

# NUMATICS®

## ISO Series

5599/2 Valves



Siège Social Douala - Cameroun B.P. 12591 Douala  
contact@2comappro.com  
Tél : + 237 233 424 913  
et + 237 674 472 158

[www.2comappro.com](http://www.2comappro.com)



## ISO 5599/2 Series

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5 Ported, 4-way, 2 and 3 position, Spool & Sleeve,  
Cv: 1.2 to 5.3

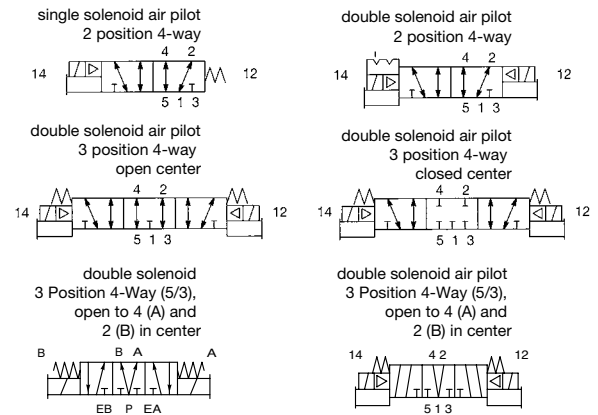
- Direct solenoid or solenoid pilot actuated
- Complies with ISO Standard 5599/2
- ISO sizes 1, 2, 3
- Terminal block for ease of wiring
- Side and bottom cylinder ports standard
- AC/ DC color-coded solenoids
- Sandwich regulators available
- Plug-in speed control available
- Elimination of internal wiring
- Designed to meet the requirements of NEMA 4 / IP65



### Solenoid Pilot Actuated

### Technical Data: ISO 5599/2 - Solenoid Air Pilot

Valve Data		English	Metric
Cv	Size 1	1.3	1.3
	Size 2	2.9	2.9
	Size 3	5.3	5.3
Flow Capacity	Size 1	60.1 SCFM	1280 NI/m
	Size 2	134.0 SCFM	2857 NI/m
	Size 3	245.0 SCFM	5222 NI/m
Main Valve Operating Pressure Range - All Sizes		28" HG to 232 PSIG	Vacuum to 16 bar
Pilot Pressure Range - All Sizes		15 to 125 PSIG	1 to 8.6 Bar
Temperature Range (ambient) - All Sizes		-10° F to +115° F	-23.3° C to +46.1° C



### Operating Data

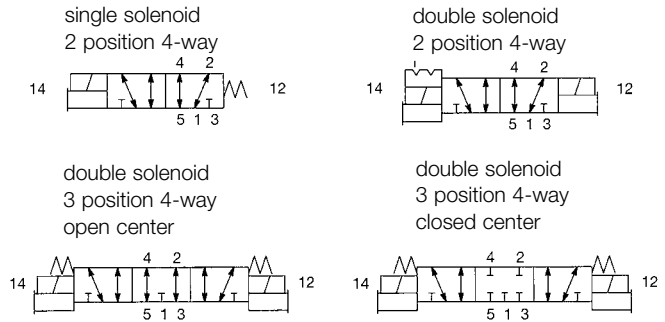
All Solenoids Are Continuous Duty Rated			24 VDC	24 VAC 50 Hz	24 VAC 60 Hz	115 VAC 50 Hz	120 VAC 60 Hz	230 VAC 50 Hz	240 VAC 60 Hz
Power (Watts) - All Sizes			4.0	N/A	N/A	N/A	N/A	N/A	N/A
Holding Current (Amps.) - All Sizes			0.16	0.36	0.29	0.06	0.06	0.03	0.03
Inrush Current (Amps.) - All Sizes			N/A	0.52	0.47	0.10	0.09	0.05	0.05
Energize in seconds	2-Position, Single, Spring Return	Size 1 & 2	0.013	0.013	0.012	0.012	0.012	0.013	0.013
		Size 3	0.020	0.018	0.019	0.017	0.017	0.018	0.018
	2-Position, Double, Detented	Size 1 & 2	0.013	0.013	0.012	0.012	0.012	0.013	0.013
		Size 3	0.020	0.018	0.019	0.017	0.017	0.018	0.018
	3-Position, Spring Centered	Size 1 & 2	0.013	0.013	0.012	0.012	0.012	0.013	0.013
		Size 3	0.020	0.018	0.019	0.017	0.017	0.018	0.018
De-energize in seconds	2-Position, Single, Spring Return	Size 1	0.036	0.034	0.035	0.035	0.036	0.039	0.038
		Size 2	0.060	0.053	0.053	0.055	0.054	0.057	0.056
		Size 3	0.066	0.067	0.067	0.069	0.068	0.072	0.072
	2-Position, Double, Detented	Size 1, 2, & 3	N/A						
	3-Position, Spring Centered	Size 1	0.036	0.034	0.035	0.035	0.036	0.039	0.038
		Size 2	0.060	0.053	0.053	0.055	0.054	0.057	0.056
Size 3		0.066	0.067	0.067	0.069	0.068	0.072	0.072	

5 Ported, 4-way, 2 and 3 position, Spool & Sleeve,  
Cv: 1.2 to 5.3



- Direct solenoid or solenoid pilot actuated
- Complies with ISO Standard 5599/2
- ISO sizes 1, 2, 3
- Terminal block for ease of wiring
- Side and bottom cylinder ports standard
- AC/ DC color-coded solenoids
- Sandwich regulators available
- Plug-in speed control available
- Elimination of internal wiring
- NEMA 4/IP 65

**Direct Solenoid Actuated**



double solenoid  
3 Position 4-Way (5/3),  
open to 4 (A) and  
2 (B) in center



**Technical Data: ISO 5599/2 - Direct Acting**

Valve Data		English	Metric
Cv	Size 1	1.2	1.2
	Size 2	2.2	2.2
	Size 3	4.4	4.4
Flow Capacity	Size 1	55.5 SCFM	1181 NI/m
	Size 2	101.7 SCFM	2166 NI/m
	Size 3	203.4 SCFM	4336 NI/m
		80 PSIG upstream pressure to atmosphere	6 bar upstream to 5 bar downstream
Main Valve Operating Pressure Range - All Sizes		28" HG to 232 PSIG	Vacuum to 16 bar
Temperature Range (ambient) - All Sizes		-10° F to +115° F	-23.3° C to +46.1° C

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**Operating Data** - All solenoids are continuous duty rated

Valve Data		24 VDC	24 VAC 50 Hz	24 VAC 60 Hz	115 VAC 50 Hz	120 VAC 60 Hz	230 VAC 50 Hz	240 VAC 60 Hz	
Power (Watts)	Size 1 & 2	6.0	N/A	N/A	N/A	N/A	N/A	N/A	
	Size 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	
Holding Current (Amps.)	Size 1 & 2	0.25	0.59	0.42	0.11	0.09	0.07	0.05	
	Size 3		0.59	0.42	0.11	0.09	0.07	0.05	
In-rush Current (Amps.)		Size 1, 2, & 3	N/A	2.85	2.53	0.63	0.58	0.31	0.29
Energize in seconds	2-Position, Single, Spring Return	Size 1 & 2	0.038	0.012	0.012	0.012	0.012	0.012	0.012
		Size 3	N/A	0.012	0.012	0.012	0.012	0.012	0.012
	2-Position, Double, Detented	Size 1 & 2	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		Size 3	N/A	0.012	0.012	0.012	0.012	0.012	0.012
	3-Position, Spring Centered	Size 1 & 2	0.038	0.012	0.012	0.012	0.012	0.012	0.012
		Size 3	N/A	N/A	0.012	0.012	0.012	0.012	0.012
De-energize in seconds	2-Position, Single, Spring Return	Size 1 & 2	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		Size 3	N/A	0.012	0.012	0.012	0.012	0.012	0.012
	2-Position, Double, Detented	Size 1, 2, & 3	N/A	N/A	N/A	N/A	N/A	N/A	N/A
		Size 1 & 2	0.012	0.012	0.012	0.012	0.012	0.012	0.012
	3-Position, Spring Centered	Size 1 & 2	0.012	0.012	0.012	0.012	0.012	0.012	0.012
		Size 3	N/A	0.012	0.012	0.012	0.012	0.012	0.012

## How to Order

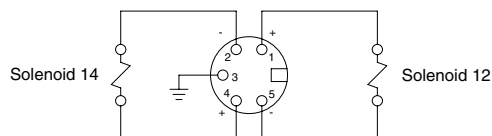
### Valves

<p><b>Valve Series and Port Size</b></p> <p>I12* = ISO 5599/2 Size 1 1/4          I13 = ISO 5599/2 Size 1 3/8          I23* = ISO 5599/2 Size 2 3/8          I24 = ISO 5599/2 Size 2 1/2          I34* = ISO 5599/2 Size 3 1/2          I35 = ISO 5599/2 Size 3 3/4</p> <p>*Use for valve unit only (Mounting = 00)</p> <p><b>First letter = "14" Actuator</b>  <b>Second letter = "12" Actuator</b></p> <p>BA = Solenoid Air Pilot w/Spring Return          BB = Double Solenoid Air Pilot          BW = Solenoid Pilot w/Differential Air Return          SA = Direct Solenoid w/Spring Return          SS = Double Direct Solenoid          00 = Manifold Block without Valve</p> <p><b>Function</b></p> <p>4 = 2 Position, 4-Way          5 = 3 Position, 4-Way Open Center          6 = 3 Position, 4-Way Closed Center          7 = 3 Position 4-Way (5/3), Open to 4 (A) and 2 (B) in Center          P = Indicates Blank Station Plate</p> <p><b>Mounting</b></p> <p>00 = Valve Unit Only          01 = 00 w/Speed Control          15** = Manifold Block, Side and Bottom Cylinder Ports          25 = 15 w/Speed Control          3A = Base, Side Ports, Individual Exhaust          3B = Base, Side and Bottom Ports, Individual Exhaust          3C = 3A w/Speed Control          3D = 3B w/Speed Control          MN = Mid-station Supply and Exhaust Block without Internal Circuit Board          MS = Mid-station Supply and Exhaust Block with Internal Circuit Board          Z1 = Manifold Block w/Side and Bottom Ports, Single Solenoid Internal Circuit Board          Z2** = Manifold Block w/Side and Bottom Ports, Double Solenoid Internal Circuit Board          Z5 = Z1 w/Speed Control          Z6 = Z2 w/Speed Control          R1 = Z1 w/Ribbon Cable Connector          R2 = Z2 w/Ribbon Cable Connector          R5 = Z5 w/Ribbon Cable Connector          R6 = Z6 w/Ribbon Cable Connector</p> <p>**Also Used with Function P= Blank Station</p>	<p><b>Voltage</b></p> <p>20 = 24/50-60 VAC          30 = 110-120/50-60 VAC          40 = 220-240/50-60 VAC          61 = 24 VDC          00 = Use w/Blank Station Plate</p> <p><b>Options</b></p> <p>11B = Flush Locking Override          11Z = Extended Locking Override          14B = Internal Pilot Supply from #1 (P) If Not Standard          14C*** = Internal Pilot Supply from #3 (EB)          14D*** = Internal Pilot Supply from #5 (EA)          15G = 5 Pin Mini Connector (Valve Conduit Cover)          17G = Low Wattage Solenoid Pilot-1.85 Watt          14X *** = External Pilot Supply Through Base or Manifold Endplates          17N = DC Solenoid with Surge Suppression Diode          46T = Zinc Plated "T" Armature In Solenoid(s) - AC Only, Direct Acting Only          56Y = 4 Pin Micro Connector in Mounting          60V = 4 Pin Micro Connector (Valve Conduit Cover)</p> <p>***Must use one of these options when used with RC, RQ, or RD regulators and solenoid pilot valves.</p> <p><b>Port Type</b></p> <p>0 = NPTF (Direct Solenoid Valves)(Use for valve unit only)          G = G Tap (Direct Solenoid Valves)(Use for valve unit only) (conforms to ISO standards 1179-1 and 228-1)          P = NPTF (Solenoid Pilot Valves)          Q = G Tap (Solenoid Pilot Valves) (conforms to ISO standards 1179-1 and 228-1)</p> <p><b>Wiring Option</b></p> <p>K = Plug-in AC w/Light          L= = Standard AC, Special Connector (15G)          M = Plug-in DC w/Light          O= = Blank Station Plate          R= = Standard DC, Special Connector (60V)</p>
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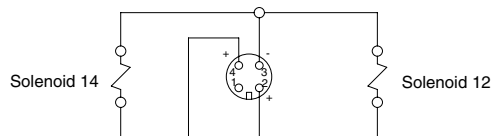
Note: Standard for all ISO 5599/2 Valve Series is internal pilot supply from port #1.

## Wiring Diagrams

**5 Pin (Mini) Connector**  
 15G (Valve Conduit Cover)



**4 Pin 12mm (Micro) Connector**  
 60V (Valve Conduit Cover)  
 56Y (Mounting)



**How to Order**

**Regulators**

**I24 RS 1 15 J P 000 00**

**Valve Series and Port Size**  
 I12\* = ISO 5599/2 Size 1 1/4"  
 I13 = ISO 5599/2 Size 1 3/8"  
 I23\* = ISO 5599/2 Size 2 3/8"  
 I24 = ISO 5599/2 Size 2 1/2"  
 I34\* = ISO 5599/2 Size 3 1/2"  
 I35 = SO 5599/2 Size 3 3/4"  
 \*Use for regulator unit only (Mounting = 00)

**Regulator Type**  
 RS = Single Pressure to Port #1 (P)  
 RD\*\* = Dual Pressure to Ports #3 (EB) & #5 (EA)  
 RC\*\* = Dual Pressure w/Non-relieving Checks  
 Air Return (Sizes 2 & 3 Only)  
 RQ\*\* = Dual Pressure w/Relieving Checks  
 RE = Dual Pressure, External Outlet  
 \*\*Solenoid pilot valves used with RC, RD & RQ regulators must have the pilot supply from other than internally from port #1 (P)

**Pressure Range**  
 1 = 10 - 130 PSIG (0.7 - 9 bar)  
 3 = 3 - 30 PSIG (0.2 - 2 bar)  
 4 = 5 - 60 PSIG (0.3 - 4.1 bar)  
 6 = 20 - 250 PSIG (1.4 - 17 bar)

**Options**  
 16N = Jumper on 14 (A) End  
 16P = Jumper on 12 (B) End

**Port Type**  
 P = NPTF  
 Q = G Tap

**Wiring Option**  
 J = Plug-In Receptacle  
 O = No Electrical Connection

**Mounting**  
 00 = Regulator Unit Only  
 15 = Manifold Block, Side and Bottom Cylinder Ports  
 3A = Base, Side Ports, Individual Exhaust  
 3B = Base, Side and Bottom Ports, Individual Exhaust  
 Z0 = Manifold Block w/Side and Bottom Ports Transfer Board, Used w/RE Regulator  
 Z1 = Manifold Block with Side and Bottom Ports, Single Solenoid Internal Circuit Board  
 Z2 = Manifold Block with Side and Bottom Ports, Double Solenoid Internal Circuit Board  
 Z5 = Z1 w/Speed Control  
 Z6 = Z2 w/Speed Control  
 R1 = Z1 w/Ribbon Cable Connector  
 R2 = Z2 w/Ribbon Cable Connector  
 R5 = Z5 w/Ribbon Cable Connector  
 R6 = Z6 w/Ribbon Cable Connector  
 Z0 = RE only (no Z-board)

**Manifold Assembly Kit**

**AK 0 R C 0000 4 N STD**

**Electrical/Connection Type and Location**  
 0 = Standard  
 E\* = Fieldbus Electronics (w/"Z-Board"™)  
 F\* = Terminal Strip 1-16  
 J\* = 25 Pin Sub-D  
 M\* = 37 Pin Sub-D  
 P = 12 Pin Round Connector  
 Q = 19 Pin Round Connector  
 R\* = 26 Pin Round Connector  
 S\* = 26 + 12 Pin Round Connector  
 T\* = Terminal Strip 1-32  
 V = Fieldbus Electronics (hardwired)  
 \*Used with Z-board only

**Valve Series(s)**  
 Q = ISO 5599/2 size 1  
 R = ISO 5599/2 size 2  
 S = ISO 5599/2 size 3

**Number(s) of Valve Stations**  
 A = 1 I = 9  
 B = 2 J = 10  
 C = 3 K = 11  
 D = 4 L = 12  
 E = 5 M = 13  
 F = 6 N = 14  
 G = 7 O = 15  
 H = 8 P = 16

**Options**  
 STD = Standard

**Port Type**  
 N = NPTF  
 G = G Tap

**End Plate Port Size**  
 3 = 3/8 (Size 1)  
 4 = 1/2 (Size 2)  
 6 = 1 (Size 3)  
 X = 2 or more valve series in one manifold assembly

**Valve Series and Number of stations**

**Example order**  
 ISO 2 manifold with side and bottom ports

AKORC00004NSTD  
 Station 1 I23BA415MP00061  
 Station 2 I23BB415MP00061  
 Station 3 I23BB400MP00061  
 I23RS115JP00000  
 ASSEMBLED

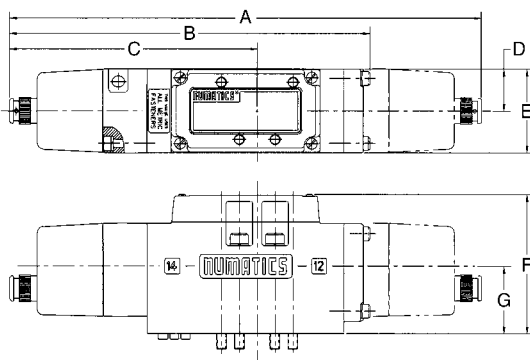
**Maximum Solenoid Outputs**

Terminal Strip		25 PIN Sub-D	37 PIN Sub-D	26 PIN Round	26 + 12 PIN Round	12 PIN Round	19 PIN Round
AK"F"	AK"T"	AK"J"	AK"M"	AK"R"	AK"S"	AK"P"	AK"Q"
16	32	22	32	22	32	8	16

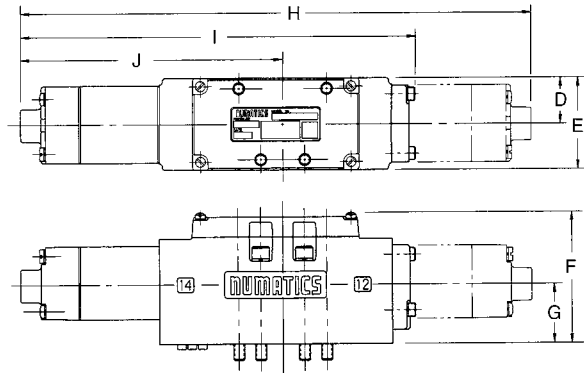
Dimensions: Inches (mm)

## Valve Units

### Solenoid Pilot Actuated



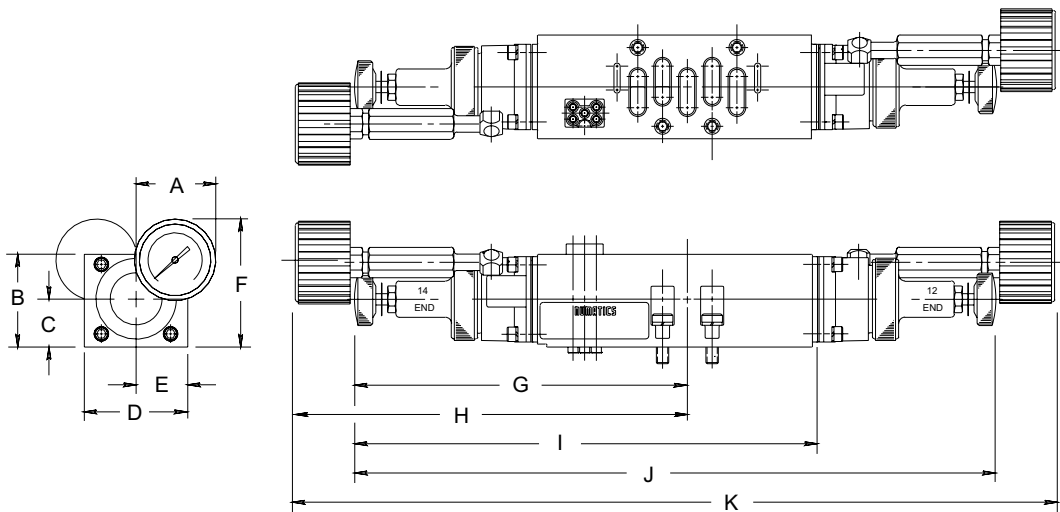
### Direct Solenoid Actuated



	A	B	C	D	E	F	G	H DC	H AC	I DC	I AC	J DC	J AC
Size 1	9.32 (236.7)	7.11 (180.6)	4.89 (124.2)	0.83 (21.0)	1.65 (41.9)	2.69 (68.4)	1.30 (32.9)	11.23 (285.3)	9.75 (247.8)	8.09 (205.4)	7.35 (186.6)	5.83 (148.1)	5.10 (129.6)
Size 2	10.41 (264.4)	8.27 (210.1)	5.36 (136.1)	0.99 (25.0)	1.97 (50.0)	2.79 (70.8)	1.25 (31.8)	12.34 (313.4)	10.86 (275.8)	9.18 (233.2)	8.45 (214.7)	6.32 (160.5)	5.58 (141.7)
Size 3	11.65 (295.9)	9.27 (235.5)	6.05 (153.7)	1.26 (32.0)	2.52 (64.0)	2.93 (74.3)	1.22 (30.9)	N/A N/A	12.40 (314.9)	N/A N/A	9.05 (229.8)	N/A N/A	5.86 (148.7)

Dimensions: Inches (mm)

## Sandwich Pressure Regulator



	A	B	C	D	E	F	G	H	I	J	K
Size 1	1.55 (39.4)	1.77 (45.0)	0.92 (23.3)	1.70 (43.2)	0.85 (21.6)	2.46 (62.5)	5.98 (151.9)	7.10 (180.3)	7.83 (198.9)	11.19 (284.2)	13.44 (341.4)
Size 2	1.55 (39.4)	1.77 (45.0)	0.92 (23.4)	2.02 (51.3)	1.01 (25.9)	2.46 (62.5)	6.33 (160.8)	7.46 (189.5)	8.81 (223.8)	12.19 (309.6)	14.44 (366.8)
Size 3	1.55 (39.4)	2.65 (67.3)	1.32 (33.5)	2.52 (64.0)	1.26 (32.0)	3.36 (85.3)	9.11 (231.4)	7.71 (195.8)	11.77 (299.0)	17.45 (443.2)	14.63 (371.6)

Dimensions: Inches (mm)

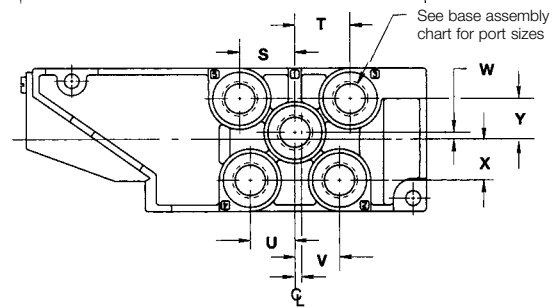
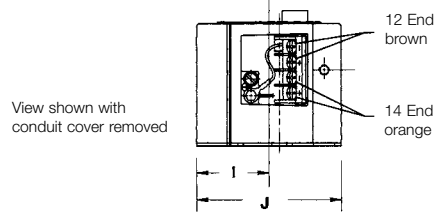
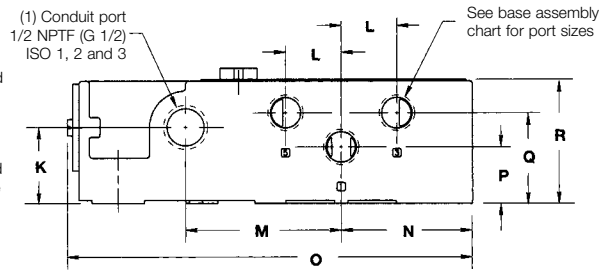
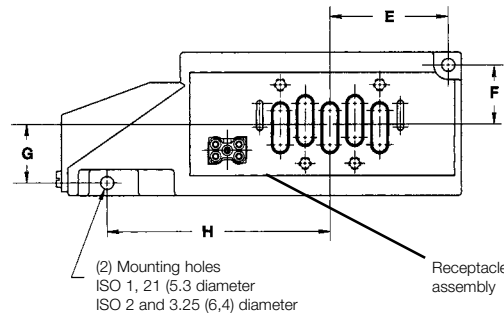
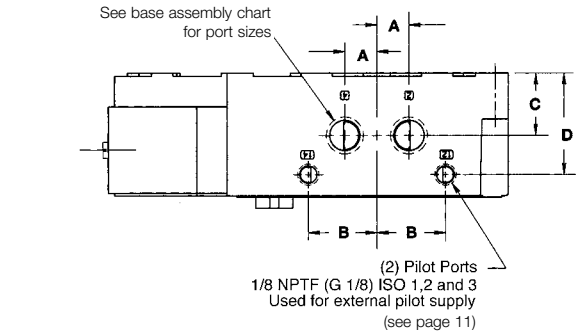
Base Assembly

Base Assembly Part Number

Series	Port Size	Side Ports Only	Side and Bottom Ports
ISO 1	1/4 NPTF	203-818	203-822
	3/8 NPTF	203-817	203-821
	G 1/4	203-819	203-823
	G 3/8	203-820	203-824
ISO 2	3/8 NPTF	203-829	203-833
	1/2 NPTF	203-830	203-834
	G 3/8	203-831	203-835
ISO 3	G 1/2	203-832	203-836
	1/2 NPTF	203-837	203-841
	3/4 NPTF	203-838	203-842
	G 3/4	203-839	203-843
	G 3/4	203-840	203-844

Receptacle Assembly Part Numbers

	Standard	With Z-Board
Size 1	230-680	230-1066
Size 2	230-707	230-1062
Size 3	230-707	230-1062



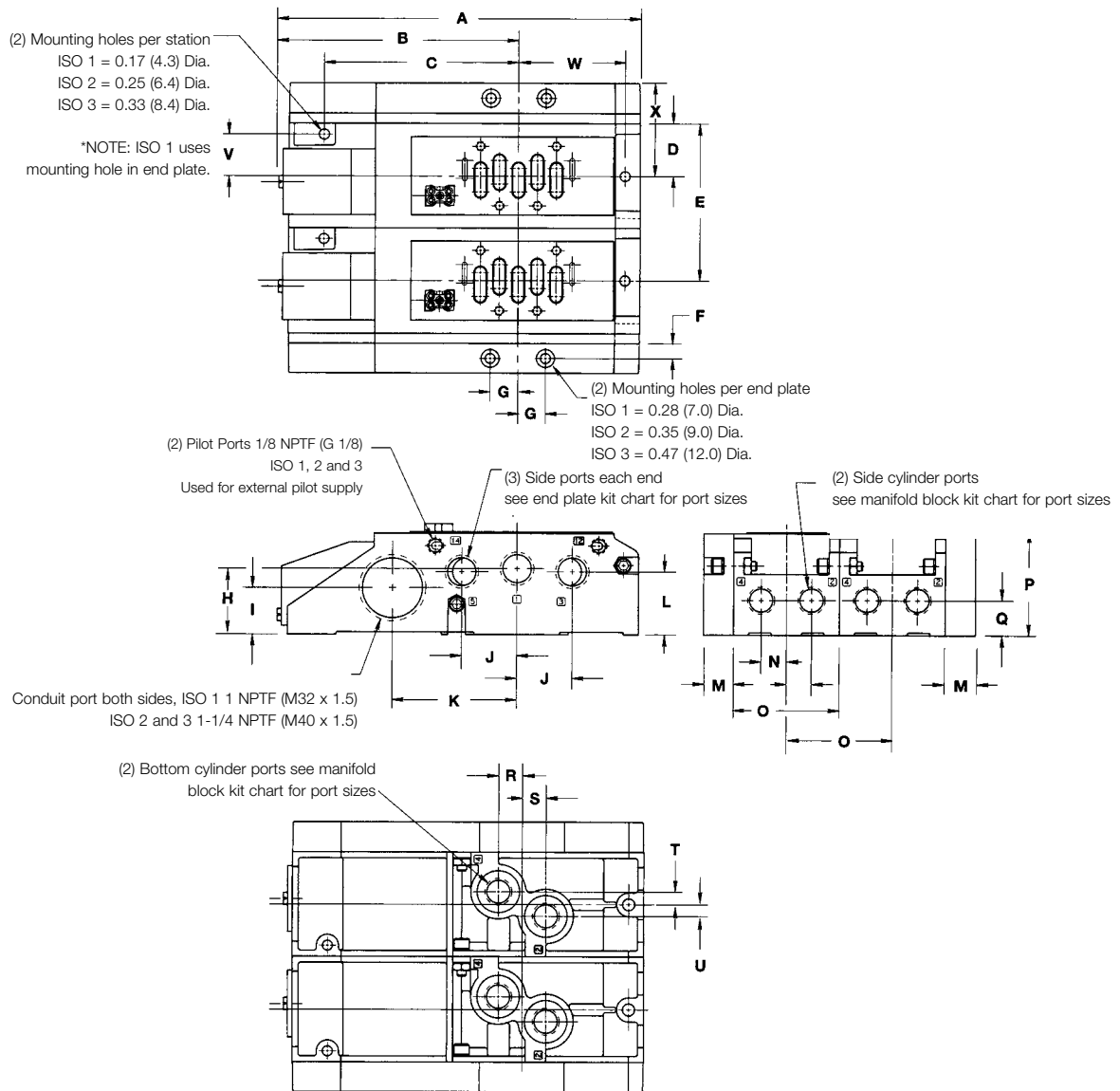
	A	B	C	D	E	F	G	H	I	J	K	L	M
Size 1	0.50 (12.7)	1.02 (25.9)	0.82 (20.8)	1.49 (37.8)	1.55 (39.4)	0.89 (22.6)	0.90 (22.9)	3.63 (92.2)	1.14 (29.0)	2.27 (57.7)	0.94 (23.9)	0.86 (21.8)	2.37 (60.2)
Size 2	0.61 (15.5)	1.31 (33.3)	1.19 (30.2)	1.94 (49.3)	2.25 (57.2)	1.13 (28.7)	1.13 (28.7)	4.25 (108.0)	1.38 (35.1)	2.75 (69.9)	1.47 (37.2)	1.06 (26.9)	2.97 (75.4)
Size 3	0.81 (20.6)	1.77 (45.0)	1.33 (33.9)	2.73 (69.3)	2.48 (63.0)	1.52 (38.6)	1.43 (36.3)	5.38 (136.7)	1.77 (45.0)	3.54 (89.9)	1.84 (46.7)	1.49 (37.8)	4.09 (103.9)

	N	O	P	Q	R	S	T	U	V	W	X	Y	Z
Size 1	1.81 (45.9)	6.47 (164.3)	0.82 (20.8)	1.33 (33.8)	1.85 (47.0)	0.84 (21.3)	1.07 (27.2)	0.50 (12.7)	0.59 (15.0)	0.33 (8.4)	0.65 (16.5)	0.63 (16.0)	0.12 (3.0)
Size 2	2.50 (63.5)	7.76 (197.1)	1.09 (27.7)	1.74 (44.2)	2.38 (60.5)	1.05 (26.7)	1.05 (26.7)	0.85 (21.6)	0.85 (21.6)	0.13 (3.3)	0.78 (19.8)	0.78 (19.8)	N/A
Size 3	2.73 (69.3)	9.26 (235.2)	1.33 (33.8)	2.02 (51.3)	3.34 (84.8)	1.63 (41.4)	1.63 (41.4)	1.07 (27.2)	1.07 (27.2)	0.81 (20.6)	0.81 (20.6)	0.81 (20.6)	N/A



## Dimensions: Inches (mm)

### Manifold Block Assembly



	A	B	C	D	E	F	G	H	I	J	K	L
Size 1	7.19 (182.6)	N/A N/A	N/A N/A	1.04 (26.4)	3.11 (79.0)	0.55 (14.0)	0.55 (14.0)	1.32 (33.5)	0.97 (24.6)	1.10 (27.9)	2.50 (63.5)	1.20 (30.5)
Size 2	9.00 (228.6)	5.97 (151.6)	4.84 (122.9)	1.31 (33.3)	3.94 (100.1)	0.63 (16.0)	0.69 (17.5)	1.65 (41.9)	1.16 (29.5)	1.38 (35.1)	3.10 (78.7)	1.57 (39.9)
Size 3	10.61 (269.5)	7.10 (180.3)	5.94 (150.9)	1.68 (42.7)	5.05 (128.3)	0.59 (15.0)	1.02 (25.9)	1.79 (45.5)	1.22 (31.0)	2.05 (52.1)	4.10 (104.1)	1.67 (42.4)

	M	N	O	P	Q	R	S	T	U	V	W	X
Size 1	0.87 (22.1)	0.51 (13.0)	2.08 (52.8)	2.18 (55.4)	0.63 (16.0)	0.51 (13.0)	0.51 (13.0)	0.26 (6.6)	0.26 (6.6)	N/A N/A	2.02 (51.3)	1.90 (48.3)
Size 2	1.00 (25.4)	0.63 (16.0)	2.63 (66.8)	2.58 (65.5)	0.86 (21.8)	0.59 (15.0)	0.59 (15.0)	0.32 (8.1)	0.30 (7.6)	1.04 (26.4)	2.65 (67.3)	2.31 (58.7)
Size 3	1.18 (30.0)	0.83 (21.1)	3.37 (85.6)	3.06 (77.7)	0.77 (19.6)	0.70 (17.8)	0.80 (20.3)	0.49 (12.4)	0.47 (11.9)	1.25 (31.8)	3.11 (79.0)	2.86 (72.6)

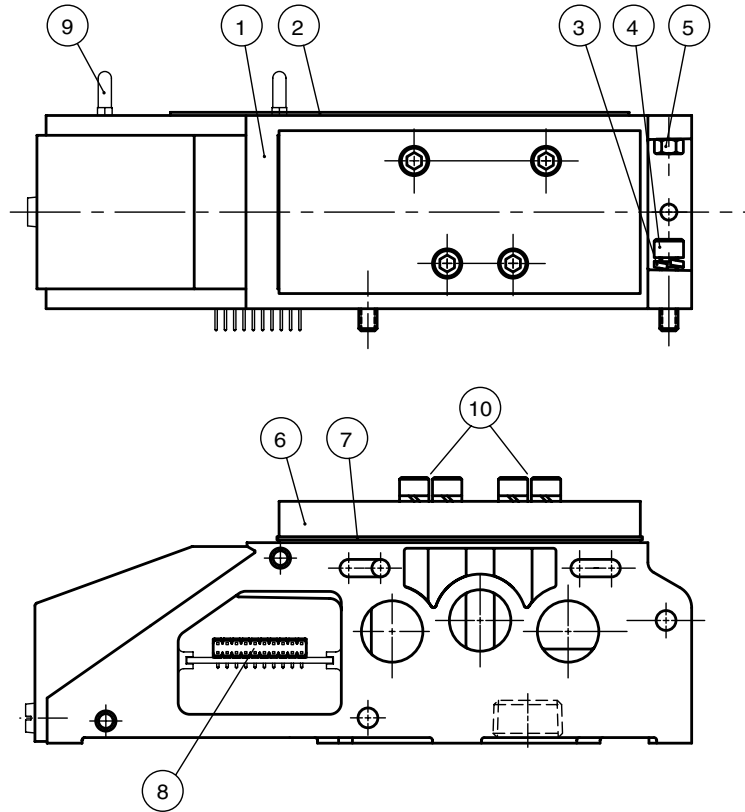
**Manifold Assembly Kits with "Z-Board"™**

Series	Port Size	Kit Number with Single Z-Board	Kit Number with Double Z-Board	Kit Number with Single Ribbon Cable	Kit Number with Double Ribbon Cable
ISO 1	1/4 NPTF	239-2128	239-1931	239-2132	239-1935
	3/8 NPTF	239-2129	239-1930	239-2133	239-1934
	G 1/4	239-2130	239-1933	239-2134	239-1937
	G 3/8	239-2131	239-1932	239-2135	239-1936
ISO 2	3/8 NPTF	239-2136	239-1893	239-2140	239-1897
	1/2 NPTF	239-2137	239-1894	239-2141	239-1898
	G 3/8	239-2138	239-1895	239-2142	239-1899
	G 1/2	239-2139	239-1896	239-2143	239-1900
ISO 3	1/2 NPTF	239-2144	239-1901	239-2148	239-1905
	3/4 NPTF	239-2145	239-1902	239-2149	239-1906
	G 1/2	239-2146	239-1903	239-2150	239-1907
	G 3/4	239-2147	239-1904	239-2151	239-1908

**Manifold Assembly Kits  
without "Z-Board"™**

Series	Port Size	Kit Number
ISO 1	1/4 NPTF	239-638
	3/8 NPTF	239-637
	G 1/4	239-640
	G 3/8	239-639
ISO 2	3/8 NPTF	239-647
	1/2 NPTF	239-648
	G 3/8	239-649
	G 1/2	239-650
ISO 3	1/2 NPTF	239-654
	3/4 NPTF	239-655
	G 1/2	239-656
	G 3/4	239-657

## Mid-Station Supply and Exhaust Block



NOTE: For dimensions and port locations, see page 9.

Det. No.	No. Req'd	Part Name	Size 1		Size 2		Size 3	
			3/8 NPTF 239-1938 239-2101	G 3/8 239-1939 239-2102	1/2 NPTF 239-1940 239-2103	G 1/2 239-1941 239-2104	3/4 NPTF 239-1942 239-2105	G 3/4 239-1943 239-2106
1	1	Manifold Assembly: with Z-Board without Z-Board	206-1455 206-1497	206-1456 206-1498	206-1457 206-1499	206-1457 206-1499	206-1457 206-1499	206-1460 206-1502
2	1	Gasket	113-447		113-453		113-457	
3	6	Lockwasher	128-170		128-171		128-187	
4	2	Screw	127-409		127-427		127-443	
5	2	Nut	128-234		128-235		128-236	
6	1	Blank Station Plate	104-525		104-526		104-538	
7	1	Gasket	113-581		113-582		113-583	
8*	1	Transfer Board	256-811		256-790		256-802	
9*	2	Guide Pin	131-250		131-250		131-250	
10	4	Screw	127-409		127-529		127-441	

\*Not required for mid-station supply and exhaust blocks without "Z-Board."™

End Plate Kits

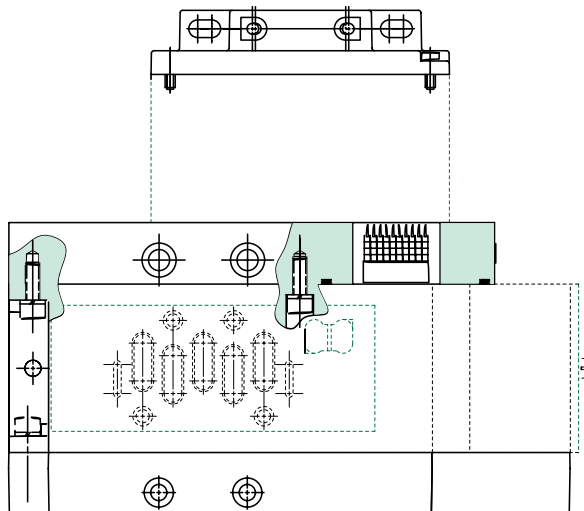


End Plate Kits  
for Non-“Z-Board”™ Manifolds

Series	Port Size	Kit Number	Common Exhaust
ISO 1	3/8 NPTF	239-635	N/A
	G 3/8	239-636	N/A
ISO 2	1/2 NPTF	239-642	239-874
	G 1/2	239-643	N/A
ISO 3	1 NPTF	239-658	239-875
	G 1	239-659	N/A



End Plate Kit with “Z-Board”™



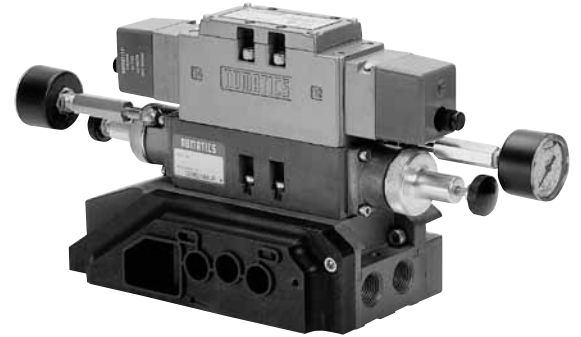
End Plate Kits for “Z-Board”™ Manifolds

Series	Port Size	Kit Number With Mounting Cover	Kit Number Without Mounting Cover
ISO 1	3/8 NPTF	239-1947	239-1945
	G 3/8	239-1948	239-1946
ISO 2	1/2 NPTF	239-1951	239-1949
	G 1/2	239-1952	239-1950
ISO 3	1 NPTF	239-1955	239-1953
	G 1	239-1956	239-1954

## Sandwich Pressure Regulators

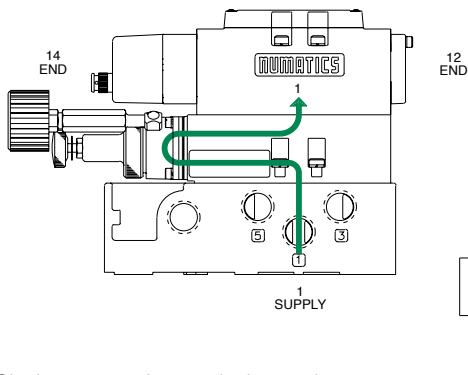
Types: RS / RD / RC / RQ

When ordering a valve plus regulator mounted on a base or manifold, list the valve unit—only model number and include the mounting requirements only within the regulator. Specify “Assembled.”



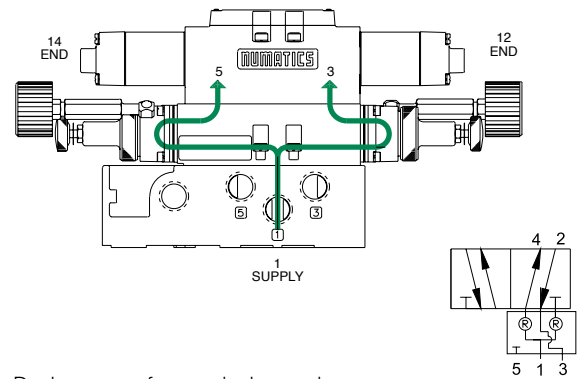
Example orders:	TYPE RS	TYPE RD
Valve unit only:	I23BA400KP00030	I23BB400KP14C30
Regulator	I23RS13AJP00000	I23RD115JP00000
+mounting	ASSEMBLED	ASSEMBLED

### Type RS



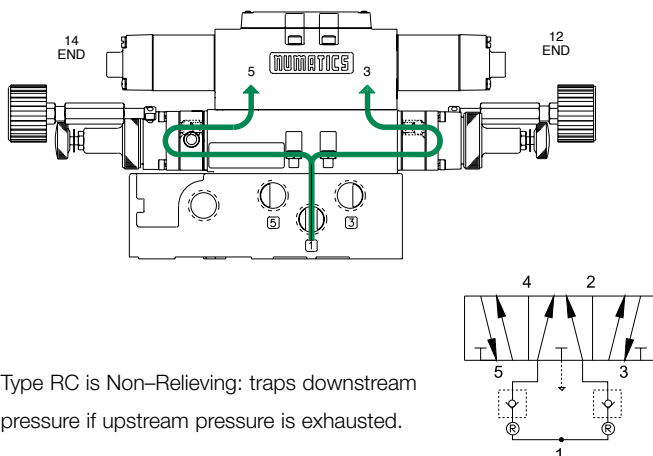
Single pressure from a single supply.

### Type RD



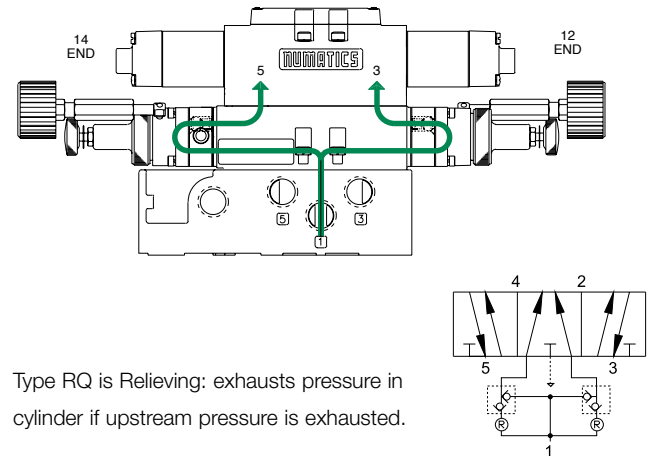
Dual pressure from a single supply.

### Type RC



Type RC is Non-Relieving: traps downstream pressure if upstream pressure is exhausted.

### Type RQ

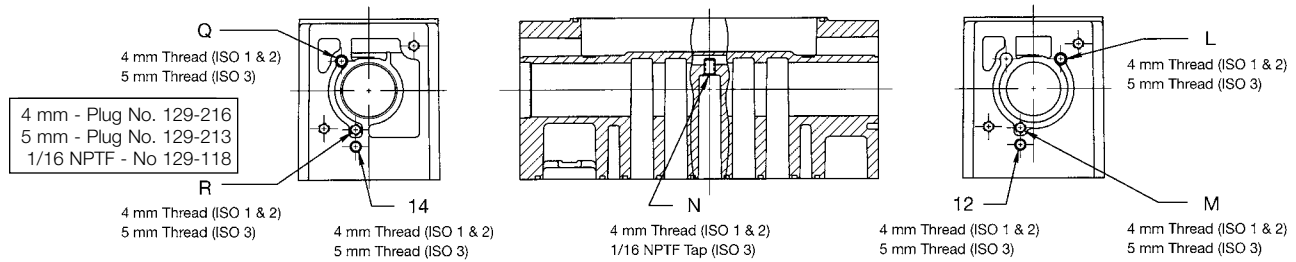


Type RQ is Relieving: exhausts pressure in cylinder if upstream pressure is exhausted.

## Pilot Plugging Arrangements and Service Kits

The Numatics valve bodies used for the ISO 5599/2 Series have a number of tapped pilot passages. Simply by opening or plugging certain passages, a number of different pilot supply options are available. A cross

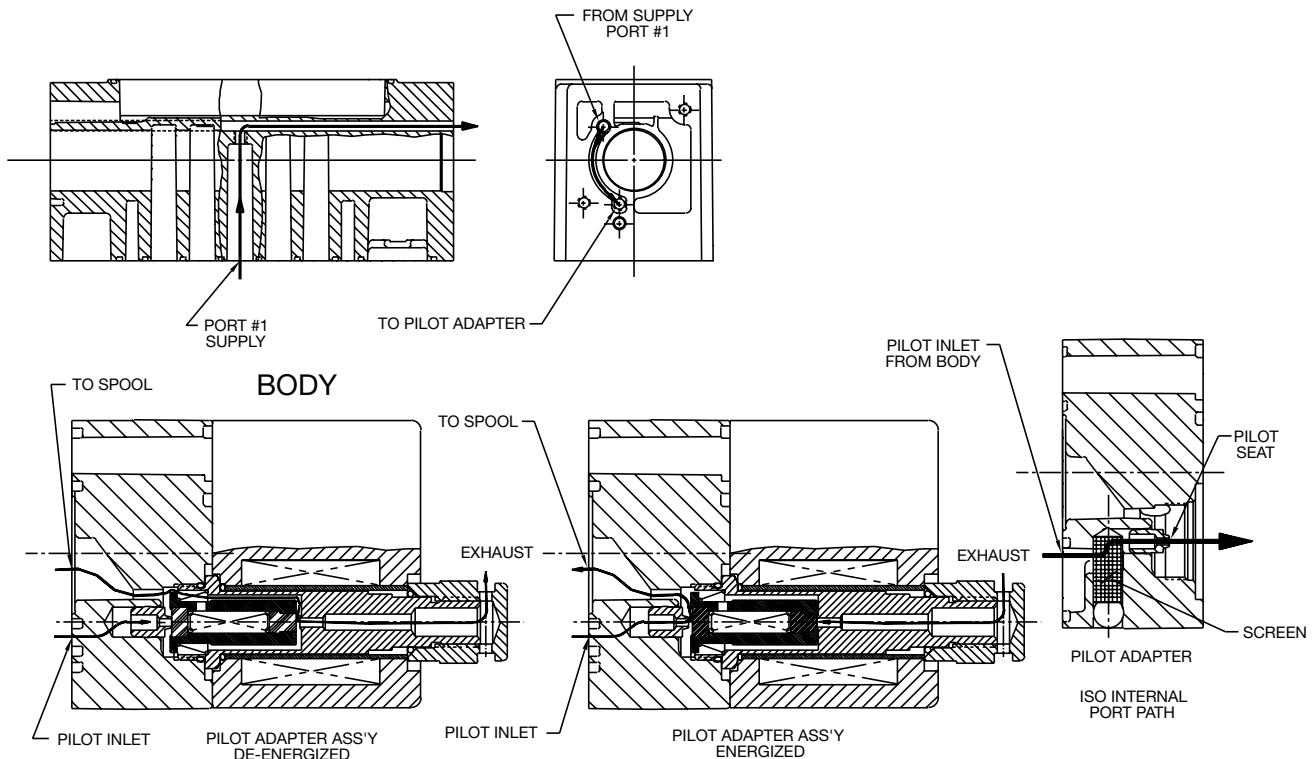
section of the valve bodies and both end views are shown below. These views show the location of all passages. The letters do not appear on the casting. They are used only to identify the ports and the locations.



Pilot Port	Standard Internal Supply From Port 1		External Supply From Port 12		14X External Supply From Port 14		14C Internal Supply From Port 3		14D Internal Supply From Port 5	
	Single Pilot	Double Pilot	Single Pilot	Double Pilot	Single Pilot	Double Pilot	Single Pilot	Double Pilot	Single Pilot	Double Pilot
L	Plug	Open	N/A	Open	Plug	Open	N/A	Open	Open	Open
M	Plug	Plug	N/A	Plug	Plug	Plug	N/A	Open	Plug	Plug
N	Open	Open	N/A	Plug	Plug	Plug	N/A	Plug	Plug	Plug
Q	Open	Open	N/A	Open	Plug	Open	N/A	Open	Plug	Open
R	Plug	Plug	N/A	Plug	Plug	Plug	N/A	Plug	Open	Open
12	Plug	Plug	N/A	Open	Plug	Plug	N/A	Plug	Plug	Plug
14	Plug	Plug	N/A	Plug	Open	Open	N/A	Plug	Plug	Plug

NOTE: Standard for all ISO 5599/2 valve series is internal supply from port #1.

## Flow Paths for Solenoid Air Pilot Actuation



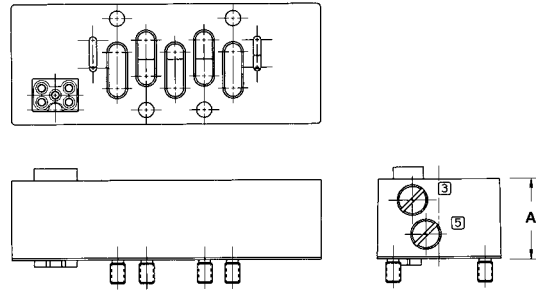
## Speed Controls Kits

The ISO speed control kit mounts between the valve unit and any base, manifold, or RS regulator. The 3 and 5 ports of the unit contain needle valves which can be adjusted to throttle the flow of exhaust air out of the valve

unit. Thus, the speeds of the two strokes of a cylinder piston can be adjusted independently on the same end of the speed control unit.

### Speed Control Kit Numbers

Series	Part Numbers	Dimensions "A"
ISO 1	239-634	0.93" (23.6 mm)
ISO 2	239-645	1.30" (33.0 mm)
ISO 3	239-661	1.63" (41.4 mm)

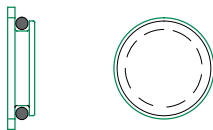


## Transition Plate Kits

	ISO 1 to ISO 2	ISO 2 to ISO 1	ISO 2 to ISO 3	ISO 3 to ISO 2
Hardwired	239-662	239-663	239-664	239-665
With Z-Board	239-1957	N/A	239-1960	N/A

## Gallery Blocking Disc Kits

May be used to block any gallery in a manifold system



### Disc Kit Numbers

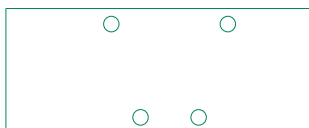
Series	1-5 Gallery	Pilot Supply Gallery
ISO 1	239-251	239-651
ISO 2	239-252	239-652
ISO 3	239-253	239-653

## Regulator Gauges

Pressure Range	Part No.
0-160 PSIG	214-103
0-60 PSIG	214-116
0-100 PSIG	214-117
0-300 PSIG	214-118

NOTE: Core tube not available separately.

## Blank Station Plate Kit



Note: Includes screws and gasket

### Plate Kit Numbers

Series	Part Number
ISO 1	239-641
ISO 2	239-644
ISO 3	239-660

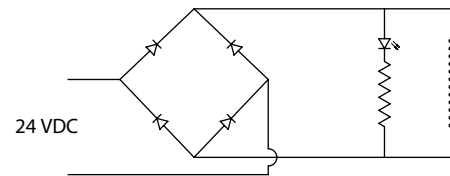
### Direct Solenoid Assemblies

Voltages	Solenoid Capsule Ass'y ISO 1 & 2		Solenoid Only ISO 1 & 2	Solenoid Capsule Assembly ISO 3			Solenoid ISO 3	
	2-Position	3-Posiiton		Single	Double 2-Position	Double 3-Position	Single	Double
100-115/50 110-120/60	237-790	237-793	228-842	237-814	237-817	237-820	228-714	228-717
200-230/50 220-240/60	237-791	237-794	228-843	237-813	237-816	237-819	228-713	228-716
24/50-60	237-789	237-792	228-841	237-815	237-818	237-821	228-715	228-718
12 VDC	236-138	236-142	225-439	N/A	N/A	N/A	N/A	N/A
24 VDC	236-139	236-143	225-440	N/A	N/A	N/A	N/A	N/A

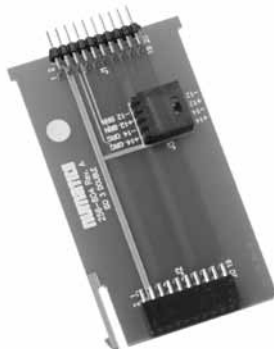
### Solenoid Pilot Assemblies

Voltages	Part No.
110-120/60: 100-115/50 (Black Coil)	237-1045
220-240/60: 200-230/50 (Black Coil)	237-1046
24/50-60 (Black Coil)	237-1044
24 VDC (4.0 Watt) (Blue Coil)	236-384

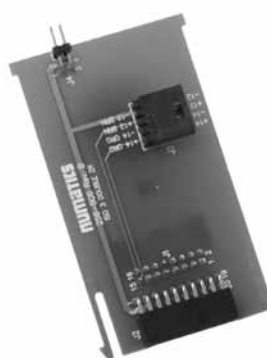
Includes Solenoid, Core Tube & Nut (128-317)  
NOTE: Core tube not available separately.



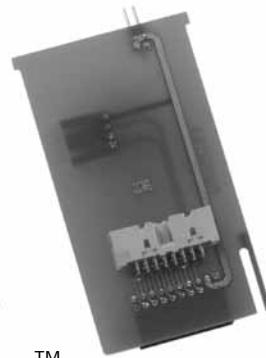
### “Z-Boards”™



“Z-Board”™



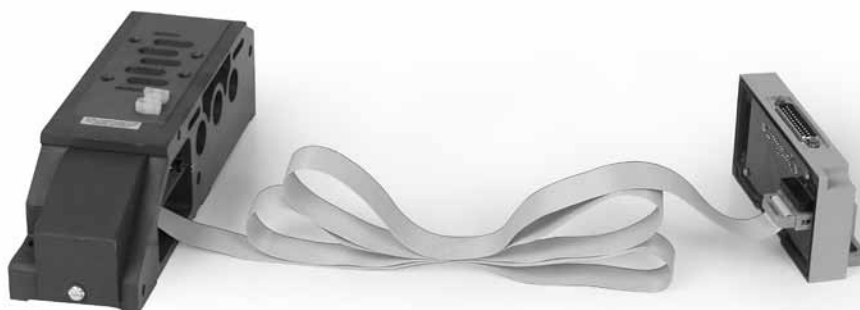
“ZR-Board”™



Size	Single “Z-Board”™	Double “Z-Board”™	Single “ZR-Board”™	Double “ZR-Board”™	Ribbon Cable
Size 1	256-861	256-812	256-862	256-813	230-1065
Size 2	256-791	256-792	256-800	256-801	230-1063
Size 3	256-803	256-804	256-805	256-806	230-1064

### “Z-Board”™ Ribbon Cable

Ribbon cable option used for manifold assemblies that exceed 16 solenoid outputs.

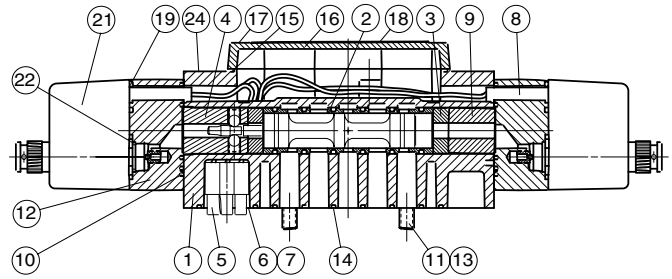
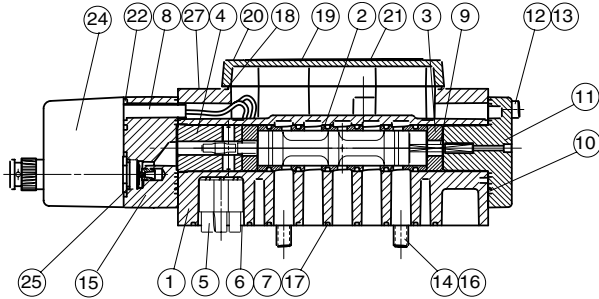




## Valve Service Kits and Parts - Solenoid Pilot

Kit No. ISO 1 I1BP-K1  
ISO 2 I2BP-K1  
ISO 3 I3BP-K1

Kit No. ISO 1 I1BP-K2  
ISO 2 I2BP-K2  
ISO 3 I3BP-K2



### BA4 Parts List

Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-624	101-623	101-626	Valve Body
2	1	209-314	209-571	209-572	Sleeve Ass'y w/ Seals
3*	2	114-146	114-170	114-110	Bumper
4*	1	110-132	110-133	110-134	Detent Body
5	1	230-700	230-700	230-708	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	1	125-309	125-309	125-309	Receptacle Housing
9*	1	115-254	115-248	115-251	Spring
10*	2	113-495	113-495	113-461	Gasket
11	1	204-523	204-598	204-524	Spring Cover Assembly
12	2	127-350	127-350	127-360	Screw
13	2	128-188	128-188	128-188	Lockwasher
14	4	127-620	127-430	127-447	Screw
15	1	219-278	219-278	219-417	Pilot Adaptor Assembly
16	4	128-170	128-171	128-170	Lockwasher
17*	1	113-450	113-455	113-459	Gasket
18*	1	113-449	113-454	113-458	Gasket
19	1	105-334	105-336	105-337	Conduit Cover
20	4	127-683	127-683	127-704	Screw
21	1	122-989	122-989	122-990	Nameplate
22*	1	126-204	126-204	126-204	O-Ring Seal
23	2	127-672	127-672	127-412	Screw with Lockwasher
24	1	See pg. 16			Solenoid Capsule Assembly
25	1	126-133	126-133	126-133	O-Ring Seal
26	4	127-691	127-691	128-187	Screw / Lockwasher
27	1	122-1064	122-1064	N/A	Label
28	4	N/A	N/A	129-213	Plug

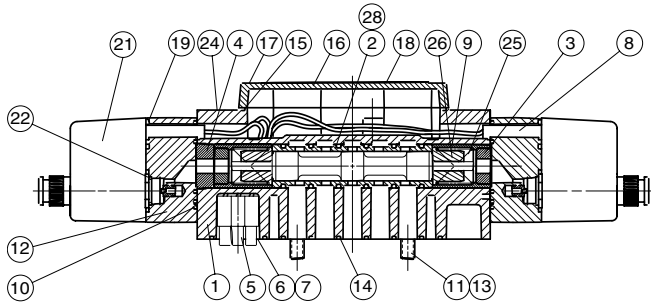
### BB4 Parts List

Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-624	101-623	101-626	Valve Body
2	1	209-314	209-571	209-572	Sleeve Ass'y w/ Seals
3*	2	114-146	114-170	114-110	Bumper
4*	1	210-134	210-135	210-136	Detent Body
5	2	230-699	230-699	230-765	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	1	125-309	125-309	125-309	Receptacle Housing
9*	1	116-285	116-444	116-449	Spacer
10*	2	113-495	113-495	113-461	Gasket
11	4	127-620	127-430	127-447	Screw
12	2	219-278	219-278	219-279	Pilot Adaptor Assembly
13	4	128-170	128-171	128-170	Lockwasher
14*	1	113-450	113-455	113-459	Gasket
15*	1	113-449	113-454	113-458	Gasket
16	1	105-334	105-336	105-337	Conduit Cover
17	4	127-683	127-683	127-704	Screw
18	1	122-989	122-989	122-990	Nameplate
19*	1	126-204	126-204	126-204	O-Ring Seal
20	2	127-672	127-672	127-412	Screw with Lockwasher
21	1	See pg. 16			Solenoid Capsule Assembly
22	1	126-133	126-133	126-133	O-Ring Seal
23	4	127-691	127-691	128-187	Screw / Lockwasher
24	1	122-1064	122-1064	N/A	Label
25	4	N/A	N/A	129-213	Plug

\* Indicates parts included in service kit

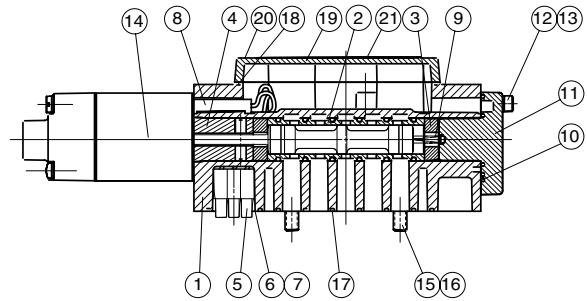
### Valve Service Kits and Parts - Solenoid Pilot continued

Kit No. ISO 1 I1BP-K3  
ISO 2 I2BP-K3  
ISO 3 I3BP-K3



### Valve Service Kits and Parts - Direct Solenoid

Kit No. ISO 1 I1SP-K1  
ISO 2 I2SP-K1  
ISO 3 I3SP-K1



#### BB5 and BB6 Parts List

Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-624	101-623	101-626	Valve Body
2	1	209-347	209-481	209-340	Sleeve Ass'y w/ Seals (BB5)
3*	2	114-100	114-146	114-108	Bumper
4*	1	116-344	116-443	114-448	Spacer
5	2	230-699	230-700	230-765	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	1	125-309	125-309	125-309	Receptacle Housing
9*	1	116-446	116-442	116-343	Spacer
10*	2	113-495	113-495	113-461	Gasket
11	4	127-620	127-430	127-447	Screw
12	2	219-278	219-278	219-280	Pilot Adaptor Assembly
13	4	128-170	128-171	128-170	Lockwasher
14*	1	113-450	113-455	113-459	Gasket
15*	1	113-449	113-454	113-458	Gasket
16	1	105-334	105-336	105-337	Conduit Cover
17	4	127-683	127-683	127-704	Screw
18	1	122-989	122-989	122-990	Nameplate
19*	2	126-204	126-204	126-204	O-Ring Seal
20	4	127-672	127-672	127-412	Screw w/Lockwasher
21	2	See pg. 16			Solenoid Capsule Assembly
22	2	126-133	126-133	126-133	O-Ring Seal
23	4	127-691	127-691	128-187	Screw / Lockwasher
24	1	122-1064	122-1064	N/A	Label
25*	2	115-225	115-337	115-242	Spring
26*	2	116-316	116-441	116-333	Spring Retainer
27	4	N/A	N/A	129-213	Plug
28	1	209-348	209-482	209-341	Sleeve Ass'y w/Seals (BB6)

#### SA4 Parts List

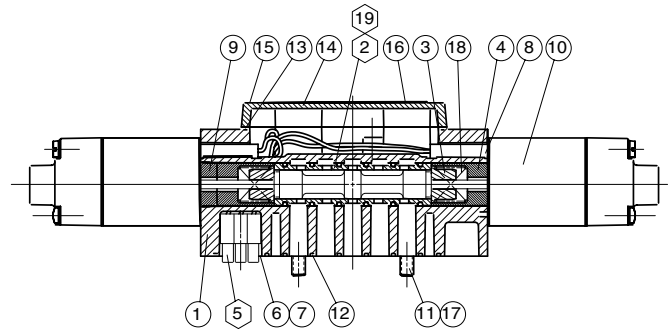
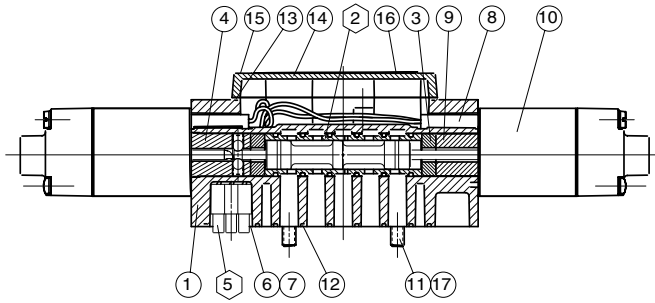
Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-618	101-621	101-625	Valve Body
2	1	209-467	209-476	209-478	Sleeve Ass'y w/ Seals
3*	2	114-146	114-170	114-110	Bumper
4*	1	110-132	110-133	110-132	Detent Body
5	2	230-700	230-700	230-708	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	1	125-309	125-309	125-309	Receptacle Housing
9*	1	115-214	115-214	115-165	Spring
10*	2	113-495	113-495	113-461	Gasket
11	4	104-512	104-535	104-534	Spring Cover
12	2	127-350	127-350	127-360	Screw
13	4	128-188	128-188	128-188	Lockwasher
14	1	127-620	127-430	127-447	Screw
15	1	See p.16			Sol. Capsule Assembly
16	1	128-170	128-171	128-170	Lockwasher
17*	4	113-450	113-455	113-459	Gasket
18*	1	113-449	113-454	113-458	Gasket
19	1	105-334	105-336	105-337	Conduit Cover
20	2	127-683	127-683	127-704	Screw
21	1	122-989	122-989	122-990	Nameplate

\* Indicates parts included in service kit

## Valve Service Kits and Parts - Direct Solenoid continued

Kit No. ISO 1 I1SP-K2  
 ISO 2 I2SP-K2  
 ISO 3 I3SP-K2

Kit No. ISO 1 I1SP-K3  
 ISO 2 I2SP-K3  
 ISO 3 I3SP-K3



### SS4 Parts List

Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-618	101-621	101-625	Valve Body
2	1	209-470	209-477	209-479	Sleeve Ass'y w/ Seals
3*	2	114-146	114-170	114-110	Bumper
4*	1	110-134	210-135	210-136	Detent Assembly
5	1	230-679	230-699	230-699	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	2	125-309	125-309	125-309	Receptacle Housing
9*	1	116-285	116-444	116-317	Spacer
10	2	See pg. 16			Sol. Capsule Assembly
11	4	128-170	128-171	128-187	Lockwasher
12*	1	113-450	113-455	113-459	Gasket
13*	1	113-449	113-454	113-458	Gasket
14	1	105-334	105-336	105-337	Conduit Cover
15	4	127-683	127-683	127-704	Screw
16	1	122-989	122-989	122-990	Nameplate
17	4	127-620	127-430	127-447	Screw

### SS5 and SS6 Parts List

Det No.	No. Req'd	ISO 1	ISO 2	ISO 3	Part Name
1	1	101-618	101-621	101-625	Valve Body
2	1	209-471	209-483	209-489	Sleeve Ass'y w/ Seals (SS5)
3*	2	116-287	116-391	116-401	Spring Retainer
4*	2	116-345	116-443	116-342	Spacer
5	1	230-679	230-699	230-699	Plug Assembly
6	1	127-342	127-342	127-342	Screw
7	1	127-180	127-180	127-180	Screw
8	1	125-309	125-309	125-309	Receptacle Housing
9*	1	116-446	116-445	116-448	Spacer
10*	2	See pg. 16			Sol. Capsule Assembly
11	4	128-170	128-171	128-187	Lockwasher
12	1	113-450	113-455	113-459	Gasket
13	1	113-449	113-454	113-458	Gasket
14	1	105-334	105-336	105-337	Conduit Cover
15	4	127-683	127-683	127-704	Screw
16	1	122-989	122-989	122-990	Nameplate
17*	4	127-620	127-430	127-447	Screw
18*	2	115-204	115-290	115-249	Spring
19	1	209-472	209-484	209-487	Sleeve Ass'y w/Seals (SS6)

\* Indicates parts included in service kit

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