Globe Drain Valves

DECON

DECON INDUSTRIES LIMITED

Company Profile

Decon Industries Limited is a supplier of engineered valve products and associated equipment for the Nuclear Power, Conventional Power and Petrochemical Industries.

Our company headquarters are located in North East England , close to Newcastle Upon Tyne. We have a subsidiary company in Hong Kong, and a representative office in Beijing China. Our manufacturing resources are located in the UK, mainland Europe and the USA.

We supply high pressure, high temperature and critical service isolation, non return and control valves for the steam, feedwater and cooling water systems in nuclear, conventional utility and industrial power plants, plus hydrocarbon processing systems.

We also specialize in isolation and non return valves in exotic materials for critical services in the coal liquefaction and associated industries.

We take pride in our technical competence and we can provide a range of services to valve users, specifiers and manufacturers.

These services include:

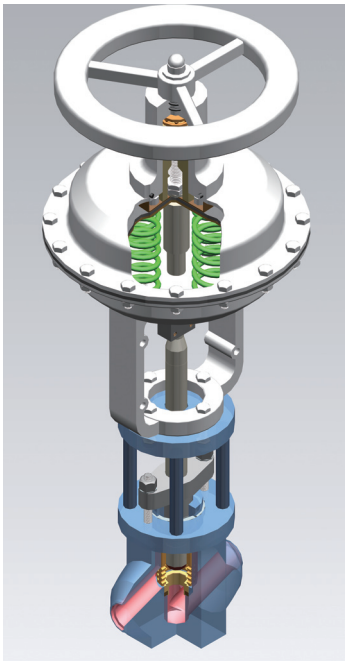
Solving valve performance problems;

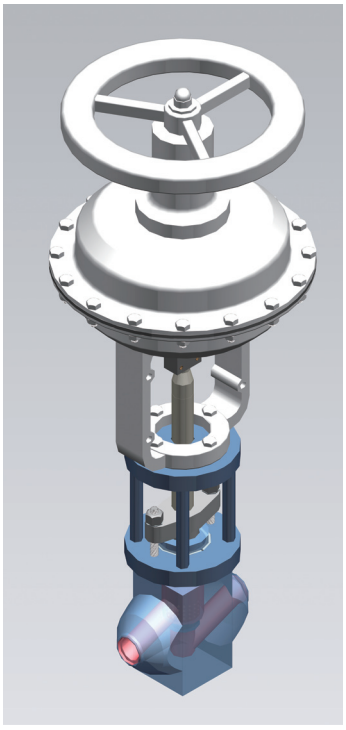
Valve selection and supply for critical service applications;

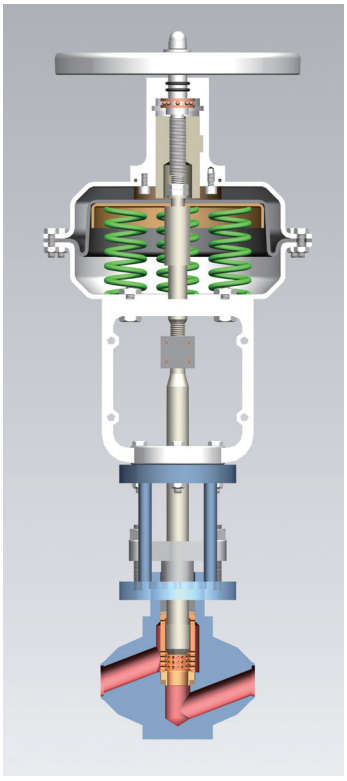
Assistance in performance based specification writing;

Aftermaket service and repair;

Valve design and performance enhancement.







High pressure Globe Drain Valves for Steam systems

The function of a boiler or turbine drain valve is to allow the discharge of condensed steam out of the pipework or system.
The condensed steam (condensate) will be at a temperature slightly below the boiling point or saturation temperature corresponding to the pressure of the steam in the system.

In modern supercritical or ultra supercritical power plants where the live steam pressure can be in the order of MPa 25 – 30, this means that the condensate could be at a temperature in excess of 300ºC.

The condensate is normally drained to a low pressure system, this means that at the moment the drain valve is opened the condensate pressure is reduced to a level below its saturation pressure, and it flashes into superheated steam.

The flashing of the condensate into steam causes a large increase in volume which means that there must be a high velocity flow through the valve in order to drain the condensate.

High velocity flashing steam can cause a number of problems for a valve that is fundamentally designed for isolation service.

The flashing steam can cause wire drawing or erosion of the sealing surfaces of the valve. Once the sealing surfaces are damaged the valve will start to leak when it is in the closed position.

The high velocity will also mean turbulent flow which can cause vibration in the valve and adjoining pipework.

This vibration can cause damage to the valve including wear of the seating surface which again would mean a leaking valve in the closed position.

A standard globe Isolation valve is often selected for drain applications due to its relatively low cost, however standard globe Isolation valves are not designed for high pressure drop service, and they normally wear out very quickly requiring expensive repair or replacement.

For the end user it is less expensive in the long term to install a high quality valve that is specifically designed for drain service.

DECON's Globe Drain Valve is specifically designed for drain service, and has the following features:

The DECON Globe Drain valve has two stages of pressure reduction. The first stage is cage with several holes sized and machined to ensure that most of the pressure drop through the valve takes place through the cage, rather than the valve seat. This design ensures that the possibility of wire drawing damage to the valve seat is minimized.

The valve stem and disc, seat , and cage are all removable with the valve in line, and can be easily replaced. This means the valve does not have to be cut out of line to be repaired, and avoids the need to replace the complete valve in the event of disc or seat damage.
The valve body is designed to ensure that the centre of gravity is as close to the pipe axis as possible. This is to ensure that valve and pipe vibration caused by the highly turbulent flow is minimized.

Valve Selection pressure temperature table -ASME B 16.34

Class 150 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	
A105	Std	19.6	19.2	17.7	15.8	13.8	12.1	10.2	9.3	8.4	7.4	6.5	5.5	4.6	3.7	2.8	1.4	
	Spec	19.8	19.8	19.8	19.6	19.4	19.4	19.4	19.2	18.7	18.1	16.6	13.8	11	8.4	5.6	2.8	

Class 300 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	
A105	Std	51.1	50.1	46.6	45.1	43.8	41.9	39.8	38.7	37.6	36.4	34.7	28.8	23.0	17.4	11.8	5.9	
	Spec	51.7	51.7	51.6	51.0	50.6	50.5	50.5	50.1	48.9	47.1	43.4	36.0	28.8	21.8	14.7	7.4	

Class 600 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	102.2	100.2	93.2	90.2	87.6	83.8	79.6	77.4	75.2	72.8	69.4	57.6	46.0	34.8	23.6	11.8					
	Spec	103.4	103.4	103.2	102.0	101.2	101.0	101.0	100.2	97.8	94.2	86.8	72.0	57.6	43.6	29.4	14.8					
F22	Std	103.4	103.4	103.0	100.3	97.2	92.7	85.7	82.6	80.4	77.6	73.7	70.0	67.7	63.4	56.5	36.9	31.3	21.1	13.8	8.9	5.7
	Spec	103.4	103.4	103.2	101.9	100.4	100.0	99.6	99.2	98.4	97.5	97.5	97.5	94.4	85.5	71.5	46.1	39.1	26.3	17.2	11.2	7.1
F91	Std	103.4	103.4	103.0	100.3	97.2	92.7	85.7	82.6	80.4	77.6	73.3	70.0	67.7	63.4	56.5	50.0	49.8	47.9	39.0	29.2	19.9
	Spec	103.4	103.4	103.4	103.4	103.4	103.4	103.4	103.4	102.8	101.0	100.6	99.3	94.4	85.5	71.5	57.9	57.9	57.1	48.7	36.5	24.8

Class 900 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	153.3	150.3	139.8	135.3	131.4	125.7	119.4	116.1	112.8	109.2	104.1	86.4	69.0	52.2	35.4	17.7					
	Spec	155.1	155.1	154.8	153.0	151.8	151.5	151.5	150.3	146.7	141.3	130.2	108.0	86.4	65.4	44.1	22.2					
F22	Std	155.1	155.1	154.6	150.6	145.8	139.0	128.6	124.0	120.7	116.5	109.8	105.1	101.4	95.1	84.7	55.3	46.9	31.6	20.7	13.4	8.5
	Spec	155.1	155.1	154.9	152.9	150.7	149.9	149.3	148.8	147.6	146.3	146.3	146.3	141.4	128.2	107.1	69.1	58.6	39.5	25.8	16.7	10.6
F91	Std	155.1	155.1	154.6	150.6	145.8	139.0	128.6	124.0	120.7	116.5	109.8	105.1	101.4	95.1	84.7	75.2	74.8	71.8	58.5	43.8	29.8
	Spec	155.1	155.1	155.1	155.1	155.1	155.1	155.1	155.1	154.3	151.5	150.6	148.9	141.4	128.2	107.1	86.9	86.9	85.7	73.1	54.8	37.2

Class 1500 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	255.3	250.6	233.0	225.4	219.0	209.7	199.1	193.6	187.8	181.8	173.6	143.8	115.0	87.2	58.8	29.5					
	Spec	258.6	258.6	258.2	255.2	252.9	252.6	252.6	250.6	244.6	235.5	217.0	179.8	143.8	109.0	73.5	36.9					
F22	Std	258.6	258.6	257.6	250.8	243.4	231.8	214.4	206.6	201.1	194.1	183.1	175.1	169.0	158.2	140.9	92.2	78.2	52.6	34.4	22.3	14.2
	Spec	258.6	258.6	258.1	254.8	251.1	249.9	248.9	248.0	246.0	243.8	243.8	243.8	235.8	213.7	178.6	115.2	97.7	65.8	43.0	27.9	17.7
F91	Std	258.6	258.6	257.6	250.8	243.4	231.8	214.4	206.6	201.1	194.1	183.1	175.1	169.0	158.2	140.9	125.5	124.9	119.7	97.5	73.0	49.6
	Spec	258.6	258.6	258.6	258.6	258.6	258.6	258.6	258.6	257.1	252.5	251.2	248.2	235.8	213.7	178.6	145.1	145.1	143.0	121.9	91.3	62.1

Class 2500 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	425.5	417.7	388.3	375.6	365.0	349.5	331.8	322.6	313.0	303.1	289.3	239.7	191.7	145.3	97.9	49.2					
	Spec	430.9	430.9	430.3	425.3	421.4	421.1	421.1	417.6	407.6	392.5	361.7	299.6	239.6	181.6	122.4	61.6					
F22	Std	430.9	430.9	429.4	418.2	405.4	386.2	357.1	344.3	335.3	323.2	304.9	291.6	281.8	263.9	235.0	153.7	130.3	87.7	57.4	37.2	23.6
	Spec	430.9	430.9	430.2	424.6	418.5	416.5	414.8	413.3	410.0	406.3	406.3	406.3	393.1	356.3	297.5	192.1	162.8	109.7	71.7	46.5	29.5
F91	Std	430.9	430.9	429.4	418.2	405.4	386.2	357.1	344.3	335.3	323.2	304.9	291.6	281.8	263.9	235.0	208.9	208.0	199.5	162.5	121.7	82.7
	Spec	430.9	430.9	430.9	430.9	430.9	430.9	430.9	430.9	428.6	420.9	418.3	413.7	393.1	356.3	297.5	241.7	241.7	238.3	203.1	152.1	103.4

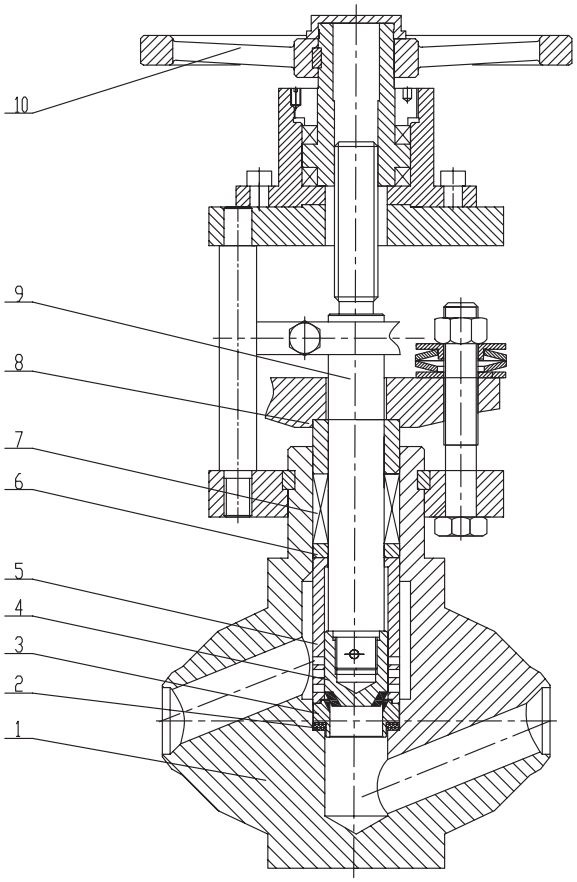
Class 3200 (ASME B16.34) Standard Class, Butt Weld and Flanged

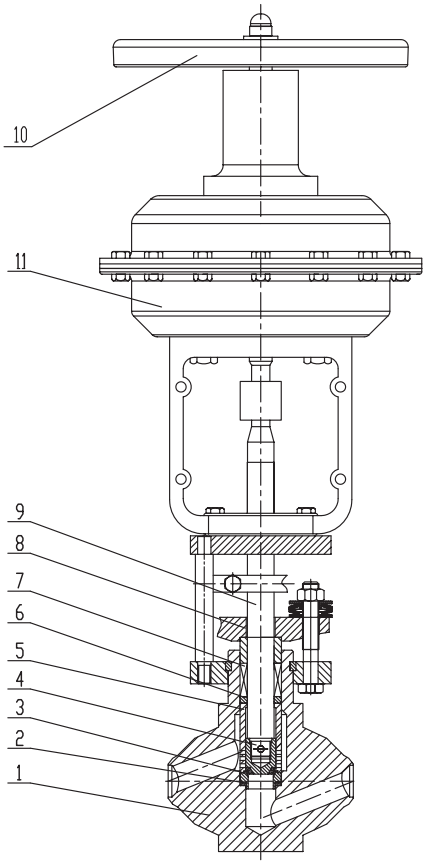
ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	544.7	534.6	497.1	480.8	467.2	447.4	424.8	412.9	400.6	388.0	370.4	306.8	245.3	186.0	125.3	62.9					
	Spec	551.6	551.6	550.8	544.4	539.4	539.0	539.0	534.5	521.7	502.4	463.0	383.5	306.7	232.4	156.7	78.8					
F22	Std	551.6	551.6	549.6	535.3	518.9	494.3	457.1	440.8	429.2	413.7	390.3	373.2	360.7	337.8	300.8	196.7	166.8	112.2	73.5	47.6	30.2
	Spec	551.6	551.6	550.6	543.5	535.7	533.1	531.0	529.1	524.8	520.0	520.0	520.0	503.2	456.1	380.8	245.9	208.4	140.4	91.7	59.5	37.8
F91	Std	551.6	551.6	549.6	535.3	518.9	494.3	457.1	440.8	429.2	413.7	390.3	373.2	360.7	337.8	300.8	267.4	266.2	255.4	208.0	155.7	105.8
	Spec	551.6	551.6	551.6	551.6	551.6	551.6	551.6	551.6	548.6	538.8	535.4	529.5	503.2	456.1	380.8	309.4	309.4	305.1	260.0	194.7	132.4

Class 4500 (ASME B16.34) Standard Class, Butt Weld and Flanged

ATSM Body Material	ASME B16.34	Pressure in bar.g at Temp. °C (For intermediate ratings use linear interpolation)																				
Forged		-29 to 38	50	100	150	200	250	300	325	350	375	400	425	450	475	500	538	550	675	600	625	650
A105	Std	765.9	751.9	699.0	676.1	657.0	629.1	597.3	580.7	563.5	545.4	520.8	431.5	345.1	261.5	176.3	88.6					
	Spec	775.7	775.7	774.5	765.5	758.6	757.9	757.9	751.7	733.7	706.5	651.0	539.3	431.4	326.9	220.4	110.8					
F22	Std	775.7	775.7	773.0	752.8	729.8	694.8	642.6	619.6	603.3	581.8	548.5	524.7	507.0	474.8	423.0	276.6	234.5	157.9	103.3	66.9	42.6
	Spec	775.7	775.7	774.3	764.3	753.4	749.7	746.7	743.9	738.1	731.3	731.3	731.3	707.6	641.3	535.4	345.7	293.1	197.4	129.1	83.7	53.2
F91	Std	775.7	775.7	773.0	752.8	729.8	694.8	642.6	619.6	603.3	581.8	548.5	524.7	507.0	474.8	423.0	375.8	374.2	359.1	292.5	219.1	148.9
	Spec	775.7	775.7	775.7	775.7	775.7	775.7	775.7	775.7	771.4	757.4	753.2	744.6	707.6	641.3	535.4	435.1	435.1	428.8	365.6	273.8	186.2

Globe Drain Valves Part List / Material

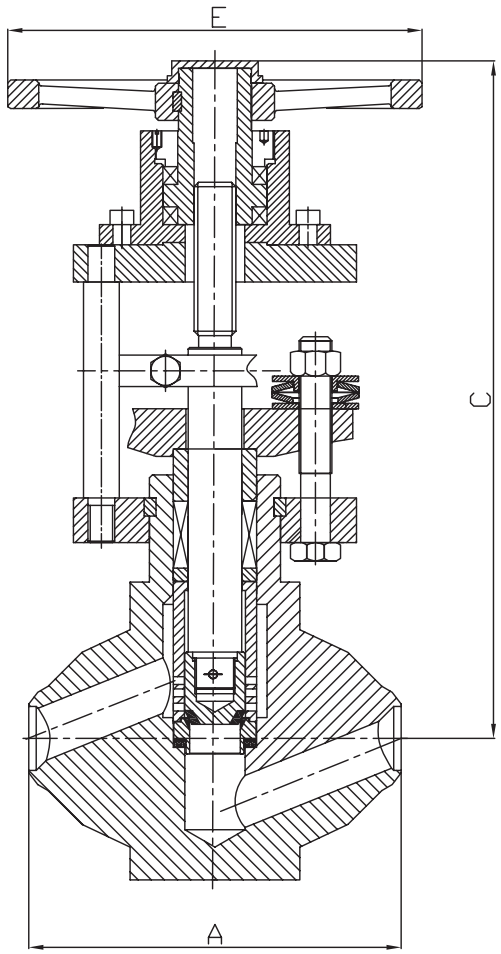




Manual and Pneumatic Actuated Globe Drain Valves

Ref.	Description	Body Mat: A105	Body Mat: F22	Body Mat: F91
1	Body	ASTM A105	ASTM A182 F22	ASTM A182 F91
2	Gasket	ASTM A240 304+Graphite	ASTM A240 304+Graphite	ASTM A240 304+Graphite
3	Seat	ASTM A105+STL	ASTM A182 F22+STL	ASTM A182 F91+STL
4	Disc	ASTM A105+STL	ASTM A182 F22+STL	ASTM A182 F91+STL
5	Cage	ASTM A240 321	ASTM A240 321	ASTM A240 321
6	Bonnet	ASTM A105	ASTM A182 F22	ASTM A182 F91
7	Seal Ring	Graphite	Graphite	Graphite
8	Packing	Graphite	Graphite	Graphite
9	Stem	ASTM 420 SST	ASTM 420 SST	ASTM 420 SST
10	Actuator	DECON	DECON	DECON
11	Handwheel	ASTM A216 WCB	ASTM A216 WCB	ASTM A216 WCB

Manual Globe Drain Valves Dimensions

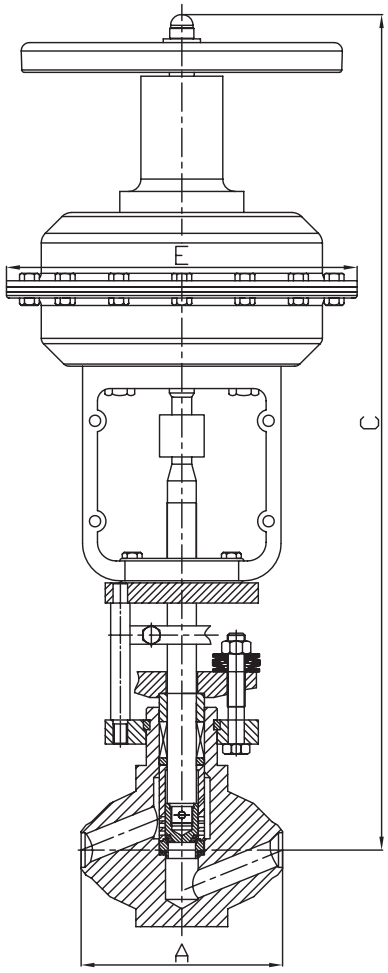


Maual Globe Drain Valves Dimensions

Nominal Size		A		C		E		W (B.W)	
mm	in	mm	in	mm	in	mm	in	Kg	Lb
15	1/2	170	6.69	283	11.14	202	7.95	15	33.0
20	3/4	170	6.69	312	12.28	202	7.95	20	44.1
25	1	170	6.69	312	12.28	202	7.95	20	44.1
40	1 1/2	250	9.84	371	14.61	242	9.53	36.5	80.4
50	2	250	9.84	457	17.99	242	9.53	58	127.8
65	2 1/2	350	13.78	590	23.23	242	9.53	98	215.9

* The dimensions shown above are our standard. Final dimensions will be according to our certified drawing.

Pneumatic Globe Drain Valves Dimensions



Pneumatic Actuated Globe Drain Valves Dimensions

Nominal Size		A		C		E		W (B.W)	
mm	in	mm	in	mm	in	mm	in	Kg	Lb
15	1/2	170	6.69	681	26.81	285	11.22	30	66.0
20	3/4	170	6.69	710	27.95	285	11.22	30	66.0
25	1	170	6.69	710	27.95	285	11.22	38	83.6
40	1 1/2	250	9.84	850	33.46	470	18.50	70	154.0
50	2	250	9.84	1060	41.73	470	18.50	110	242.0
65	2 1/2	350	13.78	1170	46.06	470	18.50	154	338.8

* The dimensions shown above are our standard. Final dimensions will be according to our certified drawing.

Actuation

In many applications, operation of valves may require the use of electric, pneumatic or hydraulic actuators. Such applications include those where the valve.

(1) is too large or has too high a differential shut-off pressure for manual operation;

(2) is not accessible for manual operation;

(3) is part of a system requiring simultaneous operation of many valves;

(4) must be triggered from a remote location, as is often essential for emergency shut-off in hazardous areas.

We will gladly furnish any type or make of actuator you specify, or make recommen-dations for your particular service conditions.

Manual Geared Actuator

Pneumatic Actuator

Electric Actuator

Valve selection and ordering, please provide data according to the following table

Design Pressure: _____ Design Temperature: _____

Operating pressure: _____ Operating temperature: _____

Connection: _____ Pipe size: _____

Pipe material: _____ Flowrate: _____

Operation: Manual / Actuated _____

Others: _____

Product Ordering Infomation

Products	Direction	Connection	Connection Size		Pressure Rating	Material(Body)	Operation
			Metric	Imperial			
48	1	10	0250	9004	1150	01	1

48
- 48 - Globe Drain Valve

1
- 1 - Straight Thro
- 2 - Angle Pattern
- 3 - Three Way

10
- 10 - Butt Weld
- 11 - Socket Weld
- 20 - FF
- 21 - RJ
- 22 - RTJ
- 30 - Wafer
- 31 - Wafer Lugged
- 40 - Screwed
- 50 - Threaded
- 60 - Clam Hub

0250 / 9004

Metric	Imperial
0010 - DN10	9001 - 3/8"
0015 - DN15	9002 - 1/2"
0020 - DN20	9003 - 3/4"
0025 - DN25	9004 - 1"
0032 - DN32	9005 - 1 1/4"
0040 - DN40	9006 - 1 1/2"
0050 - DN50	9007 - 2"
0065 - DN65	9008 - 2 1/2"
0080 - DN80	9009 - 3"
0100 - DN100	9010 - 4"
0125 - DN125	9011 - 5"
0150 - DN150	9012 - 6"
0200 - DN200	9013 - 8"
0225 - DN225	9014 - 9"
0250 - DN250	9015 - 10"
0300 - DN300	9016 - 12"
0350 - DN350	9017 - 14"
0400 - DN400	9018 - 16"
0450 - DN450	9019 - 18"
0500 - DN500	9020 - 20"
0600 - DN600	9021 - 24"
0700 - DN700	9022 - 28"
0800 - DN800	9023 - 32"
0900 - DN900	9024 - 36"
1000 - DN1000	9025 - 40"

1150

0010 - ANSI 150	1010 - PN10
0030 - ANSI 300	1016 - PN16
0060 - ANSI 600	1025 - PN25
0061 - ANSI 600SPL	1040 - PN40
0090 - ANSI 900	1064 - PN64
0091 - ANSI 900SPL	1100 - PN100
0150 - ANSI 1500	1160 - PN160
0210 - ANSI 2100	1320 - PN320
0250 - ANSI 2500	1400 - PN400
0310 - ANSI 3200	1500 - PN500
0450 - ANSI 4500	

01
- 01 - A105
- 02 - WCB
- 03 - F11
- 04 - WC6
- 05 - F22
- 06 - WC9
- 07 - F91
- 08 - C12A
- 09 - F92
- 10 - WB36
- 11 - 304
- 12 - CF8
- 13 - 304L
- 14 - CF3
- 15 - 316
- 16 - CF8M
- 17 - 316L
- 18 - CF3M
- 19 - 15NiCuMoNb-5

1
- 1 - Handwheel
- 2 - Lever
- 3 - Gearbox
- 4 - Electric
- 5 - Pneumatic
- 6 - Hydraulic