

# NUMATICS™

## 2012 Series

Solenoid Pilot Actuated Valves



[www.numatics.com](http://www.numatics.com)

  
**EMERSON™**  
Industrial Automation

## 2012 Series

Terminal Strip, Sub-D, and Round Connector Options-Exploded View	3
Technical and Operating Data	4
How to Order	5
Individual Base Assembly Kit	6
Internal/External Pilot Supply	6
Valve on Individual Base Dimensions	7
Sandwich Pressure Regulators	8
Valve Regulator/Speed Control Plug-in Assembly	9
Regulator Service Kits and Parts	9
Sandwich Pressure Regulator Dimensions	10
Gauge Kit	10
Manifold Assemblies	11
Valve on Manifold Block	12
Mid-Station Supply and Exhaust Block	13
Sandwich Shut Off Block	13
Sandwich Pressure Block	14
Sandwich Exhaust Block	14
Solenoid Pilot Assembly	15
Blank Station Plate	15
Speed Control Kit	15
Interchangeable Push-in Cartridge Fittings	16
DIN Rail Clamp Kit	16
Blocking Discs	16
Ribbon Cable Assembly Kit	17
End Plate Kits	18-19
Manifold Assembly	20
Internal/External Pilot Selection	21
Internal Muffler	21
Valve Service Kits and Parts	22-23
2005/2012 Transition Plate	24

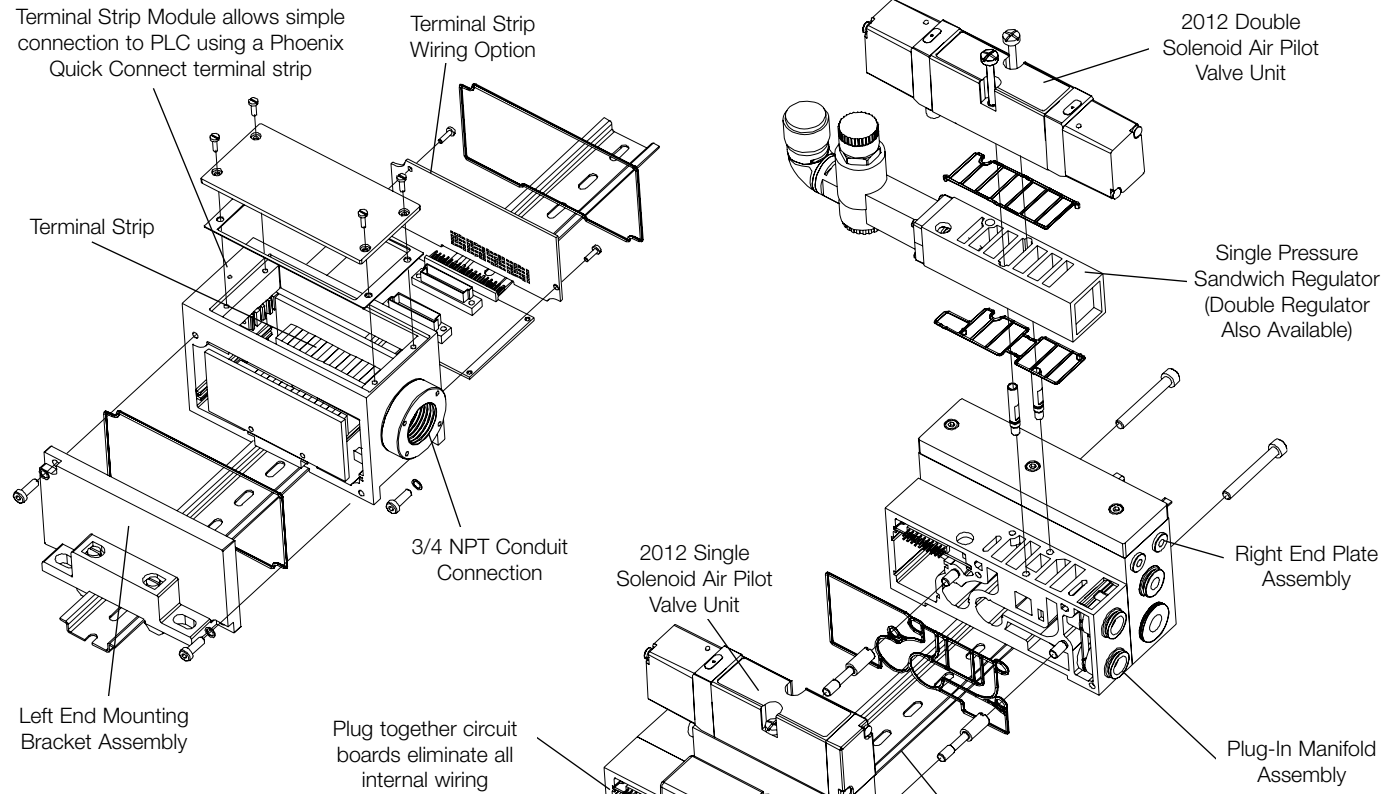
## Assembly Kits

How to Order	25
25 or 37 Pin Sub-D	26
1-16 or 1-32 Terminal Strip	26
26 or 26+12 Pin Round Connector	26
Connector Kits	27-29
Electrical Interface	30

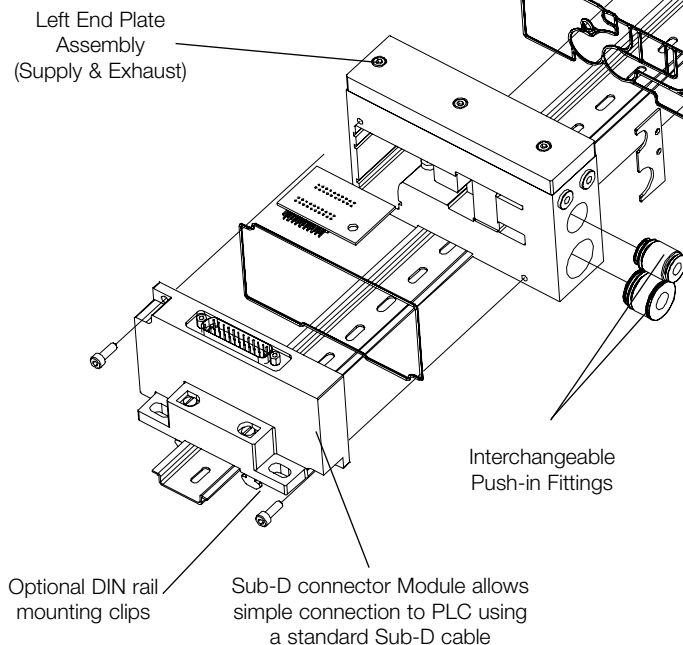
## Manifold and Wiring Architecture

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

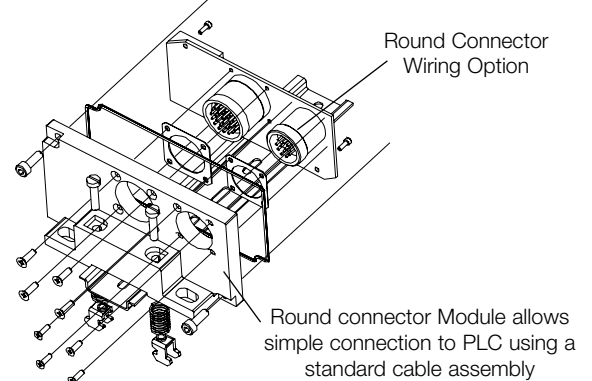
#### Terminal Strip Option



#### Sub-D Option



#### Round Connector Option



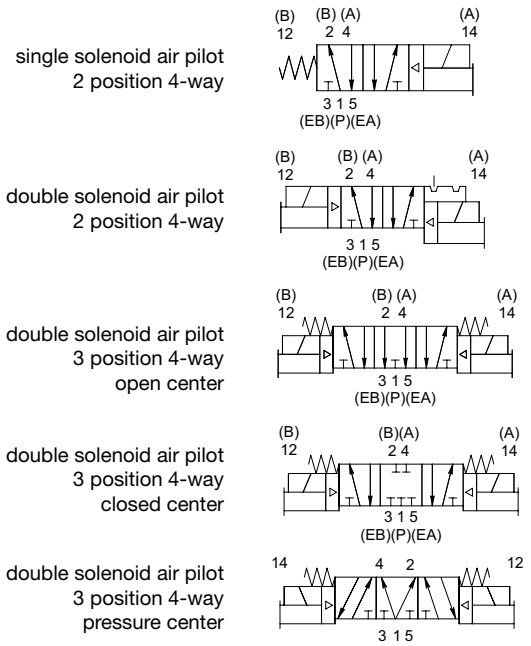
5 Ported, 2 and 3 position, 4-way, Spool & Sleeve Cv: 1.2

- 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
- Designed to meet the requirement of 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	.020

## 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

**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 30.
- Fieldbus electronics see Electronics section.

### Regulators

**122 RS 3 L Z1 J 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  
 \*F 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)

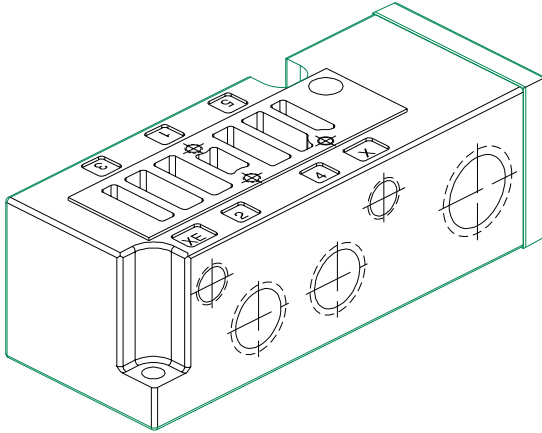
**Special Options**  
 12H = Less gauge  
 16N = Jumper on 14 (A) End  
 16P = Jumper on 12 (B) End  
 16W = Top Facing Gauge

**Port Type**  
 L = Push-In  
 N = NPTF  
 G = G Tap

**Wiring Option**  
 J = Plug-In Receptacle Ass'y  
 0 = Non-Plug-In (Type RE only)

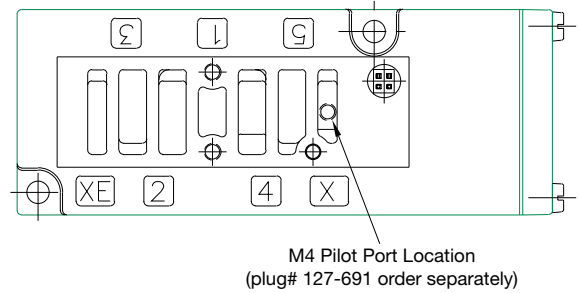
**Mounting**  
 00 = Regulator Unit Only  
 3A = Individual Base, Side Ports, Individual Exhaust  
 3C = 3A w/Speed Control  
 R1 = Z1 w/Ribbon Cable Connector  
 R2 = Z2 w/Ribbon Cable Connector  
 R5 = Z5 w/Ribbon Cable Connector  
 R6 = Z6 w/Ribbon Cable Connector  
 Z0 = Manifold Block w/Side and 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

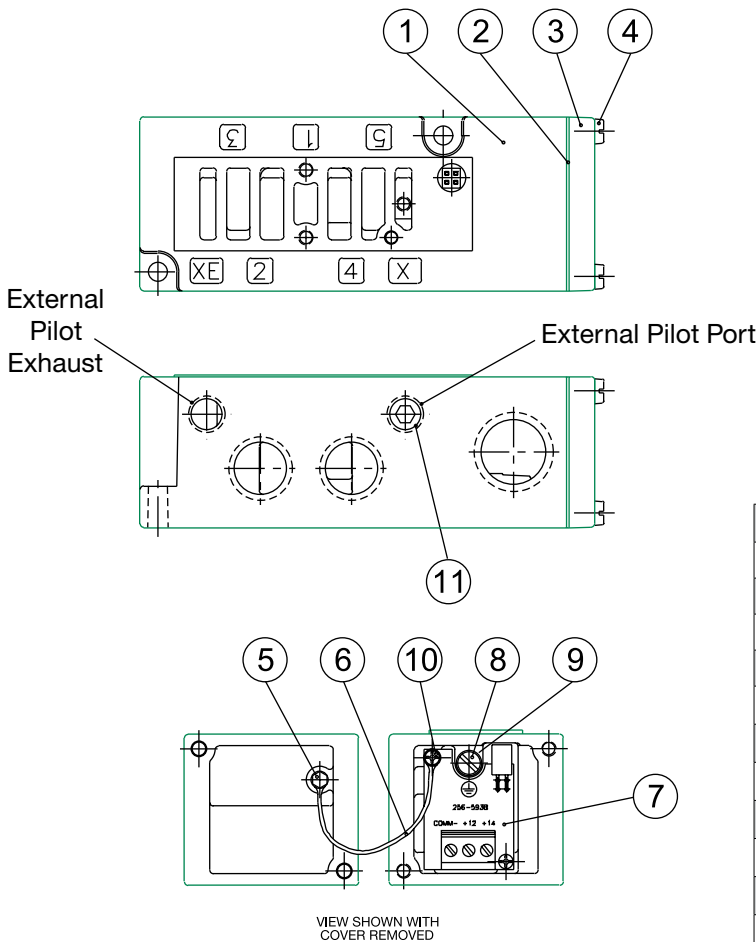


Port Size	Part No.
1/4-NPTF	203-1100
3/8 NPTF	203-1101
1/4 G	203-1137
3/8 G	203-1138

Internal/External Pilot Selection



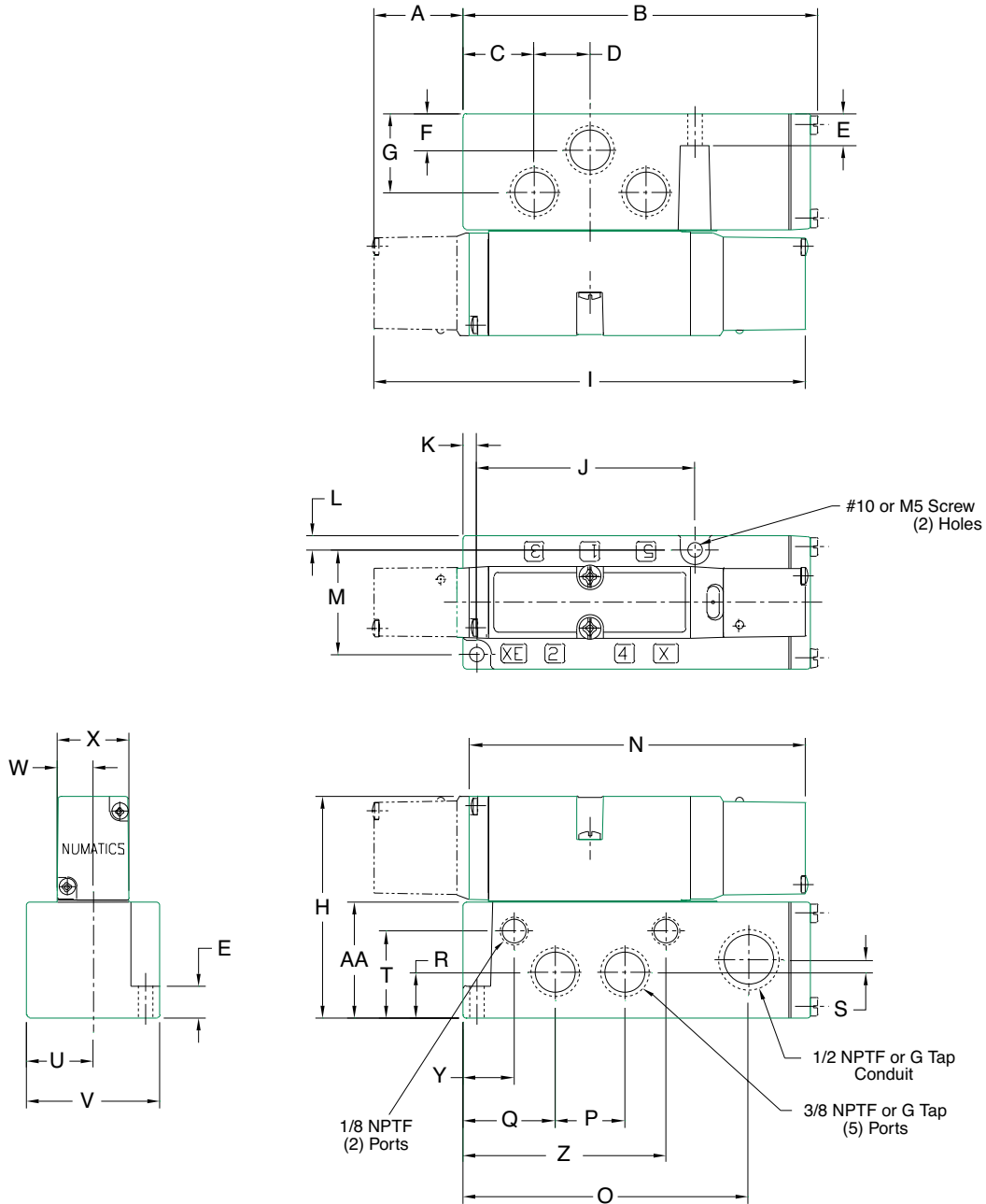
Note: Base assemblies are supplied set up for internal pilot supply. To convert to external pilot supply install plug P.N. 127-691 (sold separately) in the "X" gallery as indicated above. Remove the 1/8 NPTF pipe plug from the "X" port to supply pilot pressure.



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

### Valve on Individual Base

Dimensions: Inches (mm)



A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
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)

P	Q	R	S	T	U	V	W	X	Y	Z	AA
1.00 (25.4)	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)	0.74 (18.8)	2.94 (74.7)	1.67 (42.4)

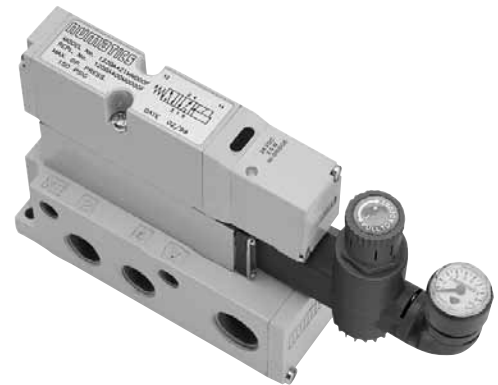


## Sandwich Pressure Regulators

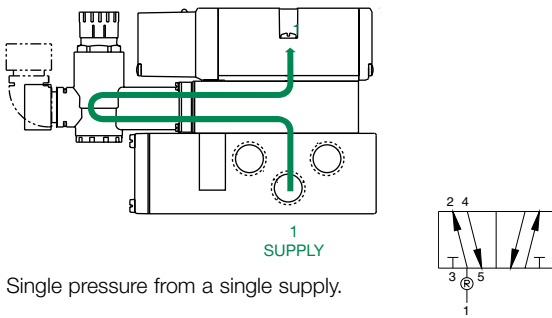
Types: RS / RD / RC / RQ / RE / RT

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."

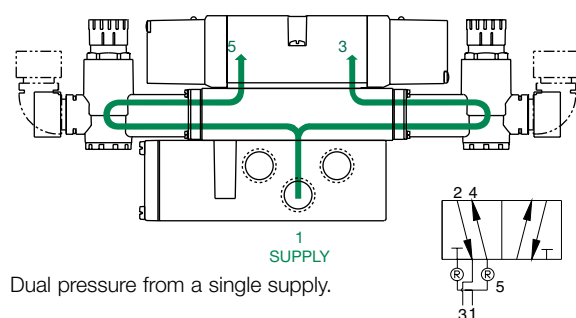
Example orders:	Type RS	Type RD
Valve unit only:	122BA400K000030	122BB400M000061
Regulator	122RS1Z1JN00000	122RD1Z2JN00000
+mounting	ASSEMBLED	ASSEMBLED



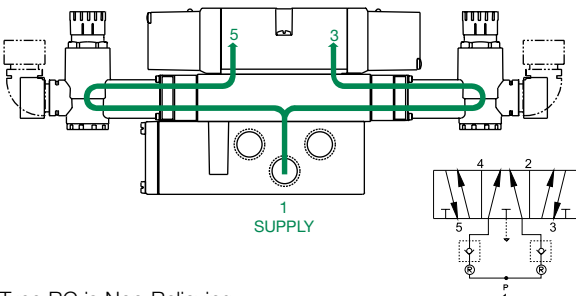
### Type RS



### Type RD

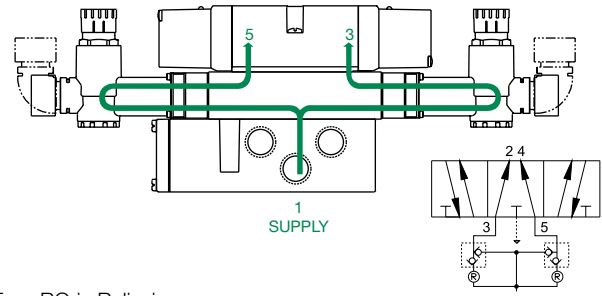


### Type RC



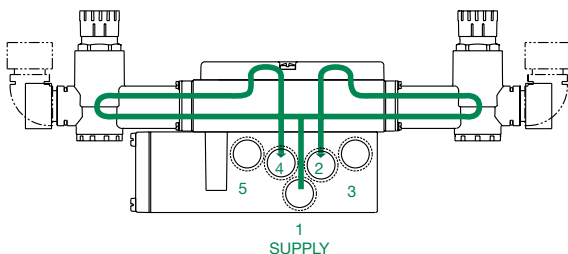
Type RC is Non-Relieving:  
traps downstream pressure if upstream pressure is exhausted.

### Type RQ



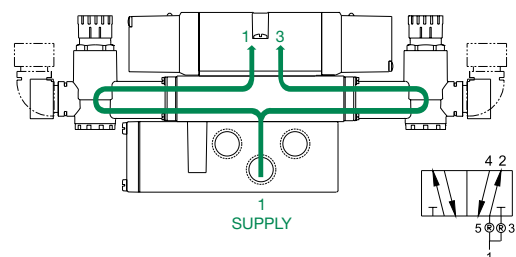
Type RQ is Relieving:  
exhausts pressure in cylinder if upstream pressure is exhausted.

### Type RE



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

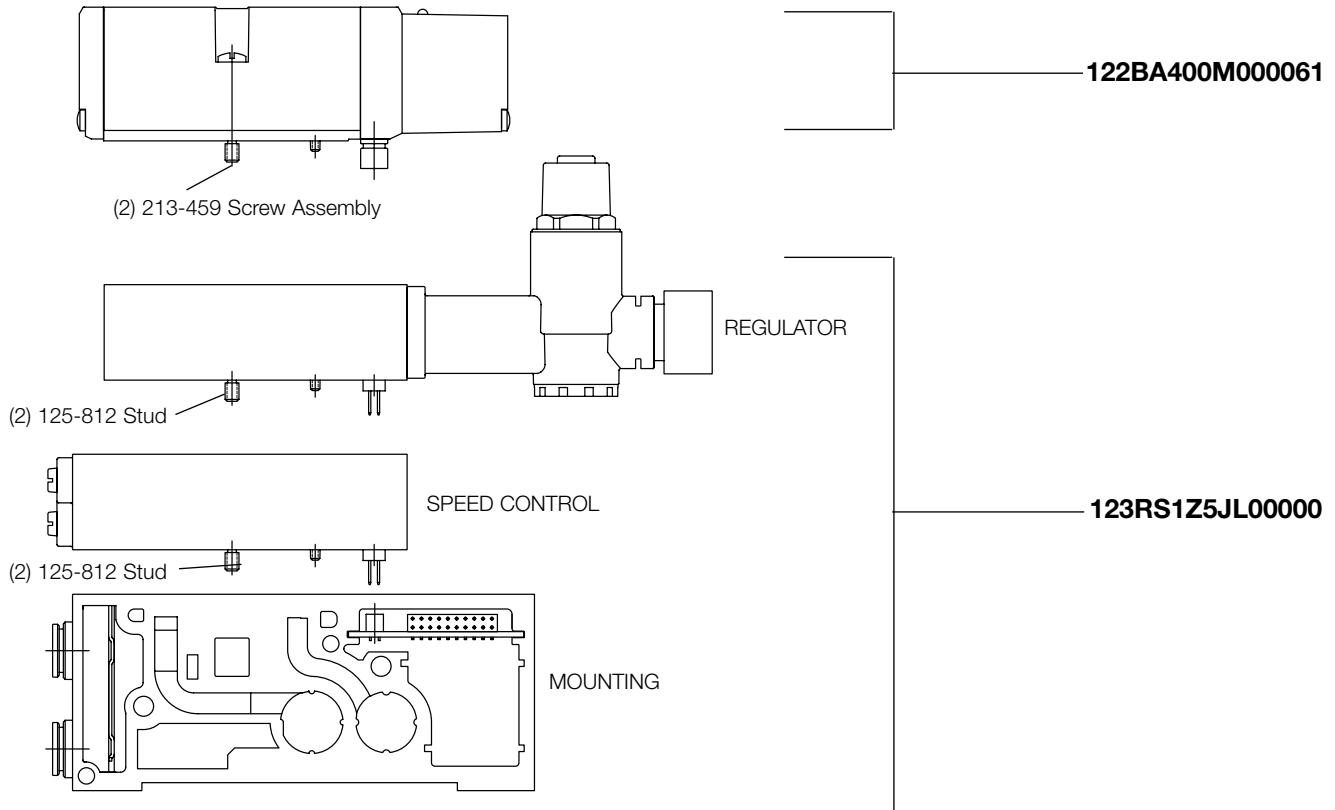
### Type RT



Two-pressure selector used for multi-pressure applications.



### Valve Regulator / Speed Control Plug-in Assembly

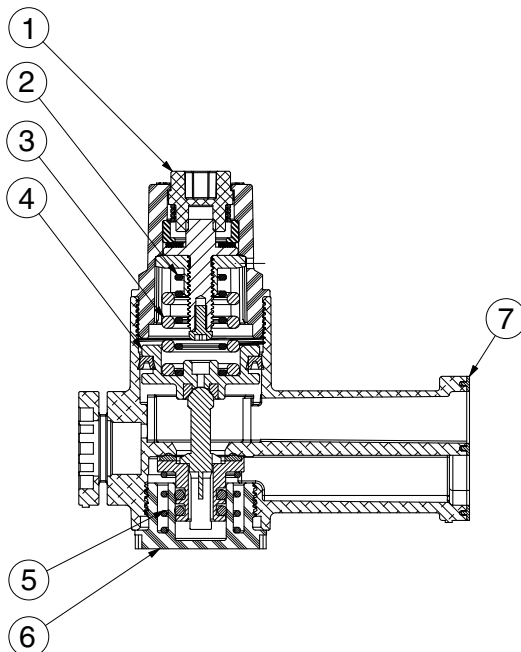


Refer to page 5 for ordering codes.

### 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

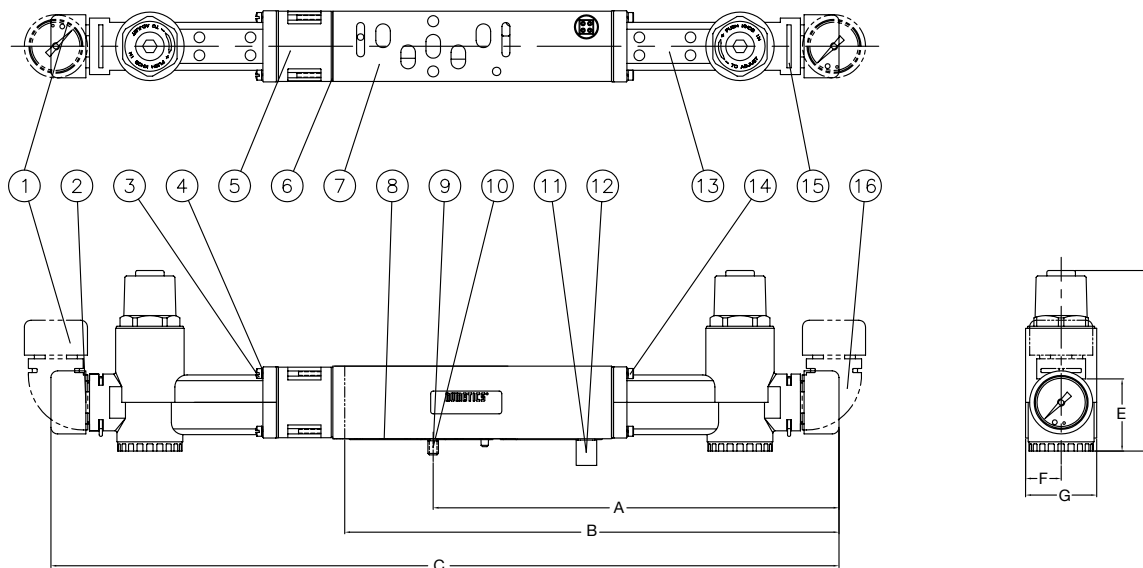
PSIG	Part No.
3-30 PSIG	115-423
5-60 PSIG	115-425
10-130 PSIG*	115-423
	115-424

\* = 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: Inches (mm)



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

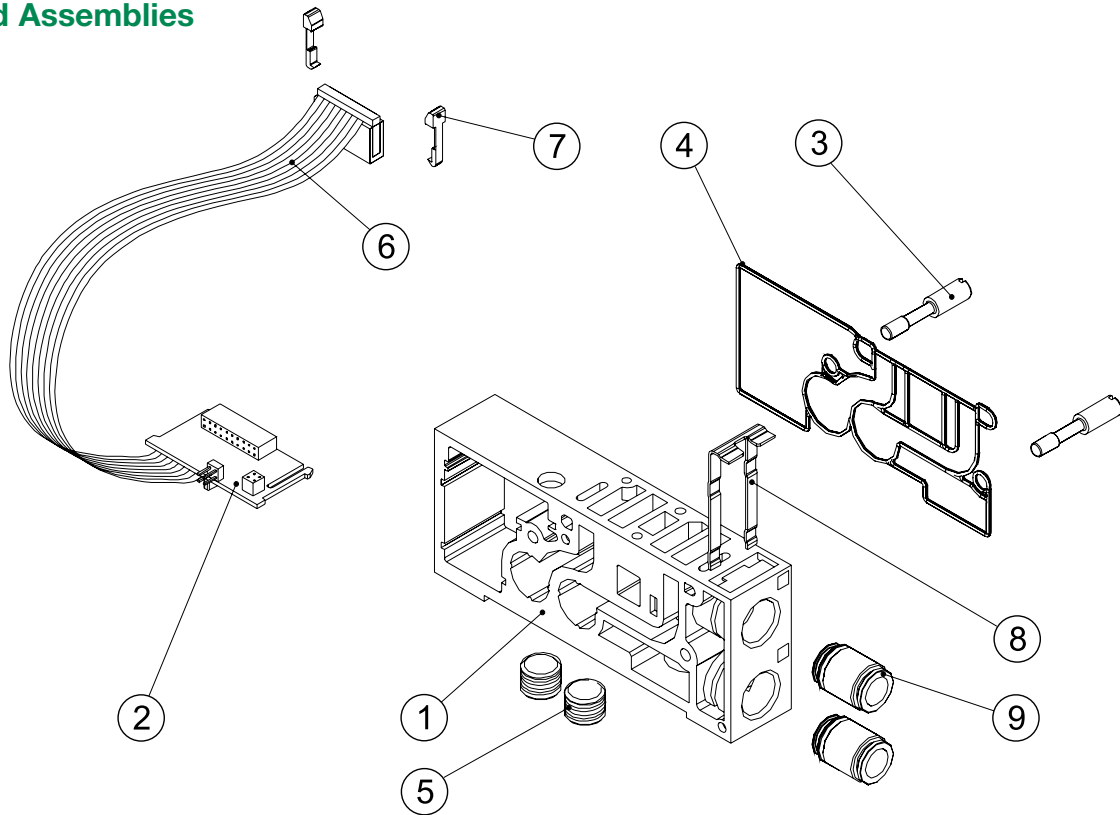
Det. No.	No. Req'd	Part Name	Part No.
1	2*	Regulator	See p. 9
2	1	Single riser block	125-798
2	1	Double riser block	125-799
3	2	O-Ring	126-528
4	2	Stud	125-812
5	1	Screw	127-318
6	1	Plug-Assembly	230-904
7	2*	Gauge 160 PSI max.	214-212
7	2*	Gauge 11 bar max.	214-213
7	2*	Gauge 60 PSI max.	214-217
7	2*	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
16	1	Gasket for RT Regulator	113-565

\* (1) Required for RS

\*\* (2) Required for RS

\*\*\* (4) Required for RS

### Manifold Assemblies

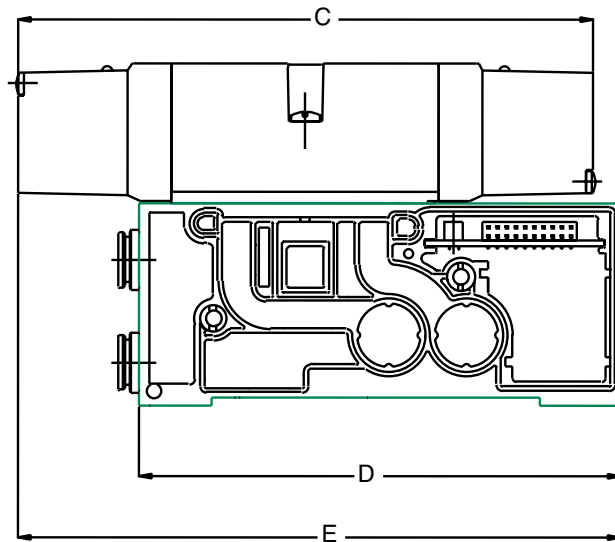
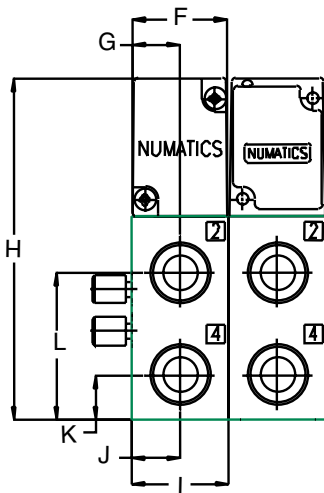
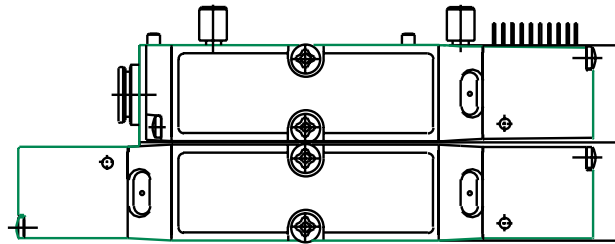
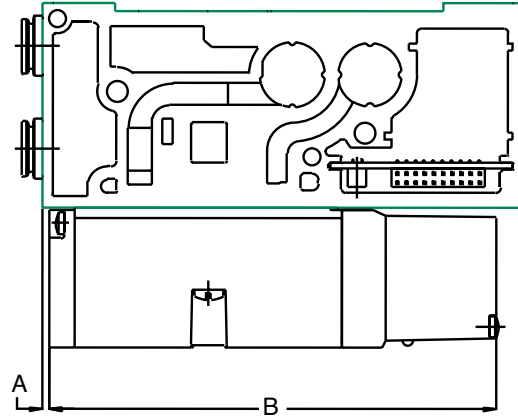


Det. No.	No. Req'd	Part Name	Part No.
1	1	Manifold Block (not sold separately)	
2*	1	"Z-Board"™	not sold separately
3	2	Stud	125-813
4	1	Gasket	113-537
5	2	Pipe Plug, 1/4 NPTF	129-101
5	2	Pipe Plug, 1/4 G	129-161
6	1	Ribbon Cable Ass'y	230-905
7	2	Snap In Latch	140-721
8	1	Retaining Clip	125-751
9	2	Push-in Fitting	See p. 16

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

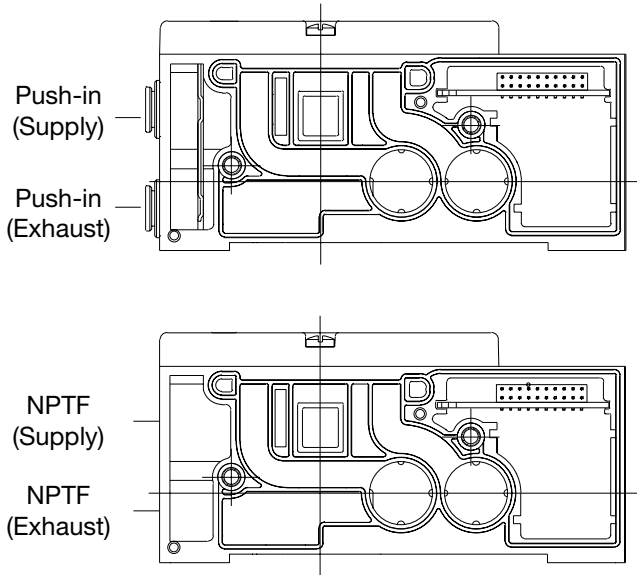
Dimensions: Inches (mm)

Valve on Manifold Block



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

## Mid-Station Supply and Exhaust Block



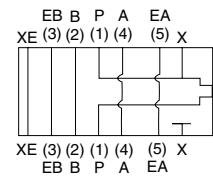
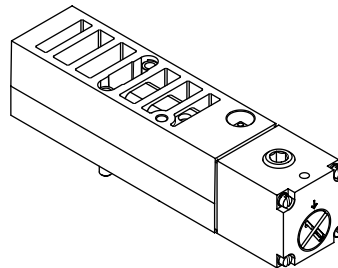
### Mid-Station Supply & Exhaust Block Kits

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

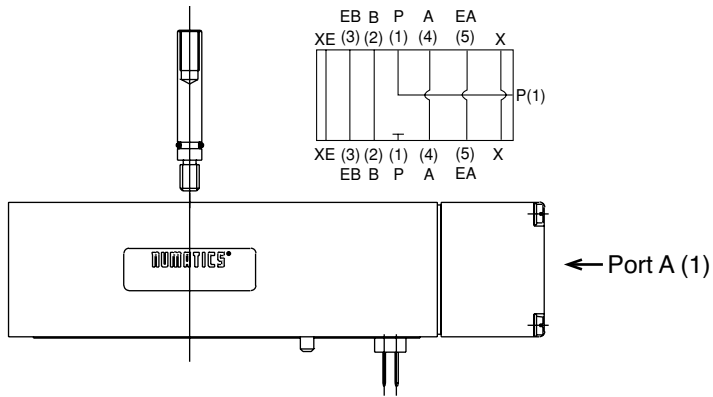
## Sandwich Shut Off Block

**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

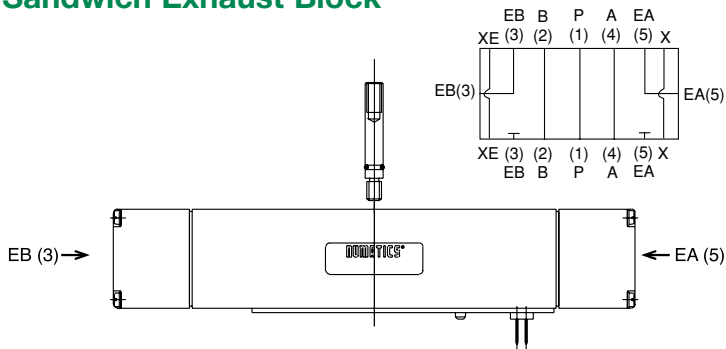


- Used to supply a separate pressure to a single valve station without needing blocking disks.

#### Sandwich Pressure Block Kit

Port Type	Part. No.
NPTF 1/4	239-1422
G 1/4	239-1436

### Sandwich Exhaust Block

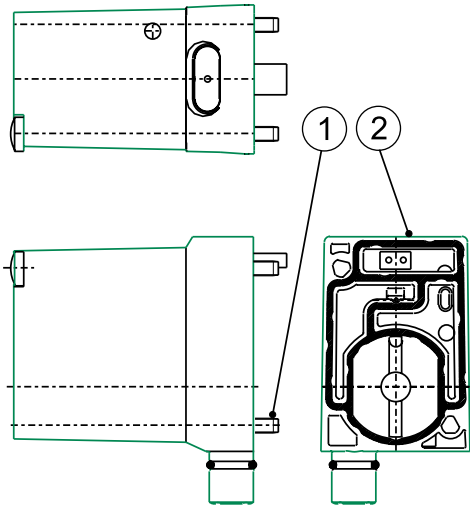


- Used to isolate the exhaust of a single valve station from the manifold.
- Allows faster exhaust response by re-routing.
- Exhaust externally to the manifold.

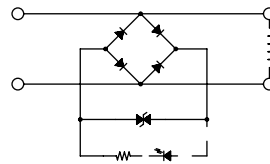
#### Sandwich Pressure Block Kit

Port Type	Part. No.
NPTF 1/4	239-1554
G 1/4	239-1556

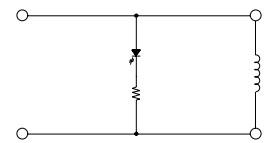
### Solenoid Pilot Assembly



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

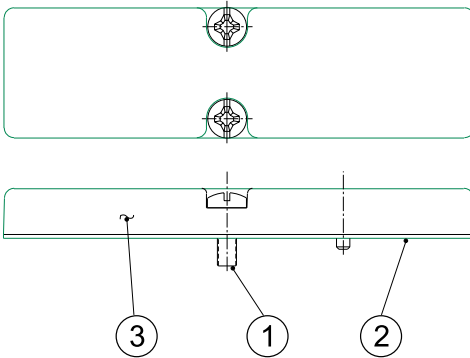


AC Solenoid  
Circuit Diagram

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

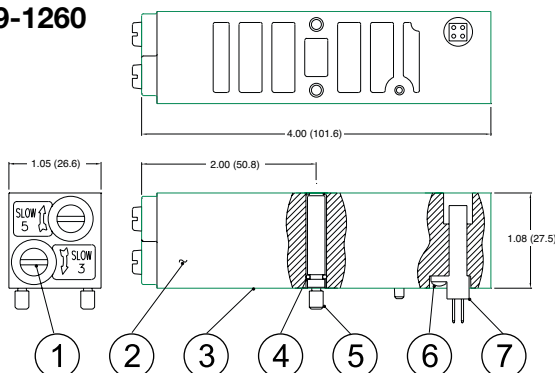


- Used to block off a manifold station block for future use

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



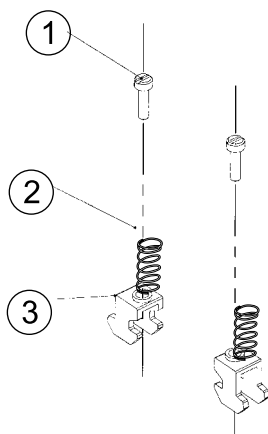
### Interchangeable Push-in Cartridge Fittings



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



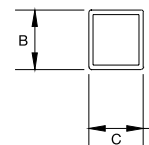
Det. No.	No. Req'd	Part Name	Part No.
1	4	Screw	127-472
2	4	Spring	115-355
3	4	Clamp	125-720

### Blocking Discs

Port 3/5



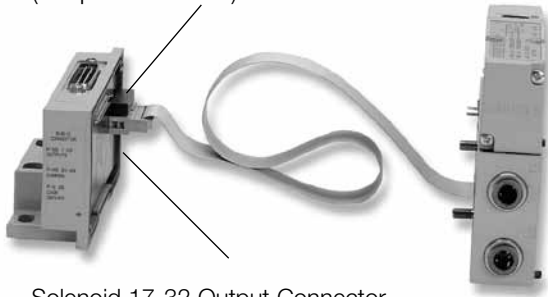
Port 1



Det. No.	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

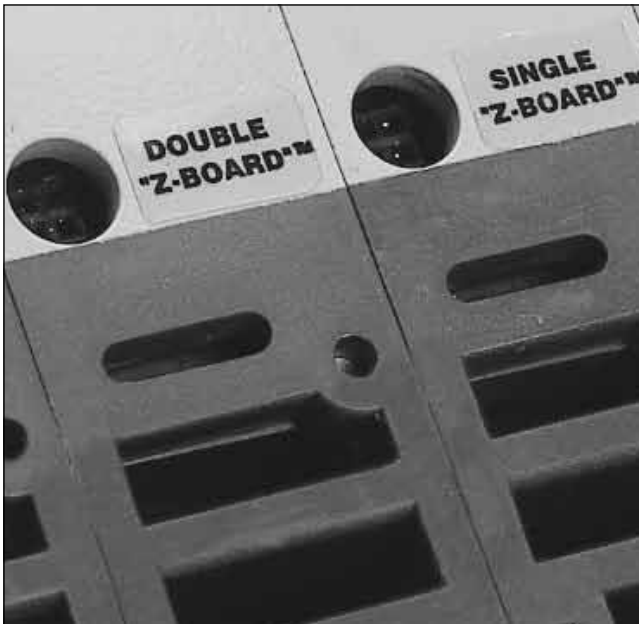
Solenoid 1-16 Output Connector  
(Output Bits 0-15)



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

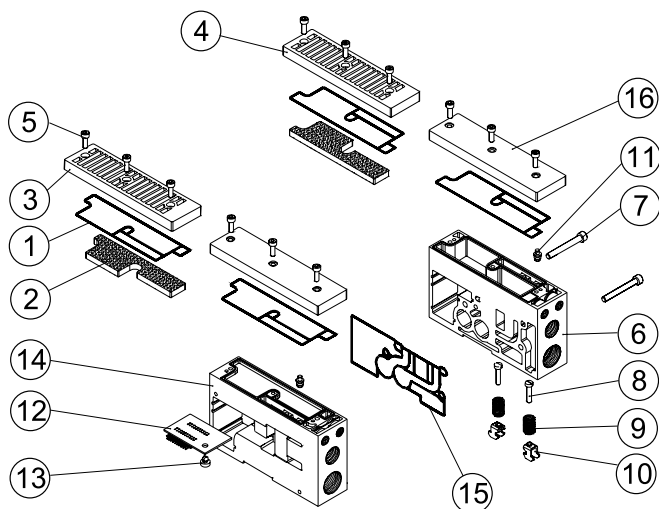
No. Req'd	Part Name	Part No.
1	Replacement Ribbon Cable Assembly	230-905
2	Replacement Snap In Latch	140-721

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



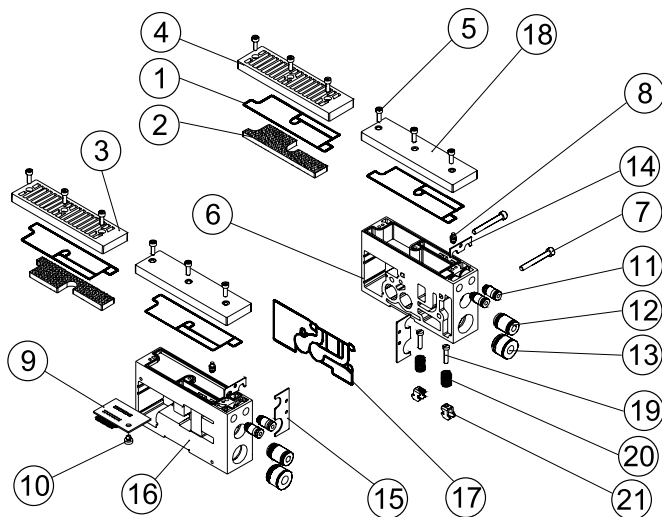
Label on manifold block indicates Installed "Z-Board"™ type.

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

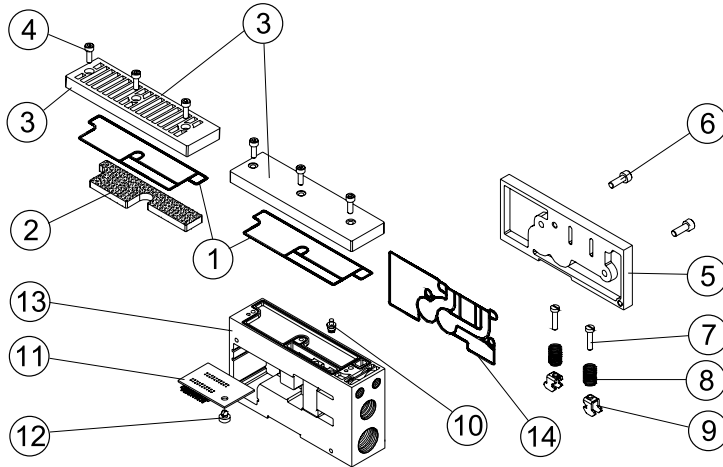
End Plate Kit - Push-in



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. 16
12	2	Push-in Fittings	See p. 16
13	2	Push-in Fittings	See p. 16
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

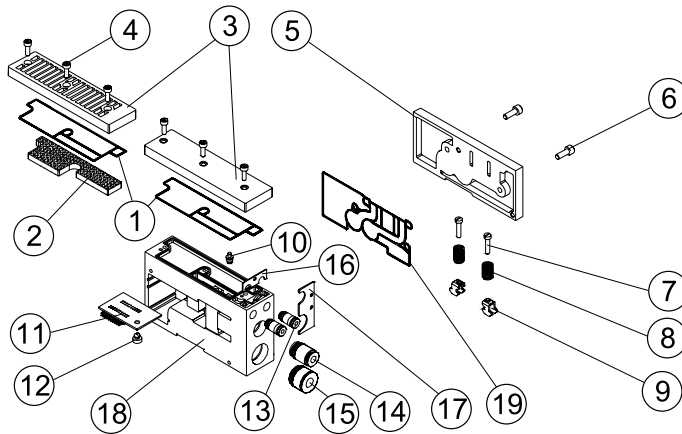
Port Type	NPTF			ISO228/1-G			Push-In			Push-In			Push-In			Push-In			
	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	1	3/5	X, XE	
PORT																			
PORT SIZE	3/8	1/2	1/8	3/8	1/2	1/8	1/4	3/8	1/4	3/8	1/2	1/4	8mm	12mm	6mm	10mm	14mm	6mm	
Kit w/o muffler, w/o DIN Rail	239-1236			239-1240			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			

### End Plate Kit with LH Ports Only - Threaded



Det. No.	No. Req'd	Part Name	Part No.
1	1	Cover Gasket	113-536
2	1	Muffler (Optional)	125-851
3	1	LH Endplate Cover Vented (Optional)	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

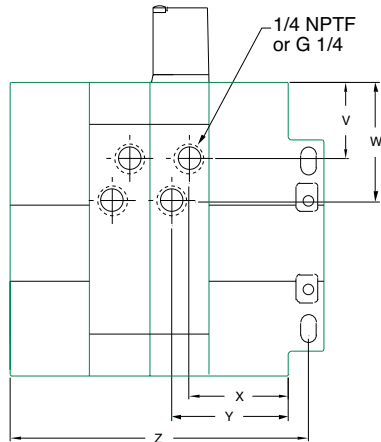
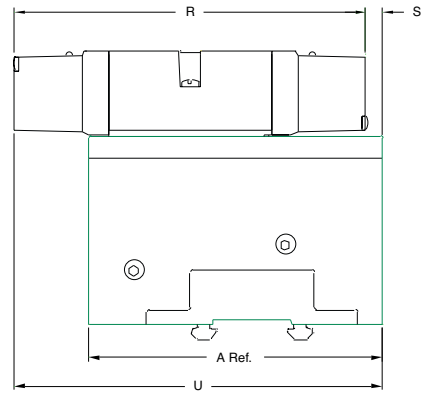
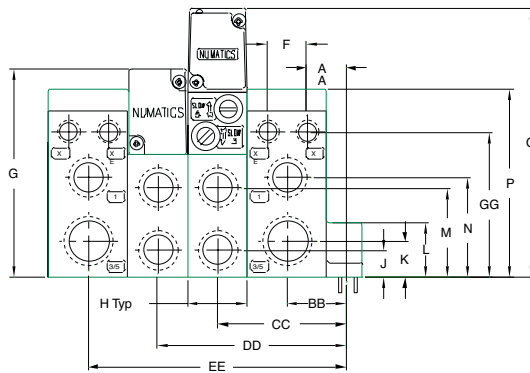
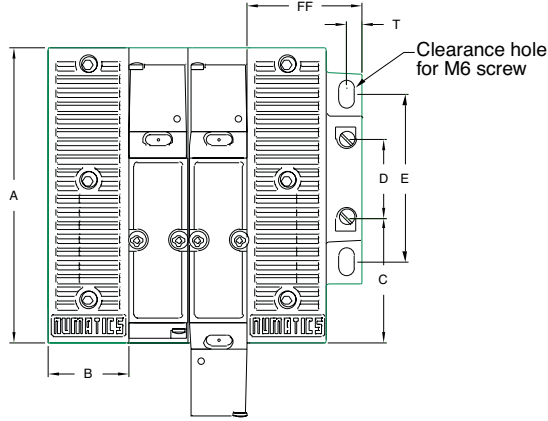


Det. No.	No. Req'd	Part Name	Part No.
1	1	Gasket	113-536
2	1	Muffler (Optional)	125-851
3	1	LH Endplate Cover (Muffler Option)	005-193
3	1	LH Endplate Cover	105-400
4	3	Screw	127-368
5	1	RH Portless Endplate	105-423
6	2	Screw	127-407
7	2	Screw (DIN Rail Only)	127-472
8	4	Spring (DIN Rail Only)	115-355
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. 16
14	1	Push-in Fittings	See p. 16
15	1	Push-in Fittings	See p. 16
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			
	Port	3/8	1/2	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 muffler, w/o DIN Rail	239-1688			239-1692			239-1699			239-1700			239-1707			239-1708			
LH Ports Only Kit w/o muffler, w/ DIN Rail	239-1687			239-1691			239-1697			239-1698			239-1705			239-1706			
LH Ports Only Kit w/ muffler, w/o DIN Rail	239-1686			239-1690			239-1695			239-1696			239-1703			239-1704			
LH Ports Only Kit w/ muffler, w/ DIN Rail	239-1685			239-1689			239-1693			239-1694			239-1701			239-1702			

Manifold Assembly

Dimensions: Inches (mm)



NOTE:

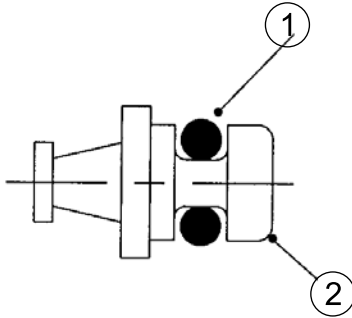
- For Electrical Interface option dimensions see Electronics section.
- For Fieldbus Electronics dimensions see Electronics section.

A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	S	T
5.25 (133.3)	1.42 (36.0)	2.16 (55.0)	1.50 (38.1)	3.02 (76.8)	0.71 (18.0)	3.71 (94.3)	1.06 (27.0)	0.47 (12.1)	0.63 (16.0)	0.97 (24.5)	1.59 (40.3)	1.77 (45.0)	3.35 (85.0)	4.80 (121.9)	6.26 (159.0)	0.30 (7.6)	0.29 (7.4)

U	V	W	X	Y	Z	AA	BB	CC	DD	EE	FF	GG
6.56 (166.6)	1.42 (36.1)	2.12 (53.8)	1.78 (45.2)	2.10 (53.3)	5.30 (134.6)	0.70 (17.8)	1.05 (26.7)	2.29 (58.2)	3.35 (85.1)	4.55 (115.6)	2.05 (52.0)	2.57 (65.4)

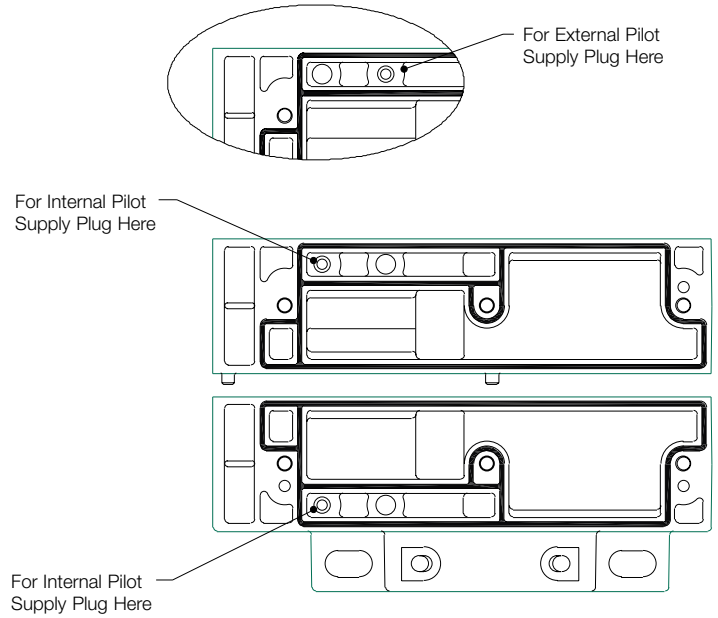
## Internal Pilot Plug

213-497



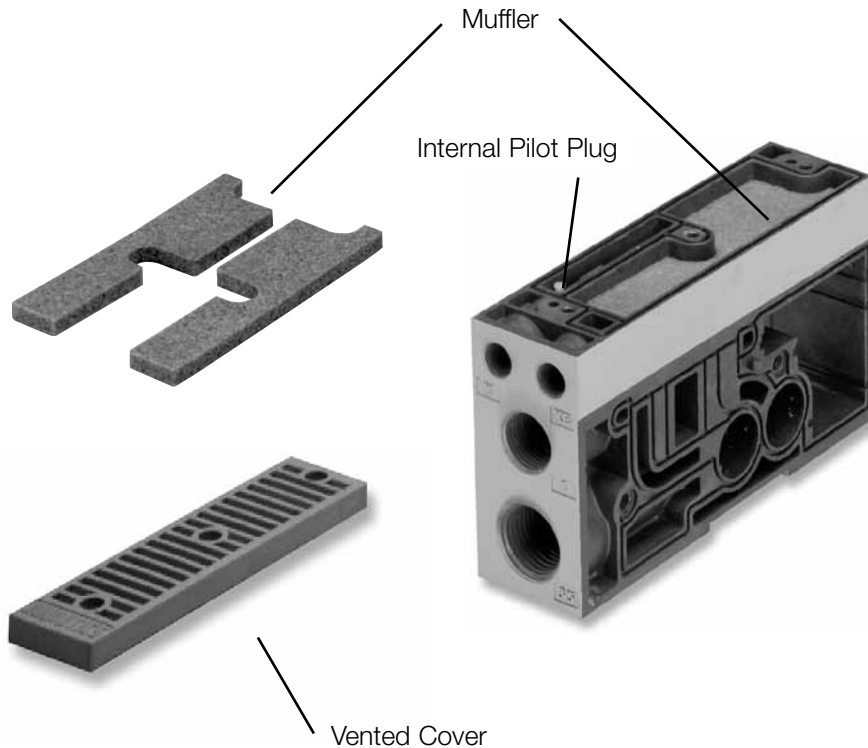
Det. No.	No. Req'd	Part Name	Part No.
1	1	Plug	125-820
2	1	O-Ring	126-471

## Internal/External Pilot Selection



## Internal Muffler

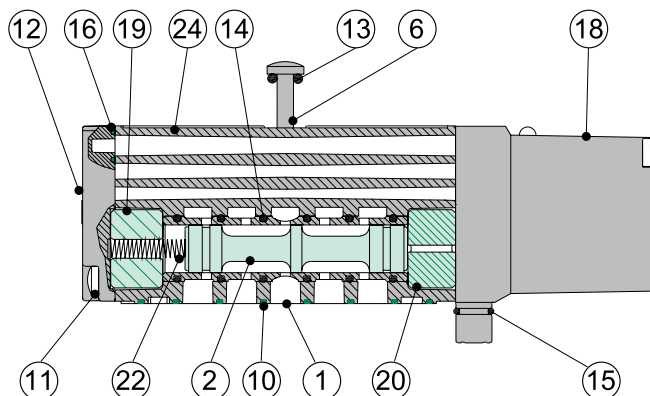
125-851



**Valve Service Kits and Parts**

**Kit No. 2012-K1\***

**(For Models 122BA4, 123BA4, 12HBA4, 12KBA4)**

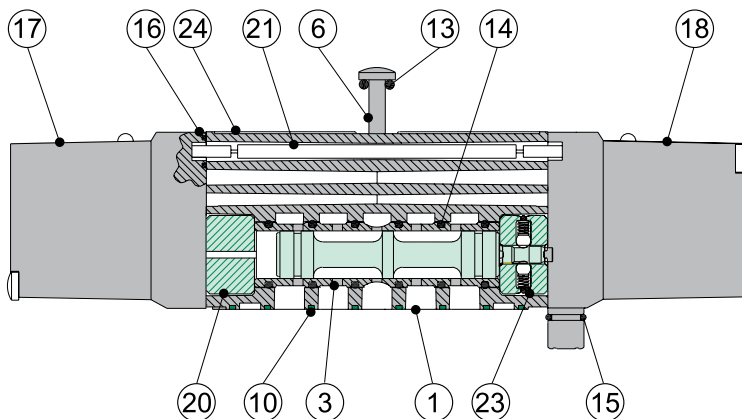


Det. No.	BA4	BB4	Part Name	Part No.
1	1	1	Body (not sold separately)	
2	1	N/A	Spool & Sleeve Assembly	209-517
3	N/A	1	Spool & Sleeve Assembly	209-518
6	2	2	Screw Assembly	213-459
10*	1	1	Gasket Body/Manifold	113-370
11	2	N/A	Screw	127-650
12	1	N/A	Spring Cap	104-673
13*	2	2	O-Ring	126-163
14*	6	6	O-Ring	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. 15
18	1	1	Solenoid Pilot - 14 End	See p. 15
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

\*Indicates parts included in service kit.

**Kit No. 2012-K2\***

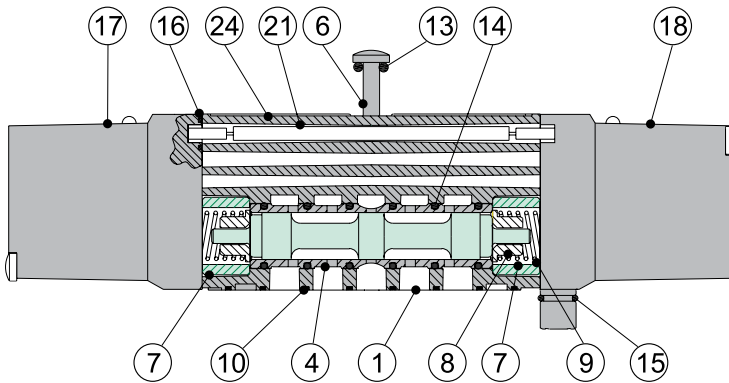
**(For Models 122BB4, 123BB4, 12HBB4, 12KBB4)**





### Valve Service Kits and Parts

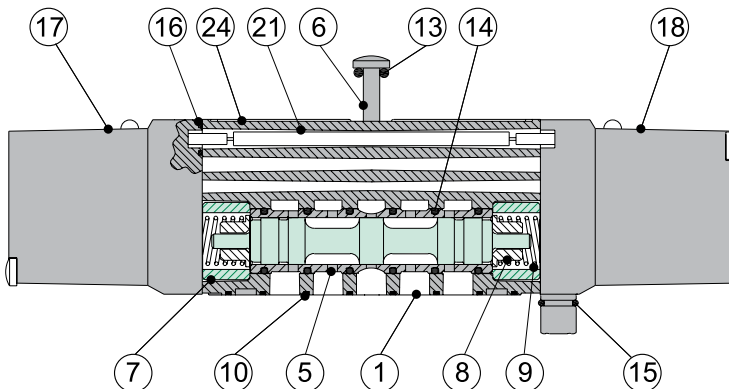
**Kit No. 2012-K3\***  
(For Models 122BB5, 123BB5, 12HBB5, 12KBB5)



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. 15
18	1	1	Solenoid Pilot - 14 End	See p. 15
21	1	1	14-12 Recepticle	230-915
24	1	1	Nameplate	122-1074

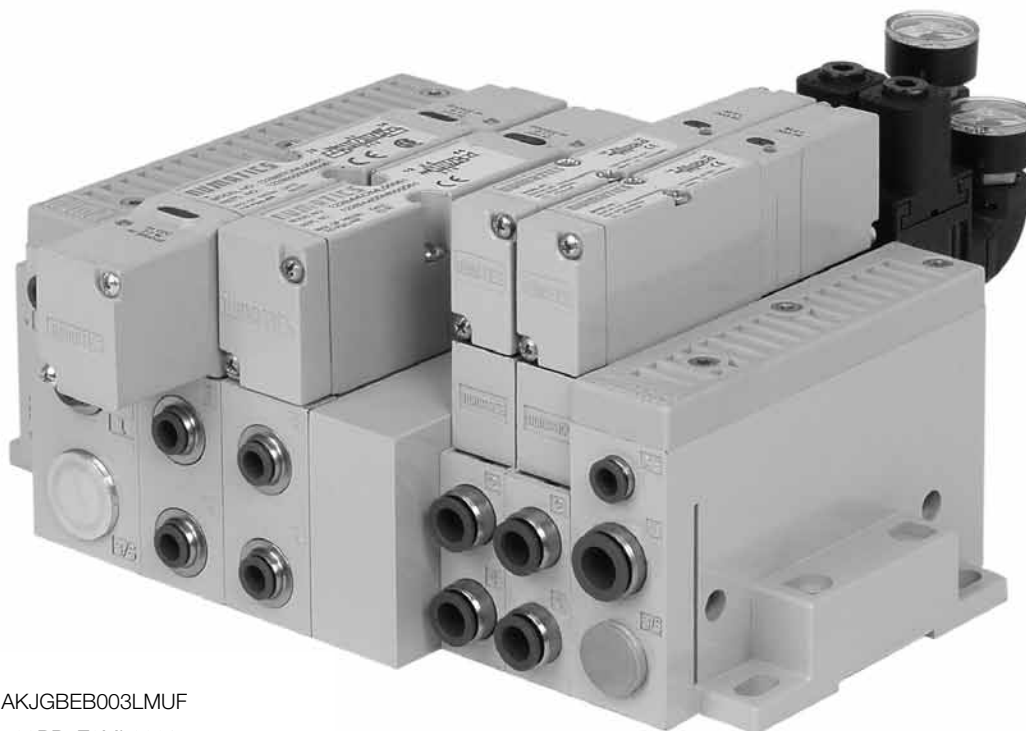
\*Indicates parts included in service kit.

**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

### Manifold Assembly How to Order

**A K J G D O O 00 3 L STD**

**Electrical Connection**

**Type & Location**

3 = G3 Fieldbus Electronics  
 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  
 O = 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 = 3/8Port 3/5 = 1/2  
 2 = Port Type L only  
 Port 1 = 1/4Port 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

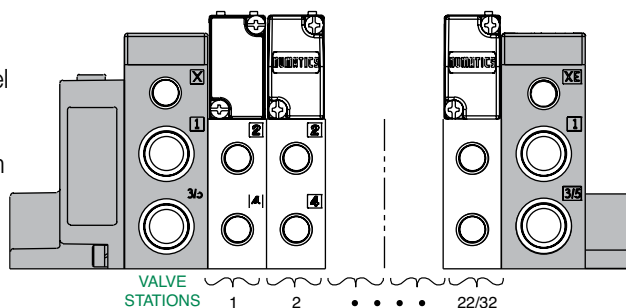
Terminal Strip		25 Pin Sub-D	37 Pin Sub-D	26 Pin Round	26 + 12 Pin Round	12 Pin Round	19 Pin Round
AK "F"	AK "T"	AK "J"	AK "M"	AK "R"	AK "S"	AK "P"	AK "Q"
16	32	22	32	22	32	8	16

\*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 21).
- 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: (2012)**

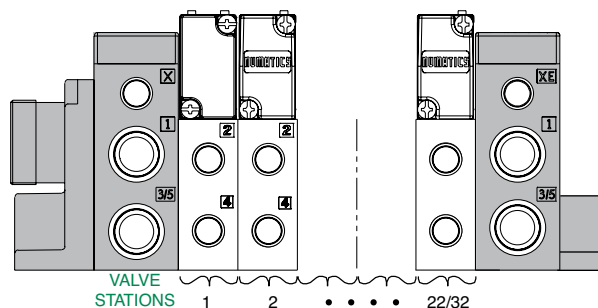
37 Pin Sub-D	AKMGD00003GMUF
valve station 1	123BA4Z1ML00061
valve station 2	123BA4Z1ML00061
valve station 3	123BB5Z2ML00061
valve station 4	123BB6Z2ML00061
	ASSEMBLED

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

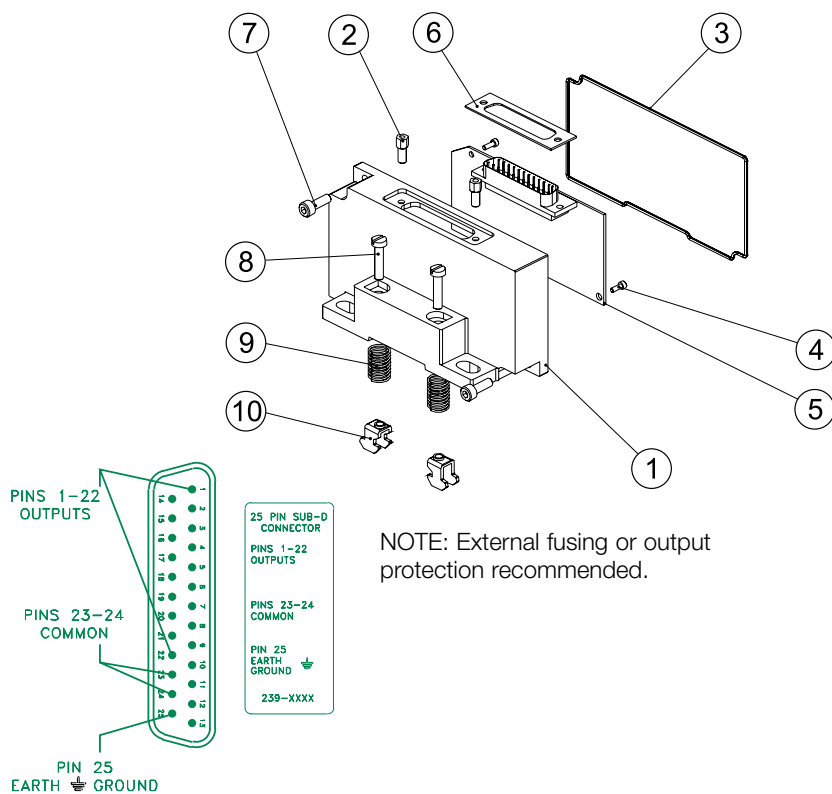
- Ordered using the same method as Sub-D:

**Example order: (2012)**

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



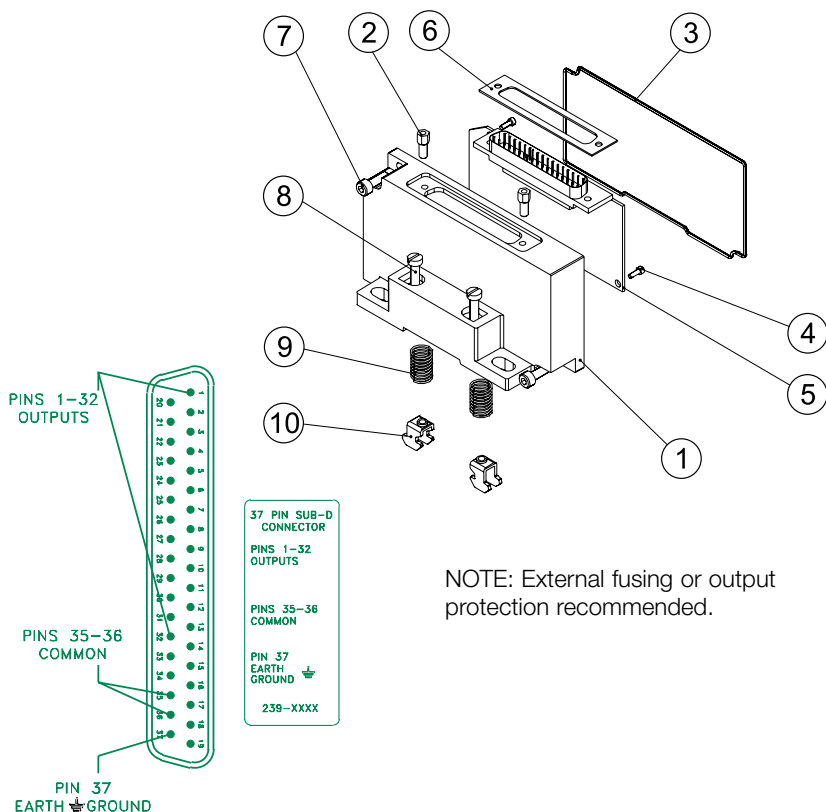
### 25 Pin Sub-D Connector Kit



37 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

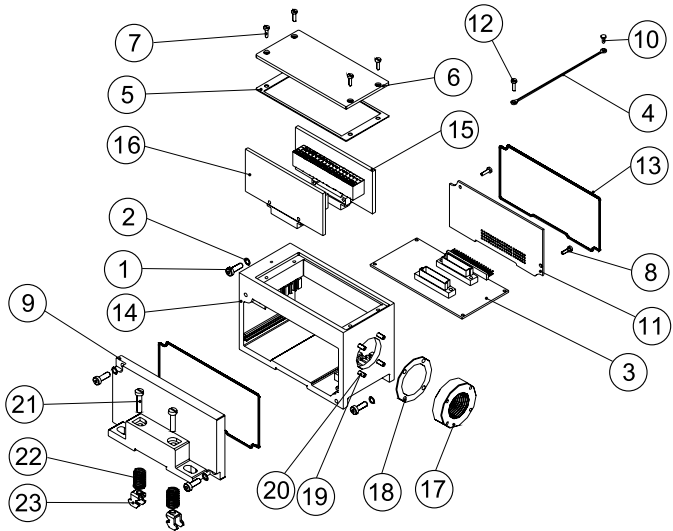
### 37 Pin Sub-D Connector Kit



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



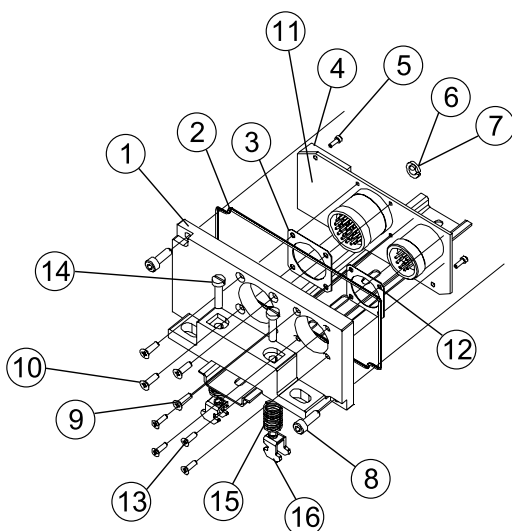
TERMINAL STRIP  
TERMINALS 1-32 OUTPUTS  
TERMINAL COM COMMON  
TERMINAL GND EARTH GROUND  
18 AWG WIRE MAXIMUM

NOTE: External fusing or output protection recommended.  
NOTE: Min. Wire AWG 26  
Max. Wire AWG 18

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 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      26 Pin + 12 Pin

NOTE: External fusing or output protection recommended.

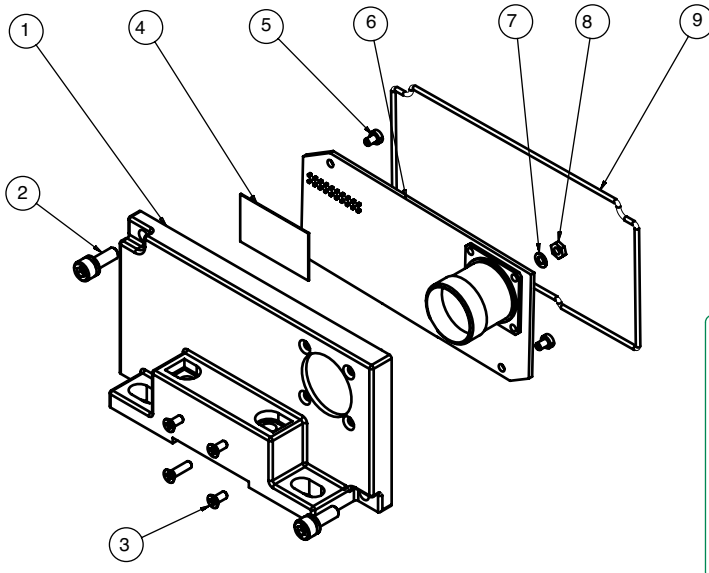
26 Pin Round Kit	Part No.
Without DIN	239-1184
With DIN	239-1185

26 + Pin Round Kits	Part No.
Without DIN	239-1184
With DIN	239-1185

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

### 12 Pin Round Connector Kit

239-2115



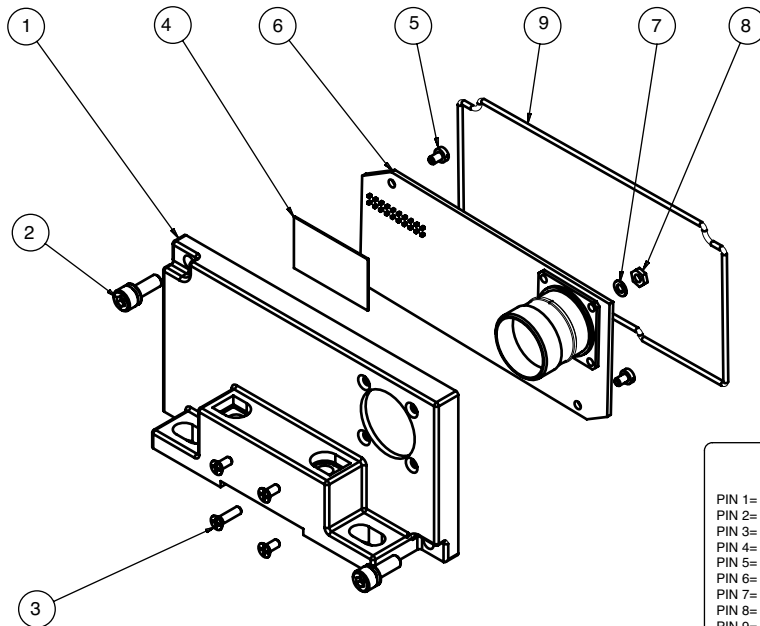
NOTE: External fusing or output protection recommended.

#### 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	256-905
7	4	Lockwasher	128-352
8	4	Nut	128-288
9	1	Gasket	113-531

### 19 Pin Round Connector Kit

239-2307



NOTE: External fusing or output protection recommended.

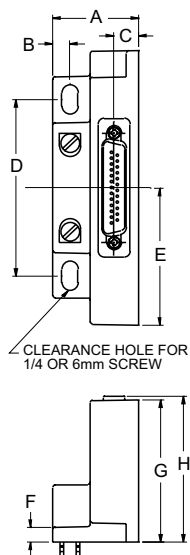
#### Parts List

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

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	



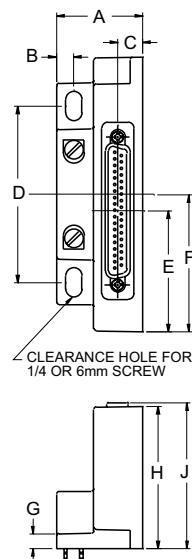
Electrical Interface  
25 Pin Sub-D



Dimensions: Inches (mm)

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

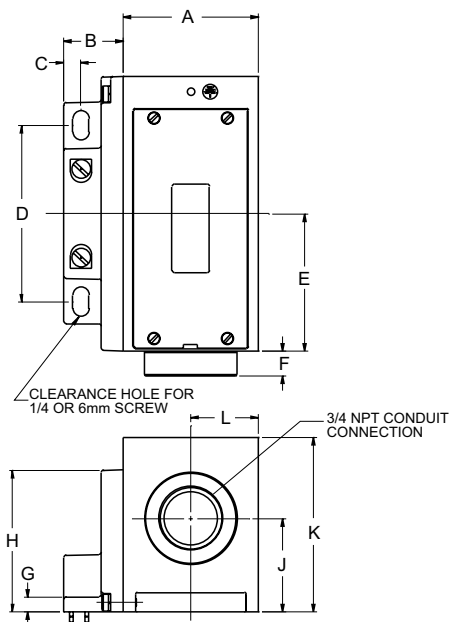
37 Pin Sub-D



Dimensions: Inches (mm)

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

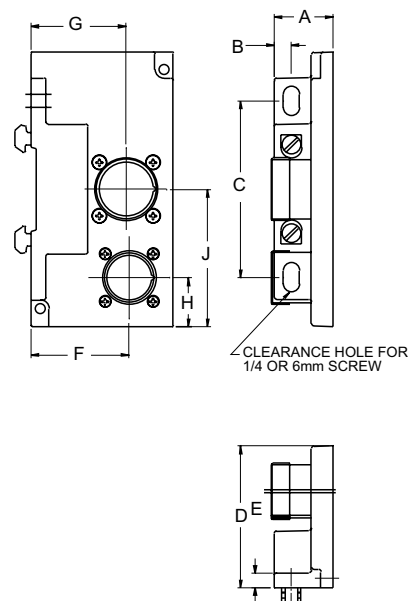
Terminal Strip 1-16 & 1-32



Dimensions: Inches (mm)

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

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



Dimensions: Inches (mm)

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



World Class Supplier of Pneumatic Components



## World Headquarters

### **USA Numatics, Incorporated**

46280 Dylan Drive  
Novi, Michigan 48377

P: 248-596-3200  
F: 248-596-3201

### **Canada Numatics, Ltd**

P: 519-758-2700  
F: 519-758-5540

### **Mexico Numatics de Mexico S.A. de C.V.**

P: 52-222-284-6176  
F: 52-222-284-6179

### **Brazil Ascoval Ind.e Comercio Ltda**

P: (55) 11-4208-1700  
F: (55) 11-4195-3970