

Junior Fitting Brochure

[Overview](#)

[Sizes, Pressure Ratings and Body Styles](#)

[Catalog Numbers](#)

[Operation of 18" and Larger Fittings](#)

[Orifice Plate Seals](#)

Drawings

Flangnek [10"-14"](#), [16"-24"](#)

Flanged [10"-14"](#), [16"-24"](#)

Weldnek [10"-14"](#), [16"-24"](#), [30"-36"](#)

Dimensions 10"-14"

Flangnek Raised Face Class [150](#), [300](#), [600](#), [900](#), [1500](#),
[2500](#)

Flangnek Ring Joint Class [600](#), [900](#), [1500](#), [2500](#)

Flanged Raised Face Class [150](#), [300](#), [600](#), [900](#), [1500](#), [2500](#)

Flanged Ring Joint Class [600](#), [900](#), [1500](#), [2500](#)

Weldnek Class [600](#), [900](#), [1500](#), [2500](#)

Dimensions 16"-24"

Flangnek Raised Face Class [150](#), [300](#), [600](#), [900](#)

Flangnek Ring Joint Class [600](#), [900](#)

Flanged Raised Face Class [150](#), [300](#), [600](#)

Flanged Ring Joint Class [600](#), [900](#)

Weldnek Class [300](#), [600](#), [900](#)

Dimensions 30"-36"

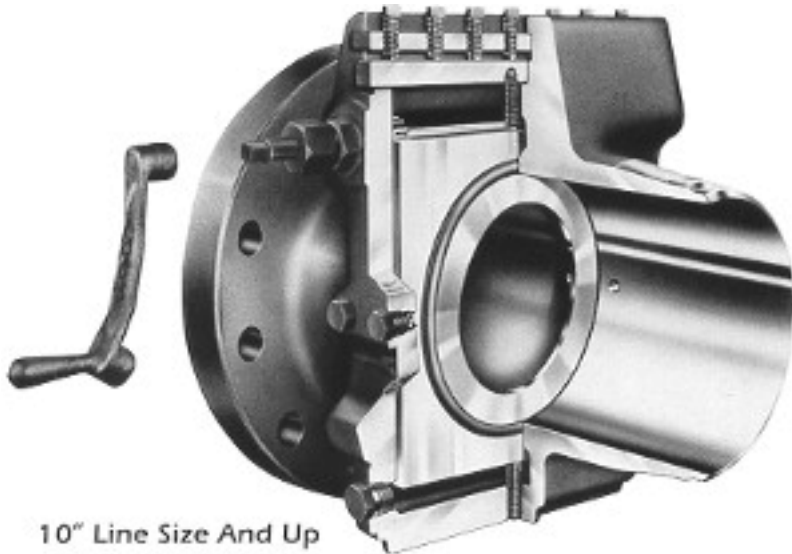
Weldnek Class [150](#), [300](#), [600](#)

Parts Diagrams [10"-14"](#), [16"-42"](#)

Parts List [10"-14"](#), [16"-24"](#), [30"-42"](#)

Product Overview

DANIEL JUNIOR ORIFICE FITTINGS CATALOG 200



Accurate measurement at large volume meter stations

Safety, simplicity and ease of operation make Daniel Junior Orifice Fittings a popular choice for reliable measurement at large volume meter stations. The "Junior" is a single-chamber fitting, engineered and manufactured to make orifice plate changing quick and easy at installations where line movement from flange-spreading is undesirable. Juniors installed on liquid lines prevent product spillage during plate changing.

To inspect orifice plate:

1. By-pass and relieve pressure in the meter tube;
2. Remove clamping bar, sealing bar, and gasket;
3. Use speed wrench to raise orifice plate carrier clear of fitting;
4. Inspect, clean, and/or replace plate and sealing unit with plate inlet side facing upstream;
5. Reverse opening procedure; tighten clamping bar set screws before re-pressuring meter tube.

Measurement can now be resumed with a minimum of shutdown time.

Two features of the "Junior" insure that the orifice plate will be centered as the plate carrier is seated in the fitting.

1. Special positioning set screws permanently installed at the factory impinge on the plate carrier on all four edges, fixing its position.
2. The top set screw is in the sealing bar so that the fitting cannot be sealed off unless the carrier is fully

seated and centered.

Other features:

- With proper meter tube lengths, the Junior can be used to measure flow in either direction;
- All parts can be replaced on location without removing the fitting from the line;
- Locations on fittings are provided for extra sets of pressure taps, when specified, for telemetering operations;
- All fittings meet or exceed the recommendations of ANSI/API 14.3, A.G.A. #3, A.S.M.E, and numerous other societies.

Body Styles



FLANGED



"FLANGNEK"



WELDING NECK



Is a Registered Trademark, Copyright 1999

Sizes, Pressure Ratings and Body Styles

Junior Orifice Fittings are especially designed and constructed for large volume measurement at gathering systems, compressor stations, city gates and power plants. Line sizes begin at 10" and continue through 42". Larger sizes can be supplied on special order. All popular sizes are available in Class 150 to Class 900. ANSI Class 1500 are available 10"-14" and can be supplied in other sizes on request. Body styles on popular sizes include Flanged (both ends), Flangnek and Welding Neck. Flanges may be serrated raised face or ring-type joints. Class 2500 available in 10"-12".

10"-42" JUNIOR ORIFICE FITTING CATALOG NUMBERS

Body Style	Primary Service Pressure Rating*					
	Class 150	Class 300	Class 600	Class 900	Class 1500	Class 2500
Flanged-Raised Face	201 DS	203 DS	205 DS	206 TS	207 TS	208 TS
Flanged-Ring Joint			245 DS	246 TS	247 TS	248 TS
Flangnek-Raised Face	021 DS	023 DS	025 DS	026 TS	027 TS	028 TS
Flangnek-Ring Joint			0245 DS	0246 TS	0247 TS	0248 TS
Welding Neck	281 DVS	283 DS	285 DS	286 TS	287 TS	288 TS

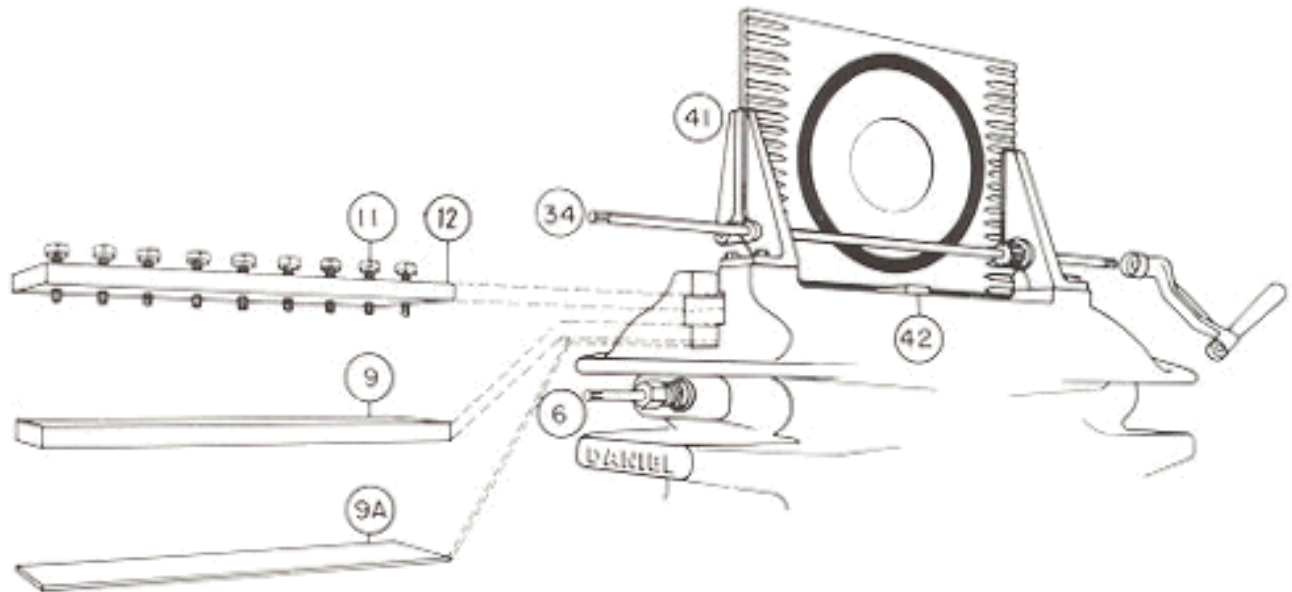
*All pressure ratings not available in all sizes. (See Dimensional Charts.)

NOTE: Each fitting furnished with "DS" removable seal in 10" only. "3DVS"*** bonded seal furnished in 12" and up.

**US Patent 5318073

Operation of Junior Orifice Fittings

18" & LARGER



TO REMOVE ORIFICE PLATE

1. De-pressure and bypass or shut-in the line.
2. Use wrench to loosen Part No. 11 (Clamping Bar Screws).
3. Lightly tap Part No. 9 (Sealing Bar) to break Gasket Seal.
4. Remove Part No. 12 (Clamping Bar).
5. Remove Part No. 9 (Sealing Bar).
6. Remove Part No. 9A (Sealing Bar Gasket).
7. Rotate Part No. 6 (Internal Pinion Shaft) to raise Plate Carrier.
8. Rotate Part No. 34 (External Pinion Shaft) to position Plate Carrier in Top Guide Bracket (Part No. 41).
9. Position Part No. 42 (Plate Carrier Stop) beneath Carrier to hold in place. Inspect, clean or change orifice plate.

TO REPLACE ORIFICE PLATE

1. Replace Orifice Plate/Sealing Unit Assembly in Plate Carrier with *inlet* side upstream.
2. Rotate Part No. 34 to raise Plate Carrier. Release Part No. 42.
3. Rotate Part No. 34 to lower Plate Carrier.
4. Rotate Part No. 6 to seat Plate Carrier in Fitting.
5. Replace Part No. 9A (Sealing Bar Gasket).
6. Replace Part No. 9 (Sealing Bar).
7. Replace Part No. 12 (Clamping Bar).
8. Tighten Part No. 11 (Clamping Bar Screws).

9. Gradually re-pressure the line.

Orifice Plate Sealing Units



The Daniel Dual Seal is the most simple and practical orifice plate sealing device for normal flowing streams. It is precision molded from 70-80 shore nitrile synthetic rubber** and provides four rubber-to-metal sealing surfaces 360° around the plate. The units positively seal against both outer faces of the plate and against both seats of the orifice fitting to prevent leakage.

On request, a special metallic-oxide lubricant coated "DSC" seal is available. In 1-1/2" to 10" sizes, the "DSC" is interchangeable with Daniel "TSC" and "MSC" seal units. In 12" sizes and up, the seal is bonded from 80-90 shore rubber directly to the outer edge of the orifice plate at the factory. If damaged, the "DVSC" seal and plate may be returned to the factory for revulcanizing. The "DSC" and "DVSC" seals are used in pressure ratings to 600 lbs. ANSI, in temperatures from -20°F to +275°F.

"DSC" in 2"-8", "DS" in 10"

*US Patent # 5085250. **Also available in Viton.



The Daniel Snap Seal Ring is a removable orifice plate holder designed for use in services where elastomer seal swelling is a problem. Certain media, such as ethylene or carbon dioxide may cause seal swelling when other type holders are removed from high-pressure service.

The Snap Seal Ring unit consists of two symmetrical metal rings, each one having an O-ring on both sides for a positive seal on the plate side and the fitting side of the ring. These rings center and secure the orifice plate between them. The assembled unit provides a full 360° rubber-to-metal seal around both sides, even in the absence of any pressure differential. No special tools are required for assembly or disassembly.

The Snap Seal Ring is designed for service temperatures ranging from -20°F to +275°F (standard O-rings) to -67°F to +437°F (Viton O-rings). It is available for line sizes of 2" through 16". When ordering, please specify nominal line size, schedule, plate thickness, and flowing media or material choice. The unit is available in 316 stainless steel and cadmium-plated carbon steel.

"SSRC" 2"-8", "SSR" 10" & up

*US Patent # 4,478,251.



The Daniel Teflon Seal is a superior orifice plate sealing unit for difficult, corrosive flows and for higher temperatures than the "DSC" unit can handle. The "TSC" has proven effective in such flows as dilute sulphuric acid, fuming nitric acid, hydrazine, liquid oxygen and other unusual flows, from -65°F to +500°F.

The two-piece unit consists of an inlet ring which fits around the plate outer diameter, and a downstream ring fitted with metal clips for assembling the unit. A special lip on this ring plus an annular groove* provide compression to effectively seal off the plate. The "TSC" unit can be assembled or taken apart by hand and is interchangeable in 1 1/2" to 10" sizes with Daniel "DSC" and "MSC" seal units.

"TSC" 2"-8", "TS" 10" & up



The Teflon seal is recommended for services with pressure ratings of 900 lbs. ANSI to 2500 lbs. ANSI or lower pressure services where rubber seals may not be satisfactory. Size 14" and larger now have graphite added for lubricity and ease of movement.

*This groove should be spread by inserting a blunt object such as screw driver and rotating 360° to reengage the spring lip after each use.

The Daniel Metal Seal is a stainless or cadmium-plated carbon steel clip-ring assembly recommended for high pressures and for temperatures up to 1200°F. The assembly consists of an upstream and a downstream ring. The upstream ring has a recessed groove into which a thin leaf-spring is inserted. When the plate is clamped between the rings, the spring provides the necessary compression to seat the plate against the downstream ring and effect a seal.

"MSC" 2"-8", "MS" 10" & up

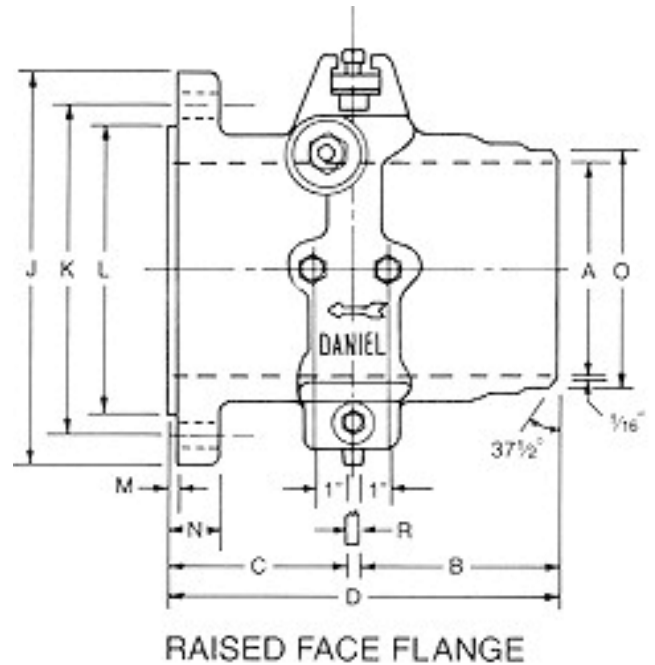
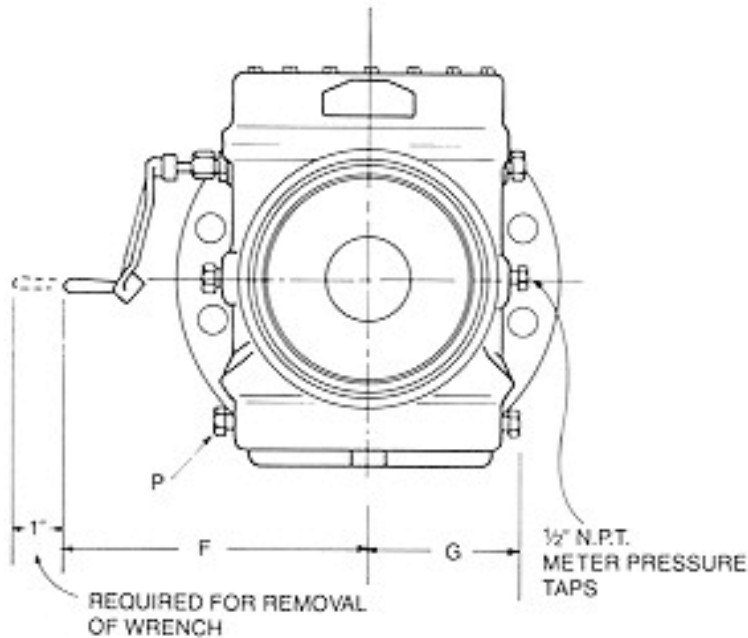
"MSC" Seal Units of cadmium-plated carbon steel are recommended for services to +600°F, standard 316 stainless steel units to +1000°F, and 316 stainless steel units with an iconel spring to +1200°F. The "MSC" seal unit can be assembled or taken apart by hand and is interchangeable in 1-1/2" to 12" sizes with Daniel "DSC" and "TSC" seal units.

.....

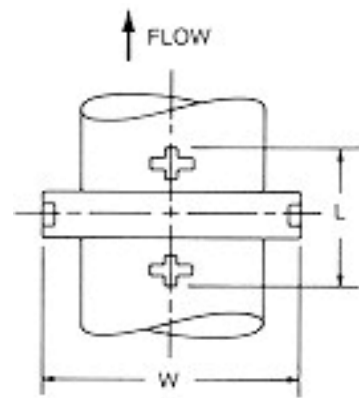
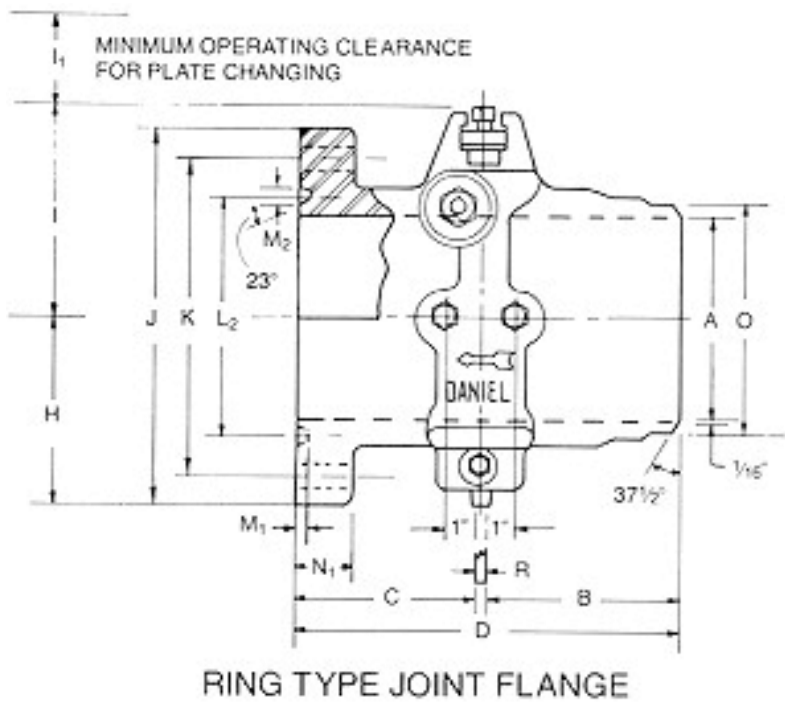
Dimensional Diagrams

DANIEL "FLANGNEK" JUNIOR ORIFICE FITTINGS

10" - 14" DIMENSIONS



RAISED FACE FLANGE



**Daniel Flangnek Junior Orifice Fittings
12"-14" Footing Dimensions**

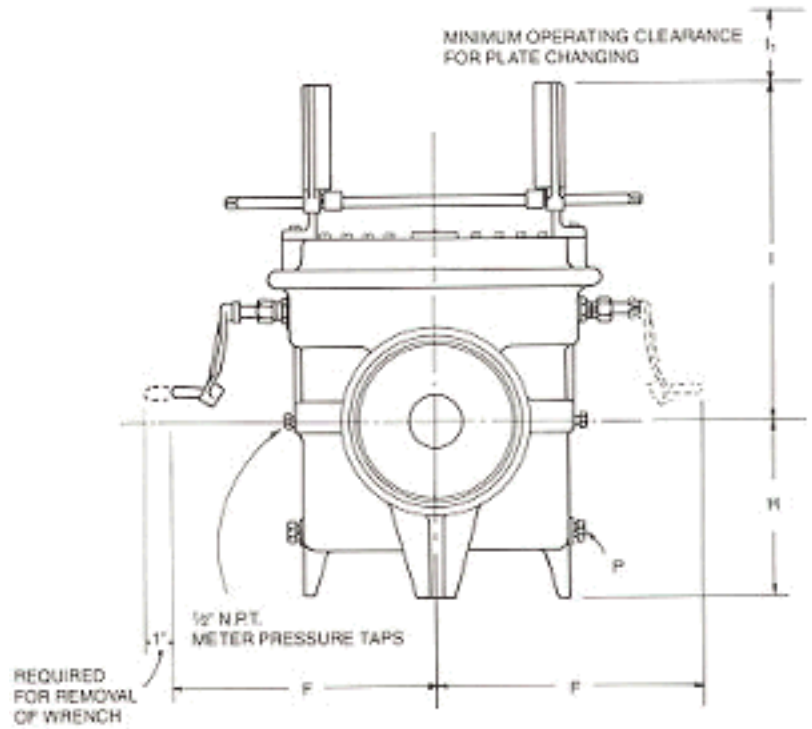
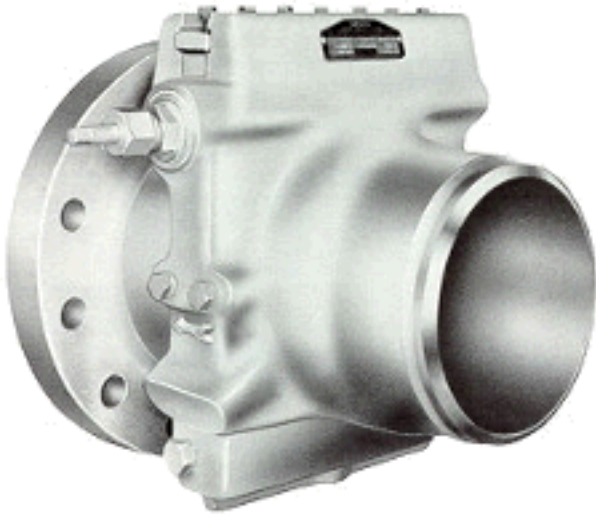
SIZE	RATING	L	W
12"	Class 150	---	16 1/4
	Class 300	---	16 1/4
	Class 600	---	16 1/4
14"	Class 150	---	19 1/4
	Class 300	---	19 1/4
	Class 600	10	17 1/4

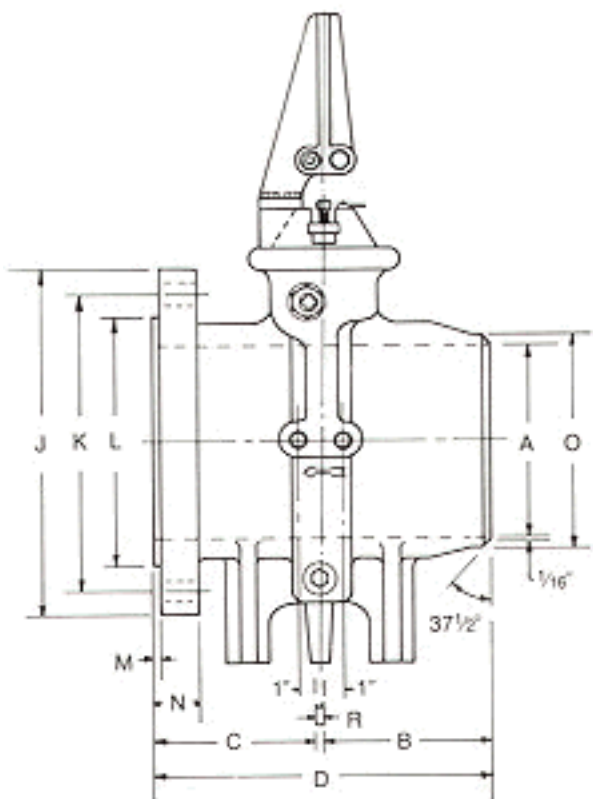
Dimensional Diagrams

DANIEL "FLANGNEK" JUNIOR ORIFICE FITTINGS

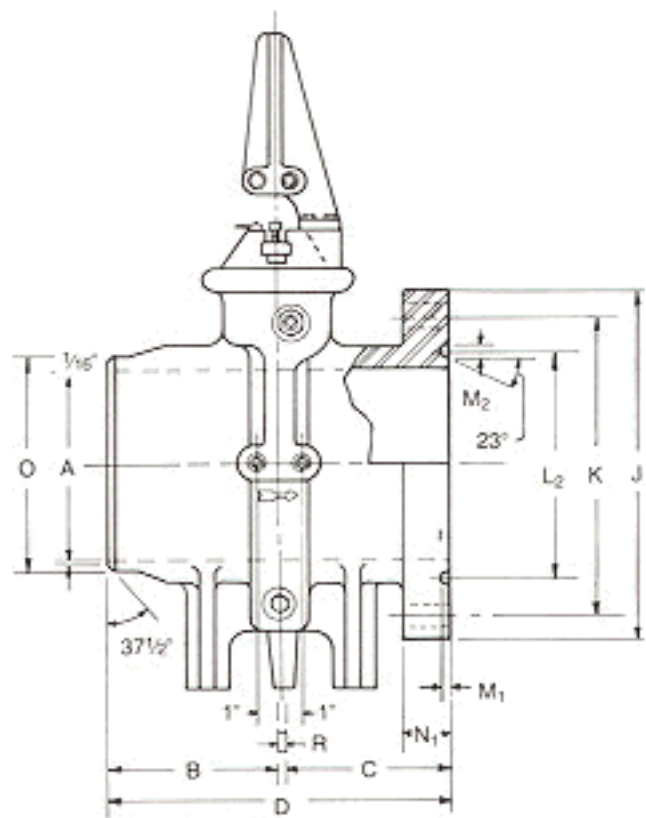
16"-24" DIMENSIONS

Note: 16" Does Not Have Top Guide Brackets

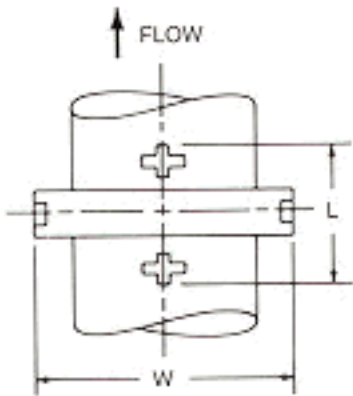




RAISED FACE FLANGE



RING TYPE JOINT FLANGE



**Daniel Flangnek Junior Orifice Fittings
16"-24" Footing Dimensions**

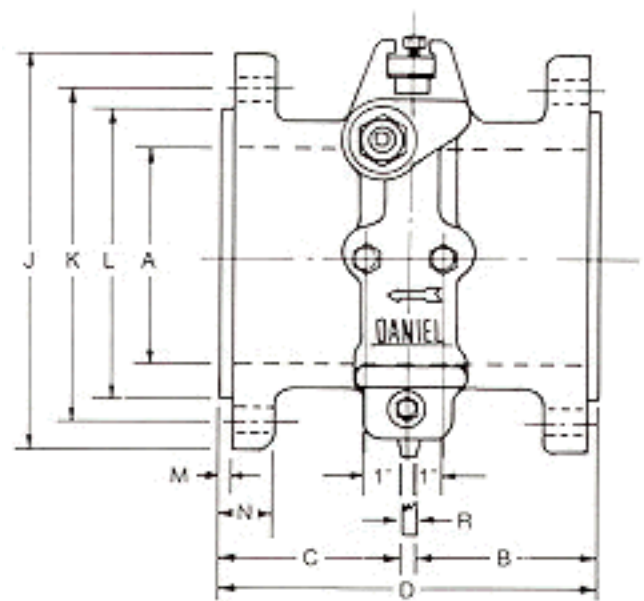
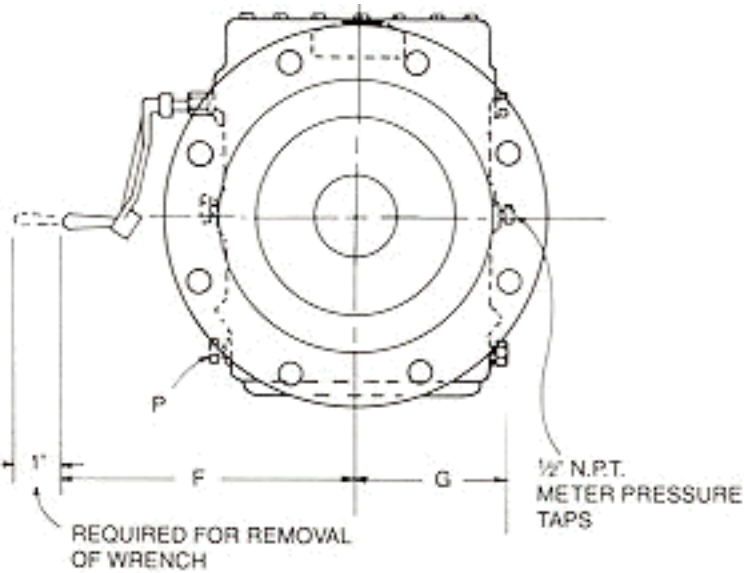
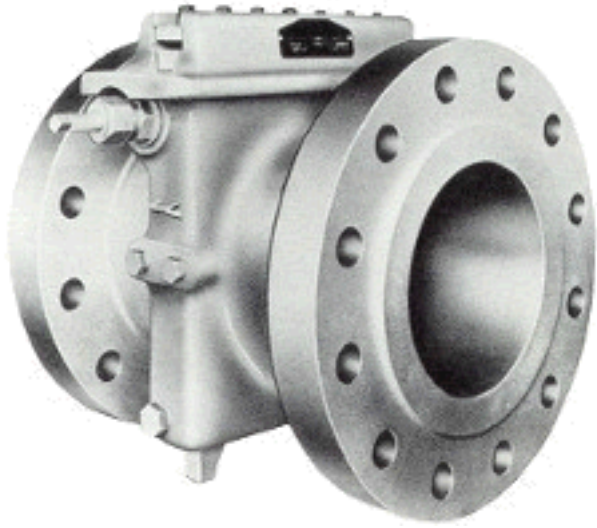
SIZE	RATING	L	W
16"	Class 150	---	23 1/4
	Class 300	---	23 1/4
	Class 600	---	23 1/4
18"	Class 150	---	24 1/4
	Class 300	---	24 1/4
	Class 600	---	25 3/8
20"	Class 150	---	26 1/2
	Class 300	---	26 1/2
	Class 600	---	28 1/8
24"	Class 150	---	28

Class 300	---	28
Class 600	14	32 3/8

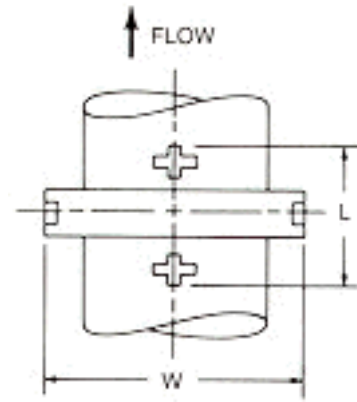
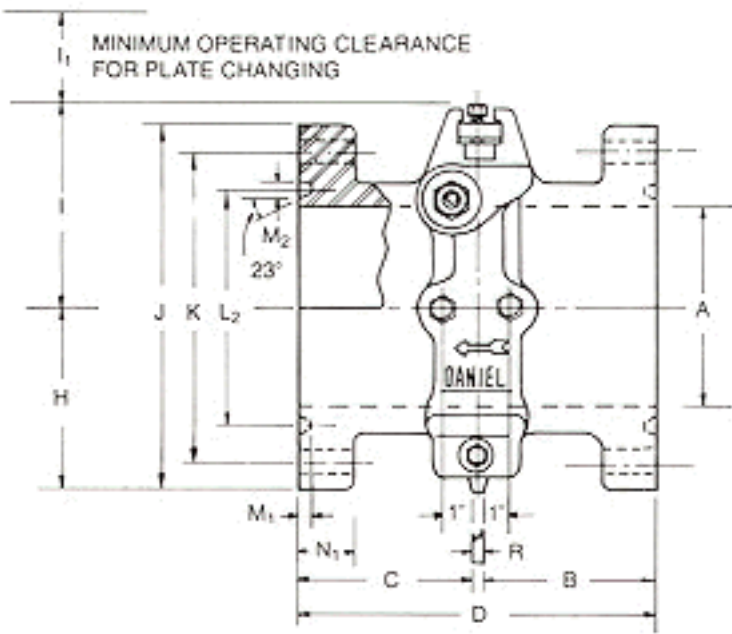
Dimensional Diagrams

DANIEL FLANGED JUNIOR ORIFICE FITTINGS

10" - 14" DIMENSIONS



RAISED FACE FLANGE



RING TYPE JOINT FLANGE

**Daniel Flanged Junior Orifice Fittings
12"-14" Footing Dimensions**

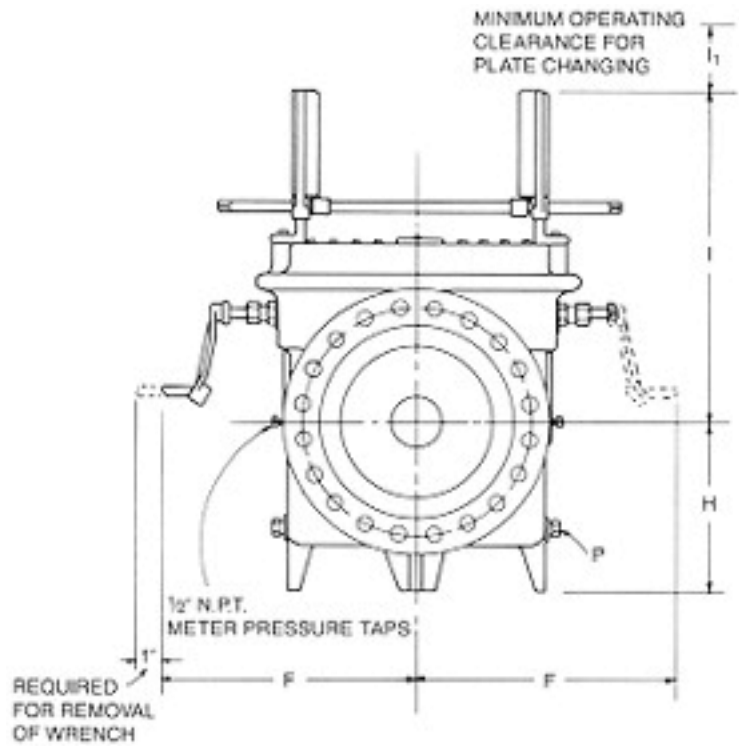
SIZE	RATING	L	W
12"	Class 150	---	16 1/4
	Class 300	---	16 1/4
	Class 600	---	16 1/4
14"	Class 150	---	19 1/4
	Class 300	---	19 1/4
	Class 600	10	17 1/4

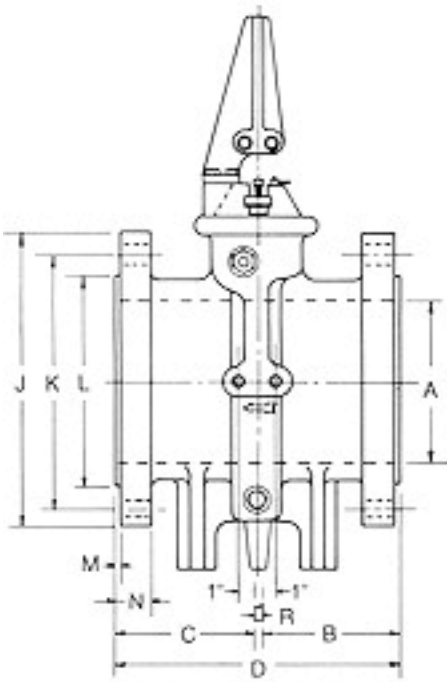
Dimensional Diagrams

DANIEL FLANGED JUNIOR ORIFICE FITTINGS

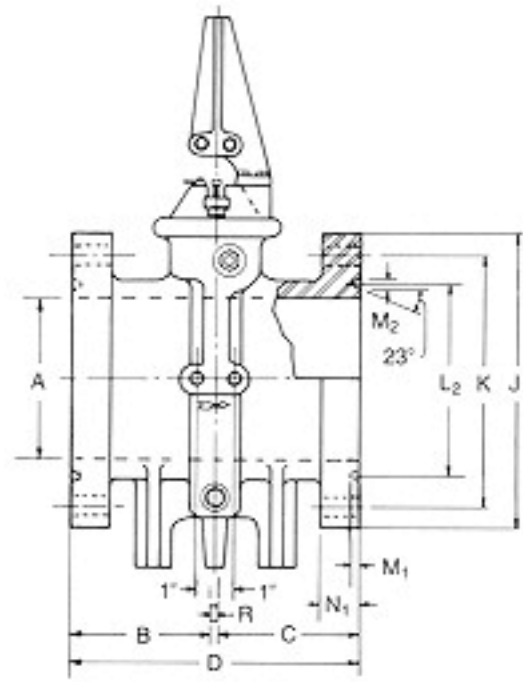
16"-24" DIMENSIONS

Note: 16" Does Not Have Top Guide Brackets

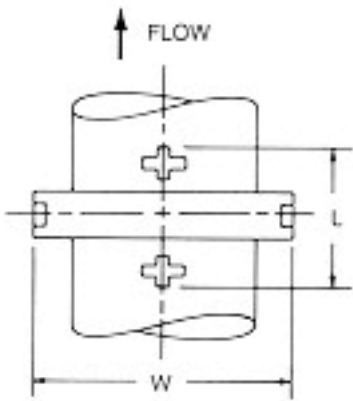




RAISED FACE FLANGE



RING TYPE JOINT FLANGE



**Daniel Flanged Junior Orifice Fittings
16"-24" Footing Dimensions**

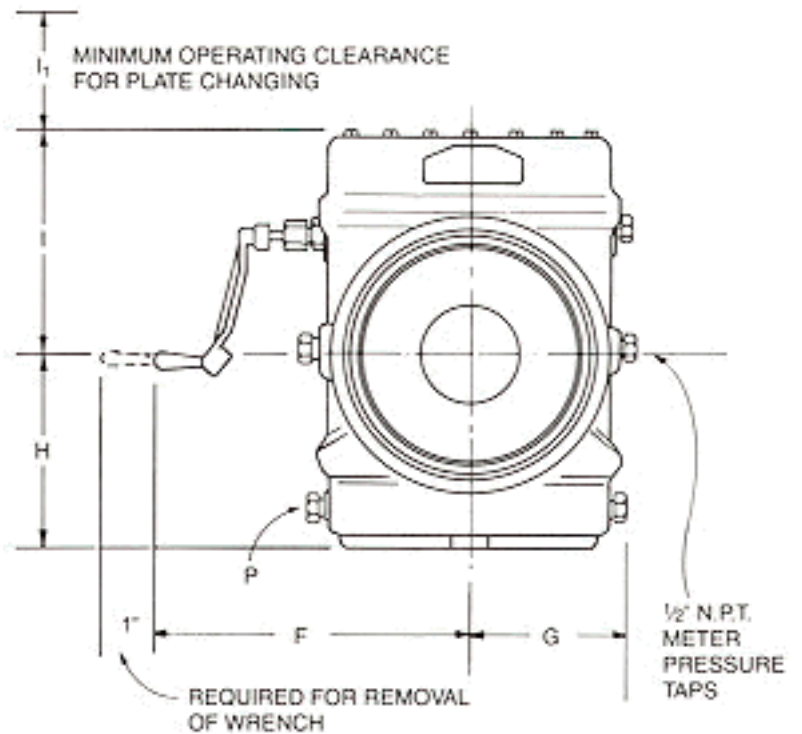
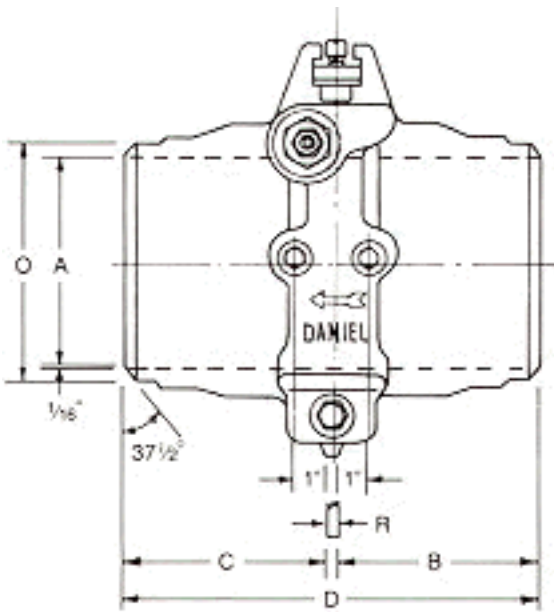
SIZE	RATING	L	W
16"	Class 150	---	23 1/4
	Class 300	---	23 1/4
	Class 600	---	23 1/4
18"	Class 150	---	24 1/4
	Class 300	---	24 1/4
	Class 600	---	25 3/8
20"	Class 150	---	26 1/2
	Class 300	---	26 1/2
	Class 600	---	28 1/8
24"	Class 150	---	28
	Class 300	---	28

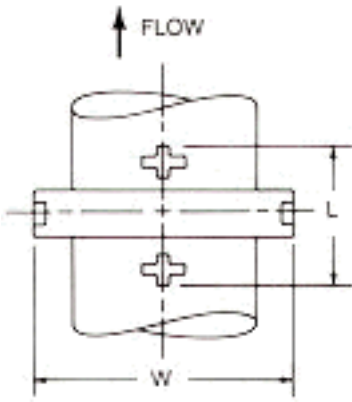
	Class 600	14	32 3/8
--	-----------	----	--------

Dimensional Diagrams

DANIEL WELDING NECK JUNIOR ORIFICE FITTINGS

10" - 14" DIMENSIONS





**Daniel Welding Neck Junior Orifice Fittings
12"-14" Footing Dimensions**

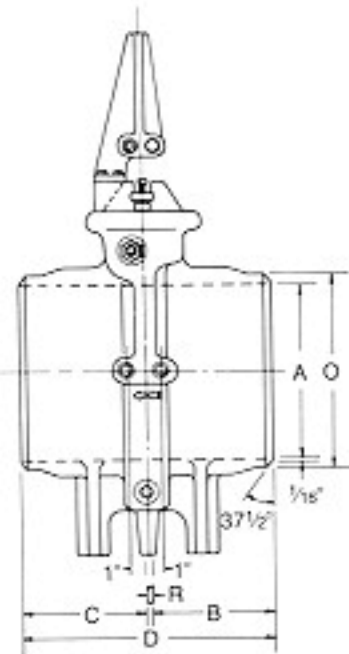
SIZE	RATING	L	W
12"	Class 150	---	16 1/4
	Class 300	---	16 1/4
	Class 600	---	16 1/4
14"	Class 150	---	19 1/4
	Class 300	---	19 1/4
	Class 600	10	17 1/4

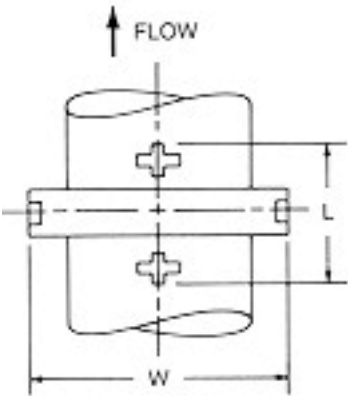
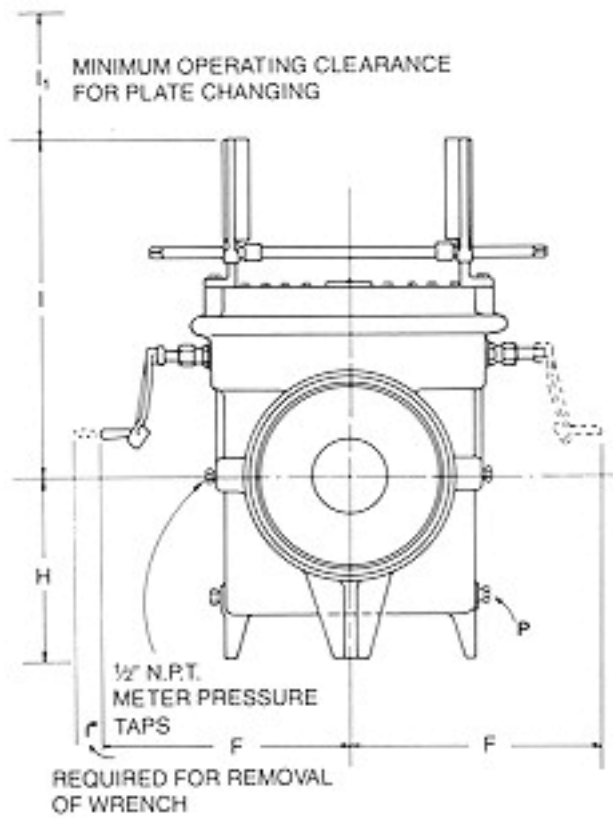
Dimensional Diagrams

DANIEL WELDING NECK JUNIOR ORIFICE FITTINGS

16"-24" DIMENSIONS

Note: 16" Does Not Have Top Guide Brackets





**Daniel Welding Neck Junior Orifice Fittings
16"-24" Footing Dimensions**

SIZE	RATING	L	W
16"	Class 150	---	23 1/4
	Class 300	---	23 1/4
	Class 600	---	23 1/4
18"	Class 150	---	24 1/4
	Class 300	---	24 1/4
	Class 600	---	25 3/8
20"	Class 150	---	26 1/2
	Class 300	---	26 1/2
	Class 600	---	28 1/8
24"	Class 150	---	28

Class 300	---	28
Class 600	14	32 3/8



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 150 Class

10" - 14" DIMENSIONS

Catalog No. 021 DS*--Class 150--"FLANGNEK" Raised Face, Both Ends---285 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.136	12.090	13.250
Upstream Face of Orifice Plate to Face of Flange	B	5 7/8	6 3/8	7 3/8
Downstream Face of Orifice Plate to Face of Flange	C	5 7/8	6 3/8	7 3/8
Overall Face to Face	D	12	13	15
Operating Clearance from Center	F	17 3/8	18 7/8	20 1/8
Body Clearance from Center	G	8 1/2	9 3/4	12 1/4
Centerline to Bottom	H	8 3/4	10 1/8	12
Centerline to Top	I	11 3/8	12 3/4	14 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	16	19	21
Diameter of Bolt Circle	K	14 1/4	17	18 3/4
Diameter of Raised Face	L	12 3/4	15	16 1/4
Height of Raised Face	M	1/16	1/16	1/16
Flange Thickness	N	1 3/16	1 1/4	1 3/8
Number and Diameter of Studs per Flange		12-- 7/8	12-- 7/8	12--1
Length of Studs with 2 Hex. Nuts		4 3/4	4 3/4	5 1/2
Diameter of Hub at Point of Welding	O	10.750	12.750	14.000
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		280	380	615

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 300 Class

10" - 14" DIMENSIONS

Catalog No. 023 DS*--Class 300--"FLANGNEK" Raised Face, Both Ends---740 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.136	12.090	13.250
Upstream Face of Orifice Plate to Face of Flange	B	6 1/2	7 7/8	8 1/4
Downstream Face of Orifice Plate to Face of Flange	C	6 1/2	7 7/8	8 1/4
Overall Face to Face	D	13 1/4	16	16 3/4
Operating Clearance from Center	F	17 3/8	18 7/8	20 1/8
Body Clearance from Center	G	8 1/2	9 3/4	12 1/4
Centerline to Bottom	H	8 3/4	10 1/4	12 1/2
Centerline to Top	I	11 3/8	12 3/4	14 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	17 1/2	20 1/2	23
Diameter of Bolt Circle	K	15 1/4	17 3/4	20 1/4
Diameter of Raised Face	L	12 3/4	15	16 1/4
Height of Raised Face	M	1/16	1/16	1/16
Flange Thickness	N	1 7/8	2	2 1/8
Number and Diameter of Studs per Flange		16--1	16--1 1/8	20--1 1/8
Length of Studs with 2 Hex. Nuts		6 1/4	6 3/4	7 1/4
Diameter of Hub at Point of Welding	O	10.750	12.750	14.000
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		400	515	800

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 600 Class

10" - 14" DIMENSIONS

Catalog No. 025 DS*--Class 600--"FLANGNEK" Raised Face, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.020	11.938	13.000
Upstream Face of Orifice Plate to Face of Flange	B	5 3/8	7 5/16	8 3/8
Downstream Face of Orifice Plate to Face of Flange	C	8 7/8	9 5/16	12 3/16
Overall Face to Face	D	14 1/2	16 7/8	20 13/16
Operating Clearance from Center	F	17 3/8	18 7/8	19 3/16
Body Clearance from Center	G	10 3/4	12 1/2	12 3/8
Centerline to Bottom	H	10	10 1/8	11 7/8
Centerline to Top	I	11 3/4	12 3/4	13 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	20	22	23 3/4
Diameter of Bolt Circle	K	17	19 1/4	20 3/4
Diameter of Raised Face	L	12.750	15.000	16.250
Height of Raised Face	M	1/4	1/4	1/4
Flange Thickness	N	2 3/4	2 7/8	3
Number and Diameter of Studs per Flange		16--1 1/4	20--1 1/4	20--1 3/8
Length of Studs with 2 Hex. Nuts		8 1/2	8 3/4	9 1/2
Diameter of Hub at Point of Welding	O	10.750	12.750	14.000
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		675	690	1115

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 900 Class

10" - 14" DIMENSIONS

Catalog No. 026 TS--Class 900--"FLANGNEK" Raised Face, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of Flange	B	7 3/8	9 7/8
Downstream Face of Orifice Plate to Face of Flange	C	9 5/8	9 7/8
Overall Face to Face	D	17 1/4	20
Operating Clearance from Center	F	18 3/8	20 3/8
Body Clearance from Center	G	10	10 1/2
Centerline to Bottom	H	11	12
Centerline to Top	I	12 3/8	12 3/4
Clearance for Plate Changing	I ₁	13 1/8	15
Diameter of Flange	J	21 1/2	24
Diameter of Bolt Circle	K	18 1/2	21
Diameter of Raised Face	L	12.750	15.000
Height of Raised Face	M	1/4	1/4
Flange Thickness	N	3	3 3/8
Number and Diameter of Studs per Flange		16--1 3/8	20--1 3/8
Length of Studs with 2 Hex. Nuts		9 1/4	10
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		990	1240

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 1500 Class

10" - 14" DIMENSIONS

Catalog No. 027 TS--Class 1500--"FLANGNEK" Raised Face, Both Ends---3705 P.S.I. (Gage) C.W.P.

Size		10"
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of Flange	B	9 5/8
Downstream Face of Orifice Plate to Face of Flange	C	13 3/8
Overall Face to Face	D	23 1/4
Operating Clearance from Center	F	17 7/16
Body Clearance from Center	G	11
Centerline to Bottom	H	11 1/2
Centerline to Top	I	11 5/8
Clearance for Plate Changing	I ₁	15
Diameter of Flange	J	23
Diameter of Bolt Circle	K	19
Diameter of Raised Face	L	12.750
Height of Raised Face	M	1/4
Flange Thickness	N	4 1/2
Number and Diameter of Studs per Flange		12--1 7/8
Length of Studs with 2 Hex. Nuts		13 3/4
Diameter of Hub at Point of Welding	O	10.750
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	1/4
Approximate Weight (Pounds)		1565

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 2500 Class

10" - 14" DIMENSIONS

Catalog No. 028 TS--Class 2500--"FLANGNEK" Raised Face, Both Ends---6170 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of Flange	B	11	16 3/4
Downstream Face of Orifice Plate to Face of Flange	C	16 5/8	20 7/16
Overall Face to Face	D	27 7/8	37 7/16
Operating Clearance from Center	F	19 1/8	23 1/16
Body Clearance from Center	G	13 3/8	18 1/16
Centerline to Bottom	H	13 1/4	18 5/16
Centerline to Top	I	12 1/2	14 7/16
Clearance for Plate Changing	I ₁	15	15
Diameter of Flange	J	26 1/2	30
Diameter of Bolt Circle	K	21 1/4	24 3/8
Diameter of Raised Face	L	12.750	15.000
Height of Raised Face	M	1/4	1/4
Flange Thickness	N	6 3/4	7 1/2
Number and Diameter of Studs per Flange		12--2 1/2	12--2 3/4
Length of Studs with 2 Hex. Nuts		19 3/4	22
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		2675	3700

?To be Specified by Purchaser.

Flangnek Ring Joint, ANSI 600 Class

10" - 14" DIMENSIONS

Catalog No. 0245 DS*--Class 600--"FLANGNEK" Ring Joint, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
A.P.I. Ring Number		R-53	R-57	R-61
Diam. Internal Line Bore	A	10.020	11.938	13.000
Upstream Face of Orifice Plate to Face of End	B	5 3/8	7 3/8	8 3/8
Downstream Face of Orifice Plate to Face of Flange	C	8 15/16	9 3/8	12 1/4
Overall Face to Face	D	14 9/16	17	20 7/8
Operating Clearance from Center	F	17 3/8	18 7/8	19 3/16
Body Clearance from Center	G	10 3/4	12 1/2	12 3/8
Centerline to Bottom	H	10	10 1/8	11 7/8
Centerline to Top	I	11 3/4	12 3/4	13 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	20	22	23 3/4
Diameter of Bolt Circle	K	17	19 1/4	20 3/4
Pitch Diameter of Ring and Groove	L ₂	12 3/4	15	16 1/2
Depth of Groove	M ₁	5/16	5/16	5/16
Width of Groove	M ₂	15/32	15/32	15/32
Flange Thickness	N ₁	2 13/16	2 15/16	3 1/16
Number and Diameter of Studs per Flange		16--1 1/4	20--1 1/4	20--1 3/8
Length of Studs with 2 Hex. Nuts		8 3/4	9	10
Diameter of Hub at Point of Welding	O	10.750	12.750	14.000
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4

Approximate Weight (Pounds)		675	690	1130
--------------------------------	--	-----	-----	------

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)

Flangnek Ring Joint, ANSI 900 Class

10" - 14" DIMENSIONS

Catalog No. 0246 TS--Class 900--"FLANGNEK" Ring Joint, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		10"	12"
A.P.I. Ring Number		R-53	R-57
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	7 3/8	9 7/8
Downstream Face of Orifice Plate to Face of Flange	C	9 11/16	9 7/8
Overall Face to Face	D	17 5/16	20
Operating Clearance from Center	F	18 3/8	20 3/8
Body Clearance from Center	G	10	10 1/2
Centerline to Bottom	H	11	12
Centerline to Top	I	12 3/8	12 3/4
Clearance for Plate Changing	I ₁	13 1/8	15
Diameter of Flange	J	21 1/2	24
Diameter of Bolt Circle	K	18 1/2	21
Pitch Diameter of Ring and Groove	L ₂	12 3/4	15
Depth of Groove	M ₁	5/16	5/16
Width of Groove	M ₂	15/32	15/32
Flange Thickness	N ₁	3 /16	3 7/16
Number and Diameter of Studs per Flange		16--1 3/8	20--1 3/8
Length of Studs with 2 Hex. Nuts		9 1/2	10 1/4
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4

Approximate Weight (Pounds)		990	1240
--------------------------------	--	-----	------

?To be Specified by Purchaser.

Flangnek Ring Joint, ANSI 1500 Class

10" - 14" DIMENSIONS

Catalog No. 0247 TS--Class 1500--"FLANGNEK" Ring Joint, Both Ends---3705 P.S.I. (Gage) C.W.P.

Size		10"
A.P.I. Ring Number		R-54
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of End	B	9 5/8
Downstream Face of Orifice Plate to Face of Flange	C	13 9/16
Overall Face to Face	D	23 7/16
Operating Clearance from Center	F	17 7/16
Body Clearance from Center	G	11
Centerline to Bottom	H	11 1/2
Centerline to Top	I	11 5/8
Clearance for Plate Changing	I ₁	15
Diameter of Flange	J	23
Diameter of Bolt Circle	K	19
Pitch Diameter of Ring and Groove	L ₂	12 3/4
Depth of Groove	M ₁	7/16
Width of Groove	M ₂	21/32
Flange Thickness	N ₁	4 11/16
Number and Diameter of Studs per Flange		12--1 7/8
Length of Studs with 2 Hex. Nuts		14 1/2
Diameter of Hub at Point of Welding	O	10.750
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	1/4

Approximate Weight (Pounds)		1600
--------------------------------	--	------

?To be Specified by Purchaser.

Flangnek Ring Joint, ANSI 2500 Class

10" - 14" DIMENSIONS

Catalog No.0248 TS--Class 2500--"FLANGNEK" Ring Joint, Both Ends---6170 P.S.I. (Gage) C.W.P.

Size		10"	12"
A.P.I. Ring Number		R-55	R-60
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	11	16 3/4
Downstream Face of Orifice Plate to Face of Flange	C	17 1/16	20 7/8
Overall Face to Face	D	28 5/16	37 7/8
Operating Clearance from Center	F	19 1/8	23 1/16
Body Clearance from Center	G	13 3/8	18 1/16
Centerline to Bottom	H	13 1/4	18 5/16
Centerline to Top	I	12 1/2	14 7/16
Clearance for Plate Changing	I ₁	15	15
Diameter of Flange	J	26 1/2	30
Diameter of Bolt Circle	K	21 1/4	24 3/8
Pitch Diameter of Ring and Groove	L ₂	13 1/2	16
Depth of Groove	M ₁	11/16	11/16
Width of Groove	M ₂	1 3/16	1 5/16
Flange Thickness	N ₁	7 3/16	7 15/16
Number and Diameter of Studs per Flange		12--2 1/2	12--2 3/4
Length of Studs with 2 Hex. Nuts		20 3/4	23
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4

Approximate Weight (Pounds)		2570	3800
--------------------------------	--	------	------

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 150 Class

10" - 14" DIMENSIONS

Catalog No. 201 DS*--Class 150--"Flanged" Raised Face, Both Ends---285 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.136	12.090	13.250
Upstream Face of Orifice Plate to Face of Flange	B	5 7/8	6 3/8	7 3/8
Downstream Face of Orifice Plate to Face of Flange	C	5 7/8	6 3/8	7 3/8
Overall Face to Face	D	12	13	15
Operating Clearance from Center	F	17 3/8	18 7/8	20 1/8
Body Clearance from Center	G	8 1/2	9 3/4	12 1/4
Centerline to Bottom	H	8 3/4	10 1/8	12
Centerline to Top	I	11 3/8	12 3/4	14 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	16	19	21
Diameter of Bolt Circle	K	14 1/4	17	18 3/4
Diameter of Raised Face	L	12 3/4	15	16 1/4
Height of Raised Face	M	1/16	1/16	1/16
Flange Thickness	N	1 3/16	1 1/4	1 3/8
Number and Diameter of Studs per Flange		12-- 7/8	12-- 7/8	12--1
Length of Studs with 2 Hex. Nuts		4 3/4	4 3/4	5 1/2
Diameter of Hub at Point of Welding	O	---	---	---
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		315	420	695

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 300 Class

10" - 14" DIMENSIONS

Catalog No. 203 DS*--Class 300--"Flanged" Raised Face, Both Ends---740 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.136	12.090	13.250
Upstream Face of Orifice Plate to Face of Flange	B	6 1/2	7 7/8	8 1/4
Downstream Face of Orifice Plate to Face of Flange	C	6 1/2	7 7/8	8 1/4
Overall Face to Face	D	13 1/4	16	16 3/4
Operating Clearance from Center	F	17 3/8	18 7/8	20 1/8
Body Clearance from Center	G	8 1/2	9 3/4	12 1/4
Centerline to Bottom	H	8 3/4	10 1/4	12 1/2
Centerline to Top	I	11 3/8	12 3/4	14 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	17 1/2	20 1/2	23
Diameter of Bolt Circle	K	15 1/4	17 3/4	20 1/4
Diameter of Raised Face	L	12 3/4	15	16 1/4
Height of Raised Face	M	1/16	1/16	1/16
Flange Thickness	N	1 7/8	2	2 1/8
Number and Diameter of Studs per Flange		16--1	16--1 1/8	20--1 1/8
Length of Studs with 2 Hex. Nuts		6 1/4	6 3/4	7 1/4
Diameter of Hub at Point of Welding	O	---	---	---
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		450	595	950

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 600 Class

10" - 14" DIMENSIONS

Catalog No. 205 DS*--Class 600--"Flanged" Raised Face, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.020	11.938	13.000
Upstream Face of Orifice Plate to Face of Flange	B	8 7/8	9 5/16	12 3/16
Downstream Face of Orifice Plate to Face of Flange	C	8 7/8	9 5/16	12 3/16
Overall Face to Face	D	18	18 7/8	24 5/8
Operating Clearance from Center	F	17 3/8	18 7/8	19 3/16
Body Clearance from Center	G	10 3/4	12 1/2	12 3/8
Centerline to Bottom	H	10	10 1/8	11 7/8
Centerline to Top	I	11 3/4	12 3/4	13 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Flange	J	20	22	23 3/4
Diameter of Bolt Circle	K	17	19 1/4	20 3/4
Diameter of Raised Face	L	12.750	15.000	16.250
Height of Raised Face	M	1/4	1/4	1/4
Flange Thickness	N	2 3/4	2 7/8	3
Number and Diameter of Studs per Flange		16--1 1/4	20--1 1/4	20--1 3/8
Length of Studs with 2 Hex. Nuts		8 1/2	8 3/4	9 1/2
Diameter of Hub at Point of Welding	O	---	---	---
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		745	1025	1380

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal)



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 900 Class

10" - 14" DIMENSIONS

Catalog No. 206 TS--Class 900--"Flanged" Raised Face, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of Flange	B	9 5/8	9 7/8
Downstream Face of Orifice Plate to Face of Flange	C	9 5/8	9 7/8
Overall Face to Face	D	19 1/2	20
Operating Clearance from Center	F	18 3/8	20 3/8
Body Clearance from Center	G	10	10 1/2
Centerline to Bottom	H	11	12
Centerline to Top	I	12 3/8	12 3/4
Clearance for Plate Changing	I ₁	13 1/8	15
Diameter of Flange	J	21 1/2	24
Diameter of Bolt Circle	K	18 1/2	21
Diameter of Raised Face	L	12.750	15.000
Height of Raised Face	M	1/4	1/4
Flange Thickness	N	3	3 3/8
Number and Diameter of Studs per Flange		16--1 3/8	20--1 3/8
Length of Studs with 2 Hex. Nuts		9 1/4	10
Diameter of Hub at Point of Welding	O	---	---
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		1080	1440

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 1500 Class

10" - 14" DIMENSIONS

Catalog No. 207 TS--Class 1500--"Flanged" Raised Face, Both Ends---3705 P.S.I. (Gage) C.W.P.

Size		10"
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of Flange	B	13 3/8
Downstream Face of Orifice Plate to Face of Flange	C	13 3/8
Overall Face to Face	D	27
Operating Clearance from Center	F	17 7/16
Body Clearance from Center	G	11
Centerline to Bottom	H	11 1/2
Centerline to Top	I	11 5/8
Clearance for Plate Changing	I ₁	15
Diameter of Flange	J	23
Diameter of Bolt Circle	K	19
Diameter of Raised Face	L	12.750
Height of Raised Face	M	1/4
Flange Thickness	N	4 1/2
Number and Diameter of Studs per Flange		12--1 7/8
Length of Studs with 2 Hex. Nuts		13 3/4
Diameter of Hub at Point of Welding	O	---
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	1/4
Approximate Weight (Pounds)		2000

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 2500 Class

10" - 14" DIMENSIONS

Catalog No. 208 TS--Class 2500--"Flanged" Raised Face, Both Ends---6170 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of Flange	B	16 5/8	20 7/16
Downstream Face of Orifice Plate to Face of Flange	C	16 5/8	20 7/16
Overall Face to Face	D	33 1/2	41 1/8
Operating Clearance from Center	F	19 1/8	23 1/16
Body Clearance from Center	G	13 3/8	18 1/16
Centerline to Bottom	H	13 1/4	18 5/16
Centerline to Top	I	12 1/2	14 7/16
Clearance for Plate Changing	I ₁	15	15
Diameter of Flange	J	26 1/2	30
Diameter of Bolt Circle	K	21 1/4	24 3/8
Diameter of Raised Face	L	12.750	15.000
Height of Raised Face	M	1/4	1/4
Flange Thickness	N	6 3/4	7 1/2
Number and Diameter of Studs per Flange		12--2 1/2	12--2 3/4
Length of Studs with 2 Hex. Nuts		19 3/4	22
Diameter of Hub at Point of Welding	O	---	---
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		3600	5000

?To be Specified by Purchaser.

Flanged Ring Joint, ANSI 2500 Class

10" - 14" DIMENSIONS

Catalog No. 248 TS--Class 2500--"Flanged" Ring Joint, Both Ends---6170 P.S.I. (Gage) C.W.P.

Size		10"	12"
A.P.I. Ring Number		R-55	R-60
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	17 1/16	20 7/8
Downstream Face of Orifice Plate to Face of Flange	C	17 1/16	20 7/8
Overall Face to Face	D	34 3/8	42
Operating Clearance from Center	F	19 1/8	23 1/16
Body Clearance from Center	G	13 3/8	18 1/16
Centerline to Bottom	H	13 1/4	18 5/16
Centerline to Top	I	12 1/2	14 7/16
Clearance for Plate Changing	I ₁	15	15
Diameter of Flange	J	26 1/2	30
Diameter of Bolt Circle	K	21 1/4	24 3/8
Pitch Diameter of Ring and Groove	L ₂	13 1/2	16
Depth of Groove	M ₁	11/16	11/16
Width of Groove	M ₂	1 3/16	1 5/16
Flange Thickness	N ₁	7 3/16	7 15/16
Number and Diameter of Studs per Flange		12--2 1/2	12--2 3/4
Length of Studs with 2 Hex. Nuts		20 3/4	23
Diameter of Hub at Point of Welding	O	---	---
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4

Approximate Weight (Pounds)		3750	5200
--------------------------------	--	------	------

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

ANSI 600 Class

10" - 14" DIMENSIONS

Catalog No. 285 DS*--Class 600--Welding Neck Ends---1480 P.S.I. (Gage) C.W.P.

Size		10"	12"	14"
Diam. Internal Line Bore	A	10.020	11.938	13.000
Upstream Face of Orifice Plate to Face of End	B	5 3/8	7 5/16	8 3/8
Downstream Face of Orifice Plate to Face of End	C	5 3/8	7 5/16	8 3/8
Overall Face to Face	D	11	14 7/8	17
Operating Clearance from Center	F	17 3/8	18 7/8	19 3/16
Body Clearance from Center	G	10	10 1/2	12 3/8
Centerline to Bottom	H	10	11	11 7/8
Centerline to Top	I	12 3/8	12 3/4	13 1/2
Clearance for Plate Changing	I ₁	13 1/8	15	17 9/16
Diameter of Hub at Point of Welding	O	10.750	12.750	14.000
Size of Drain Plugs	P	3/4	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4	1/4
Approximate Weight (Pounds)		350	500	850

*Sizes 12" and up "DVSC" (Dual Vulcanized Seal), Bonded to Plate

ANSI 900 Class

10" - 14" DIMENSIONS

Catalog No. 286 TS--Class 900--Welding Neck Ends---2220 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	7 3/8	9 7/8
Downstream Face of Orifice Plate to Face of End	C	7 3/8	9 7/8
Overall Face to Face	D	15	20
Operating Clearance from Center	F	18 3/4	20 3/8
Body Clearance from Center	G	10	10 1/2
Centerline to Bottom	H	10 3/4	12
Centerline to Top	I	12 3/8	12 3/4
Clearance for Plate Changing	I ₁	13 1/8	15
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		630	830

?To be Specified by Purchaser.

ANSI 1500 Class

10" - 14" DIMENSIONS

Catalog No. 287 TS--Class 1500--Welding Neck Ends---3705 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	9 5/8	9 7/8
Downstream Face of Orifice Plate to Face of End	C	9 5/8	9 7/8
Overall Face to Face	D	19 1/2	20
Operating Clearance from Center	F	17 7/16	20 9/16
Body Clearance from Center	G	11	15 9/16
Centerline to Bottom	H	11 1/2	15 13/16
Centerline to Top	I	11 5/8	13 3/4
Clearance for Plate Changing	I ₁	15	16
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		1130	1750

?To be Specified by Purchaser.

ANSI 2500 Class

10" - 14" DIMENSIONS

Catalog No. 288 TS--Class 2500--Welding Neck Ends---6170 P.S.I. (Gage) C.W.P.

Size		10"	12"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	11	16 3/4
Downstream Face of Orifice Plate to Face of End	C	11	16 3/4
Overall Face to Face	D	22 1/4	33 3/4
Operating Clearance from Center	F	19 1/8	23 1/16
Body Clearance from Center	G	13 3/8	18 1/16
Centerline to Bottom	H	13 1/4	18 5/16
Centerline to Top	I	12 1/2	14 7/16
Clearance for Plate Changing	I ₁	15	15
Diameter of Hub at Point of Welding	O	10.750	12.750
Size of Drain Plugs	P	3/4	3/4
Orifice Plate Thickness	R	1/4	1/4
Approximate Weight (Pounds)		1750	2400

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 150 Class

16" - 24" DIMENSIONS

Catalog No. 021 3DVS--Class 150--"FLANGNEK" Raised Face, Both Ends---285 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	10 5/16	9 13/16	8 29/32	9 13/16
Downstream Face of Orifice Plate to Face of Flange	C	10 5/16	11 3/8	8 23/32	9 13/16
Overall Face to Face	D	21	21 9/16	18	20
Operating Clearance from Center	F	21 7/8	24 1/4	25 5/8	27 1/8
Centerline to Bottom	H	11 3/4	12 9/16	18 3/8	21
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	23 1/2	25	27 1/2	32
Diameter of Bolt Circle	K	21 1/4	22 3/4	25	29 1/2
Diameter of Raised Face	L	18 1/2	21	23	27 1/4
Height of Raised Face	M	1/16	1/16	1/16	1/16
Flange Thickness	N	1 7/16	1 9/16	1 11/16	1 7/8
Number and Diameter of Studs per Flange		16--1	16--1 1/8	20--1 1/8	20--1 1/4
Length of Studs with 2 Hex. Nuts		5 1/2	6	6 1/2	7
Diameter of Hub at Point of Welding	O	16.000	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		920	1230	1505	1540

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 300 Class

16" - 24" DIMENSIONS

Catalog No. 023 3DVS--Class 300--"FLANGNEK" Raised Face, Both Ends---740 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	11 15/32	9 13/16	9 23/32	10 9/16
Downstream Face of Orifice Plate to Face of Flange	C	10 21/32	12 3/16	9 17/32	10 13/16
Overall Face to Face	D	22 1/2	22 3/8	19 5/8	21 3/4
Operating Clearance from Center	F	21 7/8	24 1/4	25 5/8	27 1/2
Centerline to Bottom	H	13 1/8	12 9/16	18 3/8	21
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	25 1/2	28	30 1/2	36
Diameter of Bolt Circle	K	22 1/2	24 3/4	27	32
Diameter of Raised Face	L	18 1/2	21	23	27 1/4
Height of Raised Face	M	1/16	1/16	1/16	1/16
Flange Thickness	N	2 1/4	2 3/8	2 1/2	2 3/4
Number and Diameter of Studs per Flange		20--1 1/4	24--1 1/4	24--1 1/4	24--1 1/2
Length of Studs with 2 Hex. Nuts		7 3/4	7 3/4	8 1/4	9
Diameter of Hub at Point of Welding	O	16.000	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1050	1475	1765	2000

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 600 Class

16" - 24" DIMENSIONS

Catalog No. 025 3DVS--Class 600--"FLANGNEK" Raised Face, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	12 1/8	9 13/16	12 7/16	13 1/16
Downstream Face of Orifice Plate to Face of Flange	C	12 1/8	13 5/16	12 7/16	13 1/16
Overall Face to Face	D	24 5/8	23 1/2	25 1/4	26 1/2
Operating Clearance from Center	F	22 1/2	24 3/4	26 3/8	28 1/2
Centerline to Bottom	H	13 1/2	14 5/8	19	21 1/4
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	27	29 1/4	32	37
Diameter of Bolt Circle	K	23 3/4	25 3/4	28 1/2	33
Diameter of Raised Face	L	18.500	21.000	23.000	27.250
Height of Raised Face	M	1/4	1/4	1/4	1/4
Flange Thickness	N	3 1/4	3 1/2	3 3/4	4 1/4
Number and Diameter of Studs per Flange		20--1 1/2	20--1 5/8	24--1 5/8	24--1 7/8
Length of Studs with 2 Hex. Nuts		10 1/4	11	11 1/2	13
Diameter of Hub at Point of Welding	O	16.000	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1240	2045	2190	3160

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.



Is a Registered Trademark, Copyright 1999

Flangnek Raised Face, ANSI 900 Class

16" - 24" DIMENSIONS

Catalog No. 026 TS--Class 900--"FLANGNEK" Raised Face, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		18"
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of Flange	B	12 5/8
Downstream Face of Orifice Plate to Face of Flange	C	12 5/8
Overall Face to Face	D	25 5/8
Operating Clearance from Center	F	24 3/4
Centerline to Bottom	H	15 1/2
Centerline to Top	I	31 9/16
Clearance for Plate Changing	I ₁	8 7/8
Diameter of Flange	J	31
Diameter of Bolt Circle	K	27
Diameter of Raised Face	L	21
Height of Raised Face	M	1/4
Flange Thickness	N	4 1/4
Number and Diameter of Studs per Flange		20--1 7/8
Length of Studs with 2 Hex. Nuts		13 1/2
Diameter of Hub at Point of Welding	O	18.000
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	3/8
Approximate Weight (Pounds)		2500

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

Flangnek Ring Joint, ANSI 600 Class

16" - 24" DIMENSIONS

Catalog No. 0245 3DVS--Class 600--"FLANGNEK" Ring Joint, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
A.P.I. Ring Number		R-65	R-69	R-73	R-77
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of End	B	12 13/16	9 13/16	12 9/16	13 1/4
Downstream Face of Orifice Plate to Face of Flange	C	12 13/16	13 3/8	12 9/16	13 1/4
Overall Face to Face	D	24 3/4	23 9/16	25 1/2	26 7/8
Operating Clearance from Center	F	22 1/2	24 3/4	26 3/8	28 1/2
Centerline to Bottom	H	13 1/2	14 5/8	19	21 1/4
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	27	29 1/4	32	37
Diameter of Bolt Circle	K	23 3/4	25 3/4	28 1/2	33
Pitch Diameter of Ring and Groove	L ₂	18 1/2	21	23	27 1/4
Depth of Groove	M ₁	5/16	5/16	3/8	7/16
Width of Groove	M ₂	15/32	15/32	17/32	21/32
Flange Thickness	N ₁	3 5/16	3 9/16	3 7/8	4 7/16
Number and Diameter of Studs per Flange		20--1 1/2	20--1 5/8	24--1 5/8	24-1 7/8
Length of Studs with 2 Hex. Nuts		10 1/2	11 1/4	11 3/4	13 1/2
Diameter of Hub at Point of Welding	O	16.000	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1240	2045	2190	3160

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

Flangnek Ring Joint, ANSI 900 Class

16" - 24" DIMENSIONS

Catalog No. 0246 TS--Class 900--"FLANGNEK" Ring Joint, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		18"
A.P.I. Ring Number		R-70
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of End	B	12 5/8
Downstream Face of Orifice Plate to Face of Flange	C	12 7/8
Overall Face to Face	D	25 7/8
Operating Clearance from Center	F	24 3/4
Centerline to Bottom	H	15 1/2
Centerline to Top	I	31 9/16
Clearance for Plate Changing	I ₁	8 7/8
Diameter of Flange	J	31
Diameter of Bolt Circle	K	27
Pitch Diameter of Ring and Groove	L ₂	21
Depth of Groove	M ₁	1/2
Width of Groove	M ₂	25/32
Flange Thickness	N ₁	4 1/2
Number and Diameter of Studs per Flange		20--1 7/8
Length of Studs with 2 Hex. Nuts		13 1/2
Diameter of Hub at Point of Welding	O	18.000
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	3/8
Approximate Weight (Pounds)		2500

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 150 Class

16" - 24" DIMENSIONS

Catalog No. 201 DVS--Class 150--"Flanged" Raised Face, Both Ends---285 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	10 5/16	11 3/8	8 29/32	9 13/16
Downstream Face of Orifice Plate to Face of Flange	C	10 5/16	11 3/8	8 23/32	9 13/16
Overall Face to Face	D	21	23 1/8	18	20
Operating Clearance from Center	F	21 7/8	24 1/4	25 5/8	27 1/8
Centerline to Bottom	H	11 3/4	12 9/16	18 3/8	21
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	23 1/2	25	27 1/2	32
Diameter of Bolt Circle	K	21 1/4	22 3/4	25	29 1/2
Diameter of Raised Face	L	18 1/2	21	23	27 1/4
Height of Raised Face	M	1/16	1/16	1/16	1/16
Flange Thickness	N	1 7/16	1 9/16	1 11/16	1 7/8
Number and Diameter of Studs per Flange		16--1	16--1 1/8	20--1 1/8	20--1 1/4
Length of Studs with 2 Hex. Nuts		5 1/2	6	6 1/2	7
Diameter of Hub at Point of Welding	O	---	---	---	---
Size of Drain Plugs	P	3/4	3/4	1	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		985	1380	1625	1745

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 300 Class

16" - 24" DIMENSIONS

Catalog No. 203 DVS--Class 300--"Flanged" Raised Face, Both Ends---740 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	11 15/32	12 3/16	9 23/32	10 9/16
Downstream Face of Orifice Plate to Face of Flange	C	10 21/32	12 3/16	9 17/32	10 13/16
Overall Face to Face	D	22 1/2	24 3/4	19 5/8	21 3/4
Operating Clearance from Center	F	21 7/8	24 1/4	25 5/8	27 1/2
Centerline to Bottom	H	13 1/8	12 9/16	18 3/8	21
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	25 1/2	28	30 1/2	36
Diameter of Bolt Circle	K	22 1/2	24 3/4	27	32
Diameter of Raised Face	L	18 1/2	21	23	27 1/4
Height of Raised Face	M	1/16	1/16	1/16	1/16
Flange Thickness	N	2 1/4	2 3/8	2 1/2	2 3/4
Number and Diameter of Studs per Flange		20--1 1/4	24--1 1/4	24--1 1/4	24--1 1/2
Length of Studs with 2 Hex. Nuts		7 3/4	7 3/4	8 1/4	9
Diameter of Hub at Point of Welding	O	---	---	---	---
Size of Drain Plugs	P	3/4	3/4	1	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1245	1775	1945	2490

?To be Specified by Purchaser.



Is a Registered Trademark, Copyright 1999

Flanged Raised Face, ANSI 600 Class

16" - 24" DIMENSIONS

Catalog No. 205 DVS--Class 600--"Flanged" Raised Face, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of Flange	B	12 1/8	13 5/16	12 7/16	13 1/16
Downstream Face of Orifice Plate to Face of Flange	C	12 1/8	13 5/16	12 7/16	13 1/16
Overall Face to Face	D	24 5/8	27	25 1/4	26 1/2
Operating Clearance from Center	F	22 1/2	24 3/4	26 3/8	28 1/2
Centerline to Bottom	H	13 1/2	14 5/8	19	21 1/4
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	27	29 1/4	32	37
Diameter of Bolt Circle	K	23 3/4	25 3/4	28 1/2	33
Diameter of Raised Face	L	18.500	21.000	23.000	27.250
Height of Raised Face	M	1/4	1/4	1/4	1/4
Flange Thickness	N	3 1/4	3 1/2	3 3/4	4 1/4
Number and Diameter of Studs per Flange		20--1 1/2	20--1 5/8	24--1 5/8	24--1 7/8
Length of Studs with 2 Hex. Nuts		10 1/4	11	11 1/2	13
Diameter of Hub at Point of Welding	O	---	---	---	---
Size of Drain Plugs	P	3/4	3/4	1	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1570	2520	2800	4035

?To be Specified by Purchaser.

Flanged Ring Joint, ANSI 600 Class

16" - 24" DIMENSIONS

Catalog No. 245 DVS--Class 600--"Flanged" Ring Joint, Both Ends---1480 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
A.P.I. Ring Number		R-65	R-69	R-73	R-77
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of End	B	12 3/16	13 3/8	12 9/16	13 1/4
Downstream Face of Orifice Plate to Face of Flange	C	12 3/16	13 3/8	12 9/16	13 1/4
Overall Face to Face	D	24 3/4	27 1/8	25 1/2	26 7/8
Operating Clearance from Center	F	22 1/2	24 3/4	26 3/8	28 1/2
Centerline to Bottom	H	13 1/2	14 5/8	19	21 1/4
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Flange	J	27	29 1/4	32	37
Diameter of Bolt Circle	K	23 3/4	25 3/4	28 1/2	33
Pitch Diameter of Ring and Groove	L ₂	18 1/2	21	23	27 1/4
Depth of Groove	M ₁	5/16	5/16	3/8	7/16
Width of Groove	M ₂	15/32	15/32	17/32	21/32
Flange Thickness	N ₁	3 5/16	3 9/16	3 7/8	4 7/16
Number and Diameter of Studs per Flange		20--1 1/2	20--1 5/8	20--1 5/8	24-1 7/8
Length of Studs with 2 Hex. Nuts		10 1/2	11 1/4	11 3/4	13 1/2
Diameter of Hub at Point of Welding	O	---	---	---	---
Size of Drain Plugs	P	3/4	3/4	1	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		1570	2520	2800	4035

?To be Specified by Purchaser.

Flanged Ring Joint, ANSI 900 Class

16" - 24" DIMENSIONS

Catalog No. 246 TS--Class 900--"Flanged" Ring Joint, Both Ends---2220 P.S.I. (Gage) C.W.P.

Size		18"
A.P.I. Ring Number		R-70
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of End	B	12 7/8
Downstream Face of Orifice Plate to Face of Flange	C	12 7/8
Overall Face to Face	D	26 1/8
Operating Clearance from Center	F	24 3/4
Centerline to Bottom	H	15 1/2
Centerline to Top	I	31 9/16
Clearance for Plate Changing	I ₁	8 7/8
Diameter of Flange	J	31
Diameter of Bolt Circle	K	27
Pitch Diameter of Ring and Groove	L ₂	21
Depth of Groove	M ₁	1/2
Width of Groove	M ₂	25/32
Flange Thickness	N ₁	4 1/2
Number and Diameter of Studs per Flange		20--1 7/8
Length of Studs with 2 Hex. Nuts		13 1/2
Diameter of Hub at Point of Welding	O	---
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	3/8
Approximate Weight (Pounds)		3525

?To be Specified by Purchaser.

ANSI 300 Class

16" - 24" DIMENSIONS

Catalog No. 283 3DVS--Class 300--Welding Neck Ends---740 P.S.I. (Gage) C.W.P.

Size		18"	20"	24"
Diam. Internal Line Bore	A	?	?	?
Upstream Face of Orifice Plate to Face of End	B	9 13/16	9 23/32	9 13/16
Downstream Face of Orifice Plate to Face of End	C	9 13/16	9 17/32	9 13/16
Overall Face to Face	D	20	19 5/8	20
Operating Clearance from Center	F	24 1/4	25 5/8	27 1/4
Centerline to Bottom	H	12 9/16	18 3/8	21
Centerline to Top	I	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	9	11 1/8	15
Diameter of Hub at Point of Welding	O	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8
Approximate Weight (Pounds)		1175	1485	1510

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

ANSI 600 Class

16" - 24" DIMENSIONS

Catalog No. 285 3DVS--Class 600--Welding Neck Ends---1480 P.S.I. (Gage) C.W.P.

Size		16"	18"	20"	24"
Diam. Internal Line Bore	A	?	?	?	?
Upstream Face of Orifice Plate to Face of End	B	9 5/16	9 13/16	12 7/16	13 1/16
Downstream Face of Orifice Plate to Face of End	C	9 5/16	9 13/16	12 7/16	13 1/16
Overall Face to Face	D	19	20	25 1/4	26 1/2
Operating Clearance from Center	F	22 1/2	24 3/4	26 3/8	28 1/2
Centerline to Bottom	H	13 1/2	14 5/8	19	21 1/4
Centerline to Top	I	14 7/16	29 5/8	30 1/4	32 3/8
Clearance for Plate Changing	I ₁	19 1/2	9	11 1/8	15
Diameter of Hub at Point of Welding	O	16.000	18.000	20.000	24.000
Size of Drain Plugs	P	3/4	3/4	3/4	1
Orifice Plate Thickness	R	3/8	3/8	3/8	3/8
Approximate Weight (Pounds)		840	1570	1575	2285

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

ANSI 900 Class

16" - 24" DIMENSIONS

Catalog No. 286 TS--Class 900--Welding Neck Ends---2220 P.S.I. (Gage) C.W.P.

Size		18"
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of End	B	12 5/8
Downstream Face of Orifice Plate to Face of End	C	12 5/8
Overall Face to Face	D	25 5/8
Operating Clearance from Center	F	24 3/4
Centerline to Bottom	H	15 1/2
Centerline to Top	I	31 9/16
Clearance for Plate Changing	I ₁	8 7/8
Diameter of Hub at Point of Welding	O	18.000
Size of Drain Plugs	P	3/4
Orifice Plate Thickness	R	3/8
Approximate Weight (Pounds)		1500

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

ANSI 150 Class

30"-36" DIMENSIONS

Catalog No. 281 3DVS--Class 150--Welding Neck Ends---285 P.S.I. (Gage) C.W.P.

Size		36"
Diam. Internal Line Bore	A	?
Upstream Face of Orifice Plate to Face of End	B	12 3/4
Downstream Face of Orifice Plate to Face of End	C	12 3/4
Overall Face to Face	D	26
Operating Clearance from Center	F	34 3/16
Centerline to Bottom	H	30 1/8
Centerline to Top	I	41 1/16
Clearance for Plate Changing	I ₁	29 1/2
Diameter of Hub at Point of Welding	O	36.000
Size of Drain Plugs	P	1 1/4
Orifice Plate Thickness	R	1/2
Approximate Weight (Pounds)		9000

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

ANSI 300 Class

30" - 36" DIMENSIONS

Catalog No. 283 3DVS--Class 300--Welding Neck Ends---740 P.S.I. (Gage) C.W.P.

Size		30"	36"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	17 1/4	17 3/4
Downstream Face of Orifice Plate to Face of End	C	17 1/4	17 3/4
Overall Face to Face	D	35	36
Operating Clearance from Center	F	37 1/4	38
Centerline to Bottom	H	26 7/8	31 7/8
Centerline to Top	I	37 7/8	43
Clearance for Plate Changing	I ₁	35	29 1/2
Diameter of Hub at Point of Welding	O	30.000	36.000
Size of Drain Plugs	P	1	1 1/4
Orifice Plate Thickness	R	1/2	1/2
Approximate Weight (Pounds)		8300	10900

?To be Specified by Purchaser.

Note: Other Styles Available Upon Request.

ANSI 600 Class

30" - 36" DIMENSIONS

Catalog No. 285 3DVS--Class 600--Welding Neck Ends---1480 P.S.I. (Gage) C.W.P.

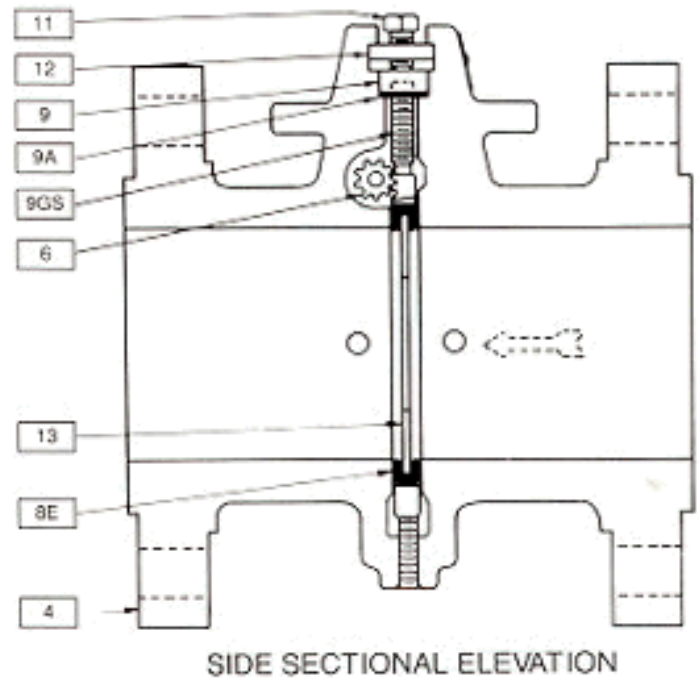
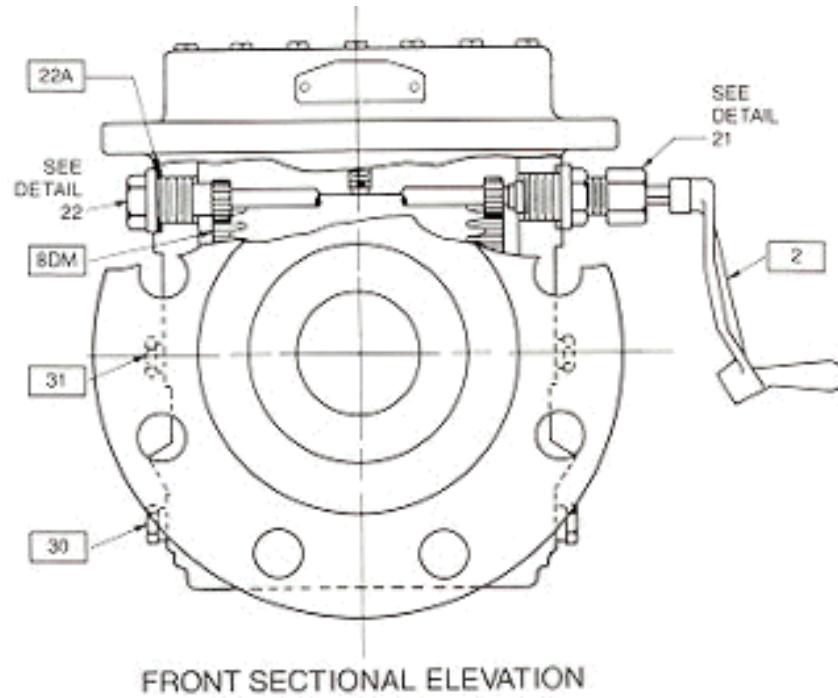
Size		30"	36"
Diam. Internal Line Bore	A	?	?
Upstream Face of Orifice Plate to Face of End	B	17 1/4	17 3/4
Downstream Face of Orifice Plate to Face of End	C	17 1/4	17 3/4
Overall Face to Face	D	35	36
Operating Clearance from Center	F	37 1/4	38
Centerline to Bottom	H	26 7/8	31 7/8
Centerline to Top	I	37 7/8	43
Clearance for Plate Changing	I ₁	22	29 1/2
Diameter of Hub at Point of Welding	O	30.000	36.000
Size of Drain Plugs	P	1	1 1/4
Orifice Plate Thickness	R	1/2	1/2
Approximate Weight (Pounds)		9100	11700

?To be Specified by Purchaser.

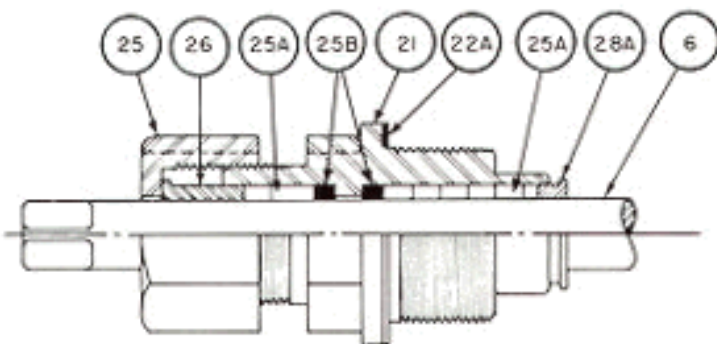
Note: Other Styles Available Upon Request.

Diagrams, 10"-14" Parts

10" - 14" PARTS

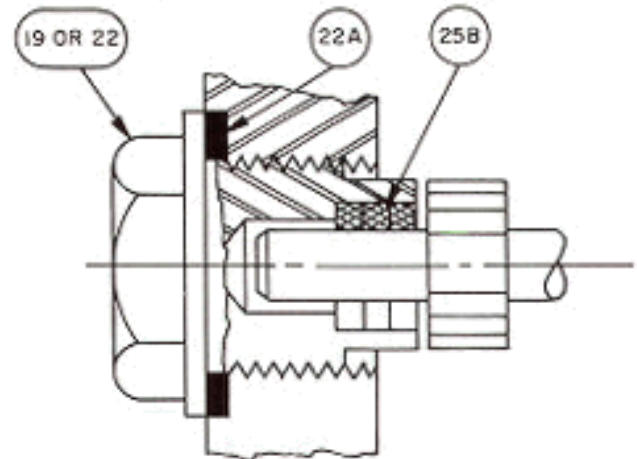


STUFFING BOX FOR 10" - 24" FITTING
(EXCEPT 2500 CLASS)



DETAIL 21-0

BEARING PLUG
(EXCEPT 2500 CLASS)

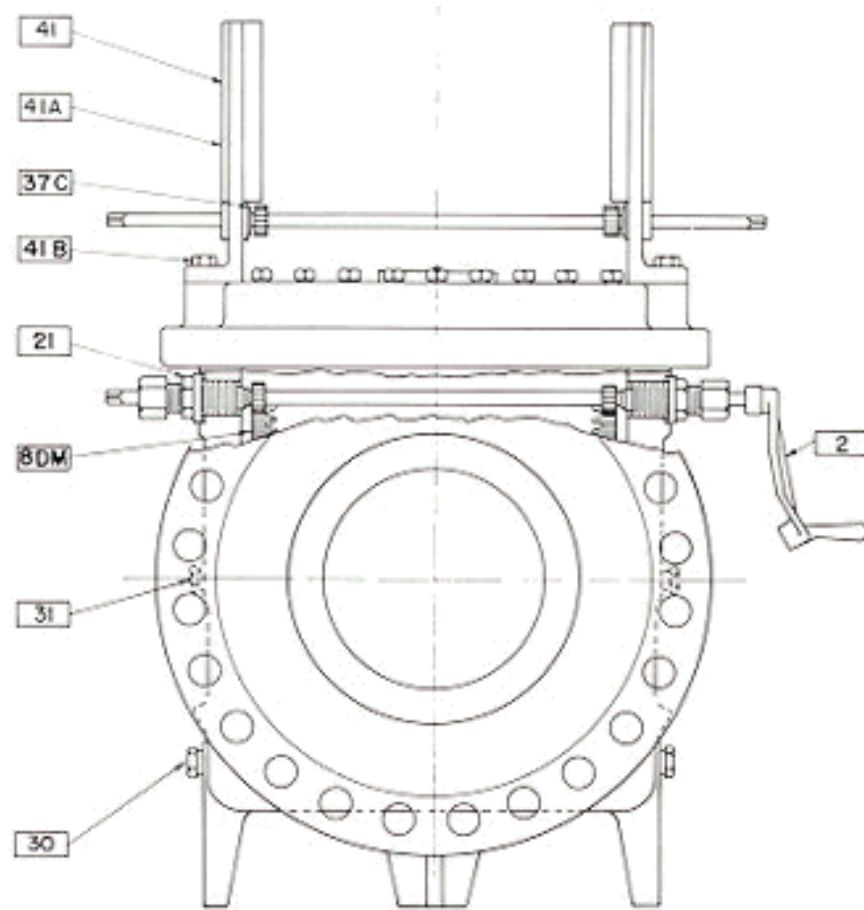


DETAIL 22

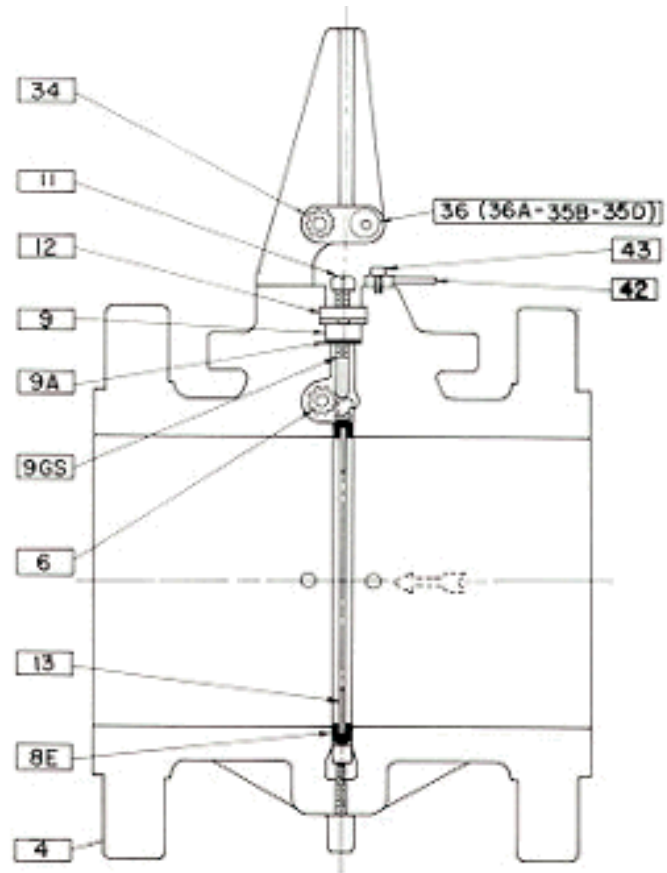
Diagrams, 16"-42" Parts

16" - 42" PARTS

Note: 16" Does Not Have Top Guide Brackets

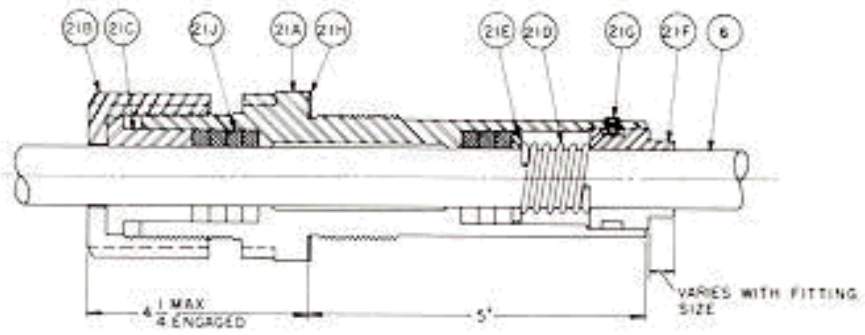


FRONT SECTIONAL ELEVATION

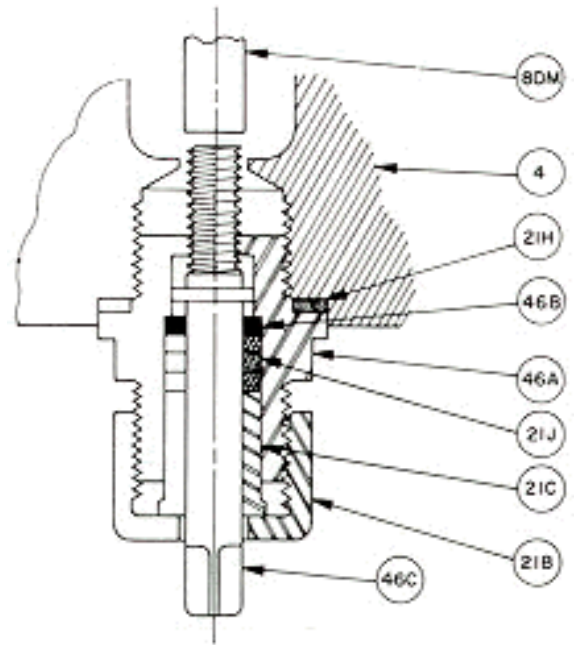


SIDE SECTIONAL ELEVATION

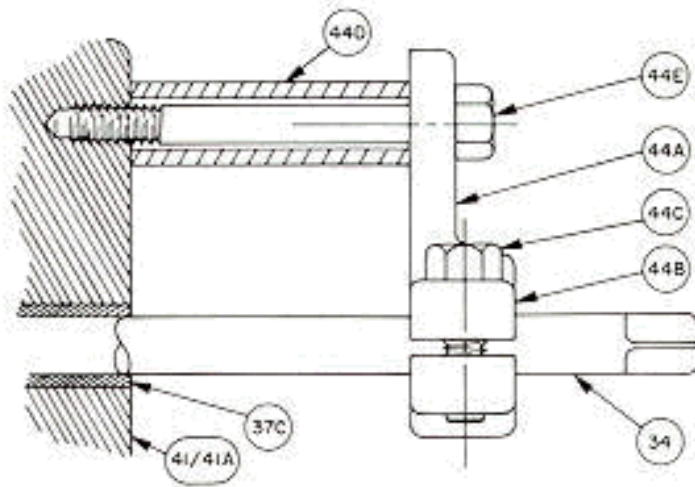
STUFFING BOX FOR 30"-42" FITTING



DETAIL 21-1



DETAIL 46 (42" ONLY)



DETAIL 44 (42" ONLY)



Is a Registered Trademark, Copyright 1999

Parts List, 10"-14" Sizes

DANIEL JUNIOR ORIFICE FITTINGS PARTS LIST, 10" - 14"

PART NO.	DESCRIPTION	MATERIAL AND RATINGS	NUMBER REQUIRED		
			10"	12"	14"
2	Operating Wrench	Malleable Iron	1	1	1
4	Body	Cast Carbon Steel	1	1	1
6	Plate Carrier Shaft and Pinions	C.R.S. (Chemically Treated)	1	1	1
8 DM	Plate Carrier	C.R.S. (Chemically Treated)	1	1	1
8 E-DS	Sealing Unit	Synthetic Rubber (Removable)	1		
8 E-DVS	Sealing Unit	Synthetic Rubber Bonded to Both Sides Orifice Plate		1	1
8 TS	Optional Sealing Units for Special Services	Teflon (Plate Not Included)	1	1	1
8 MS	Optional Sealing Units for Special Services	Cadmium Plated and Stainless Steel (Plate Not Included)*	1	1	1
9	Sealing Bar	C.R.S. (Chemically Treated)	1	1	1
9 HP*	Sealing Bar	C.R.S. (Chemically Treated) (Class 1500 Only)*	1	1	
		C.R.S. (Chemically Treated) (Class 2500 Only)*	1	1	
9 GS	Sealing Bar Alignment Pin	C.R.S. (Chemically Treated)	1	1	1
9A	Sealing Bar Gasket	Graphit Asbestos (Class 150-2500)	1	1	1
11	Clamping Bar Screws	Steel (Class 150-600) 900??	8	10	11
		Steel (Class 1500 Only)	16	22	
		Steel (Class 2500 Only)	22	26	
12	Clamping Bar	C.R.S. (Chemically Treated) (Class 150-900)	1	1	1
12 HP*	Clamping Bar	C.R.S. (Chemically Treated) (Class 1500)	1	1	
		C.R.S. (Chemically Treated) (Class 2500)	1	1	
13	Orifice Plate	Stainless Steel	1	1	1
21-0 & 21-1	Stuffing Box Assembly	?	1	1	1
21 & 21A	Stuffing Box Body	C.R.S.	1	1	1
22 & 22 HP	Bearing Plug	C.R.S.	1	1	1
22A & 22A-HP & 21H	Bearing Plug and Stuffing Box Gaskets	Stainless Steel	2	2	2
22B	Bearing Plug and Stuffing Box "O" Ring Seals	Synthetic Rubber (2500 Lb. Only)	2	2	
25 & 25 HP & 21B	Packing Nuts	C.R.S. (Chemically Treated)	1	1	1
25A & 21J	Packing Sleeves	Teflon (Class 150)	9	11	12

		Teflon (Class 300)	9	11	12
		Teflon (Class 600)	10	11	13
		Teflon (Class 900)	10	11	
		Teflon (Class 1500)	12	14	
25 A-HP		Teflon (Class 2500)	10	10	
25B & 25B-HP	Shaft Centering Rings	Teflon (None in 30"-42")	----->	2 per stuffing box, 3 per bearing plug	<-----
26 & 21C	Stuffing Box Glands	Stainless Steel (Class 150-1500)	1	1	1
26B	External Stuffing Box Glands with "O" Ring Groove	316 Stainless Steel (Class 2500 Only)	1	1	
26E	Internal Stuffing Box Glands with "O" Ring Groove	316 Stainless Steel (Class 2500 Only)	1	1	
26C	"O" Rings	Synthetic Rubber (Class 2500 Only)	1	1	
26D	"O" Rings	Synthetic Rubber (Class 2500 Only)	2	2	
28A & 21F	Packing Bushing & Retainer	Stainless Steel (10" Thru 24") (Class 150-1500)	1	1	1
30	Drain Valve Plug	C.R.S.	2	2	2
31	1/2" N.P.T. Tap Hole Plug	C.R.S.	4	4	4

*Not Shown

Note: Other Materials Available Upon Request

Design Subject To Change Without Notice



Is a Registered Trademark, Copyright 1999

Parts List, 16"-24" Sizes

DANIEL JUNIOR ORIFICE FITTINGS PARTS LIST, 16" - 24"

PART NO.	DESCRIPTION	MATERIAL AND RATINGS	NUMBER REQ'D			
			16	18"	20"	24"
2	Operating Wrench	Malleable Iron	1	1	1	1
4	Body	Cast Carbon Steel	1	1	1	1
6	Plate Carrier Shaft and Pinions	C.R.S. (Chemically Treated)	1	1	1	1
8 DM	Plate Carrier	C.R.S. (Chemically Treated)	1	1	1	1
8 E-DVS	Sealing Unit	Synthetic Rubber Bonded to Both Sides Orifice Plate	1	1	1	1
8 TS	Optional Sealing Units for Special Services	Teflon (Plate Not Included)	1			
9	Sealing Bar	C.R.S. (Chemically Treated)	1	1	1	1
9 GS	Sealing Bar Alignment Pin	C.R.S. (Chemically Treated)	1	1	1	1
9A	Sealing Bar Gasket	Graphit Asbestos (Class 150-2500)	1	1	1	1
11	Clamping Bar Screws	Steel (Class 150-600) 900??	12	14	15	20
12	Clamping Bar	C.R.S. (Chemically Treated) (Class 150-900)	1	1	1	1
13	Orifice Plate	Stainless Steel	1	1	1	1
21-0 & 21-1	Stuffing Box Assembly	?	2	2	2	2
21 & 21A	Stuffing Box Body	C.R.S.	2	2	2	2
22A & 22A-HP & 21H	Bearing Plug and Stuffing Box Gaskets	Stainless Steel	2	2	2	2
25 & 25 HP & 21B	Packing Nuts	C.R.S. (Chemically Treated)	2	2	2	2
25A & 21J	Packing Sleeves	Teflon (Class 150)	14	14	14	14
		Teflon (Class 300)	14	16	14	14
		Teflon (Class 600)	14	16	20	22
25B & 25B-HP	Shaft Centering Rings	Teflon (None in 30"-42")	----->	2 per stuffing box	& 3 per bearing plug	<-----
26 & 21C	Stuffing Box Glands	Stainless Steel (Class 150-1500)	2	2	2	2

28A & 21F	Packing Bushing & Retainer	Stainless Steel (10" Thru 24") (Class 150-1500)	2	2	2	2
30	Drain Valve Plug	C.R.S.	2	2	2	2
31	1/2" N.P.T. Tap Hole Plug	C.R.S.	4	4	4	4
34	External Plate Carrier Shaft and Pinions	C.R.S. (Chemically Treated)		1	1	1
36 36A	External Shaft & Roller Ass'y: Shaft	C.R.S. (Chemically Treated)		1	1	1
35B	Rollers	Bronze		2	2	2
35D	Roller Snap Rings	Steel (Chemically Treated)		2	2	2
41 41A	Plate Carrier Bracket Guide Assembly: Brackets	Cast Carbon Steel		2	2	2
41B	Hex Head Cap Screws	Steel		4	4	4
37C	Shaft Bushing	Bronze		4	4	4
42	Plate Carrier Stop	Steel		1	1	1
43	Socket Head Cap Screw w/Bushing	Steel		1	1	1

*Not Shown

Note: Other Materials Available Upon Request
Design Subject To Change Without Notice

Parts List, 30"-42" Sizes

DANIEL JUNIOR ORIFICE FITTINGS PARTS LIST, 30" - 42"

PART NO.	DESCRIPTION	MATERIAL AND RATINGS	NUMBER REQ'D			
			30"	34"	36"	42"
2	Operating Wrench	Malleable Iron	1	1	1	4
4	Body	Cast Carbon Steel	1	1	1	1
6	Plate Carrier Shaft and Pinions	316 S.S.	1	1	1	1
8 DM	Plate Carrier	C.R.S. (Chemically Treated)	1	1	1	1
8 E-DVS	Sealing Unit	Synthetic Rubber Bonded to Both Sides Orifice Plate	1	1	1	1
	Integral Metal Seal	Stainless Steel	1	1	1	1
9	Sealing Bar	C.R.S. (Chemically Treated)	1	1	1	1
9 GS	Sealing Bar Alignment Pin	C.R.S. (Chemically Treated)	1	1	1	1
9A	Sealing Bar Gasket	Graphite Asbestos (Class 150-2500)	1	1	1	1
11	Clamping Bar Screws	Steel (Class 150-600)	24	34	24	32
12	Clamping Bar	C.R.S. (Chemically Treated) (Class 150-900)	1	1	1	1
13	Orifice Plate	Stainless Steel	1	1	1	1
14*	Top	Cast Carbon Steel	1	1		1
16A*	Plate Carrier Guide Screw	316 Stainless Steel	4	4		4
18A*	Body-Top Gasket	Graphite Asbestos	1	1		1
18C*	Plate Carrier Guide	Carbon Steel	2	2		2
21-0 & 21-1	Stuffing Box Assembly		2	2	2	
21 & 21A	Stuffing Box Body	C.R.S.	2	2	2	2
21E	Packing Ret'r Washer	316 Stainless Steel	2	2	2	2
22A & 22A-HP & 21H	Bearing Plug and Stuffing Box Gaskets	Stainless Steel	2	2	2	2
22J	Special Stuffing Box Body Plug	Carbon Steel	2	2		2
25 & 25 HP & 21B	Packing Nuts	C.R.S. (Chemically Treated)	2	2	2	2

25A & 21J	Packing Sleeves	Teflon (Class 150)	16	16	16	16
		Teflon (Class 300)	16	16	16	16
		Teflon (Class 600)	16	16	16	
25B & 25B-HP	Shaft Centering Rings	Teflon (None in 30"-42")	----->	2 per stuffing box	& 3 per bearing plug	<-----
26 & 21C	Stuffing Box Glands	Stainless Steel (Class 150-1500)	2	2	2	2
28A & 21F	Packing Bushing & Retainer	Stainless Steel (10" Thru 24") (Class 150-1500)				
		Bronze (30" Thru 42")	2	2	2	
21D	Stuffing Box Spring	316 Stainless Steel	2	2	2	2
21G	Bushing Set Screws	316 Stainless Steel	2	2	2	2
30	Drain Valve Plug	C.R.S.	2	2	2	2
31	1/2" N.P.T. Tap Hole Plug	C.R.S.	4	4	4	4
32*	Heavy Hex Nut	Steel (Class 150)	40			
		Steel (Class 600)		48		54
33*	Studs	Steel (Class 150)	40			
		Steel (Class 600)		48		54
34	External Plate Carrier Shaft and Pinions	316 Stainless Steel	1	1	1	1
36 36A	External Shaft & Roller Ass'y: Shaft	316 Stainless Steel	1	1	1	1
35B	Rollers	Bronze	2	2	2	2
35D	Roller Snap Rings	Steel (Chemically Treated)	2	2	2	4
41 41A	Plate Carrier Bracket Guide Assembly: Brackets	Cast Carbon Steel	2	2	2	2
41B	Hex Head Cap Screws	Steel	4	4	4	4
37C	Shaft Bushing	Bronze	4	4	4	4
42	Plate Carrier Stop	Steel	1	1	1	1
43	Socket Head Cap Screw w/Bushing	Steel	1	1	1	1
44 44A	Plate Carrier Travel Brake: Body	Cast Steel				4
44B	Brake Band	Bronze				4
44C	Adjustment Bolt	Steel				4
44D	Sleeve	Steel				4
44E	Hex Bolt	Steel				4

45A	Shaft Support	Steel				2
45B	Shaft Support Bushing	Bronze				4
45C	Support Mtg. Bolts	Steel				4
46 46A	Jackscrew Assembly: Jackscrew Body	316 Stainless Steel				1
46C	Jackscrew Stem	4140				1
46B	Jackscrew Ctrg. Ring	316 Stainless Steel				1

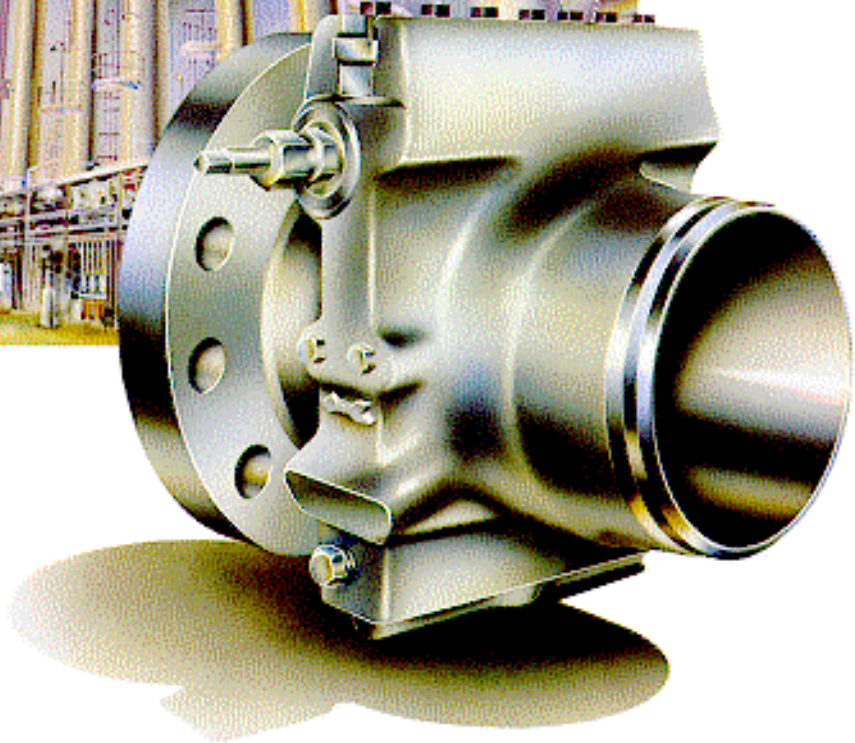
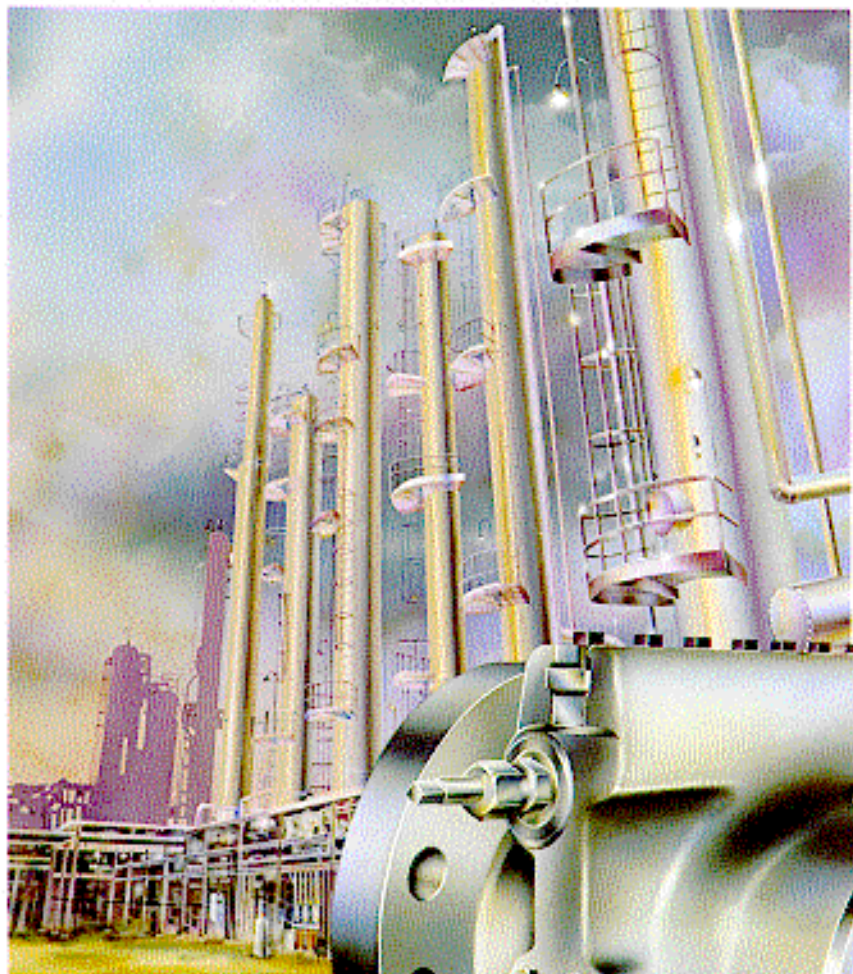
*Not Shown

Note: Other Materials Available Upon Request

Design Subject To Change Without Notice

Junior Orifice Fittings

CATALOG 200

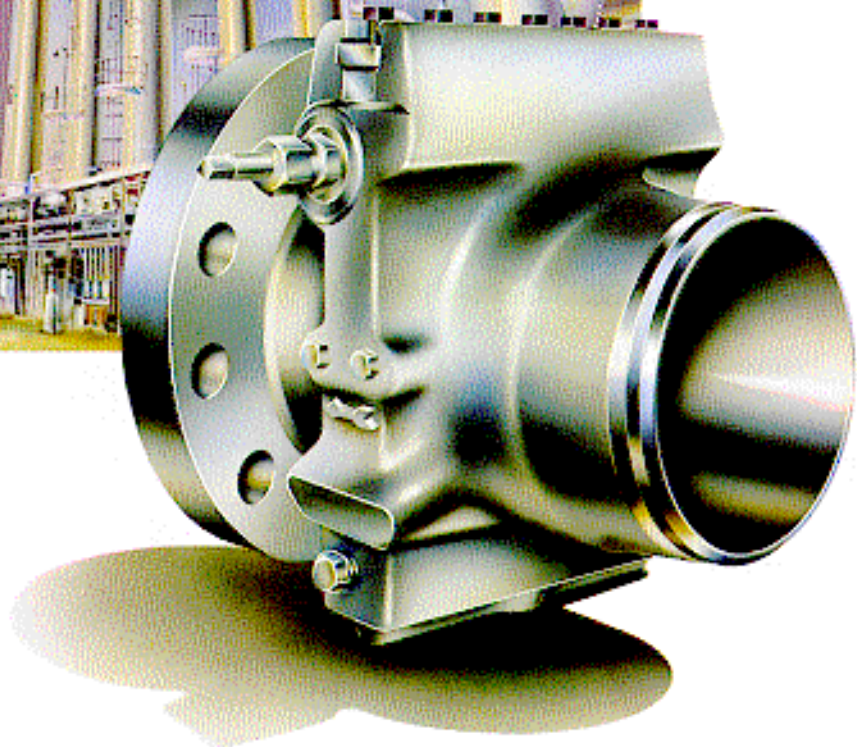
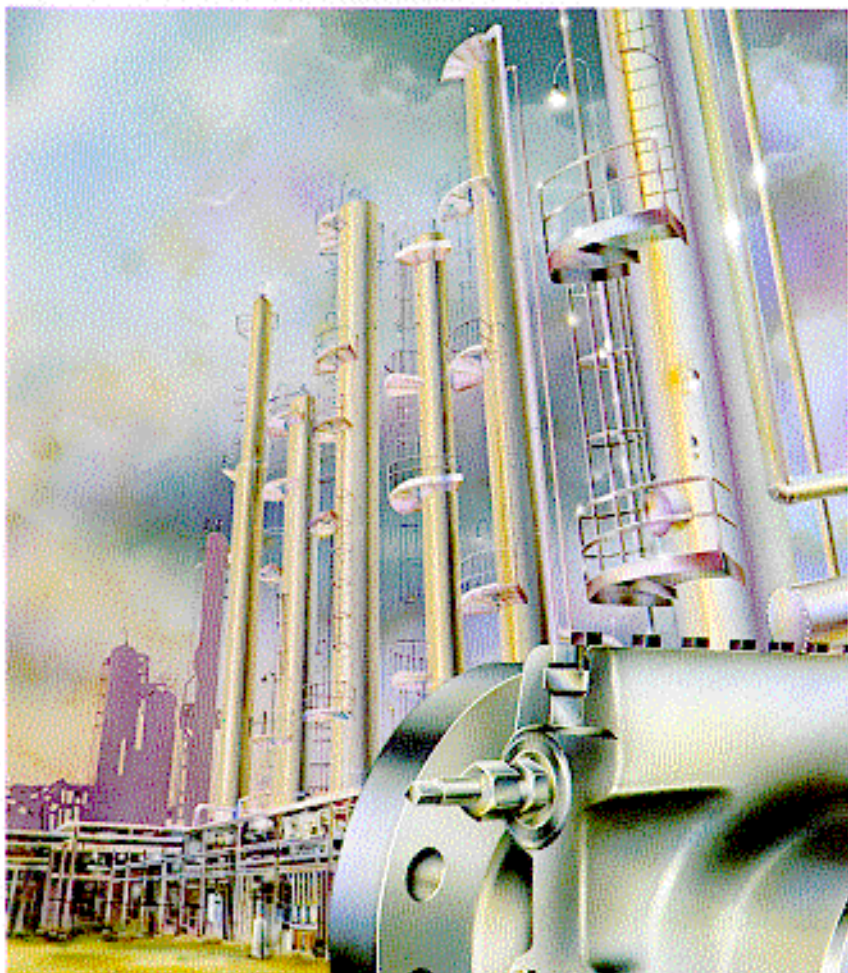


CERTIFICATE QSR-16
4720 OLD SALLY ROAD
HOUSTON, TX 77056 USA
1800 HESPELSTEAD
HOUSTON, TX 77056 USA

DANIEL

Junior Orifice Fittings

CATALOG 200



CERTIFICATE QSR-16
5129 OLD KATY ROAD
HOUSTON, TX 77056 USA
8100 NEWSTEAD
HOUSTON, TX 77066 USA

DANIEL