Expanding Plug Valve

NOV Completion & Production Solutions
midstream@nov.com
nov.com/midstream

Expanding Plug Valve

Our expanding plug valve is designed for applications where positive shut-off, verifiable zero-leakage and double block and bleed (DBB) capabilities are required.

The design has a robust clear acrylic indicator flag protector. This keeps moisture and debris from infiltrating the operator housing. The top of the indicator cap is vented to ensure that air flow will quickly evaporate any condensation that appears inside the clear housing.

Features
- Manufactured and tested to API 6D and ANSI B16.34 specifications
- Cast body design
- Double block and bleed/double isolation and bleed
- Repeated positive shut-off
- Mechanical sealing
- Provable zero leakage
- Reduced wear on sealing surfaces
- Inline repairable
- External thermal body relief system

Sizes Available
- 2" through 36"

Pressure Classes
- ANSI 150, 300, 600

Operating Temperatures
Standard -20° F to +250° F (-28° C to +121° C)
Low Temp to -40° F (-40° C)

End Connections
Raised face, ring joint, weld end

Options
- Electric or hydraulic actuators
- Customer specified External Thermal Body Relief
- Standard service
- NACE MR0175

Applications
- Blending units
- Product isolation
- Multi-port manifolds
- Prover Loops
- LACT units
- Offshore platforms
- Terminals and tank farms
- Aviation fueling systems

Available Sizes and Pressures

	Size (inches)															
ANSI Class	**2**	**3**	**4**	**6**	**8**	**10**	**12**	**14**	**16**	**18**	**20**	**24**	**26**	**28**	**30**	**36**
150	HW/GO	HW/GO	HW/GO	HW/GO	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*
800	HW/GO	HW/GO	HW/GO	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	N/A
600	HW/GO	HW/GO	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	GO*	N/A	N/A	N/A	N/A

HW = Available only as handwheel operated
GO = Available only as gear operated
HW/GO = Available as handwheel or gear operated
* These sizes have lifting lugs

Standard Materials of Construction

Component	**Standard Temp. (-20° to 200° F) (-29° to 93° C)**	**Low Temp. (-40° to 200° F) (-40° to 93° C)**
Body	Cast ASTM A216 WCC*	Cast ASTM A352 LCC*
Bonnet/Lower Plate	Cast ASTM A216 WCC	Cast ASTM A352 LCC
Plug and Stem	Cast ASTM A216 WCC**	Cast ASTM A352 LCC**
Slips	Cast Duotile Iron/Cast A395 GR 60-40-18	Cast ASTM A352 LCC
Packing Gland	Cast ASTM A216 WCC	Cast ASTM A352 LCC
Stem Packing	Pre-Formed Flexible Graphite	Pre-Formed Flexible Graphite
Gasket	Pre-Formed Flexible Graphite	Pre-Formed Flexible Graphite
O-rings and Slip Seals	Viton B***	Viton GFLT***
Bonnet to Body Studs	ASTM A193 Gr. B7	ASTM A320 Gr. L7
Bonnet Nuts	A 194 Gr. 2H	A 194 Gr. 2H
Relief System Tubing	AISI 316/AISI 304 SS	AISI 316/AISI 304 SS
Relief System Needle Valves	AISI 316 SS	AISI 316 SS
Relief System Check Valve	AISI 316 SS	AISI 316 SS

* Electroless Nickel Plated – Entire internal surface
** Electroless Nickel Plated - Entire component
*** All Omniseal® valves in class 300 and 600 are supplied with soluble reinforced Viton seals

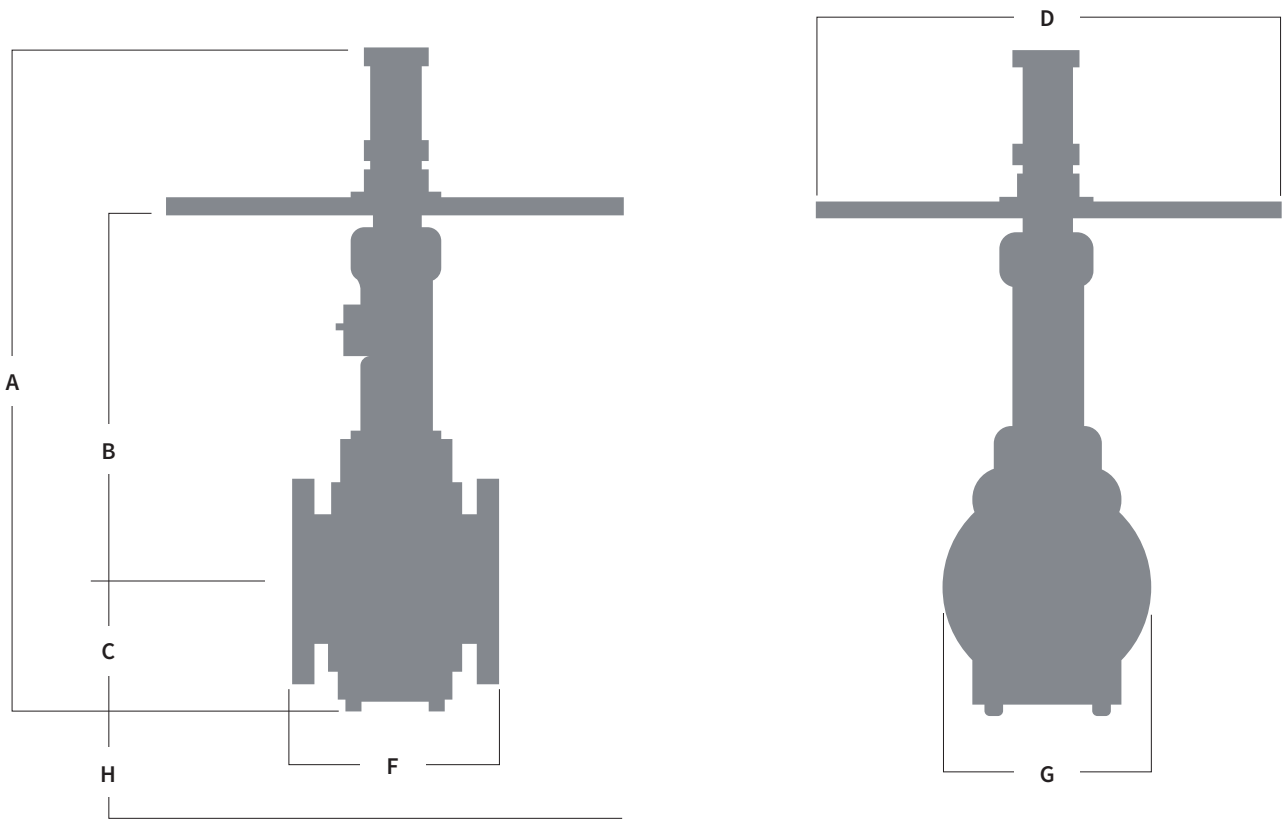
Optional Materials of Construction and Other Customized Features

Our expanding plug valves are also available in a variety of alternate configurations or materials of construction depending on customer preferences, specifications, severe temp ranges and/or service conditions.

Some common options include valves as follows:

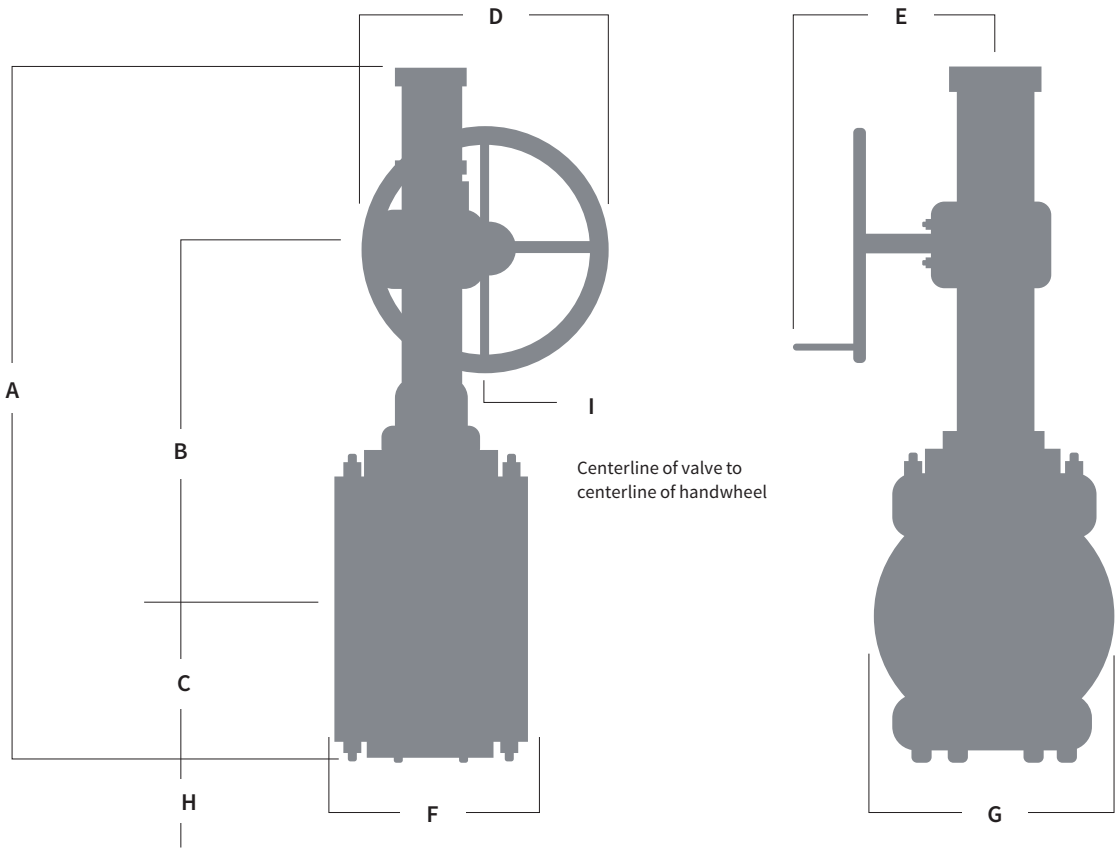
- Constructed to meet requirements of NACE MR0175/ISO 15156
- With flanges drilled to DIN standard
- Subjected to more rigorous customer-specified extended testing regimes
- With application of special coatings based on customer specifications, service conditions or cosmetics preferences
- Constructed to withstand extreme high or low temperature
- With customer specified limit switches or other accessories
- With special Automatic Body Bleed Valve (ABBV)

Expanding Plug Valve



Minimum clearance required to replace slips.

Class	Size	Oper.	A		B		C		D		F		G		H		Weight		(Number) and size Tapped Holes Each Flange	CV (GPM)
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs		
150	2	37H	18.0	457	10.6	269	4.0	102	10	254	7	178	6	152	3	76	46	21	none	202
	3	37H	18.0	457	10.6	269	4.0	102	10	254	8	206	7.5	191	3	76	59	27	none	208
	4	50H	27.5	699	16.0	406	6.0	152	20	508	9	229	9	229	4.5	114	132	60	none	594
	6	50H	32.6	828	18.0	457	7.5	191	20	508	10.5	287	11	279	8	208	198	89	(4) 3/4" - 10 UNO	1438
300	2	37H	18.0	457	10.6	269	4.0	102	10	254	8.5	216	6.5	165	3	76	52	24	none	212
	3	37H	18.0	457	10.6	269	4.0	102	10	254	11.1	282	8.25	210	6	76	73	33	none	223
	4	50H	26.6	719	16.0	406	5.5	140	20	508	12	305	10	254	5	127	158	72	none	624
600	2	50H	26.0	660	15.5	394	4.0	102	20	508	11.5	292	6.5	165	2.5	64	100	45	none	288
	3	50H	26.0	660	18.0	406	5.0	127	20	508	14	356	8.3	211	3.5	89	142	64	none	300



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Class	Size	Oper.	A		B		C		D		E		F		G		H		I		Weight		(Number) and size Tapped Holes Each Flange	CV (GPM)
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs		
150	2	37G	22.8	579	11.9	302	4.0	102	10	254	12.4	315	7	178	6	152	3	76	1.8	44	50	23	none	202
	3	37G	22.8	579	11.9	302	4.0	102	10	254	12.4	315	8	208	7.5	191	3	76	1.8	44	50	23	none	208
	4	55G	30.0	762	16.1	409	6.0	152	10	254	14.7	376	9	229	9	229	4.5	114	2.4	61	148	67	none	594
	6	55G	34.6	879	18.3	465	7.6	191	10	254	14.4	366	10.5	287	11	279	10	254	2.4	61	214	97	(4) 3/4" - 10 UNO	1438
	8	62G	42.5	1080	22.0	559	9.2	234	14	358	14.7	376	11.5	292	13.5	346	14	356	3	76	428	194	(4) 3/4" - 10 UNO	2428
	10	62G	46.0	1168	24.0	610	11.0	279	14	356	14.7	376	13	330	16	406	16	406	3	76	522	237	(4) 7/8" - 9 UNO	3688
	12	75G	55.0	1397	31.0	787	12.5	318	20	508	14.7	376	14	356	19	483	26	660	3.5	89	832	377	(4) 7/8" - 9 UNO	4012
	14	75G	68.0	1473	32.5	826	14.3	363	20	508	14.7	376	15	381	21	533	28	711	3.5	89	1074	487	(4) 1.0" - 8 UNO	5500
	16	12G	65.0	1651	39.0	991	16.0	406	20	508	17.5	445	16	406	23.5	597	30	762	5	127	1472	668	(4) 1.0" - 8 UNO	7016
	16V	75G	68.0	1473	32.5	828	14.3	383	20	508	14.7	673	16	408	23.5	597	28	711	3.5	89	1110	503	(8) 1.0" - 8 UNO	5500
	18	12G	60.0	1524	36.0	914	14.0	356	20	508	17.5	445	34	864	26	635	30	762	5	127	2658	1206	none	10900
	18V	12G	64.9	1648	38.7	983	16.0	406	20	508	17.5	445	17	432	25	635	30	762	5	127	1407	838	(8) 1-1/8" - 8 UNO	7000
	20	12G	63.0	1600	37.0	940	15.3	389	20	508	17.5	445	40	1016	27.5	699	27	686	5	127	3308	1500	none	16780
	20V	12G	69.5	1765	40.8	1024	18.6	472	20	508	17.5	445	32	818	27.5	699	32	813	5	127	2860	1297	(4) 1-1/8" - 8 UNO	8500
	24	12G	75.0	1905	44.0	1118	21.0	533	20	508	17.5	445	48	1219	32	813	32	813	5	127	6264	2841	none	24000
	24V	12G	77.9	1979	45.6	1168	21.8	554	20	508	17.5	445	36	914	32	813	37	940	5	127	3830	1737	(8) 1-1/4" - 8 UNO	11250
	26	14G	99.0	2515	56.7	1441	29.5	748	32	813	26	660	42	1067	34.6	870	38	965	9	229	9680	4400	(16) 1-1/4" - 8 UNO	27778
	28	14G	99.0	2515	56.7	1441	29.5	748	32	813	26	660	42	1067	36.4	925	38	985	9	229	10714	4870	(12) 1-1/4" - 8 UNO	31876
	30	15G	97.6	2471	75.2	1910	27.4	696	32	813	26	660	60	1524	38.8	936	41	1041	9	229	13900	6305	(12) 1-1/4" - 8 UNO	38000
	36	15G	119.2	3028	76.0	1930	30.0	762	32	813	26	660	78	1981	46	1168	41	1041	9	229	20600	9344	none	48000

V Designates a valve with a reduced face-to-face dimension versus the Omni standard pattern, except for the 16V

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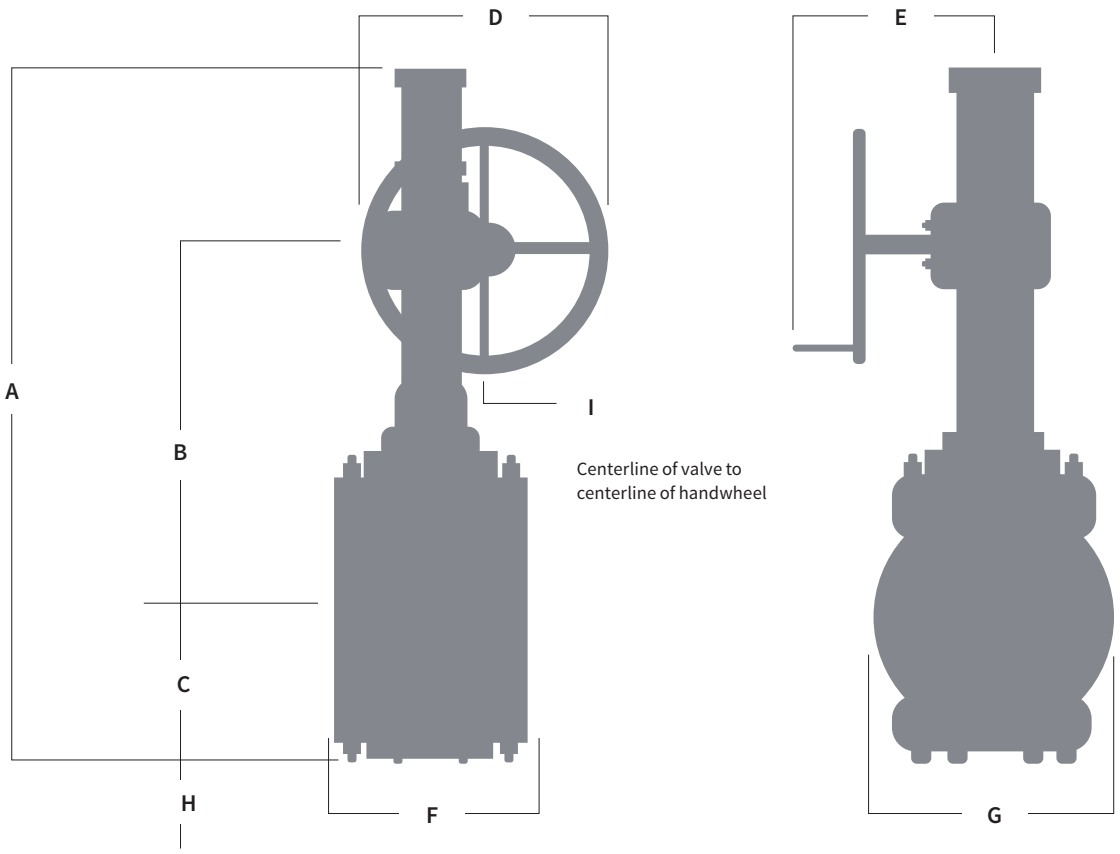
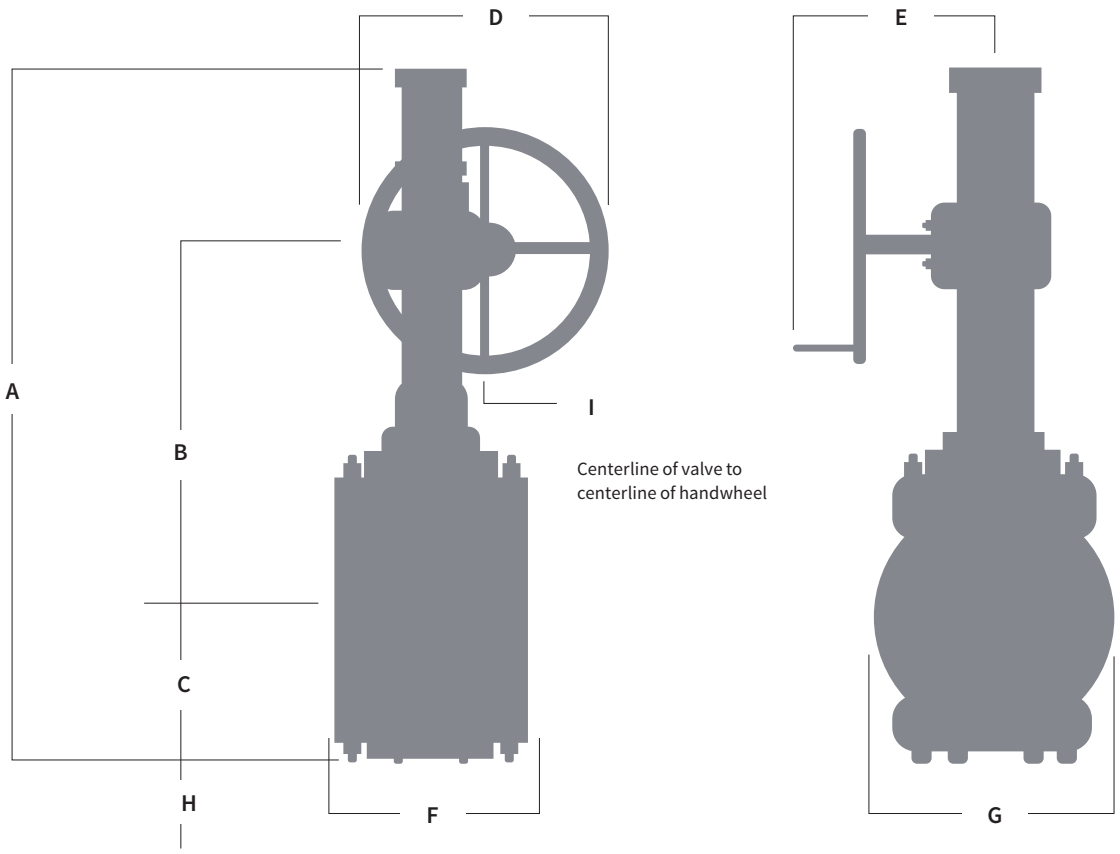


Minimum clearance required to replace slips.

Class	Size	Oper.	A		B		C		D		E		F		G		H		I		Weight		(Number) and size Tapped Holes Each Flange	CV (GPM)
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs		
300	2	37G	22.8	579	11.9	302	4.0	102	10	254	12.4	315	8.5	216	6.5	165	3	76	1.8	46	65	29	none	212
	3	37G	22.8	579	11.9	302	4.0	102	10	254	12.4	315	11.1	282	8.6	211	3	76	1.8	46	76	34	none	223
	4	55G	30.0	762	16.2	411	5.5	140	10	254	14.7	376	12	306	10	254	5	127	2.4	61	171	78	none	624
	6	62G	39.0	991	20.5	521	7.7	198	14	358	14.7	376	15.9	404	12.5	318	10	254	3	76	342	155	none	1776
	8	75G	49.0	1245	28.0	711	9.5	241	20	508	14.7	376	16.5	419	15	381	14	356	3.5	89	658	298	(4) 7/8" - 9 UNO	3008
	10	75G	51.8	1616	29.0	737	11.0	279	20	508	14.7	376	18	457	17.5	445	16	406	3.5	89	878	398	(4) 1.0" - 8 UNO	3550
	12	12G	61.0	1549	36.5	927	14.0	358	20	508	17.5	445	19.8	503	20.5	521	26	660	5	127	1402	636	(8) 1-1/8" - 8 UNO	4712
	14	12G	60.9	1547	36.8	935	13.7	348	20	508	17.5	445	30	762	23	584	26	660	5	127	1990	908	none	6000
	16	12G	60.3	1532	36.5	927	13.5	343	30	508	17.5	445	33	833	25.5	648	28	684	5	127	2662	1207	none	9400
	16F	14G	81.4	2066	49.6	1280	18.9	481	32	816	26	660	35	889	25.5	648	27	686	9	229	5521	2504	(8) 1-1/4" - 8 UNO	13400
	18	12G	71.0	1808	40.5	1029	17.0	432	20	508	17.5	445	36	914	28	711	26	660	5	127	3550	1610	(12) 1-1/4" - 8 UNO	11500
	20	14G	81.4	2068	48.0	1219	20.0	608	32	816	26	660	39	991	30.5	775	29	737	9	229	4155	1885	(12) 1-1/4" - 8 UNO	16600
	24	14G	91.8	2619	54.1	1376	24.5	621	32	816	26	660	46	1143	36	914	38	985	9	229	8150	3697	none	2700
	30	15G	120.0	3048	71.0	1806	32.5	826	32	816	26	660	65	1651	43	1092	41	1041	9	229	15300	6940	none	33500



Minimum clearance required to replace slips.

Class	Size	Oper.	A		B		C		D		E		F		G		H		I		Weight		(Number) and size Tapped Holes Each Flange	CV (GPM)
			in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	in.	mm	lbs	kgs		
600	2	55G	28.0	711	15.5	394	4.0	102	10	254	14.5	368	11.5	292	6.5	165	2.5	64	2.4	61	108	49	none	288
	3	55G	29.0	737	16.0	406	5.0	127	10	254	14.5	368	14	356	8.8	211	3.5	89	2.4	61	151	68	none	300
	4	62G	36.0	914	19.0	483	6.2	157	14	356	14.7	376	17	432	10.8	274	3.5	89	3	76	275	125	none	350
	6	75G	45.6	1158	26.0	660	8.0	203	20	508	14.7	376	22	559	14	356	10	254	3.5	89	700	318	none	2265
	8	75G	48.2	1224	27.0	686	10.0	254	20	508	14.7	376	26	660	16.5	419	12	305	3.5	89	1100	499	none	3600
	10	12G	58.4	1483	36.5	927	11.5	292	20	508	17.5	445	31	787	20	508	14	356	5	127	1975	896	none	5100
	12	12G	61.0	1549	37.5	953	13.1	333	20	508	17.5	445	33	838	22	559	22	559	5	127	2532	1149	none	9300
	14	14G	75.9	1928	47.0	1194	16.0	406	32	813	26	660	35	889	23.8	605	25	635	9	229	4100	1860	(4) 1-3/8" - 8 UNO	9500
	16	14G	76.7	1923	47.0	1194	15.8	401	32	813	26	660	39	991	27	686	25	635	9	229	4300	1950	(8) 1-1/2" - 8 UNO	11000
	18	14G	79.5	2019	48.8	1240	18.1	461	32	813	26	660	43	1092	29.6	743	25	635	9	229	7920	3600	(8) 1-6/8" - 8 UNO	13457
	20	15G	99.4	2525	69.5	1785	20.5	521	32	813	26	660	47	1194	32	813	25	635	9	229	9500	4309	none	16500
	24	15G	107.8	2738	71.5	1816	23.5	597	32	813	26	660	55	1397	37	940	25	635	9	229	15000	6804	(8) 1-7/8" - 8 UNO	27500

Corporate Headquarters
7909 Parkwood Circle Drive
Houston, Texas 77036
USA

Process and Flow Technologies
4310 North Sam Houston Parkway E.
Houston, Texas 77032