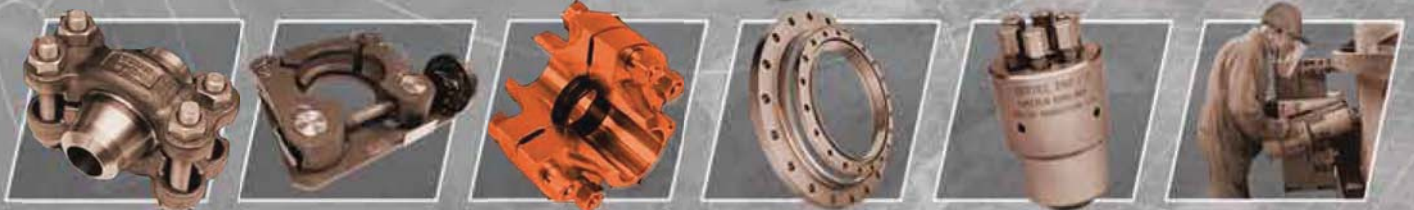
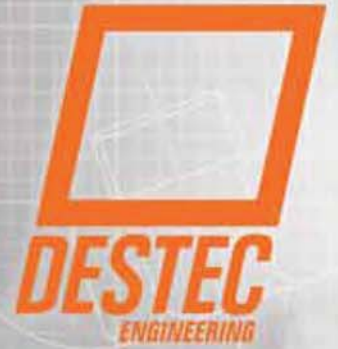


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DESFLEX
COMPACT FLANGES



DESFLEX COMPACT FLANGES

The first original Compact Flange designed in full accordance with ASME ANSI PD 5500, Type Approved & Fire Tested.

Offering weight savings of up to 88% when compared to the equivalent ANSI Flange. Quick and easy make-up with superior mechanical strength and fatigue performance.

The Desflex Compact Flange is ideal for both topsides and sub-sea applications where minimum weight is essential and reduced maintenance.

Both standard and swivel type weld neck flanges are available in Carbon, Stainless, Alloy and Duplex steels.

Desflex Flanges are Type Approved and have successfully passed API Fire tests.

Available to meet NORSOK standards.

The patented design includes several unique features including spherical nuts on the bolting to reduce bolt stresses and a toe at the outside diameter to limit Flange rotation and to prevent overstressing of the flange.

Reusable metal-to-metal Seal.

The Destec D and RD range of all metal Seal Rings are used.



Quality Assured.

Destec Engineering operate a Quality System approved by Lloyds Register of Quality Assurance to BS EN ISO 9001: 2000.

Full traceability of all materials and conformance with exacting standards is ensured by a system operated by dedicated personnel backed up with the latest high technology equipment.



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After Sales Service

Destec Engineering Ltd. have a team of technicians available to assist clients with site supervision or assembly and repair of G-Range connections and Desflex Compact Flanges.

By using our extensive range of portable machines we are able to re-cut any joint face on site and, if required, stainless steel weld overlay joint faces and re-machine.



DESFLEX COMPACT FLANGES



An economical design with considerable weight saving compared with standard ANSI flanges and at the same time maintaining a high integrity joint.

Desflex flanges meet these criteria by using the latest technology and Destec's full experience. Destec 'D' type seals ensure a minimum fluid seal diameter and a smooth bore through the flange.

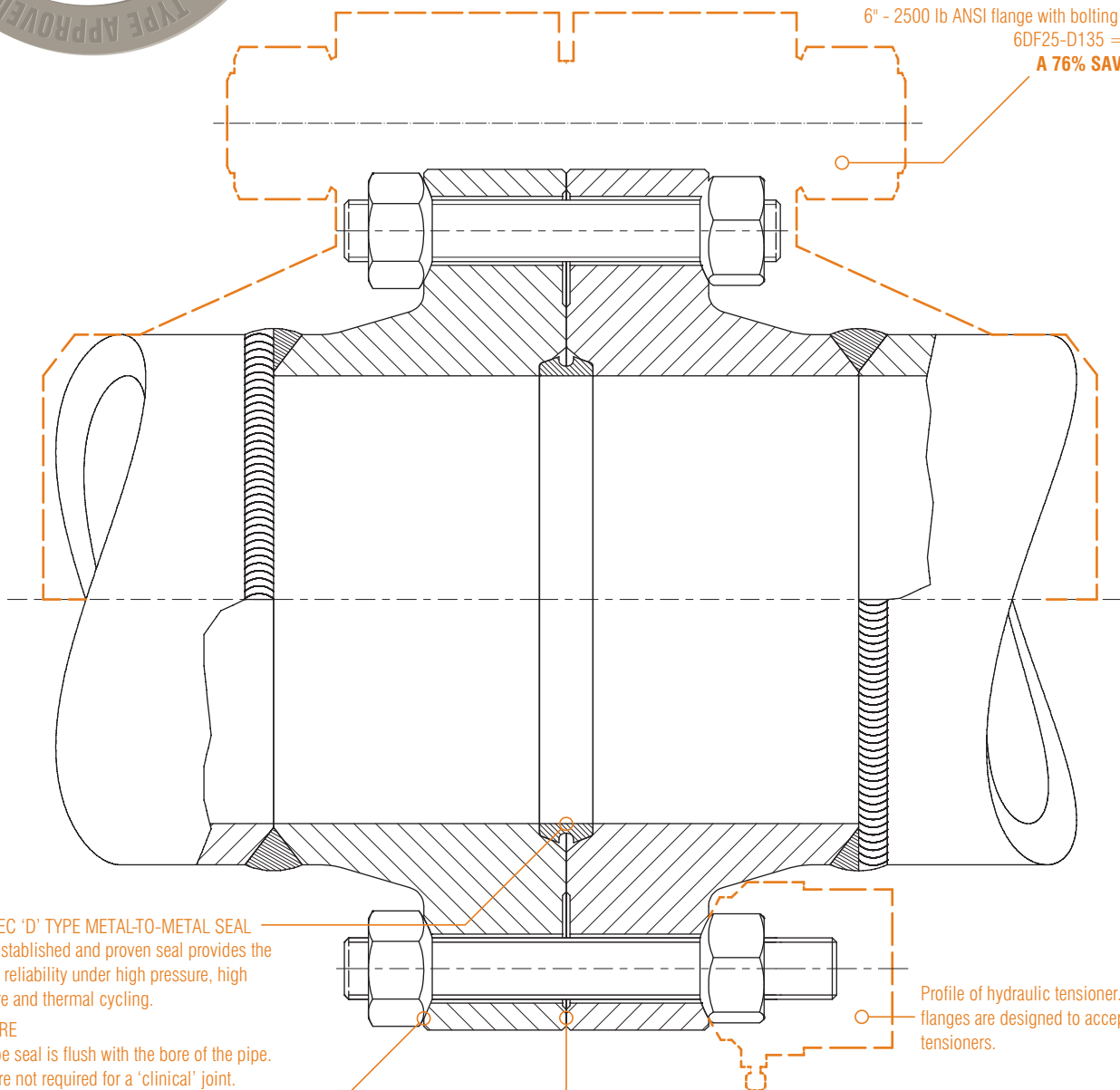
Unique design incorporates all the advantages of standard flanges that have joints within the bolt circle and full face flanges for limiting flange rotation. This ensures that the flanges are more resistant to external bending and cannot be overstressed by excessive tightening of bolts. There are no mismatch problems typical with spigoted flanged joints.

Substantial size and weight saving when compared with standard API and ANSI flanges using compressible and/or ring type joints of the same rating.

JUST COMPARE:

6" - 2500 lb ANSI flange with bolting - 783 lb (355 kg)
6DF25-D135 = 188 lb (85.2 kg)

A 76% SAVING IN WEIGHT.



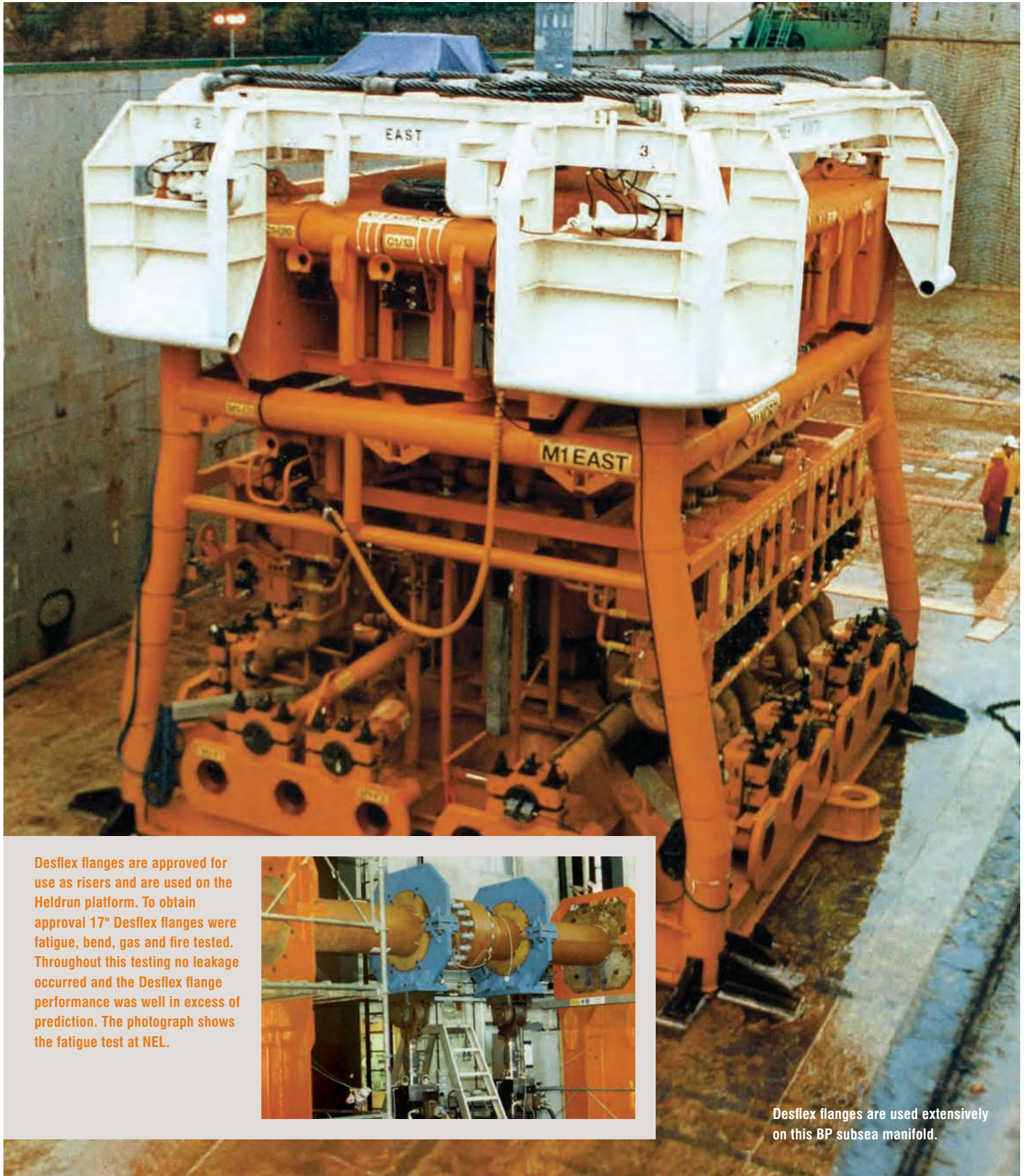
THE DESTEC 'D' TYPE METAL-TO-METAL SEAL
This well established and proven seal provides the ultimate in reliability under high pressure, high temperature and thermal cycling.

FLUSH BORE
The 'D' type seal is flush with the bore of the pipe. Specials are not required for a 'clinical' joint.

Spherically seated nuts minimise overstressing of the bolts due to bending. On standard flanges flange rotation can cause the bolting faces to be 2° out of parallel.

Flanges stress during assembly is controlled by limiting flange rotation via a small gap at the toe of the flange. Excessive bolt tightening cannot overstress the flanges.

Profile of hydraulic tensiometer. Standard Desflex flanges are designed to accept hydraulic bolt tensioners.



Desflex flanges are approved for use as risers and are used on the Heldrun platform. To obtain approval 17" Desflex flanges were fatigue, bend, gas and fire tested. Throughout this testing no leakage occurred and the Desflex flange performance was well in excess of prediction. The photograph shows the fatigue test at NEL.

Desflex flanges are used extensively on this BP subsea manifold.

Standard Design

Desflex flanges are designed in accordance with international piping and pressure vessel Standards.

A full range of Desflex flanges – equivalent to or with a higher rating than ANSI flanges are readily available. Sizes and rating are given on pages 8 to 16.

Type Approval

Lloyds type approval has been given to the Desflex flanges after a series of successful pressure and bending test carried out on 1500lb and 2500lb rated flanges.

Ideal for Sub-Sea Operations

Desflex flanges are in service on sub-sea pipelines. The lightweight, reduced bolting ensuring ease of assembly in a hostile environment. Flanges can be supplied in a range of materials with coatings and weld overlays to meet client's specifications. The Destec 'D' Ring Seals are retained in one flange for these type applications.

Weld Overlaid Flanges

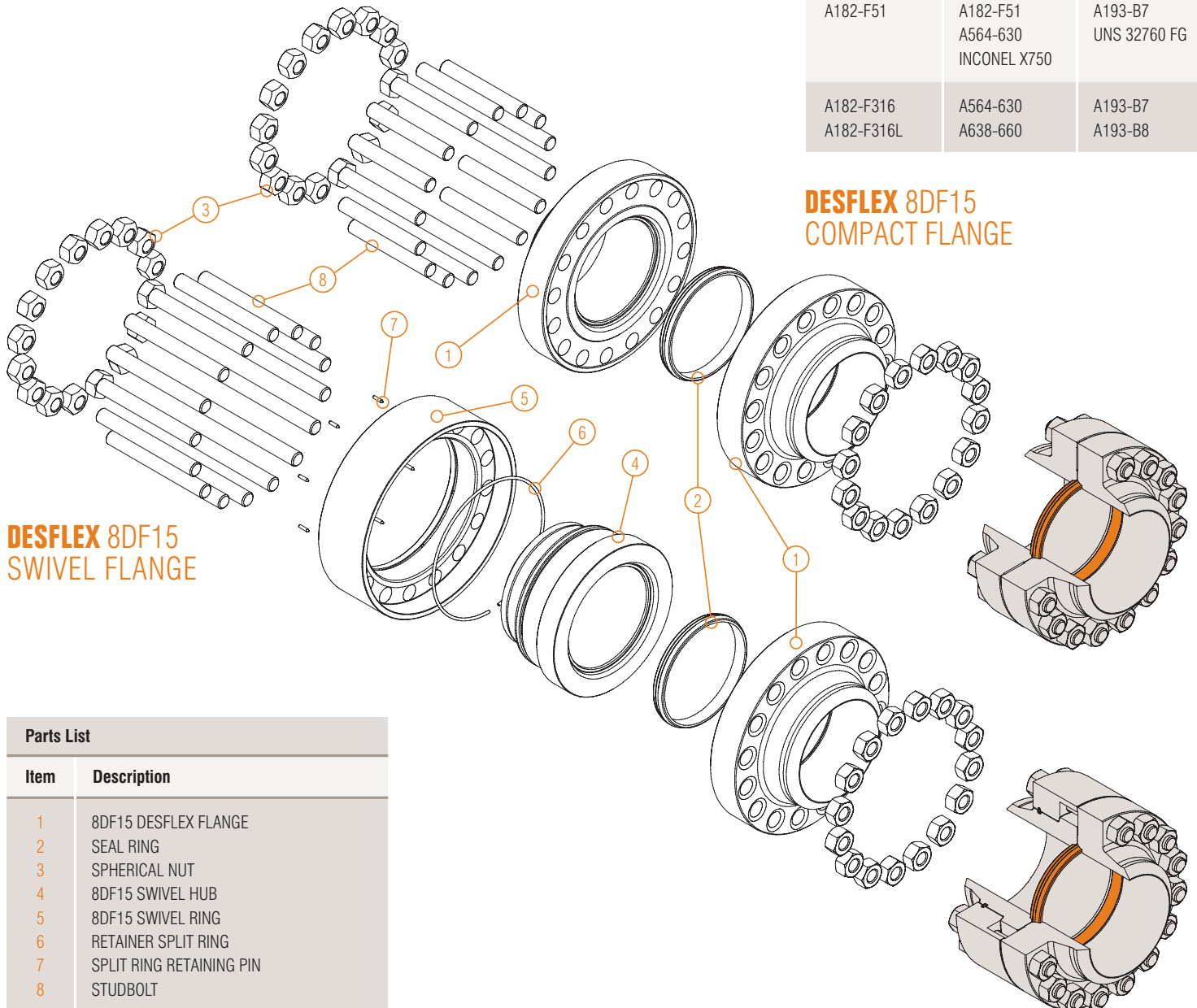
Destec recommend stainless steel or nickel based alloy overlay of joint faces for combating severe erosion or corrosion, and can supply through lined Desflex flanges and nozzles for attachment to clad pipe, vessels or valves.

Materials

Destec flanges are available in all types of steels, nickel based alloys and high strength materials, with compatible materials for the D-Range seal rings. Seal rings are coated with a high pressure lubricant PTFE, MoS₂, or similar.

The table below lists the more common material combinations:

Desflex Flange	D-Range Seals	Bolting
A105 A350-LF2 A694-F65 AISI 4130	AISI 4140 A564-630	A193-B7
A182-F51	A182-F51 A564-630 INCONEL X750	A193-B7 UNS 32760 FG
A182-F316 A182-F316L	A564-630 A638-660	A193-B7 A193-B8



DESFLEX 8DF15 SWIVEL FLANGE

DESFLEX 8DF15 COMPACT FLANGE

Parts List

Item	Description
1	8DF15 DESFLEX FLANGE
2	SEAL RING
3	SPHERICAL NUT
4	8DF15 SWIVEL HUB
5	8DF15 SWIVEL RING
6	RETAINER SPLIT RING
7	SPLIT RING RETAINING PIN
8	STUDBOLT

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⊗ INSTALLATION & ASSEMBLY

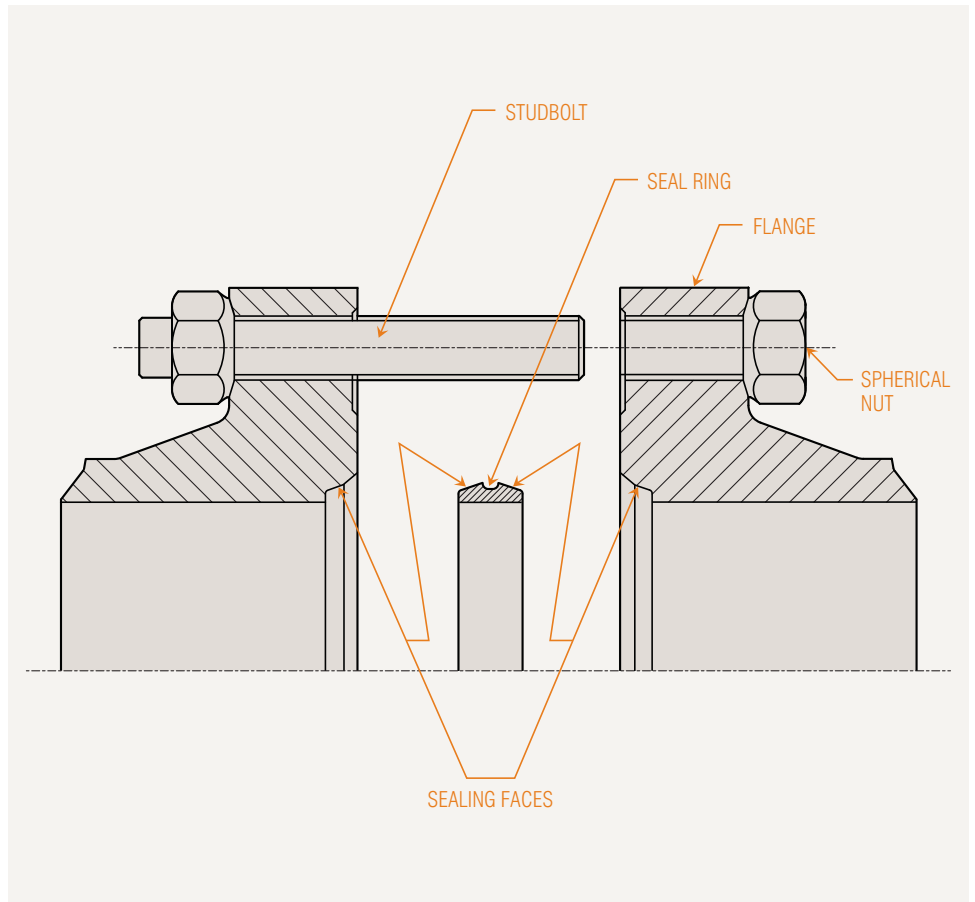
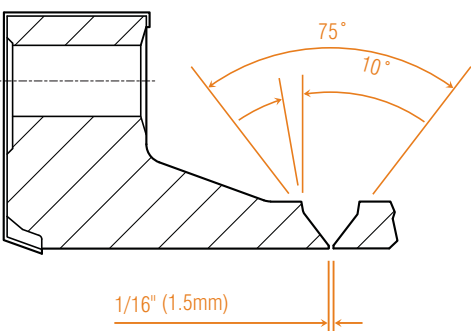
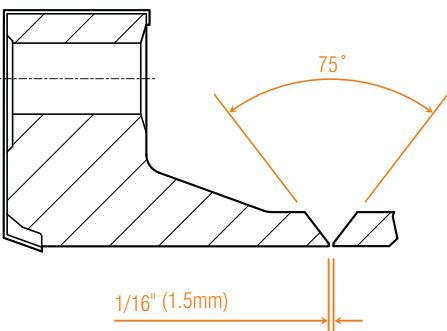


1.

Welding of Flanges to Pipe Ends

The standard flange is provided with a weld preparation for welding from the outside only. Protect the flange seat with the metal guards provided, and against oxidation, by using Berkatect No. 12 or equivalent.

If flanges welded to pipe lengths are not to be assembled immediately, remove metal guards and coat flanges with grease or lanolin preservative. Replace metal guards for storage.



2.

Clean

Remove grease and preservative from flange seat faces.

3.

Inspect

Check all sealing surfaces for mechanical damage and rust. Small scratches should be removed by polishing, more serious defects may mean re-machining of the component or component replacement. Destec should be contacted for advice and information.

4.

Lubricate

The seal ring and flange sealing faces must be lubricated before assembly. Seal rings are supplied coated with lubricant either PTFE or Molybdenum Disulphide. If the seal rings are PTFE coated the flange seat must be clean and uncoated. If the seal rings are MoS₂ coated the flange seat should be sprayed with a thin coat of Molybdenum Disulphide.



The bolting, if supplied without PTFE coating, should be lubricated with clean light oil, grease or proprietary anti-scuffing agent.

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5.

Fitting

Fit the flanges together with the spherical faces of the nuts located in the special seating. Tighten the bolting evenly to the torques recommended, ensuring that the gap between the flanges remains reasonably constant during the tightening sequence.

Lubricant	Recommended Bolting Torques			
	A193-B7 A320-L7		A193-B7M A320-L7M	
	Oil	PTFE	Oil	PTFE
Bolt Size	Nm (lb. ft.)	Nm (lb. ft.)	Nm (lb. ft.)	Nm (lb. ft.)
½" -13 UNC	74 (55)	53 (39)	57 (42)	40 (30)
5/8" -11 UNC	145 (107)	103 (76)	110 (81)	78 (58)
¾" -10 UNC	252 (186)	178 (132)	192 (142)	136 (100)
7/8" -9 UNC	401 (296)	283 (209)	305 (225)	216 (159)
1" UNC	596 (440)	421 (311)	454 (335)	321 (237)
1 1/8" UN	862 (636)	606 (447)	657 (485)	462 (341)
1 1/4" UN	1198 (883)	837 (618)	912 (673)	638 (471)
1 3/8" UN	1609 (1187)	1121 (827)	1226 (905)	854 (630)
1 1/2" UN	2106 (1554)	1462 (1079)	1605 (1184)	1114 (822)
1 5/8" UN	2695 (1988)	1866 (1377)	2054 (1515)	1422 (1049)
1 3/4" UN	3385 (2497)	2338 (1725)	2579 (1902)	1781 (1314)
1 7/8" UN	4183 (3085)	2883 (2126)	3187 (2351)	2196 (1620)
2" UN	5096 (3760)	3506 (2586)	3883 (2864)	2671 (1970)
2 1/8" UN	6134 (4525)	4213 (3108)	4674 (3448)	3210 (2368)
2 1/4" UN	7304 (5388)	5008 (3695)	5565 (4105)	3816 (2815)
2 3/8" UN	8614 (6354)	5898 (4351)	6563 (4841)	4494 (3315)
2 1/2" UN	10071 (7429)	6888 (5081)	7673 (5660)	5248 (3871)
2 5/8" UN	10571 (7798)	7221 (5327)	8902 (6567)	6081 (4486)
2 3/4" UN	12178 (8984)	8311 (6131)	10250 (7565)	6998 (5163)
2 7/8" UN	13940 (10283)	9504 (7011)	11739 (8660)	8003 (5904)
3" UN	15864 (11703)	10806 (7971)	13359 (9855)	9100 (6713)
3 1/4" UN	20227 (14921)	13757 (10148)	17033 (12565)	11584 (8546)
3 1/2" UN	25324 (18681)	17200 (12688)	21326 (15731)	14484 (10684)
3 3/4" UN	31211 (23024)	21173 (15619)	26283 (19389)	17830 (13153)
4" UN	37947 (27993)	25716 (18970)	31956 (23573)	21655 (15975)



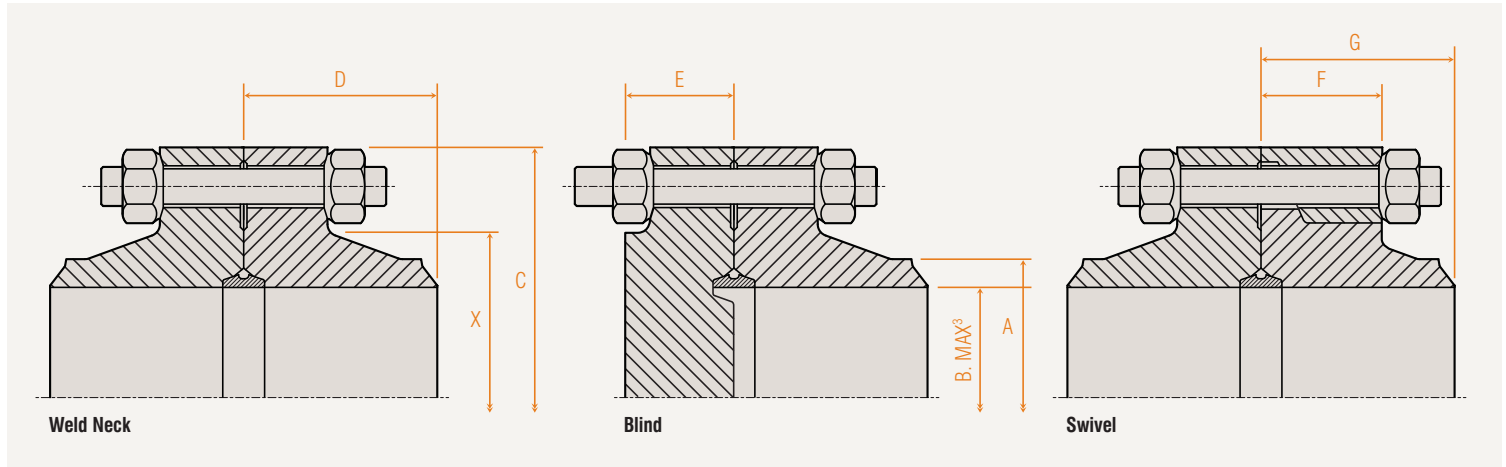
Note:

Torque figures have been calculated using formula in API 6A 17th Edition Appendix D with co-efficients of friction of 0.08 for PTFE coated bolts and 0.12 for oil or grease lubricated bolts.



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DES FLEX FLANGE SIZES & WEIGHTS



300 ANSI														
Rating	Dimensions (mm)										Bolting ⁴			
NOM. SIZE	Flange Size	Weight (kg) ²	Blind Weight (kg) ²	A	C	D	E	F	G	X	No.	Size	Length	P.C.D.
1"	1DF15	2.5	2.5	33.4	98.4	54	19.1	34.9	57.2	41.3	4	½"	80	73
1½"	1½DF15	3.9	4	48.3	120.7	60.3	20.6	38.1	76.2	63.5	6	½"	80	95.3
2"	2DF15	4.9	5.1	60.3	133.4	60.3	22.2	38.1	76.2	76.2	6	½"	80	108
2½"	2½DF15	7.7	8.1	73	158.8	69.9	25.4	54	88.9	88.9	6	⅝"	100	127
3"	3DF15	9.8	10.7	88.9	174.6	73	28.6	50.8	92.1	104.8	8	⅝"	100	142.9
4"	4DF15	18.3	20.2	114.3	219.1	88.9	34.9	60.3	111.1	133.4	8	¾"	120	181
5"	5DF15	26.4	29.9	141.3	247.7	95.3	41.3	69.9	114.3	161.9	12	¾"	140	209.6
6"	6DF9	28.4	33	168.3	274.7	88.9	38.1	69.9	111.1	187.3	12	¾"	130	236.6
8"	8DF9	43.5	53.2	219.1	330.2	101.6	44.5	85.7	127	241.3	20	¾"	140	292.1
10"	10DF6	50.7	64.4	273.1	381	98.4	41.3	82.6	127	292.1	24	¾"	140	342.9
12"	12DF3	61.6	84.3	323.9	435	95.3	44.5	76.2	117.5	339.7	20	¾"	140	393.7
14"	14DF3	75.9	105	355.6	469.9	104.8	47.6	82.6	127	374.7	24	¾"	150	431.8
16"	16DF3	94.9	136	406.4	523.9	114.3	50.8	88.9	138.1	425.5	32	¾"	150	482.6
18"	18DF3	132	190	457.2	584.2	130.2	57.2	104.8	161.9	482.6	32	⅞"	170	539.8
20"	20DF3	185	262	508	660.4	139.7	60.3	114.3	177.8	533.4	24	1½"	190	603.3
24"	24DF3	268	416	609.6	762	155.6	76.2	123.8	187.3	635	36	1½"	220	704.8
30"	30DF3	321	581	762	908.1	165.1	85.7	-	-	787.4	44	1"	180	857.3
36"	36DF3	467	918	914.4	1073.2	187.3	101.6	-	-	946.2	48	1½"	210	1016
40"	40DF3	579	1156	1016	1174.8	238.1	108	-	-	1060.5	56	1½"	210	1117.6

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600 ANSI														
Rating	600 ANSI										Bolting ⁴			
NOM. SIZE	Flange Size	Weight (kg) ²	Blind Weight (kg) ²	Dimensions (mm)						Bolting ⁴				
				A	C	D	E	F	G	X	No.	Size	Length	P.C.D.
1"	1DF15	2.5	2.5	33.4	98.4	54	19	34.9	57.2	41.3	4	½"	80	73
1½"	1½DF15	3.9	4	48.3	120.7	60.3	20.6	38.1	76.2	63.5	6	½"	80	95.3
2"	2DF15	4.9	5.1	60.3	133.4	60.3	22.2	38.1	76.2	76.2	6	½"	80	108
2½"	2½DF15	8.2	8.4	73	158.8	69.9	25.4	54	88.9	88.9	6	⅝"	100	127
3"	3DF15	10.6	11.1	88.9	174.6	73	28.6	50.8	92.1	104.8	8	⅝"	100	142.9
4"	4DF15	19.5	20.8	114.3	219.1	88.9	34.9	60.3	111.1	133.4	8	¾"	120	181
5"	5DF15	27.9	30.6	141.3	247.7	95.3	41.3	69.9	114.3	161.9	12	¾"	140	209.6
6"	6DF9	30.1	33.9	168.3	274.7	88.9	38.1	69.9	111.1	187.3	12	¾"	130	236.6
8"	8DF9	46.1	54.5	219.1	330.2	101.6	44.5	85.7	127	241.3	20	¾"	140	292.1
10"	10DF6	53.8	66	273.1	381	98.4	41.3	82.6	127	292.1	24	¾"	140	342.9
12"	12DF6	107	136	323.9	450.9	120.7	63.5	130.2	174.6	342.9	24	⅞"	190	406.4
14"	14DF6	142	181	355.6	495.3	127	69.9	108	142.9	377.8	24	1"	210	444.5
16"	16DF6	186	240	406.4	558.8	139.7	73	123.8	158.8	431.8	24	1⅛"	220	501.7
18"	18DF6	280	354	457.2	635	158.8	82.6	136.5	174.6	489	24	1¼"	240	571.5
20"	20DF6	367	473	508	698.5	177.8	92.1	161.9	203.2	539.8	24	1⅜"	270	628.7
24"	24DF6	555	714	609.6	819.2	215.9	101.6	168.3	206.4	649	24	1½"	290	743
30"	30DF6	803	1154	762	984.2	222.3	127	-	-	806.5	30	1⅝"	320	901.7
36"	36DF6	1304	1904	914.4	1168.4	254	149.2	-	-	965.2	36	1¾"	370	1079.5
40"	40DF6	1658	2395	1016	1289.1	266.7	152.4	-	-	1073.2	32	2"	390	1187.5

900 ANSI														
Rating	900 ANSI										Bolting ⁴			
NOM. SIZE	Flange Size	Weight (kg) ²	Blind Weight (kg) ²	Dimensions (mm)						Bolting ⁴				
				A	C	D	E	F	G	X	No.	Size	Length	P.C.D.
1"	1DF15	2.5	2.5	33.4	98.4	54	19	34.9	57.2	41.3	4	½"	80	73
1½"	1½DF15	4.2	4.1	48.3	120.7	60.3	20.6	38.1	76.2	63.5	6	½"	80	95.3
2"	2DF15	5.3	5.3	60.3	133.4	60.3	22.2	38.1	76.2	76.2	6	½"	80	108
2½"	2½DF15	8.2	8.4	73	158.8	69.9	25.4	54	88.9	88.9	6	⅝"	100	127
3"	3DF15	10.6	11.1	88.9	174.6	73	28.6	50.8	92.1	104.8	8	⅝"	100	142.9
4"	4DF15	20.6	21.4	114.3	219.1	88.9	34.9	60.3	111.1	133.4	8	¾"	120	181
5"	5DF15	29.4	31.4	141.3	247.7	95.3	41.3	69.9	114.3	161.9	12	¾"	140	209.6
6"	6DF9	31.8	34.7	168.3	274.7	88.9	38.1	69.9	111.1	187.3	12	¾"	130	236.6
8"	8DF9	51.1	57	219.1	330.2	101.6	44.5	85.7	127	241.3	20	¾"	140	292.1
10"	10DF9	91.6	105	273.1	409.6	114.3	54	95.3	139.7	295.3	16	1"	170	358.8
12"	12DF9	150	174	323.9	476.3	133.4	66.7	120.7	165.1	349.3	20	1⅛"	210	419.1
14"	14DF9	211	247	355.6	530.2	149.2	77.8	136.6	181	384.2	20	1¼"	230	466.7
16"	16DF9	286	336	406.4	596.9	165.1	84.1	149.2	190.5	438.2	20	1⅜"	250	527.1
18"	18DF9	379	450	457.2	660.4	184.2	92.1	165.1	212.7	495.3	24	1⅝"	270	590.6
20"	20DF9	476	572	508	717.6	196.9	100	177.8	225.4	546.1	24	1½"	290	641.4
24"	24DF9	791	949	609.6	857.3	228.6	117.5	209.6	279.4	660.4	24	1¾"	330	768.4
30"	30DF9	1425	1757	762	1054.1	266.7	146.1	-	-	819.2	24	2¼"	410	939.8
36"	36DF9	1943	2474	914.4	1219.2	285.8	158.8	-	-	977.9	28	2¼"	430	1104.9
40"	40DF9	2318	3113	1016	1339.9	292.1	180	-	-	1079.5	28	2½"	430	1212.9

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DES FLEX FLANGE SIZES & WEIGHTS

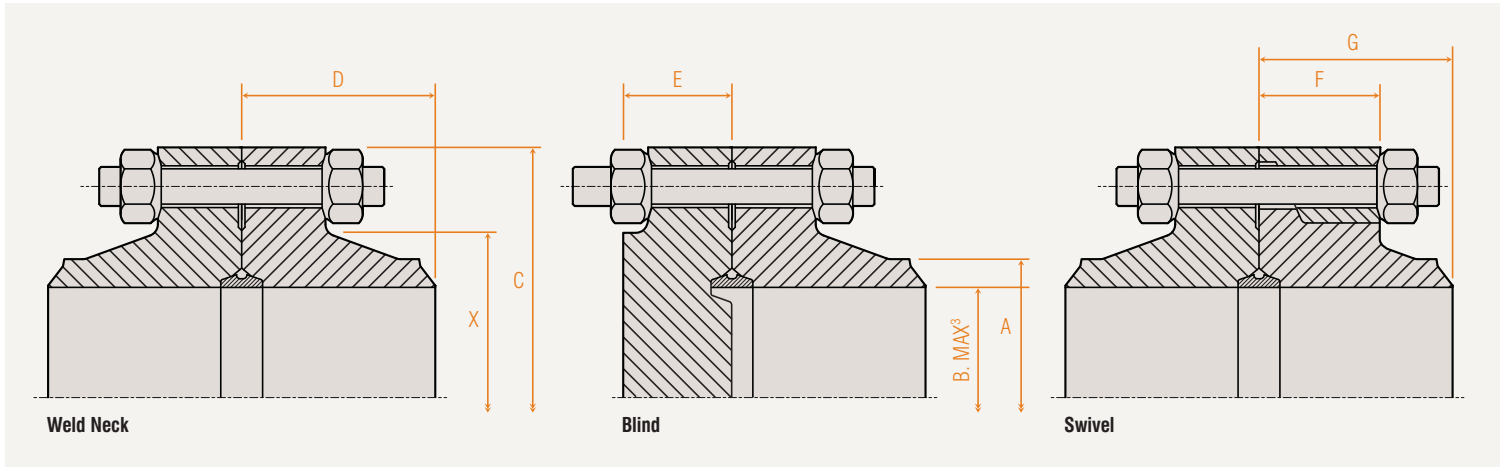
Rating		1500 ANSI												
NOM. SIZE	Flange Size	Weight (kg) ²	Blind Weight (kg) ²	Dimensions (mm)						Bolting ⁴				
				A	C	D	E	F	G	X	No.	Size	Length	P.C.D.
1"	1DF15	2.7	2.6	33.4	98.4	54	19	34.9	57.2	41.3	4	½"	80	73
1½"	1½DF15	4.2	4.1	48.3	120.7	60.3	20.6	38.1	76.2	63.5	6	½"	80	95.3
2"	2DF15	5.3	5.3	60.3	133.4	60.3	22.2	38.1	76.2	76.2	6	½"	80	108
2½"	2½DF15	8.8	8.7	73	158.8	69.9	25.4	54	88.9	88.9	6	⅝"	100	127
3"	3DF15	11.3	11.4	88.9	174.6	73	28.6	50.8	92.1	104.8	8	⅝"	100	142.9
4"	4DF15	21.7	21.9	114.3	219.1	88.9	34.9	60.3	111.1	133.4	8	¾"	120	181
5"	5DF15	30.9	32.1	141.3	247.7	95.3	41.3	69.9	114.3	161.9	12	¾"	140	209.6
6"	6DF15	48	50.1	168.3	288.9	101.6	47.6	82.6	123.8	190.5	12	⅞"	150	244.5
8"	8DF15	84.6	90.1	219.1	355.6	120.7	57.2	101.6	161.9	241.3	16	1"	180	304.8
10"	10DF15	144	154	273.1	425.5	146.1	69.9	114.3	171.5	298.5	16	1⅝"	210	368.3
12"	12DF15	239	257	323.9	508	168.3	80.9	139.7	190.5	355.6	16	1⅜"	250	438.2
14"	14DF15	306	332	355.6	558.8	174.6	88.9	161.9	209.6	393.7	20	1⅜"	260	489
16"	16DF15	477	518	406.4	649	203.2	103.2	190.5	244.5	447.7	20	1⅝"	290	566.7
18"	18DF15	602	675	457.2	692.2	222.3	125.4	203.2	260.4	501.7	20	1¾"	330	603.3
20"	20DF15	846	933	508	781.1	238.1	128.6	231.8	288.9	558.8	20	2"	360	679.5
24"	24DF15	1351	1472	609.6	920.8	279.4	144.5	266.7	330.2	673.1	20	2¼"	410	806.5
30"	30DF15	2200	2486	762	1117.6	311.2	174.6	-	-	831.9	20	2¾"	470	977.9
36"	36DF15	3463	3974	914.4	1308.1	355.6	206.3	-	-	990.6	22	3"	550	1155.7
40"	40DF15	4279	5066	1016	1428.8	355.6	225.4	-	-	1079.5	22	3¼"	600	1263.7

Rating		2500 ANSI												
NOM. SIZE	Flange Size	Weight (kg) ²	Blind Weight (kg) ²	Dimensions (mm)						Bolting ⁴				
				A	C	D	E	F	G	X	No.	Size	Length	P.C.D.
1"	1DF25	2.7	2.6	33.4	98.4	54	19	34.9	57.2	41.3	4	½"	80	73
1½"	1½DF25	5.1	4.9	48.3	120.7	63.5	23.8	47.6	82.6	63.5	8	½"	90	95.3
2"	2DF25	8.4	8.2	60.3	146.1	66.7	27	57.2	79.4	76.2	8	⅝"	100	114.3
2½"	2½DF25	14.9	14.8	73	174.7	79.4	35	66.7	101.6	88.9	8	¾"	120	136.5
3"	3DF25	16.5	16.2	88.9	181	82.6	36.5	63.5	101.6	104.8	12	⅝"	120	146
4"	4DF25	30.7	30.2	114.3	225.4	98.4	44.5	73	123.8	138.1	12	¾"	140	187.3
5"	5DF25	58.6	58.5	141.3	279.4	114.3	55.5	95.3	136.5	165.1	12	1"	180	228.6
6"	6DF25	89.3	90.5	168.3	317.5	127	68.2	104.8	158.8	190.5	12	1⅝"	210	260.4
8"	8DF25	176	180	219.1	403.2	152.4	85.7	128.6	177.8	244.5	12	1⅜"	260	333.4
10"	10DF25	335	345	273.1	498.5	184.2	106.3	168.3	219.1	301.6	12	1¾"	320	409.6
12"	12DF25	505	522	323.9	577.9	203.2	120.7	196.9	257.2	358.8	12	2"	360	476.3
14"	14DF25	500	510	355.6	593.7	209.6	111.1	196.9	260.4	406.4	16	1¾"	330	504.8
16"	16DF25	736	761	406.4	666.8	241.3	133.4	228.6	304.8	450.9	16	2"	380	565.2
18"	18DF25	1003	1065	457.2	746.1	260.4	165.1	254	342.9	508	16	2¼"	410	631.8
20"	20DF25	1354	1453	508	828.7	276.2	158.8	285.8	377.8	565.2	16	2½"	460	701.7
24"	24DF25	2028	2202	609.6	962	308	209.6	330.2	422.3	679.5	20	2½"	510	835

Note: 1. Standard Materials - **Flange:** A350-LF2 or Equal
Studbolts: A193-B7
Nuts: A194 Gr. 2H
Seal Rings: AISI 4140

2. Weights refer to BW/BW and BW/Blind assemblies including standard bolting.
 3. Flange bore to be specified. See pressure rating tables on pages 12 to 16 for seal ring sizes to match standard pipe schedules.
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4. Bolting thread is UNC series up to 1" and 8UN series over 1". Increased length bolting is required with swivel connectors and for hydraulic bolt tensioning equipment.



WEIGHT COMPARISON CHART

DESFLEX vs ANSI All weights are in kilogrammes. Weights are for pairs of flanges complete with bolting and joints.

Rating	300 ANSI			600 ANSI			900 ANSI			1500 ANSI			2500 ANSI				
	ANSI	Desflex	Wt. Saving	ANSI	Desflex	Wt. Saving	ANSI	Desflex	Wt. Saving	ANSI	Desflex	Wt. Saving	ANSI	Desflex	Wt. Saving		
1"	4	2.5	38%	4	2.5	38%	9	2.5	72%	9	2.7	70%	13	2.7	79%		
1.5"	7	3.9	44%	8	3.9	51%	14	4.2	70%	14	4.2	70%	27	5.1	81%		
2"	8	4.9	39%	12	4.9	59%	24	5.3	78%	24	5.3	78%	40	8.4	79%		
2.5"	12	7.7	36%	18	8.2	54%	34	8.2	76%	34	8.8	74%	50	14.9	70%		
3"	18	9.8	46%	22	10.6	52%	30	10.6	65%	46	11.3	75%	88	16.5	81%		
4"	25	18.3	27%	40	19.5	51%	50	20.6	59%	69	21.7	69%	137	30.7	78%		
5"	34	26.4	22%	64	27.9	56%	81	29.4	64%	122	30.9	75%	230	58.6	75%		
6"	43	28.4	34%	76	30.1	60%	102	31.8	69%	154	48	69%	355	89.3	75%		
8"	65	43.5	33%	112	46.1	59%	174	51.1	71%	256	84.6	67%	538	176	67%		
10"	93	50.7	45%	176	53.8	69%	247	91.6	63%	422	144	66%	999	335	66%		
12"	132	61.6	53%	208	107	49%	342	150	56%	639	239	63%	1492	505	66%		
14"	190	75.9	60%	319	142	55%	516	211	59%	872	306	65%					
16"	231	94.9	59%	442	186	58%	629	286	55%	1160	477	59%					
18"	295	132	55%	510	280	45%	850	379	55%	1507	602	60%					
20"	368	185	50%	633	367	42%	1069	476	55%	1902	846	56%					
24"	534	268	50%	898	555	38%	1939	791	59%	3081	1351	56%					
Average Weight Saving			43%							64%							74%

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DESFLEX COMPACT FLANGE PRESSURE RATINGS

FLANGE - CARBON STEEL A350-LF2 or EQUAL BOLTING - LOW ALLOY STEEL A193-B7

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
			Max. Working Pressure (Bars)				
1"	Sch. 40	D 30	466	466	466	466	466
	25	D 25	798	798	798	798	798
	Sch. 80	D 25	802	802	802	802	802
	Sch. 160	D 25	842	842	842	842	842
	20	D 20	1239	1239	1239	1239	1239
	Sch.XXS	D 20	1228	1228	1228	1228	1228
1½"	Sch. 40	D 45	428	428	428	428	550
	40	D 40	557	557	557	557	705
	Sch. 80	D 40	620	620	620	620	763
	35	D 35	807	807	807	807	1055
	Sch. 160	D 35	774	774	774	774	1061
	30	D 30	798	798	798	798	1317
2"	Sch. XXS	D 30	706	706	706	706	1155
	Sch. 40	D 55	353	353	353	353	482
	50	D 50	527	527	527	527	677
	Sch. 80	D 50	531	531	531	531	696
	45	D 45	637	637	637	637	914
	Sch. 160	D 45	597	597	597	597	929
2½"	40	D 40	638	638	638	638	1144
	Sch. XXS	D 40	583	583	583	583	1094
	Sch. 40	D 65	388	388	388	388	594
	60	D 60	464	464	464	464	727
	Sch. 80	D 60	470	470	470	470	742
	55	D 55	565	565	565	565	926
3"	Sch. 160	D 55	554	554	554	554	930
	50	D 50	648	648	648	648	1215
	Sch. XXS	D 50	647	647	647	647	1530
	Sch. 40	D 80	362	362	362	362	500
	75	D 75	453	453	453	453	642
	Sch. 80	D 75	461	461	461	461	658
3½"	70	D 70	555	555	555	555	762
	Sch. 160	D 70	548	548	548	548	779
	65	D 65	617	617	617	617	911
	60	D 60	639	639	639	639	1105
	Sch. XXS	D 60	603	603	603	603	1076
	55	D 55	636	636	636	636	1210
4"	50	D 50	708	708	708	708	1343
	Sch. 40	D 105	305	305	305	305	462
	100	D 100	336	336	336	336	515
	Sch. 80	D 100	348	348	348	348	540
	Sch. 120	D 95	463	463	463	463	697
	90	D 90	526	526	526	526	785
4½"	Sch. 160	D 90	511	511	511	511	798
	85	D 85	557	557	557	557	908
	Sch. XXS	D 85	514	514	514	514	895
	80	D 80	577	577	577	577	1010
	75	D 75	616	616	616	616	1125

Pipe Size		Seal Ring	Pressure Rating (ANSI)					
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500	
			Max. Working Pressure (Bars)					
5"	Sch. 40	D 130	314	314	314	314	459	
	125	D 125	347	347	347	347	503	
	Sch. 80	D 125	357	357	357	357	519	
	Sch. 120	D 120	415	415	415	415	608	
	115	D 115	453	453	453	453	659	
	110	D 110	502	502	502	502	733	
	Sch. 160	D 110	500	500	500	500	734	
	105	D 105	525	525	525	525	821	
	Sch. XXS	D 105	517	517	517	517	828	
	100	D 100	545	545	545	545	924	
	6"	Sch. 40	D 155	200	200	200	299	472
		150	D 150	226	226	226	328	520
Sch. 80		D 150	242	242	242	340	540	
145		D 145	274	274	274	379	598	
140		D 140	308	308	308	427	673	
Sch. 120		D 140	307	307	307	428	673	
135		D 135	321	321	321	483	729	
Sch. 160		D 135	317	317	317	482	736	
130		D 130	337	337	337	513	797	
125		D 125				535	877	
Sch. XXS		D 125				533	879	
120		D 120				559	969	
6½"	115	D 115					1075	
	110	D 110					1194	
	7"	Sch. 40	D 205	182	182	182		
		200	D 200	198	198	198	266	464
		195	D 195	234	234	234	299	519
		Sch. 80	D 195	239	239	239	302	524
		190	D 190	267	267	267	329	568
		Sch. 120	D 185	279	279	279	373	630
		180	D 180	292	292	292	404	668
		175	D 175	304	304	304	443	715
		Sch. 160	D 175	302	302	302	439	718
		Sch. XXS	D 175				442	715
170		D 170				460	768	
165		D 165				478	829	
7½"	160	D 160				499	897	
	155	D 155					973	
	8"	Sch. 40	D 255	117	117	170	263	
		250	D 250	136	136	186	278	484
		Sch. 60	D 250	144	144	192	282	490
		245	D 245	157	157	206	298	519
		Sch. 80	D 245	158	158	213	303	526
		240	D 240	164	164	230	322	557
		235	D 235	172	172	257	350	601
		Sch. 120	D 235	173	173	258	364	610
		230	D 230	180	180	269	381	637
		225	D 225	188	188	279	415	669
220		D 220				289	450	707
Sch. 160		D 220				287	444	712
8½"	215	D 215				300	465	748
	210	D 210				306	480	795
	205	D 205					497	846
	200	D 200					514	902
	195	D 195						988

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Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
Max. Working Pressure (Bars)							
12"	Sch. 30	D 310	83	134	170		
	305	D 305	90	144	184		
	Sch. STD	D 305	90	144	185		
	300	D 300	103	163	199	269	462
	Sch. X	D 300	107	168	201	271	466
	295	D 295	120	184	214	285	491
	290	D 290	134	201	232	303	523
	Sch. 80	D 290	135	204	235	305	526
	285	D 285	142	221	253	324	558
	280	D 280	149	244	276	348	588
	Sch. 120	D 275		274	303	380	614
	270	D 270			313	404	641
	265	D 265			329	442	684
	260	D 260			339	454	719
	Sch. 160	D 260			337	450	723
	255	D 255				467	757
	250	D 250				480	799
	245	D 245				495	844
240	D 240					894	
14"	Sch. 20	D 340	77	136			
	Sch. STD	D 340	88	148	188		
	335	D 335	94	156	195		
	Sch. 40	D 335	98	161	197		
	Sch. XS	D 335	105	170	201		
	330	D 330	108	175	207		436
	Sch. 60	D 330	120	189	214	264	442
	325	D 325	124	196	221	272	457
	320	D 320	135	213	237	290	486
	Sch. 80	D 320	136	218	242	294	489
	315	D 315		231	255	309	509
	310	D 310		252	275	330	533
	Sch. 100	D 310			281	335	536
	305	D 305			298	353	560
	Sch. 120	D 300			322	379	589
	295	D 295			334	402	620
	Sch. 140	D 295			332	399	626
	290	D 290			342	411	654
285	D 285				421	690	
Sch. 160	D 285				420	692	
16"	Sch. 20	D 395	73	115			
	390	D 390	75	119	160		
	Sch. STD	D 390	80	129	168		
	385	D 385	86	139	176		
	Sch. 40	D 385	94	150	181		
	380	D 380	99	156	187		
	375	D 375	113	175	199		438
	Sch. 60	D 375	118	181	202		443
	370	D 370	123	192	212	266	465
	365	D 365	130	208	228	280	494
	Sch. 80	D 365	131	212	231	283	497
	360	D 360			245	297	513
	355	D 355			264	315	532
	Sch. 100	D 355			266	317	533
	350	D 350			284	335	553

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
Max. Working Pressure (Bars)							
16" Cont.		345			295	356	577
	Sch. 120	D 345			295	357	577
	340	D 340				378	602
	335	D 335				394	629
	Sch. 140	D 335				393	632
	330	D 330				403	658
	Sch. 160	D 330				399	666
	18"	Sch. 30	RD 435	88	129	168	
Sch. XS		RD 435	94	138	174		
430		RD 430	99	145	180		
Sch. 40		RD 430	102	149	182	261	
425		RD 425	112	161	190	271	
420		RD 420	124	175	203	284	
Sch. 60		RD 420	125	177	205	285	
415		RD 415	129	188	216	297	437
410		RD 410	134	202	230	312	455
Sch. 80		RD 410	134	204	232	313	455
405		RD 405		218	246	328	470
400		RD 400		235	262	345	486
Sch. 100		RD 400		239	266	348	488
395		D 395			302	387	532
390		D 390			314	408	552
Sch. 120		D 390			313	414	556
385		D 385			321	431	575
380		D 380			328	455	599
Sch. 140	D 380			326	459	602	
375	D 375				470	625	
370	D 370				479	652	
Sch. 160	D 370				474	657	
20"	Sch. XS	RD 485	74	127	162		
	480	RD 480	81	135	172		
	Sch. 40	RD 480	86	140	178		
	475	RD 475	92	149	186	266	
	470	RD 470	104	164	197	277	
	Sch. 60	RD 470	107	172	202	281	
	465	RD 465	110	179	208	289	
	460	RD 460	114	191	221	301	446
	Sch. 80	RD 460	116	199	228	306	457
	455	RD 455	118	204	234	314	469
	450	RD 450	122	218	248	328	487
	445	RD 445			265	345	504
	Sch. 100	RD 445			269	348	505
	440	RD 440			282	362	520
	435	RD 435			296	379	538
	Sch. 120	RD 435			295	385	541
	430	RD 430			302	398	556
	425	RD 425			308	418	577
420	RD 420			315	440	599	
Sch. 140	RD 420			315	439	601	
415	RD 415				447	622	
410	RD 410				454	646	
Sch. 160	RD 410				452	649	

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DESFLEX COMPACT FLANGE PRESSURE RATINGS

FLANGE - CARBON STEEL A350-LF2 or EQUAL BOLTING - LOW ALLOY STEEL A193-B7

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
Max. Working Pressure (Bars)							
22"	520	RD 520	198	198	198	280	
	Sch. 60	RD 515	208	208	208	291	
	510	RD 510	218	218	218	301	
	505	RD 505	230	230	230	313	
	Sch. 80	RD 505	236	236	236	317	
	500	RD 500	243	243	243	326	
	495	RD 495	258	258	258	341	
	490	RD 490	273	273	273	356	
	Sch. 100	RD 490	275	275	275	357	
	485	RD 485	288	288	288	372	
	480	RD 480	301	301	301	388	
	Sch. 120	RD 480	299	299	299	394	
	475	RD 475	306	306	306	406	
	470	RD 470	312	312	312	425	
	465	RD 465				445	
	Sch. 140	RD 465				447	
	460	RD 460				456	
	455	RD 455				462	
Sch. 160	RD 455				458		
24"	Sch. 30	RD 585	69	132	167		
	580	RD 580	72	135	173		
	575	RD 575	83	143	183		
	Sch. 40	RD 575	84	144	183	259	
	570	RD 570	95	153	193	270	
	565	RD 565	108	163	202	280	
	Sch. 60	RD 565	119	170	209	284	
	560	RD 560	122	173	213	290	
	555	RD 555	134	185	224	301	
	550	RD 550	139	197	236	313	440
	Sch. 80	RD 550	140	201	240	316	445
	545	RD 545		211	250	326	461
	540	RD 540			263	340	480
	535	RD 535			277	354	493
	Sch. 100	RD 535			278	358	495
	530	RD 530			283	369	507
	525	RD 525			288	384	522
	520	RD 520			293	401	539
	Sch. 120	RD 520			292	405	541
	515	RD 515				418	556
	510	RD 510				428	574
	505	RD 505				434	592
	Sch. 140	RD 505				434	592
	500	RD 500				440	612
495	RD 495				447	633	
Sch. 160	RD 495				443	638	

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
Max. Working Pressure (Bars)							
30"	740	RD 740	53				
	Sch. XS	RD 740	57				
	735	RD 735	60				
	Sch. 30	RD 735	66				
	730	RD 730	67				
	725	RD 725	75	108	162		
	720	RD 720	82	119	175		
	715	RD 715	87	129	187		
	710	RD 710	91	141	199		
	705	RD 705	95	152	209		
	700	RD 700	99	165	218		
	695	RD 695	104	178	227	267	
	690	RD 690	107	188	237	276	
	685	RD 685	111	194	247	286	
	680	RD 680		197	258	297	
	675	RD 675		201	270	308	
	670	RD 670			281	319	
	665	RD 665			291	331	
	660	RD 660			294	344	
	36"	655	RD 655				357
650		RD 650				360	
885		RD 885	61				
Sch. 30		RD 885	64				
880		RD 880	68				
Sch. 40		RD 880	73				
875		RD 875	75				
870		RD 870	80	104			
865		RD 865	83	112			
860		RD 860	87	121			
855		RD 855	90	130	164		
850		RD 850	93	139	174		
845		RD 845	97	149	184		
840		RD 840	100	159	195		
835		RD 835	103	170	206	262	
830		RD 830			218	270	
825		RD 825			226	278	
820		RD 820			236	286	
815		RD 815			245	296	
810		RD 810			252	305	
805	RD 805			254	314		
800	RD 800			257	324		
795	RD 795				341		
790	RD 790				351		
785	RD 785				363		
780	RD 780				370		
775	RD 775				374		
770	RD 770				378		

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Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300#	600	900	1500	2500
Max. Working Pressure (Bars)							
40"	Sch. XS	RD 990	59				
	985	RD 985	72				
	980	RD 980	80				
	975	RD 975	86				
	970	RD 970	89				
	965	RD 965	92	105			
	960	RD 960	95	113			
	955	RD 955	98	122			
	950	RD 950	100	131			
	945	RD 945		140			
	940	RD 940		149	161		
	935	RD 935		159	170		
	930	RD 930		169	178		
	925	RD 925			186		

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300#	600	900	1500	2500
Max. Working Pressure (Bars)							
40" Cont.	920	RD 920			190		
	915	RD 915			193		
	910	RD 910			195	260	
	905	RD 905			198	268	
	900	RD 900			200	275	
	895	RD 895			203	284	
	890	RD 890			205	292	
	885	RD 885				300	
	880	RD 880				309	
	875	RD 875				319	
	870	RD 870				328	
	865	RD 865				338	
	860	RD 860				347	
	855	RD 855				357	
	850	RD 850				361	

DESFLEX COMPACT FLANGE PRESSURE RATINGS

FLANGE - DUPLEX A182-F51 BOLTING - LOW ALLOY STEEL A193-B7

Pipe Size		Seal Ring	Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500
Max. Working Pressure (Bars)							
1"	Sch. 40	D 30	637	637	637	637	637
	25	D 25	1044	1044	1044	1044	1044
	Sch. 80	D 25	1056	1056	1056	1056	1056
	Sch. 160	D 25	1133	1133	1133	1133	1133
	20	D 20	1642	1642	1642	1642	1642
	Sch.XXS	D 20	1269	1269	1269	1269	1269
1½"	Sch. 40	D 45	632	632	632	632	816
	40	D 40	782	782	782	782	1004
	Sch. 80	D 40	764	764	764	764	1030
	35	D 35	864	864	864	864	1306
	Sch. 160	D 35	814	814	814	814	1273
	30	D 30	860	860	860	860	1380
2"	Sch. XXS	D 30	776	776	776	776	1236
	Sch. 40	D 55	495	495	495	495	709
	50	D 50	627	627	627	627	915
	Sch. 80	D 50	627	627	627	627	923
	45	D 45	713	713	713	713	1174
	Sch. 160	D 45	646	646	646	646	1133
2½"	40	D 40	702	702	702	702	1292
	Sch. XXS	D 40	650	650	650	650	1189
	Sch. 40	D 65	506	506	506	506	830
	60	D 60	612	612	612	612	976
	Sch. 80	D 60	608	608	608	608	982
	55	D 55	671	671	671	671	1180
3"	Sch. 160	D 55	661	661	661	661	1189
	50	D 50	722	722	722	722	1549
	Sch. XXS	D 45	732	732	732	732	1798

Pipe Size		Seal Ring	Pressure Rating (ANSI)					
Nom. Size	Sch./ Bore (mm)		300	600	900	1500	2500	
Max. Working Pressure (Bars)								
3"	Sch. 40	D 80	475	475	475	475	681	
	75	D 75	595	595	595	595	824	
	Sch. 80	D 75	609	609	609	609	832	
	70	D 70	689	689	689	689	976	
	Sch. 160	D 70	663	663	663	663	1004	
	65	D 65	744	744	744	744	1172	
	60	D 60	729	729	729	729	1318	
	Sch. XXS	D 60	691	691	691	691	1287	
	4"	Sch. 40	D 105	400	400	400	400	618
		100	D 100	444	444	444	444	696
Sch. 80		D 100	464	464	464	464	711	
Sch. 120		D 95	590	590	590	590	894	
90		D 90	641	641	641	641	1007	
Sch. 160		D 90	625	625	625	625	1025	
85		D 85	683	683	683	683	1144	
Sch. XXS		D 85	600	600	600	600	1081	
5"		Sch. 40	D 130	409	409	409	409	585
		125	D 125	454	454	454	454	657
	Sch. 80	D 125	469	469	469	469	682	
	Sch. 120	D 120	547	547	547	547	777	
	115	D 115	593	593	593	593	843	
	110	D 110	619	619	619	619	939	
	Sch. 160	D 110	617	617	617	617	940	
	105	D 105	650	650	650	650	1052	
	Sch. XXS	D 105	634	634	634	634	1062	

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DES FLEX COMPACT FLANGE PRESSURE RATINGS

FLANGE - DUPLEX A182-F51 BOLTING - LOW ALLOY STEEL A193-B7

Pipe Size			Pressure Rating (ANSI)					
Nom. Size	Sch./ Bore (mm)	Seal Ring	300	600	900	1500	2500	
			Max. Working Pressure (Bars)					
6"	Sch. 40	D 155	270	270	270	390	616	
	150	D 150	305	305	305	428	680	
	Sch. 80	D 150	327	327	327	446	708	
	145	D 145	367	367	367	494	780	
	140	D 140	385	385	385	557	850	
	Sch. 120	D 140	384	384	384	559	851	
	135	D 135	403	403	403	609	925	
	Sch. 160	D 135	397	397	397	596	936	
	130	D 130	412	412	412	633	1013	
	125	D 125				662	1115	
	Sch. XXS	D 125				659	1118	
	8"	Sch. 40	D 205	245	245	245		
200		D 200	266	266	266	344	599	
195		D 195	312	312	312	388	670	
Sch. 80		D 195	319	319	319	393	677	
190		D 190	341	341	341	428	735	
Sch. 120		D 185	351	351	351	486	796	
180		D 180	367	367	367	526	845	
175		D 175	382	382	382	551	905	
Sch. 160		D 175	369	369	369	547	910	
Sch. XXS		D 175				550	906	
10"		Sch. 40	D 255	161	161	224	334	
		250	D 250	187	187	246	356	621
	Sch. 60	D 250	194	194	253	362	629	
	245	D 245	201	201	273	384	666	
	Sch. 80	D 245	202	202	281	390	675	
	240	D 240	211	211	304	416	716	
	235	D 235	221	221	328	452	764	
	Sch. 120	D 235	222	222	326	471	768	
	230	D 230	231	231	339	493	801	
	225	D 225	230	230	352	537	844	
	220	D 220			364	561	892	
	Sch. 160	D 220			361	554	900	
	215	D 215			378	579	946	
	210	D 210			372	599	1005	
	205	D 205				619	1070	
	200	D 200				641	1141	
	195	D 195					1248	
	12"	Sch. 30	D 310	115	183	233		
305		D 305	123	194	242			
Sch. STD		D 305	124	195	242			
300		D 300	142	218	259	342	593	
Sch. XS		D 300	148	225	262	345	598	
295		D 295	164	242	279	364	630	
290		D 290	174	265	303	389	672	
Sch. 80		D 290	175	268	307	392	676	
285		D 285	181	291	330	417	710	
280		D 280	187	320	360	448	738	
Sch. 120		D 275		332	381	489	773	
270		D 270			393	519	807	
265		D 265			412	550	861	
260		D 260			425	565	906	

Pipe Size			Pressure Rating (ANSI)				
Nom. Size	Sch./ Bore (mm)	Seal Ring	300	600	900	1500	2500
			Max. Working Pressure (Bars)				
12" Cont.	Sch. 160	D 260			422	561	912
	255	D 255				581	955
	250	D 250				598	1008
	245	D 245				616	1066
	240	D 240					1128
14"	Sch. 20	D 340	111	190			
	Sch. STD	D 340	122	199	245		
	335	D 335	129	210	253		
	Sch. 40	D 335	134	216	255		
	Sch. XS	D 335	143	226	260		
	330	D 330	147	233	268		533
	Sch. 60	D 330	161	248	277	338	555
	325	D 325	166	256	286	350	575
	320	D 320	173	277	307	372	617
	Sch. 80	D 320	175	285	313	378	620
	315	D 315		302	331	397	644
	310	D 310		329	357	424	675
	Sch. 100	D 310			363	430	679
	305	D 305			385	454	709
	Sch. 120	D 300			407	486	746
	295	D 295			418	501	785
	Sch. 140	D 295			415	497	792
	290	D 290			429	513	828
	285	D 285				525	874
	16"	Sch. 160	D 285				524
Sch. 20		D 395	100	164			
390		D 390	103	168	216		
Sch. STD		D 390	109	176	221		
385		D 385	117	187	228		
Sch. 40		D 385	128	200	234		
380		D 380	134	209	241		
375		D 375	151	232	257		560
Sch. 60		D 375	153	236	261		567
370		D 370	159	250	275	339	595
365		D 365	167	271	295	358	623
Sch. 80		D 365	168	276	298	361	624
360		D 360			317	380	645
355		D 355			341	403	670
Sch. 100		D 355			344	405	671
350		D 350			361	428	697
345		D 345			369	455	727
Sch. 120		D 345			369	457	728
340		D 340				481	759
335		D 335				491	794
16" Cont.	Sch. 140	D 335				489	797
	330	D 330				502	831
	Sch. 160	D 330				498	841

- Note:** Ratings have been calculated using the following:
1. Flange allowable stresses taken from ASME/ANSI B31.3.
 2. Corrosion allowance 1.5mm on carbon and low alloy steels.
 3. Stress analysis methodology to ASME VIII, Div. 1, App. 2.

The above ratings refer to the flange only and are not intended as a guide to pipe ratings. Pipe ratings should be checked in accordance with the relevant piping specification for the application. *300lb flanges of size 30" and above are supplied with 'GL' type sea rings (not 'RD' type).



MATERIAL ANALYSIS & MECHANICAL PROPERTIES

Component	Flanges							Seal Rings		
Material	A350 LF2 Modified	A694-F52	A694-F60	AISI 4130 (60K)	A182-F316	A182-F51 Duplex	A182-F53 S. Duplex	AISI 4140	A564-630 (17.4PH)	INC X750 ASTM B637
Chemical Analysis										
C	0.18 max	0.16 max	0.26 max	0.28/0.33	0.08 max	0.03 max	0.03 max	0.38/0.43	0.07 max	0.80 max
Si	0.50 max	0.10/0.50	0.15/0.35	0.15/0.35	1.0 max	1.0 max	0.80 max	0.15/0.35	1.0 max	0.50 max
Mn	1.55 max	0.90/1.45	1.40 max	0.40/0.60	2.0 max	2.0 max	1.20 max	0.75/1.0	1.0 max	1.0 max
Ni	0.40 max	0.85 max			10.0/14.0	4.50/6.50	6.0/8.0		3.0/5.0	70 min
Cr	0.30 max	0.30 max		0.80/1.10	16.0/18.0	21.0/23.0	24.0/26.0	0.80/1.10	15.0/17.5	14.0/17.0
Mo	0.12 max	0.08 max		0.15/0.25	2.0/3.0	2.50/3.50	3.0/5.0	0.15/0.25		
S	0.010 max	0.025 max	0.025 max	0.040 max	0.030 max	0.020 max	0.020 max	0.040 max	0.030 max	0.01 max
P	0.025 max	0.030 max	0.025 max	0.035 max	0.040 max	0.030 max	0.035 max	0.035 max	0.040 max	
Cu	0.40 max	0.20 max					0.50 max		3.0/5.0	0.50 max
V	0.03 max	0.05 max								
Nb	0.05 max	0.04 max								0.40/1.0
N		0.015 max				0.08/0.20	0.24/0.32			2.25/2.75
Al										0.40/1.0
Ti										2.25/2.75
Co										1.0 max
Others									Nb + Ta 0.15/0.45	Nb 0.70/1.20
Fe	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	Balance	5.0/9.0
CE	0.43 max	0.43 max	0.43 max							

Component	Flanges							Seal Rings		
Material	A350 LF2 Modified	A694-F52	A694-F60	AISI 4130 (60K)	A182-F316	A182-F51 Duplex	A182-F53 S. Duplex	AISI 4140	A564-630 (17.4PH)	INC X750 ASTM B637
Mechanical Properties										
Tensile (Rm) N/mm ² (lb/in ²)	496 min (72000)	455 min (66000)	515 min (75000)	620 min (90000)	517 min (75000)	690 min (100000)	800 min (116000)	690 min (100000)	724 min (105000)	1103 min (160000)
Yield (Re) N/mm ² (lb/in ²)	358 min (52000)	358 min (52000)	414 min (60000)	414 min (60000)	207 min (30000)	450 min (65000)	550 min (80000)	517 min (75000)	655 min (95000)	690 min (100000)
Elongation %	22 min	25 min	20 min	18 min	30 min	25 min	15 min	15 min	16 min	20 min
Red of Area %	30 min	30 min		35 min	50 min	45 min		40 min	50 min	20 min
Impact Charpy V	27 J-46°C	27 J-46°C								
HB HRC	235 max 22 max	235 max 22 max	235 max 22 max	187/235 10/22	235 max 22 max	269 max 28 max	269 max 28 max	235 max 22 max	277/311 29/33	267/326 27/35



Desflex Compact Flanges are used extensively on sub-sea manifolds



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Ordering Procedure.

If standard pipe is being used select the flange size from the table of sizes on pages 12 to 16.

Seal ring sizes and pressure class can be taken from the tables of pressure ratings on pages 12 to 16.

- DESIGN PRESSURE AND TEMPERATURE
- EXTERNAL PIPE FORCES
- PIPE MATERIALS AND CONTAINED FLUID
- PIPE OR PRESSURE VESSEL CODE
- PIPE BORE AND OUTSIDE DIAMETER
- QUANTITY INVOLVED
- ANY OTHER INFORMATION CONSIDERED RELEVANT TO DESIGN eg. CORROSION ALLOWANCE

Designation

Example

6 DF 15-D135 WN Sch.160



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