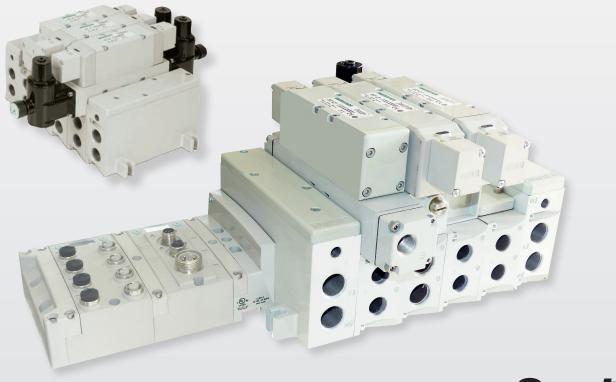


Valve Manifolds







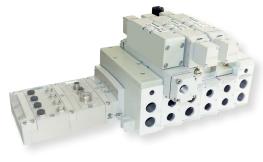


General Information

2035 Valve Series belong to the Numatics Valve Generation 2000.

With up to **224 outputs** and **96 inputs., depending on the protocols used,** they fulfill all requirements of automation. **Characteristics:**

- Modular reality, true plug & play flexibility in design. 35 mm wide valves.
- Strong and light due to valve housing made of aluminium.
- Equipped with the famous Numatics lapped spool and sleeve assembly:
- Insensitive, self-cleaning spool made of stainless steel with "air bearing effect" by air entrained between spool and sleeve (1 µm air clearance), typical service life of more than 200 million cycles.
- Can operate with different pressures at the same time within one valve, independent of flow direction.
- Available as 5-port., 2- and 3-pos. valve.
- Exchange of valves without dismounting valve manifold.
- Worldwide support by Numatics subsidiaries and distributors in almost all countries of the world.





2035 Series

5-port., 2- and 3-pos. valves, single or double solenoid pilot actuatedFlow capacity: 3820 I/min ANRIndividual base mount or manifold mount

- Low-wattage solenoids polarity insensitive with surge suppression
- Plug-in manifolds with internal wiring by "Z-Board" plug-in system
- Integral recessed gaskets between base and valve as well as between the manifolds
- Interchangeable cartridge fittings to accommodate various tube sizes
- Simple conversion from internal to external pilot air supply
- Modular plug-together Fieldbus electronics
- Designed to meet IP65/NEMA4

UN2115





Contents



Description	Page
General Information	52
Spool and Sleeve Assembly Manifold with Plug-in Technical Data • Operating Data	
Sandwich Pressure Regulators General Information Dimensions	



Completely Assembled Manifolds

with Multipole Connection	57
3-D Drawings	58
Accessories	.59
Dimensions / Weight	.61
Overview	.65

Spare Parts

Plates (sandwich pressure regulator, sandwich speed control,	
shut-off sandwich plate, sandwich pressure block)66	-67
Blank station plate, Blocking discs, Covers, Plug	.68
End Plate Kits	.68
Valves and sandwich pressure regulators69	-70
Manifold Assemblies Kits "Z-Boards", Ribbon Cable Assembly Kit	.71
Mid-Station Supply and Exhaust Blocks	
Conversion of Pilot Air Supply	.72

Completely Assembled Manifolds

with Fieldbus Electronics G3	
3-D Drawings	77
Fieldbus Systems (protocols)	81 97
Input / Output Modules	99105
Dimensions (I/O Assembly with G3 Electronics)	
How to Order - 2035 41 mm Series	110-114-115
How to configure & Order G3 Electronics	119-120





Technical Data • Operating Data

Manifolds of 2035 series valves are equipped with integral electrical plug-in allowing an easy exchange of single components without dismounting the manifold. "Z-Board"™ eliminates internal wiring.

Manifolds are available either with threaded ports or with push-in fittings.

Bottom supply ports are only available threaded. Common air exhaust.

End plates are available with integral mufflers.

Easy conversion from internal to external pilot air supply.

Technical Data

Flow capacity [at 6 bar, ∆p 1 bar] 3500 l/min ANR Operating pressure range: Vacuum to 10 bar Pilot pressure range: 1,8 to 8,2 bar Ambient temperature range -20°C to +50°C	5-port., 2- and 3-pos. valves	2035
Pilot pressure range: 1,8 to 8,2 bar	Flow capacity [at 6 bar, ∆p 1 bar]	3500 l/min ANR
······································	Operating pressure range:	Vacuum to 10 bar
Ambient temperature range -20°C to +50°C	Pilot pressure range:	1,8 to 8,2 bar
	Ambient temperaturre range	-20°C to +50°C

Material	
Body:	Aluminium
Other parts:	Stainless steel, steel, aluminium alloy or plastic
Static seals:	NBR
Finish:	Anodised or varnished

Operating Data

5 port., 2- and 3-pos. valves		2	035	
100% ED:	24 \	/DC	110-120 VAC 50/60 Hz	
Power (Watt):	2.	5	4.2	
Response time [ms]	energise	de-energise	energise	de-energise
5-port., 2-pos., single actuated, spring return:	21	67	15	70
5-port., 2-pos., double actuated, detented:	17	-	15	-
5-port., 3-pos., double actuated, spring centered:	21	72	15	80







Sandwich Pressure Regulators • General Information

For 2035 Series single as well as double sandwich pressure regulators are available.

With single sandwich pressure regulators, pressure supply is regulated via port 1. This is carried out independently of other valves on the manifold

With double sandwich pressure regulators, pressure supply is regulated via ports 2 and 4, i. e. each cylinder port can be regulated individually.

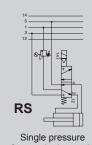
The selected pressure can be read via a gauge, either mounted inline or on a 90° swivel elbow.

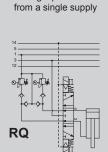
Sandwich Pressure Regulators

2035 series: Type RS / RD / RC / RQ / RE / RT When ordering a valve with regulator mounted on a manifold, list the valve unit model number only and include the mounting requirements with the regulator. Specify "Assembled"

EXAMPLE ORDERS: Valve unit only: Regulator and mounting:

Type RS 353BA400K000030 353RS1Z1JN00000 ASSEMBLED



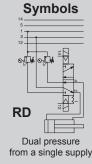


Relieving

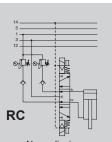
exhausts pressure in cylinder

if upstream pressure is

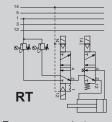
exhausted



RE



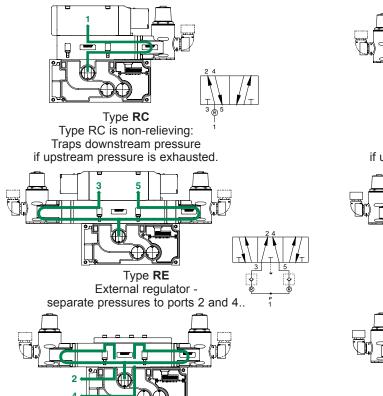
Non-relieving taps downstream pressure if upstream is exhausted



Two-pressure selector used for multi-pressure applications



Type RS Single pressure from a single supply.

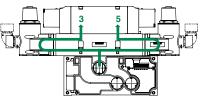


Type RD Dual pressure from a single supply.

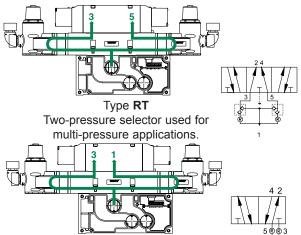
External regulator -

separate pressures to ports

. 2 and 4.



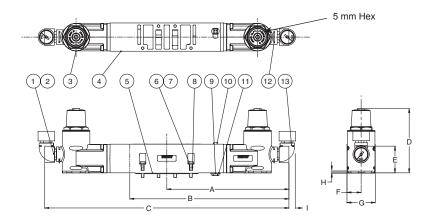
Type RQ Type RQ is relieving: Exhausts pressure in cylinder if upstream pressure is exhausted.







Sandwich Pressure Regulators • Dimensions Single or Double Sandwich Pressure Regulator



Dimensions 2035 series [mm]

Туре	Α	В	С	D	Е	F	G	н	I	Weight approx. [kg]
Single regulator	177.1	230.7	_	93.1	38.6	20.5	41.0	0.46	_	0.720
Double regulator	177.1	—	354.1	93.1	38.6	20.5	41.0	0.46	373.1	0.995





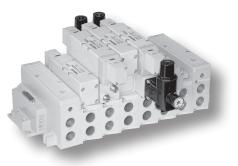
General Information on Multipole Systems

FEATURES

- · Solenoid air operated valve manifolds for connection to a control system (PLC) with a multiwire cable for simple wiring.
- Electrical connection with a 25 or 37 pin Sub-D connector or a 12, 19 or 26 pin round connector. Harting on request.
- Internal wiring by "Z-Board" plug-in system.
- Plug-together flexibility due to different assembly and wiring options.
- Designed to meet IP65 / NEMA 4 with round connector or terminal strip. These protection classes allow direct incorporation of the 2000 series manifold into a machine, close to the actuators and enable an increased number of production cycles.
- Manifold delivered assembled according to customer specifications.

COMBINATIONS

- Modules of up to 32 valves can be grouped together. The maximum number of valves depends on the type of electrical connection chosen:
 - 25 pin Sub-D connector : max. 22 solenoids
- 37 pin Sub-D connector : max. 32 solenoids
- Terminal strip: max. 32 solenoids
- 12 pin round connector: max. 8 solenoids
- 19 pin round connector: max. 15 solenoids
- 26 pin round connector: max. 22 solenoids
- Optional mixing of:
 - All functions of dual 2-position, 5-ported, 2-position single or double actuated and 5-ported, 3-position valves.
 - Pressure separation plate and intermediate pressure supply module.
- The valve manifolds are intended for frame.



Technical	Data

Technical Dala					
Electrical data					
Node power:	Voltage: 24 V DC +- 10%				
	Operating data				
Temperature range:	-20 °C to +50 °C				
Humidity:	air or inert gas ISO 8573 Level 7.4.4				
Protection:	IP 65 or NEMA 4				
Configuration data					
Solenoid coil outputs:	Max. 32				

01457GB-2017/R02

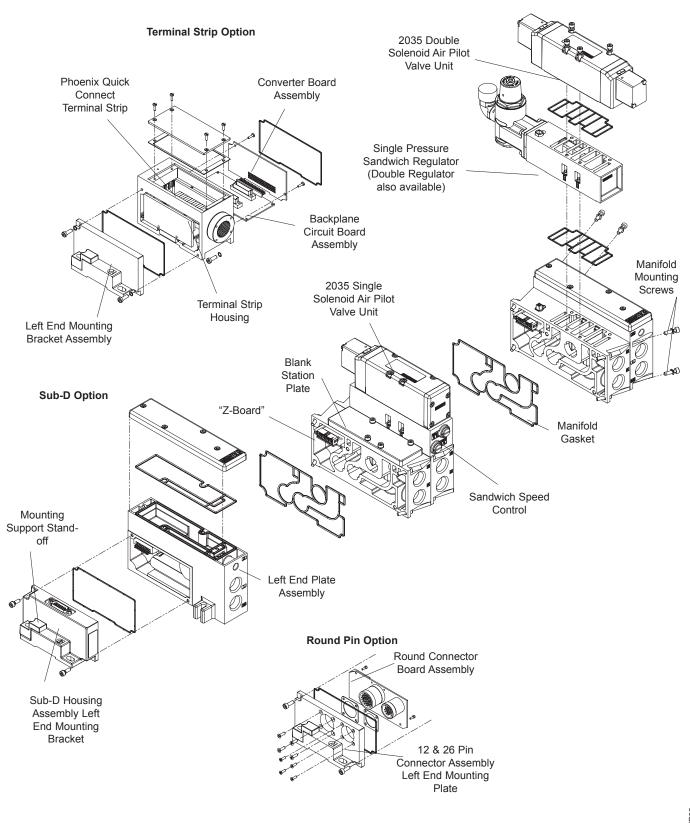
Availability, design and specifications are subject to change without notice. All rights reserved



numatics

2035 Series

Terminal Strip. Sub-D, and Round Connector Options (58)







Multipole Systems • Accessories

Accessory	Description			Order Code
			2m	88100453
and	25 pin female SUB-D connector, according to DIN 47100, straight cable outlet (IP 40) (série 2000)	w/ cable	5 m	88100456
			10 m	88100461
B	25 pin female SUB-D connector, elbow cable outlet	w/ cable	2 m	88100901
	(série 2000)	w ouble	5 m	88157644
			2 m	88100473
	37 pin female SUB-D connector, according to DIN 47100, straight cable outlet (IP 40) (série 2000)	w/ cable	5 m	88100476
			10 m	88100481
	10 nin female M22 connector streight	w/o cable		88164102
	19 pin female M23 connector, straight	w/ cable	5 m	88164106
	10 ris female M02 connector 00° alhow	w/o cable		88164105
	19 pin female M23 connector, 90° elbow	w/ cable	5 m	88164107
		w/o cable		230-879-K
	12 pin female M23 connector (IP 65)	w/ cable	2 m	230-960-02m
			5 m	230-960-05m
			10 m	230-960-10m
	26 pin female M27 connector (IP 65)	w/ cable	10 m	230-742E-10m

01457GB-2017/R02 Availability, design and specifications are subject to change without notice. All rights reserved.





Multipole Systems • Accessories

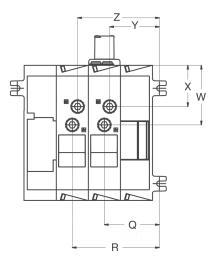
Pin no.	37 PIN SUB-D according to DIN 47100 Order Codes: 88100473 88100476 88100481	SUB-D 25 Order Codes: 88100901 88157644	25 PIN SUB-D according to DIN 47100 Order Codes: 88100453 88100456 88100461	12 PIN ROUND M23 Order Code: 230-960-xxm	19 PIN ROUND M23 Order Codes: 88164106 88164107	26 PIN ROUND M27 Order Code: 230-742E-10m
1	white	white-green	white	white	purple	white
2	brown	white-yellow	brown	brown	red	brown
3	green	white-grey	green	green	grey	green
4	yellow	green	yellow	yellow	red-blue	yellow
5	grey	yellow	grey	grey	green	grey
6	pink	yellow-black	pink	pink	blue	pink
7	blue	grey	blue	blue	grey-pink	blue
8	red	yellow-red	red	red	white-green	red
9	black	pink	black	black	white-yellow	black
10	purple	yellow-blue	purple	purple	white-grey	purple
11	grey-pink	orange	grey-pink	grey-pink	black	pink-brown
12	red-blue	khaki	red-blue	green-yellow	yellow-green	white-pink
13	white-green	blue	white-green		yellow-brown	white-green
14	brown-green	white-brown	brown-green		brown-green	brown-green
15	white-yellow	white-black	white-yellow		white	white-yellow
16	yellow-brown	purple	yellow-brown		yellow	yellow-brown
17	white-grey	white-pink	white-grey		pink	white-grey
18	grey-brown	white-red	grey-brown		grey-brown	grey-brown
19	white-pink	white-purple	white-pink		brown	red-blue
20	pink-brown	white-blue	pink-brown			grey-pink
21	white-blue	blue	white-blue			white-blue
22	brown-blue	white	brown-blue			brown-blue
23	white-red	red	white-red			white-red
24	brown-red	brown	brown-red			brown-red
25	white-black	black	white-black			white-black
26	brown-black					yellow-green
27	grey-green					
28	yellow-grey					
29	pink-green					
30	yellow-pink					
31	green-blue					
32	yellow-blue					
33	green-red					
34	yellow-red					
35	green-black					
36	yellow-black					
37	grey-blue					
	19 19 10 10 10 10 10 10 10 10 10 10	Pin 25 PE Pins 22 COMM Pins 1. Coils	3-24 ION	Pin 12 PE Pin 11 COMMON Pins 1-10 Coils	View from solder side	Pin 26 PE Pins 24-25 COMMON Pins 1-22 Coils

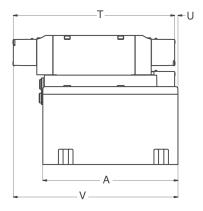


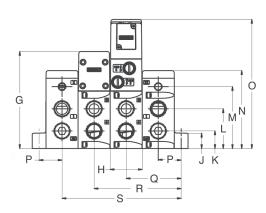


Dimensions

Manifold Assembly







Е

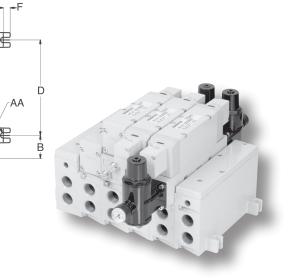
0

6

С

E

F



Note: For Fieldbus Electronics dimensions, see page: 109

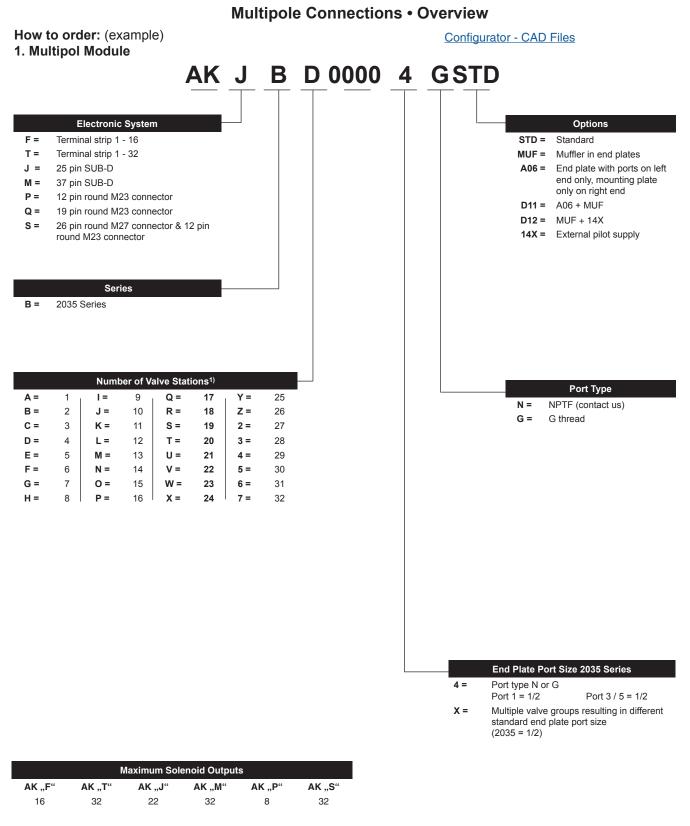
Dimensions [mm]

Α	В	С	D	Е	F	G	н	J	к	L	М	Ν	0	Р	Q	R
177.0	30.0	42.0	125.0	51.0	9.0	127.0	42.0	20.0	23.0	52.0	81.0	102.0	169.0	30.0	72.0	114.0
S	T	U	v	w	x	Y	Z	AA	Weight (0 stations) approx. [kg]			'n	+ kg er station			
156.0	211.3	4.4	215.6	78.0	54.0	65.0	72.0	3.5	2.050		F	0.640				



numatics

2035 Series



1) Note:

Maximum number of valve stations is determined by

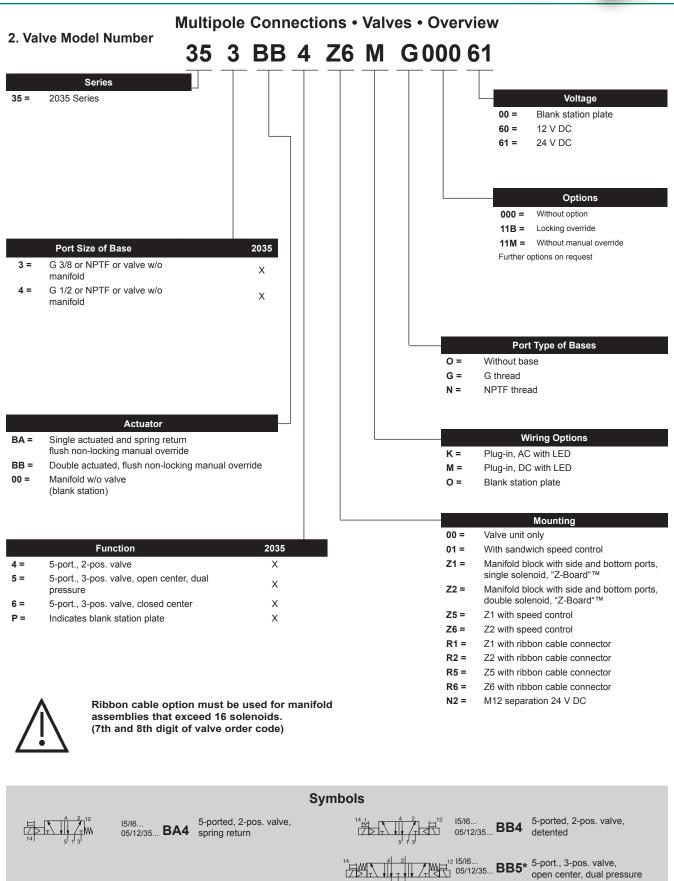
the electrical / electronic connection type

• the valve type: Single solenoid pilot actuated valves up to the maximum solenoid outputs allowed by the electrical connection type or a combination of single and/or double solenoid actuated valves not to exceed the maximum number of outputs allowed. Example: 6 single and 5 double solenoid actuated valves have in total 16 solenoid outputs.

This is the maximum amount permitted for the terminal strip version. ("AKF").

numatics...





2035 Series

⁴ ² ¹² ^{R5/R6...} ⁵ ¹ ¹² ^{05/12/35...}**BB6** ^{5-port., 3-pos. valve, closed center}

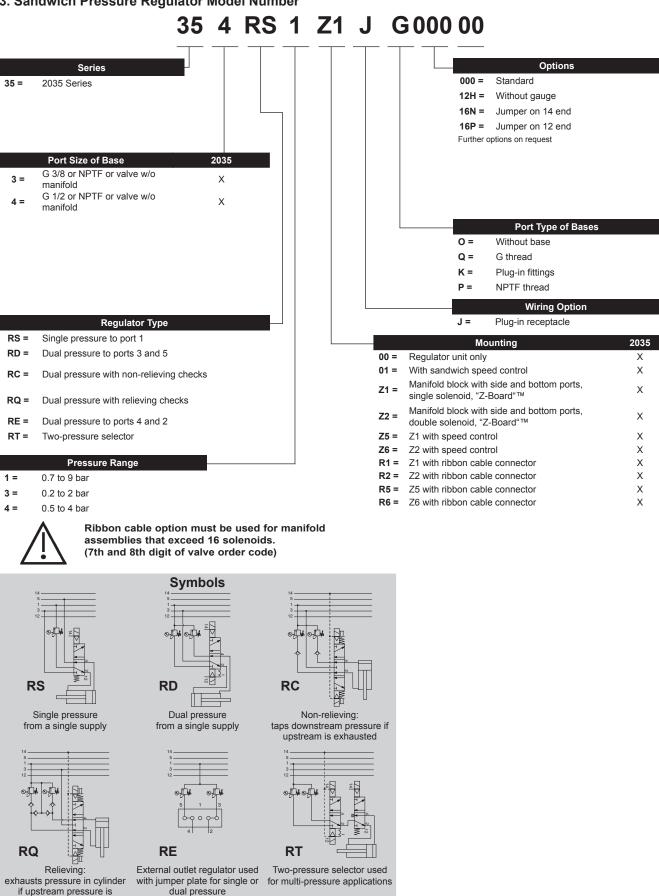


umatics

2035 Series

Sandwich Pressure Regulators • Overview

3. Sandwich Pressure Regulator Model Number



All leaflets are available on: www.asco.com

exhausted





Multipole Connections • Example Order

Sandwich Pressure Regulators and Speed Control

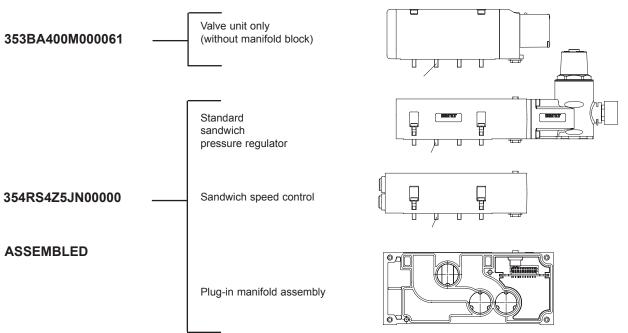
Type: **RS / RD / RE / RT** When ordering a valve with regulator mounted on a manifold and sandwich speed control, list the valve unit model number only and include the mounting requirements with the regulator and the speed control. Specify "Assembled"

EXAMPLE ORDERS:

Valve unit only:

Regulator with speed control and mounting: 354RS4Z5JN00000

353BA400M000061 354RS4Z5JN00000 ASSEMBLED



Note: Sandwich speed controls can only be used with single sandwich pressure regulators.

Manifold assembly • Multipole connection

Shaded components are included in assembly kit (AK).

Each valve station is listed in sequential order from left to right when facing the port side of the manifold as indicated. For valves and sandwich pressure regulators, see model number selection on pages X021-09-13 and 14).

Example order: (25 Pin Sub-D)

 1. Assembly kit
 AKJBD00004NSTD

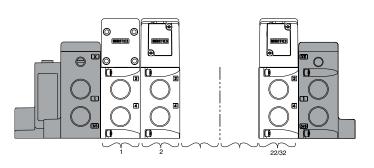
 2. Valve
 Station 1 =
 353BA4Z1MN00061

 Station 2 =
 353BA4Z1MN00061

 Station 3 =
 353BB4Z2MN00061

 Station 4 =
 353BB5Z2MN00061

 AKJBD0004NSTD
 AKJBD0004NSTD







Accessories • Sandwich Pressure Regulators

accessory	description		order code
		0,2 to 2 bar	239-2220
	Regulator repair kit	0,3 to 4 bar	239-2221
		0,7 to 9 bar	239-2222
	Gauge to max. 11 bar		214-215
and a second	Gauge to max. 4 bar		214-220
	Adapter, port G1/8		239-2048
	Retaining clip		131-236



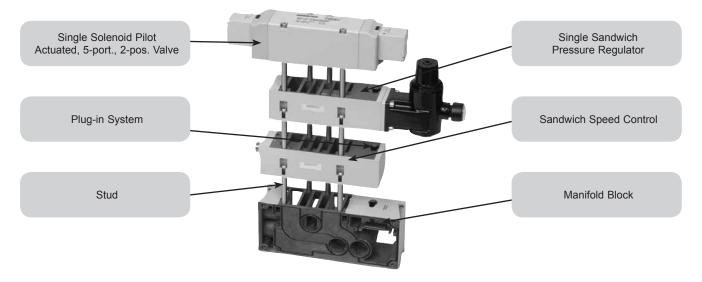


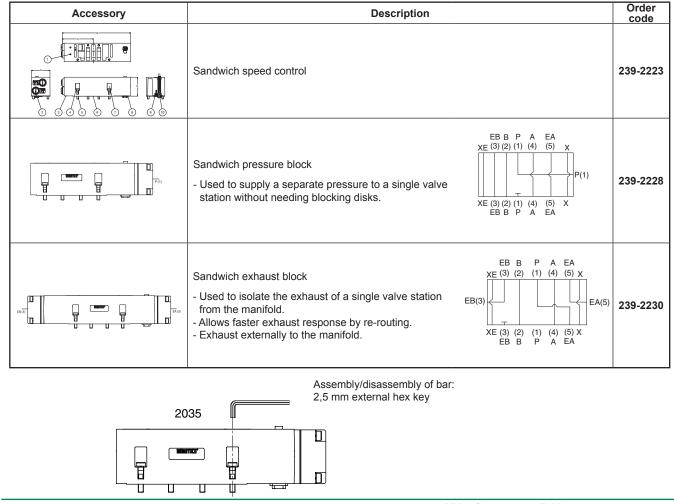
Spare Parts • Sandwich Components

Sandwich Speed Control

Sandwich speed control for valves and regulators is equipped with an integral plug-in system. Sandwich speed control provide a variable restriction in ports 3 and 5 in order to control the cylinders' extend and retract speed. To facilitate easy adjustment both screws are on the same side of the speed control.

Note: Sandwich speed control can only be used with single sandwich pressure regulators.







Spare Parts

Accessory	Description					
	Blank station plate (screw, blank station plate, O-ring, gasket)					
0.87 (2.3 mm)	Blocking disks for port 1, 3/5					
	Cover for end plate	screw	127-396			
		cover	105-456			
	Cover for end plate with muffler	screw	127-396			
		cover	105-457			
Gasket for end plate cover						
Muffler for end plate cover						
Plug for conversion of pilot supply						

Spare Parts • End Plate Kits

2035 Series End plate kit



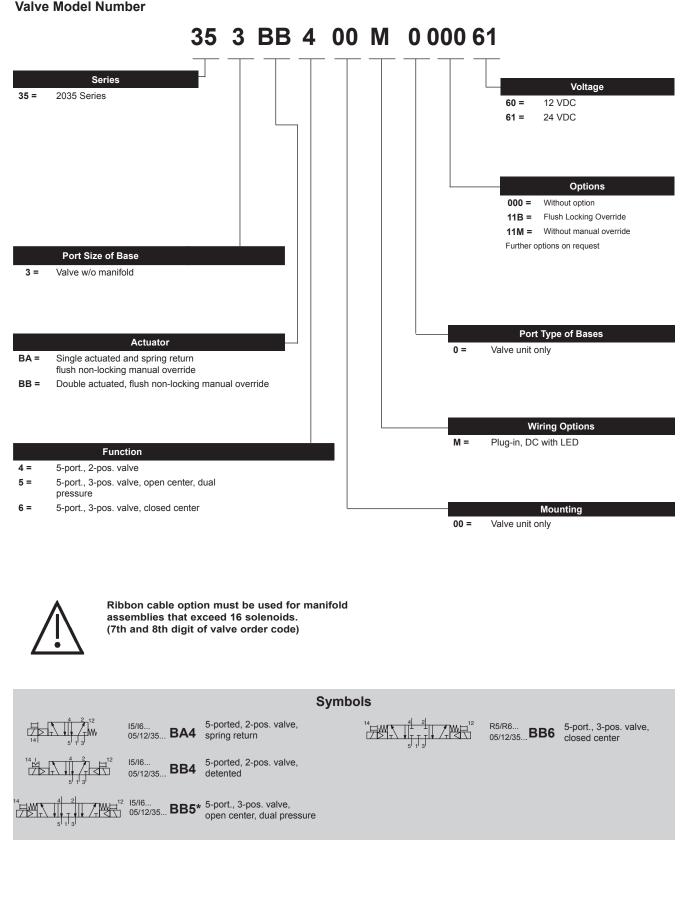
End plate kits	Order Code					
	Weight	Port		1	3/5	X/XE
	approx. [kg]	Size	1/2	1/2	1/8	
End plates with muffler	2.050			:	239-220	7
End plates without muffler	2.050			:	239-220	8
LH ports with muffler, RH mounting cover with pilot exhaust	2.050			:	239-221	5
LH ports without muffler, RH mounting cover with pilot exhaust	2.050			:	239-221	6
On request: with NPTF thread						



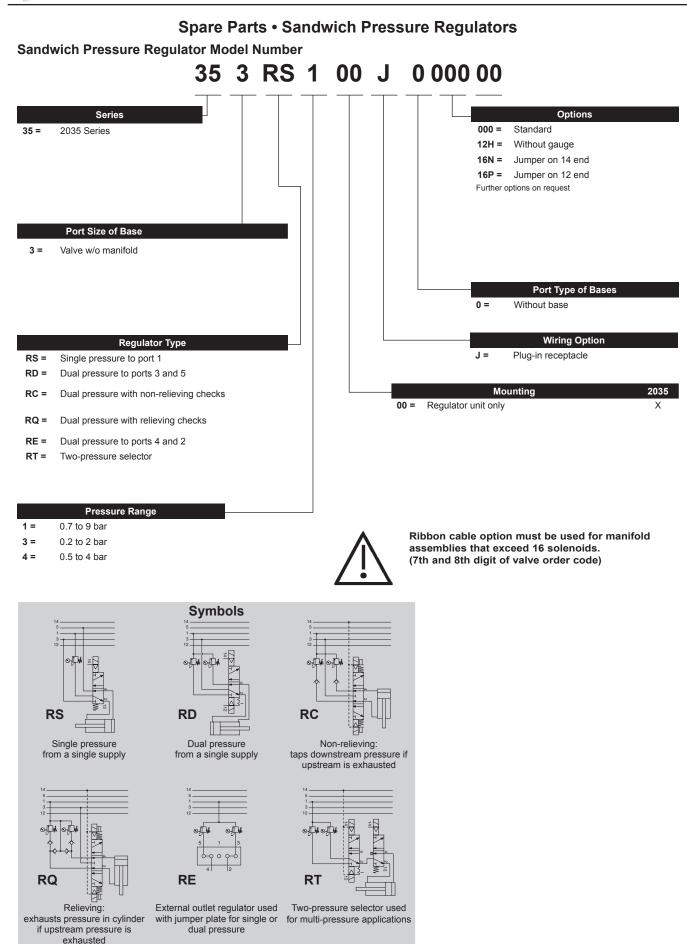




Spare Parts • Valves







All leaflets are available on: www.asco.com

umatics





Spare Parts • Manifold Assembly Kits "Z-Boards"

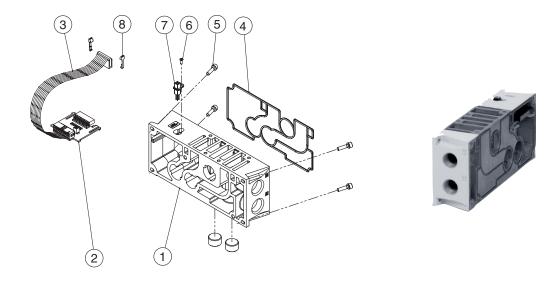
"Z-Boards"

2035 Series includes 4 different "Z-Boards"™ for driving up to 32 solenoids of single and double solenoid actuated valves. Ribbon cable feature must be used for manifold assemblies that exceed 16 solenoids.

In order to allow the full capacity of 32 solenoids, the assembly must be configured so that an even number of solenoids is utilised prior to the station using the ribbon cable feature.

Note: The 16th and 17th solenoid cannot be on the same valve. (See valve model number selection for 7th and 8th digit for valve with 17th solenoid).

Manifold Assemblies



2035 Series

Manifold assemblies with side ports with bottom ports	Order Code G 1/2" G 3/8"	Order Code NPTF 1/2" NPTF 3/8"	Order Code G 3/8" G 3/8"	Order Code NPTF 3/8" NPTF 3/8"	Weight approx. [kg]
With single "Z-Board"™	206-1610	206-1608	206-1611	206-1609	0.640
With double "Z-Board"™	206-1614	206-1612	206-1615	206-1613	0.645
With single "Z-Board"™ and ribbon cable	206-1622	206-1620	206-1623	206-1621	0.690
With double "Z-Board"™ and ribbon cable	206-1618	206-1616	206-1619	206-1617	0.695

Ribbon cable for Valve Station with 17th Solenoid

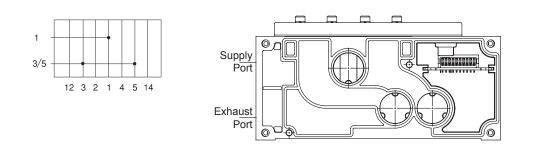




Spare Parts • Mid-Station Supply & Exhaust Block

Mid-Station Supply & 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



2035 Series

Description	Weight	Order
	approx. [kg]	Code
Mid-station supply & exhaust block	0.770	239-2225
On request: Threaded ports in NPTF		

Spare Parts • Conversion of Pilot Air Supply

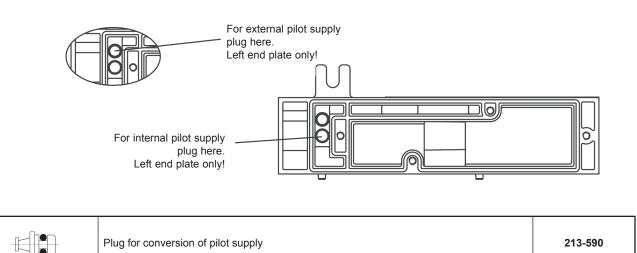
Conversion of Pilot Air Supply

Manifolds can easily be converted from internal to external pilot supply.



When converting from internal to external pilot supply, please ensure that the manifold is not pressurised, as pressure is applied to the end plate covers.

2035 Series



umatics