3Z Metal Seated Plug Valves, Lubricated

Designed for Crude oil, Oil, Natural gas handling and transmission lines. Line sealing is achieved basically by metal to metal contact between body and plug with assistance of sealant injected in between body and plug, which serves both sealing and lubricating during operation.

Uniqueness of dynamically and pressure balanced design together with inverted plug design, assure prevention of locking, which has been the problems of conventional design at higher pressure application.

3Z Lubricated plug valves have been installed around the world for its price,quality and on time delivery Benefits. The important locations where 3Z Lubricated plug valves are installed are : USA, Mexico, Venezuela India, Pakistan, Taiwan, Kazakstan, Uzbekistan, UK,Italy, Iran, Kuwait, Egypt, South Africa, Zambia, France, Germany ,Turkey and Australia etc. The class covered from #150 upto #3000. Furthermore variety of Material is available as well as different configurations. Whenever and wherever the demands for Lubricated Plug valves exsist, please contact 3Z and/or our sales network around the world.

If the threat of fire is one of your major valve considerations, then 3Z fire safe valve is for you. This valve was successfully tested in accordance with the fire safe testing procedure suggested by API

Construction of Lubricated Plug Valve

The valve is mainly consisted of 1) Pressure containing system and 2) Operation system.

Pressure containing system:

The flow media with a pressure is contained and controlled by this system. They are;

Body: Body is a main component of the valve and has provisions for 1) connection to the pipe lines, 2) port opening for flow passage, 3) strength requirements for containment of pressure, 4) seating surface for plug, 5) sealing surface for flow control, 6) affixing geometry for most of the valve components, 7) facilitation of lubrication system, 8) stem sealing, etc.

Plug: Plug has provisions for 1) connection to the operation component, 2) port opening for flow passage, 3) strength requirements for containment of pressure, 4) seating surface matching to body, 5) sealing surface for flow control, 6) facilitation of lubrication system, etc.

Covers: Bottom an d Top covers have provisions for 1) strength requirements for containment of pressure, 2) limiting and adjusting geometry for plug movement, 3) facilitation of stem sealing, etc. The bottom cover is bolted onto body with stud and nuts. Two metal diaphram are placed in a recess between body and bottom cover in order to prevent the leakage.
Sealant system: Sealant system contains 1) injection nipple, 2) injection check valve, 3) grooved plug, 4) Uper chamber, and 4) grooved body.

Stem seals: Stem seals are consisted of 1) gland yoke, and 2) gland packing.

Rotary Action: 3Z plug valves are rotary valves in which a plug closure member is rotated through increments of a certain degrees to engage and disengage a port hole in the plug with the ports in the valve body.

Wedge Action: 3Z tapered plug valves permit the sealing gap between the seatings to be adjusted by forcing the plug deeper into the seat, for the plug is tapered. The plug is rotated while in intimate contact with the valve body.

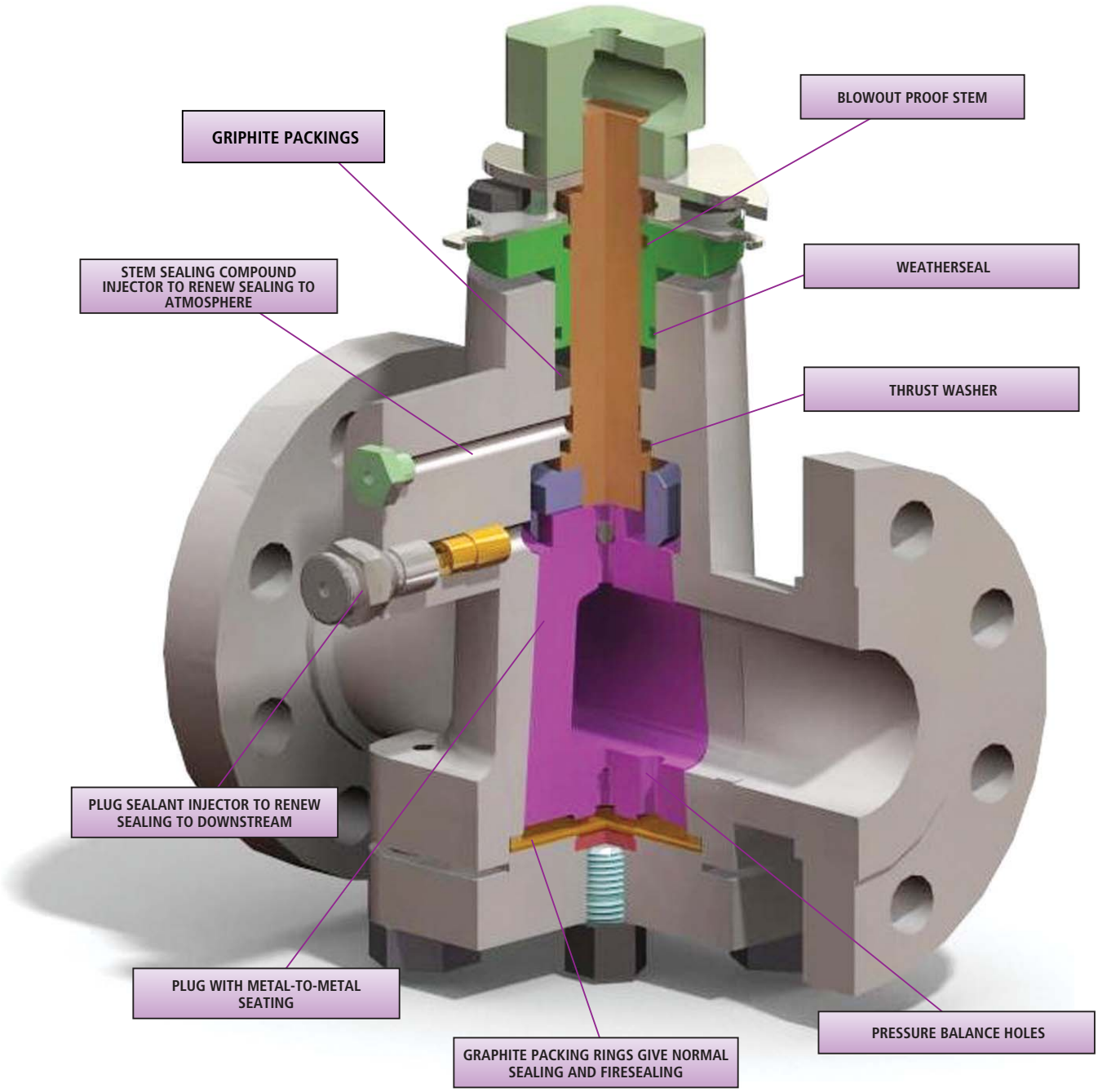
Inverted Plug: The plug is mounted in the inverted position and divorced from the stem. The inverted plug design is the solution for preventing the ✂ Taper Lock ✂. The plug is adjusted in its position by a adjusting screw in the valve cover.

Primary Seal by Metal-to-Metal Seatings: The primary sealing is achieved by the seating surfaces metal body and seat surfaces.

Secondary Seal by Sealant Action: As a secondary seal, the valve is provided with a lubrication system which allows feeding a special sealant into the valve while the valve is in operation. Besides sealing, the lubricant is to protect the internals of the valve against corrosion and wear as well as reducing the valve torque. Sealant injection system ensures that all seal faces are supplied with thin coat of lubricant and by so doing becomes an efficient secondary seal.

Design Features

3Z Metal Seated Plug Valves provide Safety, Reliability, and Economy in plant operation, owing to its super longevity. General merits in construction make it possible.



Class : ANSI 150-2500(PN20 -420),
API 2000, 5000 & 10000
Pattern : Short, Regular, and Venturi
Size : 1/2″-30″ (DN 25- 750)
Temperature : -30ºC ~400ºC
Construction: Standard, API-6D 60K, Special, NACE, Low Temperature, Other specials
End Conn: Flanged, Butt Welding Socket Weld

	ANSI AND API 6D VALVES		API 6A VALVES	
PART NAME	STANDARD CONSTRUCTION	SOUR GAS CONSTRUCTION PER NACE MR-01-75	STANDARD CONSTRUCTION	SOUR GAS CONSTRUCTION PER NACE MR-01-75
BODY	CARBON STEEL	CARBON STEEL HRC 33 MAX.	API* TYPE 2 STEEL	API TYPE 2 STEEL* HRC 22 MAX.
COVER	CARBON STEEL	CARBON STEEL HRC 33 MAX.	API* TYPE 2 STEEL	API TYPE 1 STEEL* HRC 22 MAX.
STEM (WRENCH OPERATED)	STAINLESS STEEL	STAINLESS STEEL HRC 22 MAX.	STAINLESS STEEL	STAINLESS STEEL
STEM (GEAR OPERATED)	WROUGHT CARBON OR LOW ALLOY STEEL	ALLOY STEEL HRC 22 MAX.	WROUGHT CARBON OR LOW ALLOY STEEL	ALLOY STEEL HRC 22 MAX
GLAND	MALLEABLE OR DUCTILE IRON			
GLAND BOLTS	A193 GRADE B7	A193 GRADE B7M	A193 GRADE B7	A193 GRADE B7M
PACKING	COMPOUND OF GRAPHITE AND PTFE			
STEM RING	MILD STEEL			
THRUST BEARING**	STAINLESS STEEL			
EQUALIZER	ALLOY STEEL	ALLOY STEEL HRC 22 MAX.	ALLOY STEEL	ALLOY STEEL HRC 22 MAX.
BALL	STAINLESS STEEL	MONEL K-500 HRC 27-35	STAINLESS STEEL	MONEL K-500 HRC 27-35
SPRING	STAINLESS STEEL	INCONEL X-750	STAINLESS STEEL	INCONEL X-750
PLUG	STEEL IN SIZE 6 AND 8 ANSI CLASS 1500, AND SIZE 10 AND SMALLER CLASS 2500 VALVES. ASTM A-48 IRON IN ALL OTHER SIZES AND ANSI PRESSURE CLASSES. PLUGS HAVE LOW COEFFICIENT OF FRICTION MATERIAL COATINGS.	ALLOY STELL HRC 22 MAX. COATED WITH 001" ELECTROLESS NICKEL	STEEL IN API CLASS 5000 VALVES. ASTM-A-48 IRON IN ALL OTHER SIZES AND PRESSURE CLASSES. PLUGS HAVE LOW COEFFICIENT FRICTION MATERIAL COATINGS.	ALLOY STELL HRC 22 MAX. COATED WITH 001" ELECTROLESS NICKEL
COVER BOLTS	A193 GRADE B7	A193 GRADE B7M	A193 GRADE B7	A193 GRADE B7M

3Z Metal Seated Plug Valve, Lubricated RF/BW

3Z Metal Seated Plug Valve, Lubricated & Jacketed.

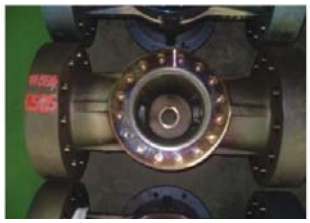
3Z Metal Seated Plug Valve, Lubricated, 3-Way Type.

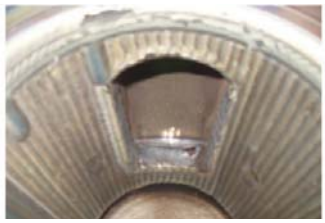
3Z Metal Seated Plug Valve, Lubricated, 4-Way Type.

3Z Metal Seated Plug Valve, Lubricated, Full Bore Type

Hard Surfaced Valves

High Temperature and Abrasive services: For high temperature and abrasive services, 3Z plug valve can be supplied with plug taper and body seat hard surfaced with nickel or cobalt base alloys. These materials provides a coating at elevated temperatures. With additional hard surfacing in high erosion areas, hard surfaced valve provides excellent resistance to abrasion in coal, limestone, iron core, copper ore and other water carried slurries. For severe services, hard sufacing extends valve life and improves valve performance significantly.





Hard Surfacing of Plug: 3Z has extensive experience. Fully trained technicians take hard surfaced plugs and lap these into the matching body. Valve assembly at room temperature is made with dimension allowance to assure proper operation at elevated temperature in actual services. A valve shell test is performed to prove pressure containment, and a seat test is performed with normal adjustment to prove the integrity of the seat. To prevent stress cracking of the hard surfacing material, these tests are performed at the valve maximum operating pressure

NACE Construction valves

for sour gas application

Sulfide Stress Cracking: The basic problem is that whenever even a small amount of hydrogen sulfide is encouraged in natural gas or under oil pressure, a corrosion phenomenon may occur, known as hydrogen sulfide embrittlement or sulfide stress cracking. Actually the steel part is absorbing hydrogen. This causes ductility, and when other stresses are added, may result in failure of part.

Yield Strength: Currently with yield strength above 621 Mpa and/or hardness greater than RC 22 are subject to sulfide stress cracking. Failure below these limits is unlikely.

Heat Treatment: All major components are heat treated to a controlled hardness of 22 or lower on RC scale. In this configuration the plug is coated with electolysis nickel to prevent galling.

Complete details are available upon request.

Extended stems are made to be installed on Wrench Operated standard stems, in case of buried installation of the Plug Valve or in case of installation of the valve in plant location of the valve in plant locations where a normal access of manover is not possible.

Valve extension for underground service include piping for lubrication and are supplied with water tight seals.

Extension length should be advised by customer.

NO	PART NAME	Q'TY	MATERIAL
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	STAINLESS STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	CARBON STEEL
6	LUB. NIPPLE	1	STAINLESS STEEL
7	GLAND BOLT	1S	CARBON STEEL
8	PRESS. BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(I)	1	CARBON STEEL
10	METAL DIAPHR'M(II)	1	STAINLESS STEEL
11	GASKET	1	GRAFOIL
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAFOIL
15	GLAND	1	STAINLESS STEEL
16	O-RING(I)	1	VITON
17	O-RING(II)	1	VITON
18	LOCK NUT	1	CARBON STEEL
19	THRUST BEARING	1	STAINLESS STEEL
20	ADJUSTING BOLT	1	CARBON STEEL
21	LOCK BOLT	1	CARBON STEEL
22	NEEDLE VALVE	1	CARBON STEEL
23	GEAR OPERATOR	1S	STEEL
24	CHECK VALVE	1	STAINLESS STEEL
25	PIPE	1	STEEL
26	ADAPTER	1	STEEL

3Z Plug valves are available in a wide range of variants described in the valve standards. In API6D, API599 and BS 5353, the variants are defined as Short pattern, regular pattern, Venturi pattern and full bore pattern, respectively. The different variants refer to face to face dimension, plug port and shape.

Venturi Pattern: The plug port is reduced area, but the change of section thru the body throat is so designed as to produce a Venturi effect to restore the velocity head losses thru the valve thus resulting in a relatively low pressure drop.

Regular Pattern: These valves have face to face dimensions in accordance with the apprpriate British and American standards where applicable. This ensures the maximum interchangeability between valves or different types and end connections. The plug ports of these valves have a rectangular-slightly tapered shape in section and have an area larger than Venturi Pattern. The transition from the round body end ports to the rectangular seat ports is smooth, and entails no sudden alteration in shape or section which might cause excessive changes in velocity or direction of the fluid flowing in the pipeline.

Short Pattern: These valve have the same face to face dimension as gate valves according to ANSI B16.10 in class 125,150,250 and 300. In order to obtain the relatively short face to face dimensions, the plug port is reduced and has a recangular slightly tapered-shape.

INCH SIZE	ANSI #150	ANSI #300	ANSI #600	ANSI #900	ANSI #1500	ANSI #2500
0.5			R		R	R
0.75			R		R	R
1			R		R	R
1.5		S	R	V	R	R
2	S	S	R	V	R	R
3	S	S	R	V	R	R
4	S	S	R	V	R	R
6	S	V	R / V	R / V	R /V	R
8	S	V	R / V	R / V	R /V	R
10	S	V	R / V	R / V	R /V	R
12	S	V	R / V	R / V	R /V	R
14	V	V	R / V	R / V		
16	V	V	V		V	
18	V	V	V			
20	V	V	V			
24	V	V	V			

Maximum BreakTorque

3Z LUBRICATED PLUG VALVES AVE LOWEST POSSIBLE TURNING TORQUE COMPATRBLE WITH TIGHT SHUT-OFF CONDITIONS. THE TABLE GIVENIN BELOW IS AN ACTUAL TEST DATA FOR EXPECTED MAXIMUM WORKING CONDITIONS.

INCH SIZE	ANSI #150	ANSI #300	ANSI #600	ANSI #900	ANSI #1500	ANSI #2500
1	33			100	110	250
2	162	173	210	210	230	700
3	173	249	400	480	580	1,100
4	303	378	735	720	820	2,500
6	497	649	1,167	1,600	2,500	6,800
8	1,027	984	2,269	2,800	3,600	12,000
10	1,470	2,475	3,620	5,400	6,000	18,000
12	2,053	2,637	5,923	8,500	11,600	25,000
14	2,053	3,729	5,620			
16	2,702	4,648	7,350			
18	3,459	6,794	10,593			
20	4,626	5,859	17,294			
24	5,836	13,295	31,344			

Notes : 1. Above table data add 30% safety factor to actual torque data.
2. When sizing an Actuator, consult with 3Z.

Materials Availability

Variety of materials are available such as Cast iron, Ductile iron,Carbon steel, Lead-Bronze 80/10/10, stainless acid-resisting steel, Duplex stainless steel and special qualities and alloys.

Carbon steel: cast carbon steel used is a medium carbon steel, conforming to ASTM A216 WCC. Steel plug is made of a low alloy steel, heat treated to produce the proper balance between non-galling properties and the toughness required to resist the mechanical loads imposed in operating the valve.

Manganese-Molybdenum Alloy Steel: (ASTM A-487 Grade 4 Class C) This alloy steel is used for body castings for Class 3000 and higher Pressure balanced valves for oilfield services, which must conform to API 6A, covering Steel valves for Drilling and Production Service.

Ferritic Steel: Grade LCC Ferritic Steel, conforming to ASTM A352, is basically a "killed" mild carbon steel which has good impact qualities at low temperature to 146C and must have a minimum average Charpy V notch impact strength of 15 foot pounds at that temperature.

Type CF8M Stainless Steel: This is an 18-12 type of stainless steel casting material, containing molybdenum, with analysis and properties closely corresponding to AISI type 316 wrought stainless steel, and conforming to ASTM spec 351 Grade CF8M.

13% Chromium stainless steel: ASTM A351 Grade CA-15. 13% chromium stainless steel is used for body castings of high pressure 3Z valves made especially for use in the oil fields on high pressure corrosive services which cannot be handled with standard manganese-molybdenum alloy steel valves. While the bodies of such valves are 13% chromium stainless steel, the plugs are 18-8 stainless steel with taper surface hard faced.

Pressure and temperature Chart

3Z Lubricated plug valves are designed and manufactured in accordance with pressure and Temperature rating Criteria. One of the typical chart showing WCB/WCB is as below. For other various material information, please Consult with us and/or your nearlest agent around the world.

Pressure Temperature Ratings
(Carbon Steel ASTM A105, ASTM A216 Grade WCB and ASTM A216 Grade WCC)

Service Temperature In °F	Working Pressure by Classes(PSIG)					
	150	300	600	900	1500	2500
-20 to 100	285	740	1480	2220	3705	6170
200	260	675	1350	2025	3375	5625
250	245	665	1333	1998	3328	5548
300	230	655	1315	1970	3283	5470
400	200	635	1270	1900	3170	5280
450	185	618	1235	148	3080	5135
500	170	600	1200	1795	2995	4990
600	140	550	1095	1640	2735	4560
700	110	535	1065	1600	2665	4440
750	95	505	1010	1510	2520	4200
800	80	410	825	1235	2060	3420

Service Temperature °C	Working Pressure by Rating Number(BAR)					
	150	300	600	900	1500	2500
-29 to 38	19.6	51.5	102.1	153.2	255.3	425.5
50	19.2	50.1	100.2	150.2	250.4	417.3
100	17.7	46.4	92.8	139.1	231.9	386.5
120	16.9	45.9	91.9	137.8	229.5	382.5
150	15.8	45.3	90.5	135.7	226.1	376.9
200	14	43.5	87.6	131.5	219.1	365.2
232	12.8	42.6	85.2	127.4	212.6	354
250	12.1	41.5	83.4	125.2	208.6	347.7
300	10.2	38.1	77.5	116.2	193.7	322.8
350	8.4	36.1	73.9	110.9	184.8	308
375	7.4	36	72.9	109.4	182.3	303.9
400	6.5	34.1	69	103.5	172.5	287.5
425	5.6	28.1	57.5	86.3	143.8	239.6
450	4.7	20.5	41.4	60.1	100.2	166.9

3Z Lubricated plug valves are strictly tested as per various international standard as well as customer requirement if any. The typical test pressure and test duration tables are illustrated as under

Test Pressure

VALVE RATING	Maximum C.W.P		SHELL TEST(minimum)		SEAT TEST(minimum)	
	bar	ibf/in^2	bar	ibf/in^2	bar	ibf/in^2
CLASS 150 PN 20	19.6	285	29.4	427.5	21.6	313.5
CLASS 300 PN 50	51.1	740	76.7	1110	56.2	814
CLASS 600 PN 100	102.1	1480	153.2	2220	112.3	1628
CLASS 800 PN 140	138	2000	207	3002	152	2204
CLASS 900 PN 150	153.2	2220	229.8	3330	168.5	2442
CLASS 1500 PN 250	255.3	3705	383	5558	280.8	4076
CLASS 2500 PN 420	425.5	6170	638.3	9255	468	6787
API 2000	138	2000	276	4000	138	2000
API 2000	2074	3000	414	6200	207	3000
API 5000	345	5000	690	10000	345	5000

Test Duration(MIN)

VALVE SIZE		BS 5146		API 6D	
		SHELL TEST	SEAT TEST	SHELL TEST	SEAT TEST
≤ 401mm	≤ 1 1/2″	3/4	3/4	not applicable	
50mm	2”	3/4	3/4	2	2
65-100mm	2 1/2″- 4″	1	1	2	2
150mm	6″	1	1	5	5
200&250mm	8″ & 10″	2	2	5	5
300mm	12″	2	2	15	5
350-450mm	14″ - 18″	5	2	15	5
≥ 500mm	≥ 20″	5	2	30	5

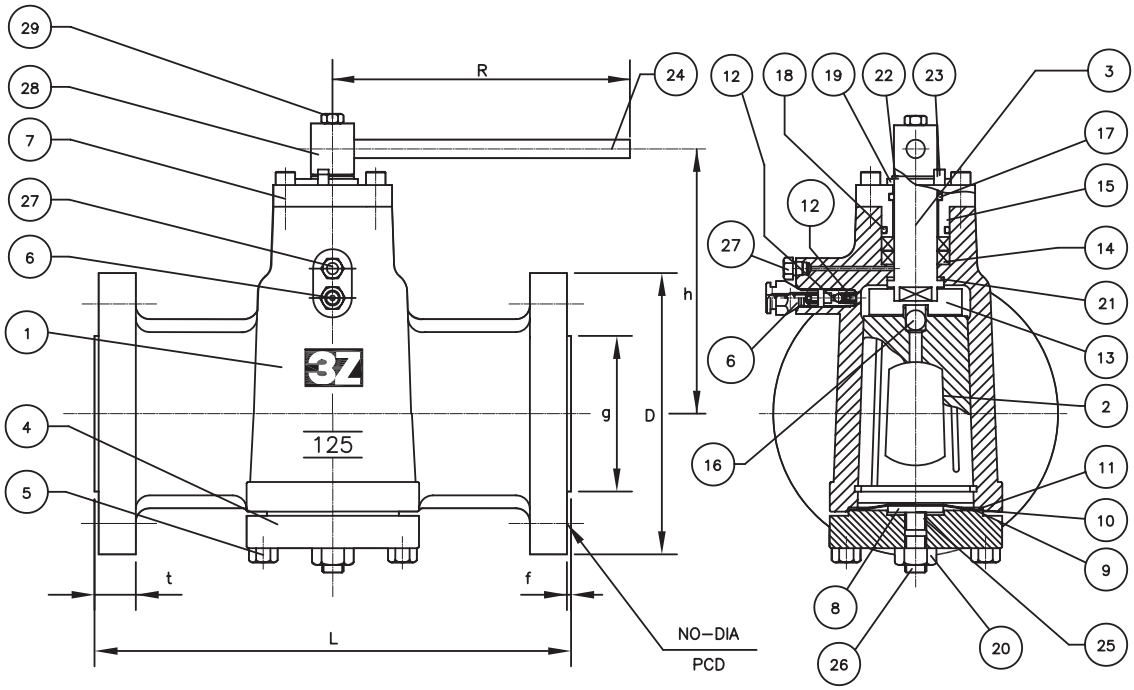
■LUBRICANT FUNCTION :

1. To minimize friction during operation of valve.
2. To protect seat surfaces from corrosion.
3. To prevent leakage by lubricant encircled with lubricant grooves.

LUBRICANT NO.	COLOR	TEMP. RANGE	PRINCIPAL SERVICES	UNSUITABLE FLUID
G-104	Peanut Butter	-18 ~ 260℃	* API Gate Valve, Bady scoired, Ball or Plug Valve	Alkalies
G-204	White	-45 ~ 204℃	* Molten Sulphur, Acetic Anhydride, Acetic Acid, Food and Pharmaceutical applications as determined by user.	LPG and hydrocarbon solvents
G-220	Clear	-59 ~ 121℃	* Very cold service for pipe lines, compressorstations, gasoline plants and crude oil production fields.	Aromatic, Solvents
G-304	Yellow	-29 ~ 204℃	* Where H_2S and CO_2 are encountered	Solvents & Amine
G-350A	Yellow	-29 ~ 204℃	* Hydroflouric acid or mixtures of HF & L.P.G.	Hot Air
G-400A	Amber	-29 ~ 204℃	* Aqueous solutions of Acides and Caustics	Liquid Hydrocarbons
G-400	Red	-20 ~ 232℃	* Acids and Caustics	Liquid Hydrocarbons
G-525	Clear	-18 ~ 204℃	* Air starting valves Air fractionaltion	Liquid Hydrocarbons
G-600	Brown	-29 ~ 260℃	* 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℃	* Aviation gasoline, Jet fuel, fuel blends of Alkylate	100% Bezine
G-750	Black	-18 ~ 316℃	* asphalt hot oil service Salt brine, high temperature steam	Aeromatic, Alkalies Solvents

COMPARISON TABLE OF SEALANTS				
3Z	ROCKWELL	WALWORTH	CLIMAX	AVAILABLE FLUID
G-400/400A	147-421		400/400A	acids, alcohols, glycerine
G-204	234		204	silicone sealant
G-711	357		711	gasoline, mineral oils, kerosene
G-600	386		600	general gas and wate sealant
G-650/800/900	555	NO. 1	650/800/900	aliphatic hydrocarbon liquids and gases
G-650/800/900	654		650/800/900	hot hydrocarbon vapors and gases
G-711	755	NO. 7	711	benzene, butane, solvent naphthas
G-711	833		711	aviation gasoline, jet fuel
G-220	862	NO.5 , NO.6	220	air and inert gases at sub-zero temp.
G-950	950		950	benzene, propylene, styrene, LPGS
G-400A		NO. 4	400A	strong acides, alkalies
G-340			340	sour gas, H_2S, CO_2
G-FL5	660		FL-5	fluorocarbon, lubricant wxygen chlorine
G-PS2	921		Polyseal No. 3	hot hydrocarbon gases and vapors
G-PS6		NO. 2	Polyseal No. 6	steam, high temperature water

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES							
					BOLT HOLE						
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R
0.5	15	108	135	89	60.5	4	16	35	9.7	1.6	180
0.75	20	117	135	98	70	4	16	43	10.4	1.6	180
1	25	140	140	108	79.5	4	16	51	11.2	1.6	222
1.5	40	165	197	127	98.5	4	16	73	14.2	1.6	318
2	50	178	197	152	120.5	4	19	92	15.8	1.6	457
3	80	203	230	190	152.5	4	19	127	19.1	1.6	597
4	100	299	308	229	190.5	8	19	157	23.9	1.6	746

NOTE.
1. FIRE SAFE DESIGN : ACCORDING TO API 6FA
2. PLUG : CASE HARDENED WITH PTFE

	END CONNECTION : RF	
STD	TEST	ANSI 6D
	FACE TO FACE or END TO END	ANSI B 16.10 CLASS 150
	DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 150
	WALL THICKNESS	ANSI 599

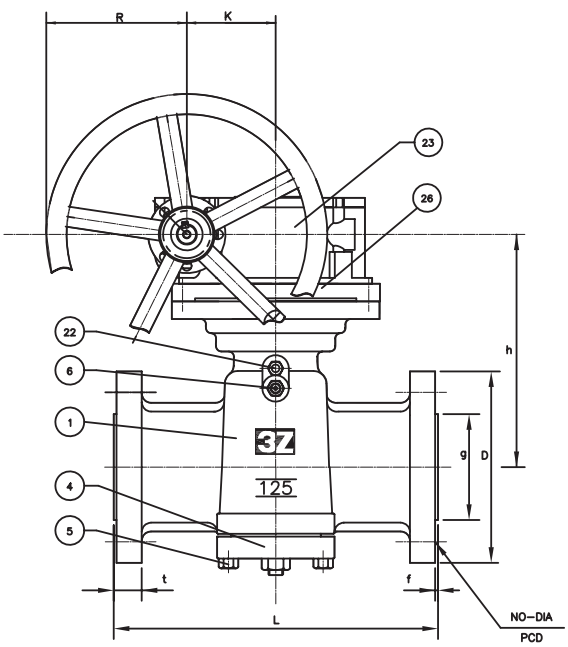
3Z

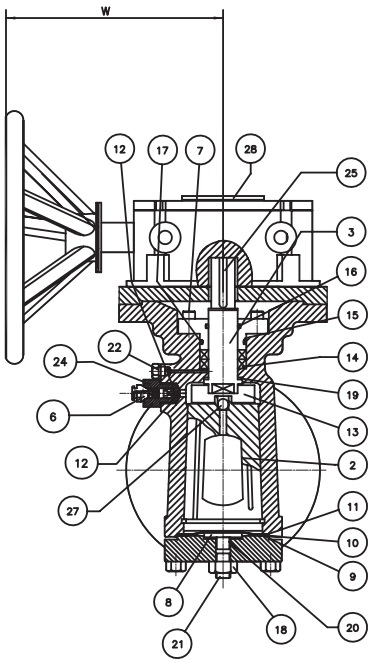
LUBRICATED PLUG VALVES

PRODUCTION NO.

125.1-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	O-RING(1)	1	VITON
17	O-RING(2)	1	VITON
18	LOCK NUT	1	ALLOY STEEL
19	THRUST BEARING	1	CARBON STEEL
20	ADJUSTING BOLT	1	ALLOY STEEL
21	LOCK BOLT	1	ALLOY STEEL
22	STEM PACKING INJECTOR	1	STAINLESS STEEL
23	GEAR OPERATOR	1	STEEL
24	SOCKET	1	CARBON STEEL
25	KEY	1	STEEL
26	ADAPTER	1	CARBON STEEL
27	CHECK BALL	1	STAINLESS STEEL
28	INDICATOR	1	CARBON STEEL





DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
6	150	267	310	279	241.5	8	22	216	25.4	1.6	200	73	300
8	200	292	393	343	298.5	8	22	270	28.6	1.6	225	108	350
10	250	330	424	406	362	12	25	324	30.2	1.6	225	108	350
12	300	356	524	483	432	12	25	381	31.8	1.6	225	108	450
14	350	687	570	533	476	12	29	413	35.1	1.6	225	166	450
16	400	762	642	597	539.5	16	29	470	36.6	1.6	280	166	450
18	450	864	678	635	578	16	32	533	39.7	1.6	315	166	450
20	500	914	732	698	635	20	32	584	42.9	1.6	315	166	450
24	600	1067	785	812.8	749.3	20	35	692	47.8	1.6	355	166	450

NOTE.

1. FIRE SAFE DESIGN : ACCORDING TO API 6FA
2. PLUG : CASE HARDENED WITH PTFE

END CONNECTION : RF

STD		
	TEST	ANSI 6D
	FACE TO FACE or END TO END	ANSI B 16.10 CLASS 150
	DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 150
	WALL THICKNESS	ANSI 599

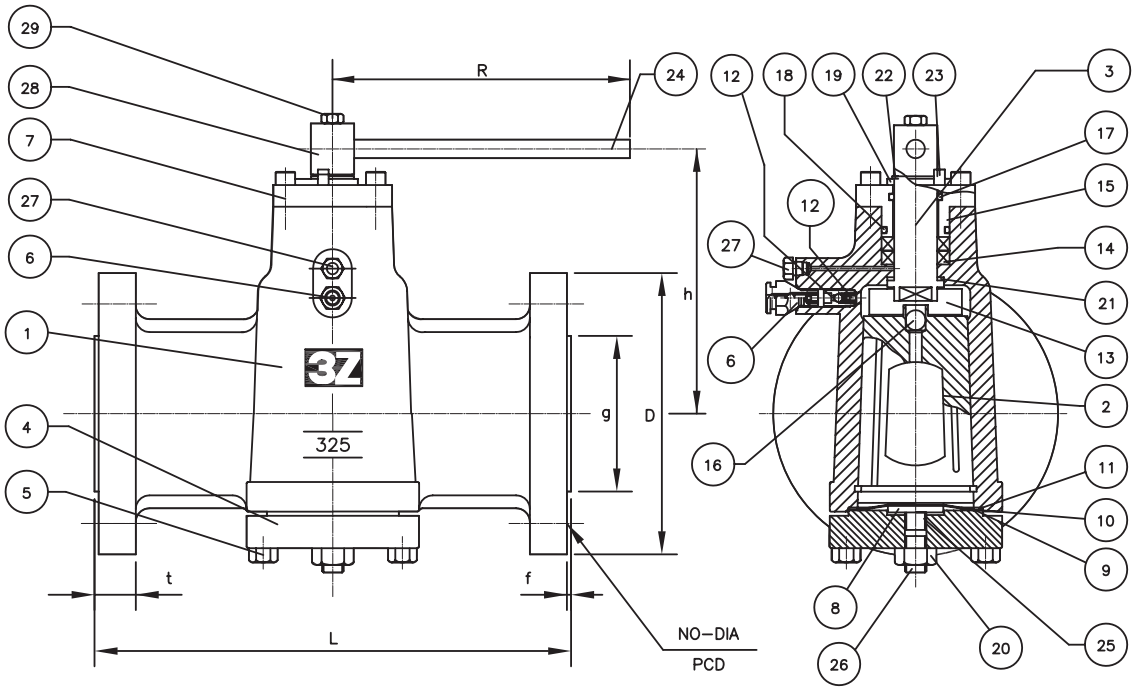
3Z

LUBRICATED PLUG VALVES

PRODUCTION NO.

125.2-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES							
					BOLT HOLE						
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R
0.5	15	140	135	95	66.5	4	16	35	14.3	1.6	180
0.75	20	152	135	117	82.5	4	19	43	15.9	1.6	180
1	25	165	140	124	89	4	19	51	17.5	1.6	222
1.5	40	190	197	156	114.5	4	22	73	20.7	1.6	318
2	50	216	197	165	127	8	19	92	22.3	1.6	457
3	80	283	230	210	168	8	22	127	28.6	1.6	597
4	100	305	324	254	200	8	22	157	31.8	1.6	960

NOTE.	END CONNECTION : RF	
1 .FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST — ANSI 6D
		FACE TO FACE or END TO END — ANSI B 16.10 CLASS 300
		DIMENSIONS OF FLANGE — ANSI B 16.5 CLASS 300
		WALL THICKNESS — ANSI 599

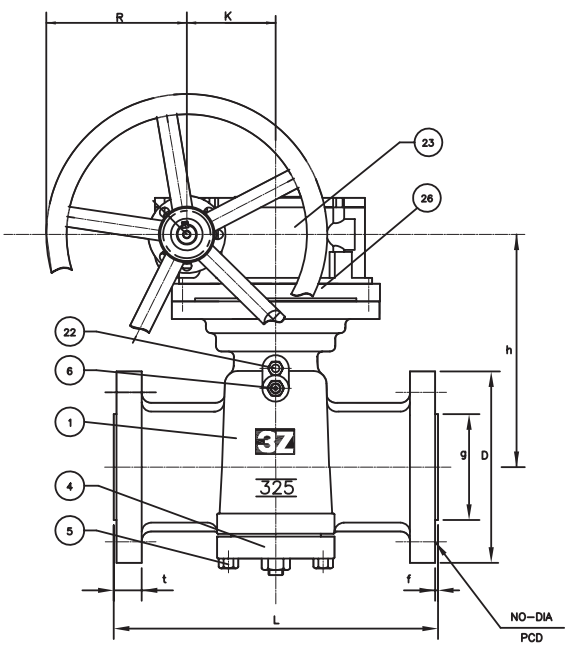
3Z

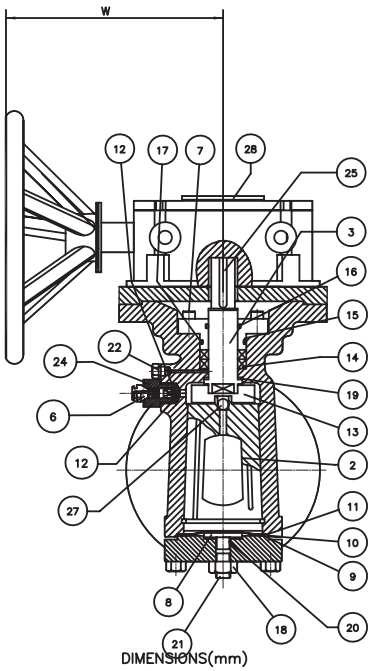
LUBRICATED PLUG VALVES

PRODUCTION NO.

325.1-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	O-RING(1)	1	VITON
17	O-RING(2)	1	VITON
18	LOCK NUT	1	ALLOY STEEL
19	THRUST BEARING	1	CARBON STEEL
20	ADJUSTING BOLT	1	ALLOY STEEL
21	LOCK BOLT	1	ALLOY STEEL
22	STEM PACKING INJECTOR	1	STAINLESS STEEL
23	GEAR OPERATOR	1	STEEL
24	SOCKET	1	CARBON STEEL
25	KEY	1	STEEL
26	ADAPTER	1	CARBON STEEL
27	CHECK BALL	1	STAINLESS STEEL
28	INDICATOR	1	CARBON STEEL





DIMENSIONS(mm)

	NOMINAL SIZE				END FLANGES									
						BOLT HOLE								
	IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
	4	100	305	324	254	200	8	22	157	31.8	1.6	200	75	235
	6	150	403	310	318	270	12	22	216	36.6	1.6	200	75	235
	8	200	419	393	381	330	12	25	270	41.3	1.6	225	92	288
*	10	250	457	429	444	387.5	16	29	324	47.7	1.6	225	92	288
	12	300	502	534	521	451	16	32	381	50.8	1.6	225	92	288
	14	350	762	585	584	514.5	20	32	413	54	1.6	280	113	321
	16	400	838	662	648	571.5	20	35	470	57.2	1.6	315	145	371
	18	450	914	678	711	628.5	24	35	533	60.4	1.6	355	185	454
	20	500	991	762	775	686	24	35	584	63.5	1.6	355	185	454
	24	600	1143	820	914.4	812.8	24	41	692	69.8	1.6	400	230	540

NOTE.

1. FIRE SAFE DESIGN : ACCORDING TO API 6FA
2. * 2 BOTTOM HOLES IN FLANGES ARE TAPPING FOR 1-8UNC THRU

END CONNECTION : RF

STD		
	TEST	ANSI 6D
	FACE TO FACE or END TO END	ANSI B 16.10 CLASS 300
	DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 300
	WALL THICKNESS	ANSI 599

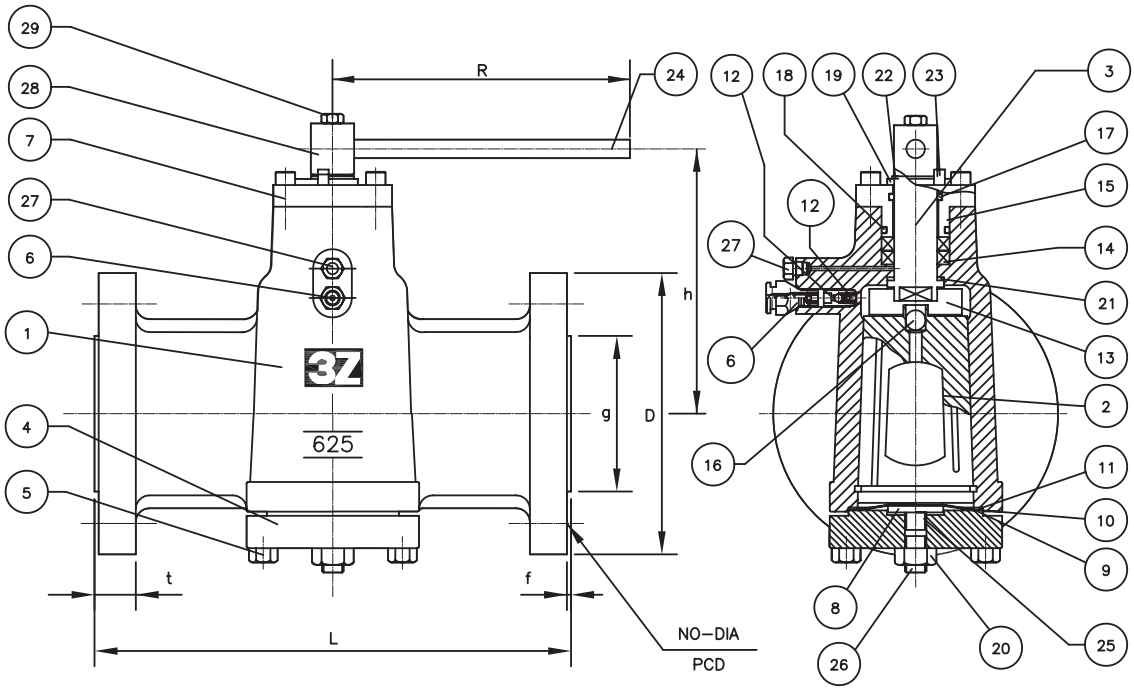
3Z

LUBRICATED PLUG VALVES

PRODUCTION NO.

325.2-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL

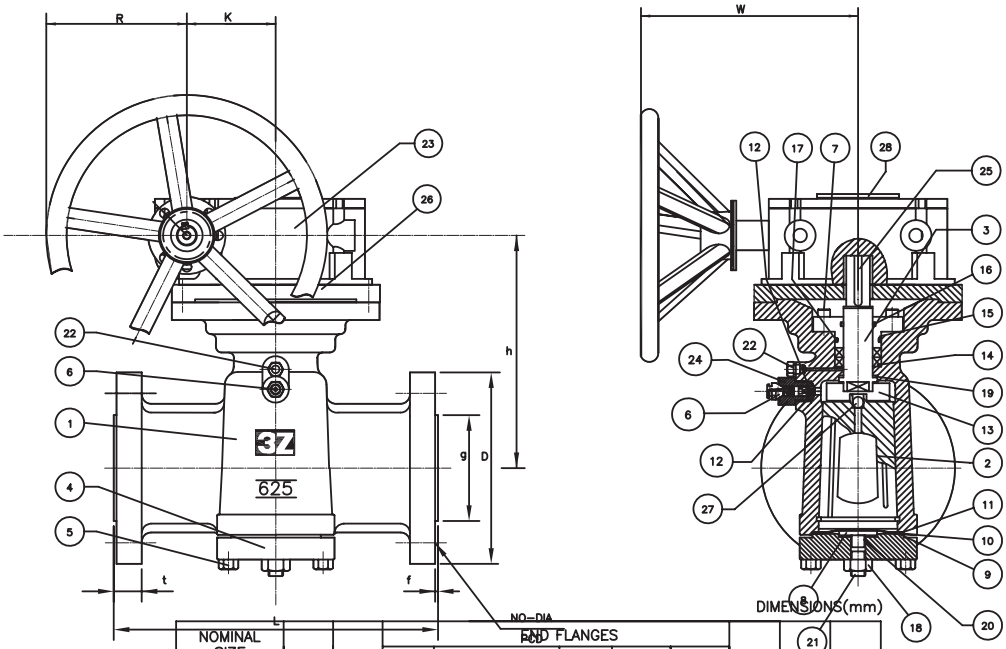


DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES							
					BOLT HOLE						
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R
0.5	15	165	135	95	66.5	4	16	35	20.7	6.4	180
0.75	20	190	135	117	82.5	4	19	43	22.3	6.4	180
1	25	216	140	124	89	4	19	51	23.9	6.4	317.5
1.5	40	241	197	156	114.5	4	22	73	28.7	6.4	317.5
2	50	292	197	165	127	8	19	92	31.8	6.4	597
3	80	356	258	210	168	8	22	127	38.2	6.4	960
4	100	432	319	273	216	8	25	157	44.5	6.4	1070

NOTE.			
1 .FIRE SAFE DESIGN : ACCORDING TO API 6FA	END CONNECTION : RF		
	STD	TEST	ANSI 6D
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 600
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 600
		WALL THICKNESS	ANSI 599
3Z LUBRICATED PLUG VALVES			PRODUCTION NO. 625.1-W.W

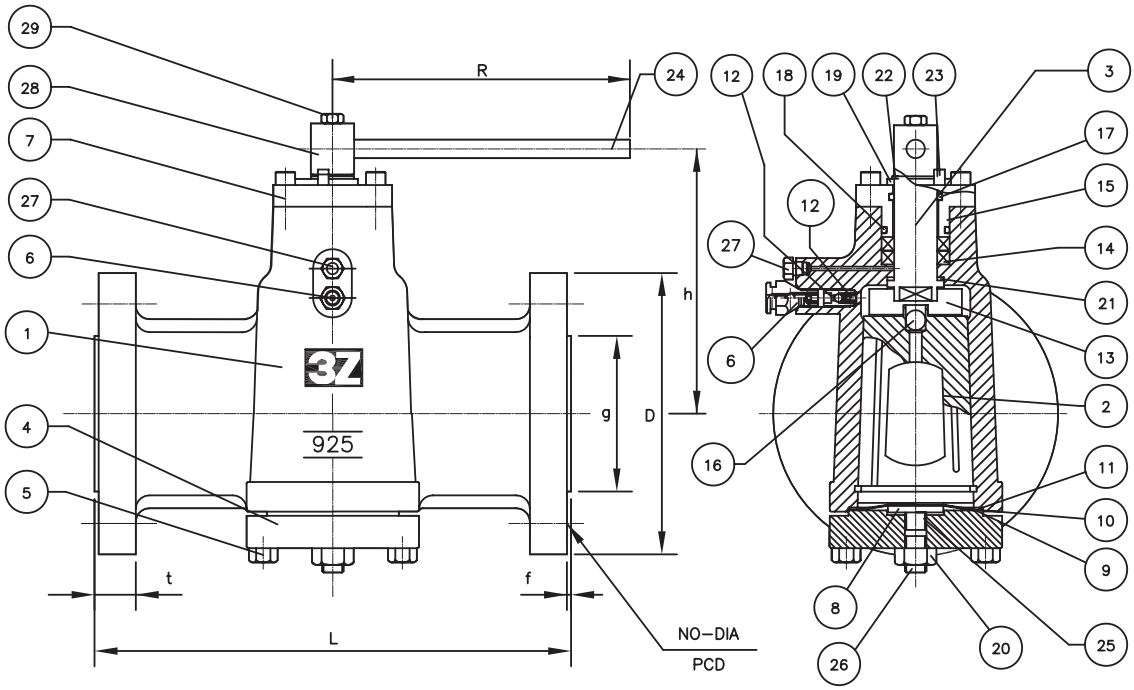
NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	O-RING(1)	1	VITON
17	O-RING(2)	1	VITON
18	LOCK NUT	1	ALLOY STEEL
19	THRUST BEARING	1	CARBON STEEL
20	ADJUSTING BOLT	1	ALLOY STEEL
21	LOCK BOLT	1	ALLOY STEEL
22	STEM PACKING INJECTOR	1	STAINLESS STEEL
23	GEAR OPERATOR	1	STEEL
24	SOCKET	1	CARBON STEEL
25	KEY	1	STEEL
26	ADAPTER	1	CARBON STEEL
27	CHECK BALL	1	STAINLESS STEEL
28	INDICATOR	1	CARBON STEEL



NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
4	100	432	319	273	216	8	25	157	44.5	6.4	200	92	288
6	150	559	344	356	292	12	29	216	54.1	6.4	225	92	288
8	200	660	406	419	349	12	32	270	62	6.4	225	145	371
10	250	787	554	508	432	16	35	324	69.9	6.4	315	145	371
12	300	838	668	559	489	20	35	381	73.1	6.4	315	145	371
14	350	889	700	603	527	20	38	413	76.3	6.4	315	185	454
16	400	991	773	686	603	20	41	470	82.6	6.4	355	230	540
18	450	1092	856	743	654	20	45	533	89	6.4	400	230	540
20	500	1194	932	813	724	24	45	584	95.3	6.4	400	230	540
24	600	1397	987	940	838	24	51	692	108	6.4	450	328	605

NOTE.			
1. FIRE SAFE DESIGN : ACCORDING TO API 6FA		END CONNECTION : RF	
	STD	TEST	ANSI 6D
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 600
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 600
		WALL THICKNESS	ANSI 599
3Z	LUBRICATED PLUG VALVES		PRODUCTION NO. 625.2-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES							
					BOLT HOLE						
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R
0.5	15	215.9	135	120.7	82.6	4	22.4	35	28.8	6.4	180
0.75	20	228.6	135	130	88.9	4	22.4	43	31.8	6.4	180
1	25	254	140	149	101.6	4	25.4	51	34.8	6.4	222
1.5	40	305	197	178	124	4	28.4	73	38.2	6.4	597
2	50	368	197	216	165.1	8	25.4	92	44.5	6.4	746
3	80	381	258	241	190.5	8	25.4	127	44.5	6.4	1070

NOTE.	END CONNECTION : RF	
1 .FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST — ANSI 6D
		FACE TO FACE or END TO END — ANSI B 16.10 CLASS 900
		DIMENSIONS OF FLANGE — ANSI B 16.5 CLASS 900
		WALL THICKNESS — ANSI 599

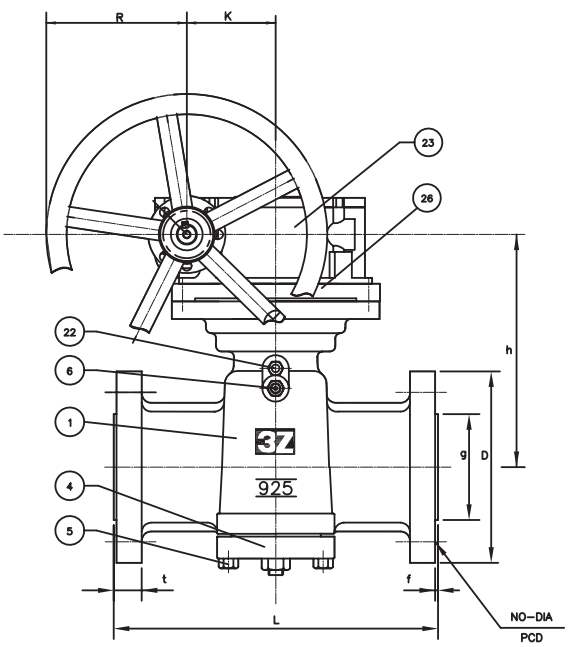
3Z

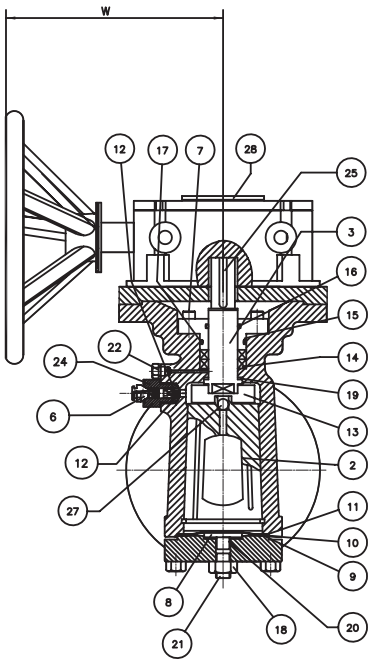
LUBRICATED PLUG VALVES

PRODUCTION NO.

925.1-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	O-RING(1)	1	VITON
17	O-RING(2)	1	VITON
18	LOCK NUT	1	ALLOY STEEL
19	THRUST BEARING	1	CARBON STEEL
20	ADJUSTING BOLT	1	ALLOY STEEL
21	LOCK BOLT	1	ALLOY STEEL
22	STEM PACKING INJECTOR	1	STAINLESS STEEL
23	GEAR OPERATOR	1	STEEL
24	SOCKET	1	CARBON STEEL
25	KEY	1	STEEL
26	ADAPTER	1	CARBON STEEL
27	CHECK BALL	1	STAINLESS STEEL
28	INDICATOR	1	CARBON STEEL





DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
4	100	457	319	292	235	8	31.8	157	50.9	6.4	225	108	350
6	150	610	344	381	317.5	12	31.75	216	61.8	6.4	225	108	350
8	200	737	406	470	393.7	12	38.1	270	69.9	6.4	280	166	450
10	250	838	554	546	469.9	18	38.1	324	76.3	6.4	315	166	450
12	300	965	668	610	533.4	20	38.1	381	85.6	6.4	355	166	450
16	400	1130	932	705	616	20	44	470	95.3	6.4	355	290	800

NOTE.	END CONNECTION : RF	
1. FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST — ANSI 6D
		FACE TO FACE or END TO END — ANSI B 16.10 CLASS 900
		DIMENSIONS OF FLANGE — ANSI B 16.5 CLASS 900
		WALL THICKNESS — ANSI 599

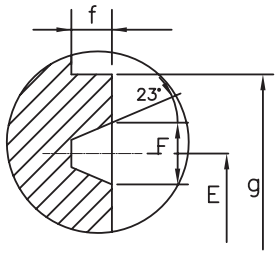
3Z

LUBRICATED PLUG VALVES

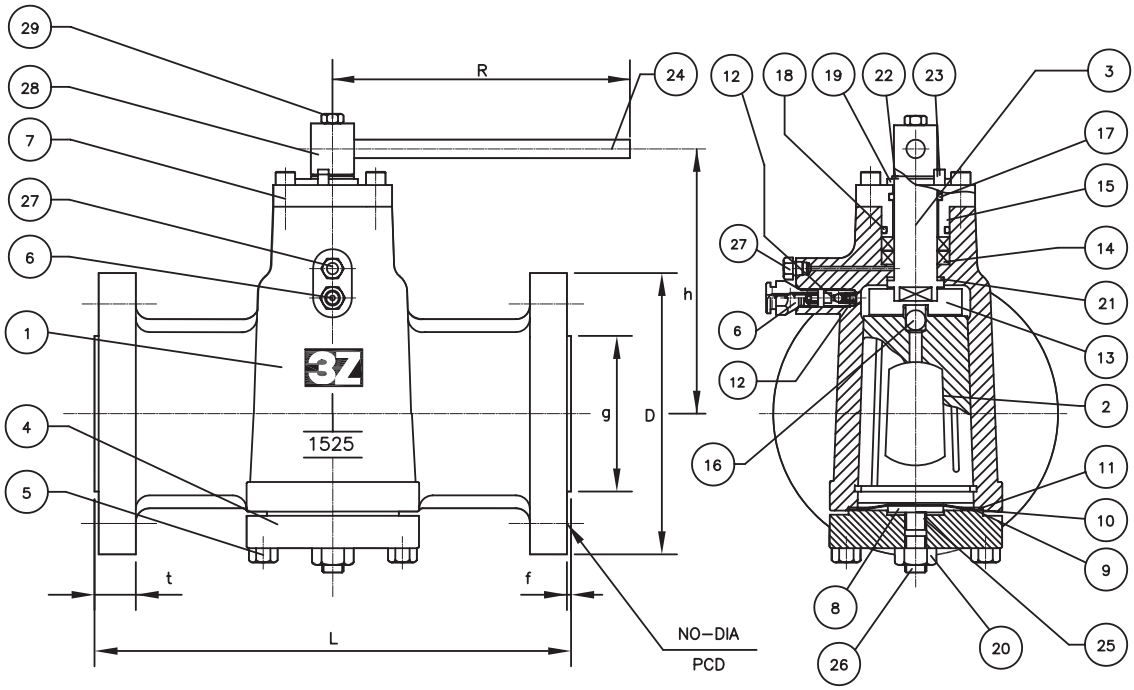
PRODUCTION NO.

925.2-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL



FORM B



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	E	F
0.5	15	215.9	135	120.7	82.6	4	22.4	60.5	28.8	6.4	180	39.7	8.7
0.75	20	228.6	135	130	88.9	4	22.4	66.5	31.8	6.4	180	44.5	8.7
1	25	254	140	149	101.6	4	25.4	71.5	34.8	6.4	317.5	50.8	8.7
1.5	40	305	197	178	124	4	28.4	92	38.2	6.4	597	68.3	8.7
2	50	368	258	216	165.1	8	25.4	124	44.5	7.9	1070	95.3	11.9
3	80	470	258	267	203.2	8	32	168	54.2	7.9	1070	136.5	11.9

NOTE.	END CONNECTION : RF	
1 .FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST — ANSI 6D
		FACE TO FACE or END TO END — ANSI B 16.10 CLASS 1500
		DIMENSIONS OF FLANGE — ANSI B 16.5 CLASS 1500
		WALL THICKNESS — ANSI 599

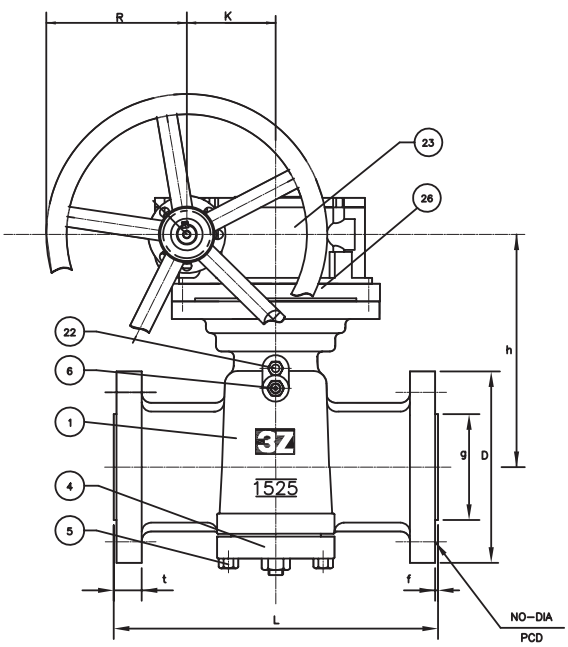
3Z

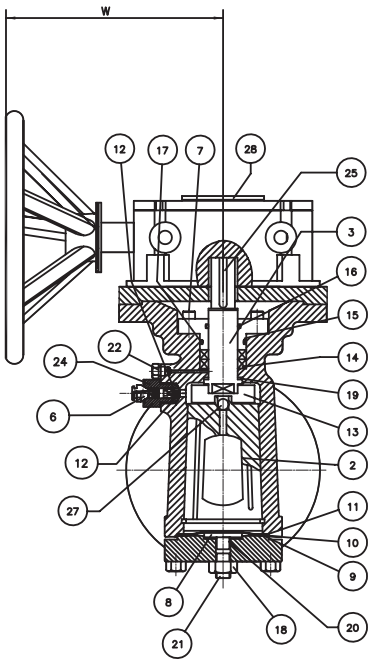
LUBRICATED PLUG VALVES

PRODUCTION NO.

1525.1-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	O-RING(1)	1	VITON
17	O-RING(2)	1	VITON
18	LOCK NUT	1	ALLOY STEEL
19	THRUST BEARING	1	CARBON STEEL
20	ADJUSTING BOLT	1	ALLOY STEEL
21	LOCK BOLT	1	ALLOY STEEL
22	STEM PACKING INJECTOR	1	STAINLESS STEEL
23	GEAR OPERATOR	1	STEEL
24	SOCKET	1	CARBON STEEL
25	KEY	1	STEEL
26	ADAPTER	1	CARBON STEEL
27	CHECK BALL	1	STAINLESS STEEL
28	INDICATOR	1	CARBON STEEL



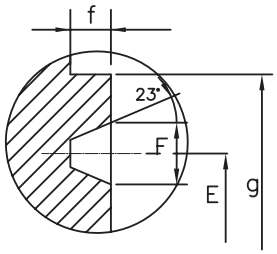


DIMENSIONS(mm)

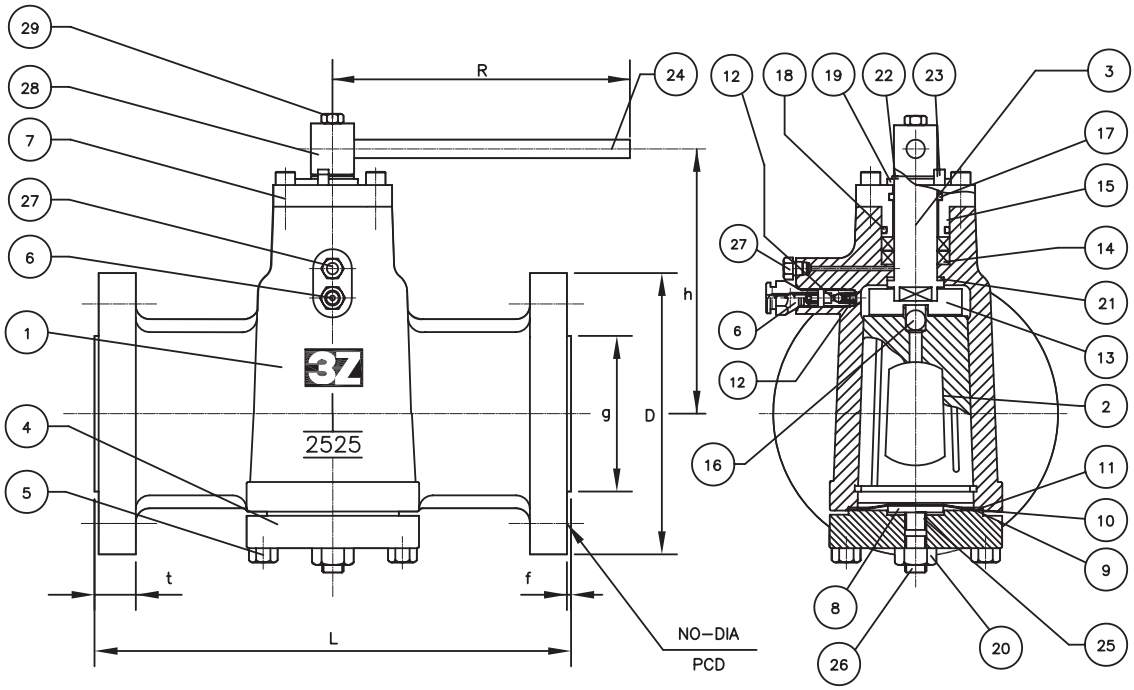
NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	K	W
4	100	546.1	344	311.2	241.3	8	35.1	157	60.3	6.4	225	108	350
6	150	705	406	393.7	317.5	12	38.1	216	89	6.4	225	108	350
8	200	832	668	483	393.7	12	44	270	98.3	6.4	280	166	450
10	250	991	650	584.2	482.6	12	50.8	324	114.3	6.4	315	166	450
14	450	1257	932	749	635	16	60	412.8	139.8	6.4	355	290	800
16	400	1384	987	826	704.9	16	67	470	154	6.4	355	290	800

NOTE.		END CONNECTION : RF	
1. FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST	ANSI 6D
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 1500
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 1500
		WALL THICKNESS	ANSI 599
3Z LUBRICATED PLUG VALVES		PRODUCTION NO.	1525.2-W.W

NO.	PART NAME	Q'TY	MATERIALS
1	BODY	1	CARBON STEEL
2	PLUG	1	CARBON STEEL
3	STEM	1	CALBON STEEL
4	COVER	1	CARBON STEEL
5	COVER BOLT	1S	ALLOY STEEL
6	SEALANT INJECTOR	1	STAINLESS STEEL
7	GLAND BOLT	1S	ALLOY STEEL
8	PRESS.BUTTON	1	STAINLESS STEEL
9	METAL DIAPHR'M(1)	1	CARBON STEEL
10	DETAL DIAPHR"M(2)	1	STAINLESS STEEL
11	GASKET	1	GRAPHITE
12	CHECK VALVE	1	STAINLESS STEEL
13	COMPENSATOR	1	CARBON STEEL
14	GLAND PACKING	2	GRAPHITE
15	GLAND	1	CARBON STEEL
16	CHECK BALL	1	STAINLESS STEEL
17	O-RING(1)	1	VITON
18	O-RING(2)	1	VITON
19	INDICATOR	1	CARBON STEEL
20	LOCK NUT	1	ALLOY STEEL
21	THRUST BEARING	1	CARBON STEEL
22	SNAP RING	1	CARBON STEEL
23	STOPPER	1	CARBON STEEL
24	WRENCH	1	CARBON STEEL
25	ADJUSTING BOLT	1	ALLOY STEEL
26	LOCK BOLT	1	ALLOY STEEL
27	STEM PACKING INJECTOR	1	STAINLESS STEEL
28	HUB	1	STAINLESS STEEL
29	HUB BOLT	1	STAINLESS STEEL



FORM B



DIMENSIONS(mm)

NOMINAL SIZE				END FLANGES									
					BOLT HOLE								
IN	MM	L	h	D	PCD	NO	DIA	g	t	f	R	E	F
3	80	583	197	305	228.6	8	35	168	76.2	9.6	1070	127	13.5

NOTE.		END CONNECTION : RF	
1 .FIRE SAFE DESIGN : ACCORDING TO API 6FA	STD	TEST	ANSI 6D
		FACE TO FACE or END TO END	ANSI B 16.10 CLASS 1500
		DIMENSIONS OF FLANGE	ANSI B 16.5 CLASS 1500
		WALL THICKNESS	ANSI 599
3Z LUBRICATED PLUG VALVES		PRODUCTION NO.	2525.1-W.W