

SUPER-H - Class 150 & 300 - Short & Venturi Patterns

AUDCO SUPER-H Pressure Balanced Plug Valves have been developed to reduce the operating torque in plug valves without compromising the in-line maintenance capability. The plug and body seating surfaces, which are lapped and matched, are not exposed to the line fluid while valves are in open condition; this confines inevitable corrosion and erosion to less critical areas. Sealing is further enhanced by specially developed plug sealants charged evenly around the seating surfaces. The plug is impregnated with PTFE based anti-friction agent - 'SUPER LoMu' which provides greater wear resistance and ensures consistent operating torque.

PRESSURE BALANCED PLUG

In a standard taper plug valve the line fluid finds its way into the large end chamber of the plug. The resultant force pushes the plug into its taper seat causing taper locking and possibly valve seizure. This resultant force persists when the subsequent line pressure remains high or is reduced. To unseat the taper locking and keep the valve operational frequent sealant injection is required.

In pressure balanced plug valves, pressure balancing is achieved by providing two holes in the plug connecting the chambers at each end of the plug. The chambers, one

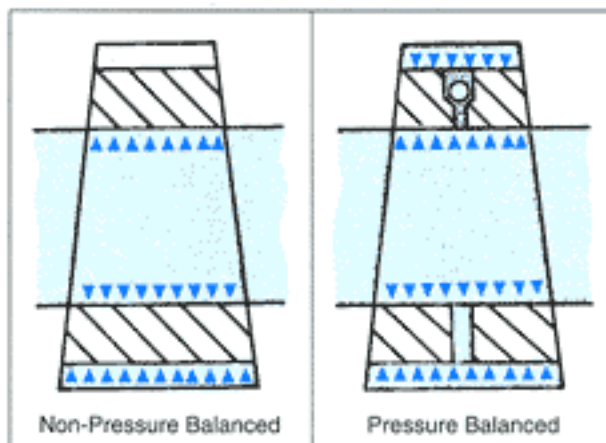
Pressure balancing eliminates out of balance and consequent taper locking. The Fig. shows clearly how a balanced position is reached when line pressure is allowed to equalise the pressure acting on each end of the plug.

FIRE SAFE

SUPER-H plug valves are designed to meet standards for fire test. The features incorporated in the valve make the valve seal and operate effectively even after being subjected to varying temperatures and duration resembling fire accidents.

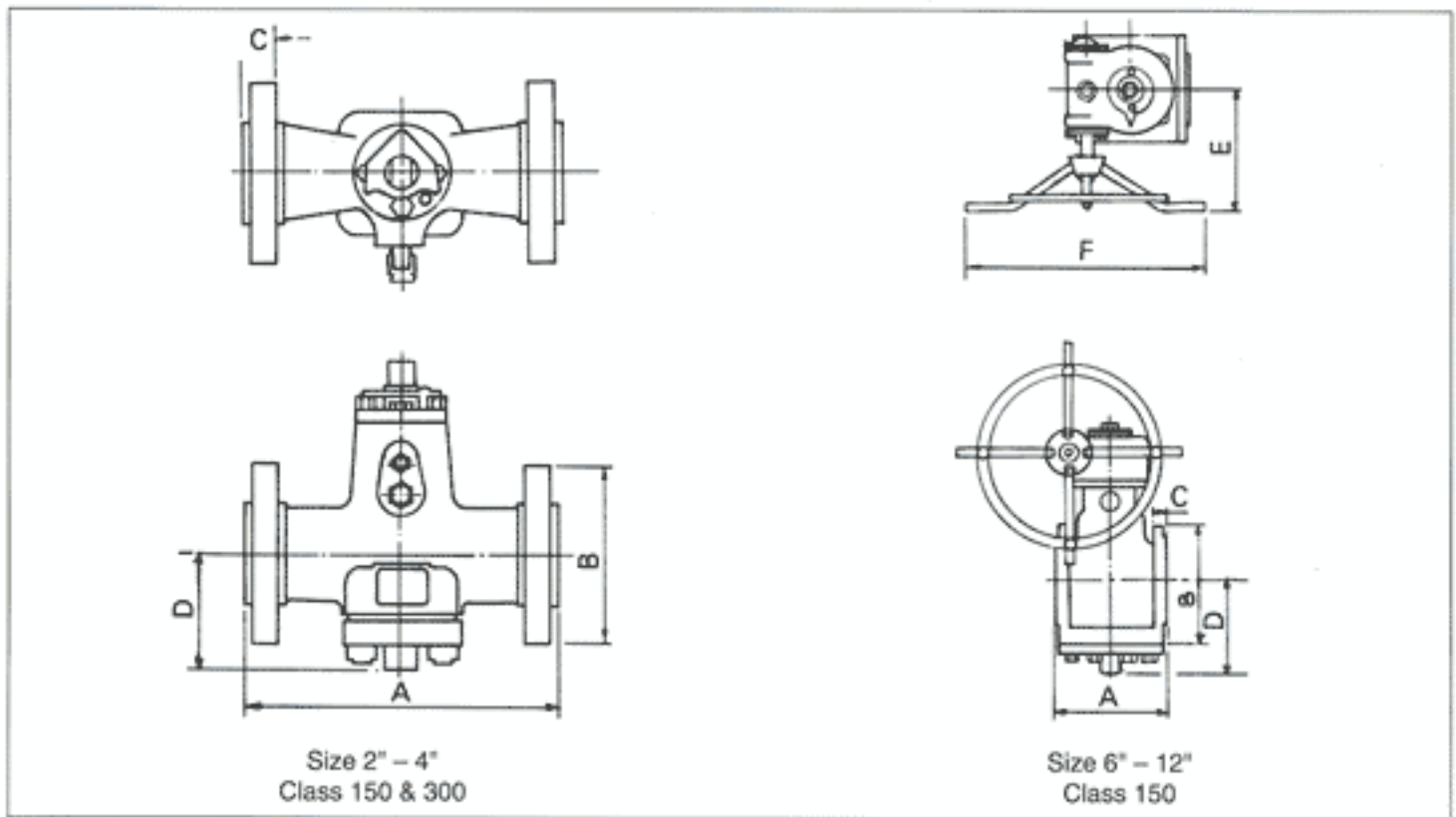
OPERATION AND MAINTENANCE

SUPER-H plug valves generally need very little attention after installation. However for trouble free operation sealant injection as recommended is to be carried out. Please refer to "Installation, Operation & Maintenance manual for SUPER-H Pressure Balanced Plug valves" for details. For ease of adjustment, it is desirable that 6" (150 mm) clearance be maintained around the pressure screw, located at the bottom of the valve.



fitted with a non-return valve acts as a balancing mechanism for the plug. The pressure in the large end chamber always equals the line pressure and the pressure in the small end chamber is always equal to or greater than the line pressure, minimising the resultant force.

As a standard, SUPER-H plug valves are supplied with AUDCO 733 sealant which is suitable for most hydrocarbon services. On request, sealant from a wide range offered, can be supplied to suit the nature of service. It is recommended that you consult us before selecting the sealant for a new service.

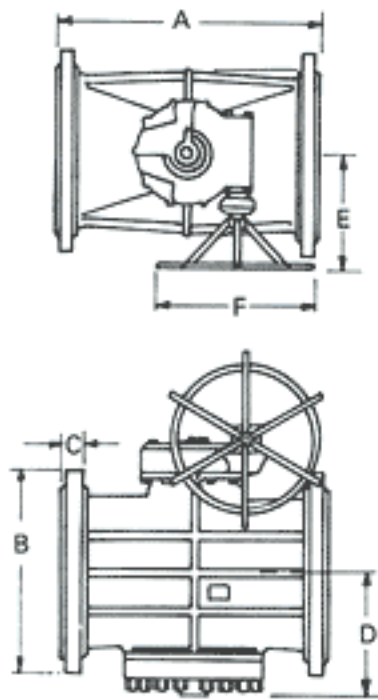


DIMENSIONS

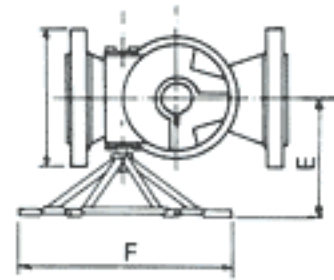
Inches mm

CLASS 150

Valve Size	Pattern	Face to Face	Flange		CL to Bottom	CL to H/W Face	Wrench Gear Unit	Wrench Length/ HW Dia	No. of Tapping per Flange	Tapping detail
			OD	Thickness						
		A	B	C	D	E		F		
2	S	7.00	6.00	0.62	4.72	—	B4	19.45	—	—
50	—	178	152	15.70	120	—	—	494	—	—
3	S	8.00	7.50	0.75	6.50	—	B5S	26.93	2	5/8"-11 UNC
80	—	203	191	19.10	165	—	—	684	—	—
4	S	9.00	9.00	0.94	7.28	—	B5S	26.93	2	5/8"-11 UNC
100	—	229	229	23.90	185	—	—	684	—	19mm deep
6	S	10.50	11.00	1.00	6.69	12.09	27M3	22.76	2	3/4" -10 UNC
150	—	267	279	25.40	170	307	—	578	—	22 mm deep
8	S	11.50	13.50	1.12	7.68	12.09	27M3	22.76	2	3/4" -10 UNC
200	—	292	343	28.40	195	307	—	578	—	22 mm deep
10	S	13.00	16.00	1.19	10.04	12.09	27M5	22.76	2	7/8" -9 UNC
250	—	330	406	30.20	255	307	—	578	—	22 mm deep
12	S	14.00	19.00	1.25	11.02	12.09	27M5	22.76	2	7/8" -9 UNC
300	—	356	483	31.80	280	307	—	578	—	22 mm deep
14	V	27.00	21.00	1.38	14.76	17.20	3H	30.98	—	—
350	—	686	533	35.10	375	437	—	787	—	—
16	V	30.00	23.50	1.44	13.98	13.31	G400	22.76	—	—
400	—	762	597	36.60	355	338	—	578	—	—
18	V	34.00	25.00	1.56	15.16	16.57	G400	27.56	—	—
450	—	864	635	39.60	385	421	—	700	—	—
20	V	36.00	27.50	1.69	18.11	17.20	5B	30.98	—	—
500	—	914	699	42.90	460	437	—	787	—	—
24	V	42.00	32.00	1.88	18.70	20.71	3MS	30.98	—	—
600	—	1067	813	47.80	475	526	—	787	—	—
26	V	45.00	34.25	2.70	23.60	22.80	9AS	25.60	—	—
650	—	1143	870	68.40	600	580.00	—	650	—	—
28	V	51.00	36.50	2.81	26.00	22.80	9AS	25.60	—	—
700	—	1295	927	71.40	666	580.00	—	650	—	—
30	V	51.00	38.75	2.94	26.0	22.80	9AS	25.60	—	—
750	—	1295	986	75	660	580	—	650	—	—



Size 24" - 30" Class 150
Size 18" - 24" Class 300



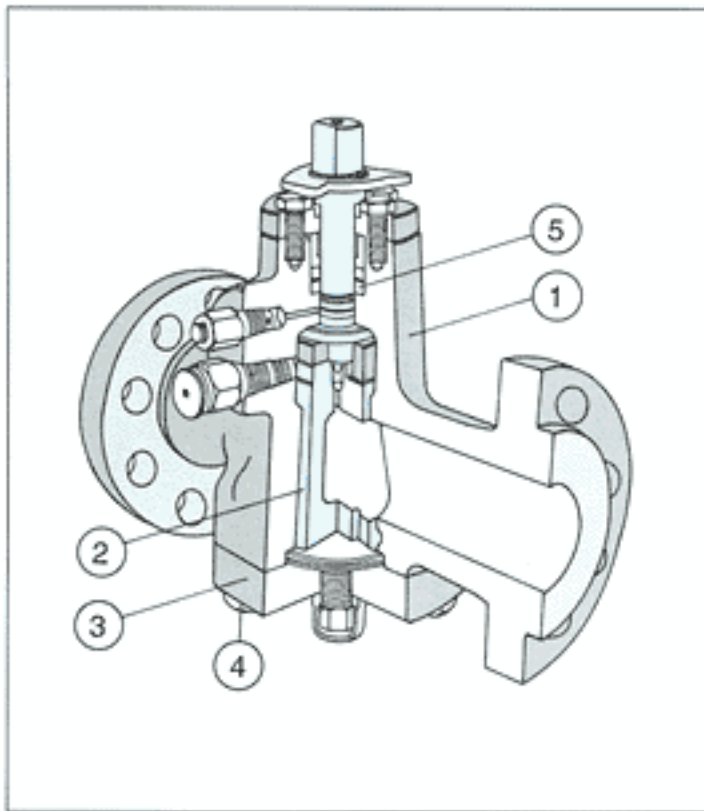
Size 14" - 20" Class 150
Size 6" - 16" Class 300

DIMENSIONS

Inches mm

CLASS 300

Valve Size	Pattern	Face to Face	Flange		CL. to Bottom	Wrench H/W Face	Wrench Gear Unit	Wrench Length/ HW Dia	No. of Tapping per Flange	Tapping detail
			OD	Thickness						
		A	B	C	D	E		F		
2	S	8.50	6.50	0.88	4.72	—	B4	19.45	—	—
50	—	216	165	22.40	120	—	—	494	—	—
3	S	11.12	8.25	1.12	5.71	—	B5S	26.93	—	—
80	—	282	210	28.40	145	—	—	684	—	—
4	S	12.00	10.00	1.25	6.69	—	B5L	36.30	—	—
100	—	305	254	31.80	170	—	—	922	—	—
6	V	15.88	12.50	1.44	6.89	12.09	27M3	22.76	—	—
150	—	403	318	36.60	175	307	—	578	—	—
8	V	16.50	15.00	1.62	7.87	12.09	27M3	22.76	—	—
200	—	419	381	41.10	200	307	—	578	—	—
10	V	18.00	17.50	1.88	11.61	12.09	27H1	22.76	—	—
250	—	457	445	47.80	295	307	—	578	—	—
12	V	19.75	20.50	2.00	15.55	17.20	G400	27.56	2	1.1/8 — 8 UN
300	—	502	521	50.80	395	437	—	700	—	38 mm deep
14	V	30.00	23.00	2.12	14.76	17.20	5B	30.98	—	—
350	—	762	584	53.80	375	437	—	787	—	—
16	V	33.00	25.50	2.25	15.20	21.54	5B	30.98	—	—
400	—	838	648	57.2	385	547	—	787	—	—
18	V	36.00	28.00	2.38	15.74	21.54	5BS	30.98	—	—
450	—	914	711	60.50	400	547	—	787	—	—
20	V	39.00	30.50	2.50	18.90	21.54	5BS	30.98	—	—
500	—	991	775	63.50	480	547	—	787	—	—
24	V	45	36	275	20.70	21.54	5BS	30.98	—	—
600	—	1143	914	69.90	525	547	—	787	—	—



MATERIAL SPECIFICATION

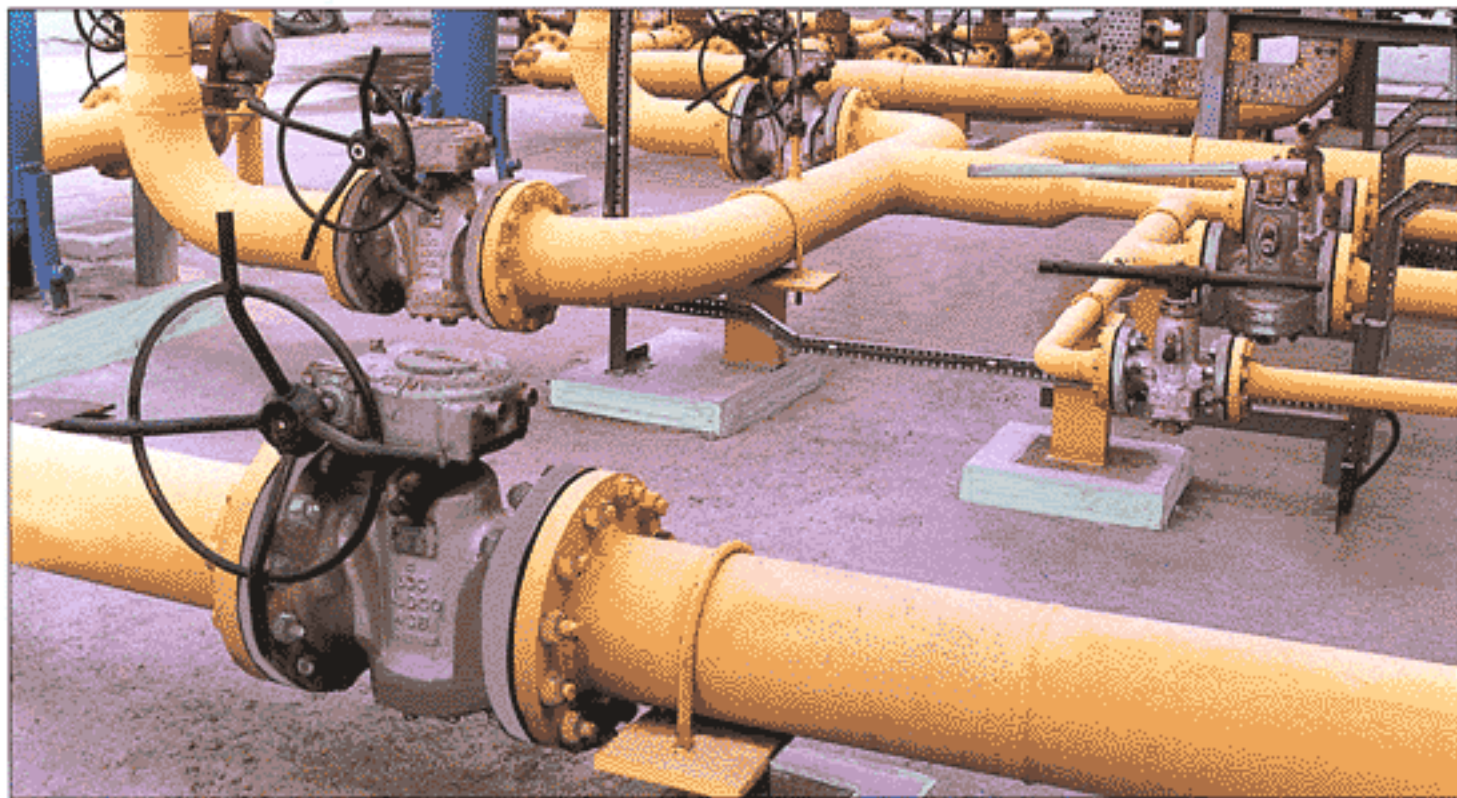
Name of part		Specification
1. Body		ASTM A216 Gr.WCB
2. Plug		ASTM A216 Gr.WCB case hardened and Super LoMu treated
3. Cover		ASTM A216 Gr.WCB
4. Bolting	Studs	ASTM A193 Gr. B7
	Nuts	ASTM A194 Gr. 2H
5. Packing		Graphite

STANDARDS

Valve Design	API 6D
Shell wall thickness	BS5353
Face to face dimensions	ANSI/ASME B16.10 and BS 2080
Flange dimensions and drilling	ANSI/ASME B16.5
Inspection and Testing	API 6D and BS 6755 part I
Fire test	API 6FA

TEST PRESSURE

	Hydrostatic			
	Shell		Seat	
	bar	psig	bar	psig
Class 150	31	450	22	315
Class 300	78	1125	56	815



Super-H Pressure Balanced Plug Valves on natural gas skid

CATALOGUE NUMBER

A familiarity with our catalogue number is not necessary when specifying or ordering our valves. If full description of the valve could be provided we will translate this into a catalogue number formulated as per the following system.

4"	H	S	W	2 3 3		C	C	
Size	Super -H	Pattern	Operation	1st digit Pressure Rating	2nd & 3rd Digit End Connection each ends	Body Material	Plug Material	Options
		S-Short V-Venturi	W-Wrench G-Gear A-Actuator	2-Class 150 3-Class 300	3-Flanged RF 5-Flanged RTJ	C - Carbon Steel	C-Case Hardened Carbon Steel	Nil - Standard S - Slurry N - NACE

As we continuously endeavour to improve our products, the data given herein are subject to change.

Manufactured by

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AUDCO Plug Valves

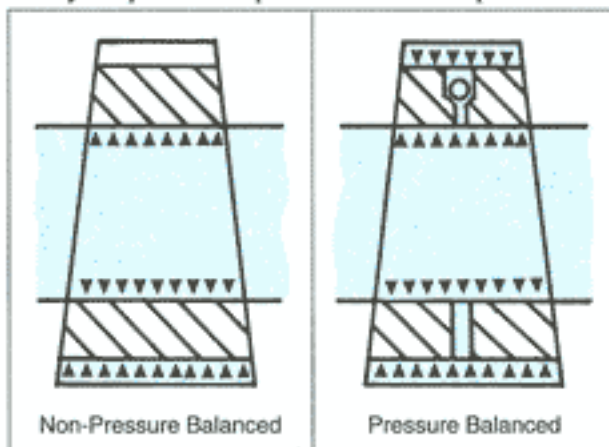
SUPER-H

Class 400
Regular & Venturi Patterns

AUDCO SUPER-H Pressure Balanced Plug Valves have been developed to reduce the operating torque in plug valves without compromising on in-line maintenance capability. The plug and body seating surfaces, which are lapped and matched, are not exposed to the line fluid while valves are in open condition; this confines corrosion and erosion to less critical areas. Sealing is further enhanced by specially developed plug sealants charged evenly around the seating surfaces. The plug is impregnated with PTFE based anti-friction agent - 'SUPER LoMu' - which provides greater wear resistance and ensures consistent operating torque.

PRESSURE BALANCED PLUG

In a standard taper plug valve, the line fluid finds its way into the large end chamber of the plug. The resultant force pushes the plug into its taper seat causing taper locking and possibly valve seizure. This resultant force persists when the subsequent line pressure remains high or is reduced. To unseat the taper locking and keep the valve operational, frequent sealant injection is required. In pressure balanced plug valve pressure balancing is achieved by providing two holes in the plug connecting the chambers at each end of the plug. The chambers, one fitted with a non-return valve acts as a balancing mechanism for the plug. The pressure in the large end chamber always equals line pressure and the pressure in



the small end chamber is always equal to or greater than the line pressure, minimising the resultant force. Pressure balancing eliminates out of balance forces and consequent taper locking. The Figure shows clearly how a balanced position is reached when line pressure is allowed to equalise the pressure acting on each end of the plug.

SUPER LoMu

Plug and Stem of Super-H Pressure Balanced plug valves are treated with an antifriction agent based on PTFE which we call as "Super LoMu". This provides greater wear resistance and ensures low consistent operating torque.

FIRE SAFE

Super-H Pressure Balanced Plug valves are designed to meet fire test standards. The features incorporated in the valve make the valves seal and operate effectively even after being subjected to fire of varying temperatures and duration resembling fire accidents.

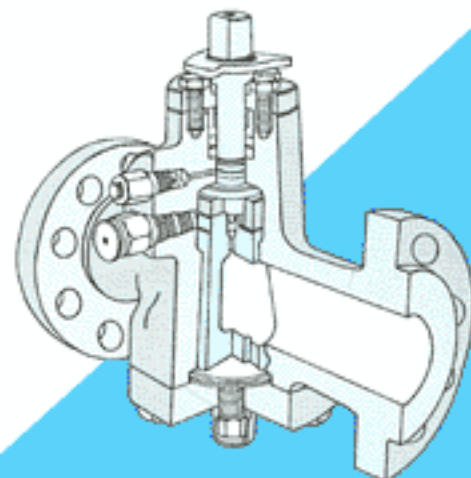
STANDARDS

Valve Design	API 6D
Face to Face dimensions & drilling	ASME/ANSI B16.10 and BS 2080
Inspection & Testing	API 6D and BS 6755 Part 1
Fire tests	API 6FA

OPERATION AND MAINTENANCE

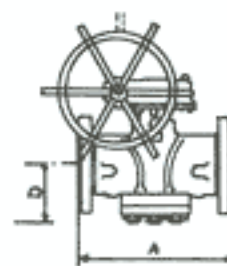
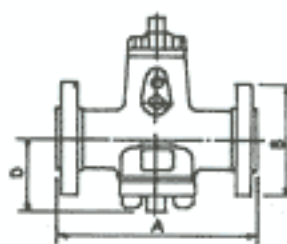
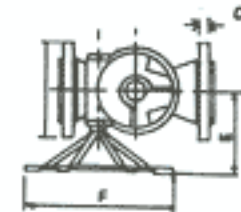
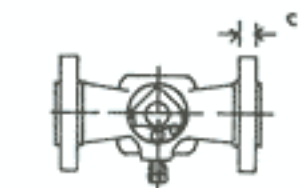
Super-H Pressure Balanced Plug valves generally need very little attention on installation. However, for trouble free operation sealant injection as recommended is to be carried out. Please refer to "Installation, Operation & Maintenance Manual of Super-H Pressure Balanced Plug valves" for details.

As a standard, Super-H Pressure Balanced Plug valves are supplied with AUDCO 733 Plug Sealant suitable for most hydrocarbon services in a temperature range of -40 to 480° F. On request, plug sealant from a wide range offered, can be supplied to suit the nature of service. It is recommended that you consult us before selecting the plug sealant for a new service.



MATERIAL SPECIFICATION

Name of part	Specification
Body	ASTM A 216 Gr. WCB
Plug	ASTM A 216 Gr. WCB Case Hardened & Super LoMu treated
Cover	ASTM A 216 Gr. WCB
Bolting Studs	ASTM A 193 Gr. B7
Nuts	ASTM A 194 Gr. 2H
Packing	Graphite



Sizes : 2" & 4"

Sizes : 6" & above

For ease of adjustment, it is desirable that 6" (150mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

TEST PRESSURE

	Max. CWP at -20 to 100°F		Hydrostatic			
	psig	bar	Shell		Seat	
			psig	bar	psig	bar
Cl. 400	990	68	1500	103	1091	75

DIMENSIONS (mm)

Size		Pattern	A		B	C	D	E	Wrench	Wrench Length	Gear Unit	F
Inch	mm		RF	RTJ								
2	50	R	292	295	165	25.4	120	—	B4	494	—	—
4	100	R	406	409	235	35.1	170	—	B5S	684	—	—
6	150	V	495	498	318	41.1	180	307	—	—	27M3	578
8	200	V	597	600	381	47.8	205	307	—	—	27M3	578
12	300	V	762	765	521	57.2	325	421	—	—	G400M1	700
14	350	V	826	829	584	60.5	370	421	—	—	G400M1	700
16	400	V	902	905	648	63.5	405	437	—	—	5B	787

RF height of 6.4 mm and RTJ face height of 7.9 mm excluded from flange thickness.

CATALOGUE NUMBER

A familiarity with our catalogue number is not necessary when specifying or ordering our valves. If full description of the valve could be provided we will translate this into a catalogue number formulated as per the following system.

50	H	R	W	4 3 3	C	C		
Size	Super-HI	Pattern	Operation	1st digit Press. Rating	2nd & 3rd Digit End Connection each ends	Body Material	Plug Material	Options
50 mm		R - Regular V - Venturi	W - Wrench G - Gear A - Actuator	4 - Class 400	3 - Flanged RF 5 - Flanged RTJ	C - Carbon Steel	C - Case Hardened Carbon Steel E - Electroless Nickel Plated	Nil - Standard S - Slurry N - NACE

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SUPER-H - Class 600 & 900 - Regular & Venturi Patterns

AUDCO SUPER-H Pressure Balanced Plug Valves have been developed to reduce the operating torque in plug valves without compromising on in-line maintenance capability. The plug and body seating surfaces, which are lapped and matched, are not exposed to the line fluid while valves are in open condition; this confines corrosion and erosion to less critical areas. Sealing is further enhanced by specially developed plug sealants charged evenly around the seating surfaces. The plug is impregnated with PTFE based anti-friction agent - 'SUPER LoMu' which provides greater wear resistance and ensures consistent operating torque.

PRESSURE BALANCED PLUG

In a standard taper plug valve, the line fluid finds its way into the large end chamber of the plug. The resultant force pushes the plug into its taper seat causing taper locking and possibly valve seizure. This resultant force persists when the subsequent line pressure remains high or is reduced. To unseat the taper locking and keep the valve operational, frequent sealant injection is required. In pressure balanced plug valve pressure balancing is achieved by providing two holes in the plug connecting the chambers at each end of the plug. The chambers, one

which we call as "Super LoMu". This provides greater wear resistance and ensures low consistent operating torque.

FIRE SAFE

Super-H Pressure Balanced Plug valves are designed to meet fire test standards. The features incorporated in the valve make the valves seal and operate effectively even after being subjected to fire of varying temperatures and duration resembling fire accidents.

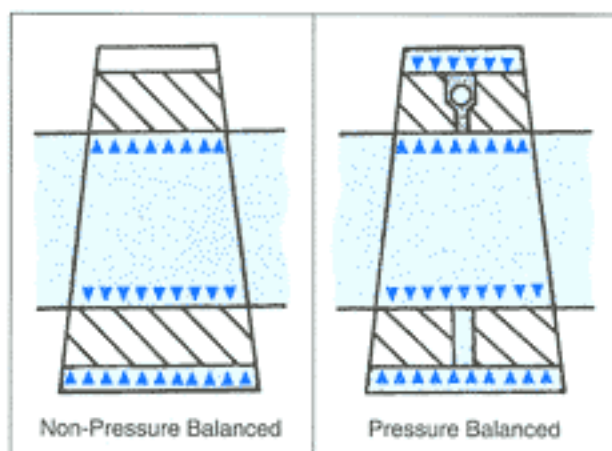
STANDARDS

Valve Design	API 6D
Face to Face dimensions	ASME/ANSI B16.10 and BS 2080
End Flange dimensions and drilling	ASME/ANSI B16.5
Inspection & Testing	API 6D and BS 6755 Part 1
Fire tests	API 6FA

OPERATION AND MAINTENANCE

Super-H Pressure Balanced Plug valves generally need very little attention on installation. However, for trouble free operation sealant injection as recommended is to be carried out. Please refer to "Installation, Operation & Maintenance manual of Super-H Pressure Balanced Plug valves" for details.

As a standards, SUPER-H Pressure Balanced Plug valves are supplied with AUDCO 733 Plug Sealant – suitable for most hydro carbon services in a temperature range of -40 to 480°F. On request, plug sealant from a wide range offered, can be supplied to suit the nature of service. It is recommended that you consult us before selecting the plug sealant for a new service.

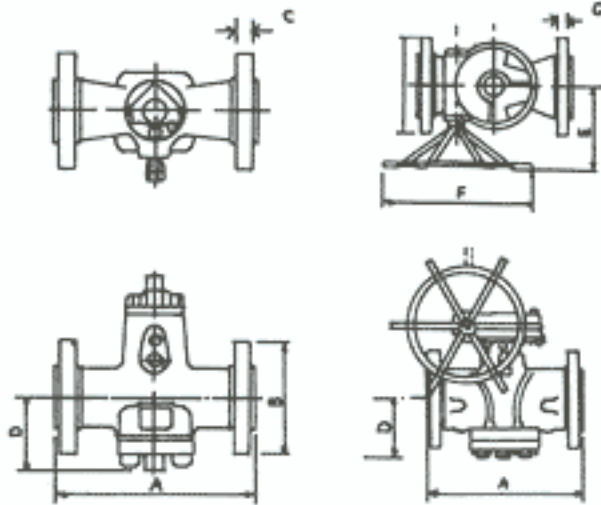


fitted with a non-return valve acts as a balancing mechanism for the plug. The pressure in the large end chamber always equals line pressure and the pressure in the small end chamber is always equal to or greater than the line pressure, minimising the resultant forces. Pressure balancing eliminates out of balance forces and consequent taper locking. The Figure shows clearly how a balanced position is reached when line pressure is allowed to equalise the pressure acting on each end of the plug.

SUPER LoMu

Plug and Stem of Super-H Pressure Balanced plug valves are treated with an antifriction agent based on PTFE

Class 600

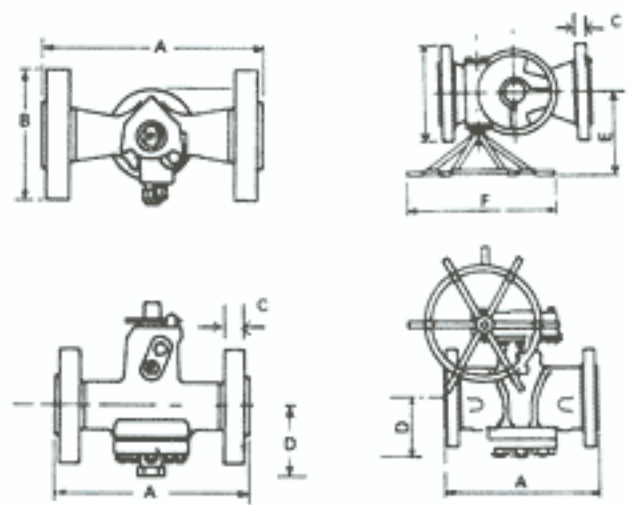


Sizes : 2" - 4"

Sizes : 6" & above

For ease of adjustment, it is desirable that 6" (150 mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

Class 900



Size : 3"

Sizes : 4" & 6"

For ease of adjustment, it is desirable that 6" (150 mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

DIMENSIONS (mm)

Class 600

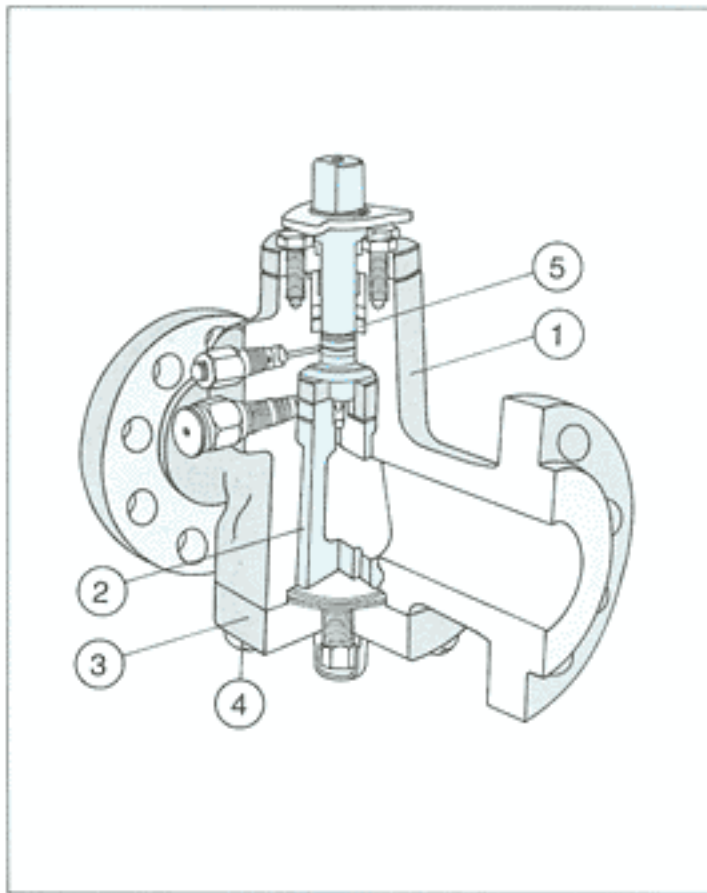
Size Inch mm	Pattern	A		B	C	D	E	Wrench	Wrench Length	Gear Unit	F
		RF	RTJ								
2 50	R	292	295	165	25.4	120	—	B4	494	—	—
3 80	R	356	359	210	31.8	145	—	B5S	684	—	—
4 100	R	432	435	273	38.1	170	—	B5S	684	—	—
6 150	R	559	562	356	47.8	205	338	—	—	G4000M3	578
	V					180	307				
8 200	R	660	663	419	55.6	260	338	—	—	G400	700
	V					205	307				
10 250	R	787	790	508	63.5	325	437	—	—	5B	787
	V					260	338				
12 300	V	838	841	559	66.5	325	437	—	—	5B	787
14 350	V	889	892	603	69.9	370	437	—	—	5B	787
16 400	V	991	994	686	76.2	410	607	—	—	9AS	650
18 450	V	1092	1095	743	82.5	534	547	—	—	5BS	787

DIMENSIONS (mm)

Class 900

Size Inch mm	Pattern	A		B	C	D	E	Wrench	Wrench Length	Gear Unit	F
		RF	RTJ								
3 80	R	381	384	241	38.1	165	—	B7	933	—	—
4 100	R	457	460	292	44.4	190	307	—	—	27M 3	578
6 150	V	610	613	356	47.8	180	307	—	—	27M3	578

RF height of 6.4 mm and RTJ face height of 7.9 mm excluded from flange thickness of Class 600 & 900 Valves.



MATERIAL SPECIFICATION

Name of part	Specification
1. Body	ASTM A 216 Gr. WCB
2. Plug	ASTM A 216 Gr. WCB Case Hardened and Super LoMu treated
3. Cover	ASTM A216 Gr. WCB
4. Bolting Studs Nuts	ASTM A 193 Gr. B7 ASTM A 194 Gr. 2H
5. Packing	Graphite

TEST PRESSURE

	Max. CWP at -20 to 100°F		Hydrostatic			
			Shell		Seat	
	psig	bar	psig	bar	psig	bar
Class 600	1480	102	2225	153	1630	112
Class 900	2220	153	3350	231	2445	169

CATALOGUE NUMBER

A familiarity with our catalogue number is not necessary when specifying or ordering our valves. If full description of the valve could be provided we will translate this into a catalogue number formulated as per the following system.

80	H	R	W	9 5 5	C	C		
Size	Super-H	Pattern	Operation	1st digit Pressure Rating	2nd & 3rd Digit End Connection each ends	Body Material	Plug Material	Options
80 mm		R - Regular V - Venturi	W - Wrench G - Gear A - Actuator	6 - Class 600 9 - Class 900	3 - Flanged RF 5 - Flanged RTJ	C - Carbon Steel	C - Case Hardened Carbon Steel	Nil - Standard S - Slurry N - NACE

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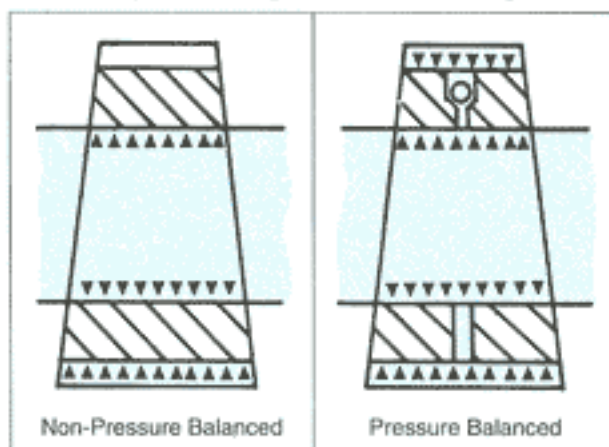
SUPER-H

Class 800
Regular Pattern

AUDCO SUPER-H Pressure Balanced Plug Valves have been developed to reduce the operating torque in plug valves without compromising on the in-line maintenance capability. The plug and body seating surfaces, which are lapped and matched, are not exposed to the line fluid while valves are in open condition; this confines corrosion and erosion to less critical areas. Sealing is further enhanced by specially developed plug sealants charged evenly around the seating surfaces. The plug is impregnated with PTFE based anti-friction agent - 'SUPER LoMu' - which provides greater wear resistance and ensures consistent operating torque.

PRESSURE BALANCED PLUG

In a standard taper plug valve, the line fluid finds its way into the large end chamber of the plug. The resultant force pushes the plug into its taper seat causing taper locking and possibly valve seizure. This resultant force persists when the subsequent line pressure remains high or is reduced. To unseat the taper locking and keep the valve operational, frequent sealant injection is required. In pressure balanced plug valve pressure balancing is achieved by providing two holes in the plug connecting the chambers at each end of the plug. The chambers, one fitted with a non-return valve acts as a balancing mechanism for the plug. The pressure in the large end chamber always equals line pressure and the pressure



in the small end chamber is always equal to or greater than the line pressure, minimising the resultant force. Pressure balancing eliminates out of balance forces and consequent taper locking. The Figure shows clearly how a balanced position is reached when line pressure is allowed to equalise the pressure acting on each end of the plug.

SUPER LoMu

Plug and Stem of Super-H Pressure Balanced plug valves are treated with an antifriction agent based on PTFE which we call as "Super LoMu". This provides greater wear resistance and ensures low consistent operating torque.

FIRE SAFE

Super-H Pressure Balanced Plug valves of class 800 are intrinsically fire safe by design. The features incorporated in the valve make the valves seal and operate effectively even after being subjected to fire of varying temperatures and duration resembling fire accidents.

STANDARDS

Valve Design	BS 5353
End to End dimensions	ASME/ANSI B16.10 and BS 2080
Socketweld ends	ASME/ANSI B16.11
Inspection & Testing	BS 6755 Part I

OPERATION AND MAINTENANCE

Super-H Pressure Balanced Plug valves generally need very little attention on installation. However, for trouble free operation sealant injection as recommended is to be carried out. Please refer to "Installation, Operation & Maintenance Manual of Super-H Pressure Balanced Plug valves" for details.

As a standard, Super-H Pressure Balanced Plug valves are supplied with AUDCO 733 Plug Sealant suitable for most hydrocarbon services in a temperature range of -40 to 480° F. On request, plug sealant from a wide range offered, can be supplied to suit the nature of service. It is recommended that you consult us before selecting the plug sealant for a new service.

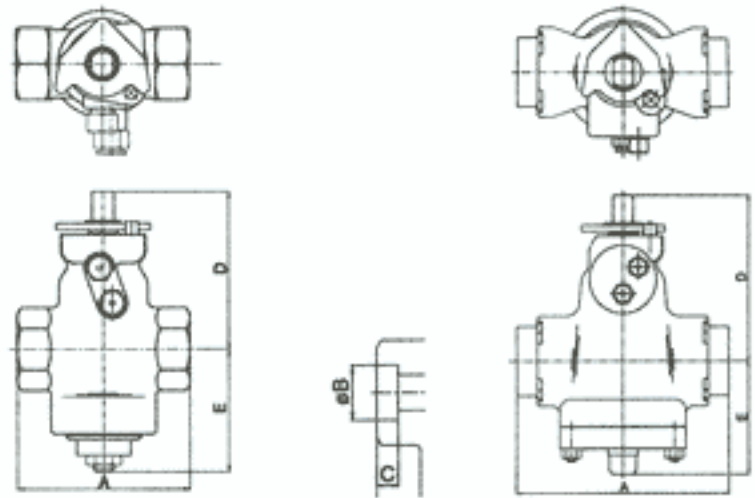


MATERIAL SPECIFICATION

Name of part	Specification
Body	ASTM A 105 ASTM A 216 Gr.WCB for 40mm
Plug	BS 970 080M15
Bung/cover	BS 970 070M20 ASTM A 216 Gr.WCB for 40mm
Packing	Graphite

TEST PRESSURE

	Max. CWP at -20 to 100°F		Hydrostatic			
			Shell		Seat	
	psig	bar	psig	bar	psig	bar
Cl. 800	1975	136	3000	207	2175	150



1/2" to 1"

Socket weld ends

1 1/2"

For ease of adjustment, it is desirable that 6" (150mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

DIMENSIONS (mm)

Size		Pattern	A	B	C	D	E	Wrench No.	Wrench Length
Inch	mm								
1/2	15	R	89	21.97 21.71	10	104	76	B8	230
3/4	20	R	133	27.31 27.05	13	127	97	B9	318
1	25	R	133	33.78 33.05	13	127	97	B9	318
1.1/2	40	R	228	48.65 48.90	13	180	120	B5S	685

Valves with welded on flanges can be offered but with a face to face dimension matching Cl. 1500 rating.

CATALOGUE NUMBER

A familiarity with our catalogue number is not necessary when specifying or ordering our valves. If full description of the valve could be provided we will translate this into a catalogue number formulated as per the following system.

15	H	R	W	899	C	C		
Size	Super-H	Pattern	Operation	1st digit Press. Rating	2nd & 3rd Digit End Connection each ends	Body Material	Plug Material	Options
15 mm		R - Regular	W - Wrench A - Actuator	8 - Class 800	9 - Socketweld	C - Carbon Steel	C - Carbon Steel E - Electroless Nickel Plated	Nil - Standard N - NACE

As we continuously endeavour to improve our products, the data given herein are subject to change.



Manufactured by
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Marketed by

LARSEN & TOUBRO LIMITED

(Industrial Valves Section)

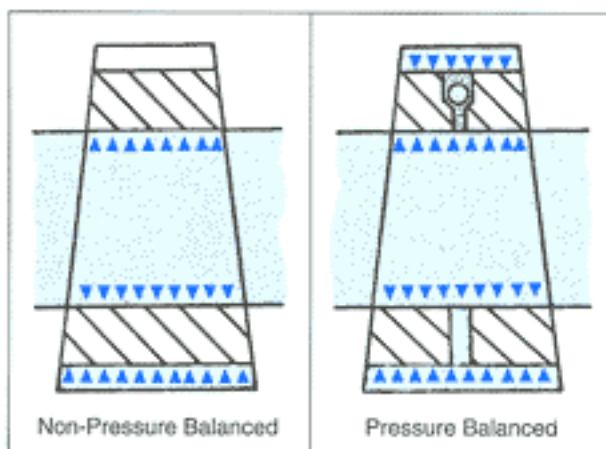
P.O. Box 619, Calcutta 700 071 - Ph : 2822301 - Fax : 033-2821025
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SUPER-H - Class 1500 & 2500 - Regular & Venturi Patterns

AUDCO SUPER-H Pressure Balanced Plug Valves have been developed to reduce the operating torque in plug valves without compromising on the in-line maintenance capability. The plug and body seating surfaces, which are lapped and matched, are not exposed to the line fluid while valves are in open condition; this confines corrosion and erosion to less critical areas. Sealing is further enhanced by specially developed plug sealants charged evenly around the seating surfaces. The plug is impregnated with PTFE based anti-friction agent - 'SUPER LoMu' which provides greater wear resistance and ensures consistent operating torque.

PRESSURE BALANCED PLUG

In a standard taper plug valve, the line fluid finds its way into the large end chamber of the plug. The resultant force pushes the plug into its taper seat causing taper locking and possibly valve seizure. This resultant force persists when the subsequent line pressure remains high or is reduced. To unseat the taper locking and keep the valve operational, frequent sealant injection is required. In pressure balanced plug valve pressure balancing is



achieved by providing two holes in the plug connecting the chambers at each end of the plug. The chambers, one fitted with a non-return valve act as a balancing mechanism for the plug. The pressure in the large end chamber always equals line pressure and the pressure in the small end chamber is always equal to or greater than the line pressure, minimising the resultant force. Pressure balancing eliminates out of balance forces and consequent taper locking. The Figure shows clearly how a balanced position is reached when line pressure is allowed to equalise the pressure acting on each of the plug.

FIRE SAFE

Super-H Pressure Balanced Plug valves are designed to meet fire test standards. The features incorporated in the valve make the valves seal and operate effectively even after being subjected to fire of varying temperatures and duration resembling fire accidents.

STANDARDS

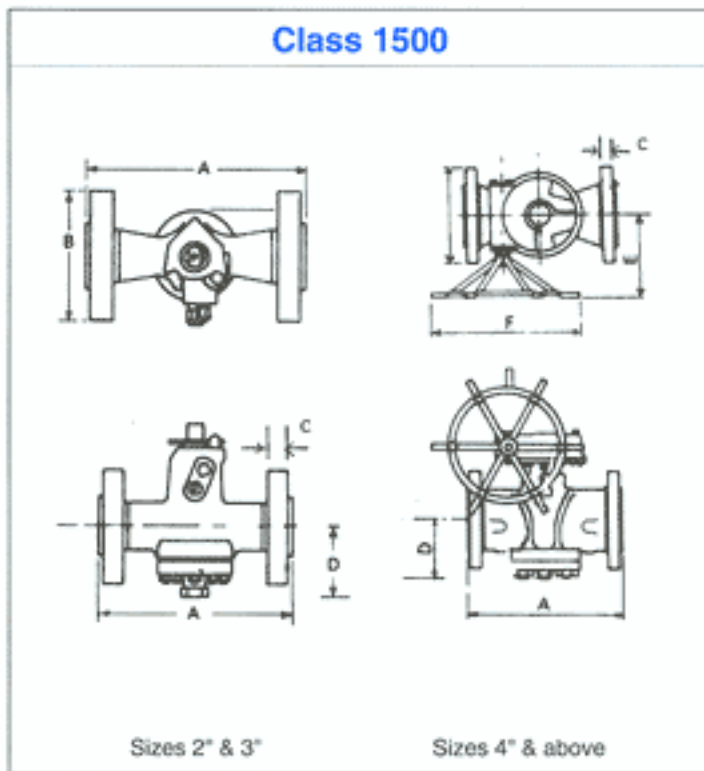
Valve Design	API 6D
Face to Face dimensions	ASME/ANSI B16.10 and BS 2080
End Flange dimensions and drilling	ASME/ANSI B16.5
Inspection & Testing	API 6D and BS 6755 Part 1
Fire tests	API 6FA

OPERATION AND MAINTENANCE

SUPER-H Pressure Balanced Plug valves generally need very little attention on installation. However, for trouble free operation sealant injection as recommended is to be carried out. Please refer to "Installation, Operation & Maintenance Manual of Super-H Pressure Balanced Plug valves" for details.

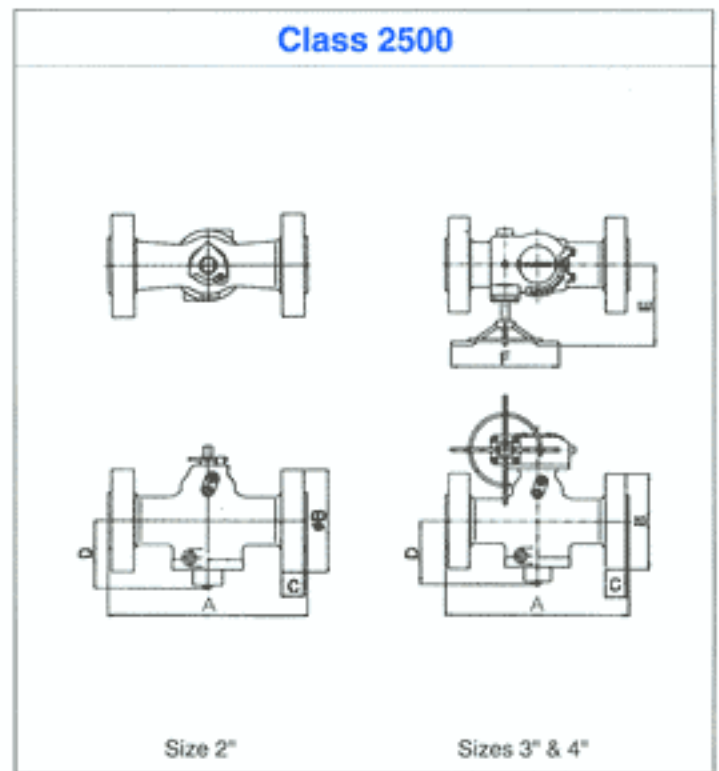
As a standard, Super-H Pressure Balanced Plug valves are supplied with AUDCO 733 Plug Sealant suitable for most hydrocarbon services in a temperature range of -40 to 480° F. On request, plug sealant from a wide range offered, can be supplied to suit the nature of service. It is recommended that you consult us before selecting the plug sealant for a new service.

Class 1500



For ease of adjustment, it is desirable that 6" (150 mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

Class 2500



For ease of adjustment, it is desirable that 6" (150 mm) clearance be maintained around the pressure screw, located at the bottom of the valve.

DIMENSIONS (mm)

Class 1500

Size Inch mm	Pattern	A		B	C	D	E	Wrench	Wrench Length	Gear Unit	F
		RF	RTJ								
2 50	R	368	371	216	38.1	120	—	B5S	684	—	—
3 80	R	470	473	267	47.8	165	—	B7	933	—	—
4 100	R	546	549	311	53.8	190	307	—	—	27M3	578
6 150	V	705	711	394	82.6	205	338	—	—	G400M3	578
8 200	V	832	841	483	92	264	421	—	—	G400	700
12 300	V	1130	1146	673	124	350	636	—	—	3MS	787

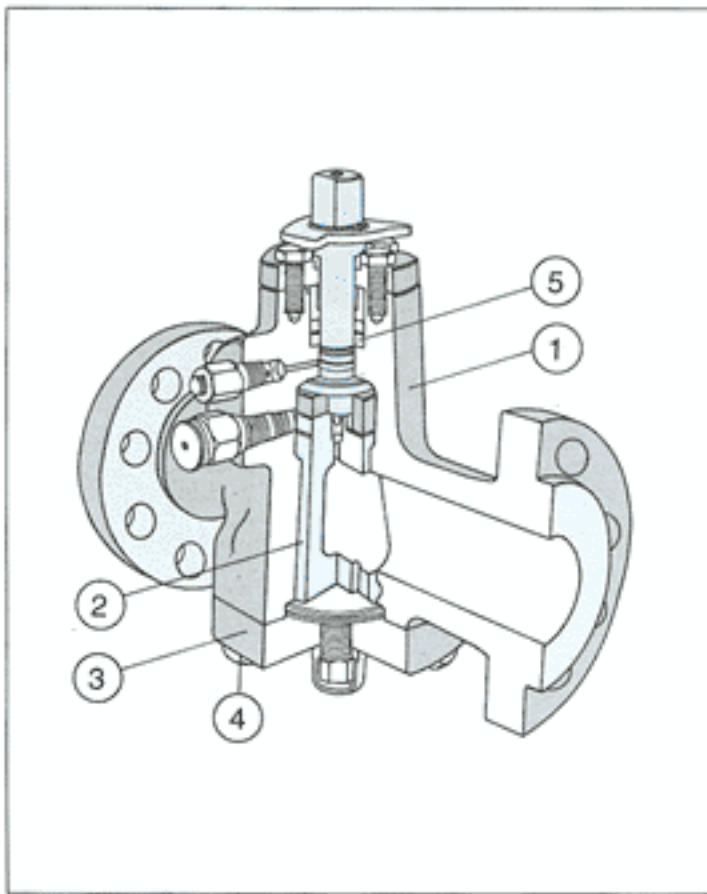
RF height of 6.4 mm and RTJ face height of 7.9 mm for 2", 3" & 4", 9.5 mm 6", 11 mm for 8" and 14.3 mm for 12" excluded from flange thickness.

DIMENSIONS (mm)

Class 2500

Size Inch mm	Pattern	A		B	C	D	E	Wrench	Wrench Length	Gear Unit	F
		RF	RTJ								
2 50	R	451	454	235	50.8	185	—	B5S	684	—	—
3 80	R	578	584	305	66.5	218	307	—	—	27M3	578
4 100	R	673	683	356	76.2	218	338	—	—	G400M3	578

RF height of 6.4 mm and RTJ face height of 7.9 mm for 2" and 11 mm for 4" excluded from flange thickness.



MATERIAL SPECIFICATION

Name of part	Specification
1. Body	ASTM A 216 Gr. WCB
2. Plug	ASTM A 216 Gr. WCB Case hardened & Super LoMu treated
3. Cover	ASTM A 216 Gr. WCB
4. Bolting Studs Nuts	ASTM A 193 Gr. B7 ASTM A 194 Gr. 2H
5. Packing	Graphite

TEST PRESSURE

	Max. CWP at -20 to 100°F		Hydrostatic			
			Shell		Seat	
	psig	bar	psig	bar	psig	bar
Class 1500	3705	256	5575	384	4080	281
Class 2500	6170	426	9275	640	6790	468

CATALOGUE NUMBER

A familiarity with our catalogue number is not necessary when specifying or ordering our valves. If full description of the valve could be provided we will translate this into a catalogue number formulated as per the following system.

80	H	R	G	B 5 5	C	C		
Size	Super-H	Pattern	Operation	1st digit Pressure Rating	2nd & 3rd Digit End Connection each ends	Body Material	Plug Material	Options
80 mm		R - Regular V - Venturi	W - Wrench G - Gear A - Actuator	A - Class 1500 B - Class 2500	3 - Flanged RF 5 - Flanged RTJ	C - Carbon Steel	C - Case Hardened Carbon Steel	Nil - Standard S - Slurry N - NACE

As we continuously endeavour to improve our products, the data given herein are subject to change.

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