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valves

2005 & 2012 Series

Solenoid Pilot Actuated Valves



NUMATICS®



www.numatics.com

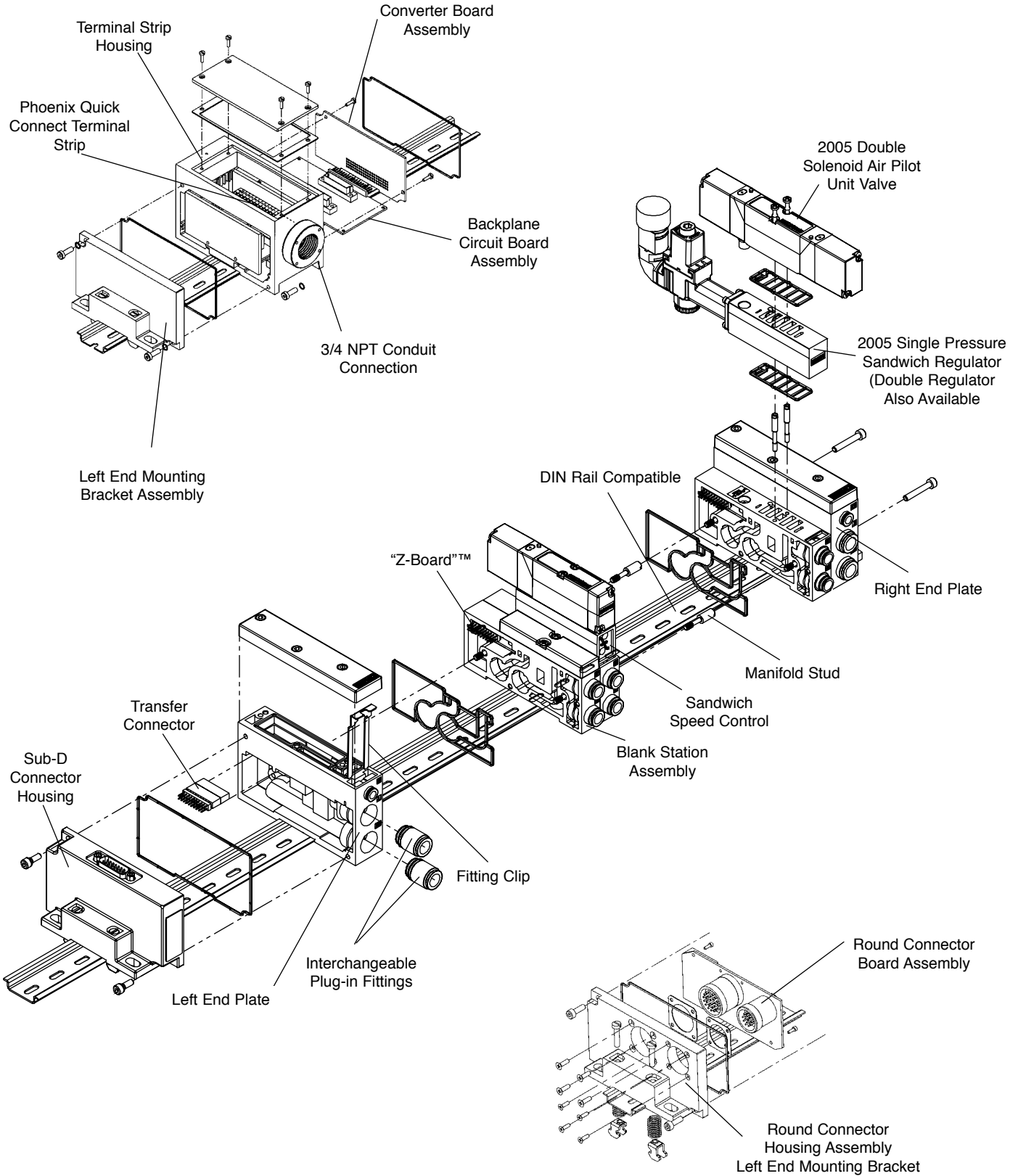
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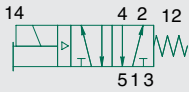
Terminal Strip, Sub-D, and 26 & 12 Round Pin Options (exploded view)



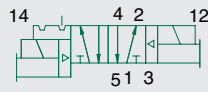


2005 Series

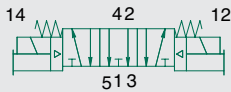
single solenoid air pilot
2 position 4-way



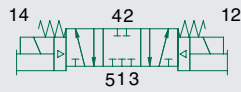
double solenoid air pilot
2 position 4-way



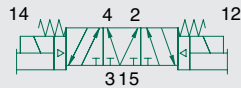
double solenoid air pilot
3 position 4-way
open center



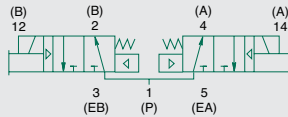
double solenoid air pilot
3 position 4-way
closed center



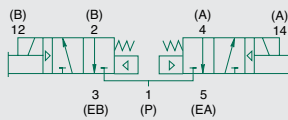
double solenoid air pilot
3 position 4-way
pressure center



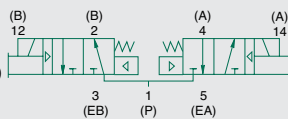
double solenoid
2 position dual 3-way
"14(A)" & "12(B)" NO



double solenoid
2 position dual 3-way
"14(A)" & "12(B)" NC



double solenoid
2 position dual 3-way
"14(A)" NC, "12(B)" NO



5 Ported, 2 and 3 position, 4-way, Spool & Sleeve
Cv: 0.56

Dual 3-Way Pack Spool Cv:0.56

- Solenoid air pilot actuated
- Low wattage plug-in - 1.0 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Interchangeable Push-in fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot supply
- Modular plug-together Fieldbus electronics
- NEMA 4/IP65



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	0.56	0.56
Flow Capacity	26 SCFM @ 80 PSIG upstream pressure to atmosphere	552 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	28" Hg. Vacuum to 150 PSIG	Vacuum to 10 bar
Operating Pressure Range – 3 Way	22" Hg. Vacuum to 100 PSIG	Vacuum to 7 bar
Pilot Pressure Range	26 to 120 PSIG	1.8 to 8.2 bar
Pilot Pressure Range – 3 Way	26 to 100 PSIG	1.8 to 7 bar
Pilot Pressure Vacuum	50 to 100 PSIG	3.5 to 7 bar
Temperature Range (Ambient)	-10°F to +115°F	-23°C to +46°C

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED	24 VDC	110-120 VAC / 50/60 Hz.		
Power (Watts)	1.35	4.2		
Holding Current (Amps)	0.04	0.04		
RESPONSE TIME IN SECONDS	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2 - Position, Single, Spring Return	0.014	0.016	0.014	0.016
2 - Position, Double, Detented	0.013	N/A	0.013	N/A
3 - Position, Spring Centered	0.014	0.016	0.014	0.016
Dual 3 Way	0.014	0.016	0.014	0.016



How to Order

Valves

051 BB 4 Z6 M N 000 61

Valve Series & Port Size
 051* = 1/8 (Threaded only)
 052 = 1/4 (Push-in only)
 05F = 6mm
 05H = 8mm
 *Use for valve unit only (Mounting = 00)

Valve Type
 BA = Single Solenoid Pilot, (Spring Return) w/flush Non-Locking Override
 BB = Double Solenoid Pilot w/Flush non-locking Override
 00 = Blank Station

Function
 4 = 2 Position, 4-way
 5 = 3 Position, 4-way Open Center
 6 = 3 Position, 4-way Closed Center
 7 = 3 Position, 4 way Pressure Center
 A = Dual 3-way, A Normally Open - B Normally Open
 B = Dual 3-way, Vacuum Service, A Normally Open - B Normally Open
 D = Dual 3-way, A Normally Closed - B Normally Closed
 E = Dual 3-way, Vacuum Service, A Normally Closed - B Normally Closed
 0 = Manifold Block, w/o Valve
 P = Indicates Blank Station

Mounting
 00 = Valve Unit only
 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
 3A = Individual Base, Side Ports, Individual Exhaust
 3C = 3A w/ Speed Control

Voltage
 20 = 24/50-60 VAC
 30 = 110-120/50-60 VAC
 60 = 12 VDC
 61 = 24 VDC

Options
 11B = Flush Locking Override
 11M = No Override

Port Type
 L = Push-In Fitting
 N = NPTF (1/8 only)
 G = G Tap (1/8 only)
 0 = Valve Unit only

Wiring Option
 K = Plug-In AC w/Light
 M = Plug-In DC w/Light
 0 = Blank Station Plate

NOTE:

Manifold assembly kit ordering information for:

- Electrical interface options *see page 42.*
- Fieldbus electronics see Electronics section.

Regulators

051 RS 1 Z1 J L 000 00

Valve Series & Port Size
 051* = 1/8
 052 = 1/4 (Push-in only)
 05F = 6mm
 05H = 8mm
 *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)
 RE = Dual Pressure to Ports 4 (A) & 2 (B)
 RT = 2 Pressure Selector
 *For metric gauge replace R with E in 4th Digit.

Pressure Range
 1 = 10-130 PSIG (0.7-9 bar)
 3 = 3-30 PSIG (0.2-2 bar)
 4 = 5-60 PSIG (0.5-4 bar)

Mounting
 00 = Regulator Unit Only
 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 = Manifold Block w/Side and Bottom Ports, Transfer Board, Used w/RE Regulators RE only (no Z-board)
 Z1 = Manifold Block w/Side & Bottom Ports, Single Solenoid Internal Circuit Board
 Z2 = Manifold Block W/Side & Bottom Ports, Double Solenoid Internal Circuit Board
 Z5 = Z1 W/Speed Control
 Z6 = Z2 W/Speed Control
 3A = Individual Base, Side Ports, Individual Exhaust
 3C = 3A w/ Speed Control

Options
 12H = Less Gauge
 16N = Jumper on 14 (A) End
 16P = Jumper on 12 (B) End
 16W = Top Facing Gauge
 61Y = Extended Gauge
 63D = 16W + 61Y Extended Top Facing Gauge

Port Type
 L = Push-In
 N = NPTF (1/8 only)
 G = G Tap (1/8 only)

Wiring Option
 J = Plug-In Receptacle Ass'y

See Note Below

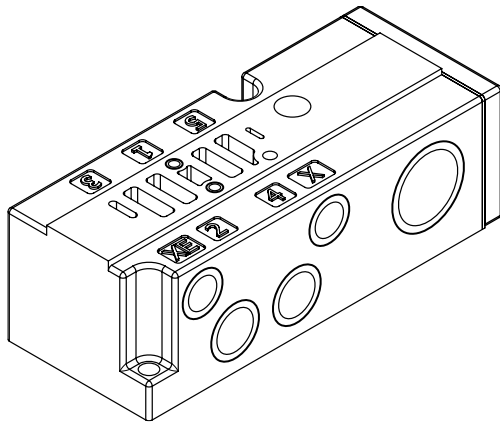


NOTE: Regulator gauges must be offset on alternating stations to prevent interference (see photo)

- * Odd numbered stations will use either standard (no option) or top facing ("16W" option) gauges.
- * Even numbered stations will use either extended standard ("61Y" option) or extended top facing ("63D" option) gauges.

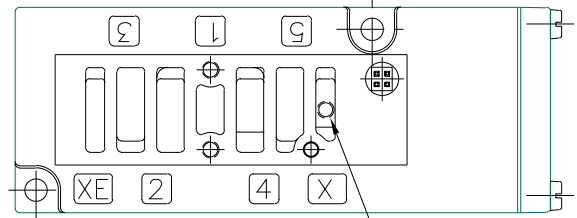


Individual Base Assembly Kit



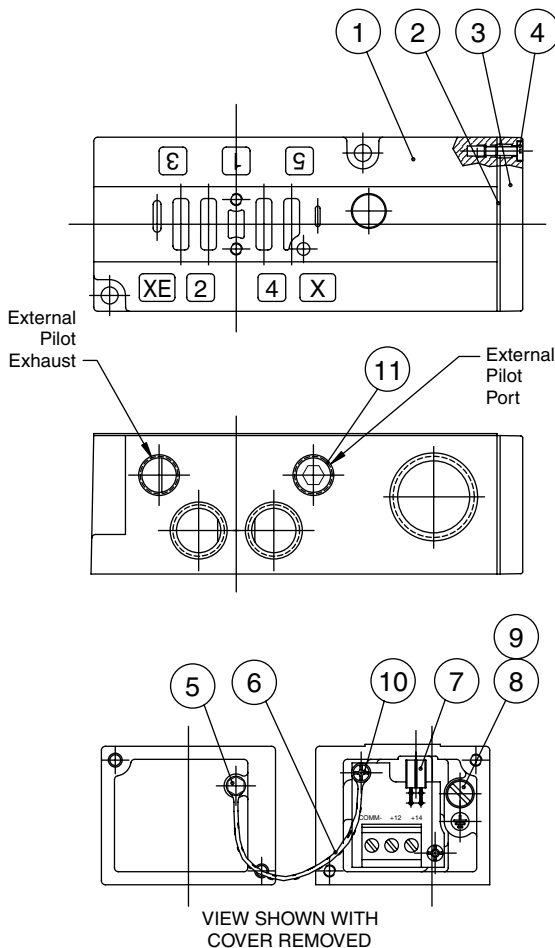
PORT SIZE	PART NO.
1/4-NPTF	203-1266
1/4 G	203-1271

Internal/External Pilot Selection



M4 Pilot Port Location
(plug# 127-691 order separately)

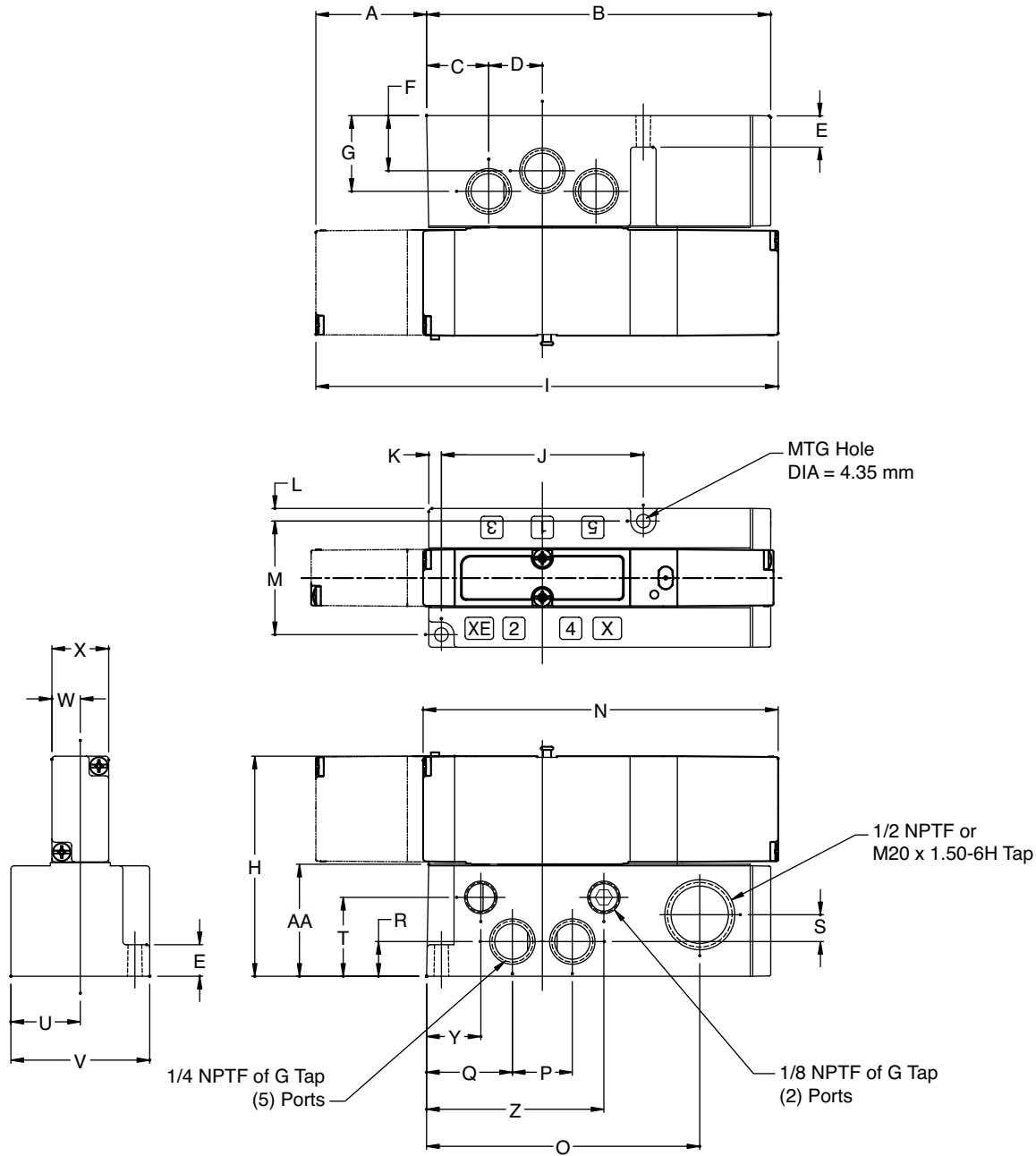
Note: Base assemblies are supplied set up for internal pilot supply. To convert to external pilot supply install plug P.N. 127-691 (sold separately) in the "X" gallery as indicated above. Remove the 1/8 NPTF pipe plug from the "X" port to supply pilot pressure.



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Base	
2	1	Gasket	113-632
3	1	Cover	105-462
4	2	Screw	127-852
5	1	Screw	127-172
6	1	Strap	125-772
7	1	Terminal Strip Ass'y	256-896
8	1	Screw	127-176
9	1	Washer	128-162
10	2	Screw	127-318
11	1	1/8 NPTF Pipe Plug	129-100



Valve on Individual Base



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1.38 (35.1)	4.01 (101.9)	0.77 (19.7)	0.67 (17.0)	0.39 (10.0)	0.68 (17.5)	0.94 (24.0)	2.75 (69.75)	5.77 (146.56)	2.52 (64.0)	0.16 (4.0)	2.52 (4.0)	1.42 (36.0)	4.43 (112.56)	3.41 (86.6)	0.75 (19.0)
Q	R	S	T	U	V	W	X	Y	Z	AA					
1.07 (27.2)	0.43 (11.0)	0.33 (8.5)	0.98 (25.0)	0.87 (22.0)	1.73 (44.0)	0.35 (9.0)	0.71 (18.0)	0.68 (17.2)	2.21 (56.2)	1.42 (36.0)					



Sandwich Pressure Regulators Types: RS / RD / RE / RT

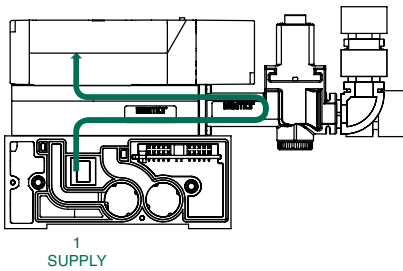
When ordering a valve with a regulator mounted on a manifold, list the valve unit model number only and include the mounting requirements with the regulator.

Specify "Assembled."

EXAMPLE ORDERS:	TYPE RS	TYPE RD
Valve unit only:	051BA400K000030	051BB400M000061
Regulator +mounting	052RS1Z1JL00000	052RD1Z2JL00000
	ASSEMBLED	ASSEMBLED

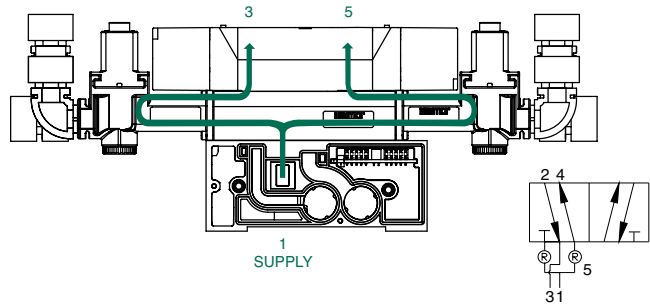


Type RS



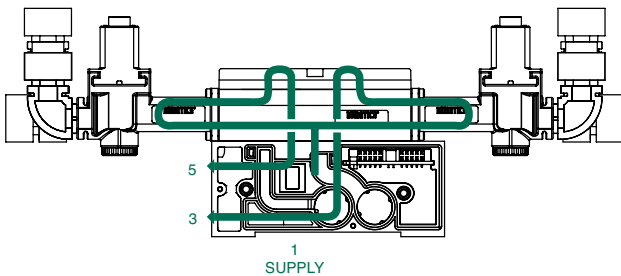
Single pressure from a single supply.

Type RD



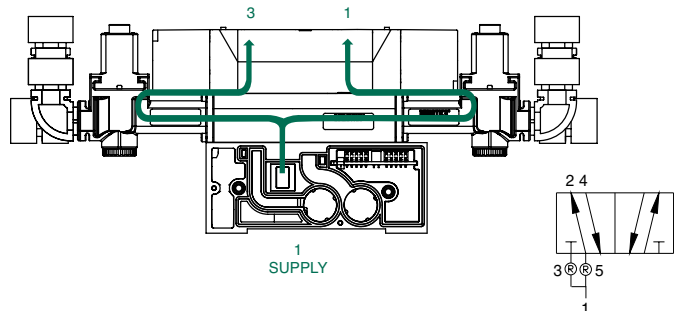
Dual pressure from a single supply.

Type RE



External outlet regulator used with jumper plate for single or dual pressure.

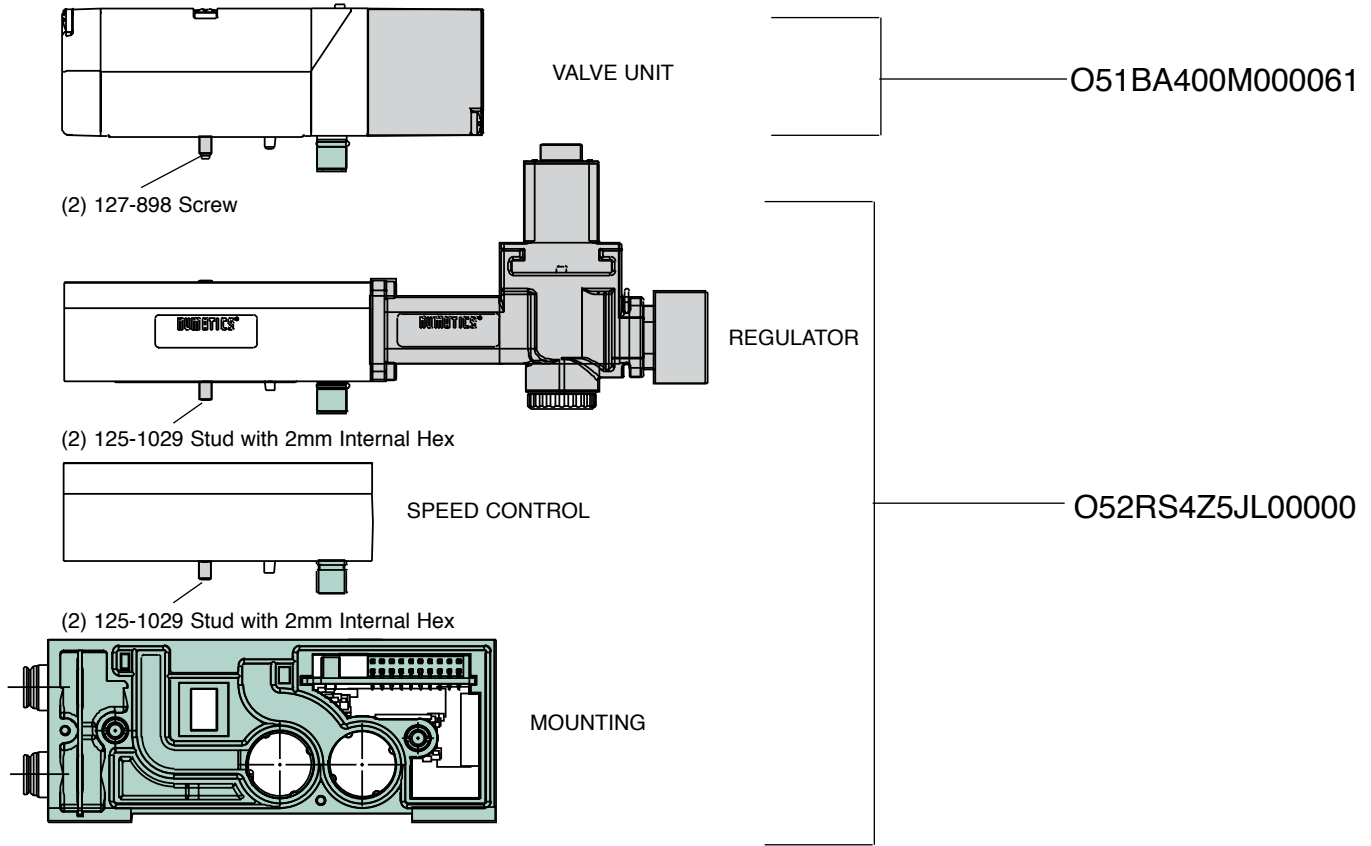
Type RT



Two-pressure selector used for multi-pressure applications.

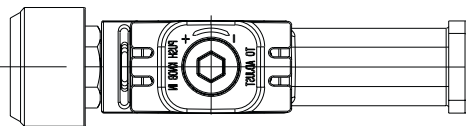


Valve Regulator / Speed Control Plug-in Assembly



Regulator Kits & Service Parts

Regulator Service Kit 239-1839



Regulator Unit Kits

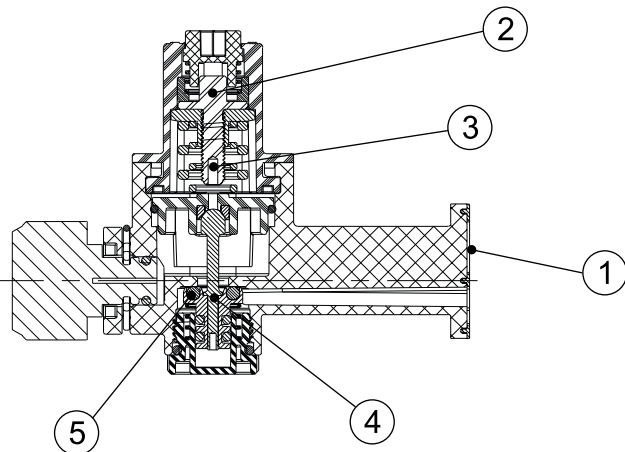
(includes regulator assembly, gaskets, screws)

PSIG	PART NO.
3-30 PSIG	239-1824
5-60 PSIG	239-1825
10-130 PSIG	239-1826

Bonnet Springs

PSIG	PART NO.
3-30 PSIG	115-421
5-60 PSIG	115-422
10-130 PSIG*	115-419
	115-420

* Both springs required

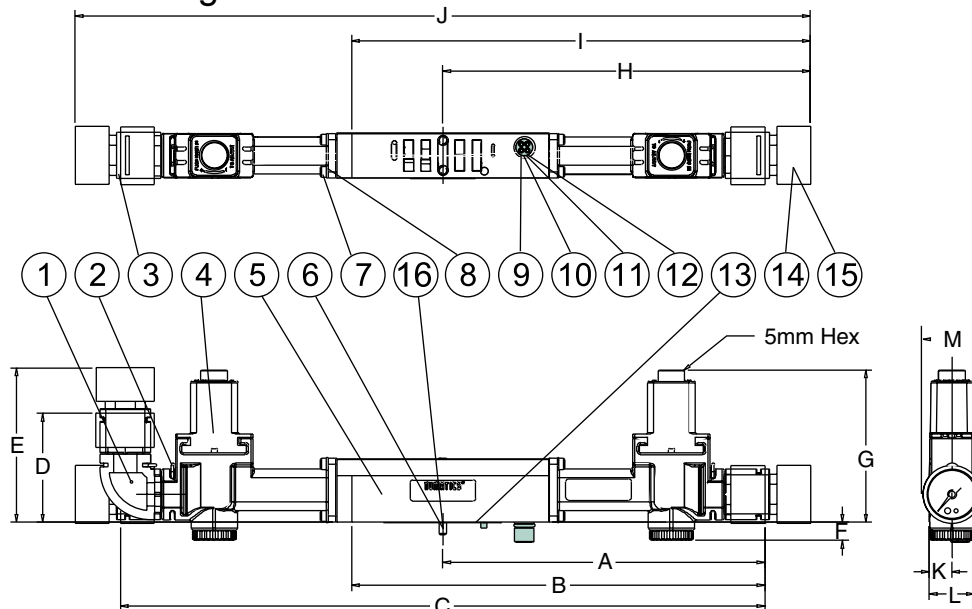


DET. NO.	NO. REQ'D	PART NAME
1	1	Gasket
2	1	Valve Cap Assembly
3	1	Valve Stem Assembly
4	1	Piston Assembly
5	1	O-Ring



2005 Series

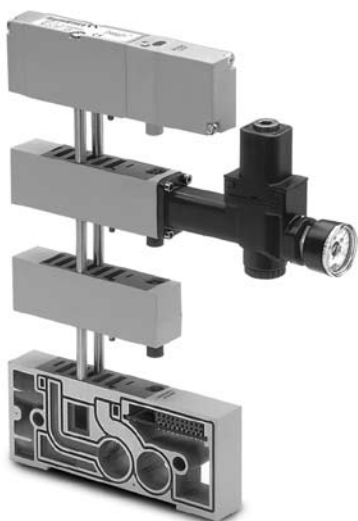
Sandwich Pressure Regulator



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M
5.24 (133.0)	6.71 (170.5)	10.47 (266.0)	1.78 (45.2)	2.53 (64.3)	0.28 (7.1)	2.72 (69.1)	5.99 (152.0)	7.46 (189.5)	11.97 (304.1)	0.36 (9.3)	0.73 (18.5)	0.94 (23.9)



Gauge Kit

160 PSI	11 bar max.	60 PSI	4 bar max.
214-214	214-215	214-219	214-220

Elbow Kit

239-1217

Gauge Extension Kit

239-1790

Parts List

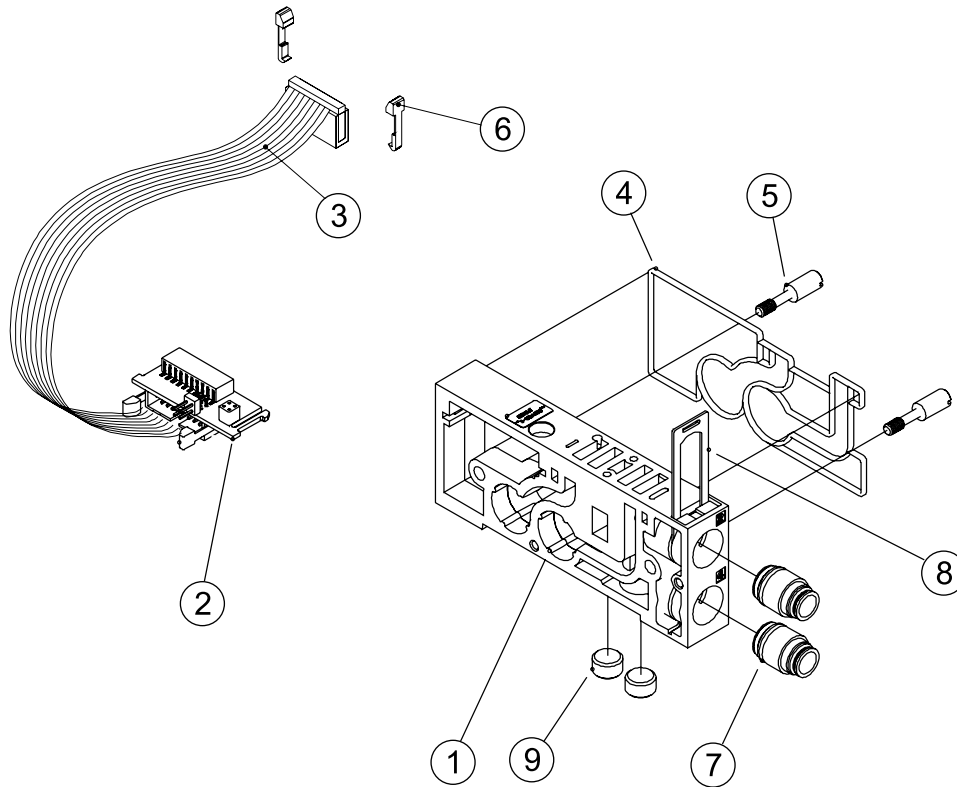
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1*	Elbow	134-505
2	1*	Pin	131-236
3	1*	Extender	134-536
4	1*	Regulator	See p. 5
5	1	Single Riser Block	125-974
5	1	Double Riser Block	125-975
6	2	Stud with 2mm Internal Hex	125-991
7	4**	Lockwasher	128-352
8	4**	Screw	127-957
9	1	Plug Assembly	230-1006
10	1	O-Ring	126-144
11	1	O-Ring	126-419
12	1	Screw	127-318
13	1	Gasket	113-574
14	1*	Gauge 160 PSI max.	214-212
14	1*	Gauge 11 bar max.	214-213
14	1*	Gauge 60 PSI max.	214-217
14	1*	Gauge 4 bar max.	214-218
15	1*	O-Ring	126-105
16	2	O-Ring	126-187

* (2) Required for RD

** (8) Required for RD



Manifold Assemblies



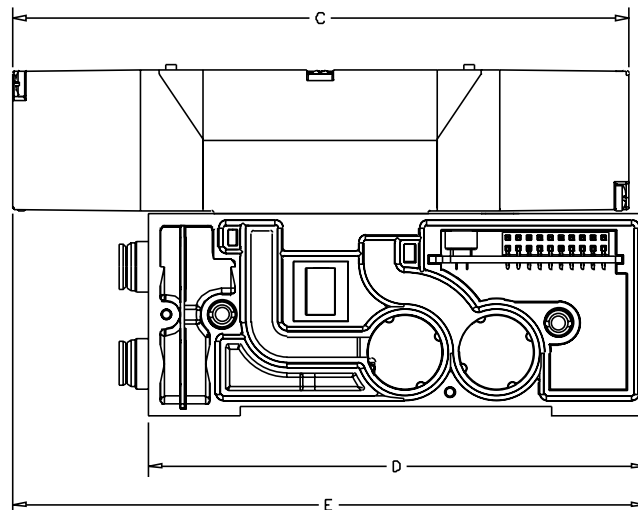
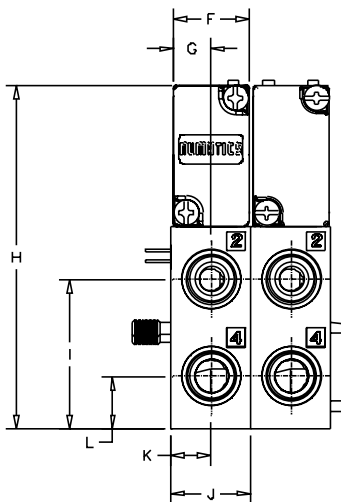
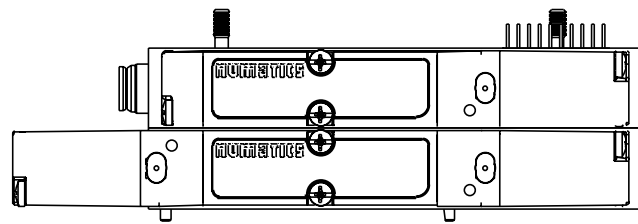
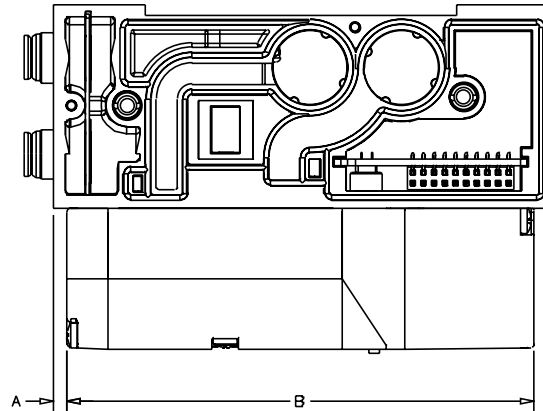
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Manifold Block (not sold separately)	
2	1	"Z-Board"™	<i>not sold separately</i>
3	1	Ribbon Cable Ass'y	230-1053
4	1	Gasket Manifold	113-571
5	2	Stud	125-1011
6	1	Snap In Latch	140-721
7	2	Push-in Fittings	<i>See p. 15</i>
8	1	Retaining Clip	125-1013
9	2	Pipe Plug 1/8 NPTF	129-100
9	2	Pipe Plug G 1/8	129-160

MANIFOLD ASSEMBLY KITS

	1/8 NPTF	G 1/8	1/4 Push-in	6mm Push-in	5/16 (8mm) Push-in
Side Cylinder Ports					
Bottom Cylinder Ports					
Single, "Z-Board"™	206-1373	206-1371	206-1365	206-1387	206-1363
Double "Z-Board"™	206-1374	206-1372	206-1366	206-1388	206-1364
Single, "Z-Board"™ w/ Ribbon Cable	206-1377	206-1375	206-1381	206-1389	206-1379
Double "Z-Board"™ w/ Ribbon Cable	206-1378	206-1376	206-1382	206-1390	206-1380



Valve on Manifold Block



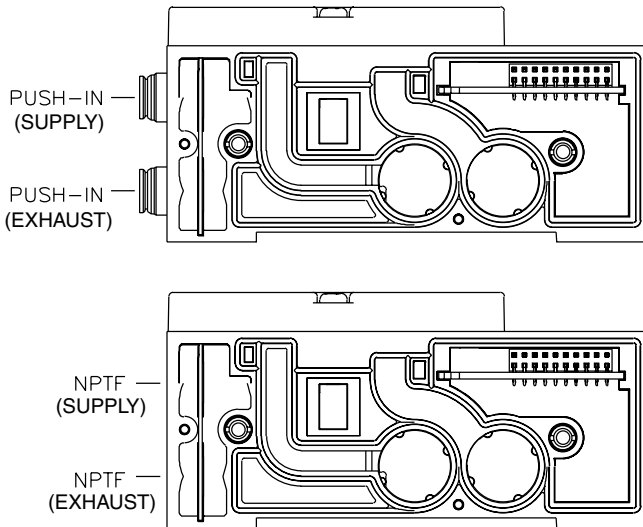
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L
0.13	4.37	5.77	4.65	5.92	0.74	0.37	3.24	1.40	0.75	0.38	0.49
(3.2)	(111.1)	(146.6)	(118.2)	(150.5)	(18.0)	(9.0)	(81.8)	(35.5)	(19.0)	(9.5)	(12.5)



Mid-Station Supply and Exhaust Block



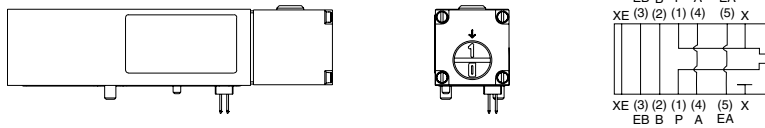
- Add additional supply and exhaust capacity to large manifold assemblies
- Add different pressure to manifold section with use of blocking disks
- Same size as standard manifold block with blank station plate

Mid-Station Supply & Exhaust Block Kit

PORT TYPE	PART NO.
1/4 Push-in	239-1787
8mm Push-in	239-1788
NPTF 1/8	239-1786
G 1/8	239-1789

Sandwich Shut Off Block

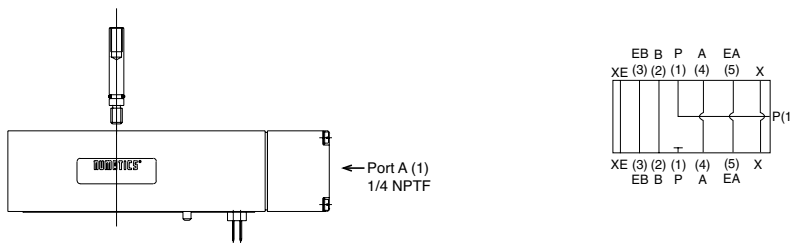
239-1596



- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold.

Sandwich Pressure Block

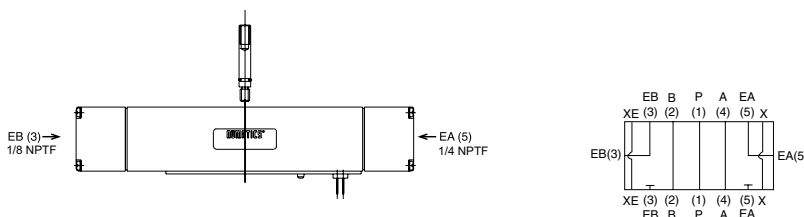
239-2188



- Used to supply a separate pressure to a single valve station without needing blocking disks.

Sandwich Exhaust Block

239-2189

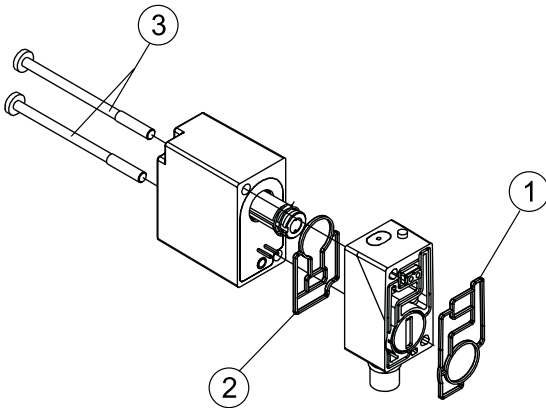


- Used to isolate the exhaust of a single valve station from the manifold.
- Allows faster exhaust response by re-routing.
- Exhaust externally to the manifold.

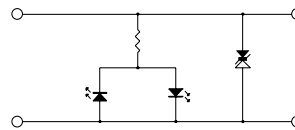


2005 Series

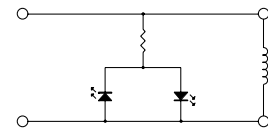
Solenoid Pilot Assembly



DESCRIPTION	12 VDC	24 VDC	24 VAC	120 VAC
14 end, push non-locking override	236-495	236-496	237-1115	237-1112
12 end, push non-locking override	236-501	236-502	237-1121	237-1118
14 end, turn & lock override	236-494	236-497	237-1114	237-1111
12 end, turn & lock override	236-500	236-503	237-1120	237-1117
14 end, no override	236-493	236-498	237-1113	237-1110
12 end, no override	236-499	236-504	237-1119	237-1116



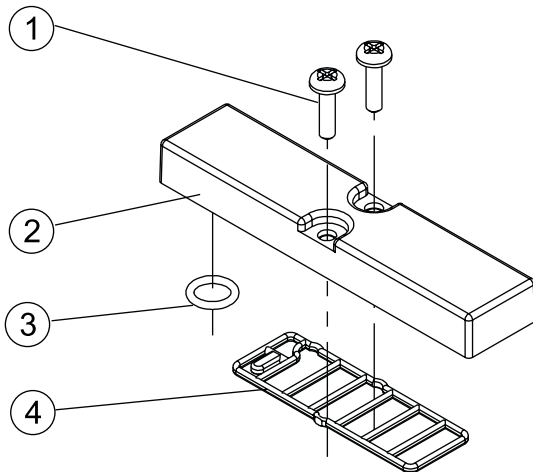
DC Solenoid
Circuit Diagram



AC Solenoid
Circuit Diagram

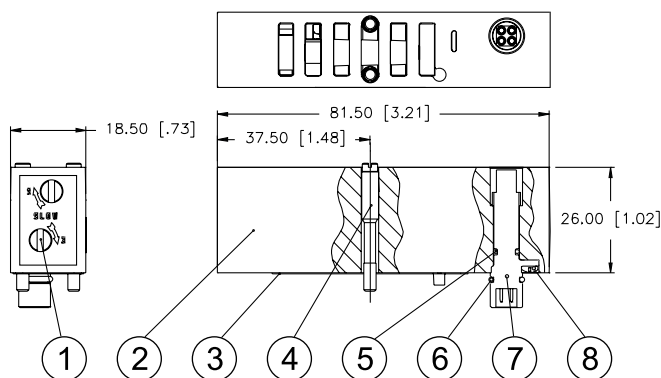
DET. NO.	NO. REQ'D.	PART NAME	PART NO.
1	1	Gasket	113-573
2	1	Gasket	113-572
3	2	Screw	127-658

Blank Station Plate Kit 239-1712



DET. NO.	NO. REQ'D.	PART NAME	PART NO.
1	2	Screw	127-916
2	1	Gasket	113-574
3	1	O-Ring	126-191
4	1	Blank Station Plate	104-769

Speed Control Kit 239-1597



DET. NO.	NO. REQ'D.	PART NAME	PART NO.
1	2	Metering Screw	118-185
Not Shown	2	Nylon Rod	125-613
2	1	Speed Control Body	125-973
3	1	Gasket	113-574
4	2	Stud	125-1029
5	1	O-Ring	126-419
6	1	O-Ring	126-144
7	1	Plug Assembly	230-1006
8	1	Screw	127-318



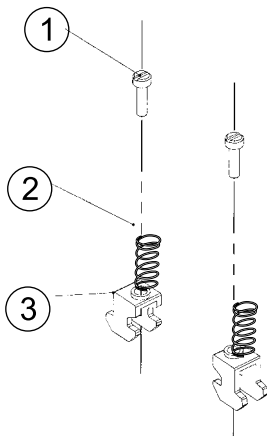
Interchangeable Push-in Cartridge Fittings



PORTS	SIZE	TYPE	PART NO.
1, 3, 5	10mm	Push-in	134-509
1, 3, 5	3/8"	Push-in	134-508
X, XE	1/4"	Push-in	134-518
X, XE	6mm	Push-in	134-499
2, 4	6mm	Push-in	134-534
2, 4	1/4"	Push-in	134-502
2, 4	5/16 (8mm)	Push-in	134-501
1, 3, 5	N/A	Plug Assy.	239-1190
X, XE	N/A	Plug Assy.	239-1086
2, 4	N/A	Plug Assy.	239-1085

DIN Rail Clamp Kit

239-980



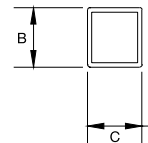
DET. NO.	NO. REQ'D.	PART NAME	PART NO.
1	4	Screw	127-472
2	4	Spring	115-355
3	4	Clamp	125-720

Blocking Discs

Port 3/5



Port 1

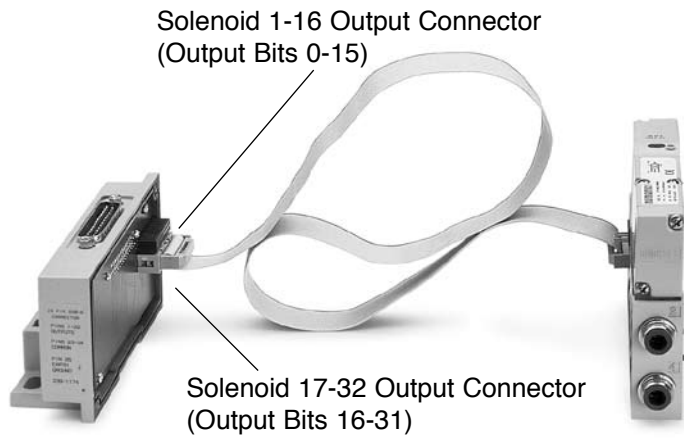


PORT	PART NO.	A	B	C
1	124-341	N/A	0.54 (13.7)	0.50 (12.6)
3/5	239-907	0.70 (17.8)	N/A	N/A



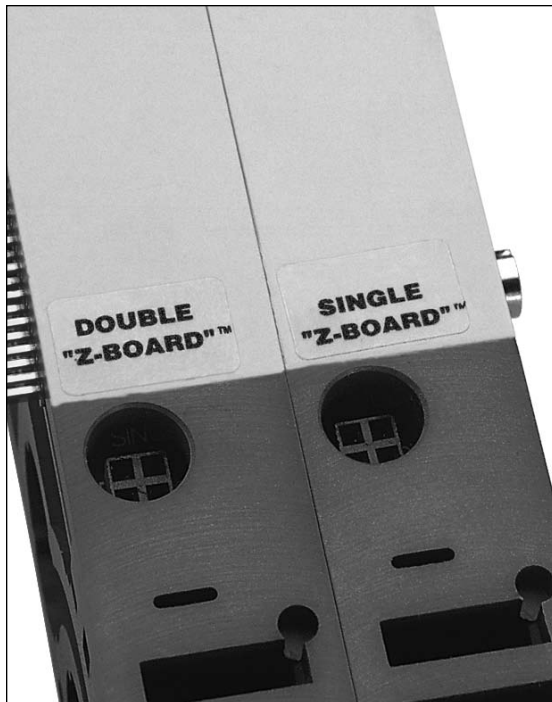
Ribbon Cable Assembly Kit

239-1840



NO. REQ'D.	PART NAME	PART NO.
1	Ribbon Cable Assembly	230-1053
2	Snap In Latch	140-721

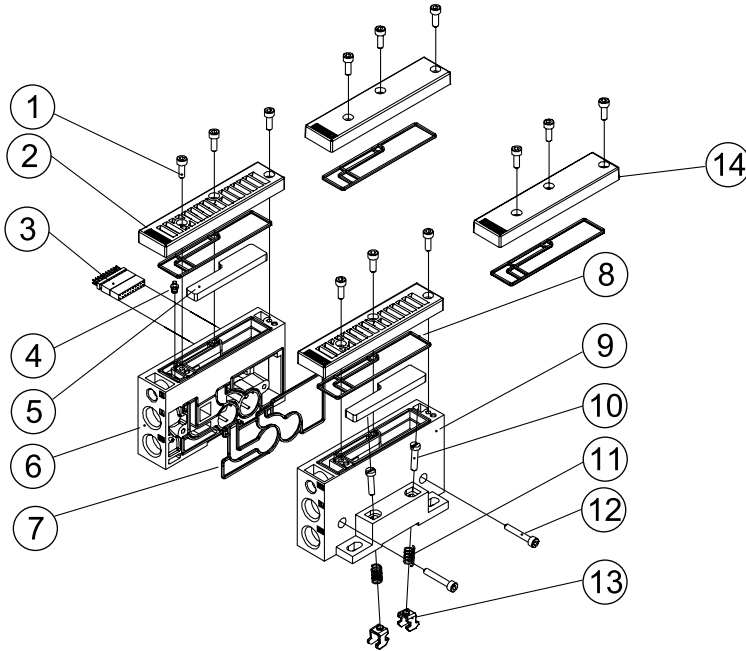
Ribbon cable option used for manifold assemblies that exceed 16 solenoids.



Label on manifold block indicates installed—"Z-Board"™ type.

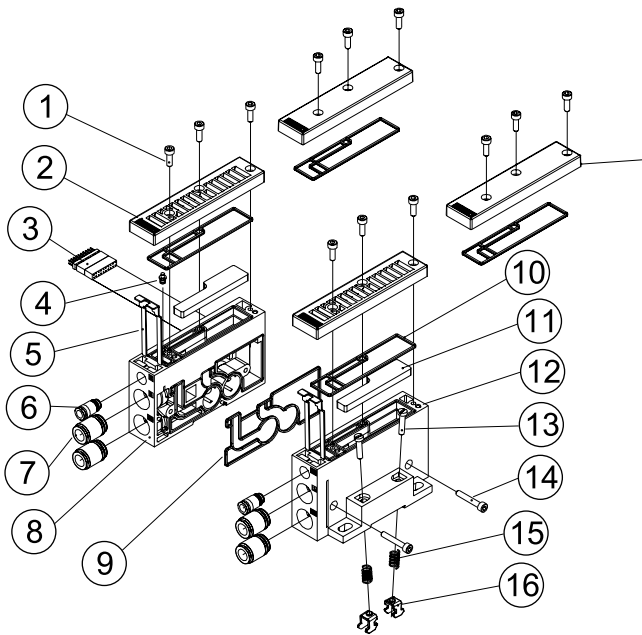


End Plate Kit - Threaded



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	6	Cover Screw	127-368
2	2	Vented Cover	105-435
3	1	Transfer Conn.	140-910
4	1	Pilot Plug Ass'y	213-497
5	2	Muffler	125-1012
6	1	LH Endplate	104-759
7	1	Gasket	113-571
8	2	Cover Gasket	113-570
9	1	RH Endplate	104-761
10	2	Screw (DIN Rail Only)	127-472
11	2	Spring (DIN Rail Only)	115-355
12	2	Screw	127-400
13	2	Clamp (DIN Rail Only)	125-720
14	2	Cover	105-436

End Plate Kit - Push-in

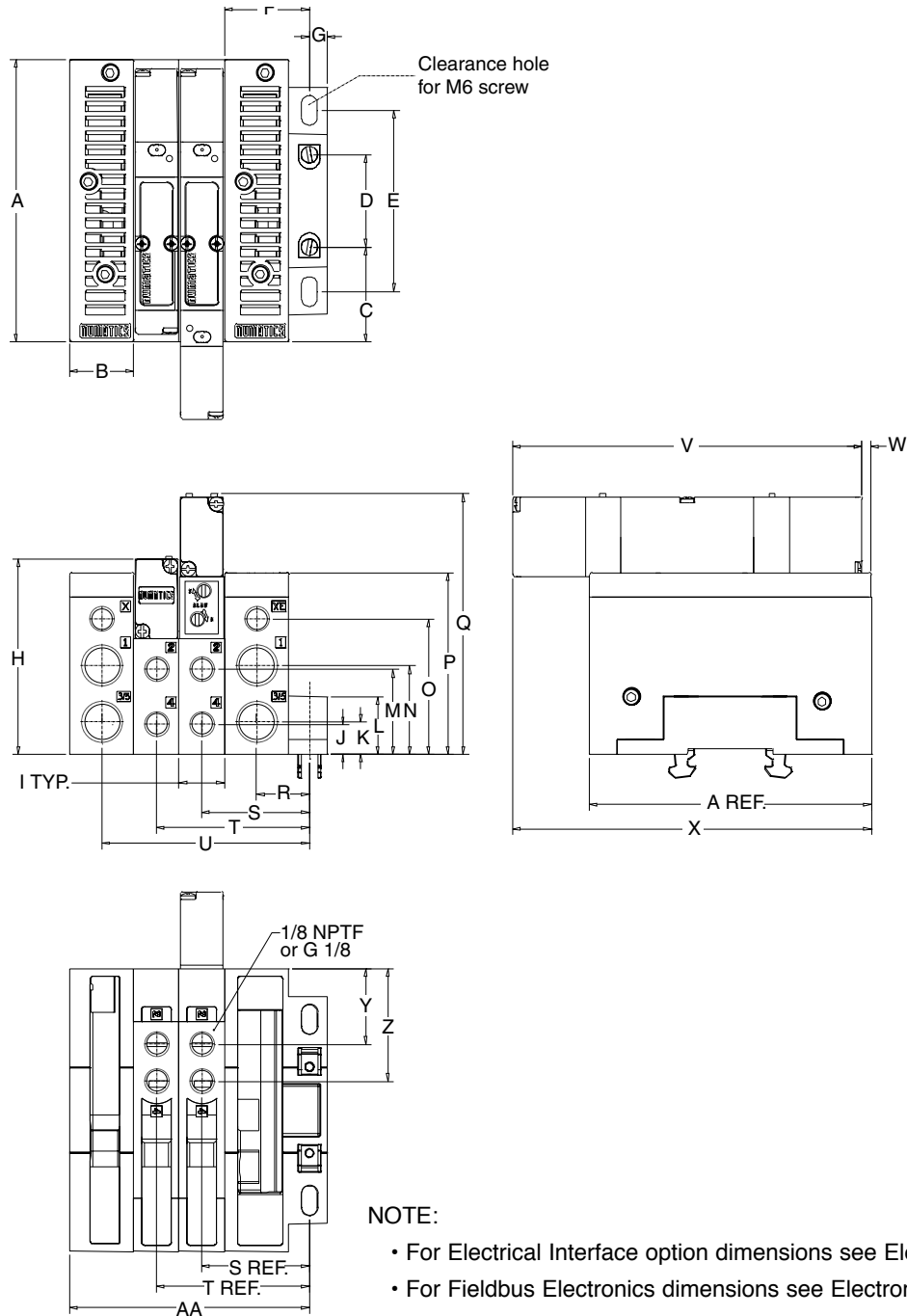


DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	6	Cover Screw	127-368
2	2	Vented Cover	105-435
3	1	Transfer Conn.	140-910
4	1	Pilot Plug Ass'y	213-497
5	2	Retaining Clip	125-1014
6	2	Pilot Push-in Fitting	See p. 15
7	4	Supply/Exhaust Push-in Fitting	See p. 15
8	1	LH Endplate	104-760
9	1	Gasket	113-571
10	2	Cover Gasket	113-570
11	2	Muffler	125-1012
12	1	RH Endplate	104-762
13	2	Screw (DIN Rail Only)	127-472
14	2	Screw	127-400
15	2	Spring (DIN Rail Only)	115-355
16	2	Clamp (DIN Rail Only)	125-720
17	2	Cover	105-436

PORT TYPE	NPTF			ISO228/1-G			PUSH-IN			PUSH-IN		
	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE
PORT	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE
PORT SIZE	3/8	3/8	1/8	3/8	3/8	1/8	3/8	3/8	1/4	10mm	10mm	6mm
Kit w/o muffler, w/o DIN Rail	239-1642			239-1646			239-1650			239-1654		
Kit w/o muffler, w/ DIN Rail	239-1641			239-1645			239-1649			239-1653		
Kit w/ muffler, w/o DIN Rail	239-1640			239-1644			239-1648			239-1652		
Kit w/ muffler, w/ DIN Rail	239-1638			239-1643			239-1647			239-1651		



Manifold Assembly



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

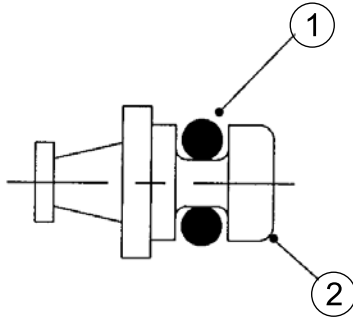
A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q
4.65	1.06	1.62	1.40	2.87	1.40	0.34	3.24	0.75	0.49	0.53	0.96	1.40	1.46	2.22	2.99	4.31
(118.2)	(27.0)	(41.2)	(35.7)	(73.0)	(35.7)	(8.7)	(81.8)	(19.0)	(12.5)	(13.5)	(24.4)	(35.5)	(37.0)	(56.5)	(76.0)	(109.5)

R	S	T	U	V	W	X	Y	Z	AA
0.90	1.84	2.62	3.56	5.77	0.15	5.92	1.24	1.85	3.96
(22.2)	(45.2)	(64.2)	(87.2)	(146.6)	(3.9)	(150.5)	(31.5)	(47.0)	(100.7)

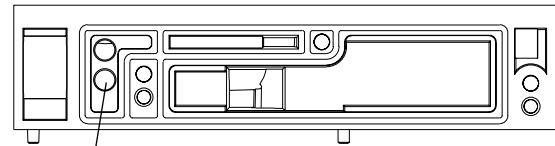
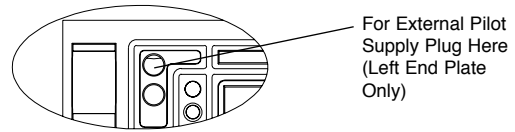


Internal Pilot Plug

213-497



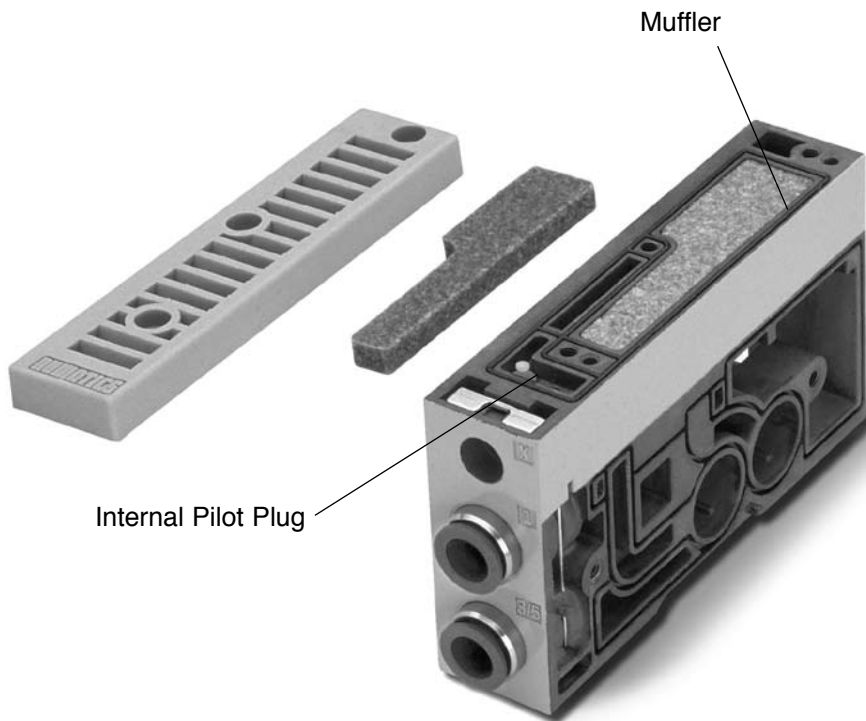
Internal/External Pilot Selection



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Plug	125-820
2	1	O-Ring	126-471

Internal Muffler

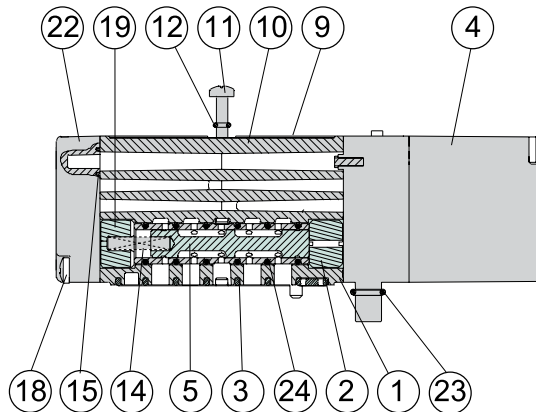
125-1012





Valve Service Kits and Parts

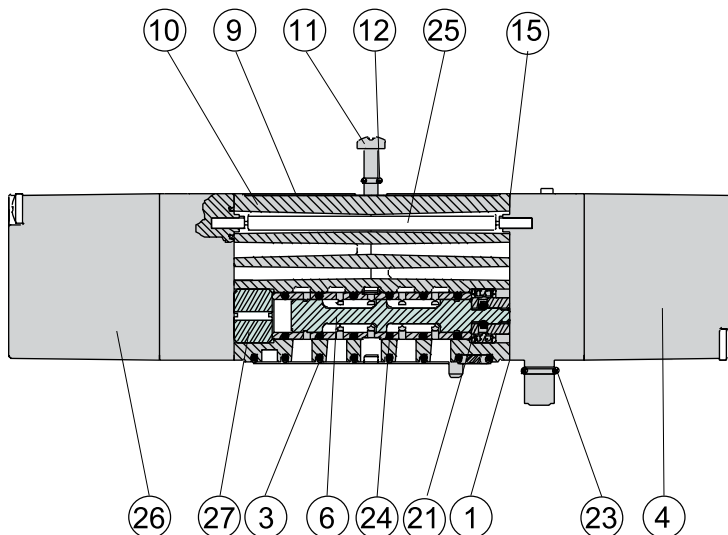
Kit No. 2005-K1*
(For Models 051BA4, 052BA4, 05FBA4, 05HBA4)



DET NO.	BA4	BB	PART NAME	PART NO.
1	1	1	Screen	125-789
2 *	1	N/A	Detent Spacer	116-516
*3 *	1	1	Gasket Body/Manifold	113-574
4	1	1	Solenoid Pilot – 14 End	See p. 14
5	1	N/A	Spool & Sleeve Assembly	209-512
6	N/A	1	Spool & Sleeve Assembly	209-634
9	1	1	Nameplate	122-1121
10	1	1	Body (not sold separately)	
11	2	2	Screw	127-898
12 *	2	2	O-Ring	126-345
14 *	1	N/A	Spring	115-273
15 *	1	2	Gasket Adaptor/Body	113-573
18	2	N/A	Screw	127-650
19 *	1	N/A	Spring Retainer	116-517
21 *	N/A	1	Detent Assembly	210-143
22	1	N/A	Spring Cover	104-768
23 *	1	1	O-Ring	126-144
24 *	6	6	O-Ring	126-133
25	N/A	1	14 to 12 Conn.	230-1044
26	N/A	1	Solenoid Pilot - 12 End	See p. 14
27 *	N/A	1	Spacer	116-516

*Indicates parts included in service kit.

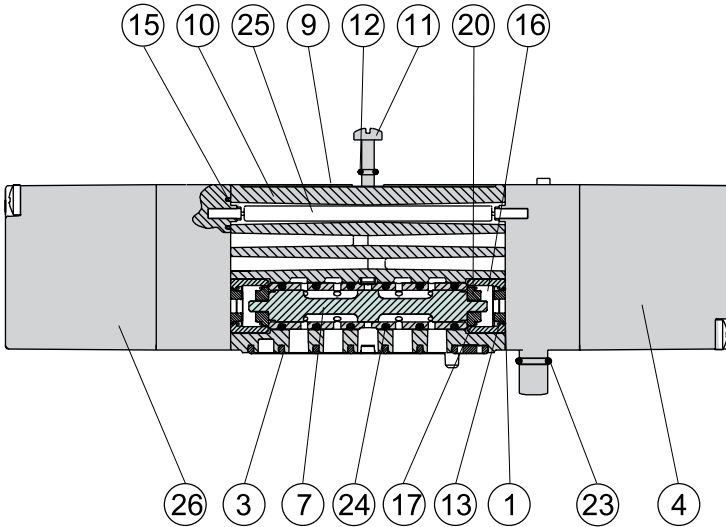
Kit No. 2005-K2*
(For Models 051BB4, 052BB4, 05FBB4, 05HBB4)





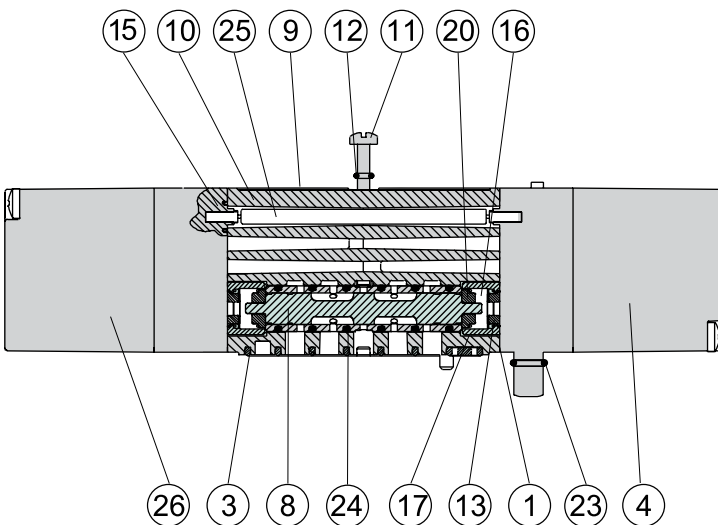
Valve Service Kits and Parts

Kit No. 2005-K3*
(For Models 051BB5, 052BB5, 05FBB5, 05HBB5)



DET NO.	BB5	BB6	PART NAME	PART NO.
1	1	1	Screen	125-789
3 *	1	1	Gasket Body/Manifold	113-574
4	1	1	Solenoid Pilot – 14 End	See p. 14
7	1	N/A	Spool & Sleeve Assembly	209-514
8	N/A	1	Spool & Sleeve Assembly	209-515
9	1	1	Nameplate	122-1121
10	1	1	Body (not sold separately)	
11	2	2	Screw	127-898
12 *	2	2	O-Ring	126-345
13 *	2	2	Bumper	114-204
15 *	2	2	Gasket Adaptor/Body	113-573
16 *	2	2	Spring	115-266
17 *	2	2	Spacer	116-519
20 *	2	2	Spring Retainer	116-386
23 *	1	1	O-Ring	126-144
24 *	6	6	O-Ring	126-133
25	1	1	14 to 12 Conn.	230-1044
26	1	1	Solenoid Pilot - 12 End	See p. 14

Kit No. 2005-K3*
(For Models 051BB6, 052BB6, 05FBB6, 05HBB6)

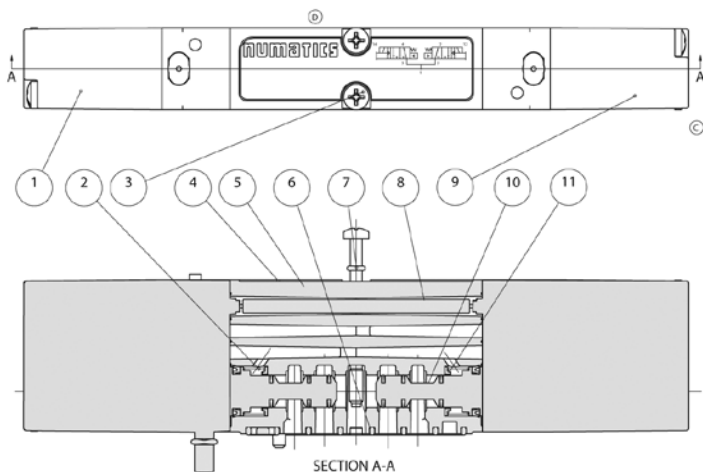


*Indicates parts included in service kit.



Valve Service Kits and Parts, Dual 3-Way

Kit No. 2005-K3A
(for models 051BBA, 052BBA, 053BBA, 05FBBA, 05HBBA)

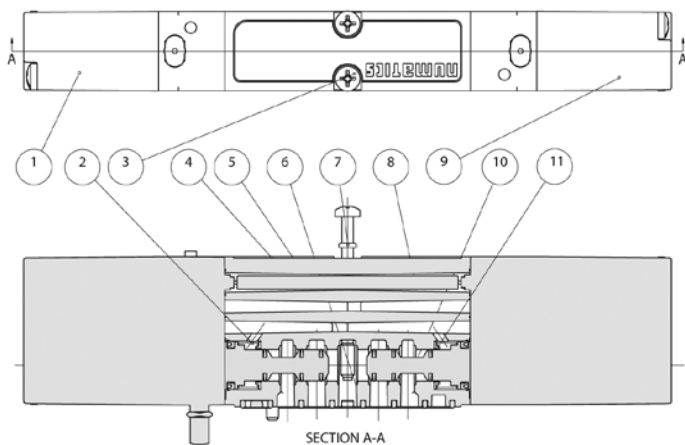


Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Sol. Pilot Ass'y 14	237-1112
2*	2	Spring	115-395
3	2	Screw	127-990
4	1	Nameplate	122-1121
5	1	Body	101-821
6*	1	Gasket	113-574
7*	2	O-ring	126-345
8	1	14 To 12 Conn.	230-1044
9	1	Sol. Pilot Ass'y 12	237-1118
10*	2	Spool Ass'y W/seals	221-187
11*	2	Bumper	114-205

* Indicates parts included in service kit

Kit No. 2005-K3B
(for models 051BBB, 052BBB, 053BBB, 05FBBB, 05HBBB)



Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Sol. Pilot Ass'y 14	237-1112
2*	2	Spring	115-431
3	2	Screw	127-990
4	1	Nameplate	122-1121
5	1	Body	101-821
6*	1	Gasket	113-574
7*	2	O-ring	126-345
8	1	14 To 12 Conn.	230-1044
9	1	Sol. Pilot Ass'y 12	237-1118
10*	2	Spool Ass'y W/seals	221-187
11*	2	Bumper	114-205

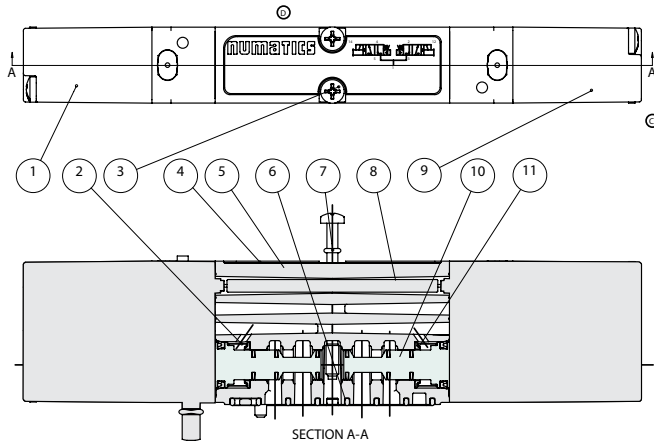
* Indicates parts included in service kit



Valve Service Kits and Parts, Dual 3-Way

Kit No. 2005-K3D

(for models 051BBD, 052BBD, 053BBD, 05FBBD, 05HBBD)



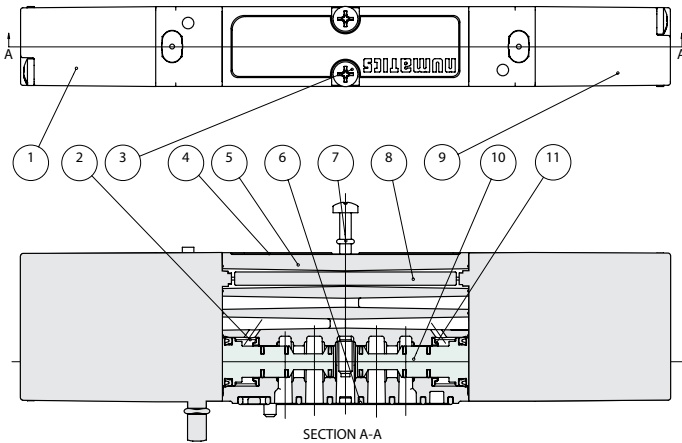
Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Sol. Pilot Ass'y 14	237-1112
2*	2	Spring	115-395
3	2	Screw	127-990
4	1	Nameplate	122-1121
5	1	Body	101-821
6*	1	Gasket	113-574
7*	2	O-ring	126-345
8	1	14 To 12 Conn.	230-1044
9	1	Sol. Pilot Ass'y 12	237-1118
10*	2	Spool Ass'y W/seals	221-186
11*	2	Bumper	114-205

* Indicates parts included in service kit

Kit No. 2005-K3E

(for models 051BBE, 052BBE, 053BBE, 05FBBE, 05HBBE)



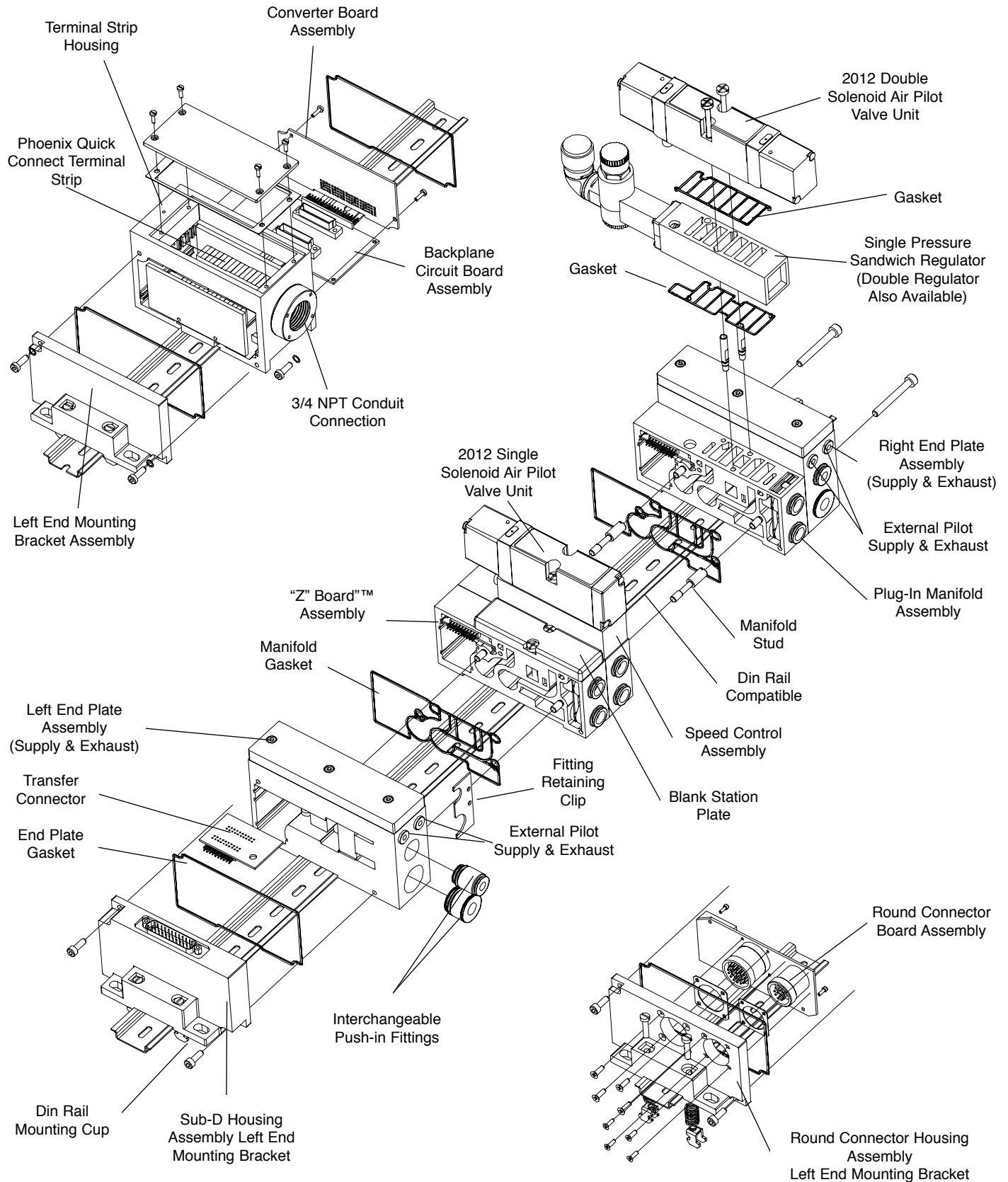
Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Sol. Pilot Ass'y 14	237-1112
2*	2	Spring	115-431
3	2	Screw	127-990
4	1	Nameplate	122-1121
5	1	Body	101-821
6*	1	Gasket	113-574
7*	2	O-ring	126-345
8	1	14 To 12 Conn.	230-1044
9	1	Sol. Pilot Ass'y 12	237-1118
10*	2	Spool Ass'y W/seals	221-186
11*	2	Bumper	114-205

* Indicates parts included in service kit

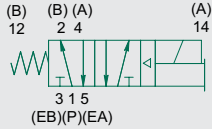


Terminal Strip, Sub-D, and Round Connector Options
(exploded view)

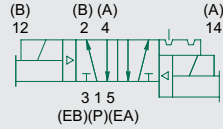




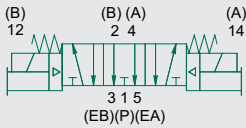
single solenoid air pilot
2 position 4-way



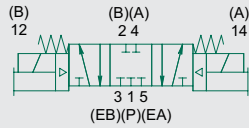
double solenoid air pilot
2 position 4-way



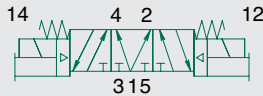
double solenoid air pilot
3 position 4-way
open center



double solenoid air pilot
3 position 4-way
closed center



double solenoid air pilot
3 position 4-way
pressure center



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

- Solenoid air pilot actuated
- Low wattage plug-in – 2.5 watt for DC application
- DC solenoids polarity insensitive with surge suppression
- Plug together circuit boards eliminate internal wiring
- Integral recessed gaskets
- Interchangeable push-in fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot
- Modular plug-together Fieldbus electronics
- NEMA 4/IP65



Technical Data

VALVE DATA	ENGLISH	METRIC
Cv	1.20	1.20
Flow Capacity	56 SCFM @ 80 PSIG upstream pressure to atmosphere	1180 NI/m @ 6 bar upstream to 5 bar downstream
Operating Pressure Range	28"Hg Vacuum to 150 PSIG	Vacuum to 10 bar
Pilot Pressure Range	26 to 120 PSIG	1.8 to 8.2 bar
Temperature Range (Ambient)	-10°F to + 115°F	-23°C to +46° C

Operating Data

ALL SOLENOIDS ARE CONTINUOUS DUTY RATED	24 VDC	110 - 120 VAC 50/60 Hz.		
Power (Watts)	2.5	4.2		
Holding Current (Amps.)	0.10	0.05		
RESPONSE TIME IN SECONDS	ENERGIZE	DE-ENERGIZE	ENERGIZE	DE-ENERGIZE
2-Position, Single, Spring Return	0.010	0.020	0.010	0.020
2-Position, Double, Detented	0.010	N/A	0.010	N/A
3-Position, Spring Centered	0.010	0.020	0.010	0.020



2012 Series

How to Order

Valves

122 BB 4 Z6 M L 000 61

Valve Series & Port Size

122* = 1/4
123 = 3/8
12H = 8mm
12K = 10mm

*Use for valve unit only (Mounting = 00)

Valve Type

BA = Single Solenoid Pilot, (Spring Return)
w/Flush Non-Locking Override
BB = Double Solenoid Pilot w/Flush
Non-Locking Override
00 = Blank Station

Function

4 = 2 Position, 4-way
5 = 3 Position, 4-way Open Center
6 = 3 Position, 4-way Closed Center
7 = 3 Position, 4-way Pressure Center
P = Blank Station Plate
0 = Blank Station

Mounting

00 = Valve Unit only
3A = Individual Base, Side Ports, Individual Exhaust
3C = 3A w/Speed Control
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

Voltage

20 = 24/50-60 VAC
30 = 110-120/50-60 VAC
60 = 12 VDC
61 = 24 VDC

Special Options

11B = Flush Locking Override
11M = No Override
56Y = 12mm Electrical Connector in
Conduit Port of Base Mounting only
(See below)

Port Type

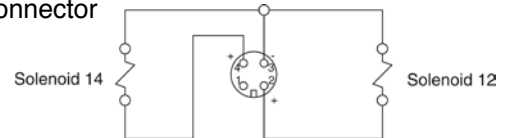
L = Push-in Fitting
N = NPTF
G = G Tap
0 = Valve Unit only

Wiring Option

K = Plug-in AC w/Light
M = Plug-in DC w/Light
0 = Blank Station

Wiring Diagram

4 Pin 12mm (Micro) Connector
56Y (Mounting)



NOTE: Manifold assembly kit ordering information for:

- Electrical interface options *see page 42.*
- Fieldbus electronics see Electronics section.

Regulators

122 RS 3 Z1 J L 000 00

Valve Series & Port Size

122* = 1/4
123 = 3/8
12H = 8mm
12K = 10mm

*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
RQ = Dual Pressure w/Relieving Checks
RE = Dual Pressure to Ports 4 (A) & 2 (B)
RT = 2 Pressure Selector
*For metric gauge, replace R with E in 4th digit.

Pressure Range

1 = 10-130 PSIG (0.7-9 bar)
3 = 3-30 PSIG (0.2-2 bar)
4 = 5-60 PSIG (0.5 - 4 bar)

Special Options

12H = Less gauge
16N = Jumper on 14 (A) End
16P = Jumper on 12 (B) End
16W = Top Facing Gauge

Port Type

L = Push-In
N = NPTF
G = G Tap

Wiring Option

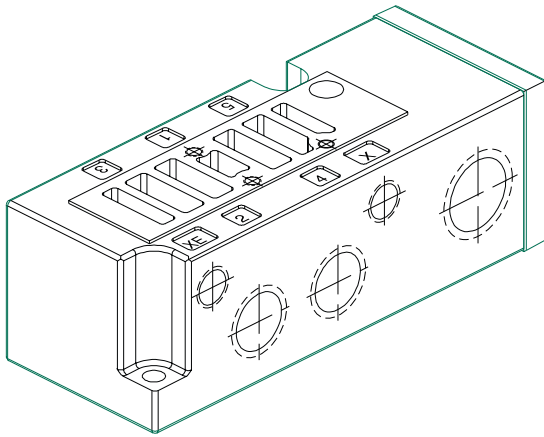
J = Plug-In Receptacle Ass'y
O = Non-Plug-In (Type RE only)

Mounting

00 = Regulator Unit Only
3A = Individual Base, Side Ports, Individual Exhaust
3C = 3A 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 = Manifold Block w/Side and Bottom Ports,
Transfer Board, Used w/RE Regulators
RE only (no Z-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

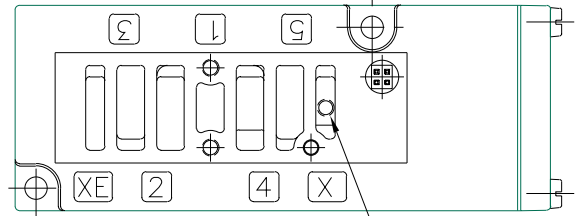


Individual Base Assembly Kit



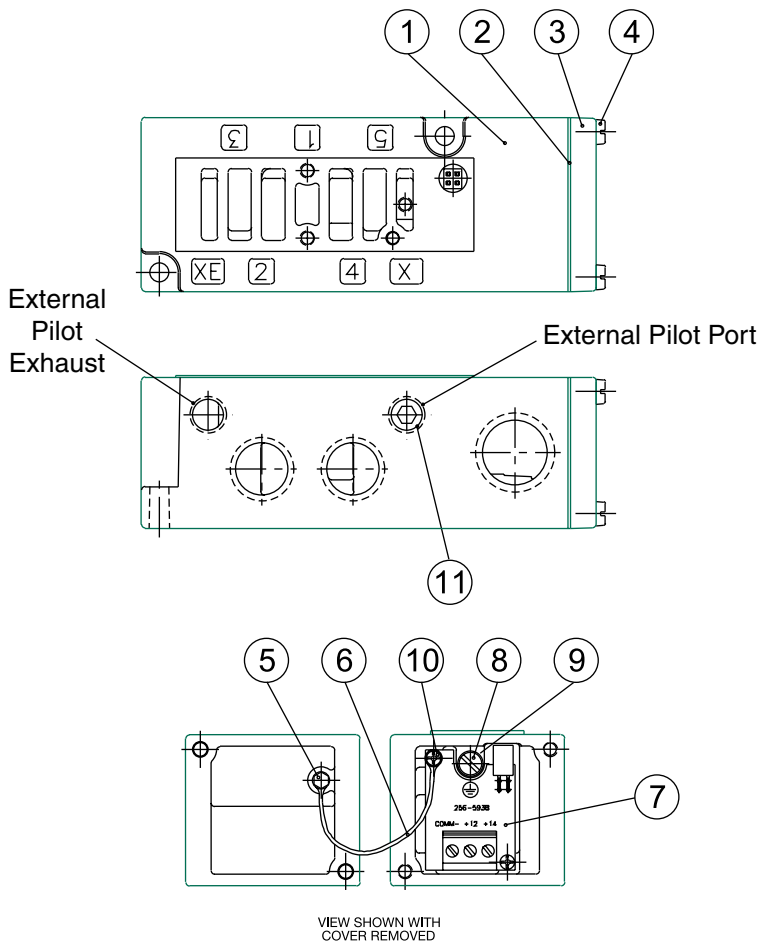
PORT SIZE	PART NO.
1/4-NPTF	203-1100
3/8 NPTF	203-1101
1/4 G	203-1137
3/8 G	203-1138

Internal/External Pilot Selection



M4 Pilot Port Location
(plug# 127-691 order separately)

Note: Base assemblies are supplied set up for internal pilot supply. To convert to external pilot supply install plug P.N. 127-691 (sold separately) in the "X" gallery as indicated above. Remove the 1/8 NPTF pipe plug from the "X" port to supply pilot pressure.

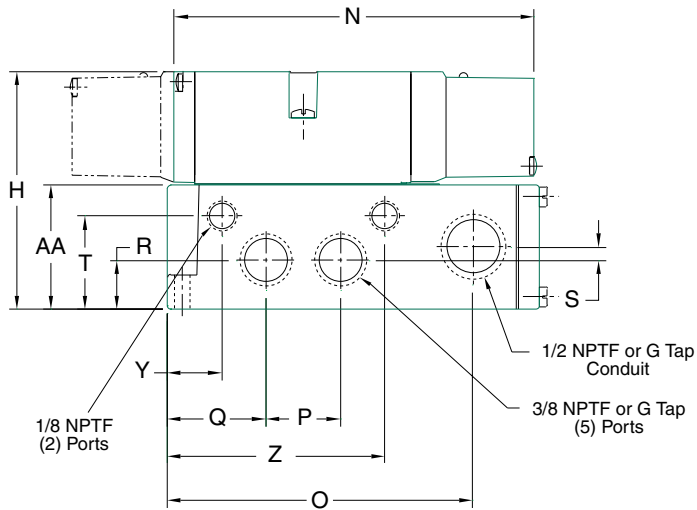
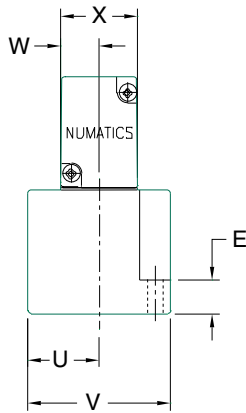
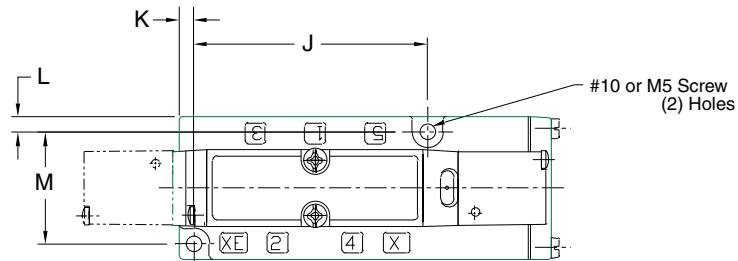
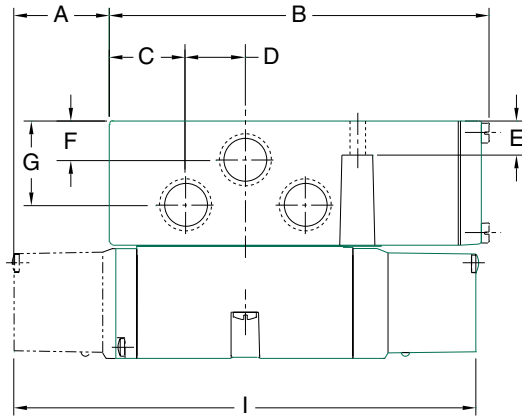


DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Base (not sold separately)	
2	1	Gasket	113-528
3	1	Cover	105-397
4	2	Screw	127-850
5	1	Screw	127-172
6	1	Strap	125-772
7	1	Terminal Strip Ass'y	256-593
8	1	Screw	127-176
9	1	Washer	128-162
10	2	Screw	127-318
11	1	1/8 NPTF Pipe Plug	129-100



2012 Series

Valve on Individual Base



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
1.27 (32.3)	5.14 (130.6)	1.03 (26.3)	0.81 (20.6)	0.46 (11.7)	0.53 (13.5)	1.14 (29.0)	3.21 (81.5)	6.26 (159.0)	3.16 (80.3)	0.20 (5.1)	0.21 (5.3)	1.51 (38.4)	5.00 (127.0)	4.14 (105.2)	1.00 (25.4)

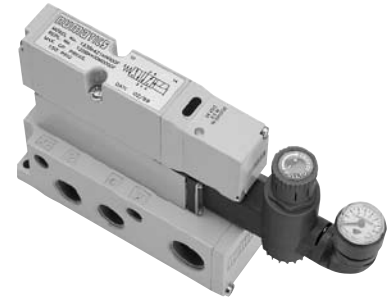
Q	R	S	T	U	V	W	X	Y	Z	AA
1.33 (33.8)	0.65 (16.5)	0.18 (4.6)	1.25 (31.8)	0.97 (24.6)	1.93 (49.0)	0.52 (13.2)	1.04 (26.4)	0.69 (17.7)	2.94 (74.7)	1.67 (42.4)



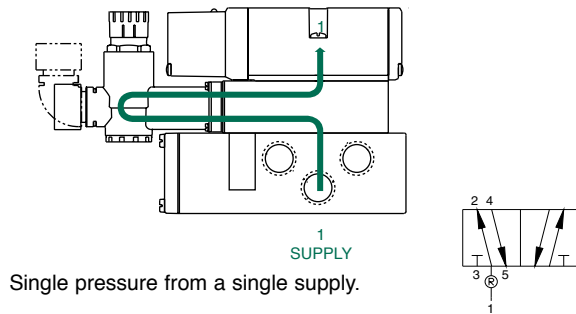
Sandwich Pressure Regulators Types: RS / RD / RC / RQ / RE / RT

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

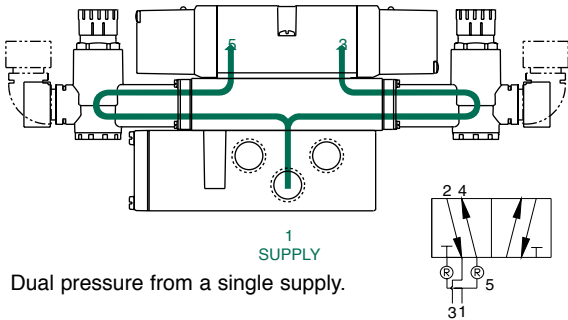
Example orders:	Type RS	Type RD
Valve unit only:	122BA400K000030	122BB400M000061
Regulator +mounting	122RS1Z1JN00000 ASSEMBLED	122RD1Z2JN00000 ASSEMBLED



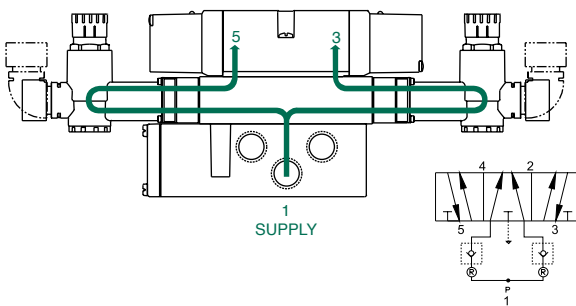
Type RS



Type RD

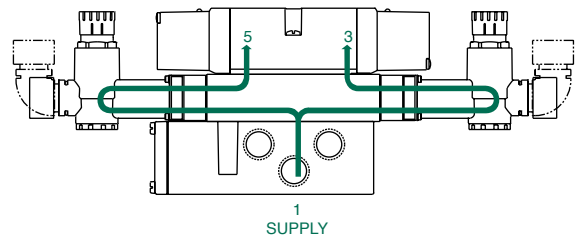


Type RC



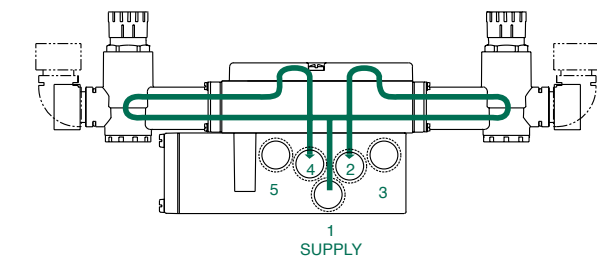
Type RC is Non-Relieving:
traps downstream pressure if upstream pressure is exhausted.

Type RQ



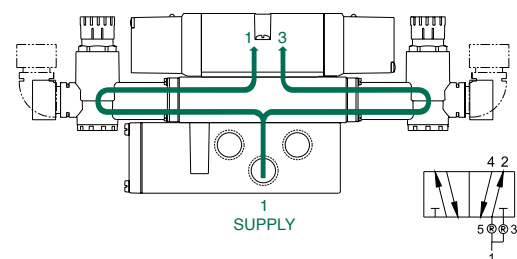
Type RQ is Relieving:
exhausts pressure in cylinder if upstream pressure is exhausted.

Type RE



External outlet regulator used with jumper plate for single or dual pressure.

Type RT

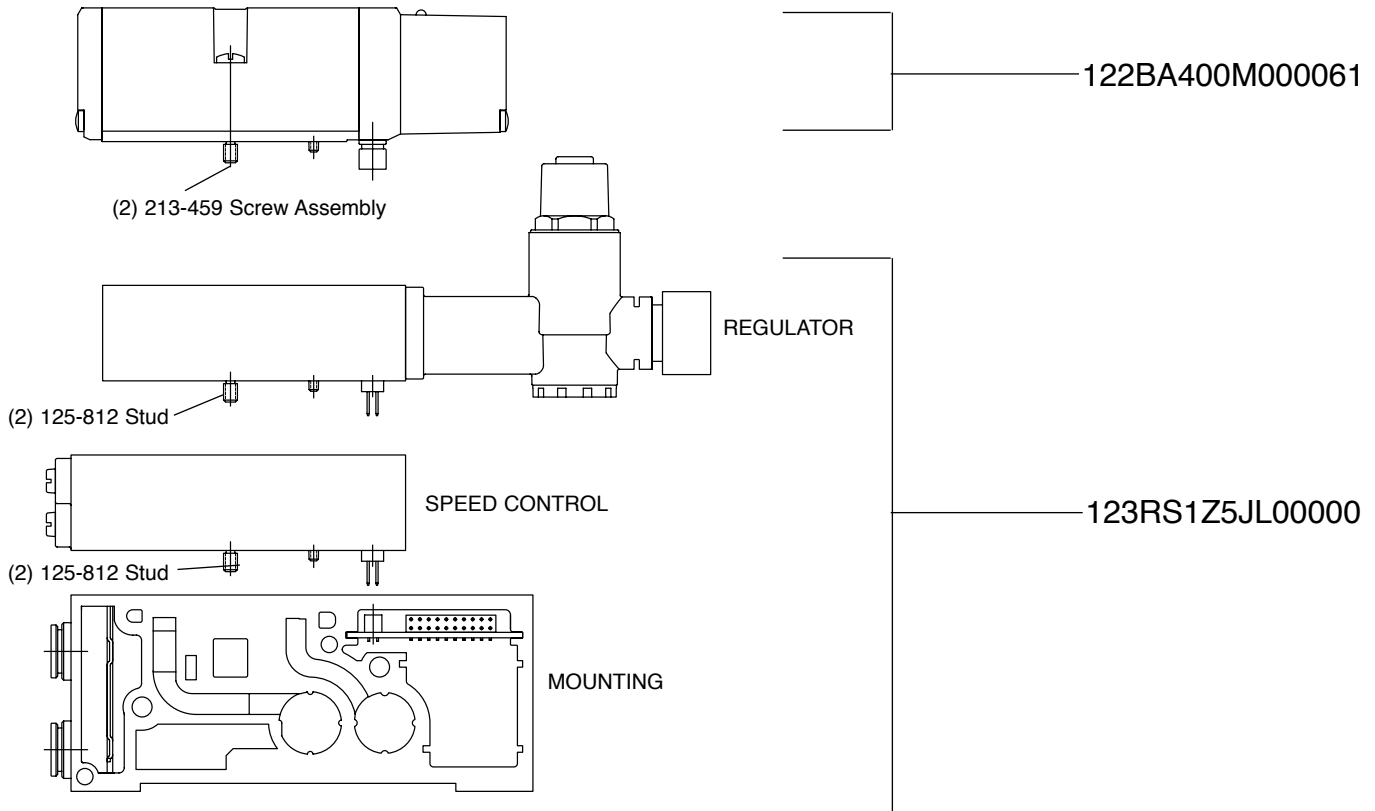


Two-pressure selector used for multi-pressure applications.



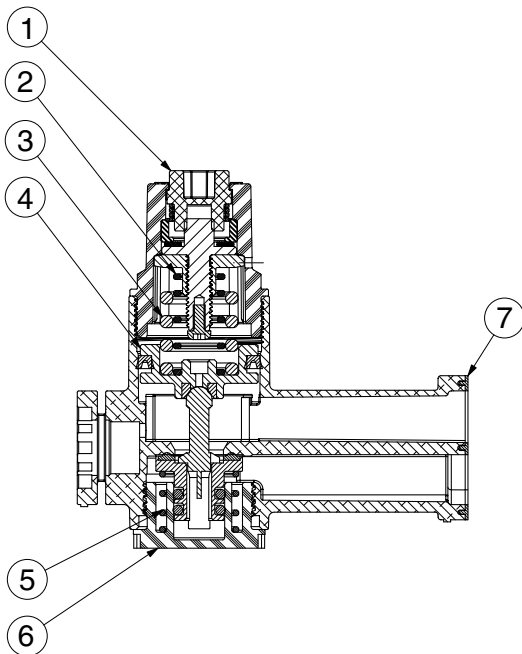
2012 Series

Valve Regulator / Speed Control Plug-in Assembly



Refer to *page 22* for ordering codes.

Regulator Kits and Service Parts
Regulator Service Kit 239-1393



Regulator Unit Kits
 (includes regulator assembly, gaskets, screws)

PSIG	PART NO.
3-30 PSIG	239-1909
5-60 PSIG	239-1910
10-130 PSIG	239-1911

Bonnet Springs

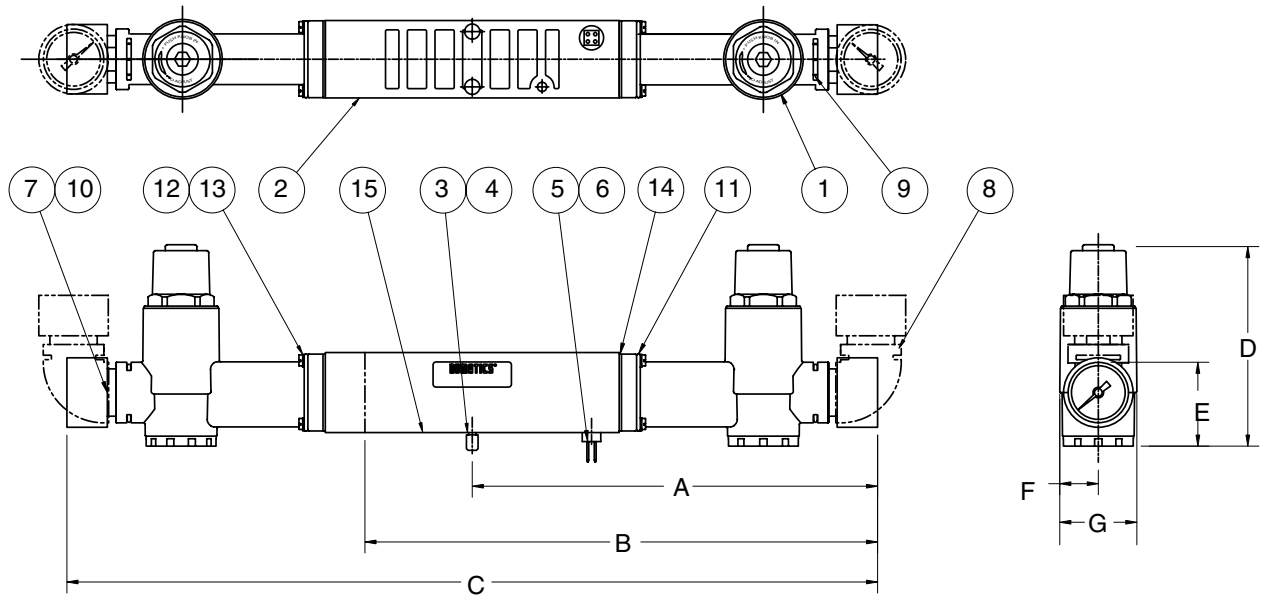
PSIG	PART NO.
3-30 PSIG	115-423
5-60 PSIG	115-425
10-130 PSIG*	115-423
	115-424

* = Both Springs Required

DET. NO.	NO. REQ'D	PART NAME
1	1	Bonnet
2	1	Spring
3	1	Spring
4	1	Piston Assembly
5	1	Spring
6	1	Cap
7	1	Gasket



Sandwich Pressure Regulator



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G
5.48 (139.2)	6.94 (176.3)	10.97 (278.6)	2.7 (68.6)	1.14 (29.0)	0.52 (13.2)	1.04 (26.4)



Shown with
"16W" option
(90° elbow)

Gauge Kit

160 PSI	11 BAR MAX.	60 PSI	4 BAR MAX.
214-214	214-215	214-219	214-220

Elbow Kit **239-1217**
Gauge Adaptor Kit 1/8 NPTF **239-1561**

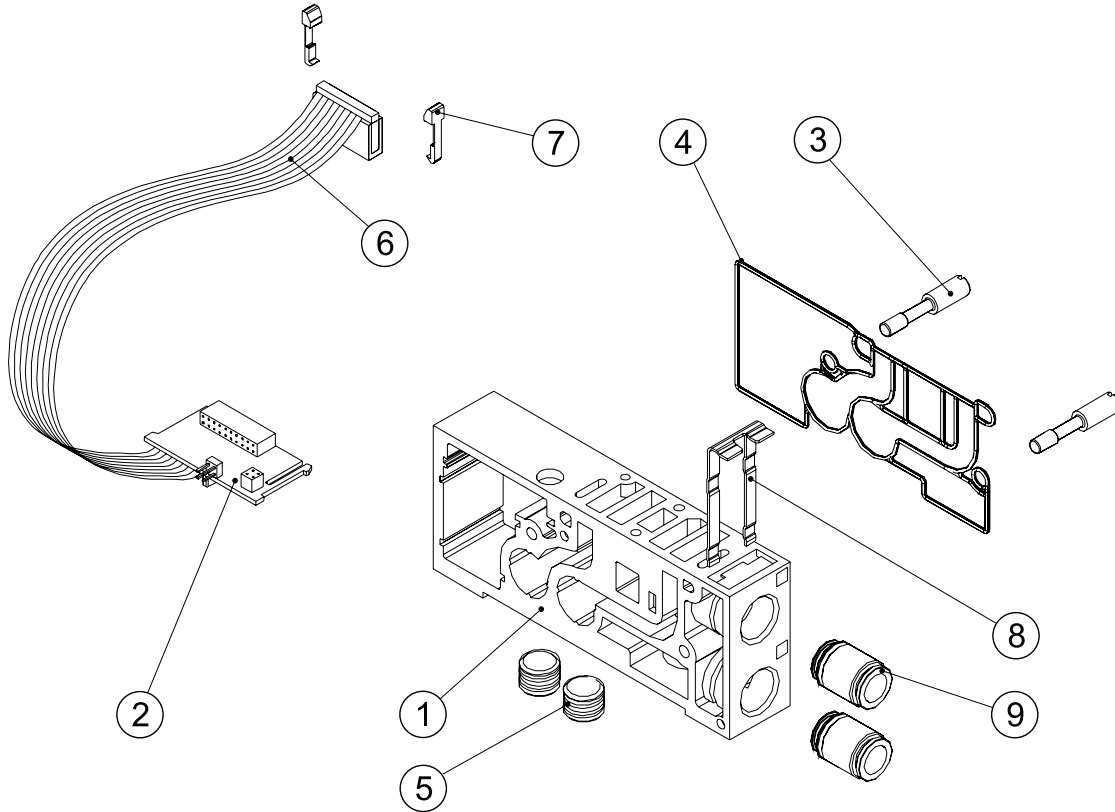
Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2*	Regulator	See p. 30
2	1	Single riser block	125-798
2	1	Double riser block	125-799
3	2	O-Ring	126-528
4	2	Stud	125-812
5	1	Screw	127-318
6	1	Plug-Assembly	230-904
7	2*	Gauge 160 PSI max.	214-212
7	2*	Gauge 11 bar max.	214-213
7	2*	Gauge 60 PSI max.	214-217
7	2*	Gauge 4 bar max.	214-218
8	2*	Elbow	134-505
9	4**	Pin	131-236
10	4**	O-Ring	126-105
12	8***	Screw	127-960
13	8***	Lockwasher	128-172
14	2*	Gasket	113-535
15	1	Gasket	113-534
	1	Gasket for RT Regulator	113-565

* (1) Required for RS
** (2) Required for RS
*** (4) Required for RS



Manifold Assemblies



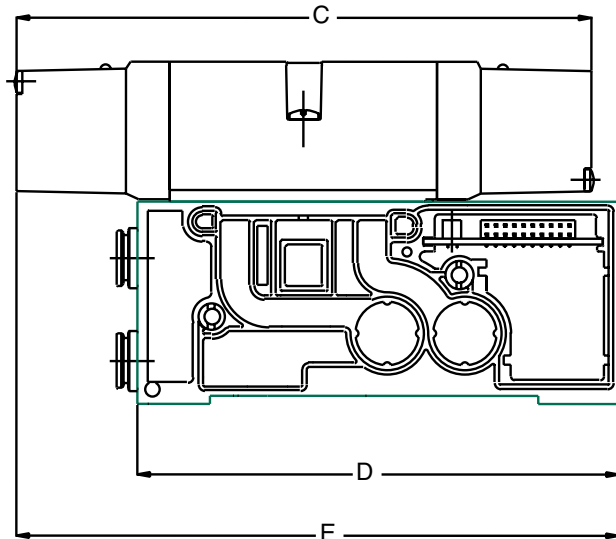
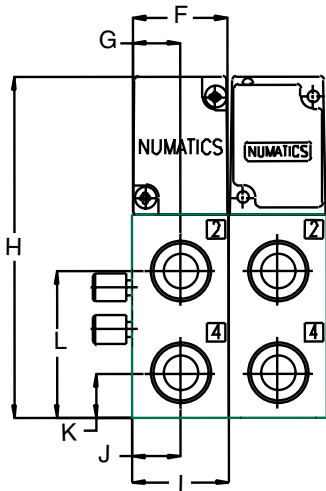
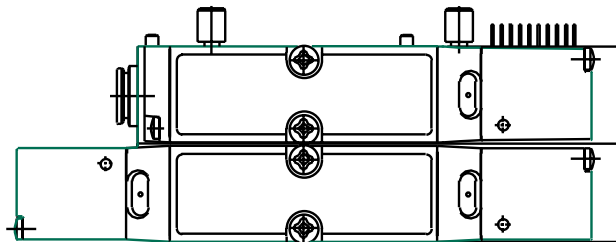
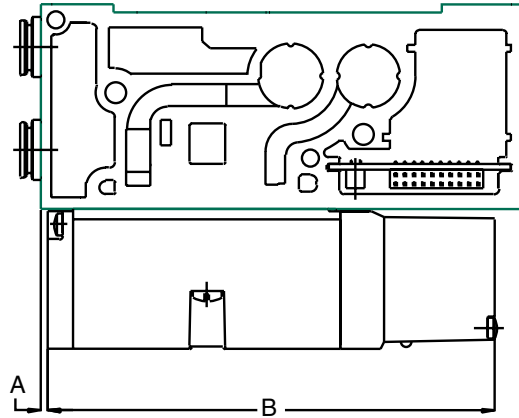
DET. NO.	NO REQ'D	PART NAME	PART NO.
1	1	Manifold Block (not sold separately)	
2 *	1	"Z-Board"™	not sold separately
3	2	Stud	125-813
4	1	Gasket	113-537
5	2	Pipe Plug, 1/4 NPTF	129-101
5	2	Pipe Plug, 1/4 G	129-161
6	1	Ribbon Cable Ass'y	230-905
7	2	Snap In Latch	140-721
8	1	Retaining Clip	125-751
9	2	Push-in Fitting	See p. 37

MANIFOLD ASSEMBLY KITS

	1/4 NPTF	3/8 NPTF	G 1/4	G 3/8	1/4 Push-in	3/8 Push-in	8mm Push-in	10mm Push-in
Side Cylinder Ports	1/4 NPTF	3/8 NPTF	G 1/4	G 3/8	1/4 Push-in	3/8 Push-in	8mm Push-in	10mm Push-in
Bottom Cylinder Ports	1/4 NPTF	1/4 NPTF	G 1/4	G 1/4	1/4 NPTF	1/4 NPTF	G 1/4	G 1/4
Single "Z-Board"™	206-1272	206-1271	206-1256	206-1255	206-1273	206-1274	206-1257	206-1258
Double "Z-Board"™	206-1280	206-1279	206-1264	206-1263	206-1281	206-1282	206-1265	206-1266
Single "Z-Board"™ w/Ribbon Cable	206-1276	206-1275	206-1260	206-1259	206-1277	206-1278	206-1261	206-1262
Double "Z-Board"™ w/Ribbon Cable	206-1284	206-1283	206-1268	206-1267	206-1285	206-1286	206-1269	206-1270



Valve on Manifold Block

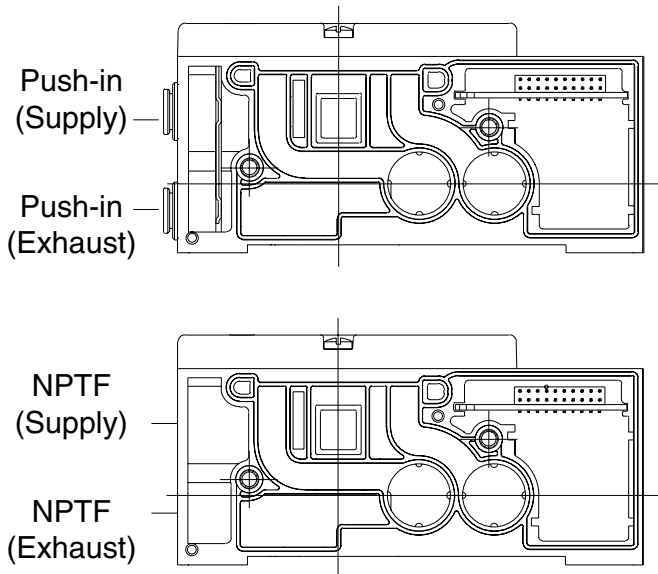


Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	I	J	K	L
0.07	4.87	6.26	5.25	6.57	1.04	0.52	3.72	1.06	0.55	0.47	1.59
(1.8)	(123.7)	(159.0)	(133.3)	(166.9)	(26.4)	(13.2)	(94.5)	(27.0)	(14.0)	(11.9)	(40.4)

Mid-Station Supply and Exhaust Block

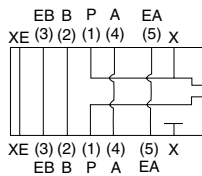
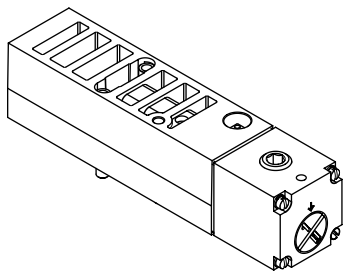


Mid-Station Supply & Exhaust Block Kits

	PART NO.
NPTF 3/8	239-1330
G 3/8	239-1331
3/8 Push-in	239-1332
10mm Push-in	239-1333

Sandwich Shut Off Block

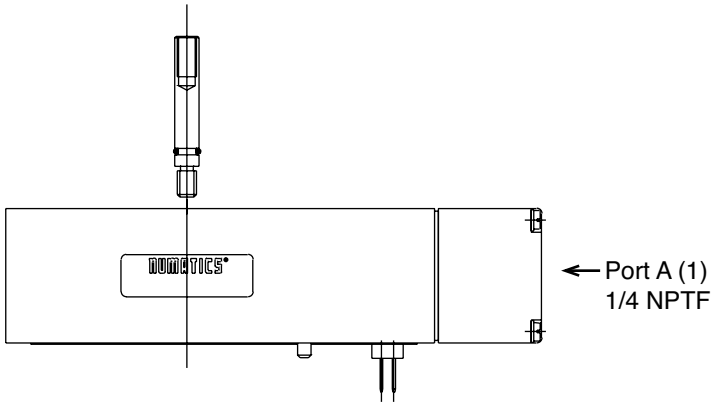
239-2236



- Used to shut-off pressure to the valve which is mounted above it.
- Allows easy maintenance without the need to shut-off pressure to the whole manifold.



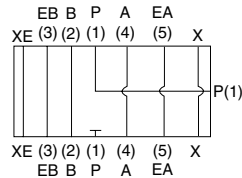
Sandwich Pressure Block



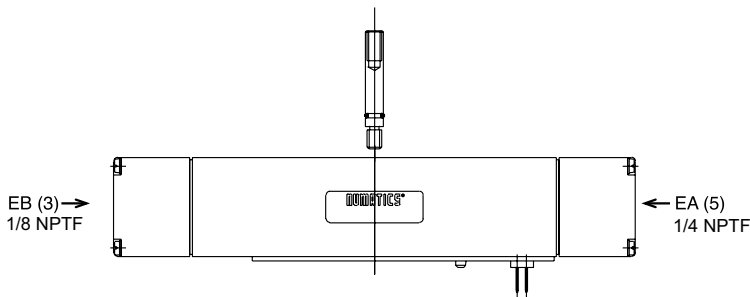
- Used to supply a separate pressure to a single valve station without needing blocking disks.

Sandwich Pressure Block Kit

PORT TYPE	PART NO.
NPTF 1/4	239-1422
G 1/4	239-1436



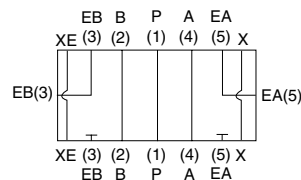
Sandwich Exhaust Block



- Used to isolate the exhaust of a single valve station from the manifold.
- Allows faster exhaust response by re-routing.
- Exhaust externally to the manifold.

Sandwich Exhaust Block Kit

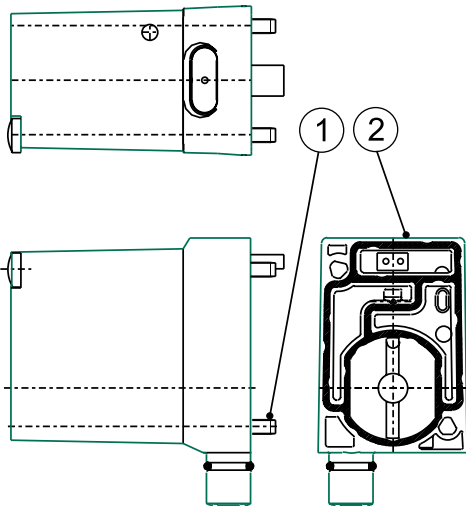
PORT TYPE	PART NO.
NPTF 1/4	239-1554
G 1/4	239-1556



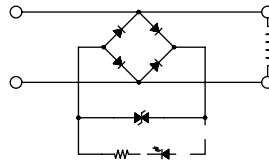


2012 Series

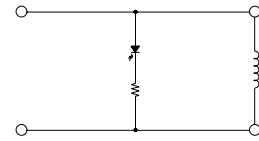
Solenoid Pilot Assembly



DESCRIPTION	12 VDC	24 VDC	24 VAC	120 VAC
14 end, push non-locking override	236-417	236-356	237-1070	237-1079
12 end, push non-locking override	236-418	236-357	237-1071	237-1080
14 end, turn & lock override	236-420	236-359	237-1073	237-1082
12 end, turn & lock override	236-421	236-360	237-1074	237-1083
14 end, no override	236-423	236-362	237-1076	237-1085
12 end, no override	236-424	236-363	237-1077	237-1086



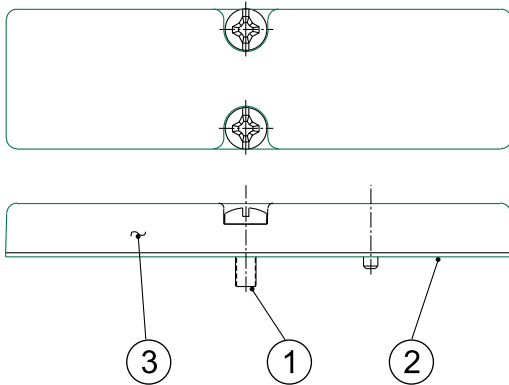
DC Solenoid
Circuit Diagram



AC Solenoid
Circuit Diagram

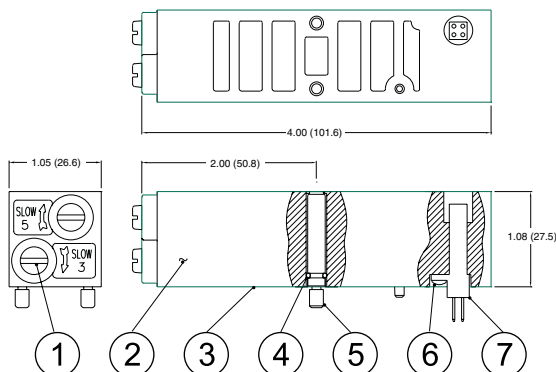
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-373
2	2	Screw	127-823

Blank Station Plate Kit 239-1390



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Screw	127-876
2	1	Gasket	113-534
3	1	Blank Station Plate	104-726

Speed Control Kit 239-1260



DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Metering Screw	118-178
Not Shown	2	Nylon Rod	125-131
2	1	Speed Control Body	119-632
3	1	Gasket	113-534
4	2	O-Ring	126-528
5	2	Stud	125-812
6	1	Screw	127-318
7	1	Plug Assembly	230-904



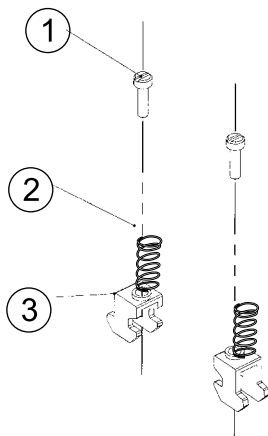
Interchangeable Push-in Cartridge Fittings



PORTS	SIZE	TYPE	PART NO.
1, 2, 4	1/4"	Push-in	134-506
1, 2, 4	3/8"	Push-in	134-508
1, 2, 4	8mm	Push-in	134-507
1, 2, 4	10mm	Push-in	134-509
1, 2, 4	N/A	Plug Ass'y	239-1190
3/5	3/8"	Push-in	134-510
3/5	1/2"	Push-in	134-512
3/5	12mm	Push-in	134-511
3/5	14mm	Push-in	134-513
3/5	N/A	Plug Ass'y	239-1191
X, XE	4mm	Push-in	134-498
X, XE	6mm	Push-in	134-499
X, XE	1/4"	Push-in	134-518
X, XE	N/A	Plug Ass'y	239-1086

DIN Rail Clamp Kit

239-980



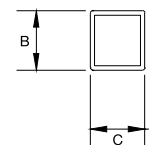
DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Screw	127-472
2	4	Spring	115-355
3	4	Clamp	125-720

Blocking Discs

Port 3/5



Port 1



PORT	PART NO.	A	B	C
1	124-341	N/A	0.54 (13.7)	0.50 (12.6)
3/5	239-907	0.70 (17.8)	N/A	N/A



Ribbon Cable Assembly Kit 239-1336

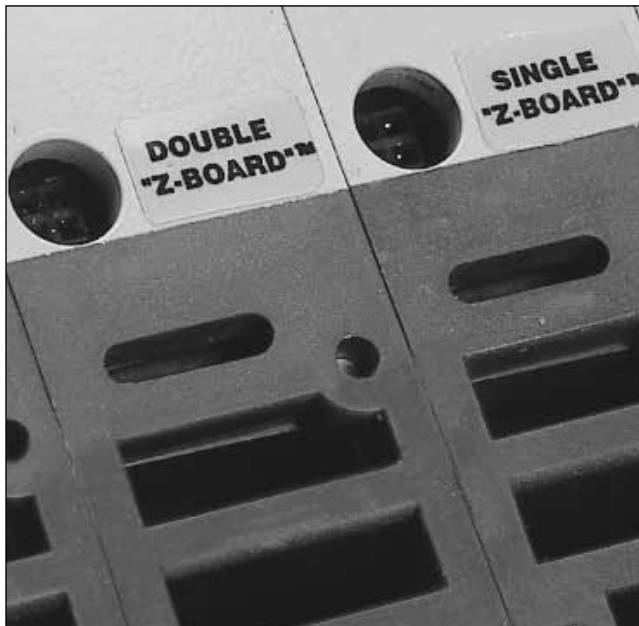
Solenoid 1-16 Output Connector
(Output Bits 0-15)



Solenoid 17-32 Output Connector
(Output Bits 16-31)

NO. REQ'D.	PART NAME	PART NO.
1	Replacement Ribbon Cable Assembly	230-905
2	Replacement Snap In Latch	140-721

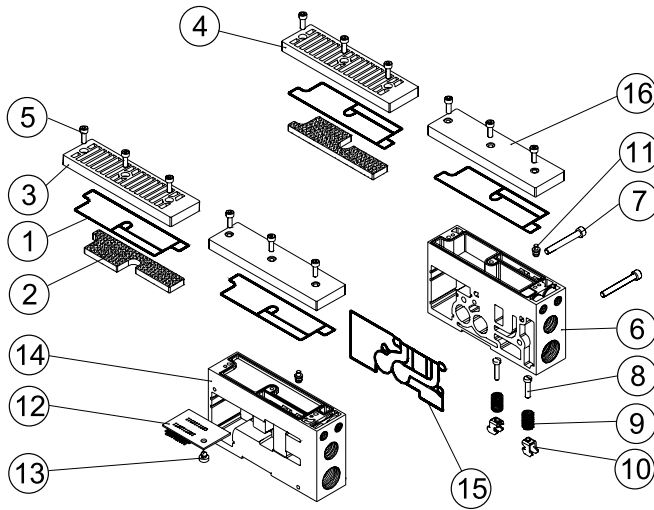
Ribbon cable option used for manifold assemblies that exceed 16 solenoid outputs.



Label on manifold block indicates Installed "Z-Board"™ type.

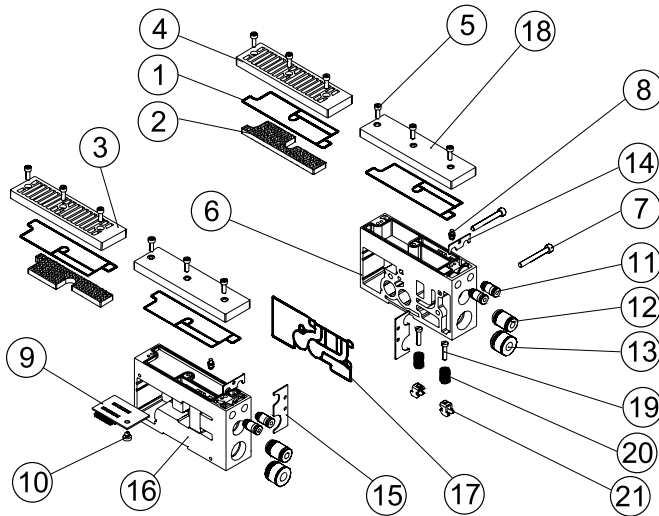


End Plate Kit - Threaded



DET NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Cover Gasket	113-536
2	2	Muffler (Optional)	125-851
3	1	LH Endplate Cover Vented (Optional)	005-193
4	1	RH Endplate Cover Vented (Optional)	005-194
5	6	Screw	127-368
6	1	RH Endplate	104-713
7	2	Screw	127-413
8	2	Screw (DIN Rail Only)	127-472
9	2	Spring (DIN Rail Only)	115-355
10	2	Clamp (DIN Rail Only)	125-720
11	2	Pilot Plug Ass'y	213-497
12	1	Transfer Conn. Board Ass'y	256-644
13	1	Retention Pin	125-845
14	1	LH Endplate	104-710
15	1	Gasket	113-537
16	2	End Plate Cover	105-400

End Plate Kit - Push-in

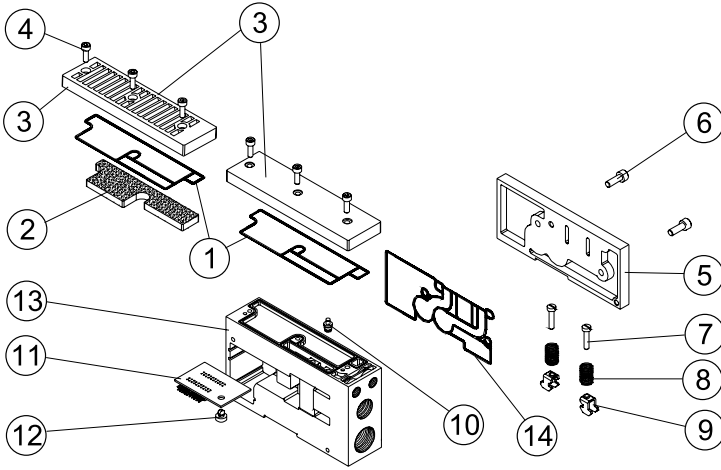


DET NO.	NO. REQ'D	PART NAME	PART NO.
1	2	Cover Gasket	113-536
2	2	Muffler (Optional)	125-851
3	1	LH Endplate Cover Vented (Optional)	005-193
4	1	RH Endplate Cover Vented (Optional)	005-194
5	6	Screw	127-368
6	1	RH Endplate	104-712
7	2	Screw	127-413
8	2	Pilot Plug Ass'y	213-497
9	1	Transfer Conn. Board Ass'y	256-644
10	1	Retention Pin	125-845
11	4	Push-in Fittings	See p. 37
12	2	Push-in Fittings	See p. 37
13	2	Push-in Fittings	See p. 37
14	2	Retaining Clip (Small)	125-814
15	2	Retaining Clip (Large)	125-815
16	1	LH Endplate (NPTF)	104-709
17	1	Gasket	113-537
18	2	End Plate Cover	105-400
19	2	Screw (DIN Rail Only)	127-472
20	2	Spring (DIN Rail Only)	115-355
21	2	Clamp (DIN Rail Only)	125-720

PORT TYPE	NPTF			ISO228/1-G			PUSH-IN			PUSH-IN			PUSH-IN			PUSH-IN		
	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE
PORT SIZE	3/8	1/2	1/8	3/8	1/2	1/8	1/4	3/8	1/4	3/8	1/2	1/4	8mm	12mm	6mm	10mm	14mm	6mm
Kit w/o muffler, w/o DIN Rail	239-1236			239-1240			239-1247			239-1248			239-1255			239-1256		
Kit w/o muffler, w/ DIN Rail	239-1235			239-1239			239-1245			239-1246			239-1253			239-1254		
Kit w/ muffler, w/o DIN Rail	239-1234			239-1238			239-1243			239-1244			239-1251			239-1252		
Kit w/ muffler, w/ DIN Rail	239-1233			239-1237			239-1241			239-1242			239-1249			239-1250		

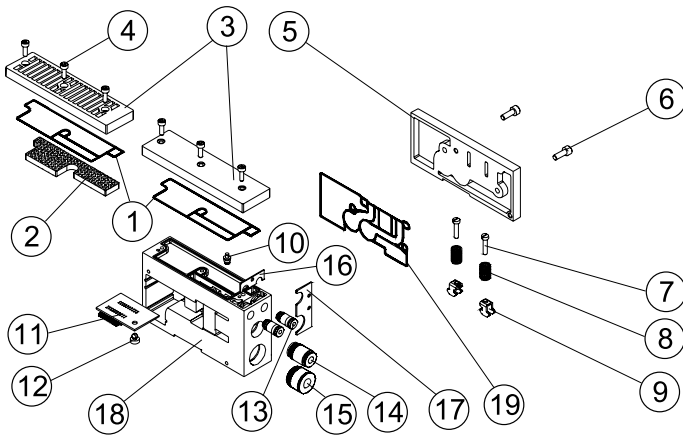
2012 Series

End Plate Kit with LH Ports Only - Threaded



DET NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-536
2	1	Muffer (Optional)	125-851
3	1	LH Endplate Cover (Muffer Option)	005-193
3	1	LH Endplate Cover	105-400
4	3	Screw	127-368
5	1	RH Portless Endplate	105-423
6	2	Screw	127-407
7	2	Screw (DIN Rail Only)	127-472
8	4	Spring (DIN Rail Only)	115-355
9	4	Clamp (DIN Rail Only)	125-720
10	1	Pilot Plug Ass'y	213-497
11	1	Transfer Conn. Board Ass'y	256-644
12	1	Retention Pin	125-845
13	1	LH Endplate (NPTF)	104-710
13	1	LH Endplate (G)	104-711
14	1	Gasket	113-537

End Plate Kit with LH Ports Only - Push-in

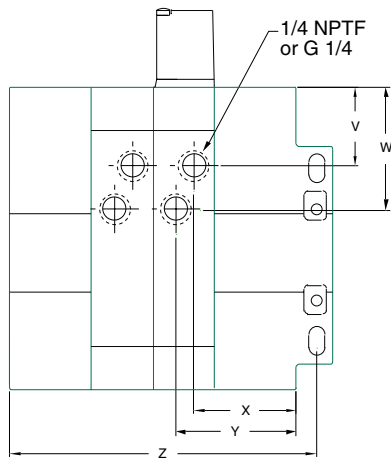
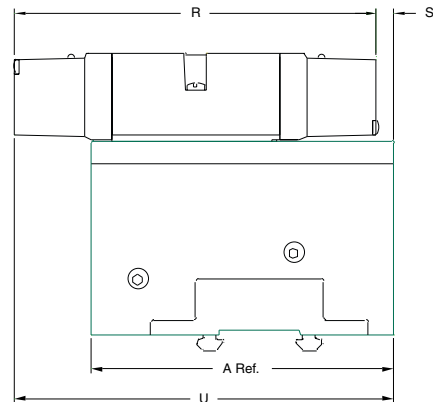
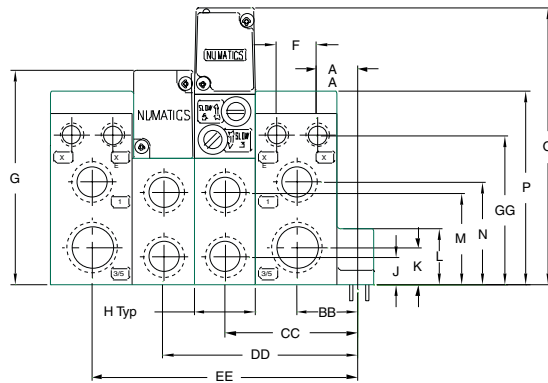
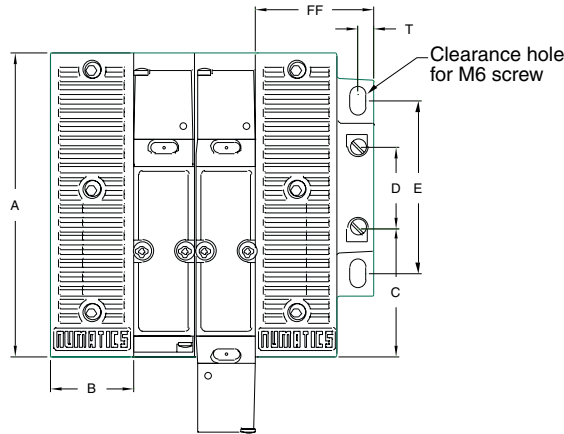


DET NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Gasket	113-536
2	1	Muffer (Optional)	125-851
3	1	LH Endplate Cover (Muffer Option)	005-193
3	1	LH Endplate Cover	105-400
4	3	Screw	127-368
5	1	RH Portless Endplate	105-423
6	2	Screw	127-407
7	2	Screw (DIN Rail Only)	127-472
8	4	Spring (DIN Rail Only)	115-355
9	4	Clamp (DIN Rail Only)	125-720
10	1	Pilot Plug Ass'y	213-497
11	1	Transfer Conn. Board Ass'y	256-644
12	1	Retention Pin	125-845
13	2	Push-in Fittings	See p. 37
14	1	Push-in Fittings	See p. 37
15	1	Push-in Fittings	See p. 37
16	1	Retaining Clip (Small)	125-814
17	1	Retaining Clip (Large)	125-815
18	1	LH Endplate (NPTF)	104-709
19	1	Gasket	113-537

PORT TYPE	NPTF			ISO228/1-G			PUSH-IN			PUSH-IN			PUSH-IN			PUSH-IN		
	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE
PORT SIZE	3/8	1/2	1/8	3/8	1/2	1/8	1/4	3/8	1/4	3/8	1/2	1/4	8mm	12mm	6mm	10mm	14mm	6mm
LH Ports Only Kit w/o muffer, w/o DIN Rail	239-1688			239-1692			239-1699			239-1700			239-1707			239-1708		
LH Ports Only Kit w/o muffer, w/ DIN Rail	239-1687			239-1691			239-1697			239-1698			239-1705			239-1706		
LH Ports Only Kit w/ muffer, w/o DIN Rail	239-1686			239-1690			239-1695			239-1696			239-1703			239-1704		
LH Ports Only Kit w/ muffer, w/ DIN Rail	239-1685			239-1689			239-1693			239-1694			239-1701			239-1702		



Manifold Assembly



NOTE:

- For Electrical Interface option dimensions see Electronics section.
- For Fieldbus Electronics dimensions see Electronics section.

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T	U
5.25	1.42	2.16	1.50	3.02	0.71	3.71	1.06	0.47	0.63	0.97	1.59	1.77	3.35	4.80	6.26	0.30	0.29	6.56
(133.3)	(36.0)	(55.0)	(38.1)	(76.8)	(18.0)	(94.3)	(27.0)	(12.1)	(16.0)	(24.5)	(40.3)	(45.0)	(85.0)	(121.9)	(159.0)	(7.6)	(7.4)	(166.6)
V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG							
1.42	2.12	1.78	2.10	5.30	0.70	1.05	2.29	3.35	4.55	2.05	2.57							
(36.1)	(53.8)	(45.2)	(53.3)	(134.6)	(17.8)	(26.7)	(58.2)	(85.1)	(115.6)	(52.0)	(65.4)							

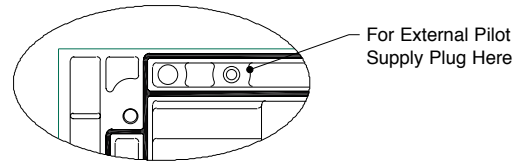
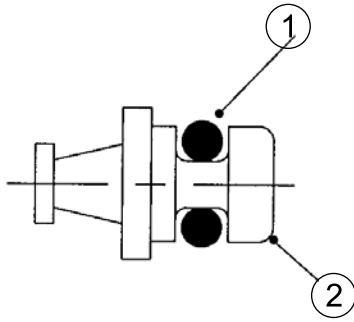


2012 Series

Internal Pilot Plug

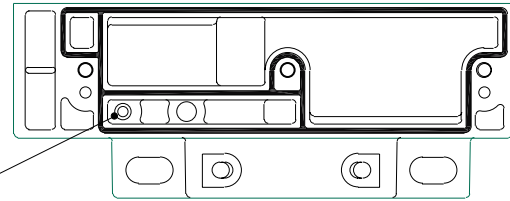
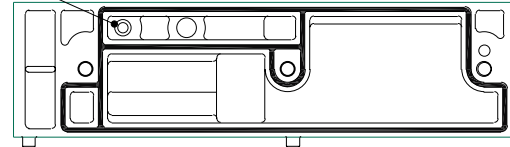
213-497

Internal/External Pilot Selection



For External Pilot Supply Plug Here

For Internal Pilot Supply Plug Here

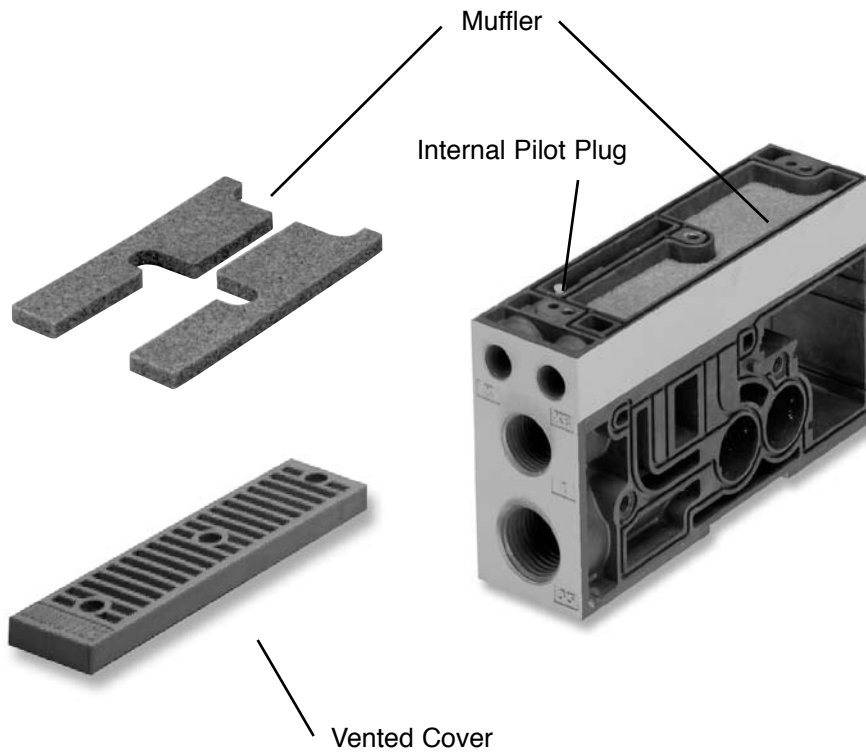


For Internal Pilot Supply Plug Here

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Plug	125-820
2	1	O-Ring	126-471

Internal Muffler

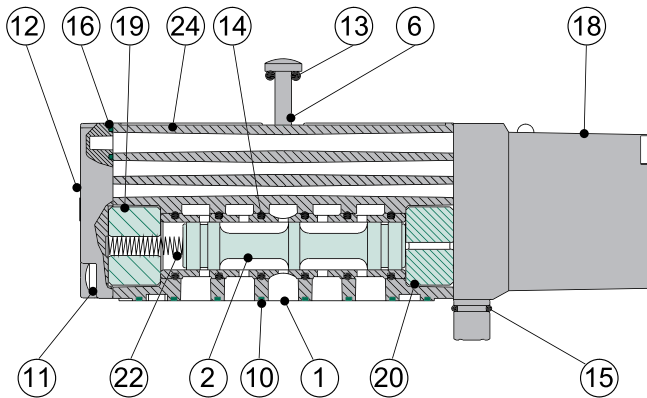
125-851





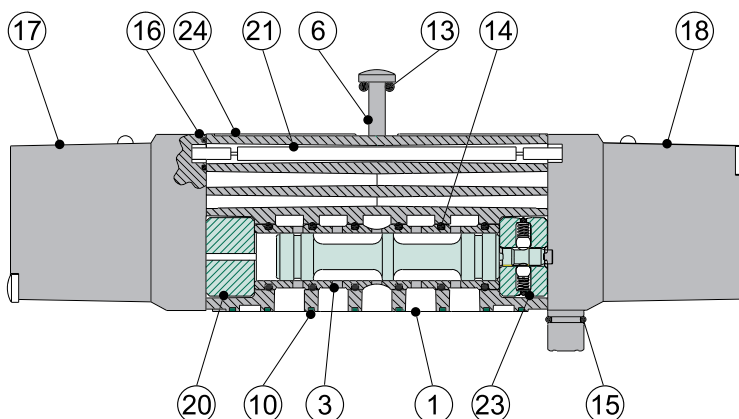
Valve Service Kits and Parts

Kit No. 2012-K1*
(For Models 122BA4, 123BA4, 12HBA4, 12KBA4)



DET NO.	BA4	BB4	PART NAME	PART NO.
1	1	1	Body (not sold separately)	
2	1	N/A	Spool & Sleeve Assembly	209-517
3	N/A	1	Spool & Sleeve Assembly	209-518
6	2	2	Screw Assembly	213-459
10 *	1	1	Gasket Body/Manifold	113-370
11	2	N/A	Screw	127-650
12	1	N/A	Spring Cap	104-673
13 *	2	2	O-Ring	126-163
14 *	6	6	O-Ring	126-395
15 *	1	1	O-Ring	126-144
16 *	2	2	Gasket Adaptor/Body	113-373
17	N/A	1	Solenoid Pilot - 12 End	See p. 36
18	1	1	Solenoid Pilot - 14 End	See p. 36
19 *	1	N/A	Bumper 12 End	114-154
20 *	1	N/A	Bumper 14 End	114-153
21	N/A	1	14-12 Recepticle	230-915
22 *	1	N/A	Spring	115-271
23 *	N/A	1	Detent Assembly	210-128
24	1	1	Nameplate	122-1074

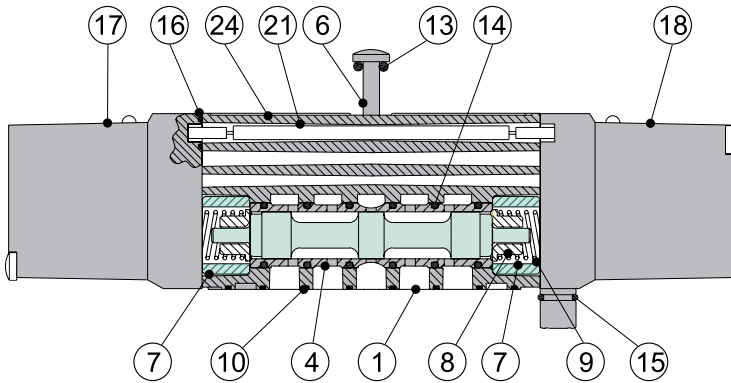
Kit No. 2012-K2*
(For Models 122BB4, 123BB4, 12HBB4, 12KBB4)



*Indicates parts included in service kit.

Valve Service Kits and Parts

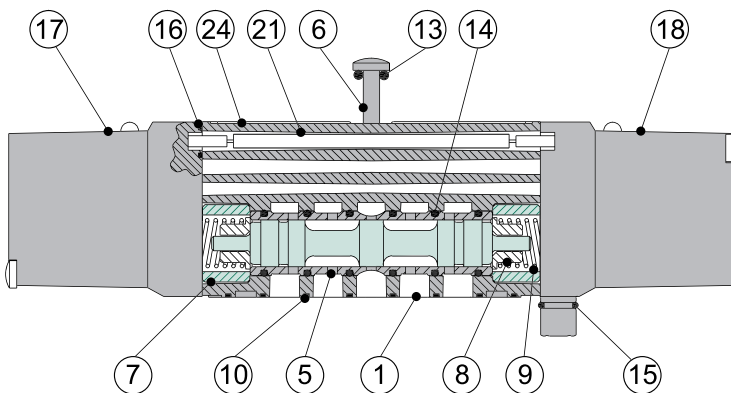
Kit No. 2012-K3*
(For Models 122BB5, 123BB5, 12HBB5, 12KBB5)



DET NO.	BB5	BB6	PART NAME	PART NO.
1	1	1	Body (not sold separately)	
4	1	N/A	Spool & Sleeve Assembly	209-519
5	N/A	1	Spool & Sleeve Assembly	209-520
6	2	2	Screw Assembly	213-459
7 *	2	2	Bushing	117-174
8 *	2	2-	Spring Retainer	116-464
9 *	2	2	Return Spring	115-284
10 *	1	1	Gasket Body/Manifold	113-370
13 *	2	2	O-Ring	126-163
14 *	6	6	O-Ring	126-395
15 *	1	1	O-Ring	126-144
16 *	2	2	Gasket Adaptor/Body	113-373
17	1	1	Solenoid Pilot - 12 End	See p. 36
18	1	1	Solenoid Pilot - 14 End	See p. 36
21	1	1	14-12 Recepticle	230-915
24	1	1	Nameplate	122-1074

*Indicates parts included in service kit.

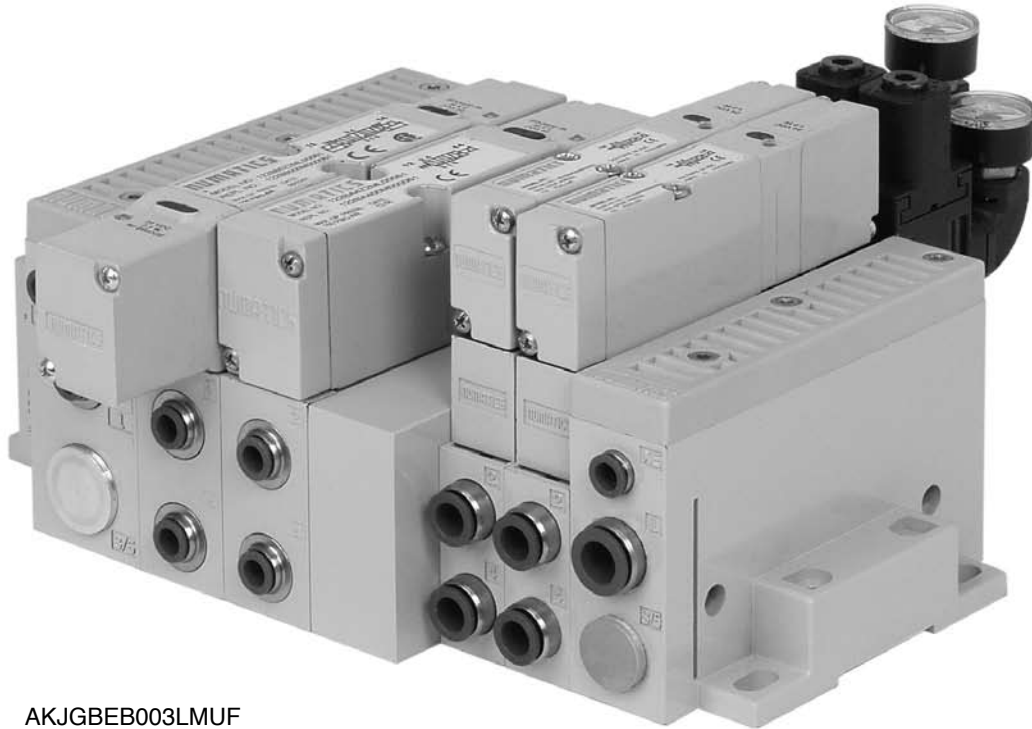
Kit No. 2012-K3*
(For Models 122BB6, 123BB6, 12HBB6, 12KBB6)



Adaptor Plate Kits

239-1965

This kit includes the adaptor plate, transfer board, gasket, screws, and studs. Individual end plates for the 2005 and 2012 are not included. This adaptor allows the transition from the 2012 to the 2005 series.



Example order

Adaptor Plate Kit AKJGBEB003LMUF
 122BB4Z2ML00061
 122BA4Z1ML00061
 053BA4Z1ML00061
 053BA4Z1ML00061
 ASSEMBLED

Adaptor Plate Kit with Standard End Plates ("STD" Option)

DESCRIPTION	PART NO.
2005 with 3/8 NPTF - 2012 with 3/8 and 1/2 NPTF	239-2064
2005 with 3/8 G-Tap - 2012 with 3/8 and 1/2 G-Tap	239-2068
2005 with 3/8 Push-in - 2012 with 3/8 and 1/2 Push-in	239-2072
2005 with 10 mm Push-in - 2012 with 10 & 14 mm Push-in	239-2076

Adaptor Plate Kit with Standard End Plates and Muffler ("MUF" Option)

DESCRIPTION	PART NO.
2005 with 3/8 NPTF - 2012 with 3/8 and 1/2 NPTF	239-2065
2005 with 3/8 G-Tap - 2012 with 3/8 and 1/2 G-Tap	239-2069
2005 with 3/8 Push-in - 2012 with 3/8 and 1/2 Push-in	239-2073
2005 with 10 mm Push-in - 2012 with 10 & 14 mm Push-in	239-2077

Adaptor Plate Kit with Standard End Plates and DIN Rail Mount ("DRM" Option)

DESCRIPTION	PART NO.
2005 with 3/8 NPTF - 2012 with 3/8 and 1/2 NPTF	239-2066
2005 with 3/8 G-Tap - 2012 with 3/8 and 1/2 G-Tap	239-2070
2005 with 3/8 Push-in - 2012 with 3/8 and 1/2 Push-in	239-2074
2005 with 10 mm Push-in - 2012 with 10 & 14 mm Push-in	239-2078

Adaptor Plate Kit with Standard End Plates, Muffler and DIN Rail Mount ("DWM" Option)

DESCRIPTION	PART NO.
2005 with 3/8 NPTF - 2012 with 3/8 and 1/2 NPTF	239-2067
2005 with 3/8 G-Tap - 2012 with 3/8 and 1/2 G-Tap	239-2071
2005 with 3/8 Push-in - 2012 with 3/8 and 1/2 Push-in	239-2075
2005 with 10 mm Push-in - 2012 with 10 & 14 mm Push-in	239-2079



Assembly Kits 2005 & 2012 Series

Manifold Assembly

2005 Series

AK J E D 0000 3 L STD

**Electrical/Electronics
Type & Location**

- C = For Fieldbus Electronics, See Electronics Section
- 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

Valve Series

- E = 2005 Series

Number of Valve Stations

A = 1	I = 9	Q = 17	Y = 25
B = 2	J = 10	R = 18	Z = 26
C = 3	K = 11	S = 19	2 = 27
D = 4	L = 12	T = 20	3 = 28
E = 5	M = 13	U = 21	4 = 29
F = 6	N = 14	V = 22	5 = 30
G = 7	O = 15	W = 23	6 = 31
H = 8	P = 16	X = 24	7 = 32

Options

- STD = Standard
- DRM = DIN Rail Mounting
- MUF = Muffler in End Plates
- DWM = DIN Rail with MUF
- 14X = External Pilot

Port Type

- L = Push-in
- N = NPTF
- G = G Tap

End Plate Port Size 2005

- 3 = Port type L, N or G
Port 1 = 3/8 Port 3/5 = 3/8
- K = Port type L only
Port 1 = 10mm Port 3/5 = 10mm

2012 Series

A K J G D 0 000 3 L STD

**Electrical Connection
Type & Location**

- C = For Fieldbus Electronics, See Electronics Section
- 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

Valve Series

- G = 2012 Series

Number of Valve Stations*

A = 1	I = 9	Q = 17	Y = 25
B = 2	J = 10	R = 18	Z = 26
C = 3	K = 11	S = 19	2 = 27
D = 4	L = 12	T = 20	3 = 28
E = 5	M = 13	U = 21	4 = 29
F = 6	N = 14	V = 22	5 = 30
G = 7	O = 15	W = 23	6 = 31
H = 8	P = 16	X = 24	7 = 32

Valve Series

- E = 2005 Series
- 0 = No Second Valve Series

Options

- STD = Standard
- DRM = DIN Rail Mounting
- MUF = Muffler in End Plates
- DWM = DIN Rail with MUF
- A06 = End Plate with Ports on Left End Only, Mounting Plate Only on Right End
- D10 = A06 w/DIN Rail Mounting
- D11 = A06 w/Muffler in End Plates
- F05 = A06 w/DIN Rail with MUF
- 14X = External Pilot

Port Type

- L = Push-in
- N = NPTF
- G = G Tap

End Plate Port Size 2012

- 3 = Port Type L, N or G
Port 1 = 3/8 Port 3/5 = 1/2
- 2 = Port Type L only
Port 1 = 1/4 Port 3/5 = 3/8
- H = Port Type L only
Port 1 = 8mm Port 3/5 = 12mm
- K = Port Type L only
Port 1 = 10mm Port 3/5 = 14mm

Number of Valve Stations*

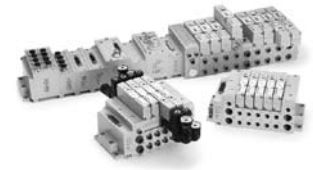
A = 1	I = 9	Q = 17	Y = 25
B = 2	J = 10	R = 18	Z = 26
C = 3	K = 11	S = 19	2 = 27
D = 4	L = 12	T = 20	3 = 28
E = 5	M = 13	U = 21	4 = 29
F = 6	N = 14	V = 22	5 = 30
G = 7	O = 15	W = 23	6 = 31
H = 8	P = 16	X = 24	7 = 32

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"
16	32	22	32	22	32	8
						16

*NOTE: Maximum number of valve stations is determined by:

- The electrical connection type.
- The valve type - single solenoid valves up to the maximum solenoid outputs allowed by the electrical connection type (see chart above) or a combination of single and/or double solenoid valves not to exceed the maximum number of solenoid outputs allowed.
- Combination of all stations cannot exceed 32



AKJ or AKM 25 or 37 Pin Sub-D

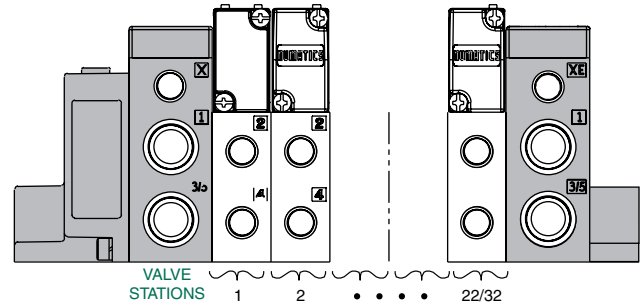
- Shaded components described by Assembly Kit (AK) model number designation (see #1, page 42).
- Each valve manifold station is listed in sequential order from left to right when facing the port side of the manifold as indicated.

Example order: (2005)

25 Pin Sub-D	AKJED00003NSTD
valve station 1	051BA4Z1MN00061
valve station 2	051BA4Z1MN00061
valve station 3	051BB4Z2MN00061
valve station 4	051BB5Z2MN00061
	ASSEMBLED

Example order: (2012)

37 Pin Sub-D	AKMGD00003GMUF
valve station 1	123BA4Z1ML00061
valve station 2	123BA4Z1ML00061
valve station 3	123BB5Z2ML00061
valve station 4	123BB6Z2ML00061
	ASSEMBLED

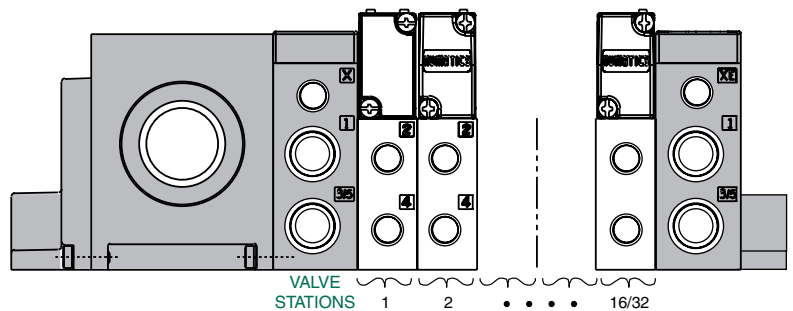


AKF or AKT 1-16 or 1-32 Terminal Strip

- Ordered using the same method as Sub-D:

Example order: (2005)

valve station 1	AKFEF00003LDRM
valve station 2	05HBA4Z1ML00061
valve station 3	05HBA4Z1ML00061
valve station 4	05HBB4Z2ML00061
valve station 5	05HBB4Z2ML00061
valve station 6	05HBB5Z2ML00061
	05HBB6Z2ML00061
	ASSEMBLED

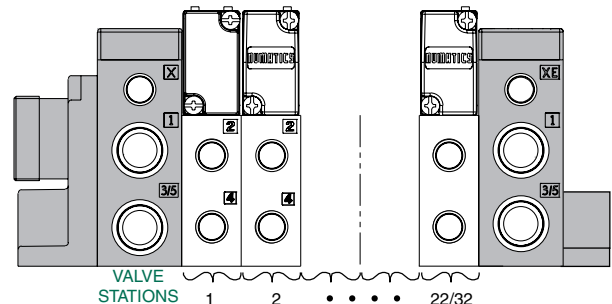


AKP, AKQ, AKR or AKS 12, 19, 26 or 26+12 Pin Round Connector

- Ordered using the same method as Sub-D:

Example order: (2012)

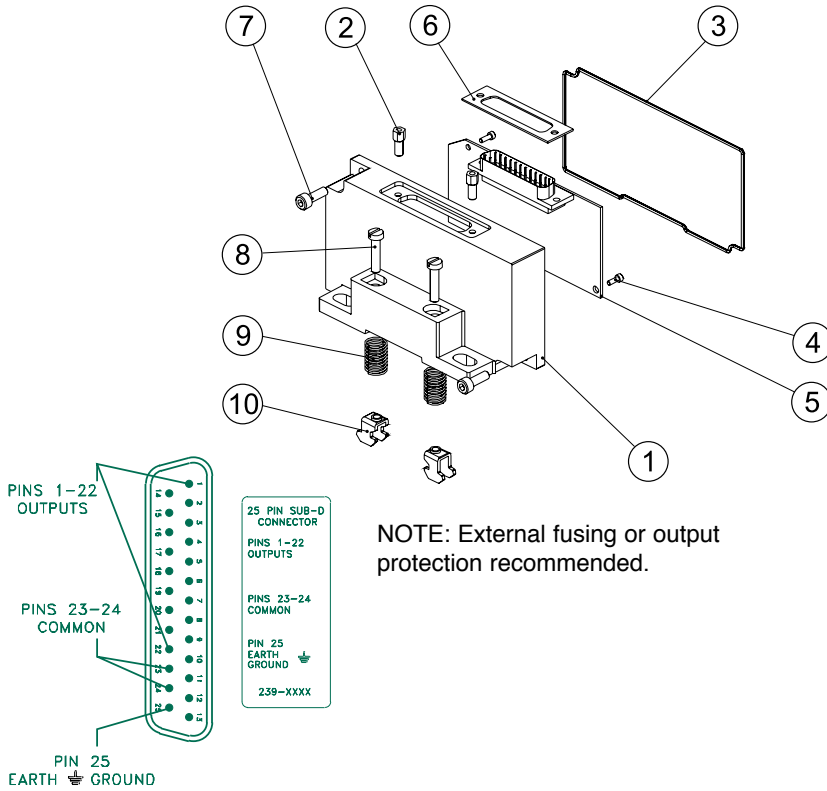
valve station 1	AKRGH00003LDWM
valve station 2	123BA4Z1ML00061
valve station 3	123BA4Z1ML00061
valve station 4	123BA4Z1ML00061
valve station 5	123BB4Z6ML00061
valve station 6	123BB4Z6ML00061
valve station 7	123BB5Z6ML00061
valve station 8	123BB5Z6ML00061
	ASSEMBLED





Assembly Kits 2005 & 2012 Series

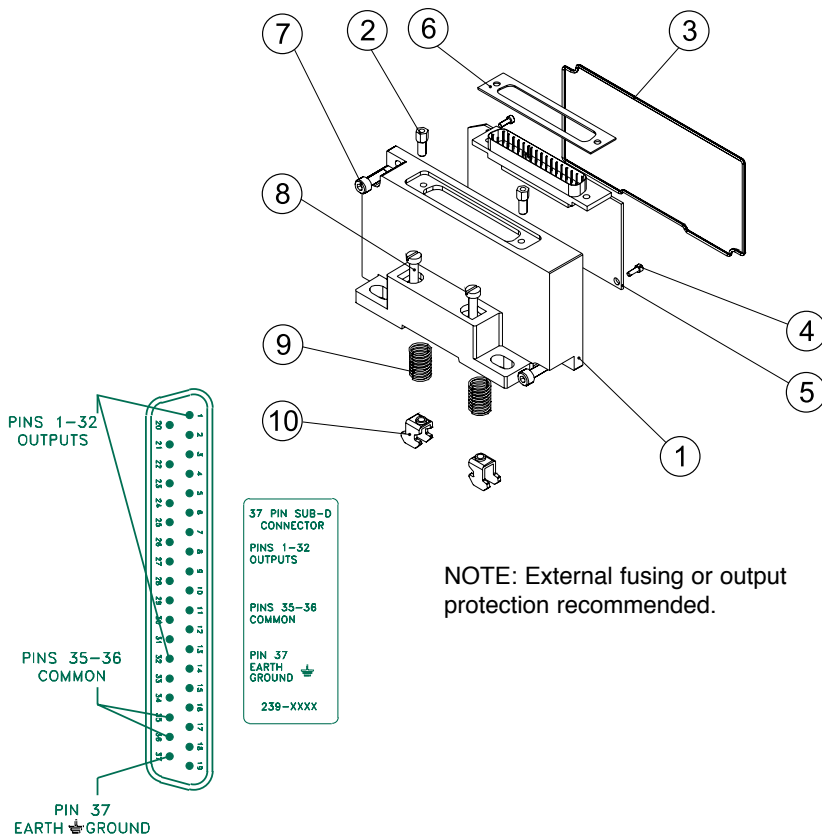
25 Pin Sub-D Connector Kit



25 PIN SUB-D HOUSING KITS		PART NO.
Without DIN Rail		239-1174
With DIN Rail		239-1175

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Housing	105-401
2	2	Hex Screw	127-825
3	1	Gasket	113-531
4	2	Screw	127-318
5	1	PCB Ass'y	256-607
6	1	Gasket	113-507
7	2	Screw Ass'y	127-396
8	2	Screw (DIN Rail Only)	127-472
9	2	Spring (DIN Rail Only)	115-355
10	2	Clamp (DIN Rail Only)	125-720

37 Pin Sub-D Connector Kit

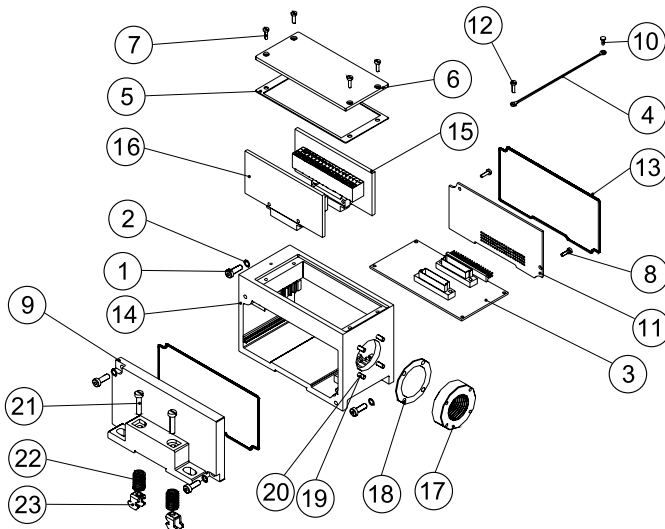


37 PIN SUB-D HOUSING KITS		PART NO.
Without DIN Rail		239-1180
With DIN Rail		239-1181

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Housing	105-402
2	2	Hex Screw	127-825
3	1	Gasket	113-531
4	2	Screw	127-318
5	1	PCB Ass'y	256-608
6	1	Gasket	113-530
7	2	Screw Ass'y	127-396
8	2	Screw (DIN Rail Only)	127-472
9	2	Spring (DIN Rail Only)	115-355
10	2	Clamp (DIN Rail Only)	125-720



1-16 & 1-32 Terminal Strip Kit



NOTE: External fusing or output protection recommended.

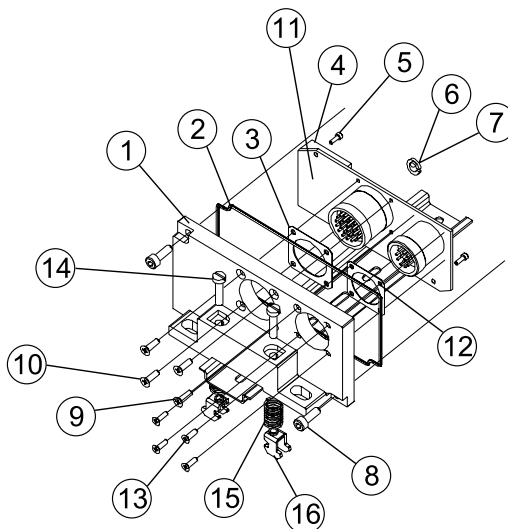
NOTE: Min. Wire AWG 26
Max. Wire AWG 18

TERMINAL STRIP
TERMINALS
1-32 OUTPUTS
TERMINAL COM
COMMON
TERMINAL GND
EARTH
GROUND
18 AWG WIRE
MAXIMUM

TERMINAL STRIP HOUSING KITS	PART NO.
Without DIN Rail, 1-16 Sol.	239-1229
With DIN Rail, 1-16 Sol.	239-1230
Without DIN Rail, 1-32 Sol.	239-1231
With DIN Rail, 1-32 Sol.	239-1232

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	4	Screw	127-697
2	4	Lockwasher	128-188
3	1	Backplane board	256-618
4	1	Cover Strap	125-772
5	1	Gasket	113-533
6	1	Cover	105-405
7	4	Screw	127-852
8	1	Screw	127-318
9	1	DIN Rail Cover PT	105-403
10	1	Screw	127-180
11	1	Converter BRD	256-645
12	2	Screw	127-794
13	2	Gasket	113-531
14	1	Housing	125-844
15	1	Terminal Strip (1-16)	256-617
16	1	Terminal Strip (17-32)	256-619
17	1	Adaptor	119-659
18	1	Gasket	113-542
19	4	Screw	127-879
20	4	Lockwasher	128-192
21	2	Screw (DIN Rail Only)	127-472
22	2	Spring (DIN Rail Only)	115-355
23	2	Clamp (DIN Rail Only)	125-720

26 Pin & 26 + 12 Pin Round Connector Kit



26 PIN ROUND CONNECTOR
PINS 1-22
OUTPUTS
PINS 24-25
COMMON
PIN 26
EARTH
GROUND

26 Pin

26 PIN ROUND CONNECTOR
PINS 1-22
OUTPUTS 1-22
PINS 24-25
COMMON
PIN 26
EARTH
GROUND
12 PIN ROUND CONNECTOR
PINS 1-10
OUTPUTS 23-32

26 Pin + 12 Pin

NOTE: External fusing or output protection recommended.

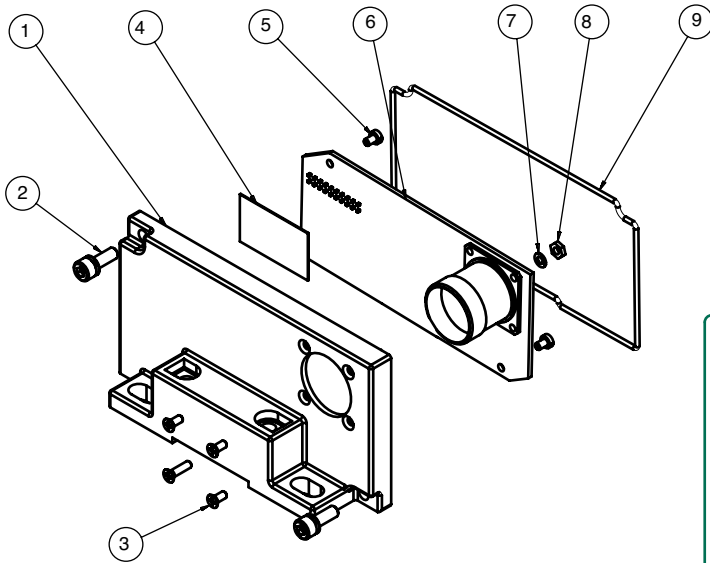
26 PIN ROUND KIT	PART NO.
Without DIN	239-1184
With DIN	239-1185
26 + 12 PIN ROUND KITS	PART NO.
Without DIN	239-1376
With DIN	239-1377

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Cover (26 Pin Only)	105-408
1	1	Cover (26 + 12 Pin Only)	105-421
2	1	Gasket	113-531
3	1	Gasket	113-353
4	1	26 PCB Ass'y	256-624
4	1	26 + 12 PCB Ass'y	256-688
5	2	Screw	127-875
6	1	Lockwasher	128-294
7	1	Hex Nut	128-293
8	2	Screw Ass'y	127-396
9	3	Screw	127-810
10	1	Screw	127-770
11	1	Shield (26 + 12 Pin Only)	140-759
12	1	Gasket (26 + 12 Pin Only)	113-354
13	4	Screw (26 + 12 Pin Only)	127-811
14	2	Screw (DIN Rail Only)	127-742
15	2	Spring (DIN Rail Only)	115-355
16	2	Clamp (DIN Rail Only)	125-720



Assembly Kits 2005 & 2012 Series

12 Pin Round Connector Kit 239-2115



12 PIN ROUND CONNECTOR
 PINS 1-8
 OUTPUTS
 PINS 9-10
 COMMON
 PIN 11
 NOT USED
 PIN 12
 EARTH
 GROUND

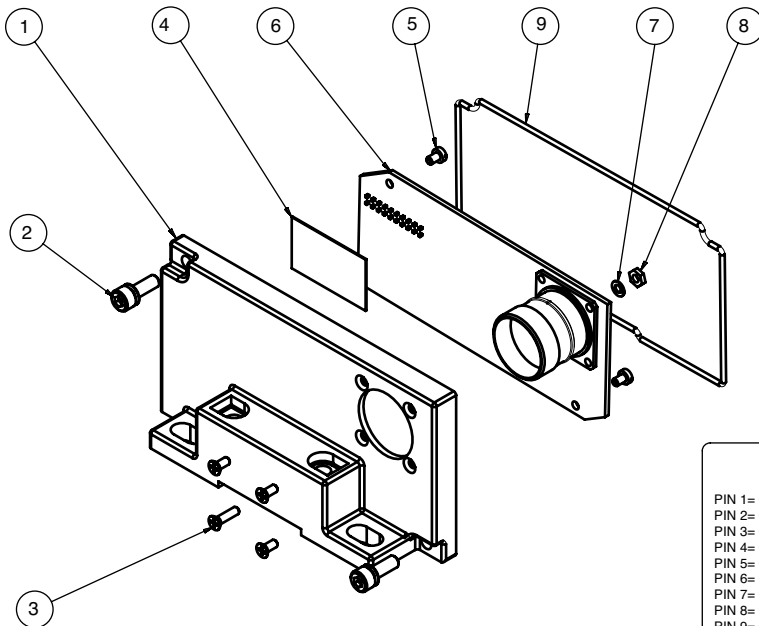
239-2115

NOTE: External fusing or output protection recommended.

Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Cover	105-451
2	2	Screw	127-391
3	4	Screw	127-982
4	1	Shield	140-759
5	2	Screw	127-875
6	1	PC Board	256-856
7	4	Lockwasher	128-352
8	4	Nut	128-288
9	1	Gasket	113-531

19 Pin Round Connector Kit 239-2307



19 PIN CONNECTOR

PIN 1= COIL 15	PIN 11= COIL 13
PIN 2= COIL 11	PIN 12= P.E.
PIN 3= COIL 7	PIN 13= COIL 12
PIN 4= COIL 4	PIN 14= COIL 8
PIN 5= COIL 3	PIN 15= COIL 1
PIN 6= COMMON	PIN 16= COIL 5
PIN 7= COIL 2	PIN 17= COIL 9
PIN 8= COIL 6	PIN 18= COIL 16
PIN 9= COIL 10	PIN 19= N.C.
PIN 10= COIL 14	

NOTE: External fusing or output protection recommended.

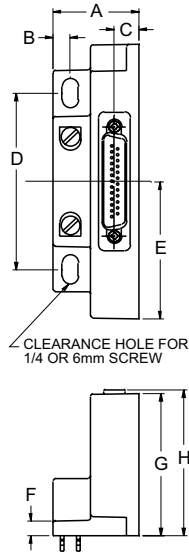
Parts List

DET. NO.	NO. REQ'D	PART NAME	PART NO.
1	1	Cover	105-451
2	2	Screw	127-391
3	4	Screw	127-982
4	1	Shield	140-759
5	2	Screw	127-875
6	1	PC Board	256-905
7	4	Lockwasher	128-352
8	4	Nut	128-288
9	1	Gasket	113-531



Electrical Interface

25 Pin Sub-D

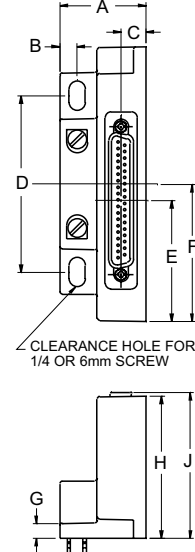


Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H
1.45	0.29	0.42	2.98	2.32	0.25	2.40	2.47
(36.8)	(7.4)	(10.7)	(75.7)	(58.9)	(6.3)	(61.0)	(62.7)

37 Pin Sub-D

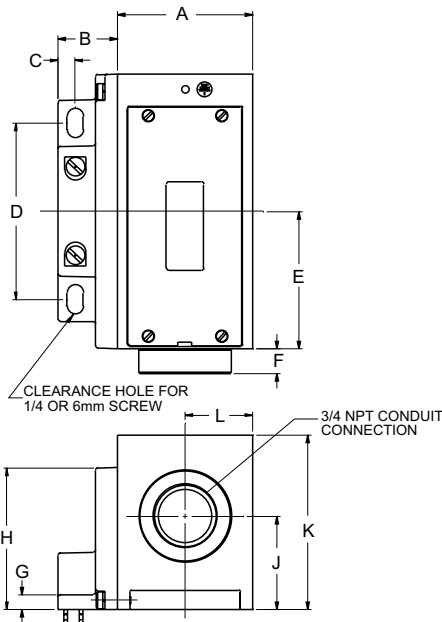


Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	J
1.45	0.29	0.42	2.98	2.04	2.32	0.25	2.40	2.47
(36.8)	(7.4)	(10.7)	(75.7)	(51.8)	(58.9)	(6.3)	(61.0)	(62.7)

Terminal Strip 1-16 & 1-32

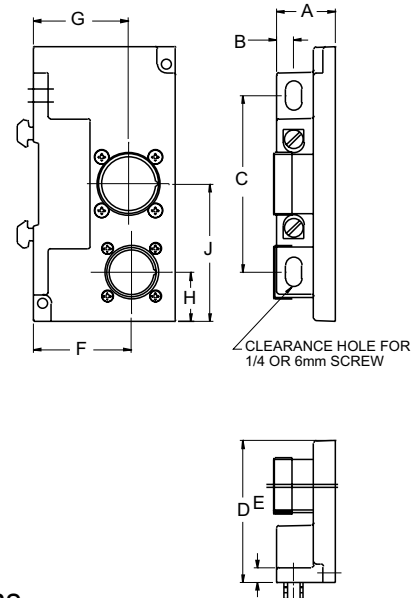


Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	J	K	L
2.28	1.00	0.29	2.98	2.32	0.43	0.25	2.40	1.58	2.95	1.14
(57.9)	(25.4)	(7.4)	(75.7)	(58.9)	(10.9)	(6.3)	(61.0)	(40.1)	(74.9)	(29.0)

12, 19, 26 & 26 + 12 Pin Round Connector



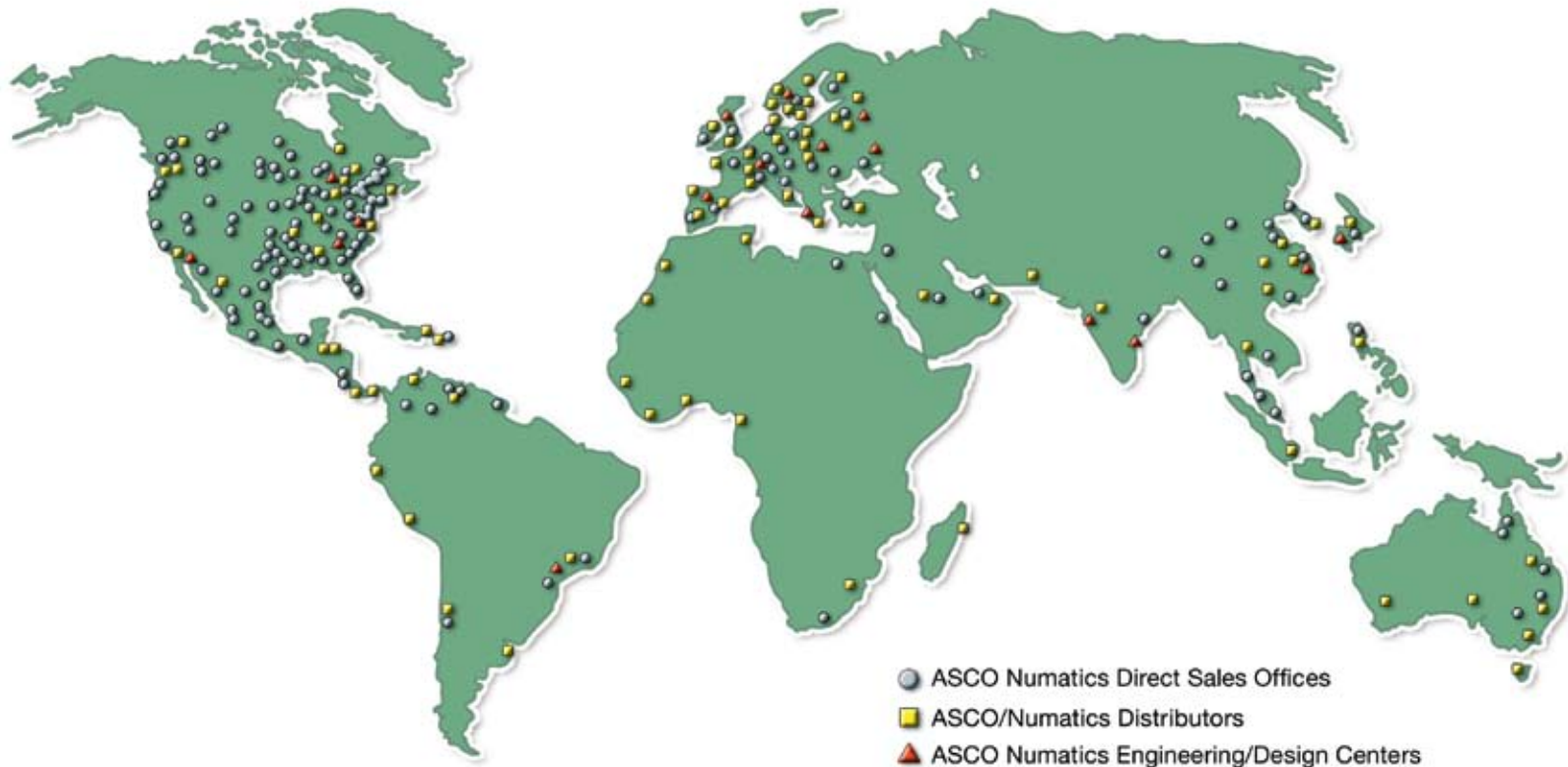
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

A	B	C	D	E	F	G	H	J
1.00	0.29	2.98	2.40	0.25	1.66	1.61	0.82	2.32
(25.4)	(7.4)	(75.7)	(61.0)	(6.3)	(42.2)	(40.9)	(20.8)	(58.9)

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