Index

Quality from the Start

Sinclair Collins is an ISO 9001 registered facility. Bronze and stainless steel components are machined in our own facility. All components must meet our high performance specifications and quality control standards.

After assembly, each valve is fully tested at rated pressure prior to shipment and all material and workmanship are covered by a two-year warranty.

Valve Design

Sinclair Collins valves are designed and quality-built to provide long, trouble-free performance. They combine economical automatic operation with precision control and maximum dependability.

THE SERIES C264, C274. C284, C294 VALVES. These diaphragm-operated valves are produced in two basic types, hard-seat and soft-seat. The 500 psi (34 bar) hard-seat has a metal-to-metal seat and can be used in a majority of applications. In lower pressure applications where a hard-seated valve is not acceptable, the 400 psi (28 bar) soft-seated-valve is recommended. This valve utilizes stainless steel-filled PTFE rings in the stems to provide bubbletight seal. Both of these valve types employ an exclusive swivel-stem design that reduces side load on the packer to assure smoother, faster operation and longer packer life. The chevron-packer is spring loaded and self-adjusting to reduce maintenance. The heat-treated stainless steel seat rings used in the hard-seat valves are skirted to provide minimum fluid by-pass and minimum shock during valve shift. In all 3-way valves, upper and lower seat rings are identical and interchangeable to simplify inventory and maintenance. Standard bodies are Navy-M bronze with stainless steel trim. Stainless steel/filler material spiral-wound gaskets are used. The valves are equipped with large or small size diaphragm actuators. The large actuator permits operation of the valve at maximum rated pressure at any port with recommended actuated air pressure of 40 psi (2.8 bar). (If lesser line pressures are handled, lesser actuating air pressure can be used). The small actuator provides some savings in space but its use reduces the usable operating pressure of the valve to the limits shown in the Model Selection Chart included on the individual catalog sheets. The large and small diaphragm actuators are interchangeable within a given size. The diaphragm assembly may be replaced with the valve under pressure but de-energized.

THE SERIES C244 VALVES. These diaphragm-operated 200 psi (14 bar) valves employ a single piece stem, as well as a new fixed height stem seal. The seal design has an integral spring which compensates for packer wear. Because only one seal is used, the cavity for the seal in the body is shallow and the bearing length in the body is correspondingly longer. The stainless steel upper seat cage, in addition to being drop-in, also serves as a diverter to help direct the flow through the valve. Standard bodies are cast bronze and the trim is of stainless steel. A spiral wound gasket consisting of stainless steel and filler material is also utilized to seal the upper seat. These valves are equipped with a single size diaphragm actuator per basic size. The actuator permits operation of the valve at a maximum rated pressure at any port with recommended actuating air pressure of 35 psi (2.4 bar). (If lesser line pressures are handled, lesser actuating air pressure can be used). The two piece top construction allows the diaphragm assembly to be changed in areas where head space is at a premium.

THE SERIES C304 VALVES. These 500 psi (34 bar) manifold mounted valves combine many of the features from the 500 psi (34 bar) hard-seated line-mounted valves with the numerous advantages of manifold mounting. These valves have spring-loaded stem packers, self-aligning stems, skirted stainless-steel seats, and bronze bodies. A cylinder operator is used for space savings. Manifold mounting simplifies original installation, reduces labor costs and saves energy by allowing piping to be insulated. The design allows for multiple valve manifolding as well as single-station installations. For in-service maintenance, the manifold valve is simply unbolted, removed and replaced in minutes.

LUBRICATION

1. Coat Packing Rings and Packer Bore with Dow Corning III Compound.

DIAPHRAGM REPLACEMENT

- Clean old rubber from surfaces.
- Insert all screws in cover and through diaphragm, do not elongate or re-punch holes in diaphragm.
- Assemble ring and install nuts loosely.
- Use valve piston to deform diaphragm against the cover and clamp in place.
- Tighten all nuts moderately.
- For more detailed instructions, see Bulletin H101.

"If it is possible that the ambient temperature may fall below freezing, the medium must be moisture free to prevent internal damage or unpredictable behavior."

Torque Requirements for 400 PSI & 500 PSI End Caps & Adapters

		Torque	
Basic Valve Size	**Thread**	**lb - ft**	**N - M**
400 & 500	1-3/8 - 12	22±2	30±3
1/2"	1-3/4 - 12	95±5	129±7
1"	2-1/4 - 12	200±10	271±14
1½"	2-7/8 - 12	300±15	407±20

HOW TO ORDER

Refer to the Model Selection Charts and recomended Piping Connection charts on the following pages to order valves suitable for your Cv and pipe size requirements. If a 3-way valve is desired for 2-way service, it is necessary to plug the unused port. Refer to the Piping Connection chart as a guide. Complete Parts Data Charts are included for your convenience in ordering parts.

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA

Valves for Steam and Hot & Cold Liquids

500 psi
3-Way Valve

500 psi
Offset
2-Way Valve

200 psi
2-Way Valve

200 psi
3-Way Valve

400 & 500 psi
3-Way Valve

400 & 500 psi
3-Way Valve

400 & 500 psi
3-Way Manifold Valve

400 & 500 psi
Inline
2-Way Valve

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA

Soft Seated, 400 psi (28 bar) 2- & 3-Way Valves Tapped 1/4", 3/8"

Use 35 to 40 psi (2.4 - 2.8 bar) Air Pressure on Top

SPECIFICATIONS

Media: Steam • Hot or Cold Water • Air & Inert Gases
Pressure: Maximum Operating Pressure: 400 psi (28 bar)
Temperature Range: -40° TO 400°F (-40° TO 204°C)

This basic 1/4", soft seated valve is available in 2- and 3-Way types. These valves were designed for applications where a bubble-tight seal is required. This is done through the utilization of stainless steel reinforced PTFE rings on the stem.

The body, adapter and yoke are of cast bronze. Diaphragm springs are high quality spring steel and a proprietary coating is applied for maximum corrosion resistance. The stem packer is spring loaded and self-adjusting for reduced maintenance and longer packer life. The stem is guided by an engineered proprietary polymer bearing pressed into the packer gland. Spiral wound gaskets consisting of stainless steel and filler material are utilized to seal the seats and adapter.

This valve is equipped with a single size diaphragm actuator. The actuator permits operation of the valve at the ratings shown in the Model Selection Chart. Two-piece construction is standard on this valve which allows the diaphragm assembly to be changed in areas where headspace is at a premium. The diaphragm assembly may be replaced with the valve under pressure but de-energized.

To order valves with Molded PTFE diaphragms, change the fourth digit in the Model Number to (6). Example: C266-0091

For dimensional data, see page 39.

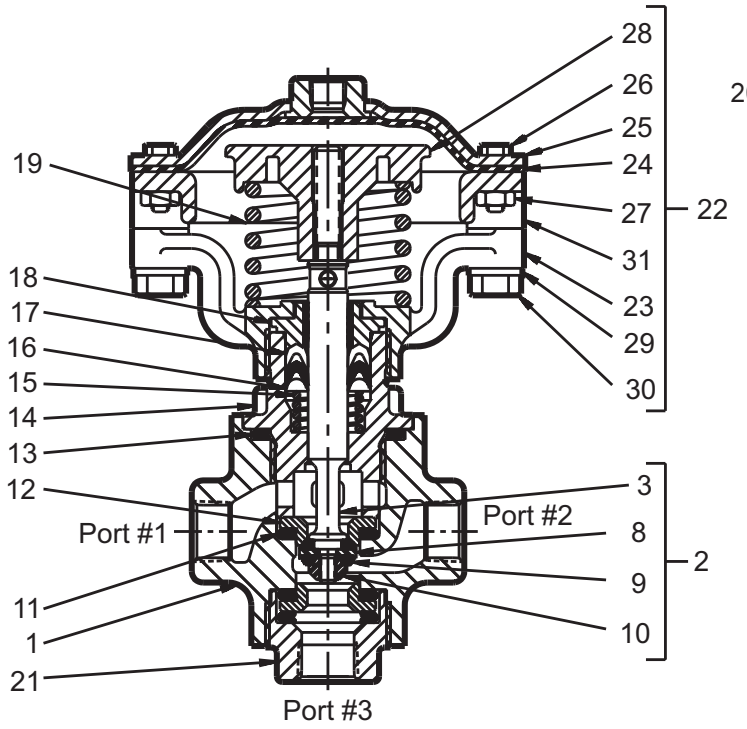
Valve Type		Piping Connection		
		Port 1	Port 2	Port 3
2-Way	Normally Open Angle Piped	Plugged	Cylinder or Inlet	Inlet or Cylinder
	Normally Closed Inline Piped	Inlet	Cylinder	Plugged
3-Way	Normally Open	Drain	Cylinder	Inlet
	Normally Closed	Inlet	Cylinder	Drain
3-Port	Directional Valve	Outlet	Inlet	Outlet
	Mixing Valve	Inlet	Outlet	Inlet

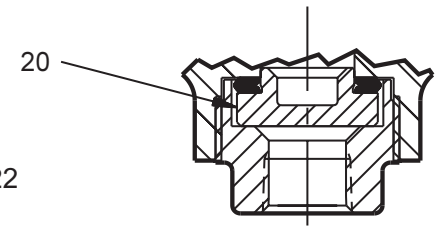
Model Selection Chart

Basic Valve Size	Port Tap (NPTF)	Description	Model Number	Pressure Rating		Cv			
				psi	bar	Port 1 to Port 2	Port 2 to Port 1	Port 2 to Port 3	Port 3 to Port 2
1/4"	1/4"	2WNC	C264-00091	400	28	3.35	3.75	-	-
	3/8"		C264-00101	400	28	3.05	3.25	-	-
	1/4"	2WNO	C284-00071	400†	28†	3.35	3.75	-	-
	3/8"		C284-00081	400†	28†	3.05	3.45	-	-
	1/4"	3WNC	C264-00131	400*	28*	3.35	3.75	4.15	4.25
	3/8"		C264-00141	400*	28*	3.05	3.25	4.90	4.25

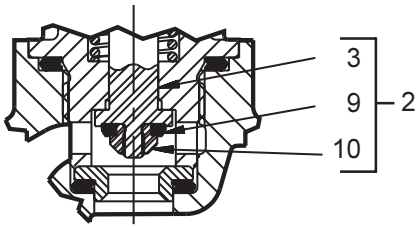
CAUTION -See Chart Above
* When used as a **DIRECTIONAL CONTROL VALVE**, pressures up to 400 psi are permissible. As a **MIXING VALVE** pressures up to 400 psi at Port #1 are permissible, but pressure at Port #3 must not exceed 275 psi with 35 psi pressure. At 40 psi top pressure, 400 psi may be introduced at Port #3.

† Pressure rating shown is for inlet at Port #I. With inlet at Port #2 pressure must not exceed 275 psi with 35 psi top pressure. At 40 psi top pressure 400 psi may be introduced at Port #2.





Detail of 2-Way
Stem Stop Assembly



Detail of 2-Way
Normally Open
Stem Assembly

Basic Valve Size & Type	1/4" 2-Way Normally Closed		1/4" 2-Way Normally Open		1/4" 3-Way Normally Closed		
Port Size	1/4" NPTF	3/8" NPTF	1/4" NPTF	3/8" NPTF	1/4" NPTF	3/8" NPTF	
Model No.	C264-00091	C264-00101	C284-00071	C284-00081	C264-00131	C264-00141	
Item No.	Part Number						Description
1	C093-258	C093-259	C093-258	C093-259	C093-258	C093-259	Body
2	C332-079	C332-079	C332-078	C332-078	C332-079	C332-079	Stem Assembly
3	D093-209	D093-209	D093-208	D093-208	D093-209	D093-209	Stem Only
8	C353-011	C353-011	-	-	C353-011	C353-011	Disc Holder
• 9	C343-067	C343-067	C343-067	C343-067	C343-067	C343-067	Seat Disc
10	C553-027	C553-027	C553-027	C553-027	C553-027	C553-027	Disc Nut
• 11	C383-063	C383-063	C383-063	C383-063	C383-063	C383-063	Seat Gasket
12	C963-147	C963-147	C963-147	C963-147	C963-147	C963-147	Seat Ring
• 13	C383-064	C383-064	C383-064	C383-064	C383-064	C383-064	Gasket
14	C013-015	C013-015	C013-015	C013-015	C013-015	C013-015	Adapter
15	D293-131	D293-131	D293-131	D293-131	D293-131	D293-131	Packer Spring
16	C713-017	C713-017	C713-017	C713-017	C713-017	C713-017	Packer Spreader
• 17	C242-024	C242-024	C242-024	C242-024	C242-024	C242-024	Packer Assembly
18	C603-030	C603-030	C603-030	C603-030	C603-030	C603-030	Retainer
19	D293-130	D293-130	D293-130	D293-130	D293-130	D293-130	Diaphragm Spring
20	D123-052	D123-052	D123-052	D123-052	-	-	Stem Stop
21	C213-196	C213-197	C213-196	C213-197	C213-196	C213-197	Bottom Cap
22	C392-050	C392-050	C392-050	C392-050	C392-050	C392-050	Diaphragm Assembly EPDM
	C392-070	C392-070	C392-070	C392-070	C392-070	C392-070	Diaphragm Assembly PTFE
23	D283-184	D283-184	D283-184	D283-184	D283-184	D283-184	Yoke
• 24	C333-056	C333-056	C333-056	C333-056	C333-056	C333-056	Diaphragm EPDM
	C333-067	C333-067	C333-067	C333-067	C333-067	C333-067	Diaphragm PTFE
25	M163-005	M163-005	M163-005	M163-005	M163-005	M163-005	Cover
26	H109-09	H109-09	H109-09	H109-09	H109-09	H109-09	Cap Screw
27	H064-16	H064-16	H064-16	H064-16	H064-16	H064-16	Hex Nut
28	C783-141	C783-141	C783-141	C783-141	C783-141	C783-141	Piston
29	H175-16	H175-16	H175-16	H175-16	H175-16	H175-16	Lock Washer
30	H096-84	H096-84	H096-84	H096-84	H096-84	H096-84	Cap Screw
31	M423-002	M423-002	M423-002	M423-002	M423-002	M423-002	Ring
	C242-056						Service Kit EPDM
	C242-081						Service Kit PTFE

• IN SERVICE KIT

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA

Soft Seated 400 psi (28 bar) 2-Way Valves
Tapped 1/2", 3/4", 1", 1-1/4", 1-1/2"

SPECIFICATIONS

Media: Steam • Hot or Cold Water • Air & Inert Gases
Pressure: Maximum Operating Pressure: 400 psi (28 bar)
Temperature Range: -40° TO 400°F (-40° TO 204°C)

These soft seated valves were designed for applications where bubble-tight seal is required. This is done through stainless steel reinforced PTFE rings on the stem. Valve bodies are machined from the highest quality Navy-M bronze with stainless steel stem and seats, spring-loaded packers and stainless steel spiral-wound gaskets. The body, adapter and yoke are of cast bronze. The exclusive swivel stem design reduces side load on the stem packer for longer packer life. Diaphragm springs are high quality spring steel and a proprietary coating is applied for maximum corrosion resistance.

These valves are available with a choice of large or small diaphragm actuators. The large actuator permits operation of the valve at maximum rated pressure at any port with 30 to 40 PSI (2.1 to 2.8 bar). The small actuator provides some savings in space, but their use reduces the usable operating pressure of the valve to the limits shown in the Model Selection Charts. The large and small diaphragm actuators are interchangeable within a given basic size. The actuator may be replaced with the valve under pressure but de-energized.

Use 35 to 40 psi (2.4 - 2.8 bar) Air Pressure on Top

2WNO & 2WNC Valves may be ported backwards with the media pressure piped to Port No. 2. This brings the pressure under the seat, removing the stem packing from continuous pressure. For vacuum service, 2WNO & 2WNC Valves should be piped backwards with the vacuum to Port No. 2. This brings the vacuum under the seat and has no affect on the stem packing, which is designed to be pressurized from within. Internal areas in the valves are designed for higher Cv ratings. Higher Cv ratings offer faster recovery times for temperature and faster cycle rates.

To order valves with Molded PTFE diaphragms, change the fourth digit in the Model number to (6). Example: C286-20011
For dimensional data, see page 39.

Model Selection Chart

Basic Valve Size	Port Tap (NPTF)	Description		Large Top psi	Large Top bar	Small Top psi	Small Top bar	Cv Port 1 to Port 2	Cv Port 2 to Port 1
1/2"	1/2"	2WNC	Model No.	C284-20011		C284-20051		6.9	6.9
			Pressure Rating	400	28.0	270 (1)	18.6		
	3/4"		Model No.	C284-20021		C284-20061		7.5	7.1
			Pressure Rating	400	28.0	270 (1)	18.6		
	1/2"	2WNO	Model No.	C284-20031		C284-20071		6.9	6.6
			Pressure Rating	400	28.0	135 (2)	9.3		
	3/4"		Model No.	C284-20041		C284-20081		8.0	8.4
			Pressure Rating	400	28.0	135 (2)	9.3		
1"	1"	2WNC	Model No.	C284-40011		C284-40051		15.2	13.5
			Pressure Rating	400	28.0	230 (1)	15.9		
	1¼"		Model No.	C284-40021		C284-40061		16.8	16.0
			Pressure Rating	400	28.0	230 (1)	15.9		
	1"	2WNO	Model No.	C284-40031		C284-40071		14.8	16.0
			Pressure Rating	400	28.0	105 (3)	7.2		
	1¼"		Model No.	C284-40041		C284-40081		15.8	17.2
			Pressure Rating	400	28.0	105 (3)	7.2		
1½"	1½"	2WNC	Model No.	C284-60021		C284-60061		35.0	33.5
			Pressure Rating	400	28.0	165 (1)	11.3		
	1½"	2WNO	Model No.	C284-60041		C284-60081		33.0	35.0
			Pressure Rating	400	28.0	60 (4)	4.1		

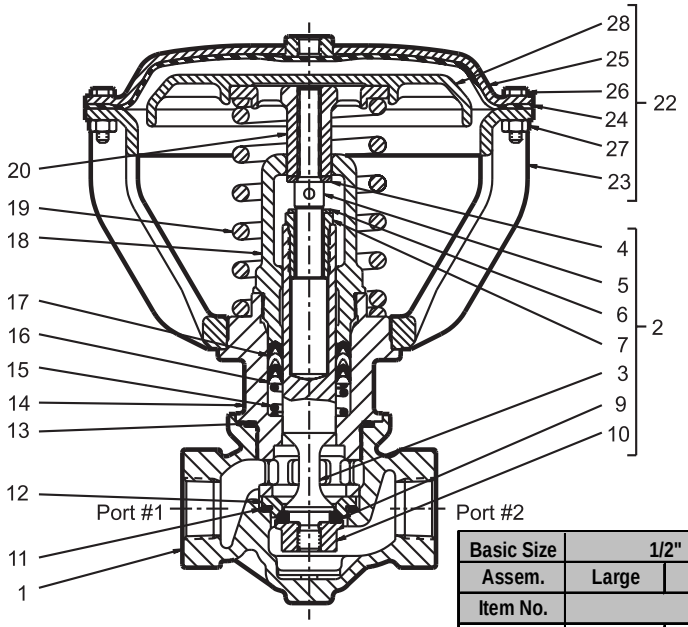
(1) Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 400 psi are permissible.

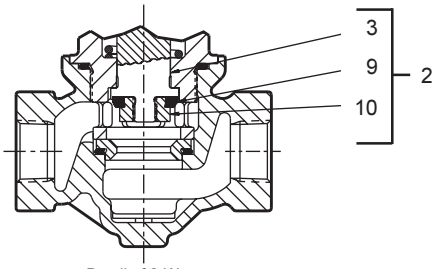
(2) Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 210 psi are permissible.

(3) Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 175 psi are permissible.

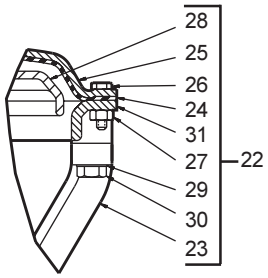
(4) Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 140 psi are permissible.

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA





Detail of 2-Way
Normally Open
Stem Assembly



Detail of 1-1/2"
2-Piece Yoke
Cover Assembly

Basic Size	1/2"		1"		1 1/2"		
Assem.	Large	Small	Large	Small	Large	Small	
Item No.	Part Numbers						Description
22	C132-039	C132-038	C132-040	C132-041	C132-048	C132-042	Diaphragm Assembly EPDM
	C132-051	C132-052	C132-053	C132-054	C132-055	C132-056	Diaphragm Assembly PTFE
23	D283-140	D293-139	D283-148	D283-146	D283-099	D283-063	Yoke
•24	C333-053	C333-049	C333-051	C333-050	C333-052	C333-051	Diaphragm EPDM
	C333-069	C333-068	C333-070	C333-072	C333-071	C333-070	Diaphragm PTFE
25	C293-023	C293-018	C293-030	C293-091	C293-036	C293-030	Diaphragm Cover
26	H096-10	H096-10	H096-10	H096-10	H096-10	H096-10	Cap Screw
27	H060-03	H060-03	H060-03	H060-03	H060-03	H060-03	Hex Nut
28	C783-048	C783-032	C783-081	C783-061	C783-102	C783-071	Diaphragm Piston
29	-	-	-	-	H175-21	-	Lock Washer
30	-	-	-	-	H096-49	-	Cap Screw
31	-	-	-	-	C893-031	-	Ring
	C242-057	C242-058	C242-059	C242-060	C242-061	C242-062	Service Kit EPDM
	C242-088	C242-089	C242-090	C242-091	C242-092	C242-093	Service Kit PTFE

• IN SERVICE KIT

Basic Valve Size & Type	1/2" Normally Closed		1/2" Normally Open		1" Normally Closed		1" Normally Open		1½" N.C.	1½" N.O.	
Port Size	1/2" NPTF	3/4" NPTF	1/2" NPTF	3/4" NPTF	1" NPTF	1¼" NPTF	1" NPTF	1¼" NPTF	1½" NPTF	1½" NPTF	
Item No.	Part Numbers										Description
1	C093-136	C093-138	C093-136	C093-138	C093-140	C093-142	C093-140	C093-142	C093-146	C093-146	Body
2	C332-080	C332-080	C332-081	C332-081	C332-083	C332-083	C332-084	C332-084	C332-086	C332-087	Stem Assembly
3	D093-210	D093-210	D093-211	D093-211	D093-212	D093-212	D093-213	D093-213	D093-214	D093-215	Stem Only
4	D223-019	D223-019	D223-019	D223-019	D223-030	D223-030	D223-030	D223-030	-	-	Washer
5	D093-037	D093-037	D093-037	D093-037	D093-086	D093-086	D093-086	D093-086	D093-146	D093-146	Swivel Stem
6	H132-04	H132-04	H132-04	H132-04	H132-05	H132-05	H132-05	H132-05	H132-06	H132-06	Dust Washer
7	C643-002	C643-002	C643-002	C643-002	C643-006	C643-006	C643-006	C643-006	C643-010	C643-010	Swivel Nut
• 9	C343-068	C343-068	C343-068	C343-068	C343-069	C343-069	C343-069	C343-069	C343-070	C343-070	Seat Disc
10	C553-021	C553-021	C553-022	C553-022	C553023	C553023	C553-024	C553-024	C553025	C553026	Disc Nut
•11	C383-010	C383-010	C383-010	C383-010	C383-019	C383-019	C383-019	C383-019	C383-029	C383-029	Seat Gasket
12	C963-148	C963-148	C963-148	C963-148	C963-149	C963-149	C963-149	C963-149	C963-150	C963-150	Seat Ring
•13	C383-022	C383-022	C383-022	C383-022	C383-028	C383-028	C383-028	C383-028	C383-032	C383-032	End Gasket
14	C013-006	C013-006	C013-006	C013-006	C013-009	C013-009	C013-009	C013-009	C013-007	C013-007	Adapter
15	D293-001	D293-001	D293-001	D293-001	D293-002	D293-002	D293-002	D293-002	D293-004	D293-004	Packer Spring
16	C713-003	C713-003	C713-003	C713-003	C713-004	C713-004	C713-004	C713-004	C713-007	C713-007	Packer Spreader
•17	C242-021	C242-021	C242-021	C242-021	C242-022	C242-022	C242-022	C242-022	C242-023	C242-023	Packer Assembly
18	C563-034	C563-034	C563-034	C563-034	C563-015	C563-015	C563-015	C563-015	C563-022	C563-022	Gland Nut
19	D293-157	D293-157	D293-157†	D293-157†	D293-147	D293-147	D293-147	D293-147	D293-051	D293-051‡	Diaphragm Spring
20	C883-006	C883-006	C883-006	C883-006	C883-008	C883-008	C883-008	C883-008	C883-009	C883-009	Spring Retainer

† FOR NORMALLY OPEN SMALL TOP USE D293-158 ‡ FOR NORMALLY OPEN SMALL TOP USE D293-054

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA

Hard Seated, 500 psi, 2- & 3-Way Valves Tapped 1/4", 3/8"

Use 30 to 40 psi (2.1 - 2.8 bar) Air Pressure on Top

SPECIFICATIONS

Media: Steam • Hot or Cold Water • Air & Inert Gases*
Pressure: Maximum Operating Pressure: 500 psi (34 bar)**
Temperature Range: -40° TO 450°F (-40° TO 232°C)

This basic 1/4" valve is available in 2-way and 3-way types. The 2-way, normally closed valves are inline ported. The 2-way, normally open valves may be ordered with angle or inline porting, as shown in the Model Selection Chart. The piping variations for the 3-way as well as the 2-way are shown in the Piping Connection chart. The body, adapter and yoke are of cast bronze. Diaphragm springs are high quality spring steel and a proprietary coating is applied for maximum corrosion resistance. The stem-packer is spring-loaded and self-adjusting for reduced maintenance. Spiral wound gaskets consisting of stainless steel and filler material are utilized to seal the seats and adapter.

This valve is equipped with a single size diaphragm actuator. The actuator permits operation of the valve at the ratings shown in the Model Selection Chart. Two-piece construction is standard on this valve which allows the diaphragm assembly to be changed in areas where head space is at a premium. The diaphragm assembly may be replaced with the valve under pressure but de-energized.

To order gas tested valves, add suffix (2) to the Model No. Example: C264-00092.
To order valves with molded PTFE diaphragms, change the fourth digit in the model No. to (6). Example: C266-0009.

* See Page 2.
** See maximum pressure for individual valves in "Model Selection Chart."
For dimensional data, see page 39.

CAUTION - See Chart
(1) Pressure rating shown is for inlet at Port 3. With inlet at Port 2, pressures up to 500 psi are permissible.
(2) When used as a **Directional Valve**, pressures up to 500 psi are permissible. As a **Mixing Valve**, pressures up to 500 psi at Port 1 are permissible but pressure at Port 3 must not exceed 225 psi with 30 psi top pressure. At 40 psi top pressure, 500 psi may be introduced at Port 3.
(3) When used as a **Directional Valve**, pressures up to 500 psi are permissible. As a **Mixing Valve**, pressures up to 240 psi at Port I are permissible but pressure at Port 3 must not exceed 375 psi with 30 psi top pressure. At 40 psi top pressure, 500 psi may be introduced at Port 3.
(4) Pressure rating shown is for inlet at Port 1 with inlet at Port 2, pressures up 500 psi are permissible.

Valve Type		Piping Connection		
		Port 1	Port 2	Port 3
2-Way	Normally Open Angle Piped	Plugged	Cylinder or Inlet	Inlet or Cylinder
	Normally Closed Inline Piped	Inlet	Cylinder	Plugged
	Normally Open Inline Piped	Inlet	Cylinder	Plugged
3-Way	Normally Open	Drain	Cylinder	Inlet
	Normally Closed	Inlet	Cylinder	Drain
3-Port	Directional Valve	Outlet	Inlet	Outlet
	Mixing Valve	Inlet	Outlet	Inlet

Model Selection Chart

Basic Valve Size	Port Tap (NPTF)	Description	Model Number	Pressure Rating		Cv			
				psi	bar	Port 1 to Port 2	Port 2 to Port 1	Port 2 to Port 3	Port 3 to Port 2
1/4"	1/4"	2WNC (Inline Porting)	C264-0009	500	34.0	2.06	-	-	-
	3/8"		C264-0010	500	34.0	2.57	-	-	-
	1/4"	2WNO (Inline Porting)	C284-0007	375 (4)	26.0	1.80	1.85	-	-
	3/8"		C284-0008	375 (4)	26.0	1.95	2.25	-	-
	1/4"	2WNO (Angle Porting)	C264-0011	375 (1)	26.0	-	-	2.44	3.30
	3/8"		C264-0012	375 (1)	26.0	-	-	2.35	2.62
	1/4"	3WNC	C264-0013	500 (2)	34.0	2.06	2.06	2.44	3.30
	3/8"		C264-0014	500 (2)	34.0	2.57	2.48	2.35	3.62
	1/4"	3WNO	C264-0015	375 (3)	26.0	2.06	2.06	2.44	3.30
	3/8"		C264-0016	375 (3)	26.0	2.57	2.48	2.35	3.62

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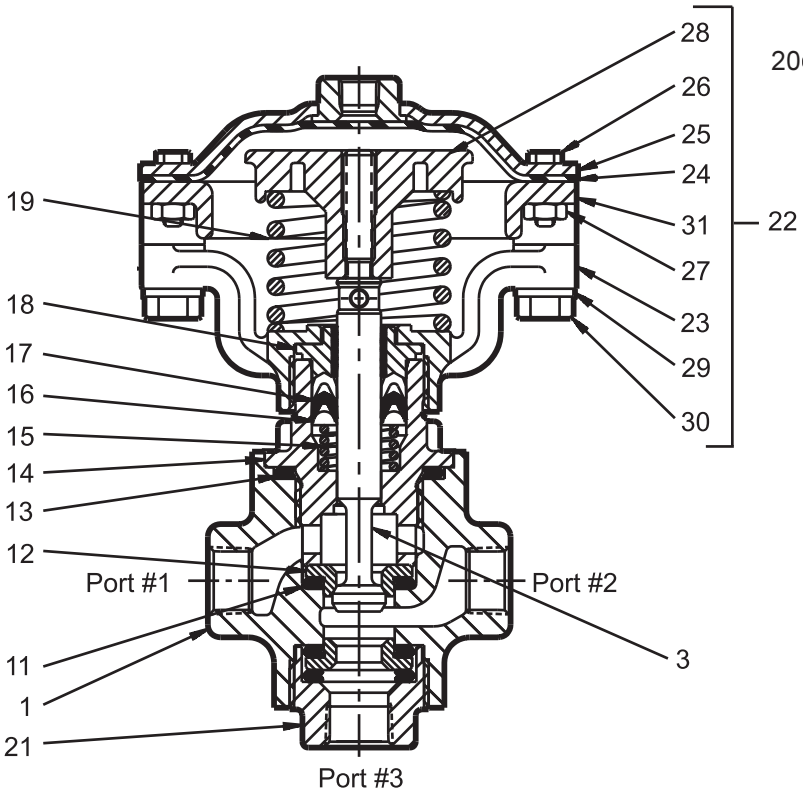

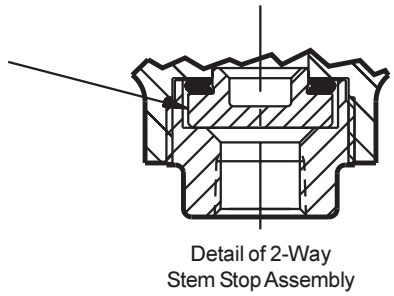

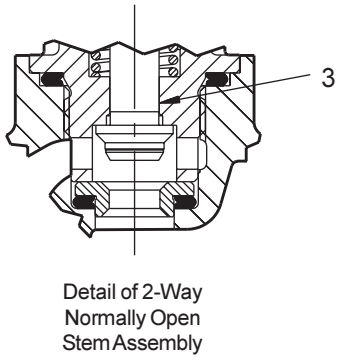

Basic Valve Size & Type	1/4" 2-Way Normally Closed		1/4" 2-Way Normally Open		1/4" 3-Way Normally Closed		1/4" 3-Way Normally Open		
Port Size	1/4" NPTF	3/8" NPTF	1/4" NPTF	3/8" NPTF	1/4" NPTF	3/8" NPTF	1/4" NPTF	3/8" NPTF	
Model No.	C264-0009	C264-0010	C284-0007	C284-0008	C264-0013	C264-0014	C264-0015	C264-0016	
Item No.	Part Number								Description
1	C093-258	C093-259	C093-258	C093-259	C093-258	C093-259	C093-258	C093-259	Body
3	D093-205	D093-205	D093-204	D093-204	D093-205	D093-205	D093-205	D093-205	Stem
• 11	C383-063	C383-063	C383-063	C383-063	C383-063	C383-063	C383-063	C383-063	Seat Gasket
12	C963-145	C963-145	C963-145	C963-145	C963-145	C963-145	C963-145	C963-145	Seat Ring
• 13	C383-064	C383-064	C383-064	C383-064	C383-064	C383-064	C383-064	C383-064	Gasket
14	C013-015	C013-015	C013-015	C013-015	C013-015	C013-015	C013-015	C013-015	Adapter
15	D293-131	D293-131	D293-131	D293-131	D293-131	D293-131	D293-131	D293-131	Packer Spring
16	C713-017	C713-017	C713-017	C713-017	C713-017	C713-017	C713-017	C713-017	Packer Spreader
• 17	C242-024	C242-024	C242-024	C242-024	C242-024	C242-024	C242-024	C242-024	Packer
18	C603-030	C603-030	C603-030	C603-030	C603-030	C603-030	C603-030	C603-030	Retainer
19	D293-130	D293-130	D293-129	D293-129	D293-130	D293-130	D293-129	D293-129	Diaphragm Spring
20	D123-052	D123-052	D123-052	D123-052	-	-	-	-	Stem Stop
21	C213-196	C213-197	C213-196	C213-197	C213-196	C213-197	C213-196	C213-197	Bottom Cap
22	C392-050	C392-050	C392-050	C392-050	C392-050	C392-050	C392-050	C392-050	Diaphragm Assembly EPDM
	C392-070	C392-070	C392-070	C392-070	C392-070	C392-070	C392-070	C392-070	Diaphragm Assembly PTFE
23	D283-184	D283-184	D283-184	D283-184	D283-184	D283-184	D283-184	D283-184	Yoke
• 24	C333-056	C333-056	C333-056	C333-056	C333-056	C333-056	C333-056	C333-056	Diaphragm EPDM
	C333-067	C333-067	C333-067	C333-067	C333-067	C333-067	C333-067	C333-067	Diaphragm PTFE
25	M163-005	M163-005	M163-005	M163-005	M163-005	M163-005	M163-005	M163-005	Cover
26	H109-09	H109-09	H109-09	H109-09	H109-09	H109-09	H109-09	H109-09	Cap Screw
27	H064-16	H064-16	H064-16	H064-16	H064-16	H064-16	H064-16	H064-16	Hex Nut
28	C783-141	C783-141	C783-141	C783-141	C783-141	C783-141	C783-141	C783-141	Piston
29	H175-16	H175-16	H175-16	H175-16	H175-16	H175-16	H175-16	H175-16	Lock Washer
30	H096-84	H096-84	H096-84	H096-84	H096-84	H096-84	H096-84	H096-84	Cap Screw
31	M423-002	M423-002	M423-002	M423-002	M423-002	M423-002	M423-002	M423-002	Ring
	C242-049								Service Kit EPDM
	C242-080								Service Kit PTFE

• IN SERVICE KIT

Parker Hannifin Corporation
Sinclair Collins Division
Akron, OH USA

Hard Seated 500 psi (34 bar), 2-Way Valves Tapped 1/2", 3/4", 1", 1-1/4", 1-1/2"

SPECIFICATIONS

Media: Steam • Hot or Cold Water • Air & Inert Gases*
Pressure: Maximum Operating Pressure: 500 psi (34 bar)**
Temperature Range: -40° TO 450° F (-40° TO 232°C)

These valves are designed for the majority of applications where a 2-Way valve is required. The bodies are machined from the highest quality Navy-M bronze with stainless steel stem and seats, spring-loaded packers and stainless steel spiral-wound gaskets. The body, adapter and yoke are of cast bronze. The exclusive swivel stem design reduces side load on the stem packer for longer packer life.

These valves are available with a choice of large or small diaphragm actuators. The large actuator permits operation of the valve at maximum rated pressure at any port with 30 to 40 PSI (2.1 to 2.8 bar). The small actuator provides some savings in space, but its use reduces the usable operating pressure of the valve to the limits shown in the Model Selection Charts. The large and small diaphragm actuators are interchangeable within a given basic size. The actuator may be replaced with the valve under pressure but de-energized.

2WNO & 2WNC Valves may be ported backwards with the media pressure piped to Port No. 2. This brings the pressure under the seat, removing the stem packing from continuous pressure. For vacuum service, 2WNO & 2WNC Valves should be piped backwards with the vacuum to Port No. 2. This brings the vacuum under the seat and has no affect on the stem packing, which is designed to be pressurized from within. Internal areas in the valves are designed for higher Cv ratings. Higher Cv ratings offer faster recovery times for temperature and faster cycle rates.

Use 30 to 40 psi (2.1 - 2.8 bar) Air Pressure on Top

To order gas tested valves, add suffix (2) to the Model No. **Example: C284-20012** To order valves with Molded PTFE diaphragms, change the fourth digit to (6). **Example: C286-2001**
* See Page 2.
** See maximum operating pressure for individual valves in "Model Selection Chart."
For dimensional data, see page 39.

Model Selection Chart

Basic Valve Size	Port Tap (NPTF)	Description		Large Top psi	Large Top bar	Small Top psi	Small Top bar	Cv Port 1 to Port 2	Cv Port 2 to Port 1
1/2"	1/2"	2WNC	Model No.	C284-2001		C284-2005		5.6	6.1
			Pressure Rating	500	34.0	450	31.0		
	3/4"		Model No.	C284-2002		C284-2006		7.4	7.0
			Pressure Rating	500	34.0	450	31.0		
	1/2"	2WNO	Model No.	C284-2003		C284-2007		6.1	6.5
			Pressure Rating	500	34.0	375‡	26.0		
	3/4"		Model No.	C284-2004		C284-2008		7.6	8.0
			Pressure Rating	500	34.0	375‡	26.0		
1"	1"	2WNC	Model No.	C284-4001		C284-4005		12.8	12.3
			Pressure Rating	500	34.0	375‡	26.0		
	1¼"		Model No.	C284-4002		C284-4006		17.0	16.3
			Pressure Rating	500	34.0	375‡	26.0		
	1"	2WNO	Model No.	C284-4003		C284-4007		13.2	12.6
			Pressure Rating	500	34.0	275†	19.0		
	1¼"		Model No.	C284-4004		C284-4008		17.9	17.0
			Pressure Rating	500	34.0	275†	19.0		
1½"	1½"	2WNC	Model No.	C284-6002		C284-6006		32.5	31.0
			Pressure Rating	500	34.0	250	17.2		
	1½"	2WNO	Model No.	C284-6004		C284-6008		32.0	32.9
			Pressure Rating	450‡	31.0	200‡	13.8		

‡ Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 500 psi are permissible.
† Pressure rating shown is for use with inlet at Port 2. If inlet is piped to Port 1, line pressures up to 350 psi are permissible.

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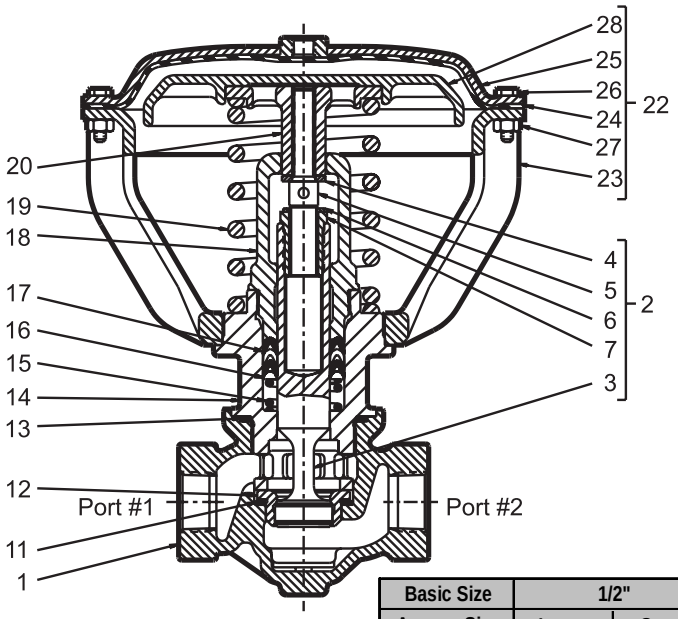
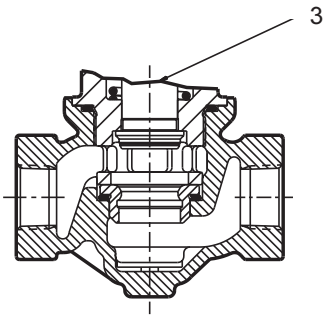
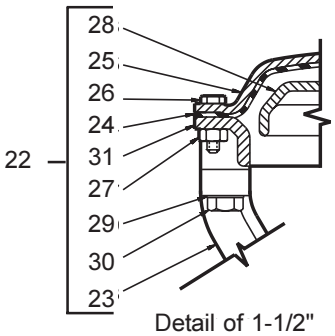




Detail of 2-Way
Normally Open
Stem Assembly



Detail of 1-1/2"
Two-Piece Yoke
Cover Assembly

Basic Size	1/2"		1"		1-1/2"		
Assem. Size	Large	Small	Large	Small	Large	Small	
Item No.	Part Numbers						Description
22	C132-039	C132-038	C132-040	C132-041	C132-048	C132-042	Diaphragm Assembly EPDM
	C132-051	C132-052	C132-053	C132-054	C132-055	C132-056	Diaphragm Assembly PTFE
23	D283-140	D283-139	D283-148	D283-146	D283-099	D283-063	Yoke
• 24	C333-053	C333-049	C333-051	C333-050	C333-052	C333-051	Diaphragm EPDM
	C333-069	C333-068	C333-070	C333-072	C333-071	C333-070	Diaphragm PTFE
25	C293-023	C293-018	C293-030	C293-091	C293-036	C293-030	Diaphragm Cover
26	H096-10	H096-10	H096-10	H096-10	H096-10	H096-10	Cap Screw
27	H060-03	H060-03	H060-03	H060-03	H060-03	H060-03	Hex Nut
28	C783-048	C783-032	C783-081	C783-061	C783-102	C783-071	Diaphragm Piston
29	-	-	-	-	H175-21	-	Lock Washer
30	-	-	-	-	H096-49	-	Cap Screw
31	-	-	-	-	C893-031	-	Ring
	C242-050	C242-051	C242-052	C242-053	C242-054	C242-055	Service Kit EPDM
	C242-082	C242-083	C242-084	C242-085	C242-086	C242-087	Service Kit PTFE

• IN SERVICE KIT

Basic Valve Size & Type	1/2" Normally Closed		1/2" Normally Open		1" Normally Closed		1" Normally Open		1½" N.C.	1½" N.O.	
Port Size	1/2" NPTF	3/4" NPTF	1/2" NPTF	3/4" NPTF	1" NPTF	1¼" NPTF	1" NPTF	1¼" NPTF	1½" NPTF	1½" NPTF	
Item No.	Part Numbers										Description
1	C093-136	C093-138	C093-136	C093-138	C093-140	C093-142	C093-140	C093-142	C093-146	C093-146	Body
2	C332-007	C332-007	C332-014	C332-014	C332-022	C332-022	C332-037	C332-037	C332-044	C332-045	Stem Assembly
3	D093-088	D093-088	D093-189	D093-189	D093-147	D093-147	D093-188	D093-188	D093-173	D093-175	Stem Only
• 4	D223-019	D223-019	D223-019	D223-019	D223-030	D223-030	D223-030	D223-030	-	-	Washer
5	D093-037	D093-037	D093-037	D093-037	D093-086	D093-086	D093-086	D093-086	D093-146	D093-146	Swivel Stem
• 6	H132-04	H132-04	H132-04	H132-04	H132-05	H132-05	H132-05	H132-05	H132-06	H132-06	Dust Washer
7	C643-002	C643-002	C643-002	C643-002	C643-006	C643-006	C643-006	C643-006	C643-010	C643-010	Swivel Nut
• 11	C383-010	C383-010	C383-010	C383-010	C383-019	C383-019	C383-019	C383-019	C383-029	C383-029	Seat Gasket
12	C963-008	C963-008	C963-008	C963-008	C963-052	C963-052	C963-052	C963-052	C963-085	C963-085	Seat Ring
• 13	C383-022	C383-022	C383-022	C383-022	C383-028	C383-028	C383-028	C383-028	C383-032	C383-032	End Gasket
14	C013-006	C013-006	C013-006	C013-006	C013-009	C013-009	C013-009	C013-009	C013-007	C013-007	Adapter
15	D293-001	D293-001	D293-001	D293-001	D293-002	D293-002	D293-002	D293-002	D293-004	D293-004	Packer Spring
16	C713-003	C713-003	C713-003	C713-003	C713-004	C713-004	C713-004	C713-004	C713-007	C713-007	Packer Spreader
• 17	C242-021	C242-021	C242-021	C242-021	C242-022	C242-022	C242-022	C242-022	C242-023	C242-023	Packer Assembly
18	C563-034	C563-034	C563-034	C563-034	C563-015	C563-015	C563-015	C563-015	C563-022	C563-022	Gland Nut
19	D293-157	D293-157	D293-158	D293-158	D293-147	D293-147	D293-147	D293-147	D293-051†	D293-054	Diaphragm Spring
20	C883-006	C883-006	C883-006	C883-006	C883-008	C883-008	C883-008	C883-008	C883-009	C883-009	Spring Retainer

† FOR NORMALLY CLOSED SMALL TOP USE D293-054.

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