Stainless Steel Flange Solutions

Style 441
2-6"/50 – 150mm

No. 445F and No. 445R
11/4 – 12"/32" – 300mm

No. 441N
PN10-PN16

1.0 PRODUCT DESCRIPTION

Function

- **Style 441** Flange Adapter
- **No. 445F and 445R** Flange Adapter Nipples
- **No. 441N** (EMEA-I Only) Flange Adapter Nipple

Available Sizes

- **Style 441:** 2 – 6"/50 – 150mm
- **No. 445F and No. 445R:** 1¼ – 12"/32 – 300mm
- **No. 441N (EMEA-I Only):** 2 – 12"/50 – 300mm

Application

- Joins stainless steel pipe.

Pipe Materials

- Stainless steel, ANSI Class 150

Maximum Working Pressure

- 275 psi/1896 kPa/19 BAR

2.0 CERTIFICATION/LISTINGS

See Victaulic Publication 02.06 for potable water approvals if applicable.

ALWAYS REFER TO ANY NOTIFICATIONS AT THE END OF THIS DOCUMENT REGARDING PRODUCT INSTALLATION, MAINTENANCE OR SUPPORT.

System No.		Location	
Submitted By		Date	

Spec Section		Paragraph	
Approved		Date	

3.0 SPECIFICATIONS – MATERIAL

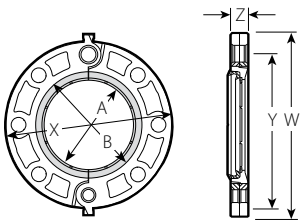
Pipe Nipple: No. 445F and No. 445R Flange Adapter Nipples: ANSI Type 316L stainless steel (EN 1.4404)

Flange Types:

- Style 441 Flange Adapter: ASTM A351 Grade CF8M Type 316 stainless steel flange adapter for use with ANSI class 150 flanges.
- No. 445F and No. 445R Flange Adapter Nipples: ANSI B16.5 Class 150 slip-on stainless steel flange.
- No. 441N Flange Adapter Nipple: Type 316 stainless steel loose plate flange EN1092-1 Type 02A available for PN10 and PN16 pressure classes.

4.0 DIMENSIONS

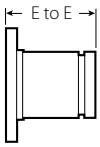
Style 441



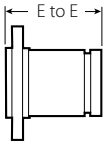
Nominal Size DN inches	Actual Outside Diameter mm inches	No. Bolts Req'd.	Bolt Size Inches	Sealing Surface mm/inches		Dimensions mm/inches				Approx. Weight Each kg Lbs.
				"A" Max.	"B" Min.	W	X	Y	Z	
50 2	60.3 2.375	4	⅝ x 2¾	61 2.40	86 3.40	174 6.84	152 6.00	121 4.75	21 0.82	1.4 3.0
65 2½	73.0 2.875	4	⅝ x 3	74 2.90	99 3.90	196 7.72	178 7.00	140 5.50	22 0.88	2.0 4.3
76.1	73.0 2.875	4	⅝ x 3	74 2.90	99 3.90	196 7.72	178 7.00	140 5.50	22 0.88	2.0 4.3
80 3	88.9 3.500	4	⅝ x 3	89 3.50	114 4.50	209 8.22	191 7.50	152 6.00	24 0.94	2.2 4.8
100 4	114.3 4.500	8	⅝ x 3	114 4.50	140 5.50	247 9.72	229 9.00	191 7.50	24 0.94	3.1 6.9
150 6	168.3 6.625	8	¾ x 3½	168 6.60	198 7.80	299 11.78	279 11.00	241 9.50	25 1.00	4.3 9.5

4.1 DIMENSIONS

ANSI Flange Adapter Nipple
ANSI Class 150 No. 445F & No. 445R



No. 445F
ANSI B16.5 Class 150 Flat Face



No. 445R
ANSI B16.5 Class 150 Raised Fa

Nominal Size inches DN	**Actual Outside Diameter** inches mm	**Wall Thickness** inches mm	**Dimensions** E to E inches mm	**Approx. Weight Each** Lbs. kg
1¼ 32	1.66 42.2	.10 2.6	4.00 102	3.3 1.5
1½ 40	1.90 48.3	.10 2.6	4.00 102	3.9 1.8
2 50	2.38 60.3	.10 2.6	4.00 102	6.2 2.8
2½ 65	2.88 73.0	.10 2.6	4.00 102	9.9 4.5
 76.1	2.88 73.0	.10 2.6	4.00 102	9.9 4.5
3 80	3.50 88.9	.10 2.6	4.00 102	11.4 5.2
4 100	4.50 114.3	.10 2.6	6.00 152	18.4 8.3
5 125	5.56 141.3	.16 4.0	6.00 152	21.3 9.7
6 150	6.63 168.3	.16 4.0	6.00 152	27.5 12.5
8 200	8.63 219.1	.16 4.0	6.00 152	41.3 18.8
10 250	10.75 273.0	.16 4.0	8.00 203	59.8 27.1
12 300	12.75 323.9	.16 4.0	8.00 203	88.2 40.0

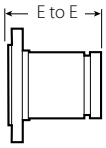
Please contact Victaulic for other ANSI Class flange adapter solutions.

NOTE

- Please refer to submittal 17.09 for the pressure rating and end load of the groove connection. The pressure rating and end load vary depending on the coupling style and wall thickness of the 445F/445R and grooved pipe.

4.2 DIMENSIONS

ISO Flange Adapter Nipple No. 441N (PN10 / PN16)



No. 441N
ISO EN1092 1 Type 02A stainless steel
316L loose plate flange

Nominal Size DN inches	Actual Outside Diameter mm inches	Wall Thickness mm inches	Dimensions E to E mm Inches	Approx.Weight Each PN10 kg Lbs.	 PN16 kg Lbs.
50 2	60.3 2.38	2.78 .109	64 2.50	3.12 6.88	3.12 6.88
65 2½	73.0 2.85	3.05 .120	64 2.50	4.33 9.55	4.33 9.55
76.1	73.0 2.85	3.05 .120	64 2.50	4.33 9.55	4.33 9.55
80 3	88.9 3.50	3.05 .120	64 2.50	4.15 9.15	4.15 9.15
100 4	114.3 4.50	3.05 .120	76 3.00	5.41 11.93	5.41 11.93
139	114.3 4.50	3.05 .120	76 3.00	5.41 11.93	5.41 11.93
150 6	168.3 6.63	3.40 .134	89 3.50	9.39 20.7	9.39 20.7
200 8	219.1 8.63	3.76 .148	102 4.00	11.80 26.01	9.96 21.96
250 10	273.0 10.75	4.19 .165	127 5.00	15.94 35.14	14.80 32.63
300 12	323.9 12.75	457 .180	152 5.98	19.11 42.13	19.50 43.00

Please contact Victaulic for other ANSI Class flange adapter solutions.

NOTE

- Please refer to submittal 17.09 for the pressure rating and end load of the groove connection. The pressure rating and end load vary depending on the coupling style and wall thickness of the 441N and grooved pipe.

5.0 PERFORMANCE

Performance on ANSI Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Style 441			Maximum	
		Pipe Wall Thickness		Groove Type	Working Pressure [1] kPa PSI Bar	End Load [1] Lbs N kg
		inches mm	ANSI Schedule Number			
2 50	2.375 60.3	0.217 5.5	80S	C	1896 275 19	5419 1218 553
		0.154 3.9	40S	Std/C	1896 275 19	5419 1218 553
		0.110 2.8	10S	RX	1896 275 19	5419 1218 553
		0.067 1.7	5S	RX	1379 200 14	3941 886 402
2½ 65	2.875 73.0	0.276 7.0	80S	C	1896 275 19	7941 1785 810
		0.205 5.2	40S	Std/C	1896 275 19	7941 1785 810
		0.122 3.1	10S	RX	1896 275 19	7941 1785 810
		0.083 2.1	5S	RX	1379 200 14	5776 1298 589
76.1	2.875 73.0	0.276 7.0	80S	C	1896 275 19	7941 1785 810
		0.205 5.2	40S	Std/C	1896 275 19	7941 1785 810
		0.122 3.1	10S	RX	1896 275 19	7941 1785 810
		0.083 2.1	5S	RX	1379 200 14	5776 1298 589
3 80	3.500 88.9	0.299 7.6	80S	C	1896 275 19	11679 2646 1191
		0.217 5.5	40S	Std/C	1896 275 19	11679 2646 1191
		0.122 3.1	10S	RX	1896 275 19	11679 2646 1191
		0.083 2.1	5S	RX	1379 200 14	8560 1924 873

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"
Std= Standard roll set marked with the prefix "R"
C= Cut groove

[1] Working Pressure and End Load are total, from all internal and external loads. Contact Victaulic for performance on other pipe.

5.0 PERFORMANCE (Continued)

Performance on ANSI Wall Thicknesses:

Nominal Size inches DN	Actual Outside Diameter inches mm	Style 441			Maximum	
		Pipe Wall Thickness		Groove Type	Working Pressure [1] kPa PSI Bar	End Load [1] Lbs N kg
		inches mm	ANSI Schedule Number			
4 100	4.500 114.3	0.339 8.6	80S	C	1896 275 19	19454 4374 1984
		0.236 6.0	40S	Std/C	1896 275 19	19454 4374 1984
		0.122 3.1	10S	RX	1896 275 19	19454 4374 1984
		0.083 2.1	5S	RX	1379 200 14	14150 3181 1443

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"
Std= Standard roll set marked with the prefix "R"
C= Cut groove

[1] Working Pressure and End Load are total, from all internal and external loads. Contact Victaulic for performance on other pipe.

NOTE

- WARNING: FOR ONE TIME FIELD TEST ONLY, the maximum Joint Working Pressure may be increased to 1½ times the figures shown.

5.1 PERFORMANCE

Performance on ISO Wall Thicknesses:

Nominal Size DN inches	Actual Outside Diameter mm inches	Style 441		Maximum
		Pipe Wall Thickness mm inches	Groove Type	Working Pressure [2] kPa PSI Bar
50 2	60.3 2.375	5.6 0.220	C	1896 275 19
		4.0 0.157	Std/C	1896 275 19
		3.6 0.142	Std	1896 275 19
		3.2 0.126	Std	1896 275 19
		2.9 0.114	Std	1896 275 19
		2.6 0.102	RX	1724 250 17
		2.3 0.091	RX	1724 250 17
		2.0 0.079	RX	1551 225 16
		1.6 0.063	RX	1379 200 14
80 3	88.9 3.500	8.0 0.315	C	1896 275 19
		5.6 0.220	Std/C	1896 275 19
		4.0 0.157	Std	1896 275 19
		3.6 0.142	Std	1896 275 19
		3.2 0.126	Std	1896 275 19
		2.9 0.114	RX	1724 250 17
		2.6 0.102	RX	1600 232 16
		2.3 0.091	RX	1379 200 14
		2.0 0.079	RX	1379 200 14

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"
Std= Standard roll set marked with the prefix "R"
C= Cut groove

[2] Working Pressure is total, from all internal and external loads. Contact Victaulic for performance on other pipe.

5.1 PERFORMANCE (Continued)

Performance on ISO Wall Thicknesses:

Nominal Size DN inches	Actual Outside Diameter mm inches	Style 441		Maximum
		Pipe Wall Thickness mm inches	Groove Type	Working Pressure [2] kPa PSI Bar
100 4	114.3 4.500	8.8 0.346	C	1896 275 19
		6.3 0.248	C	1896 275 19
		4.5 0.177	Std	1896 275 19
		3.6 0.142	Std	1896 275 19
		2.9 0.114	RX	1724 250 17
		2.6 0.102	RX	1600 232 16
		2.0 0.079	RX	1379 200 14
150 6	168.3 6.625	11.0 0.433	C	1896 275 19
		7.1 0.280	Std	1896 275 19
		7.1 0.280	C	1896 275 19
		5.0 0.197	Std	1600 232 16
		4.5 0.177	Std	1551 225 16
		4.0 0.157	Std	1379 200 14
		3.2 0.126	RX	1207 175 12
		2.6 0.102	RX	N/R
		2.0 0.079	RX	

RX= Roll Set for light wall stainless steel pipe marked with the prefix "RX"
Std= Standard roll set marked with the prefix "R"
C= Cut groove
N/R stands for Not Rated.

[2] Working Pressure is total, from all internal and external loads. Contact Victaulic for performance on other pipe.

NOTES

- WARNING: FOR ONE TIME FIELD TEST ONLY, the maximum Joint Working Pressure may be increased to 1½ times the figures shown.

6.0 NOTIFICATIONS

- The Style 441 does not rigidly attach to the grooved pipe. Some axial, angular and rotation flexibility of the pipe is to be expected.
- The Style 441 is designed for use with Class 150 raisedface flanges, in accordance with ANSI B16.5. When a Style 441 is used with a flat-faced flange, the raised projections on the outside edge and around the mating holes of the flange adapter must be ground flush to the body. Refer to the Style 441 Installation Instructions I-441.
- The Style 441 must not be used as anchor points for tie rods across non-restrained joints.
- The Style 441 must not be used against rubber coated surfaces or with wafer or lug-type valves, or when the flange adapter does not mount flush with the mating flange. For those types of applications, use a groove by flange adapter nipple, such as the No. 445F or No. 445R.
- Because of the outside flange dimension, the Style 441 must not be used 90° to one another on a standard fitting.
- Style 441 Flange adapter gaskets must always be assembled with the color coded lip on the pipe and the other lip facing the mating flange. The markings on the outside of the gasket must face the Style 441 flange adapter.
- WARNING: Depressurize and drain the piping system before attempting to install, remove, or adjust any Victaulic piping products.

⚠ WARNING

- **Victaulic RX roll sets must be used when grooving light-wall/thin-wall stainless steel pipe for use with Victaulic Couplings.**

Failure to use Victaulic RX roll sets when grooving light-wall/thin-wall stainless steel pipe may cause joint failure, resulting in serious personal injury and/or property damage.

NOTICE

- **Victaulic RX grooving rolls must be ordered separately. They are identified by a silver color and the designation RX on the front of the roll sets.**

7.0 REFERENCE MATERIALS

17.01: Stainless Steel Pipe End Preparation - http://static.victaulic.com/assets/uploads/literature/17.01.pdf
17.09: Victaulic Grooved Couplings Performance Data for Stainless Steel Pipe - static.victaulic.com/assets/uploads/literature/17.09.pdf
29.01: Terms and Conditions/Warranty - static.victaulic.com/assets/uploads/literature/29.01.pdf
I-100: FIELD INSTALLATION HANDBOOK - http://static.victaulic.com/assets/uploads/literature/I-100.pdf

