

Steel Taper Plug Valve



 **Serck Audco Valves**



Steel Taper Plug Valve



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Range and Index



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API MONOGRAM
Valves shown in this catalogue
are manufactured under the terms of our
Licence to use the API Monogram which
covers flanged straightway valves.

	mm Inches	15 ½	20 ¾	25 1	40 1½	50 2	65 2½	80 3	100 4	150 6	200 8	250 10	300 12	Page No.
Straightway														
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	mm Inches	15 ½	20 ¾	25 1	40 1½	50 2	65 2½	80 3	100 4	150 6	200 8	250 10	300 12	Page No.

Old Fig. No	New Fig. No	Page	Old Fig. No	New Fig. No	Page	Old Fig. No	New Fig. No	Page
MW23	MRW233CG	11	LGS23	MSG233CC	12	LJ21F	MFW2FFCG	15
MW21F	MRW2FFCG	11	LO23	MSO233CG	12	ML23	MMW233CG	19
MS22	MRW222CC	11	MW32	MSW322CC	13	ML21F	MMW2FFCG	19
MS23	MRW233CC	11	MW33	MSW333CC	13	MT23	MNW233CG	19
MS21F	MRW2FFCC	11	MW34	MSW344CC	13	MT21F	MNW2FFCG	19
MS24	MRW244CC	11	MW39	MSW399CC	13	ML33	MMW333CG	19
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LS23	MSW233CC	12	KG33	MVG333CC	14	BGLV23	BLG233CG	19
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Principles and Maintenance

Principles of Operation

The Serck Audco Taper Plug Valve, manufactured in sizes from ½" to 12", is used on a wide variety of liquid, gaseous and slurry services.

The tapered plug is held firmly into its tapered seat but can be so adjusted that complete leaktightness is achieved together with smooth valve operation.

The tapered seating surfaces of the plug and body are not exposed to the line fluid when the valve is in the open position, so that the effects of corrosion and erosion are confined to the less important parts of the valve. Also since there is a straight flowpath through the valve, there is very little resistance to flow and pressure loss is minimised.

Super LoMu Treatment

All Carbon Steel taper plug valves, sizes 1½" and above, have plugs with Audco Super LoMu treatment. In this unique process, low friction PTFE is incorporated in the surface structure of the valve plug metal. This gives easier operation and enhanced resistance to taper lock over thousands of operations or many years of service.

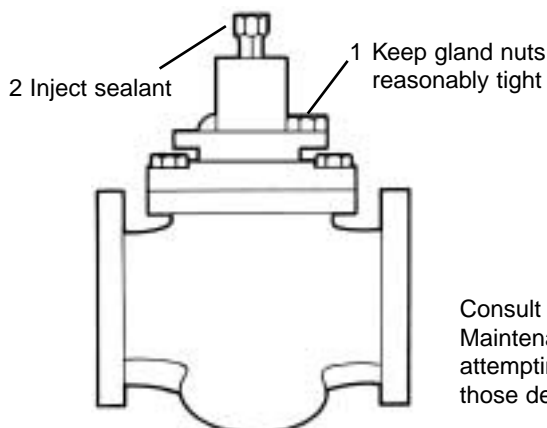
Sealant Type

All valves described in this catalogue are normally filled with 733 sealant.

If you require a different sealant, please state this at the ordering stage so that the valve can be assembled with the correct sealant.

In those cases where no previous experience exists regarding the suitability of the normal sealant for the line fluid on which the valve is to be used, please provide full service details so that we may ensure that the correct type of sealant is used in the assembly of the valve.

Maintenance



Sealant Injection

Lubrication of the seating surfaces is by means of a specially compounded valve sealant which is fed into the operating shank of the valve, either in the form of sealant sticks or by a sealant gun. The sealant then passes through a non-return valve into a system of grooves and ducts on the plug and body.

As the valve is operated, a film of sealant is spread evenly between the seating surfaces and, if a valve should become difficult to turn, sealant pressure may be built up in the small end chamber underneath the plug, so that the plug is eased slightly in its seat and operability is restored.

The design of the sealant system ensures that any sealant groove which is exposed to the line fluid during operation, is isolated from the sealant supply. Thus loss of sealant into the pipeline is avoided.

As well as facilitating valve operation, the special sealant also perfects the seal between the accurately matched seating surfaces and so assures positive leaktightness.

Serck Audco sealants are specially formulated for use in Serck Audco valves. It is extremely important that only Serck Audco sealant be used as they retain their properties over a wide temperature range, resist corrosive attack and have many other characteristics necessary for the efficient operation of Serck Audco valves. Similarly, Serck Audco sealant should not be used for any purpose other than injecting into Serck Audco taper plug valves in the way described in our operating instructions, except with our express recommendation.

Frequency of Valve Operation	On average valve should be lubricated	
	Not more than	Not less than
Over 100 times per shift	Each shift	Weekly
10 to 100 times per day	Daily	Weekly
1 to 10 times daily	Weekly	Monthly
1 to 30 times monthly	Monthly	Quarterly
Less frequently	Quarterly	Twice Annually

Consult Serck Audco full Installation, Operation and Maintenance Manual, available on request, before attempting any maintenance operations other than those described here.

Sealants (methods of injection)



Serck Audco sealants are formulated specially for use in Serck Audco valves and no other types of sealant should be used, nor should Serck Audco valve sealants be used for any purpose other than injecting into valves without our express recommendation.

Injection by Sealant Gun

All valves are fitted with a taper threaded sealant injector positioned in the centre of the stem or as a side feed in the body.

Sealant Guns

Sealant guns are fitted with flexible hoses giving a hook-on connection to the combination sealant injector on the valve.



Type CL 400-D

Hand operated hydraulic gun, fitted with a pressure gauge. This gun is designed to take Size 'K' sealant sticks. Effortless to operate and gives positive indication of when valve has been fully charged. Further information available on request.

Type ALG 4

This gun is designed to take pre-packed cartridges of soft grade sealant which screw into the body of the gun and which can be removed either when empty or when a change of sealant is necessary.



Hypregun

Easy to use pneumatically operated sealant injection gun. Uses bulk lubricant in 5 quart cans. Recommended for large valve installations such as manifolds, gas processing plants, compressor stations, refineries and water treatment plants.

Pneumatic Sealant Injection Equipment

For compressed air actuated valves a pneumatic dispenser can be supplied.

It has a 3lbs capacity sealant reservoir and a pumping element suitable for use on valves operating at line pressures up to 5000 lb/in². A predetermined quantity of sealant is fed into the valve at each operation. Further information available on request.



Sealants (multi-purpose and specialised)

Multi-Purpose Sealants

In recent years the Serck Audco Valves research laboratories have paid great attention to the development of multi-purpose sealants to simplify plant maintenance where many services are encountered. As a result of this research, we are able to offer two sealants which, between them, cover a very wide variety of services and have replaced many of the older Serck Audco sealants. A single multi-purpose sealant can often be used throughout an entire plant, even though that plant handles a variety of fluids. This simplifies maintenance and reduces the number of sealants which need to be stocked.

Lubricating and Sealing Properties

In addition to being suitable for a wide range of services, these sealants have excellent lubricating properties and great film strength. They supplement Super LoMu treatment to reduce friction between the seating surfaces and provide a very effective seal at higher line pressures.

Suitability Tests

The table below summarises our general sealant recommendations. Further details for specific services are contained in the Chemical Resistance Section of our catalogue.

Where there is any doubt to the suitability of a particular sealant for a given service, tests should be carried out in a new clean valve. Experience shows that this is the only satisfactory way to conduct such tests. Laboratory tests carried out by immersing a stick of sealant in a breaker of the line fluid have proved most misleading. Where samples of fluids can be supplied, together with details of temperatures and pressure rating involved, we can carry out tests in our own laboratories and give recommendations based upon the results.

Temperature Range

The temperature range of each sealant is given in these tables but the sealant performance within the given temperature range may vary with the particular fluid being handled.

Multi-Purpose Sealants

Sealant	Form	Colour	Temperature Range*		Recommended for	Do not use on
			Min.	Max.		
731	Sticks (all sizes)	Cream	-15°C	230°C	Most chemical plant services, water, aqueous solutions, dilute acids, all alkaline solutions, compressed air, tars, bitumens.	Strong acid solutions, petroleum products.
	Cartridges		-20°C	230°C		
	Bulk		-25°C	230°C		
733	Sticks (all sizes)	Cream	0°C	250°C	Most hydrocarbons, butane, propane, gasoline, kerosene, oils, fuel oils. Natural gas, manufactured gas (including gas with carbon dioxide, hydrogen sulphide, water and condensate), LPG, glycols.	Strong alkalis, high aromatic solvents.
	Cartridges		-10°C	250°C		
	Bulk		-15°C	250°C		

* Temperature range is dependent upon nature of service.

Specialised Sealants

Sealant	Form	Colour	Temp Range °C (°F)		Recommended for	Do not use on
			Min	Max		
201	H & K Sticks Cartridges Bulk	White	-7 (-20)	200 (390)	Domestic water services, foodstuffs and pharmaceuticals.	As 731.
147	H & K Sticks Cartridges Bulk	White	-10 (14)	70 (160)	Nitrating acids, sulphuric acid and other oxidising elements.	Hydrocarbon chlorinated and aromatic solvents.
563	H & K Sticks Cartridges Bulk	Yellow	-10 (14)	150 (300)	Chlorinated and aromatic hydrocarbon solvents.	Strong acids, nitrating acids, water and water based services and alcohols.
734	H & K Sticks Cartridges Bulk	Cream	0 (32)	170 (340)	Water, high pressure, hot water and steam.	As 731.
735	H & K Sticks Hard grade Bulk only	Black	-40 (-40)	325 (620)	Hot gases and high temperature services 220°C maximum in the presence of oxygen.	Neat petroleum products. Strong mineral acids. Chlorinated and aromatic acids.
591	H & K Sticks Cartridges Bulk	Cream	0 (32)	300 (570)	Petroleum based heat transfer oils. Hot fuel oil to 120°C.	As 733.
608	H & K Sticks Cartridges Bulk	Off White	0 (32)	340 (650)	Hot hydrocarbon gases and vapours including high temperature cracking and reforming. Strong acids and alkalis to 150°C.	Aromatic and chlorinated solvents. Liquid hydrocarbons and nitrating acids.
574	Cartridges Soft grade Bulk only	Beige	-50 (-58)	50 (120)	Ammonia and brine.	As 731.
985	K Sticks Cartridges Soft grade Bulk only	Light Brown	-10 (12)	150 (300)	Sweet and sour natural and manufactured gas with water/organic condensates. Preferred at elevated temperatures.	As 733.
2977	K Sticks Cartridges Soft grade Bulk only	Black	-40 (-40)	325 (620)	As for 735, also oil and water mixtures where water content is above 50% in the mixture.	As 735.

Storage and Handling of Sealants

Sealants should be stored in clean, dry conditions away from heat and flame and strong oxidising agents. Keep containers closed and store sealants in their original containers until required for use.

All of our sealants have flash points above 150°C but some will burn if subjected to sufficiently fierce flames. If any sealant is incinerated avoid breathing the fumes.

Normal hygiene procedures should be followed e.g. avoid prolonged skin contact, wash hands thoroughly after use, etc.

Specific data sheets for each sealant are available on request.

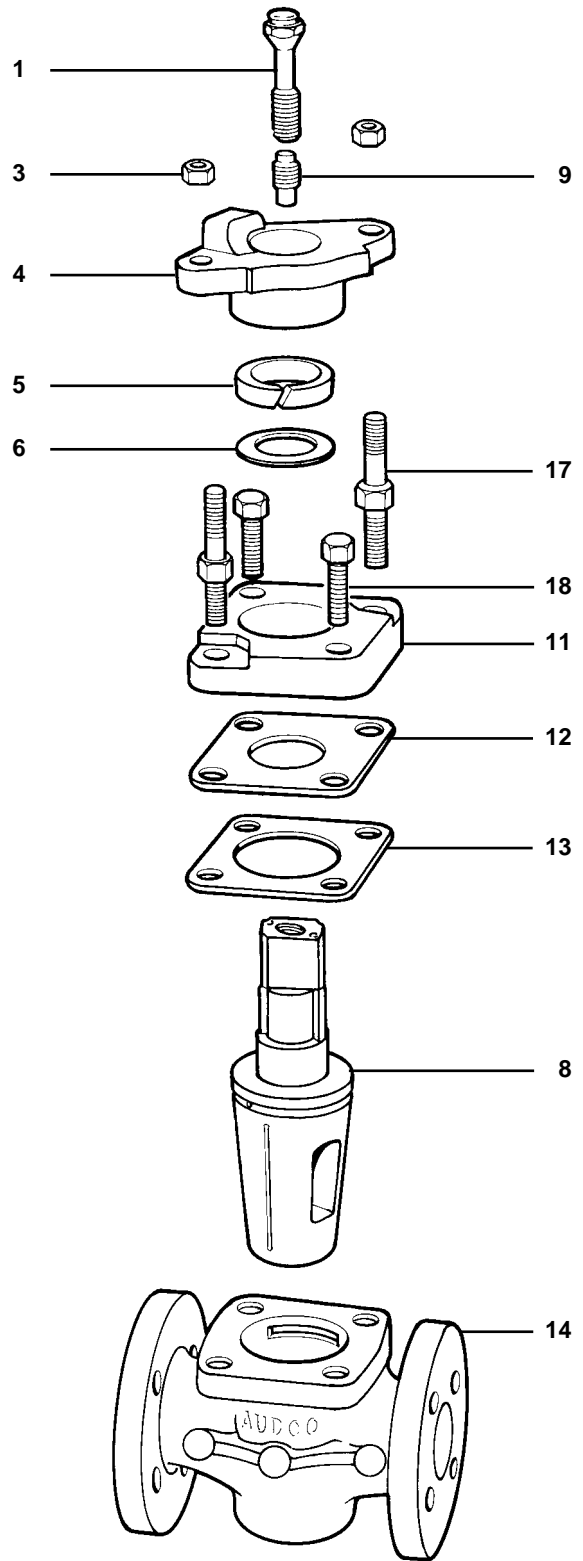
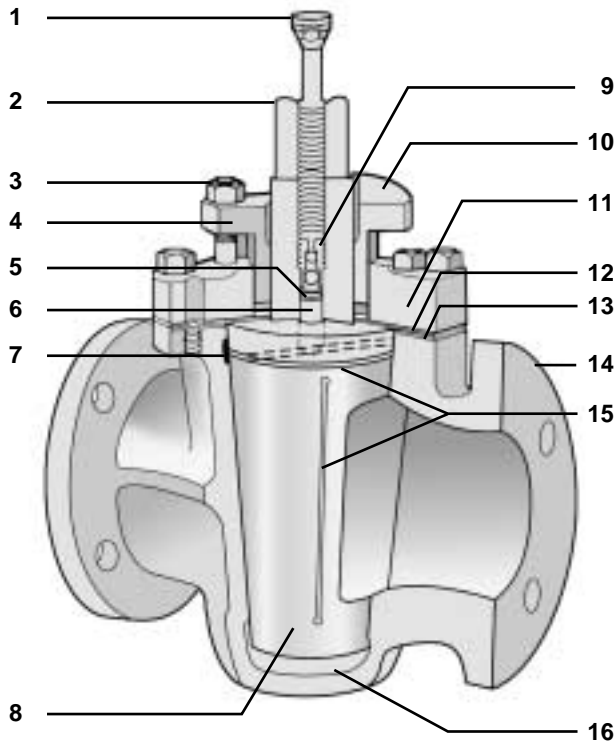


Standard Construction

Audco Standard Type Valve

The Serck Audco Standard type valve has its integral operating shank at the large end of the taper plug. The plug is seated by means of forces applied through the gland packing housed in the cover which also seals the shank against leakage.

To prevent damage to the packing where it would otherwise rub on the top of the plug, it bears on a metal shim which is clamped between the body and the cover. This reduces friction between the plug and the packing and also acts as a separate and very effective seal against leakage of the line fluid into the packing space.



- | | | |
|----------------------|----------------|--------------------|
| 1 Sealant Injector * | 7 Sealant Duct | 13 Gasket |
| 2 Indicator | 8 Plug | 14 Body |
| 3 Gland Nuts | 9 Check Valve | 15 Sealant Grooves |
| 4 Gland | 10 Stop | 16 Sealant Chamber |
| 5 Gland Packing | 11 Cover | 17 Gland Studs |
| 6 Packing Ring | 12 Shim | 18 Cover Bolts |
- * Sealant Screw (up to 40mm)

Materials and Figure Numbers



Body Materials

	SAV Specification	Used for	Comparable Specifications		Form
CARBON STEEL	ASTM A216 Gr. WCB but with max.C 0.25%	Flanged valves all sizes. Screwed & socket weld end size 40-80mm	BS 1504-161 Grade 480	DIN 17245 GS - C 25 DIN 1681 GS.45.3 (1.0616)	CASTING
	ASTM A105	Screwed & socket weld end valves sizes 15-25mm	BS 1503-164-490	DIN 17100 RPS1 37-2	FORGING

Alternative materials available on request, including Transco BG, GBE/C9 Specification.

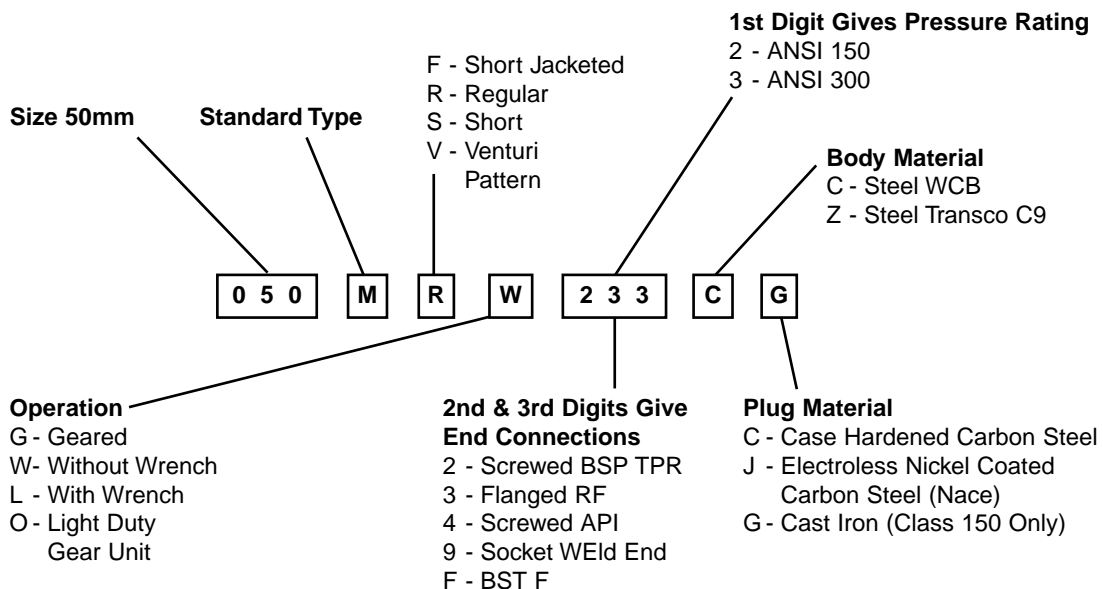
Plug Materials

	SAV Specification	Used for	Comparable Specifications		Form
CARBON STEEL	ASTM A216 Gr. WCB but with max.C 0.25%	Sizes 100mm and larger	BS 1504-161 Grade 480	DIN 17245 GS - C 25 DIN 1681 GS.45.3 (1.0616)	CASTING
	ASTM A105	Sizes 15-80mm	BS 1503-164-490	DIN 17100 RPS1 37-2	FORGING
GREY IRON	Bs1452 Gr. 220	Class 150 only, sizes 50mm and larger	ASTM A126 Class B	DIN 1691 GG22 (0.6022)	CASTING

Figure Numbering

A familiarity with our figure number system is not necessary when specifying or ordering our valves. Providing a full description of the valve is given, our Sales Office will translate this into a figure number. A full description of the valve would begin with "Audco Standard Type Steel Valve", and would then go on to give size, pressure rating, flanging details etc.

We give an example below in order to illustrate figure number, but if a fuller explanation is required please request Standards Sheet 300033/Sect 1Q.



Materials and Figure Numbers



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	ASTM A105	Screwed & socket weld end valves sizes 15-25mm	BS 1503-164-490	DIN 17100 RPS1 37-2	FORGING

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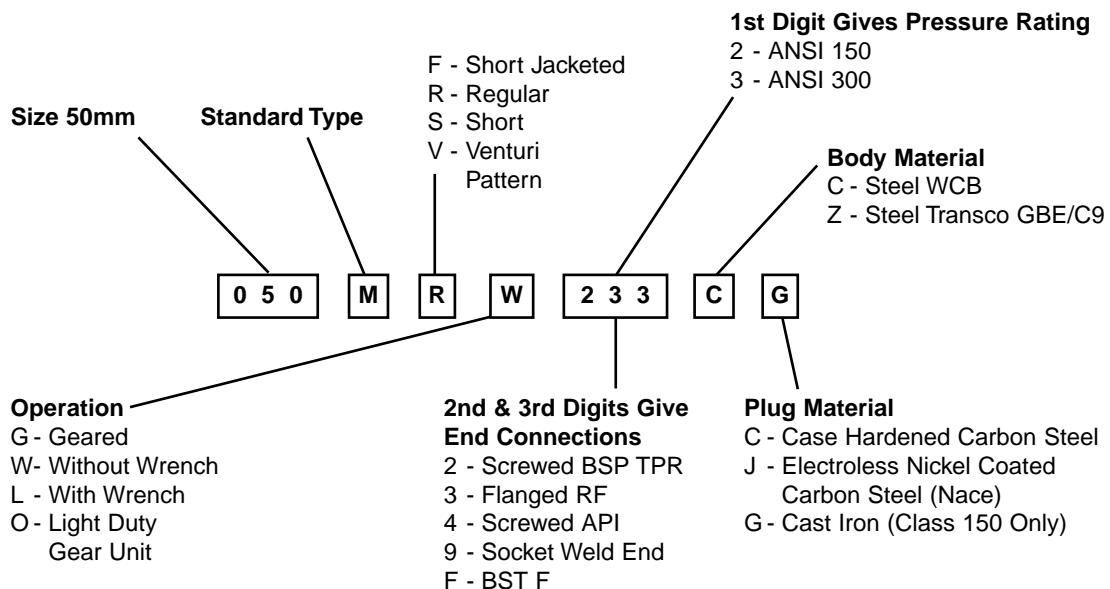
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	ASTM A105	Sizes 15-80mm	BS 1503-164-490	DIN 17100 RPS1 37-2	FORGING
GREY IRON	BS 1452 Gr. 220	Class 150 only, sizes 50mm and larger	ASTM A126 Class B	DIN 1691 GG22 (0.6022)	CASTING

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Standards

The requirements for steel valves for refinery use are defined in API 599. BS 5353 is based on API 599 and plug valves to these two standards are interchangeable in all respects if the appropriate pattern is selected and steel plugs are used. Steel pipeline valves are covered by API 6D/ISO 14313 for which there is no direct British equivalent. API 6D/ISO 14313 permits iron plugs: BS 5353 permits iron plugs only by agreement between purchaser and supplier. Therefore, it is British practice to manufacture the valves to BS 5353 except for the substitution of iron plugs. Standard Type Plug Valves meet the requirements of BS 5353, API 599, API 6D/ISO 14313 and ASME B16.34.

BS 2080	Face-to-face, centre-to-face, end-to-end, and centre-to-end dimensions of flanged and butt welding end steel valves for the petroleum, petrochemical and allied industries.
BS 5146	Specification for inspection and test of steel valves for the petroleum, petrochemical and allied industries
BS 5158	Cast iron & carbon steel plug valves for general purposes
BS 5353	Specification for plug valves.
ASME B16.10	Face-to-face and end-to-end dimensions of ferrous valves.
ASME B16.34	Valves - flanged and butt welding end.
API 6D / ISO14313	Specification for pipeline valves.
API 599	Steel plug valves flanged or butt welding ends.
NACE MR0175	Sulphide stress cracking resistant metallic material for oil field equipment.



Patterns

Serck Audco steel standard type valves are available in Regular, Short or Venturi Pattern. These terms are defined in BS 5353, API 6D/ISO 14313 and API 599. The different patterns vary as regards end-to-end dimension and port area for a given size of valve.

Regular Pattern valves have the largest port area. Short Pattern valves have a reduced port area as a consequence of their compact face-to-face dimensions which are identical to those for wedge gate valves. Venturi Pattern valves have a reduced port area and a flow path approximating a venturi shape to aid pressure recovery. Face-to-face and end-to-end dimensions conform to ASME B16.10, API 6D / ISO14313, BS 2080 and BS 5158.



Test Pressures

Valve Rating or Flanging	Maximum C.W.P.		Body Test (Minimum)		Seat Test (Minimum)	
	bar	lbf/in ²	bar	lbf/in ²	bar	lbf/in ²
Class 150 PN 20	19.6	285	31	450	22	320
Class 300 PN 50	51.1	740	77.6	1125	57	825
BST F	21.0	300	As Class 150		As Class 150	

There may not be exact equivalence between pressure in bar and in lbf/in² due to rounding (1 bar = 10⁵ Pa).



Test Duration

Each relevant standard defines the minimum length of time for which each test pressure is to be maintained and also the testing operations sequence.

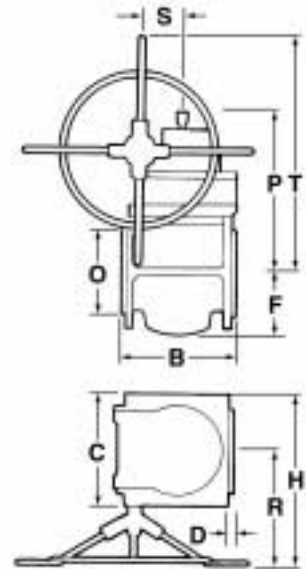
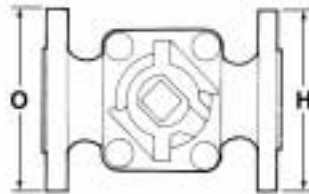
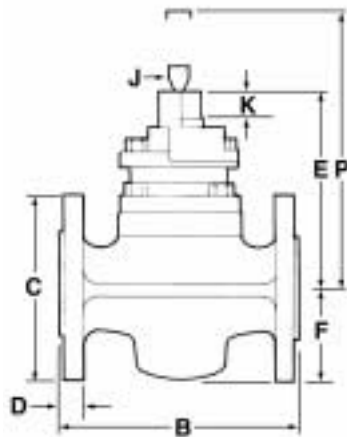
These durations will be adhered to unless a different specification is required against a particular order. If, once fitted into the line, a valve is to be subjected to a greater test pressure or a longer duration of test, then this should be specified and this can be covered at the inspection stage of the finished valve before painting.



Class 150 Short Pattern

Standard Type

MSW233CC	Flanged Class 150 RF	50-200mm
MSG233CC	Flanged Class 150 RF	200-300mm
MSW233CG	Flanged Class 150 RF	50-200mm
MSO233CG	Flanged Class 150 RF	250mm
MSG233CG	Flanged Class 150 RF	200-300mm



Flanged valves have face-to-face dimensions conforming to BS 5158 PN 10/16 & BS 2080 Class 150 Short, ANSI B16.10 & API 6D Class 150 Short. These valves are thus interchangeable with equivalent gate valves. Flanged valves have patterns conforming to BS 5353, BS 5158, ANSI B16.34, API 6D & API 599 Short (with steel plug).

			50	65	80	100	150	200	250	300
B	Face-to-face	mm	178	191	203	229	267	292	330	356
C	Flange diameter ANSI RF	mm	152	178	191	229	279	343	406	483
D	Total flange thickness ANSI RF	mm	15.9	17.5	19.1	23.8	25.4	30.2	30.2	31.8
E	CL to top of stem	mm	152	176	208	230	293	327	364	-
F	CL to bottom of body	mm	71.0	87.0	102	114	160	179	219	289
G	Handwheel diameter	mm	-	-	-	-	-	578	578	578
H	Maximum width MSW & MSO	mm	105	127	144	149	279	343	381	-
H	Maximum width MSG	mm	-	-	-	-	-	479	516	544
J	Size of plug square	mm	27.0	31.8	38.1	41.3	50.8	50.8	50.8	-
K	Depth of plug square	mm	28.6	27.0	30.2	44.5	54.0	54.0	54.0	-
O	Raised face diameter ANSI RF	mm	92.1	105	127	157	216	270	324	381
P	Clearance to remove screw or lubricator MSW & MSO	mm	225	265	297	324	414	449	483	-
P	Clearance to remove screw or lubricator MSG	mm	-	-	-	-	-	486	536	597
R	CL to face of handwheel	mm	-	-	-	-	-	310	310	310
S	CL valve to CL input shaft	mm	-	-	-	-	-	105	105	105
T	CL to top of handwheel	mm	-	-	-	-	-	613	676	718
U	CL to end of fitted wrench	mm	318	381	457	559	1020	1020	-	-
	Weight (approx) MSW & MSO	kg	13	18	25	36	86	118	181	-
	Weight (approx) MSG	kg	-	-	-	-	-	150	200	277
	Wrench number		4H	5H	6H	7H	10H	10H	-	-
	Sealant stick size		B	C	C	D	E	E	E	E
	Number of tapped holes in each flange		0	0	0	0	2	4	4	8

Valves are normally supplied with drilled Class 150 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. BS10 full faced & drilled flanges are also available. Most valves on this page can be supplied with flange drillings to BS 4504 PN 16 or DIN PN 16.

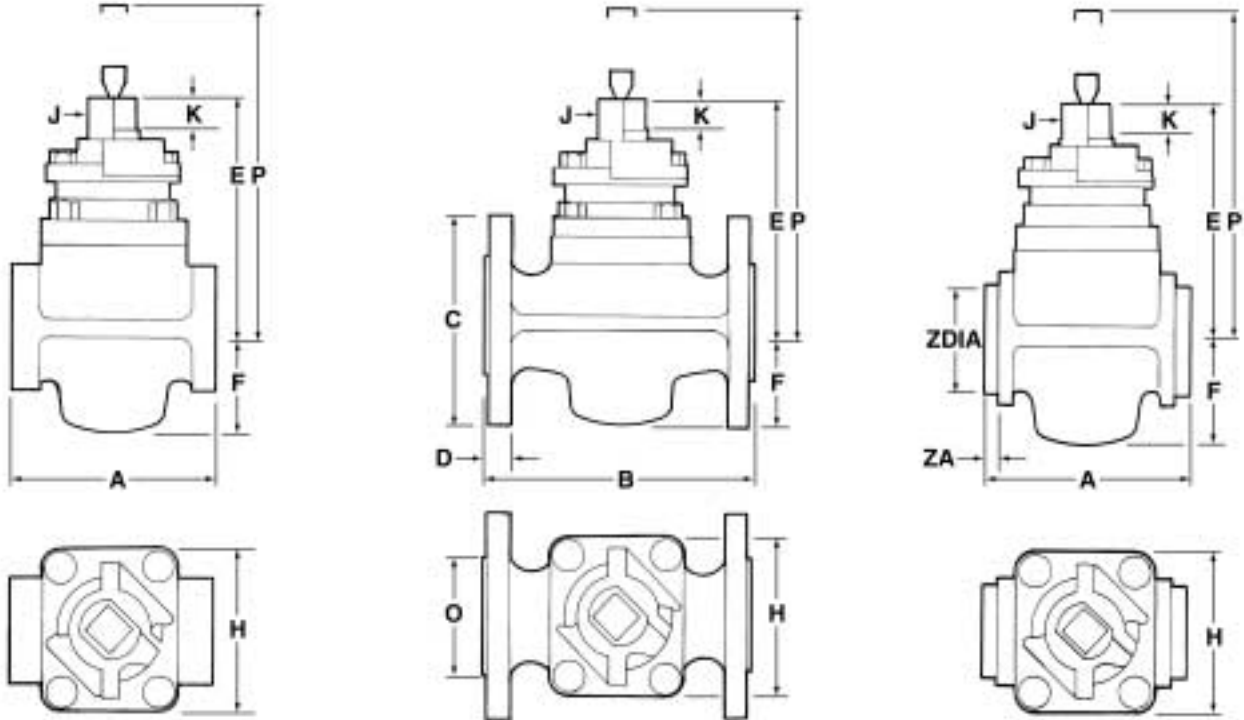
Valves in sizes 150mm and larger have flanges which are not machined on the edges and have some holes threaded. Threads are UNC on ANSI, BS 1560 and BS10 flanges but metric coarse on DIN and BS 4504 flanges. The threaded holes require studs of the same diameter as the bolts they replace.

Class 300 Short Pattern



Standard Type

MSW322CC	Screwed BSP Tpr	15-80mm
MSW344CC	Screwed API	15-80mm
MSW333CC	Flanged Class 300 RF	15-100mm
MSW399CC	Socket Weld end	15-50mm



Flanged valves have face-to-face dimensions conforming to BS 5158 PN 10/16 & BS 2080 Class 150 Short, ANSI B16.10 & API 6D Class 150 Short. These valves are thus interchangeable with equivalent gate valves. Flanged valves have patterns conforming to BS 5353, BS 5158, ANSI B16.34, API 6D & API 599 Short (with steel plug).

			15	20	25	40	50	65	80	100
A	End-to-end screwed & SWE	mm	95	95	111	133	165	191	203	-
B	Face-to-face	mm	140	140	159	191	216	241	283	305
C	Flange diameter ANSI RF	mm	95.3	117	124	156	165	191	210	254
D	Total flange thickness ANSI RF	mm	14.3	15.9	17.5	20.6	22.2	25.4	28.6	31.8
E	CL to top of stem	mm	100	100	114	114	176	207	229	245
F	CL to bottom of body	mm	37	37	49	65	81	102	114	140
H	Maximum width of body screwed & SWE	mm	71	71	78	104	125	138	149	-
H	Maximum width of body flanged	mm	78	78	78	105	125	138	149	149
J	Size of plug square	mm	19.1	19.1	22.2	27.0	31.8	38.1	41.3	47.6
K	Depth of plug square	mm	19.8	19.8	21.4	28.6	27.0	30.2	44.5	46.0
O	Raised face diameter ANSI RF	mm	34.9	42.9	50.8	73.0	92.1	105	127	157
P	Clearance to remove screw or lubricator	mm	157	157	171	210	265	297	325	343
U	CL to end of fitted wrench	mm	152	152	229	318	381	457	559	711
Z	I.D. of socket SWE (-0.0 +0.25mm)	mm	21.72	27.05	33.78	48.64	61.11	-	-	-
ZA	Depth of socket SWE	mm	9.53	12.7	12.7	12.7	15.9	-	-	-
	Weight (approx) screwed & SWE	kg	3.2	3.2	4.5	8.2	13	23	27	-
	Weight (approx) flanged	kg	3.6	3.6	6.3	14	18	27	38	75
	Wrench number		2	2	3H	4H	5H	6H	7H	8H
	Sealant stick size		A	A	A	B	C	C	D	D

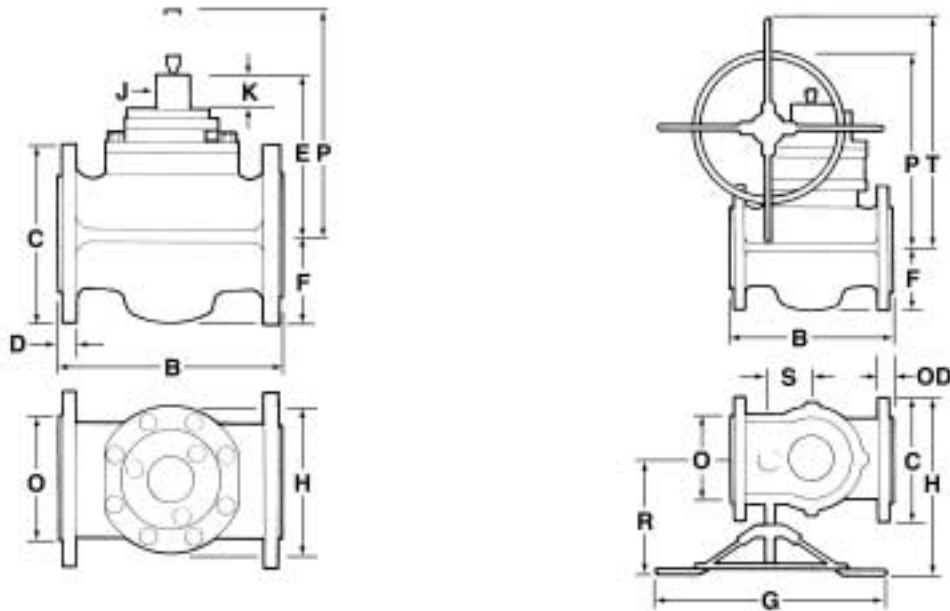
Valves are normally supplied with drilled Class 150 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. Most valves on this page can be supplied with flanges drilled to BS 4504 PN 25/40 or DIN PN 25/40.



Class 300 Venturi Pattern

Standard Type

MVW333CC Flanged Class 300 RF 150mm
 MVG333CC Flanged Class 300 RF 150-300mm



Valves have face-to-face dimensions conforming to BS 5158 PN 25/40, BS 2080 Class 300, ANSI B16.10 & API 6D Venturi. These valves are thus interchangeable with equivalent gate valves. Valves have Patterns conforming to BS 5353, BS 5158, API 6D & API 599 Venturi. Valves also conform to ANSI B31.4.

			150	150	200	250	300
B	Face-to-face	mm	403	403	419	457	502
C	Flange diameter ANSI RF	mm	318	318	381	445	521
D	Total flange thickness ANSI RF	mm	36.5	36.5	41.3	47.6	50.8
E	CL to top of stem	mm	283	-	-	-	-
F	CL to bottom of body	mm	159	159	194	194	260
G	Handwheel diameter	mm	-	578	578	578	578
H	Maximum width	mm	260	441	508	508	549
J	Size of plug square	mm	50.8	-	-	-	-
K	Depth of plug square	mm	54.0	-	-	-	-
O	Raised face diameter ANSI RF	mm	216	216	270	324	381
P	Clearance to remove screw or lubricator	mm	403	468	506	500	564
R	CL to face of handwheel	mm	-	308	308	308	324
S	CL valve to CL input shaft	mm	-	105	105	105	133
T	CL to top of handwheel	mm	-	589	624	624	686
U	CL to end of fitted wrench	mm	1020	-	-	-	-
	Weight (approx)	kg	111	136	213	240	346
	Wrench number		10H	-	-	-	-
	Sealant stick size		E	E	E	E	E

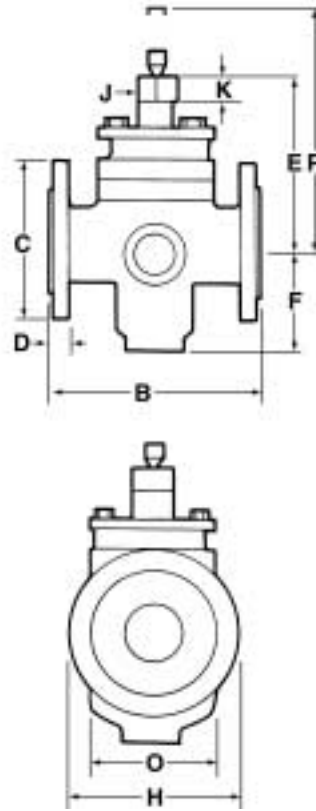
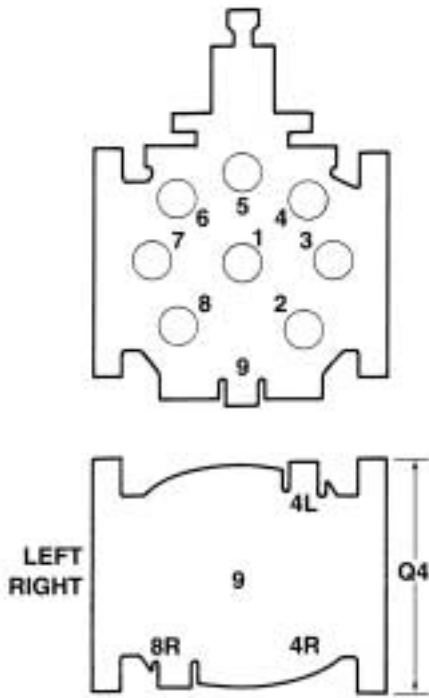
Valves are normally supplied with drilled Class 300 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. Most valves on this page can be supplied with flanges drilled to BS 4504 PN 25/40 or DIN PN 25/40.

Class 150 Jacketed Short Pattern



Standard Type

MFW233CG Flanged Class 150 RF 50-150mm
MFW2FFCG Flanged BST F 50-150mm



Valves have face-to-face dimensions conforming to BS 5158 PN 10/16, BS 2080 Class 150 Short, ANSI B16.10 & API 6D Class 150 Short. These valves are thus interchangeable with equivalent gate valves. Valves have Patterns conforming to BS 5353, BS 5158, API 6D & API 599 Short (with steel plug).

			50	80	100	150
B	Face-to-face flanged RF	mm	179	203	229	267
C	Flange diameter ANSI RF	mm	152	191	229	279
D	Total flange thickness ANSI RF	mm	15.9	19.1	23.8	25.4
E	CL to top of stem	mm	152	210	230	292
F	CL to bottom of body	mm	103	137	151	209
H	Maximum width	mm	135	186	198	289
J	Size of plug square	mm	27.0	38.1	41.3	50.8
K	Depth of plug square	mm	28.6	30.2	44.5	54.0
O	Raised face diameter ANSI RF	mm	92.1	127	157	216
P	Clearance to remove screw or lubricator	mm	225	297	327	414
	Jacket connection size screwed API	in	3/4"	3/4"	3/4"	3/4"
	Number of connections		3	3	3	3
	Positions of connections		1R 1L	1R 1L	1R 1L	1R 1L
			9	9	9	9
Q4	Maximum width between connections	mm	135	186	198	289
	Weight (approx)	kg	16	31	42	114
	Wrench number		4H	6H	7H	10H
	Sealant stick size		B	C	D	E

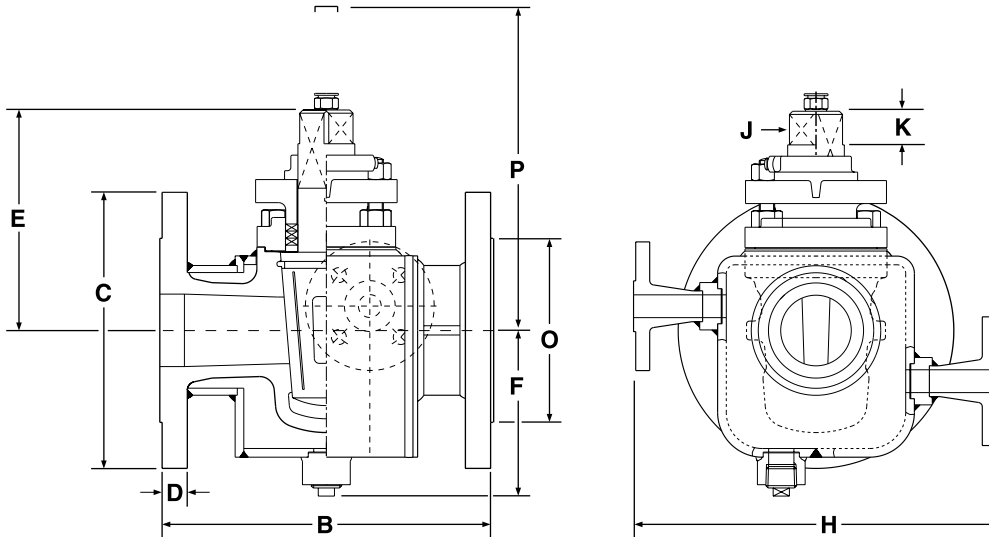
Valves are normally supplied with drilled Class 150 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. BS 10 full faced & drilled flanges are also available. Most valves on this page can be supplied with flange drillings to BS 4504 PN 16 or DIN PN 16.

Maximum pressure in jacket 150 lbf/in².



Jacketed Valves With Oversize Flanges

MZL233LLP 25-100mm



Valves have face-to-face dimensions conforming to BS 5158 PN 10/16, BS 2080 Class 150 Short, ANSI B16.10 & API 6D Class 150 Short. These valves are thus interchangeable with equivalent gate valves. Valves have Patterns conforming to BS 5353, BS 5158, API 6D & API 599 Short (with steel plug).

			50x25x50	80x50x80	100x80x100	150x100x150
B	Face-to-face flanged RF	mm	160	230	310	350
C	Flange diameter ANSI RF	mm	152	191	229	280
D	Total flange thickness ANSI RF	mm	15.8	19	24	25.4
E	CL to top of stem	mm	118	152	207	230
F	CL to bottom of body	mm	-	-	-	-
H	Maximum width	mm	-	-	-	-
J	Size of plug square	mm	22	27	38	41
K	Depth of plug square	mm	21	28	30	44
O	Raised face diameter ANSI RF	mm	92	127	157	216
P	Clearance to remove screw or lubricator	mm	-	-	-	-
	Jacket connection size screwed API	in	-	-	-	-
	Number of connections		3	3	3	3
	Positions of connections		1R 1L	1R 1L	1R 1L	1R 1L

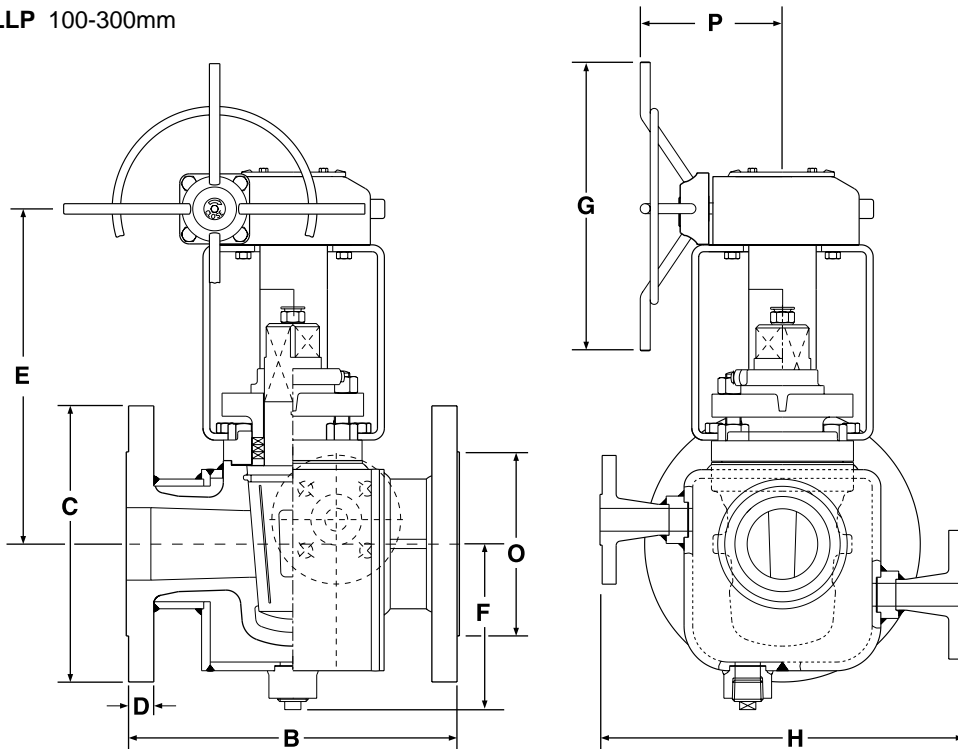
Valves are normally supplied with drilled Class 150 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. BS 10 full faced & drilled flanges are also available. Most valves on this page can be supplied with flange drillings to BS 4504 PN 16 or DIN PN 16.

Maximum pressure in jacket 150 lbf/in².

Jacketed Valves With Oversize Flanges



MZG233LLP 100-300mm



Valves have face-to-face dimensions conforming to BS 5158 PN 10/16, BS 2080 Class 150 Short, ANSI B16.10 & API 6D Class 150 Short. These valves are thus interchangeable with equivalent gate valves. Valves have Patterns conforming to BS 5353, BS 5158, API 6D & API 599 Short (with steel plug).

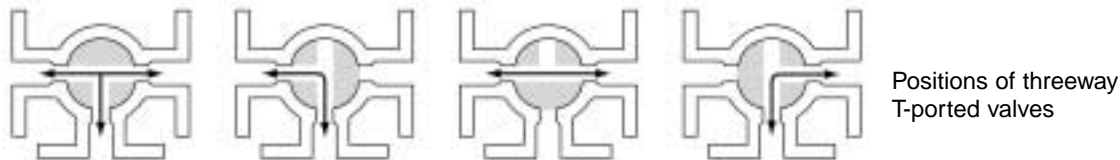
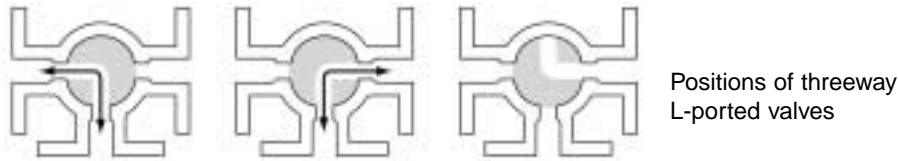
			150x100x150	200x150x200	250x200x250	300x250x300
B	Face-to-face flanged RF	mm	350	480	600	730
C	Flange diameter ANSI RF	mm	280	343	407	483
D	Total flange thickness ANSI RF	mm	25.4	28.4	30.2	31.8
E	CL to gearbox CL	mm	354	315	330	375
F	CL to bottom of body	mm	-	-	-	-
G	Handwheel diameter	mm	578	578	578	578
H	Maximum width	mm	-	-	-	-
O	Raised face diameter ANSI RF	mm	216	270	324	381
P	CL to handwheel	mm	307	307	307	307
	Jacket connection size screwed API	in				
	Number of connections		3	3	3	3
	Positions of connections		1R 1L	1R 1L	1R 1L	1R 1L

Valves are normally supplied with drilled Class 150 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. BS 10 full faced & drilled flanges are also available. Most valves on this page can be supplied with flange drillings to BS 4504 PN 16 or DIN PN 16.

Maximum pressure in jacket 150 lbf/in².



Threeway Valves



Features

- Reduction in the number of valves used
- Simplification of pipe layout
- Economy of pipework and fittings
- Less risk of product intermixing
- No risk of incorrect valve operation
- Quicker and easier operation

Quick Operation

Two of three multiport valves can often be inter-coupled in the same piping layout to permit fast multiple operation in the simplest possible way and with the minimum of manpower.

Foolproof

A further advantage of multiport valves is that ports and stops can be arranged to give the required flow positions and at the same time prevent the possibility of incorrect porting.

Typical Applications

Threeway valve - alternate connection of two supply lines to a common delivery; diversion of a flow to either of two dimensions; isolation of one of a pair of safety valves for maintenance purposes; operation of a cylinder with a single acting piston.

Multiport valves save operating time and maintenance costs. Study of these diagrams will suggest more economical layouts than could be obtained with a complicated system of straightway valves.

Positive and Negative Shut Off

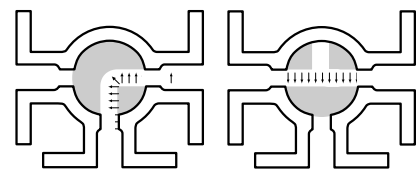
Multiport valves of the various pressure ratings listed are built to the same standards of quality and strength as the corresponding straightway valves. However, multiport valves can only be expected to provide shut off against full rated working pressure in the positive direction, that is with the line pressure to hold the plug against the body port which is to be shut off from the higher pressure, as illustrated in Figs. 1 and 2.

In Fig. 1 the flow is between the right-hand and centre connections with the left-hand connection shut off. In Fig. 2 the flow is straight through with the centre connection shut off.

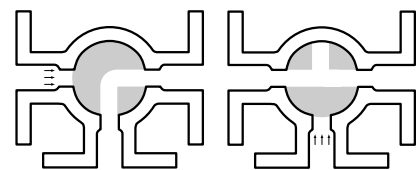
In both cases the pressure inside the valve tends to force the plug against the body port that is to be shut off. Multiport valves should not be expected to shut off high differential pressures when the line pressure is in a negative direction as illustrated in Figs. 3 and 4. In these examples pressure applied in the direction as shown, tends to force the plug away from the body port which is to be shut off. Multiport valves are designed for flow diversion and should not be expected to provide a positive shut-off in intermediate positions.

NOTE - For vacuum applications care should be taken to ensure that the vacuum tends to hold the plug against the body port which is to be shut off.

Positive Shut Off



Negative Shut Off



Class 150 and 300 Threeway



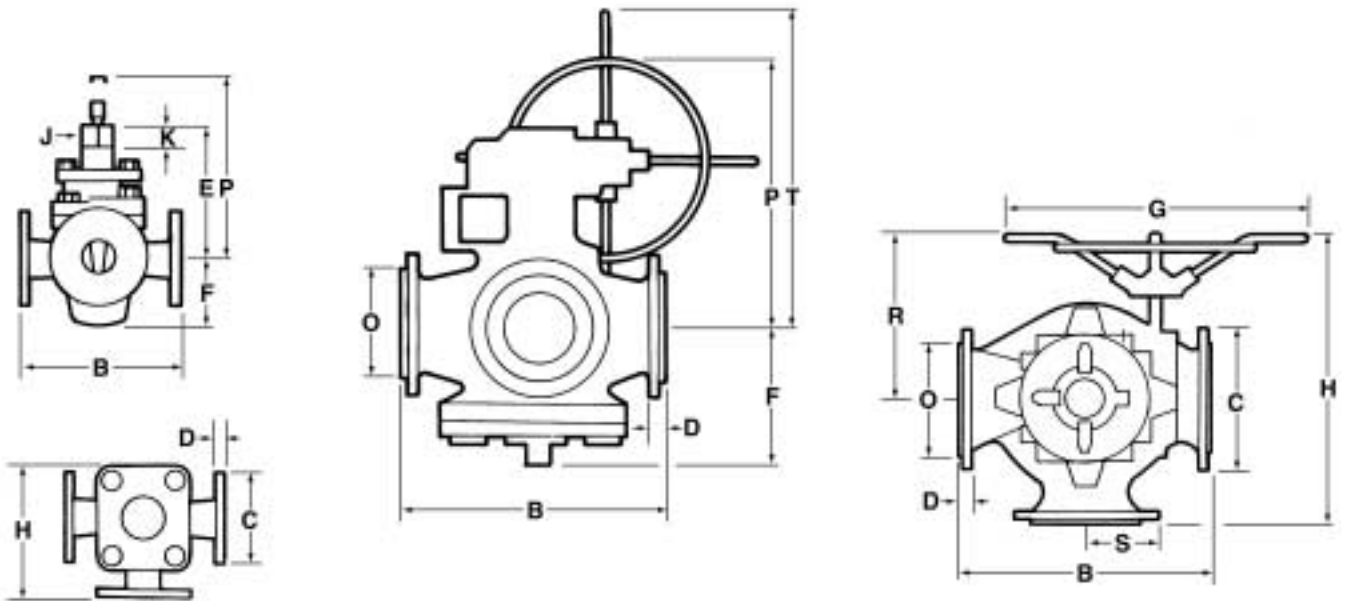
Standard & Inverted Type

MMW233CG L Port Flanged 150 RF 25-100mm
MNW233CG T Port

MMW2FFCG L Port Flanged BST F 25-100mm
MNW2FFCG T Port

BLG233CG L Port Flanged 150 RF 150mm
BTG233CG T Port

MMW333CG L Port Flanged 300 RF 25-100mm
MNW333CG T Port



There are no national or international standards for multiport valves.

			25	40	50	80	100	150
B	Face-to-face flanged ANSI 150 RF	mm	184	235	241	362	400	483
B	Face-to-face flanged ANSI 300 RF	mm	191	241	248	375	413	-
C	Flange diameter ANSI 150 RF	mm	108	127	152	191	229	280
C	Flange diameter ANSI 300 RF	mm	124	156	165	210	254	-
D	Total flange thickness ANSI 150RF	mm	11.1	14.3	15.9	19.1	23.8	25.4
D	Total flange thickness ANSI 300 RF	mm	17.5	20.6	22.2	28.6	31.8	-
E	CL to top of stem	mm	129	194	219	265	284	-
F	CL to bottom of body	mm	60	68	87	118	138	267
G	Handwheel diameter	mm	-	-	-	-	-	578
H	Maximum width ANSI 150 RF	mm	135	187	192	170	352	425
H	Maximum width ANSI 300 RF	mm	138	191	195	303	359	-
J	Size of plug square	mm	22.2	31.8	38.1	47.6	50.8	-
K	Depth of plug square	mm	22.2	28.6	30.2	50.8	49.2	-
O	Raised face diameter ANSI RF	mm	50.8	73.0	92.1	127	157	216
P	Clearance to remove screw or lubricator	mm	180	268	302	359	398	494
R	CL to face of handwheel	mm	-	-	-	-	-	324
S	CL valve to CL input shaft	mm	-	-	-	-	-	133
T	CL to top of handwheel	mm	-	-	-	-	-	613
U	CL to end of fitted wrench	mm	229	381	457	711	1020	-
	Weight (approx)	kg	10	16	30	68	91	249
	Wrench number		3H	5H	6H	8H	10H	-
	Actuator size (if required)		P100	P480	P480	P1700	P1700	P1700
	Sealant stick size		B	C	C	D	E	E

Valves are normally supplied with drilled Class 150/ 300 flanges having serrated finish raised faces in accordance with BS 1560 & ANSI B16.5. BS 10 flanges & drillings are also available. Most valves on this page can be supplied with flanges drilled to BS 4504 PN 16, 25 or 40 or to DIN PN 16, 25 or 40 as appropriate.

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- Actuators

Copies of relevant literature available on request.



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