API 6D

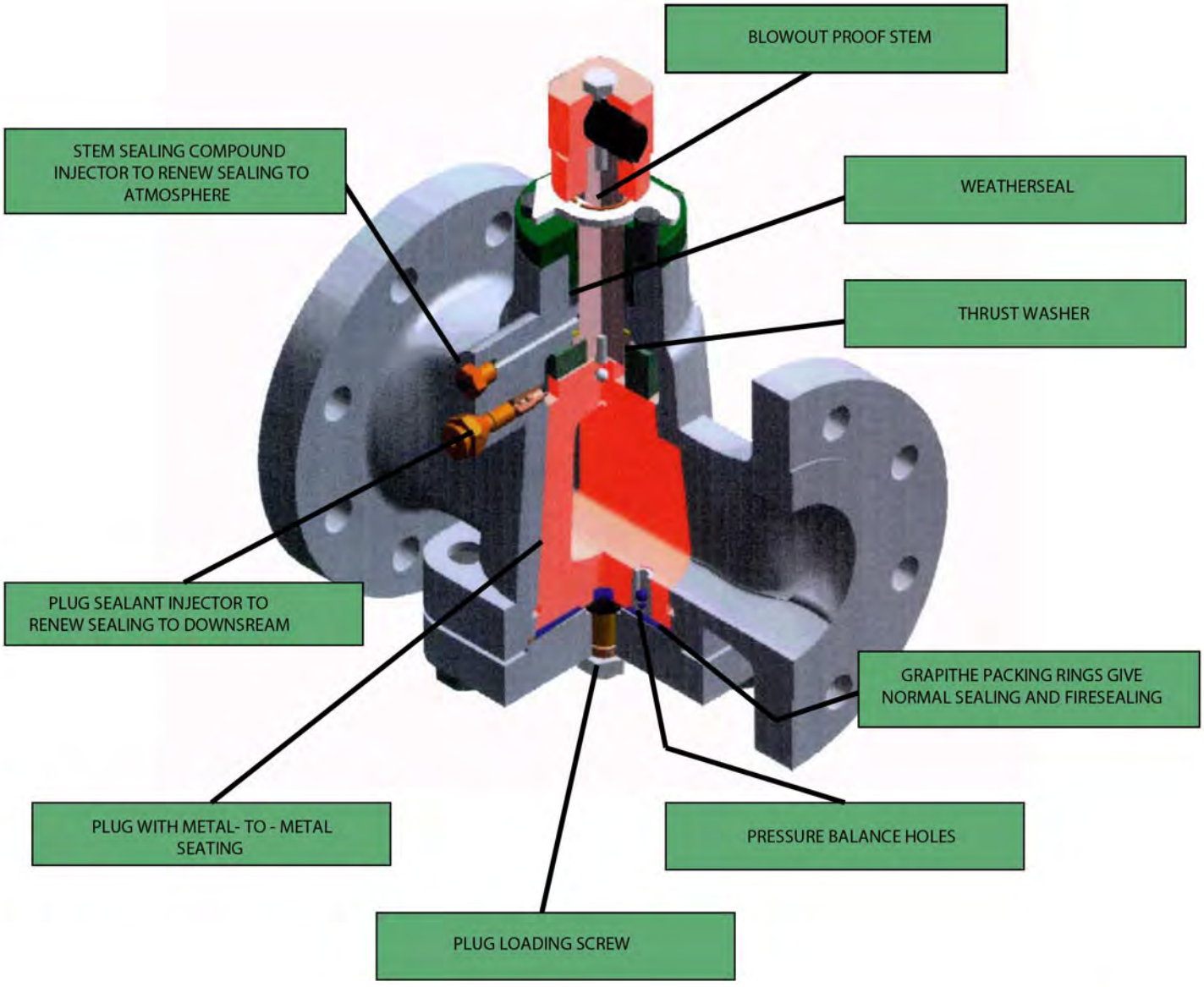
FEATURES

- **ZERO LEAKAGE (BUBBLE TIGHT SHUT OFF)**
  TFV TAPERED PLUG VALVE ASSURES POSITIVE BUBBLE TIGTH SHUT OFF WITH UNIQUE SEALANT SYSTEM
- **ZERO MAINTENANCE (IN LINE ADJUSTMENT)**
  TFV TAPERED PLUG VALVE CAN BE ADJUSTED WITH THE VALVE IN LINE, EXTENDING THE SERVICE LIFE OF THE VALVE
- **ZERO CAVITY**
  SLURRY OR SLUDGE DON'T ACCUMULATE ANYWHERE IN A TFV VALVE, BECAUSE TFV VALVE HAS NO DEAD CAVITY IN THE FLOW PATH
- **EASE OF OPERATION**
  POSITIVE QUARTER TURN OPERATION IS QUICK AND SURE
- **PRESSURE BALANCE SYSTEM**
  FOR MAINTAINING PRESSURE EQUALIZATION BETWEEN PLUG PORT AND BOTTOM OF THE PLUG, AND FOR INSURING THE PRESSURE ABOVE THE PLUG BEING THE SAME AS OR GREATER THAN IN THE PLUG PORT, TFV PRESSURE BALANCE SYSTEM DESIGN IS AVAILABLE
- **SAFETY**
  FIRE TESTED ACCORDING TO API 607
  NACE MR 0175

BENEFIT

- **PRESSURE BALANCED TYPE AS A STANDARD**
- **BLOWOUT-PROOF STEM STRUCTURE**
- **OPERATION**
  1) FREEDOM FROM SEIZURE BY LONG SERVICE OPERATION
  2) CONSISTENT TORQUE
- **SELF CLEANING SEATING SURFACE**
  THE TURNING ACTION OF PLUG VALVE SCRAPES OFF ANY INGREDIENT WHICH MAY ACCUMULATE THE PLUG SURFACE IN A CLOSED POSITION

Design Features



LUBRICANTS

- **LUBRICANT FUNCTION** 1) TO MINIMIZE FRICTION DURING OPERATION OF VALVE
  2) TO PROTECT SEAT SURFACES FROM CORROSION
  3) TO PREVENT LEAKING BY LUBRICANT ENCIRCLED WITH LUBRICANT GROOVES
- **LUBRICANT PROPERTIES** REQUIREMENTS TO SERVE A VARIETY OF PURPOSES
  1) ALLOW THE VALVE TO TURN EASILY
  2) ASSURE TIGHT SEALING
  3) CHEMICALLY INERT IN THE SERVICE FLUID AND ADHESION PROPERTY TO THE METAL
  4) REMAINS IN A PLASTIC STATE OVER A WIDE RANGE OF TEMPERATURE CONDITION
  5) NO SOLIDIFICATION FROM TEMPERATURE OR CHEMICAL REACTIONS
- **LUBRICANT SELECTION** ACCORDING TO LUBRICANT CLASSIFICATION, THE BELOW CHART SHOWS THE TEMPERATURE RANGE, PRINCIPAL SERVICES AND UNSUITABLE FLUID FOR A LUBRICANTS

LUBRICANTS

LUBRICANT NO.	COLOR	TEMP. RANGE	PRINCIPAL SERVICES	UNSUITABLE FLUID
G-104	Peanut Butter	-18~260°C	API Gate Valve, Bady scored, Ball or Plug Valve	Alkalies
G-204	White	-46~204°C	Molten Sulphur, Acetic Anhydride, Acetic Acid, Food and Pharmaceutical applications as determined by user.	LPG and hydrocarbon solvents
G-220	Clear	-59~121°C	Very cold service for pipe lines, compressor stations, gasoline plants and crude oil production fields. For Liquid Service.	Aromatic, Solvents
G-340	Yellow	-29~204°C	Where H_2S and CO_2 are encountered	Solvents & Amine
G-350A	Yellow	-29~204°C	Hydroflouric acid or mixtures of HF & L.P.G.	Hot Air
G-400A	Amber	-29~204°C	Aqueous solutions of Acids and Caustics	Liquid Hydrocarbons
G-400	Red	-20~232°C	Acids and Caustics	Liquid Hydrocarbons
G-525	Clear	-18~204°C	Air starting valves Air fractionaltion	Liquid Hydrocarbons
G-600	Brown	-29~260°C	General gas and water Sealant and general Hydrocarbons service	LPG
G-650	Green	-40~260	Hydrocarbon and L.P.G. service	Aeromatic, Alkalies Solvents
G-711	White	0~204°C	Aviation gasoline, Jet fuel, fuel blends of Alkylate	100% Bezine
G-750	Black	-18~316°C	Asphalt hot oil service Salt brine, high temperature steam	Aeromatic, Alkalies Solvents

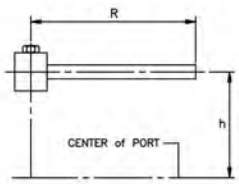
SPECIAL LUBRICANT

LUBRICANT NO.	TEMP. RANGE	PRINCIPAL SERVICE	UNSUITABLE FLUID
G-Turn #1	-29~260°C	To work out valve residue left in plug valves in Hydrocarbons service	Not a Sealant
G-Turn #2	-29~260°C	Same as above except for acids & caustics	Not a Sealant
G-FL5	-18~204°C	Non-reactive to corrosive liquids and oxidizing agents as chlorine anhydros hydrogen chlorids, nitric acid, oxygen hydrogen peroxide and sulfuric acid	Do not use on aluminum or magnesium parts
G-PS6	0~232°C	Steam and water lubricant	Liquid Hydrocarbons
G-PS3	0~343°C	Super heated steam	Liquid Hydrocarbons
G-1500	~815°C	Anti-Ceez Lubricant	Liquid Hydrocarbons
G-S3	-29~177°C	General Purpose EP Bearing Lubricant	Liquid Hydrocarbons

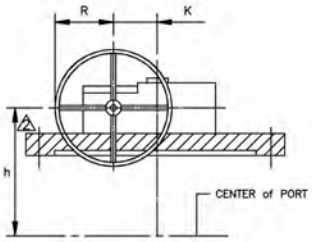
- **LUBRICANT MANTENANCE** THE AMOUNT OF MAINTENANCE DEPENDS UPON THE FRECUENCY OF OPERATION OF VALVE PERIODIC MAINTENANCE: SHIELDS THE SEATING SURFACE AND PREVENTS LEAKAGE. A VALVE NOT PERIODICALLY OPERATED SHOULD BE SERVICED AT LEAST EVERY SIX MONTHS

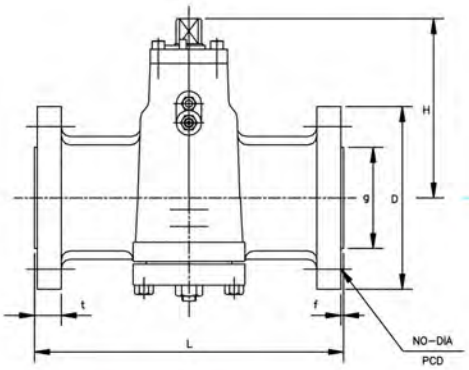
DIMENSIONS 150#

Less than 4 inches



More than 6 inches



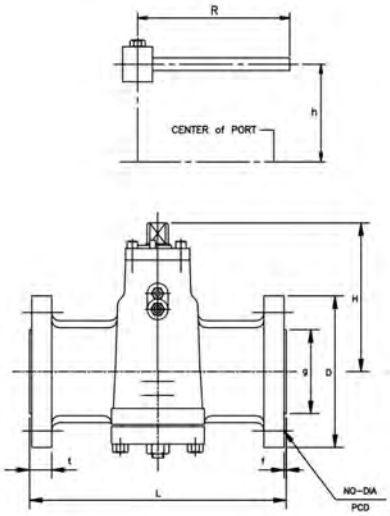


SIZE	SHORT P'TN								TORQUE	WEIGHT	VENTURI P'TN								TORQUE	WEIGHT
	L	h	R	D	BOLT HOLE			g			L	h	R	D	BOLT HOLE			g		
					PCD	NO	DIA		(IN-LB)	(LB)					PCD	NO	DIA		(IN-LB)	(LB)
2"	7.01	6.73	18.03	5.98	4.74	4	0.75	3.62	292	38	-	-	-	-	-	-	-	-	-	-
3"	7.99	8.07	23.50	7.48	6.00	4	0.75	5.00	1434	75	-	-	-	-	-	-	-	-	-	-
4"	9.02	11.14	29.37	9.02	7.50	8	0.75	6.18	1531	120	-	-	-	-	-	-	-	-	-	-
6" G	10.51	12.20	7.48	10.98	9.51	8	0.87	8.50	2682	260	-	-	-	-	-	-	-	-	-	-
8" G	11.50	15.47	8.86	13.50	11.75	8	0.87	10.63	4398	340	-	-	-	-	-	-	-	-	-	-
10" G	12.99	16.69	8.86	15.98	14.25	12	0.98	12.76	9089	475	-	-	-	-	-	-	-	-	-	-
12" G	14.02	20.63	10.63	19.02	17.01	12	0.98	15.00	13010	710	-	-	-	-	-	-	-	-	-	-
14" G	-	-	-	-	-	-	-	-	-	-	27.05	22.44	10.63	20.98	18.74	12	1.14	16.26	18169	1080
16" G	-	-	-	-	-	-	-	-	-	-	30.00	25.28	10.63	23.50	21.24	16	1.14	18.50	23913	1660
18" G	-	-	-	-	-	-	-	-	-	-	34.02	26.69	10.63	25.00	22.76	16	1.26	20.98	30612	2120
20" G	-	-	-	-	-	-	-	-	-	-	35.98	28.35	10.63	27.48	25.00	20	1.26	22.99	40940	2490
24" G	-	-	-	-	-	-	-	-	-	-	42.01	30.91	10.63	32.01	29.50	20	1.38	27.24	51649	4137

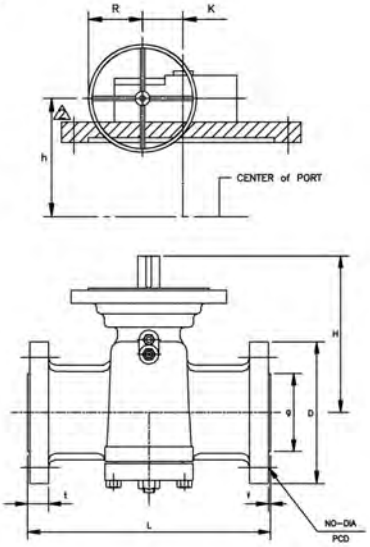
NOTE: G-GEAR OPERATING TYPE

DIMENSIONS 300#

Less than 4 inches



More than 6 inches

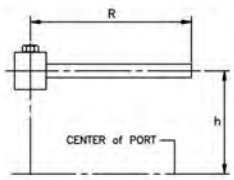


SIZE	SHORT P'TN								TORQUE	WEIGHT	VENTURI P'TN								TORQUE	WEIGHT
	L	h	R	D	BOLT HOLE			g	(IN-LB)	(LB)	L	h	R	D	BOLT HOLE			g	(IN-LB)	(LB)
					PCD	NO	DIA								PCD	NO	DIA			
1	6.50	4.84	8.74	4.88	3.50	4	0.75	2.01	-	18	-	-	-	-	-	-	-	-	-	-
1-1/2"	7.48	7.05	12.52	6.14	4.51	4	0.87	2.87	-	28	-	-	-	-	-	-	-	-	-	-
2"	8.50	7.05	17.99	6.50	5.00	8	0.75	3.62	1531	46	-	-	-	-	-	-	-	-	-	-
2-1/2"	9.49	8.31	23.50	7.48	5.87	8	0.87	4.13	2005	57	-	-	-	-	-	-	-	-	-	-
3"	11.14	8.31	23.50	8.27	6.61	8	0.87	5.00	2204	82	-	-	-	-	-	-	-	-	-	-
4"	12.01	11.81	29.37	10.00	7.87	8	0.87	6.18	3345	134	-	-	-	-	-	-	-	-	-	-
6" G	15.87	12.20	8.86	12.52	10.63	12	0.87	8.50	5744	340	-	-	-	-	-	-	-	-	-	-
8" G	16.50	15.47	8.86	15.00	12.99	12	0.98	10.63	8708	450	-	-	-	-	-	-	-	-	-	-
10" G	-	-	-	-	-	-	-	-	-	-	457	429	225	444	387,5	16	29	324	21904	630
12" G	-	-	-	-	-	-	-	-	-	-	502	534	225	521	451,0	16	32	381	23337	840
14" G	-	-	-	-	-	-	-	-	-	-	762	585	270	584	514,5	20	32	413	33002	1270
16" G	-	-	-	-	-	-	-	-	-	-	838	662	270	648	571,5	20	35	470	41135	1910
18" G	-	-	-	-	-	-	-	-	-	-	914	678	400	711	628,5	24	35	533	60127	2409
20" G	-	-	-	-	-	-	-	-	-	-	991	762	400	775	686,0	24	35	584	51852	3340
24" G	-	-	-	-	-	-	-	-	-	-	1143	820	400	914	812,8	24	41,1	692,2	117661	5430

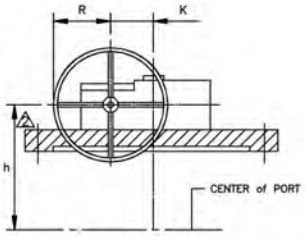
NOTE: G-GEAR OPERATING TYPE

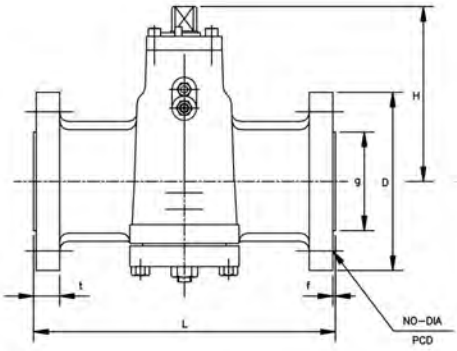
DIMENSIONS 600#

Less than 4 inches



More than 6 inches





SIZE	REGULAR P'TN								TORQUE	WEIGHT	VENTURI P'TN								TORQUE	WEIGHT
	L	h	R	D	BOLT HOLE			g	(IN-LB)	(LB)	L	h	R	D	BOLT HOLE			g	(IN-LB)	(LB)
					PCD	NO	DIA								PCD	NO	DIA			
2"	11.50	6.73	18.03	6.50	5.00	8	0.75	3.62	1859	51	-	-	-	-	-	-	-	-	-	-
3"	14.02	8.07	23.50	8.27	6.61	8	0.87	5.00	3540	93	-	-	-	-	-	-	-	-	-	-
4"	17.01	11.14	29.37	10.75	8.50	8	0.98	6.18	6505	175	-	-	-	-	-	-	-	-	-	-
6" G	22.01	12.20	7.48	14.02	11.50	12	1.14	8.50	10328	500	-	-	-	-	-	-	-	-	-	-
8" G	25.98	15.47	8.86	16.50	13.74	12	1.26	10.63	20081	830	-	-	-	-	-	-	-	-	-	-
10" G	30.98	16.69	8.86	20.00	17.01	16	1.38	12.76	32037	1280	-	-	-	-	-	-	-	-	-	-
12" G	32.99	20.63	10.63	22.01	19.25	20	1.38	15.00	52419	1990	-	-	-	-	-	-	-	-	-	-
14" G	-	-	-	-	-	-	-	-	-	-	35.00	22.44	10.63	23.74	20.75	20	1.50	16.26	49737	1840
16" G	-	-	-	-	-	-	-	-	-	-	39.02	25.28	10.63	27.01	23.74	20	1.61	18.50	65048	3750
18" G	-	-	-	-	-	-	-	-	-	-	42.99	26.69	10.63	29.25	25.75	20	1.77	20.98	93748	4500
24" G	-	-	-	-	-	-	-	-	-	-	55.00	30.91	10.63	37.01	32.99	24	2.01	27.24	277394	10370

NOTE: G-GEAR OPERATING TYPE

MATERIAL LIST

NO.	PART NAME	MATERIALS	SPECIFICATIONS
1	BODY	CARBON STEEL	ASTM A216 W CB
2	PLUG	ALLOY STEEL	ASTM A487 G r.4 CL.A
3	STEM	STAINLESS STEEL	316SS
4	COVER	CARBON STEEL	ASTM A216 W CB
5	COVER BOLT	ALLOY STEEL	ASTM A193 B 7
6	LUB. NIPPLE	COMMERCIAL	-
7	GLAND BOLT	ALLOY STEEL	ASTM A193 B 7
8	PRESS. BUTTON	STAINLESS STEEL	410SS
9	METAL DIAPHR'M	STEEL/STAINLESS STEEL	1020/304SS
10	BALL SEAT	STAINLESS STEEL	410SS
11	BALL	STAINLESS STEEL	304SS
12	CHECK VALVE	COMMERCIAL	-
13	COMPENSATOR	CARBON STEEL	1050
14	THRUST WASHER	STAINLESS STEEL	410SS
15	GLAND PACKING	GRAPHITE	PILLAR NO. 6671
16	GLAND	STAINLESS STEEL	410SS
17	ADJUSTING BOLT	ALLOY STEEL	ASTM A193 B 7
18	END CAP	CARBON STEEL	1020, PAINTED
19	STOPPER	STAINLESS STEEL	316SS
20	SNAP RING	CARBON STEEL	1020, PAINTED
21	LOCK NUT	ALLOY STEEL	ASTM A194 2 H
22	BALANCE CH. BALL	COMMERCIAL	-
23	HANDLE	CARBON STEEL	1050, PAINTED
24	GEAR BOX	DCI	

Notes:
1. Above spec. is TFV standard (ANSI CLASS 150#) and not exact for every valve.
2. Heat No. marked on body, plug and cover. Other parts are not fully traceable, but statement of conformity can be prouded.
3. Mill certificate can be provided. Heat No. is fully traceable by mill certificate.
4. Other material available upon request. Please ask for current sells drawing.

HOW TO ORDER

VALVE BODY DESIGN (SERIES)		FEATURES			BODY MATERIAL		TRIM MATERIAL			ENDS		CLASS		SIZE		OPERATION	
10P	Pressure balance Lubricated Plug valve	-	NONE	-	20	A216 WCB	10	316SS	-	F	Flanged RF	0	ANSI 150#	02	2"	H	Hand wheel
10D	Double Block and bleed Plug Valve	6D	API 6D		21	A216 WCC	20	A105 +EPN/ WCB+EPN		R	Flanged RTJ	3	ANSI 300#	02.5	21/2"	G	Gear Operator(1)
		N	NACE		22	A350 LCB	47	A352 LCB + ENP		B	Butt Weld	6	ANSI 600#	03	3"	E	Electric Actuator
		ND	NACE/API 6D		23	A352 LC3	48	A487 Class 4A						04	4"	P	Pneumatic Actuator
		F	Fire Safe		24	A217 WC1	60	Cast Iron						06	6"	B	Bare Shaft
		G	Fire Safe / NACE		25	A217 WC6								08	8"	L	Lever
					26	A217 WC9								10	10"		
					27	A217 C5								12	12"		
					28	A217 C12								14	14"		
					30	A351 CF8M								16	16"		
					31	A351 CF3M								18	18"		
					32	A351 CF8								20	20"		
					33	A351 CF3								24	24"		
					40	Monel											
					41	Alloy 20											
					42	Hastelloy											
					43	A182 Gr321											
					44	A182 Gr347											
					45	Duplex											
					60	Cast Iron											

Example

PRESSURE BALANCE PLUG VALVE, BODY WCB, TRIM ALLOY A487 GR 4 CL. A, ACCORDING WITH NACE MR0175, DESIGN API 6D, FLANGED ANSI CLASS 600# SIZE 12" WITH GEAR OPERATOR.

10PND-2048-F612G

(1) Mandatory From 6" and above