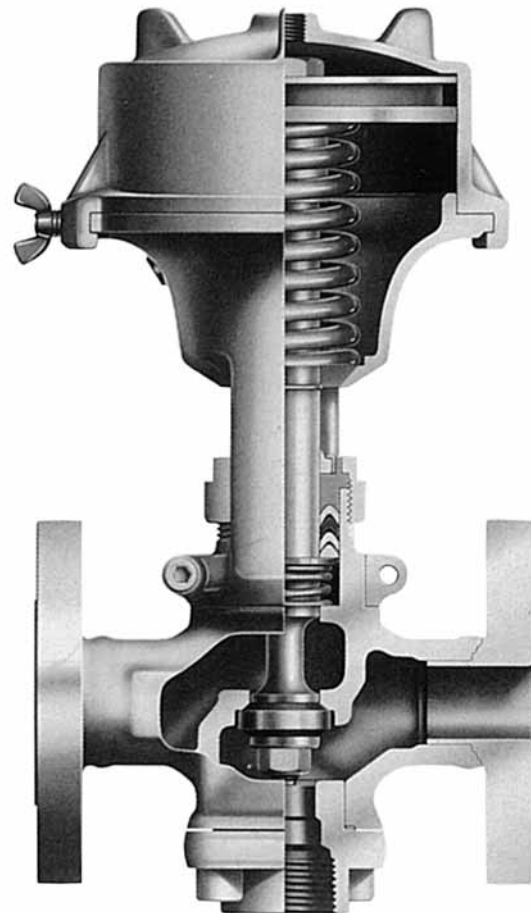


# **ROCKY Piston Valves\***

## **Process Valves**

## **Steam Regulators**

**FOR STEAM, GAS, HOT and COLD LIQUIDS**



\*US-Patent granted

Series	Description	Valves Sizes	Page
	Introduction, Technical Description, Order Information, Function and Design		3 to 7
TPC	2-Way and 3-Way Valves, Normally Closed	tapped 1/4" to 3/4"	8/9
TPC	2-Way and 3-Way Valves, Normally Closed	tapped 1" to 1 1/2"	10/11
TPC	2-Way and 3-Way Valves, Normally Open	tapped 1/4" to 3/4"	12/13
TPC	2-Way and 3-Way Valves, Normally Open	tapped 1" to 1 1/2"	14/15
TPC	2-Way and 3-Way Valves, Normally Closed	ANSI-Flange 15 to 50 mm	16/17
TPC	2-Way and 3-Way Valves, Normally Open	ANSI-Flange 15 to 50 mm	18/19
TPC	3-Way Valves, Normally Closed	ANSI-Flange 15 to 40 mm	20/21
TPC	3-Way Valves, Normally Open	ANSI-Flange 15 to 40 mm	22/23
TPC	2-Way and 3-Way Valves, Normally Closed	JIS-Flange 15 to 50 mm	24/25
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FP	4-Way Valves	tapped 1/4" - 3/8"	28/29
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DC	Process Regulating Valves Normally Closed	tapped 1/2" - 1"	32/33
DC	Process Regulating Valves Normally Closed	tapped 1 1/4" - 1 1/2"	34/35
DC	Process Regulating Valves Normally Closed	ANSI-Flange 15 - 40 mm	36/37
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LJ	Knuckle Joints	tapped 1/2" - 2"	52/53
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	Order Code TPC-Valves		55
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- **Compact Design**
- **Self-Regulating Packing**
- **Non-Corrosive Materials**
- **High Performance**
- **Long Life**
- **Easy Maintenance**
- **Absolutely Leakproof**

## 1. Introduction

The ROCKY Piston Operated Valves are used throughout the world and have set a standard of quality for over 30 years. To meet the requirements and specifications of different countries, a wide variety of thread and flange types have been developed. Throughout the years, the valves have earned a well-deserved reputation of outstanding quality, dependability, value and a reliable worldwide service.

The valves are designed to make servicing an extremely simple matter. It has been found in the past that a great deal of time and expense is needed to maintain and repair valves that operate under tough working conditions. In order to satisfy the modern needs of industry, the design of these valves is based on many years of experience, and, if a defect occurs, parts are replaced easily. For example, the disc rings on the valve stem can be replaced without removing the valve from the pipe line. The replacement of a piston ring is much easier and faster than for instance the replacement of a diaphragm.

## 2. Application

This series of valves and their accessories have been developed primarily for the purpose of rationalizing and automating the control of presses used for tires, records and other plastic and rubber products.

They can be used in steam, gas, hot and cold water, air and vacuum service. Many other fluids such as gasoline, alcohol, solvents and fuels can also be controlled with these valves.

## 3. Technical Description

The valves are operated pneumatically by a piston. The piston ring is made of special teflon. The valve body and stem are made of stainless steel. A combination of stainless steel on one side and graphite-reinforced teflon on the other is used for the valve seats. The spring-loaded self-regulating M-type packing requires no maintenance.

The maximum operating pressure is 460 PSI (32 bar), unless otherwise mentioned.

The pilot control pressure should be 36 – 51 PSI (2.5 – 3.5 bar).

The 3-way valves can also be converted to a 2-way version at a later time, by plugging port 3.

On valves with flanged connections, port 3 can be supplied either tapped (catalogue pages 16, 18, 24 and 26) or with flange connection (catalogue pages 20 and 22). Subsequent conversion is easily possible.

Port 1 should preferably be used as fluid inlet, although port 2 or port 3 may also be used as inlet.

The temperature range is from – 22° F. to 401° F. (– 30° C to + 205° C) unless specified otherwise on the catalogue pages. Cv-values are shown on page 54, further technical information on pages 57 – 59.

## 4. Ordering Information

The various mounting configurations, thread and flange types are identified by the following model suffixes:

N = NPT -thread	A = ANSI-flange
B = BSP-thread	D = DIN -flange
P = PT -thread	J = JIS -flange

The valves described on the individual pages of this catalogue represent the standard executions, i.e.

Valves with NPT -Inlet/Outlet or ANSI-flange ports have NPT-Pilot ports.

Valves with BSP -Inlet/Outlet or DIN -flange ports have BSP-Pilot ports.

Valves with PT -Inlet/Outlet or JIS -flange ports have PT -Pilot ports.

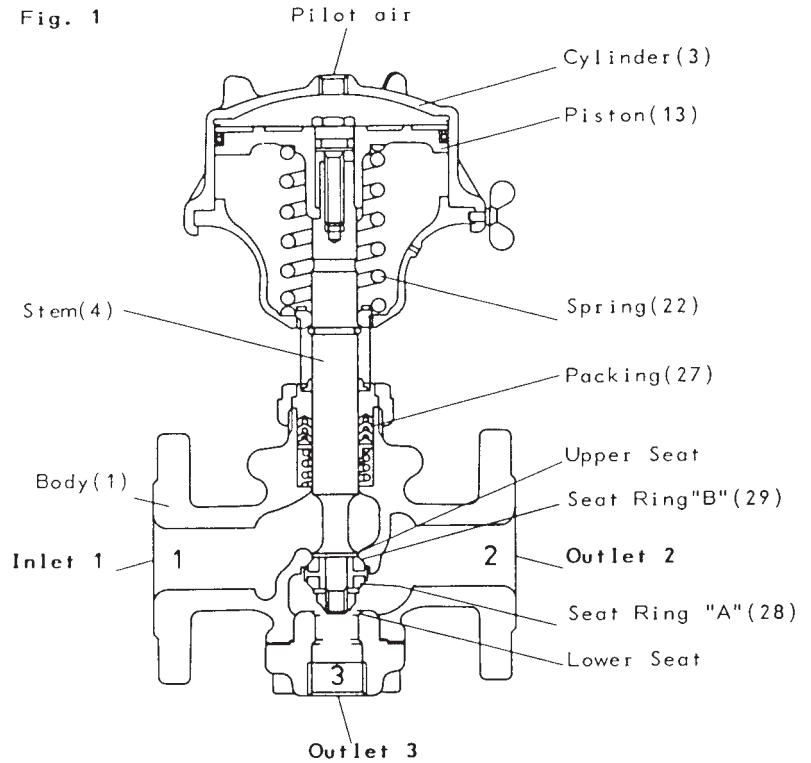
Any other combination is available on request and should be specified according to the ordering details on pages 55 – 56.

**5. Function**

The valve functions in three stages:

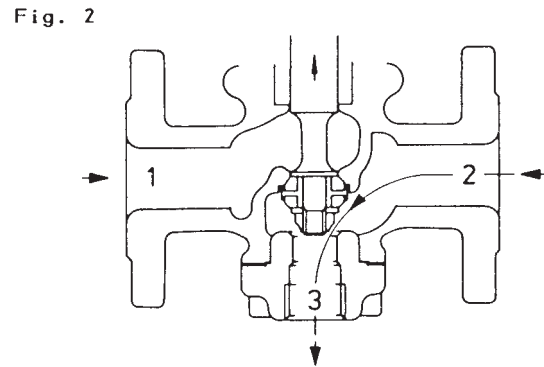
**Stage A**

1. As shown in Fig. 1, the fluid passes from inlet 1 into the chamber between packing (27) and the upper seat.
2. The outlets 2 and 3 are now connected with each other. Seat ring B is pushed against upper seat by the spring force given through stem (4). – (See Fig. 2)



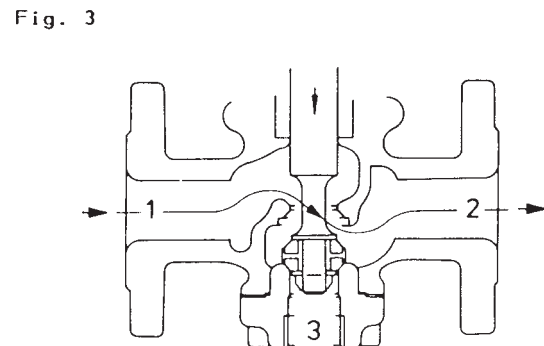
**Stage B**

1. By giving pilot pressure (36 - 51 PSI) air flows into the cylinder (3). The pressure that builds up overcomes the spring force and pushes against the lower seat via the piston (13) and the stem (4).
2. The connections 1 and 2 are now joined together and the fluid flows from 1 to 2 (Fig. 2)



**Stage C**

1. If the pilot air is now switched off, the spring (22) again pushes the stem (4) upwards and the seat ring closes off the flow of fluid at the upper seat. The passage between connections 2 and 3 is now open again (Fig. 2)

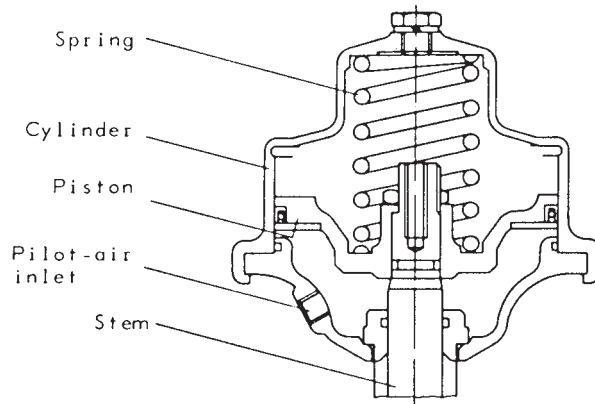


The description on the previous page covers the function of the normally closed valve. Normally open valves can also be supplied.

**Functional sequence of NO-valves**

The spring is on the opposite side of the piston so that the stem remains pressed against the lower seat. The fluid can thus flow from connection 1 to 2. When the piston is operated by the pilot valve the piston valve switches over and the stem presses against the upper seat. Fig. 4 shows the arrangement of the spring in the valve cylinder.

Fig. 4

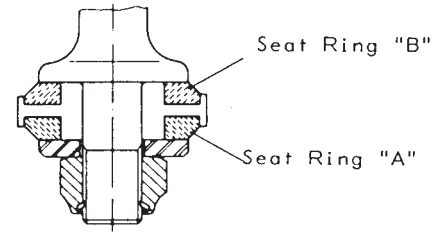


**6. Advantages of TPC-Valves**

**a) High sealing effect**

The soft seat seals of the seat rings give the valve a high sealing effect for numerous fluids. The seat rings A + B can be renewed without having to remove the valve from the piping system. (Fig. 5)

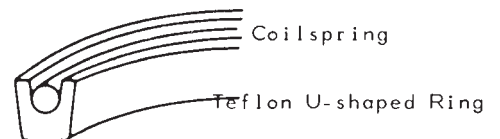
Fig. 5



**a) Long life resulting from special piston ring**

The piston ring consists of a U-shaped teflon ring in which a coil spring is inserted. The characteristics of teflon give the piston the necessary long life even at high temperatures. (Fig. 6)

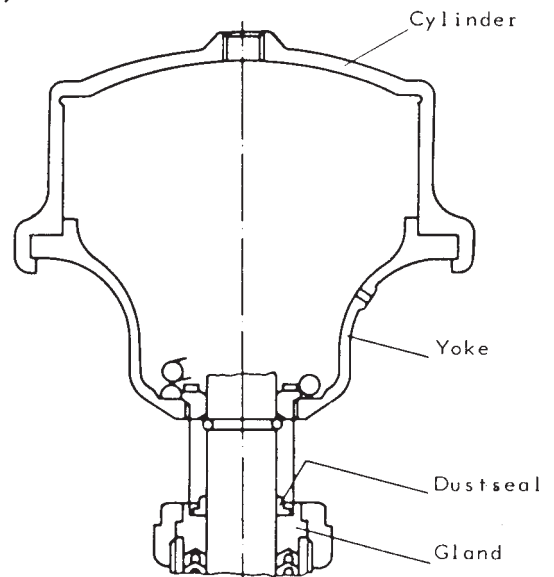
Fig. 6



**c) Protective cover**

The yoke, together with the cylinder, also acts as protective cover for stem and spring against damage and dirt. (Fig. 7)

Fig. 7



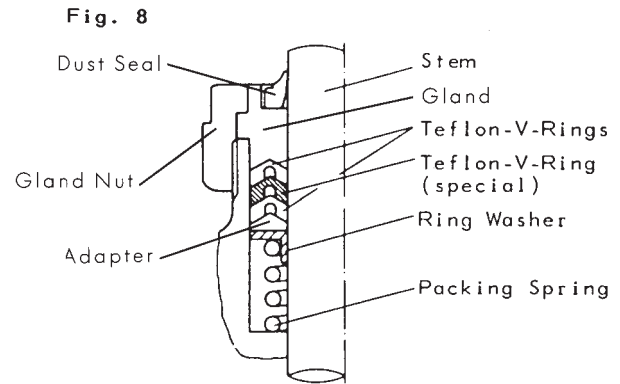
**d) Wiper**

The wiper prevents dirt or foreign particles from finding their way between gland and stem.

**e) Design of Gland Packing**

The packing consists of three V-shaped teflon rings. The middle ring is a special, highly wear resistant teflon mixture.

The packing is pushed simultaneously against the external surface of the stem and the internal surface of the body by the stainless packing spring and the ring washer. Leaks are thus avoided.



**f) Ring Washer**

The ring washer placed between the packing spring and the adapter prevents the packing getting caught up either on the body or on the stem. The ring has a slot at an angle of 30° in order to compensate for possible expansion due to heat. (Fig. 9)

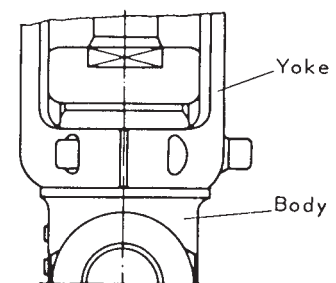
**Fig. 9**



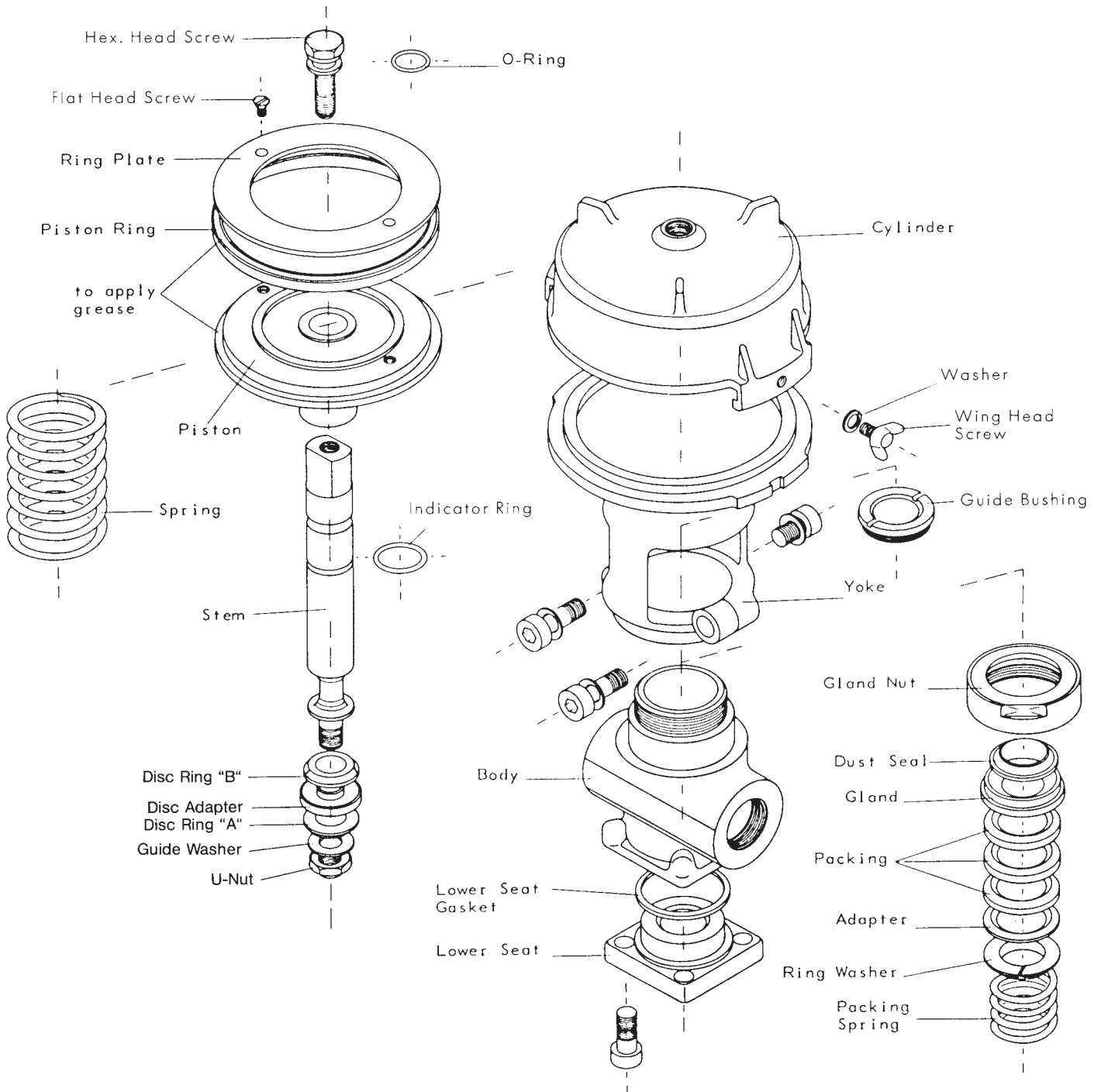
**g) Material and ease of maintenance**

The material used for valve body and stem is stainless steel. Socket head screws connect the valve housing and the valve yoke and allow simple and quick dismantling of the valve. (Fig. 10)

**Fig. 10**



**7. Design of TPC-Valves**



#### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

Three types of thread are available according to the model selection chart below.

It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

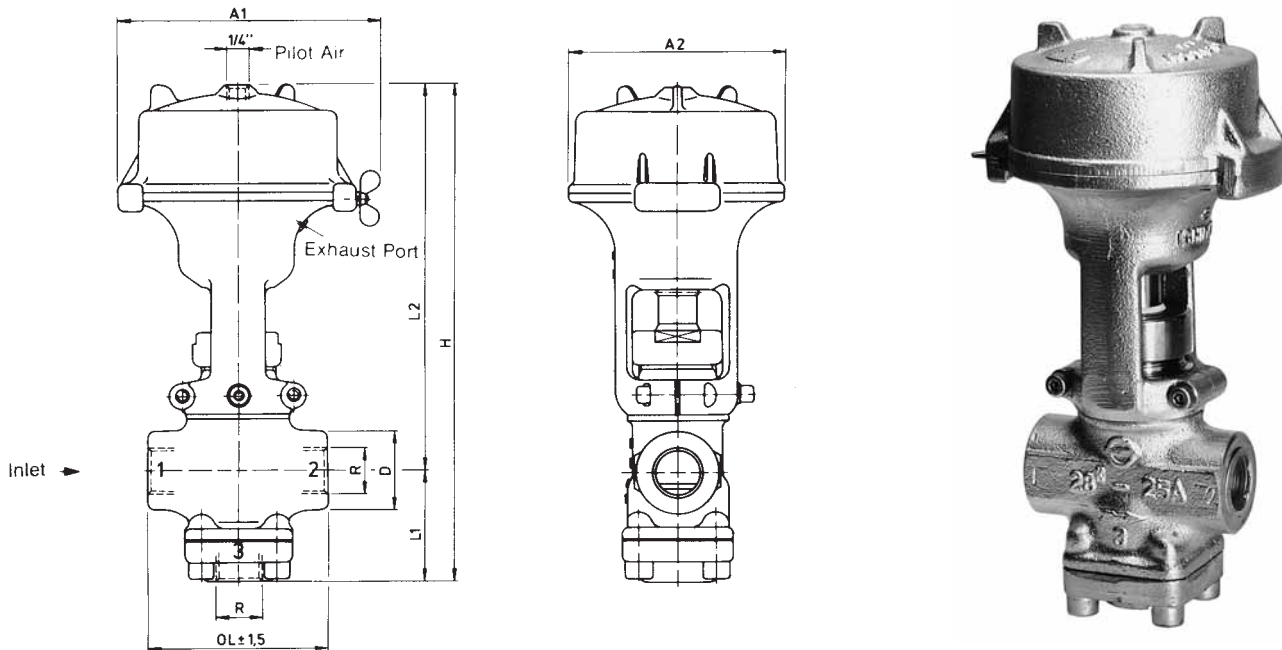
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

#### Dimensions (mm)

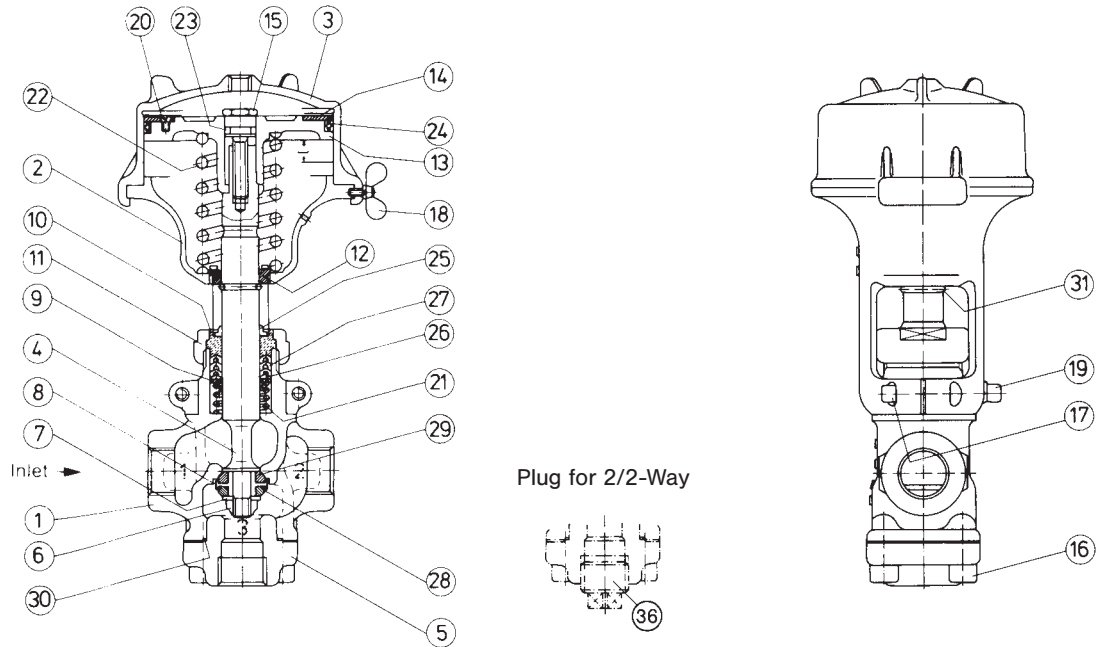


#### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size R	A1	A2	D	H	I	L1	L2	OL	Weight lbs	Weight kg
TPC-2211-08N	TPC-2311-08N	1/4" NPT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-08B	TPC-2311-08B	1/4" BSP	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-08P	TPC-2311-08P	1/4" PT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-10N	TPC-2311-10N	3/8" NPT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-10B	TPC-2311-10B	3/8" BSP	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-10P	TPC-2311-10P	3/8" PT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-15N	TPC-2311-15N	1/2" NPT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-15B	TPC-2311-15B	1/2" BSP	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-15P	TPC-2311-15P	1/2" PT	119	82	28	203.5	10	50	153.5	85	5.9	2.7
TPC-2211-20N	TPC-2311-20N	3/4" NPT	138	100	36	255.5	13	66	189.5	110	9.5	4.3
TPC-2211-20B	TPC-2311-20B	3/4" BSP	138	100	36	255.5	13	66	189.5	110	9.5	4.3
TPC-2211-20P	TPC-2311-20P	3/4" PT	138	100	36	255.5	13	66	189.5	110	9.5	4.3

### Parts List



Repair Kits include items 25, 27, 28, 29 and 30.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2211-08/10/15 2311-08/10/15	TPC-2211-20 TPC-2311-20	Valve Model No.		TPC-2211-08/10/15 2311-08/10/15	TPC-2211-20 TPC-2311-20		
Key No.	Part Name	Size	1/4" - 3/8" - 1/2"	3/4"	Key No.	Part Name	Size	1/4" - 3/8" - 1/2"	3/4"
1	Body, 1/4" NPT-tapped		C-21108-01N	-	14	Ring Plate		C-21115-14	C-21120-14
	Body, 1/4" BSP-tapped		C-21108-01B	-	15	Hex. Head Screw		C-21115-15	C-21120-15
	Body, 1/4" PT-tapped		C-21108-01P	-	16	Socket Head Cap Screw (4)		C-21115-16	C-21120-16
	Body, 3/8" NPT-tapped		C-21110-01N	-	17	Socket Head Cap Screw (2)		C-21115-17	C-21120-17
	Body, 3/8" BSP-tapped		C-21110-01B	-	18	Wing Head Screw		C-21115-18	C-21120-18
	Body, 3/8" PT-tapped		C-21110-01P	-	19	Socket Head Cap Screw		C-21115-19	C-21120-19
	Body, 1/2" NPT-tapped		C-21115-01N	-	20	Flat Head Screw (2)		C-21115-20	C-21120-20
	Body, 1/2" BSP-tapped		C-21115-01B	-	21	Packing Spring		C-21115-21	C-21120-21
	Body, 1/2" PT-tapped		C-21115-01P	-	22	Spring		C-21115-22	C-21120-22
	Body, 3/4" NPT-tapped		-	C-21120-01N	23	O-Ring		C-21115-23	C-21120-23
	Body, 3/4" BSP-tapped		-	C-21120-01B	24	Piston Ring		C-21115-24	C-21120-24
	Body, 3/4" PT-tapped		-	C-21120-01P	25	Dust Seal		C-21115-25	C-21120-25
2	Yoke		C-21115-02		26	Adapter		C-21115-26	C-21120-26
3	Cylinder, NPT-tapped		C-21115-03N	C-21120-03N	27	M-type Packing		C-21115-27	C-21120-27
	Cylinder, BSP-tapped		C-21115-03B	C-21120-03B	28	Disc Ring 'A'		C-21115-28	C-21120-28
	Cylinder, PT-tapped		C-21115-03P	C-21120-03P	29	Disc Ring 'B'			
4	Stem		C-21115-04	C-21120-04	30	Lower Seat Gasket		C-21115-30	C-21120-30
5	Lower Seat, 1/4" NPT-tapped		C-21108-05N	-	31	Indicator Ring		C-21115-31	C-21120-31
	Lower Seat, 1/4" BSP-tapped		C-21108-05B	-	36	Plug, 1/4" NPT-tapped		C-21108-36N	-
	Lower Seat, 1/4" PT-tapped		C-21108-05P	-		Plug, 1/4" BSP-tapped		C-21108-36B	-
	Lower Seat, 3/8" NPT-tapped		C-21110-05N	-		Plug, 1/4" PT-tapped		C-21108-36P	-
	Lower Seat, 3/8" BSP-tapped		C-21110-05B	-		Plug, 3/8" NPT-tapped		C-21110-36N	-
	Lower Seat, 3/8" PT-tapped		C-21110-05P	-		Plug, 3/8" BSP-tapped		C-21110-36B	-
	Lower Seat, 1/2" NPT-tapped		C-21115-05N	-		Plug, 3/8" PT-tapped		C-21110-36P	-
	Lower Seat, 1/2" BSP-tapped		C-21115-05B	-		Plug, 1/2" NPT-tapped		C-21115-36N	-
	Lower Seat, 1/2" PT-tapped		C-21115-05P	-		Plug, 1/2" BSP-tapped		C-21115-36B	-
	Lower Seat, 3/4" NPT-tapped		-	C-21120-05N		Plug, 1/2" PT-tapped		C-21115-36P	-
	Lower Seat, 3/4" BSP-tapped		-	C-21120-05B		Plug, 3/4" NPT-tapped		-	C-21120-36N
	Lower Seat, 3/4" PT-tapped		-	C-21120-05P		Plug, 3/4" BSP-tapped		-	C-21120-36B
						Plug, 3/4" PT-tapped		-	C-21120-36P
6	U-Nut		C-21115-06	C-21120-06					
7	Guide Washer		C-21115-07	C-21120-07					
8	Disc Adapter		C-21115-08	C-21120-08					
9	Ring Washer		C-21115-09	C-21120-09					
10	Gland		C-21115-10	C-21120-10					
11	Gland Nut		C-21115-11	C-21120-11					
12	Guide Bushing		C-21115-12	C-21120-12					
13	Piston		C-21115-13	C-21120-13					

#### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

Three types of thread are available according to the model selection chart below.

It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

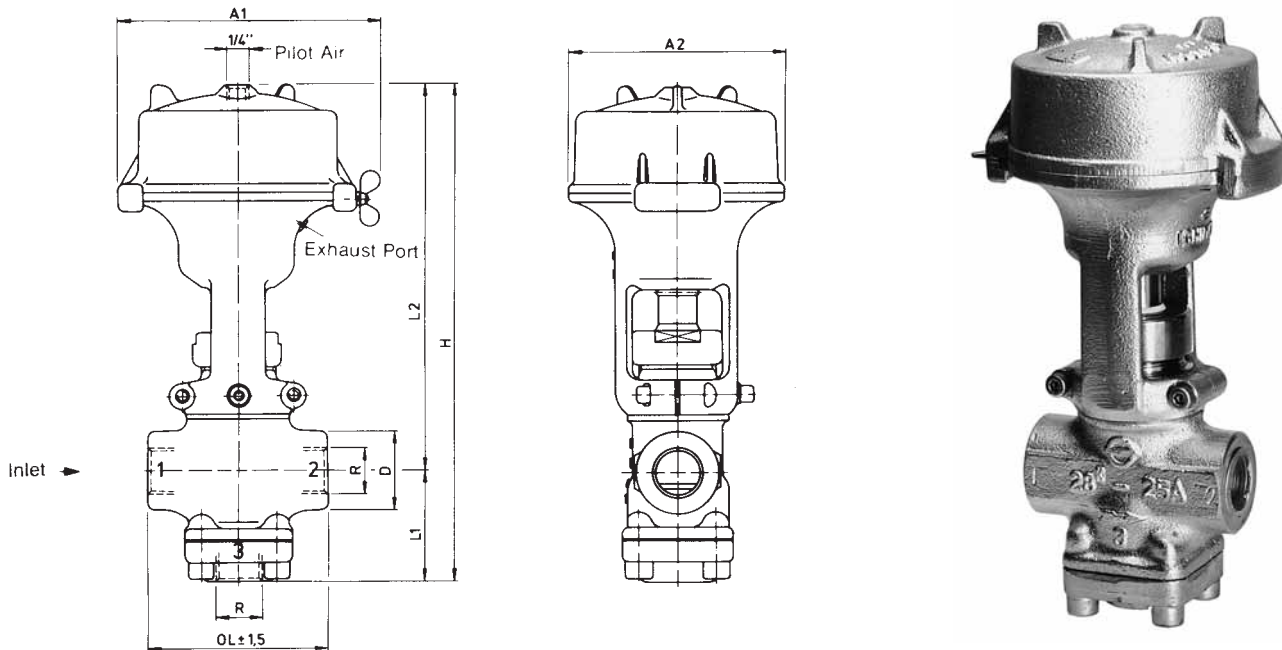
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

#### Dimensions (mm)

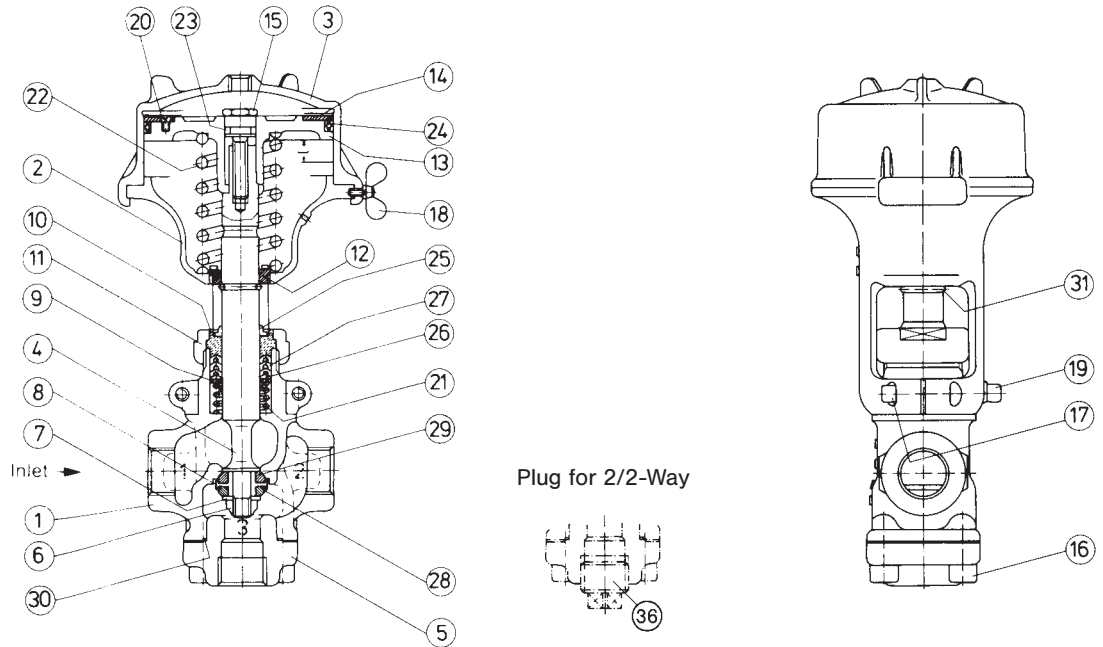


#### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size R	A1	A2	D	H	I	L1	L2	OL	Weight	
											lbs	kg
TPC-2211-25N	TPC-2311-25N	1" NPT	168	128	44	301.0	17	71	230.0	120	15.0	6.8
TPC-2211-25B	TPC-2311-25B	1" BSP	168	128	44	301.0	17	71	230.0	120	15.0	6.8
TPC-2211-25P	TPC-2311-25P	1" PT	168	128	44	301.0	17	71	230.0	120	15.0	6.8
TPC-2211-32N	TPC-2311-32N	1 1/4" NPT	182	142	54	339.5	18	91	248.5	145	21.6	9.8
TPC-2211-32B	TPC-2311-32B	1 1/4" BSP	182	142	54	339.5	18	91	248.5	145	21.6	9.8
TPC-2211-32P	TPC-2311-32P	1 1/4" PT	182	142	54	339.5	18	91	248.5	145	21.6	9.8
TPC-2211-40N	TPC-2311-40N	1 1/2" NPT	216	168	62	392.0	23	91	301.0	150	35.3	16.0
TPC-2211-40B	TPC-2311-40B	1 1/2" BSP	216	168	62	392.0	23	91	301.0	150	35.3	16.0
TPC-2211-40P	TPC-2311-40P	1 1/2" PT	216	168	62	392.0	23	91	301.0	150	35.3	16.0

#### Parts List



Repair Kits include items 25, 27, 28, 29 and 30.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2211-25 2311-25	TPC-2211-32 2311-32	TPC-2211-40 2311-40	Valve Model No.		TPC-2211-25 2311-25	TPC-2211-32 2311-32	TPC-2211-40 2311-40
Key No.	Size	1"	1¼"	1½"	Key No.	Size	1"	1¼"	1½"
Part Name		Part Number			Part Name		Part Number		
1	Body, 1" NPT-tapped	C-21125-01N	-	-	20	Flat Head Screw (2 - 3)	C-21125-20	C-21132-20	C-21140-20
	Body, 1" BSP-tapped	C-21125-01B	-	-	21	Packing Spring	C-21125-21	C-21132-21	C-21140-21
	Body, 1" PT-tapped	C-21125-01P	-	-	22	Spring	C-21125-22	C-21132-22	C-21140-22
	Body, 1¼" NPT-tapped	-	C-21132-01N	-	23	O-Ring	C-21125-23	C-21132-23	C-21140-23
	Body, 1¼" BSP-tapped	-	C-21132-01B	-	24	Piston Ring	C-21125-24	C-21132-24	C-21140-24
	Body, 1¼" PT-tapped	-	C-21132-01P	-	25	Dust Seal	C-21125-25	C-21132-25	C-21140-25
	Body, 1½" NPT-tapped	-	-	C-21140-01N	26	Adapter	C-21125-26	C-21132-26	C-21140-26
	Body, 1½" BSP-tapped	-	-	C-21140-01B	27	M-type Packing	C-21125-27	C-21132-27	C-21140-27
Body, 1½" PT-tapped	-	-	C-21140-01P	28	Disc Ring 'A'	C-21125-28	C-21132-28	C-21140-28	
2	Yoke	C-21125-02	C-21132-02	C-21140-02	29	Disc Ring 'B'	C-21125-29	C-21132-29	C-21140-29
3	Cylinder, NPT-tapped	C-21125-03N	C-21132-03N	C-21140-03N	30	Lower Seat Gasket	C-21125-30	C-21132-30	C-21140-30
	Cylinder, BSP-tapped	C-21125-03B	C-21132-03B	C-21140-03B	31	Indicator Ring	C-21125-31	C-21132-31	C-21140-31
	Cylinder, PT-tapped	C-21125-03P	C-21132-03P	C-21140-03P	36	Plug, 1" NPT-tapped	C-21125-36N	-	-
4	Stem	C-21125-04	C-21132-04	C-21140-04		Plug, 1" BSP-tapped	C-21125-36B	-	-
	Lower Seat, 1" NPT-tapped	C-21125-05N	-	-		Plug, 1" PT-tapped	C-21125-36P	-	-
5	Lower Seat, 1" BSP-tapped	C-21125-05B	-	-		Plug, 1¼" NPT-tapped	-	C-21132-36N	-
	Lower Seat, 1" PT-tapped	C-21125-05P	-	-		Plug, 1¼" BSP-tapped	-	C-21132-36B	-
	Lower Seat, 1¼" NPT-tapped	-	C-21132-05N	-		Plug, 1¼" PT-tapped	-	C-21132-36P	-
	Lower Seat, 1¼" BSP-tapped	-	C-21132-05B	-		Plug, 1½" NPT-tapped	-	-	C-21140-36N
	Lower Seat, 1¼" PT-tapped	-	C-21132-05P	-		Plug, 1½" BSP-tapped	-	-	C-21140-36B
	Lower Seat, 1½" NPT-tapped	-	-	C-21140-05N		Plug, 1½" PT-tapped	-	-	C-21140-36P
	Lower Seat, 1½" BSP-tapped	-	-	C-21140-05B					
	Lower Seat, 1½" PT-tapped	-	-	C-21140-05P					
6	U-Nut	C-21125-06	C-21132-06	C-21140-06					
7	Guide Washer	C-21125-07	C-21132-07	C-21140-07					
8	Disc Adapter	C-21125-08	C-21132-08	C-21140-08					
9	Ring Washer	C-21125-09	C-21132-09	C-21140-09					
10	Gland	C-21125-10	C-21132-10	C-21140-10					
11	Gland Nut	C-21125-11	C-21132-11	C-21140-11					
12	Guide Bushing	C-21125-12	C-21132-12	C-21140-12					
13	Piston	C-21125-13	C-21132-13	C-21140-13					
14	Ring Plate	C-21125-14	C-21132-14	C-21140-14					
15	Hex. Head Screw	C-21125-15	C-21132-15	C-21140-15					
16	Socket Head Cap Screw (4)	C-21125-16	C-21132-16	C-21140-16					
17	Socket Head Cap Screw (2)	C-21125-17	C-21132-17	C-21140-17					
18	Wing Head Screw	C-21125-18	C-21132-18	C-21140-18					
19	Socket Head Cap Screw	C-21125-19	C-21125-19	C-21140-19					

#### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

Three types of thread are available according to the model selection chart below.

It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

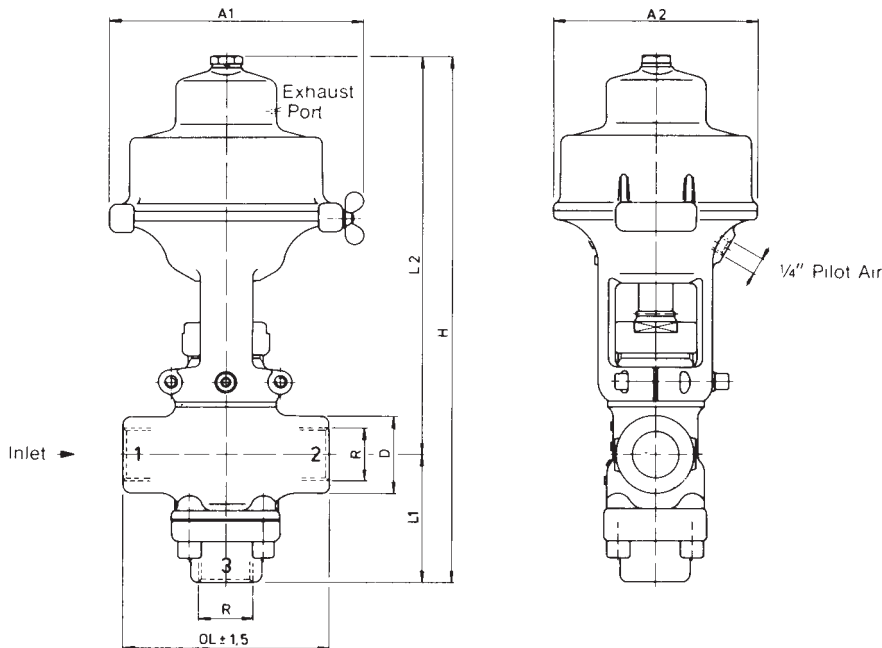
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

#### Dimensions (mm)

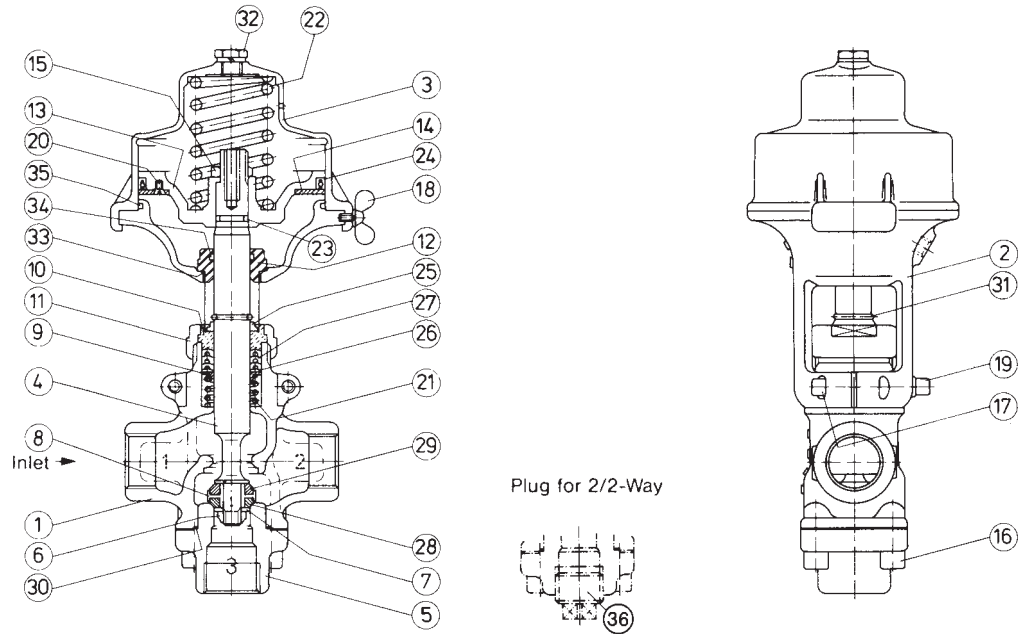


#### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size R	A1	A2	D	H	I	L1	L2	OL	Weight lbs	Weight kg
TPC-2221-08N	TPC-2321-08N	1/4" NPT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-08B	TPC-2321-08B	1/4" BSP	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-08P	TPC-2321-08P	1/4" PT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-10N	TPC-2321-10N	3/8" NPT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-10B	TPC-2321-10B	3/8" BSP	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-10P	TPC-2321-10P	3/8" PT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-15N	TPC-2321-15N	1/2" NPT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-15B	TPC-2321-15B	1/2" BSP	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-15P	TPC-2321-15P	1/2" PT	119	82	28	236	10	50	186	85	6.8	3.1
TPC-2221-20N	TPC-2321-20N	3/4" NPT	138	100	36	286	13	66	220	110	10.4	4.7
TPC-2221-20B	TPC-2321-20B	3/4" BSP	138	100	36	286	13	66	220	110	10.4	4.7
TPC-2221-20P	TPC-2321-20P	3/4" PT	138	100	36	286	13	66	220	110	10.4	4.7

### Parts List



Repair Kits include items 25, 27, 28, 29, 30, 33, 34 and 35.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2221-08/10/15 2321-08/10/15	TPC-2221-20 TPC-2321-20	Valve Model No.		TPC-2221-08/10/15 2321-08/10/15	TPC-2221-20 TPC-2321-20		
Key No.	Part Name	Size	1/4" - 3/8" - 1/2"	3/4"	Key No.	Part Name	Size	1/4" - 3/8" - 1/2"	3/4"
1	Body, 1/4" NPT-tapped		C-21108-01N	-	14	Ring Plate		C-21115-14	C-21120-14
	Body, 1/4" BSP-tapped		C-21108-01B	-	15	Lock Nut		C-22115-15	C-22120-15
	Body, 1/4" PT-tapped		C-21108-01P	-	16	Socket Head Cap Screw (4)		C-21115-16	C-21120-16
	Body, 3/8" NPT-tapped		C-21110-01N	-	17	Socket Head Cap Screw (2)		C-21115-17	C-21120-17
	Body, 3/8" BSP-tapped		C-21110-01B	-	18	Wing Head Screw		C-21115-18	C-21120-18
	Body, 3/8" PT-tapped		C-21110-01P	-	19	Socket Head Cap Screw		C-21115-19	C-21120-19
	Body, 1/2" NPT-tapped		C-21115-01N	-	20	Flat Head Screw (2)		C-21115-20	C-21120-20
	Body, 1/2" BSP-tapped		C-21115-01B	-	21	Packing Spring		C-21115-21	C-21120-21
	Body, 1/2" PT-tapped		C-21115-01P	-	22	Spring		C-21115-22	C-21120-22
	Body, 3/4" NPT-tapped		-	C-21120-01N	23	O-Ring		C-21115-23	C-21120-23
	Body, 3/4" BSP-tapped		-	C-21120-01B	24	Piston Ring		C-21115-24	C-21120-24
	Body, 3/4" PT-tapped		-	C-21120-01P	25	Dust Seal		C-21115-25	C-21120-25
2	Yoke, NPT-thread		C-22115-02N	C-22120-02N	26	Adapter		C-21115-26	C-21120-26
	Yoke, BSP-thread		C-22115-02B	C-22120-02B	27	M-type Packing		C-21115-27	C-21120-27
	Yoke, PT-thread		C-22115-02P	C-22120-02P	28	Disc Ring 'A'		C-21115-28	C-21120-28
3	Cylinder		C-22115-03	C-22120-03	29	Disc Ring 'B'			
4	Stem		C-22115-04	C-22120-04	30	Lower Seat Gasket		C-21115-30	C-21120-30
5	Lower Seat, 1/4" NPT-tapped		C-21108-05N	-	31	Indicator Ring		C-21115-31	C-21120-31
	Lower Seat, 1/4" BSP-tapped		C-21108-05B	-	32	Plug		C-22115-32	C-22120-32
	Lower Seat, 1/4" PT-tapped		C-21108-05P	-	33	O-Ring		C-22115-33	C-22120-33
	Lower Seat, 3/8" NPT-tapped		C-21110-05N	-	34	O-Ring with Back-up Washer		C-22115-34	C-22120-34
	Lower Seat, 3/8" BSP-tapped		C-21110-05B	-	35	O-Ring		C-22115-35	C-22120-35
	Lower Seat, 3/8" PT-tapped		C-21110-05P	-	36	Plug, 1/4" NPT-tapped		C-21108-36N	-
	Lower Seat, 1/2" NPT-tapped		C-21115-05N	-		Plug, 1/4" BSP-tapped		C-21108-36B	-
	Lower Seat, 1/2" BSP-tapped		C-21115-05B	-		Plug, 1/4" PT-tapped		C-21108-36P	-
	Lower Seat, 1/2" PT-tapped		C-21115-05P	-		Plug, 3/8" NPT-tapped		C-21110-36N	-
	Lower Seat, 3/4" NPT-tapped		-	C-21120-05N		Plug, 3/8" BSP-tapped		C-21110-36B	-
	Lower Seat, 3/4" BSP-tapped		-	C-21120-05B		Plug, 3/8" PT-tapped		C-21110-36P	-
	Lower Seat, 3/4" PT-tapped		-	C-21120-05P		Plug, 1/2" NPT-tapped		C-21115-36N	-
6	U-Nut		C-21115-06	C-21120-06		Plug, 1/2" BSP-tapped		C-21115-36B	-
7	Guide Washer		C-21115-07	C-21120-07		Plug, 1/2" PT-tapped		C-21115-36P	-
8	Disc Adapter		C-21115-08	C-21120-08		Plug, 3/4" NPT-tapped		-	C-21120-36N
9	Ring Washer		C-21115-09	C-21120-09		Plug, 3/4" BSP-tapped		-	C-21120-36B
10	Gland		C-21115-10	C-21120-10		Plug, 3/4" PT-tapped		-	C-21120-36P
11	Gland Nut		C-21115-11	C-21120-11					
12	Guide Bushing		C-22115-12	C-22120-12					
13	Piston		C-22115-13	C-22120-13					

#### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

Three types of thread are available according to the model selection chart below.

It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

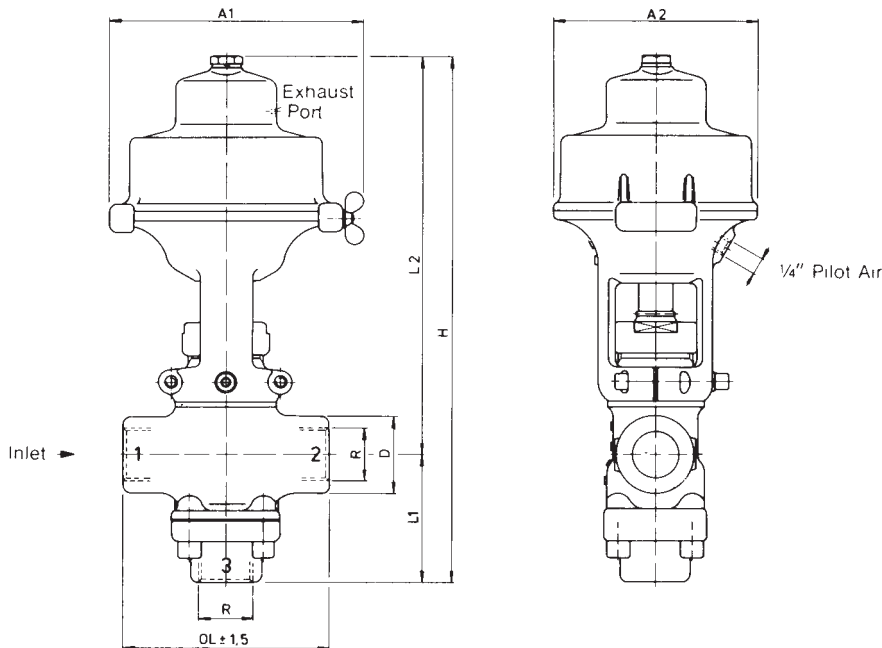
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

#### Dimensions (mm)

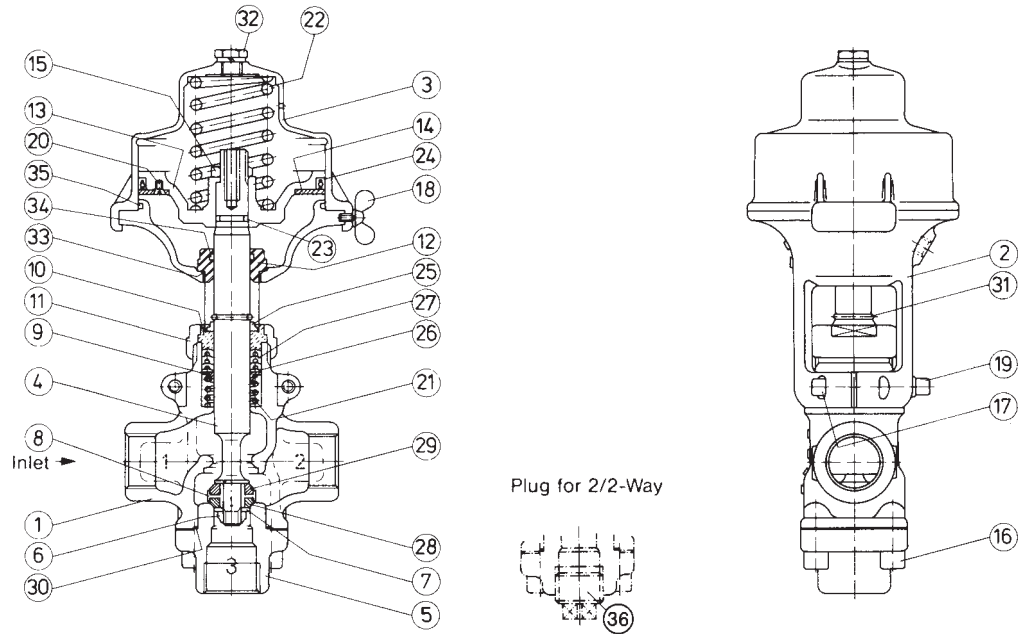


#### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size R	A1	A2	D	H	I	L1	L2	OL	Weight lbs	Weight kg
TPC-2221-25N	TPC-2321-25N	1" NPT	168	128	44	320	17	71	249	120	16.0	7.3
TPC-2221-25B	TPC-2321-25B	1" BSP	168	128	44	320	17	71	249	120	16.0	7.3
TPC-2221-25P	TPC-2321-25P	1" PT	168	128	44	320	17	71	249	120	16.0	7.3
TPC-2221-40N	TPC-2321-40N	1½" NPT	216	168	62	421	23	91	330	150	36.1	16.4
TPC-2221-40B	TPC-2321-40B	1½" BSP	216	168	62	421	23	91	330	150	36.1	16.4
TPC-2221-40P	TPC-2321-40P	1½" PT	216	168	62	421	23	91	330	150	36.1	16.4

#### Parts List



Repair Kits include items 25, 27, 28, 29, 30, 33, 34 and 35.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

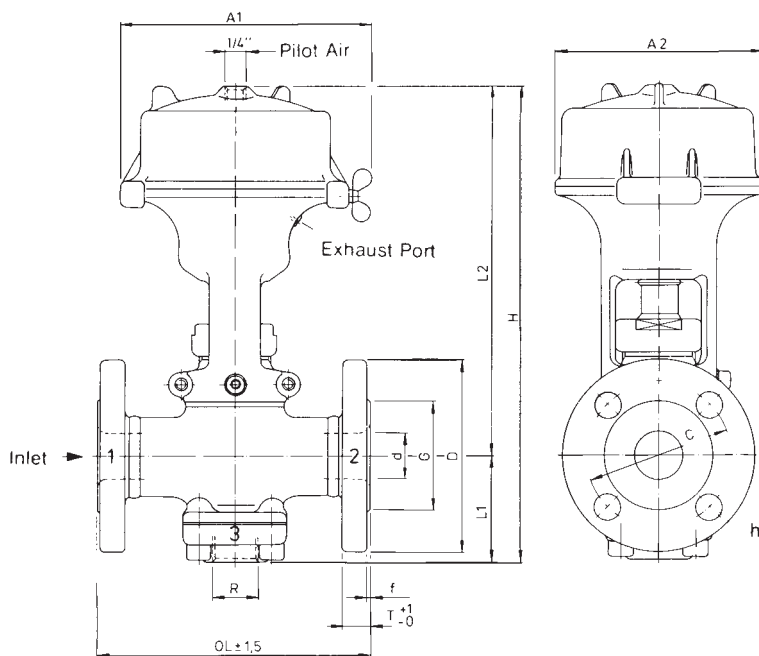
Valve Model No.		TPC-2221-25 TPC-2321-25	TPC-2221-40 TPC-2321-40	Valve Model No.		TPC-2221-25 TPC-2321-25	TPC-2221-40 TPC-2321-40
Key No.	Size	1"	1½"	Key No.	Size	1"	1½"
Part Name		Part Number		Part Name		Part Number	
1	Body, 1" NPT-tapped	C-21125-01N	-	23	O-Ring	C-21125-23	C-21140-23
	Body, 1" BSP-tapped	C-21125-01B	-	24	Piston Ring	C-21125-24	C-21140-24
	Body, 1" PT-tapped	C-21125-01P	-	25	Dust Seal	C-21125-25	C-21140-25
	Body, 1½" NPT-tapped	-	C-21140-01N	26	Adapter	C-21125-26	C-21140-26
	Body, 1½" BSP-tapped	-	C-21140-01B	27	M-type Packing	C-21125-27	C-21140-27
	Body, 1½" PT-tapped	-	C-21140-01P	28	Disc Ring 'A'	C-21125-28	C-21140-28
2	Yoke, NPT-thread	C-22125-02N	C-22140-02N	29	Disc Ring 'B'		
	Yoke, BSP-thread	C-22125-02B	C-22140-02B	30	Lower Seat Gasket	C-21125-30	C-21140-30
	Yoke, PT-thread	C-22125-02P	C-22140-02P	31	Indicator Ring	C-21125-31	C-21140-31
3	Cylinder	C-22125-03	C-22140-03	32	Plug	C-22125-32	C-22140-32
4	Stem	C-22125-04	C-22140-04	33	O-Ring	C-22125-33	C-22140-33
5	Lower Seat, 1" NPT-tapped	C-21125-05N	-	34	O-Ring with Back-up Washer	C-22125-34	C-22140-34
	Lower Seat, 1" BSP-tapped	C-21125-05B	-	35	O-Ring	C-22125-35	C-22140-35
	Lower Seat, 1" PT-tapped	C-21125-05P	-	36	Plug, 1" NPT-tapped	C-21125-36N	-
	Lower Seat, 1½" NPT-tapped	-	C-21140-05N		Plug, 1" BSP-tapped	C-21125-36B	-
	Lower Seat, 1½" BSP-tapped	-	C-21140-05B		Plug, 1" PT-tapped	C-21125-36P	-
	Lower Seat, 1½" PT-tapped	-	C-21140-05P		Plug, 1½" NPT-tapped	-	C-21140-36N
6	U-Nut	C-21125-06	C-21140-06		Plug, 1½" BSP-tapped	-	C-21140-36B
7	Guide Washer	C-21125-07	C-21140-07		Plug, 1½" PT-tapped	-	C-21140-36P
8	Disc Adapter	C-21125-08	C-21140-08				
9	Ring Washer	C-21125-09	C-21140-09				
10	Gland	C-21125-10	C-21140-10				
11	Gland Nut	C-21125-11	C-21140-11				
12	Guide Bushing	C-22125-12	C-22140-12				
13	Piston	C-22125-13	C-22140-13				
14	Ring Plate	C-21125-14	C-21140-14				
15	Lock Nut	C-22125-15	C-22140-15				
16	Socket Head Cap Screw (4)	C-21125-16	C-21140-16				
17	Socket Head Cap Screw (2)	C-21125-17	C-21140-17				
18	Wing Head Screw	C-21125-18	C-21140-18				
19	Socket Head Cap Screw	C-21125-19	C-21140-19				
20	Flat Head Screw (2 – 3)	C-21125-20	C-21140-20				
21	Packing Spring	C-21125-21	C-21140-21				
22	Spring	C-21125-22	C-21140-22				

### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.  
It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).  
Certain valves sizes may be equipped with a flange on port "3" (see catalogue pages 20/21).

<b>Operating Pressure:</b> max. 460 PSI (32 bar)	<b>Material of Body:</b> stainless steel casting
<b>Pilot Pressure:</b> 36 – 51 PSI (2.5 – 3.5 bar)	<b>Material of Stem and Seat:</b> stainless steel
<b>Temperature Range:</b> – 22° F. to 401° F. (– 30° C to + 205° C)	<b>Material of Packing:</b> graphite-reinforced teflon

### Dimensions (mm)



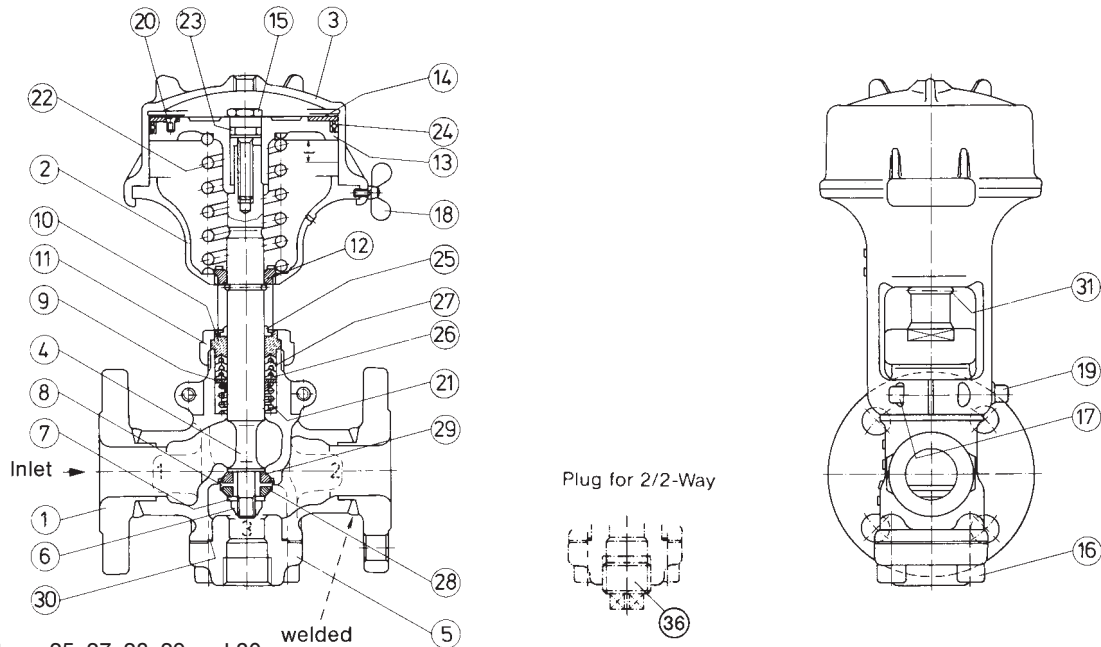
The flange dimensions on this page are according to ANSI-Standard.  
On request the valves are also available with DIN-flanges.  
Sizes 65 and 75 are available on request.  
Size 50: No Wing Head Screw Assembly.

### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	R (NPT)	T	Weight lbs	kg
TPC-2212-15AN	TPC-2312-15AN	15	119	82	66.5	95	1.6	35	203.5	15	50	153.5	10	140	1/2"	14.3	9.2	4.2
TPC-2212-20AN	TPC-2312-20AN	20	138	100	82.5	117	1.6	43	255.5	19	66	189.5	13	150	3/4"	16.0	13.2	6.0
TPC-2212-25AN	TPC-2312-25AN	25	168	128	89.0	124	1.6	51	301.0	19	71	230.0	17	170	1"	17.5	22.0	10.0
TPC-2212-32AN	TPC-2312-32AN	32	182	142	98.5	133	1.6	64	339.5	19	91	248.5	18	190	1 1/4"	19.1	29.8	13.5
TPC-2212-40AN	TPC-2312-40AN	40	216	168	114.5	156	1.6	73	392.0	22	91	301.0	23	200	1 1/2"	20.7	41.9	19.0
TPC-2212-50AN	TPC-2312-50AN	50	208	208	127.0	165	1.6	92	418.0	19	100	318.0	25	230	2"	22.3	55.1	25.0

### Parts List



Repair Kits include items 25, 27, 28, 29 and 30.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

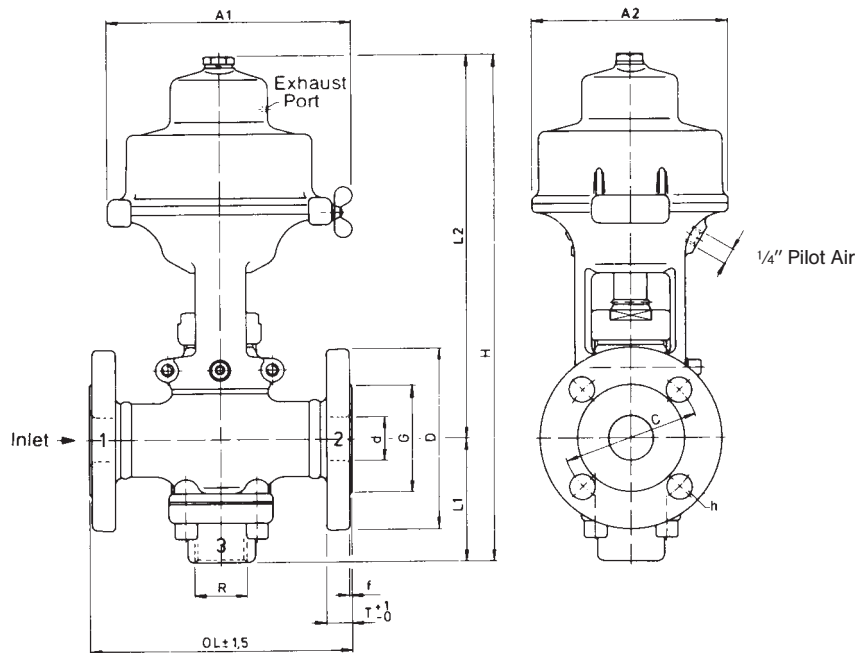
Valve Model No.		TPC-2212-15A TPC-2312-15A	TPC-2212-20A TPC-2312-20A	TPC-2212-25A TPC-2312-25A	TPC-2212-32A TPC-2312-32A	TPC-2212-40A TPC-2312-40A	TPC-2212-50A TPC-2312-50A
Size		15	20	25	32	40	50
Key No.	Part Name	Part Number					
1	Body, ANSI-flange	C-21215-01A	C-21220-01A	C-21225-01A	C-21232-01A	C-21240-01A	C-21250-01A
2	Yoke	C-21115-02	C-21120-02	C-21125-02	C-21132-02	C-21140-02	C-21150-02
3	Cylinder, NPT-tapped	C-21115-03N	C-21120-03N	C-21125-03N	C-21132-03N	C-21140-03N	C-21150-03N
	Cylinder, BSP-tapped	C-21115-03B	C-21120-03B	C-21125-03B	C-21132-03B	C-21140-03B	C-21150-03B
	Cylinder, PT-tapped	C-21115-03P	C-21120-03P	C-21125-03P	C-21132-03P	C-21140-03P	C-21150-03P
4	Stem	C-21115-04	C-21120-04	C-21125-04	C-21132-04	C-21140-04	C-21150-04
5	Lower Seat, NPT-tapped	C-21115-05N	C-21120-05N	C-21125-05N	C-21132-05N	C-21140-05N	C-21150-05N
	Lower Seat, BSP-tapped	C-21115-05B	C-21120-05B	C-21125-05B	C-21132-05B	C-21140-05B	C-21150-05B
	Lower Seat, PT-tapped	C-21115-05P	C-21120-05P	C-21125-05P	C-21132-05P	C-21140-05P	C-21150-05P
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21132-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21132-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21132-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21132-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21132-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21132-11	C-21140-11	C-21150-11
12	Guide Bushing	C-21115-12	C-21120-12	C-21125-12	C-21132-12	C-21140-12	C-21150-12
13	Piston	C-21115-13	C-21120-13	C-21125-13	C-21132-13	C-21140-13	C-21150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21132-14	C-21140-14	C-21150-14
15	Hex. Head Screw	C-21115-15	C-21120-15	C-21125-15	C-21132-15	C-21140-15	C-21150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21132-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21132-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21132-18	C-21140-18	C-21150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21132-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 – 4)	C-21115-20	C-21120-20	C-21125-20	C-21132-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21132-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21132-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21132-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21132-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21132-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21132-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21132-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21132-28	C-21140-28	C-21150-28
29	Disc Ring 'B'						
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21132-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21132-31	C-21140-31	-
36	Plug, NPT-tapped	C-21115-36N	C-21120-36N	C-21125-36N	C-21132-36N	C-21140-36N	C-21150-36N
	Plug, BSP-tapped	C-21115-36B	C-21120-36B	C-21125-36B	C-21132-36B	C-21140-36B	C-21150-36B
	Plug, PT-tapped	C-21115-36P	C-21120-36P	C-21125-36P	C-21132-36P	C-21140-36P	C-21150-36P

### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.  
It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).  
Certain valves sizes may be equipped with a flange on port "3" (see catalogue pages 22/23).

<b>Operating Pressure:</b> max. 460 PSI (32 bar)	<b>Material of Body:</b> stainless steel casting
<b>Pilot Pressure:</b> 36 – 51 PSI (2.5 – 3.5 bar)	<b>Material of Stem and Seat:</b> stainless steel
<b>Temperature Range:</b> – 22° F. to 401° F. (– 30° C to + 205° C)	<b>Material of Packing:</b> graphite-reinforced teflon

### Dimensions (mm)



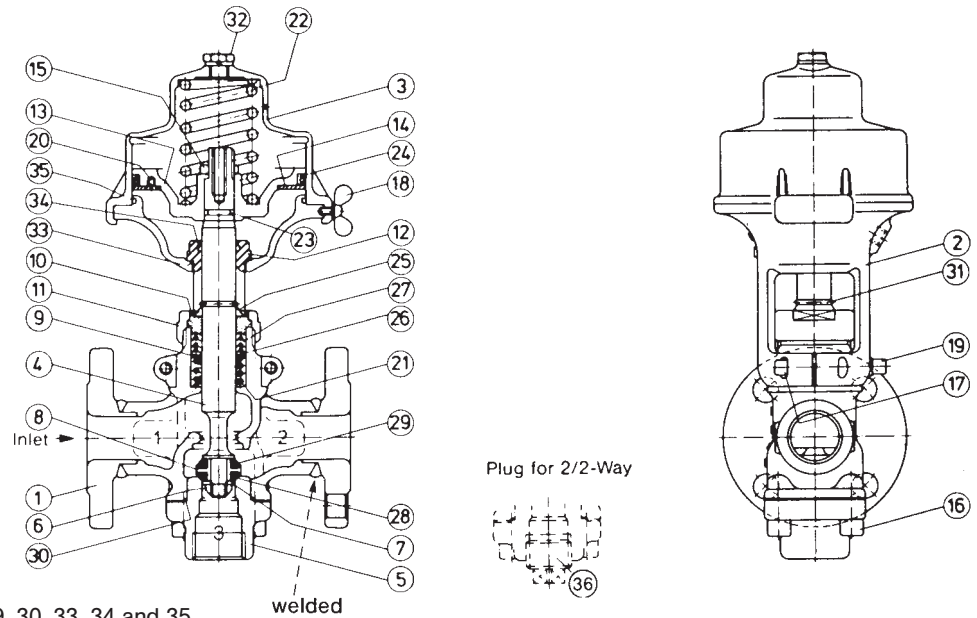
The flange dimensions on this page are according to ANSI-Standard.  
On request the valves are also available with DIN-flanges.  
Size 50: No Wing Head Screw Assembly.

### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	R (NPT)	T	Weight lbs	Weight kg
TPC-2222-15AN	TPC-2322-15AN	15	119	82	66.5	95	1.6	35	236	15	50	186	10	140	1/2"	14.3	9.9	4.5
TPC-2222-20AN	TPC-2322-20AN	20	138	100	82.5	117	1.6	43	286	19	66	220	13	150	3/4"	16.0	14.3	6.5
TPC-2222-25AN	TPC-2322-25AN	25	168	128	89.0	124	1.6	51	320	19	71	249	17	170	1"	17.5	19.8	9.0
TPC-2222-40AN	TPC-2322-40AN	40	216	168	114.5	156	1.6	73	421	22	91	330	23	200	1 1/2"	20.7	47.4	21.5
TPC-2222-50AN	TPC-2322-50AN	50	208	208	127.0	165	1.6	92	498	19	100	398	25	230	2"	22.3	61.7	28.0

### Parts List



Repair Kits include items 25, 27, 28, 29, 30, 33, 34 and 35.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2222-15A TPC-2322-15A	TPC-2222-20A TPC-2322-20A	TPC-2222-25A TPC-2322-25A	TPC-2222-40A TPC-2322-40A	TPC-2222-50A TPC-2322-50A
Size		15	20	25	40	50
Key No.	Part Name	Part Number				
1	Body, ANSI-flange	C-21215-01A	C-21220-01A	C-21225-01A	C-21240-01A	C-21250-01A
2	Yoke, NPT-thread	C-22115-02N	C-22120-02N	C-22125-02N	C-22140-02N	C-22150-02N
	Yoke, BSP-thread	C-22115-02B	C-22120-02B	C-22125-02B	C-22140-02B	C-22150-02B
	Yoke, PT-thread	C-22115-02P	C-22120-02P	C-22125-02P	C-22140-02P	C-22150-02P
3	Cylinder	C-22115-03	C-22120-03	C-22125-03	C-22140-03	C-22150-03
4	Stem	C-22115-04	C-22120-04	C-22125-04	C-22140-04	C-22150-04
5	Lower Seat, NPT-tapped	C-21115-05N	C-21120-05N	C-21125-05N	C-21140-05N	C-21150-05N
	Lower Seat, BSP-tapped	C-21115-05B	C-21120-05B	C-21125-05B	C-21140-05B	C-21150-05B
	Lower Seat, PT-tapped	C-21115-05P	C-21120-05P	C-21125-05P	C-21140-05P	C-21150-05P
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21140-11	C-21150-11
12	Guide Bushing	C-22115-12	C-22120-12	C-22125-12	C-22140-12	C-22150-12
13	Piston	C-22115-13	C-22120-13	C-22125-13	C-22140-13	C-22150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21140-14	C-21150-14
15	Lock Nut	C-22115-15	C-22120-15	C-22125-15	C-22140-15	C-22150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21140-18	C-22150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 – 4)	C-21115-20	C-21120-20	C-21125-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21140-28	C-21150-28
29	Disc Ring 'B'					
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21140-31	-
32	Plug	C-22115-32	C-22120-32	C-22125-32	C-22140-32	-
33	O-Ring	C-22115-33	C-22120-33	C-22125-33	C-22140-33	C-22150-33
34	O-Ring with Back-up Washer	C-22115-34	C-22120-34	C-22125-34	C-22140-34	C-22150-34
35	O-Ring	C-22115-35	C-22120-35	C-22125-35	C-22140-35	C-22150-35
36	Plug, NPT-tapped	C-21115-36N	C-21120-36N	C-21125-36N	C-21140-36N	C-21150-36N
	Plug, BSP-tapped	C-21115-36B	C-21120-36B	C-21125-36B	C-21140-36B	C-21150-36B
	Plug, PT-tapped	C-21115-36P	C-21120-36P	C-21125-36P	C-21140-36P	C-21150-36P

### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

It is possible to change this 3-way valve into a 2-way valve: Lower Seat Flange (item 5) has to be replaced by threaded type (item 5) with plug (item 36). Part-Nos. see pages 9 resp. 11.

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

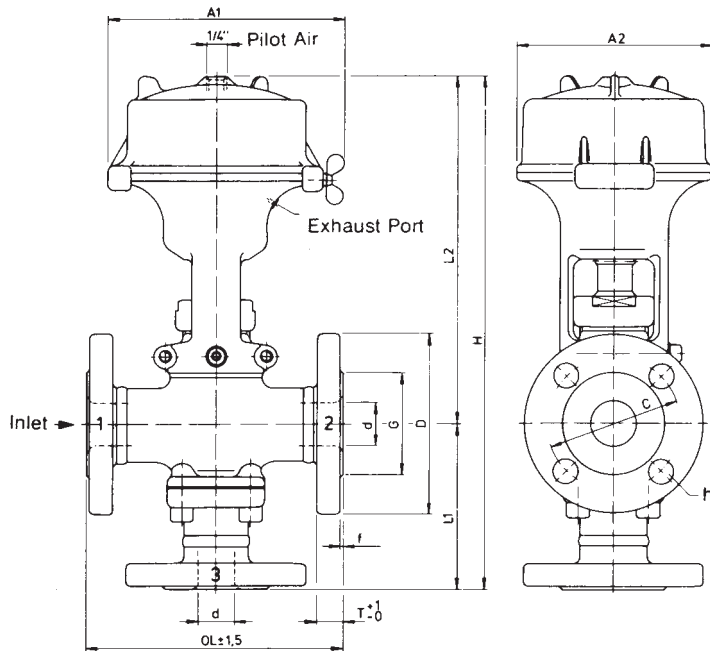
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

### Dimensions (mm)



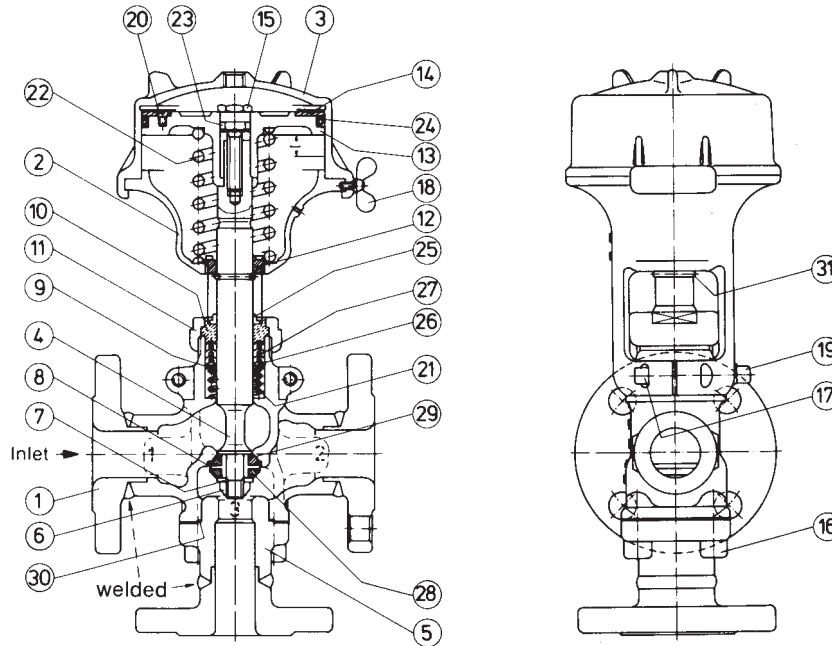
The flange dimensions on this page are according to ANSI-Standard.  
On request the valves are also available with DIN-flanges.  
Size 50: No Wing Head Screw Assembly.

### Model Selection Chart

Cv-values see page 54.

Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	T	Weight	
															lbs	kg
TPC-2313-15AN	15	119	82	66.5	95	1.6	35	258.5	15	105	153.5	10	140	14.3	9.9	4.5
TPC-2313-20AN	20	138	100	82.5	117	1.6	43	299.5	19	110	189.5	13	150	16.0	14.3	6.5
TPC-2313-25AN	25	168	128	89.0	124	1.6	51	365.0	19	135	230.0	17	170	17.5	20.3	9.2
TPC-2313-32AN	32	182	142	98.5	133	1.6	64	393.5	19	145	248.5	18	190	19.1	29.8	13.5
TPC-2313-40AN	40	216	168	114.5	156	1.6	73	451.0	22	150	301.0	23	200	20.7	47.4	21.5
TPC-2313-50AN	50	208	208	127.0	165	1.6	92	478.0	19	160	318.0	25	230	22.3	59.5	27.0

### Parts List



Repair Kits include items 25, 27, 28, 29 and 30.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2313-15A	TPC-2313-20A	TPC-2313-25A	TPC-2313-32A	TPC-2313-40A	TPC-2313-50A
Size		15	20	25	32	40	50
Key No.	Part Name	Part Number					
1	Body, ANSI-flange	C-21215-01A	C-21220-01A	C-21225-01A	C-21232-01A	C-21240-01A	C-21250-01A
2	Yoke	C-21115-02	C-21120-02	C-21125-02	C-21132-02	C-21140-02	C-21150-02
3	Cylinder, NPT-tapped	C-21115-03N	C-21120-03N	C-21125-03N	C-21132-03N	C-21140-03N	C-21150-03N
	Cylinder, BSP-tapped	C-21115-03B	C-21120-03B	C-21125-03B	C-21132-03B	C-21140-03B	C-21150-03B
	Cylinder, PT-tapped	C-21115-03P	C-21120-03P	C-21125-03P	C-21132-03P	C-21140-03P	C-21150-03P
4	Stem	C-21115-04	C-21120-04	C-21125-04	C-21132-04	C-21140-04	C-21150-04
5	Lower Seat Flange, ANSI-type	C-31315-05A	C-31320-05A	C-31325-05A	C-31332-05A	C-31340-05A	C-31350-05A
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21132-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21132-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21132-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21132-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21132-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21132-11	C-21140-11	C-21150-11
12	Guide Bushing	C-21115-12	C-21120-12	C-21125-12	C-21132-12	C-21140-12	C-21150-12
13	Piston	C-21115-13	C-21120-13	C-21125-13	C-21132-13	C-21140-13	C-21150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21132-14	C-21140-14	C-21150-14
15	Hex. Head Screw	C-21115-15	C-21120-15	C-21125-15	C-21132-15	C-21140-15	C-21150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21132-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21132-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21132-18	C-21140-18	C-22150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21132-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 – 3)	C-21115-20	C-21120-20	C-21125-20	C-21132-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21132-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21132-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21132-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21132-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21132-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21132-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21132-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21132-28	C-21140-28	C-21150-28
29	Disc Ring 'B'						
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21132-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21132-31	C-21140-31	-

#### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.

It is possible to change this 3-way valve into a 2-way valve: Lower Seat Flange (item 5) has to be replaced by threaded type (item 5) with plug (item 36). Part-Nos. see pages 13 resp. 15.

**Operating Pressure:** max. 460 PSI (32 bar)

**Pilot Pressure:** 36 – 51 PSI (2.5 – 3.5 bar)

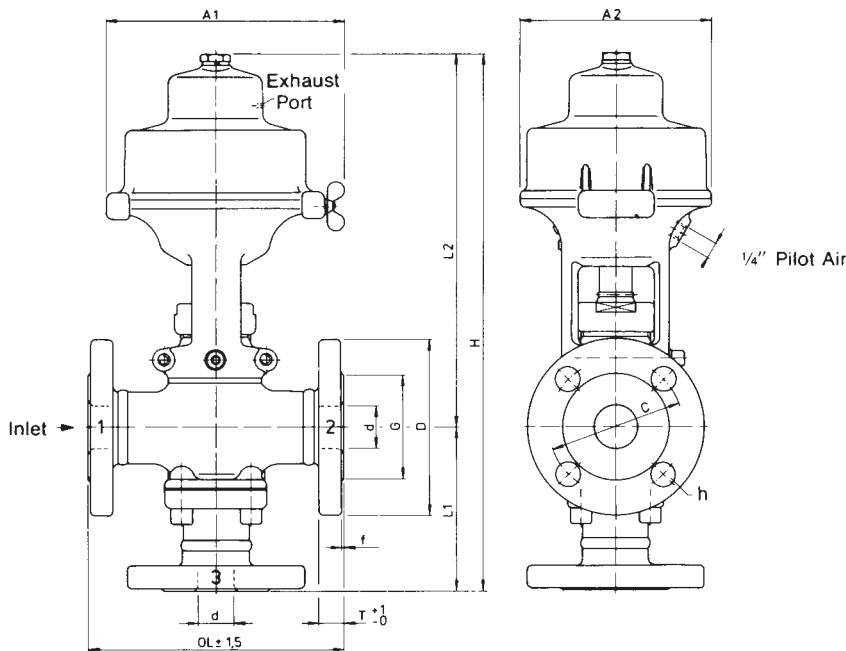
**Temperature Range:** – 22° F. to 401° F. (– 30° C to + 205° C)

**Material of Body:** stainless steel casting

**Material of Stem and Seat:** stainless steel

**Material of Packing:** graphite-reinforced teflon

#### Dimensions (mm)



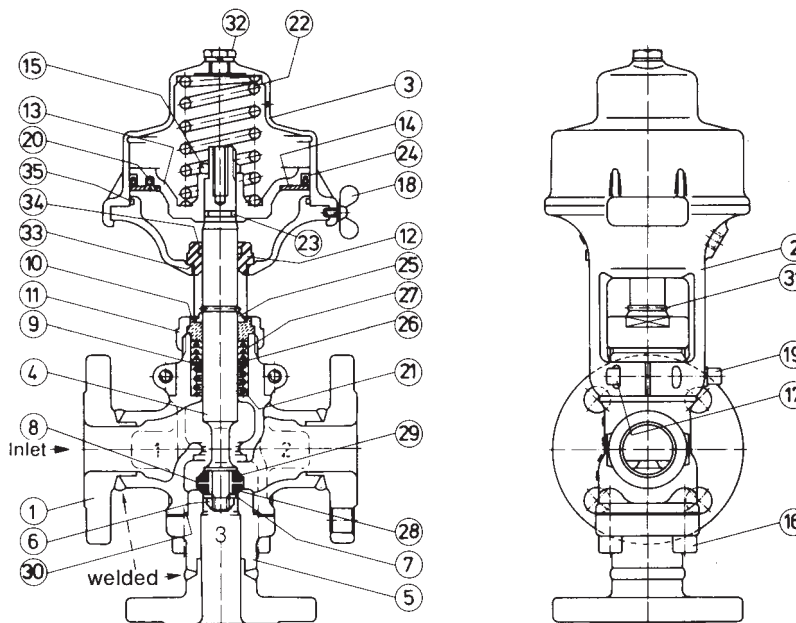
The flange dimensions on this page are according to ANSI-Standard.  
On request the valves are also available with DIN-flanges.  
Size 50: No Wing Head Screw Assembly.

#### Model Selection Chart

Cv-values see page 54.

Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	T	Weight lbs	Weight kg
TPC-2323-15AN	15	119	82	66.5	95	1.6	35	291	15	105	186	10	140	14.3	11.0	5.0
TPC-2323-20AN	20	138	100	82.5	117	1.6	43	330	19	110	220	13	150	16.0	15.4	7.0
TPC-2323-25AN	25	168	128	89.0	124	1.6	51	384	19	135	249	17	170	17.5	21.4	9.7
TPC-2323-40AN	40	216	168	114.5	156	1.6	73	480	22	150	330	23	200	20.7	48.5	22.0
TPC-2323-50AN	50	208	208	127.0	165	1.6	92	558	19	160	398	25	230	22.3	60.6	27.5

#### Parts List



Repair Kits include items 25, 27, 28, 29, 30, 33, 34 and 35.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

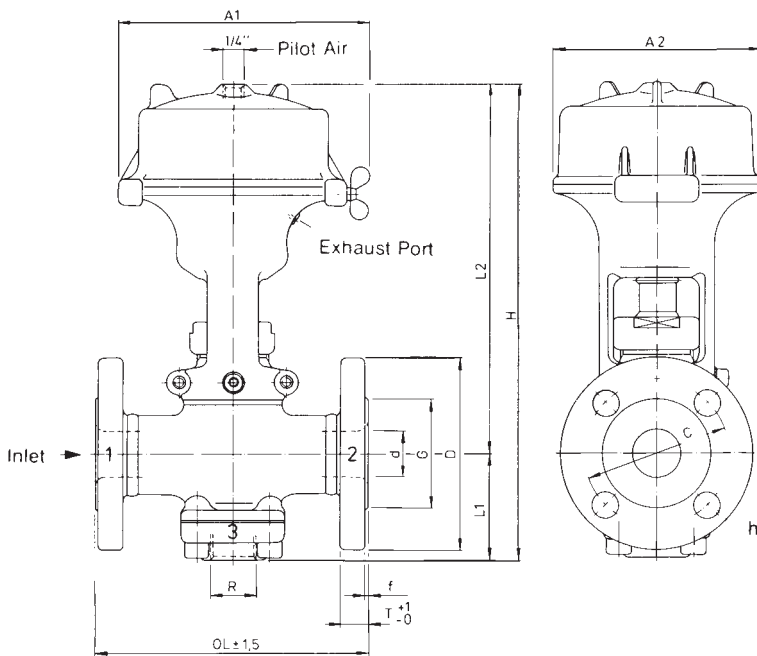
Valve Model No.		TPC-2323-15A	TPC-2323-20A	TPC-2323-25A	TPC-2323-40A	TPC-2323-50A
Size		15	20	25	40	50
Key No.	Part Name	Part Number				
1	Body, ANSI-flange	C-21215-01A	C-21220-01A	C-21225-01A	C-21240-01A	C-21250-01A
2	Yoke, NPT-thread	C-22115-02N	C-22120-02N	C-22125-02N	C-22140-02N	C-22150-02N
	Yoke, BSP-thread	C-22115-02B	C-22120-02B	C-22125-02B	C-22140-02B	C-22150-02B
	Yoke, PT-thread	C-22115-02P	C-22120-02P	C-22125-02P	C-22140-02P	C-22150-02P
3	Cylinder	C-22115-03	C-22120-03	C-22125-03	C-22140-03	C-22150-03
4	Stem	C-22115-04	C-22120-04	C-22125-04	C-22140-04	C-22150-04
5	Lower Seat Flange, ANSI-type	C-31315-05A	C-31320-05A	C-31325-05A	C-31340-05A	C-31350-05A
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21140-11	C-21150-11
12	Guide Bushing	C-22115-12	C-22120-12	C-22125-12	C-22140-12	C-22150-12
13	Piston	C-22115-13	C-22120-13	C-22125-13	C-22140-13	C-22150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21140-14	C-21150-14
15	Lock Nut	C-22115-15	C-22120-15	C-22125-15	C-22140-15	C-22150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21140-18	C-22150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 - 3)	C-21115-20	C-21120-20	C-21125-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21140-28	C-21150-28
29	Disc Ring 'B'					
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21140-31	-
32	Plug	C-22115-32	C-22120-32	C-22125-32	C-22140-32	-
33	O-Ring	C-22115-33	C-22120-33	C-22125-33	C-22140-33	C-22150-33
34	O-Ring with Back-up Washer	C-22115-34	C-22120-34	C-22125-34	C-22140-34	C-22150-34
35	O-Ring	C-22115-35	C-22120-35	C-22125-35	C-22140-35	C-22150-35

### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.  
It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).  
Certain valves sizes may be equipped with a flange on port "3". Details are available on request.

<b>Operating Pressure:</b> max. 460 PSI (32 bar)	<b>Material of Body:</b> stainless steel casting
<b>Pilot Pressure:</b> 36 – 51 PSI (2.5 – 3.5 bar)	<b>Material of Stem and Seat:</b> stainless steel
<b>Temperature Range:</b> – 22° F. to 401° F. (– 30° C to + 205° C)	<b>Material of Packing:</b> graphite-reinforced teflon

### Dimensions (mm)



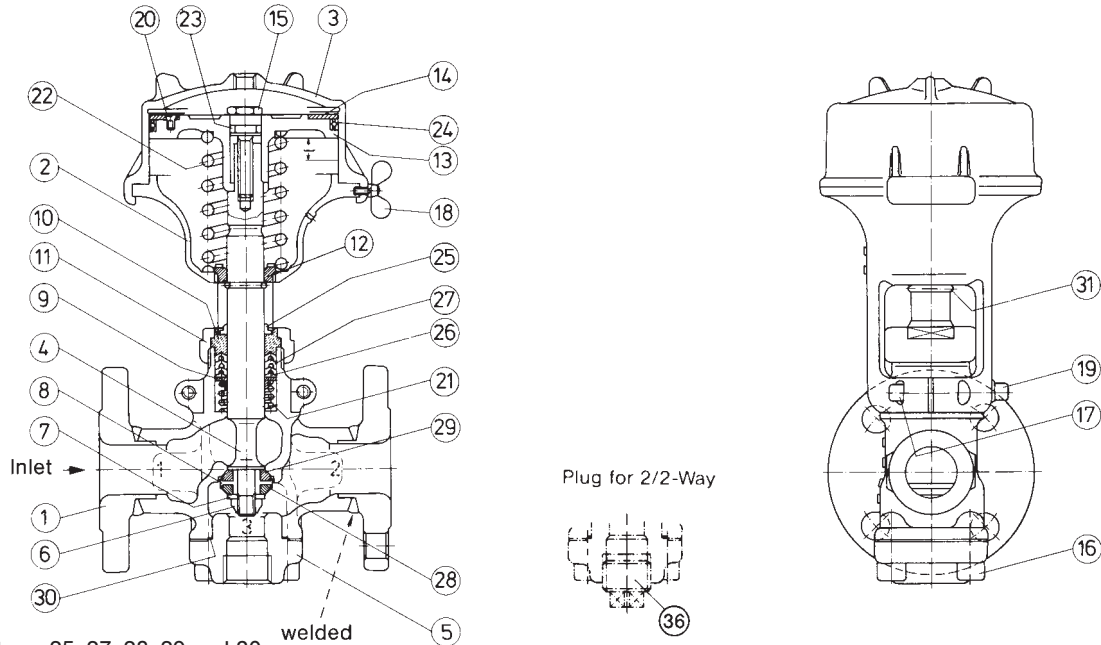
The flange dimensions on this page are according to JIS-Standard.  
On request the valves are also available with DIN-flanges.  
Sizes 65 and 75 are available on request.  
Size 50: No Wing Head Screw Assembly.

### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	R (PT)	T	Weight lbs	kg
TPC-2212-15JP	TPC-2312-15JP	15	119	82	70	95	1	52	203.5	15	50	153.5	10	146	1/2"	14	8.8	4.0
TPC-2212-20JP	TPC-2312-20JP	20	138	100	75	100	1	58	255.5	15	66	189.5	13	146	3/4"	16	13.2	6.0
TPC-2212-25JP	TPC-2312-25JP	25	168	128	90	125	1	70	301.0	19	71	230.0	17	167	1"	16	18.7	8.5
TPC-2212-32JP	TPC-2312-32JP	32	182	142	100	135	2	80	339.5	19	91	248.5	18	190	1 1/4"	18	27.6	12.5
TPC-2212-40JP	TPC-2312-40JP	40	216	168	105	140	2	85	392.0	19	91	301.0	23	190	1 1/2"	18	44.1	20.0
TPC-2212-50JP	TPC-2312-50JP	50	208	208	120	155	2	100	433.5	19	100	333.5	25	216	2"	18	55.1	25.0

#### Parts List



Repair Kits include items 25, 27, 28, 29 and 30.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

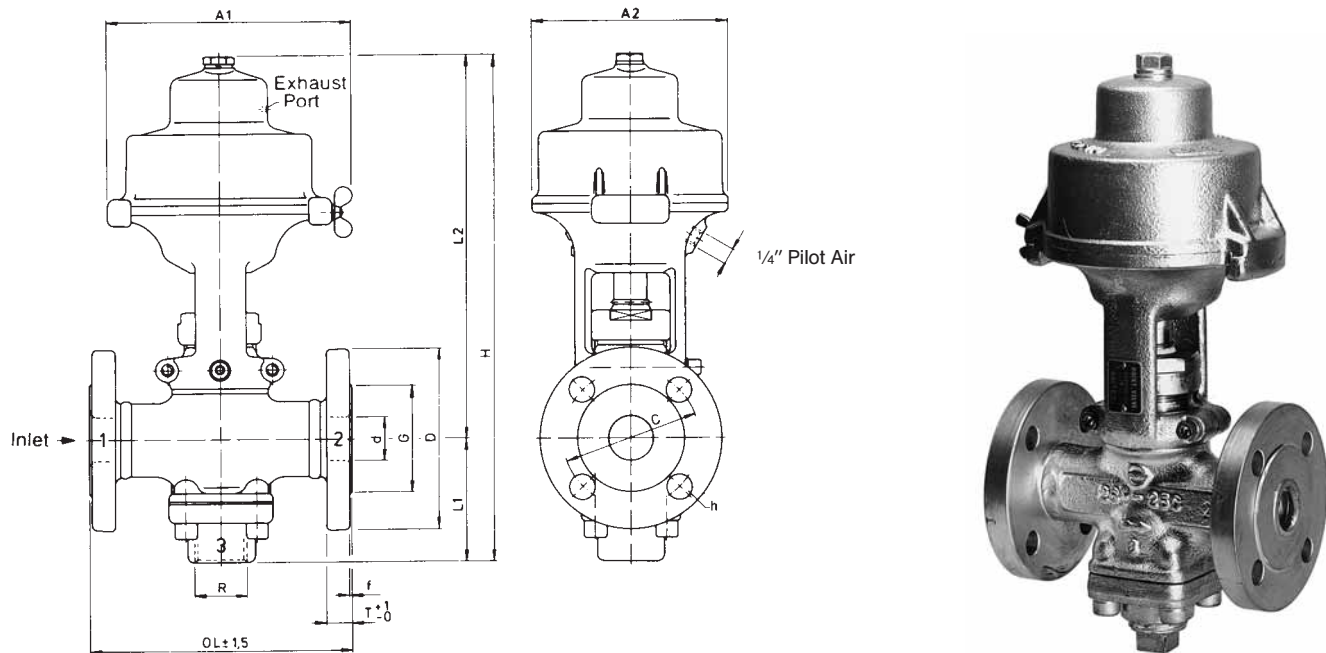
Valve Model No.		TPC-2212-15J TPC-2312-15J	TPC-2212-20J TPC-2312-20J	TPC-2212-25J TPC-2312-25J	TPC-2212-32J TPC-2312-32J	TPC-2212-40J TPC-2312-40J	TPC-2212-50J TPC-2312-50J
Size		15	20	25	32	40	50
Key No.	Part Name	Part Number					
1	Body, JIS-flange	C-21215-01J	C-21220-01J	C-21225-01J	C-21232-01J	C-21240-01J	C-21250-01J
2	Yoke	C-21115-02	C-21120-02	C-21125-02	C-21132-02	C-21140-02	C-21150-02
3	Cylinder, NPT-tapped	C-21115-03N	C-21120-03N	C-21125-03N	C-21132-03N	C-21140-03N	C-21150-03N
	Cylinder, BSP-tapped	C-21115-03B	C-21120-03B	C-21125-03B	C-21132-03B	C-21140-03B	C-21150-03B
	Cylinder, PT-tapped	C-21115-03P	C-21120-03P	C-21125-03P	C-21132-03P	C-21140-03P	C-21150-03P
4	Stem	C-21115-04	C-21120-04	C-21125-04	C-21132-04	C-21140-04	C-21150-04
5	Lower Seat, NPT-tapped	C-21115-05N	C-21120-05N	C-21125-05N	C-21132-05N	C-21140-05N	C-21150-05N
	Lower Seat, BSP-tapped	C-21115-05B	C-21120-05B	C-21125-05B	C-21132-05B	C-21140-05B	C-21150-05B
	Lower Seat, PT-tapped	C-21115-05P	C-21120-05P	C-21125-05P	C-21132-05P	C-21140-05P	C-21150-05P
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21132-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21132-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21132-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21132-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21132-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21132-11	C-21140-11	C-21150-11
12	Guide Bushing	C-21115-12	C-21120-12	C-21125-12	C-21132-12	C-21140-12	C-21150-12
13	Piston	C-21115-13	C-21120-13	C-21125-13	C-21132-13	C-21140-13	C-21150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21132-14	C-21140-14	C-21150-14
15	Hex. Head Screw	C-21115-15	C-21120-15	C-21125-15	C-21132-15	C-21140-15	C-21150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21132-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21132-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21132-18	C-21140-18	C-21150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21132-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 – 4)	C-21115-20	C-21120-20	C-21125-20	C-21132-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21132-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21132-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21132-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21132-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21132-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21132-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21132-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21132-28	C-21140-28	C-21150-28
29	Disc Ring 'B'						
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21132-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21132-31	C-21140-31	-
36	Plug, NPT-tapped	C-21115-36N	C-21120-36N	C-21125-36N	C-21132-36N	C-21140-36N	C-21150-36N
	Plug, BSP-tapped	C-21115-36B	C-21120-36B	C-21125-36B	C-21132-36B	C-21140-36B	C-21150-36B
	Plug, PT-tapped	C-21115-36P	C-21120-36P	C-21125-36P	C-21132-36P	C-21140-36P	C-21150-36P

### Description

These valves are designed for the use with Steam, Hot Water, Cold Water, Air, Gas or on Vacuum Service.  
It is possible to change from a 2-way valve into a 3-way valve or vice versa by adding or removing the plug (item 36).  
Certain valves sizes may be equipped with a flange on port "3". Details are available on request.

<b>Operating Pressure:</b> max. 460 PSI (32 bar)	<b>Material of Body:</b> stainless steel casting
<b>Pilot Pressure:</b> 36 – 51 PSI (2.5 – 3.5 bar)	<b>Material of Stem and Seat:</b> stainless steel
<b>Temperature Range:</b> – 22° F. to 401° F. (– 30° C to + 205° C)	<b>Material of Packing:</b> graphite-reinforced teflon

### Dimensions (mm)



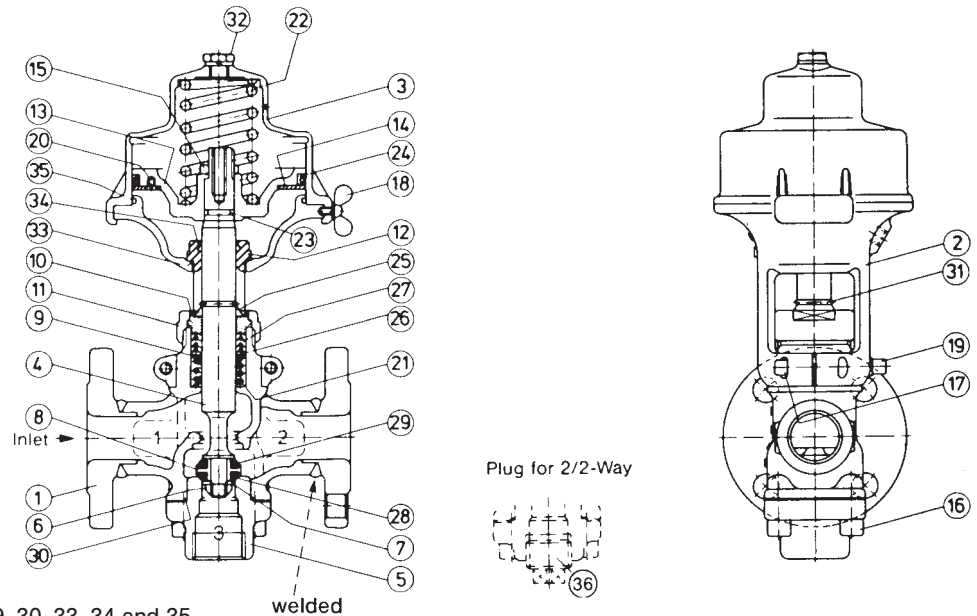
The flange dimensions on this page are according to JIS-Standard.  
On request the valves are also available with DIN-flanges.  
Size 50: No Wing Head Screw Assembly.

### Model Selection Chart

Cv-values see page 54.

Model No. of 2-way	Model No. of 3-way	Size d	A1	A2	C	D	f	G	H	h	L1	L2	I	OL	R (PT)	T	Weight lbs	Weight kg
TPC-2222-15JP	TPC-2322-15JP	15	119	82	70	95	1	52	236	15	50	186	10	146	1/2"	14	9.9	4.5
TPC-2222-20JP	TPC-2322-20JP	20	138	100	75	100	1	58	286	15	66	220	13	146	3/4"	16	14.3	6.5
TPC-2222-25JP	TPC-2322-25JP	25	168	128	90	125	1	70	320	19	71	249	17	167	1"	16	19.8	9.0
TPC-2222-40JP	TPC-2322-40JP	40	216	168	105	140	2	85	421	19	91	330	23	190	1 1/2"	18	47.4	21.5
TPC-2222-50JP	TPC-2322-50JP	50	208	208	120	155	3	100	468	19	100	368	25	216	2"	18	61.7	28.0

### Parts List



Repair Kits include items 25, 27, 28, 29, 30, 33, 34 and 35.  
For order information refer to page 54.

Designs and Specifications are subject to change without notice

Valve Model No.		TPC-2222-15J TPC-2322-15J	TPC-2222-20J TPC-2322-20J	TPC-2222-25J TPC-2322-25J	TPC-2222-40J TPC-2322-40J	TPC-2222-50J TPC-2322-50J
Size		15	20	25	40	50
Key No.	Part Name	Part Number				
1	Body, JIS-flange	C-21215-01J	C-21220-01J	C-21225-01J	C-21240-01J	C-21250-01J
2	Yoke, NPT-thread	C-22115-02N	C-22120-02N	C-22125-02N	C-22140-02N	C-22150-02N
	Yoke, BSP-thread	C-22115-02B	C-22120-02B	C-22125-02B	C-22140-02B	C-22150-02B
	Yoke, PT-thread	C-22115-02P	C-22120-02P	C-22125-02P	C-22140-02P	C-22150-02P
3	Cylinder	C-22115-03	C-22120-03	C-22125-03	C-22140-03	C-22150-03
4	Stem	C-22115-04	C-22120-04	C-22125-04	C-22140-04	C-22150-04
5	Lower Seat, NPT-tapped	C-21115-05N	C-21120-05N	C-21125-05N	C-21140-05N	C-21150-05N
	Lower Seat, BSP-tapped	C-21115-05B	C-21120-05B	C-21125-05B	C-21140-05B	C-21150-05B
	Lower Seat, PT-tapped	C-21115-05P	C-21120-05P	C-21125-05P	C-21140-05P	C-21150-05P
6	U-Nut	C-21115-06	C-21120-06	C-21125-06	C-21140-06	C-21150-06
7	Guide Washer	C-21115-07	C-21120-07	C-21125-07	C-21140-07	C-21150-07
8	Disc Adapter	C-21115-08	C-21120-08	C-21125-08	C-21140-08	C-21150-08
9	Ring Washer	C-21115-09	C-21120-09	C-21125-09	C-21140-09	C-21150-09
10	Gland	C-21115-10	C-21120-10	C-21125-10	C-21140-10	C-21150-10
11	Gland Nut	C-21115-11	C-21120-11	C-21125-11	C-21140-11	C-21150-11
12	Guide Bushing	C-22115-12	C-22120-12	C-22125-12	C-22140-12	C-22150-12
13	Piston	C-22115-13	C-22120-13	C-22125-13	C-22140-13	C-22150-13
14	Ring Plate	C-21115-14	C-21120-14	C-21125-14	C-21140-14	C-21150-14
15	Lock Nut	C-22115-15	C-22120-15	C-22125-15	C-22140-15	C-22150-15
16	Socket Head Cap Screw (4)	C-21115-16	C-21120-16	C-21125-16	C-21140-16	C-21150-16
17	Socket Head Cap Screw (2)	C-21115-17	C-21120-17	C-21125-17	C-21140-17	C-21150-17
18	Wing Head Screw or Socket Screw	C-21115-18	C-21120-18	C-21125-18	C-21140-18	C-21150-18
19	Socket Head Cap Screw	C-21115-19	C-21120-19	C-21125-19	C-21140-19	C-21150-19
20	Flat Head Screw (2 – 4)	C-21115-20	C-21120-20	C-21125-20	C-21140-20	C-21150-20
21	Packing Spring	C-21115-21	C-21120-21	C-21125-21	C-21140-21	C-21150-21
22	Spring	C-21115-22	C-21120-22	C-21125-22	C-21140-22	C-21150-22
23	O-Ring	C-21115-23	C-21120-23	C-21125-23	C-21140-23	C-21150-23
24	Piston Ring	C-21115-24	C-21120-24	C-21125-24	C-21140-24	C-21150-24
25	Dust Seal	C-21115-25	C-21120-25	C-21125-25	C-21140-25	C-21150-25
26	Adapter	C-21115-26	C-21120-26	C-21125-26	C-21140-26	C-21150-26
27	M-type Packing	C-21115-27	C-21120-27	C-21125-27	C-21140-27	C-21150-27
28	Disc Ring 'A'	C-21115-28	C-21120-28	C-21125-28	C-21140-28	C-21150-28
29	Disc Ring 'B'					
30	Lower Seat Gasket	C-21115-30	C-21120-30	C-21125-30	C-21140-30	C-21150-30
31	Indicator Ring	C-21115-31	C-21120-31	C-21125-31	C-21140-31	-
32	Plug	C-22115-32	C-22120-32	C-22125-32	C-22140-32	-
33	O-Ring	C-22115-33	C-22120-33	C-22125-33	C-22140-33	C-22150-33
34	O-Ring	C-22115-34	C-22120-34	C-22125-34	C-22140-34	C-22150-34
35	O-Ring	C-22115-35	C-22120-35	C-22125-35	C-22140-35	C-22150-35
36	Plug, NPT-tapped	C-21115-36N	C-21120-36N	C-21125-36N	C-21140-36N	C-21150-36N
	Plug, BSP-tapped	C-21115-36B	C-21120-36B	C-21125-36B	C-21140-36B	C-21150-36B
	Plug, PT-tapped	C-21115-36P	C-21120-36P	C-21125-36P	C-21140-36P	C-21150-36P

### Description

These valves are used for control of the cold water line. The compact design allows installation in narrow space.

The same valve can be used for either single or double acting applications. To change the valve from single to double acting only the spring (item 13) and plug (item 20) have to be removed.

**Operating Pressure:** max. 305 PSI (21 bar)  
430 PSI (30 bar) valves on request

**Pilot Pressure:** 36.20 – 50.75 PSI (2.5 – 3.5 bar)

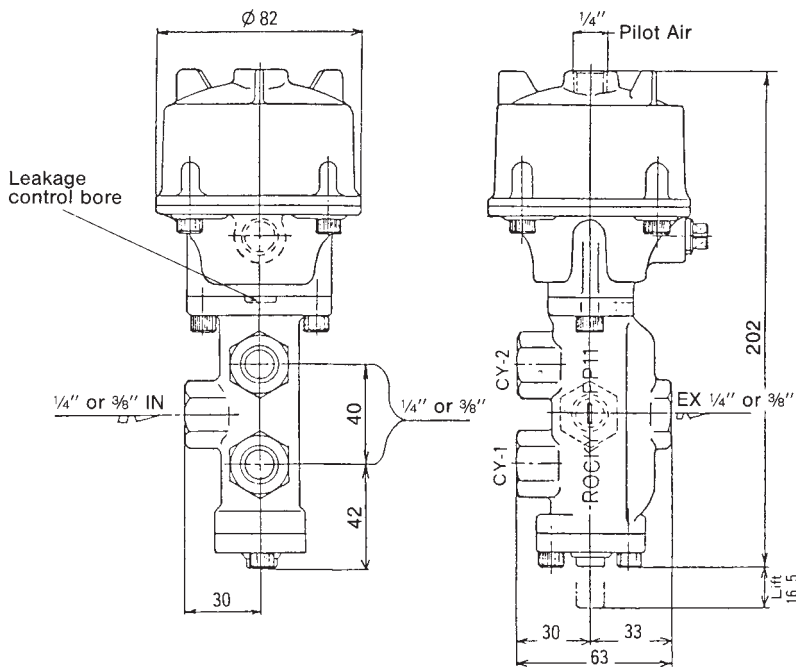
**Temperature:** max. 149° F. (max. 65° C)

**Fluid:** cold water

**Material of Body:** bronze

**Material of Cylinder:** cast iron, inside chromium plated

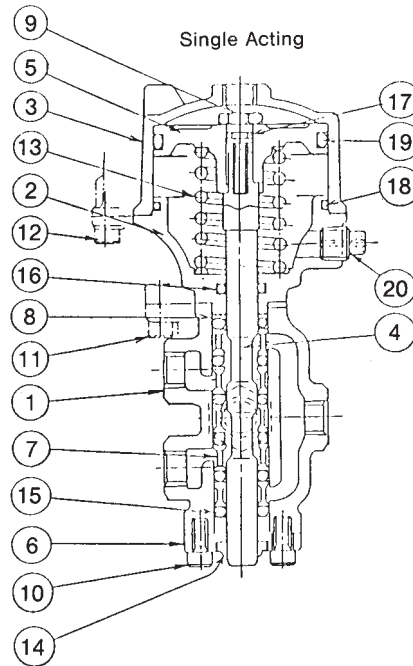
### Dimensions (mm)



### Model Selection Chart

Single Acting	Double Acting	Size	Weight			
			Single Acting lbs	Single Acting kg	Double Acting lbs	Double Acting kg
<b>FP-1411-08N</b>	<b>FP-1421-08N</b>	<b>1/4" NPT-tapped</b>	<b>5.3</b>	<b>2.4</b>	<b>5.1</b>	<b>2.3</b>
FP-1411-08B	FP-1421-08B	1/4" BSP-tapped	5.3	2.4	5.1	2.3
FP-1411-08P	FP-1421-08P	1/4" PT -tapped	5.3	2.4	5.1	2.3
<b>FP-1411-10N</b>	<b>FP-1421-10N</b>	<b>3/8" NPT-tapped</b>	<b>5.3</b>	<b>2.4</b>	<b>5.1</b>	<b>2.3</b>
FP-1411-10B	FP-1421-10B	3/8" BSP-tapped	5.3	2.4	5.1	2.3
FP-1411-10P	FP-1421-10P	3/8" PT -tapped	5.3	2.4	5.1	2.3

### Parts List



Repair Kits include items 15 to 19.  
For order information refer to page 54.

Model-No.		FP-1411-08 FP-1411-10	FP-1421-08 FP-1421-10
Size		1/4" - 3/8"	1/4" - 3/8"
Key No.	Part Name	Part Number	
1	Body 1/4" NPT-tapped	F-41108-01N	F-41108-01N
	Body 1/4" BSP-tapped	F-41108-01B	F-41108-01B
	Body 1/4" PT-tapped	F-41108-01P	F-41108-01P
	Body 3/8" NPT-tapped	F-41110-01N	F-41110-01N
	Body 3/8" BSP-tapped	F-41110-01B	F-41110-01B
	Body 3/8" PT-tapped	F-41110-01P	F-41110-01P
2	Yoke, 1/4" NPT-tapped	F-41108-02N	F-41108-02N
	Yoke, 1/4" BSP-tapped	F-41108-02B	F-41108-02B
	Yoke, 1/4" PT-tapped	F-41108-02P	F-41108-02P
3	Cylinder	F-41108-03	F-41108-03
4	Stem	F-41108-04	F-41108-04
5	Piston	F-41108-05	F-41108-05
6	Valve Cover	F-41108-06	F-41108-06
7	Lantern Ring (5)	F-41108-07	F-41108-07
8	Washer	F-41108-08	F-41108-08
9	Tension Bolt	F-41108-09	F-41108-09
10	Socket Head Cap Screw (2)	F-41108-10	F-41108-10
11	Socket Head Cap Screw (2)	F-41108-10	F-41108-10
12	Socket Head Cap Screw (4)	F-41108-10	F-41108-10
13	Spring	F-41108-13	-
14	Dust Seal	F-41108-14	F-41108-14
15	O-Ring (6)	F-41108-15	F-41108-15
16	O-Ring	F-41108-16	F-41108-16
17	O-Ring	F-41108-17	F-41108-17
18	O-Ring	F-41108-18	F-41108-18
19	O-Ring	F-41108-19	F-41108-19
20	Plug, NPT-tapped	F-41108-20N	-
	Plug, BSP-tapped	F-41108-20B	-
	Plug, PT-tapped	F-41108-20P	-

Designs and Specifications are subject to change without notice

### Description

These valves are used for control of the cold water line. The compact design allows installation in narrow space.

The same valve can be used for either single or double acting applications. To change the valve from single to double acting only the spring (item 12) and plug (item 11) have to be removed.

**Operating Pressure:** max. 305 PSI (21 bar)  
430 PSI (30 bar) valves on request

**Pilot Pressure:** 36.20 – 50.75 PSI (2.5 – 3.5 bar)

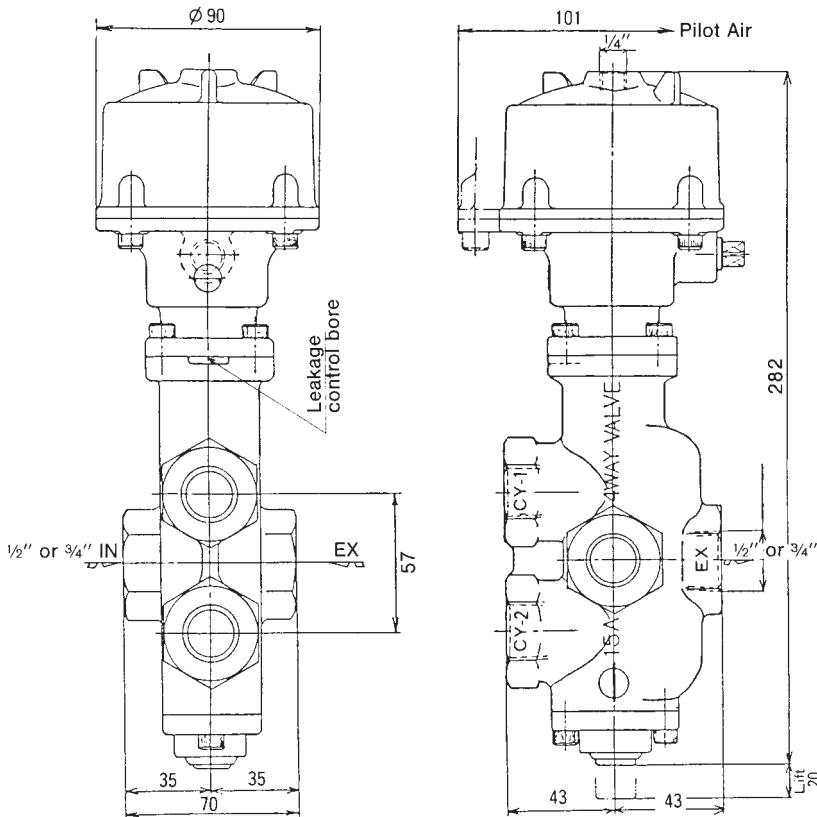
**Temperature:** max. 149° F. (max. 65° C)

**Fluid:** cold water

**Material of Body:** bronze

**Material of Cylinder:** cast iron, inside chromium plated

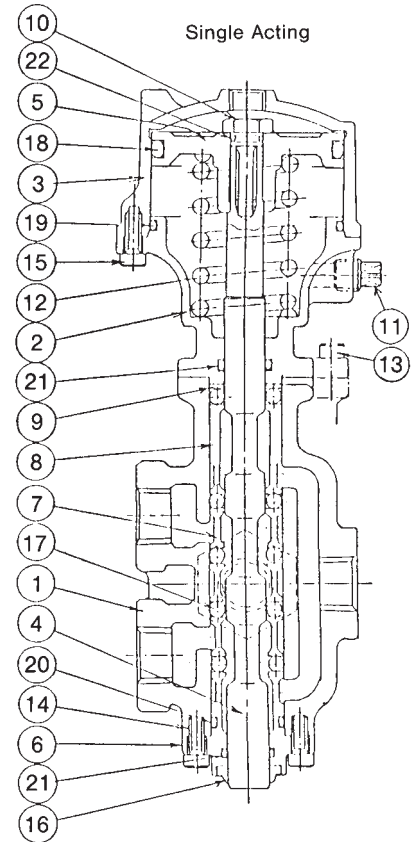
### Dimensions (mm)



### Model Selection Chart

Single Acting	Double Acting	Size	Weight			
			Single Acting lbs	kg	Double Acting lbs	kg
<b>FP-1412-15N</b>	<b>FP-1422-15N</b>	<b>1/2" NPT-tapped</b>	<b>10.8</b>	<b>4.9</b>	<b>10.6</b>	<b>4.7</b>
FP-1412-15B	FP-1422-15B	1/2" BSP-tapped	10.8	4.9	10.6	4.7
FP-1412-15P	FP-1422-15P	1/2" PT -tapped	10.8	4.9	10.6	4.7
<b>FP-1412-20N</b>	<b>FP-1422-20N</b>	<b>3/4" NPT-tapped</b>	<b>10.8</b>	<b>4.9</b>	<b>10.6</b>	<b>4.7</b>
FP-1412-20B	FP-1422-20B	3/4" BSP-tapped	10.8	4.9	10.6	4.7
FP-1412-20P	FP-1422-20P	3/4" PT -tapped	10.8	4.9	10.6	4.7

### Parts List



Model No.		FP-1412-15 FP-1412-20	FP-1422-15 FP-1422-20
Size		1/2" - 3/4"	1/2" - 3/4"
Key No.	Part Name	Part Number	
1	Body 1/2" NPT-tapped	F-41115-01N	F-41115-01N
	Body 1/2" BSP-tapped	F-41115-01B	F-41115-01B
	Body 1/2" PT-tapped	F-41115-01P	F-41115-01P
	Body 3/4" NPT-tapped	F-41120-01N	F-41120-01N
	Body 3/4" BSP-tapped	F-41120-01B	F-41120-01B
	Body 3/4" PT-tapped	F-41120-01P	F-41120-01P
2	Yoke, 1/4" NPT-tapped	F-41115-02N	F-41115-02N
	Yoke, 1/4" BSP-tapped	F-41115-02B	F-41115-02B
	Yoke, 1/4" PT-tapped	F-41115-02P	F-41115-02P
3	Cylinder	F-41115-03	F-41115-03
4	Stem	F-41115-04	F-41115-04
5	Piston	F-41115-05	F-41115-05
6	Valve Cover	F-41115-06	F-41115-06
7	Lantern Ring (3)	F-41115-07	F-41115-07
8	Lantern Ring, long type	F-41115-08	F-41115-08
9	Washer	F-41115-09	F-41115-09
10	Tension Bolt	F-41115-10	F-41115-10
11	Plug, NPT-tapped	F-41108-20N	-
	Plug, BSP-tapped	F-41108-20B	-
	Plug, PT-tapped	F-41108-20P	-
12	Spring	F-41115-12	-
13	Socket Head Cap Screw (4)	F-41108-10	F-41108-10
14	Socket Head Cap Screw (2)	F-41108-10	F-41108-10
15	Socket Head Cap Screw (4)	F-41108-10	F-41108-10
16	Dust Seal	F-41115-16	F-41115-16
17	O-Ring (5)	F-41115-17	F-41115-17
18	O-Ring	F-41115-18	F-41115-18
19	O-Ring	F-41115-19	F-41115-19
20	O-Ring	F-41115-20	F-41115-20
21	O-Ring (2)	F-41115-21	F-41115-21
22	O-Ring	F-41115-22	F-41115-22

Repair Kits include items 17 to 22.  
For order information refer to page 54.

#### Description

These valves are designed to control the flow of steam, gas or air. They guarantee highly accurate process control. The spring-loaded gland packings are self-adjusting.

**Operating Pressure:** max. 290 PSI (20 bar)

**Pilot Pressure:** 2.9 – 14.5 PSI (0.2 – 1.0 bar)

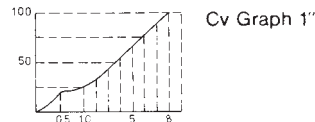
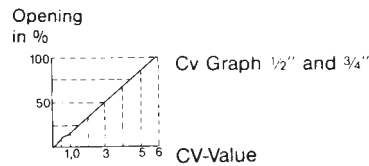
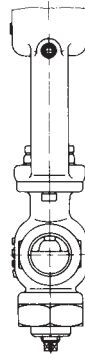
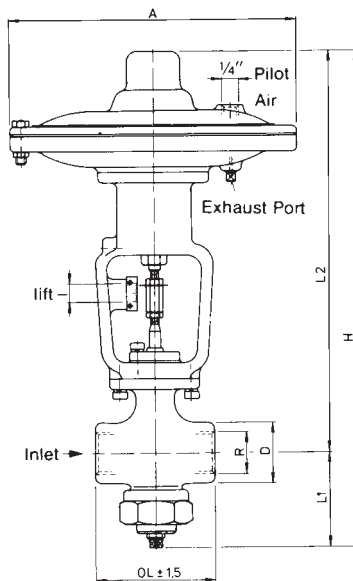
**Pressure Drop:** max. 87 PSI (6 bar)

**Temperature:** max. 410° F. (210° C)

**Material of Body:** stainless steel casting

**Stem:** stainless steel supported by guide, guide bushing and adj. rod guide, Stellite seat.

#### Dimensions (mm)



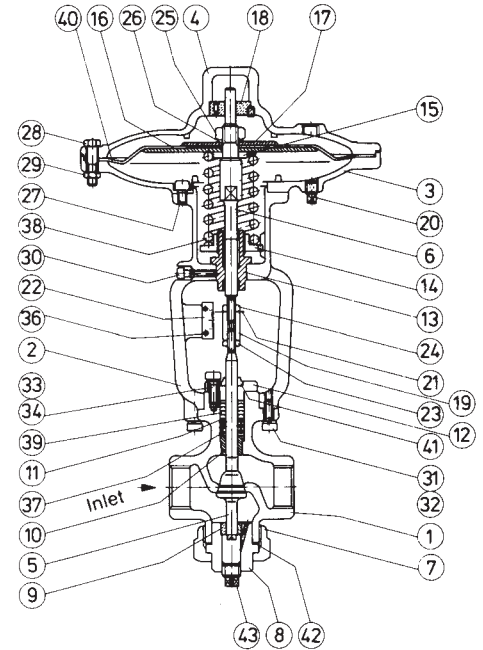
#### Model Selection Chart

Designs and Specifications are subject to change without notice

Model No.	R	A	D	H	I (lift)	L1	L2	OL	Weight	
									lbs	kg
<b>DC-1211-15N</b>	1/2" NPT	<b>220</b>	<b>38</b>	<b>376.5</b>	<b>14</b>	<b>71.5</b>	<b>305</b>	<b>95</b>	<b>16.5</b>	<b>7.5</b>
DC-1211-15B	1/2" BSP	220	38	376.5	14	71.5	305	95	16.5	7.5
DC-1211-15P	1/2" PT	220	38	376.5	14	71.5	305	95	16.5	7.5
<b>DC-1211-20N</b>	3/4" NPT	<b>220</b>	<b>38</b>	<b>376.5</b>	<b>14</b>	<b>71.5</b>	<b>305</b>	<b>95</b>	<b>16.3</b>	<b>7.4</b>
DC-1211-20B	3/4" BSP	220	38	376.5	14	71.5	305	95	16.3	7.4
DC-1211-20P	3/4" PT	220	38	376.5	14	71.5	305	95	16.3	7.4
<b>DC-1211-25N</b>	1" NPT	<b>220</b>	<b>46</b>	<b>385.5</b>	<b>14</b>	<b>76.5</b>	<b>309</b>	<b>100</b>	<b>24.9</b>	<b>11.3</b>
DC-1211-25B	1" BSP	220	46	385.5	14	76.5	309	100	24.9	11.3
DC-1211-25P	1" PT	220	46	385.5	14	76.5	309	100	24.9	11.3

#### Parts List

Valve Model No.		DC-1211-15	DC-1211-20	DC-1211-25
Size		1/2"	3/4"	1"
Key No.	Part Name	Part Number		
1	Body, 1/2" NPT-tapped	D-21115-01N	-	-
	Body, 1/2" BSP-tapped	D-21115-01B	-	-
	Body, 1/2" PT-tapped	D-21115-01P	-	-
	Body, 3/4" NPT-tapped	-	D-21120-01N	-
	Body, 3/4" BSP-tapped	-	D-21120-01B	-
	Body, 3/4" PT-tapped	-	D-21120-01P	-
	Body, 1" NPT-tapped	-	-	D-21125-01N
	Body, 1" BSP-tapped	-	-	D-21125-01B
Body, 1" PT-tapped	-	-	D-21125-01P	
2	Yoke	D-21115-02	D-21115-02	D-21125-02
3	Lower Cover	D-21115-03	D-21115-03	D-21125-03
4	Upper Cover, 1/4" NPT-tapped	D-21115-04N	D-21115-04N	D-21125-04N
	Upper Cover, 1/4" BSP-tapped	D-21115-04B	D-21115-04B	D-21125-04B
	Upper Cover, 1/4" PT-tapped	D-21115-04P	D-21115-04P	D-21125-04P
5	Stem	D-21115-05	D-21115-05	D-21125-05
6	Upper Stem	D-21115-06	D-21115-06	D-21125-06
7	Bottom Nut	D-21115-07	D-21115-07	D-21125-07
8	Disc Guide	D-21115-08	D-21115-08	D-21125-08
9	Guide Bushing	D-21115-09	D-21115-09	D-21125-09
10	Guide	D-21115-10	D-21115-10	D-21125-10
11	Packing Washer	D-21115-11	D-21115-11	D-21125-11
12	Gland	D-21115-12	D-21115-12	D-21125-12
13	Threaded Guide Bushing	D-21115-13	D-21115-13	D-21125-13
14	Spring Seat	D-21115-14	D-21115-14	D-21125-14
15	Washer	D-21115-15	D-21115-15	D-21125-15
16	Diaphragm Lower Seat	D-21115-16	D-21115-16	D-21125-16
17	Diaphragm Upper Seat	D-21115-17	D-21115-17	D-21125-17
18	Guide Bushing	D-21115-18	D-21115-18	D-21125-18
19	Adjustment Nut	D-21115-19	D-21115-19	D-21125-19
20	Air Exhaust Plug	D-21115-20	D-21115-20	D-21125-20
21	Indicator Ring	D-21115-21	D-21115-21	D-21125-21
22	Scale	D-21115-22	D-21115-22	D-21125-22
23	Lock Nut (RH)	D-21115-23	D-21115-23	D-21125-23
24	Lock Nut (LH)	D-21115-24	D-21115-24	D-21125-24
25	Nut	D-21115-25	D-21115-25	D-21125-25
26	Spring Washer	D-21115-26	D-21115-26	D-21125-26
27	Socket Head Cap Screw (6)	D-21115-27	D-21115-27	D-21125-27
28	Hex. Head Screw (12)	D-21115-28	D-21115-28	D-21125-28
29	Hex. Head Nut (12)	D-21115-29	D-21115-29	D-21125-29
30	Socket Head Cap Screw	D-21115-30	D-21115-30	D-21125-30
31	Socket Head Cap Screw (2)	D-21115-31	D-21115-31	D-21125-31
32	Spring Washer (2)	D-21115-32	D-21115-32	D-21125-32
33	Socket Head Cap Screw (2)	D-21115-33	D-21115-33	D-21125-33
34	Spring Washer (2)	D-21115-34	D-21115-34	D-21125-34
35	-	-	-	-
36	Rivett	D-21115-36	D-21115-36	D-21115-36
37	Packing Spring	D-21115-37	D-21115-37	D-21125-37
38	Spring	D-21115-38	D-21115-38	D-21125-38
39	Gland Packing	D-21115-39	D-21115-39	D-21125-39
40	Diaphragm	D-21115-40	D-21115-40	D-21125-40
41	Dust Seal	D-21115-41	D-21115-41	D-21125-41
42	Gasket	D-21115-42	D-21115-42	D-21125-42
43	Plug	D-21115-43	D-21115-43	D-21115-43



#### Description

These valves are designed to control the flow of steam, gas or air. They guarantee highly accurate process control. The spring-loaded gland packings are self-adjusting.

**Operating Pressure:** max. 290 PSI (20 bar)

**Pilot Pressure:** 2.9 – 14.5 PSI (0.2 – 1.0 bar)

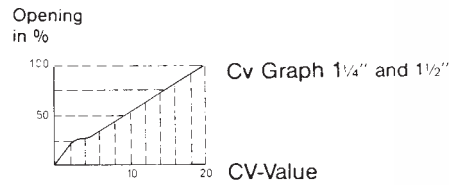
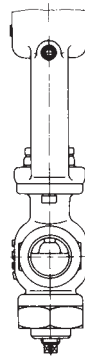
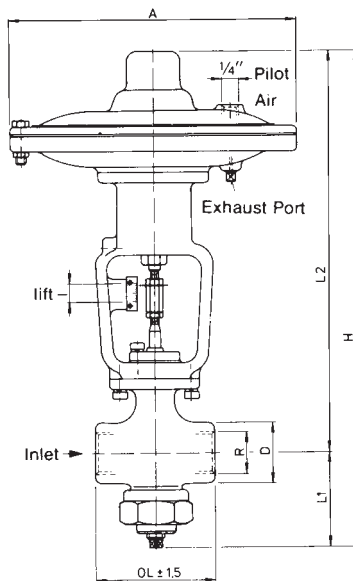
**Pressure Drop:** max. 87 PSI (6 bar)

**Temperature:** max. 410° F. (210° C)

**Material of Body:** stainless steel casting

**Stem:** stainless steel supported by guide, guide bushing and adj. rod guide, Stellite seat.

#### Dimensions (mm)



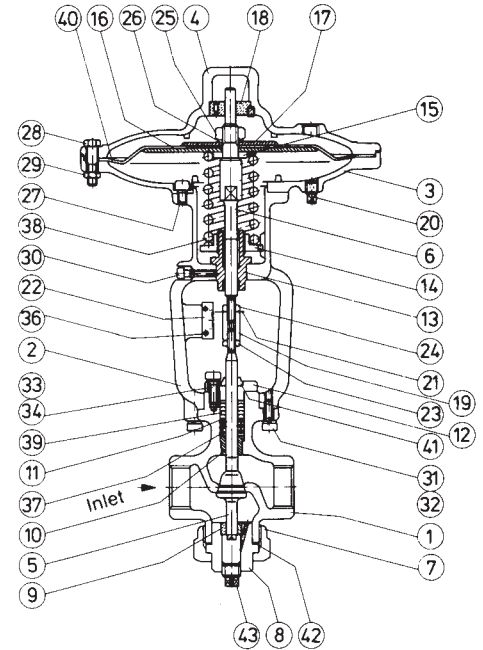
#### Model Selection Chart

Designs and Specifications are subject to change without notice

Model No.	R	A	D	H	I (lift)	L1	L2	OL	Weight	
									lbs	kg
DC-1211-32N	1 1/4" NPT	282	65	525.0	18	94.0	431	130	38.1	17.3
DC-1211-32B	1 1/4" BSP	282	65	525.0	18	94.0	431	130	38.1	17.3
DC-1211-32P	1 1/4" PT	282	65	525.0	18	94.0	431	130	38.1	17.3
DC-1211-40N	1 1/2" NPT	282	65	525.0	18	94.0	431	130	37.9	17.2
DC-1211-40B	1 1/2" BSP	282	65	525.0	18	94.0	431	130	37.9	17.2
DC-1211-40P	1 1/2" PT	282	65	525.0	18	94.0	431	130	37.9	17.2

#### Parts List

Valve Model No.		DC-1211-32	DC-1211-40
Size		1 1/4"	1 1/2"
Key No.	Part Name	Part Number	
1	Body, 1 1/4" NPT-tapped	D-21132-01N	-
	Body, 1 1/4" BSP-tapped	D-21132-01B	-
	Body, 1 1/4" PT-tapped	D-21132-01P	-
	Body, 1 1/2" NPT-tapped	-	D-21140-01N
	Body, 1 1/2" BSP-tapped	-	D-21140-01B
	Body, 1 1/2" PT-tapped	-	D-21140-01P
2	Yoke	D-21132-02	D-21132-02
3	Lower Cover	D-21132-03	D-21132-03
4	Upper Cover, 1/4" NPT-tapped	D-21132-04N	D-21132-04N
	Upper Cover, 1/4" BSP-tapped	D-21132-04B	D-21132-04B
	Upper Cover, 1/4" PT-tapped	D-21132-04P	D-21132-04P
5	Stem	D-21132-05	D-21132-05
6	Upper Stem	D-21132-06	D-21132-06
7	Bottom Nut	D-21132-07	D-21132-07
8	Disc Guide	D-21132-08	D-21132-08
9	Guide Bushing	D-21132-09	D-21132-09
10	Guide	D-21132-10	D-21132-10
11	Packing Washer	D-21132-11	D-21132-11
12	Gland	D-21132-12	D-21132-12
13	Threaded Guide Bushing	D-21132-13	D-21132-13
14	Spring Seat	D-21132-14	D-21132-14
15	Washer	D-21132-15	D-21132-15
16	Diaphragm Lower Seat	D-21132-16	D-21132-16
17	Diaphragm Upper Seat	D-21132-17	D-21132-17
18	Guide Bushing	D-21132-18	D-21132-18
19	Adjustment Nut	D-21132-19	D-21132-19
20	Air Exhaust Plug	D-21132-20	D-21132-20
21	Indicator Ring	D-21132-21	D-21132-21
22	Scale	D-21132-22	D-21132-22
23	Lock Nut (RH)	D-21132-23	D-21132-23
24	Lock Nut (LH)	D-21132-24	D-21132-24
25	Nut	D-21132-25	D-21132-25
26	Spring Washer	D-21132-26	D-21132-26
27	Socket Head Cap Screw (6)	D-21132-27	D-21132-27
28	Hex. Head Screw (12)	D-21132-28	D-21132-28
29	Hex. Head Nut (12)	D-21132-29	D-21132-29
30	Socket Head Cap Screw	D-21132-30	D-21132-30
31	Socket Head Cap Screw (2)	D-21132-31	D-21132-31
32	Spring Washer (2)	D-21132-32	D-21132-32
33	Socket Head Cap Screw (2)	D-21132-33	D-21132-33
34	Spring Washer (2)	D-21132-34	D-21132-34
35	-	-	-
36	Rivett	D-21115-36	D-21115-36
37	Packing Spring	D-21132-37	D-21132-37
38	Spring	D-21132-38	D-21132-38
39	Gland Packing	D-21132-39	D-21132-39
40	Diaphragm	D-21132-40	D-21132-40
41	Dust Seal	D-21132-41	D-21132-41
42	Gasket	D-21132-42	D-21132-42
43	Plug	D-21132-43	D-21132-43



### Description

These valves are designed to control the flow of steam, gas or air. They guarantee highly accurate process control. The spring-loaded gland packings are self-adjusting.

**Operating Pressure:** max. 290 PSI (20 bar)

**Pilot Pressure:** 2.9 – 14.5 PSI (0.2 – 1.0 bar)

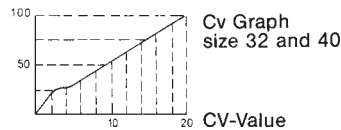
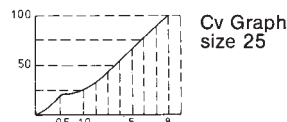
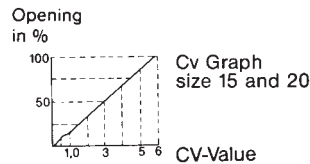
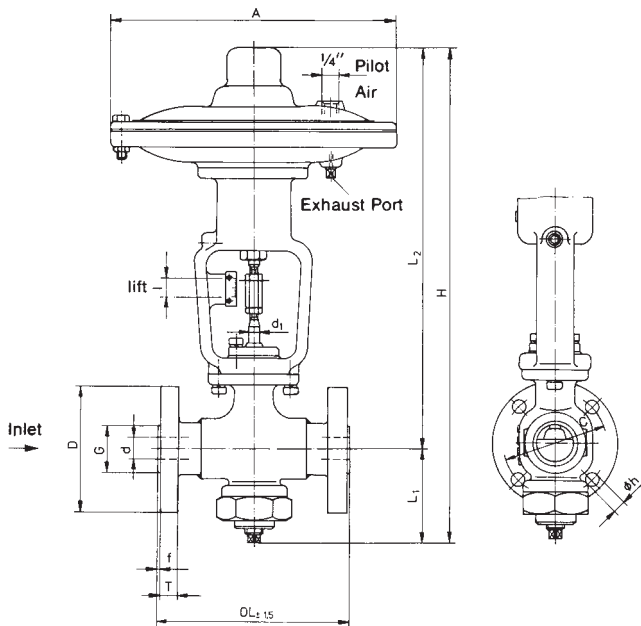
**Pressure Drop:** max. 87 PSI (6 bar)

**Temperature:** max. 410° F. (210° C)

**Material of Body:** stainless steel casting

**Stem:** stainless steel supported by guide, guide bushing and adj. rod guide, Stellite seat.

### Dimensions (mm)



### Model Selection Chart

Designs and Specifications are subject to change without notice

Model No.	Size d	A	C	D	d <sub>1</sub>	f	G	H	h	l (lift)	L <sub>1</sub>	L <sub>2</sub>	OL	T	Weight	
															lbs	kg
DC-1212-15AN	15	220	66.5	95	8.5	1.6	35	376.5	15	14	71.5	305	150	14.3	19.8	9.0
DC-1212-20AN	20	220	82.5	117	8.5	1.6	43	376.5	19	14	71.5	305	162	16.0	20.5	9.3
DC-1212-25AN	25	220	89.0	124	8.5	1.6	51	385.5	19	14	76.5	309	163	17.5	23.5	10.7
DC-1212-32AN	32	282	98.5	133	10.0	1.6	64	525.0	19	18	94.0	431	203	19.1	45.0	20.4
DC-1212-40AN	40	282	114.5	156	10.0	1.6	73	525.0	22	18	94.0	431	203	20.7	45.2	20.5

**Parts Drawing:**

Same as on page 33 resp. 35 except for body-number.

**Parts List**

Valve Model No.		DC-1212-15A	DC-1212-20A	DC-1212-25A	DC-1212-32A	DC-1212-40A
Size		15	20	25	32	40
Key No.	Part Name	Part Number				
1	Body, ANSI-Flange	D-21215-01A	D-21220-01A	D-21225-01A	D-21232-01A	D-21240-01A
2	Yoke	D-21115-02	D-21115-02	D-21125-02	D-21132-02	D-21132-02
3	Lower Cover	D-21115-03	D-21115-03	D-21125-03	D-21132-03	D-21132-03
4	Upper Cover, 1/4" NPT-tapped	D-21115-04N	D-21115-04N	D-21125-04N	D-21132-04N	D-21132-04N
	Upper Cover, 1/4" BSP-tapped	D-21115-04B	D-21115-04B	D-21125-04B	D-21132-04B	D-21132-04B
	Upper Cover, 1/4" PT-tapped	D-21115-04P	D-21115-04P	D-21125-04P	D-21132-04P	D-21132-04P
5	Stem	D-21115-05	D-21115-05	D-21125-05	D-21132-05	D-21132-05
6	Upper Stem	D-21115-06	D-21115-06	D-21125-06	D-21132-06	D-21132-06
7	Bottom Nut	D-21115-07	D-21115-07	D-21125-07	D-21132-07	D-21132-07
8	Disc Guide	D-21115-08	D-21115-08	D-21125-08	D-21132-08	D-21132-08
9	Guide Bushing	D-21115-09	D-21115-09	D-21125-09	D-21132-09	D-21132-09
10	Guide	D-21115-10	D-21115-10	D-21125-10	D-21132-10	D-21132-10
11	Packing Washer	D-21115-11	D-21115-11	D-21125-11	D-21132-11	D-21132-11
12	Gland	D-21115-12	D-21115-12	D-21125-12	D-21132-12	D-21132-12
13	Threaded Guide Bushing	D-21115-13	D-21115-13	D-21125-13	D-21132-13	D-21132-13
14	Spring Seat	D-21115-14	D-21115-14	D-21125-14	D-21132-14	D-21132-14
15	Washer	D-21115-15	D-21115-15	D-21125-15	D-21132-15	D-21132-15
16	Diaphragm Lower Seat	D-21115-16	D-21115-16	D-21125-16	D-21132-16	D-21132-16
17	Diaphragm Upper Seat	D-21115-17	D-21115-17	D-21125-17	D-21132-17	D-21132-17
18	Guide Bushing	D-21115-18	D-21115-18	D-21125-18	D-21132-18	D-21132-18
19	Adjustment Nut	D-21115-19	D-21115-19	D-21125-19	D-21132-19	D-21132-19
20	Air Exhaust Plug	D-21115-20	D-21115-20	D-21125-20	D-21132-20	D-21132-20
21	Indicator Ring	D-21115-21	D-21115-21	D-21125-21	D-21132-21	D-21132-21
22	Scale	D-21115-22	D-21115-22	D-21125-22	D-21132-22	D-21132-22
23	Lock Nut (RH)	D-21115-23	D-21115-23	D-21125-23	D-21132-23	D-21132-23
24	Lock Nut (LH)	D-21115-24	D-21115-24	D-21125-24	D-21132-24	D-21132-24
25	Nut	D-21115-25	D-21115-25	D-21125-25	D-21132-25	D-21132-25
26	Spring Washer	D-21115-26	D-21115-26	D-21125-26	D-21132-26	D-21132-26
27	Socket Head Cap Screw (6)	D-21115-27	D-21115-27	D-21125-27	D-21132-27	D-21132-27
28	Hex. Head Screw (12)	D-21115-28	D-21115-28	D-21125-28	D-21132-28	D-21132-28
29	Hex. Head Nut (12)	D-21115-29	D-21115-29	D-21125-29	D-21132-29	D-21132-29
30	Socket Head Cap Screw	D-21115-30	D-21115-30	D-21125-30	D-21132-30	D-21132-30
31	Socket Head Cap Screw (2)	D-21115-31	D-21115-31	D-21125-31	D-21132-31	D-21132-31
32	Spring Washer (2)	D-21115-32	D-21115-32	D-21125-32	D-21132-32	D-21132-32
33	Socket Head Cap Screw (2)	D-21115-33	D-21115-33	D-21125-33	D-21132-33	D-21132-33
34	Spring Washer (2)	D-21115-34	D-21115-34	D-21125-34	D-21132-34	D-21132-34
35	-	-	-	-	-	-
36	Rivett	D-21115-36	D-21115-36	D-21125-36	D-21132-36	D-21132-36
37	Packing Spring	D-21115-37	D-21115-37	D-21125-37	D-21132-37	D-21132-37
38	Spring	D-21115-38	D-21115-38	D-21125-38	D-21132-38	D-21132-38
39	Gland Packing	D-21115-39	D-21115-39	D-21125-39	D-21132-39	D-21132-39
40	Diaphragm	D-21115-40	D-21115-40	D-21125-40	D-21132-40	D-21132-40
41	Dust Seal	D-21115-41	D-21115-41	D-21125-41	D-21132-41	D-21132-41
42	Gasket	D-21115-42	D-21115-42	D-21125-42	D-21132-42	D-21132-42
43	Plug	D-21115-43	D-21115-43	D-21115-43	D-21132-43	D-21132-43

### Description

These valves are designed to control the flow of steam, gas or air. They guarantee highly accurate process control. The spring-loaded gland packings are self-adjusting.

**Operating Pressure:** max. 290 PSI (20 bar)

**Pilot Pressure:** 2.9 – 14.5 PSI (0.2 – 1.0 bar)

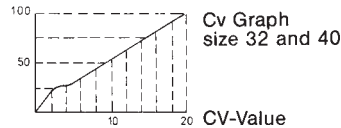
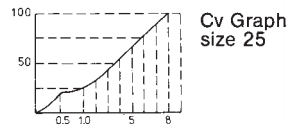
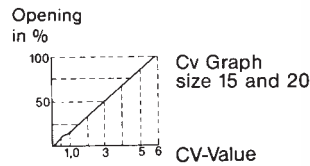
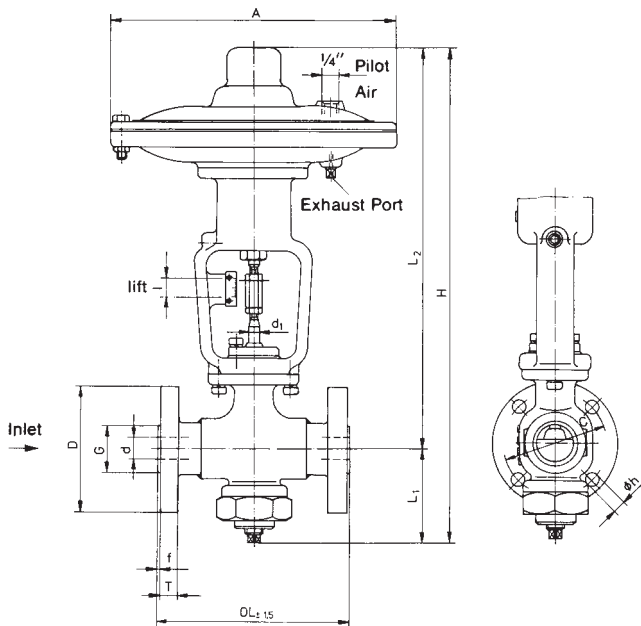
**Pressure Drop:** max. 87 PSI (6 bar)

**Temperature:** max. 410° F. (210° C)

**Material of Body:** stainless steel casting

**Stem:** stainless steel supported by guide, guide bushing and adj. rod guide, Stellite seat.

### Dimensions (mm)



### Model Selection Chart

Designs and Specifications are subject to change without notice

Model No.	Size d	A	C	D	d <sub>1</sub>	f	G	H	h	l (lift)	L <sub>1</sub>	L <sub>2</sub>	OL	T	Weight	
															lbs	kg
DC-1212-15JP	15	220	70	95	8.5	1	52	376.5	15	14	71.5	305	154	14	20.3	9.2
DC-1212-20JP	20	220	75	100	8.5	1	58	376.5	15	14	71.5	305	154	16	20.9	9.5
DC-1212-25JP	25	220	90	125	8.5	1	70	385.5	19	14	76.5	309	164	16	23.5	10.7
DC-1212-32JP	32	282	100	135	10.0	2	80	525.0	19	18	94.0	431	203	18	45.0	20.4
DC-1212-40JP	40	282	105	140	10.0	2	85	525.0	19	18	94.0	431	203	18	45.2	20.5

**Parts Drawing:**

Same as on page 33 resp. 35 except for body-number.

**Parts List**

Valve Model No.		DC-1212-15J	DC-1212-20J	DC-1212-25J	DC-1212-32J	DC-1212-40J
Size		15	20	25	32	40
Key No.	Part Name	Part Number				
1	Body, JIS-Flange	D-21215-01J	D-21220-01J	D-21225-01J	D-21232-01J	D-21240-01J
2	Yoke	D-21115-02	D-21115-02	D-21125-02	D-21132-02	D-21132-02
3	Lower Cover	D-21115-03	D-21115-03	D-21125-03	D-21132-03	D-21132-03
4	Upper Cover, 1/4" NPT-tapped	D-21115-04N	D-21115-04N	D-21125-04N	D-21132-04N	D-21132-04N
	Upper Cover, 1/4" BSP-tapped	D-21115-04B	D-21115-04B	D-21125-04B	D-21132-04B	D-21132-04B
	Upper Cover, 1/4" PT-tapped	D-21115-04P	D-21115-04P	D-21125-04P	D-21132-04P	D-21132-04P
5	Stem	D-21115-05	D-21115-05	D-21125-05	D-21132-05	D-21132-05
6	Upper Stem	D-21115-06	D-21115-06	D-21125-06	D-21132-06	D-21132-06
7	Bottom Nut	D-21115-07	D-21115-07	D-21125-07	D-21132-07	D-21132-07
8	Disc Guide	D-21115-08	D-21115-08	D-21125-08	D-21132-08	D-21132-08
9	Guide Bushing	D-21115-09	D-21115-09	D-21125-09	D-21132-09	D-21132-09
10	Guide	D-21115-10	D-21115-10	D-21125-10	D-21132-10	D-21132-10
11	Packing Washer	D-21115-11	D-21115-11	D-21125-11	D-21132-11	D-21132-11
12	Gland	D-21115-12	D-21115-12	D-21125-12	D-21132-12	D-21132-12
13	Threaded Guide Bushing	D-21115-13	D-21115-13	D-21125-13	D-21132-13	D-21132-13
14	Spring Seat	D-21115-14	D-21115-14	D-21125-14	D-21132-14	D-21132-14
15	Washer	D-21115-15	D-21115-15	D-21125-15	D-21132-15	D-21132-15
16	Diaphragm Lower Seat	D-21115-16	D-21115-16	D-21125-16	D-21132-16	D-21132-16
17	Diaphragm Upper Seat	D-21115-17	D-21115-17	D-21125-17	D-21132-17	D-21132-17
18	Guide Bushing	D-21115-18	D-21115-18	D-21125-18	D-21132-18	D-21132-18
19	Adjustment Nut	D-21115-19	D-21115-19	D-21125-19	D-21132-19	D-21132-19
20	Air Exhaust Plug	D-21115-20	D-21115-20	D-21125-20	D-21132-20	D-21132-20
21	Indicator Ring	D-21115-21	D-21115-21	D-21125-21	D-21132-21	D-21132-21
22	Scale	D-21115-22	D-21115-22	D-21125-22	D-21132-22	D-21132-22
23	Lock Nut (RH)	D-21115-23	D-21115-23	D-21125-23	D-21132-23	D-21132-23
24	Lock Nut (LH)	D-21115-24	D-21115-24	D-21125-24	D-21132-24	D-21132-24
25	Nut	D-21115-25	D-21115-25	D-21125-25	D-21132-25	D-21132-25
26	Spring Washer	D-21115-26	D-21115-26	D-21125-26	D-21132-26	D-21132-26
27	Socket Head Cap Screw (6)	D-21115-27	D-21115-27	D-21125-27	D-21132-27	D-21132-27
28	Hex. Head Screw (12)	D-21115-28	D-21115-28	D-21125-28	D-21132-28	D-21132-28
29	Hex. Head Nut (12)	D-21115-29	D-21115-29	D-21125-29	D-21132-29	D-21132-29
30	Socket Head Cap Screw	D-21115-30	D-21115-30	D-21125-30	D-21132-30	D-21132-30
31	Socket Head Cap Screw (2)	D-21115-31	D-21115-31	D-21125-31	D-21132-31	D-21132-31
32	Spring Washer (2)	D-21115-32	D-21115-32	D-21125-32	D-21132-32	D-21132-32
33	Socket Head Cap Screw (2)	D-21115-33	D-21115-33	D-21125-33	D-21132-33	D-21132-33
34	Spring Washer (2)	D-21115-34	D-21115-34	D-21125-34	D-21132-34	D-21132-34
35	-	-	-	-	-	-
36	Rivett	D-21115-36	D-21115-36	D-21125-36	D-21132-36	D-21132-36
37	Packing Spring	D-21115-37	D-21115-37	D-21125-37	D-21132-37	D-21132-37
38	Spring	D-21115-38	D-21115-38	D-21125-38	D-21132-38	D-21132-38
39	Gland Packing	D-21115-39	D-21115-39	D-21125-39	D-21132-39	D-21132-39
40	Diaphragm	D-21115-40	D-21115-40	D-21125-40	D-21132-40	D-21132-40
41	Dust Seal	D-21115-41	D-21115-41	D-21125-41	D-21132-41	D-21132-41
42	Gasket	D-21115-42	D-21115-42	D-21125-42	D-21132-42	D-21132-42
43	Plug	D-21115-43	D-21115-43	D-21115-43	D-21132-43	D-21132-43

#### Description

These valves are designed to control the flow of steam, gas or air. They guarantee highly accurate process control. The spring-loaded gland packings are self-adjusting.

**Operating Pressure:** max. 290 PSI (20 bar)

**Pilot Pressure:** 2.9 - 14.5 PSI (0.2 - 1.0 bar)

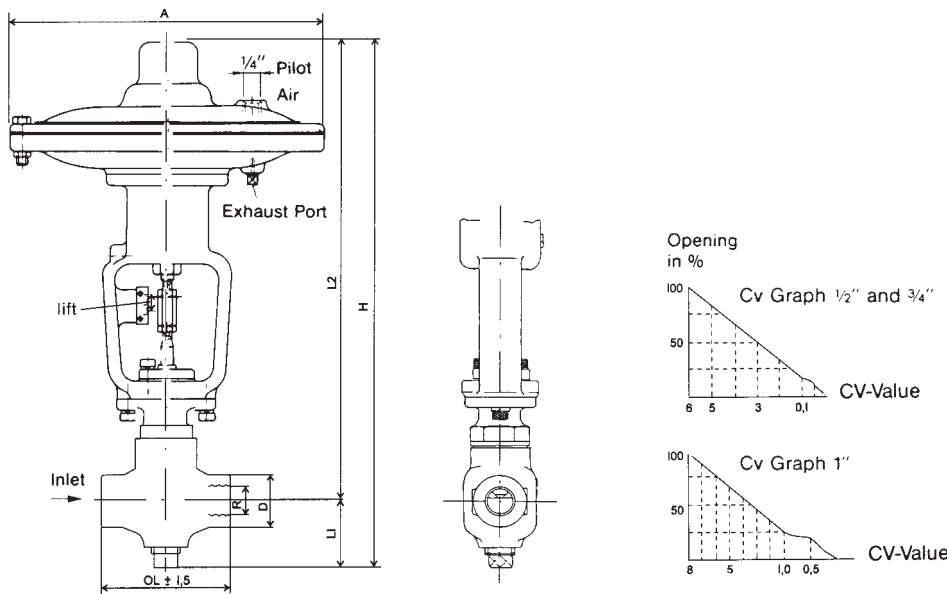
**Pressure Drop:** max. 87 PSI (6 bar)

**Temperature:** max. 410° F. (210° C)

**Material of Body:** stainless steel casting

**Stem:** stainless steel supported by guide, guide bushing and adj. rod guide, Stellite seat.

#### Dimensions (mm)



Size 1 1/2" on request.  
Flange-type valves on request.

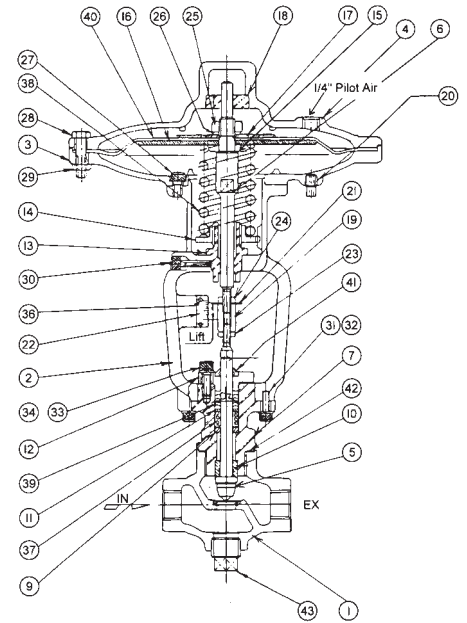
#### Model Selection Chart

Designs and Specifications are subject to change without notice

Model No.	R	A	D	H	I (lift)	L1	L2	OL	Weight	
									lbs	kg
DC-1221-15N	1/2" NPT	220	38	370.8	14	48.0	322.8	95	15.4	7.0
DC-1221-15B	1/2" BSP	220	38	370.8	14	48.0	322.8	95	15.4	7.0
DC-1221-15P	1/2" PT	220	38	370.8	14	48.0	322.8	95	15.4	7.0
DC-1221-20N	3/4" NPT	220	38	376.5	14	48.0	322.8	95	15.2	6.9
DC-1221-20B	3/4" BSP	220	38	376.5	14	48.0	322.8	95	15.2	6.9
DC-1221-20P	3/4" PT	220	38	376.5	14	48.0	322.8	95	15.2	6.9
DC-1221-25N	1" NPT	220	46	375.8	14	53.0	322.8	100	23.6	10.7
DC-1221-25B	1" BSP	220	46	375.8	14	53.0	322.8	100	23.6	10.7
DC-1221-25P	1" PT	220	46	375.8	14	53.0	322.8	100	23.6	10.7

### Parts List

Valve Model No.		DC-1221-15	DC-1221-20	DC-1221-25
Size		1/2"	3/4"	1"
Key No.	Part Name	Part Number		
1	Body, 1/2" NPT-tapped	D-22115-01N	-	-
	Body, 1/2" BSP-tapped	D-22115-01B	-	-
	Body, 1/2" PT-tapped	D-22115-01P	-	-
	Body, 3/4" NPT-tapped	-	D-22120-01N	-
	Body, 3/4" BSP-tapped	-	D-22120-01B	-
	Body, 3/4" PT-tapped	-	D-22120-01P	-
	Body, 1" NPT-tapped	-	-	D-22125-01N
	Body, 1" BSP-tapped	-	-	D-22125-01B
Body, 1" PT-tapped	-	-	D-22125-01P	
2	Yoke	D-21115-02	D-21115-02	D-21125-02
3	Lower Cover	D-21115-03	D-21115-03	D-21125-03
4	Upper Cover, 1/4" NPT-tapped	D-21115-04N	D-21115-04N	D-21125-04N
	Upper Cover, 1/4" BSP-tapped	D-21115-04B	D-21115-04B	D-21125-04B
	Upper Cover, 1/4" PT-tapped	D-21115-04P	D-21115-04P	D-21125-04P
5	Stem	D-22115-05	D-22115-05	D-22125-05
6	Upper Stem	D-21115-06	D-21115-06	D-21125-06
7	Bonnet	D-22115-07	D-22115-07	D-22125-07
8	-	-	-	-
9	Guide Bushing	D-22115-09	D-22115-09	D-22125-09
10	Guide Bushing	D-22115-10	D-22115-10	D-22125-10
11	Packing Washer	D-21115-11	D-21115-11	D-21125-11
12	Gland	D-21115-12	D-21115-12	D-21125-12
13	Threaded Guide Bushing	D-21115-13	D-21115-13	D-21125-13
14	Spring Seat	D-21115-14	D-21115-14	D-21125-14
15	Washer	D-21115-15	D-21115-15	D-21125-15
16	Diaphragm Lower Seat	D-21115-16	D-21115-16	D-21125-16
17	Diaphragm Upper Seat	D-21115-17	D-21115-17	D-21125-17
18	Guide Bushing	D-21115-18	D-21115-18	D-21125-18
19	Adjustment Nut	D-21115-19	D-21115-19	D-21125-19
20	Air Exhaust Plug	D-21115-20	D-21115-20	D-21125-20
21	Indicator Ring	D-21115-21	D-21115-21	D-21125-21
22	Scale	D-21115-22	D-21115-22	D-21125-22
23	Lock Nut (RN)	D-21115-23	D-21115-23	D-21125-23
24	Lock Nut (LH)	D-21115-24	D-21115-24	D-21125-24
25	Nut	D-21115-25	D-21115-25	D-21125-25
26	Spring Washer	D-21115-26	D-21115-26	D-21125-26
27	Socket Head Cap Screw (6)	D-21115-27	D-21115-27	D-21125-27
28	Hex. Head Screw (12)	D-21115-28	D-21115-28	D-21125-28
29	Hex. Head Nut (12)	D-21115-29	D-21115-29	D-21125-29
30	Socket Head Cap Screw	D-21115-30	D-21115-30	D-21125-30
31	Socket Head Cap Screw (2)	D-21115-31	D-21115-31	D-21125-31
32	Spring Washer (2)	D-21115-32	D-21115-32	D-21125-32
33	Socket Head Cap Screw (2)	D-21115-33	D-21115-33	D-21125-33
34	Spring Washer (2)	D-21115-34	D-21115-34	D-21125-34
35	-	-	-	-
36	Rivett	D-21115-36	D-21115-36	D-21115-36
37	Packing Spring	D-21115-37	D-21115-37	D-21125-37
38	Spring	D-21115-38	D-21115-38	D-21125-38
39	Gland Packing	D-21115-39	D-21115-39	D-21125-39
40	Diaphragm	D-21115-40	D-21115-40	D-21125-40
41	Dust Seal	D-21115-41	D-21115-41	D-21125-41
42	Gasket	D-21115-42	D-21115-42	D-21125-42
43	Plug	D-22115-43	D-22115-43	D-22115-43



### Description

The Steam Regulator is used for automatic control of pressure. The output pressure can be varied quickly and without difficulties by means of remote setting (pressure reduction of the pilot control air).

**Operating Pressure:** max. 188 PSI (13 bar)

**Temperature:** max. 401° F. (205° C)

**Ratio between Loading Pressure and Steam Output Pressure:**

size  $\frac{3}{4}$ " : 18.85 to 20.30 PSI : 14.5 PSI (1.3 to 1.4 bar : 1 bar)

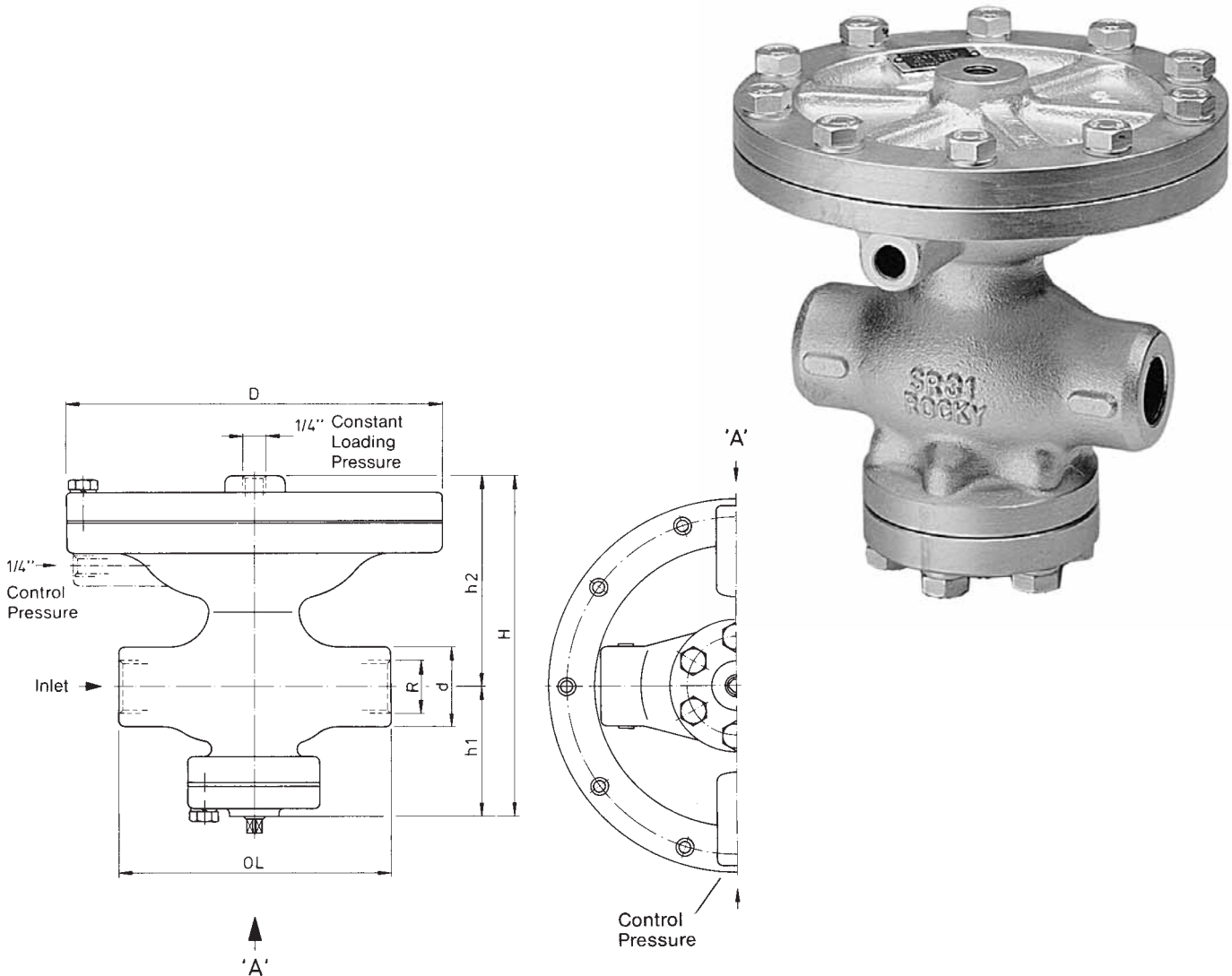
size 1" : 17.40 to 18.85 PSI : 14.5 PSI (1.2 to 1.3 bar : 1 bar)

**Note for Mounting:** The connecting line for the control pressure should be mounted in 10 x d behind the valve outlet.

**Material of Body:** Cast Iron (Ductile)

**Fluid:** Steam, Air

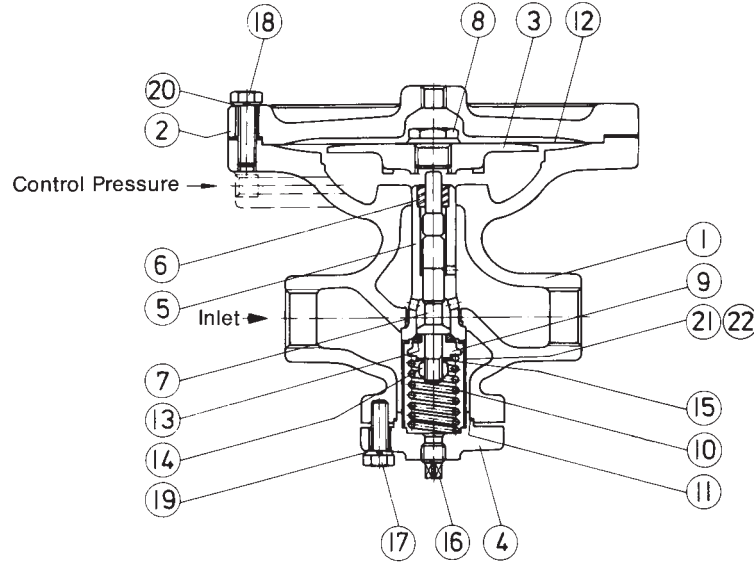
### Dimensions (mm)



### Model Selection Chart

Model No.	Size R	D	d	H	h <sub>1</sub>	h <sub>2</sub>	OL	Weight	
								lbs	kg
SR-3211-20N	$\frac{3}{4}$ " NPT	186	46	181	68	113	140	19.0	8.6
SR-3211-20B	$\frac{3}{4}$ " BSP	186	46	181	68	113	140	19.0	8.6
SR-3211-20P	$\frac{3}{4}$ " PT	186	46	181	68	113	140	19.0	8.6
SR-3211-25N	1" NPT	228	52	205	77	128	165	30.2	13.7
SR-3211-25B	1" BSP	228	52	205	77	128	165	30.2	13.7
SR-3211-25P	1" PT	228	52	205	77	128	165	30.2	13.7

#### Parts List



Model No.		SR-3211-20	SR-3211-25
Size		3/4"	1"
Key No.	Part Name	Part Number	
1	Body, NPT-tapped	R-31120-01N	R-31125-01N
	Body, BSP-tapped	R-31120-01B	R-31125-01B
	Body, PT-tapped	R-31120-01P	R-31125-01P
2	Cover, NPT-tapped	R-21120-02N	R-21125-02N
	Cover, BSP-tapped	R-21120-02B	R-21125-02B
	Cover, PT-tapped	R-21120-02P	R-21125-02P
3	Diaphragm Plate	R-21120-03	R-21125-03
4	Bottom Cover	R-31120-04	R-31125-04
5	Center Seat	R-21120-05	R-21125-05
6	Guide Bushing	R-21120-06	R-21125-06
7	Center Spindle	R-21120-07	R-21125-07
8	Screw	R-21120-08	R-21125-08
9	Disc Adapter	R-21120-09	R-21125-09
10	Disc Spring	R-21120-10	R-21125-10
11	Gasket	R-31120-11	R-31125-11
12	Diaphragm (2)	R-21120-12	R-21125-12
13	Disc Ring	R-21120-13	R-21125-13
14	U-Nut	R-21120-14	R-21125-14
15	Spring Washer	R-21120-15	R-21125-15
16	Plug	R-21120-16	R-21125-16
17	Hex Head Screw (6)	R-31120-17	R-31125-17
18	Spring Washer (6)	R-21120-18	R-21125-18
19	Spring Washer (10)	R-21120-19	R-21125-19
20	Hex Head Screw (10)	R-21120-20	R-21125-20
21	Filter	R-31120-21	R-31125-21
22	Filter Spring	R-31120-22	R-31125-22

Designs and Specifications are subject to change without notice

#### Description

The Steam Regulator is used for automatic control of pressure. The output pressure can be varied quickly and without difficulties by means of remote setting (pressure reduction of the pilot control air). These Steam Regulators are also available with flange connections.

**Operating Pressure:** max. 188 PSI (13 bar)

**Temperature:** max. 401° F. (205° C)

**Ratio between Loading Pressure and Steam Output Pressure:**

size 3/4" : 18.85 to 20.30 PSI : 14.5 PSI (1.3 to 1.4 bar : 1 bar)

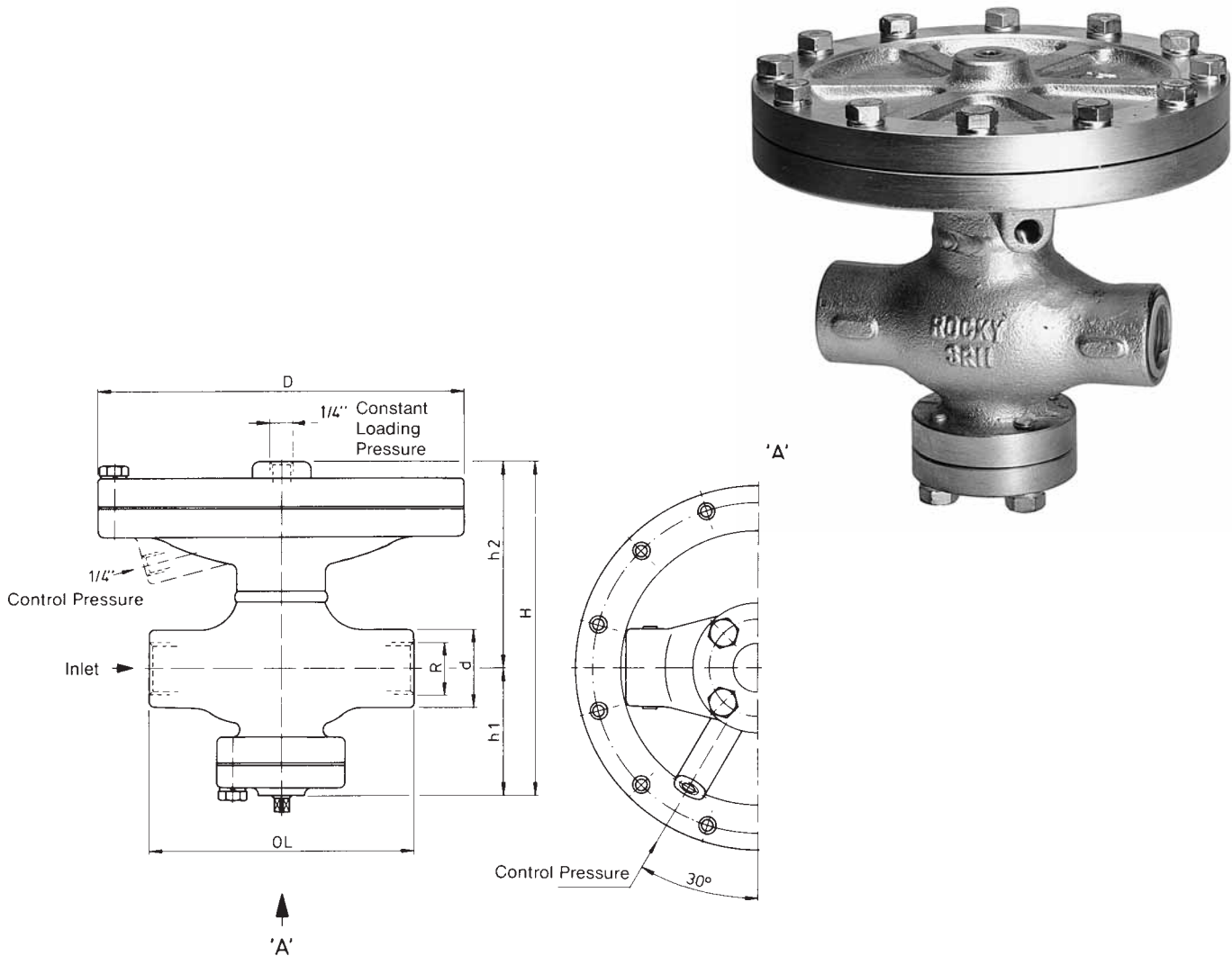
size 1" : 17.40 to 18.85 PSI : 14.5 PSI (1.2 to 1.3 bar : 1 bar)

**Note for Mounting:** The connecting line for the control pressure should be mounted in 10 x d behind the valve outlet.

**Material of Body:** stainless steel casting

**Fluid:** Steam, Air, Gas

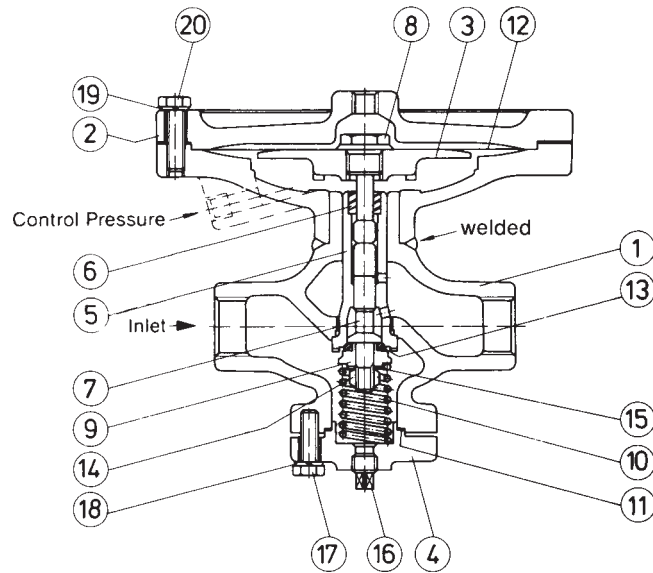
#### Dimensions (mm)



#### Model Selection Chart

Model No.	Size R	D	d	H	h <sub>1</sub>	h <sub>2</sub>	OL	Weight	
								lbs	kg
SR-2211-20N	3/4" NPT	186	42	181	68	113	140	18.5	8.4
SR-2211-20B	3/4" BSP	186	42	181	68	113	140	18.5	8.4
SR-2211-20P	3/4" PT	186	42	181	68	113	140	18.5	8.4
SR-2211-25N	1" NPT	228	48	205	77	128	165	29.5	13.4
SR-2211-25B	1" BSP	228	48	205	77	128	165	29.5	13.4
SR-2211-25P	1" PT	228	48	205	77	128	165	29.5	13.4

#### Parts List



Model No.		SR-2211-20	SR-2211-25
Size		3/4"	1"
Key No.	Part Name	Part Number	
1	Body, NPT-tapped	R-21120-01N	R-21125-01N
	Body, BSP-tapped	R-21120-01B	R-21125-01B
	Body, PT-tapped	R-21120-01P	R-21125-01P
2	Cover, NPT-tapped	R-21120-02N	R-21125-02N
	Cover, BSP-tapped	R-21120-02B	R-21125-02B
	Cover, PT-tapped	R-21120-02P	R-21125-02P
3	Diaphragm Plate	R-21120-03	R-21125-03
4	Bottom Cover	R-21120-04	R-21125-04
5	Center Seat	R-21120-05	R-21125-05
6	Guide Bushing	R-21120-06	R-21125-06
7	Center Spindle	R-21120-07	R-21125-07
8	Screw	R-21120-08	R-21125-08
9	Disc Adapter	R-21120-09	R-21125-09
10	Disc Spring	R-21120-10	R-21125-10
11	Gasket	R-21120-11	R-21125-11
12	Diaphragm (2)	R-21120-12	R-21125-12
13	Disc Ring	R-21120-13	R-21125-13
14	U-Nut	R-21120-14	R-21125-14
15	Spring Washer	R-21120-15	R-21125-15
16	Plug	R-21120-16	R-21125-16
17	Hex Head Screw (4)	R-21120-17	R-21125-17
18	Spring Washer (4)	R-21120-18	R-21125-18
19	Spring Washer (10)	R-21120-19	R-21125-19
20	Hex Head Screw (10)	R-21120-20	R-21125-20

Designs and Specifications are subject to change without notice

#### Description

The Steam Regulator is used for automatic control of pressure. The output pressure can be varied quickly and without difficulties by means of remote setting (pressure reduction of the pilot control air).

On request the steam regulator is available with either JIS- or DIN-flanges.

**Operating Pressure:** max. 188 PSI (13 bar)

**Temperature:** max. 401° F. (205° C)

**Ratio between Loading Pressure and Steam Output Pressure:**

size 3/4" : 18.85 to 20.30 PSI : 14.5 PSI (1.3 to 1.4 bar : 1 bar)

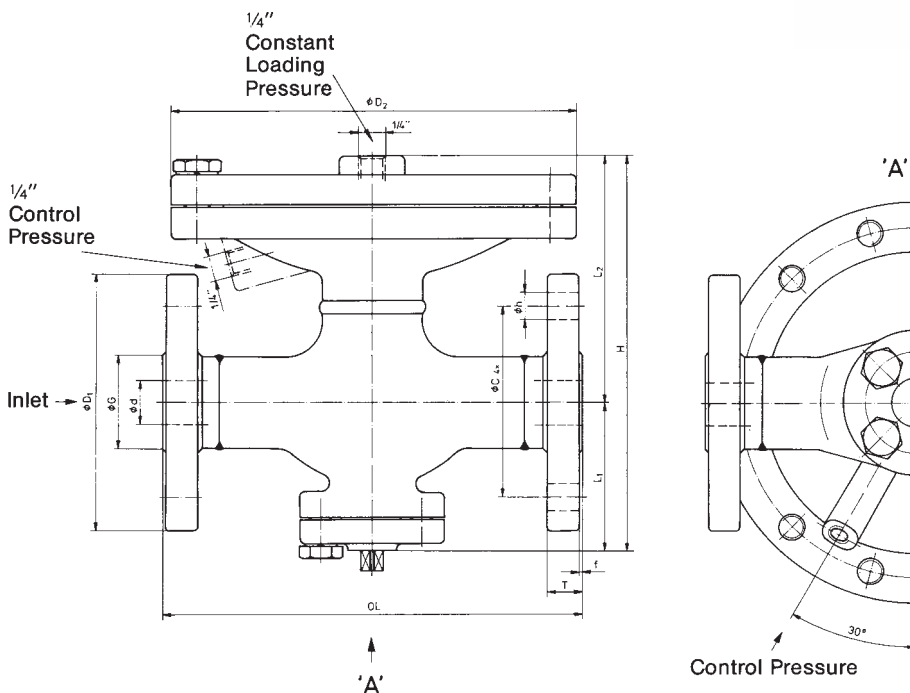
size 1" : 17.40 to 18.85 PSI : 14.5 PSI (1.2 to 1.3 bar : 1 bar)

**Note for Mounting:** The connecting line for the control pressure should be mounted in 10 x d behind the valve outlet.

**Material of Body:** stainless steel casting

**Fluid:** Steam, Air, Gas

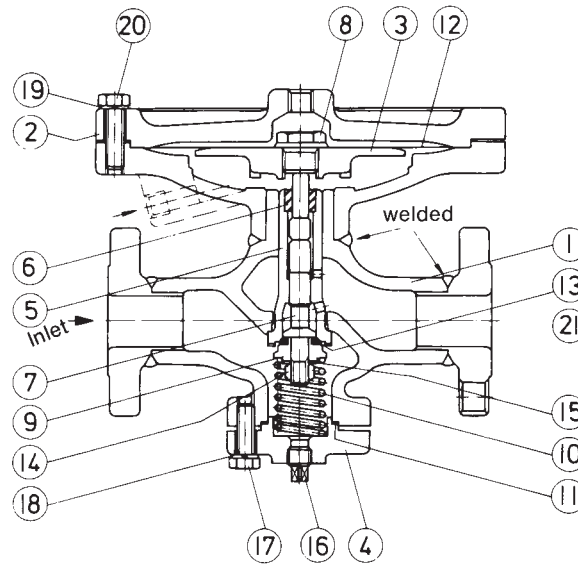
#### Dimensions (mm)



#### Model Selection Chart

Model No.	Size d	C	D <sub>1</sub>	D <sub>2</sub>	f	G	H	h	L <sub>1</sub>	L <sub>2</sub>	OL	T	Weight	
													lbs	kg
SR-2212-20AN	20	82.5	117	186	1.6	43	181	19	68	113	190	16.0	24.2	11.0
SR-2212-25AN	25	89.0	124	228	1.6	51	205	19	77	128	215	17.5	35.7	16.2

#### Parts List



Model No.		SR-2212-20AN	SR-2212-25AN
Size		3/4"	1"
Key No.	Part Name	Part Number	
1	Body, ANSI-flange	R-22120-01A	R-22125-01A
2	Cover, NPT-tapped	R-21120-02N	R-21125-02N
3	Diaphragm Plate	R-21120-03	R-21125-03
4	Bottom Cover	R-21120-04	R-21125-04
5	Center Seat	R-21120-05	R-21125-05
6	Guide Bushing	R-21120-06	R-21125-06
7	Center Spindle	R-21120-07	R-21125-07
8	Screw	R-21120-08	R-21125-08
9	Disc Adapter	R-21120-09	R-21125-09
10	Disc Spring	R-21120-10	R-21125-10
11	Gasket	R-21120-11	R-21125-11
12	Diaphragm (2)	R-21120-12	R-21125-12
13	Disc Ring	R-21120-13	R-21125-13
14	U-Nut	R-21120-14	R-21125-14
15	Spring Washer	R-21120-15	R-21125-15
16	Plug	R-21120-16	R-21125-16
17	Hex Head Screw (4)	R-21120-17	R-21125-17
18	Spring Washer (4)	R-21120-18	R-21125-18
19	Spring Washer (10)	R-21120-19	R-21125-19
20	Hex Head Screw (10)	R-21120-20	R-21125-20

Designs and Specifications are subject to change without notice

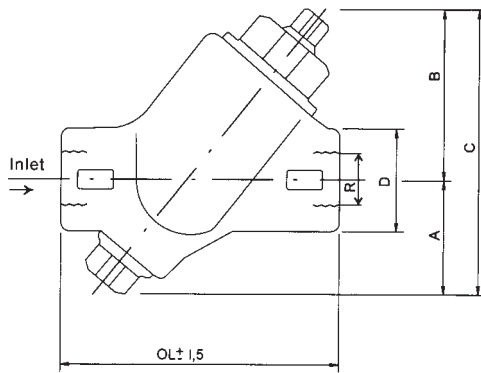
#### Description

These check valves provide accurate and perfect non-return of fluid. The pressure drop is very small due to the full bore size.

**Operating Pressure:** max. 460 PSI (32 bar), min. 1.45 PSI (0.1 bar)  
**Temperature Range:** max. 401° F. (205° C)

**Material of Body:** stainless steel casting  
**Fluid:** Steam, Air, Hot and Cold Water  
**Mounting:** horizontal

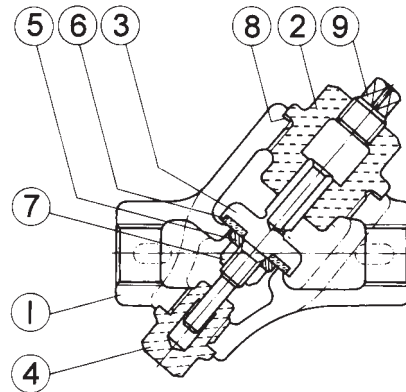
#### Dimensions (mm)



#### Model Selection Chart

Model No.	Size R	A	B	C	D	OL	Weight	
							lbs	kg
<b>YL-1211-08N</b>	1/4" NPT	<b>38</b>	<b>54</b>	<b>92</b>	<b>32</b>	<b>92</b>	<b>2.0</b>	<b>0.9</b>
YL-1211-08B	1/4" BSP	38	54	92	32	92	2.0	0.9
YL-1211-08P	1/4" PT	38	54	92	32	92	2.0	0.9
<b>YL-1211-10N</b>	3/8" NPT	<b>38</b>	<b>54</b>	<b>92</b>	<b>32</b>	<b>92</b>	<b>2.0</b>	<b>0.9</b>
YL-1211-10B	3/8" BSP	38	54	92	32	92	2.0	0.9
YL-1211-10P	3/8" PT	38	54	92	32	92	2.0	0.9
<b>YL-1211-15N</b>	1/2" NPT	<b>38</b>	<b>54</b>	<b>92</b>	<b>32</b>	<b>92</b>	<b>2.0</b>	<b>0.9</b>
YL-1211-15B	1/2" BSP	38	54	92	32	92	2.0	0.9
YL-1211-15P	1/2" PT	38	54	92	32	92	2.0	0.9
<b>YL-1211-20N</b>	3/4" NPT	<b>44</b>	<b>65</b>	<b>109</b>	<b>38</b>	<b>111</b>	<b>3.3</b>	<b>1.5</b>
YL-1211-20B	3/4" BSP	44	65	109	38	111	3.3	1.5
YL-1211-20P	3/4" PT	44	65	109	38	111	3.3	1.5
<b>YL-1211-25N</b>	1" NPT	<b>49</b>	<b>69</b>	<b>118</b>	<b>44</b>	<b>132</b>	<b>4.6</b>	<b>2.1</b>
YL-1211-25B	1" BSP	49	69	118	44	132	4.6	2.1
YL-1211-25P	1" PT	49	69	118	44	132	4.6	2.1
<b>YL-1211-32N</b>	1 1/4" NPT	<b>56</b>	<b>79</b>	<b>135</b>	<b>55</b>	<b>145</b>	<b>6.2</b>	<b>2.8</b>
YL-1211-32B	1 1/4" BSP	56	79	135	55	145	6.2	2.8
YL-1211-32P	1 1/4" PT	56	79	135	55	145	6.2	2.8
<b>YL-1211-40N</b>	1 1/2" NPT	<b>60</b>	<b>90</b>	<b>150</b>	<b>62</b>	<b>152</b>	<b>7.7</b>	<b>3.5</b>
YL-1211-40B	1 1/2" BSP	60	90	150	62	152	7.7	3.5
YL-1211-40P	1 1/2" PT	60	90	150	62	152	7.7	3.5

#### Parts List



Valve Model No.		YL-1211-08 YL-1211-10 YL-1211-15	YL-1211-20	YL-1211-25	YL-1211-32	YL-1211-40
Size		1/4" – 3/8" – 1/2"	3/4"	1"	1 1/4"	1 1/2"
Key No.	Part Name	Part Number				
1	Body, 1/4" NPT-tapped	Y-21108-01N	-	-	-	-
	Body, 1/4" BSP-tapped	Y-21108-01B	-	-	-	-
	Body, 1/4" PT-tapped	Y-21108-01P	-	-	-	-
	Body, 3/8" NPT-tapped	Y-21110-01N	-	-	-	-
	Body, 3/8" BSP-tapped	Y-21110-01B	-	-	-	-
	Body, 3/8" PT-tapped	Y-21110-01P	-	-	-	-
	Body, 1/2" NPT-tapped	Y-21115-01N	-	-	-	-
	Body, 1/2" BSP-tapped	Y-21115-01B	-	-	-	-
	Body, 1/2" PT-tapped	Y-21115-01P	-	-	-	-
	Body, 3/4" NPT-tapped	-	Y-21120-01N	-	-	-
	Body, 3/4" BSP-tapped	-	Y-21120-01B	-	-	-
	Body, 3/4" PT-tapped	-	Y-21120-01P	-	-	-
	Body, 1" NPT-tapped	-	-	Y-21125-01N	-	-
	Body, 1" BSP-tapped	-	-	Y-21125-01B	-	-
Body, 1" PT-tapped	-	-	Y-21125-01P	-	-	
Body, 1 1/4" NPT-tapped	-	-	-	Y-21132-01N	-	
Body, 1 1/4" BSP-tapped	-	-	-	Y-21132-01B	-	
Body, 1 1/4" PT-tapped	-	-	-	Y-21132-01P	-	
Body, 1 1/2" NPT-tapped	-	-	-	-	Y-21140-01N	
Body, 1 1/2" BSP-tapped	-	-	-	-	Y-21140-01B	
Body, 1 1/2" PT-tapped	-	-	-	-	Y-21140-01P	
2	Guide Cover	Y-21115-02	Y-21120-02	Y-21125-02	Y-21132-02	Y-21140-02
3	Disc	Y-21115-03	Y-21120-03	Y-21125-03	Y-21132-03	Y-21140-03
4	Guide Plug	Y-21115-04	Y-21120-04	Y-21125-04	Y-21132-04	Y-21140-04
5	Washer	Y-21115-05	Y-21120-05	Y-21125-05	Y-21132-05	Y-21140-05
6	Disc Plate	Y-21115-06	Y-21120-06	Y-21125-06	Y-21132-06	Y-21140-06
7	U-Nut	Y-21115-07	Y-21120-07	Y-21125-07	Y-21132-07	Y-21140-07
8	Gasket	Y-21115-08	Y-21120-08	Y-21125-08	Y-21132-08	Y-21140-08
9	Plug, 1/4"	Y-21115-09	Y-21115-09	Y-21115-09	Y-21115-09	Y-21115-09

Designs and Specifications are subject to change without notice

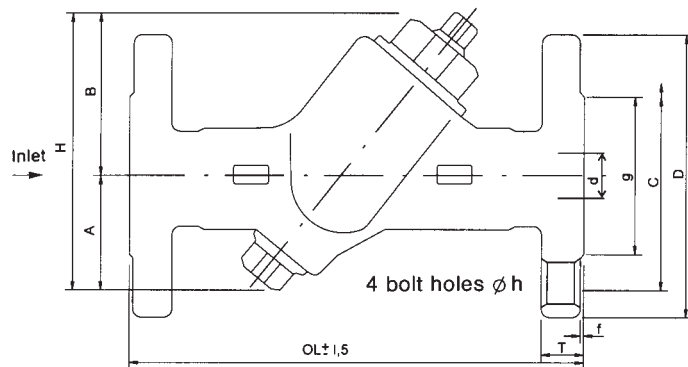
### Description

These check valves provide accurate and perfect non-return of fluid. The pressure drop is very small due to the full bore size.

**Operating Pressure:** max. 460 PSI (32 bar), min. 1.45 PSI (0.1 bar)  
**Temperature Range:** max. 401° F. (205° C)

**Material of Body:** stainless steel casting  
**Fluid:** Steam, Air, Hot and Cold Water  
**Mounting:** horizontal

### Dimensions (mm)

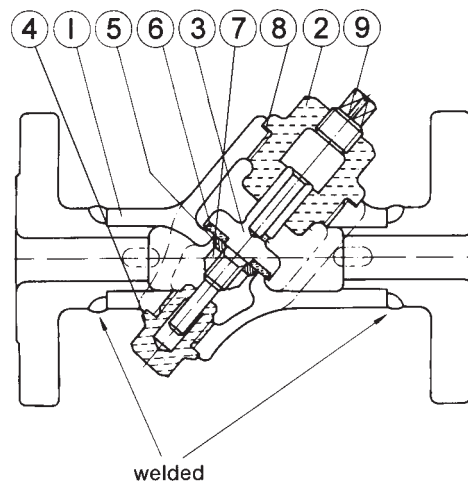


On-request the check valves are available with JIS-flanges.

### Model Selection Chart

Model No.	Size d	A	B	C	D	f	G	H	h	OL	T	Weight	
												lbs	kg
YL-1212-15A	15	38	54	66.5	95	1.6	35	92	15	147	14.3	5.3	2.4
YL-1212-20A	20	44	65	82.5	119	1.6	43	108	19	178	16.0	7.5	3.4
YL-1212-25A	25	49	69	89.0	124	1.6	51	118	19	195	17.5	11.0	5.0
YL-1212-32A	32	56	79	98.5	133	1.6	64	135	19	205	19.1	14.6	6.6
YL-1212-40A	40	60	90	114.5	156	1.6	73	150	22	241	20.7	17.0	7.7

### Parts List



Valve Model No.		YL-1212-15A	YL-1212-20A	YL-1212-25A	YL-1212-32A	YL-1212-40A
Size		15	20	25	32	40
Key No.	Part Name	Part Number				
1	Body, ANSI-flange	Y-21215-01A	Y-21220-01A	Y-21225-01A	Y-21232-01A	Y-21240-01A
2	Guide Cover	Y-21115-02	Y-21120-02	Y-21125-02	Y-21132-02	Y-21140-02
3	Disc	Y-21115-03	Y-21120-03	Y-21125-03	Y-21132-03	Y-21140-03
4	Guide Plug	Y-21115-04	Y-21120-04	Y-21125-04	Y-21132-04	Y-21140-04
5	Washer	Y-21115-05	Y-21120-05	Y-21125-05	Y-21132-05	Y-21140-05
6	Disc Plate	Y-21115-06	Y-21120-06	Y-21125-06	Y-21132-06	Y-21140-06
7	U-Nut	Y-21115-07	Y-21120-07	Y-21125-07	Y-21132-07	Y-21140-07
8	Gasket	Y-21115-08	Y-21120-08	Y-21125-08	Y-21132-08	Y-21140-08
9	Plug, 1/4"	Y-21115-09	Y-21115-09	Y-21115-09	Y-21115-09	Y-21115-09

Designs and Specifications are subject to change without notice

### Description

These joints are designed as flexible connectors of pipe lines to handle pipe motion and pipe misalignment. They may be used with Steam, Hot- or Cold Water, Air or Gas.

The built-in ball joint is always returned to the original position.

**Two types are available:** a) 20° angle type b) fixed type.

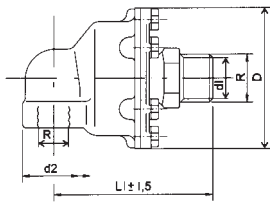
**Material of Body:** cast iron

**Operating Pressure:** max. 460 PSI (32 bar)

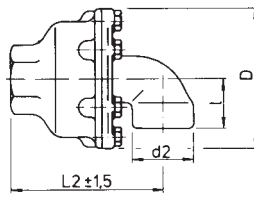
**Temperature Range:** max. 401° F. (205° C)

### Dimensions (mm)

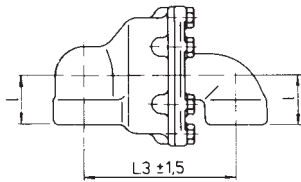
**Type 1** (angle body with straight ball joint)



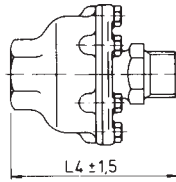
**Type 2** (straight body with angle ball joint)



**Type 3** (angle body with angle ball joint)

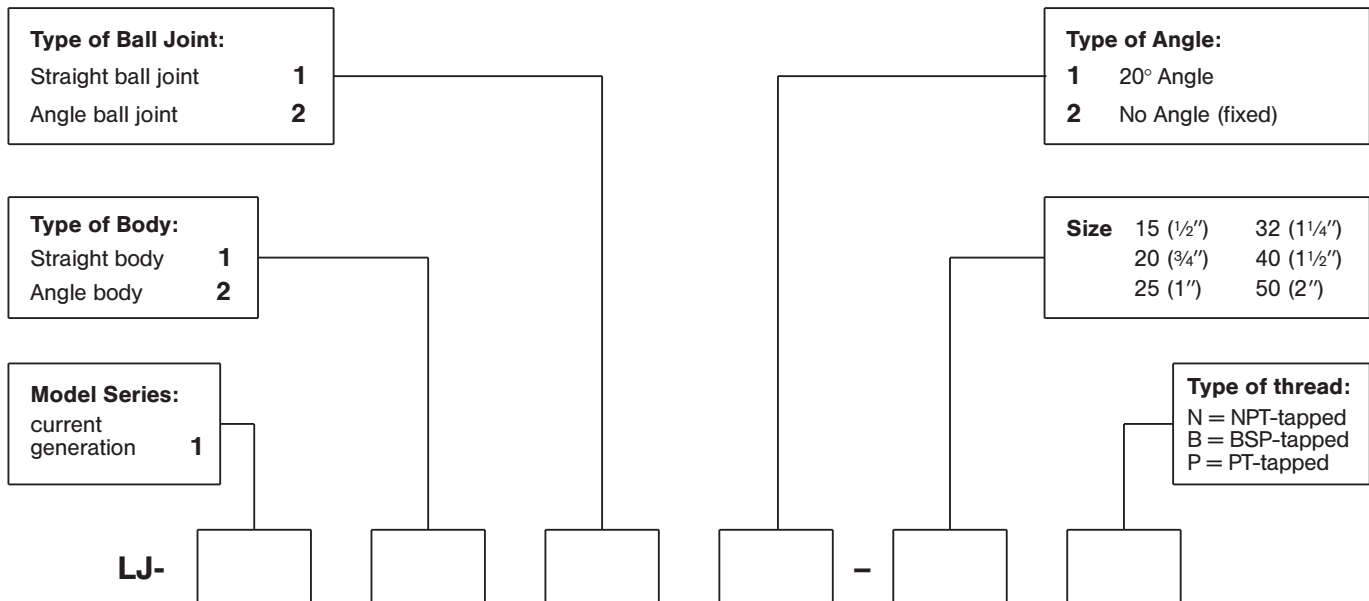


**Type 4** (straight body with straight ball joint)

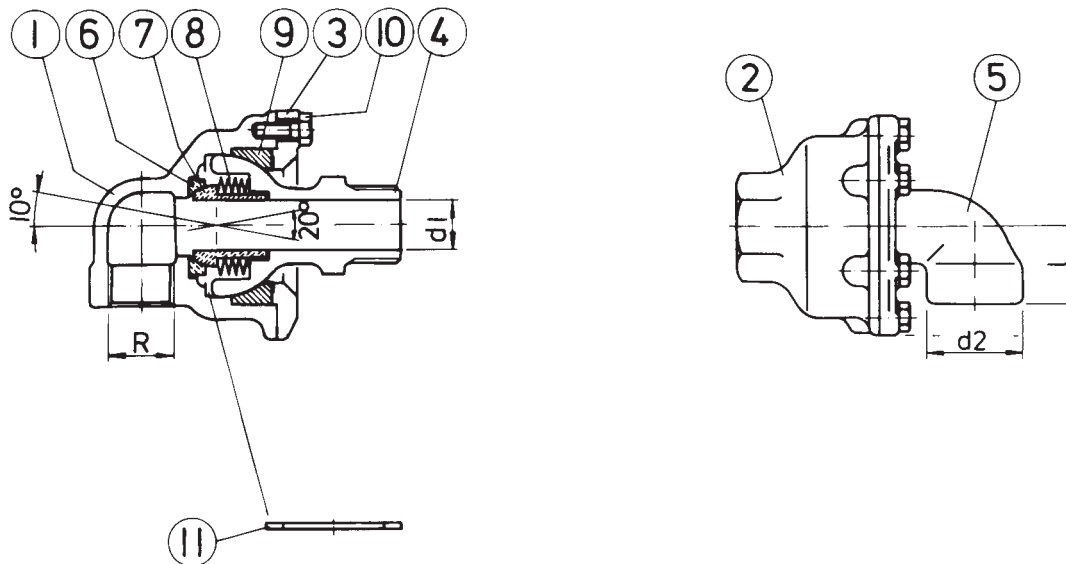


Size (R)	D	d <sub>1</sub>	d <sub>2</sub>	I	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>	Size (R)	D	d <sub>1</sub>	d <sub>2</sub>	I	L <sub>1</sub>	L <sub>2</sub>	L <sub>3</sub>	L <sub>4</sub>
1/2"	70	13	32	30	84	82	75	91	1 1/4"	118	30	58	45	131	145	140	136
3/4"	85	19	38	30	97	93	92	100	1 1/2"	126	36	64	55	140	150	140	148
1"	100	23	46	38	110	120	110	120	2"	154	46	80	65	165	170	165	170

### Order Code



### Parts List



Key No.	Description
1	Body L
2	Body S
3	Cover
4	Ball Joint S
5	Ball Joint L
6	Ball Washer
7	Inner Ball
8	Leaf Spring Package (6 – 10)
9	Seal Ring
10	Cap Screw (6 – 8)
11	Spacer

**When ordering spare parts please state Model No., Size and type of thread of Knuckle Joint.**

Designs and Specifications are subject to change without notice

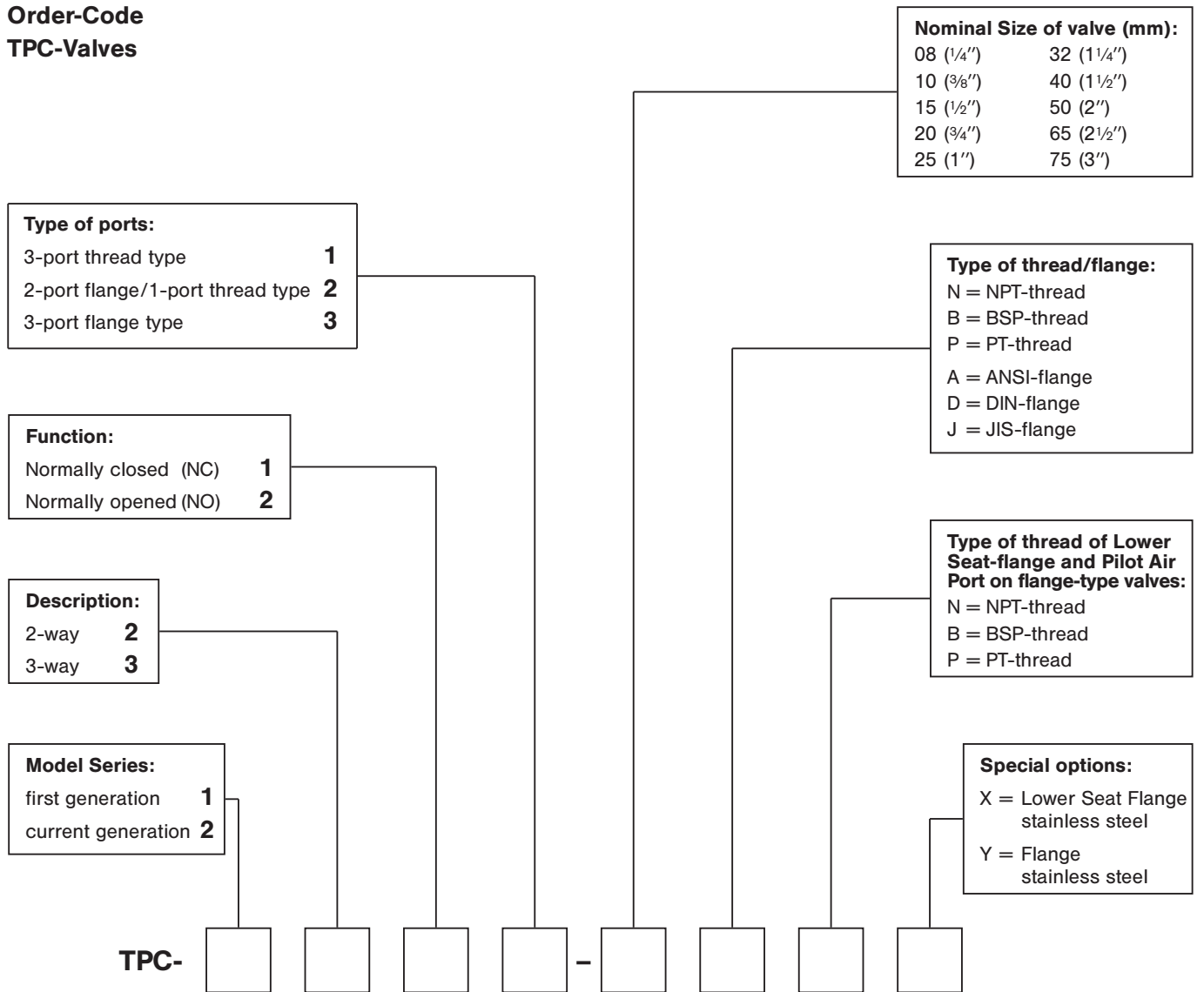
### Cv-Values – TPC-Valves

Size of Valve (mm)	Port No. 1 to Port No. 2	Port No. 2 to Port No. 1	Port No. 2 to Port No. 3	Port No. 3 to Port No. 2
15 (1/2")	3.1	3.1	3.0	2.7
20 (3/4")	5.7	5.9	6.3	5.3
25 (1")	9.0	9.3	12.3	11.3
32 (1 1/4")	13.8	15.3	16.5	19.2
40 (1 1/2")	23.2	23.5	29.0	29.6
50 (2")	30.0	30.2	36.7	37.2

### Repair Kits

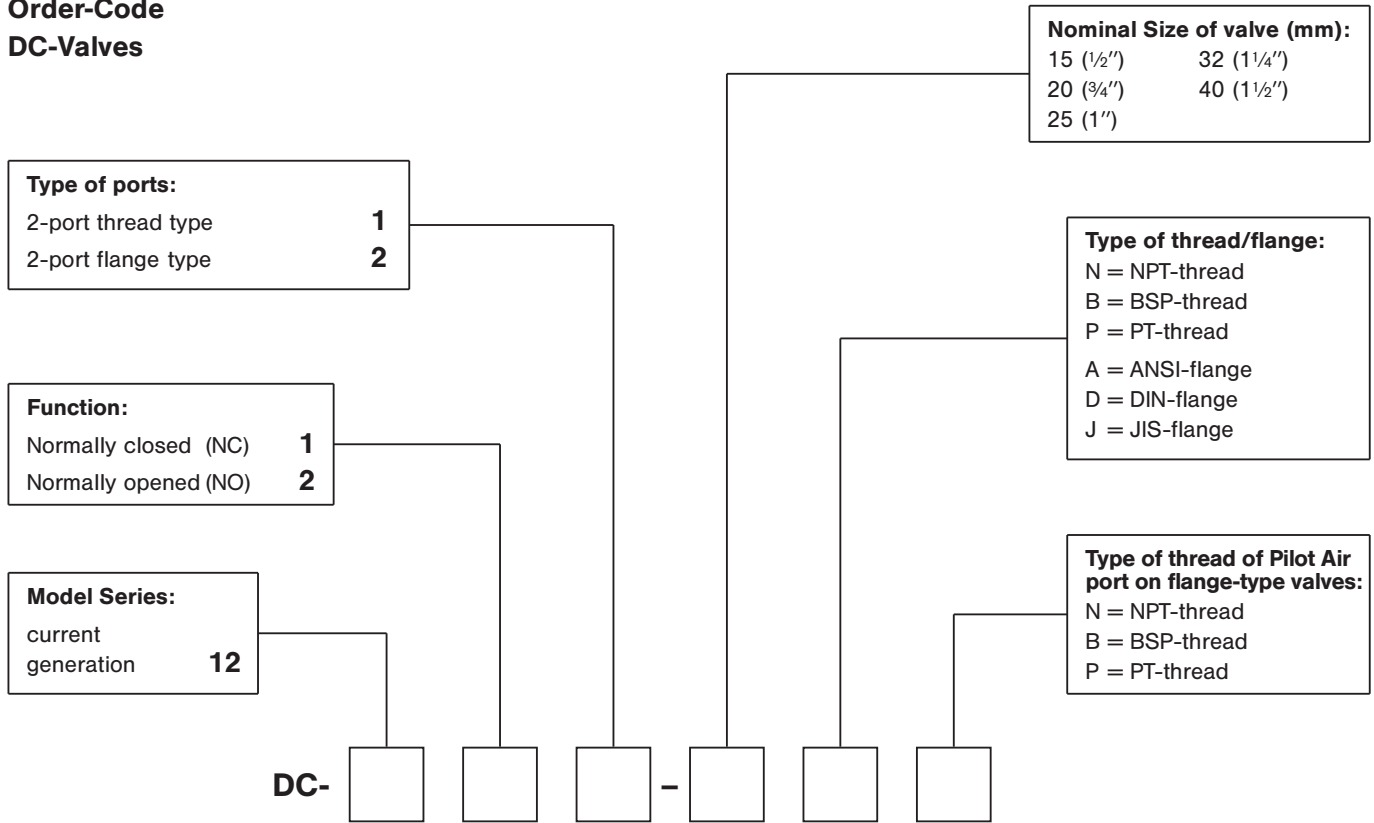
Valve Model-No.	Size (mm)	Repair-Kit Order-No.
TPC-2211-08/TPC-2311-08	8 (1/4")	RK-21115
TPC-2211-10/TPC-2311-10	10 (3/8")	RK-21115
TPC-2211-15/TPC-2311-15	15 (1/2")	RK-21115
TPC-2212-15/TPC-2312-15	15 (1/2")	RK-21115
TPC-2313-15	15 (1/2")	RK-21115
TPC-2211-20/TPC-2311-20	20 (3/4")	RK-21120
TPC-2212-20/TPC-2312-20	20 (3/4")	RK-21120
TPC-2313-20	20 (3/4")	RK-21120
TPC-2211-25/TPC-2311-25	25 (1")	RK-21125
TPC-2212-25/TPC-2312-25	25 (1")	RK-21125
TPC-2313-25	25 (1")	RK-21125
TPC-2211-32/TPC-2311-32	32 (1 1/4")	RK-21132
TPC-2212-32/TPC-2312-32	32 (1 1/4")	RK-21132
TPC-2313-32	32 (1 1/4")	RK-21132
TPC-2211-40/TPC-2311-40	40 (1 1/2")	RK-21140
TPC-2212-40/TPC-2312-40	40 (1 1/2")	RK-21140
TPC-2313-40	40 (1 1/2")	RK-21140
TPC-2212-50/TPC-2312-50	50 (2")	RK-21150
TPC-2221-08/TPC-2321-08	8 (1/4")	RK-22115
TPC-2221-10/TPC-2321-10	10 (3/8")	RK-22115
TPC-2221-15/TPC-2321-15	15 (1/2")	RK-22115
TPC-2222-15/TPC-2322-15	15 (1/2")	RK-22115
TPC-2323-15	15 (1/2")	RK-22115
TPC-2221-20/TPC-2321-20	20 (3/4")	RK-22120
TPC-2222-20/TPC-2322-20	20 (3/4")	RK-22120
TPC-2323-20	20 (3/4")	RK-22120
TPC-2221-25/TPC-2321-25	25 (1")	RK-22125
TPC-2222-25/TPC-2322-25	25 (1")	RK-22125
TPC-2323-25	25 (1")	RK-22125
TPC-2221-40/TPC-2321-40	40 (1 1/2")	RK-22140
TPC-2222-40/TPC-2322-40	40 (1 1/2")	RK-22140
TPC-2323-40	40 (1 1/2")	RK-22140
TPC-2222-50/TPC-2322-50	50 (2")	RK-21150
FP-1411-08/FP-1421-08	8 (1/4")	RK-41108
FP-1411-10/FP-1421-10	10 (3/8")	RK-41108
FP-1411-15/FP-1421-15	15 (1/2")	RK-41115
FP-1411-20/FP-1421-20	20 (3/4")	RK-41115

**Order-Code**  
**TPC-Valves**



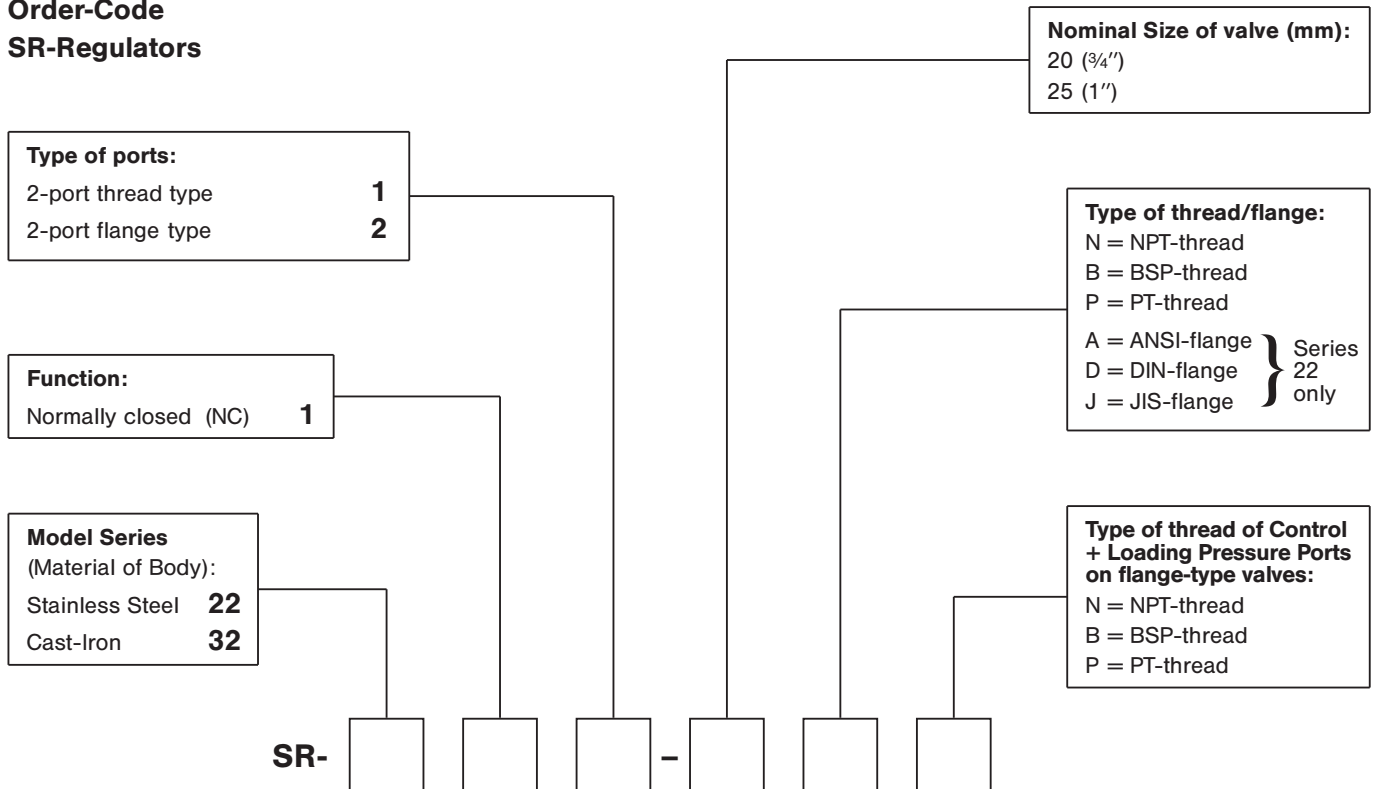
### Order-Code

### DC-Valves



### Order-Code

### SR-Regulators



## A. Length dimensions

The unit of measure given in this catalogue is in mm.  
 The following table assists in the conversion to inches.  
 For precise calculation please use:  
 mm → inch : 1 mm = 0.03937"  
 inch → mm : 1" = 25.4 mm

mm	inch	mm	inch
0.1	0.0039	5.6	0.2205
0.2	0.0079	5.7	0.2244
0.3	0.0118	5.8	0.2283
0.4	0.0157	5.9	0.2323
0.5	0.0197	6.0	0.2362
0.6	0.0236	6.1	0.2402
0.7	0.0276	6.2	0.2441
0.8	0.0315	6.3	0.2480
0.9	0.0354	6.4	0.2520
1.0	0.0394	6.5	0.2559
1.1	0.0433	6.6	0.2598
1.2	0.0472	6.7	0.2638
1.3	0.0512	6.8	0.2677
1.4	0.0551	6.9	0.2717
1.5	0.0591	7.0	0.2756
1.6	0.0630	7.1	0.2795
1.7	0.0669	7.2	0.2835
1.8	0.0709	7.3	0.2874
1.9	0.0748	7.4	0.2913
2.0	0.0787	7.5	0.2953
2.1	0.0827	7.6	0.2992
2.2	0.0866	7.7	0.3031
2.3	0.0906	7.8	0.3071
2.4	0.0945	7.9	0.3110
2.5	0.0984	8.0	0.3150
2.6	0.1024	8.1	0.3189
2.7	0.1063	8.2	0.3228
2.8	0.1102	8.3	0.3268
2.9	0.1142	8.4	0.3307
3.0	0.1181	8.5	0.3346
3.1	0.1220	8.6	0.3386
3.2	0.1260	8.7	0.3425
3.3	0.1299	8.8	0.3465
3.4	0.1339	8.9	0.3504
3.5	0.1378	9.0	0.3543
3.6	0.1417	9.1	0.3583
3.7	0.1457	9.2	0.3622
3.8	0.1496	9.3	0.3661
3.9	0.1535	9.4	0.3701
4.0	0.1575	9.5	0.3740
4.1	0.1614	9.6	0.3780
4.2	0.1654	9.7	0.3819
4.3	0.1693	9.8	0.3858
4.4	0.1732	9.9	0.3898
4.5	0.1772	10.0	0.3937
4.6	0.1811	10.1	0.3976
4.7	0.1850	10.2	0.4039
4.8	0.1890	10.3	0.4055
4.9	0.1929	10.4	0.4094
5.0	0.1969	10.5	0.4134
5.1	0.2008	10.6	0.4173
5.2	0.2047	10.7	0.4213
5.3	0.2087	10.8	0.4252
5.4	0.2126	10.9	0.4291
5.5	0.2165	11.0	0.4331

mm	inch	mm	inch
100	3.937	650	25.591
110	4.331	660	25.984
120	4.724	670	26.378
130	5.119	680	26.772
140	5.512	690	27.165
150	5.906	700	27.559
160	6.230	710	27.953
170	6.693	720	28.346
180	7.087	730	28.740
190	7.480	740	29.134
200	7.874	750	29.528
210	8.268	760	29.921
220	8.661	770	30.315
230	9.056	780	30.709
240	9.449	790	31.102
250	9.843	800	31.496
260	10.236	810	31.890
270	10.630	820	32.283
280	11.024	830	32.677
290	11.417	840	33.071
300	11.811	850	33.465
310	12.205	860	33.858
320	12.598	870	34.252
330	12.992	880	34.646
340	13.386	890	35.039
350	13.780	900	35.433
360	14.173	910	35.827
370	14.567	920	36.220
380	14.961	930	36.614
390	15.354	940	37.008
400	15.748	950	37.402
410	16.142	960	37.795
420	16.535	970	38.189
430	16.930	980	38.583
440	17.323	990	38.976
450	17.717		
460	18.110		
470	18.504		
480	18.898		
490	19.291		
500	19.685		
510	20.079		
520	20.472		
530	20.866		
540	21.260		
550	21.654		
560	22.047		
570	22.441		
580	22.835		
590	23.228		
600	23.622		
610	24.016		
620	24.409		
630	24.803		
640	25.197		

### Valve sizes:

1/8" = 0.125" = 3.175 mm	1" = 1.000" = 25.400 mm
1/4" = 0.250" = 6.350 mm	1 1/4" = 1.250" = 31.750 mm
3/8" = 0.375" = 9.525 mm	1 1/2" = 1.500" = 38.100 mm
1/2" = 0.500" = 12.700 mm	2" = 2.000" = 50.800 mm
3/4" = 0.750" = 19.050 mm	3" = 3.000" = 76.200 mm

## B. Temperature

The following table assists in the conversion to °F or Kelvin (°K).

### Formula °C to °F

$$\frac{C \times 9}{5} + 32 = °F$$

### Formula °F to °C

$$F - 32 \times \frac{5}{9} = °C$$

°C → °F		°C → °F		°C → °F	
-100	-148	+65	+149	+235	+455
-95	-139	+70	+158	+240	+464
-90	-130	+75	+167	+245	+473
-85	-121	+80	+176	+250	+482
-80	-112	+85	+185	+255	+491
-75	-103	+90	+194	+260	+500
-70	-94	+95	+203	+265	+509
-65	-85	+100	+212	+270	+518
-60	-76	+105	+221	+275	+527
-55	-67	+110	+230	+280	+536
-50	-58	+115	+239	+285	+545
-45	-49	+120	+248	+290	+554
-40	-40	+125	+257	+295	+563
-35	-31	+130	+266	+300	+572
-30	-22	+135	+275	+305	+581
-25	-13	+140	+284	+310	+590
-20	-4	+145	+293	+315	+599
-17.8	0	+150	+302	+320	+608
-15	+5	+155	+311	+325	+617
-10	+14	+160	+320	+330	+626
-5	+23	+165	+329	+335	+635
0	+32	+170	+338	+340	+644
+5	+41	+175	+347	+345	+653
+10	+50	+180	+356	+350	+662
+15	+59	+185	+365	+355	+671
+20	+68	+190	+374	+360	+680
+25	+77	+195	+383	+365	+689
+30	+86	+200	+392	+370	+698
+35	+95	+205	+401	+375	+707
+40	+104	+210	+410	+380	+716
+45	+113	+215	+419	+385	+725
+50	+122	+220	+428	+390	+734
+55	+131	+225	+437	+395	+743
+60	+140	+230	+446	+400	+752

°F → °C		°F → °C		°F → °C	
-100	-73.3	+65	+18.3	+235	+112.8
-95	-70.6	+70	+21.1	+240	+115.6
-90	-67.8	+75	+23.9	+245	+118.3
-85	-65.0	+80	+26.7	+250	+121.1
-80	-62.2	+85	+29.4	+255	+123.9
-75	-59.4	+90	+32.2	+260	+126.7
-70	-56.7	+95	+35.0	+265	+129.4
-65	-53.9	+100	+37.8	+270	+132.2
-60	-51.1	+105	+40.6	+275	+135.0
-55	-48.3	+110	+43.3	+280	+137.8
-50	-45.6	+115	+46.1	+285	+140.6
-45	-42.8	+120	+48.9	+290	+143.3
-40	-40.0	+125	+51.7	+295	+146.1
-35	-37.2	+130	+54.4	+300	+148.9
-30	-34.4	+135	+57.2	+305	+151.7
-25	-31.7	+140	+60.0	+310	+154.4
-20	-28.9	+145	+62.8	+315	+157.2
-15	-26.1	+150	+65.6	+320	+160.0
-10	-23.3	+155	+68.3	+325	+162.8
-5	-20.6	+160	+71.1	+330	+165.6
0	-17.8	+165	+73.9	+335	+168.3
+5	-15.0	+170	+76.7	+340	+171.1
+10	-12.2	+175	+79.4	+345	+173.9
+15	-9.4	+180	+82.2	+350	+176.7
+20	-6.7	+185	+85.0	+355	+179.4
+25	-3.9	+190	+87.8	+360	+182.2
+30	-1.1	+195	+90.6	+365	+185.0
+32	0.0	+200	+93.3	+370	+187.8
+35	+1.7	+205	+96.1	+375	+190.6
+40	+4.4	+210	+98.9	+380	+193.3
+45	+7.2	+215	+101.7	+385	+196.1
+50	+10.0	+220	+104.4	+390	+198.9
+55	+12.8	+225	+107.2	+395	+201.7
+60	+15.6	+230	+110.0	+400	+204.4

### Further temperature information

°C	°F	°K
-20	-4	253.15
-15	+5	258.15
-10	+14	263.15
-5	+23	268.15
0	+32	273.15
+5	+41	278.15
+10	+50	283.15
+15	+59	288.15
+20	+68	293.15
+30	+86	303.15
+40	+104	313.15
+50	+122	323.15
+60	+140	333.15
+70	+158	343.15
+80	+176	353.15
+90	+194	363.15
+95	+200	368.15
+100	+212	373.15

## C. Pressure

The table below permits conversion to psi or bar.

1 bar = 100 kPa = 14.5 psi

1 psi = 0.069 bar = 6896.5 Pa

1 Pa = 0.00001 bar = 0.000145 psi

bar	psi	kPa	psi	bar	kPa
0.0005	0.0073	0.05	0.007	0.0005	0,05
0.001	0.0145	0.10	0.015	0.0010	0,10
0.005	0.0725	0.5	0.070	0.0048	0,48
0.01	0.145	1	0.150	0.0104	1,04
0.05	0.725	5	0.700	0.0483	4,83
0.069	1.000	6.9	1.000	0.0690	6,90
0.1	1.450	10	1.500	0.1035	10,35
0.25	3.625	25	3.000	0.2070	20,70
0.5	7.250	50	7.000	0.4830	48,30
0.75	10.875	75	10.000	0.6900	69,00
1.0	14.500	100	15.000	1.0345	103,45
1.5	21.750	150	20.000	1.380	138,00
2.0	29.000	200	25.000	1.724	172,40
2.5	36.250	250	30.000	2.069	206,90
3.0	43.500	300	35.000	2.414	241,40
3.5	50.750	350	40.000	2.759	275,90
4.0	58.000	400	50.000	3.448	344,80
4.5	65.250	450	60.000	4.138	413,80
5.0	72.500	500	70.000	4.828	482,80
5.5	79.750	550	80.000	5.517	551,70
6.0	87.000	600	90.000	6.207	620,70
7.0	101.500	700	100.000	6.896	689,60
8.0	116.000	800	110.000	7.586	759,00
9.0	130.500	900	125.000	8.621	862,50
10.0	145.000	1000	150.000	10.345	1035
12.0	174.000	1200	175.000	12.069	1207,50
14.0	203.000	1400	200.000	13.793	1380
16.0	232.000	1600	225.000	15.517	1552,50
18.0	261.000	1800	250.000	17.241	1725
20.0	290.000	2000	300.000	20.689	2070
21.0	304.500	2100	350.000	24.150	2415
22.0	319.000	2200	370.000	25.530	2552
23.0	333.500	2300	390.000	26.910	2690
24.0	348.000	2400	400.000	27.600	2759
25.0	362.500	2500	420.000	28.980	2897
26.0	377.000	2600	440.000	30.360	3035
27.0	391.500	2700	450.000	31.050	3104
28.0	406.000	2800	470.000	32.340	3233
29.0	420.500	2900	490.000	33.810	3280
30.0	435.000	3000	500.000	34.500	3450
31.0	449.500	3100	520.000	35.880	3586
32.0	464.000	3200	540.000	37.260	3724
33.0	478.500	3300	550.000	37.950	3793
34.0	493.000	3400	570.000	39.330	3931
35.0	507.500	3500	590.000	40.710	4069
40.0	580.000	4000	600.000	45.400	4138

## WARNING

Warning!!! Failure or improper selection or improper use of any of the products found in this ROCKY catalog or related items can cause death, personal injury and/or property damage.

Before using any product, it is important that you analyze all aspects of your application and review the information concerning the product in the current product catalog.

Products described in this catalog, their specifications and designs are subject to change at any time without notice.

## 1. Offer and Contract

Acceptance by Seller of Buyer's order is expressly made conditional on assent to these Terms and Conditions, either by written acknowledgement or by conduct of Buyer that recognizes the existence of the contract with respect to Goods described on this acknowledgement form.

These Terms and Conditions also serve as notice of Seller's objection to and rejection of any Terms and Conditions of purchase or sale included in Buyer's purchase order or other writing that are different from or additional to these Terms and Conditions.

Sales representatives are not authorized to bind Seller.

All written quotations automatically expire thirty (30) days from the date quoted unless otherwise specified.

## 2. Prices and Taxes

Prices are subject to change without notice at any time prior to acceptance of order on Seller's acknowledgement form. All prices are F.O.B. Chicago, Illinois unless otherwise agreed by Buyer and Seller in writing. Buyer agrees to pay all present and future U.S. federal, state and local tax obligations, including but not limited to sales, use and excise taxes. If Buyer claims that the Goods are exempt from any particular tax, Buyer must provide Seller with a tax exemption certificate acceptable to the tax authorities.

## 3. Cancellation Charges

No cancellations or changes of any kind in the purchase order shall be effective unless agreed to in writing by Seller. All changes are accepted subject to adjustment in prices and delivery dates. All cancellations are accepted subject to cancellation charges which will be determined by the Seller and will reflect, among other factors, the expenses already incurred and commitments made by the Seller, sales and administrative overhead and profits.

Seller shall have the absolute right to cancel the order upon (i) material breach of any of these Terms and Conditions by Buyer, or (ii) failure by Buyer to make any payment or (iii) insolvency of Buyer, the filing of voluntary petition in bankruptcy by Buyer, the filing of an involuntary petition to have the Buyer declared bankrupt, the appointment of a receiver or trustee for Buyer, the execution by Buyer of an assignment for the benefit of creditors, or (iv) the discontinuance of business by Buyer or the sale by Buyer of the bulk of its assets other than in the usual course of business. Upon cancellation, Seller shall be entitled to a cancellation charge as described above.

## 4. Shipment and Delivery

All delivery dates are estimates only. Seller's only obligation with respect to delivery dates shall be to use reasonable effort to meet same. All shipments shall be F.O.B. Chicago, Illinois unless otherwise agreed in writing between Buyer and Seller. Title and risk of loss shall pass to Buyer at the F.O.B. point. Unless otherwise agreed in writing, Seller will ship via surface transportation. Seller will not be liable for any delays, breakage, loss or damage after having made delivery in good order to the carrier. Seller reserves the right to insure all shipments at Buyer's expense.

## 5. Force Majeure, Waiver

Seller shall not be liable for any delay to make delivery or failure to deliver due to any clause or contingency beyond the control of Seller (including but not limited to accidents, breakdowns, strikes, riots, sabotage, insurrections, war, delay or interruptions in or failure of sources of materials, supplies, labor, energy or transportation, acts of God or orders of any court, governmental body, authority or agency). Seller may, at its option, allocate available supplies among its customers, including Buyer, in any manner that Seller decides is fair and reasonable, extend the delivery time or cancel the contract for such Goods, in whole or in part. Such allocation, extension of delivery time or cancellation shall not affect the right of Seller to cover for any unpaid Goods previously delivered. IN NO EVENT SHALL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND INCLUDING LOSS OF PROFITS ARISING IN CONNECTION WITH SUCH FAILURE OR DELAY IN DELIVERY.

## 6. Terms of Payment

Unless otherwise expressly agreed between Buyer and Seller in writing, terms of payment are net thirty (30) days after date of shipment. Seller reserves the right to alter or suspend credit terms and require C.O.D. or advance payment, whenever Seller has reasonable doubt as to Buyer's creditworthiness. If Buyer becomes delinquent in payment or refuses to accept C.O.D. shipments, Seller shall have the right, in addition to any other rights it may have, to cancel any order of Buyer's, without further deliveries and declare all unpaid amounts for Goods previously delivered immediately due and payable. Each shipment shall be considered a separate and independent transaction and payment therefore shall be made accordingly. Amounts past due shall be subject to a late charge of 1.5% per month. All costs and expenses incurred by Seller as result of non-payment or delinquent payment by Buyer, including collections costs, interest, and reasonable attorneys fees shall be paid by the Buyer.

## 7. Claims and Remedies

All claims for loss or damage in transit are to be made by Buyer directly to the carrier. No deduction of any kind from the invoice amount shall be made. Buyer shall inspect all Goods immediately upon their arrival and shall immediately give written notice to Seller of any claim that the Goods do not conform to the terms of the contract. Seller shall have reasonable access to inspect any allegedly non-conforming Goods. Buyer waives any right to assert any claim against Seller arising from any non-conformity of Goods which would have been observable on reasonable inspection or testing within thirty (30) days after delivery.

Written notice of any alleged defect within the warranty period must be presented to Seller immediately upon Buyer's discovery of the defect and Seller must be allowed to inspect the Goods while they are in the alleged defective condition. Operation of the Goods must be suspended until written clearance is issued by Seller for continued operation provided that Seller, upon receipt of written notice of an alleged defect, proceeds without unreasonable delay to remedy any defects coming within the warranty.

## 8. Warranty, Disclaimer, Limitation of Liability

### General Warranty Terms Applicable To All Goods:

The above warranties by Seller do not extend to any Goods subject to (i) improper installation or storage, (ii) accident, damage, abuse or misuse, (iii) abnormal or unusual operating conditions or applications, (iv) operating conditions or applications above the rated capacity of the Goods, (v) operating conditions or applications not made known to Seller prior to the date of the agreement, or (vi) a purpose or application in any way different from that for which the Goods were designed. Seller's warranty does not extend to any Good or parts thereof that are not manufactured by Seller or that Buyer alters or modifies or that Buyer adds to or incorporates into Seller's Goods (including but not limited to controls, electronics, valves and other parts or equipment and only the warranty, if any, given by the manufacturer thereof, will apply. Seller's obligation under this warranty will not apply to any product which (i) is normally consumed in operations or (ii) has a normal life inherently shorter than the warranty period stated herein.

THE WARRANTY EXPRESSED HEREIN IS IN LIEU OF ANY OTHER WARRANTIES, EXPRESSED OR IMPLIED, INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTY OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE, AND IS IN LIEU OF ANY AND ALL OTHER OBLIGATIONS OR LIABILITY ON THE SELLER'S PART. UNDER NO CIRCUMSTANCES WILL SELLER BE LIABLE FOR ANY INCIDENTAL OR CONSEQUENTIAL DAMAGES OR FOR ANY OTHER LOSS, DAMAGE OR EXPENSE OF ANY KIND, INCLUDING LOSS OF PROFITS, ARISING IN CONNECTION WITH THE CONTRACT OR WITH THE USE OR LIABILITY TO USE SELLER'S GOODS FURNISHED UNDER THE CONTRACT. SELLER'S SOLE LIABILITY AND BUYER'S SOLE REMEDY ARE LIMITED TO EITHER (i) REPAIR OR REPLACEMENT OF DEFECTIVE PARTS OR GOODS, OR (ii) AT THE SELLER'S OPTION, RETURN OF THE GOODS TO SELLER AND REFUND OF PURCHASE PRICE. SUCH REMEDY SHALL BE BUYER'S ENTIRE AND EXCLUSIVE REMEDY, IN THE EVENT OF BREACH OF WARRANTY OR NEGLIGENCE OF SELLER.

## 9. Confidentiality

All drawings, diagrams, specifications, and other materials furnished by Seller relating to the sale, installation, service or repair of Goods furnished hereunder and the information therein are proprietary to Seller. Buyer may not reproduce or distribute such materials without the written consent of Seller except to Buyer's employees who may use the material as part of their duties. All such materials relating to the Goods supplied by Seller (except information as may be established to be in the public domain or disclosed through judicial or government action) shall be received in confidence, and Buyer shall exercise reasonable care to hold all such information in confidence.

In the event Buyer's personnel visit Seller's plant or assembly facility or otherwise receive any proprietary to confidential information from Seller, said information shall be retained as confidential by Buyer and not disclosed to any third party without the written consent of Seller.

## 10. Limitation of Actions

Any cause of action arising from this agreement or the breach thereof must be commenced within one (1) year after the cause of action accrues.

## 11. Applicable Law

The law governing the agreement and any further agreement or contractual relation between Seller and Buyer shall be the law of the State of Illinois. The invalidity of any provision of this agreement shall not affect the validity of the remaining provisions.

## 12. Non-Assignment

Buyer's rights and obligations hereunder may not be assigned without prior written consent of Seller.

AIRTEC Pneumatics, Inc.