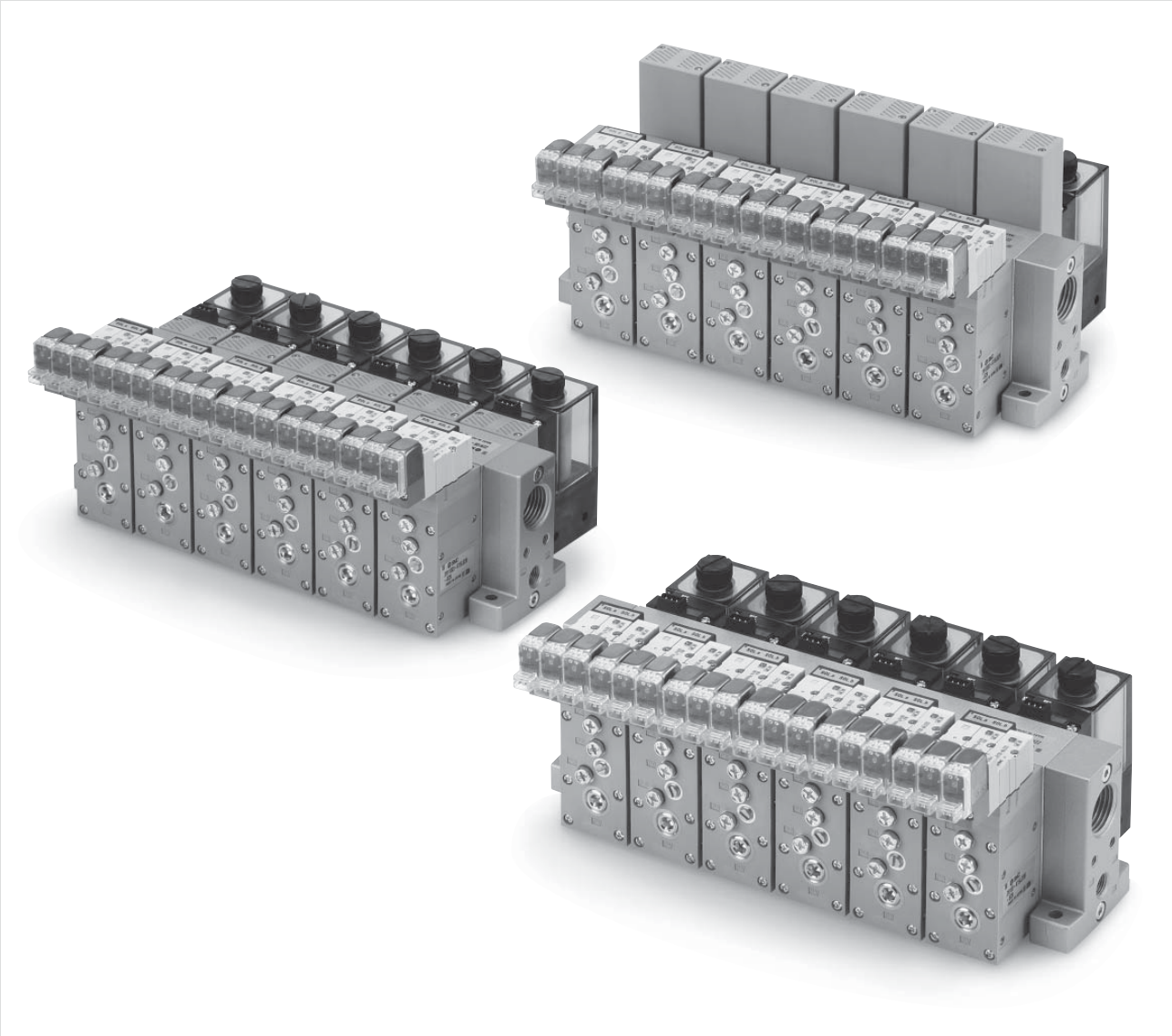
Large Size Vacuum Module:

Ejector System/Vacuum Pump System

- Large suction flow rate, suitable when used with large size pads or multiple pads.
- Nozzle dia. Ø 1.0, Ø 1.3, Ø 1.5, Ø 1.8, Ø 2.0
- Vacuum module suitable for handling workpieces of 0.5 to 5 kg.



***ZR* Series**

SMC

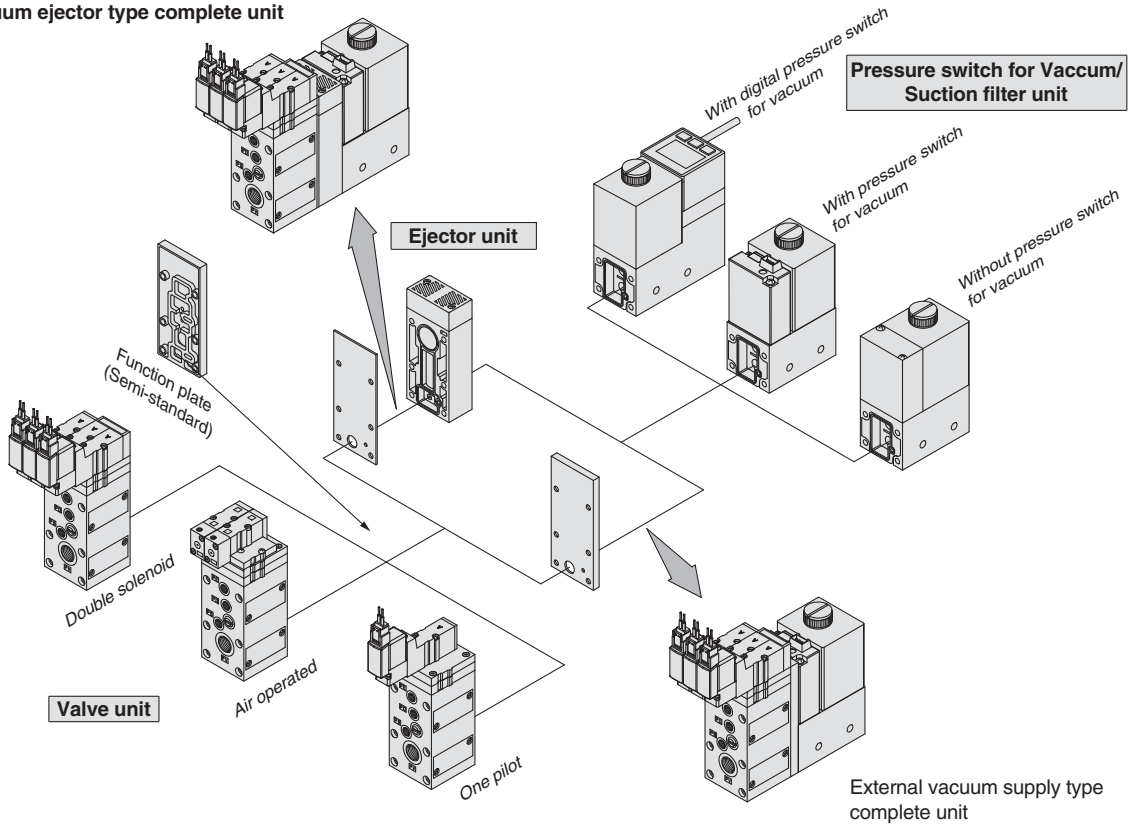
EMC-ZR-01A-UK

ZR Series

Vacuum module suitable for handling workpieces of 0.5 to 5 kg.

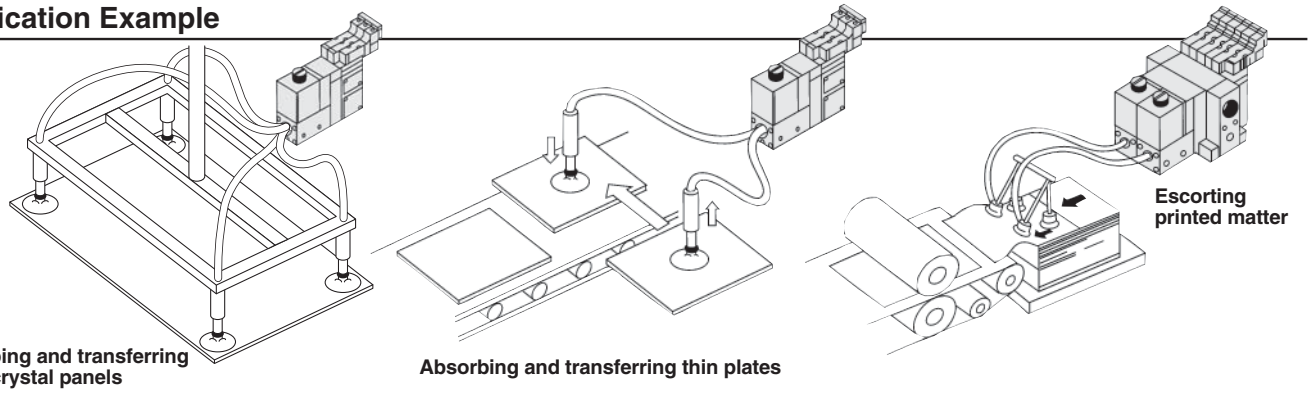
- **Modular design**/Customised application function through selection of modular components.
- **Modules for use with external vacuum supply (from pump or mainline) or as an air driven ejector system.**
- **Safe — Vacuum self-holding function by means of double solenoid valves.**
- **Compact, Lightweight**
- **Manifolding possible**

Vacuum ejector type complete unit



External vacuum supply type complete unit

Application Example



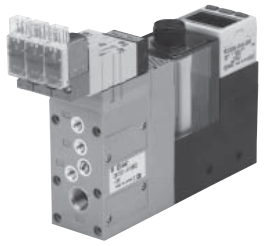
Absorbing and transferring liquid crystal panels

Absorbing and transferring thin plates

Absorbing and transferring copper plates, Automatic labeling machine, Absorbing and transferring veneers, Automatic screw fastening machine

Large Size Vacuum Module: Ejector System

ZR Series



How to Order

Note for model selection

Take function plates into consideration. (Refer to page 6.)

Components

Ejector unit	Supply valve self-holding	Pressure switch for vacuum unit	ZR1 20 S 1 – K1 5 M Z □ – □□□□ – □ – Q
Ejector unit	Supply valve N.C.	Pressure switch for vacuum unit	ZR1 20 L 1 – K2 5 M Z □ – □□□□ – □ – Q
Ejector unit		Pressure switch for vacuum unit	ZR1 20 S 1 □□□□ – Q
Ejector unit		Filter unit	ZR1 20 L 1 □□□□ – Q

Note) A bracket is applicable only when the product is to be shipped on its own. When a manifold is to be shipped, a bracket is not included with any of the models.

Ejector module nozzle diameter

10	1.0	18	1.8
13	1.3	20	2.0
15	1.5		

Maximum vacuum pressure

S	–84 kPa
L	–53 kPa

Ejector exhaust

Symbol	Type	Valve	Manifold
1	Built-in silencer	●	●
2 Note 1)	Port exhaust	●	●
3 Note 2)	Common exhaust	—	●

Note 1) When port exhaust is applied to the manifold, pilot exhaust is done by common exhaust. Thus, the exhaust port on the manifold base should be open while operating.

Note 2) When the product is used for the manifold specification and common exhaust, the exhaust air of the operating ejector releases may enter the vacuum (V) port of the non-operating ejector and be released if there are an operating and non-operating ejector. Select either the built-in silencer or port exhaust for the ejector exhaust method.

Combination of supply valve and release valve

Refer to "Table (1)" on page 4 for details.

Release flow rate adjusting needle/Bracket A, B Note)

	Lock nut	Bracket A or B
—	×	●
L	●	●
M	●	×
N	×	×

●: Attached (Bracket A or B is shipped together.)
×: None

Lead wire specifications

Digital pressure switch for vacuum (ZSE30A) specifications (D)

—	Without lead wire
L	Lead wire with connector (Length 2 m)

Refer to "Table (4)" on page 4 for part no. of lead wire with connector.

Pressure switch for vacuum (ZSE2) specifications (E)

—	Grommet/Lead wire (Length 0.6 m)
L	Grommet/Lead wire (Length 3 m)
C	Lead wire with connector (Length 0.6 m)
CL	Lead wire with connector (Length 3 m)
CN	Without lead wire with connector

Refer to "Table (3)" on page 4 for part no. of lead wire with connector.

Filter specifications (F)

—	No setting

Solenoid valve rated voltage

—	Air operated
5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Electrical entry

—	Air operated	
L	L plug connector type	Lead wire length 0.3 m
LN		Without lead wire
LO		Without connector
M	M plug connector type	Lead wire length 0.3 m
MN		Without lead wire
MO		Without connector
G	Grommet type	Lead wire length 0.3 m
H		Lead wire length 0.6 m

• Refer to "Table (2)" on page 4 for part no. of lead wire with connector.

Unit specifications

Digital pressure switch for vacuum (ZSE30A) specifications (D)

—	With unit switching function
M	SI unit only
P	With unit switching function (Initial value psi)

Note 1) Fixed unit: kPa

Pressure switch for vacuum (ZSE2) specifications (E)

—	No setting

Filter specifications (F)

—	No setting

Light/Surge voltage suppressor

—	None
Z	With light/surge voltage suppressor
S	With surge voltage suppressor

∗ If the polarity is incorrect at DC (surge voltage suppressor), diode or switching element may be damaged.

Manual override

—	Non-locking push type
B	Slotted locking type

Output specifications

Digital pressure switch for vacuum (ZSE30A) specifications (D)

N	NPN open collector 1 output
P	PNP open collector 1 output
A	NPN open collector 2 outputs
B	PNP open collector 2 outputs
C	NPN open collector 1 output + Analogue voltage output
D	NPN open collector 1 output + Analogue current output
E	PNP open collector 1 output + Analogue voltage output
F	PNP open collector 1 output + Analogue current output

Pressure switch for vacuum (ZSE2) specifications (E)

—	NPN open collector 1 output
55	PNP open collector 1 output

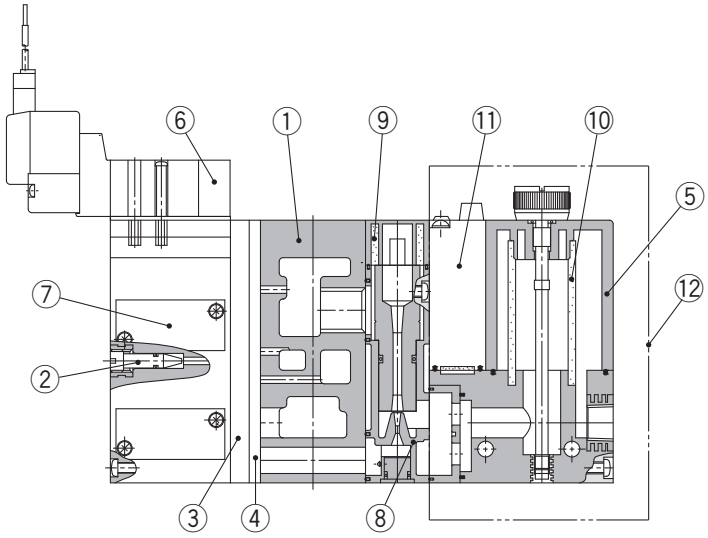
Filter specifications (F)

—	No setting

Combination of switch/filter

—	None
D	Digital pressure switch for vacuum (ZSE30A) + Filter
E	Pressure switch for vacuum (ZSE2) + Filter
F	Filter

Construction



Component Parts

No.	Description	Material	Part Model
1	**Manifold base**	Aluminium alloy	
2	**Release flow rate adjusting needle**	Stainless steel	ZR1-NA[Note 2)]
3	**Function plate**	PBT	Refer to page 27.
4	**Individual spacer**	PBT	Refer to page 27.
5[Note 1)]	**Filter case**	Polycarbonate	Refer to page 18.
6	**Pilot valve assembly**	—	Refer to "Table (5)" on page 8.
7	**Valve body assembly**	—	Refer to "Table (1)" on page 8.

No.	Description	Material	Part Model
8	**Ejector assembly**	—	Refer to "Table (2)" on page 8.
9	**Silencer**	PVA sponge	Refer to "Table (3)" on page 8.
10	**Filter element**	PVA sponge	ZR1-FZ(30 μm)
11	**Pressure switch for vacuum**	—	ZSE2-OR-$^{15}_{55}$-□ ZSE30A-00-□-□□□-Equivalent
12	**Filter switch unit for replacement**	—	ZR1-F□□□□-D

Note 1) Precautions on handling the filter case
1. The case is made of polycarbonate. Therefore, do not contact it or expose it to the following chemicals: paint thinner, carbon tetrachloride, chloroform, acetic ester, aniline, cyclohexane, trichloroethylene, sulfuric acid, lactic acid, water soluble cutting oil (alkalinic), etc.
2. Do not expose it to direct sunlight.
Note 2) Turning the release flow rate adjusting needle 2 full turns from the fully closed position renders the needle valve fully open. Do not turn more than two times since turning excessively may cause the needle fall off.
In order to prevent the needle from loosening and falling out, the release flow rate adjusting (ZR1-ND-L) lock nut is also available.

How to Order Solenoid Valves/Air Operated Valves

Air operated

SYJA3130

Solenoid valve

ZR1 − SYJ3233 − □□□□ − X126 − Q

SYJ3133 − □□□□ − Q

rated voltage

5	24 VDC
6	12 VDC
V	6 VDC
S	5 VDC
R	3 VDC

Manual override

—	Non-locking push type
D	Slotted locking type

Light/Surge voltage suppressor

—	None
Z	With light and surge voltage suppressor
S	With surge voltage suppressor

Electrical entry

L	L plug connector type	Lead wire: 0.3 m
LN		Without lead wires
LO		Without connector
M	M plug connector type	Lead wire: 0.3 m
MN		Without lead wires
MO		Without connector
G	Grommet type	Lead wire: 0.3 m
H		Lead wire: 0.6 m

Note) Mounting screw and pilot valve gasket are included.