	88.9	109	114	117	114	120	4			20	M12x70(40)	50
3"	148	61.9	106.4	131	135	138	136	141	4			25	M16x80(50)	50
4"	164	77.8	130.2	152	162	162	157	168	4			30	M16x90(50)	50
5"	180	92.1	152.4	180	184	188	186	190	4			40	M16x120(60)	50
6"	196								6	208	236	40	M16x110(60)	50
8"	228								8	275	317	40	M20x120(70)	50
10"	260								8	345	410	50	M20x140(80)	50
12"	292								12	400	470	65	M24x180(110)	50

Manufacturing tolerance for flange thickness (S) ±5%.

L= flange to flange
(L)= flange to block

Retain ring flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



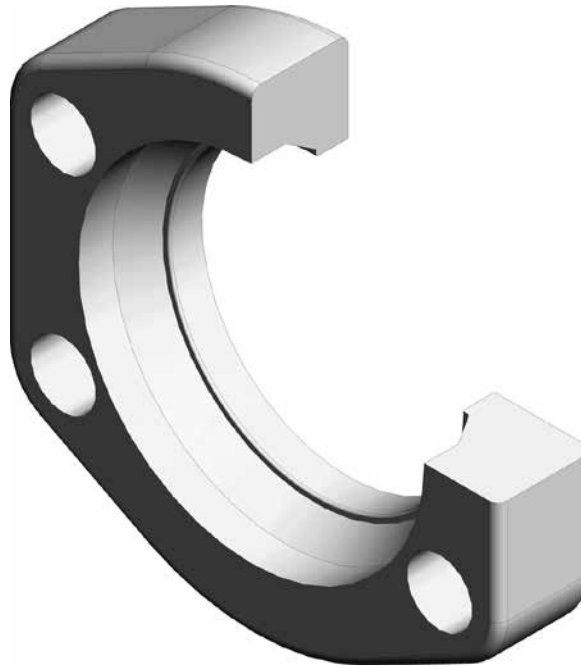
SAE 50 BAR

Size	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1 1/2"	124	1101000100	124HDG	1111009000	124SS	1201000100	50	0.43
2"	132	1101030000	132HDG	1111039000	132SS	1201030000	50	0.59
2 1/2"	140	1101060000	140HDG	1111069000	140SS	1201060000	50	0.71
3"	148	1101090000	148HDG	1111099000	148SS	1201090000	50	1.12
4"	164	1101150000	164HDG	1111159000	164SS	1201150000	50	1.53
5"	180	1101180000	180HDG	1111189000	180SS	1201156000	50	2.63
6"	196	1101210000	196HDG	1111219000	196SS	1201210000	50	4.39
8"	228	1101240000	228HDG	1111220100	228SS	1201240000	50	8.98
10"	260	1101270000	260HDG	1111220300	260SS	1201270000	50	23.4

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Flare flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)

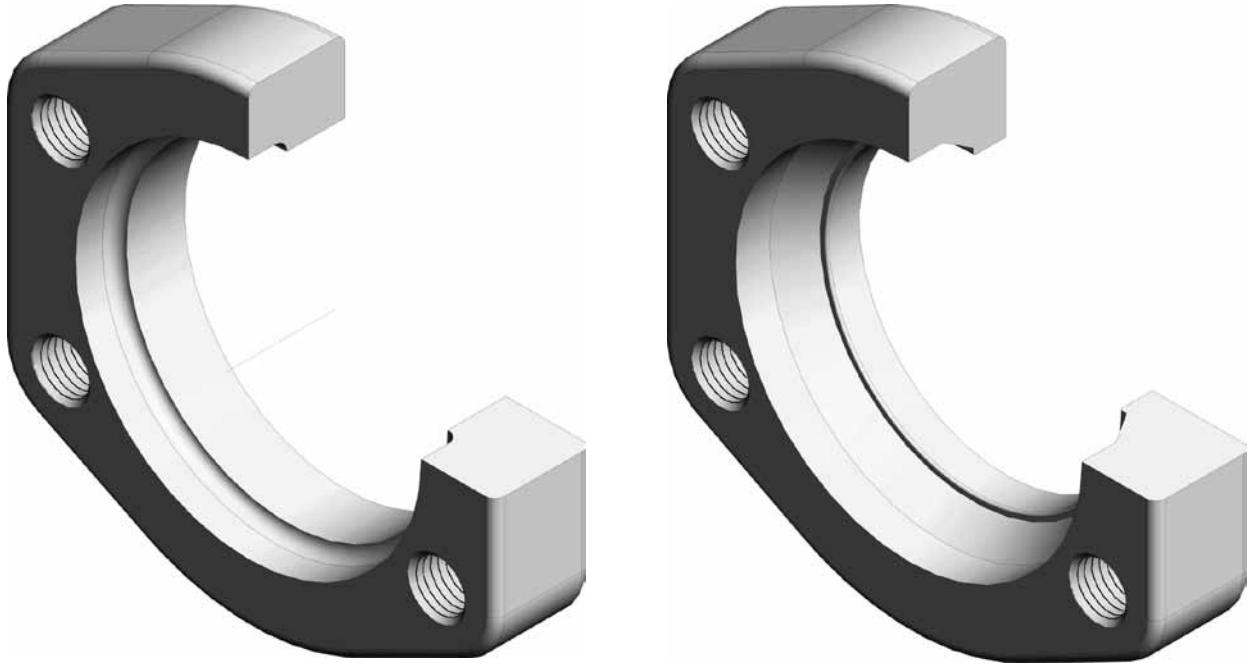


Size	Pipe O.D. [mm]	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1 1/2"	50	124F	1101003000	124FHDG	1111006000	124FSS	1201003000	50	0.43
2"	60	132F	1101033000	132FHDG	1111036000	132FSS	1201033000	50	0.59
2 1/2"	73	140F	1101065000	140FHDG	1111066500	140FSS	1201064000	50	0.71
3"	90	148F	1101093000	148FHDG	1111096000	148FSS	1201093000	50	1.12
4"	115	164F	1101153000	164FHDG	1111156000	164FSS	1201153000	50	1.53
5"	140	180F	1101183000	180FHDG	1111186000	180FSS	1201183000	50	2.63
6"	165	196F	1101213000	196FHDG	1111216000	196FSS	1201213000	50	4.39
8"	220	228F	1101243000	228FHDG	1111220000	228FSS	1201243000	50	8.98
10"	273	260F	1101273000	260FHDG	1111220200	260FSS	1201273000	50	23.4
12"	323.9	292F	1101283020	292FHDG	1111220420	292FSS	1201273570	50	40.2

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Counter flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

Retain ring flange

Size	Part No	ID Code	Bolt	Weight [kg]
1 1/2"	124/M12	1101001000	M12x40	0.43
2"	132/M12	1101031000	M12x40	0.59
2 1/2"	140/M12	1101061000	M12x40	0.71
3"	148/M16	1101091000	M16x50	1.12

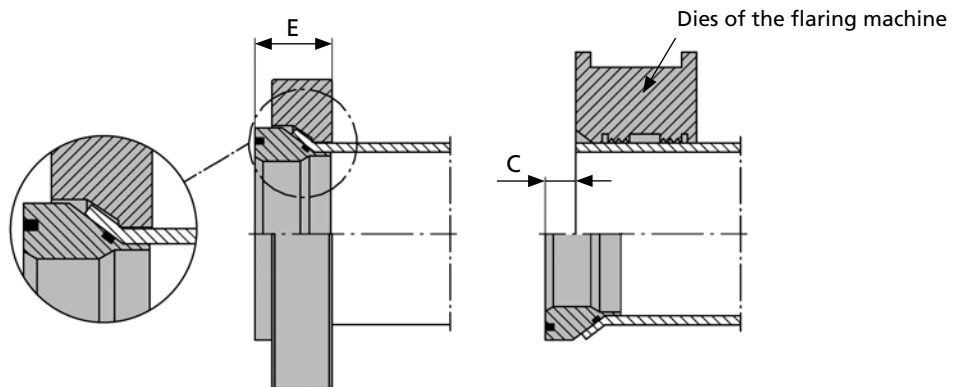
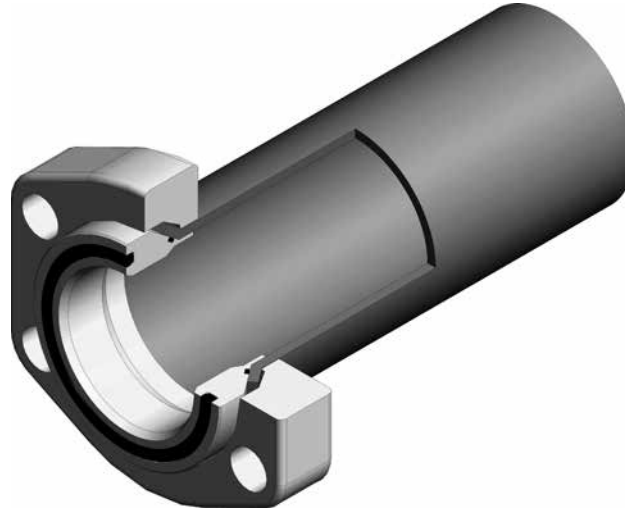
Flare flange

Size	Part No	ID Code	Bolt	Weight [kg]
1 1/2"	124F/M12	1101004000	M12x40	0.43
2"	132F/M12	1101034000	M12x40	0.59
2 1/2"	140F/M12	1101064000	M12x40	0.71
3"	148F/M16	1101094000	M16x50	1.12

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Flare flange connection – Type A

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
124/50X3FA includes:
 124F 1 pc
 24/50X3FA 1 pc
 OR47.22X3.53 1 pc
 OR41X1.78 1 pc

Size	Pipe Size	Complete Part No	Complete ID Code	C	E	Weight [kg]	Insert Part No	Insert ID Code	O-Ring Part No	O-Ring 2 Part No
1 1/2"	50x3	124/50X3FA	1402200000	13	28	0.68	24/50X3FA*	1401038880	OR47.22X3.53	OR41X1.78
2"	60x3	132/60X3FA	1402201000	13	27	0.91	32/60X3FA*	1401041880	OR56.75X3.53	OR52.5X1.78
2 1/2"	73x3	140/73X3FA	1402201500	12	25	1.00	40/73X3FA*	1401045402	OR69.44X3.53	OR66.4X1.78
3"	90x3.5	148/90X3.5FA	1402203000	16	30	1.59	48/90X3.5FA*	1401048500	OR85.32X3.53	OR82.27X1.78
4"	115x4	164/115X4FA	1402205000	16	36	2.46	L64/115X4FA	1402014000	OR110.72X3.53	OR107.67X1.78
5"	140x4.5	180/140X4.5FA	1402206000	17	47	3.90	L80/140X4.5FA	1402016500	OR136.12X3.53	OR126.67X2.62
6"	165x5	196/165X5FA	1402207000	16	42	6.55	L96/165X5FA	1402018000	OR158.34X3.53	OR152.07X2.62
8"	220x6	228/220X6FA	1402208000	20	48	12.7	L28/220X6FA	1402004000	OR219.3X5.7	OR209.22X2.62
10"	273x6	260/273X6FA	1402209000	18	58	26.1	L60/273X6FA	1402012000	OR269.3X5.7	OR247.32X2.62
12"	323.9x7.1	292/323.9X7.1FA	1402209800	24	77	45.7	L92/323.9X7.1FA	1402017500	OR319.3X5.7	OR304.39X3.53

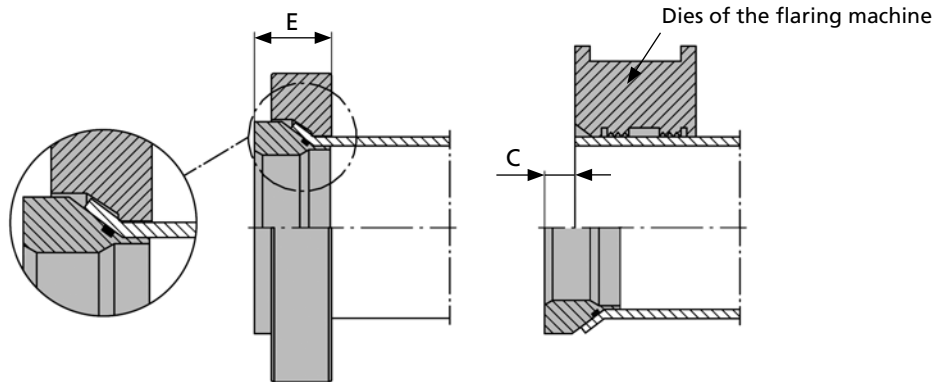
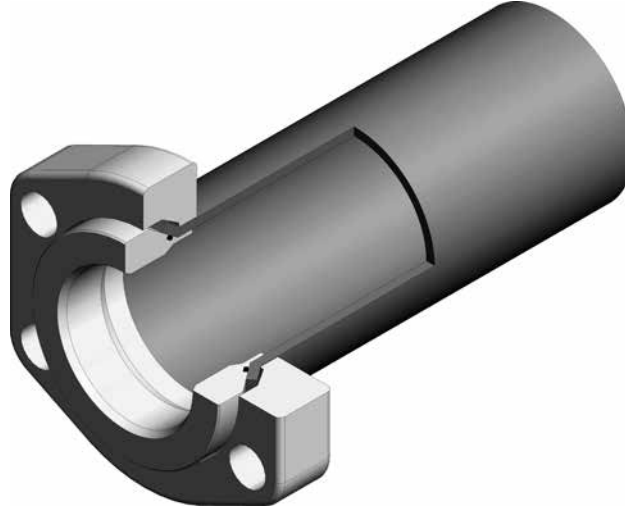
Material possibilities page 168.
 Please check the working pressure rating of the pipe.
 Flare flange connection components for ANSI 36.10/36.19 pipes are available by request.
 Please contact your local GSH dealer.

*) Insert cone could also be used in high pressure connection

Flanges page 14
 O-rings page 32

Flare flange connection – Type B

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
124/50X3FB includes:
 124F 1 pc
 24/50X3FB 1 pc
 OR41X1.78 1 pc

Size	Pipe Size*	Complete Part No	Complete ID Code	C	E	Weight [kg]	Insert Part No	Insert ID Code	O-Ring 2 Part No
1 1/2"	50x3	124/50X3FB	1402200100	13	28	0.68	24/50X3FB*	1401038890	OR41X1.78
2"	60x3	132/60X3FB	1402201100	13	27	0.91	32/60X3FB*	1401041890	OR52.5X1.78
2 1/2"	73x3	140/73X3FB	1402201600	12	25	1.00	40/73X3FB*	1401045403	OR66.4X1.78
3"	90x3.5	148/90X3.5FB	1402203200	16	30	1.59	48/90X3.5FB*	1401048510	OR82.27X1.78
4"	115x4	164/115X4FB	1402205100	16	36	2.46	L64/115X4FB	1402014100	OR107.67X1.78
5"	140x4.5	180/140X4.5FB	1402206100	17	47	3.90	L80/140X4.5FB	1402016600	OR126.67X2.62
6"	165x5	196/165X5FB	1402207100	16	42	6.55	L96/165X5FB	1402018100	OR152.07X2.62
8"	220x6	228/220X6FB	1402208100	20	48	12.7	L28/220X6FB	1402004100	OR209.22X2.62
10"	273x6	260/273X6FB	1402209100	18	58	26.1	L60/273X6FB	1402012100	OR247.32X2.62
12"	323.9x7.1	292/323.9X7.1FB	1402209820	24	77	45.8	L92/323.9X7.1FB	1402017510	OR304.39X3.53

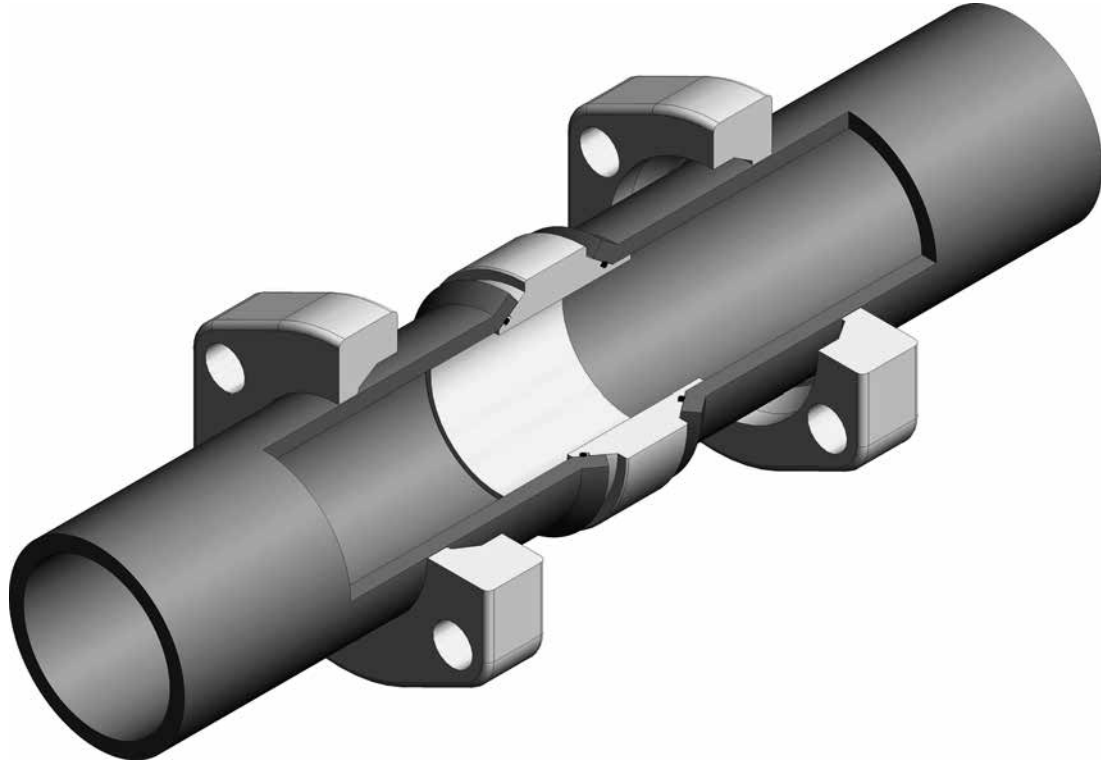
Material possibilities page 168.
 Please check the working pressure rating of the pipe.
 Flare flange connection components for ANSI 36.10/36.19 pipes are available by request.
 Please contact your local GSH dealer.

*) Insert cone could also be used in high pressure connection

Flanges page 14
 O-rings page 32

Flare flange connection – Type D

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
124/50X3FD includes:
 124F 2 pcs
 24/50X3FD 1 pc
 OR41X1.78 2 pcs

Size	Pipe Size*	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	Insert ID Code	O-Ring 2 Part No
1 1/2"	50x3	124/50X3FD	1402200200	1.40	24/50X3FD*	1401038910	OR41X1.78
2"	60x3	132/60X3FD	1402201200	1.73	32/60X3FD*	1401041910	OR52.5X1.78
2 1/2"	73x3	140/73X3FD	1402201800	1.98	40/73X3FD*	1401045410	OR66.4X1.78
3"	90x3.5	148/90X3.5FD	1402203400	3.22	48/90X3.5FD*	1401048530	OR82.27X1.78
4"	115x4	164/115X4FD	1402205200	5.02	L64/115X4FD	1402014300	OR107.67X1.78
5"	140x4.5	180/140X4.5FD	1402206200	7.86	L80/140X4.5FD	1402016700	OR126.67X2.62
6"	165x5	196/165X5FD	1402207300	13.5	L96/165X5FD	1402018200	OR152.07X2.62
8"	220x6	228/220X6FD	1402208300	25.4	L28/220X6FD	1402004200	OR209.22X2.62
10"	273x6	260/273X6FD	1402209300	54.7	L60/273X6FD	1402012400	OR247.32X2.62
12"	323.9x7.1	292/323.9X7.1FD	1402209840	91.8	L92/323.9X7.1FD	1402017520	OR304.39X3.53

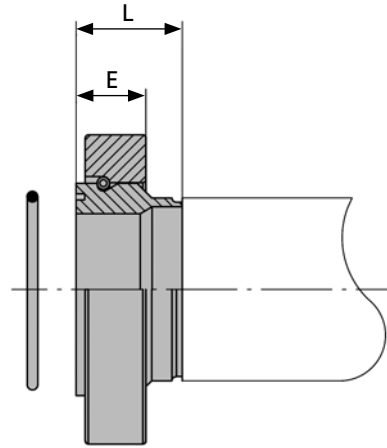
Material possibilities page 168.
 Please check the working pressure rating of the pipe.
 Flare flange connection components for ANSI 36.10/36.19 pipes are available by request.
 Please contact your local GSH dealer.

*) Insert cone could also be used in high pressure connection

Flanges page 14
 O-rings page 32

Flange for welding – Type A

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

Complete Part No example:

124002A includes:

124	1 pc
L24002A	1 pc
L24	1 pc
OR47.22X3.53	1 pc

Size	Pipe Size O.D.xS	Complete Part No	Complete ID Code	L	E	Weight [kg]	Body Part No	Body ID Code	O-ring Part No
1 1/2"	48.3x2.6 (50x3)	124002A	1302500100	35	23	0.75	L24002A	1302000100	OR47.22X3.53
2"	60.3x2.9 (60x3)	132002A	1302501000	35	23	0.95	L32002A	1302004200	OR56.75X3.53
2 1/2"	76.1x3.2 (75x3)	140002A	1302502200	35	23	1.16	L40002A	1302006200	OR69.44X3.53
2 1/2"	73x3	140003A	1302502450	35	23	1.16	L40003A	1302006870	OR69.44X3.53
3"	88.9x3.6 (90x3.5)	148002A	1302503200	40	28	1.80	L48002A	1302008200	OR85.32X3.53
4"	115x4.0	164001A	1302505000	40	33	2.64	L64001A	1302014000	OR110.72X3.53
4"	114.3x4.5	164002A	1302505200	40	33	2.64	L64002A	1302014200	OR110.72X3.53
5"	140x4.5	180001A	1302506000	45	44	4.24	L80001A	1302016000	OR136.12X3.53
5"	139.7x5.6	180002A	1302506200	45	44	4.24	L80002A	1302016200	OR136.12X3.53
6"	165x5.0	196001A	1302507000	50	43	7.01	L96001A	1302018000	OR158.34X3.53
6"	168.3x7.1	196002A	1302507200	50	43	7.01	L96002A	1302018200	OR158.34X3.53
8"	219.1x6.3 (220x6)	228001A	1302508000	60	46	13.5	L28001A	1302002000	OR219.3X5.7
8"	219.1x8.0	228002A	1302508200	60	46	13.5	L28002A	1302002200	OR219.3X5.7
10"	273x6.0*	260001A	1302509000	70	56	31.0	L60001A	1302012000	OR269.3X5.7

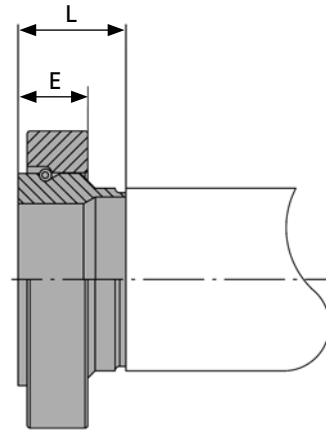
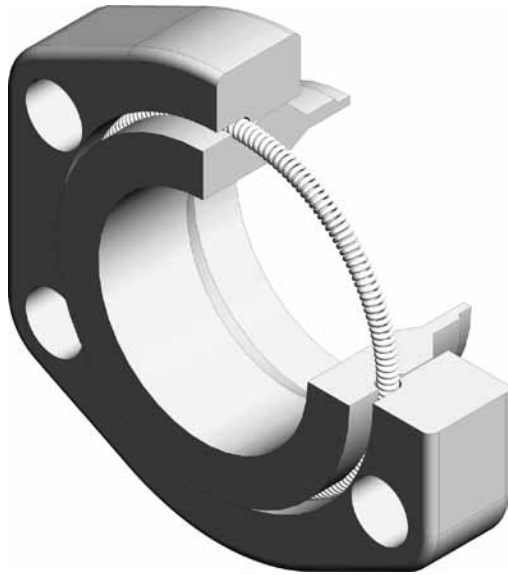
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.
 *) Maximum working pressure 49 bar.

Welding hubs for other pipe sizes on request.

Flanges page 13
 Retain rings page 31
 O-rings page 32

Flange for welding – Type B

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

124002B includes:
 124 1 pc
 L24002B 1 pc
 L24 1 pc

Size	Pipe Size O.D.xS	Complete Part No	Complete ID Code	L	E	Weight [kg]	Body Part No	Body ID Code
1 1/2"	48.3x2.6 (50x3)	124002B	1302500200	35	23	0.75	L24002B	1302000200
2"	60.3x2.9 (60x3)	132002B	1302501100	35	23	0.95	L32002B	1302004300
2 1/2"	76.1x3.2 (75x3)	140002B	1302502400	35	23	1.16	L40002B	1302006300
2 1/2"	73X3	140003B	1302502460	35	23	1.16	L40003B	1302006880
3"	88.9x3.6 (90x3.5)	148002B	1302503300	40	28	1.80	L48002B	1302008300
4"	115x4.0	164001B	1302505100	40	33	2.64	L64001B	1302014100
4"	114.3x4.5	164002B	1302505300	40	33	2.64	L64002B	1302014300
5"	140x4.5	180001B	1302506100	45	44	4.24	L80001B	1302016100
5"	139.7x5.6	180002B	1302506300	45	44	4.24	L80002B	1302016300
6"	165x5.0	196001B	1302507100	50	43	7.01	L96001B	1302018100
6"	168.3x7.1	196002B	1302507300	50	43	7.01	L96002B	1302018300
8"	219.1x6.3 (220x6)	228001B	1302508100	60	46	13.5	L28001B	1302002100
8"	219.1x8.0	228002B	1302508300	60	46	13.5	L28002B	1302002300
10"	273x6.0*	260001B	1302509200	70	56	31.0	L60001B	1302012100

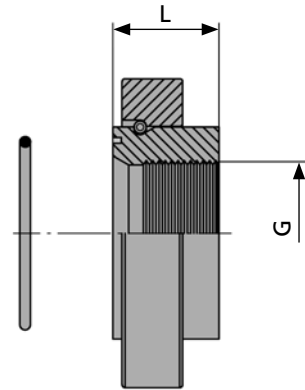
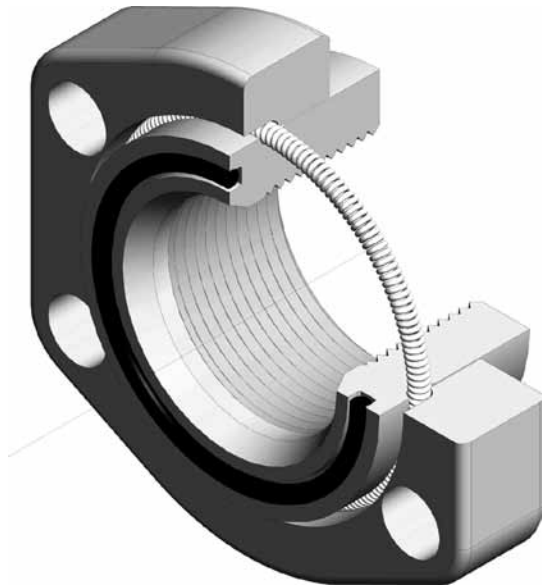
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.
 *) Maximum working pressure 49 bar.

Welding hubs for other pipe sizes on request.

Flanges page 13
 Retain rings page 31

Female thread flange, BSPP

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

Complete Part No example:

124013 includes:
 124 1 pc
 L24013 1 pc
 L24 1 pc
 OR47.22X3.53 1 pc

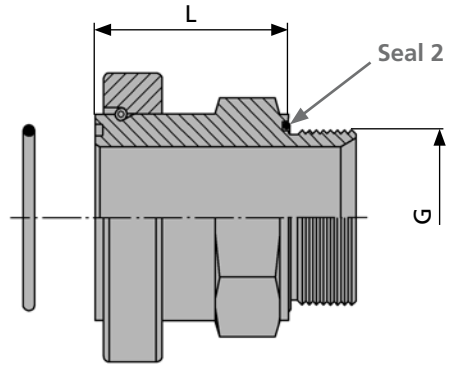
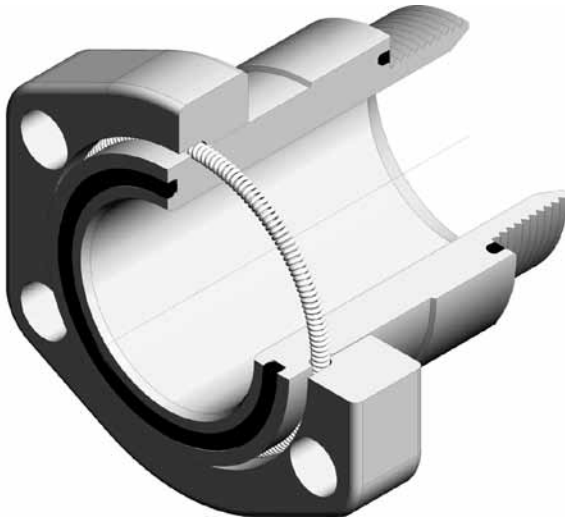
Size	Complete Part No	Complete ID Code	L	G	Weight [kg]	Body Part No	Body ID Code
1 1/2"	124013	1307002000	35	1 1/4"	0.7	L24013	1307100000
2"	132013	1307003000	35	1 1/2"	1.0	L32013	1307101000
2 1/2"	140013	1307004000	35	2"	1.3	L40013	1307102000
3"	148013	1307005000	40	2 1/2"	1.5	L48013	1307103000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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Male thread flange, BSPP

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

124014 includes:
 124 1 pc
 L24014 (Seal2 included) 1 pc
 L24 1 pc
 OR47.22X3.53 1 pc

Size	Complete Part No	Complete ID Code	L	G	Seal 2	A/F	Weight [kg]	Body Part No	Body ID Code
1 1/2"	124014	1305500000	64	1 1/2"	ED R11/2+M82X2 VI	60	1.1	L24014	1305200000
2"	132014	1305502000	66	2"	OR59.99X2.62VI	70	1.2	L32014	1305202000
2 1/2"	140014	1305504000	66	2 1/2"	OR75.87X2.62VI	85	1.5	L40014	1305204000
3"	148014	1305506000	80	3"	OR88.57X2.62VI	100	2.6	L48014	1305206000
4"	164014	1305506400	76	4"	OR117.07X3.53VI	-	4.90	L64014	1305210000

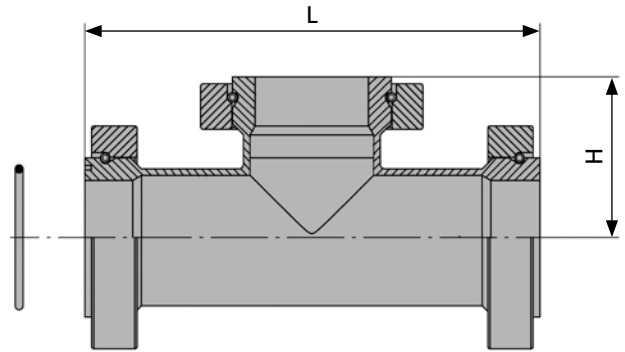
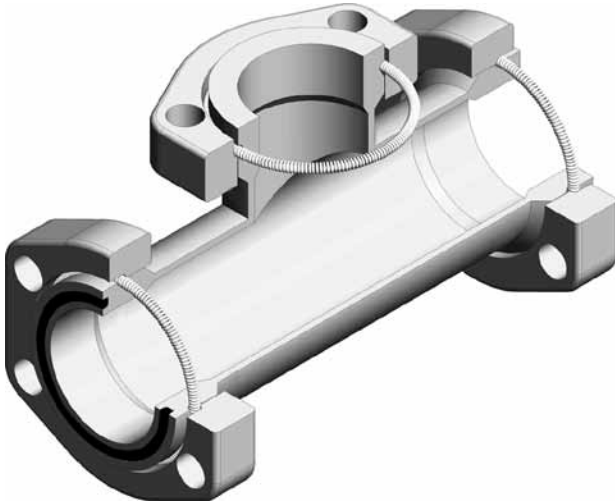
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Seal 2 material: FPM (Viton®)

Flanges page 13
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Tee flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

Please, note maximum working pressure for each component.

Complete Part No example:
124016 includes:
 124 3 pcs
 L24016 1 pc
 L24 3 pcs
 OR47.22X3.53 1 pc

Body Size	Outlet Size	Complete Part No	Complete ID Code	W.P.* [bar]	L	H	Weight [kg]	Body Part No	Body ID Code
1 1/2"		124016	1701600100	50	184	92	3.00	L24016	1701500000
2"		132016	1701602000	50	198	99	3.60	L32016	1701504000
2"	1 1/2"	132/124/132016	1701602200	50	198	95	3.40	L32/24/32016	1701504200
2 1/2"		140016	1701605000	25	222	111	4.65	L40016	1701660500
2 1/2"	2"	140/132/140016	1701605400	50	222	105	4.30	L40/32/40016	1701661000
2 1/2"	1 1/2"	140/124/140016	1701605200	50	222	102	4.10	L40/24/40016	1701661500
3"		148016	1701607000	25	252	126	7.65	L48016	1701663000
3"	2 1/2"	148/140/148016	1701607600	25	252	118	66.65	L48/40/48016	1701663500
3"	2"	148/132/148016	1701607400	50	252	111	6.30	L48/32/48016	1701664000
3"	1 1/2"	148/124/148016	1701607200	50	252	108	6.10	L48/24/48016	1701664500
4"		164016	1701611000	25	290	145	10.80	L64016	1701669000
4"	3"	164/148/164016	1701611400	25	290	138	9.75	L64/48/64016	1701670000
4"	2 1/2"	164/140/164016	1701611200	25	290	130	8.75	L64/40/64016	1701670500
5"		180016	1701613000	25	338	169	16.20	L80016	1701672000
5"	4"	180/164/180016	1701613600	25	338	157	14.40	L80/64/80016	1701672500
5"	3"	180/148/180016	1701613200	25	338	151	13.35	L80/48/80016	1701673500
6"		196016	1701615000	25	386	193	21.15	L96016	1701675000
6"	5"	196/180/196016	1701615600	25	386	182	19.50	L96/80/96016	1701675500
6"	4"	196/164/196016	1701615400	25	386	170	17.70	L96/64/96016	1701676000
8"		228016	1701617000	25	476	238	43.50	L28016	1701678000
8"	6"	228/196/228016	1701617600	25	476	218	36.05	L28/96/28016	1701678500
8"	5"	228/180/228016	1701617400	25	476	207	34.40	L28/80/28016	1701679000
8"	4"	228/164/228016	1701617200	25	476	196	32.60	L28/64/28016	1701679500

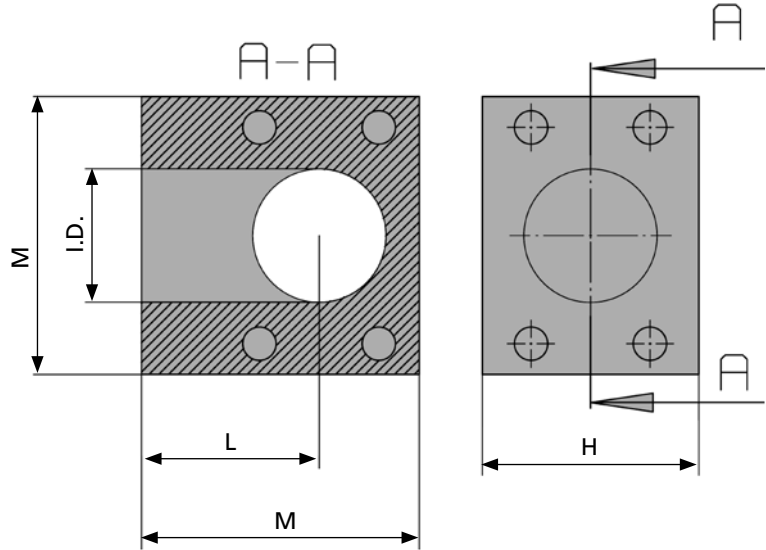
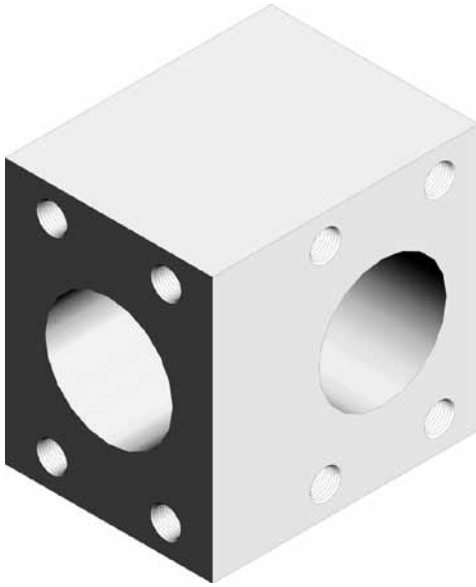
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

*) Tee flanges for W.P. 50 bar,
 please add -50 after Part No.

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Tee block

Drilled to ISO 6162-1 (SAE J 518 Code 61)

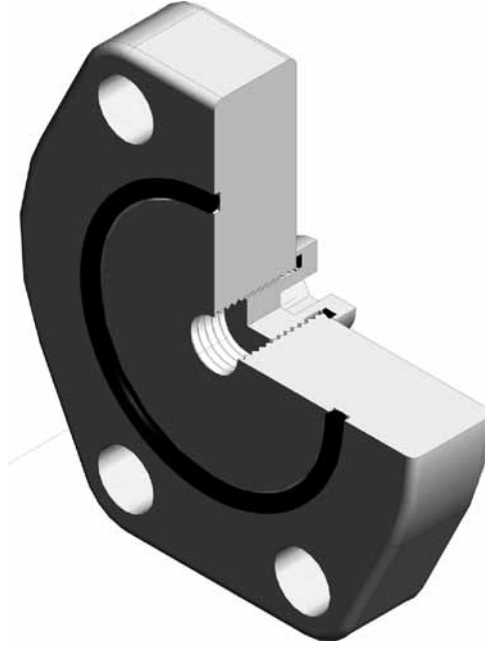


Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1 1/2"	324116	1702008000	68	59	90	38	2.96
1 1/2" – 1 1/4"	324/320/324116	1702008800	68	59	90	38/30/38	3.16
1 1/2" – 1"	324/316/324116	1702008600	68	59	90	38/23/38	3.22
2"	332116	1702010000	78	64	100	48	4.05
2" – 1 1/2"	332/324/332116	1702010600	78	64	100	48/38/48	4.26
2" – 1 1/4"	332/320/332116	1702010400	78	64	100	48/30/48	4.45
2 1/2"	340116	1702012000	88	65	110	60	5.05
2 1/2" – 2"	340/332/340116	1702012400	88	65	110	60/48/60	5.49
2 1/2" – 1 1/2"	340/324/340116	1702012200	88	65	110	60/38/60	5.60
3"	348116	1702014000	110	80	135	72	9.97
3" – 2 1/2"	348/340/348116	1702014400	110	80	135	72/60/72	10.6
3" – 2"	348/332/348116	1702014200	110	80	135	72/48/72	11.1

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Tee blocks for 50 bar are the same as SAE 3000 psi.

Blind flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

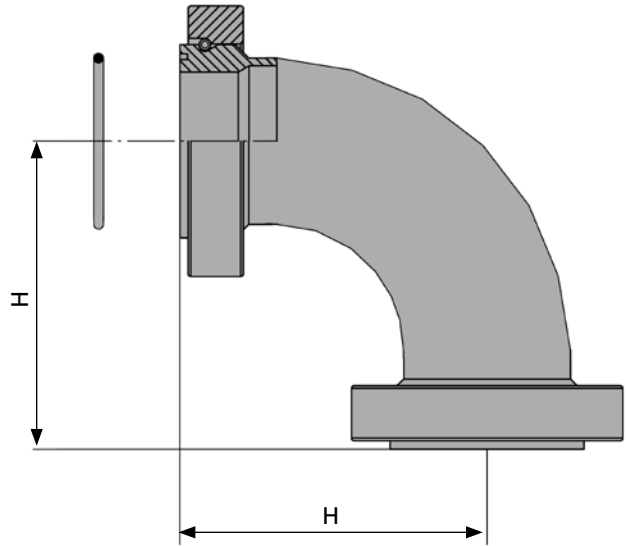
Size	Part No	ID Code	Weight [kg]
1 1/2"	124125	1910500000	0.83
2"	132125	1910500500	1.16
2 1/2"	140125	1910501000	1.50
3"	148125	1910501500	2.54
4"	164125	1910502500	4.48
5"	180125	1910503000	8.11
6"	196125	1910503500	11.5
8"	228125	1910503700	23.8

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 O-ring, ED-seal and plug included in a Part No

O-rings page 32

Flange bend

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

124018 includes:

124	2 pcs
L24018	1 pc
L24	2 pcs
OR47.22X3.53	1 pc

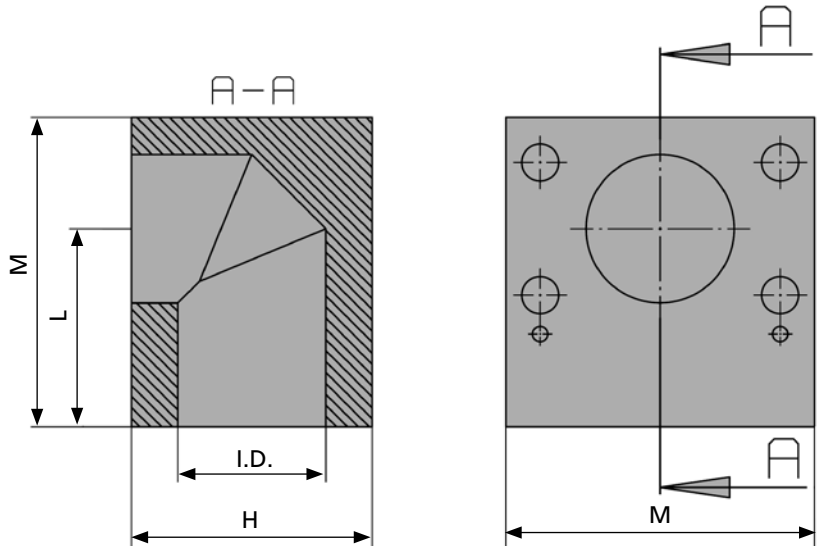
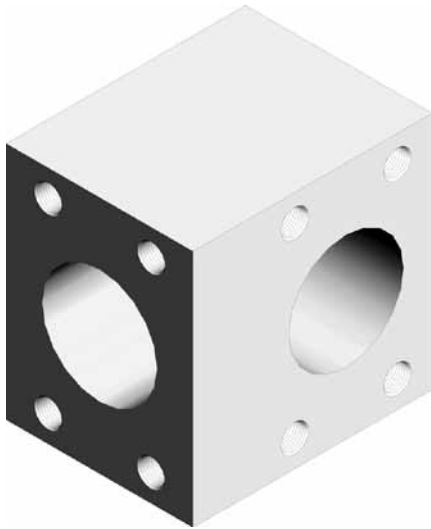
Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
1 1/2"	124018	1605000100	92	57	2.26	L24018	1605050000
2"	132018	1605000500	111	76	2.86	L32018	1605051000
2 1/2"	140018	1605001000	130	95	3.88	L40018	1605051500
3"	148018	1605001500	155	114.5	6.32	L48018	1605052000
4"	164018	1605002500	193	152.5	9.56	L64018	1605053000
5"	180018	1605003000	236	190.5	14.80	L80018	1605053500
6"	196018	1605003500	279	228.5	20.60	L96018	1605054000
8"	228018	1605004000	365	305.0	44.80	L28018	1605050500

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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Elbow block

Drilled to ISO 6162-1 (SAE J 518 Code 61)



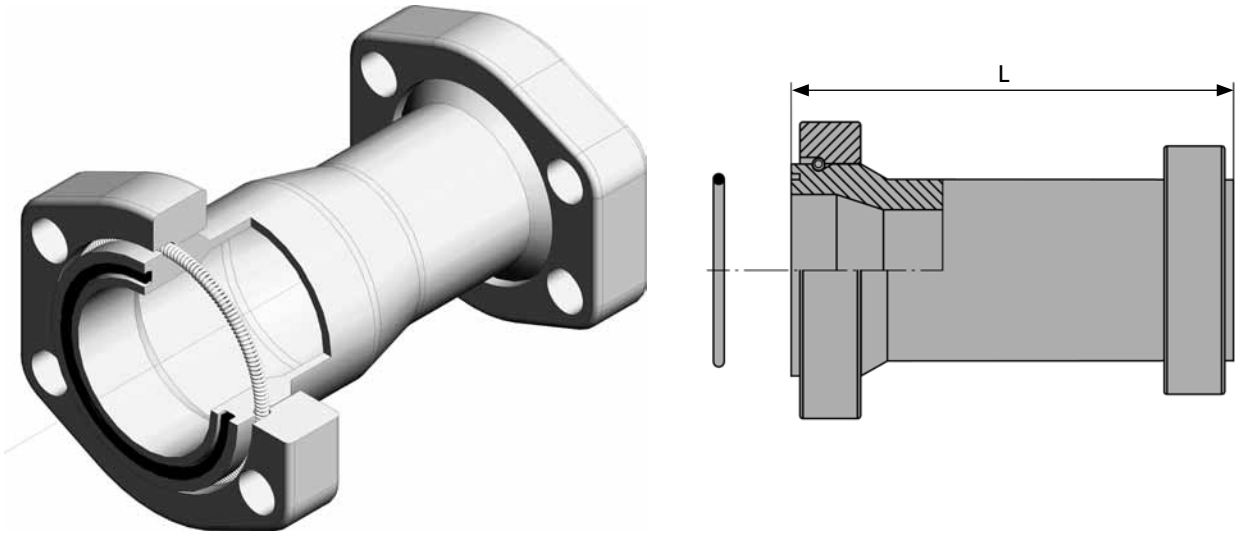
SAE 50 BAR

Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1 1/2"	324115	1603002000	68	59	90	38	3.16
2"	332115	1603002500	78	64	100	48	4.31
2 1/2"	340115	1603003000	88	65	110	60	5.45
3"	348115	1603003500	110	80	135	72	11.1

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Elbow blocks for 50 bar are the same as SAE 3000 psi.

Reducer flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

RF132-124 includes:

132	1 pc
124	1 pc
L32-24	1 pc
L32	1 pc
L24	1 pc
OR56.75X3.53	1 pc

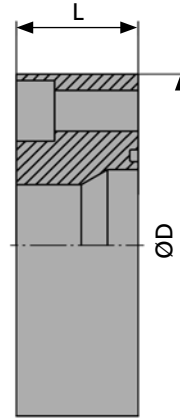
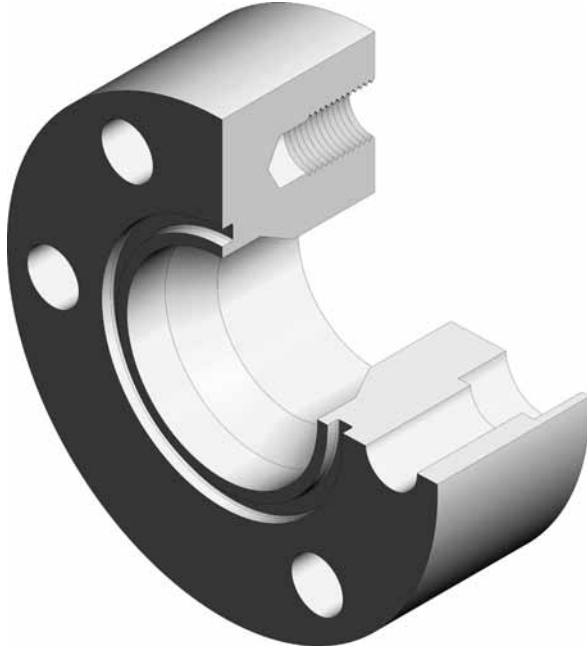
Size	Complete Part No	Complete ID Code	L	Weight [kg]	Body Part No	Body ID Code
2" – 1 1/2"	RF132-124	1501200000	146	2.51	L32-24	1501051000
2 1/2" – 1 1/2"	RF140-124	1501200700	160	3.03	L40-24	1501052000
2 1/2" – 2"	RF140-132	1501201000	160	3.23	L40-32	1501052500
3" – 1 1/2"	RF148-124	1501201500	165	3.85	L48-24	1501052800
3" – 2"	RF148-132	1501201700	165	4.36	L48-32	1501053000
3" – 2 1/2"	RF148-140	1501202000	165	4.71	L48-40	1501053500
4" – 3"	RF164-148	1501203500	180	7.14	L64-48	1501055500
5" – 4"	RF180-164	1501205000	212	10.70	L80-64	1501056500
5" – 3"	RF180-148	1501204300	212	10.20	L80-48	1501055900
6" – 4"	RF196-164	1501205500	230	13.20	L96-64	1501056900
6" – 5"	RF196-180	1501206000	235	15.00	L96-80	1501057000
8" – 5"	RF228-180	1501206500	257	23.10	L28-80	1501050000
8" – 6"	RF228-196	1501207000	262	24.80	L28-96	1501050500

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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Reducer block

Drilled to ISO 6162-1 (SAE J 518 Code 61)



SAE 50 BAR

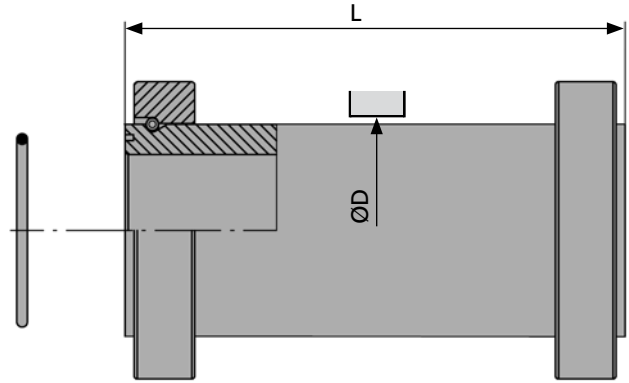
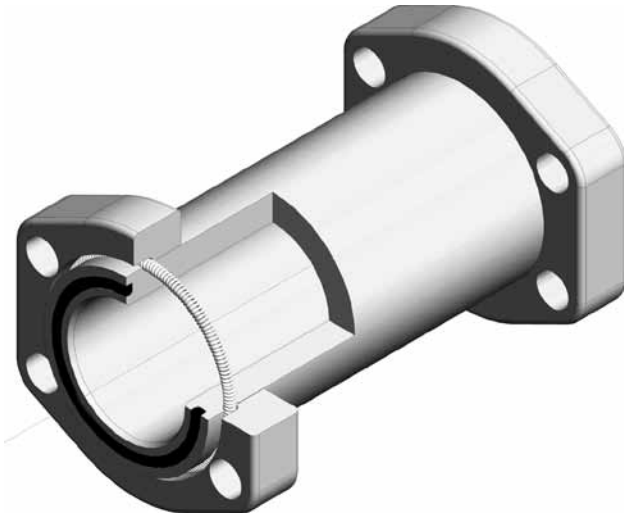
Size	Part No	ID Code	D	L	Bolt size DIN 912, 8.8	Weight [kg]
2" – 1 1/2"	RBE132-124	1502100000	113	40	M12x40	2.43
2 1/2" – 2"	RBE140-132	1502101200	128	40	M12x40	3.06
2 1/2" – 1 1/2"	RBE140-124	1502101000	128	40	M12x40	5.21
3" – 2 1/2"	RBE148-140	1502102400	158	40	M16x40	4.67
3" – 2"	RBE148-132	1502102200	158	40	M16x40	4.89
3" – 1 1/2"	RBE148-124	1502102000	158	40	M16x40	5.30
4" – 3"	RBE164-148	1502104200	185	45	M16x45	6.42
4" – 2 1/2"	RBE164-140	1502104000	185	45	M16x45	6.77
5" – 4"	RBE180-164	1502105400	211	45	M16x45	8.18
5" – 3"	RBE180-148	1502105000	211	45	M16x45	9.37
6" – 5"	RBE196-180	1502106400	242	55	M16x55	12.7
6" – 4"	RBE196-164	1502106200	242	55	M16x55	14.0
8" – 6"	RBE228-196	1502107400	320	50	M20x50	22.1
8" – 5"	RBE228-180	1502107200	320	70	M20x70	33.0
8" – 4"	RBE228-164	1502107000	320	100	M20x100	50.4

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

L= block to block

Bulkhead flange

Drilled to ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

124019 includes:

124	2 pcs
L24019	1 pc
L24	2 pcs
OR47.22X3.53	1 pc

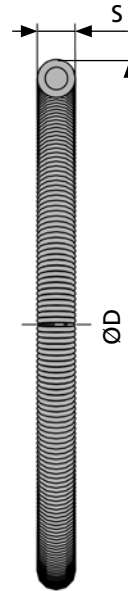
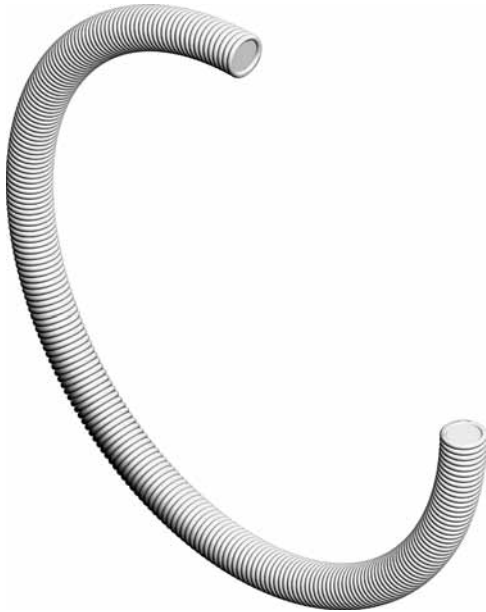
Size	Complete Part No	Complete ID Code	Required bulkhead opening ØD	L	Weight [kg]	Body Part No	Body ID Code
1 1/2"	124019	1904050000	62	165	3.8	L24019	1904001500
2"	132019	1904050500	72	165	4.5	L32019	1904002000
2 1/2"	140019	1904051000	84	175	5.45	L40019	1904002500
3"	148019	1904051500	102	200	7.8	L48019	1904003000
4"	164019	1904052500	128	200	11.7	L64019	1904004000
5"	180019	1904053000	153	200	16.4	L80019	1904004500
6"	196019	1904053500	183	215	22.9	L96019	1904005000
8"	228019	1904054000	243	240	28.0	L28019	1904450500

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.

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Retain ring

Drilled to ISO 6162-1 (SAE J 518 Code 61)



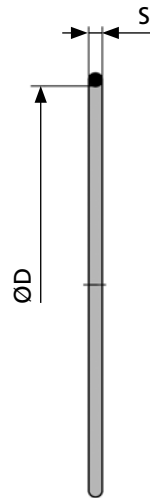
SAE 50 BAR

Size	Part No	ID Code	DxS
1 1/2"	L24	1902050050	64x4
2"	L32	1902052050	74x4
2 1/2"	L40	1902053050	85x4
3"	L48	1902054050	103x5
4"	L64	1902057050	130x5
5"	L80	1902058050	156x6
6"	L96	1902059050	186x6
8"	L28	1902051050	248x8
10"	L60	1902056050	303x8

Component material:
AISI 316, special treated.

O-ring

Drilled to ISO 6162-1 (SAE J 518 Code 61)



O-ring between flange connections

Size	GS Size	Part No	ID Code	DxS
1 1/2"	24	OR47.22X3.53	2701529000	47.22x3.53
2"	32	OR56.75X3.53	2701535000	56.75x3.53
2 1/2"	40	OR69.44X3.53	2701540000	69.44x3.53
3"	48	OR85.32X3.53	2701546000	85.32x3.53
4"	64	OR110.72X3.53	2701552000	110.72x3.53
5"	80	OR136.12X3.53	2701557000	136.12x3.53
6"	96	OR158.34X3.53	2701560000	158.34x3.53
8"	28	OR219.3X5.7	2701564000	219.3x5.70
10"	60	OR269.3X5.7	2701566000	269.3x5.70
12"	92	OR319.3X5.7	2701568520	319.3x5.7

O-ring 2 in insert cones

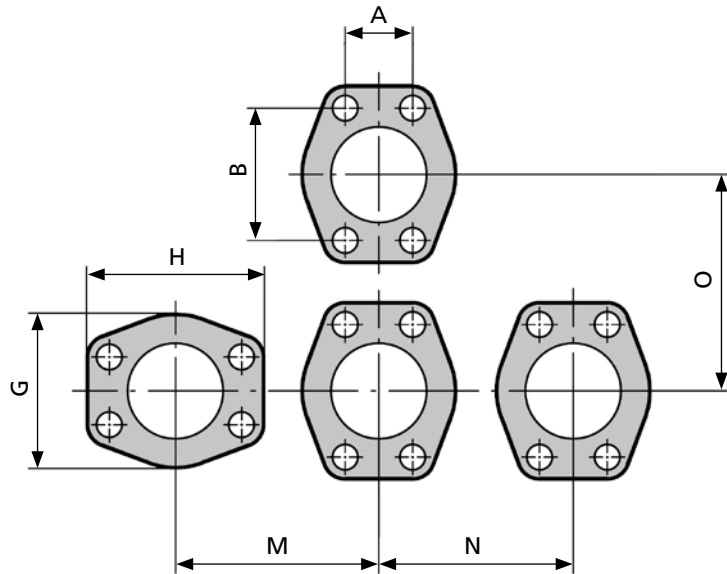
Size	GS Size	Part No	ID Code	DxS
1 1/2"	24	OR41X1.78	2701525000	41.00x1.78
2"	32	OR52.5X1.78	2701532000	52.50x1.78
2 1/2"	40	OR66.4X1.78	2701538000	66.40x1.78
3"	48	OR82.27X1.78	2701544200	82.27x1.78
4"	64	OR107.67X1.78	2701551000	107.67x1.78
5"	80	OR126.67X2.62	2701555000	126.67x2.62
6"	96	OR152.07X2.62	2701558000	152.07x2.62
8"	28	OR209.22X2.62	2701563000	209.22x2.62
10"	60	OR247.32X2.62	2701565000	247.32x2.62
12"	92	OR304.39X3.53	2701568500	304.39x3.53

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton®), Shore 90 A= add VI after Part No
 Other materials on request.

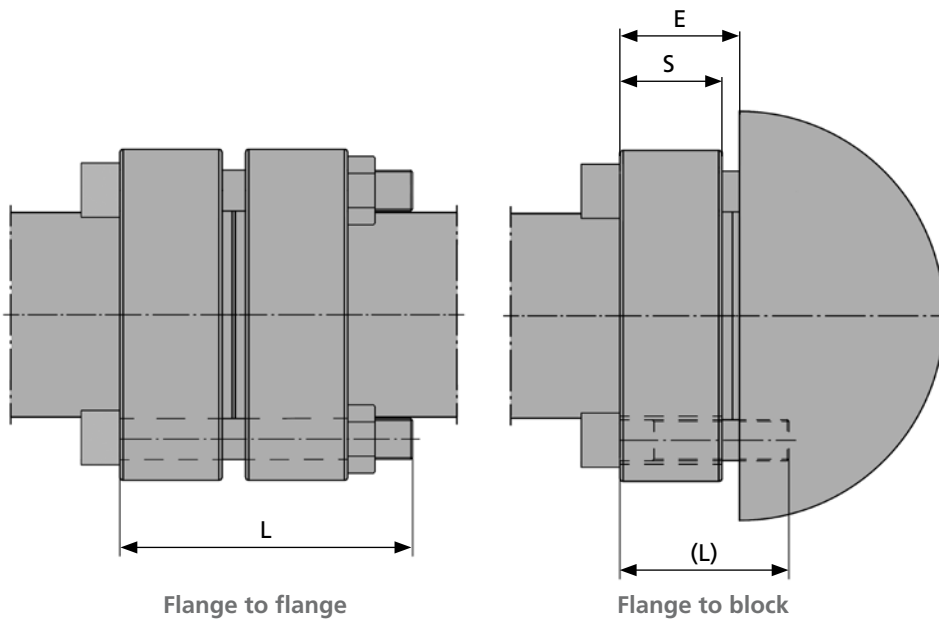
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Flange dimensions

ISO 6162-1 (SAE J 518 Code 61)



Port dimensions for flange connections according to ISO 6162-1.



Flange to flange

Flange to block

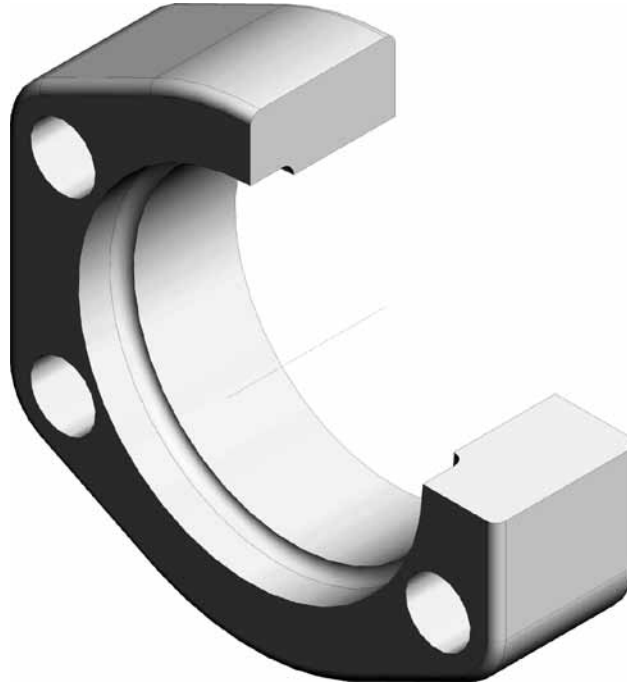
Size	GS-flange type	A	B	G	H	M	N	O	S	E	Bolt L DIN 912, 8.8	W.P. [bar]
1/2"	308	17.5	38.1	46	54	55	51	59	20	24	M8x60(35)	350
3/4"	312	22.2	47.6	52	66	63	57	70	20	24	M10x60(35)	350
1"	316	26.2	52.4	59	70	69	64	75	20	24	M10x60(35)	350
1 1/4"	320	30.2	58.7	73	79	81	78	84	20	25	M10x70(35)	280
1 1/2"	324	35.7	69.9	83	94	93	87	99	25	30	M12x80(45)	280
2"	332	42.9	77.8	97	102	104	102	107	30	35	M12x90(50)	280
2 1/2"	340	50.8	88.9	109	114	117	114	120	40	45	M12x110(60)	210
3"	348	61.9	106.4	131	135	138	136	141	50	58	M16x140(80)	210

Manufacturing tolerance for flange thickness (S) $\pm 5\%$.

L= flange to flange
(L)= flange to block

Retain ring flange

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Metric pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	26	308	1102000100	308HDG	1112009000	308SS	1202000100	350	0.17
3/4"	36	312	1102030000	312HDG	1112039000	312SS	1202030000	350	0.21
1"	39	316	1102060000	316HDG	1112069000	316SS	1202060000	350	0.27
1 1/4"	46	320	1102090000	320HDG	1112099000	320SS	1202090000	280	0.38
1 1/2"	56	324	1102120000	324HDG	1112129000	324SS	1202120000	280	0.63
2"	66	332	1102150000	332HDG	1112159000	332SS	1202150000	280	0.94
2 1/2"	80	340	1102180000	340HDG	1112183500	340SS	1202155000	210	1.51
3"	97	348	1102210000	348HDG	1112213500	348SS	1202157000	210	2.29

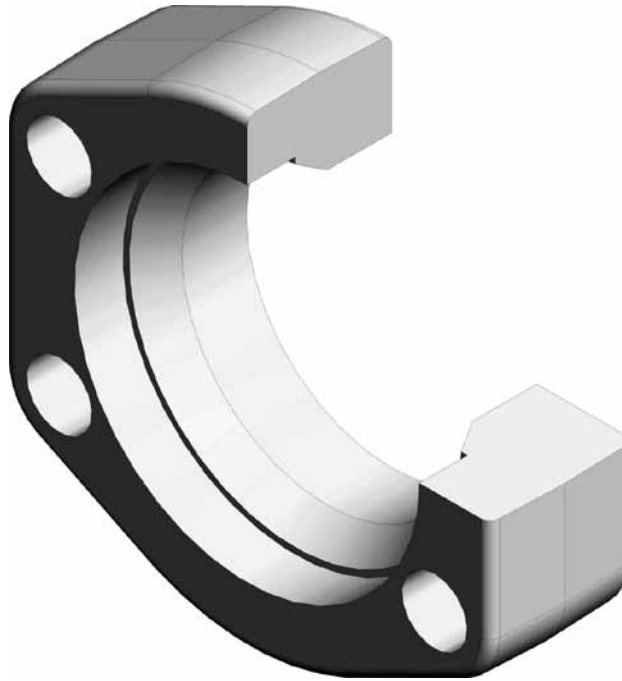
ANSI 36.10/36.19 pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	21.3	308/21.3	1102000500	308/21.3HDG	1112009200	308/21.3SS	1202000500	350	0.17
3/4"	26.7	312/26.7	1102030500	312/26.7HDG	1112039200	312/26.7SS	1202030500	350	0.21
1"	33.4	316/33.4	1102060500	316/33.4HDG	1112069200	316/33.4SS	1202060500	350	0.27
1 1/4"	42.2	320/42.2	1102090500	320/42.2HDG	1112099200	320/42.2SS	1202090500	280	0.38
1 1/2"	48.3	324/48.3	1102120500	324/48.3HDG	1112129200	324/48.3SS	1202120500	280	0.63
2"	60.3	332/60.3	1102150700	332/60.3HDG	1112159500	332/60.3SS	1202150700	280	0.94
2 1/2"	73.0	340/73	1102180700	340/73HDG	1112186200	340/73SS	1202155200	210	1.51
3"	88.9	348/88.9	1102210800	348/88.9HDG	1112211000	348/88.9SS	1202157100	210	2.29

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Flare flange

ISO 6162-1 (SAE J 518 Code 61)



Metric pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	25	308F	1102003000	308FHGD	1112006000	308FSS	1202003000	350	0.17
3/4"	30	312F	1102033000	312FHGD	1112036000	312FSS	1202033000	350	0.23
1"	38	316F	1102063000	316FHGD	1112066000	316FSS	1202063000	350	0.27
1 1/4"	42	320F	1102093000	320FHGD	1112096000	320FSS	1202093000	280	0.39
1 1/2"	50	324F	1102123000	324FHGD	1112126000	324FSS	1202123000	280	0.65
2"	60	332F	1102153000	332FHGD	1112156000	332FSS	1202153000	280	0.98
2 1/2"	73	340F	1102183200	340FHGD	1112186400	340FSS	1202156000	210	1.61
3"	90	348F	1102213000	348FHGD	1112213700	348FSS	1202157500	210	2.52

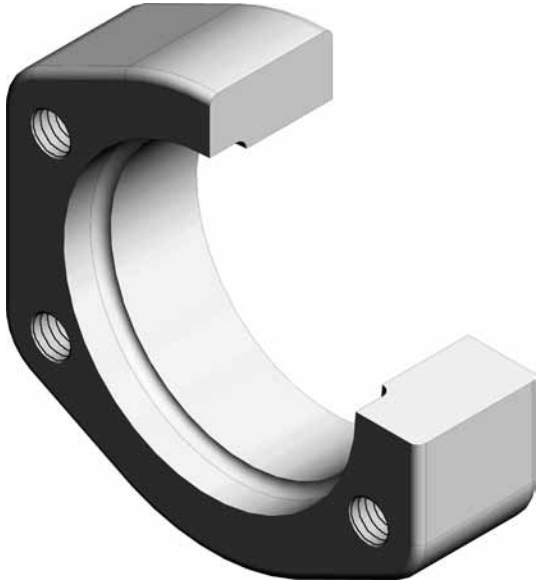
ANSI 36.10/36.19 pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	21.3	308F/21.3	1102005500	308F/21.3HDG	1112009400	308F/21.3SS	1202005500	350	0.21
3/4"	26.7	312F/26.7	1102034000	312F/26.7HDG	1112039400	312F/26.7SS	1202034000	350	0.32
1"	33.4	316F/33.4	1102063600	316F/33.4HDG	1112069400	316F/33.4SS	1202064000	350	0.39
1 1/4"	42.2	320F/42.2	1102094500	320F/42.2HDG	1112099400	320F/42.2SS	1202093800	280	0.45
1 1/2"	48.3	324F/48.3	1102124000	324F/48.3HDG	1112127000	324F/48.3SS	1202124000	280	0.80
2"	60.3	332F/60.3	1102153300	332F/60.3HDG	1112157000	332F/60.3SS	1202153500	280	1.15
2 1/2"	73.0	340F	1102183200	340FHGD	1112186400	340FSS	1202156000	210	1.61
3"	88.9	348F/88.9	1102213200	348F/88.9HDG	1112213300	348F/88.9SS	1202158000	210	2.71

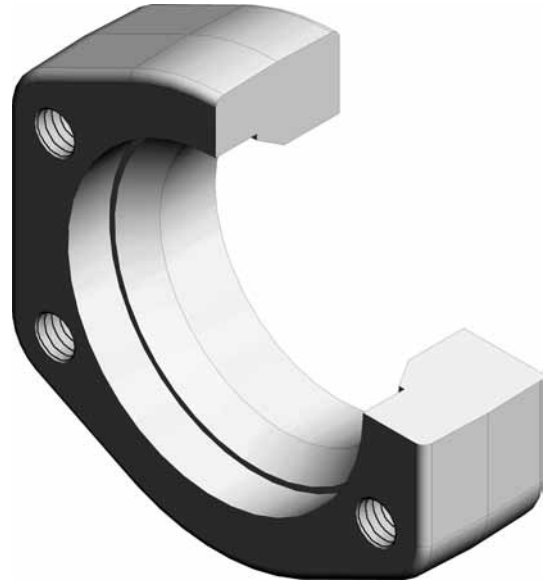
Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= Stainless steel
 Other materials on request.

Counter flange

ISO 6162-1 (SAE J 518 Code 61)



Retain ring flange with threads



Flare flange with threads

SAE 3000 PSI

Retain ring flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
1/2"	308/M8	1102001000	M8X45	0.17
3/4"	312/M10	1102031000	M10X50	0.21
1"	316/M10	1102061000	M10x50	0.27
1 1/4"	320/M10	1102091000	M10X50	0.38
1 1/2"	324/M12	1102121200	M12X60	0.63
2"	332/M12	1102151200	M12X70	0.94

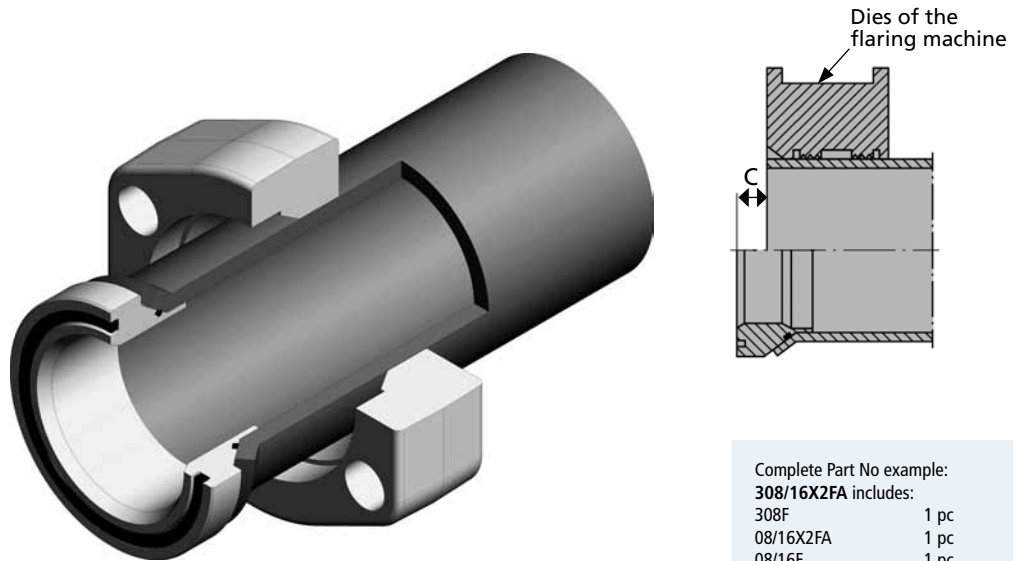
Flare flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
1/2"	308F/M8	1102004000	M8X45	0.17
3/4"	312F/M10	1102033500	M10X50	0.23
1"	316F/M10	1102063300	M10X50	0.27
1 1/4"	320F/M10	1102093100	M10X50	0.39
1 1/2"	324F/M12	1102123500	M12X60	0.65
2"	332F/M12	1102153000	M12x70	0.98

Material possibilities:
 Standard= carbon steel, zinc plated
 -SS= Stainless steel
 Other materials on request.

Flare flange connection – Type A

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/16X2FA includes:
 308F 1 pc
 08/16X2FA 1 pc
 08/16F 1 pc
 OR18.64X3.53 1 pc
 OR12X1.0 1 pc

Metric pipes

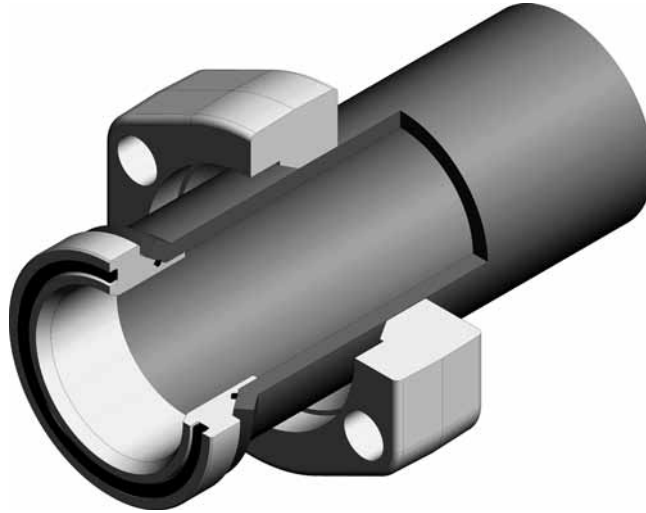
Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	308/16X2FA	1401500000	10	0.22	08/16X2FA	OR18.64X3.53	OR12X1.0	08/16F
1/2"	18x2.0	308/18X2FA	1401501000	11	0.21	08/18X2FA	OR18.64X3.53	OR14X1.0	08/18F
1/2"	20x2.0	308/20X2FA	1401502000	9	0.22	08/20X2FA	OR18.64X3.53	OR16X1.0	08/20F
1/2"	25x2.5	308/25X2.5FA	1401503000	9	0.22	08/25X2.5FA	OR18.64X3.53	OR20X1.0	None
1/2"	25x3.0	308/25X3FA	1401503500	9	0.22	08/25X3FA	OR18.64X3.53	OR19X1.0	None
3/4"	20x2.0	312/20X2FA	1401505000	12	0.36	12/20X2FA	OR24.99X3.53	OR16X1.0	12/20F
3/4"	20x2.5	312/20X2.5FA	1401505400	12	0.31	12/20X2.5FA	OR24.99X3.53	OR15X1.0	12/20F
3/4"	25x2.5	312/25X2.5FA	1401506100	9	0.34	12/25X2.5FA	OR24.99X3.53	OR20X1.0	12/25F
3/4"	25x3.0	312/25X3FA	1401506600	10	0.34	12/25X3FA	OR24.99X3.53	OR19X1.0	12/25F
3/4"	30x3.0	312/30X3FA	1401507500	9	0.31	12/30X3FA	OR24.99X3.53	OR23X1.0	None
1"	25x2.5	316/25X2.5FA	1401509000	9	0.46	16/25X2.5FA	OR32.92X3.53	OR20X1.0	16/25F
1"	25x3.0	316/25X3FA	1401509500	9	0.46	16/25X3FA	OR32.92X3.53	OR19X1.0	16/25F
1"	30x3.0	316/30X3FA	1401510000	7	0.43	16/30X3FA	OR32.92X3.53	OR23X1.0	16/30F
1"	30x4.0	316/30X4FA	1401510500	7	0.43	16/30X4FA	OR32.92X3.53	OR22X1.0	16/30F
1"	38x4.0	316/38X4FA	1401511000	10	0.37	16/38X4FA	OR32.92X3.53	OR30X1.0	None
1 1/4"	30x3.0	320/30X3FA	1401512000	10	0.61	20/30X3FA	OR37.69X3.53	OR23X1.0	20/30F
1 1/4"	30x4.0	320/30X4FA	1401512302	10	0.50	20/30X4FA	OR37.69X3.53	OR22X1.0	20/30F
1 1/4"	38x4.0	320/38X4FA	1401512500	9	0.56	20/38X4FA	OR37.69X3.53	OR30X1.0	20/38F
1 1/4"	38x5.0	320/38X5FA	1401513000	9	0.53	20/38X5FA	OR37.69X3.53	OR28X1.0	20/38F
1 1/4"	42x4.0	320/42X4FA	1401513500	11	0.51	20/42X4FA	OR37.69X3.53	OR34X1.0	None
1 1/2"	30x3.0	324/30X3FA	1401514100	14	0.91	24/30X3FA	OR47.22X3.53	OR23X1.0	24/30F
1 1/2"	38x4.0	324/38X4FA	1401514500	13	1.02	24/38X4FA	OR47.22X3.53	OR30X1.0	24/38F
1 1/2"	42x4.0	324/42X4FA	1401515000	13	0.97	24/42X4FA	OR47.22X3.53	OR34X1.0	24/42F
1 1/2"	50x5.0	324/50X5FA	1401516000	11	0.86	24/50X5FA	OR47.22X3.53	OR41X1.78	None
2"	50x5.0	332/50X5FA	1401517000	11	1.41	32/50X5FA	OR56.75X3.53	OR41X1.78	32/50F
2"	60x5.0	332/60X5FA	1401516100	11	1.23	32/60X5FA	OR56.75X3.53	OR50.52X1.78	None
2"	60x6.0	332/60X6FA	1401516500	11	1.23	32/60X6FA	OR56.75X3.53	OR47.35X1.78	None
2 1/2"	60x5.0	340/60X5FA	1401517800	12	2.11	40/60X5FA	OR69.44X3.53	OR50.52X1.78	40/60F
2 1/2"	73x7.0	340/73X7FA	1401517922	12	1.90	40/73X7FA	OR69.44X3.53	OR56.87X1.78	None
2 1/2"	73x5.0	340/73X5FA	1401518400	12	1.87	40/73X5FA	OR69.44X3.53	OR63.22X1.78	None
3"	73x5.0	348/73X5FA	1401519000	12	2.90	48/73X5FA	OR85.32X3.53	OR63.22X1.78	48/73F
3"	90x5.0	348/90X5FA	1401519800	14	3.07	48/90X5FA	OR85.32X3.53	OR79X1.78	None

Material possibilities page 168.

Flanges page 36
 Inserts page 67
 Sleeves page 69
 O-rings page 74, 75

Flare flange connection – Type A

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:
308/21.3X3.73FA includes:
 308F/21.3 1 pc
 08/21.3X3.73FA 1 pc
 OR18.64X3.53 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes

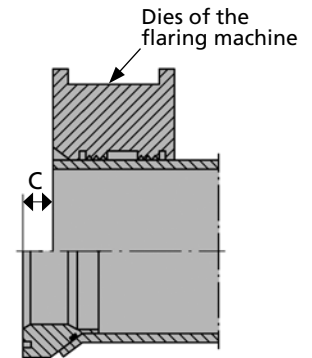
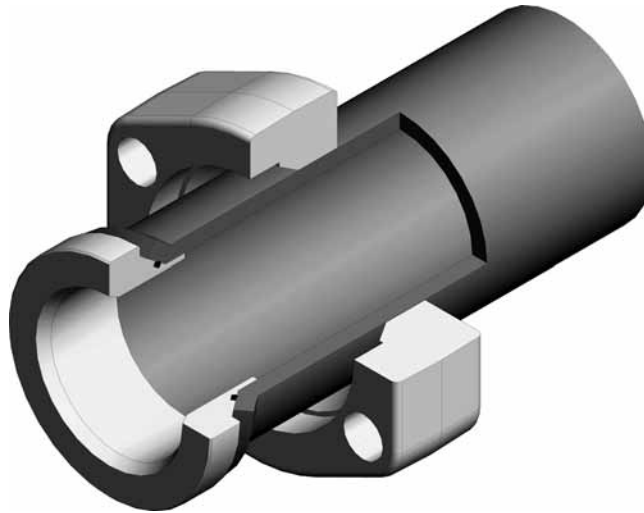
Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring Part No	O-Ring 2 Part No
1/2"	21.3X3.73	308/21.3X3.73FA	1401721000	0.2	08/21.3X3.73FA	OR18.64X3.53	OR14X1.0
1/2"	21.3X4.78	308/21.3X4.78FA	1401722000	0.2	08/21.3X4.78FA	OR18.64X3.53	OR12X1.0
3/4"	26.7X3.91	312/26.7X3.91FA	1401726000	0.3	12/26.7X3.91FA	OR24.99X3.53	OR20X1.0
3/4"	26.7X5.56	312/26.7X5.56FA	1401727000	0.3	12/26.7X5.56FA	OR24.99X3.53	OR16X1.0
1"	33.4X3.38	316/33.4X3.38FA	1401731000	0.5	16/33.4X3.38FA	OR32.92X3.53	OR25X1.0
1"	33.4X4.55	316/33.4X4.55FA	1401732000	0.5	16/33.4X4.55FA	OR32.92X3.53	OR23X1.0
1 1/4"	42.2X3.56	320/42.2X3.56FA	1401740000	0.6	20/42.2X3.56FA	OR37.69X3.53	OR34X1.0
1 1/4"	42.2X4.85	320/42.2X4.85FA	1401741000	0.6	20/42.2X4.85FA	OR37.69X3.53	OR32X1.0
1 1/2"	48.3X3.68	324/48.3X3.68FA	1401745000	0.9	24/48.3X3.68FA	OR47.22X3.53	OR41X1.78
1 1/2"	48.3X5.08	324/48.3X5.08FA	1401746000	0.9	24/48.3X5.08FA	OR47.22X3.53	OR37.82X1.78
2"	60.3X3.91	332/60.3X3.91FA	1401747000	1.4	32/60.3X3.91FA	OR56.75X3.53	OR50.52X1.78
2"	60.3X5.54	332/60.3X5.54FA	1401748000	1.4	32/60.3X5.54FA	OR56.75X3.53	OR47.35X1.78
2 1/2"	73X5.16	340/73X5.16FA	1401749000	2.1	40/73X5.16FA	OR69.44X3.53	OR63.22X1.78
2 1/2"	73X7.01	340/73X7FA	1401517922	2.1	40/73X7FA	OR69.44X3.53	OR56.87X1.78
3"	88.9X5.49	348/88.9X5.49FA	1401751000	3.6	48/88.9X5.49FA	OR85.32X3.53	OR79X1.78
3"	88.9X7.62	348/88.9X7.62FA	1401752000	3.6	48/88.9X7.62FA	OR85.32X3.53	OR72.75X1.78

Material possibilities page 168.

Flanges page 36
 Inserts page 68
 O-rings page 74, 75

Flare flange connection – Type B

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/16X2FB includes:
 308F 1 pc
 08/16X2FB 1 pc
 08/16F 1 pc
 OR12X1.0 1 pc

Metric pipes

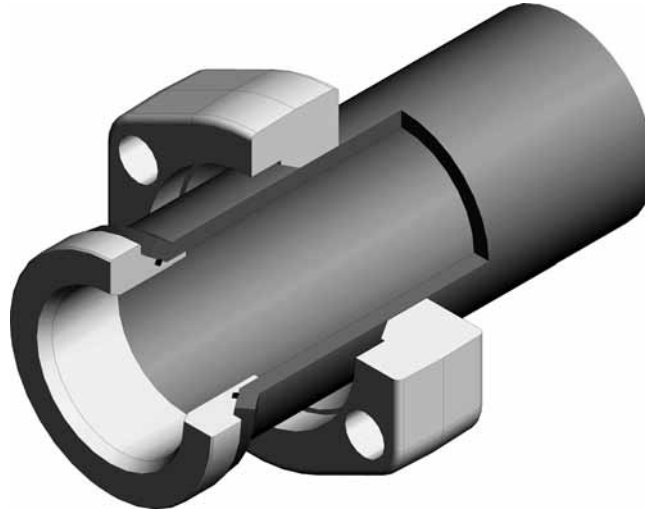
Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	308/16X2FB	1401500100	10	0.22	08/16X2FB	OR12X1.0	08/16F
1/2"	18x2.0	308/18X2FB	1401501100	11	0.21	08/18X2FB	OR14X1.0	08/18F
1/2"	20x2.0	308/20X2FB	1401502100	9	0.22	08/20X2FB	OR16X1.0	08/20F
1/2"	25x2.5	308/25X2.5FB	1401503100	9	0.22	08/25X2.5FB	OR20X1.0	None
1/2"	25x3.0	308/25X3FB	1401503600	9	0.22	08/25X3FB	OR19X1.0	None
3/4"	20x2.0	312/20X2FB	1401505100	12	0.36	12/20X2FB	OR16X1.0	12/20F
3/4"	20x2.5	312/20X2.5FB	1401505500	12	0.31	12/20X2.5FB	OR15X1.0	12/20F
3/4"	25x2.5	312/25X2.5FB	1401506200	9	0.34	12/25X2.5FB	OR20X1.0	12/25F
3/4"	25x3.0	312/25X3FB	1401506700	10	0.34	12/25X3FB	OR19X1.0	12/25F
3/4"	30x3.0	312/30X3FB	1401507600	9	0.31	12/30X3FB	OR23X1.0	None
1"	25x2.5	316/25X2.5FB	1401509100	9	0.46	16/25X2.5FB	OR20X1.0	16/25F
1"	25x3.0	316/25X3FB	1401509600	9	0.46	16/25X3FB	OR19X1.0	16/25F
1"	30x3.0	316/30X3FB	1401510100	7	0.43	16/30X3FB	OR23X1.0	16/30F
1"	30x4.0	316/30X4FB	1401510600	7	0.43	16/30X4FB	OR22X1.0	16/30F
1"	38x4.0	316/38X4FB	1401511100	10	0.37	16/38X4FB	OR30X1.0	None
1 1/4"	30x3.0	320/30X3FB	1401512100	10	0.61	20/30X3FB	OR23X1.0	20/30F
1 1/4"	30x4.0	320/30X4FB	1401512304	10	0.50	20/30X4FB	OR22X1.0	20/30F
1 1/4"	38x4.0	320/38X4FB	1401512600	9	0.56	20/38X4FB	OR30X1.0	20/38F
1 1/4"	38x5.0	320/38X5FB	1401513100	9	0.53	20/38X5FB	OR28X1.0	20/38F
1 1/4"	42x4.0	320/42X4FB	1401513600	11	0.51	20/42X4FB	OR34X1.0	None
1 1/2"	30x3.0	324/30X3FB	1401514200	14	0.91	24/30X3FB	OR23X1.0	24/30F
1 1/2"	38x4.0	324/38X4FB	1401514600	13	1.02	24/38X4FB	OR30X1.0	24/38F
1 1/2"	42x4.0	324/42X4FB	1401515100	13	0.97	24/42X4FB	OR34X1.0	24/42F
1 1/2"	50x5.0	324/50X5FB	1401516010	11	0.86	24/50X5FB	OR41X1.78	None
2"	50x5.0	332/50X5FB	1401517100	11	1.41	32/50X5FB	OR41X1.78	32/50F
2"	60x5.0	332/60X5FB	1401516110	11	1.23	32/60X5FB	OR50.52X1.78	None
2"	60x6.0	332/60X6FB	1401516600	11	1.23	32/60X6FB	OR47.35X1.78	None
2 1/2"	60x5.0	340/60X5FB	1401517810	12	2.11	40/60X5FB	OR50.52X1.78	40/60F
2 1/2"	73x7.0	340/73X7FB	1401517924	12	1.90	40/73X7FB	OR56.87X1.78	None
2 1/2"	73x5.0	340/73X5FB	1401518410	12	1.87	40/73X5FB	OR63.22X1.78	None
3"	73x5.0	348/73X5FB	1401519010	12	2.90	48/73X5FB	OR63.22X1.78	48/73F
3"	90x5.0	348/90X5FB	1401519900	14	3.07	48/90X5FB	OR79X1.78	None

Material possibilities page 168.

Flanges page 36
 Inserts page 67
 Sleeves page 69
 O-rings page 75

Flare flange connection – Type B

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:
308/21.3X3.73FB includes:
 308F/21.3 1 pc
 08/21.3X3.73FB 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes

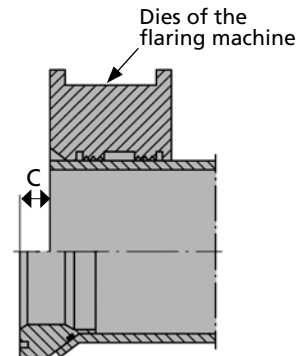
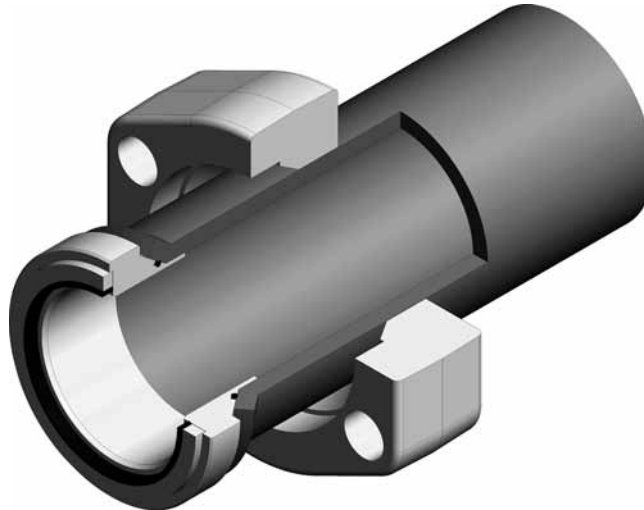
Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring 2 Part No
1/2"	21.3X3.73	308/21.3X3.73FB	1401721200	0.2	08/21.3X3.73FB	OR14X1.0
1/2"	21.3X4.78	308/21.3X4.78FB	1401722200	0.2	08/21.3X4.78FB	OR12X1.0
3/4"	26.7X3.91	312/26.7X3.91FB	1401726200	0.3	12/26.7X3.91FB	OR20X1.0
3/4"	26.7X5.56	312/26.7X5.56FB	1401727200	0.3	12/26.7X5.56FB	OR16X1.0
1"	33.4X3.38	316/33.4X3.38FB	1401731200	0.5	16/33.4X3.38FB	OR25X1.0
1"	33.4X4.55	316/33.4X4.55FB	1401732200	0.5	16/33.4X4.55FB	OR23X1.0
1 1/4"	42.2X3.56	320/42.2X3.56FB	1401740200	0.6	20/42.2X3.56FB	OR34X1.0
1 1/4"	42.2X4.85	320/42.2X4.85FB	1401741200	0.6	20/42.2X4.85FB	OR32X1.0
1 1/2"	48.3X3.68	324/48.3X3.68FB	1401745200	0.9	24/48.3X3.68FB	OR41X1.78
1 1/2"	48.3X5.08	324/48.3X5.08FB	1401746200	0.9	24/48.3X5.08FB	OR37.82X1.78
2"	60.3X3.91	332/60.3X3.91FB	1401747200	1.4	32/60.3X3.91FB	OR50.52X1.78
2"	60.3X5.54	332/60.3X5.54FB	1401748200	1.4	32/60.3X5.54FB	OR47.35X1.78
2 1/2"	73X5.16	340/73X5.16FB	1401749200	2.1	40/73X5.16FB	OR63.22X1.78
2 1/2"	73X7.01	340/73X7FB	1401517924	2.1	40/73X7FB	OR56.87X1.78
3"	88.9X5.49	348/88.9X5.49FB	1401751200	3.6	48/88.9X5.49FB	OR79X1.78
3"	88.9X7.62	348/88.9X7.62FB	1401752200	3.6	48/88.9X7.62FB	OR72.75X1.78

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Flare flange connection – Type C

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/16X2FC includes:
 308F 1 pc
 08/16X2FC 1 pc
 08/16F 1 pc
 0823 1 pc
 OR12X1.0 1 pc

Metric pipes

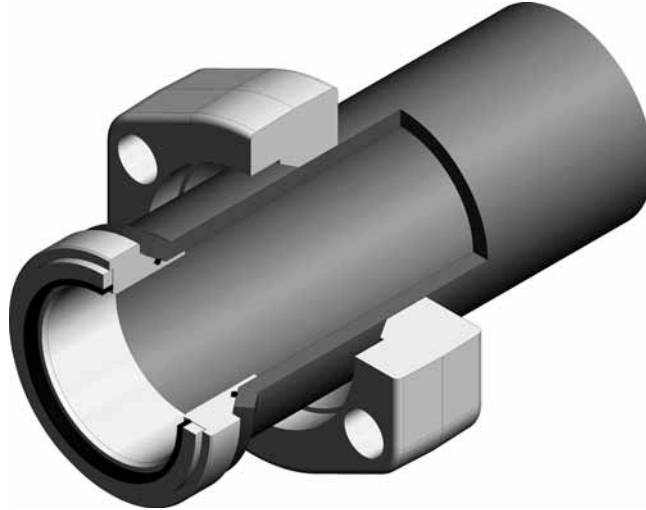
Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	Bonded seal Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	308/16X2FC	1401500200	10	0.22	08/16X2FC	0823	OR12X1.0	08/16F
1/2"	18x2.0	308/18X2FC	1401501200	11	0.21	08/18X2FC	0823	OR14X1.0	08/18F
1/2"	20x2.0	308/20X2FC	1401502200	9	0.22	08/20X2FC	0823	OR16X1.0	08/20F
1/2"	25x2.5	308/25X2.5FC	1401503200	9	0.22	08/25X2.5FC	0823	OR20X1.0	None
1/2"	25x3.0	308/25X3FC	1401503700	9	0.22	08/25X3FC	0823	OR19X1.0	None
3/4"	20x2.0	312/20X2FC	1401505200	12	0.36	12/20X2FC	1213	OR16X1.0	12/20F
3/4"	20x2.5	312/20X2.5FC	1401505700	12	0.31	12/20X2.5FC	1213	OR15X1.0	12/20F
3/4"	25x2.5	312/25X2.5FC	1401506300	9	0.34	12/25X2.5FC	1213	OR20X1.0	12/25F
3/4"	25x3.0	312/25X3FC	1401506800	10	0.34	12/25X3FC	1213	OR19X1.0	12/25F
3/4"	30x3.0	312/30X3FC	1401507700	9	0.31	12/30X3FC	1213	OR23X1.0	None
1"	25x2.5	316/25X2.5FC	1401509200	9	0.46	16/25X2.5FC	1629	OR20X1.0	16/25F
1"	25x3.0	316/25X3FC	1401509700	9	0.46	16/25X3FC	1629	OR19X1.0	16/25F
1"	30x3.0	316/30X3FC	1401510200	7	0.43	16/30X3FC	1629	OR23X1.0	16/30F
1"	30x4.0	316/30X4FC	1401510700	7	0.43	16/30X4FC	1629	OR22X1.0	16/30F
1"	38x4.0	316/38X4FC	1401511200	10	0.37	16/38X4FC	1629	OR30X1.0	None
1 1/4"	30x3.0	320/30X3FC	1401512200	10	0.61	20/30X3FC	2030	OR23X1.0	20/30F
1 1/4"	30x4.0	320/30X4FC	1401512306	10	0.50	20/30X4FC	2030	OR22X1.0	20/30F
1 1/4"	38x4.0	320/38X4FC	1401512700	9	0.56	20/38X4FC	2030	OR30X1.0	20/38F
1 1/4"	38x5.0	320/38X5FC	1401513200	9	0.53	20/38X5FC	2030	OR28X1.0	20/38F
1 1/4"	42x4.0	320/42X4FC	1401513700	11	0.51	20/42X4FC	2030	OR34X1.0	None
1 1/2"	30x3.0	324/30X3FC	1401514300	14	0.91	24/30X3FC	2432	OR23X1.0	24/30F
1 1/2"	38x4.0	324/38X4FC	1401514700	13	1.02	24/38X4FC	2432	OR30X1.0	24/38F
1 1/2"	42x4.0	324/42X4FC	1401515200	13	0.97	24/42X4FC	2432	OR34X1.0	24/42F
1 1/2"	50x5.0	324/50X5FC	1401516020	11	0.86	24/50X5FC	2432	OR41X1.78	None
2"	50x5.0	332/50X5FC	1401517200	11	1.41	32/50X5FC	3219	OR41X1.78	32/50F
2"	60x5.0	332/60X5FC	1401516120	11	1.23	32/60X5FC	3219	OR50.52X1.78	None
2"	60x6.0	332/60X6FC	1401516700	11	1.23	32/60X6FC	3219	OR47.35X1.78	None
2 1/2"	60x5.0	340/60X5FC	1401517900	12	2.11	40/60X5FC	4037	OR50.52X1.78	40/60F
2 1/2"	73x7.0	340/73X7FC	1401517926	12	1.90	40/73X7FC	4037	OR56.87X1.78	None
2 1/2"	73x5.0	340/73X5FC	1401518420	12	1.87	40/73X5FC	4037	OR63.22X1.78	None
3"	73x5.0	348/73X5FC	1401519020	12	2.90	48/73X5FC	4839	OR63.22X1.78	48/73F
3"	90x5.0	348/90X5FC	1401520000	14	3.07	48/90X5FC	4839	OR79X1.78	None

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Flare flange connection – Type C

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/21.3X3.73FC includes:
 308F/21.3 1 pc
 08/21.3X3.73FD 1 pc
 0823 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes (with standard GS bonded seal)

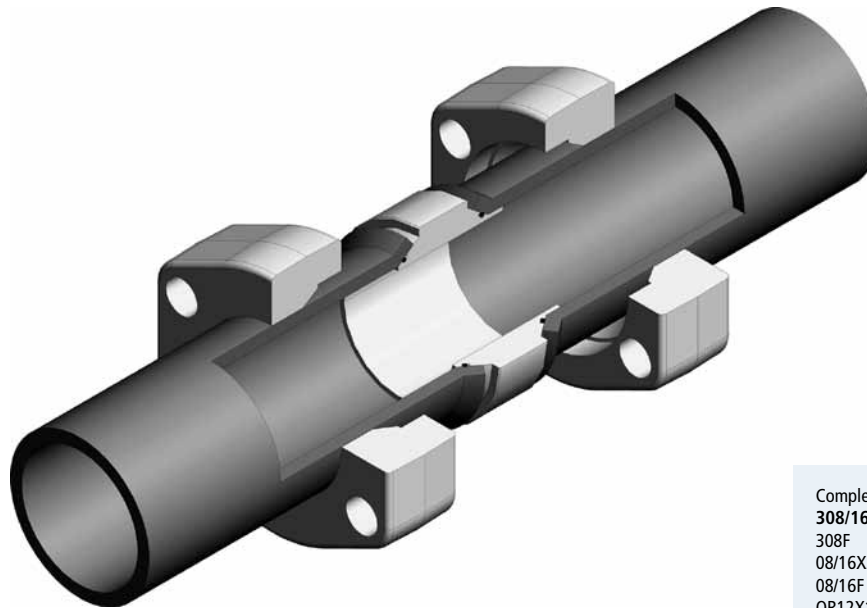
Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	Bonded seal Part No	O-Ring 2 Part No
1/2"	21.3X3.73	308/21.3X3.73FC	1401721400	0.2	08/21.3X3.73FC	0823	OR14X1.0
1/2"	21.3X4.78	308/21.3X4.78FC	1401722400	0.2	08/21.3X4.78FC	0823	OR12X1.0
3/4"	26.7X3.91	312/26.7X3.91FC	1401726400	0.3	12/26.7X3.91FC	1213	OR20X1.0
3/4"	26.7X5.56	312/26.7X5.56FC	1401727400	0.3	12/26.7X5.56FC	1213	OR16X1.0
1"	33.4X3.38	316/33.4X3.38FC	1401731400	0.5	16/33.4X3.38FC	1629	OR25X1.0
1"	33.4X4.55	316/33.4X4.55FC	1401732400	0.5	16/33.4X4.55FC	1629	OR23X1.0
1 1/4"	42.2X3.56	320/42.2X3.56FC	1401740400	0.6	20/42.2X3.56FC	2030	OR34X1.0
1 1/4"	42.2X4.85	320/42.2X4.85FC	1401741400	0.6	20/42.2X4.85FC	2030	OR32X1.0
1 1/2"	48.3X3.68	324/48.3X3.68FC	1401745400	0.9	24/48.3X3.68FC	2432	OR41X1.78
1 1/2"	48.3X5.08	324/48.3X5.08FC	1401746400	0.9	24/48.3X5.08FC	2432	OR37.82X1.78
2"	60.3X3.91	332/60.3X3.91FC	1401747400	1.4	32/60.3X3.91FC	3219	OR50.52X1.78
2"	60.3X5.54	332/60.3X5.54FC	1401748400	1.4	32/60.3X5.54FC	3219	OR47.35X1.78
2 1/2"	73X5.16	340/73X5.16FC	1401749400	2.1	40/73X5.16FC	4037	OR63.22X1.78
2 1/2"	73X7.01	340/73X7FC	1401517926	2.1	40/73X7FC	4037	OR56.87X1.78
3"	88.9X5.49	348/88.9X5.49FC	1401751400	3.6	48/88.9X5.49FC	4839	OR79X1.78
3"	88.9X7.62	348/88.9X7.62FC	1401752400	3.6	48/88.9X7.62FC	4839	OR72.75X1.78

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Flare flange connection – Type D

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/16X2FD includes:
 308F 2 pcs
 08/16X2FD 1 pc
 08/16F 2 pcs
 OR12X1.0 2 pcs

Metric pipes

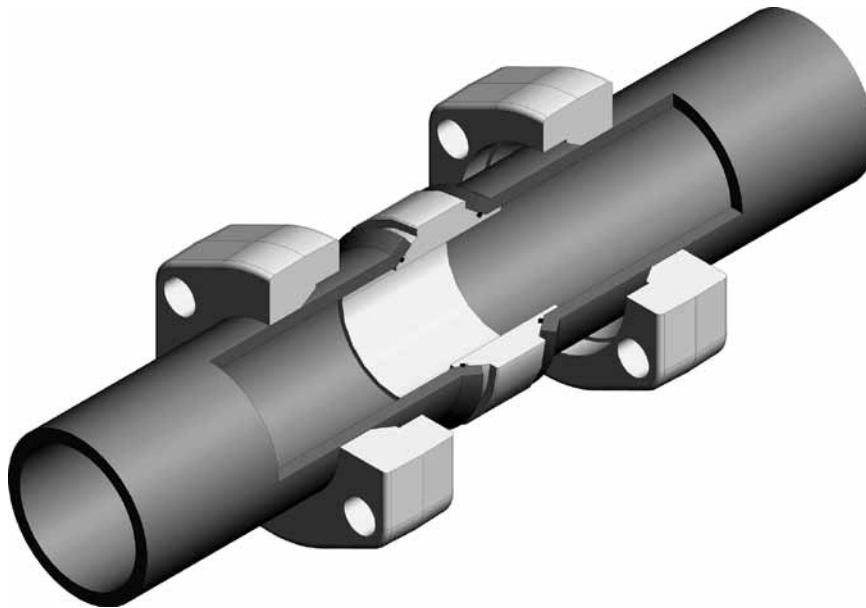
Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	308/16X2FD	1401500300	0.39	08/16X2FD	OR12X1.0	08/16F
1/2"	18x2.0	308/18X2FD	1401501300	0.38	08/18X2FD	OR14X1.0	08/18F
1/2"	20x2.0	308/20X2FD	1401502300	0.39	08/20X2FD	OR16X1.0	08/20F
1/2"	25x2.5	308/25X2.5FD	1401503300	0.39	08/25X2.5FD	OR20X1.0	None
1/2"	25x3.0	308/25X3FD	1401503800	0.39	08/25X3FD	OR19X1.0	None
3/4"	20x2.0	312/20X2FD	1401505300	0.60	12/20X2FD	OR16X1.0	12/20F
3/4"	20x2.5	312/20X2.5FD	1401505900	0.55	12/20X2.5FD	OR15X1.0	12/20F
3/4"	25x2.5	312/25X2.5FD	1401506400	0.57	12/25X2.5FD	OR20X1.0	12/25F
3/4"	25x3.0	312/25X3FD	1401506900	0.57	12/25X3FD	OR19X1.0	12/25F
3/4"	30x3.0	312/30X3FD	1401507800	0.55	12/30X3FD	OR23X1.0	None
1"	25x2.5	316/25X2.5FD	1401509300	0.72	16/25X2.5FD	OR20X1.0	16/25F
1"	25x3.0	316/25X3FD	1401509800	0.72	16/25X3FD	OR19X1.0	16/25F
1"	30x3.0	316/30X3FD	1401510300	0.69	16/30X3FD	OR23X1.0	16/30F
1"	30x4.0	316/30X4FD	1401510800	0.69	16/30X4FD	OR22X1.0	16/30F
1"	38x4.0	316/38X4FD	1401511300	0.62	16/38X4FD	OR30X1.0	None
1 1/4"	30x3.0	320/30X3FD	1401512300	1.01	20/30X3FD	OR23X1.0	20/30F
1 1/4"	30x4.0	320/30X4FD	1401512308	0.90	20/30X4FD	OR22X1.0	20/30F
1 1/4"	38x4.0	320/38X4FD	1401512800	0.96	20/38X4FD	OR30X1.0	20/38F
1 1/4"	38x5.0	320/38X5FD	1401513300	0.93	20/38X5FD	OR28X1.0	20/38F
1 1/4"	42x4.0	320/42X4FD	1401513800	0.91	20/42X4FD	OR34X1.0	None
1 1/2"	30x3.0	324/30X3FD	1401514400	1.57	24/30X3FD	OR23X1.0	24/30F
1 1/2"	38x4.0	324/38X4FD	1401514800	1.67	24/38X4FD	OR30X1.0	24/38F
1 1/2"	42x4.0	324/42X4FD	1401515300	1.63	24/42X4FD	OR34X1.0	24/42F
1 1/2"	50x5.0	324/50X5FD	1401516030	1.52	24/50X5FD	OR41X1.78	None
2"	50x5.0	332/50X5FD	1401517300	2.42	32/50X5FD	OR41X1.78	32/50F
2"	60x5.0	332/60X5FD	1401516130	2.24	32/60X5FD	OR50.52X1.78	None
2"	60x6.0	332/60X6FD	1401516800	2.24	32/60X6FD	OR47.35X1.78	None
2 1/2"	60x5.0	340/60X5FD	1401517910	3.61	40/60X5FD	OR50.52X1.78	40/60F
2 1/2"	73x7.0	340/73X7FD	1401517928	3.40	40/73X7FD	OR56.87X1.78	None
2 1/2"	73x5.0	340/73X5FD	1401518430	3.34	40/73X5FD	OR63.22X1.78	None
3"	73x5.0	348/73X5FD	1401519030	4.45	48/73X5FD	OR63.22X1.78	48/73F
3"	90x5.0	348/90X5FD	1401520100	5.64	48/90X5FD	OR79X1.78	None

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Flare flange connection – Type D

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/21.3X3.73FD includes:
 308F/21.3 2 pcs
 08/21.3X3.73FD 1 pc
 OR14X1.0 2 pcs

ANSI 36.10/36.19 pipes

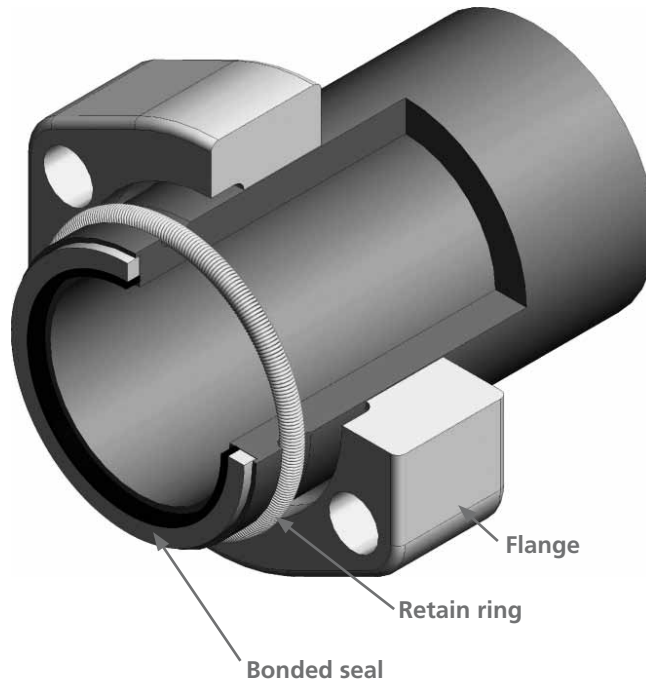
Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring 2 Part No
1/2"	21.3X3.73	308/21.3X3.73FD	1401721600	0.39	08/21.3X3.73FD	OR14X1.0
1/2"	21.3X4.78	308/21.3X4.78FD	1401722600	0.38	08/21.3X4.78FD	OR12X1.0
3/4"	26.7X3.91	312/26.7X3.91FD	1401726600	0.60	12/26.7X3.91FD	OR20X1.0
3/4"	26.7X5.56	312/26.7X5.56FD	1401727600	0.57	12/26.7X5.56FD	OR16X1.0
1"	33.4X3.38	316/33.4X3.38FD	1401731600	0.72	16/33.4X3.38FD	OR25X1.0
1"	33.4X4.55	316/33.4X4.55FD	1401732600	0.70	16/33.4X4.55FD	OR23X1.0
1 1/4"	42.2X3.56	320/42.2X3.56FD	1401740600	1.01	20/42.2X3.56FD	OR34X1.0
1 1/4"	42.2X4.85	320/42.2X4.85FD	1401741600	0.96	20/42.2X4.85FD	OR32X1.0
1 1/2"	48.3X3.68	324/48.3X3.68FD	1401745600	1.57	24/48.3X3.68FD	OR41X1.78
1 1/2"	48.3X5.08	324/48.3X5.08FD	1401746600	1.63	24/48.3X5.08FD	OR37.82X1.78
2"	60.3X3.91	332/60.3X3.91FD	1401747600	2.24	32/60.3X3.91FD	OR50.52X1.78
2"	60.3X5.54	332/60.3X5.54FD	1401748600	2.25	32/60.3X5.54FD	OR47.35X1.78
2 1/2"	73X5.16	340/73X5.16FD	1401749600	3.61	40/73X5.16FD	OR63.22X1.78
2 1/2"	73X7.01	340/73X7FD	1401517928	3.45	40/73X7FD	OR56.87X1.78
3"	88.9X5.49	348/88.9X5.49FD	1401751600	6.14	48/88.9X5.49FD	OR79X1.78
3"	88.9X7.62	348/88.9X7.62FD	1401752600	5.70	48/88.9X7.62FD	OR72.75X1.78

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Grooving direct on to pipe

ISO 6162-1 (SAE J 518 Code 61)



Metric pipes

Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
1"	39x7.5	316	1102060000	16	1902002050	1629	2701003000
1 1/4"	46x8	320	1102090000	20	1902003050	2030	2701004000
1 1/2"	56x8.5	324	1102120000	24	1902004050	2432	2701005000
2"	66x8.5	332	1102150000	32	1902006050	3219	2701007000
2 1/2"	80x10	340	1102180000	40	1902007050	4037	2701008000
3"	97x12	348	1102210000	48	1902008050	4839	2701009000

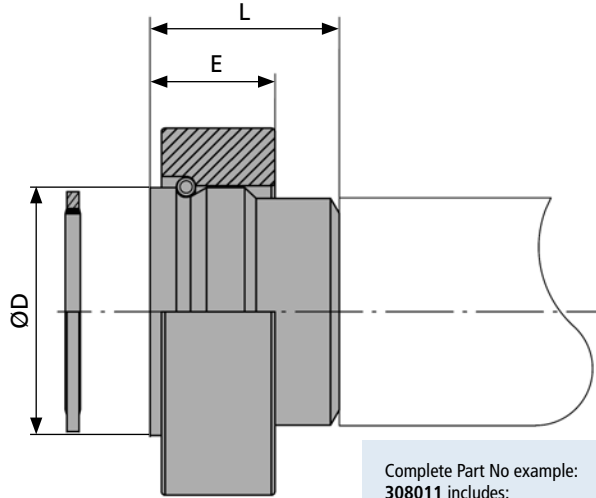
ANSI 36.10/36.19 pipes

Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
1/2"	21.3x7.5	308/21.3	1102000500	08/21.3	1902000250	0821	2701001000
3/4"	26.7x7.8	312/26.7	1102030500	12/26.7	1902001250	0823	2701001400
1"	33.4x9.1	316/33.4	1102060500	16/33.4	1902002250	1633	2701003400
1 1/4"	42.2x9.7	320/42.2	1102090500	20/42.2	1902003250	2042	2701004400
1 1/2"	48.3x10.2	324/48.3	1102120500	24/48.3	1902004250	2448	2701005200
2"	60.3x8.7	332/60.3	1102150700	32/60.3	1902006250	3260	2701007400
2 1/2"	73.0x9.53/14.02	340/73	1102180700	40/73	1902007250	4073	2701008200
3"	88.9x11.13/15.24	348/88.9	1102210800	48/88.9	1902008250	4888	2701009200

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Retain rings page 72
Bonded seals page 73

Flange for welding (1/2" – 1")

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308011 includes:
 308 1 pc
 08011 1 pc
 08 1 pc
 0823 1 pc

Size	Complete Part No	Complete ID Code	Pipe Size	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
1/2"	308011	1301503100	26x6.0	45	23	26	0.30	08011	1301003700
1/2"	308001	1301500100	12x1.5	40	23	26	0.26	08001	1301000100
1/2"	308002	1301500400	16x2.0	40	23	26	0.25	08002	1301000700
1/2"	308003	1301500700	18x2.0	40	23	26	0.25	08003	1301001300
1/2"	308004	1301501000	20x2.5	40	23	26	0.26	08004	1301001900
1/2"	308005	1301501300	25x2.5	40	23	26	0.26	08005	1301002500
1/2"	308009	1301502500	21.3x3.73	40	23	26	0.26	08009	1301003100
1/2"	308082	1301503250	21.3x2.10	40	23	26	0.27	08082	1301004800
1/2"	308083	1301503300	21.3x2.77	40	23	26	0.27	08083	1301004900
1/2"	308085	1301503400	21.3x4.78	40	23	26	0.28	08085	1301005500
1/2"	308086	1301503500	21.3x7.47	40	23	26	0.30	08086	1301006100
3/4"	312011	1301507300	36x8.0	45	23	36	0.43	12011	1301008800
3/4"	312001	1301504600	20x2.5	40	23	36	0.37	12001	1301006700
3/4"	312002	1301504900	25x3.0	40	23	36	0.36	12002	1301006800
3/4"	312003	1301505200	30x4.0	40	23	36	0.37	12003	1301007900
3/4"	312004	1301505500	30x6.0	40	23	36	0.39	12004	1301009100
3/4"	312005	1301505700	30x3.0	40	23	36	0.36	12005	1301009200
3/4"	312009	1301506700	26.7x3.91	40	23	36	0.37	12009	1301000700
3/4"	312082	1301507700	26.7x2.10	40	23	36	0.49	12082	1301010800
3/4"	312083	1301507800	26.7x2.87	40	23	36	0.50	12083	1301011300
3/4"	312085	1301508000	26.7x5.56	40	23	36	0.52	12085	1301011900
3/4"	312086	1301508100	26.7x7.82	45	23	36	0.52	12086	1301012500
1"	316011	1301511700	39x7.5	50	22	39	0.53	16011	1301019700
1"	316001	1301508800	25x3.0	40	22	39	0.46	16001	1301016100
1"	316002	1301509100	30x4.0	40	22	39	0.45	16002	1301016700
1"	316003	1301509400	38x5.0	40	22	39	0.47	16003	1301017300
1"	316004	1301509700	38x7.0	40	22	39	0.47	16004	1301017900
1"	316005	1301510000	38x4.0	40	22	39	0.47	16005	1301018500
1"	316009	1301511100	33.4x4.55	40	22	39	0.45	16009	1301019100
1"	316082	1301512000	33.4x2.80	40	22	39	0.44	16082	1301021500
1"	316083	1301512100	33.4x3.38	40	22	39	0.45	16083	1301022100
1"	316085	1301512300	33.4x6.35	50	22	39	0.45	16085	1301022700
1"	316086	1301512400	33.4x9.09	50	22	39	0.52	16086	1301023300

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168

Welding hubs for other pipe sizes on request.

Flanges page 35
 Retain rings page 72
 Bonded seals page 73

Flange for welding (1 1/4" – 3")

ISO 6162-1 (SAE J 518 Code 61)

Size	Complete Part No	Complete ID Code	Pipe Size	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
1 1/4"	320011	1301516200	46x8.0	55	23	46	0.75	20011	1301028700
1 1/4"	320001	1301513200	30x4.0	40	23	46	0.66	20001	1301025100
1 1/4"	320002	1301513500	38x5.0	40	23	46	0.63	20002	1301025700
1 1/4"	320003	1301513800	42x6.0	40	23	46	0.62	20003	1301026300
1 1/4"	320004	1301514100	46x7.0	50	23	46	0.72	20004	1301026900
1 1/4"	320005	1301514400	42x4.0	40	23	46	0.60	20005	1301027500
1 1/4"	320009	1301515600	42.2x4.85	40	23	46	0.62	20009	1301028100
1 1/4"	320082	1301516500	42.2x2.77	40	23	46	0.66	20082	1301030500
1 1/4"	320083	1301516600	42.2x3.56	40	23	46	0.72	20083	1301031100
1 1/4"	320085	1301516800	42.2x6.35	50	23	46	0.65	20085	1301031700
1 1/4"	320086	1301516900	42.2x9.70	50	23	46	0.80	20086	1301032900
1 1/2"	324011	1301520700	56x8.5	60	28	56	1.18	24011	1301037100
1 1/2"	324001	1301517700	38x5.0	45	28	56	1.08	24001	1301034100
1 1/2"	324002	1301518000	50x6.0	45	28	56	1.01	24002	1301034700
1 1/2"	324003	1301518300	50x9.0	45	28	56	1.10	24003	1301035300
1 1/2"	324005	1301518900	50x5.0	45	28	56	1.00	24005	1301035900
1 1/2"	324009	1301520100	48.3x5.08	45	28	56	0.99	24009	1301036500
1 1/2"	324082	1301521000	48.3x2.77	45	28	56	1.19	24082	1301038300
1 1/2"	324083	1301521100	48.3x3.68	45	28	56	1.09	24083	1301039500
1 1/2"	324085	1301521300	48.3x7.14	60	28	56	1.22	24085	1301040100
1 1/2"	324086	1301521400	48.3x10.15	60	28	56	1.23	24086	1301040700
2"	332011	1301524900	66x8.5	75	33	66	1.78	32011	1301046700
2"	332001	1301521900	50x9.0	50	33	66	1.62	32001	1301041900
2"	332002	1301522200	60x6.0	50	33	66	1.43	32002	1301042500
2"	332003	1301522500	60x8.0	50	33	66	1.53	32003	1301043100
2"	332005	1301523100	60x5.0	50	33	66	1.42	32005	1301044300
2"	332008	1301524000	48.3x5.08	50	33	66	1.54	32008	1301044900
2"	332009	1301524300	60x10.0	50	33	66	1.60	32009	1301045500
2"	332082	1301525500	60.3x2.77	50	33	66	1.40	32082	1301048800
2"	332083	1301525600	60.3x3.91	50	33	66	1.45	32083	1301045600
2"	332084	1301525700	60.3x5.54	50	33	66	1.50	32084	1301046200
2"	332085	1301525800	60.3x8.74	75	33	66	1.65	32085	1301046800
2"	332086	1301525900	60.3x11.07	75	33	66	1.65	32086	1301047400
2 1/2"	340011	1301526018	80x10.0	90	43	80	2.96	40011	1301052200
2 1/2"	340003	1301526010	65x8.0	50	43	80	2.44	40003	1301048600
2 1/2"	340005	1301526012	75x5.0	50	43	80	2.22	40005	1301049700
2 1/2"	340006	1301526013	76.1x6.30	50	43	80	2.24	40006	1301049800
2 1/2"	340007	1301526014	76.1x12.50	50	43	80	2.48	40007	1301050400
2 1/2"	340009	1301526016	73x5	50	43	80	2.30	40009	1301050550
2 1/2"	340010	1301526017	73x7.01	50	43	80	2.25	40010	1301051600
3"	348011	1301526041	97x12.0	110	56	97	4.91	48011	1301057600
3"	348003	1301526033	90x5.0	60	56	97	4.23	48003	1301054000
3"	348004	1301526034	76.1x12.50	60	56	97	3.68	48004	1301054600
3"	348005	1301526035	80x10.0	60	56	97	3.89	48005	1301055200
3"	348006	1301526036	88.9x8.80	60	56	97	3.76	48006	1301055800
3"	348007	1301526037	88.9x12.50	60	56	97	3.89	48007	1301056400
3"	348010	1301526040	88.9x7.62	60	56	97	3.51	48010	1301057000
3"	348082	1301526082	88.9x3.18	60	56	97	3.21	48082	1301057900
3"	348083	1301526083	88.9x5.49	60	56	97	3.43	48083	1301058000
3"	348084	1301526084	88.9x7.62	110	56	97	4.02	48084	1301058100
3"	348085	1301526085	88.9x11.13	110	56	97	4.30	48085	1301058200
3"	348086	1301526086	88.9x15.24	110	56	97	4.35	48086	1301058800

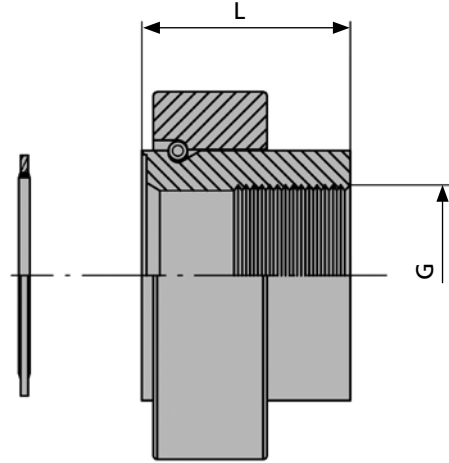
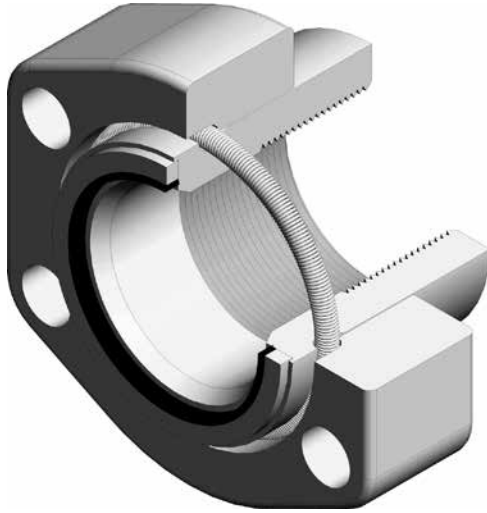
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168

Welding hubs for other pipe sizes on request.

Flanges page 35
 Retain rings page 72
 Bonded seals page 73

Female thread flange, BSP

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:

308013 includes:
 308 1 pc
 08013 1 pc
 08 1 pc
 0823 1 pc

Size	Complete Part No	Complete ID Code	L	G	Weight [kg]	Body Part No	Body ID Code
1/2"	308013	1307499000	35	1/4"	0.29	08013	1307000100
3/4"	312013	1307500000	40	1/2"	0.43	12013	1307001000
1"	316013	1307501000	40	3/4"	0.48	16013	1307006000
1 1/4"	320013	1307502000	42	1"	0.67	20013	1307007000
1 1/2"	324013	1307503000	45	1 1/4"	1.05	24013	1307008000
2"	332013	1307504000	55	1 1/2"	1.67	32013	1307009000
2 1/2"	340013	1307504020	80	2"	2.40	40013	1307010000
3"	348013	1307504030	85	2 1/2"	3.30	48013	1307011000

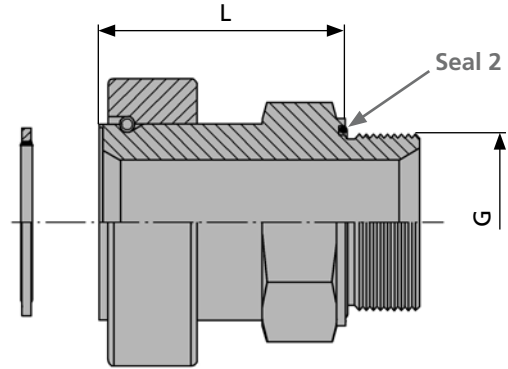
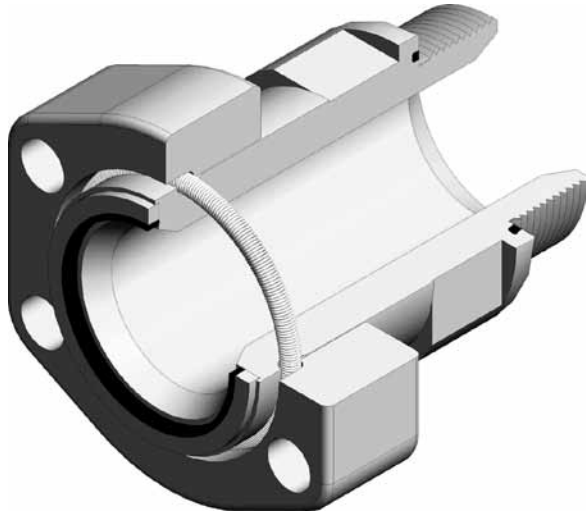
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Standard thread BSPP,
 others on request.

Flanges page 35
 Retain rings page 72
 Bonded seals page 73

Male thread flange, BSPP

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

308014 includes:
 308 1 pc
 08014 (Seal 2 included) 1 pc
 08 1 pc
 0823 1 pc

Size	Complete Part No	Complete ID Code	L	G	Seal 2	A/F	Weight [kg]	Body Part No	Body ID Code
1/2"	308014	1305507000	50	1/2"	ED R1/2 VI	27	0.35	08014	1305000100
1/2"	308014-G1/4	1305507500	50	1/4"	ED R1/4+M14X1.5 VI	27	0.37	08014-G1/4	1305000400
3/4"	312014	1305508000	61	3/4"	ED R3/4 M26X1.5 27X2 VI	36	0.60	12014	1305002000
3/4"	312014-G1/2	1305508200	61	1/2"	ED R1/2 VI	36	0.62	12014-G1/2	1305002200
1"	316014	1305510000	65	1"	ED R1+M33X2 VI	41	0.78	16014	1305004000
1"	316014-G3/4	1305510400	65	3/4"	ED R3/4 M26X1.5 27X2 VI	41	0.80	16014-G3/4	1305004300
1 1/4"	320014	1305512000	68	1 1/4"	ED R11/4+M42X2 VI	50	1.08	20014	1305006000
1 1/4"	320014-G1	1305512200	68	1"	ED R1+M33X2 VI	50	1.16	20014-G1	1305006200
1 1/2"	324014	1305514000	78	1 1/2"	ED R11/2+M82X2 VI	60	1.71	24014	1305010000
1 1/2"	324014-G11/4	1305514200	78	1 1/4"	ED R11/4+M42X2 VI	60	1.80	24014-G11/4	1305010300
2"	332014	1305516000	83	2"	OR59.99X2.62VI	70	2.55	32014	1305014000
2"	332014-G11/2	1305516200	83	1 1/2"	ED R11/2+M82X2 VI	70	2.71	32014-G11/2	1305014200

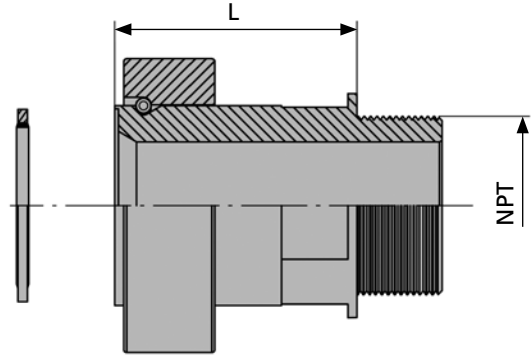
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Seal 2 material: FPM (Viton®)

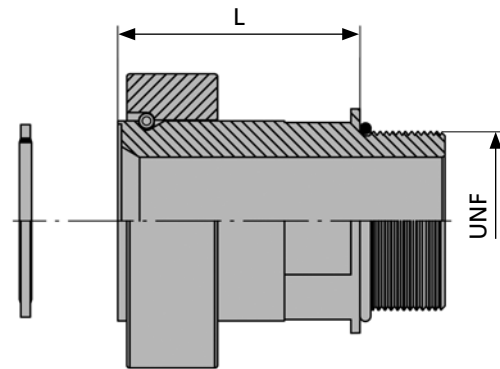
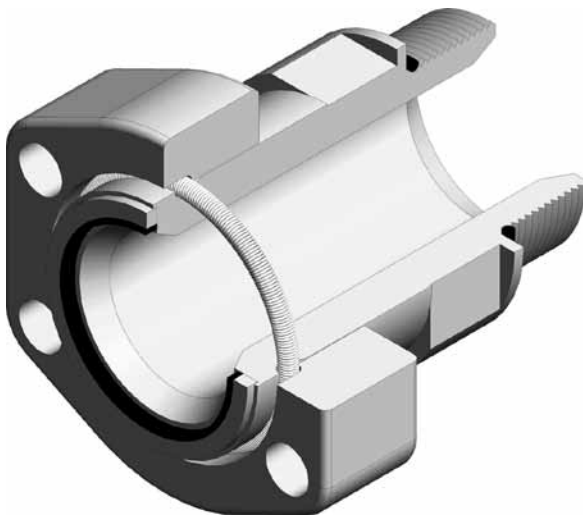
Flanges page 35
 Retain rings page 72
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 ED-seals page 76

Male thread flange, NPT & UNF

ISO 6162-1 (SAE J 518 Code 61)



NPT



UNF

Complete Part No example:
308114 includes:
 308 1 pc
 08114 1 pc
 08 1 pc
 0823 1 pc

Complete Part No example:
308214 includes:
 308 1 pc
 08214 1 pc
 08 1 pc
 0823 1 pc
 OR16.4X2.2 1 pc

Male thread flange, NPT

Size	Complete Part No	Complete ID Code	L	NPT	Weight [kg]	Body Part No	Body ID Code
1/2"	308114	1305507700	50	1/2"	0.4	08114	1305001000
3/4"	312114	1305509000	63	3/4"	0.5	12114	1305002400
1"	316114	1305510600	63	1"	0.7	16114	1305004600
1 1/4"	320114	1305512400	67	1 1/4"	1.0	20114	1305008000
1 1/2"	324114	1305514400	75	1 1/2"	1.8	24114	1305012000
2"	332114	1305516400	80	2"	2.5	32114	1305014800

Male thread flange, UNF

Size	Complete Part No	Complete ID Code	L	UN(F)	Weight [kg]	O-ring Part No	O-ring ID Code	Body Part No	Body ID Code
1/2"	308214	1305507800	48.0	3/4-16	0.4	OR16.4X2.2	2701504500	08214	1305001300
3/4"	312214	1305509200	61.3	1 1/16-12	0.5	OR23X3.0	2701511200	12214	1305002900
1"	316214	1305510800	62.0	1 5/16-12	0.7	OR29.2X3.0	2701516500	16214	1305005500
1 1/4"	320214	1305512600	65.0	1 5/8-12	1.0	OR37.2X3.0	2701524000	20214	1305009000
1 1/2"	324214	1305514600	78.2	1 7/8-12	1.8	OR43X3.0	2701527000	24214	1305012200
2"	332214	1305516600	83.2	2 1/2-12	2.5	OR59.5X3.0	2701536000	32214	1305015500

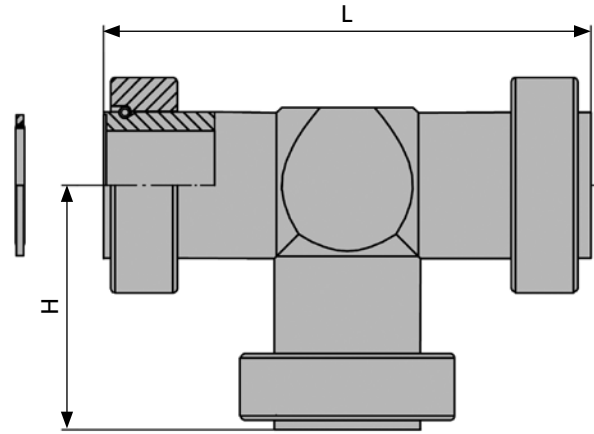
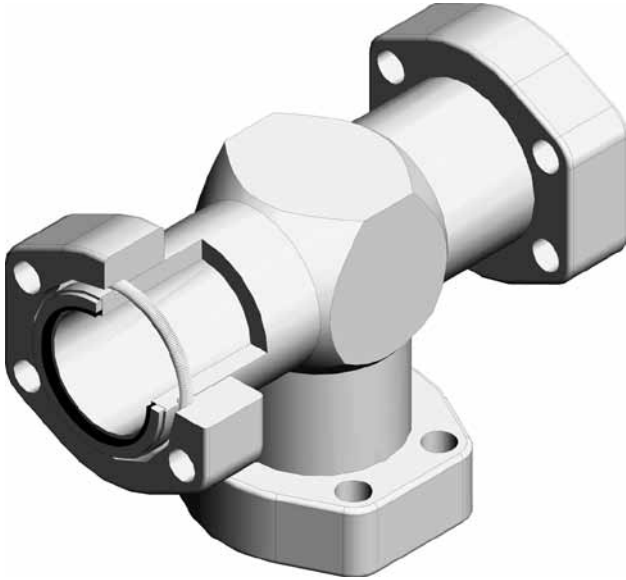
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Flanges page 35
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SAE 3000 PSI

Tee flange

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

308016 includes:

308	3 pcs
08016	1 pc
08	3 pcs
0823	3 pcs

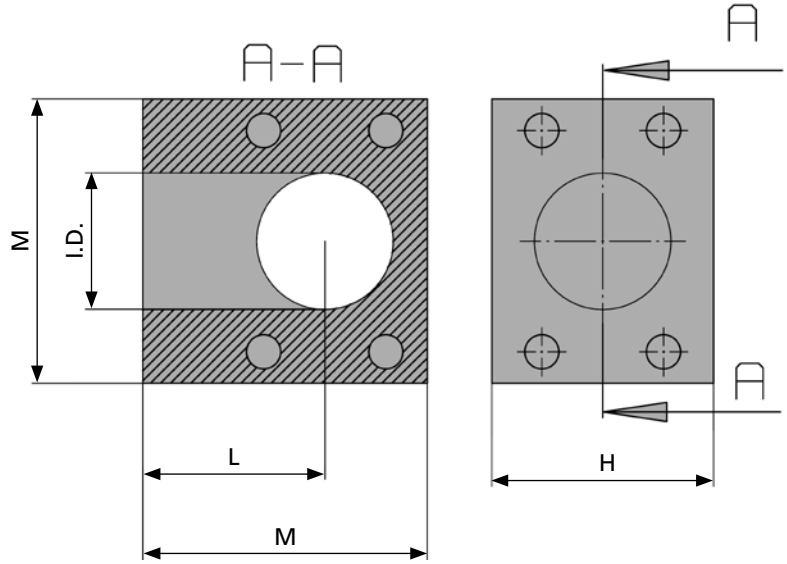
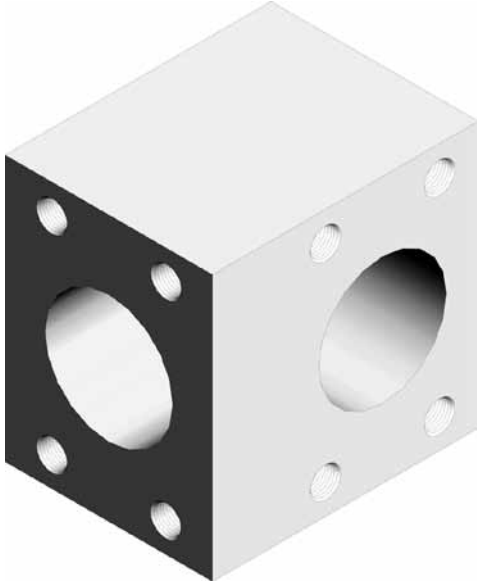
Size	Complete Part No	Complete ID Code	L	H	Weight [kg]	Body Part No	Body ID Code
1/2"	308016	1701200100	120	60	1.10	08016	1701000100
3/4"	312016	1701202000	130	65	1.68	12016	1701002000
3/4" – 1/2"	312/308/312016	1701202200	130	65	1.68	12/08/12016	1701002200
1"	316016	1701204000	140	70	2.13	16016	1701004000
1" – 3/4"	316/312/316016	1701204400	140	65	2.00	16/12/16016	1701004400
1" – 1/2"	316/308/316016	1701204200	140	65	1.66	16/08/16016	1701004200
1 1/4"	320016	1701206000	160	80	2.87	20016	1701006000
1 1/4" – 1"	320/316/320016	1701206600	160	75	2.83	20/16/20016	1701006600
1 1/4" – 3/4"	320/312/320016	1701206400	160	70	2.44	20/12/20016	1701006400
1 1/2"	324016	1701208000	180	90	4.75	24016	1701008000
1 1/2" – 1 1/4"	324/320/324016	1701208600	180	85	3.86	24/20/24016	1701008600
1 1/2" – 1"	324/316/324016	1701208400	180	80	3.60	24/16/24016	1701008400
2"	332016	1701210000	220	110	7.05	32016	1701010000
2" – 1 1/2"	332/324/332016	1701210600	220	95	6.63	32/24/32016	1701010800
2" – 1 1/4"	332/320/332016	1701210400	220	90	5.31	32/20/32016	1701010600
2 1/2"	340016	1701211900	260	130	10.8	40016	1701012000
3"	348016	1701212500	320	160	18.8	48016	1701014000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Sizes 2 1/2" and 3" are not available in stainless steel.
 Other materials on request.

Flanges page 35
 Retain rings page 72
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Tee block

ISO 6162-1 (SAE J 518 Code 61)

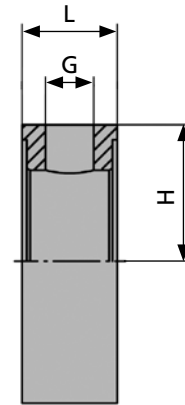


Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	308116	1702000100	40	36	56	13	0.81
3/4"	312116	1702002000	40	50	70	20	1.18
3/4" – 1/2"	312/308/312116	1702002400	40	50	70	20/13/20	1.26
1"	316116	1702004000	48	47	70	23	1.38
1" – 3/4"	316/312/316116	1702004400	48	47	70	23/20/23	1.41
1" – 1/2"	316/308/316116	1702004200	48	47	70	23/13/23	1.49
1 1/4"	320116	1702006000	58	55	80	30	2.12
1 1/4" – 1"	320/316/320116	1702006600	58	55	80	30/23/30	2.23
1 1/4" – 3/4"	320/312/320116	1702006400	58	55	80	30/20/30	2.27
1 1/2"	324116	1702008000	68	59	90	38	2.96
1 1/2" – 1 1/4"	324/320/324116	1702008800	68	59	90	38/30/38	3.16
1 1/2" – 1"	324/316/324116	1702008600	68	59	90	38/23/38	3.22
2"	332116	1702010000	78	64	100	48	4.05
2" – 1 1/2"	332/324/332116	1702010600	78	64	100	48/38/48	4.26
2" – 1 1/4"	332/320/332116	1702010400	78	64	100	48/30/48	4.45
2 1/2"	340116	1702012000	88	65	110	60	5.05
2 1/2" – 2"	340/332/340116	1702012400	88	65	110	60/48/60	5.49
2 1/2" – 1 1/2"	340/324/340116	1702012200	88	65	110	60/38/60	5.60
3"	348116	1702014000	110	80	135	73	9.97
3" – 2 1/2"	348/340/348116	1702014400	110	80	135	73/60/73	10.6
3" – 2"	348/332/348116	1702014200	110	80	135	73/48/73	11.1

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Tee between, BSPP

ISO 6162-1 (SAE J 518 Code 61)



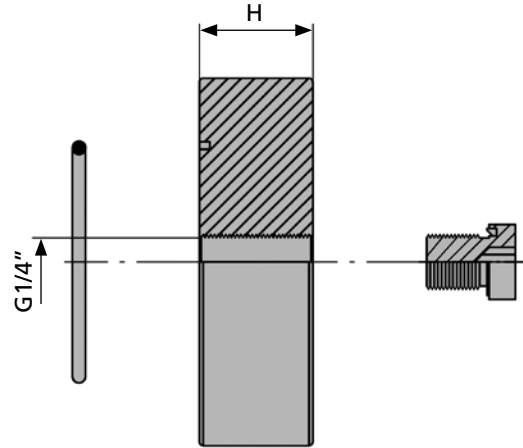
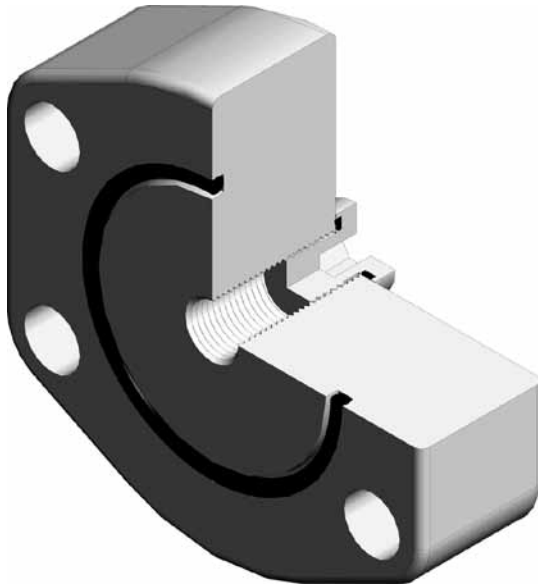
Please add measure L to bolt lengths mentioned on page 34.

Size	Part No	ID Code	L	H	G	Weight [kg]
1/2"	08035	1801000000	25	13.5	1/4"	0.12
3/4"	12035	1801000100	25	17.6	1/4"	0.18
1"	16035	1801002000	25	20.5	1/4"	0.22
1 1/4"	20035	1801003000	25	24.3	1/4"	0.27
1 1/2"	24035	1801004000	25	31.3	1/4"	0.41
2"	32035	1801005000	25	36.0	1/4"	0.47
1 1/4"	20036	1801003100	35	22.5	1/2"	0.35
1 1/2"	24036	1801004300	35	29.6	1/2"	0.56
2"	32036	1801005100	35	34.6	1/2"	0.65
2 1/2"	40036	1801006000	35	42.6	1/2"	0.90
2 1/2"	40037	1801006100	40	41	3/4"	1.30
3"	48038	1801006900	60	48	1"	1.90

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Blind flange

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

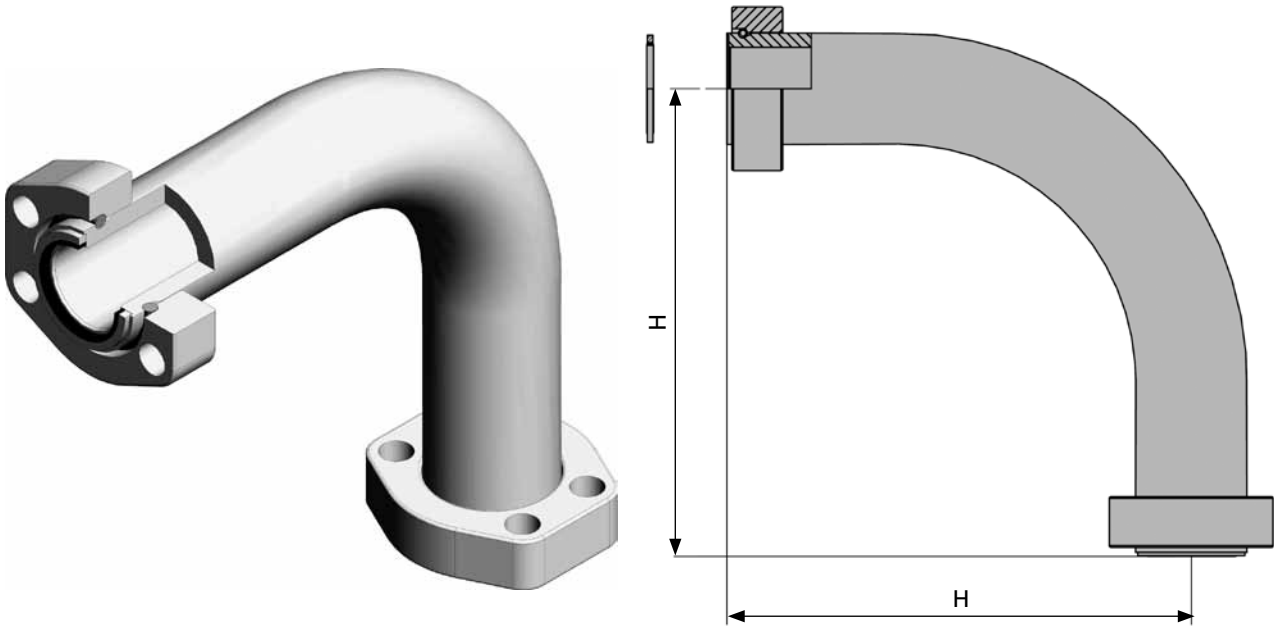
Size	Part No	ID Code	O-ring Part No	O-ring ID Code	H	Weight [kg]
1/2"	308125	1910504000	OR18.64X3.53	2701506000	20	0.24
3/4"	312125	1910504500	OR24.99X3.53	2701512000	20	0.36
1"	316125	1910505000	OR32.92X3.53	2701519400	20	0.45
1 1/4"	320125	1910505500	OR37.69X3.53	2701524200	20	0.62
1 1/2"	324125	1910506000	OR47.22X3.53	2701529000	25	1.10
2"	332125	1910506500	OR56.75X3.53	2701535000	30	1.73
2 1/2"	340125	1910507000	OR69.44X3.53	2701540000	40	2.61
3"	348125	1910507500	OR85.32X3.53	2701546000	50	4.19

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 O-ring, ED-seal and plug included in a Part No

Manufacturing tolerance for flange thickness (H) ±5%.

Flange bend

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Complete Part No example:

312018 includes:

312	2 pcs
12018	1 pc
12	2 pcs
1213	2 pcs

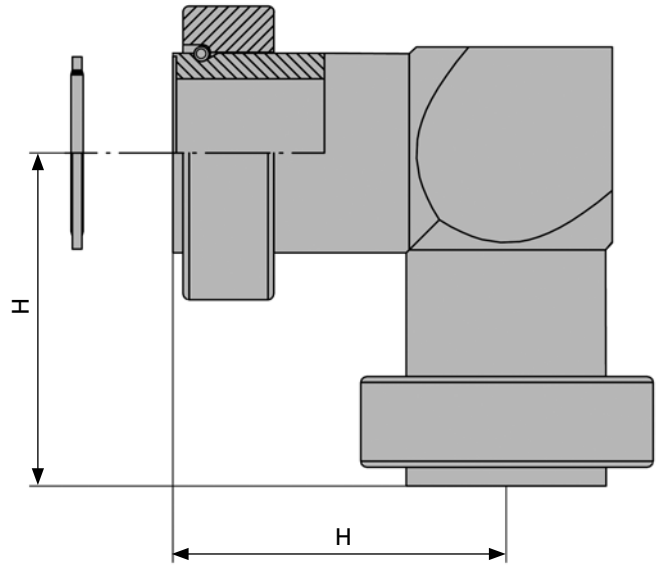
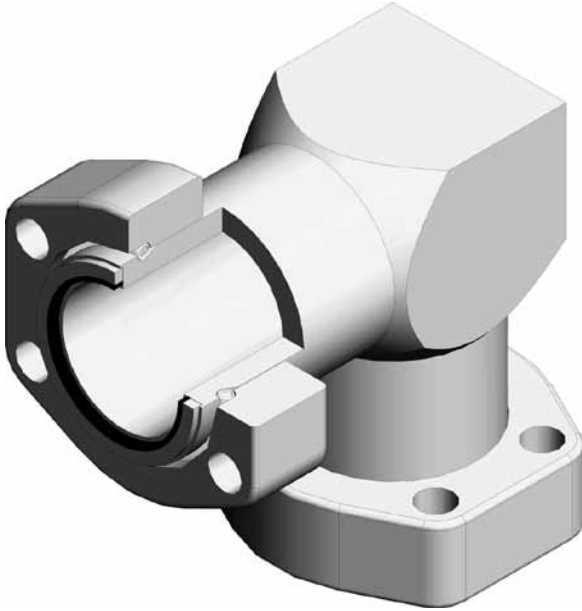
Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
3/4"	312018	1602200100	180	90	1.43	12018	1602000100
1"	316018	1602200500	180	97.5	1.64	16018	1602000500
1 1/4"	320018	1602201000	190	96	2.42	20018	1602001000
1 1/2"	324018	1602201500	240	116	3.63	24018	1602001500
2"	332018	1602202000	275	165	5.45	32018	1602002000
2 1/2"	340018	1602202200	450	200	8.21	40018	1602002500
3"	348018	1602202400	540	244	14.6	48018	1602003000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Sizes 2 1/2" and 3" are not available in stainless steel.
 Other materials on request.

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Elbow flange

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:

308015 includes:

308	2 pcs
08015	1 pc
08	2 pcs
0823	2 pcs

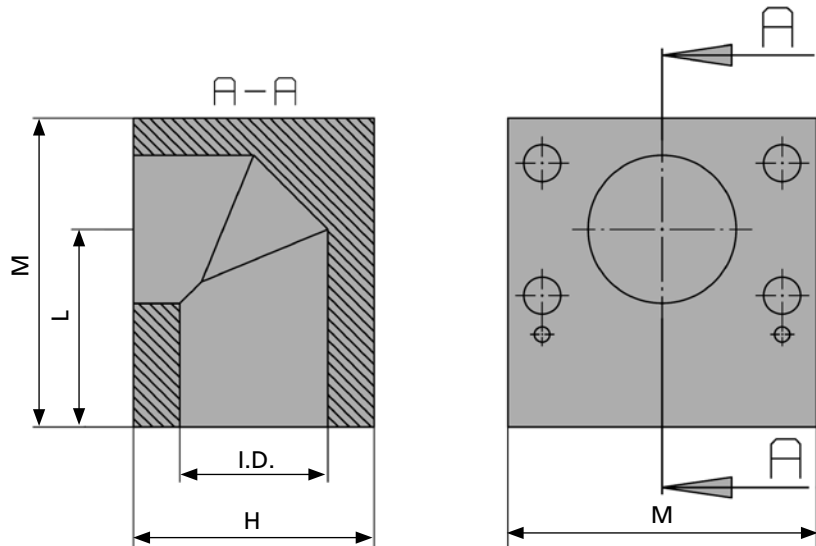
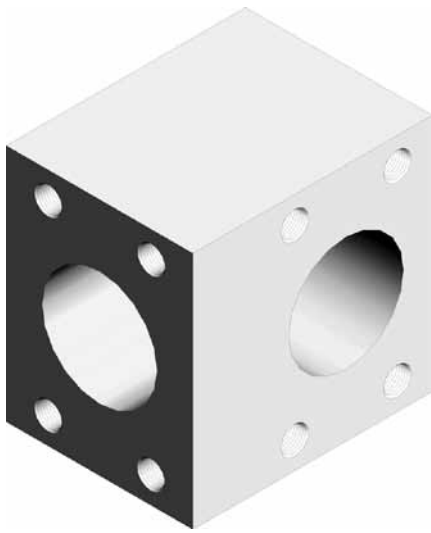
Size	Complete Part No	Complete ID Code	H	Weight [kg]	Body Part No	Body ID Code
1/2"	308015	1601200100	60	0.81	08015	1601000100
3/4"	312015	1601200500	65	1.43	12015	1601000500
1"	316015	1601201000	70	1.64	16015	1601001000
1 1/4"	320015	1601201500	80	2.42	20015	1601001500
1 1/2"	324015	1601202000	90	3.63	24015	1601002000
2"	332015	1601202500	110	5.45	32015	1601002500
2 1/2"	340015	1601202700	130	8.21	40015	1601003000
3"	348015	1601202800	160	14.6	48015	1601003500

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Sizes 2 1/2" and 3" are not available in stainless steel.
 Other materials on request.

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Elbow block

ISO 6162-1 (SAE J 518 Code 61)

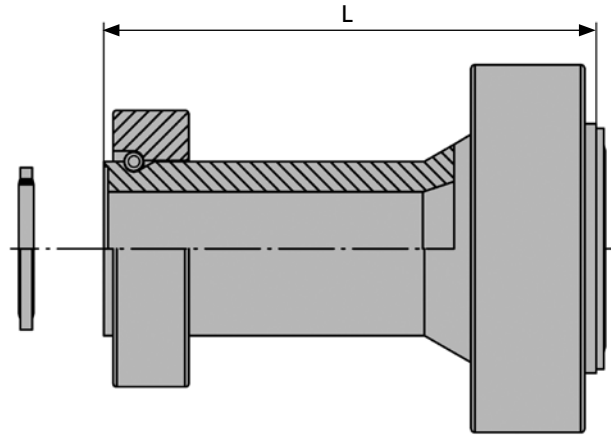
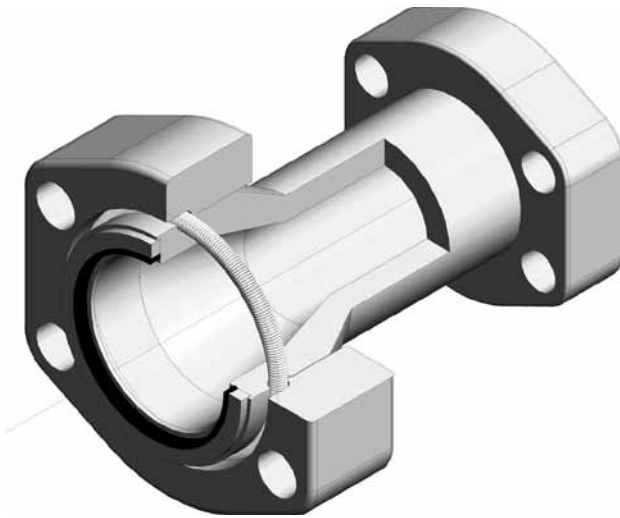


Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	308115	1603000100	40	36	56	13	0.83
3/4"	312115	1603000500	40	50	70	20	1.22
1"	316115	1603001000	48	47	70	23	1.46
1 1/4"	320115	1603001500	58	55	80	30	2.24
1 1/2"	324115	1603002000	68	59	90	38	3.16
2"	332115	1603002500	78	64	100	48	4.31
2 1/2"	340115	1603003000	88	65	110	60	5.45
3"	348115	1603003500	110	80	135	73	11.1

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Reducer flange

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:

RF312-308 includes:

312	1 pc
308	1 pc
12-08	1 pc
12	1 pc
1213	1 pc
08	1 pc
0823	1 pc

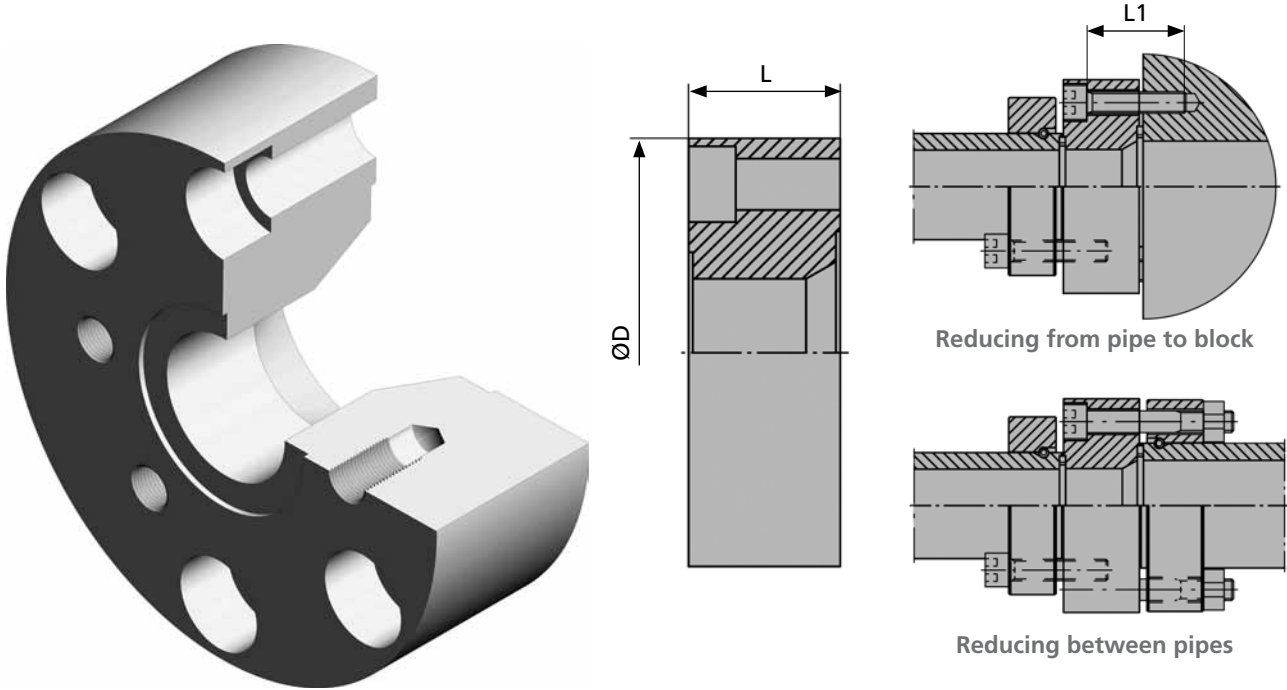
Size	Complete Part No	Complete ID Code	L	Weight [kg]	Body Part No	Body ID Code
3/4" – 1/2"	RF312-308	1501207300	65	0.75	12-08	1501000050
1" – 3/4"	RF316-312	1501208000	110	1.10	16-12	1501000100
1" – 1/2"	RF316-308	1501207800	80	1.10	16-08	1501000090
1 1/4" – 1"	RF320-316	1501209500	110	1.38	20-16	1501001500
1 1/4" – 3/4"	RF320-312	1501209000	110	1.28	20-12	1501001000
1 1/2" – 1 1/4"	RF324-320	1501210500	130	2.10	24-20	1501002500
1 1/2" – 1"	RF324-316	1501210000	110	1.76	24-16	1501002000
2" – 1 1/2"	RF332-324	1501211500	130	3.01	32-24	1501003500
2" – 1 1/4"	RF332-320	1501211000	130	2.52	32-20	1501003000
2 1/2" – 2"	RF340-332	1501211700	150	4.62	40-32	1501004500
2 1/2" – 1 1/2"	RF340-324	1501211600	150	4.08	40-24	1501004000
3" – 2 1/2"	RF348-340	1501211900	180	7.63	48-40	1501005500
3" – 2"	RF348-332	1501211800	180	6.62	48-32	1501005000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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Reducer block

ISO 6162-1 (SAE J 518 Code 61)



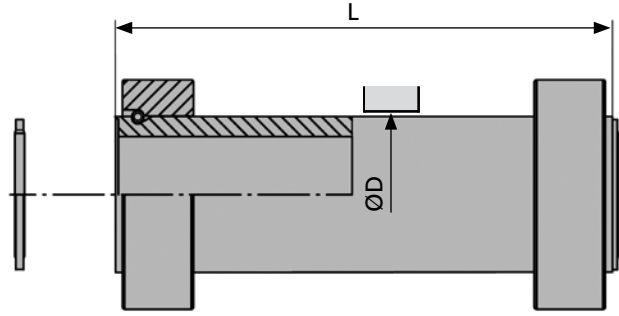
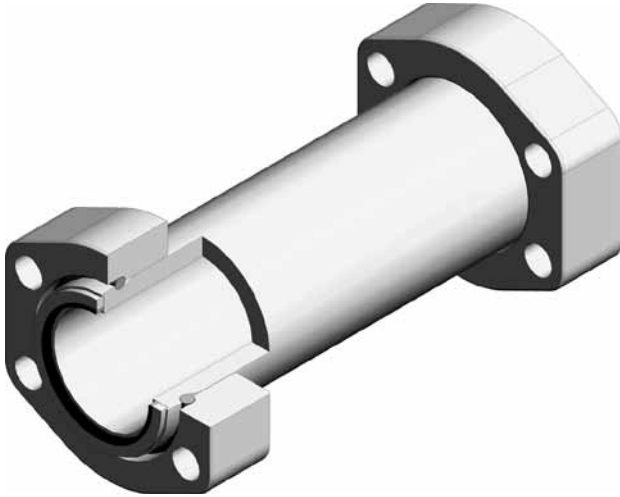
Size	Part No	ID Code	D	L	L1 Bolt size DIN 912, 8.8	Weight [kg]
3/4" – 1/2"	RBE312-308	1502108000	80	25	M10x25	0.70
1" – 3/4"	RBE316-312	1502109200	84	30	M10x30	0.90
1" – 1/2"	RBE316-308	1502109000	84	30	M10x30	0.96
1 1/4" – 1"	RBE320-316	1502110400	88	35	M10x35	1.40
1 1/4" – 3/4"	RBE320-312	1502110200	88	35	M10x35	1.40
1 1/4" – 1/2"	RBE320-308	1502110000	88	35	M10x35	1.46
1 1/2" – 1 1/4"	RBE324-320	1502111400	103	40	M12x45	2.17
1 1/2" – 1"	RBE324-316	1502111200	103	40	M12x45	2.22
1 1/2" – 3/4"	RBE324-312	1502111000	103	40	M12x45	2.23
2" – 1 1/2"	RBE332-324	1502112400	113	40	M12x45	2.50
2" – 1 1/4"	RBE332-320	1502112200	113	40	M12x45	2.63
2" – 1"	RBE332-316	1502112000	113	40	M12x45	2.35
2 1/2" – 2"	RBE340-332	1502113400	128	40	M12x45	3.15
2 1/2" – 1 1/2"	RBE340-324	1502113200	128	40	M12x45	3.28
2 1/2" – 1 1/4"	RBE340-320	1502113000	128	40	M12x45	3.35
3" – 2 1/2"	RBE348-340	1502114400	158	40	M16x45	4.86
3" – 2"	RBE348-332	1502114200	158	40	M16x45	5.04
3" – 1 1/2"	RBE348-324	1502114000	158	40	M16x45	5.11

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

L1= reducer block to block

Bulkhead flange

ISO 6162-1 (SAE J 518 Code 61)



SAE 3000 PSI

Complete Part No example:

308019 includes:
 308 2 pcs
 08019 1 pc
 08 2 pcs
 0823 2 pcs

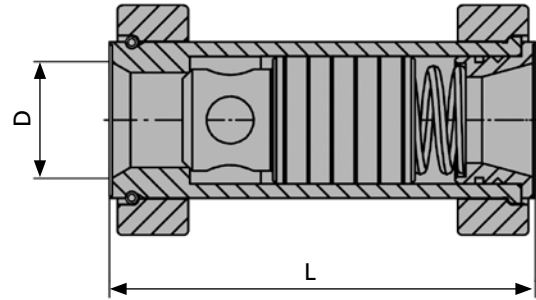
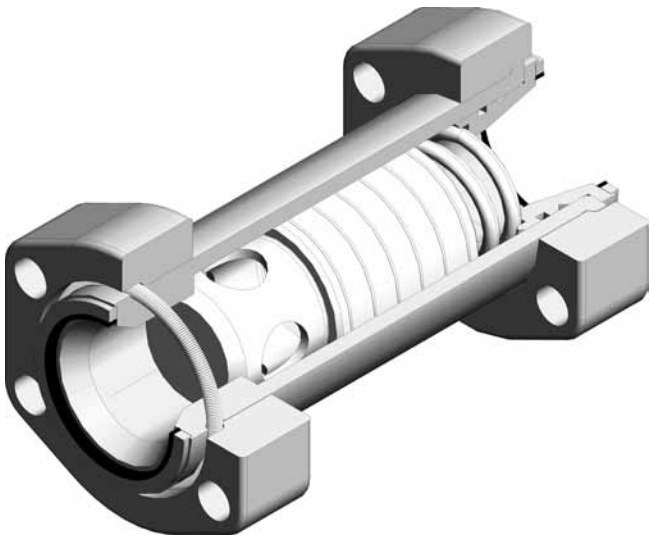
Size	Complete Part No	Complete ID Code	L	Required bulkhead opening ØD	Weight [kg]	Body Part No	Body ID Code
1/2"	308019	1904054300	170	27	1.20	08019	1904000000
3/4"	312019	1904054500	170	37	1.37	12019	1904000100
1"	316019	1904055000	170	40	1.51	16019	1904000500
1 1/4"	320019	1904055500	180	47	2.10	20019	1904001000
1 1/2"	324019	1904056000	180	57	3.04	24019	1904001500
2"	332019	1904056500	210	68	4.37	32019	1904002000
2 1/2"	340019	1904056700	220	82	6.77	40019	1904002500
3"	348019	1904056800	240	99	10.6	48019	1904003000

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.

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Non return valve

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:

312135 includes:
 312 2 pcs
 12135 1 pc
 12 1 pcs
 1213 2 pcs

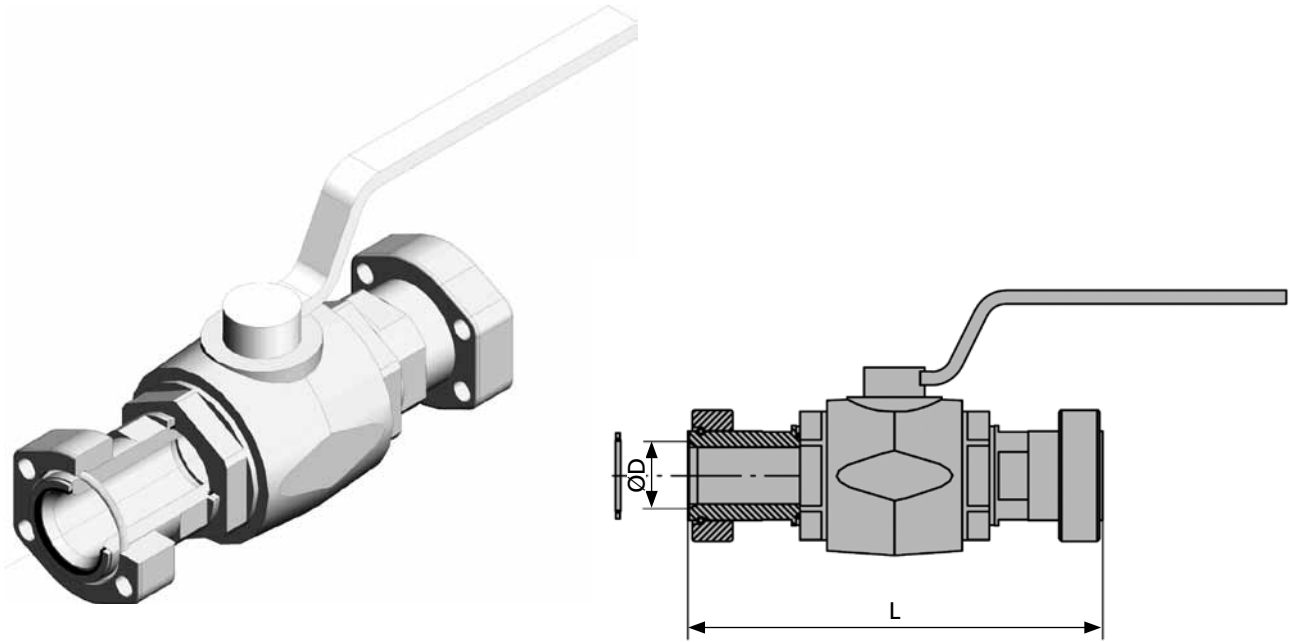
Size	Complete Part No	ID Code	W.P. [bar]	L	D	Weight [kg]
3/4"	312135	1912010000	350	100	21	1.3
1"	316135	1912011000	350	120	24	1.3
1 1/4"	320135	1912012000	280	140	31	2.0
1 1/2"	324135	1912013000	280	155	38	3.5
2"	332135	1912014000	280	180	49	4.4
2 1/2"	340135	1912014200	210	190	61	6.6
3"	348135	1912014400	210	200	73	9.6

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Standard opening pressure= 0.5 bar. On request 1 bar to 3 bar.

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Ball valve

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SAE 3000 PSI

Complete Part No example:
308129 includes:

308	2 pcs
08014	2 pc
08	2 pcs
0823	2 pcs
xxx	2 pc
BKH 1/2"R	1 pc

Ball valve with GS-flange connection SAE 3000 psi

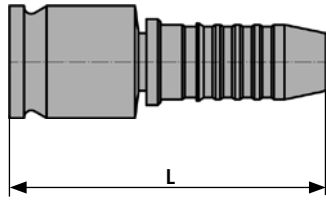
Size	Complete Part No	ID Code	W.P. [bar]	Ball valve Part No	L	D	Weight [kg]
1/2"	308129	2603010000	350	BKH 1/2 R	184	14	1.5
3/4"	312129	2603010400	350	BKH 3/4 R	218	21	2.6
1"	316129	2603010800	350	BKH 1 R	243	24	3.7
1 1/4"	320129	2603011200	280	MKHP 1 1/4 R	247	31	5.5
1 1/2"	324129	2603011600	280	MKHP 1 1/2 R	286	38	9.0
2"	332129	2603012000	280	MKHP 2 R	306	49	12.9

Body material:
Standard= carbon steel
Stainless steel= add SS after Part No

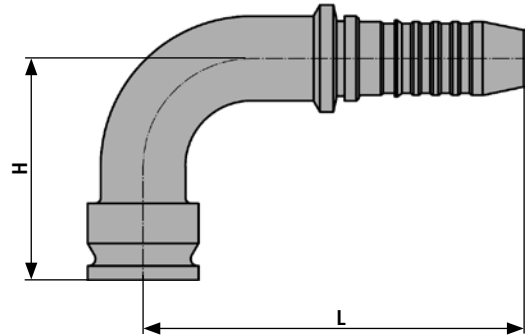
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GS-retain ring hose couplings

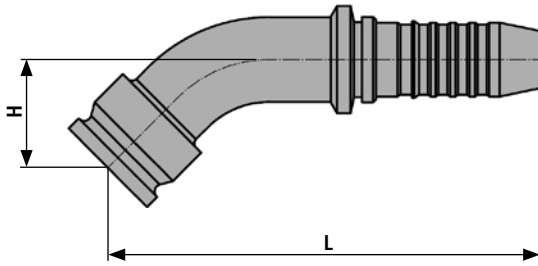
ISO 6162-1 (SAE J 518 Code 61)



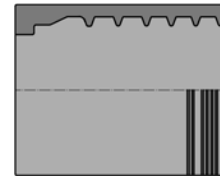
Straight



90°



45°



Ferrule

GS-hose coupling, straight

Size	Part No	ID Code	L
3/4"	12020G	5301001100	100
1"	16020G	5301001420	111
1 1/4"	20020G	5301001820	128
1 1/2"	24020G	5301002220	134
2"	32020G	5301002620	200

GS-hose coupling, 90°

Size	Part No	ID Code	L	H
3/4"	12021G	5301042020	115	69
1"	16021G	5301042420	134	78
1 1/4"	20021G	5301042820	137	88
1 1/2"	24021G	5301043620	177	102
2"	32021G	5301044020	254	126

GS-hose coupling, 45°

Size	Part No	ID Code	L	H
3/4"	12022G	5301040020	132	36
1"	16022G	5301040500	152	38
1 1/4"	20022G	5301040900	186	44
1 1/2"	24022G	5301041220	200	52
2"	32022G	5301041620	274	60

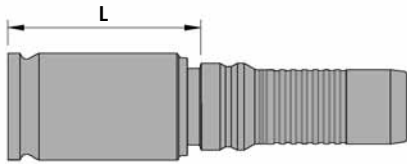
Ferrule

Size	Part No	ID Code	D (after crimping)
3/4"	G599-12	5202001230	37.4–37.8
1"	G599-16	5202001240	44.3–44.7
1 1/4"	G596-20	5202001100	56.2–56.6
1 1/2"	G599-24	5202001260	63.3–63.7
2"	integrated in hose couplings		76.6–78.1

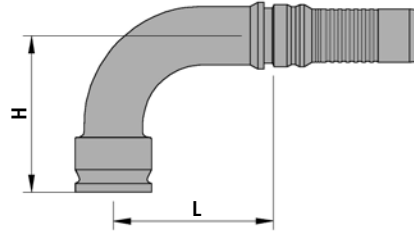
Component material:
Carbon steel, zinc plated

GS-retain ring hose couplings, I-Series

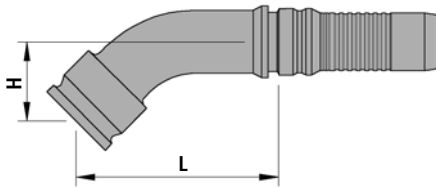
ISO 6162-1 (SAE J 518 Code 61)



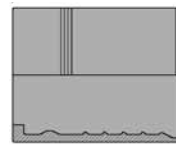
Straight



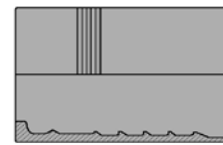
90°



45°



Type 594-



Type 596-

Ferrules

SAE 3000 PSI

GS-hose coupling, straight

Size	Part No	ID Code	L
3/4"	12020-IT	5301001105	44.2
1"	16020-IT	5301001425	48.3
1 1/4"	20020-IT	5301001825	82.3
1 1/2"	24020-IT	5301002225	83.4
2"	32020-IT	5301002625	96.9

GS-hose coupling, 90°

Size	Part No	ID Code	L	H
3/4"	12021-IT	5301042025	59.2	64
1"	16021-IT	5301042425	76.3	75
1 1/4"	20021-IT	5301042825	95.1	93
1 1/2"	24021-IT	5301043625	111.8	110
2"	32021-IT	5301044025	149.5	140

GS-hose coupling, 45°

Size	Part No	ID Code	L	H
3/4"	12022-IT	5301040025	72.2	32.0
1"	16022-IT	5301040505	88.3	36.1
1 1/4"	20022-IT	5301040905	112.1	43.8
1 1/2"	24022-IT	5301041225	128.8	51.7
2"	32022-IT	5301041625	166.4	65.9

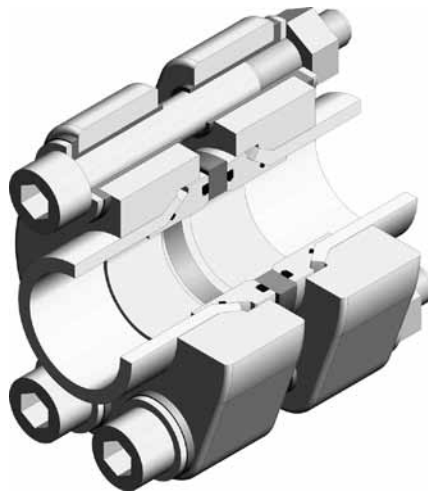
Ferrules

Size	Gates hoses				Intertraco hoses					
	G5K/EF5K		G6K/EF6K		GS4SH		GSR13		GSR15	
	Part No	ID Code	Part No	ID Code	Part No	ID Code	Part No	ID Code	Part No	ID Code
3/4"	594-12	5204006000	594-12	5204006000	594-12	5204006000	594-12	5204006000	594-12	5204006000
1"	594-16	5204006010	594-16	5204006010	594-16	5204006010	594-16	5204006010	594-16	5204006010
1 1/4"	596-20	5204006220	596-20	5204006220	594-20	5204006020	596-20	5204006220	596-20	5204006220
1 1/2"	596-24	5204006230	596-24	5204006230	594-24	5204006030	596-24	5204006230	596-24	5204006230
2"	596-32	5204006240	596-32	5204006240	594-32	5204006040	596-32	5204006240	596-32	5204006240

Component material:
Carbon steel, zinc plated
Straight couplings and ferrules available in stainless steel on request

Non-conductive flange connection

ISO 6162-1 (SAE J 518 Code 61)



Complete Part No example:
308/16X2FA-NC includes:

308F	2 pcs
08/16X2FA	2 pc
08/16F	2 pc
OR18.64X3.53	2 pc
OR12X1.0	2 pc
08099B/B-NC	1 pc
M6DIN125	8 pcs
M08-PF-308	8 pcs
M6X70DIN912-12.9	4 pcs
M6DIN934-10	4 pcs

Size	Pipe size	Complete Part No	ID Code	Bolt Torque [Nm]	Weight [kg]
1/2"	16 x 2.0	308/16X2FA-NC	1401801000	15	0.46
1/2"	18 x 2.0	308/18X2FA-NC	1401802000	15	0.44
1/2"	20 x 2.0	308/20X2FA-NC	1401803000	15	0.46
1/2"	25 x 2.5	308/25X2.5FA-NC	1401804000	15	0.46
1/2"	25 x 3.0	308/25X3FA-NC	1401805000	15	0.46
3/4"	20 x 2.0	312/20X2FA-NC	1401806000	22	0.76
3/4"	20 x 2.5	312/20X2.5FA-NC	1401807000	22	0.65
3/4"	25 x 2.5	312/25X2.5FA-NC	1401808000	22	0.71
3/4"	25 x 3.0	312/25X3FA-NC	1401809000	22	0.71
3/4"	30 x 3.0	312/30X3FA-NC	1401810000	22	0.65
1"	25 x 2.5	316/25X2.5FA-NC	1401811000	30	0.97
1"	25 x 3.0	316/25X3FA-NC	1401812000	30	0.97
1"	30 x 3.0	316/30X3FA-NC	1401813000	30	0.90
1"	30 x 4.0	316/30X4FA-NC	1401814000	30	0.90
1"	38 x 4.0	316/38X4FA-NC	1401815000	30	0.78
1 1/4"	30 x 3.0	320/30X3FA-NC	1401816000	38	1.28
1 1/4"	30 x 4.0	320/30X4FA-NC	1401817000	38	1.05
1 1/4"	38 x 4.0	320/38X4FA-NC	1401818000	38	1.18
1 1/4"	38 x 5.0	320/38X5FA-NC	1401819000	38	1.11
1 1/4"	42 x 4.0	320/42X4FA-NC	1401820000	38	1.07
1 1/2"	30 x 3.0	324/30X3FA-NC	1401821000	52	1.91
1 1/2"	38 x 4.0	324/38X4FA-NC	1401822000	52	2.14
1 1/2"	42 x 4.0	324/42X4FA-NC	1401823000	52	2.04
1 1/2"	50 x 5.0	324/50X5FA-NC	1401824000	52	1.81
2"	50 x 5.0	332/50X5FA-NC	1401825000	61	2.96
2"	60 x 5.0	332/60X5FA-NC	1401826000	61	2.58
2"	60 x 6.0	332/60X6FA-NC	1401827000	61	2.58
2 1/2"	60 x 5.0	340/60X5FA-NC	1401828000	87	4.43
2 1/2"	73 x 7.0	340/73X7FA-NC	1401829000	87	4.12
2 1/2"	73 x 5.0	340/73X5FA-NC	1401828500	87	4.10
3"	73 x 5.0	348/73X5FA-NC	1401830500	139	7.50
3"	90 x 5.0	348/90X5FA-NC	1401832000	139	6.45

Insert cone for flare flange connection

ISO 6162-1 (SAE J 518 Code 61)



Type A



Type B



Type C



Type D

Metric pipes

Size	Part No Type A	ID Code Type A	Part No Type B	ID Code Type B	Part No Type C	ID Code Type C	Part No Type D	ID Code Type D	Pipe Size
1/2"	08/16X2FA	1401000300	08/16X2FB	1401000400	08/16X2FC	1401000500	08/16X2FD	1401000600	16x2.0
1/2"	08/18X2FA	1401002100	08/18X2FB	1401002200	08/18X2FC	1401002300	08/18X2FD	1401002400	18x2.0
1/2"	08/20X2FA	1401004100	08/20X2FB	1401004200	08/20X2FC	1401004300	08/20X2FD	1401004400	20x2.0
1/2"	08/25X2.5FA	1401006000	08/25X2.5FB	1401006100	08/25X2.5FC	1401006300	08/25X2.5FD	1401006400	25x2.5
1/2"	08/25X3FA	1401006600	08/25X3FB	1401006700	08/25X3FC	1401006800	08/25X3FD	1401006900	25x3.0
3/4"	12/20X2FA	1401010100	12/20X2FB	1401010200	12/20X2FC	1401010300	12/20X2FD	1401010400	20x2.0
3/4"	12/20X2.5FA	1401010600	12/20X2.5FB	1401010700	12/20X2.5FC	1401010800	12/20X2.5FD	1401010900	20x2.5
3/4"	12/25X2.5FA	1401012100	12/25X2.5FB	1401012200	12/25X2.5FC	1401012300	12/25X2.5FD	1401012400	25x2.5
3/4"	12/25X3FA	1401012600	12/25X3FB	1401012700	12/25X3FC	1401012800	12/25X3FD	1401012900	25x3.0
3/4"	12/30X3FA	1401014100	12/30X3FB	1401014200	12/30X3FC	1401014300	12/30X3FD	1401014400	30x3.0
1"	16/25X2.5FA	1401016100	16/25X2.5FB	1401016200	16/25X2.5FC	1401016300	16/25X2.5FD	1401016400	25x2.5
1"	16/25X3FA	1401016600	16/25X3FB	1401016700	16/25X3FC	1401016800	16/25X3FD	1401016900	25x3.0
1"	16/30X3FA	1401018100	16/30X3FB	1401018200	16/30X3FC	1401018300	16/30X3FD	1401018400	30x3.0
1"	16/30X4FA	1401018600	16/30X4FB	1401018700	16/30X4FC	1401018800	16/30X4FD	1401018900	30x4.0
1"	16/38X4FA	1401022700	16/38X4FB	1401022800	16/38X4FC	1401022900	16/38X4FD	1401023000	38x4.0
1 1/4"	20/30X3FA	1401024100	20/30X3FB	1401024200	20/30X3FC	1401024300	20/30X3FD	1401024400	30x3.0
1 1/4"	20/30X4FA	1401024420	20/30X4FB	1401024440	20/30X4FC	1401024500	20/30X4FD	1401024510	30x4.0
1 1/4"	20/38X4FA	1401028500	20/38X4FB	1401028600	20/38X4FC	1401028700	20/38X4FD	1401028800	38x4.0
1 1/4"	20/38X5FA	1401029000	20/38X5FB	1041029200	20/38X5FC	1041029300	20/38X5FD	1041029400	38x5.0
1 1/4"	20/42X4FA	1401030600	20/42X4FB	1401030700	20/42X4FC	1401030800	20/42X4FD	1401030900	42x4.0
1 1/2"	24/30X3FA	1401032700	24/30X3FB	1401032800	24/30X3FC	1401032900	24/30X3FD	1401033000	30x3.0
1 1/2"	24/38X4FA	1401034100	24/38X4FB	1401034200	24/38X4FC	1401034300	24/38X4FD	1401034400	38x4.0
1 1/2"	24/42X4FA	1401036600	24/42X4FB	1401036700	24/42X4FC	1401036800	24/42X4FD	1401036900	42x4.0
1 1/2"	24/50X5FA	1401039700	24/50X5FB	1401039800	24/50X5FC	1401039900	24/50X5FD	1401040000	50x5.0
2"	32/50X5FA	1401041100	32/50X5FB	1401041200	32/50X5FC	1401041300	32/50X5FD	1401041400	50x5.0
2"	32/60X5FA	1401042100	32/60X5FB	1401042200	32/60X5FC	1401042300	32/60X5FD	1401042400	60x5.0
2"	32/60X6FA	1401042600	32/60X6FB	1401042700	32/60X6FC	1401042800	32/60X6FD	1401042900	60x6.0
2 1/2"	40/60X5FA	1401045100	40/60X5FB	1401045200	40/60X5FC	1401045300	40/60X5FD	1401045310	60x5.0
2 1/2"	40/73X7FA	1401045480	40/73X7FB	1401045482	40/73X7FC	1401045484	40/73X7FD	1401045486	73x7.0
2 1/2"	40/73X5FA	1401045430	40/73X5FB	1401045432	40/73X5FC	1401045434	40/73X5FD	1401045436	73x5.0
3"	48/73X5FA	1401047400	48/73X5FB	1401047410	48/73X5FC	1401047420	48/73X5FD	1401047430	73x5.0
3"	48/90X5FA	1401048100	48/90X5FB	1401048200	48/90X5FC	1401048300	48/90X5FD	1401048400	90x5.0

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bonded seals and O-rings not included.

Insert cone for flare flange connection

ISO 6162-1 (SAE J 518 Code 61)



Type A



Type B



Type C



Type D

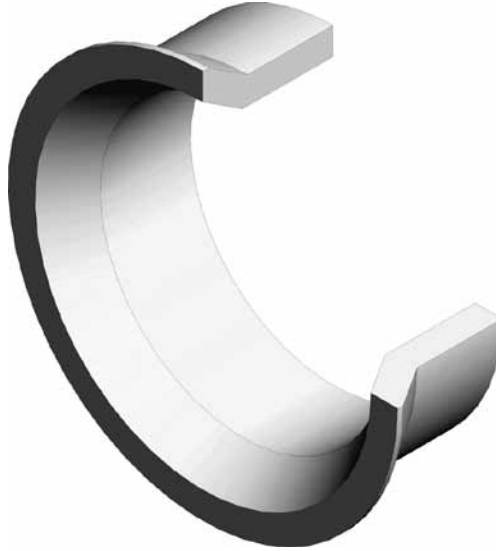
ANSI 36.10/36.19 pipes

Size	Part No Type A	ID Code Type A	Part No Type B	ID Code Type B	Part No Type C	ID Code Type C	Part No Type D	ID Code Type D	Pipe Size
1/2"	08/21.3X3.73FA	1401004921	08/21.3X3.73FB	1401004925	08/21.3X3.73FC	1401004930	08/21.3X3.73FD	1401004935	21.3X3.73
1/2"	08/21.3X4.78FA	1401004950	08/21.3X4.78FB	1401004955	08/21.3X4.78FC	1401004960	08/21.3X4.78FD	1401004965	21.3X4.78
3/4"	12/26.7X3.91FA	1401003130	12/26.7X3.91FB	1401013132	12/26.7X3.91FC	1401013134	12/26.7X3.91FD	1401013136	26.7X3.91
3/4"	12/26.7X5.56FA	1401013140	12/26.7X5.56FB	1401013145	12/26.7X5.56FC	1401013150	12/26.7X5.56FD	1401013155	26.7X5.56
1"	16/33.4X3.38FA	1401019720	16/33.4X3.38FB	1401019722	16/33.4X3.38FC	1401019724	16/33.4X3.38FD	1401019726	33.4X3.38
1"	16/33.4X4.55FA	1401019746	16/33.4X4.55FB	1401019748	16/33.4X4.55FC	1401019750	16/33.4X4.55FD	1401019752	33.4X4.55
1 1/4"	20/42.2X3.56FA	1401031020	20/42.2X3.56FB	1401031022	20/42.2X3.56FC	1401031024	20/42.2X3.56FD	1401031026	42.2X3.56
1 1/4"	20/42.2X4.85FA	1401031040	20/42.2X4.85FB	1401031042	20/42.2X4.85FC	1401031044	20/42.2X4.85FD	1401031046	42.2X4.85
1 1/2"	24/48.3X3.68FA	1401038220	24/48.3X3.68FB	1401038222	24/48.3X3.68FC	1401038224	24/48.3X3.68FD	1401038226	48.3X3.68
1 1/2"	24/48.3X5.08FA	1401038240	24/48.3X5.08FB	1401038242	24/48.3X5.08FC	1401038244	24/48.3X5.08FD	1401038246	48.3X5.08
2"	32/60.3X3.91FA	1401043720	32/60.3X3.91FB	1401043722	32/60.3X3.91FC	1401043724	32/60.3X3.91FD	1401043726	60.3X3.91
2"	32/60.3X5.54FA	1401043800	32/60.3X5.54FB	1401043820	32/60.3X5.54FC	1401043830	32/60.3X5.54FD	1401043840	60.3X5.54
2 1/2"	40/73X5.16FA	1401045450	40/73X5.16FB	1401045455	40/73X5.16FC	1401045460	40/73X5.16FD	1401045465	73X5.16
2 1/2"	40/73X7FA	1401045480	40/73X7FB	1401045482	40/73X7FC	1401045484	40/73X7FD	1401045486	73X7.01
3"	48/88.9X5.49FA	1401048030	48/88.9X5.49FB	1401048035	48/88.9X5.49FC	1401048040	48/88.9X5.49FD	1401048060	88.9X5.49
3"	48/88.9X7.62FA	1401048060	48/88.9X7.62FB	1401048062	48/88.9X7.62FC	1401048064	48/88.9X7.62FD	1401048066	88.9X7.62

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bonded seals and O-rings not included.

Sleeve

ISO 6162-1 (SAE J 518 Code 61)



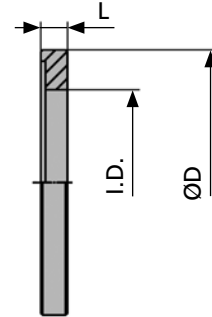
SAE 3000 PSI

Size	Part No	ID Code	Pipe O.D. [mm]
1/2"	08/16F	1401000100	16
1/2"	08/18F	1401002000	18
1/2"	08/20F	1401004000	20
3/4"	12/20F	1401010000	20
3/4"	12/25F	1401012000	25
1"	16/25F	1401016000	25
1"	16/30F	1401018000	30
1 1/4"	20/30F	1401024000	30
1 1/4"	20/38F	1401028000	38
1 1/2"	24/38F	1401034000	38
1 1/2"	24/42F	1401036000	42
2"	32/50F	1401041000	50
2 1/2"	40/60F	1401045000	60
3"	48/73F	1401047350	73

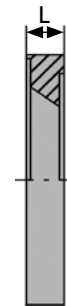
Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Adapter

ISO 6162-1 (SAE J 518 Code 61)



Adapter between O-ring and bonded seal



Adapter between metric and ANSI 36.19

Please add 10 mm to bolt lengths mentioned on page 34.

Adapter between O-ring and standard GS bonded seal, metric pipes

Size	Part No	ID Code	L	D	ID	Weight [kg]
1/2"	08099	1803000100	7	30	14	0.02
3/4"	12099	1803001000	7	40	20	0.05
1"	16099	1803002000	7	45	24	0.06
1 1/4"	20099	1803003000	7	50	30	0.07
1 1/2"	24099	1803004000	7	60	39	0.09
2"	32099	1803005000	7	70	49	0.12
2 1/2"	40099	1803006000	7	84	60	0.16
3"	48099	1803007000	7	102	72	0.22

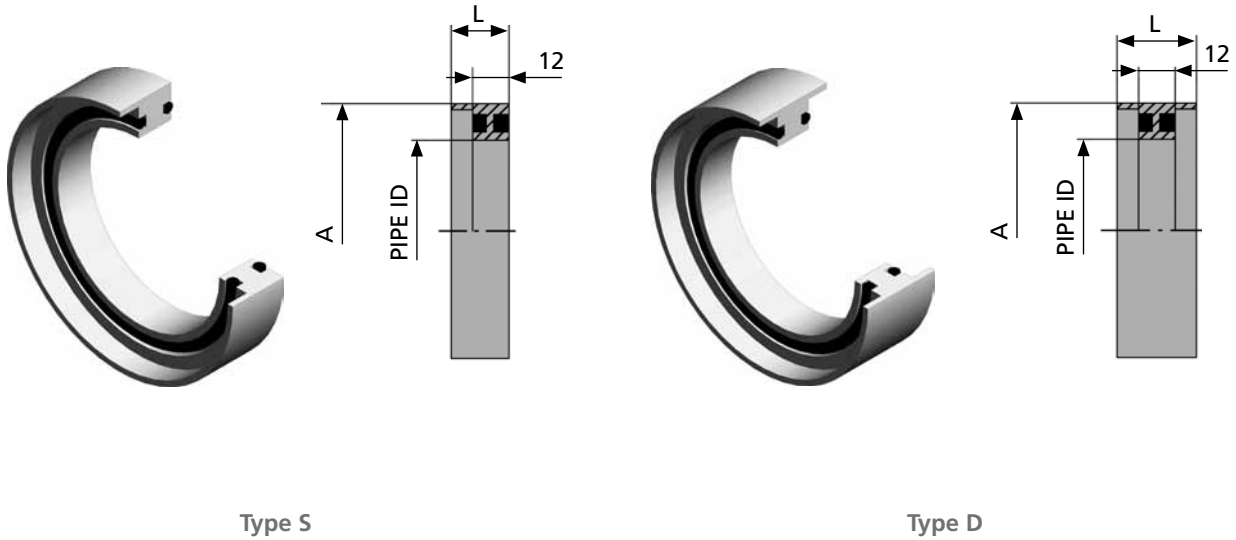
Adapter between metric and ANSI 36.10/36.19 pipes

Size	Part No	ID Code	A-Pipe	B-Pipe	Bonded Seal		L	Weight [kg]
					1	2		
1/2"	08087	1803201000	26x6.0	21.3x7.5	0823	0821	10	0.03
3/4"	12087	1803202000	36x8.0	26.7x7.8	1213	0823	10	0.06
1"	16087	1803203000	39x7.5	33.4x6.4	1629	1633	10	0.06
1"	16088	1803203500	39x7.5	33.4x9.1	1629	1633	10	0.07
1 1/4"	20087	1803204000	46x8.5	42.2x6.4	2030	2042	10	0.07
1 1/4"	20088	1803204500	46x8.5	42.2x9.7	2030	2042	10	0.08
1 1/2"	24087	1803205000	56x8.5	48.3x7.1	2432	2448	10	0.10
1 1/2"	24088	1803205500	56x8.5	48.3x10.2	2432	2448	10	0.11
2"	32087	1803206000	66x8.5	60.3x8.7	3219	3260	10	0.13
2"	32088	1803206500	66x8.5	60.3x11.1	3219	3260	10	0.14

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Seal carrier

ISO 6162-1 (SAE J 518 Code 61)



Type S

Type D

Please add at least 10 mm to bolt lengths mentioned on page 34.

Type S with O-rings between flange and block – metric pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220S	1809010000	OR53.57X3.53	70	15	66x8.5
2 1/2"	4020S	1809011000	OR66.27X3.53	84	15	80x10
3"	4820S	1809012000	OR82.14X3.53	102	15	97x12

Type S with O-rings between flange and block – ANSI 36.10/36.19 pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220/60.3X8.74S	1809010200	OR47.22X3.53	65	15	60.3x8.74
2 1/2"	4020/73X9.53S	1809011300	OR58.74X3.53	79	15	73.0x9.53
3"	4820/88.9X11.13S	1809012200	OR77.62X3.53	93	15	88.9x11.13

Type D with O-rings between flanges – metric pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220D	1809010100	OR53.57X3.53	70	18	66x8.5
2 1/2"	4020D	1809011100	OR66.27X3.53	84	18	80x10
3"	4820D	1809012100	OR82.14X3.53	102	18	97x12

Type D with O-rings between flanges – ANSI 36.10/36.19 pipes

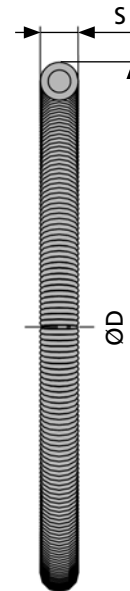
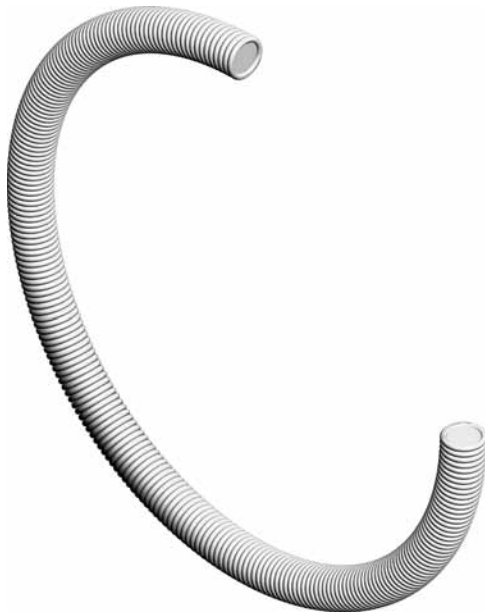
Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220/60.3X8.74D	1809010300	OR47.22X3.53	65	18	60.3x8.74
2 1/2"	4020/73X9.53D	1809011400	OR58.74X3.53	79	18	73.0x9.53
3"	4820/88.9X11.13D	1809012300	OR77.62X3.53	93	18	88.9x11.13

Component material:
Standard= carbon steel, zinc plated
Stainless steel= add SS after Part No
Other materials on request.

O-ring not included in a Part No,
please order separately.

Retain ring

ISO 6162-1 (SAE J 518 Code 61)



Metric pipes

Size	Part No	ID Code	Pipe Size	D	S
1/2"	08	1902000150	26x6	30	4
3/4"	12	1902001050	36x8	40	4
1"	16	1902002050	39x7.5	44	5
1 1/4"	20	1902003050	46x8	51	5
1 1/2"	24	1902004050	56x8.5	61	5
2"	32	1902006050	66x8.5	71	5
2 1/2"	40	1902007050	80x10	85	5
3"	48	1902008050	97x12	103	6

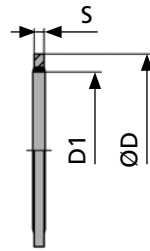
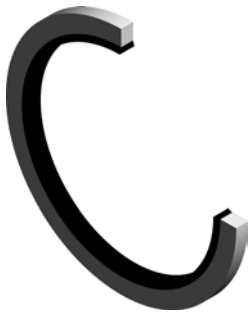
ANSI 36.10/36.19 pipes

Size	Part No	ID Code	Pipe Size	D	S
1/2"	08/21.3	1902000250	21.3x7.5	25.3	4
3/4"	12/26.7	1902001250	26.7x7.8	30.7	4
1"	16/33.4	1902002250	33.4x9.1	38.4	5
1 1/4"	20/42.2	1902003250	42.2x9.7	47.2	5
1 1/2"	24/48.3	1902004250	48.3x10.2	53.3	5
2"	32/60.3	1902006250	60.3x11.1	65.3	5
2 1/2"	40/73	1902007250	73.0x14.02	78.0	5
3"	48/88.9	1902008250	88.9x15.2	94.9	6

Component material:
AISI 316, special treated

Bonded seal

ISO 6162-1 (SAE J 518 Code 61)



Bonded seal for metric GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
1/2"	0823	2701001400	0823SS	2701100200	2.03	23.80	17.28
3/4"	1213	2701002000	1213SS	2701101000	2.34	33.27	24.26
1"	1629	2701003000	1629SS	2701102000	2.34	34.93	27.05
1 1/4"	2030	2701004000	2030SS	2701103000	3.25	42.80	33.89
1 1/2"	2432	2701005000	2432SS	2701104000	3.25	52.38	42.93
2"	3219	2701007000	3219SS	2701105000	3.25	63.50	51.69
2 1/2"	4037	2701008000	4037SS	2701107000	3.25	75.00	64.39
3"	4839	2701009000	4839SS	2701108000	3.25	90.17	76.08

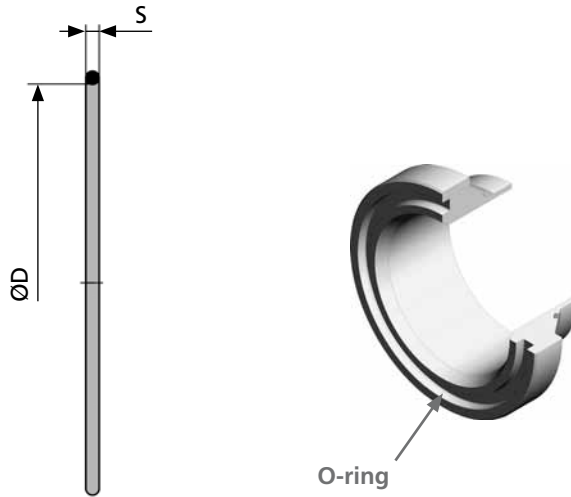
Bonded seal for ANSI 36.10/36.19 GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
1/2"	0821	2701001000	0821SS	2701100000	2.00	15.88	10.37
3/4"	0823	2701001400	0823SS	2701100200	2.03	23.80	17.28
1"	1633	2701003400	1633SS	2701102100	2.34	28.58	21.54
1 1/4"	2042	2701004400	2042SS	2701103400	2.34	39.00	31.00
1 1/2"	2448	2701005200	2448SS	2701104500	3.25	44.45	35.94
2"	3260	2701007400	3260SS	2701105400	3.25	55.50	46.50
2 1/2"	4073	2701008200	4073SS	2701107500	3.25	69.85	54.89
3"	4888	2701009200	4888SS	2701108300	4.00	83.80	70.00

Material possibilities:
 Standard= carbon steel, zinc plated with NBR
 SS= stainless steel with NBR
 Other materials and combinations on request.

O-ring between 37° insert cones

ISO 6162-1 (SAE J 518 Code 61)



Size	Part No	ID Code	GS Size
1/2"	OR18.64X3.53	2701506000	08
3/4"	OR24.99X3.53	2701512000	12
1"	OR32.92X3.53	2701519400	16
1 1/4"	OR37.69X3.53	2701524200	20
1 1/2"	OR47.22X3.53	2701529000	24
2"	OR56.75X3.53	2701535000	32
2 1/2"	OR69.44X3.53	2701540000	40
3"	OR85.32X3.53	2701546000	48

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton®), Shore 90 A= add VI after Part No
 Other materials on request.

O-ring 2 for insert cones

ISO 6162-1 (SAE J 518 Code 61)



Metric pipes

Pipe Size	Part No	ID Code
16x2.0	OR12X1.0	2701500000
18x2.0	OR14X1.0	2701502000
20x2.0	OR16X1.0	2701504000
20x2.5	OR15X1.0	2701503000
25x2.5	OR20X1.0	2701508000
25x3.0	OR19X1.0	2701507200
30x3.0	OR23X1.0	2701511000
30x4.0	OR22X1.0	2701510000
38x4.0	OR30X1.0	2701517200
38x5.0	OR28X1.0	2701516000
42x3.0	OR34X1.0	2701521200
42x4.0	OR34X1.0	2701521200
50x5.0	OR41X1.78	2701525000
60x5.0	OR50.52X1.78	2701531000
60x6.0	OR47.35X1.78	2701529200
73x7.0	OR56.87X1.78	2701535200
73x5.0	OR63.22X1.78	2701537000
90x5.0	OR79X1.78	2701543000

ANSI 36.10/36.19 pipes

Pipe Size	Part No	ID Code
21.3x3.73	OR14X1.0	2701502000
21.3x4.78	OR12X1.0	2701500000
26.7x3.91	OR20X1.0	2701508000
26.7x5.56	OR16X1.0	2701504000
33.4x3.38	OR25X1.0	2701513200
33.4x4.55	OR23X1.0	2701511000
42.2x3.56	OR34X1.0	2701521200
42.2x4.85	OR32X1.0	2701519600
48.3x3.68	OR41X1.78	2701525000
48.3x5.08	OR37.82X1.78	2701524600
60.3x3.91	OR50.52X1.78	2701531000
60.3x5.54	OR47.35X1.78	2701529200
73.0x5.16	OR63.22X1.78	2701537000
73.0x7.01	OR56.87X1.78	2701535200
88.9x5.49	OR79X1.78	2701543000
88.9x7.62	OR72.75X1.78	2701541000

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton®), Shore 90 A= add VI after Part No
 Other materials on request.

ED-Seal for male thread couplings

ISO 6162-1 (SAE J 518 Code 61)



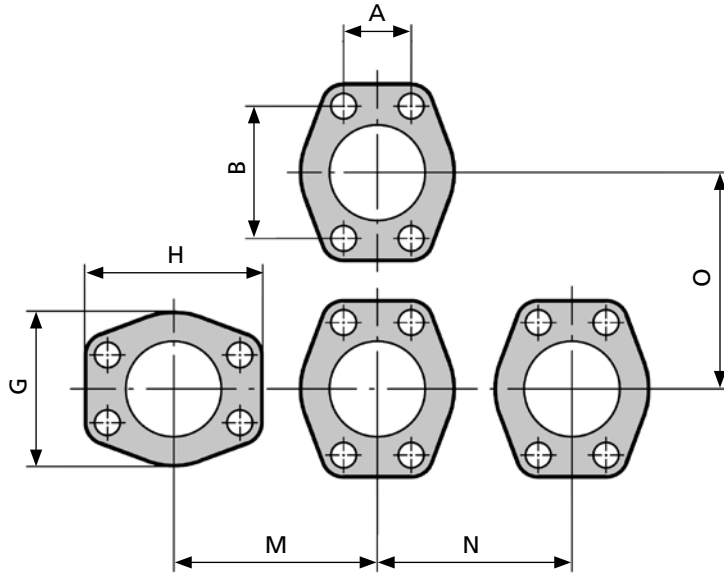
Part No	ID Code
ED R1/2 VI	2201861910
ED R3/4 M26X1.5 27X2 VI	2201862410
ED R1+M33X2 VI	2201863010
ED R11/4+M42X2 VI	2201863310
ED R11/2+M48X2 VI	2201863610

Material: FPM (Viton®)

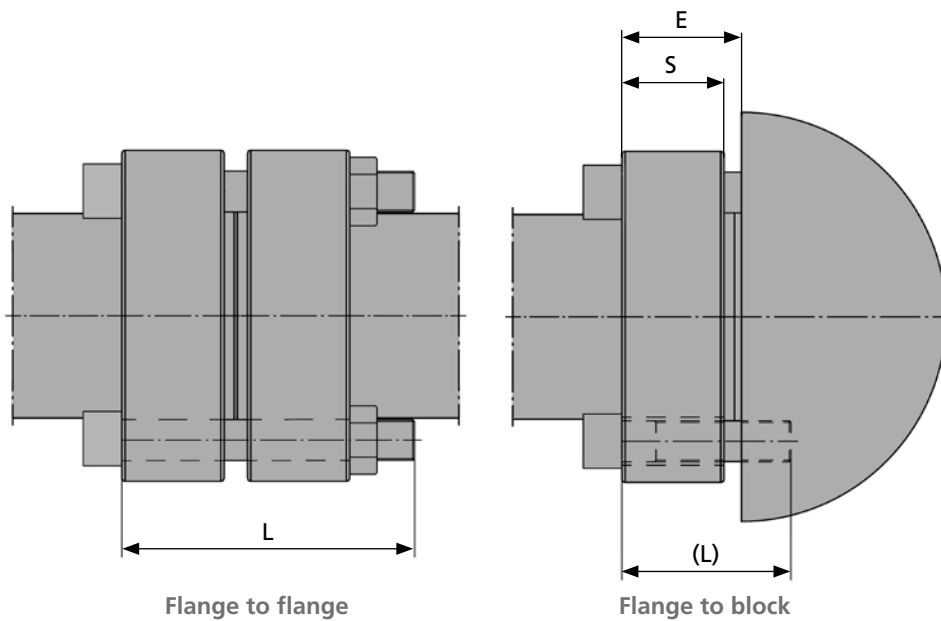
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Flange dimensions

ISO 6162-2 (SAE J 518 Code 62)



Port dimensions for flange connections according to ISO 6162-2.



Flange to flange

Flange to block

Size	Part No	A	B	G	H	M	N	O	S	E	Bolt L DIN 912, 8.8	W.P. [bar]
1/2"	608	18.2	40.5	48	56	57	53	61	20	24	M8x60(35)	420
3/4"	612	23.8	50.8	60	71	70	65	76	25	29	M10x70(40)	420
1"	616	27.8	57.2	70	81	80	75	86	25	29	M12x70(45)	420
1 1/4"	620*	31.8	66.7	78	95	91	83	100	30	35	M12x90(50)	420
1 1/4"	621**	31.8	66.7	78	95	91	83	100	30	35	M14x90(50)	420
1 1/2"	624	36.5	79.4	95	113	109	100	118	35	40	M16x100(60)	420
2"	632	44.5	96.8	114	133	129	119	139	40	45	M20x110(70)	420
2 1/2"	640	58.7	123.8	150	175	169	156	183	50	55	M24x140(90)	420
3"	648	71.4	152.4	178	215	202	184	218	50	58	M30x160(100)	420

* = According to the ISO 6162-2 standard (M12 bolts).

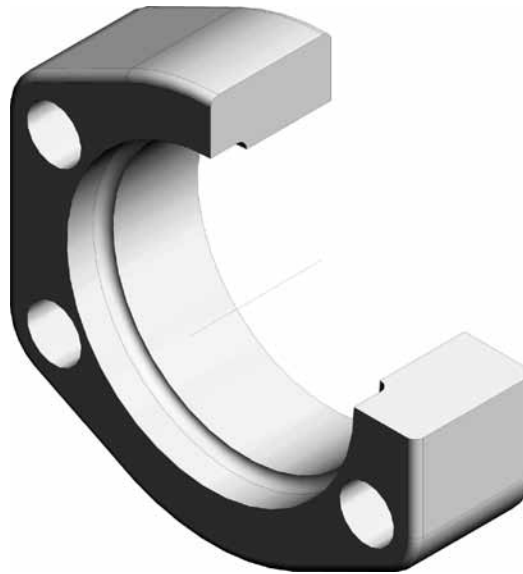
** = According to the previous ISO 6162-2 (2002) standard (M14 bolts). Not to be used for new constructions.

Manufacturing tolerance for flange thickness (S) $\pm 5\%$.

L = flange to flange
(L) = flange to block

Retain ring flange

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	26	608	1103000100	608HDG	1113009000	608SS	1203000100	420	0.20
3/4"	36	612	1103030000	612HDG	1113036000	612SS	1203030000	420	0.38
1"	39	616	1103060000	616HDG	1113069000	616SS	1203060000	420	0.50
1 1/4"	46	620*	1103097600	620HDG*	1113099505	620SS*	1203097600	420	0.87
1 1/4"	46	621**	1103090000	621HDG**	1113099000	621SS**	1203090000	420	0.87
1 1/2"	56	624	1103120000	624HDG	1113129000	624SS	1203120000	420	1.40
2"	66	632	1103150000	632HDG	1113159000	632SS	1203150000	420	2.18
2 1/2"	80	640	1103180000	640HDG	1113161000	640SS	1203159000	420	5.69
3"	97	648	1103210000	648HDG	1113210500	648SS	1203210000	420	7.80

ANSI 36.10/36.19 pipes

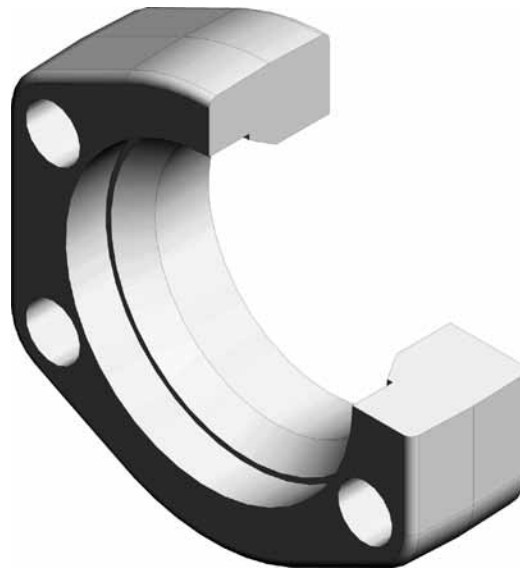
Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	21.3	608/21.3	1103001500	608/21.3HDG	1113009200	608/21.3SS	1203001500	420	0.28
3/4"	26.7	612/26.7	1103031500	612/26.7HDG	1113039200	612/26.7SS	1203031500	420	0.46
1"	33.4	616/33.4	1103061500	616/33.4HDG	1113069200	616/33.4SS	1203061500	420	0.58
1 1/4"	42.2	620/42.2*	1103097605	620/42.2HDG*	1113099510	620/42.2SS*	1203097605	420	1.00
1 1/4"	42.2	621/42.2**	1103091000	621/42.2HDG**	1113099200	621/42.2SS**	1203092000	420	1.00
1 1/2"	48.3	624/48.3	1103120800	624/48.3HDG	1113129200	624/48.3SS	1203120800	420	1.80
2"	60.3	632/60.3	1103150600	632/60.3HDG	1113150700	632/60.3SS	1203150600	420	2.35
2 1/2"	73.0	640/73	1103181000	640/73HDG	1113161500	640/73SS	1203181000	420	5.95
3"	88.9	648/88.9	1103210800	648/88.9HDG	1113211000	648/88.9SS	1203210800	420	8.10

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts).
 ** = According to the previous ISO 6162-2 (2002) standard (M14 bolts). Not to be used for new constructions.

Flare flange

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	25	608F	1103003000	608FHDG	1113006000	608FSS	1203003000	420	0.20
3/4"	30	612F	1103033000	612FHDG	1113036000	612FSS	1203033000	420	0.42
1"	38	616F	1103063000	616FHDG	1113066000	616FSS	1203063000	420	0.51
1 1/4"	42	620F*	1103097615	620FHDG*	1113099500	620FSS*	1203097615	420	0.86
1 1/4"	42	621F**	1103093000	621FHDG**	1113096000	621FSS**	1203093000	420	0.86
1 1/2"	50	624F	1103123000	624FHDG	1113126000	624FSS	1203123000	420	1.45
2"	60	632F	1103153000	632FHDG	1113156000	632FSS	1203153000	420	2.31
2 1/2"	73	640F	1103183000	640FHDG	1113160000	640FSS	1203183000	420	5.95
3"	90	648F	1103211000	648FHDG	1113212000	648FSS	1203211000	420	7.95

ANSI 36.10/36.19 pipes

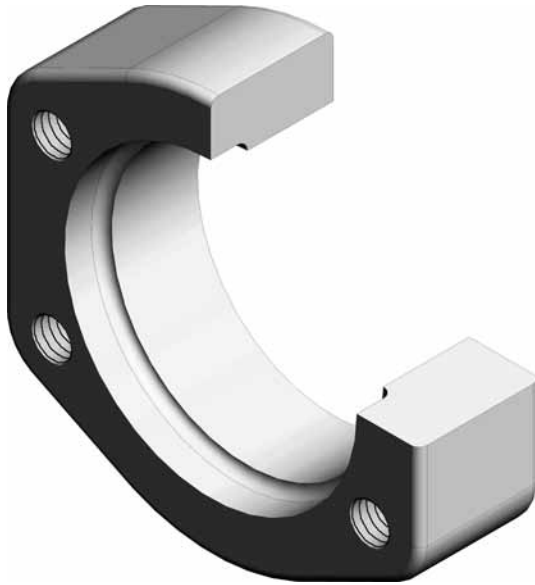
Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1/2"	21.3	608F/21.3	1103004500	608F/21.3HDG	1113009300	608F/21.3SS	1203004500	420	0.30
3/4"	26.7	612F/26.7	1103033300	612F/26.7HDG	1113039400	612F/26.7SS	1203033300	420	0.50
1"	33.4	616F/33.4	1103063300	616F/33.4HDG	1113069400	616F/33.4SS	1203063300	420	0.60
1 1/4"	42.2	620F/42.2*	1103097640	620F/42.2HDG*	1113099515	620F/42.2SS*	1203097620	420	1.00
1 1/4"	42.2	621F/42.2**	1103094000	621F/42.2HDG**	1113099400	621F/42.2SS**	1203094000	420	1.00
1 1/2"	48.3	624F/48.3	1103124000	624F/48.3HDG	1113129400	624F/48.3SS	1203124000	420	1.90
2"	60.3	632F/60.3	1103154000	632F/60.3HDG	1113157000	632F/60.3SS	1203154000	420	2.50
2 1/2"	73.0	640F	1103183000	640FHDG	1113160000	640FSS	1203183000	420	5.95
3"	88.9	648F/88.9	1103211100	648F/88.9HDG	1113212500	648F/88.9SS	1203211100	420	8.10

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= Stainless steel
 Other materials on request.

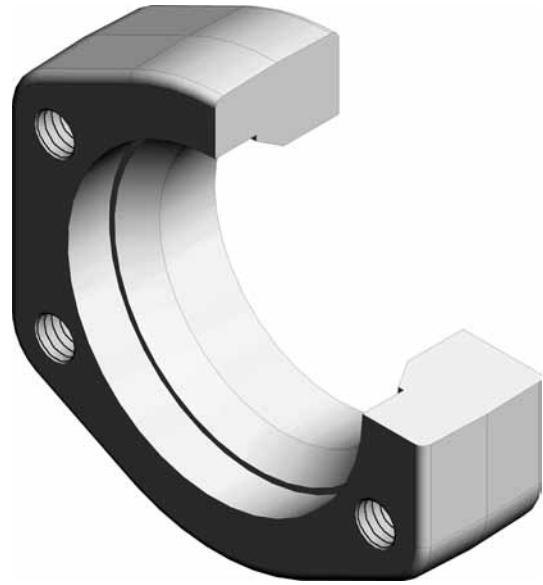
* = According to the ISO 6162-2 standard (M12 bolts).
 ** = According to the previous ISO 6162-2 (2002) standard (M14 bolts). Not to be used for new constructions.

Counter flange

ISO 6162-2 (SAE J 518 Code 62)



Retain ring flange with threads



Flare flange with threads

Retain ring flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
1/2"	608/M8	1103002000	M8x45	0.20
3/4"	612/M10	1103032000	M10x60	0.38
1"	616/M12	1103062000	M12x60	0.50
1 1/4"	620/M12*	1103097610	M12x70	0.87
1 1/4"	621/M14**	1103092000	M14x70	0.87
1 1/2"	624/M16	1103122000	M16x80	1.40
2"	632/M20	1103152000	M20x90	2.18

Flare flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
1/2"	608F/M8	1103003500	M8x45	0.20
3/4"	612F/M10	1103033900	M10x60	0.42
1"	616F/M12	1103064000	M12x60	0.51
1 1/4"	620F/M12*	1103097645	M12x70	0.86
1 1/4"	621F/M14**	1103097500	M14x70	0.86
1 1/2"	624F/M16	1103127500	M16x80	1.45
2"	632F/M20	1103157500	M20x90	2.35

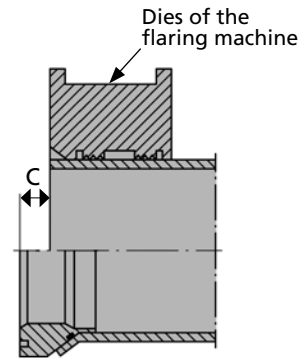
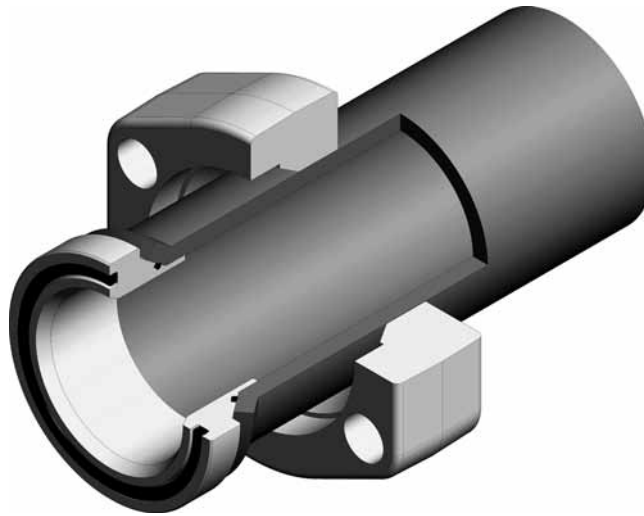
Material possibilities:
 Standard= carbon steel, zinc plated
 -SS= Stainless steel
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts).

** = According to the previous ISO 6162-2 (2002) standard (M14 bolts). Not to be used for new constructions.

Flare flange connection – Type A

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608/16X2FA includes:
 608F 1 pc
 08/16X2FA 1 pc
 08/16F 1 pc
 OR18.64X3.53 1 pc
 OR12X1.0 1 pc

Metric pipes

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	608/16X2FA	1401521000	10	0.27	08/16X2FA	OR18.64X3.53	OR12X1.0	08/16F
1/2"	18x2.0	608/18X2FA	1401521500	11	0.27	08/18X2FA	OR18.64X3.53	OR14X1.0	08/18F
1/2"	20x2.0	608/20X2FA	1401522000	9	0.26	08/20X2FA	OR18.64X3.53	OR16X1.0	08/20F
1/2"	25x2.5	608/25X2.5FA	1401522410	9	0.26	08/25X2.5FA	OR18.64X3.53	OR20X1.0	None
1/2"	25x3.0	608/25X3FA	1401522500	9	0.24	08/25X3FA	OR18.64X3.53	OR19X1.0	None
3/4"	20x2.0	612/20X2FA	1401523500	12	0.53	12/20X2FA	OR24.99X3.53	OR16X1.0	12/20F
3/4"	20x2.5	612/20X2.5FA	1401523705	12	0.54	12/20X2.5FA	OR24.99X3.53	OR15X1.0	12/20F
3/4"	25x2.5	612/25X2.5FA	1401524000	9	0.50	12/25X2.5FA	OR24.99X3.53	OR20X1.0	12/25F
3/4"	25x3.0	612/25X3FA	1401524500	10	0.51	12/25X3FA	OR24.99X3.53	OR19X1.0	12/25F
3/4"	30x3.0	612/30X3FA	1401525000	9	0.48	12/30X3FA	OR24.99X3.53	OR23X1.0	None
3/4"	30x4.0	612/30X4FA	1401525600	9	0.50	12/30X4FA	OR24.99X3.53	OR22X1.0	None
1"	25x2.5	616/25X2.5FA	1401526000	9	0.69	16/25X2.5FA	OR32.92X3.53	OR20X1.0	16/25F
1"	25x3.0	616/25X3FA	1401526410	9	0.66	16/25X3FA	OR32.92X3.53	OR19X1.0	16/25F
1"	30x3.0	616/30X3FA	1401526500	7	0.66	16/30X3FA	OR32.92X3.53	OR23X1.0	16/30F
1"	30x4.0	616/30X4FA	1401527000	7	0.66	16/30X4FA	OR32.92X3.53	OR22X1.0	16/30F
1"	38x4.0	616/38X4FA	1401527500	10	0.60	16/38X4FA	OR32.92X3.53	OR30X1.0	None
1 1/4"	30x3.0	620/30X3FA*	1401530328	10	1.08	20/30X3FA	OR37.69X3.53	OR23X1.0	20/30F
1 1/4"	30x4.0	620/30X4FA*	1401530336	10	1.08	20/30X4FA	OR37.69X3.53	OR22X1.0	20/30F
1 1/4"	38x4.0	620/38X4FA*	1401530344	9	1.01	20/38X4FA	OR37.69X3.53	OR30X1.0	20/38F
1 1/4"	38x5.0	620/38X5FA*	1401530352	9	1.00	20/38X5FA	OR37.69X3.53	OR28X1.0	20/38F
1 1/4"	42x4.0	620/42X4FA*	1401530360	11	0.98	20/42X4FA	OR37.69X3.53	OR34X1.0	None
1 1/2"	30x3.0	624/30X3FA	1401530600	14	1.16	24/30X3FA	OR47.22X3.53	OR23X1.0	24/30F
1 1/2"	38x4.0	624/38X4FA	1401531000	13	1.76	24/38X4FA	OR47.22X3.53	OR30X1.0	24/38F
1 1/2"	38x5.0	624/38X5FA	1401531410	13	1.73	24/38X5FA	OR47.22X3.53	OR28X1.0	24/38F
1 1/2"	42x4.0	624/42X4FA	1401531500	13	1.71	24/42X4FA	OR47.22X3.53	OR34X1.0	24/42F
1 1/2"	50x5.0	624/50X5FA	1401532000	11	1.60	24/50X5FA	OR47.22X3.53	OR41X1.78	None
1 1/2"	50x6.0	624/50X6FA	1401532500	11	1.70	24/50X6FA	OR47.22X3.53	OR37.82X1.78	None
1 1/2"	56x8.5**	624/56X8.5FA	1401532550	12	1.60	24/56X8.5FA	OR47.22X3.53	OR37.82X1.78	None
2"	50x5.0	632/50X5FA	1401533000	11	2.70	32/50X5FA	OR56.75X3.53	OR41X1.78	32/50F
2"	60x5.0	632/60X5FA	1401533500	11	2.52	32/60X5FA	OR56.75X3.53	OR50.52X1.78	None
2"	60x6.0	632/60X6FA	1401534000	11	2.56	32/60X6FA	OR56.75X3.53	OR47.35X1.78	None
2"	66x8.5**	632/66X8.5FA	1401534305	12	2.50	32/66X8.5FA	OR56.75X3.53	OR47.35X1.78	None
2 1/2"	60x6.0	640/60X6FA	1401534320	12	7.55	40/60X6FA	OR69.44X3.53	OR47.35X1.78	40/60F
2 1/2"	73x7.0	640/73X7FA	1401534400	12	8.30	40/73X7FA	OR69.44X3.53	OR56.87X1.78	None
3"	90x9.0**	648/90X9FA	1401535000	14	8.55	48/90X9FA	OR85.32X3.53	OR72.75X1.78	None

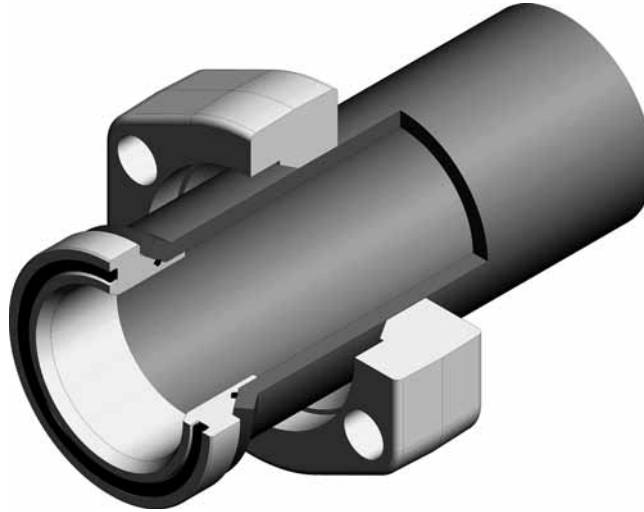
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.
 ** = Flaring machine requirements GSF 220-HD, GSF 400, FP 170 or FP 275.

Flanges page 80
 Inserts page 111
 Sleeves page 113
 O-rings page 118, 119

Flare flange connection – Type A

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/21.3X3.73FA includes:
 608F/21.3 1 pc
 08/21.3X3.73FA 1 pc
 OR18.64X3.53 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring Part No	O-Ring2 Part No
1/2"	21.3X3.73	608/21.3X3.73FA	1401761000	0.20	08/21.3X3.73FA	OR18.64X3.53	OR14X1.0
1/2"	21.3X4.78	608/21.3X4.78FA	1401762000	0.20	08/21.3X4.78FA	OR18.64X3.53	OR12X1.0
3/4"	26.7X3.91	612/26.7X3.91FA	1401766000	0.30	12/26.7X3.9F1A	OR25X3.53	OR20X1.0
3/4"	26.7X5.56	612/26.7X5.56FA	1401767000	0.30	12/26.7X5.56FA	OR25X3.53	OR16X1.0
1"	33.4X3.38	616/33.4X3.38FA	1401771000	0.50	16/33.4X3.38FA	OR32.92X3.53	OR25X1.0
1"	33.4X4.55	616/33.4X4.55FA	1401772000	0.50	16/33.4X4.55FA	OR32.92X3.53	OR23X1.0
1 1/4"	42.2X3.56	620/42.2X3.56FA*	1401782650	0.60	20/42.2X3.56FA	OR37.69X3.53	OR34X1.0
1 1/4"	42.2X4.85	620/42.2X4.85FA*	1401782658	0.60	20/42.2X4.85FA	OR37.69X3.53	OR32X1.0
1 1/2"	48.3X3.68	624/48.3X3.68FA	1401785000	0.90	24/48.3X3.68FA	OR47.22X3.53	OR41X1.78
1 1/2"	48.3X5.08	624/48.3X5.08FA	1401786000	0.90	24/48.3X5.08FA	OR47.22X3.53	OR37.82X1.78
2"	60.3X3.91	632/60.3X3.91FA	1401787000	1.40	32/60.3X3.91FA	OR56.75X3.53	OR53.70X1.78
2"	60.3X5.54	632/60.3X5.54FA	1401788000	1.40	32/60.3X5.54FA	OR56.75X3.53	OR47.35X1.78
2 1/2"	73x7.01	640/73X7FA	1401534400	8.30	40/73X7FA	OR69.44X3.53	OR56.87X1.78

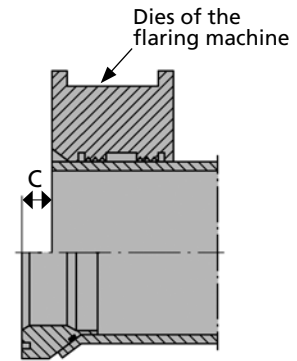
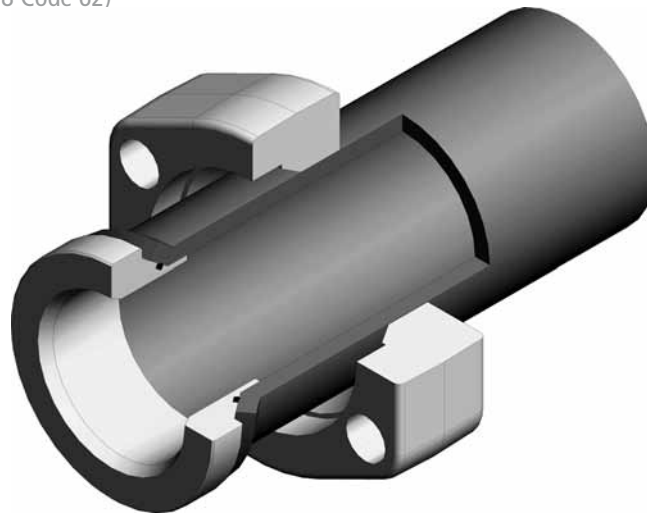
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Flare flange connection – Type B

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/16X2FB includes:
 608F 1 pc
 08/16X2FB 1 pc
 08/16F 1 pc
 OR12X1.0 1 pc

Metric pipes

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	608/16X2FB	1401521100	10	0.27	08/16X2FB	OR12X1.0	08/16F
1/2"	18x2.0	608/18X2FB	1401521600	11	0.27	08/18X2FB	OR14X1.0	08/18F
1/2"	20x2.0	608/20X2FB	1401522100	9	0.26	08/20X2FB	OR16X1.0	08/20F
1/2"	25x2.5	608/25X2.5FB	1401522420	9	0.26	08/25X2.5FB	OR20X1.0	None
1/2"	25x3.0	608/25X3FB	1401522600	9	0.24	08/25X3FB	OR19X1.0	None
3/4"	20x2.0	612/20X2FB	1401523600	12	0.53	12/20X2FB	OR16X1.0	12/20F
3/4"	20x2.5	612/20X2.5FB	1401523710	12	0.54	12/20X2.5FB	OR15X1.0	12/20F
3/4"	25x2.5	612/25X2.5FB	1401524100	9	0.50	12/25X2.5FB	OR20X1.0	12/25F
3/4"	25x3.0	612/25X3FB	1401524600	10	0.51	12/25X3FB	OR19X1.0	12/25F
3/4"	30x3.0	612/30X3FB	1401525100	9	0.48	12/30X3FB	OR23X1.0	None
3/4"	30x4.0	612/30X4FB	1401525700	9	0.50	12/30X4FB	OR22X1.0	None
1"	25x2.5	616/25X2.5FB	1401526100	9	0.69	16/25X2.5FB	OR20X1.0	16/25F
1"	25x3.0	616/25X3FB	1401526420	9	0.66	16/25X3FB	OR19X1.0	16/25F
1"	30x3.0	616/30X3FB	1401526600	7	0.66	16/30X3FB	OR23X1.0	16/30F
1"	30x4.0	616/30X4FB	1401527100	7	0.66	16/30X4FB	OR22X1.0	16/30F
1"	38x4.0	616/38X4FB	1401527600	10	0.60	16/38X4FB	OR30X1.0	None
1 1/4"	30x3.0	620/30X3FB*	1401530330	10	1.08	20/30X3FB	OR23X1.0	20/30F
1 1/4"	30x4.0	620/30X4FB*	1401530338	10	1.08	20/30X4FB	OR22X1.0	20/30F
1 1/4"	38x4.0	620/38X4FB*	1401530346	9	1.01	20/38X4FB	OR30X1.0	20/38F
1 1/4"	38x5.0	620/38X5.FB*	1401530354	9	1.00	20/38X5FB	OR28X1.0	20/38F
1 1/4"	42x4.0	620/42X4FB*	1401530362	11	0.98	20/42X4FB	OR34X1.0	None
1 1/2"	30x3.0	624/30X3FB	1401530700	14	1.16	24/30X3FB	OR23X1.0	24/30F
1 1/2"	38x4.0	624/38X4FB	1401531100	13	1.76	24/38X4FB	OR30X1.0	24/38F
1 1/2"	38x5.0	624/38X5FB	1401531412	13	1.73	24/38X5FB	OR28X1.0	24/38F
1 1/2"	42x4.0	624/42X4FB	1401531600	13	1.71	24/42X4FB	OR34X1.0	24/42F
1 1/2"	50x5.0	624/50X5FB	1401532100	11	1.60	24/50X5FB	OR41X1.78	None
1 1/2"	50x6.0	624/50X6FB	1401532510	11	1.70	24/50X6FB	OR37.82X1.78	None
1 1/2"	56x8.5**	624/56X8.5FB	1401532555	12	1.60	24/56X8.5FB	OR37.82X1.78	None
2"	50x5.0	632/50X5FB	1401533100	11	2.70	32/50X5FB	OR41X1.78	32/50F
2"	60x5.0	632/60X5FB	1401533600	11	2.52	32/60X5FB	OR50.52X1.78	None
2"	60x6.0	632/60X6FB	1401534100	11	2.56	32/60X6FB	OR47.35X1.78	None
2"	66x8.5**	632/66X8.5FB	1401534310	12	2.50	32/66X8.5FB	OR47.35X1.78	None
2 1/2"	60x6.0	640/60X6FB	1401534340	12	7.55	40/60X6FB	OR47.35X1.78	40/60F
2 1/2"	73x7.0	640/73X7FB	1401534420	12	8.30	40/73X7FB	OR56.87X1.78	None
3"	90x9.0**	648/90X9FB	1401535005	14	8.55	48/90X9FB	OR72.75X1.78	None

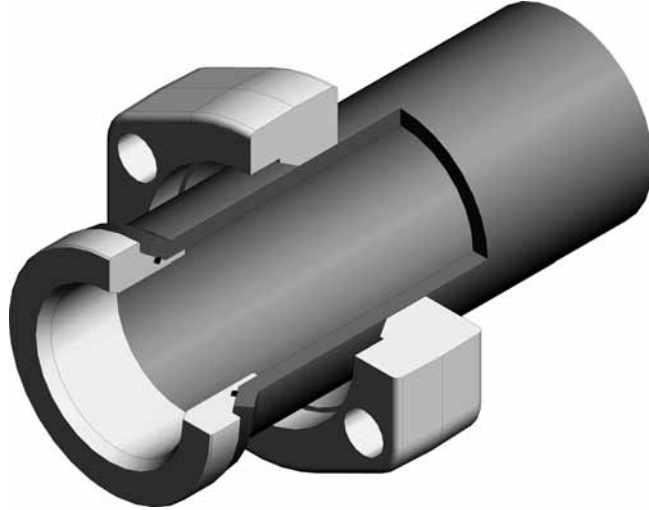
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.
 ** = Flaring machine requirements GSF 220-HD, GSF 400, FP 170 or FP 275.

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Flare flange connection – Type B

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/21.3X3.73FB includes:
 608F/21.3 1 pc
 08/21.3X3.73FB 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring2 Part No
1/2"	21.3X3.73	608/21.3X3.73FB	1401761200	0.20	08/21.3X3.73FB	OR14X1.0
1/2"	21.3X4.78	608/21.3X4.78FB	1401762200	0.20	08/21.3X4.78FB	OR12X1.0
3/4"	26.7X3.91	612/26.7X3.91FB	1401766200	0.30	12/26.7X3.91FB	OR20X1.0
3/4"	26.7X5.56	612/26.7X5.56FB	1401767200	0.30	12/26.7X5.56FB	OR16X1.0
1"	33.4X3.38	616/33.4X3.38FB	1401771200	0.50	16/33.4X3.38FB	OR25X1.0
1"	33.4X4.55	616/33.4X4.55FB	1401772200	0.50	16/33.4X4.55FB	OR23X1.0
1 1/4"	42.2X3.56	620/42.2X3.56FB*	1401782652	0.60	20/42.2X3.56FB	OR34X1.0
1 1/4"	42.2X4.85	620/42.2X4.85FB*	1401782660	0.60	20/42.2X4.85FB	OR32X1.0
1 1/2"	48.3X3.68	624/48.3X3.68FB	1401785200	0.90	24/48.3X3.68FB	OR41X1.78
1 1/2"	48.3X5.08	624/48.3X5.08FB	1401786200	0.90	24/48.3X5.08FB	OR37.82X1.78
2"	60.3X3.91	632/60.3X3.91FB	1401787200	1.40	32/60.3X3.91FB	OR53.70X1.78
2"	60.3X5.54	632/60.3X5.54FB	1401788200	1.40	32/60.3X5.54FB	OR47.35X1.78
2 1/2"	73x7.01	640/73X7FB	1401534420	8.30	40/73X7FB	OR56.87X1.78

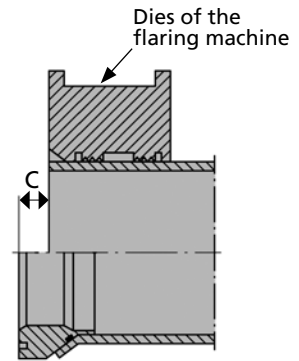
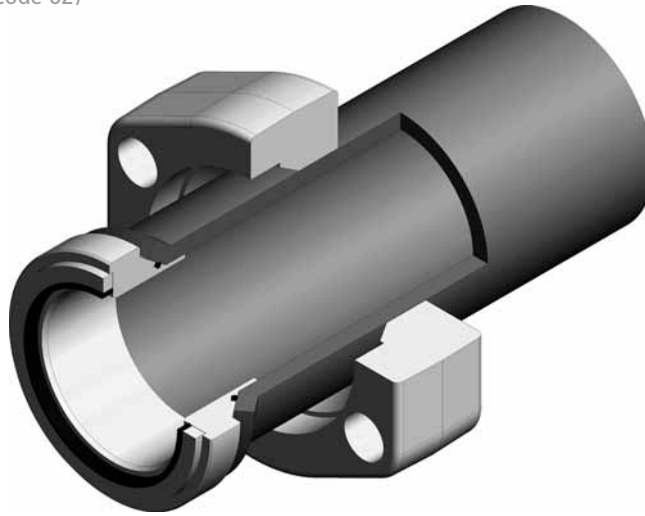
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Flare flange connection – Type C

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/16X2FC includes:
 608F 1 pc
 08/16X2FC 1 pc
 08/16F 1 pc
 0823 1 pc
 OR12X1.0 1 pc

Metric pipes

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring2 Part No	Bonded Seal Part No	Sleeve Part No
1/2"	16x2.0	608/16X2FC	1401521200	10	0.27	08/16X2FC	OR12X1.0	0823	08/16F
1/2"	18x2.0	608/18X2FC	1401521700	11	0.27	08/18X2FC	OR14X1.0	0823	08/18F
1/2"	20x2.0	608/20X2FC	1401522200	9	0.26	08/20X2FC	OR16X1.0	0823	08/20F
1/2"	25x2.5	608/25X2.5FC	1401522430	9	0.26	08/25X2.5FC	OR20X1.0	0823	None
1/2"	25x3.0	608/25X3FC	1401522700	9	0.24	08/25X3FC	OR19X1.0	0823	None
3/4"	20x2.0	612/20X2FC	1401523700	12	0.53	12/20X2FC	OR16X1.0	1213	12/20F
3/4"	20x2.5	612/20X2.5FC	1401523800	12	0.54	12/20X2.5FC	OR15X1.0	1213	12/20F
3/4"	25x2.5	612/25X2.5FC	1401524200	9	0.50	12/25X2.5FC	OR20X1.0	1213	12/25F
3/4"	25x3.0	612/25X3FC	1401524700	10	0.51	12/25X3FC	OR19X1.0	1213	12/25F
3/4"	30x3.0	612/30X3FC	1401525200	9	0.48	12/30X3FC	OR23X1.0	1213	None
3/4"	30x4.0	612/30X4FC	1401525800	9	0.50	12/30X4FC	OR22X1.0	1213	None
1"	25x2.5	616/25X2.5FC	1401526200	9	0.69	16/25X2.5FC	OR20X1.0	1629	16/25F
1"	25x3.0	616/25X3FC	1401526430	9	0.66	16/25X3FC	OR19X1.0	1629	16/25F
1"	30x3.0	616/30X3FC	1401526700	7	0.66	16/30X3FC	OR23X1.0	1629	16/30F
1"	30x4.0	616/30X4FC	1401527200	7	0.66	16/30X4FC	OR22X1.0	1629	16/30F
1"	38x4.0	616/38X4FC	1401527700	10	0.60	16/38X4FC	OR30X1.0	1629	None
1 1/4"	30x3.0	620/30X3FC*	1401530332	10	1.08	20/30X3FC	OR23X1.0	2030	20/30F
1 1/4"	30x4.0	620/30X4FC*	1401530340	10	1.08	20/30X4FC	OR22X1.0	2030	20/30F
1 1/4"	38x4.0	620/38X4FC*	1401530348	9	1.01	20/38X4FC	OR30X1.0	2030	20/38F
1 1/4"	38x5.0	620/38X5FC*	1401530356	9	1.00	20/38X5FC	OR28X1.0	2030	20/38F
1 1/4"	42x4.0	620/42X4FC*	1401530364	11	0.98	20/42X4FC	OR34X1.0	2030	None
1 1/2"	30x3.0	624/30X3FC	1401530800	14	1.16	24/30X3FC	OR23X1.0	2432	24/30F
1 1/2"	38x4.0	624/38X4FC	1401531200	13	1.76	24/38X4FC	OR30X1.0	2432	24/38F
1 1/2"	38x5.0	624/38X5FC	1401531414	13	1.73	24/38X5FC	OR28X1.0	2432	24/38F
1 1/2"	42x4.0	624/42X4FC	1401531700	13	1.71	24/42X4FC	OR34X1.0	2432	24/42F
1 1/2"	50x5.0	624/50X5FC	1401532200	11	1.60	24/50X5FC	OR41X1.78	2432	None
1 1/2"	50x6.0	624/50X6FC	1401532520	11	1.70	24/50X6FC	OR37.82X1.78	2432	None
1 1/2"	56x8.5**	624/56X8.5FC	1401532560	12	1.60	24/56X8.5FC	OR37.82X1.78	2432	None
2"	50x5.0	632/50X5FC	1401533200	11	2.70	32/50X5FC	OR41X1.78	3219	32/50F
2"	60x5.0	632/60X5FC	1401533700	11	2.52	32/60X5FC	OR50.52X1.78	3219	None
2"	60x6.0	632/60X6FC	1401534200	11	2.60	32/60X6FC	OR47.35X1.78	3219	None
2"	66x8.5**	632/66X8.5FC	1401534315	12	2.50	32/66X8.5FC	OR47.35X1.78	3219	None
2 1/2"	60x6.0	640/60X6FC	1401534360	12	7.55	40/60X6FC	OR47.35X1.78	4037	40/60F
2 1/2"	73x7.0	640/73X7FC	1401534440	12	8.30	40/73X7FC	OR56.87X1.78	4037	None
3"	90x9.0**	648/90X9FC	1401535010	14	8.55	48/90X9FC	OR72.75X1.78	4839	None

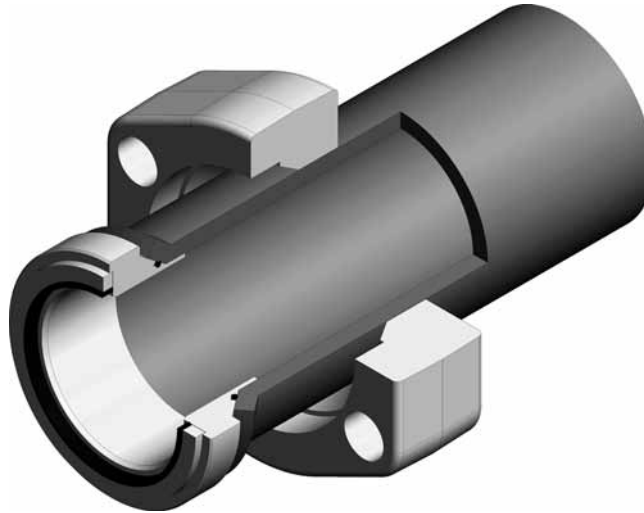
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.
 ** = Flaring machine requirements GSF 220-HD, GSF 400, FP 170 or FP 275.

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Flare flange connection – Type C

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/21.3X3.73FC includes:
 608F/21.3 1 pc
 08/21.3X3.73FD 1 pc
 0823 1 pc
 OR14X1.0 1 pc

ANSI 36.10/36.19 pipes (with standard GS bonded seal)

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring ² Part No	Bonded Seal Part No
1/2"	21.3X3.73	608/21.3X3.73FC	1401761400	0.20	08/21.3X3.73FC	OR14X1.0	0823
1/2"	21.3X4.78	608/21.3X4.78FC	1401762400	0.20	08/21.3X4.78FC	OR12X1.0	0823
3/4"	26.7X3.91	612/26.7X3.91FC	1401766400	0.30	12/26.7X3.91FC	OR20X1.0	1213
3/4"	26.7X5.56	612/26.7X5.56FC	1401767400	0.30	12/26.7X5.56FC	OR16X1.0	1213
1"	33.4X3.38	616/33.4X3.38FC	1401771400	0.50	16/33.4X3.38FC	OR25X1.0	1629
1"	33.4X4.55	616/33.4X4.55FC	1401772400	0.50	16/33.4X4.55FC	OR23X1.0	1629
1 1/4"	42.2X3.56	620/42.2X3.56FC*	1401782654	0.60	20/42.2X3.56FC	OR34X1.0	2030
1 1/4"	42.2X4.85	620/42.2X4.85FC*	1401782662	0.60	20/42.2X4.85FC	OR32X1.0	2030
1 1/2"	48.3X3.68	624/48.3X3.68FC	1401785400	0.90	24/48.3X3.68FC	OR41X1.78	2432
1 1/2"	48.3X5.08	624/48.3X5.08FC	1401786400	0.90	24/48.3X5.08FC	OR37.82X1.78	2432
2"	60.3X3.91	632/60.3X3.91FC	1401787400	1.40	32/60.3X3.91FC	OR53.70X1.78	3219
2"	60.3X5.54	632/60.3X5.54FC	1401788400	1.40	32/60.3X5.54FC	OR47.35X1.78	3219
2 1/2"	73x7.01	640/73X7FC	1401534440	8.30	40/73X7FC	OR56.87X1.78	4037

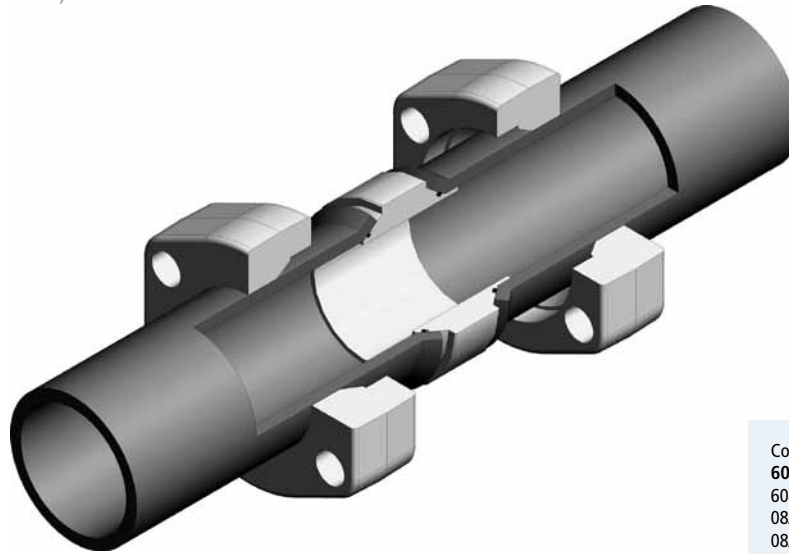
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Flare flange connection – Type D

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/16X2FD includes:
 608F 2 pcs
 08/16X2FD 1 pc
 08/16F 2 pcs
 OR12X1.0 2 pcs

Metric pipes

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring2 Part No	Sleeve Part No
1/2"	16x2.0	608/16X2FD	1401521300	0.52	08/16X2FD	OR12X1.0	08/16F
1/2"	18x2.0	608/18X2FD	1401521800	0.53	08/18X2FD	OR14X1.0	08/18F
1/2"	20x2.0	608/20X2FD	1401522300	0.51	08/20X2FD	OR16X1.0	08/20F
1/2"	25x2.5	608/25X2.5FD	1401522440	0.50	08/25X2.5FD	OR20X1.0	None
1/2"	25x3.0	608/25X3FD	1401522800	0.49	08/25X3FD	OR19X1.0	None
3/4"	20x2.0	612/20X2FD	1401523701	1.05	12/20X2FD	OR16X1.0	12/20F
3/4"	20x2.5	612/20X2.5FD	1401523900	1.06	12/20X2.5FD	OR15X1.0	12/20F
3/4"	25x2.5	612/25X2.5FD	1401524300	1.01	12/25X2.5FD	OR20X1.0	12/25F
3/4"	25x3.0	612/25X3FD	1401524800	1.01	12/25X3FD	OR19X1.0	12/25F
3/4"	30x3.0	612/30X3FD	1401525300	1.00	12/30X3FD	OR23X1.0	None
3/4"	30x4.0	612/30X4FD	1401525900	1.00	12/30X4FD	OR22X1.0	None
1"	25x2.5	616/25X2.5FD	1401526300	1.34	16/25X2.5FD	OR20X1.0	16/25F
1"	25x3.0	616/25X3FD	1401526440	1.33	16/25X3FD	OR19X1.0	16/25F
1"	30x3.0	616/30X3FD	1401526800	1.27	16/30X3FD	OR23X1.0	16/30F
1"	30x4.0	616/30X4FD	1401527300	1.28	16/30X4FD	OR22X1.0	16/30F
1"	38x4.0	616/38X4FD	1401527800	1.20	16/38X4FD	OR30X1.0	None
1 1/4"	30x3.0	620/30X3FD*	1401530334	2.12	20/30X3FD	OR23X1.0	20/30F
1 1/4"	30x4.0	620/30X4FD*	1401530342	2.11	20/30X4FD	OR22X1.0	20/30F
1 1/4"	38x4.0	620/38X4FD*	1401530350	2.03	20/38X4FD	OR30X1.0	20/38F
1 1/4"	38x5.0	620/38X5FD*	1401530358	2.02	20/38X5FD	OR28X1.0	20/38F
1 1/4"	42x4.0	620/42X4FD*	1401530366	2.01	20/42X4FD	OR34X1.0	None
1 1/2"	30x3.0	624/30X3FD	1401530900	2.95	24/30X3FD	OR23X1.0	24/30F
1 1/2"	38x4.0	624/38X4FD	1401531300	3.54	24/38X4FD	OR30X1.0	24/38F
1 1/2"	38x5.0	624/38X5FD	1401531416	3.43	24/38X5FD	OR28X1.0	None
1 1/2"	42x4.0	624/42X4FD	1401531800	3.45	24/42X4FD	OR34X1.0	24/42F
1 1/2"	50x5.0	624/50X5FD	1401532300	3.29	24/50X5FD	OR41X1.78	None
1 1/2"	50x6.0	624/50X6FD	1401532530	3.40	24/50X6FD	OR37.82X1.78	None
1 1/2"	56x8.5**	624/56X8.5FD	1401532565	3.30	24/56X8.5FD	OR37.82X1.78	None
2"	50x5.0	632/50X5FD	1401533300	5.27	32/50X5FD	OR41X1.78	32/50F
2"	60x5.0	632/60X5FD	1401533800	5.06	32/60X5FD	OR50.52X1.78	None
2"	60x6.0	632/60X6FD	1401534300	5.06	32/60X6FD	OR47.35X1.78	None
2"	66x8.5**	632/66X8.5FD	1401534317	5.00	32/66X8.5FD	OR47.35X1.78	None
2 1/2"	60x6.0	640/60X6FD	1401534380	11.55	40/60X6FD	OR47.35X1.78	40/60F
2 1/2"	73x7.0	640/73X7FD	1401534460	11.10	40/73X7FD	OR56.87X1.78	None
3"	90x9.0**	648/90X9FD	1401535015	17.00	48/90X9FD	OR72.75X1.78	None

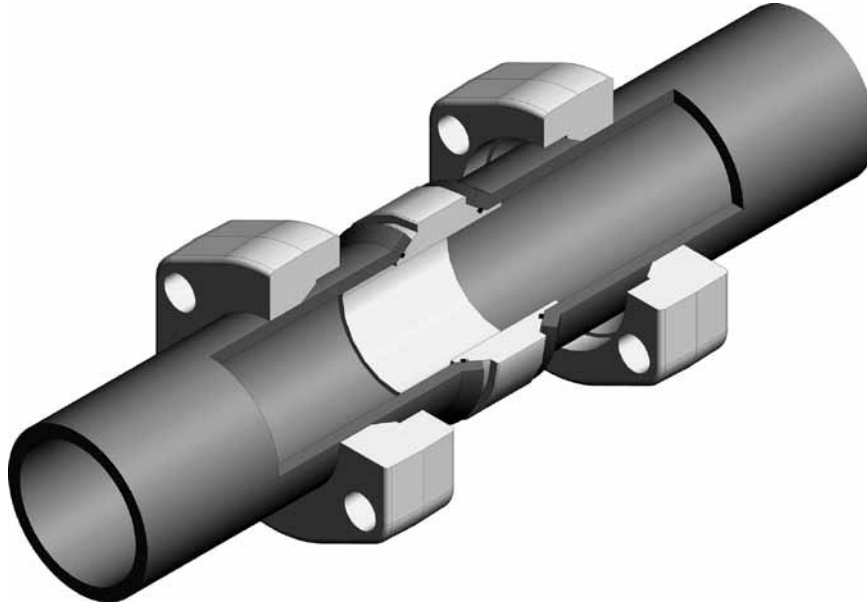
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.
 ** = Flaring machine requirements GSF 220-HD, GSF 400, FP 170 or FP 275.

Flanges page 80
 Inserts page 111
 O-rings page 119

Flare flange connection – Type D

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/21.3X3.73FD includes:
 608F/21.3 2 pcs
 08/21.3X3.73FD 1 pc
 OR14X1.0 2 pcs

ANSI 36.10/36.19 pipes

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring2 Part No
1/2"	21.3X3.73	608/21.3X3.73FD	1401761600	0.52	08/21.3X3.73FD	OR14X1.0
1/2"	21.3X4.78	608/21.3X4.78FD	1401762600	0.53	08/21.3X4.78FD	OR12X1.0
3/4"	26.7X3.91	612/26.7X3.91FD	1401766600	1.05	12/26.7X3.91FD	OR20X1.0
3/4"	26.7X5.56	612/26.7X5.56FD	1401767600	1.06	12/26.7X5.56FD	OR16X1.0
1"	33.4X3.38	616/33.4X3.38FD	1401771600	1.34	16/33.4X3.38FD	OR25X1.0
1"	33.4X4.55	616/33.4X4.55FD	1401772600	1.33	16/33.4X4.55FD	OR23X1.0
1 1/4"	42.2X3.56	620/42.2X3.56FD*	1401782656	2.12	20/42.2X3.56FD	OR34X1.0
1 1/4"	42.2X4.85	620/42.2X4.85FD*	1401782664	2.03	20/42.2X4.85FD	OR32X1.0
1 1/2"	48.3X3.68	624/48.3X3.68FD	1401785600	2.96	24/48.3X3.68FD	OR41X1.78
1 1/2"	48.3X5.08	624/48.3X5.08FD	1401786600	3.43	24/48.3X5.08FD	OR37.82X1.78
2"	60.3X3.91	632/60.3X3.91FD	1401787600	5.27	32/60.3X3.91FD	OR53.70X1.78
2"	60.3X5.54	632/60.3X5.54FD	1401788600	5.08	32/60.3X5.54FD	OR47.35X1.78
2 1/2"	73x7.01	640/73X7FD	1401534460	11.10	40/73X7FD	OR56.87X1.78

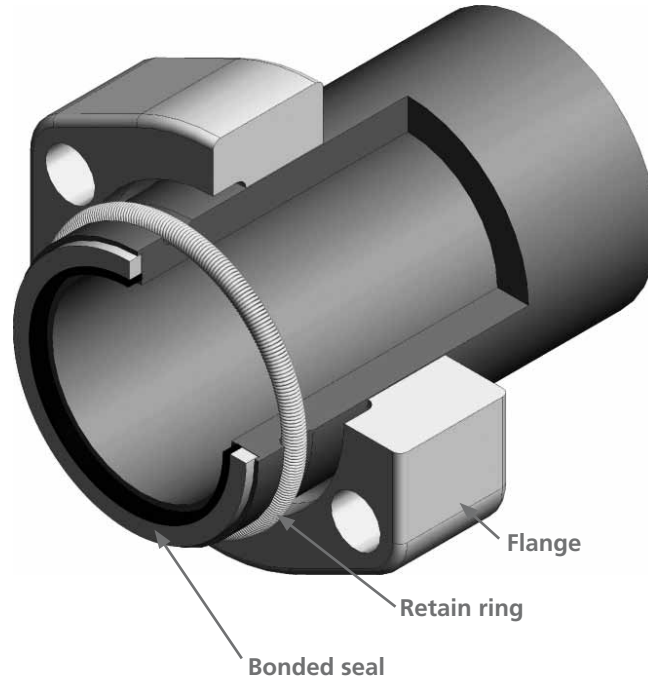
Material possibilities page 168.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Flanges page 80
 Inserts page 112
 O-rings page 119

Grooving direct on to pipe

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
1"	39x7.5	616	1103060000	16	1902002050	1629	2701003000
1 1/4"	46x8	620*	1103097600	20	1902003050	2030	2701004000
1 1/2"	56x8.5	624	1103120000	24	1902004050	2432	2701005000
2"	66x8.5	632	1103150000	32	1902006050	3219	2701007000
2 1/2"	80x10	640	1103180000	40	1902007050	4037	2701008000
3"	97x12	648	1103210000	48	1902008050	4839	2701009000

ANSI 36.10/36.19 pipes

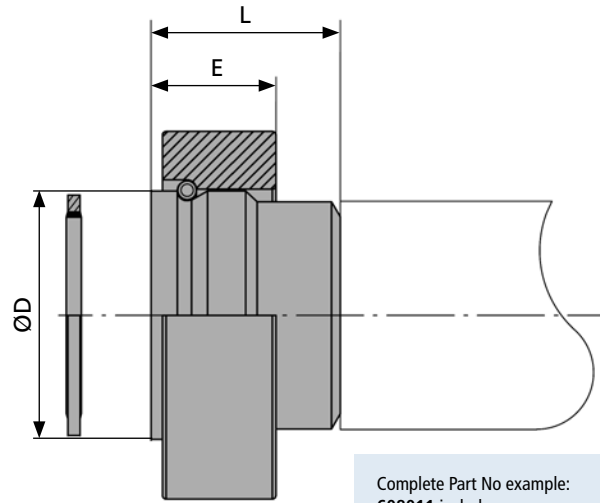
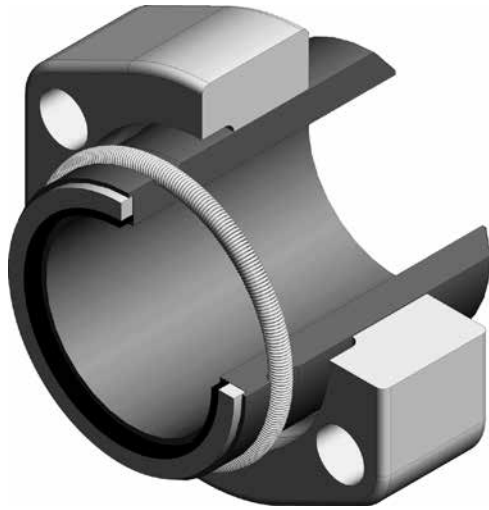
Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
1/2"	21.3x7.5	608/21.3	1103001500	08/21.3	1902000250	0821	2701001000
3/4"	26.7x7.8	612/26.7	1103031500	12/26.7	1902001250	0823	2701001400
1"	33.4x9.1	616/33.4	1103061500	16/33.4	1902002250	1633	2701003400
1 1/4"	42.2x9.7	620/42.2*	1103097605	20/42.2	1902003250	2042	2701004400
1 1/2"	48.3x10.2	624/48.3	1103120800	24/48.3	1902004250	2448	2701005200
2"	60.3x8.7	632/60.3	1103150600	32/60.3	1902006250	3260	2701007400
2 1/2"	73.0x9.53/14.02	640/73	1103181000	40/73	1902007250	4073	2701008200
3"	88.9x11.13/15.24	648/88.9	1103210800	48/88.9	1902008250	4888	2701009200

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Flanges page 79
Retain rings page 116
Bonded seals page 117

Flange for welding (1/2"–1")

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608011 includes:
 608 1 pc
 08011 1 pc
 08 1 pc
 0823 1 pc

Size	Complete Part Code	Complete ID Code	Pipe Size	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
1/2"	608011	1301550300	26x6.0	45	23	26	0.32	08011	1301003700
1/2"	608001	1301547600	12x1.5	40	23	26	0.29	08001	1301000100
1/2"	608002	1301547900	16x2.0	40	23	26	0.27	08002	1301000700
1/2"	608003	1301548200	18x2.0	40	23	26	0.28	08003	1301001300
1/2"	608004	1301548500	20x2.5	40	23	26	0.29	08004	1301001900
1/2"	608005	1301548900	25x2.5	40	23	26	0.29	08005	1301002500
1/2"	608009	1301549700	21.3x3.73	40	23	26	0.29	08009	1301003100
1/2"	608082	1301550500	21.3x2.10	40	23	26	0.27	08082	1301004800
1/2"	608083	1301550600	21.3x2.77	40	23	26	0.27	08083	1301004900
1/2"	608085	1301550900	21.3x4.78	40	23	26	0.27	08085	1301005500
1/2"	608086	1301551100	21.3x7.47	40	23	26	0.30	08086	1301006100
3/4"	612011	1301554500	36x8.0	45	28	36	0.60	12011	1301008800
3/4"	612001	1301551800	20x2.5	40	28	36	0.54	12001	1301006700
3/4"	612002	1301552100	25x3.0	40	28	36	0.53	12002	1301006800
3/4"	612003	1301552400	30x4.0	40	28	36	0.54	12003	1301007900
3/4"	612004	1301552700	30x6.0	40	28	36	0.56	12004	1301009100
3/4"	612005	1301553300	30x3.0	40	28	36	0.53	12005	1301009200
3/4"	612009	1301553900	26.7x3.91	40	28	36	0.54	12009	1301000700
3/4"	612082	1301554800	26.7x2.10	40	28	36	0.48	12082	1301010800
3/4"	612083	1301555000	26.7x2.87	40	28	36	0.48	12083	1301011300
3/4"	612085	1301555200	26.7x5.56	40	28	36	0.51	12085	1301011900
3/4"	612086	1301555400	26.7x7.82	45	28	36	0.55	12086	1301012500
1"	616011	1301558700	39x7.5	50	27	39	0.82	16011	1301019700
1"	616001	1301556000	25x3.0	40	27	39	0.75	16001	1301016100
1"	616002	1301556300	30x4.0	40	27	39	0.74	16002	1301016700
1"	616003	1301556600	38x5.0	40	27	39	0.77	16003	1301017300
1"	616004	1301556900	38x7.0	40	27	39	0.77	16004	1301017900
1"	616005	1301557200	38x4.0	40	27	39	0.76	16005	1301018500
1"	616009	1301558100	33.4x4.55	40	27	39	0.75	16009	1301019100
1"	616082	1301559300	33.4x2.87	40	27	39	0.62	16082	1301021500
1"	616083	1301559400	33.4x3.38	40	27	39	0.65	16083	1301022100
1"	616085	1301559600	33.4x6.35	50	27	39	0.70	16085	1301022700
1"	616086	1301559800	33.4x9.09	50	27	39	0.71	16086	1301023300

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.

Welding hubs for other pipe sizes on request.

Flanges page 79
 Retain rings page 116
 Bonded seals page 117

Flange for welding (1 1/4"–2")

ISO 6162-2 (SAE J 518 Code 62)

Size	Complete Part Code	Complete ID Code	Pipe Size	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
1 1/4"	620011*	1301564180	46x8.0	55	33	46	1.19	20011	1301028700
1 1/4"	620001*	1301564150	30x4.0	40	33	46	1.10	20001	1301025100
1 1/4"	620002*	1301564155	38x5.0	40	33	46	1.07	20002	1301025700
1 1/4"	620003*	1301564160	42x6.0	40	33	46	1.07	20003	1301026300
1 1/4"	620004*	1301564165	46x7.0	50	33	46	1.07	20004	1301026900
1 1/4"	620005*	1301564170	42x4.0	40	33	46	1.05	20005	1301027500
1 1/4"	620009*	1301564175	42.2x4.85	40	33	46	1.06	20009	1301028100
1 1/4"	620082*	1301564185	42.2x2.77	40	33	46	1.01	20082	1301030500
1 1/4"	620083*	1301564190	42.2x3.56	40	33	46	1.06	20083	1301031100
1 1/4"	620085*	1301564195	42.2x6.35	50	33	46	1.12	20085	1301031700
1 1/4"	620086*	1301564200	42.2x9.70	50	23	46	0.80	20086	1301032900
1 1/2"	624011	1301567400	56x8.5	60	38	56	1.91	24011	1301037100
1 1/2"	624001	1301564400	38x5.0	45	38	56	1.81	24001	1301034100
1 1/2"	624002	1301564700	50x6.0	45	38	56	1.74	24002	1301034700
1 1/2"	624003	1301565000	50x9.0	45	38	56	1.83	24003	1301035300
1 1/2"	624005	1301565600	50x5.0	45	38	56	1.73	24005	1301035900
1 1/2"	624009	1301566800	48.3x5.08	45	38	56	1.72	24009	1301036500
1 1/2"	624082	1301567900	48.3x2.77	45	38	56	1.33	24082	1301038300
1 1/2"	624083	1301568100	48.3x3.68	45	38	56	1.34	24083	1301039500
1 1/2"	624085	1301568300	48.3x7.14	60	38	56	1.45	24085	1301040100
1 1/2"	624086	1301568500	48.3x10.15	60	38	56	1.47	24086	1301040700
2"	632011	1301571900	66x8.5	75	43	66	3.07	32011	1301046700
2"	632001	1301568900	50x9.0	50	43	66	2.91	32001	1301041900
2"	632002	1301569200	60x6.0	50	43	66	2.72	32002	1301042500
2"	632003	1301569500	60x8.0	50	43	66	2.82	32003	1301043100
2"	632005	1301570100	60x5.0	50	43	66	2.71	32005	1301044300
2"	632008	1301571000	48.3x5.6	50	43	66	2.83	32008	1301044900
2"	632009	1301571300	60x10.0	50	43	66	2.89	32009	1301045500
2"	632082	1301572300	60.3x2.77	50	43	66	2.58	32082	1301048800
2"	632083	1301572400	60.3x3.91	50	43	66	2.63	32083	1301045600
2"	632084	1301572500	60.3x5.54	50	43	66	2.63	32084	1301046200
2"	632085	1301572600	60.3x8.74	75	43	66	2.81	32085	1301046800
2"	632086	1301572700	60.3x11.07	75	43	66	2.85	32086	1301047400
2 1/2"	640011	1301572760	80x10.0	85	43	80	6.70	40011	1301052200
2 1/2"	640003	1301572780	65x8.0	50	43	80	6.18	40003	1301048600
2 1/2"	640006	1301572800	76.1x6.3	50	43	80	5.98	40006	1301049800
2 1/2"	640007	1301572820	76.1x12.5	50	43	80	6.22	40007	1301050400
2 1/2"	640010	1301572840	73x7.01	50	43	80	5.99	40010	1301051600
2 1/2"	640085	1301572860	73x9.53	90	43	80	6.00	40085	1301053400
2 1/2"	640086	1301572880	73x14.02	90	43	80	6.50	40086	1301053500
3"	648011	1301572900	97x12.0	110	51	97	9.32	48011	1301057600
3"	648004	1301572920	76.1x12.5	60	51	97	8.64	48004	1301054600
3"	648005	1301572940	80x10.0	60	51	97	8.30	48005	1301055200
3"	648006	1301572960	88.9x8.8	60	51	97	8.01	48006	1301055800
3"	648007	1301572980	88.9x12.5	60	51	97	8.30	48007	1301056400
3"	648010	1301573000	88.9x7.62	60	51	97	7.92	48010	1301057000
3"	648085	1301573020	88.9x11.13	110	51	97	8.70	48085	1301058200
3"	648086	1301573040	88.9x15.24	110	51	97	9.30	48086	1301058800

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.

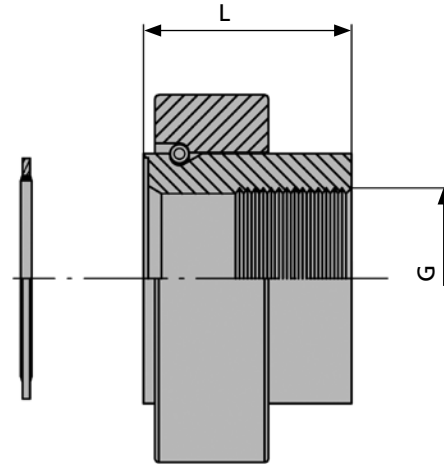
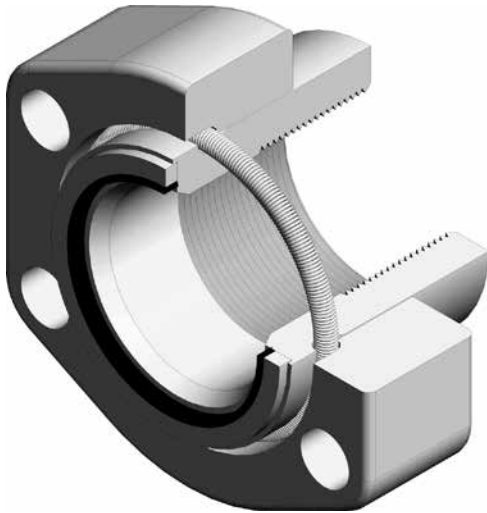
Welding hubs for other pipe sizes on request.

Flanges page 79
 Retain rings page 116
 Bonded seals page 117

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Female thread flange, BSPP

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608013 includes:

608	1 pc
08013	1 pc
08	1 pc
0823	1 pc

Size	Complete Part No	Complete ID Code	L	G	Weight [kg]	Body Part No	Body ID Code
1/2"	608013	1307507000	35	1/4"	0.31	08013	1307000100
3/4"	612013	1307508000	40	1/2"	0.60	12013	1307001000
1"	616013	1307509000	40	3/4"	0.68	16013	1307006000
1 1/4"	620013*	1307510050	42	1"	1.16	20013	1307007000
1 1/2"	624013	1307511000	45	1 1/4"	1.84	24013	1307008000
2"	632013	1307512000	55	1 1/2"	2.93	32013	1307009000
2 1/2"	640013	1307512560	80	2"	6.60	40013	1307010000
3"	648013	1307512580	85	2 1/2"	8.80	48013	1307011000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

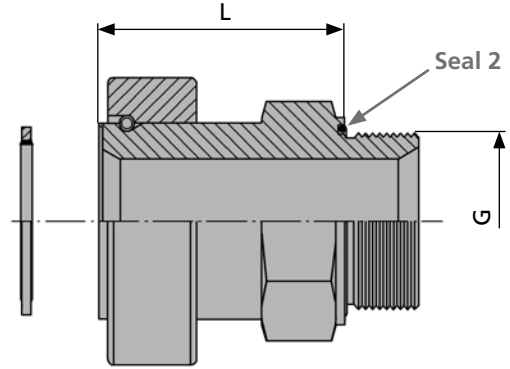
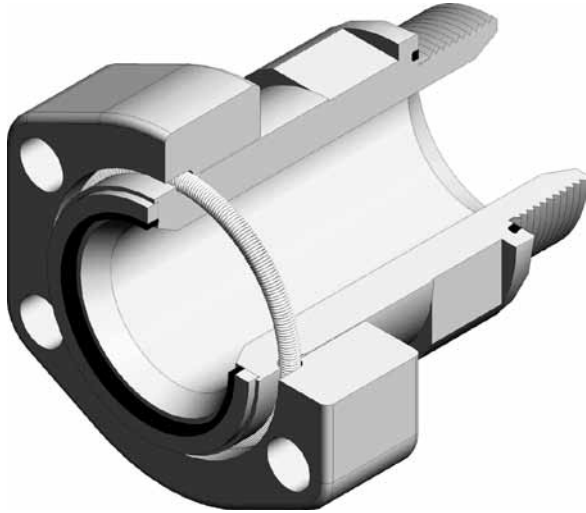
Standard thread BSP,
 others on request.

Flanges page 79
 Retain rings page 116
 Bonded seals page 117

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Male thread flange, BSPP

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608014 includes:
 608 1 pc
 08014 (Seal 2 included) 1 pc
 08 1 pc
 0823 1 pc

Size	Complete Part No	Complete ID Code	L	G	Seal 2	A/F	Weight [kg]	Body Part No	Body ID Code
1/2"	608014	1305520000	50	1/2"	ED R1/2 VI	27	0.35	08014	1305000100
1/2"	608014-G1/4	1305520200	50	1/4"	ED R1/4+M14X1.5 VI	27	0.37	08014-G1/4	1305000400
3/4"	612014	1305520400	61	3/4"	ED R3/4 M26X1.5 27X2 VI	36	0.60	12014	1305002000
3/4"	612014-G1/2	1305520600	61	1/2"	ED R1/2 VI	36	0.62	12014-G1/2	1305002200
1"	616014	1305522000	65	1"	ED R1+M33X2 VI	41	0.78	16014	1305004000
1"	616014-G3/4	1305522200	65	3/4"	ED R3/4 M26X1.5 27X2 VI	41	0.80	16014-G3/4	1305004300
1 1/4"	620014*	1305525050	68	1 1/4"	ED R11/4+M42X2 VI	50	1.08	20014	1305006000
1 1/4"	620014-G1*	1305525055	68	1"	ED R1+M33X2 VI	50	1.16	20014-G1	1305006200
1 1/2"	624014	1305526000	78	1 1/2"	ED R11/2+M82X2 VI	60	1.71	24014	1305010000
1 1/2"	624014-G11/4	1305526200	78	1 1/4"	ED R11/4+M42X2 VI	60	1.80	24014-G11/4	1305010300
2"	632014	1305528000	83	2"	OR59.99X2.62VI	70	2.55	32014	1305014000
2"	632014-G11/2	1305528200	83	1 1/2"	ED R11/2+M82X2 VI	70	2.71	32014-G11/2	1305014200

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

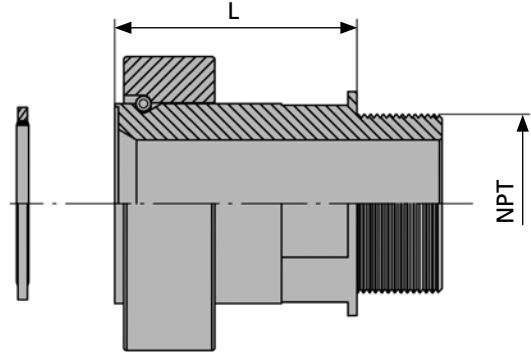
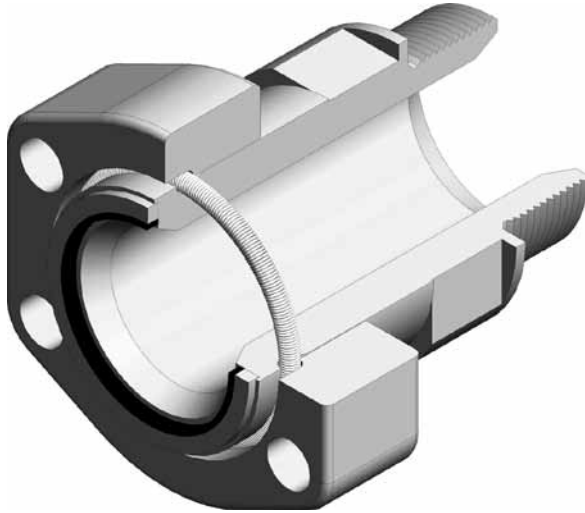
Seal 2 material: FPM (Viton®)

Flanges page 79
 Retain rings page 116
 Bonded seals page 117

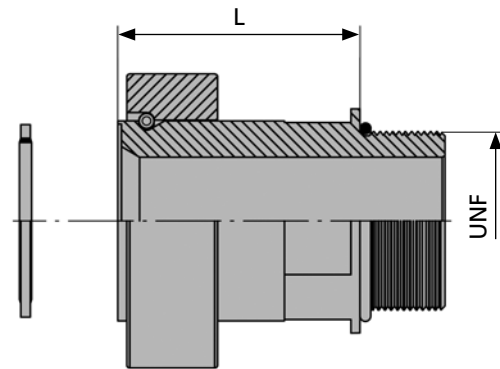
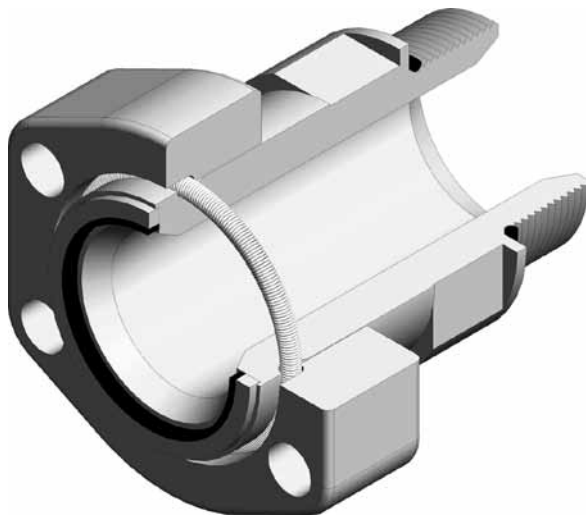
* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Male thread flange, NPT & UNF

ISO 6162-2 (SAE J 518 Code 62)



NPT



UNF

Complete Part No example:
608114 includes:
 608 1 pc
 08114 1 pc
 08 1 pc
 0823 1 pc

Complete Part No example:
608214 includes:
 608 1 pc
 08214 1 pc
 08 1 pc
 0823 1 pc
 OR16.4X2.2 1 pc

Male thread flange, NPT

Size	Complete Part No	Complete ID Code	L	NPT	Weight [kg]	Body Part No	Body ID Code
1/2"	608114	1305520300	50	1/2"	0.40	08114	1305001000
3/4"	612114	1305520800	63	3/4"	0.50	12114	1305002400
1"	616114	1305522600	63	1"	0.70	16114	1305004600
1 1/4"	620114*	1305525060	67	1 1/4"	1.00	20114	1305008000
1 1/2"	624114	1305526400	75	1 1/2"	1.80	24114	1305012000
2"	632114	1305528600	80	2"	2.50	32114	1305014800

Male thread flange, UNF

Size	Complete Part No	Complete ID Code	L	UN(F)	Weight [kg]	O-ring Part No	O-ring ID Code	Body Part No	Body ID Code
1/2"	608214	1305520310	48.0	3/4-16	0.40	OR16.4X2.2	2701504500	08214	1305001300
3/4"	612214	1305521000	61.3	1 1/16-12	0.50	OR23X3.0	2701511200	12214	1305002900
1"	616214	1305523000	62.0	1 5/16-12	0.70	OR29.2X3.0	2701516500	16214	1305005500
1 1/4"	620214*	1305525065	65.0	1 5/8-12	1.00	OR37.2X3.0	2701524000	20214	1305009000
1 1/2"	624214	1305527000	78.2	1 7/8-12	1.80	OR43X3.0	2701527000	24214	1305012200
2"	632214	1305529000	83.2	2 1/2-12	2.50	OR59.5X3.0	2701536000	32214	1305015500

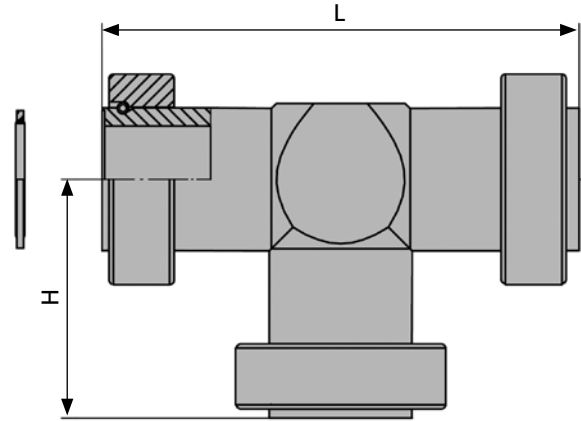
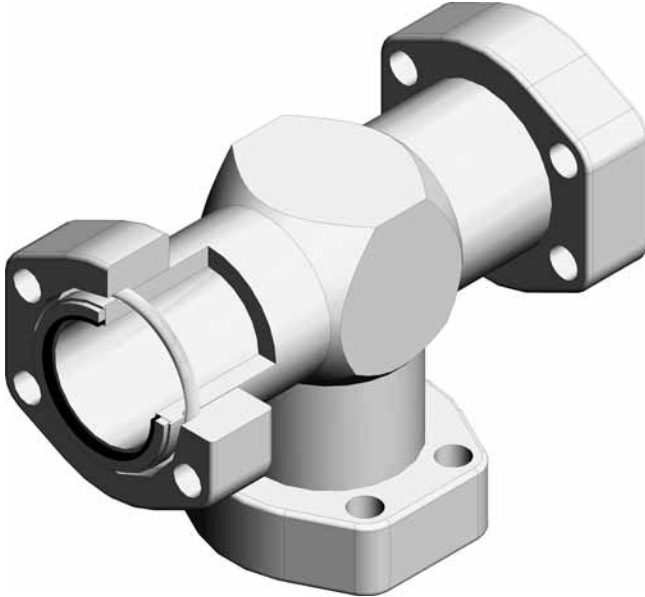
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Tee flange

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608016 includes:

608	3 pcs
08016	1 pc
08	3 pcs
0823	3 pcs

Size	Complete Part No	Complete ID Code	L	H	Weight [kg]	Body Part No	Body ID Code
1/2"	608016	1701224000	120	60	1.10	08016	1701000100
3/4"	612016	1701226000	130	65	2.41	12016	1701002000
3/4" – 1/2"	612/608/612016	1701226200	130	65	2.20	12/08/12016	1701002200
1"	616016	1701228000	140	70	3.05	16016	1701004000
1" – 3/4"	616/612/616016	1701228400	140	65	2.80	16/12/16016	1701004400
1" – 1/2"	616/608/616016	1701228200	140	65	2.62	16/08/16016	1701004200
1 1/4"	620016*	1701230005	160	80	4.52	20016	1701006000
1 1/4" – 1"	620/616/620016*	1701230610	160	75	4.33	20/16/20016	1701006600
1 1/4" – 3/4"	620/612/620016*	1701230605	160	70	4.10	20/12/20016	1701006400
1 1/2"	624016	1701232000	180	90	7.30	24016	1701008000
1 1/2" – 1 1/4"	624/620/624016*	1701232605	180	85	7.05	24/20/24016	1701008600
1 1/2" – 1"	624/616/624016	1701232400	180	80	6.77	24/16/24016	1701008400
2"	632016	1701234000	220	110	11.0	32016	1701010000
2" – 1 1/2"	632/624/632016	1701234600	220	95	10.2	32/24/32016	1701010800
2" – 1 1/4"	632/620/632016*	1701234405	220	90	9.45	32/20/32016	1701010600
2 1/2"	640016	1701234660	260	130	22.0	40016	1701012000
3"	648016	1701234680	320	160	32.1	48016	1701014000

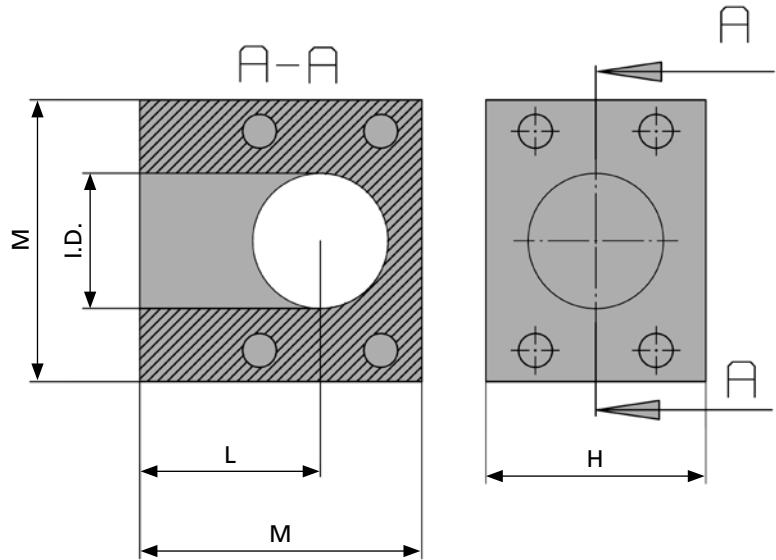
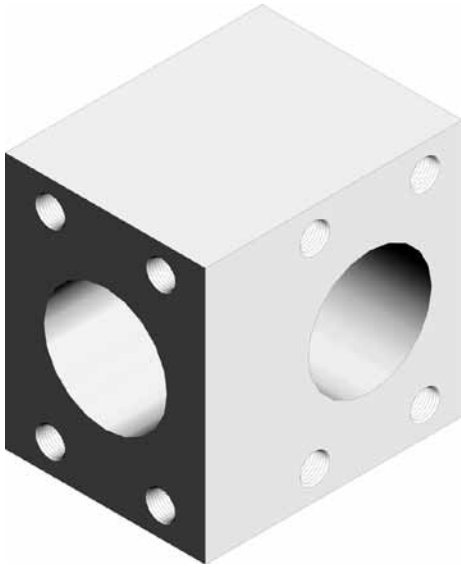
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Tee block

ISO 6162-2 (SAE J 518 Code 62)



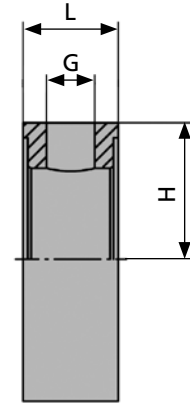
Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	608116	1702020000	40	36	56	13	0.81
3/4"	612116	1702022000	48	49	70	20	1.14
3/4" – 1/2"	612/608/612116	1702022200	48	49	70	20/13/20	1.53
1"	616116	1702024000	48	55	80	23	1.81
1" – 3/4"	616/612/616116	1702024400	48	55	80	23/20/23	1.91
1" – 1/2"	616/608/616116	1702024200	48	55	80	23/13/23	2.06
1 1/4"	620116*	1702026005	58	63	90	30	2.65
1 1/4" – 1"	620/616/620116*	1702026815	58	63	90	30/23/30	2.79
1 1/4" – 3/4"	620/612/620116*	1702026810	58	63	90	30/20/30	2.92
1 1/2"	624116	1702028000	68	68	100	38	3.62
1 1/2" – 1 1/4"	624/620/624116*	1702028605	68	68	100	38/30/38	3.85
1 1/2" – 1"	624/616/624116	1702028400	68	68	100	38/23/38	4.01
2"	632116	1702030000	88	90	130	48	8.05
2" – 1 1/2"	632/624/632116	1702031000	88	90	130	48/38/48	8.68
2" – 1 1/4"	632/620/632116*	1702030805	88	90	130	48/30/48	9.03
2 1/2"	640116	1702034000	100	100	160	60	16.49
2 1/2" – 2"	640/632/640116	1702034040	100	100	160	60/48/60	17.02
2 1/2" – 1 1/2"	640/624/640116	1702034060	100	100	160	60/38/60	18.20
3"	648116	1702044180	130	140	210	73	33.83
3" – 2 1/2"	648/640/648116	1702044220	130	140	210	73/60/73	34.50
3" – 2"	648/632/648116	1702044240	130	140	210	73/48/73	35.60

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Tee between, BSPP

ISO 6162-2 (SAE J 518 Code 62)



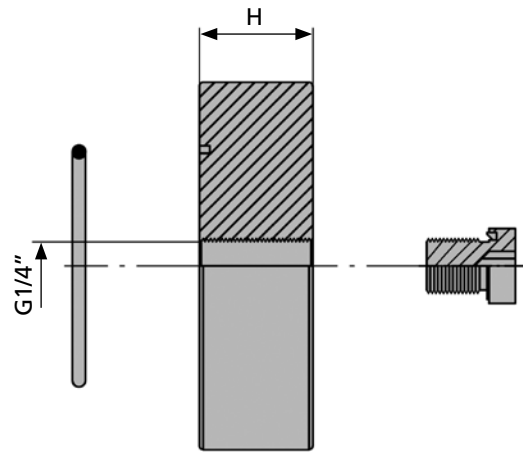
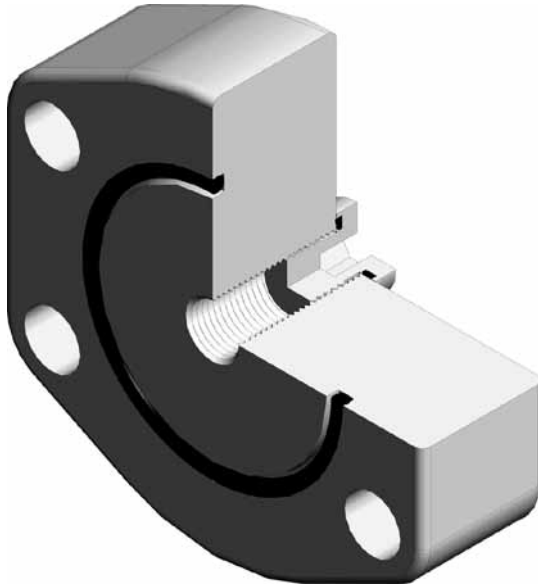
Please add measure L to bolt lengths mentioned on page 78.

Size	Part No	ID Code	L	H	G	Weight [kg]
1/2"	08035	1801000000	25	13.5	1/4"	0.12
3/4"	12035	1801000100	25	17.6	1/4"	0.18
1"	16035	1801002000	25	20.5	1/4"	0.22
1 1/4"	20035	1801003000	25	24.3	1/4"	0.27
1 1/2"	24035	1801004000	25	31.3	1/4"	0.41
2"	32035	1801005000	25	36.0	1/4"	0.47
1 1/4"	20036	1801003100	35	22.5	1/2"	0.35
1 1/2"	24036	1801004300	35	29.6	1/2"	0.56
2"	32036	1801005100	35	34.6	1/2"	0.65
2 1/2"	40036	1801006000	35	42.6	1/2"	0.90
2 1/2"	40037	1801006100	40	41	3/4"	1.30
3"	48038	1801006900	60	48	1"	1.90

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Blind flange

ISO 6162-2 (SAE J 518 Code 62)



SAE 6000 PSI

Size	Complete Part No	Complete ID Code	O-ring Part No	O-ring ID Code	H	Weight [kg]
1/2"	608125	1910510000	OR18.64X3.53	2701506000	20	0.27
3/4"	612125	1910510500	OR24.99X3.53	2701512000	25	0.58
1"	616125	1910511000	OR32.92X3.53	2701519400	25	0.69
1 1/4"	620125*	1910511705	OR37.69X3.53	2701524200	30	1.10
1 1/4"	621125**	1910511500	OR37.69X3.53	2701524200	30	1.10
1 1/2"	624125	1910512000	OR47.22X3.53	2701529000	35	1.89
2"	632125	1910512500	OR56.75X3.53	2701535000	40	3.31
2 1/2"	640125	1910512820	OR69.44X3.53	2701540000	50	7.50
3"	648125	1910512840	OR85.32X3.53	2701546000	50	9.19

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

O-ring, ED-seal and plug included in a Part No

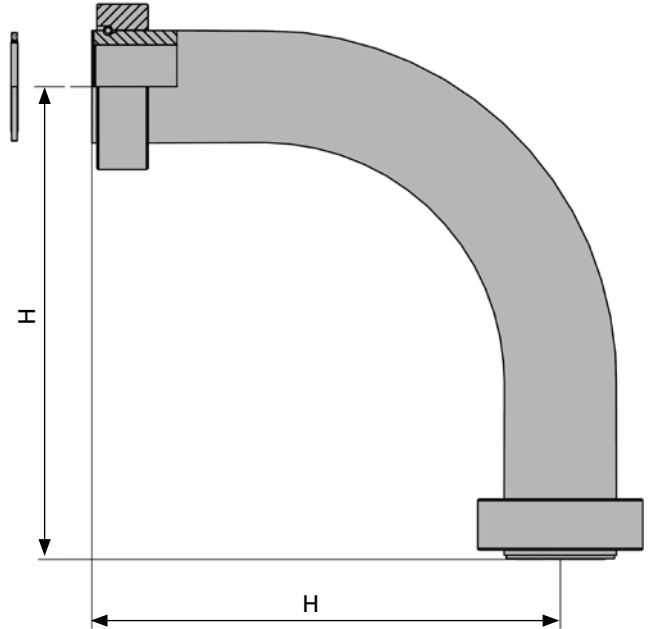
Manufacturing tolerance for flange thickness (H) ±5%.

* = According to the ISO 6162-2 standard (M12 bolts).

**= According to the previous ISO 6162-2 (2002) standard (M14 bolts). Not to be used for new constructions.

Flange bend

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

612018 includes:	
612	2 pcs
12018	1 pc
12	2 pcs
1213	2 pcs

Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
3/4"	612018	1602205000	180	90	2.48	12018	1602000100
1"	616018	1602205500	180	97.5	2.92	16018	1602000500
1 1/4"	620018*	1602206010	190	96	4.12	20018	1602001000
1 1/2"	624018	1602206500	240	116	6.90	24018	1602001500
2"	632018	1602207000	275	165	10.0	32018	1602002000
2 1/2"	640018**	1602207120	450	200	24.0	40018	1602002500
3"	648018***	1602207140	540	244	36.8	48018	1602003000

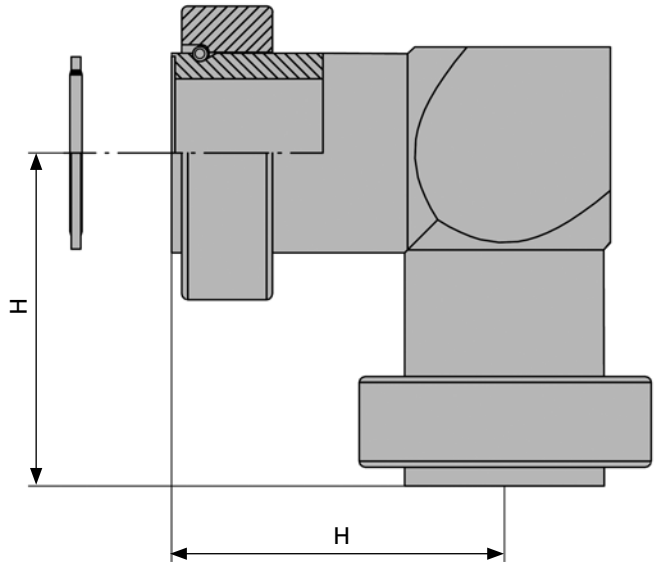
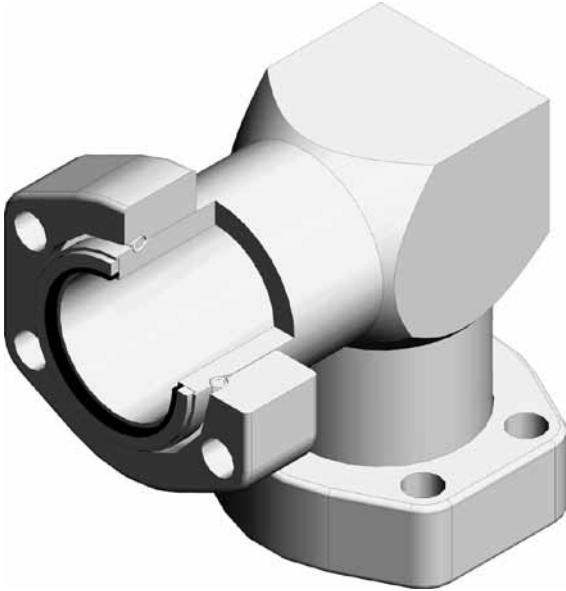
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.
 ** = Maximum working pressure 418 bar.
 *** = Maximum working pressure 416 bar.

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Elbow flange

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608015 includes:

608	2 pcs
08015	1 pc
08	2 pcs
0823	2 pcs

Size	Complete Part No	Complete ID Code	H	Weight [kg]	Body Part No	Body ID Code
1/2"	608015	1601205500	60	0.86	08015	1601000100
3/4"	612015	1601206000	65	1.76	12015	1601000500
1"	616015	1601206500	70	2.23	16015	1601001000
1 1/4"	620015*	1601207010	80	3.30	20015	1601001500
1 1/2"	624015	1601207500	90	5.08	24015	1601002000
2"	632015	1601208000	110	7.99	32015	1601002500
2 1/2"	640015	1601208120	130	15.67	40015	1601003000
3"	648015	1601208140	160	23.4	48015	1601003500

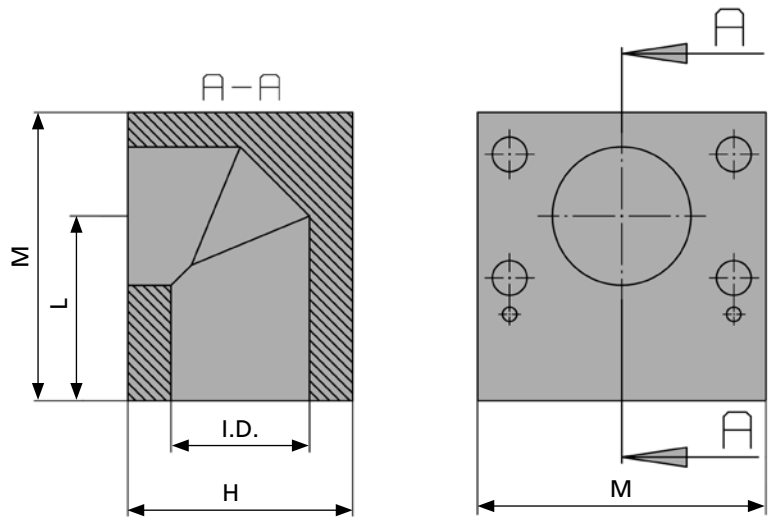
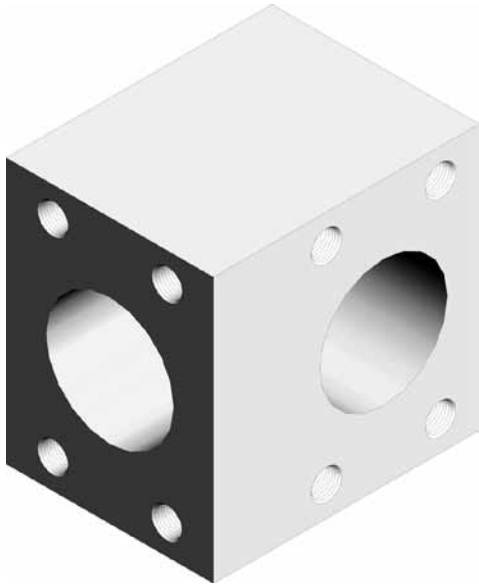
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Elbow block

ISO 6162-2 (SAE J 518 Code 62)



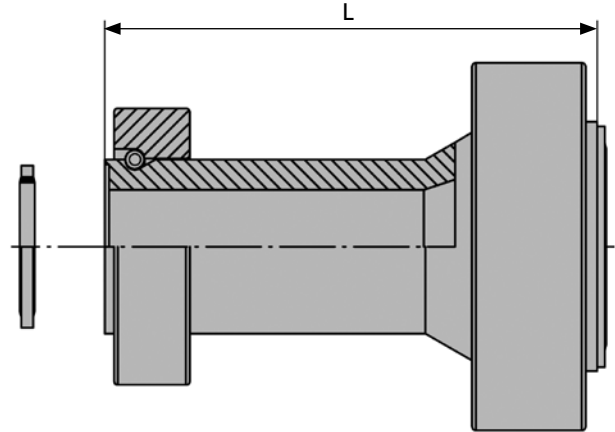
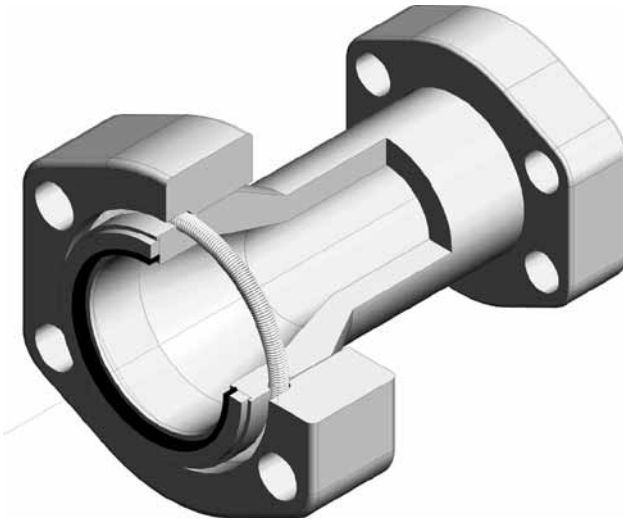
Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	608115	1603004000	40	36	56	13	0.83
3/4"	612115	1603004500	48	49	70	20	1.48
1"	616115	1603005000	48	55	80	23	1.88
1 1/4"	620115*	1603005510	58	63	90	30	2.77
1 1/2"	624115	1603006000	68	68	100	38	3.85
2"	632115	1603006500	88	90	130	48	8.55
2 1/2"	640115	1603006820	100	100	160	60	17.09
3"	648115	1603006840	130	140	210	73	32.62

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Reducer flange

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

RF612-608 includes:

612	1 pc
608	1 pc
12-08	1 pc
12	1 pc
1213	1 pc
08	1 pc
0823	1 pc

Size	Complete Part No	Complete ID Code	L	Weight [kg]	Body Part No	Body ID Code
3/4" – 1/2"	RF612-608	1501515700	65	0.86	12-08	1501000050
1" – 3/4"	RF616-612	1501516000	110	1.55	16-12	1501000100
1" – 1/2"	RF616-608	1501515800	80	1.12	16-08	1501000090
1 1/4" – 1"	RF620-616*	1501517515	110	2.09	20-16	1501001500
1 1/4" – 3/4"	RF620-612*	1501517510	110	1.87	20-12	1501001000
1 1/2" – 1 1/4"	RF624-620*	1501518510	130	3.25	24-20	1501002500
1 1/2" – 1"	RF624-616	1501518000	110	2.76	24-16	1501002000
2" – 1 1/2"	RF632-624	1501519500	130	4.98	32-24	1501003500
2" – 1 1/4"	RF632-620*	1501519505	130	4.19	32-20	1501003000
2 1/2" – 2"	RF640-632	1501519520	150	8.91	40-32	1501004500
2 1/2" – 1 1/2"	RF640-624	1501519540	150	8.50	40-24	1501004000
3" – 2 1/2"	RF648-640	1501519560	180	15.68	48-40	1501005500
3" – 2"	RF648-632	1501519580	180	11.58	48-32	1501005000

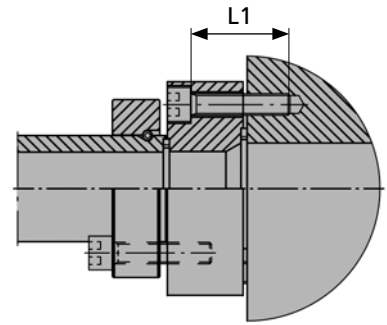
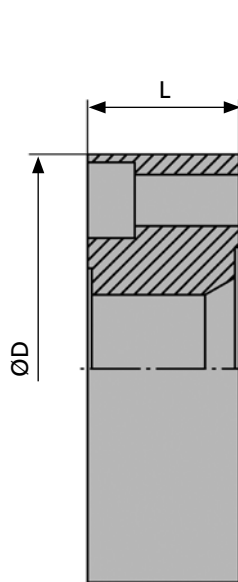
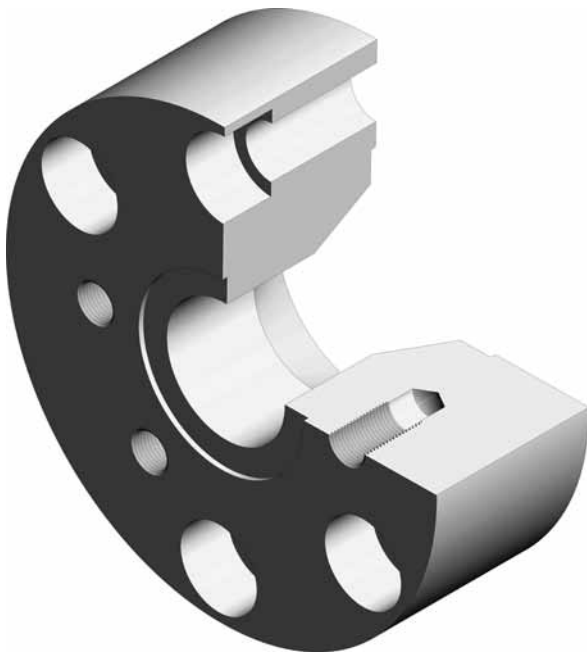
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

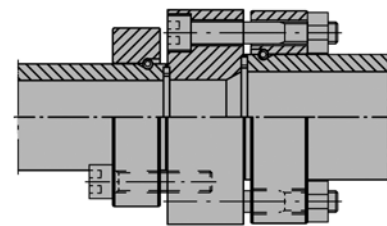
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Reducer block

ISO 6162-2 (SAE J 518 Code 62)



Reducing from pipe to block



Reducing between pipes

Size	Part No	ID Code	D	L	L1 Bolt size DIN 912, 8.8	Weight [kg]
3/4" – 1/2"	RBE612-608	1502118000	80	25	M10x25	0.82
1" – 3/4"	RBE616-612	1502118400	88	30	M12x35	1.21
1" – 1/2"	RBE616-608	1502118200	88	30	M12x35	1.26
1 1/4" – 1"	RBE620-616*	1502119420	103	35	M14x40	1.88
1 1/4" – 3/4"	RBE620-612*	1502119415	103	35	M14x40	1.97
1 1/4" – 1/2"	RBE620-608*	1502119410	103	35	M14x40	2.02
1 1/2" – 1 1/4"	RBE624-620*	1502120610	120	40	M16x45	2.81
1 1/2" – 1"	RBE624-616	1502120200	120	40	M16x45	2.93
1 1/2" – 3/4"	RBE624-612	1502120000	120	40	M16x45	2.98
2" – 1 1/2"	RBE632-624	1502121400	148	40	M20x45	4.43
2" – 1 1/4"	RBE632-620*	1502121210	148	40	M20x45	4.59
2" – 1"	RBE632-616	1502121000	148	40	M20x45	4.68
2 1/2" – 2"	RBE640-632	1502121500	191	45	M24x55	7.59
2 1/2" – 1 1/2"	RBE640-624	1502121505	191	45	M24x55	7.80
2 1/2" – 1 1/4"	RBE640-620*	1502121512	191	45	M24x55	8.00
3" – 2 1/2"	RBE648-640	1502121520	229	60	M30x70	14.51
3" – 2"	RBE648-632	1502121540	229	60	M30x70	15.00
3" – 1 1/2"	RBE648-624	1502121560	229	60	M30x70	16.00

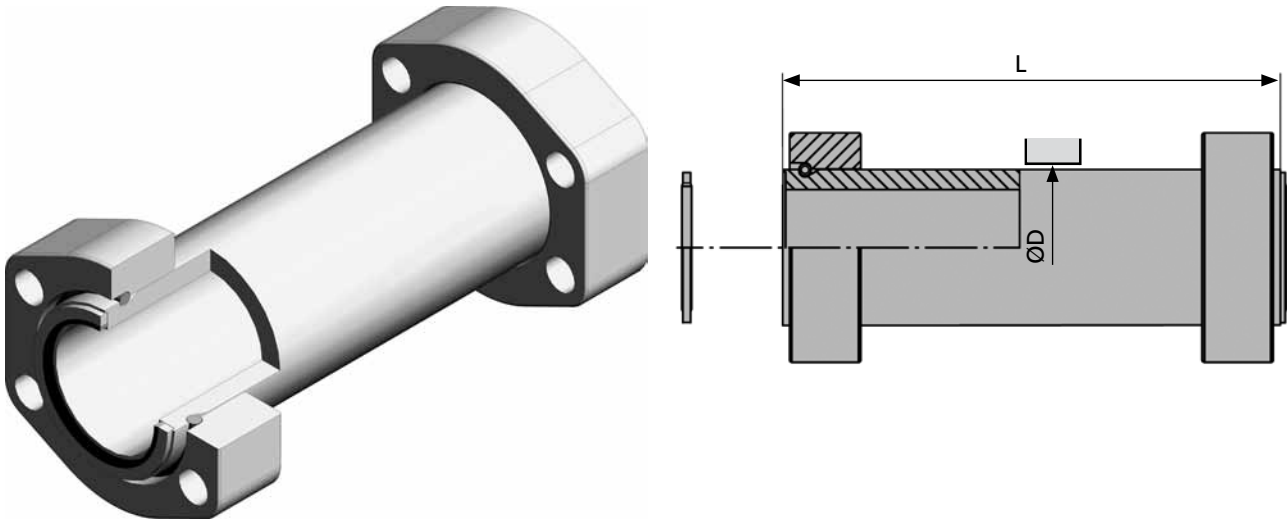
Component material:
Standard= carbon steel, zinc plated
Stainless steel= add SS after Part No
Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

L1= reducer block to block

Bulkhead flange

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608019 includes:

608	2 pcs
08019	1 pc
08	2 pcs
0823	2 pcs

Size	Complete Part No	Complete ID Code	L	Required bulkhead opening ØD	Weight [kg]	Body Part No	Body ID Code
1/2"	608019	1904059300	170	27	0.53	08019	1904000000
3/4"	612019	1904059500	170	37	1.71	12019	1904000100
1"	616019	1904060000	170	40	2.09	16019	1904000500
1 1/4"	620019*	1904060505	180	47	2.97	20019	1904001000
1 1/2"	624019	1904061000	180	57	4.50	24019	1904001500
2"	632019	1904061500	210	68	6.92	32019	1904002000
2 1/2"	640019	1904061620	220	82	14.20	40019	1904002500
3"	648019	1904061640	240	99	20.0	48019	1904003000

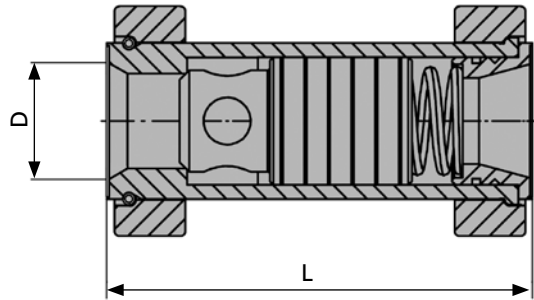
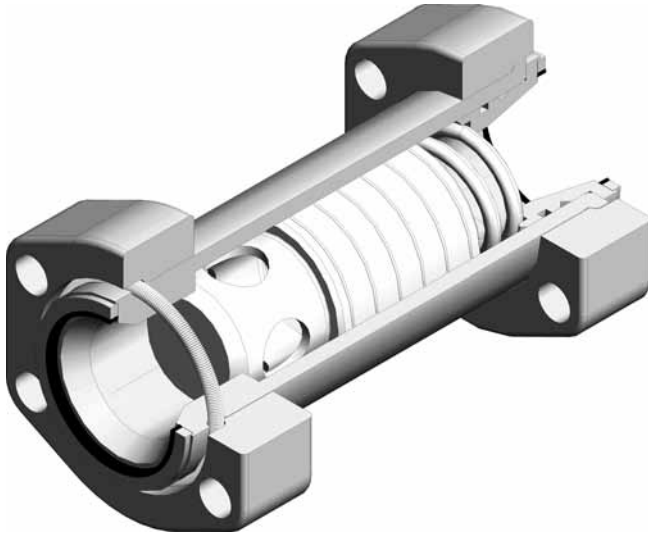
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

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Non return valve

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

612135 includes:

612	2 pcs
12135	1 pc
12	1 pcs
1213	2 pcs

Size	Complete Part No	ID Code	W.P. [bar]	L	D	Weight [kg]
3/4"	612135	1912016000	420	100	21	1.30
1"	616135	1912017000	420	120	24	1.70
1 1/4"	620135*	1912018005	420	140	31	2.70
1 1/2"	624135	1912019000	420	155	38	4.00
2"	632135	1912020000	420	180	49	6.70
2 1/2"	640135	1912020020	420	190	61	12.6
3"	648135	1912020040	420	200	73	15.6

Body material:

Standard= carbon steel

Stainless steel= add SS after Part No

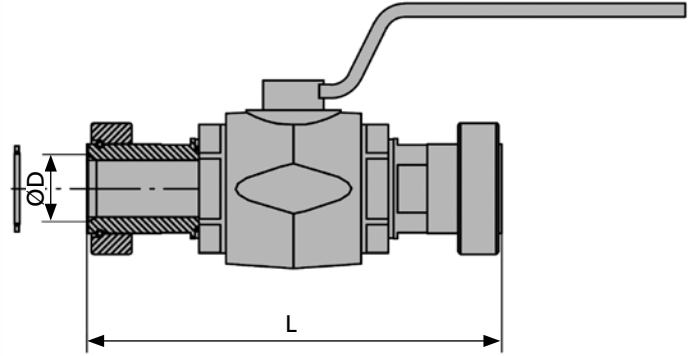
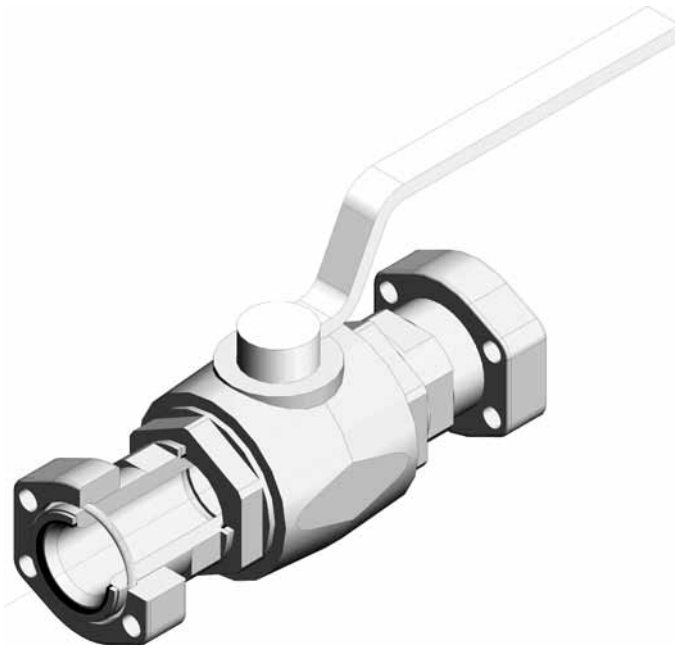
Standard opening pressure= 0,5 bar. On request 1,5 bar to 3 bar.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Flanges page 79
Retain rings page 116
Bonded seals page 117

Ball valve

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:

608129 includes:

608	2 pcs
08014	2 pc
08	2 pcs
0823	2 pcs
ED R1/2 VI	2 pc
BKH 1/2" R	1 pc

Size	Complete Part No	ID Code	W.P. [bar]	Ball valve Part No	L	D	Weight [kg]
1/2"	608129	2603015000	420	BKH 1/2 R	184	14	1.70
3/4"	612129	2603015400	420	BKH 3/4 R	218	21	3.00
1"	616129	2603015800	420	BKHP 1 R	243*	24	4.10
1 1/4"	620129*	2603016210	420	MKHP 1 1/4 R	247	31	6.30
1 1/2"	624129	2603016600	420	MKHP 1 1/2 R	286	38	10.4
2"	632129	2603017000	420	MKHP 2 R	306	49	15.1

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No

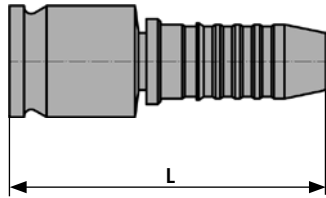
*) 261 in stainless steel

Flanges page 79
 Retain rings page 116
 Bonded seals page 117

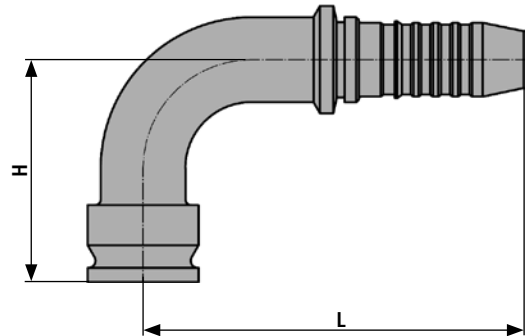
* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

GS-hose couplings

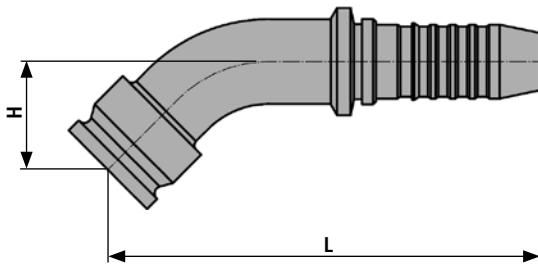
ISO 6162-2 (SAE J 518 Code 62)



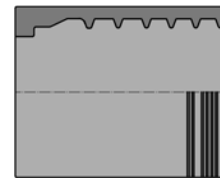
Straight



90°



45°



Ferrule

GS-hose coupling, straight

Size	Part No	ID Code	L
3/4"	12020G	5301001100	100
1"	16020G	5301001420	111
1 1/4"	20020G	5301001820	128
1 1/2"	24020G	5301002220	134
2"	32020G	5301002620	200

GS-hose coupling, 90°

Size	Part No	ID Code	L	H
3/4"	12021G	5301042020	115	69
1"	16021G	5301042420	134	78
1 1/4"	20021G	5301042820	137	88
1 1/2"	24021G	5301043620	177	102
2"	32021G	5301044020	254	126

GS-hose coupling, 45°

Size	Part No	ID Code	L	H
3/4"	12022G	5301040020	132	36
1"	16022G	5301040500	152	38
1 1/4"	20022G	5301040900	186	44
1 1/2"	24022G	5301041220	200	52
2"	32022G	5301041620	274	60

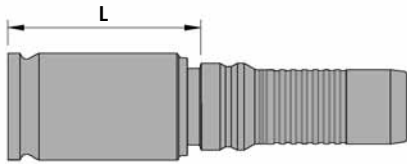
Ferrule

Size	Part No	ID Code	D (after crimping)
3/4"	G599-12	5202001230	37.4–37.8
1"	G599-16	5202001240	44.3–44.7
1 1/4"	G596-20	5202001100	56.2–56.6
1 1/2"	G599-24	5202001260	63.3–63.7
2"	integrated in hose couplings		76.6–78.1

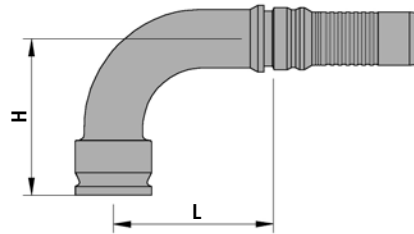
Component material:
Carbon steel, zinc plated

GS-hose couplings

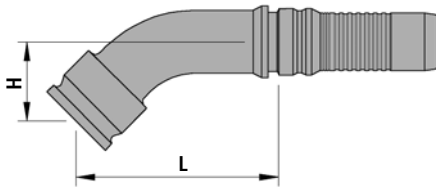
ISO 6162-2 (SAE J 518 Code 62)



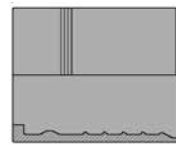
Straight



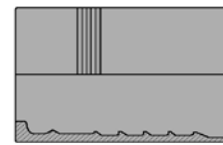
90°



45°



Type 594-



Type 596-

Ferrules

GS-hose coupling, straight

Size	Part No	ID Code	L
3/4"	12020-IT	5301001105	44.2
1"	16020-IT	5301001425	48.3
1 1/4"	20020-IT	5301001825	82.3
1 1/2"	24020-IT	5301002225	83.4
2"	32020-IT	5301002625	96.9

GS-hose coupling, 90°

Size	Part No	ID Code	L	H
3/4"	12021-IT	5301042025	59.2	64
1"	16021-IT	5301042425	76.3	75
1 1/4"	20021-IT	5301042825	95.1	93
1 1/2"	24021-IT	5301043625	111.8	110
2"	32021-IT	5301044025	149.5	140

GS-hose coupling, 45°

Size	Part No	ID Code	L	H
3/4"	12022-IT	5301040025	72.2	32.0
1"	16022-IT	5301040505	88.3	36.1
1 1/4"	20022-IT	5301040905	112.1	43.8
1 1/2"	24022-IT	5301041225	128.8	51.7
2"	32022-IT	5301041625	166.4	65.9

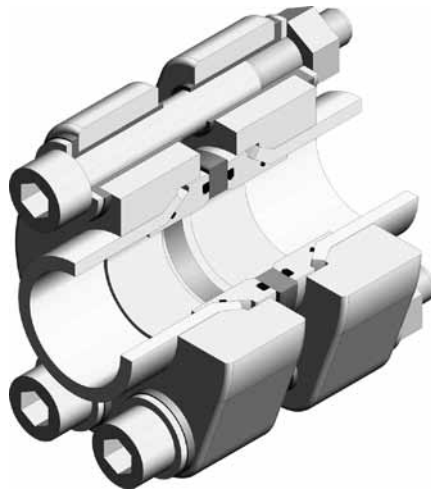
Ferrules

Size	Gates hoses				Intertraco hoses					
	G5K/EFG5K		G6K/EFG6K		GS4SH		GSR13		GSR15	
	Part No	ID Code	Part No	ID Code	Part No	ID Code	Part No	ID Code	Part No	ID Code
3/4"	594-12	5204006000	594-12	5204006000	594-12	5204006000	594-12	5204006000	594-12	5204006000
1"	594-16	5204006010	594-16	5204006010	594-16	5204006010	594-16	5204006010	594-16	5204006010
1 1/4"	596-20	5204006220	596-20	5204006220	594-20	5204006020	596-20	5204006220	596-20	5204006220
1 1/2"	596-24	5204006230	596-24	5204006230	594-24	5204006030	596-24	5204006230	596-24	5204006230
2"	596-32	5204006240	596-32	5204006240	594-32	5204006040	596-32	5204006240	596-32	5204006240

Component material:
Carbon steel, zinc plated

Non-conductive flange connection

ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
608/16X2FA-NC includes:
 608F 2 pcs
 08/16X2FA 2 pc
 08/16F 2 pc
 OR18.64X3.53 2 pc
 OR12X1.0 2 pc
 08099B/B-NC 1 pc
 M6DIN125-308 8 pcs
 M08-PTFE-308 8 pcs
 M6X70DIN912-12.9 4 pcs
 M6DIN934-10 4 pcs

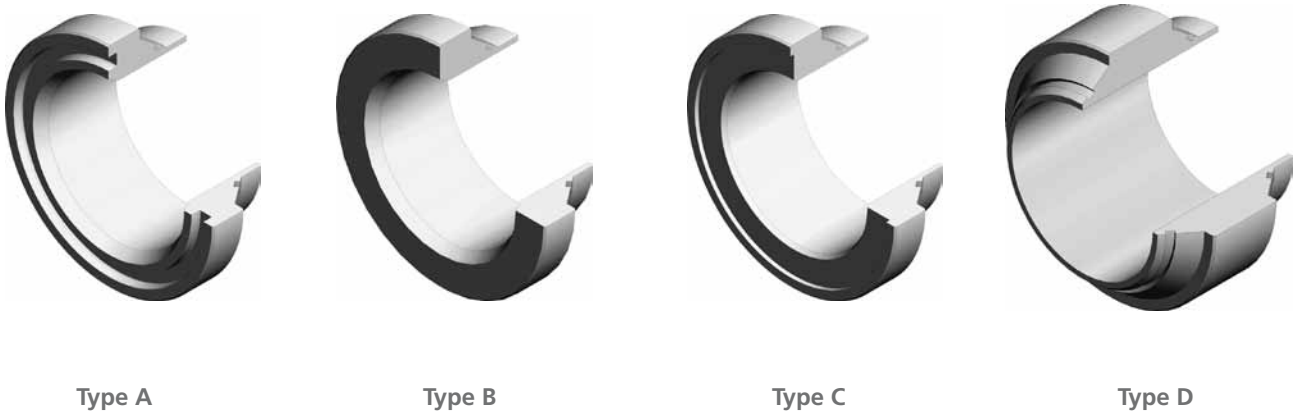
Size	Pipe size	Complete Part No	ID Code	Bolt Torque [Nm]	Weight [kg]
1/2"	16 x 2.0	608/16X2FA-NC	1401901000	15	0.57
1/2"	18 x 2.0	608/18X2FA-NC	1401902000	15	0.57
1/2"	20 x 2.0	608/20X2FA-NC	1401903000	15	0.55
1/2"	25 x 2.5	608/25X2.5FA-NC	1401904000	15	0.55
1/2"	25 x 3.0	608/25X3FA-NC	1401905000	15	0.50
3/4"	20 x 2.0	612/20X2FA-NC	1401906000	27	1.11
3/4"	20 x 2.5	612/20X2.5FA-NC	1401907000	27	1.13
3/4"	25 x 2.5	612/25X2.5FA-NC	1401908000	27	1.05
3/4"	25 x 3.0	612/25X3FA-NC	1401909000	27	1.07
3/4"	30 x 3.0	612/30X3FA-NC	1401910000	27	1.01
3/4"	30 x 4.0	612/30X4FA-NC	1401910500	27	1.05
1"	25 x 2.5	616/25X2.5FA-NC	1401911000	48	1.45
1"	25 x 3.0	616/25X3FA-NC	1401912000	48	1.39
1"	30 x 3.0	616/30X3FA-NC	1401913000	48	1.39
1"	30 x 4.0	616/30X4FA-NC	1401914000	48	1.39
1"	38 x 4.0	616/38X4FA-NC	1401915000	48	1.26
1 1/4"	30 x 3.0	621/30X3FA-NC	1401916000	72	2.27
1 1/4"	30 x 4.0	621/30X4FA-NC	1401917000	72	2.12
1 1/4"	38 x 4.0	621/38X4FA-NC	1401918000	72	2.10
1 1/4"	38 x 5.0	621/38X5FA-NC	1401919000	72	2.10
1 1/4"	42 x 4.0	621/42X4FA-NC	1401920000	72	2.06
1 1/2"	30 x 3.0	624/30X3FA-NC	1401921000	119	2.39
1 1/2"	38 x 4.0	624/38X4FA-NC	1401922000	119	3.70
1 1/2"	38 x 5.0	624/38X5FA-NC	1401922500	119	3.70
1 1/2"	42 x 4.0	624/42X4FA-NC	1401923000	119	3.59
1 1/2"	50 x 5.0	624/50X5FA-NC	1401924000	119	3.36
2"	50 x 5.0	632/50X5FA-NC	1401925000	200	5.67
2"	60 x 5.0	632/60X5FA-NC	1401926000	200	5.29
2"	60 x 6.0	632/60X6FA-NC	1401927000	200	5.29

Material possibilities page 168.

Flanges page 80
 Inserts page 111
 Sleeves page 113
 O-rings page 118, 119

Insert cone for flare flange connection

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Size	Part No Type A	ID Code Type A	Part No Type B	ID Code Type B	Part No Type C	ID Code Type C	Part No Type D	ID Code Type D	Pipe Size
1/2"	08/16X2FA	1401000300	08/16X2FB	1401000400	08/16X2FC	1401000500	08/16X2FD	1401000600	16x2.0
1/2"	08/18X2FA	1401002100	08/18X2FB	1401002200	08/18X2FC	1401002300	08/18X2FD	1401002400	18x2.0
1/2"	08/20X2FA	1401004100	08/20X2FB	1401004200	08/20X2FC	1401004300	08/20X2FD	1401004400	20x2.0
1/2"	08/25X2.5FA	1401006000	08/25X2.5FB	1401006100	08/25X2.5FC	1401006300	08/25X2.5FD	1401006400	25x2.5
1/2"	08/25X3FA	1401006600	08/25X3FB	1401006700	08/25X3FC	1401006800	08/25X3FD	1401006900	25x3.0
3/4"	12/20X2FA	1401010100	12/20X2FB	1401010200	12/20X2FC	1401010300	12/20X2FD	1401010400	20x2.0
3/4"	12/20X2.5FA	1401010600	12/20X2.5FB	1401010700	12/20X2.5FC	1401010800	12/20X2.5FD	1401010900	20x2.5
3/4"	12/25X2.5FA	1401012100	12/25X2.5FB	1401012200	12/25X2.5FC	1401012300	12/25X2.5FD	1401012400	25x2.5
3/4"	12/25X3FA	1401012600	12/25X3FB	1401012700	12/25X3FC	1401012800	12/25X3FD	1401012900	25x3.0
3/4"	12/30X3FA	1401014100	12/30X3FB	1401014200	12/30X3FC	1401014300	12/30X3FD	1401014400	30x3.0
1"	16/25X2.5FA	1401016100	16/25X2.5FB	1401016200	16/25X2.5FC	1401016300	16/25X2.5FD	1401016400	25x2.5
1"	16/25X3FA	1401016600	16/25X3FB	1401016700	16/25X3FC	1401016800	16/25X3FD	1401016900	25x3.0
1"	16/30X3FA	1401018100	16/30X3FB	1401018200	16/30X3FC	1401018300	16/30X3FD	1401018400	30x3.0
1"	16/30X4FA	1401018600	16/30X4FB	1401018700	16/30X4FC	1401018800	16/30X4FD	1401018900	30x4.0
1"	16/38X4FA	1401022700	16/38X4FB	1401022800	16/38X4FC	1401022900	16/38X4FD	1401023000	38x4.0
1 1/4"	20/30X3FA	1401024100	20/30X3FB	1401024200	20/30X3FC	1401024300	20/30X3FD	1401024400	30x3.0
1 1/4"	20/30X4FA	1401024420	20/30X4FB	1401024440	20/30X4FC	1401024500	20/30X4FD	1401024510	30x4.0
1 1/4"	20/38X4FA	1401028500	20/38X4FB	1401028600	20/38X4FC	1401028700	20/38X4FD	1401028800	38x4.0
1 1/4"	20/38X5FA	1401029000	20/38X5FB	1041029200	20/38X5FC	1041029300	20/38X5FD	1041029400	38x5.0
1 1/4"	20/42X4FA	1401030600	20/42X4FB	1401030700	20/42X4FC	1401030800	20/42X4FD	1401030900	42x4.0
1 1/2"	24/30X3FA	1401032700	24/30X3FB	1401032800	24/30X3FC	1401032900	24/30X3FD	1401033000	30x3.0
1 1/2"	24/38X4FA	1401034100	24/38X4FB	1401034200	24/38X4FC	1401034300	24/38X4FD	1401034400	38x4.0
1 1/2"	24/42X4FA	1401036600	24/42X4FB	1401036700	24/42X4FC	1401036800	24/42X4FD	1401036900	42x4.0
1 1/2"	24/50X5FA	1401039700	24/50X5FB	1401039800	24/50X5FC	1401039900	24/50X5FD	1401040000	50x5.0
1 1/2"	24/50X6FA	1401040100	24/50X6FB	1401040200	24/50X6FC	1401040300	24/50X6FD	1401040400	50x6.0
2"	32/50X5FA	1401041100	32/50X5FB	1401041200	32/50X5FC	1401041300	32/50X5FD	1401041400	50x5.0
2"	32/60X5FA	1401042100	32/60X5FB	1401042200	32/60X5FC	1401042300	32/60X5FD	1401042400	60x5.0
2"	32/60X6FA	1401042600	32/60X6FB	1401042700	32/60X6FC	1401042800	32/60X6FD	1401042900	60x6.0
2 1/2"	40/60X6FA	1401045312	40/60X6FB	1401045314	40/60X6FC	1401045316	40/60X6FD	1401045318	60x6.0
2 1/2"	40/73X7FA	1401045480	40/73X7FB	1401045482	40/73X7FC	1401045484	40/73X7FD	1401045486	73x7.0

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bonded seals and O-rings not included.

SAE 6000 PSI

Insert cone for flare flange connection

ISO 6162-2 (SAE J 518 Code 62)



Type A



Type B



Type C



Type D

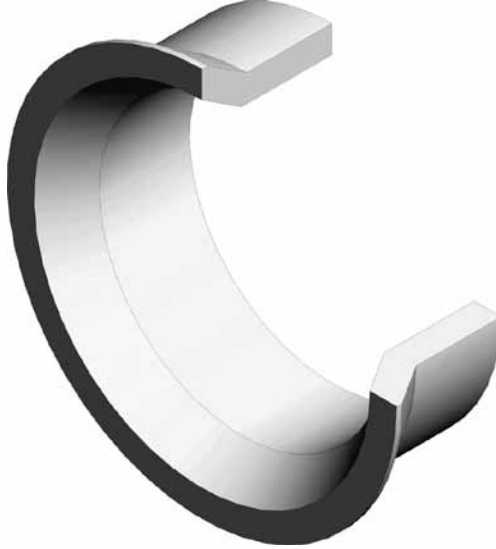
ANSI 36.10/36.19 pipes

Size	Part No Type A	ID Code Type A	Part No Type B	ID Code Type B	Part No Type C	ID Code Type C	Part No Type D	ID Code Type D	Pipe Size
1/2"	08/21.3X3.73FA	1401004921	08/21.3X3.73FB	1401004925	08/21.3X3.73FC	1401004930	08/21.3X3.73FD	1401004935	21.3X3.73
1/2"	08/21.3X4.78FA	1401004950	08/21.3X4.78FB	1401004955	08/21.3X4.78FC	1401004960	08/21.3X4.78FD	1401004965	21.3X4.78
3/4"	12/26.7X3.91FA	1401003130	12/26.7X3.91FB	1401013132	12/26.7X3.91FC	1401013134	12/26.7X3.91FD	1401013136	26.7X3.91
3/4"	12/26.7X5.56FA	1401013140	12/26.7X5.56FB	1401013145	12/26.7X5.56FC	1401013150	12/26.7X5.56FD	1401013155	26.7X5.56
1"	16/33.4X3.38FA	1401019720	16/33.4X3.38FB	1401019722	16/33.4X3.38FC	1401019724	16/33.4X3.38FD	1401019726	33.4X3.38
1"	16/33.4X4.55FA	1401019746	16/33.4X4.55FB	1401019748	16/33.4X4.55FC	1401019750	16/33.4X4.55FD	1401019752	33.4X4.55
1 1/4"	20/42.2X3.56FA	1401031020	20/42.2X3.56FB	1401031022	20/42.2X3.56FC	1401031024	20/42.2X3.56FD	1401031026	42.2X3.56
1 1/4"	20/42.2X4.85FA	1401031040	20/42.2X4.85FB	1401031042	20/42.2X4.85FC	1401031044	20/42.2X4.85FD	1401031046	42.2X4.85
1 1/2"	24/48.3X3.68FA	1401038220	24/48.3X3.68FB	1401038222	24/48.3X3.68FC	1401038224	24/48.3X3.68FD	1401038226	48.3X3.68
1 1/2"	24/48.3X5.08FA	1401038240	24/48.3X5.08FB	1401038242	24/48.3X5.08FC	1401038244	24/48.3X5.08FD	1401038246	48.3X5.08
2"	32/60.3X3.91FA	1401043720	32/60.3X3.91FB	1401043722	32/60.3X3.91FC	1401043724	32/60.3X3.91FD	1401043726	60.3X3.91
2"	32/60.3X5.54FA	1401043800	32/60.3X5.54FB	1401043820	32/60.3X5.54FC	1401043830	32/60.3X5.54FD	1401043840	60.3X5.54
2 1/2"	40/73X7FA	1401045480	40/73X7FA	1401045482	40/73X7FA	1401045484	40/73X7FA	1401045486	73x7.01

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bonded seals and O-rings not included.

Sleeve

ISO 6162-2 (SAE J 518 Code 62)

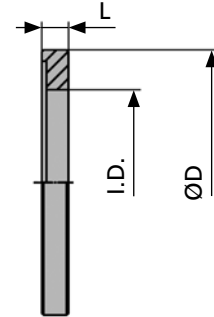


Size	Part No	ID Code	Pipe O.D. [mm]
1/2"	08/16F	1401000100	16
1/2"	08/18F	1401002000	18
1/2"	08/20F	1401004000	20
3/4"	12/20F	1401010000	20
3/4"	12/25F	1401012000	25
1"	16/25F	1401016000	25
1"	16/30F	1401018000	30
1 1/4"	20/30F	1401024000	30
1 1/4"	20/38F	1401028000	38
1 1/2"	24/38F	1401034000	38
1 1/2"	24/42F	1401036000	42
2"	32/50F	1401041000	50
2 1/2"	40/60F	1401045000	60

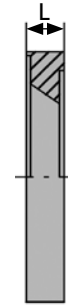
Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Adapter

ISO 6162-2 (SAE J 518 Code 62)



Adapter between O-ring and bonded seal



Adapter between metric and ANSI 36.10/36.19

Please add 10 mm to bolt lengths mentioned on page 78.

Adapter between O-ring and standard GSbonded seal, metric pipes

Size	Part No	ID Code	L	D	ID	Weight [kg]
1/2"	08099	1803000100	7	30	14	0.02
3/4"	12099	1803001000	7	40	20	0.05
1"	16099	1803002000	7	45	24	0.06
1 1/4"	20099	1803003000	7	50	30	0.07
1 1/2"	24099	1803004000	7	60	39	0.09
2"	32099	1803005000	7	70	49	0.12
2 1/2"	40099	1803006000	7	84	60	0.16
3"	48099	1803007000	7	102	72	0.22

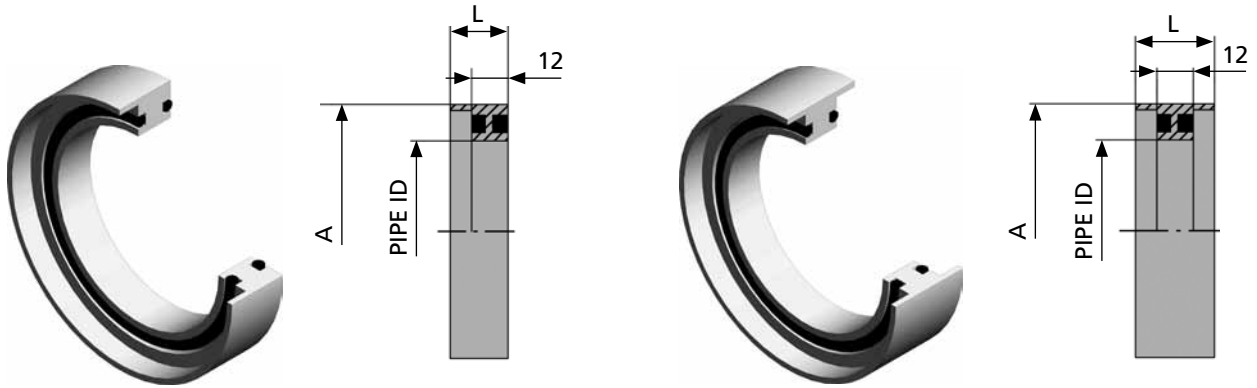
Adapter between metric and ANSI 36.10/36.19 pipes

Size	Part No	ID Code	A-Pipe	B-Pipe	Bonded Seal		L	Weight [kg]
					1	2		
1/2"	08087	1803201000	26x6.0	21.3x7.5	0823	0821	10	0.03
3/4"	12087	1803202000	36x8.0	26.7x7.8	1213	0823	10	0.06
1"	16087	1803203000	39x7.5	33.4x6.4	1629	1633	10	0.06
1"	16088	1803203500	39x7.5	33.4x9.1	1629	1633	10	0.07
1 1/4"	20087	1803204000	46x8.5	42.2x6.4	2030	2042	10	0.07
1 1/4"	20088	1803204500	46x8.5	42.2x9.7	2030	2042	10	0.08
1 1/2"	24087	1803205000	56x8.5	48.3x7.1	2432	2448	10	0.10
1 1/2"	24088	1803205500	56x8.5	48.3x10.2	2432	2448	10	0.11
2"	32087	1803206000	66x8.5	60.3x8.7	3219	3260	10	0.13
2"	32088	1803206500	66x8.5	60.3x11.1	3219	3260	10	0.14

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Seal carrier

ISO 6162-2 (SAE J 518 Code 62)



Type S

Type D

Please add at least 10 mm to bolt lengths mentioned on page 78.

Type S with O-rings between flange and block – metric pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220S	1809010000	OR53.57X3.53	70	15	66x8.5
2 1/2"	4020S	1809011000	OR66.27X3.53	84	15	80x10
3"	4820S	1809012000	OR82.14X3.53	102	15	97x12

Type S with O-rings between flange and block – ANSI 36.10/36.19 pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220/60.3X8.74S	1809010200	OR47.22X3.53	65	15	60.3x8.74
2 1/2"	4020/73X9.53S	1809011300	OR58.74X3.53	79	15	73.0x9.53
3"	4820/88.9X11.13S	1809012200	OR77.62X3.53	93	15	88.9x11.13

Type D with O-rings between flanges – metric pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220D	1809010100	OR53.57X3.53	70	18	66x8.5
2 1/2"	4020D	1809011100	OR66.27X3.53	84	18	80x10
3"	4820D	1809012100	OR82.14X3.53	102	18	97x12

Type D with O-rings between flanges – ANSI 36.10/36.19 pipes

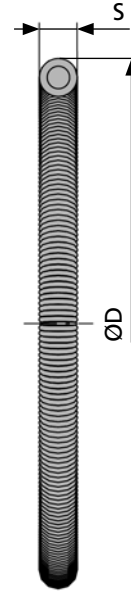
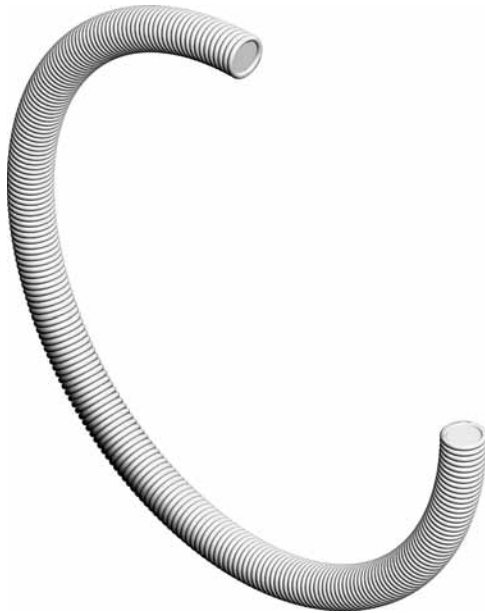
Size	Part No	ID Code	O-Ring	A	L	Pipe Size
2"	3220/60.3X8.74D	1809010300	OR47.22X3.53	65	18	60.3x8.74
2 1/2"	4020/73X9.53D	1809011400	OR58.74X3.53	79	18	73.0x9.53
3"	4820/88.9X11.13D	1809012300	OR72.62X3.53	93	18	88.9x11.13

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

O-ring not included in a Part No,
 please order separately.

Retain ring

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Size	Part No	ID Code	Pipe Size	D	S
1/2"	08	1902000150	26x6	30	4
3/4"	12	1902001050	36x8	40	4
1"	16	1902002050	39x7.5	44	5
1 1/4"	20	1902003050	46x8	51	5
1 1/2"	24	1902004050	56x8.5	61	5
2"	32	1902006050	66x8.5	71	5
2 1/2"	40	1902007050	80x10	85	5
3"	48	1902008050	97x12	103	6

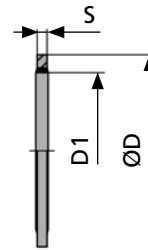
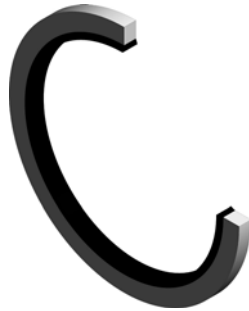
ANSI 36.10/36.19 pipes

Size	Part No	ID Code	Pipe Size	D	S
1/2"	08/21.3	1902000250	21.3x7.5	25.3	4
3/4"	12/26.7	1902001250	26.7x7.8	30.7	4
1"	16/33.4	1902002250	33.4x9.1	38.4	5
1 1/4"	20/42.2	1902003250	42.2x9.7	47.2	5
1 1/2"	24/48.3	1902004250	48.3x10.2	53.3	5
2"	32/60.3	1902006250	60.3x11.1	65.3	5
2 1/2"	40/73	1902007250	73.0x14.02	78.0	5
3"	48/88.9	1902008250	88.9x15.2	94.9	6

Component material:
AISI 316, special treated

Bonded seal

ISO 6162-2 (SAE J 518 Code 62)



Bonded seal for metric GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
1/2"	0823	2701001400	0823SS	2701100200	2.03	23.80	17.28
3/4"	1213	2701002000	1213SS	2701101000	2.34	33.27	24.26
1"	1629	2701003000	1629SS	2701102000	2.34	34.93	27.05
1 1/4"	2030	2701004000	2030SS	2701103000	3.25	42.80	33.89
1 1/2"	2432	2701005000	2432SS	2701104000	3.25	52.38	42.93
2"	3219	2701007000	3219SS	2701105000	3.25	63.50	51.69
2 1/2"	4037	2701008000	4037SS	2701107000	3.25	75.00	64.39
3"	4839	2701009000	4839SS	2701108000	3.25	90.17	76.08

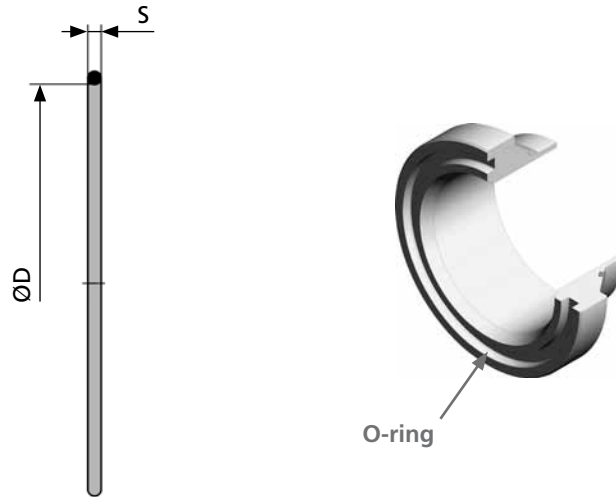
Bonded seal for ANSI 36.10/36.19 GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
1/2"	0821	2701001000	0821SS	2701100000	2.00	15.88	10.37
3/4"	0823	2701001400	0823SS	2701100200	2.03	23.80	17.28
1"	1633	2701003400	1633SS	2701102100	2.34	28.58	21.54
1 1/4"	2042	2701004400	2042SS	2701103400	2.34	39.00	31.00
1 1/2"	2448	2701005200	2448SS	2701104500	3.25	44.45	35.94
2"	3260	2701007400	3260SS	2701105400	3.25	55.50	46.50
2 1/2"	4073	2701008200	4073SS	2701107500	3.25	69.85	54.89
3"	4888	2701009200	4888SS	2701108300	4.00	83.80	70.00

Material possibilities:
 Standard= carbon steel, zinc plated with NBR
 SS= stainless steel with NBR
 Other materials and combinations on request.

O-ring between 37° insert cones

ISO 6162-2 (SAE J 518 Code 62)

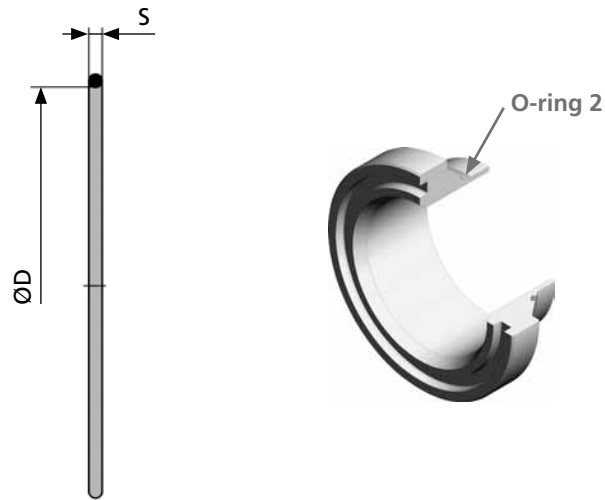


Size	Part No	ID Code	GS Size
1/2"	OR18.64X3.53	2701506000	08
3/4"	OR24.99X3.53	2701512000	12
1"	OR32.92X3.53	2701519400	16
1 1/4"	OR37.69X3.53	2701524200	20
1 1/2"	OR47.22X3.53	2701529000	24
2"	OR56.75X3.53	2701535000	32
2 1/2"	OR69.44X3.53	2701540000	40

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton®), Shore 90 A= add VI after Part No
 Other materials on request.

O-ring 2 for insert cones

ISO 6162-2 (SAE J 518 Code 62)



Metric pipes

Pipe Size	Part No	ID Code
16x2.0	OR12X1.0	2701500000
18x2.0	OR14X1.0	2701502000
20x2.0	OR16X1.0	2701504000
20x2.5	OR15X1.0	2701503000
25x2.5	OR20X1.0	2701508000
25x3.0	OR19X1.0	2701507200
30x3.0	OR23X1.0	2701511000
30x4.0	OR22X1.0	2701510000
38x4.0	OR30X1.0	2701517200
38x5.0	OR28X1.0	2701516000
42x4.0	OR34X1.0	2701521200
50x5.0	OR41X1.78	2701525000
50x6.0	OR37.82X1.78	2701524600
60x5.0	OR50.52X1.78	2701531000
60x6.0	OR47.35X1.78	2701529200
73x7.0	OR56.87X1.78	2701535200

ANSI 36.10/36.19 pipes

Pipe Size	Part No	ID Code
21.3x3.73	OR14X1.0	2701502000
21.3x4.78	OR12X1.0	2701500000
26.7x3.91	OR20X1.0	2701508000
26.7x5.56	OR16X1.0	2701504000
33.4x3.38	OR25X1.0	2701513200
33.4x4.55	OR23X1.0	2701511000
42.2x3.56	OR34X1.0	2701521200
42.2x4.85	OR32X1.0	2701519600
48.3x3.68	OR41X1.78	2701525000
48.3x5.08	OR37.82X1.78	2701524600
60.3x3.91	OR53.70X1.78	2701533000
60.3x5.54	OR47.35X1.78	2701529200
73x7.01	OR56.87X1.78	2701535200

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton®), Shore 90 A= add VI after Part No
 Other materials on request.

ED-Seal for male thread nipple

ISO 6162-2 (SAE J 518 Code 62)



Part No	ID Code
ED R1/2 VI	2201861910
ED R3/4 M26X1.5 27X2 VI	2201862410
ED R1+M33X2 VI	2201863010
ED R11/4+M42X2 VI	2201863310
ED R11/2+M48X2 VI	2201863610

Material: FPM (Viton®)

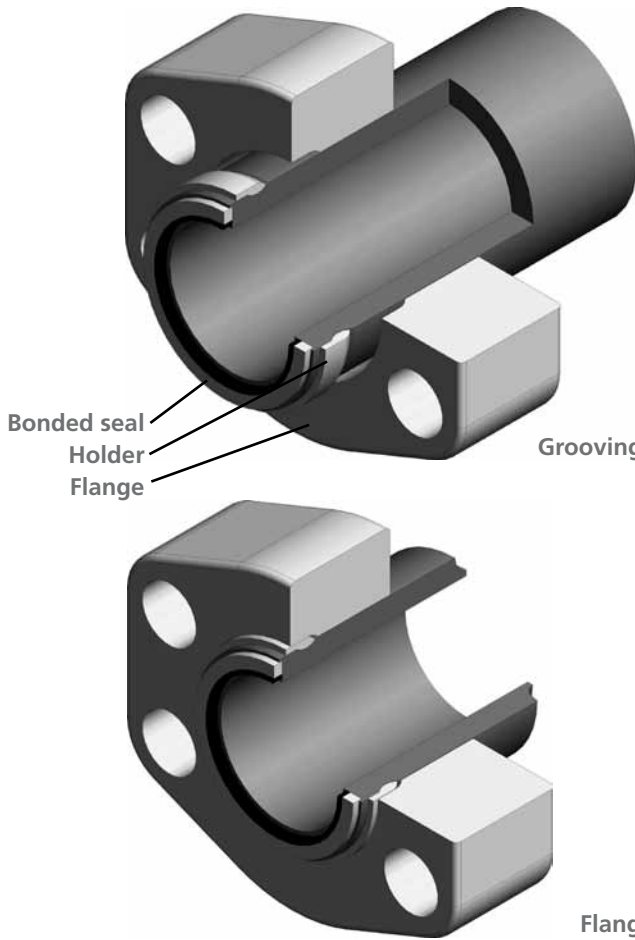
GS-HP Retain Ring™ System

ISO 6162-2 (SAE J 518 Code 62)

Connection Technology

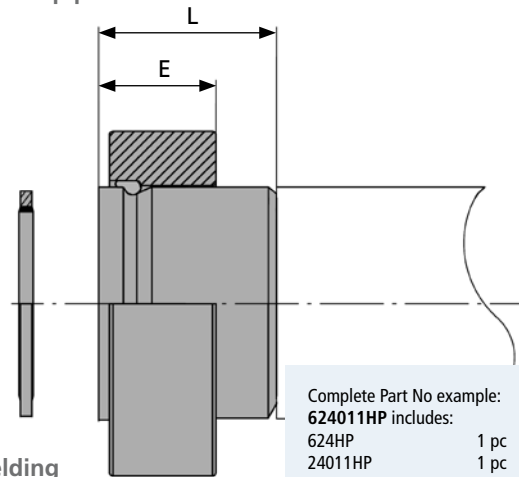
The GS-HP Retain Ring™ system provides compact, high pressure joint, in which the flanges are held to the pipe by solid retain ring halves which are sitting in a machined groove on the pipe end. The bonded seal between pipe faces ensures tight sealing when tightening the screws. This new system has been subjected to rigorous burst and impulse testing. The HP-retain rings, flanges and screws absorb the axial forces and shocks. The combination of retain rings and flanges strengthens the pipe (at the location of the groove) in such a manner that connection is stronger than the pipe itself!

The GS-HP Retain Ring™ system provides a proven, reliable and leak-free piping solution. New design and improved characteristics lead to a minimised need for maintenance, repair or replacement of piping components. The excellent sealing performance and very high mechanical strength of new HP-invention has been proven by external testing laboratories. New type of connection technology allows much higher external loads and has unique resistance against external loads.



Grooving direct on to pipe

Flange for welding



Complete Part No example:
624011HP includes:
 624HP 1 pc
 24011HP 1 pc
 24HP 1 pc
 2432 1 pc

Grooving direct on to pipe

Size	Pipe Size	Flange Part No	Flange ID Code	Holder Part No	Holder ID Code	Bonded Seal Part No	Bonded Seal ID Code
1 1/2"	56x8.5	624HP	1103120500	24HP	1902004500	2432	1903005000
2"	66x8.5	632HP	1103150300	32HP	1902006500	3219	1903007000

Flange for welding

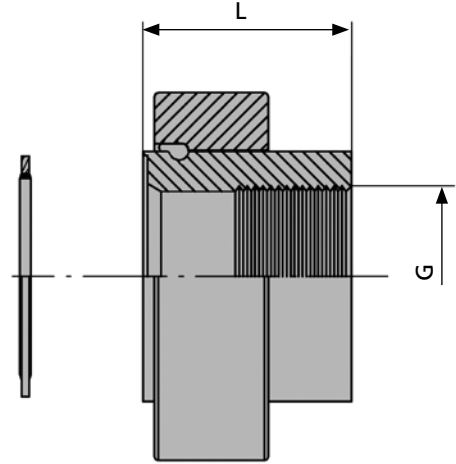
Size	Pipe Size	Complete Part Code	Complete ID Code	L	E	Weight [kg]	Body Part No	Body ID Code
1 1/2"	56x8.5	624011HP	1301567500	60	38	1.91	24011HP	1301037400
2"	66x8.5	632011HP	1301572000	75	43	3.07	32011HP	1301046795

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Holder material= duplex

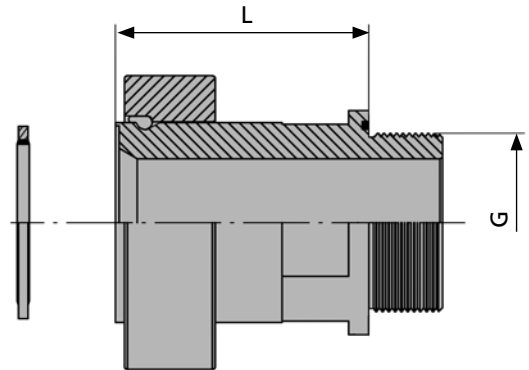
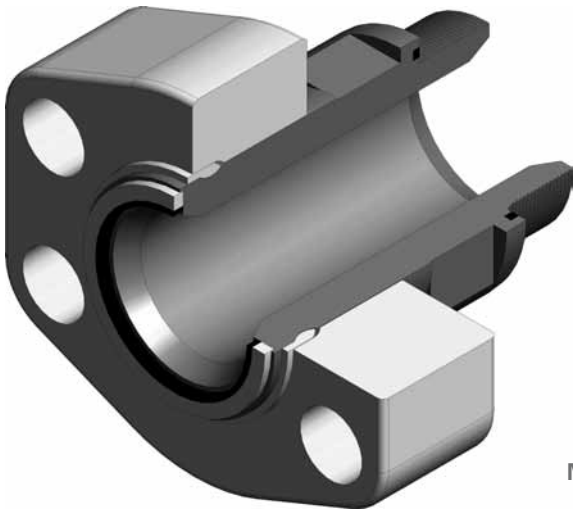
Flange dimensions page 79
 Bonded seals page 117

GS-HP Retain Ring™ System

ISO 6162-2 (SAE J 518 Code 62)



Female thread flange



Male thread flange

Complete Part No example:
624013HP includes:
 624HP 1 pc
 24013HP 1 pc
 24HP 1 pc
 2432 1 pc

Complete Part No example:
624014HP includes:
 624HP 1 pc
 24014HP 1 pc
 24HP 1 pc
 2432 1 pc
 EDR112M48X2 1 pc

Female thread flange, BSPP

Size	Complete Part No	Complete ID Code	L	G	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624013HP	1307511500	45	1 1/4"	1.84	24013HP	1307008600
2"	632013HP	1307512500	55	1 1/2"	2.93	32013HP	1307009300

Male thread flange, BSPP

Size	Complete Part No	Complete ID Code	L	G	Seal 2	A/F	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624014HP	1305527100	78.2	1 1/2"	EDR112M48X2	50	1.71	24014HP	1305010400
2"	632014HP	1305528100	83.2	2"	OR59.9X2.62	65	2.55	32014HP	1305014350

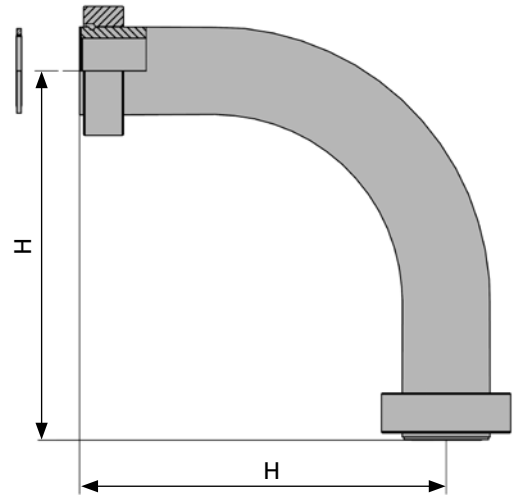
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Standard thread BSP, others on request.

Seal 2 material: FPM (Viton®)

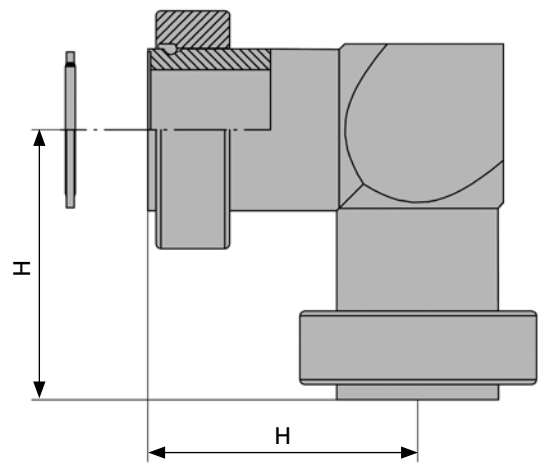
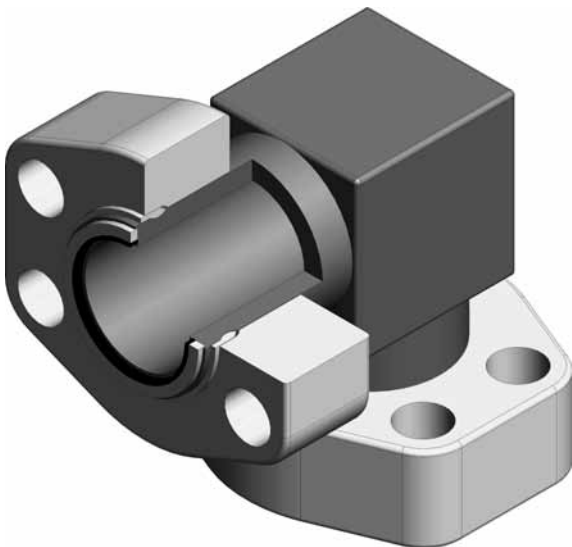
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GS-HP Retain Ring™ System

ISO 6162-2 (SAE J 518 Code 62)



Flange bend



Elbow flange

SAE 6000 PSI

Complete Part No example:
624018HP includes:
 624HP 2 pcs
 24018HP 1 pc
 24HP 2 pcs
 2432 2 pcs

Complete Part No example:
624015HP includes:
 624HP 2 pcs
 24015HP 1 pc
 24HP 2 pcs
 2432 2 pcs

Flange bend

Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624018HP*	1602206600	240	116	6.90	24018HP	1602001550
2"	632018HP*	1602207100	275	173	10.0	32018HP	1602002050

Elbow flange

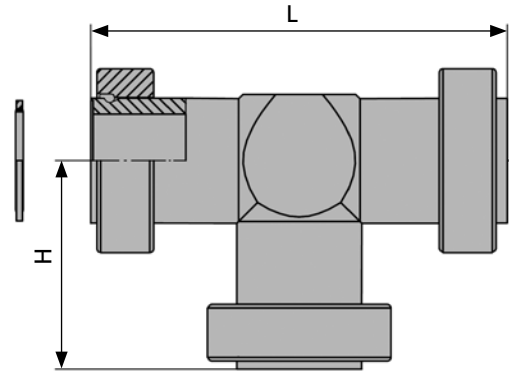
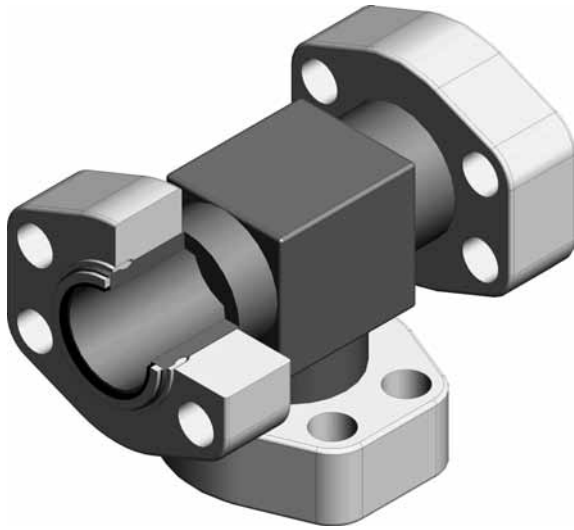
Size	Complete Part No	Complete ID Code	H	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624015HP	1601207600	90	5.08	24015HP	1601002050
2"	632015HP	1601208100	110	7.99	32015HP	1601002550

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 *) Not available in stainless steel
 Other materials on request.

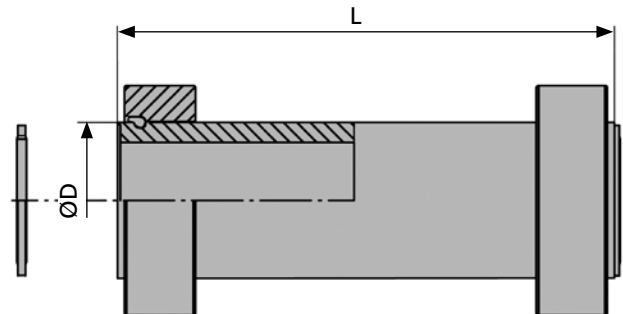
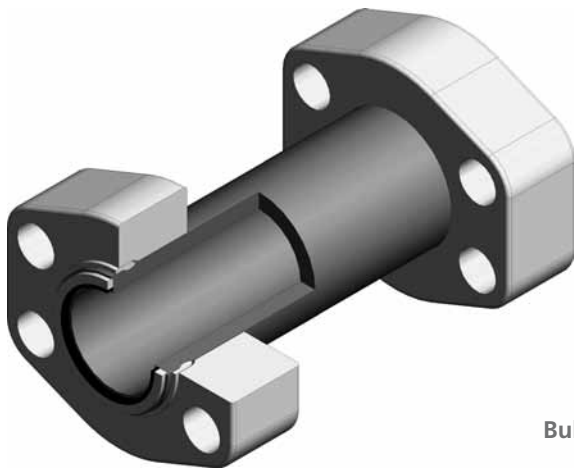
Flange dimensions page 79
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GS-HP Retain Ring™ System

ISO 6162-2 (SAE J 518 Code 62)



Tee flange



Bulkhead flange

Complete Part No example:
624016HP includes:
 624HP 3 pcs
 24016HP 1 pc
 24HP 3 pcs
 2432 3 pcs

Complete Part No example:
624019HP includes:
 624HP 2 pcs
 24019HP 1 pc
 24HP 2 pcs
 2432 2 pcs

Tee flange

Size	Complete Part No	Complete ID Code	L	H	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624016HP	1701232100	180	90	4.75	24016HP	1701008100
2"	632016HP	1701234100	220	110	7.05	32016HP	1701010100

Bulkhead flange

Size	Complete Part No	Complete ID Code	L	D	Weight [kg]	Body Part No	Body ID Code
1 1/2"	624019HP	1904061100	180	57	4.50	24019HP	1904001700
2"	632019HP	1904061600	210	68	6.92	32019HP	1904002200

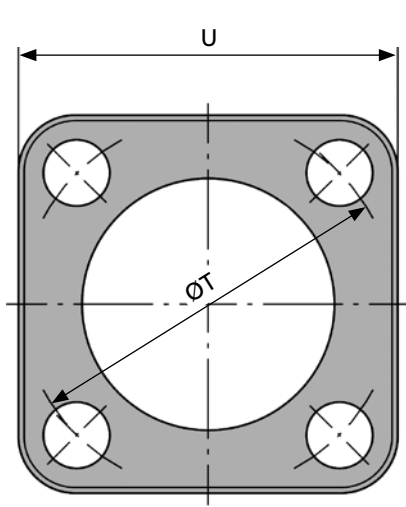
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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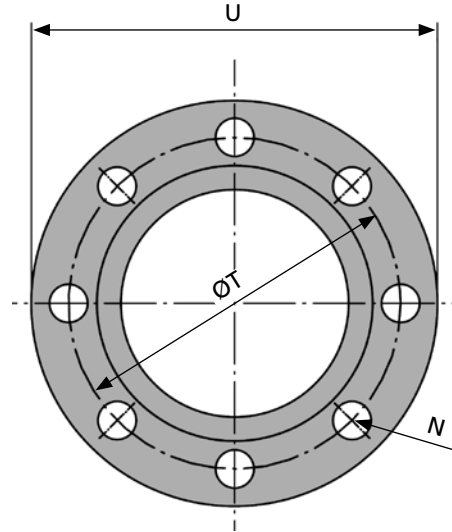
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Flange dimensions

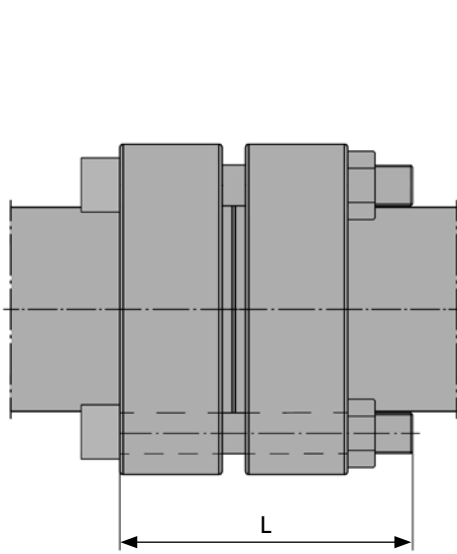
Drilled to ISO 6164 up to 4"



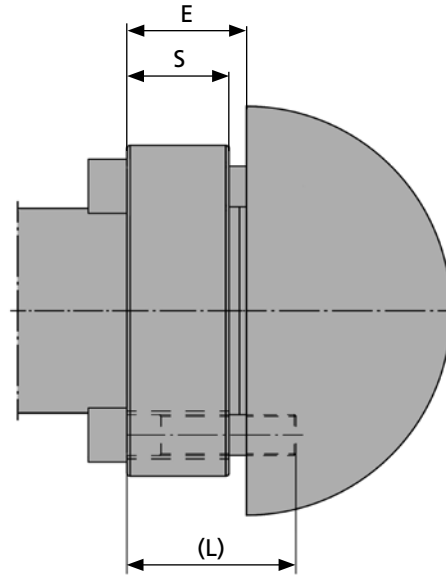
424–456



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Flange to flange



Flange to block

Pipe size	GS-flange type	T	E	S	U	N	Bolt L DIN 912, 8.8	W.P. [bar]
1 1/2"	424	85	38	35	90	4	M16x100(60)	400
2"	432	98	42	40	100	4	M16x110(60)	400
2 1/2"	440	118	47	40	120	4	M20x120(70)	400
3"	448	145	55	45	145	4	M24x140(80)	400
4"	456	175	56	50	180	4	M30x160(100)	400
4 1/2"	860	175	60	50	214	8	M20x140(80)	350
5"	864	205	69	60	245	8	M24x180(100)	350
6"	880	245	78	70	300	8	M30x220(120)	350
8"	888	290	78	70	350	8	M30x220(130)	350
8"	896	315	78	70	385	8	M36x220(130)	250
10"	8160/273	375	110	100	450	12	M36x300(180)	250
12"	8224/323.9	440	130	120	520	16	M39x360(220)	210
14"	8224/355.6	440	130	120	520	16	M39x360(220)	210

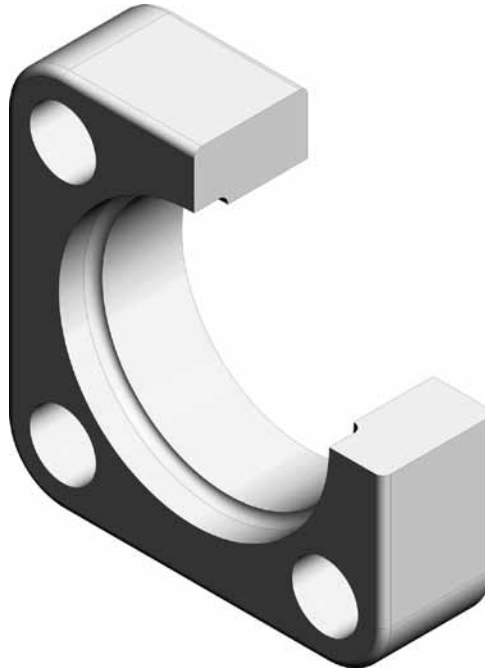
Sizes from 4 1/2" to 14" according to hydraulic equipment supplier.

Manufacturing tolerance for flange thickness (S) ±5%.

L= flange to flange
(L)= flange to block

Retain ring flange

Drilled to ISO 6164 up to 4"



Metric pipes

Size	Pipe O.D	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
2"	66	432	1104000100	432HDG	1114009000	432SS	1204000100	400	1.70
2 1/2"	80	440	1104030000	440HDG	1114039000	440SS	1204030000	400	2.80
3"	97	448	1104060000	448HDG	1114069000	448SS	1204060000	400	4.55
4"	115	456	1104090000	456HDG	1114099000	456SS	1204090000	400	6.70
4 1/2"	130	860	1104180000	860HDG	1114240200	860SS	1204180000	350	7.70
5"	150	864	1104210000	864HDG	1114240300	864SS	1204210000	350	11.5
6"	190	880	1104240000	880HDG	1114240500	880SS	1204240000	350	22.3
8"	220	888	1104270000	888HDG	1114240550	888SS	1204270000	350	28.1
8"	250	896	1104300000	896HDG	1114240700	896SS	1204300000	250	30.5

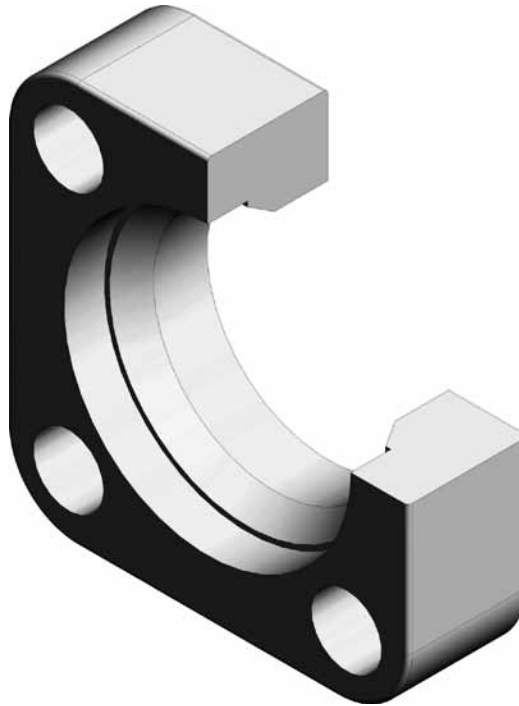
ANSI 36.10/36.19 pipes

Size	Pipe O.D	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
2"	60.3	432/60.3	1104009500	432/60.3HDG	1114009400	432/60.3SS	1204009500	400	1.73
2 1/2"	73.0	440/73	1104030700	440/73HDG	1114039100	440/73SS	1204030700	400	2.82
3"	88.9	448/88.9	1104060500	448/88.9HDG	1114069500	448/88.9SS	1204060500	400	4.66
4"	114.3	456/114.3	1104091000	456/114.3HDG	1114099500	456/114.3SS	1204099700	400	6.72
5"	141.3	864/141.3	1104211000	864/141.3HDG	1114240310	864/141.3SS	1204211000	350	12.5
6"	168.3	880/168.3	1104240300	880/168.3HDG	1114240400	880/168.3SS	1204240300	350	23.8
8"	219.1	888/219.1	1104272000	888/219.1HDG	1114240600	888/219.1SS	1204272000	350	28.1
10"	273.0	8160/273	1104306000	8160/273HDG	1114246000	8160/273SS	1204306000	250	66.0
12"	323.9	8224/323.9	1104310000	8224/323.9HDG	1114260100	8224/323.9SS	1204310000	210	48.8
14"	355.6	8224/355.6	1104320000	8224/355.6HDG	1114260300	8224/355.6SS	1204320000	210	83.2

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Flare flange

Drilled to ISO 6164 up to 4"



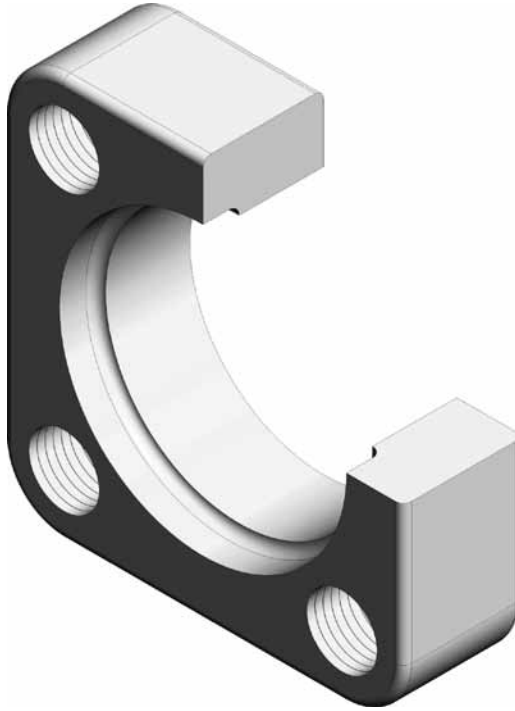
Metric pipes

Size	Pipe O.D	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. [bar]	Weight [kg]
1 1/2"	50	424F	1104000050	424FHDG	1114008000	424FSS	1204000060	400	1.25
1 1/2"	56	424F/56	1104000060	424F/56HDG	1114008010	424F/56SS	1204000070	400	1.34
2"	60	432F	1104001000	432FHDG	1114009200	432FSS	1204001000	400	1.70
2"	66	432F/66	1104010110	432F/66HDG	1114009210	432F/66SS	1204009510	400	1.55
2 1/2"	73	440F	1104032700	440FHDG	1114039300	440FSS	1204032700	400	2.80
3"	90	448F	1104060100	448FHDG	1114069100	448FSS	1204060100	400	4.40

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Other materials on request.

Counter flange

Drilled to ISO 6164 up to 4"



Retain ring flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
2"	432/M16	1104010200	M16X65	1.70
2 1/2"	440/M20	1104033100	M20X90	2.80
3"	448/M24	1104061000	M24X100	4.55
4"	456/M30	1104095000	M30X110	6.70

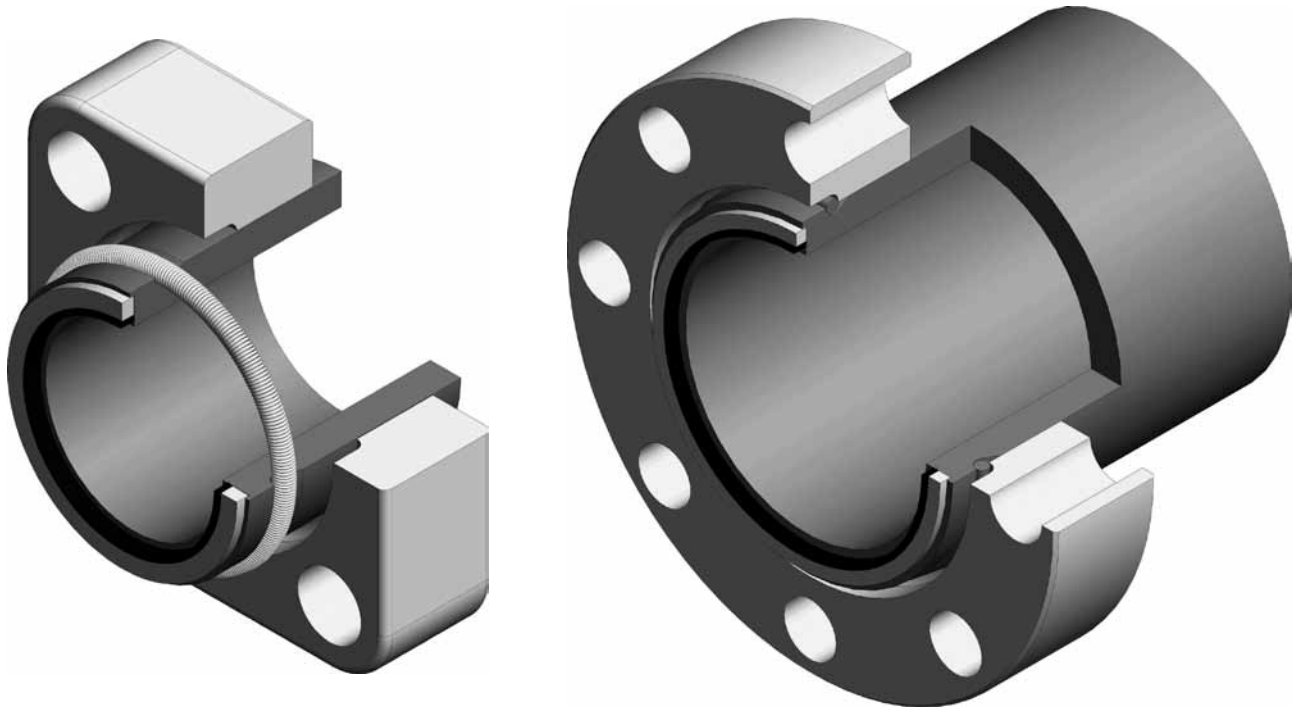
Flare flange

Size	Part No	ID Code	Bolt , DIN 912, 8.8	Weight [kg]
2"	432F/M16	1104010300	M16X65	1.70
2 1/2"	440F/M20	1104033200	M20X80	2.80

Material possibilities:
 Standard= carbon steel, zinc plated
 -SS= Stainless steel
 Other materials on request.

Grooving direct on to pipe

Drilled to ISO 6164 up to 4"



Metric pipes

Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
2"	66.0x8.5	432	1104000100	32	1902006050	3219	2701007000
2 1/2"	80.0x10.0	440	1104030000	40	1902007050	4037	2701008000
3"	97.0x12.0	448	1104060000	48	1902008050	4839	2701009000
4"	115.0x15.0	456	1104090000	56	1902010050	5644	2701011000
4 1/4"	130.0x15.0	860	1104180000	60	1902011050	6000	2701012000
5"	150.0x15.0	864	1104210000	64	1902012050	6455	2701013000
6"	190.0x20.0	880	1104240000	80	1902013050	8001	2701014200
8"	220.0x20.0	888	1104270000	88	1902015250	*	-
8"	250.0x25.0	896	1104300000	96	1902015050	9600	2701015000

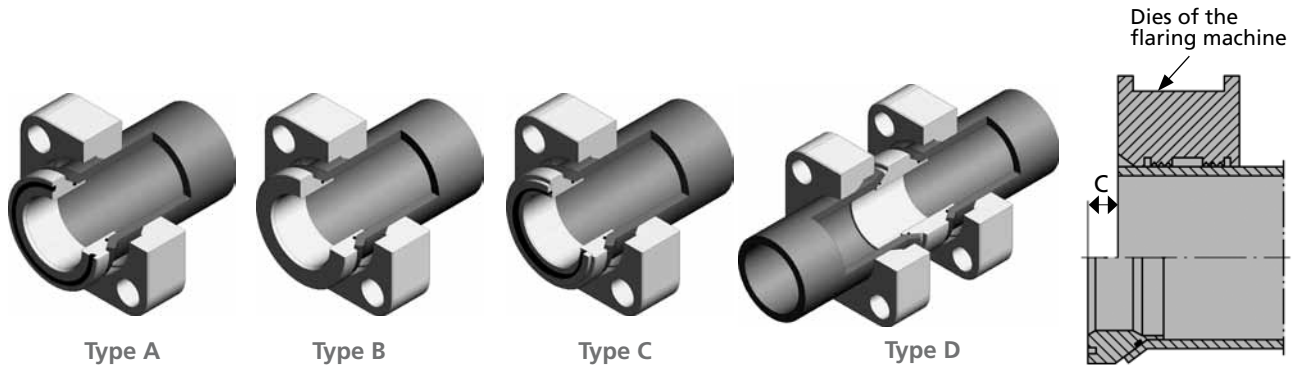
ANSI 36.10/36.19 pipes

Size	Pipe O.D.	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code	Bonded Seal Part No	Bonded Seal ID Code
2"	60.3	432/60.3	1104011000	32/60.3	1902006250	3260	2701007400
2 1/2"	73.0	440/73	1104030700	40/73.0	1902007250	4073	2701008200
3"	88.9	448/88.9	1104060500	48/88.9	1902008250	4888	2701009200
4"	114.3	456/114.3	1104091000	56	1902010050	5644	2701011000
5"	141.3	864/141.3	1104211000	64/141.3	1902012250	*	-
6"	168.3	880/168.3	1104240300	80/168.3	1902013250	*	-
8"	219.1	888/219.1	1104272000	88	1902015250	*	-
10"	273.0	8160/273	1104306000	160/273	1902005050	*	-
12"	323.9	8224/323.9	1104310000	224/323.9	1902016050	*	-
14"	355.6	8224/355.6	1104320000	224/355.6	1902017050	*	-

*) From sizes 5" to 10" use seal carrier instead of bonded seal (flat pipe end).

Flare flange connections

Drilled to ISO 6164 up to 4"



Complete Part No example:
424/50X5FA includes:
 424F 1 pc
 24/50X5FA 1 pc
 OR47.22X3.53 1 pc
 OR41X1.78 1 pc

Type A

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring Part No	O-Ring2 Part No
1 1/2"	50x5	424/50X5FA	1401540000	11	1.10	24/50X5FA	OR47.22X3.53	OR41X1.78
1 1/2"	56x8.5*	424/56X8.5FA	1401540700	12	1.60	24/56X8.5FA	OR47.22X3.53	OR37.82X1.78
2"	60x6	432/60X6FA	1401542000	11	2.00	32/60X6FA	OR56.75X3.53	OR47.35X1.78
2"	66x8.5*	432/66X8.5FA	1401542700	12	2.00	32/66X8.5FA	OR56.75X3.53	OR47.35X1.78
2 1/2"	73x7	440/73X7FA	1401545000	12	2.60	40/73X7FA	OR69.44X3.53	OR56.87X1.78
3"	90x9*	448/90X9FA	1401550000	14	5.10	48/90X9FA	OR85.32X3.53	OR72.75X1.78

Type B

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring2 Part No
1 1/2"	50x5	424/50X5FB	1401540200	11	1.10	24/50X5FB	OR41X1.78
1 1/2"	56x8.5*	424/56X8.5FB	1401540705	12	1.60	24/56X8.5FB	OR37.82X1.78
2"	60x6	432/60X6FB	1401542200	11	2.00	32/60X6FB	OR47.35X1.78
2"	66x8.5*	432/66X8.5FB	1401542705	12	2.00	32/66X8.5FB	OR47.35X1.78
2 1/2"	73x7	440/73X7FB	1401545200	12	2.60	40/73X7FB	OR56.87X1.78
32	90x9*	448/90X9FB	1401550005	14	5.10	48/90X9FB	OR72.75X1.78

Type C

Size	Pipe Size	Complete Part No	Complete ID Code	C	Weight [kg]	Insert Part No	O-Ring2 Part No	Bonded Seal Part No
1 1/2"	50x5	424/50X5FC	1401540400	11	1.10	24/50X5FC	OR41X1.78	2432
1 1/2"	56x8.5*	424/56X8.5FC	1401540710	12	1.60	24/56X8.5FC	OR37.82X1.78	2432
2"	60x6	432/60X6FC	1401542400	11	2.00	32/60X6FC	OR47.35X1.78	3219
2"	66x8.5*	432/66X8.5FC	1401542710	12	2.00	32/66X8.5FC	OR47.35X1.78	3219
2 1/2"	73x7	440/73X7FC	1401545400	12	2.60	40/73X7FC	OR56.87X1.78	4037
3"	90x9*	448/90X9FC	1401550010	14	5.10	48/90X9FC	OR72.75X1.78	4839

Type D

Size	Pipe Size	Complete Part No	Complete ID Code	Weight [kg]	Insert Part No	O-Ring2 Part No
1 1/2"	50x5	424/50X5FD	1401540600	3.30	24/50X5FD	OR41X1.78
1 1/2"	56x8.5*	424/56X8.5FD	1401540715	3.20	24/56X8.5FD	OR37.82X1.78
2"	60x6	432/60X6FD	1401542600	3.80	32/60X6FD	OR47.35X1.78
2"	66x8.5*	432/66X8.5FD	1401542715	3.70	32/66X8.5FD	OR47.35X1.78
2 1/2"	73x7	440/73X7FD	1401545600	5.20	40/73X7FD	OR56.87X1.78
3"	90x9*	448/90X9FD	1401550015	9.00	48/90X9FD	OR72.75X1.78

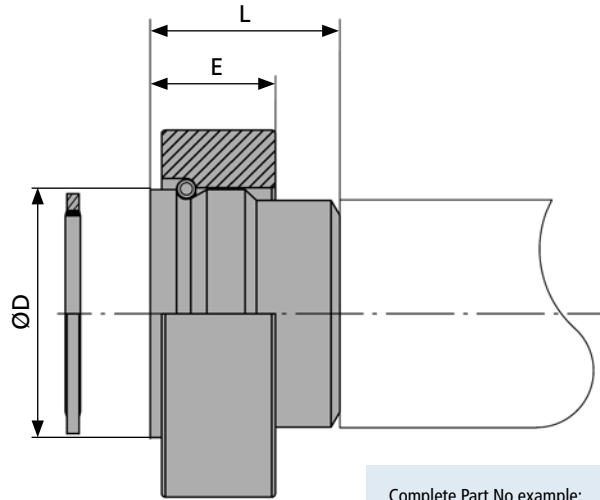
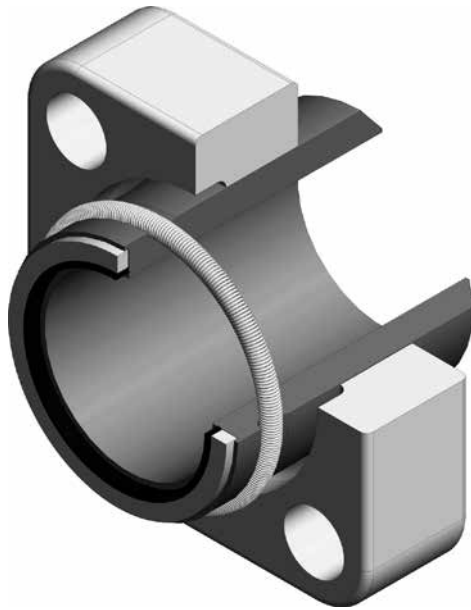
Material possibilities page 168.

* = Flaring machine requirements GSF 220-HD, GSF 400, FP 170 or FP 275.

Flanges page 128
 O-rings page 153
 Bonded seals page 149
 Insert cones page 145

Flange for welding (2"–4")

Drilled to ISO 6164 up to 4"



Complete Part No example:
432011 includes:
 432 1 pc
 32011 1 pc
 32 1 pc
 3219 1 pc

Size	Pipe Size	Complete Part No	Complete ID Code	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
2"	66x8.5	432011	1301529100	75	42	66	2.41	32011	1301046700
2"	50x9.0	432001	1301526100	50	42	66	2.24	32001	1301041900
2"	60x6.0	432002	1301526400	50	42	66	2.06	32002	1301042500
2"	60x8.0	432003	1301526700	50	42	66	2.15	32003	1301043100
2"	48.3x5.6	432008	1301528200	50	42	66	2.17	32008	1301044900
2"	60x10.0	432009	1301528500	50	42	66	2.23	32009	1301045500
2"	56x8.5	432010	1301528800	50	42	66	2.20	32010	1301046100
2"	60.3x8.74	432085	1301529400	75	42	66	2.30	32085	1301046800
2"	60.3x11.07	432086	1301529600	75	42	66	2.35	32086	1301047400
2 1/2"	80x10.0	440011	1301533500	85	43	80	3.70	40011	1301052200
2 1/2"	65x8.0	440003	1301531200	50	43	80	3.18	40003	1301048600
2 1/2"	76.1x6.3	440006	1301532100	50	43	80	2.98	40006	1301049800
2 1/2"	76.1x12.5	440007	1301532400	50	43	80	3.22	40007	1301050400
2 1/2"	73x7.01	440010	1301533300	50	43	80	2.99	40010	1301051600
2 1/2"	73x9.53	440085	1301533900	90	43	80	3.00	40085	1301053400
2 1/2"	73x14.02	440086	1301534200	90	43	80	3.50	40086	1301053500
3"	97x12.0	448011	1301537300	110	51	97	6.32	48011	1301057600
3"	76.1x12.5	448004	1301535200	60	51	97	5.64	48004	1301054600
3"	80x10.0	448005	1301535500	60	51	97	5.30	48005	1301055200
3"	88.9x8.8	448006	1301535800	60	51	97	5.01	48006	1301055800
3"	88.9x12.5	448007	1301536100	60	51	97	5.30	48007	1301056400
3"	88.9x7.62	448010	1301537000	60	51	97	4.92	48010	1301057000
3"	88.9x11.13	448085	1301537600	110	51	97	5.70	48085	1301058200
3"	88.9x15.24	448086	1301537800	110	51	97	6.30	48086	1301058800
4"	115x15.0	456011	1301541600	140	56	115	11.5	56011	1301063000
4"	88.9x12.5	456003	1301539400	80	56	115	9.51	56003	1301060000
4"	100x10.0	456005	1301540000	80	56	115	9.04	56005	1301060600
4"	101.6x8.1	456006	1301540300	80	56	115	8.85	56006	1301061200
4"	101.6x16.0	456007	1301540600	80	56	115	9.64	56007	1301061800
4"	114.3x17.5	456010	1301541300	90	56	115	10.2	56010	1301062400
4"	114.3x13.49	456085	1301542500	140	56	115	8.90	56085	1301064200
4"	114.3x17.1 2	456086	1301542700	140	56	115	10.6	56086	1301064700

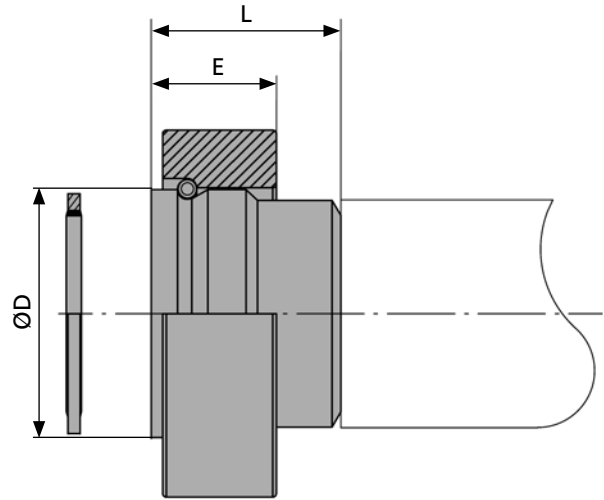
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.

Welding hubs for other pipe sizes on request.

Flanges page 127
 Retain rings page 148
 Bonded seals page 149

Flange for welding (4 1/2"–10")

Drilled to ISO 6164 up to 4"



Size	Pipe Size	Complete Part No	Complete ID Code	L	E	ØD	Weight [kg]	Body Part No	Body ID Code
4 1/2"	130x15.0	860011	1301573900	130	54	130	12.4	60011	1301067200
4 1/2"	88.9x12.5	860002	1301573200	100	54	130	11.4	60002	1301066200
4 1/2"	101.6x8.1	860006	1301573600	100	54	130	10.7	60006	1301066600
4 1/2"	110x12.5	860008	1301573800	100	54	130	11.2	60008	1301066800
5"	150x15.0	864011	1301576300	155	56	150	18.3	64011	1301071000
5"	114.3x12.5	864001	1301573950	100	56	150	15.8	64001	1301067900
5"	139.7x14.2	864002	1301574000	100	56	150	15.6	64002	1301068000
5"	141.3x15.88	864085	1301574200	100	56	150	16.0	64085	1301068100
5"	141.3x19.05	864086	1301577000	100	56	150	17.8	64086	1301071500
6"	190x20.0	880011	1301580200	175	78	190	29.9	80011	1301074000
6"	139.7x14.2	880001	1301579000	150	78	190	28.5	80001	1301072200
6"	168.3x17.5	880003	1301579300	150	78	190	28.1	80003	1301072800
6"	168.3x18.26	880085	1301581200	150	78	190	32.0	80085	1301075500
6"	168.3x21.95	880086	1301581400	150	78	190	33.1	80086	1301075000
8"	250x25.0	896011	1301596900	200	78	250	57.4	96011	1301076700
8"	168.3x17.5	896001	1301596100	150	78	250	55.1	96001	1301076100
8"	193.7x20.0	896002	1301596200	150	78	250	54.0	96002	1301076200
8"	219.1x22.23	896086	1301596300	150	78	250	53.0	96086	1301076300
10"	273x28.58	8160085B*	1301596950	250	114	273	107	160085B	1301076955
10"	273x25.40	8160086B*	1301596955	250	114	273	103	160086B	1301076960

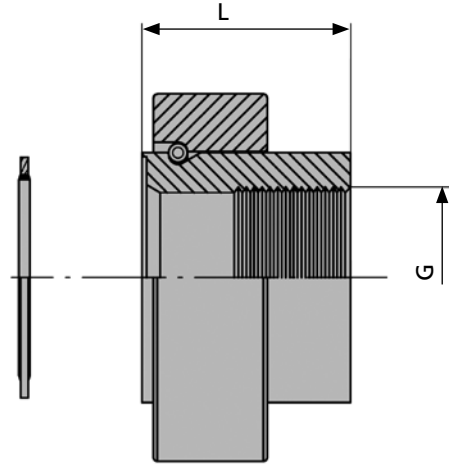
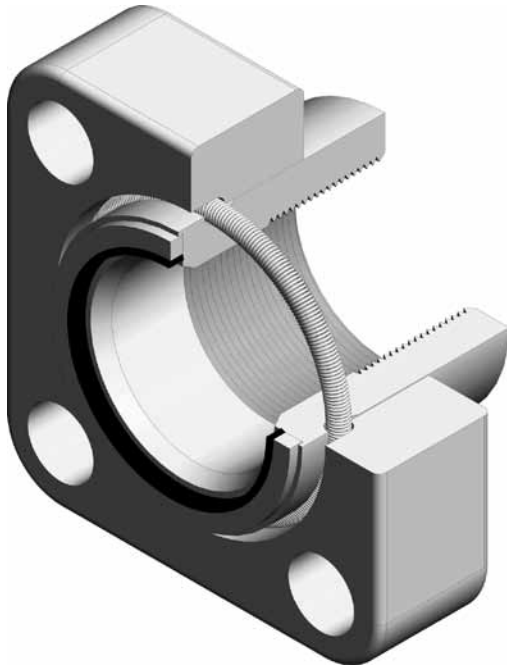
Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.
 Material possibilities page 168.
 Welding hubs for other pipe sizes on request.

* = Flat pipe end, seal carrier is needed.

Flanges page 127
 Retain rings page 148
 Bonded seals page 149
 Seal carriers page 150–151

Female thread flange, BSPP

Drilled to ISO 6164 up to 4"



Complete Part No example:

432013 includes:

432	1 pc
32013	1 pc
32	1 pc
3219	1 pc

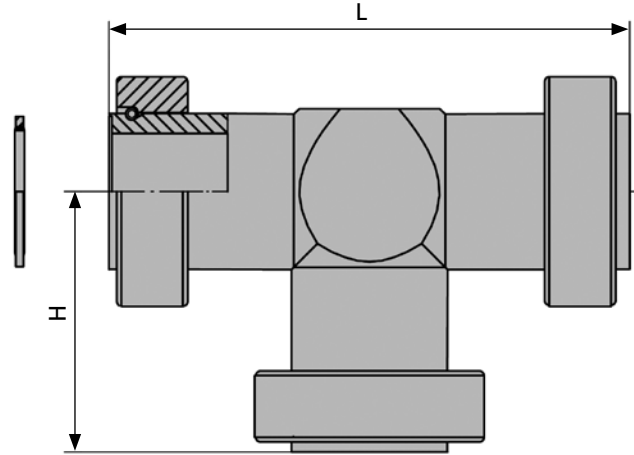
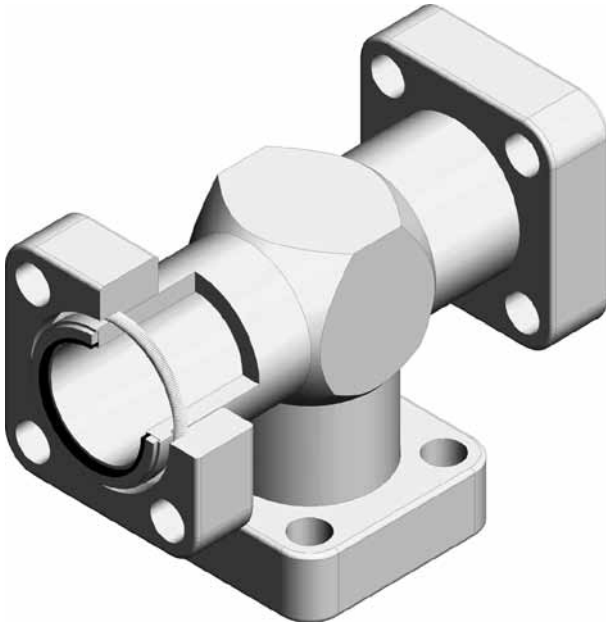
Size	Complete Part No	Complete ID Code	L	G	Weight [kg]	Body Part No	Body ID Code
2"	432013	1307505000	55	1 1/2"	3.10	32013	13070090
2 1/2"	440013	1307506000	80	2"	3.60	40013	13070100
3"	448013	1307506300	85	2 1/2"	5.80	48013	13070110
4"	456013	1307506600	100	3"	10.5	56013	13070140

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.

Flanges page 127
 Retain rings page 148
 Bonded seals page 149

Tee flange

Drilled to ISO 6164 up to 4"



Complete Part No example:

432016 includes:

432	3 pcs
32016	1 pc
32	3 pcs
3219	3 pcs

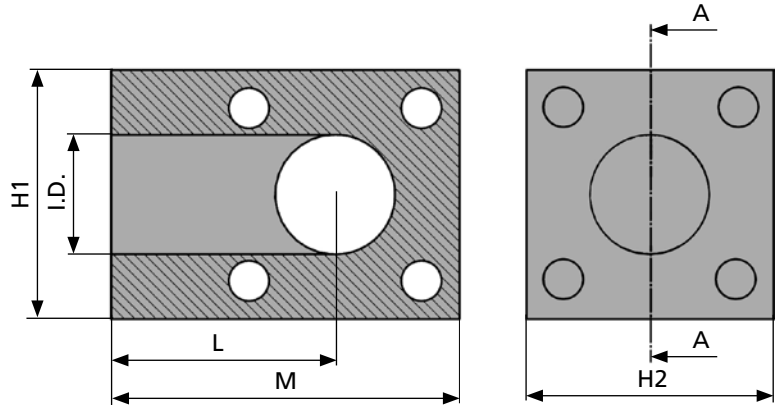
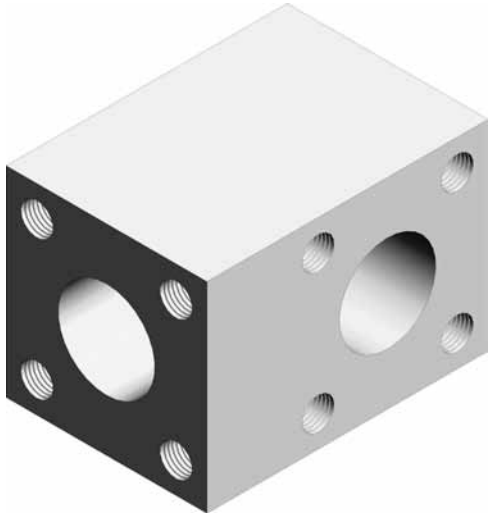
Size	Complete Part No	Complete ID Code	L	H	Weight [kg]	Body Part No	Body ID Code
2"	432016	1701214000	220	110	8.97	32016	1701010000
2 1/2"	440016	1701216000	260	130	13.0	40016	1701012000
3"	448016	1701218000	320	160	23.1	48016	1701014000
4"	456016	1701220000	400	200	41.7	56016	1701016000
4 1/2"	860016	1701235500	390	195	45.3	60016	1701018000
5"	864016	1701236000	460	230	66.2	64016	1701020000
6"	880016	1701236500	550	275	112	80016	1701022000
8"	896016	1701237000	650	325	227	96016	1701024000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Flanges page 127
 Retain rings page 148
 Bonded seals page 149

Tee block

Drilled to ISO 6164 up to 4"



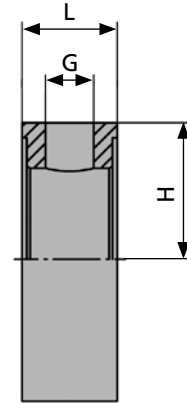
Size		Part No	ID Code	L	H1	H2	M	I.D.	Weight [kg]
Body	Outlet								
2"		432116	1702014500	90	100	100	140	48	7.39
2"	1 1/2"	432/624/432116	1702014900	90	100	70	140	48/38/48	6.55
2"	1 1/4"	432/620/432116*	1702014800	90	100	70	140	48/30/48	6.81
2"	1"	432/616/432116	1702014700	90	100	70	140	48/23/48	6.08
2 1/2"		440116	1702015800	100	120	120	160	60	13.1
2 1/2"	2"	440/432/440116	1702016450	100	120	100	160	60/48/60	10.6
2 1/2"	1 1/2"	440/624/440116	1702016700	100	120	80	160	60/38/60	8.10
2 1/2"	1 1/4"	440/620/440116*	1702016650	90	120	80	150	60/30/60	8.40
3"		448116	1702017050	150	150	150	225	73	27.8
3"	2 1/2"	448/440/448116	1702017060	130	150	120	205	73/60/73	20.5
3"	2"	448/432/448116	1702017070	115	150	100	190	73/48/73	16.1
3"	1 1/2"	448/624/448116	1702017236	115	150	80	190	73/38/73	13.5
4"		456116	1702017900	145	180	180	235	85	40.7
4"	3"	456/448/456116	1702017930	135	180	150	225	85/73/85	34.7
4"	2 1/2"	456/440/456116	1702017950	135	180	120	225	85/60/85	28.2
4"	2"	456/432/456116	1702017970	115	180	120	205	85/48/85	26.0
4 1/2"		860116	1702056000	160	214	214	267	105	70.2
4 1/2"	4"	860/456/860116	1702056430	160	214	190	267	105/85/105	64.1
4 1/2"	3"	860/448/860116	1702056450	160	214	180	267	105/73/105	62.2
4 1/2"	2 1/2"	860/440/860116	1702056470	160	214	170	267	105/60/105	59.8
5"		864116	1702057000	170	238	250	295	120	102
5"	4 1/2"	864/860/864116	1702057200	170	238	250	295	120/105/120	106
5"	4"	864/456/864116	1702057730	170	238	210	295	120/85/120	94.1
5"	3"	864/448/864116	1702057750	170	238	210	295	120/73/120	96.2
6"		880116	1702058000	210	300	300	360	150	174
6"	5"	880/864/880116	1702058100	200	300	260	350	150/120/150	160
6"	4 1/2"	880/860/880116	1702058200	200	300	260	350	150/105/150	163
6"	4"	880/456/880116	1702058500	190	300	230	340	150/85/150	121
8"		896116	1702059000	270	386	386	463	200	386
8"	6"	896/880/896116	1702059300	257	386	330	450	200/150/200	332
8"	5"	896/864/896116	1702059500	237	386	300	430	200/120/200	294
8"	4 1/2"	896/860/896116	1702059700	237	386	250	430	200/105/200	297

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

Tee between, BSPP

Drilled to ISO 6164 up to 4"



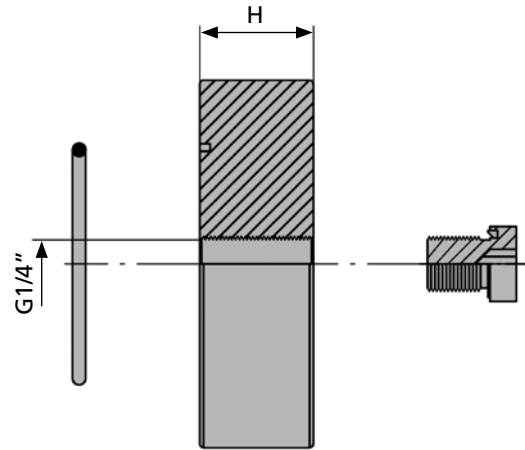
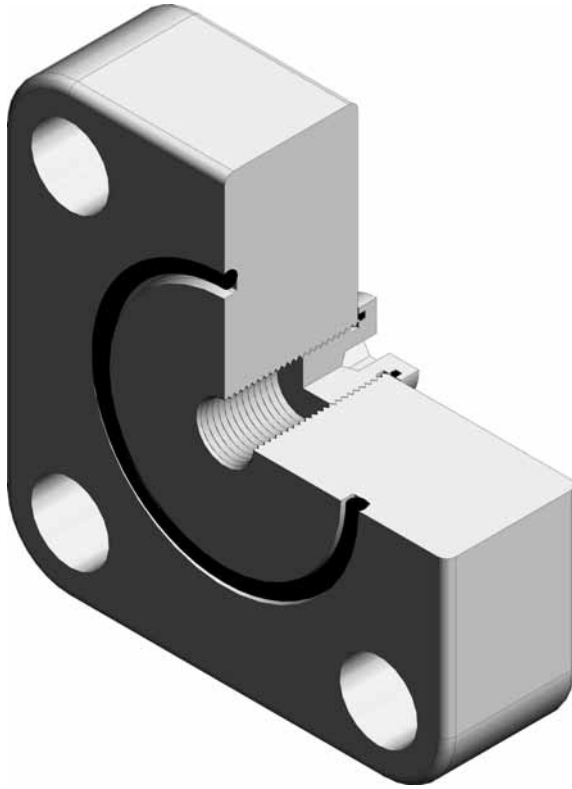
Please add measure L to bolt lengths mentioned on page 126.

Size	Part No	ID Code	H	L	G	Weight [kg]
2"	32035	1801005000	36.0	25	1/4"	0.5
2"	32036	1801005100	34.6	35	1/2"	0.6
2 1/2"	40036	1801006000	42.6	35	1/2"	1.0
2 1/2"	40037	1801006100	41.0	40	3/4"	1.0
3"	48036	1801006800	49.0	45	1/2"	1.7
3"	48037	1801006900	54.0	55	3/4"	1.9
4"	56036	1801007500	67.0	35	1/2"	2.6
4"	56037	1801008000	64.0	40	3/4"	2.8
4 1/2"	60036	1801009000	70.0	35	1/2"	3.0
4 1/2"	60037	1801009300	69.0	40	3/4"	3.3
5"	64036	1801010000	83.0	35	1/2"	4.0
5"	64037	1801010300	80.0	40	3/4"	4.3
6"	80038	1801011300	100	45	1"	10.0

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Blind flange

Drilled to ISO 6164 up to 4"



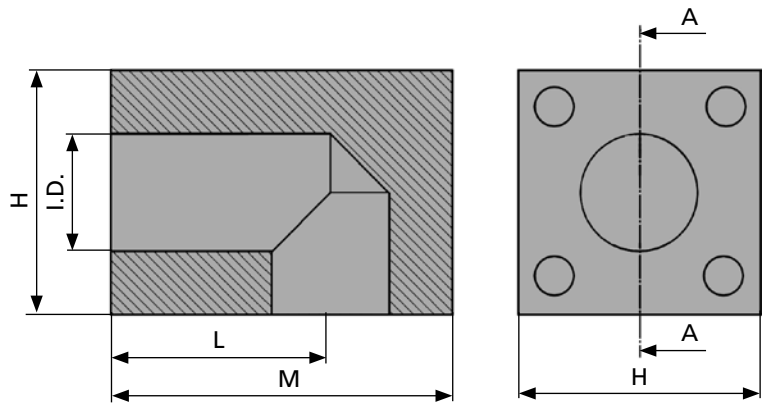
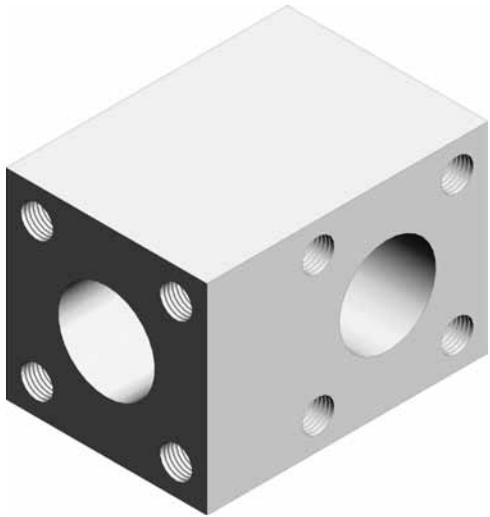
Size	Part No	ID Code	O-ring Part No	O-ring ID Code	H	Weight [kg]
2"	432125	1910508000	OR53.57X3.53	2701532100	40	2.7
2 1/2"	440125	1910508500	OR66.27X3.53	2701537900	40	3.8
3"	448125	1910509000	OR82.14X3.53	2701544000	45	6.3
4"	456125	1910509500	OR98.02X3.53	2701549000	50	10.8
4 1/2"	860125	1910513000	OR110.72X3.53	2701552000	50	15.9
5"	864125	1910513500	OR136.12X3.53	2701557000	50	20.0
6"	880125	1910514000	OR158.34X3.53	2701560000	70	32.5
8"	896125	1910515000	OR209.14X3.53	2701562900	70	42.0

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 O-ring, ED-seal and plug included in a Part No

Manufacturing tolerance for flange thickness (H) $\pm 5\%$.

Elbow block

Drilled to ISO 6164 up to 4"

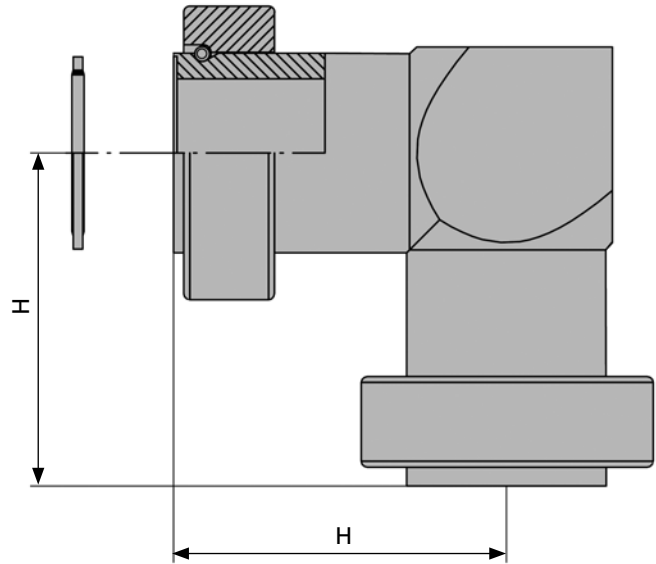
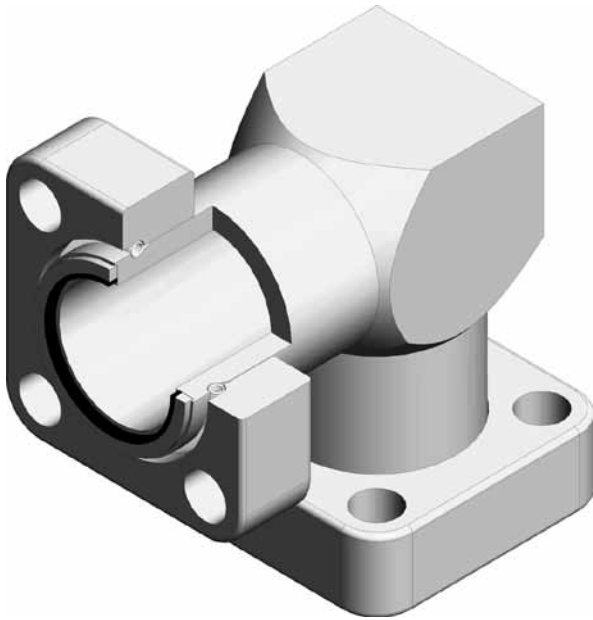


Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
2"	432115	1602003600	100	90	140	48	8.80
2 1/2"	440115	1603003700	120	100	160	60	14.5
3"	448115	1603003800	150	150	225	72	31.6
4"	456115	1603003900	180	145	235	85	48.3
4 1/2"	860115	1603010000	214	160	267	105	79.6
5"	864115	1603011000	250	170	295	120	92.9
6"	880115	1603012000	300	210	360	150	204
8"	896115	1603013000	386	270	463	200	370

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Elbow flange

Drilled to ISO 6164 up to 4"



Complete Part No example:

432015 includes:

432	2 pcs
32015	1 pc
32	2 pcs
3219	2 pcs

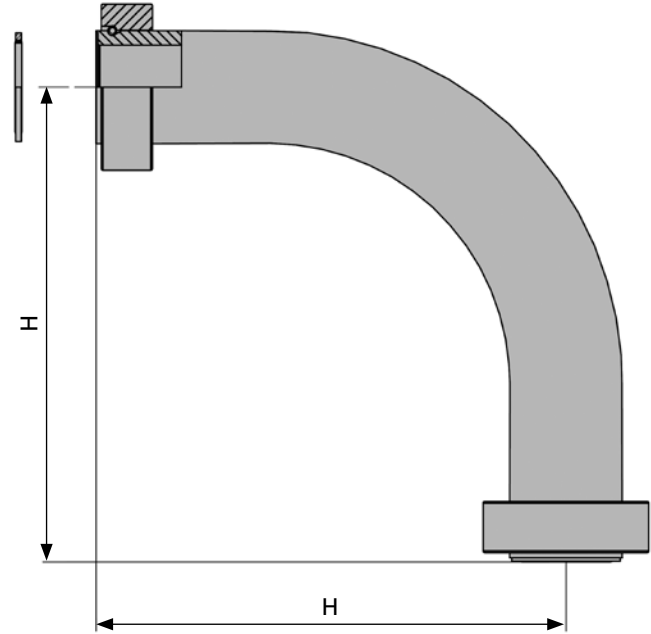
Size	Part No	ID Code	H	Weight [kg]	Body Part No	Body ID Code
2"	432015	1601203000	110	6.69	32015	1601002500
2 1/2"	440015	1601203500	130	9.67	40015	1601003000
3"	448015	1601204000	160	17.4	48015	1601003500
4"	456015	1601204500	200	32.3	56015	1601004000
4 1/2"	860015	1601208300	195	34.5	60015	1601004500
5"	864015	1601208500	230	50.4	64015	1601005000
6"	880015	1601209000	275	94.8	80015	1601005500
8"	896015	1601210000	325	178	96015	1601006000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Flanges page 127
 Retain rings page 148
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Flange bend

Drilled to ISO 6164 up to 4"



Complete Part No example:

432018 includes:

432	2 pcs
32018	1 pc
32	2 pcs
3219	2 pcs

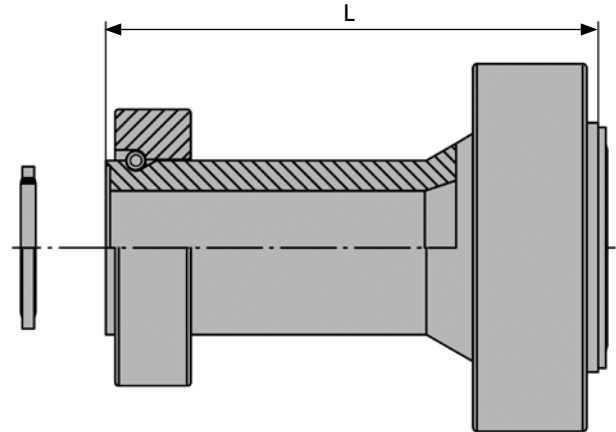
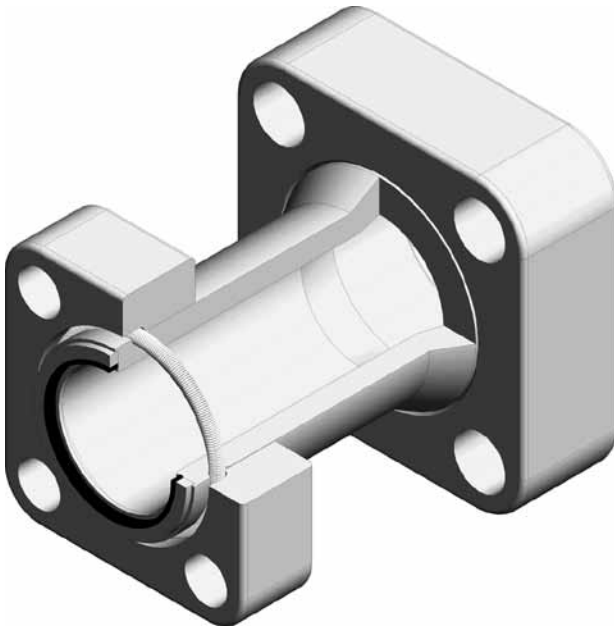
Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
2"	432018	1602202500	275	165	8.70	32018	1602002000
2 1/2"	440018	1602203000	450	200	18.0	40018	1602002500
3"	448018	1602203500	540	244	30.8	48018	1602003000
4"	456018	1602204000	580	289	54.0	56018	1602003500
4 1/2"	860018	1602214000	610	326	62.0	60018	1602004000
5"	864018	1602215000	690	376	82.6	64018	1602004500
6"	880018	1602217000	760	380	153	80018	1602005000
8"	896018	1602219000	1000	500	319	96018	1602005500

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

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 Retain rings page 148
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Reducer flange

Drilled to ISO 6164 up to 4"



Complete Part No example:

RF432-624 includes:

432	1 pc
624	1 pc
32-24	1 pc
32	1 pc
3219	1 pc
24	1 pc
2432	1 pc

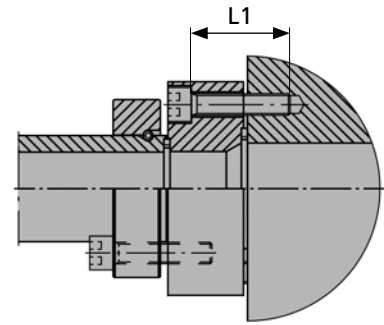
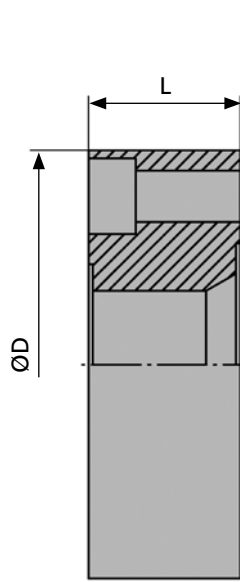
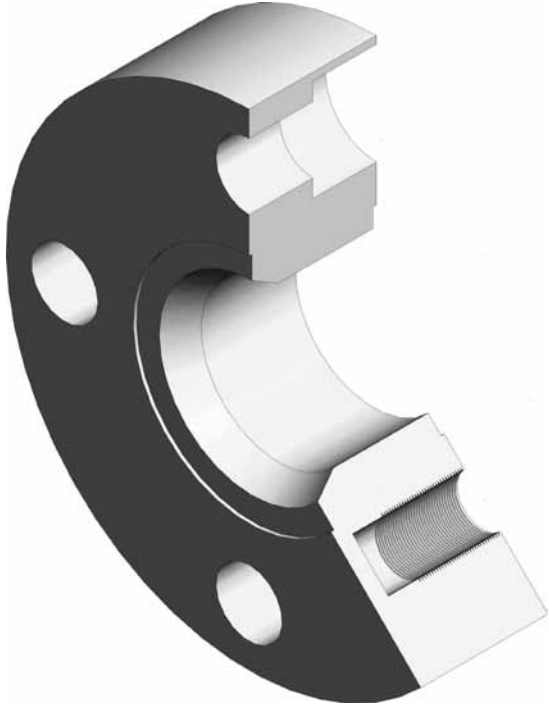
Size	Complete Part No	Complete ID Code	L	Weight [kg]	Body Part No	Body ID Code
2"–1 1/2"	RF432-624	1501212500	130	4.31	32-24	1501003500
2"–1 1/4"	RF432-620	1501212000	130	3.55	32-20	1501003000
2 1/2"–2"	RF440-432	1501213000	150	5.91	40-32	1501004500
2 1/2"–1 1/2"	RF440-624	1501213500	150	5.50	40-24	1501004000
3"–2 1/2"	RF448-440	1501214500	180	9.68	48-40	1501005500
3"–2"	RF448-432	1501214000	180	8.58	48-32	1501005000
4"–3"	RF456-448	1501515500	200	16.6	56-48	1501006700
4"–2 1/2"	RF456-440	1501215000	200	13.7	56-40	1501006500
4"–2"	RF456-432	1501214800	200	12.5	56-32	1501006000
4 1/2"–4"	RF860-456	1501536900	250	23.6	60-56	1501006928
4 1/2"–3"	RF860-448	1501536600	250	19.6	60-48	1501006925
5"–4 1/2"	RF864-860	1501538100	250	29.8	64-60	1501007400
5"–4"	RF864-456	1501537700	250	28.8	64-56	1501007000
5"–3"	RF864-448	1501537500	250	25.3	64-48	1501006950
6"–5"	RF880-864	1501540000	250	42.9	80-64	1501008500
6"–4 1/2"	RF880-860	1501539800	250	38.1	80-60	1501008300
6"–4"	RF880-456	1501539600	250	38.0	80-56	1501008000
6"–3"	RF880-448	1501539400	250	35.0	80-48	1501007800
8"–6"	RF896-880	1501541500	300	79.7	96-80	1501009300
8"–5"	RF896-864	1501541000	300	72.8	96-64	1501009000

Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

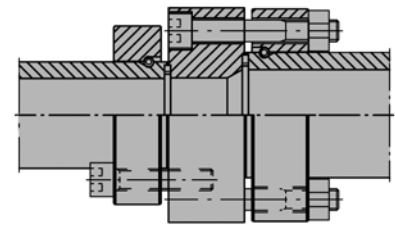
Flanges page 127
 Retain rings page 148
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Reducer block

Drilled to ISO 6164 up to 4"



Reducing from pipe to block



Reducing between pipes

Size	Part No	ID Code	D	L	L1 Bolt size DIN 912, 8.8	Weight [kg]
2 1/2"–2"	RBE440-432	1502115000	157	45	M20x50	5.47
2 1/2"–1 1/2"	RBE440-624	1502115400	157	45	M20x50	5.49
2 1/2"–1 1/4"	RBE440-620*	1502115200	157	45	M20x50	5.78
3"–2 1/2"	RBE448-440	1502116000	191	50	M24x55	8.29
3"–2"	RBE448-632	1502116400	191	50	M24x55	8.60
3"–1 1/2"	RBE448-624	1502116200	191	50	M24x55	8.86
4"–3"	RBE456-448	1502117200	230	60	M30x65	13.9
4"–2 1/2"	RBE456-440	1502117000	230	60	M30x65	14.6
4"–2"	RBE456-632	1502117400	230	60	M30x65	15.2
4 1/2"–4"	RBE860-456	1502122400	220	85	M20x90	18.4
4 1/2"–3"	RBE860-448	1502122200	220	85	M20x90	19.7
4 1/2"–2 1/2"	RBE860-440	1502122000	220	85	M20x90	20.5
5"–4 1/2"	RBE864-860	1502123800	250	80	M24x85	21.3
5"–4"	RBE864-456	1502123600	250	80	M24x85	21.6
5"–3"	RBE864-448	1502123400	250	80	M24x85	23.2
6"–5"	RBE880-864	1502125000	300	80	M30x90	31.1
6"–4 1/2"	RBE880-860	1502124800	300	80	M30x90	33.7
6"–4"	RBE880-456	1502124500	300	80	M30x90	33.8
8"–6"	RBE896-880	1502126400	385	100	M36x120	67.5
8"–5"	RBE896-864	1502126200	385	100	M36x120	70.8
8"–4 1/2"	RBE896-860	1502126000	385	100	M36x120	71.9

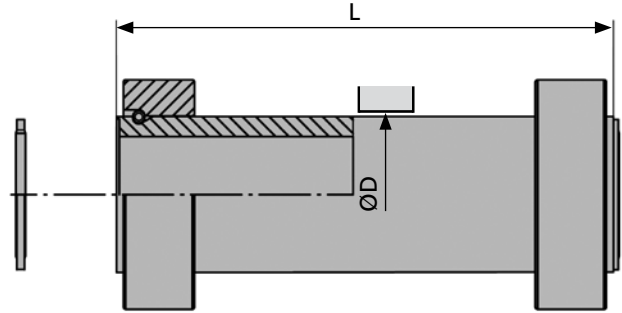
Component material:
Standard= carbon steel, zinc plated
Stainless steel= add SS after Part No
Other materials on request.

* = According to the ISO 6162-2 standard (M12 bolts). If flanges with M14 bolt holes are needed, please use 621 (instead of 620) as part number.

L1= reducer block to block

Bulkhead flange

Drilled to ISO 6164 up to 4"



Complete Part No example:

432019 includes:

432	2 pcs
32019	1 pc
32	2 pcs
3219	2 pcs

Size	Complete Part No	Complete ID Code	L	Required bulkhead opening ØD	Weight [kg]	Body Part No	Body ID Code
2"	432019	1904057000	210	68	5.80	32019	1904002000
2 1/2"	440019	1904057500	220	82	8.20	40019	1904002500
3"	448019	1904058000	240	99	14.0	48019	1904003000
4"	456019	1904058500	260	117	23.3	56019	1904003500
4 1/2"	860019	1904061800	260	132	27.0	60019	1904003800
5"	864019	1904062000	260	152	32.6	64019	1904004000
6"	880019	1904062500	290	192	60.0	80019	1904004500
8"	896019	1904063000	320	252	105	96019	1904005000

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Other materials on request.

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Insert cones for flare flange connections

Drilled to ISO 6164 up to 4"



Type A



Type B



Type C



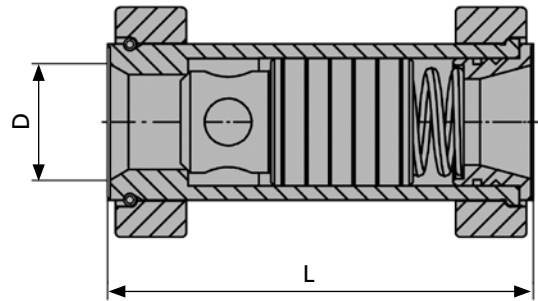
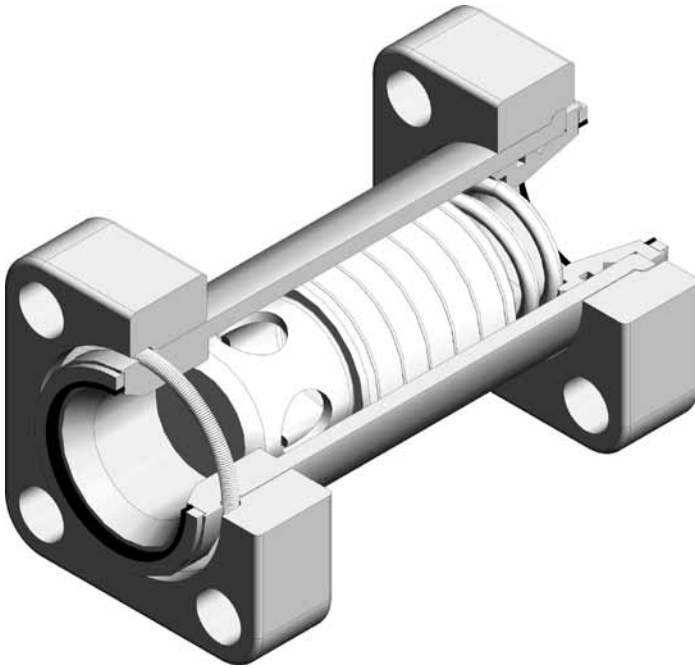
Type D

Size	Part No Type A	ID Code Type A	Part No Type B	ID Code Type B	Part No Type C	ID Code Type C	Part No Type D	ID Code Type D	Pipe Size
1 1/2"	24/50X5FA	1401039700	24/50X5FB	1401039800	24/50X5FC	1401039900	24/50X5FD	1401040000	50x5
2"	32/60X6FA	1401042600	32/60X6FB	1401042700	32/60X6FC	1401042800	32/60X6FD	1401042900	60x6
2 1/2"	40/73X7FA	1401045480	40/73X7FB	1401045482	40/73X7FC	1401045484	40/73X7FD	1401045486	73x7

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bonded seals and O-rings not included.

Non return valve

Drilled to ISO 6164 up to 4"



Complete Part No example:

432135 includes:

432	2 pcs
32135	1 pc
32	1 pcs
3219	2 pcs

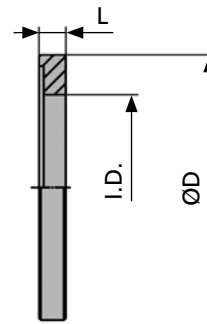
Size	Complete Part No	ID Code	W.P. [bar]	L	D	Weight [kg]
2"	432135	1912030000	400	180	49	5.2
2 1/2"	440135	1912031000	400	190	60	6.6
3"	448135	1912032000	400	200	73	9.6

Body material:
 Standard= carbon steel
 Stainless steel= add SS after Part No
 Standard opening pressure= 0.5 bar. On request 1.5 bar to 3 bar.

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Adapter between O-ring and bonded seal, metric

Drilled to ISO 6164 up to 4"



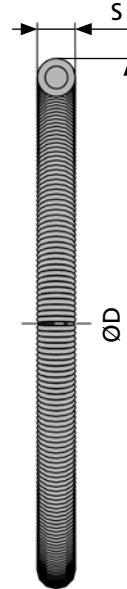
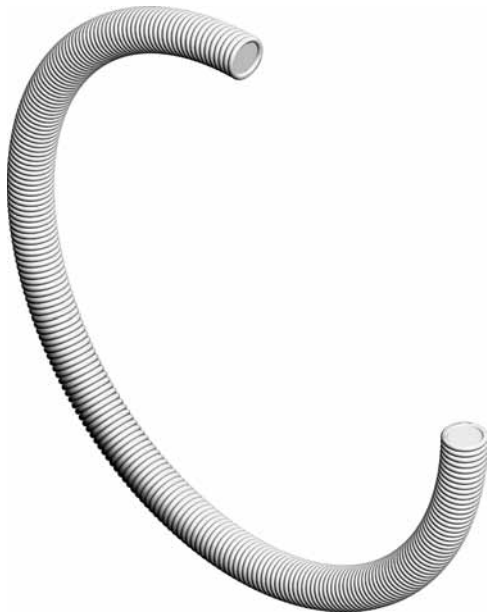
Please add 10 mm to bolt lengths mentioned on page 126.

Size	Part No	ID Code	L	D	ID	Weight [kg]
2"	32099	1803005000	7	70	49	0.12
2 1/2"	40099	1803006000	7	84	60	0.16
3"	48099	1803007000	7	102	72	0.22

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Retain ring

Drilled to ISO 6164 up to 4"



Metric pipes

Size	Part No	ID Code	Pipe Size	D	S
2"	32	1902006050	66x8.5	71	5
2 1/2"	40	1902007050	80x10	85	5
3"	48	1902008050	97x12	103	6
4"	56	1902010050	115x15	123	8
4 1/2"	60	1902011050	130x15	138	8
5"	64	1902012050	150x15	158	8
6"	80	1902013050	190x20	200	10
8"	88	1902015250	220x20	232	12
8"	96	1902015050	250x25	262	12

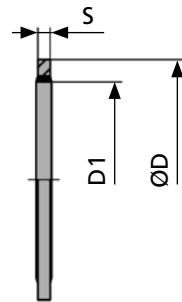
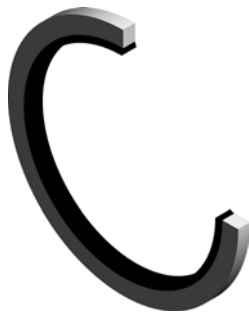
ANSI 36.10/36.19 pipes

Size	Part No	ID Code	Pipe O.D.	D	S
2"	32/60.3	1902006250	60.3	65.3	5
2 1/2"	40/73	1902007250	73.0	78.0	5
3"	48/88.9	1902008250	88.9	94.9	6
4"	56	1902010050	114.3	123	8
5"	64/141.3*	1902012250	141.3	149.3	8
6"	80/168.3	1902013250	168.3	178.3	10
8"	88	1902015250	219.1	232	12
10"	160/273	1902005050	273.0	285	12
12"	224/323.9	1902016050	323.9		
14"	224/355.6	1902017050	355.6		

Component material:
 AISI 316, special treated
 * = Could use also for pipe O.D. 139.7

Bonded seal

Drilled to ISO 6164 up to 4"



Bonded seal for metric GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
2"	3219	2701007000	3219SS	2701105000	3.25	63.50	51.69
2 1/2"	4037	2701008000	4037SS	2701107000	3.25	75.00	64.39
3"	4839	2701009000	4839SS	2701108000	3.25	90.17	76.08
4"	5644	2701011000	5644SS	2701109000	4.0	110.0	95.00
4 1/2"	6000	2701012000	6000SS	2701109500	4.0	126.0	108.0
5"	6455	2701013000	6455SS	2701110000	5.0	143.7	127.0
6"	8001	2701014200	8001SS	2701110500	8.0	181.0	155.0
8"	9600	2701015000	9600SS	2701111000	9.0	240.0	205.0

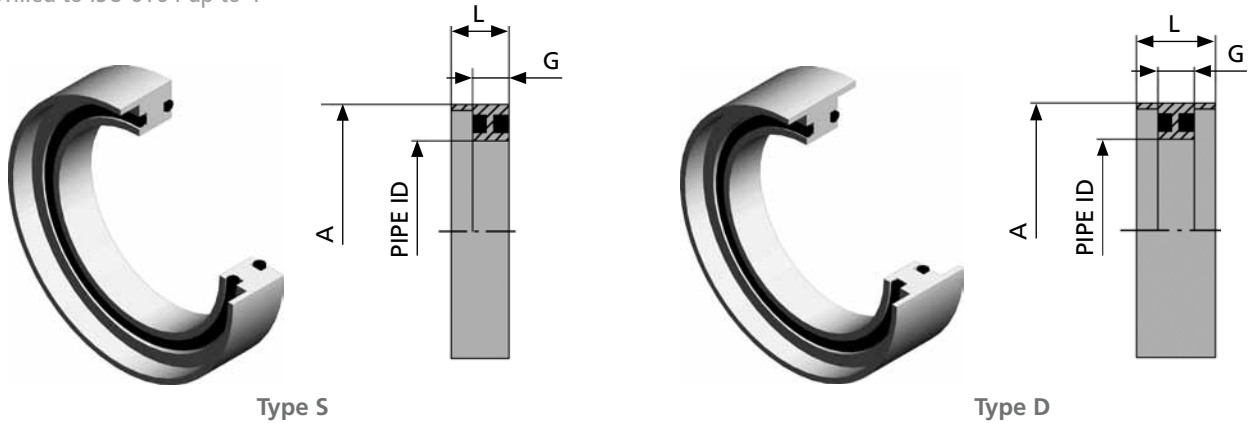
Bonded seal for ANSI 36.10/36.19 GS-pipe ends

Size	Standard Part No	Standard ID Code	SS Part No	SS ID Code	S	D	D1
2"	3260	2701007400	3260SS	2701105400	3.25	55.50	46.50
2 1/2"	4073	2701008200	4073SS	2701107500	3.25	69.85	54.89
3"	4888	2701009200	4888SS	2701108300	4.0	83.80	70.00
4"	5644	2701011000	5644SS	2701109000	4.0	110.0	95.00

Material possibilities:
 Standard= carbon steel, zinc plated with NBR
 SS= stainless steel with NBR
 Other materials and combinations on request.

Seal carrier – Type S & Type D

Drilled to ISO 6164 up to 4"



Type S

Type D

Please add 10 mm to bolt lengths mentioned on page 126.

Type S with O-rings between flange and block, metric pipes

Size	Part No	ID Code	O-Ring Size	A	G	L	Pipe Size
2 1/2"	4020S	1809011000	OR66.27X3.53	84	12	15	80x10
3"	4820S	1809012000	OR82.14X3.53	102	12	15	97x12
4"	5620S	1809013000	OR98.02X3.53	120	12	15	115x15
4 1/2"	6020S	1809014000	OR110.72X3.53	135	12	15	130x15
5"	6420S	1809015000	OR136.12X3.53	155	16	19	150x15
6"	8020S	1809016000	OR158.34X3.53	195	16	19	190x20
8"	8820S	1809017000	OR194.3X5.7	225	16	19	220x20
8"	9620S	1809018000	OR209.14X3.53	257	16	19	250x25

Type S with O-rings between flange and block, ANSI 36.10/36.19 pipes

Size	Part No	ID Code	O-Ring Size	A	G	L	Pipe Size
3"	4820/88.9X11.13S	1809012200	OR72.62X3.53	93	12	15	88.9x11.13
4"	5620/114.3X13.49S	1809013200	OR98.02X3.53	119.3	12	15	114.3x13.49
5"	6420/141.3X15.88S	1809015200	OR120.24X3.53	149	16	19	141.3x15.88
6"	8020/168.3X18.26S	1809016200	OR152X3.53	174	16	19	168.3x18.26
8"	8820/219.1X23.01S	1809017200	OR194.3X5.7	225	16	19	219.1x23.01
10"	16020/273X25.40S	1809019000	OR239.3X5.7	279	16	19	273x25.40
10"	16020/273X28.58S	1809019200	OR239.3X5.7	279	16	19	273x28.58

Type D with O-rings between flange and block, metric pipes

Size	Part No	ID Code	O-Ring Size	A	G	L	Pipe Size
2 1/2"	4020D	1809011100	OR66.27X3.53	84	12	18	80x10
3"	4820D	1809012100	OR82.14X3.53	102	12	18	97x12
4"	5620D	1809013100	OR98.02X3.53	120	12	18	115x15
4 1/2"	6020D	1809014100	OR110.72X3.53	135	12	18	130x15
5"	6420D	1809015100	OR136.12X3.53	155	16	22	150x15
6"	8020D	1809016100	OR158.34X3.53	195	16	22	190x20
8"	8820D	1809017100	OR194.3X5.7	225	16	22	220x20
8"	9620D	1809018100	OR209.14X3.53	257	16	22	250x25

Type D with O-rings between flange and block, ANSI 36.10/36.19 pipes

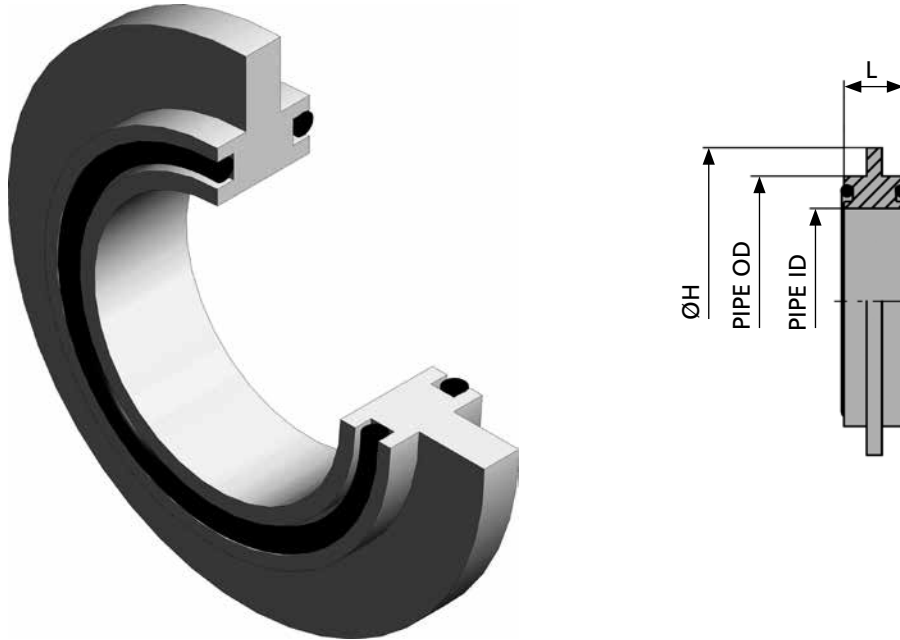
Size	Part No	ID Code	O-Ring Size	A	G	L	Pipe Size
3"	4820/88.9X11.13D	1809012300	OR72.62X3.53	93	12	18	88.9x11.13
4"	5620/114.3X13.49D	1809013300	OR98.02X3.53	119.3	12	18	114.3x13.49
5"	6420/141.3X15.88D	1809015300	OR120.24X3.53	149	16	22	141.3x15.88
6"	8020/168.3X18.26D	1809016300	OR152X3.53	174	16	22	168.3x18.26
8"	8820/219.1X23.01D	1809017300	OR194.3X5.7	225	16	22	219.1x23.01
10"	16020/273X25.40D	1809019100	OR239.3X5.7	279	16	22	273x25.40
10"	16020/273X28.58D	1809019300	OR239.3X5.7	279	16	22	273x28.58

Material possibilities:
 Standard= carbon steel, zinc plated with NBR O-rings
 Stainless steel with NBR O-rings= add SS after Part No
 Other materials and combinations on request.

O-ring not included in a Part No,
 please order separately.

Seal carrier

Drilled to ISO 6164 up to 4"



Please add 10 or 20 mm to bolt lengths mentioned on page 126.

ANSI 36.10/36.19 pipes

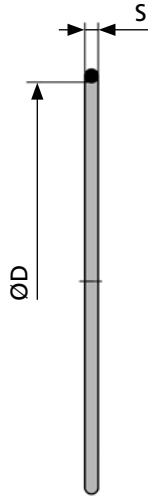
Size	Component Part No	Component ID Code	SCH	H	L	O-ring Part No
2"	3210/60.3X8.74	1809010120	160	82	12	OR47.22X3.53
2"	3210/60.3X11.07	1809010140	XXS	82	12	OR47.22X3.53
2 1/2"	4010/73X9.53	1809011120	160	99	12	OR58.74X3.53
2 1/2"	4010/73X14.02	1809011140	XXS	99	12	OR58.74X3.53
3"	4810/88.9X11.13	1809012120	160	121	12	OR72.62X3.53
3"	4810/88.9X15.24	1809012140	XXS	121	12	OR72.62X3.53
4"	5610/114.3X13.49	1809013120	160	145	12	OR98.02X3.53
4"	5610/114.3X17.12	1809013140	XXS	145	12	OR98.02X3.53
5"	6410/141.3X15.88	1809015120	160	181	12	OR120.24X3.53
5"	6410/141.3X19.05	1809015140	XXS	181	12	OR120.24X3.53
6"	8010/168.3X18.26	1809016120	160	214	16	OR152X3.53
6"	8010/168.3X21.95	1809016140	XXS	214	16	OR152X3.53
8"	8810/219.1X23.01	1809017120	160	260	16	OR194.3X5.7
8"	8810/219.1X22.23	1809017140	XXS	260	16	OR194.3X5.7
10"	16010/273X28.58	1809019120	160	338	16	OR239.3X5.7
10"	16010/273X25.40	1809019140	XXS	338	16	OR239.3X5.7
12"	22410/323.9X33.32	1809019500	160	400	20	OR289.3X5.7
12"	22410/323.9X25.40	1809019520	XXS	400	20	OR289.3X5.7
14"	22410/355.6X35.71	1809019540	160	400	20	OR299.3X5.7

Material possibilities:
 Standard= carbon steel, zinc plated with NBR O-rings
 Stainless steel with NBR O-rings= add SS after Part No
 Other pipe sizes, materials and combinations on request.

O-ring not included in a Part No, please order separately.

O-rings for seal carriers

Drilled to ISO 6164 up to 4"



For metric pipes

Pipe Size	Part No	ID Code
80x10	OR66.27X3.53	2701537900
97x12	OR82.14X3.53	2701544000
115x15	OR98.02X3.53	2701549000
130x15	OR110.72X3.53	2701552000
150x15	OR136.12X3.53	2701557000
190x20	OR158.34X3.53	2701560000
220x20	OR194.3X5.7	2701562000
250x25	OR209.14X3.53	2701562900
273x25	OR239.3X5.7	2701564500

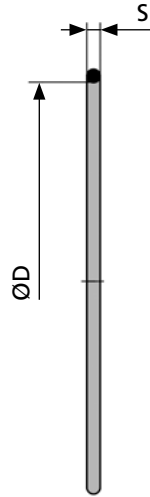
For ANSI 36.10/36.19 pipes

Pipe O.D.	Part No	ID Code
60.3	OR47.22X3.53	2701529000
73.0	OR58.74X3.53	2701535500
88.9	OR72.62X3.53	2701540500
114.3	OR98.02X3.53	2701549000
141.3	OR120.24X3.53	2701554500
139.7	OR120.24X3.53	2701554500
168.3	OR152X3.53	2701557950
219.1	OR194.3X5.7	2701562000
273.0	OR239.3X5.7	2701564500
323.9	OR289.3X5.7	2701568000

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton), Shore 90 A= add V after Part No
 Other materials on request.

O-rings for insert cones

Drilled to ISO 6164 up to 4"



O-ring between insert cones

Pipe Size	Part No	ID Code
50x5	OR47.22X3.53	2701529000
60x6	OR56.75X3.53	2701535000
73x7	OR69.44X3.53	2701540000

O-ring 2 for insert cones

Pipe Size	Part No	ID Code
50x5	OR41X1.78	2701525000
60x6	OR47.35X1.78	2701529200
73x7	OR56.87X1.78	2701535200

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton), Shore 90 A= add V after Part No
 Other materials on request.

GS-HP Retain Ring™ System

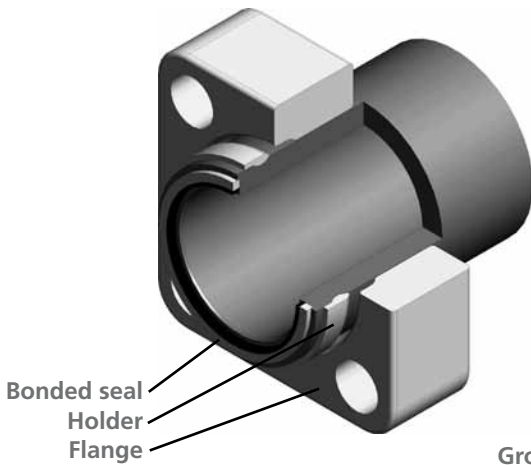
Drilled to ISO 6164 up to 4"

Connection Technology

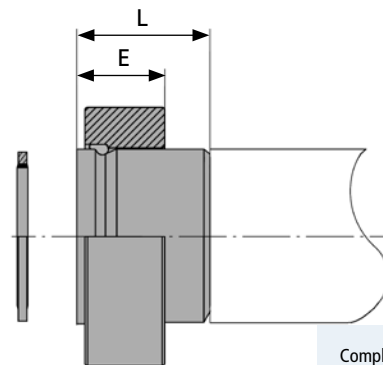
The GS-HP Retain Ring™ system provides compact, high pressure joint, in which the flanges are held to the pipe by solid retain ring halves which are sitting in a machined groove on the pipe end. The bonded seal between pipe faces ensures tight sealing when tightening the screws. This new system has been subjected to rigorous burst and impulse testing. The HP-retain rings, flanges and screws absorb the axial forces and shocks. The combination of retain rings and flanges strengthens the pipe (at the location of the groove) in such a manner that connection is stronger than the pipe itself!

The GS-HP Retain Ring™ system provides a proven, reliable and leak-free piping solution. New design and improved characteristics lead to a minimised need for maintenance, repair or replacement of piping components.

The excellent sealing performance and very high mechanical strength of new HP-invention has been proven by external testing laboratories. New type of connection technology allows much higher external loads and has unique resistance against external loads.



Grooving direct on to pipe



Complete Part No example:
440011HP includes:
440HP 1 pc
40011HP 1 pc
40HP 1 pc
4037 1 pc

Grooving direct on to pipe

Size	Pipe Size	Flange Part No	Flange ID Code	Holder Part No	Holder ID Code	Bonded Seal Part No	Bonded Seal ID Code
2 1/2"	80x10	440HP	1104030300	40HP	1902007500	4037	2701008000
3"	97x12	448HP	1104060300	48HP	1902008500	4839	2701009000

Flange for welding

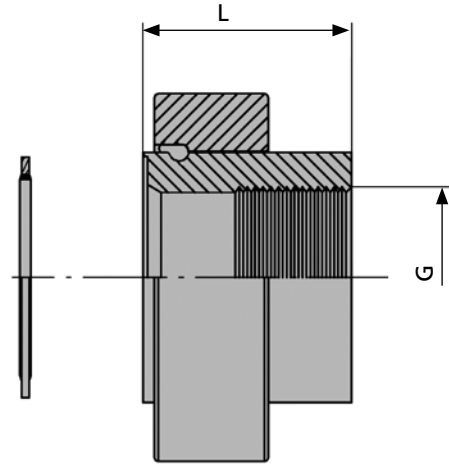
Size	Pipe Size	Complete Part Code	Complete ID Code	L	E	Weight [kg]	Body Part No	Body ID Code
2 1/2"	80x10	440011HP	1301533600	85	43	2.01	40011HP	1301052250
3"	97x12	448011HP	1301537400	110	51	3.70	48011HP	1301057650

Body material:
Standard= carbon steel
Stainless steel= add SS after Part No
Other materials on request.
Holder material= duplex

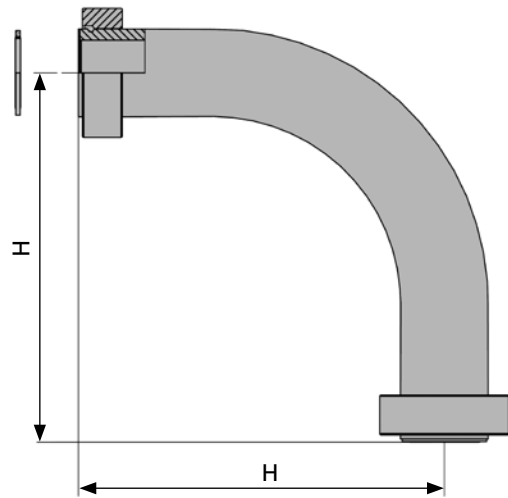
Flange dimensions page 126
Bonded seals page 149

GS-HP Retain Ring™ System

Drilled to ISO 6164 up to 4"



Female thread flange



Flange bend

Complete Part No example:

440013HP includes:

440HP	1 pc
40013HP	1 pc
40HP	1 pc
4037	1 pc

Complete Part No example:

440018HP includes:

440HP	2 pcs
40018HP	1 pc
40HP	2 pcs
4037	2 pcs

Female thread flange, BSPP

Size	Complete Part No	Complete ID Code	L	G*	Weight [kg]	Body Part No	Body ID Code
2 1/2"	440013HP	1307506100	80	2"	3.60	40013HP	1307010100
3"	448013HP	1307506400	85	2 1/2"	5.80	48013HP	1307011400

Flange bend

Size	Complete Part No	Complete ID Code	H	Bending Radius	Weight [kg]	Body Part No	Body ID Code
2 1/2"	440018HP**	1602203100	450	220	18.0	40018HP	1602002550
3"	448018HP**	1602203600	540	270	30.8	48018HP	1602003050

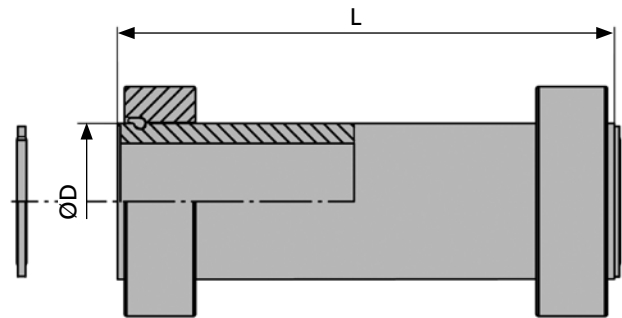
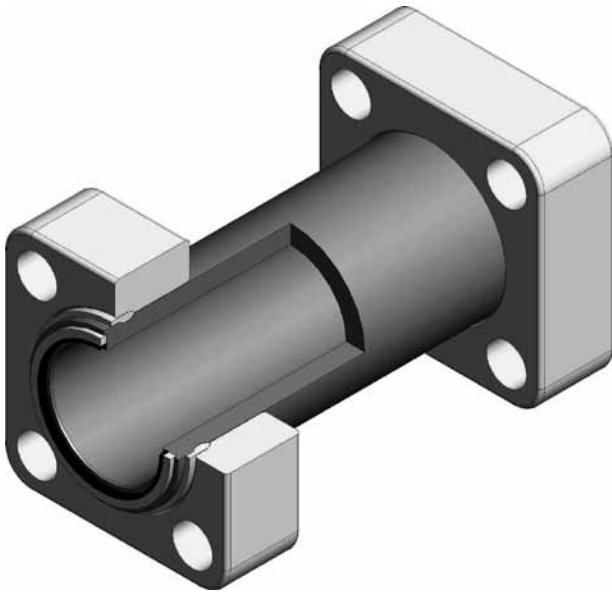
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 **) Not available in stainless steel
 Other materials on request.

*) Standard thread BSP,
 others on request.

Flange dimensions page 126
 Bonded seals page 149

GS-HP Retain Ring™ System

Drilled to ISO 6164 up to 4"



Complete Part No example:

440019HP includes:

440HP	2 pcs
40019HP	1 pc
40HP	2 pcs
4037	2 pcs

Bulkhead flange

Size	Complete Part No	Complete ID Code	L	D	Weight [kg]	Body Part No	Body ID Code
2 1/2"	440019HP	1904057600	220	82	8.20	40019HP	1904002700
3"	448019HP	1904058100	240	92	14.0	48019HP	1904003200

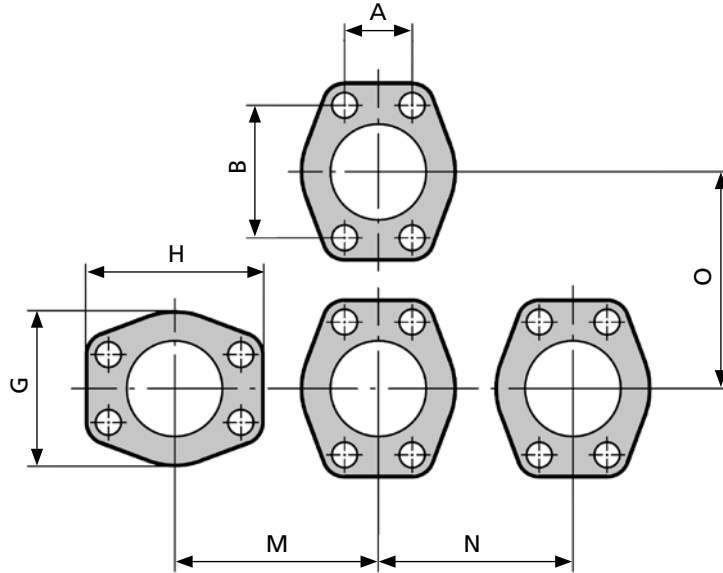
Body material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.

Flange dimensions page 126
 Bonded seals page 149

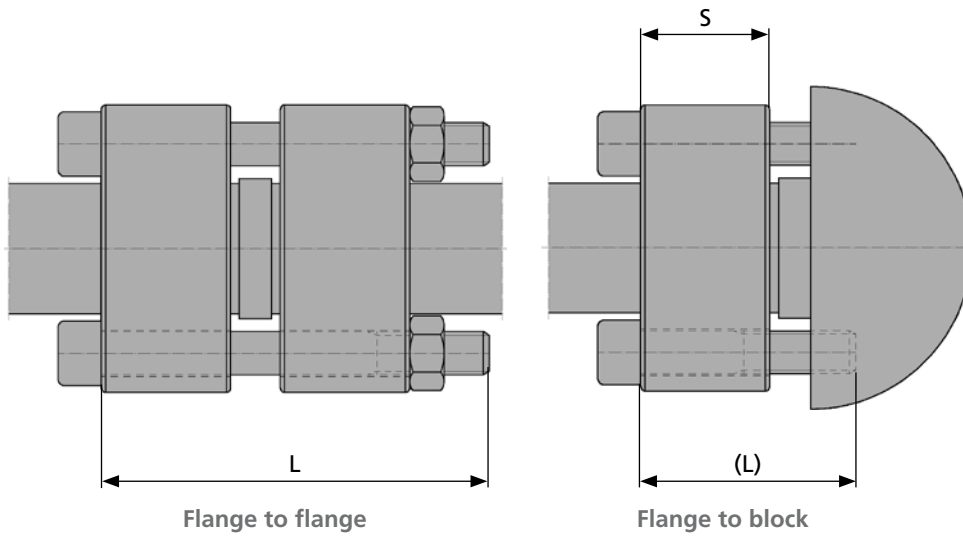
Flange dimensions.....	158
Retain ring flange.....	159
Grooving direct on to pipe.....	160
Flange for welding.....	161
Tee block, Elbow block	162
Blind flange	163
Seal carrier	164
Retain ring.....	165
O-ring.....	166

Flange dimensions

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Port dimensions for flange connections according to ISO 6162-2.



Size	Part No	A	B	G	H	M	N	O	S	Bolt L DIN 912, 8.8	W.P. [bar]	Weight [kg]
1/2"	908/21.3	18.2	40.5	48	56	57	53	61	30	M8x90(55)	690	0.28
3/4"	912/26.7	23.8	50.8	60	71	70	65	76	35	M10x100(60)	690	0.41
1"	916/33.4	27.8	57.2	70	81	80	75	86	35	M12x100(65)	690	0.71
1 1/4"	920/42.2*	31.8	66.7	78	95	91	83	100	40	M14x120(70)	690	0.99
1 1/2"	924/48.3	36.5	79.4	95	113	109	100	118	40	M16x120(75)	690	1.41
2"	932/60.3	44.5	96.8	114	133	129	119	139	60	M20x180(100)	690	3.03
2 1/2"	940/73	58.7	123.8	150	175	169	156	183	60	M24x180(110)	690	6.76
3"	948/88.9	71.4	152.4	178	215	202	184	218	70	M30x220(130)	690	11.43

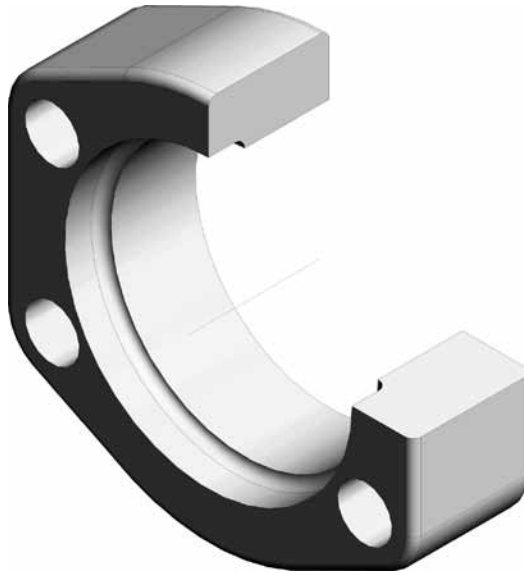
Bigger sizes (from 4" to 8") available on request.
 * = According to the previous ISO 6162-2 (2002) standard (M14 bolts).

Manufacturing tolerance for flange thickness (S) ±5%.

L = flange to flange
 (L) = flange to block
 Bolt lengths with the seal carrier.

Retain ring flange

Drilled to ISO 6162-2 (SAE J 518 Code 62)



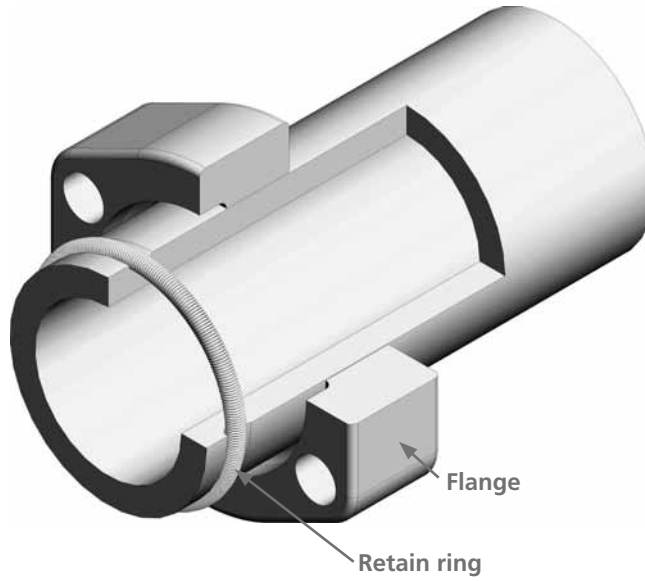
ANSI 36.10/36.19 pipes

Size	Pipe O.D.	Standard Part No	Standard ID Code	HDG Part No	HDG ID Code	SS Part No	SS ID Code	W.P. bar	Weight [kg]
1/2"	21.3	908/21.3	1103239500	908/21.3HDG	1113250100	908/21.3SS	1203239500	690	0.28
3/4"	26.7	912/26.7	1103240000	912/26.7HDG	1113250200	912/26.7SS	1203240000	690	0.46
1"	33.4	916/33.4	1103242000	916/33.4HDG	1113250300	916/33.4SS	1203242000	690	0.71
1 1/4"	42.2	920/42.2	1103244000	920/42.2HDG	1113250400	920/42.2SS	1203244000	690	1.00
1 1/2"	48.3	924/48.3	1103246000	924/48.3HDG	1113250500	924/48.3SS	1203246000	690	1.80
2"	60.3	932/60.3	1103250000	932/60.3HDG	1113250600	932/60.3SS	1203250000	690	3.03
2 1/2"	73.0	940/73	1103251000	940/73HDG	1113250700	940/73SS	1203251000	690	6.76
3"	88.9	948/88.9	1103252000	948/88.9HDG	1113250800	948/88.9SS	1203252000	690	11.43

Material possibilities:
 Standard= carbon steel, zinc plated
 -HDG= carbon steel, hot dip galvanized
 -SS= stainless steel
 Bigger size components available on request.

Grooving direct on to pipe

Drilled to ISO 6162-2 (SAE J 518 Code 62)



ANSI 36.10/36.19 pipes

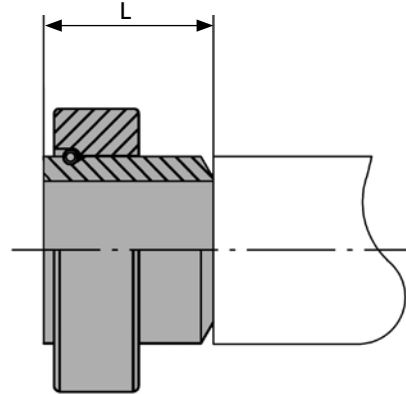
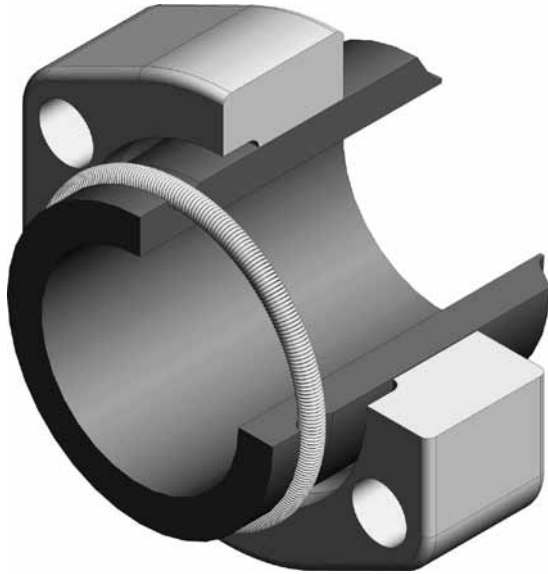
Size	Pipe Size	Flange Part No	Flange ID Code	Retain Ring Part No	Retain Ring ID Code
1/2"	21.3x7.47	908/21.3	1103239500	08/21.3	1902000200
3/4"	26.7x7.82	912/26.7	1103240000	12/26.7	1902001200
1"	33.4x9.09	916/33.4	1103242000	16/33.4	1902002200
1 1/4"	42.2x9.7	920/42.2	1103244000	20/42.2	1902003200
1 1/2"	48.3x10.15	924/48.3	1103246000	24/48.3	1902004200
2"	60.3x11.07	932/60.3	1103250000	32/60.3S=6	1902006450
2 1/2"	73x14.02	940/73	1103251000	40/73S=7	1902007450
3"	88.9x15.24	948/88.9	1103252000	48/88.9S=8	1902008450

Bigger size components available on request.
 Pipe material duplex (EN 1.4462).
 Pipe material for sizes 4" (114.3mm) and up super duplex (EN 1.4410).
 Other materials on request.

Flanges page 159
 Seal carriers page 164
 Retain rings page 165

Flange for welding

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Complete Part No example:
908011/21.3X7.47B includes:
 908/21.3 1 pc
 08011/21.3X7.47B-DX 1 pc
 08/21.3 1 pc

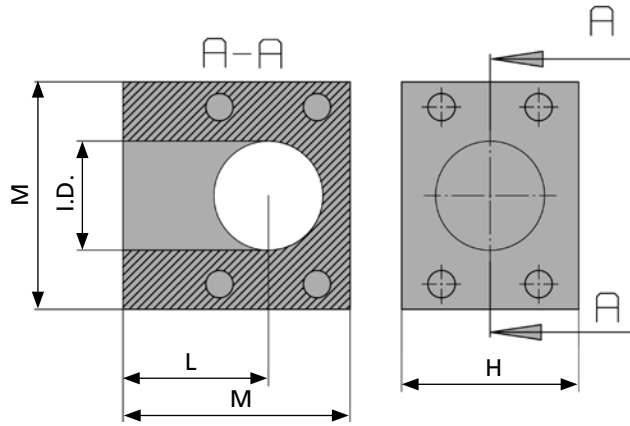
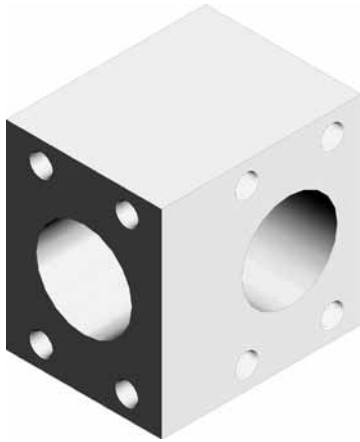
Size	Pipe Size	Complete Part No	Complete ID Code	L	Weight (kg)	Body Part No	Body ID Code
1/2"	21.3x7.47	908011/21.3X7.47B	1301601000	50	0.40	08011/21.3X7.47B-DX	1303003100
3/4"	26.7x7.82	912011/26.7X7.82B	1301601200	55	0.62	12011/26.7X7.82B-DX	1303008300
1"	33.4x9.09	916011/33.4X9.09B	1301601400	55	0.96	16011/33.4X9.09B-DX	1303013700
1 1/4"	42.2x9.7	920011/42.2X9.7B	1301601600	60	1.43	20011/42.2X9.7B-DX	1303021700
1 1/2"	48.3x10.15	924011/48.3X10.15B	1301601800	65	2.37	24011/48.3X10.15B-DX	1303027100
2"	60.3x11.07	932011/60.3X11.07B	1301602000	90	4.03	32011/60.3X11.07B-DX	1303035600
2 1/2"	73x14.02	940011/73X14.02B	1301602200	95	8.60	40011/73X14.02B-DX	1303038900
3"	88.9x15.24	948011/88.9X15.24B	1301602400	110	14.47	48011/88.9X15.24B-DX	1303043000

Body material duplex (EN 1.4462).
 Bigger size components available on request.
 Body material for sizes 4" (114.3 mm) and up super duplex (EN 1.4410).
 Other materials or type A (with O-ring) on request.

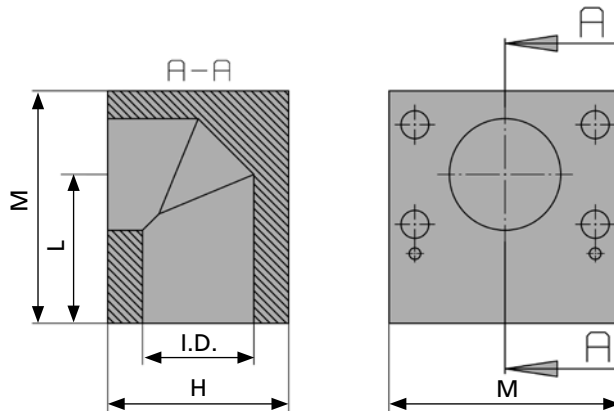
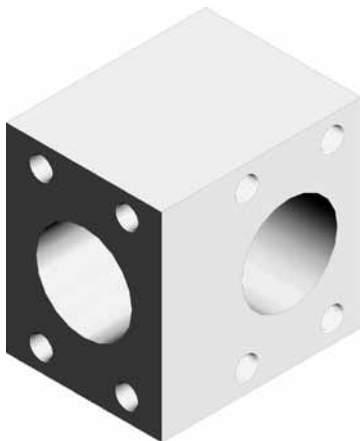
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Tee & elbow block

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Tee block



Elbow block

Tee block

Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	908116	1702080800	40	36	56	6.3	0.95
3/4"	912116	1702081200	48	49	70	11.1	1.35
1"	916116	1702081600	48	55	80	15.2	2.02
1 1/4"	920116	1702082000	58	63	90	22.8	2.95
1 1/2"	924116	1802082400	68	68	100	28.0	3.95
2"	932116	1702083200	88	90	130	38.1	8.65

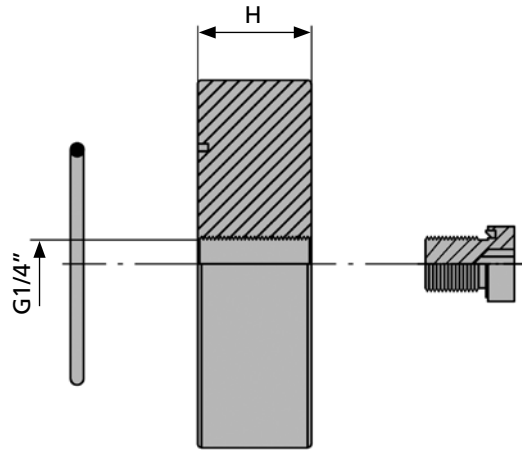
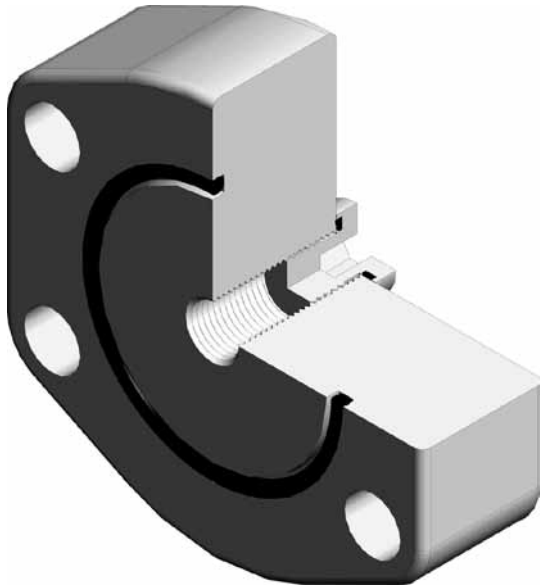
Elbow block

Size	Part No	ID Code	H	L	M	I.D.	Weight [kg]
1/2"	908115	1603030800	40	36	56	6.3	1.15
3/4"	912115	1603031200	48	49	70	11.1	1.95
1"	916115	1603031600	48	55	80	15.2	2.10
1 1/4"	920115	1603032000	58	63	90	22.8	3.10
1 1/2"	924115	1603032400	68	68	100	28.0	4.20
2"	932115	1603033200	88	90	130	38.1	9.60

Component material:
 Standard= carbon steel, zinc plated
 Stainless steel= add SS after Part No
 Other materials on request.
 Bigger size components available on request.

Blind flange

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Size	Part No	ID Code	H	Weight [kg]
1/2"	908125/21.3	1910529080	30	0.41
3/4"	912125/26.7	1910529120	35	0.81
1"	916125/33.4	1910529160	35	0.96
1 1/4"	920125/42.2	1910529200	40	1.40
1 1/2"	924125/48.3	1910529240	40	2.38
2"	932125/60.3	1910529320	60	4.73
2 1/2"	940125/73	1910529400	60	8.71
3"	948125/88.9	1910529480	70	14.83

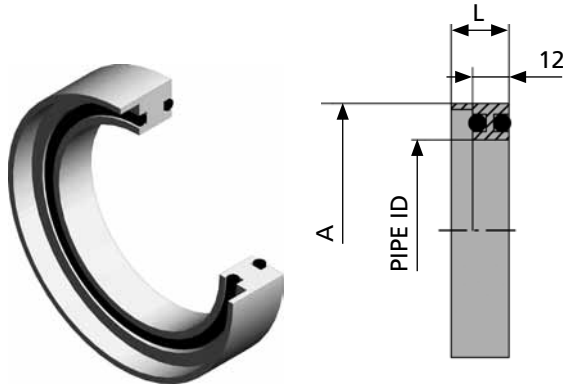
Component material:
 Standard= carbon steel, zinc plated
 Other materials on request.
 Bigger size components available on request.
 O-ring, ED-seal and plug included in a Part No

Manufacturing tolerance for
 flange thickness (H) $\pm 5\%$.

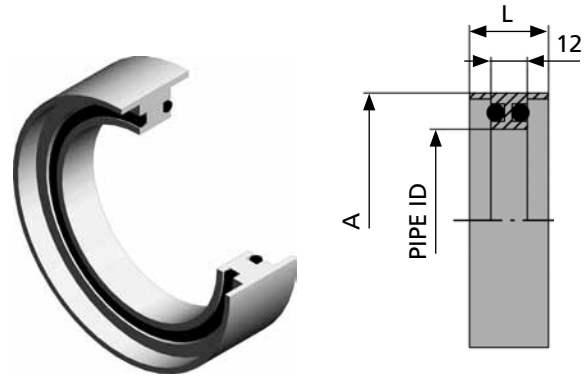
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Seal carrier

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Type S



Type D

Type S with O-rings between flange and block – ANSI 36.10/36.19 pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
1/2"	0820/21.3X7.475-DX	1811005000	OR12.37X2.62	26	15	21.3x7.47
3/4"	1220/26.7X7.825-DX	1811006000	OR17.5X2	31	15	26.7x7.82
1"	1620/33.4X9.095-DX	1811007000	OR20.22X3.53	38	15	33.4x9.09
1 1/4"	2020/42.2X9.75-DX	1811008000	OR28.17X3.53	47	15	42.2x9.7
1 1/2"	2420/48.3X10.155-DX	1811009000	OR35.2X3	53	15	48.3x10.15
2"	3220/60.3X11.075-DX	1811010400	OR47.22X3.53	65	15	60.3x11.07
2 1/2"	4020/73X14.025-DX	1811011500	OR58.74X3.53	79	15	73x14.02
3"	4820/88.9X15.245-DX	1811012400	OR72.62X3.53	93	15	88.9x15.24

Type D with O-rings between flanges – ANSI 36.10/36.19 pipes

Size	Part No	ID Code	O-Ring	A	L	Pipe Size
1/2"	0820/21.3X7.47D-DX	1811005100	OR12.37X2.62	26	18	21.3x7.47
3/4"	1220/26.7X7.82D-DX	1811006100	OR17.5X2	31	18	26.7x7.82
1"	1620/33.4X9.09D-DX	1811007100	OR20.22X3.53	38	18	33.4x9.09
1 1/4"	2020/42.2X9.7D-DX	1811008100	OR28.17X3.53	47	18	42.2x9.7
1 1/2"	2420/48.3X10.15D-DX	1811009100	OR35.2X3	53	18	48.3x10.15
2"	3220/60.3X11.07D-DX	1811010500	OR47.22X3.53	65	18	60.3x11.07
2 1/2"	4020/73X14.02D-DX	1811011600	OR58.74X3.53	79	18	73x14.02
3"	4820/88.9X15.24D-DX	1811012500	OR72.62X3.53	93	18	88.9x15.24

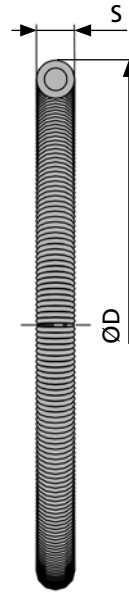
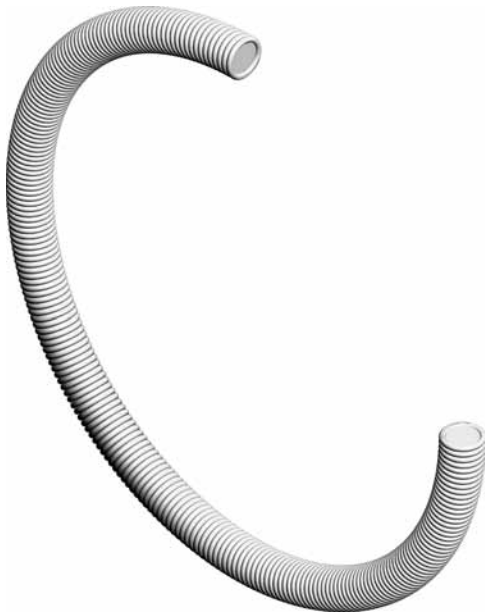
Component material duplex (EN 1.4462).
 Bigger size components available on request.
 Body material for sizes 4" (114.3 mm) and up super duplex (EN 1.4410).
 Other materials on request.

O-ring not included in a Part No,
 please order separately.

O-rings page 166

Retain ring

Drilled to ISO 6162-2 (SAE J 518 Code 62)



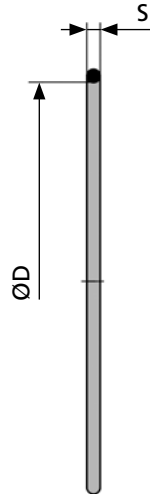
ANSI 36.10/36.19 pipes

Size	Part No	ID Code	Pipe O.D.	D	S
1/2"	08/21.3	1902000250	21.3	25.3	4
3/4"	12/26.7	1902001250	26.7	30.7	4
1"	16/33.4	1902002250	33.4	38.4	5
1 1/4"	20/42.2	1902003250	42.2	47.2	5
1 1/2"	24/48.3	1902004250	48.3	53.3	5
2"	32/60.3S=6	1902006450	60.3	66.3	6
2 1/2"	40/73S=7	1902007450	73.0	80.0	7
3"	48/88.9S=8	1902008450	88.9	96.9	8

Component material:
 AISI 316, special treated
 Bigger size components available on request.

O-ring between flange connection

Drilled to ISO 6162-2 (SAE J 518 Code 62)



Size	Part No	ID Code
1/2"	OR12.37X2.62	2701500500
3/4"	OR17.5X2	2701505300
1"	OR20.22X3.53	2701508100
1 1/4"	OR28.17X3.53	2701516100
1 1/2"	OR35.2X3	2701522200
2"	OR47.22X3.53	2701529000
2 1/2"	OR58.74X3.53	2701535500
3"	OR72.62X3.53	2701540500

Material possibilities:
 Standard= NBR, Shore 90 A
 FPM (Viton), Shore 90 A= add V after Part No
 Other materials on request.
 Bigger size components available on request.

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Material possibilities

GS-flange connections can be accomplished by several different material alternatives. The following tables demonstrates 4 different complete assemblies, out of which the best combination can be chosen out depending on the application.

Flare flange connections

	Part Code	Component Code	Material
Standard assembly	320/38X4FC	320F Flange	electric zinc coated carbon steel
		20/38X4FC Insert Cone	electric zinc coated carbon steel
		20/38F Sleeve	electric zinc coated carbon steel
		2030 Bonded Seal	electric zinc coated carbon steel/NBR
		OR30X1.0 O-ring	NBR, Shore 90 A
Stainless Steel	320/38X4FCSS	320FSS Flange	AISI 316
		20/38X4FCSS Insert Cone	AISI 316
		20/38FSS Sleeve	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*
		OR30X1.0 O-ring	NBR, Shore 90 A
Stainless Steel +electric zinc coated carbon steel flanges	320/38X4FCSS/ZN	320F Flange	electric zinc coated carbon steel
		20/38X4FCSS Insert Cone	AISI 316
		20/38FSS Sleeve	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*
		OR30X1.0 O-ring	NBR, Shore 90 A
Stainless Steel +hot dip galv. carbon steel flanges	320/38X4FCSS/HDG	320FHDG Flange	hot dip galvanized carbon steel
		20/38X4FCSS Insert Cone	AISI 316
		20/38FSS Sleeve	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*
		OR30X1.0 O-ring	NBR, Shore 90 A

Retain ring flange connections

	Part Code	Component Code	Material
Standard assembly	320019	320 Flange	electric zinc coated carbon steel
		20019 Bulkhead	electric zinc coated carbon steel
		20 Retain ring	AISI 316
		2030 Bonded Seal	electric zinc coated carbon steel/NBR
Stainless Steel	320019SS	320SS Flange	AISI 316
		20019SS Bulkhead	AISI 316
		20 Retain ring	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*
Stainless Steel +electric zinc coated carbon steel flanges	320019SS/ZN	320 Flange	electric zinc coated carbon steel
		20019SS Bulkhead	AISI 316
		20 Retain ring	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*
Stainless Steel +hot dip galv. carbon steel flanges	320019SS/HDG	320HDG Flange	hot dip galvanized carbon steel
		20019SS Bulkhead	AISI 316
		20 Retain ring	AISI 316
		2030SS Bonded Seal	AISI 316/NBR*

*) In stainless steel bonded seals there is also possibility to have FPM (Viton) as rubber material.

Zinc electrodeposited coating (ZN) according to EN 12329 – Fe//Zn 12/A/T2.

- Zinc layer thickness minimum 12 micrometer
- Clear chromate passivation – Chrome 6-free
- Additional sealing treatment by organic sealant

Hot dip galvanization (HDG) according to EN ISO 1461.

- With smaller (drum process) hot dip galvanized components the zinc thickness of layer is min. 45 micrometer.
- With bigger (rack process) hot dip galvanized components the zinc thickness of layer is min. 70 micrometer.

Assembly and installation



These are GS-Hydro's guidelines for the manufacture and assembly of the GS-Hydro 37° flare flange system, retain ring system and 90° flare flange system. The detailed installation instructions are available from GS-Hydro upon request. Also in the case of special applications (special sealing arrangements, non-conductive connections, special materials etc) please contact GS-Hydro for further instructions.

In order to achieve the integrity required in any piping system it is imperative that operators are fully trained and conversant with the tools and machines to be used. Especially important is to use trained GS-personnel and right type of machinery when carrying out grooving operations.

GS-Hydro can provide training and instruction as well as installation supervision if required.

When using bolt torque tables – following things should be carefully noted:

GS-Hydro provides bolt torques for two alternative greases:

- Gleitmo 805
- Molykote G rapid plus

There are different bolt torque columns for zinc electroplated bolts and hot dip galvanized bolts.

Always make sure that right bolt torque values are selected.

The GS-Hydro flange connecting system is enormously flexible – even flared and retain ring components fit together. This feature together with numerous other benefits of non-welded connection technology makes the whole system fast and easy to install – making it simply unique.



Assembly and installation, GS-37° Flare Flange System

The following presents the general principles of the assembly and installation of the GS-37° flare flange system and are thus not to be construed as detailed and complete instruction.

Note! The detailed assembly and installation instructions are available from GS-Hydro upon request.

In the flaring process the end of the tube is clamped into

an in-house developed flaring machine where a conical rotating tool flares the pipe end into a dye. The flange is installed onto the pipe prior to flaring. The assembly is done by placing a flaring cone on both the flared pipe ends with a seal in-between. The flanges are then tightened together to complete the connection.



After cutting, the pipe is de-burred inside and outside; then wiped clean by cloth in order to remove any metal particles.



Inspect the flange type before placing it on to the pipe (remember to use the sleeve if required). Please use the original GS-Hydro flanges to ensure a leak-free connection.



Before beginning the flaring operation check that the surface of the flaring cone has been thoroughly oiled or treated with Gleitmo 830 (Fuchs Lubritech) lubricating paste for cold forming.



The flared pipe is cleaned with a cloth before visually checking quality.



Lubricate the O-ring with Gleitmo 750 or equivalent lubricant. Place O-ring carefully into its groove. Examine all sealing surfaces to detect possible rust or mechanical damages.



Fit the insert cone into the tube flare. If needed, tap gently with plastic or hide mallet.

Assembly and installation, GS-37° Flare Flange System



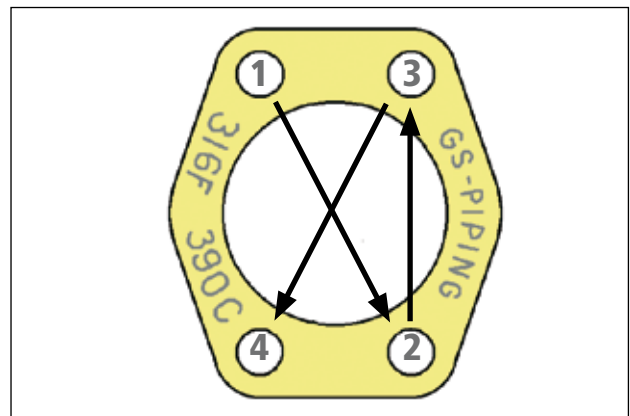
Lubricate the bonded seal with Gleitmo 805 -paste or equivalent. Control that pipe ends fit together and are aligned for sealing.



Lubricate bolt threads amply according to illustration. If tightened on bolt, lubricate bolt head compression face. If tightened on nut, lubricate nut on flange side.



The greased bolts (and nut) are tightened to the given torque to complete the installation.



Tighten bolts in diagonal sequence in small increments to appropriate torque level. See illustrated example.

1. Tightening of the bolts should start immediately after greasing of threads
2. Tighten lightly with a wrench.
3. Tighten crosswise with 30% of the recommended torque.
4. Tighten crosswise with 70% of the recommended torque.
5. Tighten crosswise with 100% of the recommended torque. Repeat this step until all bolts stand still with full torque applied. Minimum 2 full cycles.

Assembly and installation, GS-37° Flare Flange System

Bolt Torques for Gleitmo 805 -grease

Metric connections

SAE 50 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1 1/2"	124F	M12x70	x40	36 Nm	43 Nm
2"	132F	M12x70	x40	36 Nm	43 Nm
2 1/2"	140F	M12x70	x40	36 Nm	43 Nm
3"	148F	M16x80	x50	50 Nm	60 Nm
3 1/2"	156F	M16x90	x50	50 Nm	60 Nm
4"	164F	M16x90	x50	63 Nm	76 Nm
5"	180F	M16x90	x50	92 Nm	76 Nm
6"	196F	M16x110	x60	81 Nm	97 Nm
8"	228F	M20x120	x70	118 Nm	142 Nm
10"	260F	M20x140	x80	166 Nm	199 Nm

ANSI 36.19 connections

SAE 3000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	308F	M8x60	x35	22 Nm	27 Nm
3/4"	312F	M10x60	x35	24 Nm	29 Nm
1"	316F	M10x60	x35	31 Nm	37 Nm
1 1/4"	320F	M10x70	x35	40 Nm	48 Nm
1 1/2"	324F	M12x80	x45	45 Nm	54 Nm
2"	332F	M12x80	x50	53 Nm	64 Nm
2 1/2"	340F	M12x110	x60	69 Nm	83 Nm
3"	348F	M16x130	x80	137 Nm	165 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	308F/21.3	M8x60	x35	22 Nm	27 Nm
3/4"	312F/26.7	M10x60	x35	24 Nm	29 Nm
1"	316F/33.4	M10x60	x35	31 Nm	37 Nm
1 1/4"	320F/42.2	M10x70	x35	40 Nm	48 Nm
1 1/2"	324F/48.3	M12x80	x45	45 Nm	54 Nm
2"	332F/60.3	M12x80	x50	53 Nm	64 Nm
2 1/2"	340F	M12x110	x60	69 Nm	83 Nm
3"	348F/88.9	M16x130	x80	137 Nm	165 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	608F	M8x60	x35	22 Nm	27 Nm
3/4"	612F	M10x70	x40	28 Nm	34 Nm
1"	616F	M12x70	x45	41 Nm	50 Nm
1 1/4"	620F	M12x90	x50	59 Nm	71 Nm
1 1/4"	621F	M14x90	x50	69 Nm	83 Nm
1 1/2"	624F	M16x100	x60	116 Nm	140 Nm
2"	632F	M20x110	x70	145 Nm	174 Nm
2 1/2"	640F	M24x130	x90	240 Nm	288 Nm
3"	648F	M30x130	x100	415 Nm	492 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	608F/21.3	M8x60	x35	22 Nm	27 Nm
3/4"	612F/26.7	M10x70	x40	28 Nm	34 Nm
1"	616F/33.4	M12x70	x45	41 Nm	50 Nm
1 1/4"	620F/42.2	M12x90	x50	59 Nm	71 Nm
1 1/4"	621F/42.2	M14x90	x50	69 Nm	83 Nm
1 1/2"	624F/48.3	M16x100	x60	119 Nm	140 Nm
2"	632F/60.3	M20x110	x70	145 Nm	174 Nm
2 1/2"	640F	M24x130	x90	240 Nm	288 Nm
3"	648F/88.9	M30x130	x100	415 Nm	492 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1 1/2"	424F	M16x90	x50	88 Nm	98 Nm
2"	432F	M16x110	x60	113 Nm	127 Nm
2 1/2"	440F	M20x120	x70	158 Nm	190 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1 1/2"	424F/48.3	M16x90	x50	88 Nm	98 Nm
2"	432F/60.3	M16x110	x60	113 Nm	127 Nm
2 1/2"	440F	M20x120	x70	158 Nm	190 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 Torque values are with a tolerance of 0...5% .
 (Note! The torque values of 340-flanges shall not be exceeded).

Bolt torque values also relevant for other bolt material grades.

Assembly and installation, GS-37° Flare Flange System

Bolt Torques for Molycote G rapide plus -grease

Metric connections

SAE 50 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1 1/2"	124F	M12x70	x40	33 Nm	36 Nm	50 Nm
2"	132F	M12x70	x40	33 Nm	36 Nm	50 Nm
2 1/2"	140F	M12x70	x40	33 Nm	36 Nm	50 Nm
3"	148F	M16x80	x50	45 Nm	50 Nm	60 Nm
3 1/2"	156F	M16x90	x50	45 Nm	50 Nm	70 Nm
4"	164F	M16x90	x50	57 Nm	63 Nm	85 Nm
5"	180F	M16x90	x50	83 Nm	92 Nm	125 Nm
6"	196F	M16x110	x60	73 Nm	81 Nm	110 Nm
8"	228F	M20x120	x70	107 Nm	113 Nm	200 Nm
10"	260F	M20x140	x80	150 Nm	166 Nm	238 Nm

ANSI 36.19 connections

SAE 3000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1/2"	308F	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	312F	M10x60	x35	22 Nm	24 Nm	28 Nm
1"	316F	M10x60	x35	28 Nm	31 Nm	37 Nm
1 1/4"	320F	M10x70	x35	36 Nm	40 Nm	48 Nm
1 1/2"	324F	M12x80	x45	41 Nm	45 Nm	62 Nm
2"	332F	M12x80	x50	48 Nm	53 Nm	73 Nm
2 1/2"	340F	M12x110	x60	63 Nm	69 Nm	87 Nm
3"	348F	M16x130	x80	124 Nm	137 Nm	187 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1/2"	308F/21.3	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	312F/26.7	M10x60	x35	22 Nm	24 Nm	28 Nm
1"	316F/33.4	M10x60	x35	28 Nm	31 Nm	37 Nm
1 1/4"	320F/42.2	M10x70	x35	36 Nm	40 Nm	48 Nm
1 1/2"	324F/48.3	M12x80	x45	41 Nm	45 Nm	62 Nm
2"	332F/60.3	M12x80	x50	48 Nm	53 Nm	73 Nm
2 1/2"	340F	M12x110	x60	63 Nm	69 Nm	87 Nm
3"	348F/88.9	M16x130	x80	124 Nm	137 Nm	187 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1/2"	608F	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	612F	M10x70	x40	26 Nm	28 Nm	34 Nm
1"	616F	M12x70	x45	37 Nm	41 Nm	56 Nm
1 1/4"	620F	M12x90	x50	54 Nm	59 Nm	73 Nm
1 1/4"	621F	M14x90	x50	63 Nm	69 Nm	85 Nm
1 1/2"	624F	M16x100	x60	105 Nm	116 Nm	158 Nm
2"	632F	M20x110	x70	131 Nm	145 Nm	205 Nm
2 1/2"	640F	M24x130	x90	216 Nm	305 Nm	305 Nm
3"	648F	M30x130	x100	376 Nm	415 Nm	544 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1/2"	608F/21.3	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	612F/26.7	M10x70	x40	26 Nm	28 Nm	34 Nm
1"	616F/33.4	M12x70	x45	37 Nm	41 Nm	56 Nm
1 1/4"	620F/42.2	M12x90	x50	54 Nm	59 Nm	73 Nm
1 1/4"	621F/42.2	M14x90	x50	63 Nm	69 Nm	85 Nm
1 1/2"	624F/48.3	M16x100	x60	108 Nm	119 Nm	158 Nm
2"	632F/60.3	M20x110	x70	131 Nm	145 Nm	205 Nm
2 1/2"	640F	M24x130	x90	216 Nm	305 Nm	305 Nm
3"	648F/88.9	M30x130	x100	376 Nm	415 Nm	544 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1 1/2"	424F	M16x90	x50	80 Nm	88 Nm	120 Nm
2"	432F	M16x110	x60	104 Nm	113 Nm	155 Nm
2 1/2"	440F	M20x120	x70	143 Nm	158 Nm	226 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80-bolts
1 1/2"	424F/48.3	M16x90	x50	80 Nm	88 Nm	120 Nm
2"	432F/60.3	M16x110	x60	104 Nm	113 Nm	155 Nm
2 1/2"	440F	M20x120	x70	143 Nm	158 Nm	226 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 SS = Stainless steel
 Torque values are with a tolerance of 0...5% .
 (Note! The torque values of 340-flanges shall not be exceeded).

Bolt torque values also relevant for other bolt material grades.

Assembly and installation, GS-Retain Ring Flange System

The following presents the general principles of the assembly and installation of the GS retain ring system and are thus not to be construed as detailed and complete instruction.

Note! The detailed assembly and installation instructions are available from GS-Hydro upon request.

When preparing a retain ring connection a groove is made on the pipe and the pipe end itself is machined. The flanges are placed onto the pipe and the retain rings are installed into the groove. A seal is placed in-between the pipe ends and the flanges are then tightened together.



The prefabricated piping modules are then washed with 110°C–130°C steam (to which a chemical cleaning agent has been added).



Piping modules are protected with oil in order to prevent corrosion during transportation and storing.



Prior to shipping the pipe end is carefully plugged.



The cover is removed from pipe end and the pipe is cleaned with a doth.



Install the flanges with the retain ring groove facing towards the end of the pipe. Please use the original GS-Hydro flanges to ensure a leak-free connection.



Install the retain ring onto the pipe.

Assembly and installation, GS-Retain Ring Flange System



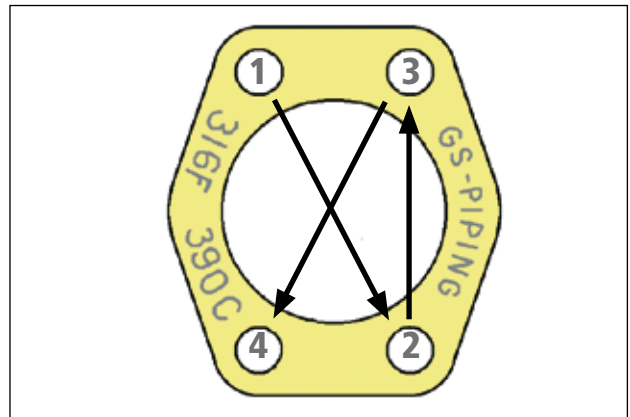
Lubricate the bonded seal with Gleitmo 805 -paste or equivalent. Control that pipe ends fit together and are aligned for sealing.



Lubricate bolt threads amply according to illustration. If tightened on bolt, lubricate bolt head compression face. If tightened on nut, lubricate nut on flange side.



The greased bolts (and nut) are tightened to the given torque to complete the installation.



Tighten bolts in diagonal sequence in small increments to appropriate torque level. See illustrated example.

1. Tightening of the bolts should start immediately after greasing of threads
2. Tighten lightly with a wrench.
3. Tighten crosswise with 30% of the recommended torque.
4. Tighten crosswise with 70% of the recommended torque.
5. Tighten crosswise with 100% of the recommended torque. Repeat this step until all bolts stand still with full torque applied. Minimum 2 full cycles.

Assembly and installation, GS-Retain Ring Flange System

Bolt Torques for Gleitmo 805 -grease

Metric connections

SAE 50 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1 1/2"	124	M12x70	x40	36 Nm	43 Nm
2"	132	M12x70	x40	36 Nm	43 Nm
2 1/2"	140	M12x70	x40	36 Nm	43 Nm
3"	148	M16x80	x50	50 Nm	60 Nm
3 1/2"	156	M16x90	x50	50 Nm	60 Nm
4"	164	M16x90	x50	63 Nm	76 Nm
5"	180	M16x90	x50	92 Nm	76 Nm
6"	196	M16x110	x60	81 Nm	97 Nm
8"	228	M20x120	x70	118 Nm	142 Nm
10"	260	M20x140	x80	166 Nm	199 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	308	M8x60	x35	22 Nm	27 Nm
3/4"	312	M10x60	x35	23 Nm	28 Nm
1"	316	M10x60	x35	31 Nm	37 Nm
1 1/4"	320	M10x70	x35	40 Nm	48 Nm
1 1/2"	324	M12x80	x45	45 Nm	54 Nm
2"	332	M12x80	x50	53 Nm	64 Nm
2 1/2"	340	M12x110	x60	69 Nm	83 Nm
3"	348	M16x130	x80	137 Nm	165 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	608	M8x60	x35	22 Nm	27 Nm
3/4"	612	M10x70	x40	28 Nm	30 Nm
1"	616	M12x70	x45	41 Nm	49 Nm
1 1/4"	620	M12x90	x50	51 Nm	61 Nm
1 1/4"	621	M14x90	x50	59 Nm	70,8 Nm
1 1/2"	624	M16x100	x60	95 Nm	106 Nm
2"	632	M20x110	x70	114 Nm	137 Nm
2 1/2"	640	M24x130	x90	227 Nm	272 Nm
3"	648	M30x130	x100	359 Nm	426 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
2"	432	M16x110	x60	95 Nm	107 Nm
2 1/2"	440	M20x120	x70	158 Nm	190 Nm
3"	448	M24x140	x80	311 Nm	373 Nm
4"	456	M30x160	x100	511 Nm	614 Nm
4 1/2"	860	M20x140	x80	183 Nm	220 Nm
5"	864	M24x160	x100	362 Nm	435 Nm
6"	880	M30x220	x130	590 Nm	644 Nm
8"	896	M36x220	x130	1247 Nm	1360 Nm
10"	8160	M36x280	x180	977 Nm	1066 Nm

ANSI 36.19 connections

SAE 10000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	908/21.3	M8x80	x45	22 Nm	27 Nm
3/4"	912/26.7	M10x90	x50	31 Nm	33 Nm
1"	916/33.4	M12x90	x55	41 Nm	49 Nm
1 1/4"	920/42.2	M14x110	x60	69 Nm	84 Nm
1 1/2"	924/48.3	M16x110	x65	110 Nm	132 Nm
2"	932/60.3	M20x150	x90	142 Nm	168 Nm
2 1/2"	940/73	M24x160	x100	315 Nm	378 Nm
3"	948/88.9	M30x190	x120	534 Nm	635 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	308/21.3	M8x60	x35	22 Nm	27 Nm
3/4"	312/26.7	M10x60	x35	23 Nm	30 Nm
1"	316/33.4	M10x60	x35	31 Nm	37 Nm
1 1/4"	320/42.2	M10x70	x35	40 Nm	48 Nm
1 1/2"	324/48.3	M12x80	x45	45 Nm	54 Nm
2"	332/60.3	M12x80	x50	53 Nm	64 Nm
2 1/2"	340/73.0	M12x110	x60	69 Nm	83 Nm
3"	348/88.9	M16x130	x80	137 Nm	165 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
1/2"	608/21.3	M8x60	x35	22 Nm	27 Nm
3/4"	612/26.7	M10x70	x40	25 Nm	30 Nm
1"	616/33.4	M12x70	x45	41 Nm	49 Nm
1 1/4"	620/42.2	M12x90	x50	51 Nm	61 Nm
1 1/4"	621/42.2	M14x90	x50	59 Nm	70,8 Nm
1 1/2"	624/48.3	M16x100	x60	88 Nm	106 Nm
2"	632/60.3	M20x110	x70	114 Nm	137 Nm
2 1/2"	640/73	M24x130	x90	169 Nm	203 Nm
3"	648/88.9	M30x130	x100	311 Nm	370 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts
2"	432/60.3	M16x110	x60	95 Nm	107 Nm
2 1/2"	440/73.0	M20x120	x70	140 Nm	168 Nm
3"	448/88.9	M24x140	x80	287 Nm	345 Nm
4"	456/114.3	M30x160	x100	511 Nm	614 Nm
5"	864/141.3	M24x160	x100	340 Nm	408 Nm
5"	864/139.7	M24x160	x100	340 Nm	408 Nm
6"	880/168.3	M30x220	x130	590 Nm	644 Nm
8"	888/219.1	M30x220	x130	886 Nm	966 Nm
10"	8160	M36x300	x180	977 Nm	1066 Nm
12"	8192/323.9	M36x320	x180	1280 Nm	1396 Nm
14"	8224/355.6	M39x360	x220	1249 Nm	1362 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 Torque values are with a tolerance of 0...5% .
 (Note! The torque values of 340-flanges shall not be exceeded).

Bolt torque values also relevant for other bolt material grades.

Assembly and installation, GS-Retain Ring Flange System

Bolt Torques for Molycote G rapide plus -grease

Metric connections

SAE 50 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1 1/2"	124	M12x70	x40	33 Nm	36 Nm	50 Nm
2"	132	M12x70	x40	33 Nm	36 Nm	50 Nm
2 1/2"	140	M12x70	x40	33 Nm	36 Nm	50 Nm
3"	148	M16x80	x50	45 Nm	50 Nm	58 Nm
3 1/2"	156	M16x90	x50	45 Nm	50 Nm	68 Nm
4"	164	M16x90	x50	57 Nm	63 Nm	72 Nm
5"	180	M16x90	x50	83 Nm	92 Nm	106 Nm
6"	196	M16x110	x60	73 Nm	81 Nm	94 Nm
8"	228	M20x120	x70	107 Nm	118 Nm	136 Nm
10"	260	M20x140	x80	150 Nm	166 Nm	238 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1/2"	308	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	312	M10x60	x35	21 Nm	23 Nm	28 Nm
1"	316	M10x60	x35	28 Nm	31 Nm	38 Nm
1 1/4"	320	M10x70	x35	36 Nm	40 Nm	49 Nm
1 1/2"	324	M12x80	x45	41 Nm	45 Nm	61 Nm
2"	332	M12x80	x50	48 Nm	53 Nm	72 Nm
2 1/2"	340	M12x110	x60	63 Nm	69 Nm	87 Nm
3"	348	M16x130	x80	124 Nm	137 Nm	158 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1/2"	608	M8x60	x35	20 Nm	22 Nm	20 Nm
3/4"	612	M10x70	x40	26 Nm	28 Nm	35 Nm
1"	616	M12x70	x45	37 Nm	41 Nm	55 Nm
1 1/4"	620	M12x90	x50	46 Nm	51 Nm	72 Nm
1 1/4"	621	M14x90	x50	54 Nm	59 Nm	84 Nm
1 1/2"	624	M16x100	x60	86 Nm	95 Nm	111 Nm
2"	632	M20x110	x70	103 Nm	114 Nm	160 Nm
2 1/2"	640	M24x130	x90	204 Nm	288 Nm	288 Nm
3"	648	M30x130	x100	326 Nm	359 Nm	471 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
2"	432	M16x110	x60	87 Nm	95 Nm	130 Nm
2 1/2"	440	M20x120	x70	143 Nm	158 Nm	226 Nm
3"	448	M24x140	x80	280 Nm	311 Nm	392 Nm
4"	456	M30x160	x100	460 Nm	511 Nm	667 Nm
4 1/2"	860	M20x140	x80	165 Nm	183 Nm	194 Nm
5"	864	M24x160	x100	326 Nm	362 Nm	431 Nm
6"	880	M30x220	x130	536 Nm	536 Nm	700 Nm
8"	896	M36x220	x130	1133 Nm	1133 Nm	1577 Nm
10"	8160	M36x280	x180	888 Nm	888 Nm	1162 Nm

ANSI 36.19 connections

SAE 10000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1/2"	908/21.3	M8x80	x45	22 Nm	25 Nm	25 Nm
3/4"	912/26.7	M10x90	x50	29 Nm	31 Nm	38 Nm
1"	916/33.4	M12x90	x55	41 Nm	57 Nm	61 Nm
1 1/4"	920/42.2	M14x110	x60	64 Nm	69 Nm	96 Nm
1 1/2"	924/48.3	M16x110	x65	101 Nm	110 Nm	151 Nm
2"	932/60.3	M20x150	x90	125 Nm	142 Nm	240 Nm
2 1/2"	940/73	M24x160	x100	284 Nm	401 Nm	451 Nm
3"	948/88.9	M30x190	x120	484 Nm	534 Nm	807 Nm

SAE 3000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1/2"	308/21.3	M8x60	x35	22 Nm	17 Nm	20 Nm
3/4"	312/26.7	M10x60	x35	25 Nm	25 Nm	30 Nm
1"	316/33.4	M10x60	x35	31 Nm	31 Nm	38 Nm
1 1/4"	320/42.2	M10x70	x35	40 Nm	40 Nm	49 Nm
1 1/2"	324/48.3	M12x80	x45	45 Nm	49 Nm	61 Nm
2"	332/60.3	M12x80	x50	53 Nm	57 Nm	72 Nm
2 1/2"	340/73.0	M12x110	x60	69 Nm	84 Nm	87 Nm
3"	348/88.9	M16x130	x80	137 Nm	115 Nm	158 Nm

SAE 6000 psi		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
1/2"	608/21.3	M8x60	x35	22 Nm	17 Nm	20 Nm
3/4"	612/26.7	M10x70	x40	25 Nm	25 Nm	30 Nm
1"	616/33.4	M12x70	x45	41 Nm	44 Nm	55 Nm
1 1/4"	620/42.2	M12x90	x50	46 Nm	51 Nm	72 Nm
1 1/4"	621/42.2	M14x90	x50	59 Nm	59 Nm	84 Nm
1 1/2"	624/48.3	M16x100	x60	88 Nm	74 Nm	102 Nm
2"	632/60.3	M20x110	x70	114 Nm	112 Nm	160 Nm
2 1/2"	640/73	M24x130	x90	152 Nm	215 Nm	215 Nm
3"	648/88.9	M30x130	x100	282 Nm	311 Nm	409 Nm

DIN 350–400 bar		Bolt DIN 912		Bolt Torque		
Size	Flange Type	Flange to flange	Flange to block	ELZ 8.8-bolts	HDG 8.8-bolts	SS A4-80 -bolts
2"	432/60.3	M16x110	x60	87 Nm	95 Nm	130 Nm
2 1/2"	440/73.0	M20x120	x70	126 Nm	140 Nm	197 Nm
3"	448/88.9	M24x140	x80	259 Nm	287 Nm	362 Nm
4"	456/114.3	M30x160	x100	460 Nm	511 Nm	667 Nm
5"	864/141.3	M24x160	x100	306 Nm	340 Nm	405 Nm
5"	864/139.7	M24x160	x100	306 Nm	340 Nm	405 Nm
6"	880/168.3	M30x220	x130	536 Nm	536 Nm	700 Nm
8"	888/219.1	M30x220	x130	805 Nm	805 Nm	1117 Nm
10"	8160	M36x300	x180	888 Nm	888 Nm	1162 Nm
12"	8192/323.9	M36x320	x180	1163 Nm	1163 Nm	1613 Nm
14"	8224/355.6	M39x360	x220	1135 Nm	1135 Nm	1704 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 SS = Stainless steel

Torque values are with a tolerance of 0...5%.

(Note! The torque values of 340-flanges shall not be exceeded).

Bolt torque values also relevant for other bolt material grades.

Assembly and installation, GS-90° Flare Flange System

The following presents the general principles of the assembly and installation of the GS 90° flare flange system and are thus not to be construed as detailed and complete instruction.

Note! The detailed assembly and installation instructions are available from GS-Hydro upon request.

In the flaring process the end of the tube is clamped into

an in-house developed flaring machine where a conical rotating tool flares the pipe end into a dye. The flange is installed onto the pipe prior to flaring. The assembly is done by placing a flaring cone on both the flared pipe ends with a seal in-between. The flanges are then tightened together to complete the connection.



The pipe is first deburred inside and out.



The flaring cone and dye is cleaned before beginning the flaring.



The flange is placed on the pipe end with chamfer facin outwards.



The pipe end is inserted into the dies with the correct flaring dimensions.



The cone and inside the pipe is lubricated.



The pipe is flared in two stages, first 37° and then 90°.

Assembly and installation, GS-90° Flare Flange System



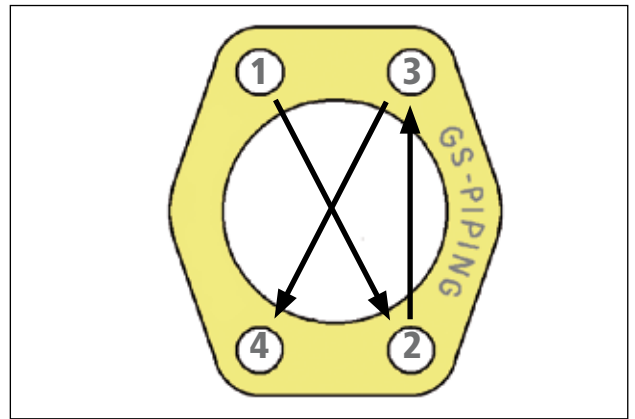
Lubricate bolt threads amply according to illustration. If tightened on bolt, lubricate bolt head compression face. If tightened on nut, lubricate nut on flange side.



The bolts are used to center the seal.



The greased bolts (and nut) are tightened to the given torque to complete the installation.



Tighten bolts in diagonal sequence in small increments to appropriate torque level. See illustrated example.

1. Tightening of the bolts should start immediately after greasing of threads
2. Tighten lightly with a wrench.
3. Tighten crosswise with 30% of the recommended torque.
4. Tighten crosswise with 70% of the recommended torque.
5. Tighten crosswise with 100% of the recommended torque. Repeat this step until all bolts stand still with full torque applied. Minimum 2 full cycles.

Assembly and installation, GS-90° Flare Flange System

Bolt Torques for Gleitmo 805 -grease

Flanges drilled to ISO 6162-1, 16 bar		Bolt DIN 912, 8.8		Bolt torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ-bolts	HDG-bolts
1 1/2"	124N	M12x70	x40	43 Nm	52 Nm
2"	132N	M12x70	x40	43 Nm	52 Nm
2 1/2"	140N	M12x70	x40	44 Nm	54 Nm
3"	148N	M16x80	x50	67 Nm	92 Nm
3 1/2"	156N	M16x90	x50	87 Nm	120 Nm
4"	164N	M16x90	x50	94 Nm	129 Nm
5"	180N	M16x110	x60	118 Nm	161 Nm
6"	196N	M16x110	x60	101 Nm	138 Nm
8"	228N	M20x120	x70	118 Nm	162 Nm

Flanges drilled to EN 1092-1 (DIN 2501), 10–40 bar		Bolt DIN 931, 8.8		Bolt torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ-bolts	HDG-bolts
1 1/4"	GSEN-PN10/40-DN32/38	M16x60	x40	27 Nm	37 Nm
	GSEN-PN10/40-DN32/42.4				
1 1/2"	GSEN-PN10/40-DN40/44.5	M16x60	x40	27 Nm	37 Nm
	GSEN-PN10/40-DN40/48.3				
2"	GSEN-PN10/40-DN50/60.3	M16x60	x40	34 Nm	46 Nm
	GSEN-PN10/40-DN50/57				
2 1/2"	GSEN-PN10/16-DN65/73	M16x70	x45	47 Nm	64 Nm
	GSEN-PN10/16-DN65/76.1				
	GSEN-PN25/40-DN65/73				
	GSEN-PN25/40-DN65/76.1				
3"	GSEN-PN10/16-DN80/88.9	M16x70	x45	30 Nm	42 Nm
	GSEN-PN25/40-DN80/88.9				
4"	GSEN-PN10/16-DN100/108	M16x70	x45	27 Nm	37 Nm
	GSEN-PN10/16-DN100/114.3				
	GSEN-PN25/40-DN100/114.3				
5"	GSEN-PN10/16-DN125/133	M16x70	x45	27 Nm	37 Nm
	GSEN-PN10/16-DN125/139.7				
	GSEN-PN25/40-DN125/139.7				
6"	GSEN-PN10/16-DN150/159	M20x80	x55	64 Nm	67 Nm
	GSEN-PN10/16-DN150/168.3				
	GSEN-PN25/40-DN150/168.3				
8"	GSEN-PN10-DN200/219.1	M20x90	x60	77 Nm	80 Nm
	GSEN-PN16-DN200/219.1				
	GSEN-PN25-DN200/219.1				
10"	GSEN-PN10-DN250/273	M20x90	x60	66 Nm	68 Nm
	GSEN-PN16-DN250/273				
12"	GSEN-PN10-DN300/323.9	M20x100	x60	81 Nm	84 Nm
	GSEN-PN16-DN300/323.9				
14"	GSEN-PN10-DN350/355.6	M20x120	x70	121 Nm	125 Nm
	GSEN-PN16-DN350/355.6				
16"	GSEN-PN10-DN400/406.4	M24x130	x80	124 Nm	118 Nm
	GSEN-PN16-DN400/406.4				
		M27x130	x90	170 Nm	161 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 Torque values are with a tolerance of 0...5% .

Bolt torque values also relevant for other bolt material grades.

Assembly and installation, GS-90° Flare Flange System

Bolt Torques for Molycote G rapide plus -grease

Flanges drilled to ISO 6162-1, 16 bar		Bolt DIN 912, 8.8		Bolt torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ-bolts	HDG-bolts
1 1/2"	124N	M12x70	x40	35 Nm	39 Nm
2"	132N	M12x70	x40	35 Nm	39 Nm
2 1/2"	140N	M12x70	x40	36 Nm	40 Nm
3"	148N	M16x80	x50	59 Nm	62 Nm
3 1/2"	156N	M16x90	x50	77 Nm	80 Nm
4"	164N	M16x90	x50	83 Nm	87 Nm
5"	180N	M16x110	x60	103 Nm	108 Nm
6"	196N	M16x110	x60	89 Nm	93 Nm
8"	228N	M20x120	x70	104 Nm	109 Nm

Flanges drilled to EN 1092-1 (DIN 2501), 10–40 bar		Bolt DIN 931, 8.8		Bolt torque	
Size	Flange Type	Flange to flange	Flange to block	ELZ-bolts	HDG-bolts
1 1/4"	GSEN-PN10/40-DN32/38	M16x60	x40	24 Nm	25 Nm
	GSEN-PN10/40-DN32/42.4				
1 1/2"	GSEN-PN10/40-DN40/44.5	M16x60	x40	24 Nm	25 Nm
	GSEN-PN10/40-DN40/48.3				
2"	GSEN-PN10/40-DN50/60.3	M16x60	x40	29 Nm	31 Nm
	GSEN-PN10/40-DN50/57				
2 1/2"	GSEN-PN10/16-DN65/73	M16x70	x45	41 Nm	43 Nm
	GSEN-PN10/16-DN65/76.1				
	GSEN-PN25/40-DN65/73				
	GSEN-PN25/40-DN65/76.1				
3"	GSEN-PN10/16-DN80/88.9	M16x70	x45	27 Nm	28 Nm
	GSEN-PN25/40-DN80/88.9				
4"	GSEN-PN10/16-DN100/108	M16x70	x45	24 Nm	25 Nm
	GSEN-PN10/16-DN100/114.3				
	GSEN-PN25/40-DN100/114.3				
5"	GSEN-PN10/16-DN125/133	M16x70	x45	24 Nm	25 Nm
	GSEN-PN10/16-DN125/139.7				
	GSEN-PN25/40-DN125/139.7				
6"	GSEN-PN10/16-DN150/159	M20x80	x55	56 Nm	57 Nm
	GSEN-PN10/16-DN150/168.3				
	GSEN-PN25/40-DN150/168.3				
8"	GSEN-PN10-DN200/219.1	M20x90	x60	67 Nm	69 Nm
	GSEN-PN16-DN200/219.1				
	GSEN-PN25-DN200/219.1				
10"	GSEN-PN10-DN250/273	M20x90	x60	57 Nm	59 Nm
	GSEN-PN16-DN250/273				
	GSEN-PN25-DN250/273				
12"	GSEN-PN10-DN300/323.9	M20x100	x60	71 Nm	72 Nm
	GSEN-PN16-DN300/323.9				
14"	GSEN-PN10-DN350/355.6	M20x120	x70	88 Nm	108 Nm
	GSEN-PN16-DN350/355.6				
16"	GSEN-PN10-DN400/406.4	M24x130	x80	104 Nm	106 Nm
	GSEN-PN16-DN400/406.4				
		M27x130	x90	142 Nm	145 Nm

ELZ = Zinc electroplated coating
 HDG = Hot dip galvanised coating
 Torque values are with a tolerance of 0...5%.

Bolt torque values also relevant for other bolt material grades.

Recommended Connection Technology

50 bar – Section Table – Carbon Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
4X1ST37.4NBK	1	0.05	DIN 2353 / End forming		
6X1ST37.4NBK	6	0.07			
8X1ST37.4NBK	5	0.17			
10X1ST37.4NBK	9	0.22			
12X1.5ST37.4NBK	11	0.39			
15X1.5ST37.4NBK	20	0.50			
16X1.5ST37.4NBK	24	0.54			
18X1.5ST37.4NBK	32	0.61			
20X2ST37.4NBK	36	0.89			
22X1.5ST37.4NBK	51	0.76			
25X2ST37.4NBK	62	1.13	37° Flare flange	1/2"	308F
28X2ST37.4NBK	81	1.28	37° Flare flange	3/4"	312F
30X3ST37.4NBK	81	2.00	37° Flare flange	3/4"	312F
35X2ST37.4NBK	136	1.63	37° Flare flange	1"	316F
38X3ST37.4NBK	145	2.59	37° Flare flange	1"	316F
42X3ST37.4NBK	183	2.89	37° Flare flange	1 1/4"	320F
50X3ST37.4NBK	274	3.48	37° Flare flange	1 1/2"	124F
60X3ST37.4NBK	412	4.22	37° Flare flange	2"	132F
73X3ST37.4NBK	635	5.18	37° Flare flange	2 1/2"	140F
90X3.5ST37.4NBK	973	7.47	37° Flare flange	3"	148F
100X4ST37.4NBK	1197	9.47	37° Flare flange	3 1/2"	156F
115X4ST37.4NBK	1618	11.0	37° Flare flange	4"	164F
140X4.5ST37.4NBK	2425	15.0	37° Flare flange	5"	180F
165X5ST37.4NBK	3395	18.7	37° Flare flange	6"	196F
220X6ST37.4NBK	6113	31.9	37° Flare flange	8"	228F
273X6ST37.4NBK**	9630	39.4	37° Flare flange	10"	260F

50 bar – Section Table — Stainless Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1AISI316L	2	0.07	DIN 2353 / End forming		
8X1AISI316L	5	0.17			
10X1AISI316L	9	0.22			
12X1.5AISI316L	11	0.39			
15X1.5AISI316L	20	0.50			
16X2AISI316L	20	0.69			
18X2AISI316L	28	0.79			
20X2AISI316L	36	0.89			
22X2AISI316L	46	0.99			
25X2.5AISI316L	57	1.39			
28X2AISI316L	81	1.28	37° Flare flange	1/2"	308F
30X3AISI316L	81	2.00	37° Flare flange	3/4"	312F
30X3AISI316L	81	2.00	37° Flare flange	3/4"	312F
35X2.5AISI316L	127	2.00	37° Flare flange	1"	316F
38X3AISI316L	145	2.59	37° Flare flange	1"	316F
42X3AISI316L	183	2.89	37° Flare flange	1 1/4"	320F
50X3AISI316L	274	3.48	37° Flare flange	1 1/2"	124F
60X3AISI316L	412	4.22	37° Flare flange	2"	132F

* = $v = 3 \text{ m/s}$

** = Maximum working pressure 49 bar.

Working pressure based on bended pipe including manufacturing and corrosion tolerance (DNV).

Recommended Connection Technology

210 bar – Section Table – Carbon Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1.5T37.4NBK	4	0.07	DIN 2353 / End forming		
8X1.5T37.4NBK	6	0.24			
10X1.5T37.4NBK	12	0.31			
12X1.5T52.4NBK	24	0.27			
16X2.5T52.4NBK	34	0.69			
20X2.5T52.4NBK	60	0.89			
25X2.5T52.4NBK	94	1.39			
30X3.5T52.4NBK	136	2.00	37° Flare flange	3/4"	312F
38X4.5T52.4NBK	212	3.35	37° Flare flange	1"	316F
42X4.5T52.4NBK	272	3.75	37° Flare flange	1 1/4"	320F
50X5.5T52.4NBK	377	5.55	37° Flare flange	1 1/2"	324F
60X5.5T52.4NBK	589	6.18	37° Flare flange	2"	332F
73X5.5T52.4NBK	935	8.38	37° Flare flange	2 1/2"	340F
90X9.5T52.4NBK	1222	18.0	37° Flare flange	3"	348F
115X15.5T52.4NBK	1702	37.0	Retain ring flange	4"	456
130X15.5T52.4NBK	2356	42.5	Retain ring flange	4 1/2"	860
150X15.5T52.4NBK	3393	49.9	Retain ring flange	5"	864
190X20.5T52.4NBK	5301	83.8	Retain ring flange	6"	880
250X25.5T52.4NBK	9425	138.7	Retain ring flange	10"	896
273X25.40P355	11633	155.1	Retain ring flange	10"	8160/273
323.9X33.32P355	15594	238.8	Retain ring flange	12"	8224/323.9
355.6X35.71P355	19028	281.7	Retain ring flange	14"	8224/355.6

210 bar – Section Table — Stainless Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1AISI316L	4	0.07	DIN 2353 / End forming		
8X1AISI316L	8	0.17			
10X1AISI316L	15	0.22			
12X1AISI316L	24	0.27			
16X2AISI316L	34	0.69			
18X1.5AISI316L	53	0.61			
20X2AISI316L	60	0.89			
22X2AISI316L	76	0.99			
25X2.5AISI316L	94	1.39	37° Flare flange	1/2"	308F
30X3AISI316L	136	2.00	37° Flare flange	3/4"	312F
38X4AISI316L	212	3.38	37° Flare flange	1"	316F
42X4AISI316L	272	3.75	37° Flare flange	1 1/4"	320F
50X5AISI316L	377	5.55	37° Flare flange	1 1/2"	324F
60X5AISI316L	589	6.78	37° Flare flange	2"	332F
80X10AISI316L	848	17.5	Retain ring flange	2 1/2"	340
97X12AISI316L	1256	25.5	Retain ring flange	3"	348
114.3X13.49TP316L	1797	37.5	Retain ring flange	4"	456/114.3
141.3X15.88TP316L	2827	49.1	Retain ring flange	5"	864/141.3
168.3X18.26TP316L	4092	67.6	Retain ring flange	6"	880/168.3
219.1X23.01TP316L	7058	107.1	Retain ring flange	8"	888/219.1
273X25.40TP316L	11633	155.1	Retain ring flange	10"	8160/273
323.9X33.32TP316L	15594	238.8	Retain ring flange	12"	8224/323.9
355.6X35.71TP316L	19028	281.7	Retain ring flange	14"	8224/355.6

* = $v = 5 \text{ m/s}$

Working pressure based on bended pipe including manufacturing and corrosion tolerance (DNV).

Recommended Connection Technology

280 bar – Section Table – Carbon Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1.5ST37.4NBK	2	0.17	DIN 2353 / End forming		
8X1.5ST37.4NBK	6	0.24			
10X2ST37.4NBK	8	0.40			
12X1.5ST52.4NBK	19	0.39			
16X2ST52.4NBK	34	0.69			
20X2.5ST52.4NBK	53	1.08			
25X2.5ST52.4NBK	94	1.39	37° Flare flange	1/2"	608F
30X3ST52.4NBK	136	2.00	37° Flare flange	3/4"	612F
38X4ST52.4NBK	212	3.35	37° Flare flange	1"	616F
42X4ST52.4NBK	272	3.75	37° Flare flange	1 1/4"	620F
50X5ST52.4NBK	377	5.55	37° Flare flange	1 1/2"	624F
60X6ST52.4NBK	543	8.04	37° Flare flange	2"	632F
73X7ST52.4NBK	820	11.39	37° Flare flange	2 1/2"	440F
90X9ST52.4NBK	1222	18.0	37° Flare flange	3"	448F
115X15ST52.4NBK	1702	37.0	Retain ring flange	4"	456
130X15ST52.4NBK	2356	42.5	Retain ring flange	4 1/2"	860
150X15ST52.4NBK	3393	49.9	Retain ring flange	5"	864
190X20ST52.4NBK	5301	83.8	Retain ring flange	6"	880
250X25ST52.4NBK	9425	138.7	Retain ring flange	10"	896

280 bar – Section Table — Stainless Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1AISI316L	4	0.07	DIN 2353 / End forming		
8X1.5AISI316L	6	0.24			
10X1.5AISI316L	12	0.31			
12X1.5AISI316L	19	0.39			
16X2AISI316L	34	0.69			
20X2.5AISI316L	53	1.08			
25X3AISI316L	85	1.63	37° Flare flange	1/2"	608F
30X4AISI316L	114	3.35	37° Flare flange	3/4"	612F
38X4AISI316L	212	3.38	37° Flare flange	1"	616F
50X6AISI316L	340	6.51	37° Flare flange	1 1/2"	624F
60X6AISI316L	543	7.99	37° Flare flange	2"	632F
80X10AISI316L	848	17.5	Retain ring flange	2 1/2"	440
97X12AISI316L	1256	25.5	Retain ring flange	3"	448
114.3X13.49TP316L	1797	37.5	Retain ring flange	4"	456/114.3
141.3X19.05TP316L	2509	57.4	Retain ring flange	5"	864/141.3
168.3X21.95TP316L	3649	79.2	Retain ring flange	6"	880/168.3

* = $v = 5 \text{ m/s}$

Working pressure based on bended pipe including manufacturing and corrosion tolerance (DNV).

NOTE! From 97 and up to 12" use ASTM A312 pipe.

Recommended Connection Technology

350 bar – Section Table – Carbon Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1.5ST37.4NBK	2	0.17	DIN 2353 / End forming		
8X2ST37.4NBK	4	0.30			
10X2ST37.4NBK	8	0.40			
12X2.5ST52.4NBK	12	0.59			
16X2.5ST52.4NBK	29	0.83			
20X3ST52.4NBK	46	1.25			
25X3ST52.4NBK	85	1.63			
30X4ST52.4NBK	114	2.51	37° Flare flange	3/4"	612F
39X7.5ST52.4NBK	136	5.86	Retain ring flange	1"	616
46X8ST52.4NBK	212	7.84	Retain ring flange	1 1/4"	620
56X8.5ST52.4NBK	358	9.96	37° Flare flange	1 1/2"	624F/56
66X8.5ST52.4NBK	566	12.1	37° Flare flange	2"	632F/66
80X10ST52.4NBK	848	17.2	Retain ring flange	2 1/2"	440
97X12ST52.4NBK	1256	25.2	Retain ring flange	3"	448
115X15ST52.4NBK	1702	37.0	Retain ring flange	4"	456
130X15ST52.4NBK	2356	42.5	Retain ring flange	4 1/2"	860
150X15ST52.4NBK**	3393	49.9	Retain ring flange	5"	864
190X20ST52.4NBK	5301	83.8	Retain ring flange	6"	880
250X25ST52.4NBK***	9425	138.7	Retain ring flange	10"	896

350 bar – Section Table — Stainless Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1AISI316L	4	0.07	DIN 2353 / End forming		
8X1.5AISI316L	6	0.24			
10X1.5AISI316L	12	0.31			
12X2AISI316L	15	0.49			
16X2.5AISI316L	29	0.83			
20X3AISI316L	46	1.21	37° Flare flange	1/2"	608F
25X4AISI316L	68	2.07	37° Flare flange	1/2"	608F
30X4AISI316L	114	3.35	37° Flare flange	3/4"	612F
38X5AISI316L	185	4.07	37° Flare flange	1"	616F
56X8.5AISI316L	358	9.96	37° Flare flange	1 1/2"	624F/56
66X8.5AISI316L	566	12.2	37° Flare flange	2"	632F/66
80X10AISI316L	848	17.5	Retain ring flange	2 1/2"	440
97X12AISI316L	1256	25.5	Retain ring flange	3"	448
114.3X17.12TP316L	1510	41.0	Retain ring flange	4"	456/114.3

* = $v = 5 \text{ m/s}$

** = Maximum working pressure 332 bar.

*** = Maximum working pressure 335 bar.

Working pressure based on bended pipe including manufacturing and corrosion tolerance (DNV).

NOTE! From 97 and up to 12" use ASTM A312 pipe.

Recommended Connection Technology

420 bar – Section Table – Carbon Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
6X1.5ST37.4NBK	2	0.17	DIN 2353 / End forming		
8X2ST37.4NBK	4	0.30			
10X2ST37.4NBK	8	0.40			
12X2.5ST52.4NBK	12	0.59			
16X2.5ST52.4NBK	29	0.83			
20X3ST52.4NBK	46	1.25			
30X4ST52.4NBK	114	2.51	37° Flare flange	3/4"	612F
39X7.5ST52.4NBK	136	5.86	Retain ring flange	1"	616
46X8ST52.4NBK	212	7.84	Retain ring flange	1 1/4"	620
56X8.5ST52.4NBK	358	9.96	37° Flare flange	1 1/2"	624F/56
66X8.5ST52.4NBK	566	12.1	37° Flare flange	2"	632F/66
80X10ST52.4NBK**	848	17.2	Retain ring flange	2 1/2"	640
97X12ST52.4NBK***	1256	25.2	Retain ring flange	3"	648

420 bar – Section Table — Stainless Steel Pipes

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
8X1.5AISI316L	6	0.24	DIN 2353 / End forming		
10X2AISI316L	8	0.40			
12X2AISI316L	15	0.49			
16X2.5AISI316L	29	0.83			
20X3AISI316L	46	1.21			
25X4AISI316L	68	2.07	37° Flare flange	1/2"	608F
38X5AISI316L	185	4.07	37° Flare flange	1"	616F
56X8.5AISI316L	358	9.96	37° Flare flange	1 1/2"	624F/56

690 bar – Section Table - Duplex Steel Pipes SAF2205 UNS S31803

Pipe	Volume Flow* [l/min]	Weight [kg/m]	Connection Type	Flange Size	Flange Type
21.3X7.47SAF2205	10	2.55	Retain ring flange	1/2"	908/21.3
26.7X7.82SAF2205	29	3.64	Retain ring flange	3/4"	912/26.7
33.4X9.09SAF2205	55	5.45	Retain ring flange	1"	916/33.4
42.2X9.77SAF2205	122	7.76	Retain ring flange	1 1/4"	920/42.2
48.3X10.15SAF2205	185	9.55	Retain ring flange	1 1/2"	924/48.3
60.3X11.07SAF2205	343	13.44	Retain ring flange	2"	932/60.3
73X14.02SAF2205	476	20.50	Retain ring flange	2 1/2"	940/73
88.9X15.24SAF2205	804	27.68	Retain ring flange	3"	948/88.9

* = $v = 5 \text{ m/s}$

** = Maximum working pressure 418 bar.

*** = Maximum working pressure 416 bar.

Working pressure based on bended pipe including manufacturing and corrosion tolerance (DNV).

NOTE! From 97 and up to 12" use ASTM A312 pipe.