

Ceram™ ISO 5599-1 Pneumatic Directional Control Valves

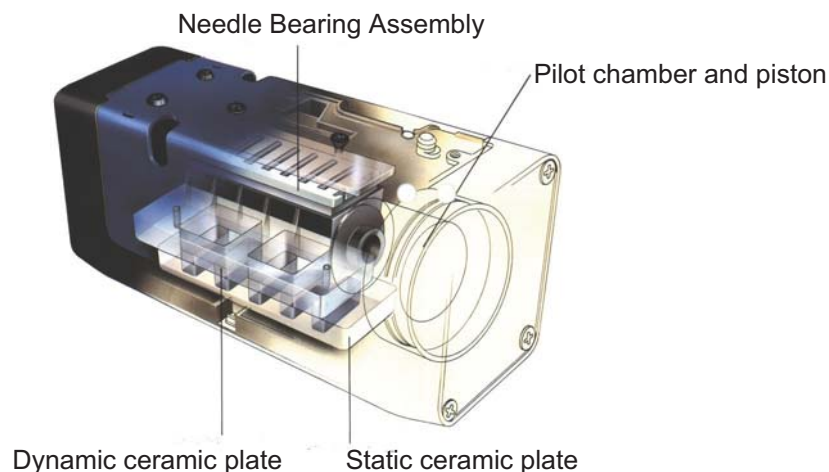


Ceram™ Valves, ISO 5599/1 Sizes 1-4

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Rexroth
Bosch Group

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Ceram™ Valves, ISO 5599/1 Sizes 1-4

Specifications and features



Specified by industries that demand tough valves due to their harsh operating environment. Ceram™ valves are very prevalent in industries where ordinary valves just don't last. Industries such as: tire plants, foundries, paper mills, steel plants, concrete batch plants, sawmills, plywood and board plants, automotive assembly, glass manufacturers, rubber and plastics, sheet metal fabrication, etc.

Eliminate downtime—they don't stick

Normal air valves can stick or jam and cause start-up problems because of their inability to handle accumulations of dirt, dust, oil or water in air lines. Not with the Ceram valve. There's no gap between the plates for dirt and oil to accumulate. The plates are finished so precise that they act like sliding magnets or jo blocks. Solenoid operators of the same voltage on standard valves are interchangeable between all sizes, reducing spare parts inventory and downtime.

They work great in normal applications too

Just because they are so popular in harsh environments, don't think they won't work great in a more normal application.

Ceram valves save air and money

The tight shut-off with Ceram valves eliminates costly loss of air that is common in other designs. Compressed air that you pay for.

Overcomes design limitations of other valves

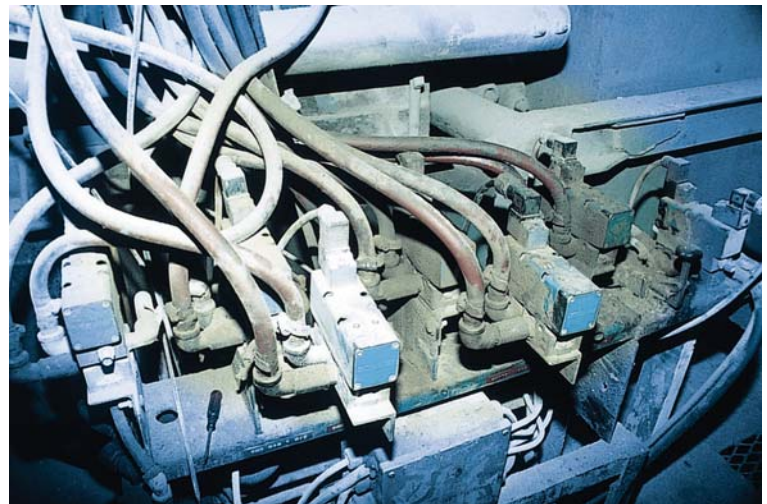
Lapped spool valves normally have a small gap between spool and sleeve that is prone to oil and dirt accumulation, resulting in sticking and the waste of air. Packed spool valves using elastomer seals are subject to deterioration and excessive wear when contamination and/or incompatible lubricants are present.

Extended life

Years of proven field service verifies an anticipated life of 150 million cycles even under adverse conditions.

World Standard ISO mounting

ISO 5599/1 mounting dimensions mean that wherever you send it, it's interchangeable with other ISO valves. Four basic valve sizes - ISO 1 through 4 with subbases or manifolds with NPT or ISO G (BSPP) ports.



Concrete batching plant application. Ceram valves withstand harsh conditions and dirty air without "sticking".

Valve Sizes/Specifications

Valve Size	Ports NPT, ISO G(BSPP)	C _v	S.C.F.M.*
Size 1	1/4", 3/8"	1.1	40 SCFM
Size 2	3/8", 1/2"	2.4	86 SCFM
Size 3	1/2", 3/4"	4.3	155 SCFM
Size 4	3/4", 1"	7.5	269 SCFM

*Flow measured with 87 psi (6 bar) supply pressure and 14.5 psi (1 bar) pressure drop across the valve.

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Specifications and features



Summary of Specifications For Ceram Valves

TECHNICAL DATA:

Port Sizes: 1/4" - 3/8" ISO Size I, 3/8" - 1/2" ISO Size II
1/2" - 3/4" ISO Size III, 1" ISO Size IV

Working Pressure: 0 to 150 PSI (0 to 10.3 bar)
(Intrinsically Safe versions: Maximum internal pilot valve pressure is 115 PSI or 7.9 bar)
Vacuum applications: to 24" Hg

Pilot Pressure: SIZES I & II

29 PSI (2.0 bar) minimum, all 2 position valves
44 PSI (3.0 bar) minimum, all 3 position valves
150 PSI (10.3 bar) maximum
(Intrinsically Safe versions: Maximum external pilot pressure is 115 PSI or 7.9 bar)

SIZES III & IV

36 PSI (2.5 bar) minimum, all 2 position valve
44 PSI (3.0 bar) minimum, all 3 position valve
150 PSI (10.3 bar) maximum
(Intrinsically Safe versions: Maximum external pilot pressure is 115 PSI or 7.9 bar)

Flow:

Valve Size	I	II	III	IV
C _v	1.1	2.4	4.3	7.5
Nl/min	1100	2400	4300	7500

Temperature Range:

Solenoid Valves: +5°F to +150°F (-15°C to 66°C)
(-10°F or -23°C operation possible with low temperature solenoid operators. Available for 2-position double solenoid and air Spring return valves.)

Air Pilot Valves: -10°F to +175°F (-23°C to 79°C)

Media: Air, either Lubricated or Non-lubricated

Service Life: over 150 million Cycles with or without Line Lubrication

Material: Body - Die Cast Anodized Aluminum (Sizes II - IV)
Die Cast Zinc (Size I)

Valve Elements - Ceramic Slide Plates (Al₂O₃)

Combination Manual Override:

Explosion-proof models: Non-locking only
Other models: Locking & Non-Locking sizes I - IV (III and IV: Oct. '92 & later)
Non-Locking sizes III & IV (Prior to Oct. '92)



ISO I pictured

ELECTRICAL DATA:

ISO Valve Size	Standard Voltages (All coils are rated for continuous duty)	Power Consumption	
		Inrush	Holding
I and II (III and IV Oct. '92 and later)	24 VAC - 50/60 Hz 110 VAC - 50 Hz/120 VAC - 60 Hz 220 VAC - 50 Hz/240 VAC - 60 Hz	6.4 VA	3.7 VA
	12, 24 VDC		
III and IV (Prior to Oct. '92)	120, 240 VAC (50/60 Hz)	15.6 VA	9.4 VA
	12, 24 VDC	6.1 W	

Voltage Tolerance: +/- 10% (Except for Explosion proof and Intrinsically safe solenoids.)

All standard valves are rated for NEMA 4.

SOLENOID CONNECTORS AND SUBBASES:

Plug-in solenoid connectors conform to DIN standard #43650 and must be ordered separately. **Order one connector per solenoid.** Connector options include strain relief and one-half inch (1/2") conduit. Both are available in Lighted and non-lighted versions. 1/2" conduit connector also available in metallic version; see page main solenoid connectors page. Subbases, manifold and accessories are ordered separately.

FEATURES

- Ceramic plates guaranteed for life of valve
- Sliding ceramic plates form seal
- Operates with or without line lubrication
- Interchangeable with other ISO valves
- Expected service life exceeds 150 million cycles
- NEMA 4 Standard
- Sub-bases and manifolds available 1/4" thru 1" NPT ISO G1/8 to G1 piping
- Wide range of accessories, including sandwich speed controls and regulators
- Explosion-proof and intrinsically safe solenoids available.
- Brad Harrison® Connector Solenoids
- U.L. and C.S.A. approved solenoids

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Model code identification



Model Code Identification

OPERATORS

“14” END

“12” END

GX - OX 00 X - X - 0 XX XX

G	X	0	X (SIZE)	00	X (DESCRIPTION)	X (Solenoid Arrangement)		
4-Way, 5-Ported CERAM Valve	S or T	0	1 ISO 1	3rd and 4th digits are always zero	1	3 Position Valves, Exhaust Open Ctr. Ext. Pilot	0	None
		0	2 ISO 2		2	3 Position Valves, Closed Ctr. Ext. Pilot	1	Single Solenoid
	S	0	3 ISO 3		3	3 Position Valves, Exhaust Open Ctr. Int. Pilot	2	Double Solenoid
		0	4 ISO 4		4	3 Position Valves, Closed Ctr. Internal Pilot		
					5	2 Position Valves, Ext. Pilot		
					6	2 Position Valves, Int. Pilot		

VALVE OPERATORS

03 • 2 or 3 Position ANSI 3 pin MiniConnection 120 VAC 50/60 Hz	33 Air Pilot—2 Position Valves
04 • 2 or 3 Position ANSI 4 pin MicroConnection 24 VDC	35 Air Pilot with Centering Springs—3 Position Valves
05 • 2 or 3 Position ANSI 5 pin MiniConnection 120 VAC 50/60	36 2 Position 12 VDC
06 • 2 or 3 Position ANSI 3 pin MiniConnection 24 VDC	38 3 Position with Centering Springs 12 VDC
07 • 2 or 3 Position ANSI 5 pin Mini.Dbl.Sol/Sgl.Conn.120 VAC 50/60 Hz	39 2 Position 24 VDC
08 • 2 or 3 Position ANSI 5 pin Mini.Dbl.Sol/Sgl.Conn.24 VDC	40 † Metal Spring Return
09 • 2 or 3 Position ANSI 4 pin Micro.Dbl.Sol/Sgl.Conn.24 VDC	41 3 Position with Centering Springs 24 VDC
10 • 2 or 3 Position ANSI 5 pin MiniConnection 24 VDC	43 Explosion Proof 2 Position 120 VAC 50/60 Hz
11 2 Position Low Temp Operator 120 VAC 50/60 Hz	46 Explosion Proof 2 Position 24 VDC
13 2 Position Low Temp Operator 24 VDC	49 Explosion Proof 2 Position 240 VAC 50/60 Hz
14 2 Position 240 VAC 50/60 Hz Low Temp	51 † Air Spring Return
15 2 or 3 Position 12 VAC 50/60 Hz	53 Explosion Proof 3 Pos. w/ Centering Springs 120 VAC 50/60 Hz
16 2 or 3 Position 480 VAC 50/60 Hz or 253 VDC	56 Explosion Proof 3 Pos. w/ Centering Springs 24 VDC
17 2 or 3 Position 36 VDC	59 Explosion Proof 3 Pos. w/ Centering Springs 240 VAC 50/60 Hz
18 2 or 3 Position 76 VDC	61 2 Position 24 VAC 50/60 Hz
19 2 or 3 Position 125 VDC	62 3 Position with Centering Springs 24 VAC 50/60 Hz
20 2 or 3 Position 24 VDC 2.1 W (For Contact Bridge)	72 2 or 3 Position U.L. Approved 120 VAC 50/60 Hz
24 2 Position 120 VAC 50/60 Hz	73 2 or 3 Position U.L. Approved 24 VDC
26 3 Position with Centering Springs 120 VAC 50/60 Hz	78 2 or 3 Position CSA Approved 120 VAC 50/60 Hz
27 2 Position 240 VAC 50/60 Hz	79 2 or 3 Position CSA Approved 24 VDC
29 3 Position with Centering Springs 240 VAC 50/60 Hz	90 2 or 3 Position Factory Mutual Approved Intrinsically Safe 24 VDC

• ANSI Connection universally known as Brad Harrison®. † Used on “12” end only.

NOTE: The previous version of the GS series was the GA series. The GS valves are direct functional/dimensional replacements for the previous GA series. Size 1 valves are now GT series, and are direct functional/dimensional replacements. Also, there are various special CERAM valves which have old part numbers that begin with “P” (such as P-069431-00001). Effective April 2008, part numbers begin with “R” and are 10 digits. For online part number crossover: www.boschrexroth-us.com/ceram

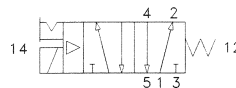
Ceram™ Valves, ISO 5599/1 Sizes 1-4

Single solenoid, metal spring return



5 Port / 2 Position Single Solenoid, Metal Spring Return Subbase Mounted (ISO Standard 5599/1)

Combination Manual Override: Locking & Non-Locking
Sizes I-IV



Choose valve first, solenoid connector next (see Solenoid Connectors page), then matching subbase or manifold components.

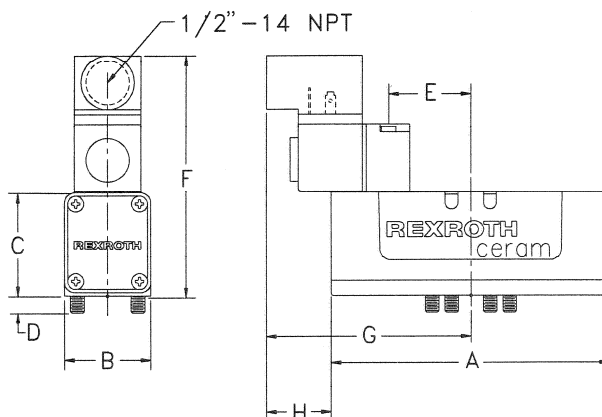
ISO Size	Voltage	Valve Part Number*	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	110V-50Hz/120V-60Hz	R432006435	GT-010061-02440	1.1 (1100)	2.15 (0.98)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
	220V-50Hz/240V-60Hz	R432006437	GT-010061-02740					
	12 VDC	R432006439	GT-010061-03640					
	24 VDC	R432006441	GT-010061-03940					
	24 VAC	R432006448	GT-010061-06140					
without coil	R432002477	GT-010061-00040						
2	110V-50Hz/120V-60Hz	R432006124	GS-020061-02440	2.4 (2400)	3.70 (1.68)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
	220V-50Hz/240V-60Hz	R432006126	GS-020061-02740					
	12 VDC	R432006128	GS-020061-03640					
	24 VDC	R432006130	GS-020061-03940					
	24 VAC	R432006136	GS-020061-06140					
without coil	R432002447	GS-020061-00040						
3	110V-50Hz/120V-60Hz	R432006238	GS-030061-02440	4.3 (4300)	4.18 (1.90)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
	220V-50Hz/240V-60Hz	R432006240	GS-030061-02740					
	12 VDC	R432006242	GS-030061-03640					
	24 VDC	R432006243	GS-030061-03940					
	24 VAC	R432030344	GS-030061-06140					
without coil	R432002457	GS-030061-00040						
4	110V-50Hz/120V-60Hz	R432006321	GS-040061-02440	7.5 (7500)	4.61 (2.09)	R432015310	1"- 11-1/2	2.75 (1.25)
	220V-50Hz/240V-60Hz	R432006323	GS-040061-02740					
	12 VDC	R432006325	GS-040061-03640					
	24 VDC	R432006326	GS-040061-03940					
	24 VAC	R432030177	GS-040061-06140					
without coil	R432002467	GS-040061-00040						

Note: All valves listed above come from the factory internally piloted. To order an externally piloted valve, change the 7th character in the model number (not counting dashes), from 6 to 5. For example, model GT-010061-02440 would become GT-010051-02440. For externally piloted valves less coil, see page 14.

*Consult factory for voltages not listed. See page 17 for Explosion Proof models.

Dimensions

Note: solenoid connector shown for reference only.



Size	A		B		C		D	
	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4

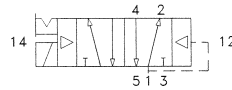
Size	E		F		G		H	
	IN	mm	IN	mm	IN	mm	IN	mm
I	1.52	38.5	4.53	115.1	3.48	88.5	1.20	30.5
II	1.57	40.0	4.90	124.5	3.54	90.0	.92	23.4
III	1.62	41.3	5.23	132.8	4.18	106.2	1.05	26.7
IV	1.62	41.3	5.32	135.1	6.65	169.0	.68	17.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Single solenoid, air spring return



5 Port / 2 Position Single Solenoid, Air Spring Return Subbase Mounted (ISO Standard 5599/1)



Combination Manual Override: Locking & Non-Locking
Sizes I-IV

Choose valve first, solenoid connector next (see Solenoid Connectors page), then matching subbase or manifold components.

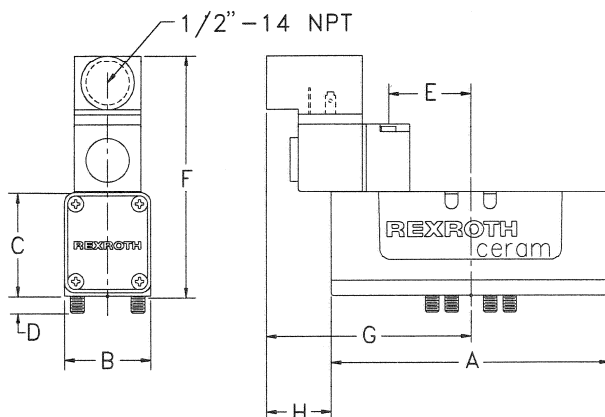
ISO Size	Voltage	Valve Part Number*	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	110V-50Hz/120V-60Hz	R432006436	GT-010061-02451	1.1 (1100)	2.15 (0.98)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
	220V-50Hz/240V-60Hz	R432006438	GT-010061-02751					
	12 VDC	R432006440	GT-010061-03651					
	24 VDC	R432006442	GT-010061-03951					
	24 VAC without coil	R432006449 R432002478	GT-010061-06151 GT-010061-00051					
2	110V-50Hz/120V-60Hz	R432006125	GS-020061-02451	2.4 (2400)	3.70 (1.68)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
	220V-50Hz/240V-60Hz	R432006127	GS-020061-02751					
	12 VDC	R432006129	GS-020061-03651					
	24 VDC	R432006131	GS-020061-03951					
	24 VAC without coil	R432006137 R432002448	GS-020061-06151 GS-020061-00051					
3	110V-50Hz/120V-60Hz	R432006239	GS-030061-02451	4.3 (4300)	4.18 (1.90)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
	220V-50Hz/240V-60Hz	R432006241	GS-030061-02751					
	12 VDC	R432030345	GS-030061-03651					
	24 VDC	R432006244	GS-030061-03951					
	24 VAC without coil	R432030343 R432002458	GS-030061-06151 GS-030061-00051					
4	110V-50Hz/120V-60Hz	R432006322	GS-040061-02451	7.5 (7500)	4.61 (2.09)	R432015310	1"- 11-1/2	2.75 (1.25)
	220V-50Hz/240V-60Hz	R432006324	GS-040061-02751					
	12 VDC	R432030378	GS-040061-03651					
	24 VDC	R432006327	GS-040061-03951					
	24 VAC without coil	R432030352 R432002468	GS-040061-06151 GS-040061-00051					

Note: All valves listed above come from the factory internally piloted. To order an externally piloted valve, change the 7th character in the model number (not counting dashes), from 6 to 5. For example, model GT-010061-02451 would become GT-010051-02451. For externally piloted valves less coil, see page 14.

*Consult factory for voltages not listed. See page 17 for Explosion Proof models.

Dimensions

Note: solenoid connector shown for reference only.



Size	A		B		C		D	
	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4

Size	E		F		G		H	
	IN	mm	IN	mm	IN	mm	IN	mm
I	1.52	38.5	4.53	115.1	3.48	88.5	1.20	30.5
II	1.57	40.0	4.90	124.5	3.54	90.0	.92	23.4
III	1.62	41.3	5.23	132.8	4.18	106.2	1.05	26.7
IV	1.62	41.3	5.32	135.1	6.65	169.0	.68	17.3

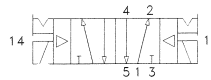
Ceram™ Valves, ISO 5599/1 Sizes 1-4

Double solenoid, 5/2



5 Port / 2 Position Double Solenoid Subbase Mounted (ISO Standard 5599/1)

Combination Manual Override: Locking & Non-Locking
Sizes I-IV



Choose valve first, solenoid connector next (see Solenoid Connectors page), then matching subbase or manifold components.

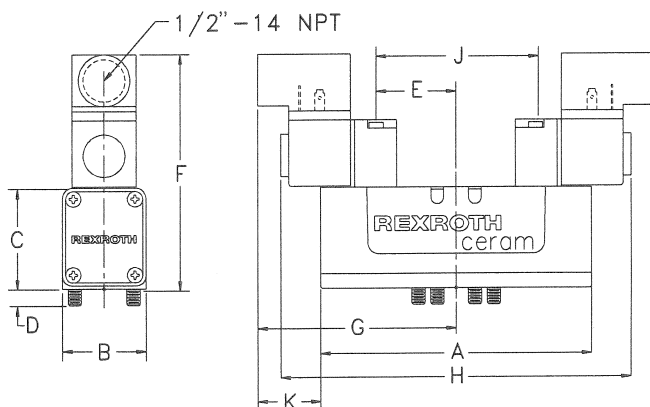
ISO Size	Voltage	Valve Part Number*	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	110V-50Hz/120V-60Hz	R432006471	GT-010062-02424	1.1 (1100)	3.21 (1.46)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
	220V-50Hz/240V-60Hz	R432006472	GT-010062-02727					
	12 VDC	R432006473	GT-010062-03636					
	24 VDC	R432006474	GT-010062-03939					
	24 VAC without coil	R432006478 R432002479	GT-010062-06161 GT-010062-00000					
2	110V-50Hz/120V-60Hz	R432006156	GS-020062-02424	2.4 (2400)	4.75 (2.15)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
	220V-50Hz/240V-60Hz	R432006157	GS-020062-02727					
	12 VDC	R432030350	GS-020062-03636					
	24 VDC	R432006158	GS-020062-03939					
	24 VAC without coil	R432006162 R432002449	GS-020062-06161 GS-020062-00000					
3	110V-50Hz/120V-60Hz	R432006265	GS-030062-02424	4.3 (4300)	4.99 (2.26)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
	220V-50Hz/240V-60Hz	R432006266	GS-030062-02727					
	12 VDC	R432030342	GS-030062-03636					
	24 VDC	R432006267	GS-030062-03939					
	24 VAC without coil	R432030341 R432002459	GS-030062-06161 GS-030062-00000					
4	110V-50Hz/120V-60Hz	R432006339	GS-040062-02424	7.5 (7500)	5.42 (2.46)	R432015310	1"- 11-1/2	2.75 (1.25)
	220V-50Hz/240V-60Hz	R432006340	GS-040062-02727					
	12 VDC	R432030353	GS-040062-03636					
	24 VDC	R432006341	GS-040062-03939					
	24 VAC without coil	R432030178 R432002469	GS-040062-06161 GS-040062-00000					

Note: All valves listed above come from the factory internally piloted. To order an externally piloted valve, change the 7th character in the model number (not counting dashes), from 6 to 5. For example, model GT-010062-02424 would become GT-010052-02424. For externally piloted valves less coils, see page 14.

*Consult factory for voltages not listed. See page 17 for Explosion Proof models.

Dimensions

Note: solenoid connectors are shown for reference only.



Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

Size	F		G		H		J		K	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	4.53	115.1	3.48	88.5	6.97	177.0	3.03	77.0	1.20	30.5
II	4.90	124.5	3.54	90.0	7.09	180.0	3.15	80.0	.92	23.4
III	5.23	132.8	4.18	106.2	8.36	212.3	3.25	82.6	1.05	26.7
IV	5.32	135.1	6.65	169.0	13.31	338.1	3.25	82.6	.68	17.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

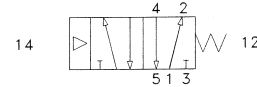
Single air pilot, metal and air spring return



5 Port / 2 Position Single Air Pilot/Metal Spring Return & Single Air Pilot/Air Spring Return (ISO Standard 5599/1)

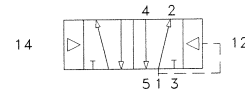


Choose valve first, then matching subbase or manifold components.



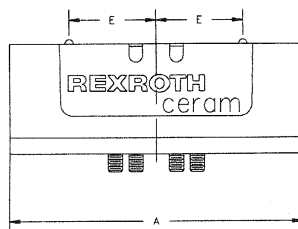
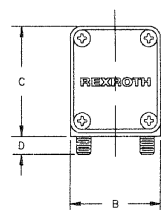
Single Air Pilot/Metal Spring Return

ISO Size	Valve Part Number	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	R432006393	GT-010050-03340	1.1 (1100)	1.22 (0.55)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
2	R432006085	GS-020050-03340	2.4 (2400)	2.77 (1.26)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
3	R432006204	GS-030050-03340	4.3 (4300)	3.37 (1.53)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
4	R432006297	GS-040050-03340	7.5 (7500)	3.80 (1.72)	R432015310	1"- 11-1/2	2.75 (1.25)



Single Air Pilot/Air Spring Return

ISO Size	Valve Part Number	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	R432006394	GT-010050-03351	1.1 (1100)	1.22 (0.55)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
2	R432006086	GS-020050-03351	2.4 (2400)	2.77 (1.26)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
3	R432006205	GS-030050-03351	4.3 (4300)	3.37 (1.53)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
4	R432006298	GS-040050-03351	7.5 (7500)	3.80 (1.72)	R432015310	1"- 11-1/2	2.75 (1.25)



Dimensions

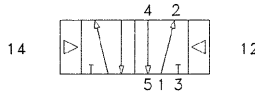
Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Double air pilot, 5/2



5 Port / 2 Position
Double Air Pilot/
Subbase Mounted (ISO Standard 5599/1)

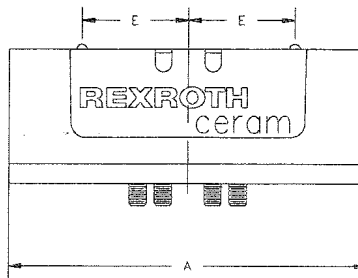
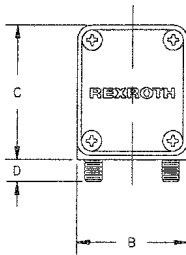


Choose valve first, then matching subbase or manifold components.

ISO Size	Valve Part Number	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	R432006392	GT-010050-03333	1.1 (1100)	1.22 (0.55)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
2	R432006084	GS-020050-03333	2.4 (2400)	2.77 (1.26)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
3	R432006203	GS-030050-03333	4.3 (4300)	3.37 (1.53)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
4	R432006296	GS-040050-03333	7.5 (7500)	3.80 (1.72)	R432015310	1"- 11-1/2	2.75 (1.25)

Dimensions

Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

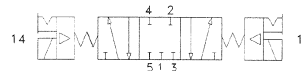


Ceram™ Valves, ISO 5599/1 Sizes 1-4

Double solenoid, 5/3, closed center



5 Port / 3 Position - Closed Center Double Solenoid Subbase Mounted (ISO Standard 5599/1)



Combination Manual Override: Locking & Non-Locking
Sizes I-IV

Choose valve first, solenoid connector next (see Solenoid Connectors page), then matching subbase or manifold components.

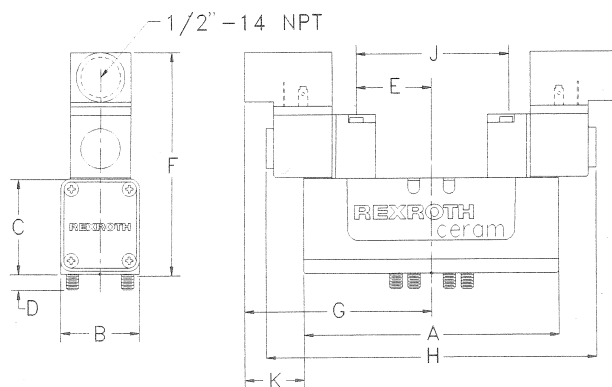
ISO Size	Voltage	Valve Part Number*	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	110V-50Hz/120V-60Hz	R432006382	GT-010042-02626	1.1 (1100)	3.21 (1.46)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
	220V-50Hz/240V-60Hz	R432006383	GT-010042-02929					
	12 VDC	R432006384	GT-010042-03838					
	24 VDC	R432006385	GT-010042-04141					
	24 VAC	R432006388	GT-010042-06262					
	without coil	R432002473	GT-010042-00000					
2	110V-50Hz/120V-60Hz	R432006076	GS-020042-02626	2.4 (2400)	4.75 (2.15)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
	220V-50Hz/240V-60Hz	R432006077	GS-020042-02929					
	12 VDC	R432006078	GS-020042-03838					
	24 VDC	R432006079	GS-020042-04141					
	24 VAC	R432006082	GS-020042-06262					
	without coil	R432002443	GS-020042-00000					
3	110V-50Hz/120V-60Hz	R432006196	GS-030042-02626	4.3 (4300)	4.99 (2.26)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
	220V-50Hz/240V-60Hz	R432006197	GS-030042-02929					
	12 VDC	R432006198	GS-030042-03838					
	24 VDC	R432006199	GS-030042-04141					
	24 VAC	R432030346	GS-030042-06262					
	without coil	R432002453	GS-030042-00000					
4	110V-50Hz/120V-60Hz	R432006290	GS-040042-02626	7.5 (7500)	5.42 (2.46)	R432015310	1"- 11-1/2	2.75 (1.25)
	220V-50Hz/240V-60Hz	R432006291	GS-040042-02929					
	12 VDC	R432006292	GS-040042-03838					
	24 VDC	R432006293	GS-040042-04141					
	24 VAC	R432030338	GS-040042-06262					
	without coil	R432002463	GS-040042-00000					

Note: All valves listed above come from the factory internally piloted. To order an externally piloted valve, change the 7th character in the model number (not counting dashes), from 4 to 2. For example, model GT-010042-02626 would become GT-010022-02626. For externally piloted valves less coils, see page 14.

*Consult factory for voltages not listed. See page 17 for Explosion Proof models.

Dimensions

Note: solenoid connectors are shown for reference only.



Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

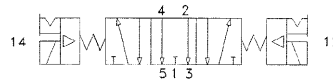
Size	F		G		H		J		K	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	4.53	115.1	3.48	88.5	6.97	177.0	3.03	77.0	1.20	30.5
II	4.90	124.5	3.54	90.0	7.09	180.0	3.15	80.0	.92	23.4
III	5.23	132.8	4.18	106.2	8.36	212.3	3.25	82.6	1.05	26.7
IV	5.32	135.1	6.65	169.0	13.31	338.1	3.25	82.6	.68	17.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Double solenoid, 5/3, exhaust open center



5 Port / 3 Position - Exhaust Open Center Double Solenoid Subbase Mounted (ISO Standard 5599/1)



Combination Manual Override: Locking & Non-Locking
Sizes I-IV

Choose valve first, solenoid connector next (see Solenoid Connectors page), then matching subbase or manifold components.

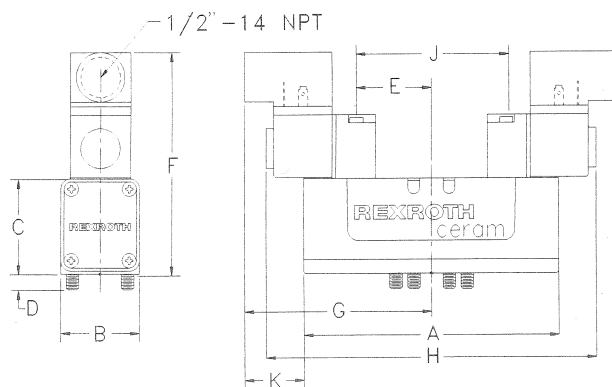
ISO Size	Voltage	Valve Part Number*	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	110V-50Hz/120V-60Hz	R432006365	GT-010032-02626	1.1 (1100)	3.21 (1.46)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
	220V-50Hz/240V-60Hz	R432006366	GT-010032-02929					
	12 VDC	R432006367	GT-010032-03838					
	24 VDC	R432006368	GT-010032-04141					
	24 VAC	R432006371	GT-010032-06262					
	without coil	R432002472	GT-010032-00000					
2	110V-50Hz/120V-60Hz	R432006058	GS-020032-02626	2.4 (2400)	4.75 (2.15)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
	220V-50Hz/240V-60Hz	R432006059	GS-020032-02929					
	12 VDC	R432030023	GS-020032-03838					
	24 VDC	R432006060	GS-020032-04141					
	24 VAC	R432006063	GS-020032-06262					
	without coil	R432002442	GS-020032-00000					
3	110V-50Hz/120V-60Hz	R432006184	GS-030032-02626	4.3 (4300)	4.99 (2.26)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
	220V-50Hz/240V-60Hz	R432006185	GS-030032-02929					
	12 VDC	R432006186	GS-030032-03838					
	24 VDC	R432006187	GS-030032-04141					
	24 VAC	R432030359	GS-030032-06262					
	without coil	R432002452	GS-030032-00000					
4	110V-50Hz/120V-60Hz	R432006283	GS-040032-02626	7.5 (7500)	5.42 (2.46)	R432015310	1"- 11-1/2	2.75 (1.25)
	220V-50Hz/240V-60Hz	R432030340	GS-040032-02929					
	12 VDC	R432029042	GS-040032-03838					
	24 VDC	R432006284	GS-040032-04141					
	24 VAC	R432030339	GS-040032-06262					
	without coil	R432002462	GS-040032-00000					

Note: All valves listed above come from the factory internally piloted. To order an externally piloted valve, change the 7th character in the model number (not counting dashes), from 3 to 1. For example, model GT-010032-02626 would become GT-010012-02626. For externally piloted valves less coils, see page 14.

*Consult factory for voltages not listed. See page 17 for Explosion Proof models.

Dimensions

Note: solenoid connectors are shown for reference only.



Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

Size	F		G		H		J		K	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	4.53	115.1	3.48	88.5	6.97	177.0	3.03	77.0	1.20	30.5
II	4.90	124.5	3.54	90.0	7.09	180.0	3.15	80.0	.92	23.4
III	5.23	132.8	4.18	106.2	8.36	212.3	3.25	82.6	1.05	26.7
IV	5.32	135.1	6.65	169.0	13.31	338.1	3.25	82.6	.68	17.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Double air pilot, 5/3, closed center and exhaust open center

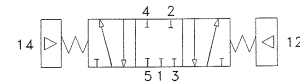


5 Port / 3 Position
Double Air Pilot - Closed Center
Double Air Pilot - Exhaust Open Center
Subbase Mounted (ISO Standard 5599/1)



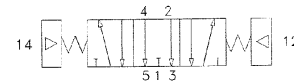
Choose valve first, then matching subbase or manifold components.

Double Air Pilot - Closed Center

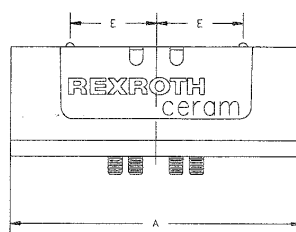
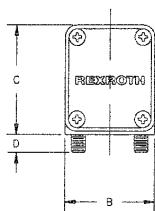


ISO Size	Valve Part Number	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	R432006352	GT-010020-03535	1.1 (1100)	1.22 (0.55)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
2	R432006047	GS-020020-03535	2.4 (2400)	2.77 (1.26)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
3	R432006173	GS-030020-03535	4.3 (4300)	3.37 (1.53)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
4	R432006276	GS-040020-03535	7.5 (7500)	3.80 (1.72)	R432015310	1" - 11-1/2	2.75 (1.25)

Double Air Pilot - Exhaust Open Center



ISO Size	Valve Part Number	Valve Model Number	Flow Cv (NI/min)	Valve Weight lbs. (kg)	Single Subbase (Side Ported)	Port Size	Subbase Weight lbs. (kg)
1	R432006345	GT-010010-03535	1.1 (1100)	1.22 (0.55)	R432015524 R432015488	1/4"-18 3/8"-18	0.76 (0.34)
2	R432006040	GS-020010-03535	2.4 (2400)	2.77 (1.26)	R432031845 R432015307	3/8"-18 1/2"-14	1.25 (0.57)
3	R432006167	GS-030010-03535	4.3 (4300)	3.37 (1.53)	R432015308 R432015309	1/2"-14 3/4"-14	1.85 (0.84)
4	R432006272	GS-040010-03535	7.5 (7500)	3.80 (1.72)	R432015310	1" - 11-1/2	2.75 (1.25)



Dimensions

Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

Ceram™ Valves, ISO 5599/1 Sizes 1-4

U.L. and CSA approved operators/Externally piloted valves less coil



Solenoid Operated Valves with U.L. Approved Operators



Available in 120VAC (suffix code 72 for 2 or 3 position valves) or 24VDC (suffix code 73 for 2 or 3-position valves).

Ordering example:

Model code GT-010061-02440 is the model code for a standard valve with 120VAC operator. To get the model code for the same valve with a U.L. approved 120VAC operator, substitute 72 for the 24.

Reference Model Code Identification page for complete listing.

Valve is not supplied with DIN solenoid connector, must order separately, see Solenoid Connectors page.

For online model code to part number crossover: www.boschrexroth-us.com/ceram

NOTE: Dimensions are identical to standard solenoid valve.

Solenoid Operated Valves with CSA Approved Operators



Available in 120VAC (suffix code 78 for 2 or 3 position valves) or 24VDC (suffix code 79 for 2 or 3-position valves).

Ordering example:

Model code GT-010061-02440 is the model code for a standard valve with 120VAC operator. To get the model code for the same valve with a CSA approved 120VAC operator, substitute 78 for the 24.

Reference Model Code Identification page for complete listing.

Valve is supplied with 1/2" conduit solenoid connector.

Maximum internally piloted valve pressure is 145 psi. Pressures to 150 psi can be used when external pilot is utilized and limited to 145 psi.

For online model code to part number crossover: www.boschrexroth-us.com/ceram

NOTE: Dimensions are identical to standard solenoid valve.

Externally Piloted Ceram Valve - without Coils

Part Number	Description	Part Number	Description
R432002470	SIZE 1 EP OC DS LESS COILS (GT-010012-00000)	R432002450	SIZE 3 EP OC DS LESS COILS (GS-030012-00000)
R432002471	SIZE 1 EP CC DS LESS COILS (GT-010022-00000)	R432002451	SIZE 3 EP CC DS LESS COILS (GS-030022-00000)
R432002474	SIZE 1 EP SS LESS COIL (GT-010051-00040)	R432002454	SIZE 3 EP SS LESS COIL (GS-030051-00040)
R432002475	SIZE 1 EP SS LESS COIL (GT-010051-00051)	R432002455	SIZE 3 EP SS LESS COIL (GS-030051-00051)
R432002476	SIZE 1 EP DS LESS COILS (GT-010052-00000)	R432002456	SIZE 3 EP DS LESS COILS (GS-030052-00000)
R432002440	SIZE 2 EP OC DS LESS COILS (GS-020012-00000)	R432002460	SIZE 4 EP OC DS LESS COILS (GS-040012-00000)
R432002441	SIZE 2 EP CC DS LESS COILS (GS-020022-00000)	R432002461	SIZE 4 EP CC DS LESS COILS (GS-040022-00000)
R432002444	SIZE 2 EP SS LESS COIL (GS-020051-00040)	R432002464	SIZE 4 EP SS LESS COIL (GS-040051-00040)
R432002445	SIZE 2 EP SS LESS COIL (GS-020051-00051)	R432002465	SIZE 4 EP SS LESS COIL (GS-040051-00051)
R432002446	SIZE 2 EP DS LESS COILS (GS-020052-00000)	R432002466	SIZE 4 EP DS LESS COILS (GS-040052-00000)

Ceram™ Valves, ISO 5599/1 Sizes 1-4

CSA approved operator: 3, 4 or 5 pin connections



Solenoid Operated Valves with CSA Approved Operator Meeting ANSI B93.55 Electrical Connections (Brad Harrison® style): 3, 4 or 5 Pin Connections

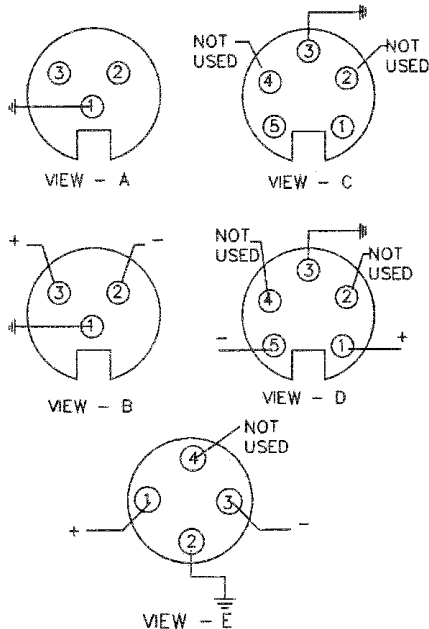
Electrical Hook-up and Ordering Information*



Ordering example:

To order a 120VAC single solenoid/metal spring return valve with ANSI B93.55 pin connection:
Substitute 03 for the 24 in the model code (GT-010061-02440 would become GT-010061-00340). Reference Model Code Identification page for complete listing.

For online model code to part number crossover:
www.boschrexroth-us.com/ceram

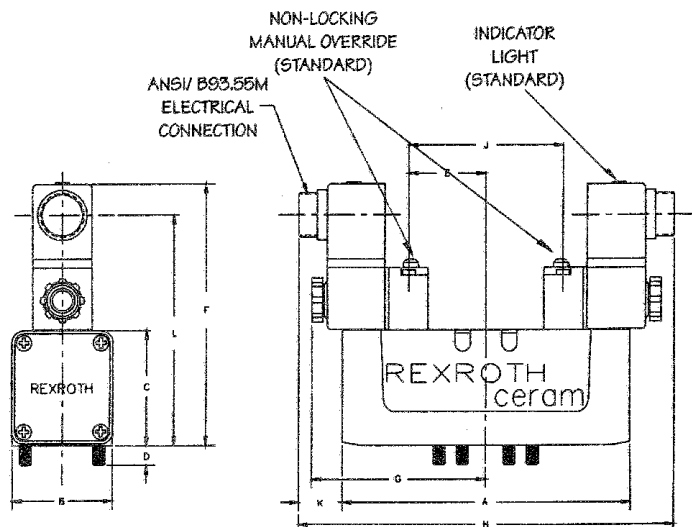


CONNECTOR INSERT

2 or 3 position valves*

VOLTAGE	CONNECTOR INSERT	PART NUMBER SUFFIX
120 VAC 50/60 Hz	VIEW A	03
24 VDC	VIEW B	06
120 VAC 50/60 Hz	VIEW C	05
24 VDC	VIEW D	10
24 VDC	VIEW E	04

*Electrical connector/cable must be ordered separately from the valve. One connector/cable assembly is required for each solenoid. See Solenoid Connectors page for selection.



Dimensions

**Operator does not overhang body assembly.

Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	0.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	0.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.8	2.59	65.8	0.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	0.41	10.4	1.62	41.3

Size	F		G		H		J		K	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	4.92	125.0	3.48	88.5	7.47	189.7	3.03	77.0	1.18	30.0
II	5.29	116.3	3.54	90.0	7.59	192.8	3.15	80.0	0.89	22.6
III	5.62	142.8	**	**	7.54	191.5	3.25	82.8	**	**
IV	5.71	145.0	**	**	**	**	3.25	82.8	**	**

Ceram™ Valves, ISO 5599/1 Sizes 1-4

CSA approved operator, single 4 or 5 pin connection
For double solenoid valves



Solenoid Operated Valves with CSA Approved Operator Meeting ANSI B93.55 Electrical Connections (Brad Harrison® style)

Single 4 or 5 Pin Connection for Double Solenoid Valves, 2 or 3 Position

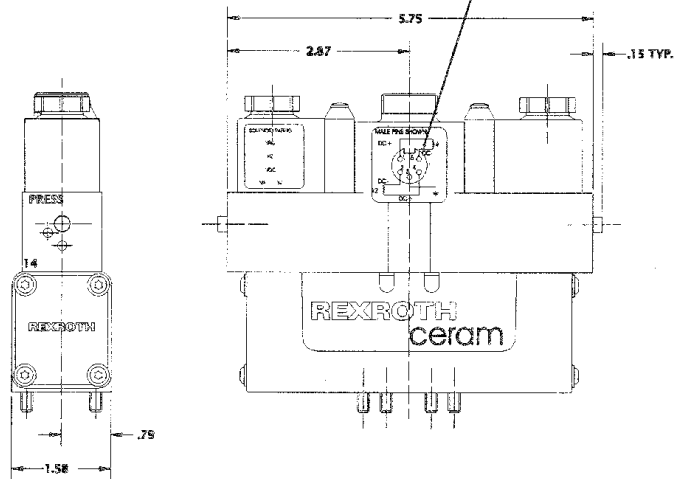
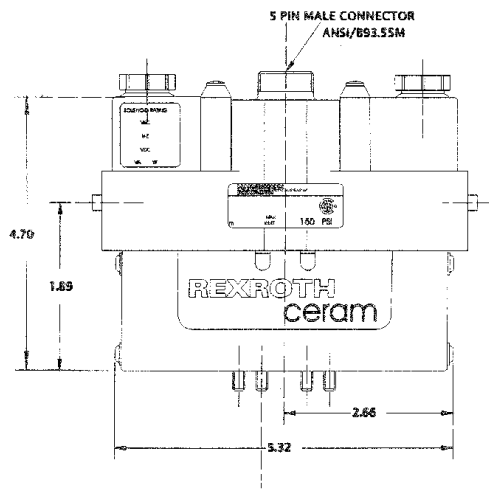
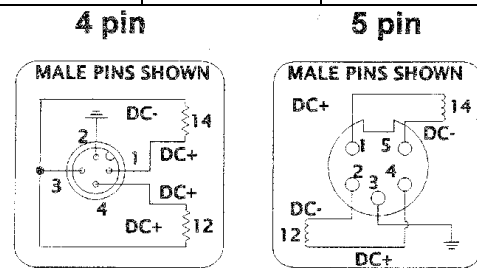
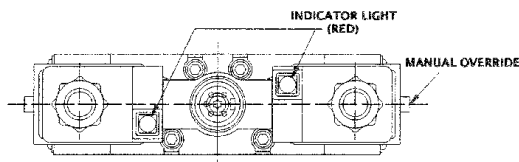


Ordering example:

To order a 120VAC double solenoid, 2 position size 1 valve with single ANSI B93.55 5-pin connection:
Substitute 07 for the 24 in the model code (GT-010061-02424 would become GT-010061-00707). Reference Model Code Identification page for complete listing.

For online model code to part number crossover:
www.boschrexroth-us.com/ceram

Voltage	Model Code Suffix	Number of Pins
120 VAC 50/60 Hz	07	5 (mini)
24 VDC	08	5 (mini)
24 VDC	09	4 (micro)



Dimensions shown above are for Size I valve; for other sizes, **add** dimensions below to Size I valve body dimensions above. Electrical portion of valve does not change, regardless of valve size.

Dimension Adders (inches)

Size	Height	Width	Length
II	0.41	0.45	0.50
III	0.70	1.13	2.22
IV	1.00	1.51	3.30

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Explosion proof and intrinsically safe solenoid valves



Explosion Proof Solenoid Valves for Hazardous Locations

NEMA 7C & 7D & U.L.

Class I-Groups C & D-Explosion Proof

NEMA 8C & 8D & U.L.

Class I-Groups C & D-Explosion Proof

NEMA 9E, 9F & 9G & U.L.

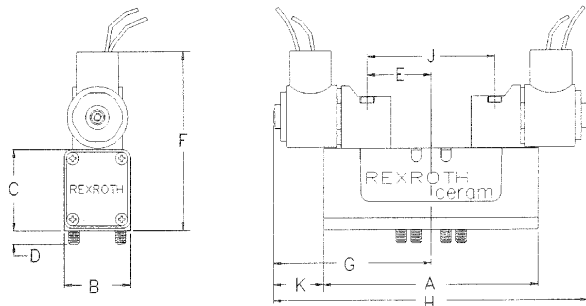
Class II-Groups E, F, G-Explosion Proof

Explosion Proof valves do not require solenoid connectors, as they come standard with 1/2" conduit housing and 18 inch wire leads.



Reference Model Code Identification page for model code information.

For online model code to part number crossover:
www.boschrexroth-us.com/ceram



Dimensions

**Operator does not overhang body assembly.

Size	A		B		C		D		E	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	5.12	130.0	1.57	40.0	1.89	48.0	.31	8.0	1.52	38.5
II	5.82	147.8	2.03	51.6	2.30	58.4	.39	10.0	1.57	40.0
III	7.54	191.5	2.71	68.9	2.59	65.8	.41	10.4	1.62	41.3
IV	8.62	218.9	3.09	78.5	2.89	73.4	.41	10.4	1.62	41.3

Size	F		G		H		J		K	
	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm
I	4.17	105.9	3.75	95.3	7.50	190.5	3.03	77.0	1.19	30.2
II	4.58	116.3	3.80	96.5	7.61	193.3	3.15	80.0	.90	22.9
III	4.87	123.7	3.86	98.0	7.71	195.8	3.25	82.6	.09	2.29
IV	5.71	145.0	4.31	109.5	**	**	3.25	82.6	**	**

Intrinsically Safe Solenoid Valves for Hazardous Locations (CSA approved)

Classes I, II and III, DIV I

Groups A, B, C, D, E, F and G

For use in low voltage (24VDC) Intrinsically Safe applications.
NO OTHER VOLTAGE IS APPROVED.



Comes standard with non-lighted DIN solenoid connector.

Must be connected to an FM approved Zener Diode Barrier.*

For dimensions, reference standard solenoid models.

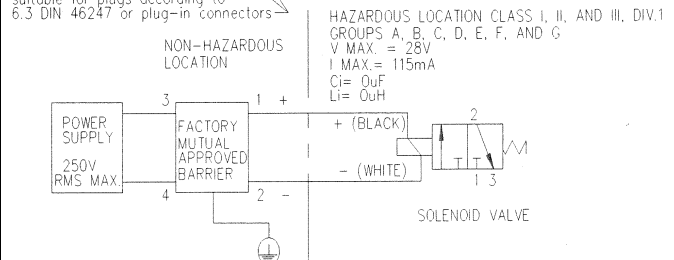
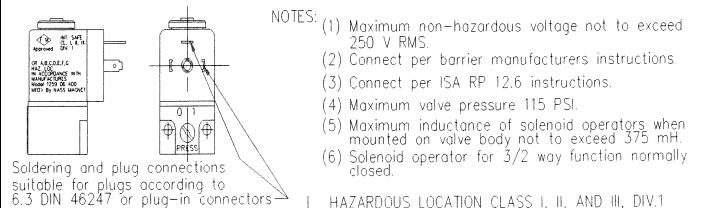
Maximum internally piloted valve pressure is 115 psi. Pressures to 150 psi can be used when external pilot is utilized and pilot pressure is limited to 115 psi.

*FM Approved Barrier Manufacturer

Stahl Incorporated—Woburn, MA

Request Rexroth Application Memo Issue#35 and ADV-300.ISSV for Intrinsically Safe Valve information and Stahl Barrier part numbers.

Installation Information:



Ordering example:

Model GT-010061-03940 = standard valve, same valve with intrinsically safe operator would be GT-010061-09040.

Reference Model Code Identification page for complete listing.

For online model code to part number crossover:
www.boschrexroth-us.com/ceram

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Repair kits and parts



Rubber Seal Kits

Size	Description	Part No.	Old Part No.
Size I	Seal Kit, GT Series 2 Pos.	R432009099	P -029294-00000
Size I	Seal Kit, GT Series 3 Pos.	R432009100	P -029295-00000
*Size II	Seal Kit, GS Series	R432008631	P -026486-00002
*Size III	Seal Kit, GA/GS Series	R432015773	P -069691-00001
*Size IV	Seal Kit, GA/GS Series	R432015774	P -069692-00001

*Includes all user serviceable rubber parts normally required.

Recommended Valve Mounting Bolt Torque Values

Size	Max. ft.-lbs.
1	4
2	6
3 & 4	7

ATTENTION: DO NOT remove the static base. Special fixtures are required to reinstall plates to factory specifications. Roller bearings and ceramic plate stack are calibrated to obtain proper mechanical pre-loading. Therefore, field disassembly is not recommended for the plate/bearing assembly. The ceramic slide plates do not require maintenance under normal operating conditions and should not be removed from the valve - consult factory if plate maintenance is required. There are no seals for the static base/ceramic plate assembly contained in repair kits.

Gasket between valve and subbase

Size	Part Number
Size I	R432006602
Size II	R432008765
Size III	R432013791
Size IV	R432013877

Solenoid Kits & Coils - Sizes I - IV (Oct. 1992 & later for Sizes III & IV)

Solenoid Kits*

Description	Part Number	Old Part No.
120VAC 50/60Hz	R432015466	P -068899-00000
240VAC 50/60Hz	R432015467	P -068899-00001
12 VDC	R432015468	P -068899-00003
24 VDC	R432015469	P -068899-00004
24VAC 50/60Hz	R432015470	P -068899-00005

*Includes coil and solenoid operator, but not connector.

Operator Only

Description	Part Number	Old Part No.
For all voltages	R432008909	P -028197-00000

Coil Only

Description	Part Number	Old Part No.
110VAC/50Hz or 120VAC/60Hz	R432011985	P -048835-00001
220VAC/50Hz or 240VAC/60Hz	R432011986	P -048835-00002
12 VDC	R432011988	P -048835-00004
24 VDC	R432011989	P -048835-00005
24VAC 50/60Hz	R432011990	P -048835-00006

Miscellaneous Repair Parts & Kits

Sizes I & II

Description	Part Number	Old Part No.
Size I & II Quick Release Vlv. Kit (inc. 2 QRV assemblies)	R432008632	P -026487-00001
Size I & II Sol. Plunger Kit (inc. armature assembly)	R432015687	P -069541-00000
Solenoid Nut Kit Size I-IV§	R432008975	P -028462-00000
Size I Return Spring	R432008995	P -028645-00000
Size II Return Spring	R434000717	
Size I Sol./Air Plt. Piston Kit (inc. piston, sleeve, seals & grease)	R432008560	P -026408-00000
Size II Sol./Air Plt. Piston Kit (inc. piston, sleeve, seals & grease)	R432008561	P -026409-00000
Size I Mntg. Bolt/Body Screw Kit-GT	R432002387	
Size I Mntg. Bolt/Body Screw Kit-GS	R432008784	P -027276-00000
Size II Mntg. Bolt & Body Screw Kit	R432008785	P -027277-00000
Size I & II 10-120 psi Adj. Knob Assy. Sandwich Reg.(fits R432... regulators only)	R432010973	P -031282-00000
Size I & II Seal Rep. Kit for Sand. Reg.(fits all old style sgl. & dbl.)	R432009198	P -029922-00000
Size I & II Seal Rep. Kit for Sand. Reg.(fits all new style sgl. & dbl.)	R432009199	P -029923-00000

Sizes III & IV

Description	Part Number	Old Part No.
Size III & IV Quick Release Vlv.Kit (QRV assemblies for any valve)	R432008681	P -026684-00002
Size III & IV Sol. Plunger Kit (inc. armature assembly)§	R432015687	P -069541-00000
Size III Return Spring Kit	R432008887	P -028037-00000
Size IV Return Spring Kit	R432008888	P -028038-00000
Size III Sol./Air Plt. Piston Kit (inc. piston,seals,end cvr. gskt.,grease)	R432008658	P -026635-00000
Size IV Sol./Air Plt. Piston Kit (inc. piston,seals,end cvr. gskt.,grease)	R432008889	P -028039-00000
Size III Seal Rep. Kit for Sand. Reg.(fits all new style sgl. & dbl.)	R432009205	P -029951-00000
Size III Mntg. Bolt/Body Screw Kit	R432008799	P -027412-00000
Size IV Mntg. Bolt/Body Screw Kit	R432008800	P -027413-00000
Explosion Proof Solenoid Kits & Coils Sizes I thru IV		
Solenoid Kit - 120VAC 50/60Hz	R432008525	P -026293-00000
Solenoid Kit - 240VAC 50/60Hz	R432008527	P -026293-00002
Solenoid Kit - 24 VDC	R432008526	P -026293-00001
Coil only - 120VAC 50/60Hz	R432013760	P -067370-00000
Coil only - 240VAC 50/60Hz	R432013761	P -067371-00000
Coil only - 24 VDC	R432013763	P -067374-00000

§October 1992 and later.

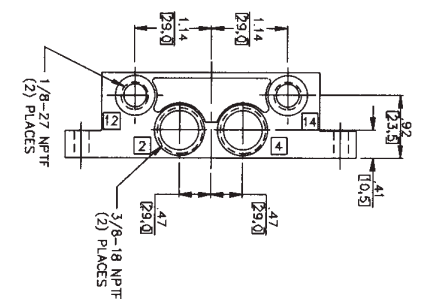
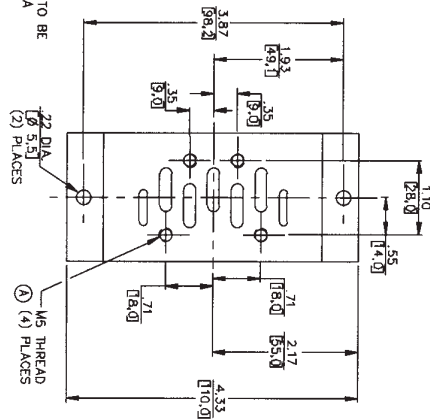
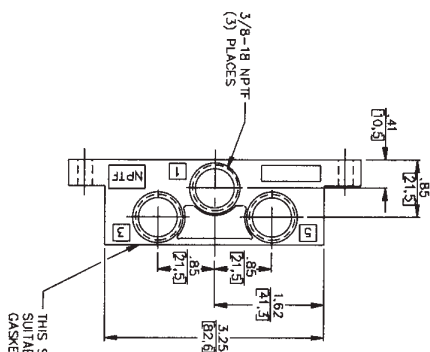
Ceram™ Valves, ISO 5599/1 Sizes 1-4

Subbases and manifolds, Size 1



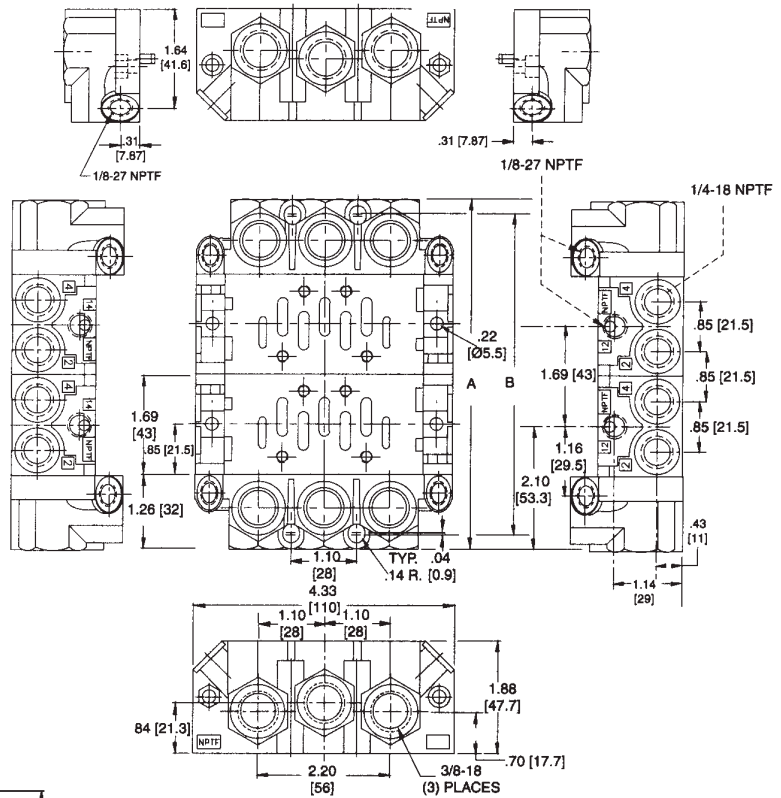
ISO SIZE 1 SUBBASES & MANIFOLDS

Single Subbase (side ported)
1/4" or 3/8" NPT ports



Part No. R432015524 - Port Size 1/4"
R432015488 - Port Size 3/8" (shown)
1825503143 - Port Size 1/4" BSPP

End Ported Manifolds
1/4" NPT delivery ports



Part Number R432015314* - Manifold Station Segment**
Part Number R432015316* - End Plates (Includes both ends)**

DIM	NUMBER OF VALVES													
	2		3		4		5		6		8			
A	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm		
B	5.91	150.0	7.60	193.0	9.29	236.0	10.98	279.0	12.68	322.0	14.37	365.0	16.06	408.0

*Manifold gaskets included.
**All hardware is included.

R432012058 Silencer, 3/8" NPT

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold assembly information, Size 1



ISO SIZE I MANIFOLDS

END PORTED MANIFOLDS

STATION SEGMENT

Each station segment kit comes complete with pipe plugs (to block unused delivery ports), fastening hardware, and a gasket. The gasket is placed between each station segment. The standard sealing gasket (A GASKET, PART NUMBER - R432008985) included has windows open for ports 1,3, & 5.

END PLATE KITS

Consists of two end plates complete with pipe plugs (to block unused supply and exhaust ports), fastening hardware, and the standard sealing gasket (A GASKET, Part Number - R432008985)

EASY MANIFOLD ASSEMBLY

Use a 4 mm hex (Allen) wrench to assemble the manifolds. Nuts and bolts (included in each kit) are used to hold the manifolds together. An extra long 4 mm wrench can be used for longer manifolds for more rapid assembly.

DUAL MANIFOLD SUPPLY PRESSURE

Supply pressure can be supplied to both ends of the manifold by simply not installing the pipe plugs supplied with the end plate kit. This is generally considered normal practice if more than 3 valves are energized at the same time.

MANIFOLD WITH TWO DIFFERENT SUPPLY PRESSURES

Different supply pressures can be provided by placing blocking gasket B (1821015043) between two of the station segments to divide the two different pressures.

PLEASE CONSULT FACTORY WITH SPECIAL APPLICATIONS 1 AND 2 BELOW:

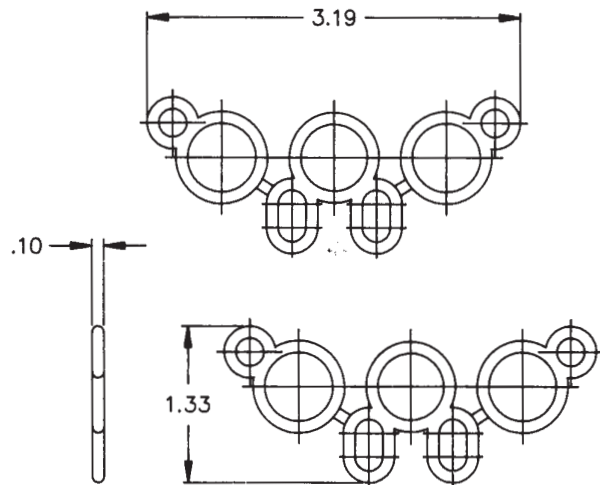
- 1) Manifold With Two Different Supply Pressures & Common Ext. Pilot
- 2) Manifold With Three Different Supply Pressures

COMMON EXTERNAL PILOT PRESSURE

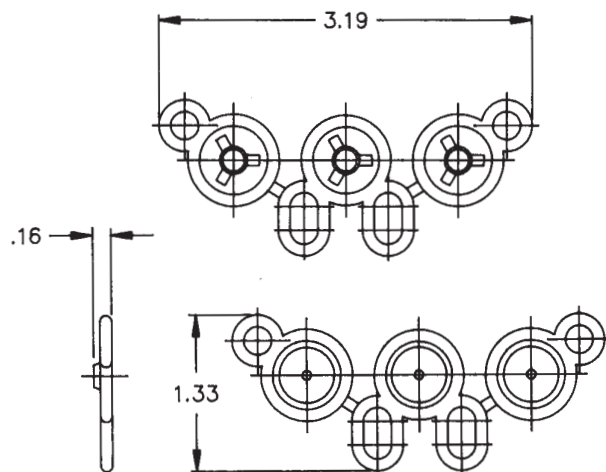
Use a 1/8" diameter drill at the 14 end to remove the thin wall on manifold station segment R432015314. Clean thoroughly.

NOTE: This wall is required to operate air piloted valves on manifold.

BLOCKING GASKET A
R432008985



BLOCKING GASKET B



Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold accessories, Size 1



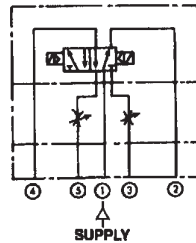
SIZE I ACCESSORIES

Sandwich Flow Controls (Meter Out Ports 5 & 3)

Our flow controls sandwich between the valve and subbase eliminating the need for addition piping and external controls for both working ports. Adjustment is with a knob on each side thread, along with our two stage needle design ensures excellent control. Kit includes flow control (1), gasket (1), and screws (4).

Part No. R432015347 *

Dimensions
 Height: .98" (25mm)
 Maximum Overall Length: 4.17" (106mm)



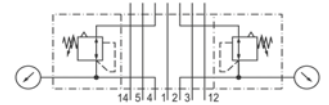
90° Elbow for use in regulator gauge port, 1/8" NPT male to 1/8" NPT female:
Part no. R432002543.

Dual Sandwich Regulator (Ports 2 & 4)

Both delivery port pressures are adjustable individually. Ideal for applications within a manifold where independent regulation of two supply pressures is required; no external pilot supply is required if minimum pilot pressure is available. Lip seal opens when downstream pressure is >30 psi than upstream pressure to allow reverse flow. With locking adjustment knobs at "Control 12" for port 2 and "Control 14" end for port 4. Kit includes regulator (1), gasket (1), screws (4) and gauges (2).

Part No. 0821302051 (10-120 psi)

Dimensions:
 Height: 1.77" (45mm)
 Max. Overall Length: 11.50" (292mm)



Optional design (w/o gauge):

- (1/8" NPT gauge ports)
- R432015497 (5-60 psi)
- R432015498 (3-30 psi)

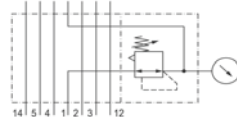


Single Sandwich Regulator

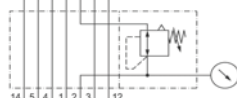
Ideal for applications within a manifold where a particular pressure is required for one or more valves. Our regulator controls inlet pressure through to each cylinder port or delivery port pressures independently. A relieving type, the knob will also lock into a given position. Kit includes regulator (1), gasket (1), screws (4) and gauge (1).

Port Regulation Part Number (10-120 psi)

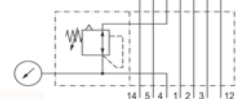
1 0821302048



2 0821302054



4 0821302057



Dimensions:
 Height: 1.77" (45mm)
 Max. Overall Length: 7.80" (198mm)
 Optional design (w/o gauge, 1/8" NPT gauge port):
 R432009189 (Port 1, 5-60 psi)
 R432009190 (Port 1, 3-30 psi)

NOTICE*
Dual Accessory Bolt Kit
 Order **Bolt Kit R432015948** to mount R432... Sandwich Regulators with a Sandwich Flow Control (R432015347).

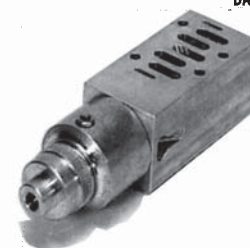
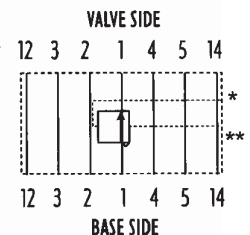
Maintenance Plate

A maintenance plate, mounted between valve and sub-base, is used when servicing individual valves in a manifold system, or replacing a cylinder while the system is still operating. See next page.

Remote Pilot-Operated Regulator (10-120 psi)

Remote control of all pressure settings throughout the selected range. Pilot source can be a smaller regulator manually adjusted or electronically adjusted via a command signal for precise control of force and speed. Example: Controlling RPM of an air motor. Rexroth Electro-Pneumatic (E/P) Devices can be directly connected to this unit (see Rexroth sales catalog SC-600). Kit includes regulator (1), gasket (1), screws (4), gauge port plugs (2).

Part No. R432009216*
Dimensions
 Height: 1.54" (39mm)
 Maximum Overall Length: 6.06" (154mm)
 *1/8" NPT GAUGE PORT
 **1/8" NPT PILOT PORT



Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold accessories, Size 1



ACCESSORIES (continued)

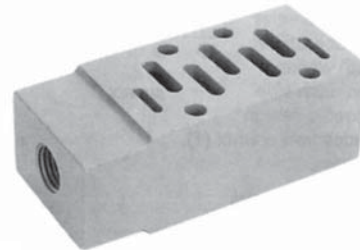
Dimensions

Height 1.19" (30.2mm)

Maximum Overall Length: 3.45" (87.6 mm)

SIZE I Sandwich Auxiliary Pressure Block (Port 1)

The separate pressure block allows for more than two pressures to be provided to a manifold of valves. This unit sandwiches between the valve and base. Pressure to the balance of the manifold is isolated. Kit includes plate (1), gasket (1), screws (4).



1/4"-18 NPT
INLET

Part No. R432015767*

Part No. R432015768*

(Allows 3 or more pressures to be applied to the same manifold assembly. See manifold assembly page.)

R432015767: auxiliary pressure supply blocked from manifold base port 1 channel

R432015768: auxiliary pressure supply open to valve AND manifold base port 1 channel

Maintenance Plate (Sizes I, II, III)

Mounts between valve and sub-base. Used when servicing individual valves in a manifold system, or replacing a cylinder while the rest of the system is still operating. Two positions, can be locked with a cotter pin:

0. Maintenance position, flow is minimal and valve is isolated[§];

1. Open position, normal operation - full flow in the system.

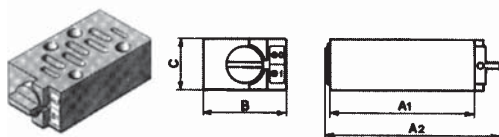
[§]The low flow in the maintenance position allows slow pressurizing when the valve is returned to service. This low flow also requires the removal of trapped downstream pressure before removing or servicing these same components.

CAUTION: Before service or removal of any components, all trapped pressure must be released. Vertically mounted cylinders, gravity and mechanically loaded actuators must be blocked/disabled to avoid injury or system damage. Install blanking station segment kit if this minimal flow is undesirable when the valve is not present.

Material: Aluminum, black anodized.

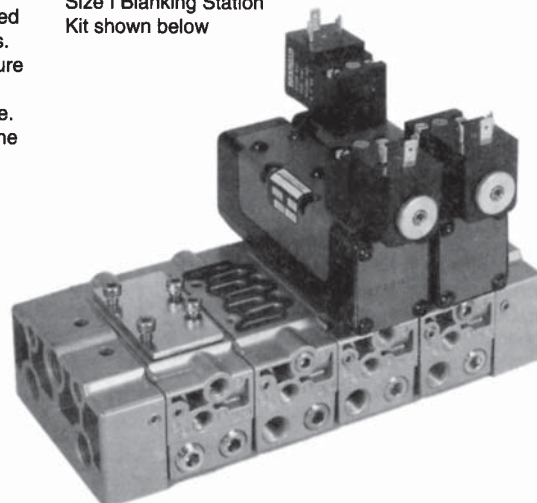
Pressure range: Vacuum to 150 psi. *dim = IN (mm)*

ISO	Part Number	A1	A2	B	C
1	580 159 000 0	2.76 (70)	3.35 (85)	1.57 (40)	0.98 (25)
2	580 259 000 0	3.42 (87)	4.09 (104)	1.97 (50)	1.10 (28)
3	580 359 000 0	4.65 (118)	5.39 (137)	2.56 (65)	1.42 (36)



***NOTICE**
Dual Accessory Bolt Kit
Order **Bolt Kit R432015950** to mount Sandwich Auxiliary Pressure Block (R432015767) with a Sandwich Flow Control (R432015347).

Size I Blanking Station Kit shown below



SIZE I Blanking Plate Kit

Allows for valve to be added later.

Can be removed to add valve to existing manifold.

Kit includes plate (1), gasket (1), screws (4).

Shown on 1/4" base.

Part No. R432015320

Transition Plate Kit (For Size I manifold segment R432015315 and Size II R432015318 station segments only)

This kit allows the combining of our sizes I and II bases, with side porting, in the same manifold. No need to sacrifice by either undersizing or oversizing to meet design needs.

Part No. R432015323

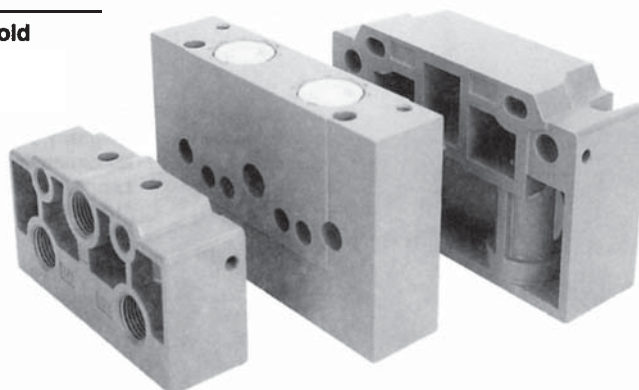
Kit contains all hardware plus:

1 - Transition plate (Size I to Size II)

1 - Size I Endplate

1 - Size II Endplate

(Cannot be used with R432015314)



Transition Plate Dimensions

3.15" (H) X 1.23" (W) X 4.97" (L)

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold assembly information, Size 2



ISO SIZE II MANIFOLDS

REXROTH END PORTED MANIFOLDS STATION SEGMENT

Each station segment kit comes complete with hardware, seals, and a sealing plate. The sealing plate is placed between each segment to ensure sealing between the Buna N gaskets. The standard sealing plate (PLATE A) included has windows open for ports 1,3, & 5.

END PLATE KITS

Consists of two end plates complete with hardware and seals. Pressure is blocked on Size II end plates with 3/4" pipe plugs (included).

EASY MANIFOLD ASSEMBLY

Use a 3 mm hex key to partially back out (approximately 4 turns counter clockwise) the installed set screw. Press the mating station segment or end plate to the manifold assembly with a sealing plate between the two, and turn the hex key clockwise to complete assembly. Tighten set screws on both sides of the manifold.

DUAL MANIFOLD SUPPLY PRESSURE

On size II manifolds, simply remove the pipe plugs. This is standard practice if more than 3 valves are energized at the same time and flow is critical to the application.

MANIFOLD WITH TWO DIFFERENT SUPPLY PRESSURES

On size II manifolds, place plate B where the pressure division is desired and remove pipe plugs from the end cover.

COMMON EXTERNAL PILOT PRESSURE

If a common external pilot is required (normally if supply pressure is below minimum pressure or a vacuum supply is used) for the entire length of the manifold, all standard plates (plate A) must be replaced by plate C. Individual valves can be externally piloted by connecting the external pilot supply to port 14 on the end of the station segment.

PLEASE CONSULT FACTORY WITH SPECIAL APPLICATIONS 1 AND 2 BELOW:

- 1) Manifold With Two Different Supply Pressures & Common Ext. Pilot
- 2) Manifold With Three Different Supply Pressures

PLATE A
1, 3 & 5 Open
R432015343

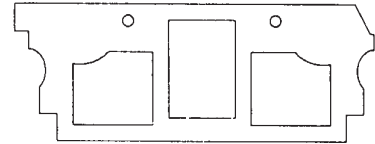


PLATE B
All ports blocked
R432015342

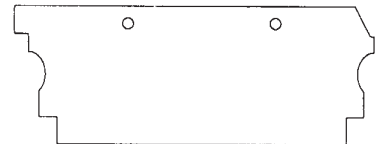
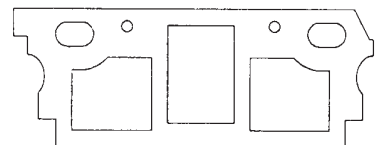


PLATE C
1, 3, 5, 12 & 14 Open
R432015344



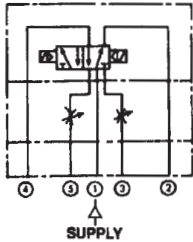
Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold accessories, Size 2



ISO SIZE II ACCESSORIES

Sandwich Flow Controls (Meter Out Ports 3 & 5)



Our flow controls sandwich between the valve and subbase eliminating the need for additional piping and external controls for both working ports. Adjustment is with a knob on each side. A fine thread, along with our two stage needle design assures excellent control. Kit includes speed control (1), gasket (1), and screws (4).
Part No. R432015348*
Dimensions
Height: 1.14" (29mm)
Maximum Overall Length: 6.99" (177.5mm)



Single Sandwich Regulator

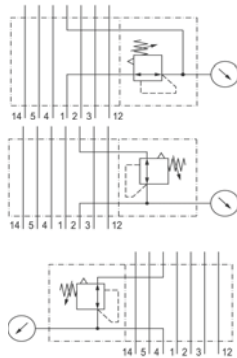
Ideal for applications within a manifold where a particular pressure is required for one or more valves. Our regulator controls inlet pressure through to each cylinder port or delivery port pressures independently. A relieving type, the knob will also lock into a given position. Kit includes regulator (1), gasket (1), screws (4) and gauge (1).

Port Regulation Part Number (10-120 psi)

1 0821302064

2 0821302065

4 0821302066



Dimensions:

Height: 2.36" (60mm)

Max. Overall Length: 10.08" (256mm)

Optional design (w/o gauge, 1/8" NPT gauge port):

R432009192 (Port 1, 5-60 psi)

R432030015 (Port 1, 3-30 psi)

90° Elbow for use in regulator gauge port, 1/8" NPT male to 1/8" NPT female:

Part no. R432002543

ISO SIZE II ACCESSORIES

Dual Sandwich Regulator (Ports 2 & 4)

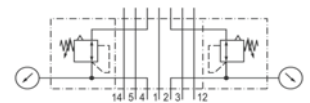
Our pressure regulators sandwich between the valve and subbase eliminating the need for additional piping. Ideal for applications within a manifold where independent regulation of two supply pressures is required; no external pilot supply is required if minimum pilot pressure is available. Lip seal opens when downstream pressure is >30 psi than upstream pressure to allow reverse flow. With locking adjustment knobs at "Control 12" for port 2 and "Control 14" end for port 4. Kit includes regulator (1), gasket (1), screws (4) and gauges (2).

Part No. 0821302067 (10-120 psi)

Dimensions:

Height: 2.36" (60mm)

Max. Overall Length: 14.13" (359mm)



Optional design (w/o gauge):
(1/8" NPT gauge ports)
R432015495 (5-60 psi)



NOTICE*

Dual Accessory Bolt Kit

Order **Bolt Kit R432015949** to mount R432... Sandwich Regulators with a Sandwich Flow Control (R432015348).

Maintenance Plate

A maintenance plate, mounted between valve and sub-base, is used when servicing individual valves in a manifold system, or replacing a cylinder while the system is still operating. See size 1 accessories.

Remote Pilot-Operated Regulator (10-120 psi)

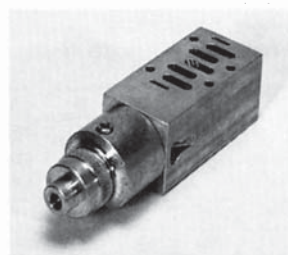
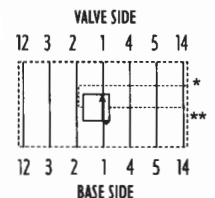
Ideal for applications where full remote control of all pressure settings throughout the selected range is needed. Pilot source can be a smaller regulator manually adjusted or electronically adjusted via a command signal for precise control of force and speed. Example: Controlling RPM of an air motor. Rexroth Electro-Pneumatic (E/P) Devices can be directly connected to this unit (see Rexroth sales catalog SC-600). Kit includes regulator (1), gasket (1), screws (4), gauge port plugs (2). * 1/8" NPT GAUGE PORTS
 **1/8" NPT PILOT PORT

Part No. R432030601* (single air pilot)

Dimensions

Height: 2.05" (52mm)

Maximum Overall Length: 7.00" (178mm)



Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifold accessories, Sizes 2 and 3



ISO SIZE II ACCESSORIES (continued)

Sandwich Auxillary Pressure Block (Port 1)

The separate pressure block allows for more than two pressures to be provided to a manifold of valves. This unit sandwiches between the valve and base. Pressure to the balance of the manifold is isolated. Kit includes plate (1), gasket (1), screws (4).

For photos, see Size 1 accessories section.

Dimensions

Height: 1.54" (39.1mm)

Maximum Overall Length: 4.28" (108.7)

1/2"-14 NPT INLET

Part No. R432015769*

Part No. R432015770*

(Allows 3 or more pressures to be applied to the same manifold assembly. See manifold assembly page.)

R432015769: auxiliary press. supply blocked from manifold base port 1 channel

R432015770: auxiliary press. supply open to valve AND manifold base port 1 channel

***NOTICE**

Dual Accessory Bolt Kit

Order **Bolt Kit R432000880** to mount Sandwich Auxillary Pressure Block (R432015769) with a Sandwich Flow Control (R432015348).

Blanking Plate Kit

Allows for valve to be added later.
Can be removed to add valve to existing manifold.
Kit includes plate (1), gasket (1), screws (4).
Shown on 1/4" base.

Part No. R432015321

Transition Plate Kit

For size 1 to size 2 transition kit, see Size 1 accessories section.

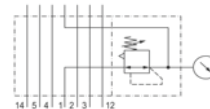
ISO SIZE III ACCESSORIES

Single Sandwich Regulator

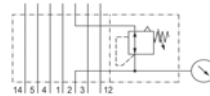
Ideal for applications within a manifold where a particular pressure is required for one or more valves. Our regulator controls inlet pressure through to each cylinder port or delivery port pressures independently. A relieving type, the knob will also lock into a given position. Kit includes regulator (1), gasket (1), screws (4) and gauge (1).

Port Regulation	Part Number	(10-120 psi)
-----------------	-------------	--------------

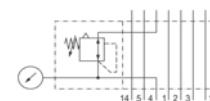
1	0821302050	
---	------------	--



2	0821302056	
---	------------	--



4	0821302059	
---	------------	--



Dimensions

Height: 2.64" (67mm)

Max. Overall Length: 11.22" (285mm)

Optional design (w/o gauge, 1/8" NPT gauge port):

R432009194 (Port 1, 5-60 psi)

R432009195 (Port 1, 3-30 psi)

Sandwich Flow Controls (Meter Out Ports 3 & 5)

Our flow controls sandwich between the valve and subbase eliminating the need for additional piping and external controls for both working ports. Adjustment is via a screw on each side, assuring excellent control. Kit includes speed control (1), gasket (1) and screws (4).

Part No. R432008895

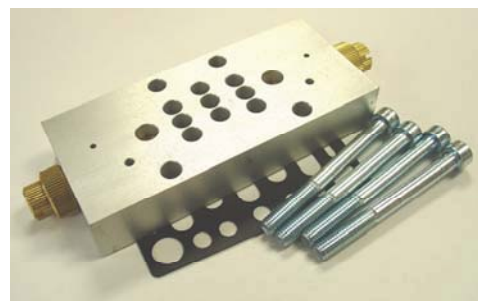
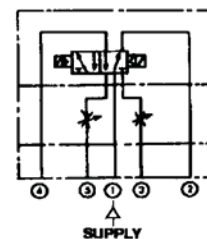
Dimensions

Height: 0.94" (23.9mm)

Maximum Overall Length: 6.44" (163.6mm)

Width: 2.50" (63.5mm)

(Cannot be combined with sandwich regulator.)



Ceram™ Valves, ISO 5599/1 Sizes 1-4

Subbases and manifold accessories, Size 3



ISO SIZE III ACCESSORIES (continued)

Dual Sandwich Regulator (Ports 2 & 4)

Our pressure regulators sandwich between the valve and subbase eliminating the need for additional piping. Ideal for applications within a manifold where independent regulation of two supply pressures is required; no external pilot supply is required if minimum pilot pressure is available. Supplying ports 2 and 4, free flow reverse check valves allow flow in both directions. With locking adjustment knobs at "Control 12" for port 2 and "Control 14" end for port 4. Kit includes regulator (1), gasket (1), screws (4) and gauge port plugs (2).

Part No. 5747021032 (10-120 psi)

Dimensions:

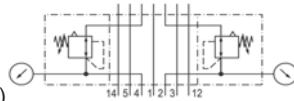
Height: 2.64" (67mm)

Max. Overall Length: 16.38" (416mm)

Gauge: Part No. 8901703200 (R1/8 threads)

Optional design (w/o gauge): (1/8" NPT gauge port)

R432009411 (5-60 psi)



Remote Pilot-Operated Regulator (10-20-psi)

Allows full remote control of all pressure settings throughout the selected range. Pilot source can be a smaller regulator manually adjusted or electronically adjusted via a command signal for precise control of force and speed. Example: controlling RPM of an air motor. Rexroth Electro-Pneumatic (E/P) devices can be directly connected to the unit (see Rexroth catalog SC-600).

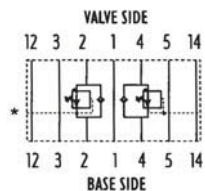
Kit includes regulator (1), gasket (1), gauge port plugs (2) and screws (4). *1/8" NPT GAUGE PORT & PILOT PORT

Part No. R432009281

Dimensions:

Height: 2.52" (64mm)

Max. Overall Length: 8.50" (216mm)



90° Elbow for use in regulator gauge port, 1/8" NPT male to 1/8" NPT female:
Part no. R432002543

Maintenance Plate

A maintenance plate, mounted between valve and subbase, is used when servicing individual valves in a manifold system, or replacing a cylinder while the system is still operating. See Page 22.

Blanking Plate Kit - Size III

Allows for valve to be added later. Kit includes plate, gasket and screws. Part No. 5803870000

Silencers

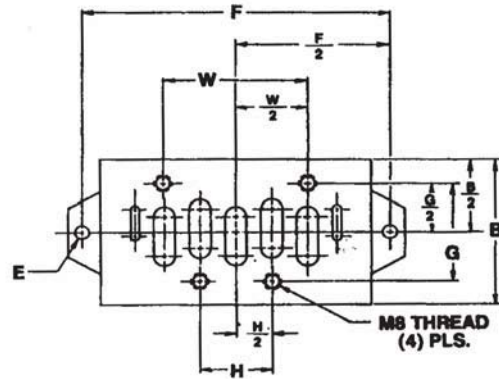
1/2" NPT Silencer, Part No. R432011952

3/4" NPT Silencer, Part No. R432012059

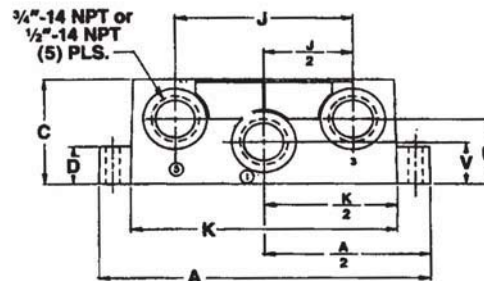
Metric manifolds and subbases are available from online catalog at www.boschrexroth-us.com/brp

ISO SIZE III SUBBASES

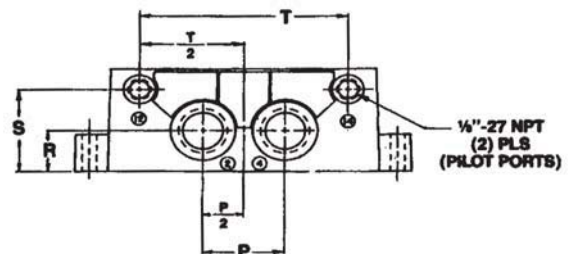
Single Subbase (side ported) 1/2" or 3/4" NPT ports



SIDE VIEW



SIDE VIEW (FROM OTHER SIDE)



Part No. R432015309 - port Size 3/4" NPT
R432015308 - port Size 1/2" NPT
1825503149 - port Size 1/2" BSPP
R432009166 - port Size 3/4" BSPP

DIM	A	B	C	D	E	F	G	H	J
IN	5.87	2.80	1.97	0.71	0.26 dia.	5.34	1.89	1.26	3.15
mm	149.0	71.0	50.0	18.0	Ø18.0	136.0	48.0	32.0	80.0

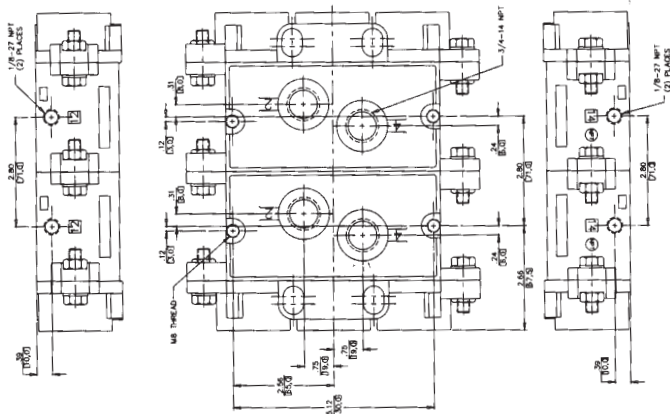
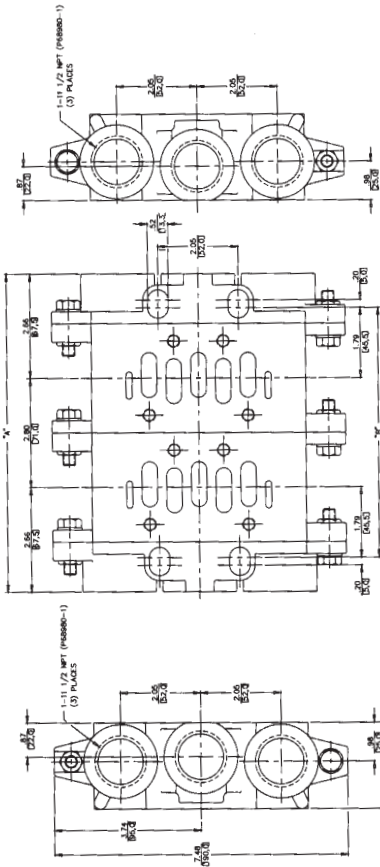
DIM	K	P	R	S	T	U	V	W
IN	4.72	1.42	0.79	1.58	3.62	1.22	0.79	2.52
mm	120.0	36.0	20.0	40.1	92.0	31.0	20.0	64.0

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Manifolds, Sizes 3 and 4



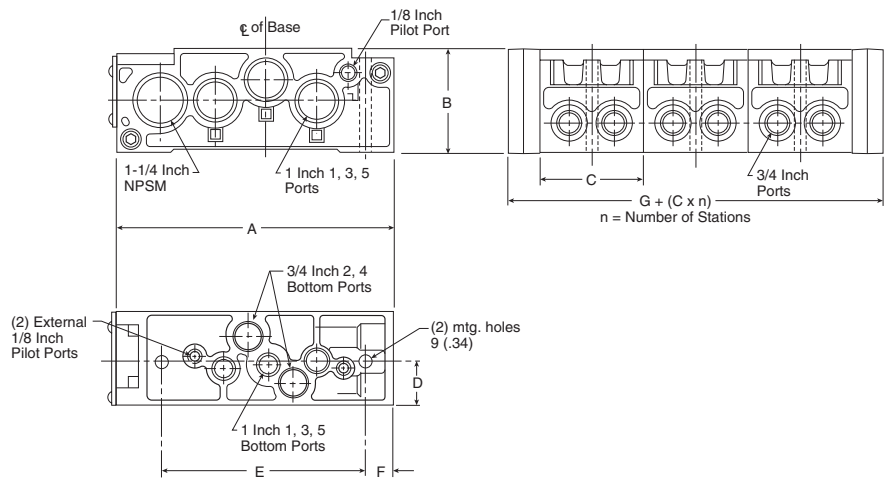
ISO SIZE III Bottom Ported Manifolds 1/2" or 3/4" NPT Delivery Ports



Part No. R432015491 - Manifold Station Segment (1/2" NPT)
Part No. R432015490 for 3/4" NPT Delivery Ports
Part No. R432015492 - End Plates (includes both ends)

ISO SIZE IV Bottom & Side Ported Manifolds

Dimensions							
IN	9.07	3.24	3.29	1.54	6.89	0.91	2.04
mm	230	82	84	39	175	23	52



Part No. R432011719 - Manifold Station Segment (3/4" NPT)
Part No. R432011720 - End Plate Kit
Part No. R432011721 - Manifold Isolation Disc

Blanking Plate Kit - Size IV

Allows for valve to be added later. Kit includes plate, gasket and screws.

Part No. 5804870000

R432011952 Silencer, 1/2" NPT
R432012059 Silencer, 3/4" NPT

DIM	NUMBER OF VALVES															
	2		3		4		5		6		7		8			
A	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm	IN	mm		
	8.10	205.7	10.90	276.9	13.70	348.0	16.50	419.1	19.30	490.2	22.10	561.3	24.90	632.5		
B	6.38	162.1	9.18	233.2	11.98	304.3	14.78	375.4	17.58	446.5	20.38	517.7	23.18	588.8		

Metric manifolds and subbases are available from on-line catalog on the Internet.

Ceram™ Valves, ISO 5599/1 Sizes 1-4

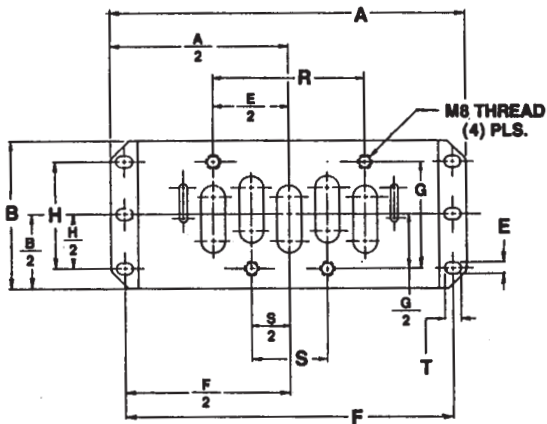
Subbases and manifold accessories, Size 4



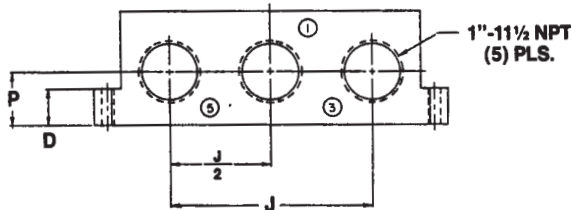
ISO SIZE IV SUBBASES

Single Subbase (side ported) 1" NPT ports

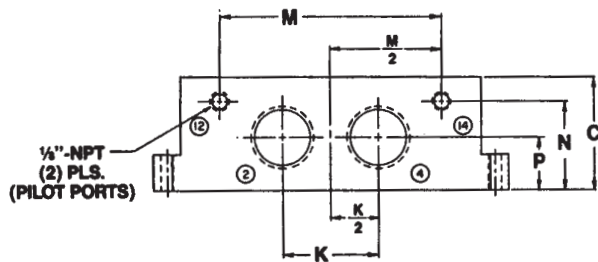
TOP VIEW



SIDE VIEW



SIDE VIEW (FROM OTHER SIDE)



Part No. R432015310 - Port Size 1"

DIM	A	B	C	D	E	F	G	H	J
IN	7.32	3.15	2.44	.71	.26	6.77	2.28	1.97	4.17
mm	186.0	80.0	62.0	18.0	6.5	172.0	58.0	50.0	106.0

DIM	K	M	N	P	R	S	T
IN	1.97	4.57	1.85	1.10	3.15	1.58	.33
mm	50.0	116.0	47.0	28.0	80.0	40.0	8.5

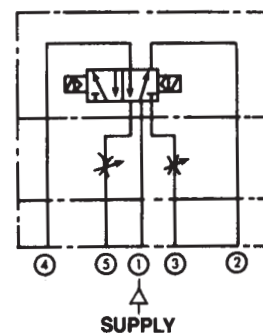
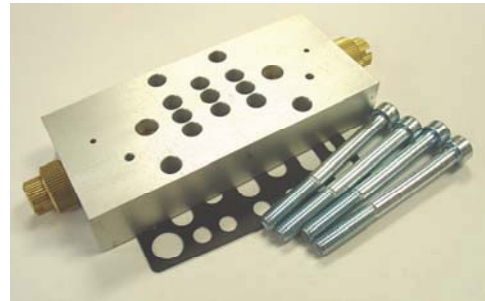
ISO SIZE IV ACCESSORIES

Sandwich Flow Controls (Meter Out Ports 3 & 5)

Our flow controls sandwich between the valve and subbase eliminating the need for additional piping and external controls for both working ports. Adjustment is via a screw on each side, assuring excellent control. Kit includes speed control (1), gasket (1), and screws (4).

Dimensions
 Height: 0.94"
 Maximum Overall Length: 7.75"
 Width: 3.00"

Part No. R432009004



Metric manifolds and subbases are available from on-line catalog on the internet.

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Pressure gauges for sandwich regulators



Pressure Gauges with 1/8" NPT compressed air connection

(PSI outer scale, BAR inner scale)

Dia. [in]	Range [psi]	Display range [psi]	Scale value [psi]	Part No.	Background Color	Scale Color
1.58	0 - 30	0 - 40	1	R412010060	Black	White
1.58	0 - 45	0 - 60	2	R412010061	Black	White
1.58	0 - 75	0 - 100	2	R412010062	Black	White
1.58	0 - 120	0 - 160	5	R412010063	Black	White
1.58	0 - 150	0 - 200	5	R412010064	Black	White
1.58	0 - 225	0 - 300	10	R412010065	Black	White

Pressure Gauges with G1/8 (BSPP) compressed air connection

(BAR outer scale, PSI inner scale)

Dia. [mm]	Range [bar]	Display range [bar]	Scale value [bar]	Part No.	Background Color	Scale Color
40	-0.8 - 0	-1	0.1	1827231053	Black	Green / White
40	0 - 1.7	0 - 2.5	0.1	1827231048	Black	Green / White
40	0 - 4	0 - 6	0.2	1827231018	Black	Green / White
40	0 - 8	0 - 10	0.5	1827231024	Black	Green / White
40	0 - 12	0 - 16	0.5	1827231009	Black	Green / White
26	0 - 10	0 - 12	0.5	8901701270	White	Black / Red

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Internal to external pilot field conversion, Sizes 1 and 2



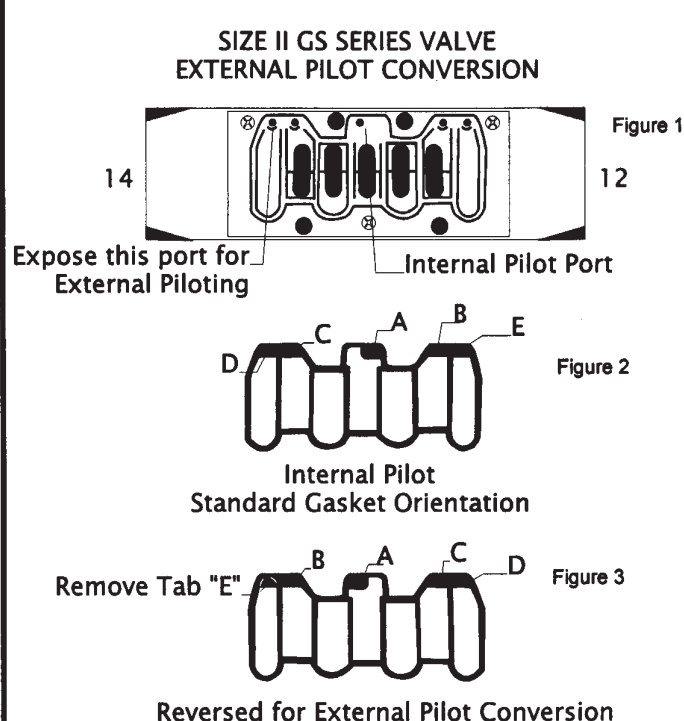
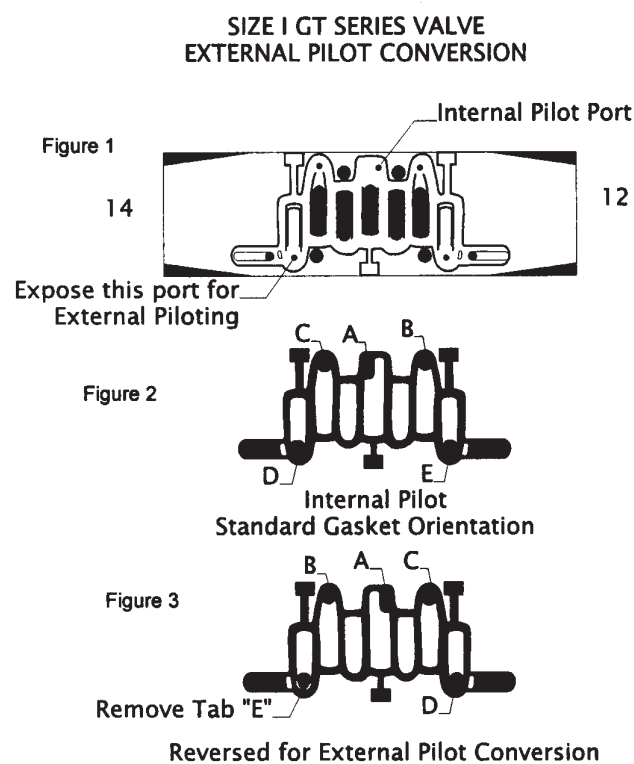
GT Series Size I and GS Series Size II Valves

** Solenoid Valve Internal To External Pilot Field Conversion **

CAUTION: Air supply should be removed before modification.

EXTERNALLY PILOTED VALVES ARE AVAILABLE DIRECTLY FROM THE FACTORY. See model explanation on page 14 as well as individual notes on pages 5 - 12 under standard valve models for ordering instructions.

The following procedure should be used to convert a solenoid valve from internal pilot to external pilot pressure operation. All valves come from the factory internally piloted. External pilot function is required if the supply pressure is below the minimum pilot pressure of 29 psi (2-position valves; 44 psi for 3-position models) or if the customer is using vacuum for supply pressure.



For external pilot conversion, remove gasket from valve body as shown in Figures 1 and 2. Flip gasket end-to-end so that Tab "A" will cover the internal pilot port shown in Figure 1. Remove Tab "E" shown in Figure 3. Mount valve to base.

Apply a minimum of 29 psi (2-position valves) or 44 psi (3-position valves) to Port 14. Port 14 will provide pilot pressure to all solenoids regardless of single or double configuration.

NOTE: Port 12 does not need to be plugged. Port 12 is used only on Double Air Pilot models.

Note: This page does not apply to air piloted/air spring return valves.

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Internal to external pilot field conversion, Sizes 3 and 4



Internal to External Pilot Conversion, Size III & IV

GASKET ORIENTATION INFORMATION FOR REPAIR OR EXTERNAL PILOT CONVERSION

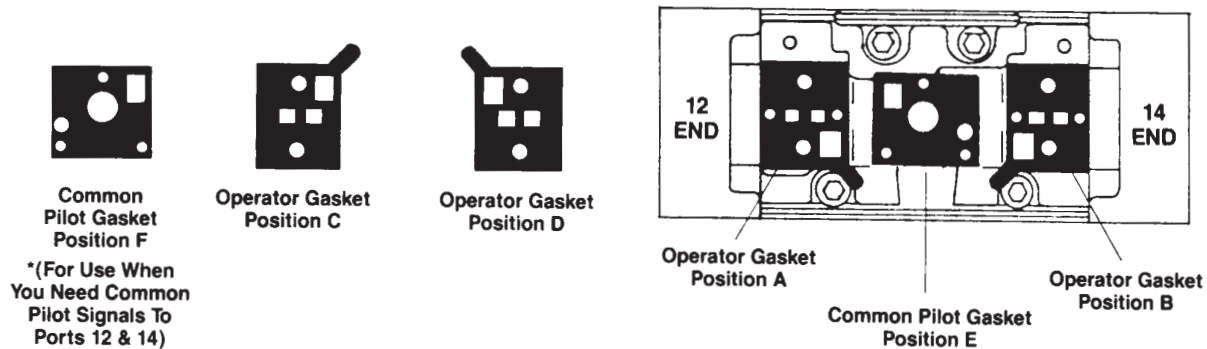
CAUTION: Air supply should be removed before modification.

EXTERNALLY PILOTED VALVES ARE AVAILABLE DIRECTLY FROM THE FACTORY. See model explanation on page 14 as well as individual notes on pages 5 - 12 under standard valve models for ordering instructions.

The following procedure should be used to convert a solenoid valve from internal pilot to external pilot pressure operation. All valves come from the factory internally piloted. External pilot function is required if the supply pressure is below the minimum pilot pressure of 29 psi (2-position valves; 44 psi for 3-position models) or if the customer is using vacuum for supply pressure.

Reorient the gaskets located underneath the blue saddle cover. Pneumatic symbols are stamped on the cover of the valve to indicate which function has been chosen. The black corner tab of each gasket is visible through a hole (in the cover) located by the symbol of the operator chosen. As you can see by the diagram below, each outside operator gasket can be rotated in one of four positions (details A, B, C, or D).

Also shown is the common pilot gasket which can be rotated in two positions (details E & F). This gasket should always be in the "E" position except for double solenoid (external pilot) with a common pilot. Ports 12 or 14 must be used for the common pilot, but the other unused port must be blocked. For separate pilot pressures, continue to use position E.



*(For Use When You Need Common Pilot Signals To Ports 12 & 14)

GASKET POSITION CHART

OPERATOR COMBINATION DESIRED	12 END	COMMON PILOT GASKET	14 END
Single Solenoid (internal pilot)/metal spring return	C	E	B
Single Solenoid (internal pilot)/air spring return (internal)	B	E	B
Single Solenoid (internal pilot)/air spring return (external)	D	E	B
Single Solenoid (external pilot)/metal spring return	C	E	D
Single Solenoid (external pilot)/air spring return (internal)	B	E	D
Single Solenoid (external pilot)/air spring return (external)	D	E	D
Double Solenoid (internal pilot) 2 & 3 position	A	E	B
*Double Solenoid (external pilot) 2 & 3 position	C	F	D
Air Pilot/Metal Spring	C	E	C
Air Pilot/Air Spring (internal)	B	E	C
Air Pilot/Air Spring (external)	D	E	C
Double Air Pilot 2 & 3 positions	D	E	C

*NOTE: Position "F" for double solenoid external pilot supply only. All other valve models use position "E."

Ceram™ Valves, ISO 5599/1 Sizes 1-4

Piping procedures



Piping Instructions - All Sizes (I, II, III, & IV)

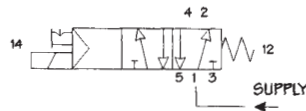
CAUTION: Air supply should be removed before modification.

Normal Piping Procedure

Use these connections if you have one supply pressure only.

Single Pressure

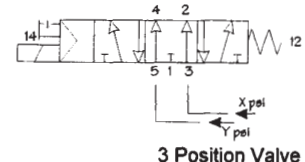
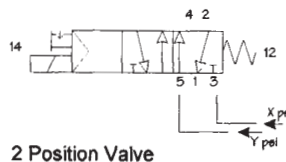
Port	Marking
1	Supply Pressure
2 & 4	Delivery (Cylinder)
3 & 5	Exhaust
12 & 14	External Pilot Supply



Dual Pressure Piping Procedure

2 Position Valve Piping. (Do not use unless you must use 2 different supply pressures.)

Port	Marking
1	Common Exhaust Port
2 & 4	Delivery (Cylinder) Ports
3 & 5	Supply Pressures
12 & 14	External Pilot Supply



3 Position Valve Piping. (Use for supplied center or for 2 different supply pressures.)

Dual Pressure Valve Conversion Instructions (Size I & II)

Please note that the supply pressure in Port 5 must be at least 29 psi (for 2-position models) or 44 psi (for 3-position models). If minimum pressure is not met on port 5, external piloting must be used; see page 31 for directions.

Size I & II CERAM Valves are designed for dual pressure applications. For this service, "replumb" the subbase by using ports "3" and "5" for the two different supplies, and port "1" for a common exhaust. (Ports "2" and "4" are still the delivery ports.) Port "3" will supply port "2", and port "5" will supply port "4". After the subbase has been "replumbed", remove the valve from the subbase and remove the bottom gasket as shown in Figures 1 and 2. Flip the gasket end-to-end so the internal pilot hole will be covered by the gasket as shown in Figure 3. Remove tab "B" as shown in Figure 3. Remount valve to base.

SIZE I GT SERIES VALVE DUAL PRESSURE CONVERSION

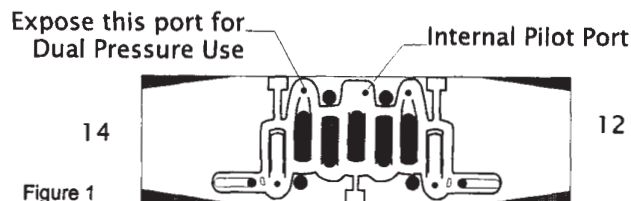


Figure 1

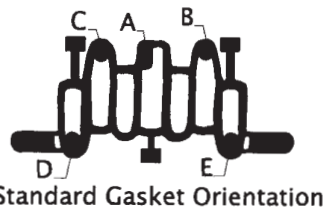


Figure 2

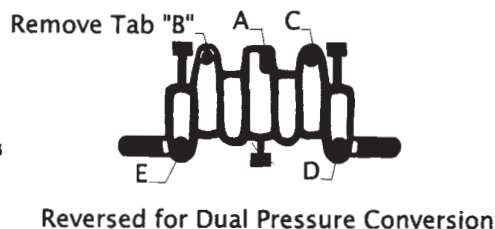


Figure 3

Reversed for Dual Pressure Conversion

SIZE II GS SERIES VALVE DUAL PRESSURE CONVERSION

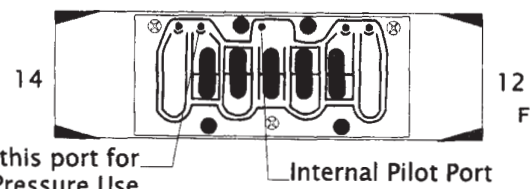


Figure 1

Expose this port for Dual Pressure Use

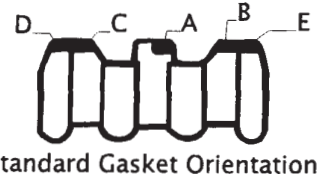


Figure 2

Standard Gasket Orientation

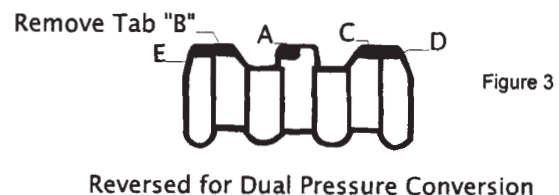


Figure 3

Reversed for Dual Pressure Conversion

Dual Pressure Valve Conversion Instructions (Sizes III & IV)

Convert to external pilot according to instructions on previous page, then follow instructions at top right of this page.

Solenoid Connectors and Cables



Solenoid Connectors for Ceram™, Series 740, and CD07™ Valves (DIN 43650-FORM A/ISO 4400 30MM)

STRAIN RELIEF CONNECTORS NON-LIGHTED



8941000302*
(Old Part No. H -894100-00302)
(Standard)

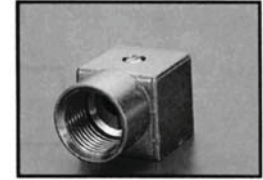


**Part No. R432013747
(Old Part No. P -067325-00000)
(for use with wireways)

1/2" CONDUIT CONNECTORS NON-LIGHTED



Part No. R432015626
(Old Part No P -069390-00000)
(Molded Engineering Plastic)



Part No. R432015781**
(Old Part No. P -069707-00000)
(Metallic)

Lighted



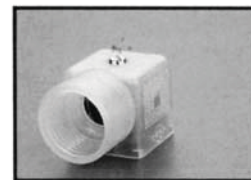
Part No.	Old Part No.	
**R432013726	P -067261-00000	120 VAC
**R432013728	P -067262-00000	240 VAC
**R432013729	P -067264-00000	12 VDC
**R432013730	P -067265-00000	24 VDC
**R432015629	P -069417-00000	24 VAC

3/8" CONDUIT CONNECTOR NON-LIGHTED



Part No. R432015404***
(Old Part No. P -068674-00000)

Lighted



Part No.	Old Part No.	
R432008421	P -026078-00001	120VAC***
R432008422	P -026078-00002	240 VAC***
R432008423	P -026078-00004	12 VDC***
R432008424	P -026078-00005	24 VDC***
R432008425	P -026078-00006	24 VAC***

Solenoid Connectors For Series 581 and Series 830 Valves ONLY (INDUSTRIAL FORM§ 22MM)

Non-Lighted



*8941004702
Old Part No. H -894100-04702

STRAIN RELIEF CONNECTORS

Part No.	Old Part No.	
*R432013878	P -067854-00000	120 VAC
*R432013879	P -067855-00000	240 VAC
*R432013880	P -067857-00000	12 VDC
*R432013881	P -067858-00000	24 VDC
*R432008426	P -026079-00000	24 VAC

Lighted



§ Not FORM B.

Solenoid Connectors for Series 840, Series 579, & Series TC Valves ONLY (Form C) 15MM

VOLTAGE (lighted version)	PART NO.	OLD PART NO.
120 VAC/DC (Without Lead)	R432011981	P -048824-00001
120 VAC/DC (W/3' LEAD)	R432011961	P -048803-00001
120 VAC/DC (W/6' LEAD)	R432011963	P -048804-00001
24 VAC/DC (Without Lead)	R432011982	P -048824-00005
24 VAC/DC (w/3' LEAD)	R432011962	P -048803-00005
24 VAC/DC (W/6' LEAD)	R432011964	P -048804-00005

Solenoid Connector Lighted



Strain Relief Solenoid Connector Non-Lighted



Part No.
8941012202
(Old part no.
H -894101-02202)

Recommended Wire Size for Solenoid Connector: 18-22 gauge wire Cable diameter: .080" to .265" O.D.
R432008830 (Old Part No. P -027609-00000) 1/2" conduit connector for 840 wireway.

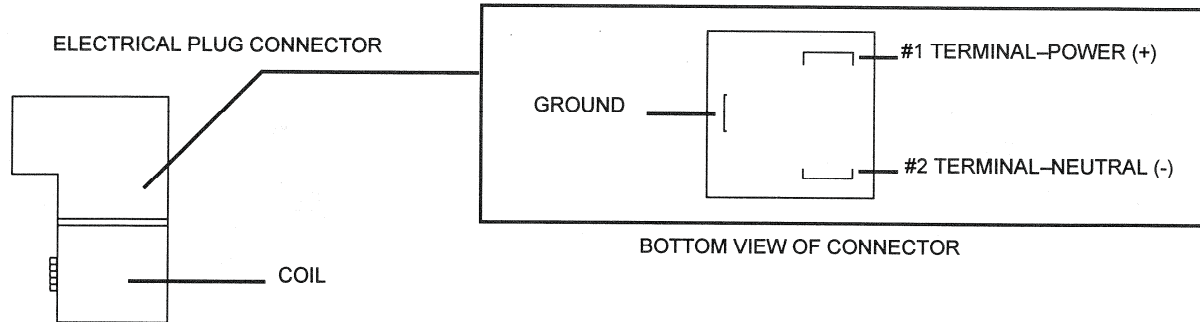
*0.236-0.315 O.D. Cable Diameter, **0.315-0.394 O.D. Cable Diameter, ***Cable Diameter up to 0.200
All connectors this page: Maximum Wire Size A.W.G. #14. (14 gauge may not fit in lighted connector.)

Connectors and Accessories

Electrical hook-up information, cables, cables w/connectors



Electrical Hook-up Information for standard DIN connectors on Ceram™, CD-7, and Series 740 valves.



Cables

ANSI Cables for (Brad Harrison®) Ceram™ Valves

One connector/cable per solenoid.

ANSI B93.55 Female Plug Connector (Mini)/Cable Assemblies

Part Number	No. of Poles	Cord Length "L"
R432011957	3	3 Ft.
R432011958	3	6 Ft.
R431001675	5	3 Ft.
R432011960	5	6 Ft.

NFPA Color Coding:

3 Pole Cord - no. 1 Green, No. 2 & 3 Red

5 Pole Cord - no. 3 Green, No. 1, 2, 4 & 5 Red

DIN Connectors with Attached Cable, Strain Relief with U.L. "S" Type Cable, Form A

Part Number	Description
R432011965	w/o Ind. Lights, w/3' Leads
R432011969	w/o Ind. Lights, w/6' Leads
R432011966	120 VAC Lighted w/3' Leads
R432011970	120 VAC Lighted w/6' Leads
R432011968	24 VDC Lighted w/3' Leads
R432011971	24 VDC Lighted w/6' Leads

Connectors and Accessories

DIN connectors with surge suppression

Advantages of Suppression

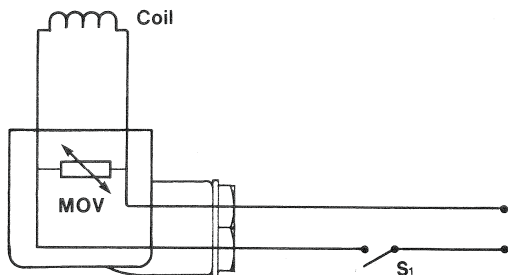
- Reduce contact burnout, increasing switch life up to ten times.
- High frequency interference pulses eliminated, lowering electronic noise.
- Protect programmable controllers and other types of electronic controllers from inductive spikes without addition of extra modules or hardware. All suppression systems are available with the standard connector for Ceram™, CD-7 and Series 740 valves shown on page 89.

DIN Connectors with Surge Suppression - VAC Models

Part Number	Description
R432011972	120 VAC Non-Lighted w/6' Leads
R432011974	120 VAC Lighted w/6' Leads

MOV (metal oxide varistor) in parallel with coil.
When switch (S_1) is opened or closed, the energy in the coil is limited by the MOV.

- Protects both supply and switch
- Good drop out time
- Good for AC or DC voltage
- Not polarity dependent

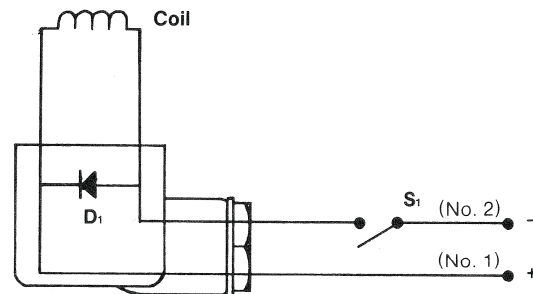


DIN Connectors with Surge Suppression - VDC Models

Part Number	Description
R432030348	12 VDC Lighted w/6' Leads
R432011973	24 VDC Non-Lighted w/6' Leads
R432011975	24 VDC Lighted w/6' Leads

Diode in parallel with coil.
When switch (S_1) is opened, the energy stored in the coil is trapped and dissipated by the diode (D_1).

- Works only with DC voltage
- Increases drop out time
- Polarity dependent



NOTICES TO PRODUCT USERS

1. WARNING: FLUID MEDIA

Bosch Rexroth pneumatic devices are designed and tested for use with filtered, clean, dry, chemical free air at pressures and temperatures within the specified limits of the device. For use with media other than air or for human life support systems, Bosch Rexroth must be consulted. Hydraulic cylinders are designed for operation with filtered, clean, petroleum based hydraulic fluid; operation using fire-resistant or other special types of fluids may require special packing and seals. Consult the factory.

2. WARNING: MATERIAL COMPATIBILITY

Damage to product seals or other parts caused by the use of non-compatible lubricants, oil additives or synthetic lubricants in the air system compressor or line lubrication devices voids Bosch Rexroth's warranty and can result in product failure or other malfunction. See lubrication recommendations below.

AIR LINE LUBRICANTS! In service higher than 18 cycles per minute or with continuous flow of air through the device, an air line lubricator is recommended. * (Do not use line lubrication with vacuum products.) However, the lubricator must be maintained since the oil will wash out the grease, and lack of lubrication will greatly shorten the life expectancy. The oils used in the lubricator must be compatible with the elastomers in the device. The elastomers are normally BUNA-N, NEOPRENE, VITON, SILICONE and HYTREL. Bosch Rexroth recommends the use of only petroleum-based oils without synthetic additives, and with an aniline point between 180° and 210° F.

COMPRESSOR LUBRICANTS! All compressors (with the exception of special "oil free" units) pass oil mist or vapor from the internal crankcase lubricating system through to the compressed air. Since even small amounts of non-compatible lubricants can cause severe seal deterioration (which could result in component and system failure) special care should be taken in selecting compatible compressor lubricants. It is recommended that users review the National Fluid Power Association "Recommended Guide Lines For Use Of Synthetic Lubricants In Pneumatic Fluid Power Systems" (NFPA T1-1978).

3. WARNING: INSTALLATION AND MOUNTING

The user of these devices must conform to all applicable electrical, mechanical, piping and other codes in the installation, operation or repair of these devices.

INSTALLATION! Do not attempt to install, operate or repair these devices without proper training in the technique of working on pneumatic or hydraulic systems and devices, unless under trained supervision. Compressed air and hydraulic systems contain high levels of stored energy. Do not attempt to connect, disconnect or repair these products when system is under pressure. Always exhaust or drain the pressure from system before performing any service work. Failure to do so can result in serious personal injury.

MOUNTING! Devices should be mounted and positioned in such manner that they cannot be accidentally operated.

4. WARNING: APPLICATION AND USE OF PRODUCTS

The possibility does exist for any device or accessory to fail to operate properly through misuse, wear or malfunction. The user must consider these possibilities and should provide appropriate safe guards in the application or system design to prevent personal injury or property damage in the event of malfunction.

5. WARNING: CONVERSION, MAINTENANCE AND REPAIR

When a device is disassembled for conversion to a different configuration, maintenance or repair, the device must be tested for leakage and proper operation after being reassembled and prior to installation.

MAINTENANCE AND REPAIR! Maintenance periods should be scheduled in accordance with frequency of use and working conditions. All Bosch Rexroth products should provide minimum of 1,000,000 cycles of maintenance free service when used and lubricated as recommended. However, these products should be visually inspected for defects and given an "in system" operating performance and leakage test once a year. Where devices require major repair as result of the one million cycles, one year, or routine inspection, the device must be disassembled, cleaned, inspected, parts replaced as required, rebuilt and tested for leakage and proper operation prior to installation. See individual catalogs for specific cycle life estimates.

6. PRODUCT CHANGES

Product changes including specifications, features, designs and availability are subject to change at any time without notice. For critical dimensions or specifications, contact factory.

*Many Bosch Rexroth pneumatic components can operate with or without air line lubrication; see individual sales catalogs for details.

--Refer to the appropriate service catalog for parts and service information.

LIMITATIONS OF WARRANTIES & REMEDIES

Bosch Rexroth warrants its products sold by it to be free from defects in material and workmanship to the following:

For twelve months after shipment Bosch Rexroth will repair or replace (F.O.B. our works), at its option, any equipment which under normal conditions of use and service proves to be defective in material or workmanship at no charge to the purchaser. No charge will be made for labor with respect to defects covered by this Warranty, provided that the work is done by Bosch Rexroth or any of its authorized service facilities. However, this Warranty does not cover expenses incurred in the removal and reinstallation of any product, nor any downtime incurred, whether or not proved defective.

All repairs and replacement parts provided under this Warranty policy will assume the identity, for warranty purposes, of the part replaced, and the warranty on such replacement parts will expire when the warranty on the original part would have expired. Claims must be submitted within thirty days of the failure or be subject to rejection.

This Warranty is not transferable beyond the first using purchaser. Specifically, excluded from this Warranty are failures caused by misuse, neglect, abuse, improper operation or filtration, extreme temperatures, or unauthorized service or parts. This Warranty also excludes the use of lubricants, fluids or air line additives that are not compatible with seals or diaphragms used in the products. This Warranty sets out the purchaser's exclusive remedies with respect to products covered by it, whether for negligence or otherwise. Neither, Bosch Rexroth nor any of its affiliates will be liable for consequential or incidental damages or other losses or expenses incurred by reason of the use or sale of such products. Our liability (except as to title) arising out of the sale, use or operation of any product or parts, whether on warranty, contract or negligence (including claims for consequential or incidental damage) shall not in any event exceed the cost of replacing the defective products and, upon expiration of the warranted period as herein provided, all such liability is terminated. THIS WARRANTY IS IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, WHETHER FOR MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE. No attempt to alter, amend or extend this Warranty shall be effective unless authorized in writing by an officer of Bosch Rexroth Corporation.

Bosch Rexroth reserves the right to discontinue manufacture of any product, or change product materials, design or specifications without notice.

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Further contacts

www.boschrexroth.com/addresses

The data specified above only serve to describe the product. No statements concerning a certain condition or suitability for a certain application can be derived from our information. The information given does not release the user from the obligation of own judgment and verification. It must be remembered that our products are subject to a natural process of wear and aging.