



Instruction Manual
Vacuum Gripper System

Series ZGS □□□□-400240 □□□□-□□□□



The intended use of the Vacuum Gripper System is for material handling.

1 Safety Instructions

These safety instructions are intended to prevent hazardous situations and/or equipment damage. These instructions indicate the level of potential hazard with the labels of "Caution," "Warning" or "Danger." They are all important notes for safety and must be followed in addition to International Standards (ISO/IEC^{*)}, and other safety regulations.

- *ISO 4414: Pneumatic fluid power — General rules and safety requirements for systems and their components.
- ISO 4413: Hydraulic fluid power — General rules and safety requirements for systems and their components
- IEC 60204-1: Safety of machinery - Electrical equipment of machines. Part 1: General requirements
- ISO 10218-1: Robots and robotic devices - Safety requirements for industrial robots - Part 1: Robots

- Refer to product catalogue, Operation Manual and Handling Precautions for SMC Products for additional information.
- Keep this manual in a safe place for future reference.

Danger	Danger indicates a hazard with a high level of risk which, if not avoided, will result in death or serious injury.
Warning	Warning indicates a hazard with a medium level of risk which, if not avoided, could result in death or serious injury.
Caution	Caution indicates a hazard with a low level of risk which, if not avoided, could result in minor or moderate injury.

Warning

- Always ensure compliance with relevant safety laws and standards.
- All work must be carried out in a safe manner by a qualified person in compliance with applicable national regulations.

2 Specifications

2.1 General specifications

Number of ejectors assemblies [pcs]	2	4	6
Fluid	Air		
Operating pressure range [MPa]	0.3~0.7		
Operating temperature range [°C]	5~50		
Standard supply pressure [MPa] ^{Note 1)}	0.58	0.6	0.6
Max. vacuum pressure [kPa]	-75		
Air consumption [L/min(ANR)] ^{Note 2)}	228	454	661
Suction flow [L/min(ANR)] ^{Note 2)}	-50 kPa	80	172
Maximum ^{Note 3)}	322	646	1022
Weight [kg] ^{Note 4)}	3.9		
Power supply voltage [V]	DC24 ± 10%		
Power consumption [W]	2.7		
Exhaust noise [dB(A)] or less ^{Note 5)}	70		
Supply/Release valve ^{Note 6)}	JSY3140-5MOZ-* equivalent		
Pressure switch ^{Note 7)}	ZSE10-00-* equivalent		

Table 1.

Note 1) Indicates the pressure right before the supply pressure P port when a vacuum is generated. It is affected by air supply capacity, pipe size, air consumption of other equipment operating simultaneously, etc.

2 Specifications - continued

During vacuum generation, the pressure immediately before the P port may fall below the standard supply pressure.

- Note2) Values are based on our measurement conditions at standard supply pressure and may vary depending on atmospheric pressure (weather, altitude, etc.) and measurement method.
- Note3) The maximum suction flow rate is an estimated value based on actual measurements under our measurement conditions (not a guaranteed value)
- Note4) In case of ZGSNPK-400240BS4-RM1C8
- Note5) Actual values measured under our measurement conditions (not guaranteed values).
- Note 6) Refer to the JSY3000 series catalogue for the specifications of the supply valve and release valve.
- Note 7) Refer to the ZSE10 series catalogue for pressure switch specifications.

Warning

Special products (-X) might have specifications different from those shown in this section. Contact SMC for specific drawings.

3 Installation

3.1 Installation

Warning

- Do not install the product unless the safety instructions have been read and understood.

3.2 Environment

Warning

- Do not use in an environment where corrosive gases, chemicals, salt water or steam are present.
- Do not use in an explosive atmosphere.
- Do not expose to direct sunlight. Use a suitable protective cover.
- Do not install in a location subject to vibration or impact in excess of the product's specifications.
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product's specifications.

3.3 Piping

Caution

- Before connecting piping make sure to clean up chips, cutting oil, dust etc.
- When installing piping or fittings, ensure sealant material does not enter inside the port. When using seal tape, leave 1 thread exposed on the end of the pipe/fitting.
- Tighten fittings to the specified tightening torque.

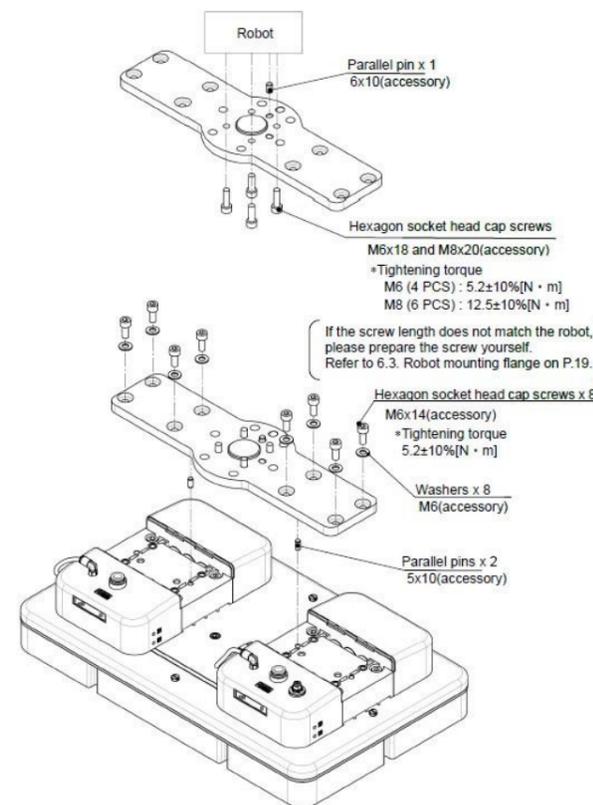
3.4 Lubrication

Caution

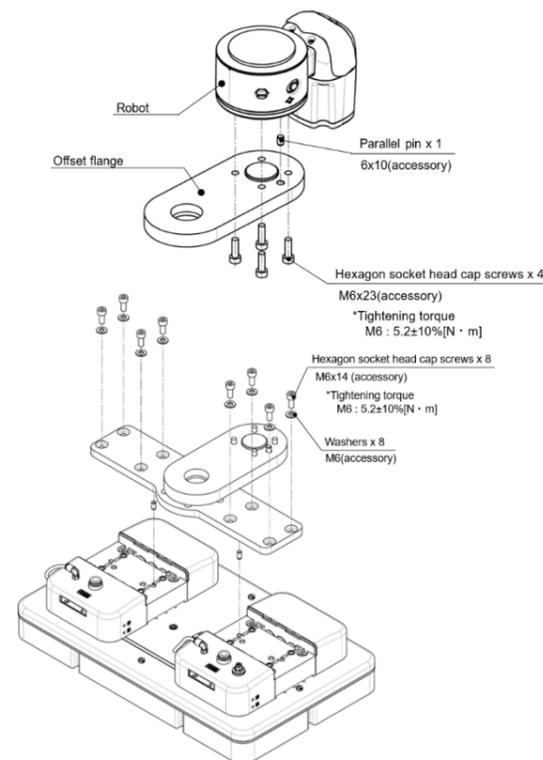
- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.
- If a lubricant is used in the system, refer to catalogue for details.

3 Installation - continued

3.5 Mounting



3.6 Offset mounting flange – Omron Techman Robot



3 Installation - continued

3.7 Wiring

Caution

Mounting the M8 connector cable.

- Connect the vacuum gripper system's M8 connector pin and the tool flange's tool I/O connector together with the M8 connector cable.
- Do not energize while securing the connector.
- Check that the connector is not loose.

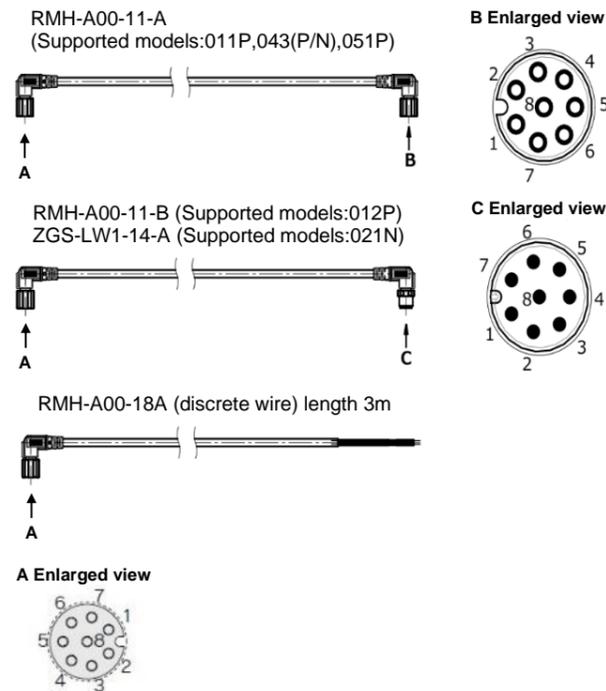


Table 2 - Connector pin assignment

Pin No.	Wire colour	UR, FANUC, YASKAWA Electric	YASKAWA Electric	OMRON Techman Robot
		PNP type	NPN type	
1	White	-	-	Power supply DC24V (+)
2	Brown	-	-	Pressure switch 1 output (OUT1) [Digital] (+)
3	Green	Pressure switch 2 output (OUT1) [Digital] (-)	Pressure switch 2 output (OUT1) [Digital] (+)	Pressure switch 2 output (OUT1) [Digital] (+)
4	Yellow	Pressure switch 1 output (OUT1) [Digital] (-)	Pressure switch 1 output (OUT1) [Digital] (+)	-
5	Grey	Power supply DC24V (+)	Power supply DC24V (+)	Supply valve (-) *1)
6	Black	Release valve (+) *1)	Release valve (-) *1)	Release valve (-) *1)
7	Blue	Supply valve (+) *1)	Supply valve(-) *1)	-
8	Red	Power supply GND (-)	Power supply GND (-)	Power supply GND (-)

*1) In case of without valve, it is not connected.

Refer to the operation manual for how to use the pressure switch ZSE10.

4 Settings

Refer to operation manual, available from SMC website, for product settings and programming instructions.

5 How to Order

Refer to drawings or catalogue for 'How to Order'.

6 Outline Dimensions

Refer to drawings or catalogue for outline dimensions.

7 Maintenance

7.1 General maintenance

Caution

- Not following proper maintenance procedures could cause the product to malfunction and lead to equipment damage.
- If handled improperly, compressed air can be dangerous.
- Maintenance of pneumatic systems should be performed only by qualified personnel.
- Before performing maintenance, turn off the power supply and be sure to cut off the supply pressure. Confirm that the air is released to atmosphere.
- After installation and maintenance, apply operating pressure and power to the equipment and perform appropriate functional and leakage tests to make sure the equipment is installed correctly.
- If any electrical connections are disturbed during maintenance, ensure they are reconnected correctly and safety checks are carried out as required to ensure continued compliance with applicable national regulations.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.
- Refer to operation manual for details.

8 Limitations of Use

8.1 Limited warranty and disclaimer/compliance requirements

Refer to Handling Precautions for SMC Products.

9 Product Disposal

This product shall not be disposed of as municipal waste. Check your local regulations and guidelines to dispose this product correctly, in order to reduce the impact on human health and the environment.

10 Contacts

Refer to www.smcworld.com or www.smc.eu for your local distributor/importer.

SMC Corporation

URL : [https:// www.smcworld.com](https://www.smcworld.com) (Global) [https:// www.smc.eu](https://www.smc.eu) (Europe)
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