How to Order

Manifold **ZZQ1** **08** – **B** **S** **B**

Number of stations Note)

01	1 station
02	2 station
⋮	⋮
08	8 station

Note) Number of stations varies according to nozzle nominal size during simultaneous operation.

Pilot exhaust port location

B	Both sides

Exhaust

S	Silencer (Both sides)

Supply port location

B	Both sides

Maximum number of stations in simultaneous operation

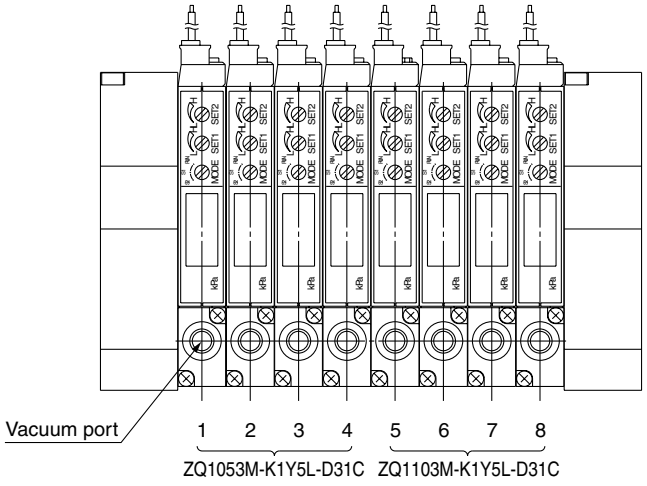
Nozzle nominal size	Maximum number of stations in simultaneous operation
ø0.5	8 Stations
ø0.7	6 Stations
ø1.0	4 Stations

Manifold Ordering Example

ZZQ108-BSB → 1 pc.
***ZQ1053M-K1Y5L-D31C → 4 pcs. (Stations 1 to 4)**
***ZQ1103M-K1Y5L-D31C → 4 pcs. (Stations 5 to 8)**

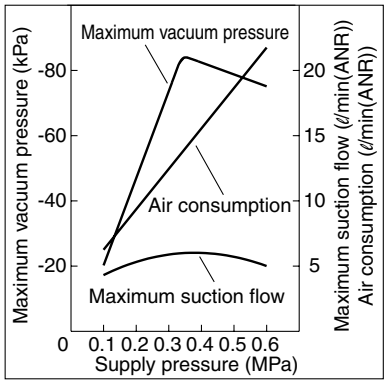
The stations are sequentially numbered. When viewed from the side of the vacuum ports, the far left station is designated as station 1.

Left **Right**

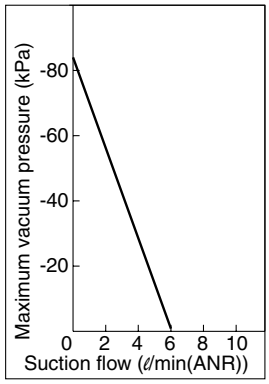


Flow Characteristics/Exhaust Characteristics

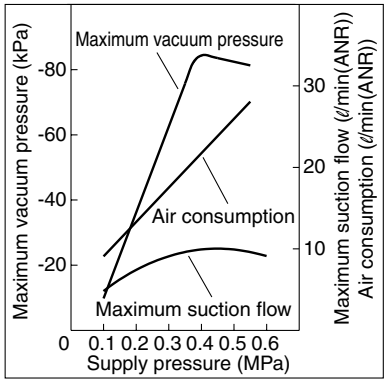
ZQ105 Exhaust Characteristics



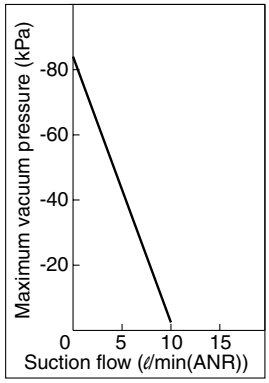
ZQ105 Flow Characteristics



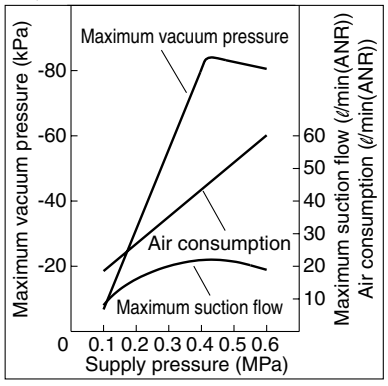
ZQ107 Exhaust Characteristics



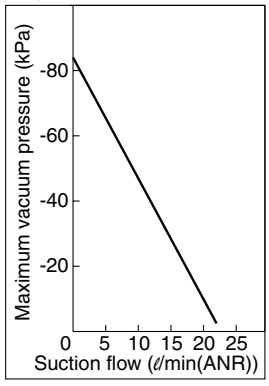
ZQ107 Flow Characteristics



ZQ110 Exhaust Characteristics



ZQ110 Flow Characteristics



Specifications

Ejector

Model	ZQ105	ZQ107	ZQ110
Nozzle nominal diameter mm ø	0.5	0.7	1.0
Maximum suction flow ℓ/min(ANR)	5	10	22
Air consumption ℓ/min(ANR)	14	23	46
Maximum vacuum pressure	–80 kPa		
Supply pressure range	0.3 MPa to 0.6 MPa		
Supply pressure	0.35 MPa	0.43 MPa	
Operating temperature range	5 to 50°C		

Weight

Single unit	Suction filter Note 1)	95 g
	Switch and suction filter Note 2)	109 g
End plate assembly for manifold		122 g

Note 1) Including a 0.3 m connector for the supply and release valves.
Note 2) Including a 0.3 m connector for the supply and release valves and a 0.6 m connector for the switch.

◎ **Calculation of weight for the manifold type**
(Single unit weight) x (Number of stations) + (Weight of end plate assembly for manifold)
Example) Switch + 8 stations with suction filter
109 g x 8 + 122 g = 994 g

Supply Valve and Release Valve

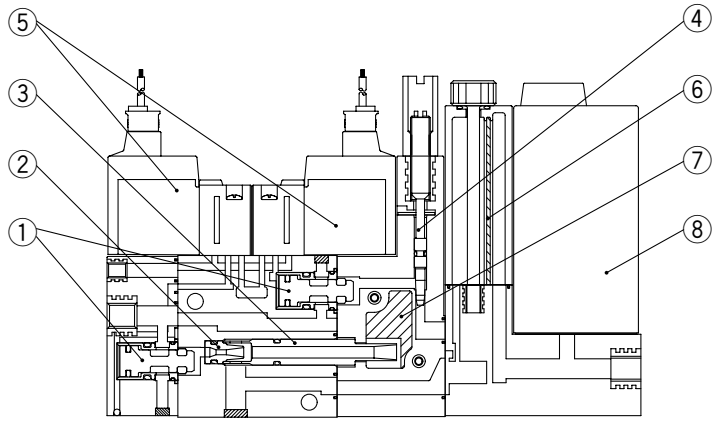
Type		Normally closed type		Latching type	Normally open type
		Standard type	Low wattage type (0.5 W)		
Model (Refer to How to Order for solenoid valves on page 13-9-5.)		VQ110-□	VQ110Y-□	VQ110L-□	ZQ1-VQ120-□
Fluid		Air, Inert gas			
Maximum operating pressure		0.6 MPa			
Minimum operating pressure		0.3 MPa			
Ambient and fluid temperature		5 to 50°C			
Lubrication		Not required			
Manual override		Non-locking push type / Lock type (tool type)		Push-lock type	Non-locking push type / Lock type (tool type)
Rated coil voltage		12, 24 VDC, 100, 110, 200, 220 VAC			12, 24 VDC
Power consumption (current value)	DC	1 W	0.5 W	1 W	
	100 VAC	0.5 VA (5 mA)	—	0.6 VA (6 mA)	—
	110 VAC	0.55 VA (5 mA)	—	0.65 VA (5.9 mA)	—
	200 VAC	1.0 VA (5 mA)	—	1.2 VA (6 mA)	—
	220 VAC	1.1 VA (5 mA)	—	1.3 VA (5.9 mA)	—
Electrical entry		Grommet		L plug connector	Grommet
		L plug connector (With light/surge voltage suppressor)		With light/surge voltage suppressor	L plug connector (With light/surge voltage suppressor)

Vacuum Pressure Switch

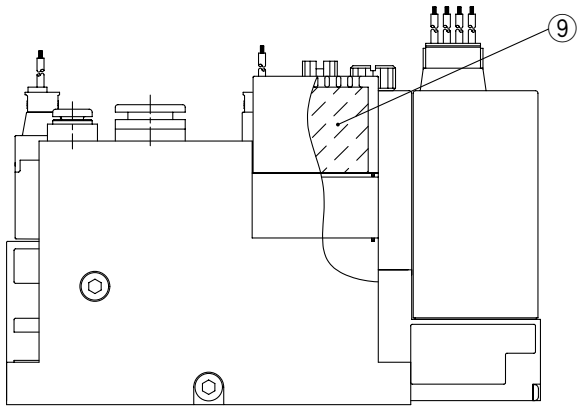
Model (Refer to How to Order for vacuum pressure switches on page 13-9-5.)		ZQ1S-D31□-□-AS	ZQ1S-D51□-□-AS	ZQ1S-D32□-□-AS	ZQ1S-D52□-□-AS
Rated pressure range		0 to –100 kPa			
Set pressure range		0 to –99 kPa			
Withstand pressure		0.2 MPa			
Fluid		Air/Non-corrosive metal/Non-combustible gas			
Power supply voltage		12 to 24 VDC ±10%			
Current consumption		35 mA or less [with power supply voltage of 24 VDC and switch output ON (with no load)]			
Ambient temperature range		5 to 50 ˚C (with no freezing or condensation)			
Ambient humidity range		35 to 85 %RH in operation and saving (with no condensation)			
Withstand voltage		500 VAC for 1 min			
Insulation resistance		50 MΩ or more (between live parts and pressure port at 500 VDC)			
Switch output		1 NPN output and analog output	1 PNP output and analog output	2 NPN outputs	2 PNP outputs
	Maximum load current	80 mA (per output)			
	Maximum applied voltage	30 V (for NPN output)			
	Residual voltage	NPN output: 0.8 V or less (at 80 mA inrush), PNP output: 1.2 V or less (at 80 mA discharge)			
	Response time	2 ms or less			
Hysteresis		0 to 15% F.S. or less (adjustable)	2% F.S. or less (fixed)	0 to 15% F.S. or less (adjustable)	2% F.S. or less (fixed)
Display		2-digit red LED			
Display accuracy		±3 %F.S. ±2 digits			
Output indicator light		Lights up when output is ON (red LED).		Lights up when output is ON (red for OUT1 and green for OUT2)	
Analog output Note)		(Only applicable to D31 and D5.1)			
	Output voltage	1 to 5 V ±2.5% F.S. or less			
	Linearity	±0.5 F.S. or less			

Construction

Single unit



Manifold



Component Parts

No.	Description	Material
①	Poppet valve assembly	–
②	Nozzle	Aluminum
③	Diffuser	Aluminum
④	Release flow adjustment needle	Aluminum

Replacement Parts

No.	Description	Material	Part no.
⑤	Solenoid valve	–	Refer to How to Order below
⑥	Filter element	PVF	XT534-5-001-AS
⑦	Sound absorbing material 1 (single unit)	PVF	XT534-5-004
⑧	Vacuum pressure switch	–	Refer to "How to Order" below
⑨	Sound absorbing material 2 (manifold)	PVF	XT534-5-003

How to Order

Solenoid valve

VQ1 1 0 □ – 5 L □

ZQ1 – VQ1 2 0 □ – 5 L □

Pilot valve

Nil	Standard type (1W)
Y	DC low wattage type (0.5 W) Not available for AC type
L	Latching positive common

Actuation

1	Normally closed
2	Normally open

Rated coil voltage

1	100V AC
2	200V AC
3	110V AC
4	220V AC
5	24V DC
6	12V DC

Electrical entry

L	L plug connector With 0.3 m lead wire
LO	L plug connector Without connector
G	Grommet With 0.3 m lead wire (Not available for latching and AC types.)

Note) Mounting screws are attached.

Manual override

Nil	Non-locking push type
	Latching: Push-lock type
B	Locking: Slotted type

Note) Only the "Nil" type is available with a latching type.

Check valve

Nil	None
K	With check valve

Note) The check valve has a function to prevent the exhaust air from the silencer overflowing to the vacuum port side when a manifold is used.

⚠Warning

① Cannot be used for vacuum retention.
② Use a release valve. (Without a release valve, the workpiece may not be released.)

Vacuum pressure switch

ZQ1S – D 31 C □ – AS

Switch specifications

31	1 NPN output and analog output
32	2 NPN outputs
51	1 PNP output and analog output
52	2 PNP outputs

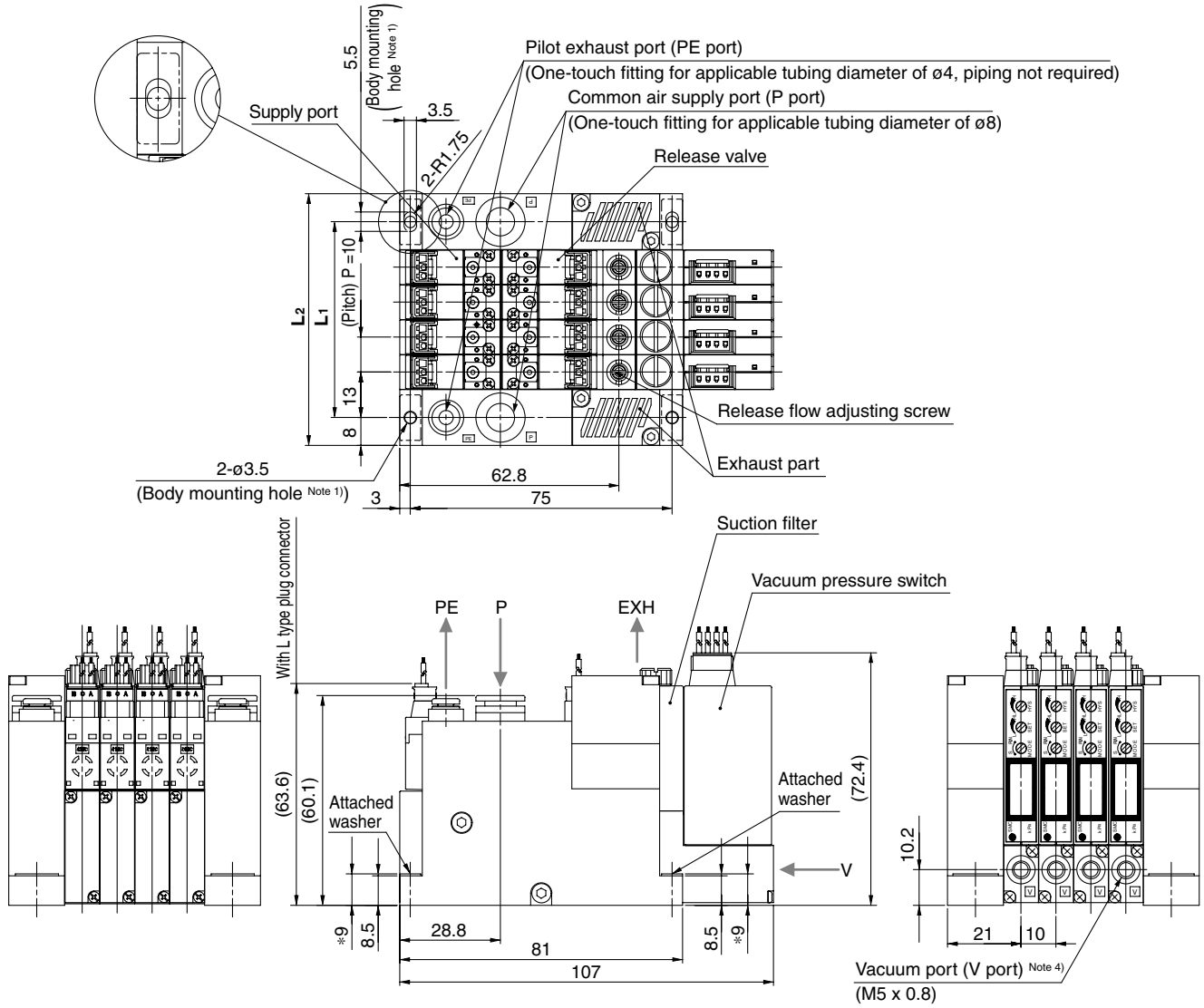
Electrical entry

C	Connector type Lead wire length: 0.6 m
CL	Connector type Lead wire length: 3 m
CN	Without connector

Note) Mounting screws are attached.

Dimensions

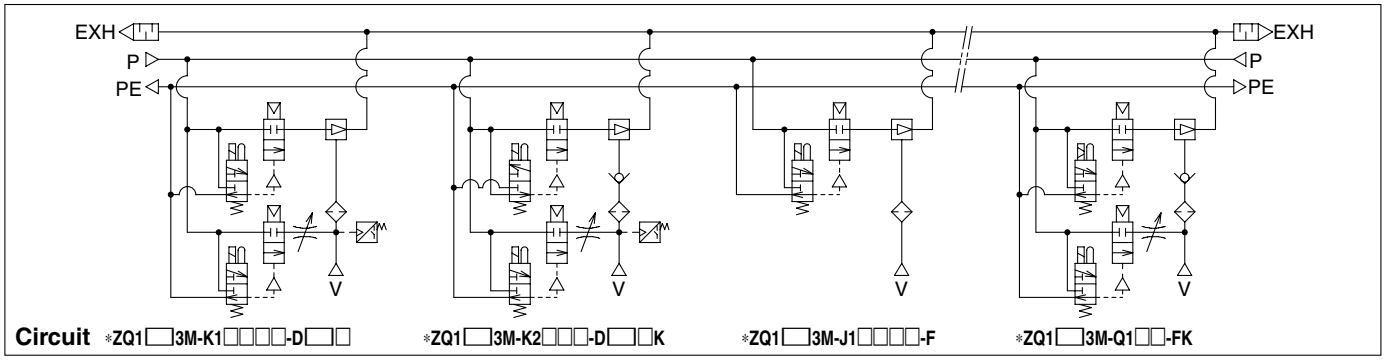
Manifold type
ZZQ1□-BSB
∗ZQ1□3M-□□□□□-□□□



Dimensions n: Number of stations (mm)

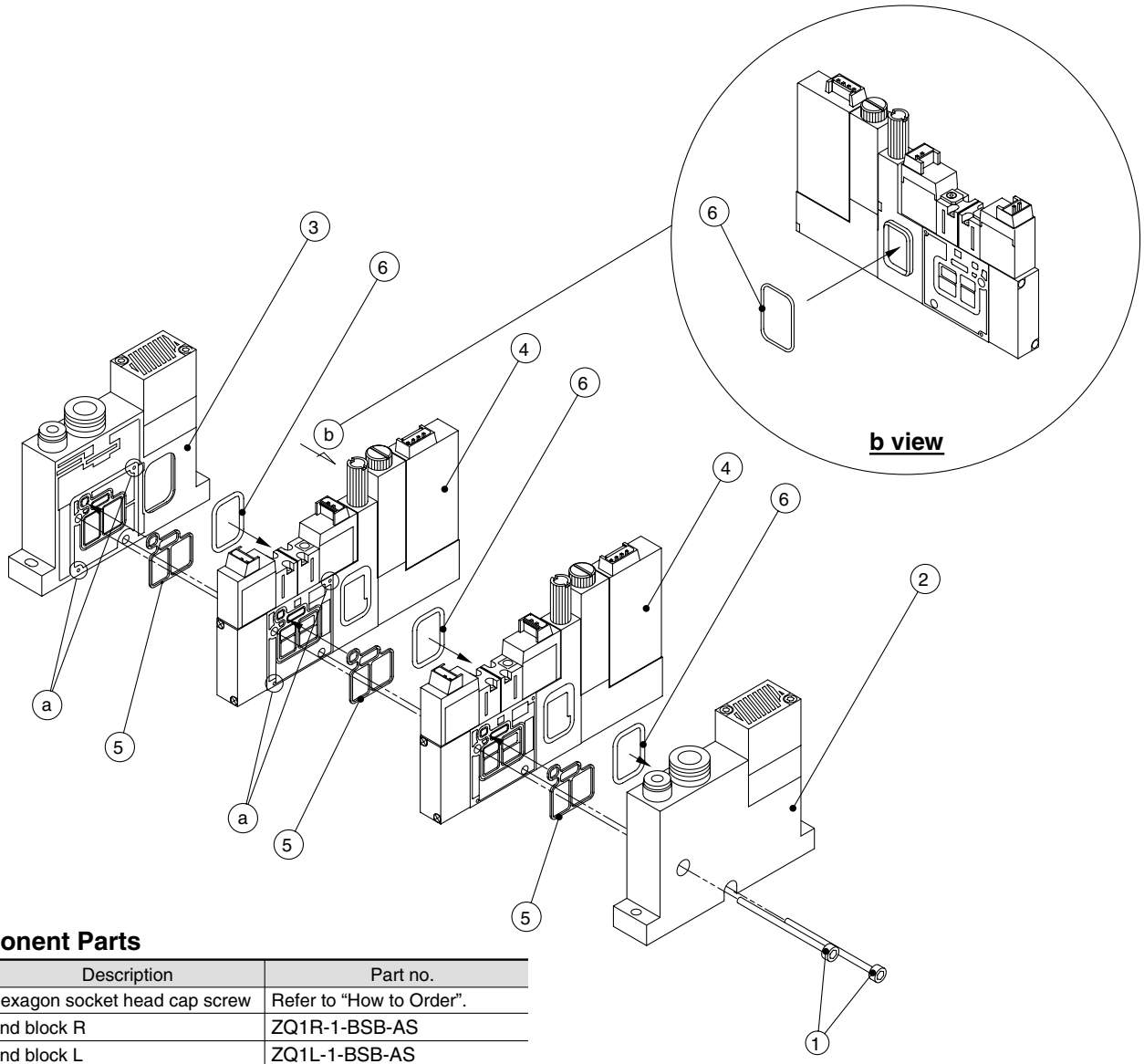
n	1	2	3	4	5	6	7	8
L_1	26	36	46	56	66	76	86	96
L_2	52	52	62	72	82	92	102	112

Note 1) The above dimensions are for ZZQ1□-BSB.
∗ZQ1□3M-K10$^{S}_{B}$L-D□C□.
∗In the case of ZQ1□3M-□□□□□-F□, the overall length is 87.2.
Note 2) ∗Dimensions marked with "∗" are those after the attached square bracket is mounted.
Note 3) When the body is mounted, tighten with a torque of 0.6±0.06 Nm.
Using excessive torque may cause damage to the body.
Note 4) The pitches of V ports are determined assuming the use of the Series KJ one-touch fittings. If used with other fittings, these may cause interference, dependant on their type and size. Please refer to the catalogue to confirm the sizes of the fittings to be used.



Circuit ∗ZQ1□3M-K1□□□□-D□□ ∗ZQ1□3M-K2□□□-D□□K ∗ZQ1□3M-J1□□□□-F ∗ZQ1□3M-Q1□□-FK

Manifold Exploded View



Component Parts

No.	Description	Part no.
①	Hexagon socket head cap screw	Refer to "How to Order".
②	End block R	ZQ1R-1-BSB-AS
③	End block L	ZQ1L-1-BSB-AS
④	Ejector assembly	ZQ1□□3M-□□□□□□-□□□□□ Note)
⑤	Ejector body gasket for manifold	ZQ-3-005
⑥	Exhaust block gasket	ZQ-3-009

Note) Refer to page 13-9-5 for detailed description of "How to Order".

How to Order Hexagon Socket Head Cap Screw

XT534−4−0 05

Number of stations

05	1 station
06	2 station
⋮	⋮
12	8 station

Working Procedure

Disassembly

Loosen and remove the hexagon socket head cap bolts ①.

Assembly

1. Install the ejector body gasket for manifold ⑤ into the gasket groove of each ejector assembly ④. Install the exhaust block gasket ⑥ around the projected part.
2. Install the exhaust block gasket ⑥ around the projected part of the end block R ②.
3. Install the ejector body gasket for manifold ⑤ into the gasket groove of the end block L ③.
4. Align the ejector assemblies ④, end block (R) ②, and end block (L) ③ using positioning pins (at the two "a" positions) and fasten with a hexagon socket head cap bolts ① (2 pcs.) (with a tightening torque of 0.6 Nm±0.06 Nm).