



Installation and Maintenance Manual

Air Cylinder Series

CG5BA32TFSV-****-DKR10937

CE Ex II 2GD c 95°C (T5) Ta -10°C to 40°C
174°C (T3) Ta 40°C to 120°C

Marking description
Group II, Category 2
Suitable for Gas and Dust environment
Type of protection "constructional safety"
The maximum surface temperature is 95°C and the temperature class is T5 when the ambient temperature is: -10°C to 40°C
The maximum surface temperature is 174°C and the temperature class is T3 when the ambient temperature is 40°C to 120°C

1 Safety Instructions

This manual contains essential information for the protection of users and others from possible injury and/or equipment damage.

- Read this manual before using the product, to ensure correct handling, and read the manuals of related apparatus before use.
- Keep this manual in a safe place for future reference.
- These instructions indicate the level of potential hazard by label of "Caution", "Warning" or "Danger", followed by important safety information which must be carefully followed.
- To ensure safety of personnel and equipment the safety instructions in this manual and the product catalogue must be observed, along with other relevant safety practices.

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

Warning

- The compatibility of pneumatic equipment is the responsibility of the person who designs the pneumatic system or decides its specifications. Since the products specified here can be used in various operating conditions, their compatibility with the specific pneumatic system must be based on specifications or after analysis and/or tests to meet specific requirements.
- Only trained personnel should operate pneumatically operated machinery and equipment.**
Compressed air can be dangerous if an operator is unfamiliar with it. Assembly, handling or repair of pneumatic systems should be performed by trained and experienced personnel.
- Do not service machinery/equipment or attempt to remove components until safety is confirmed.**
 - Inspection and maintenance of machinery/equipment should only be performed after confirmation of safe locked-out control positions.
 - When equipment is to be removed, confirm the safety process as mentioned above. Switch off air and electrical supplies and exhaust all residual compressed air in the system.
 - Before machinery/equipment is re-started, ensure all safety measures to prevent sudden movement of cylinders etc. (Supply air into the system gradually to create back pressure, i.e. incorporate a soft-start valve).
- Do not use this product outside of the specifications. Contact SMC if it is to be used in any of the following conditions:**
 - Conditions and environments beyond the given specifications, or if the product is to be used outdoors.
 - Installations in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverage, recreation equipment, emergency stop circuits, press applications, or safety equipment.

1 Safety Instructions (Continued)

- An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.

Caution

- Ensure that the air supply system is filtered to 5 microns.

2 Specifications

2.1 Specifications

Refer to the operation manual for this product.

Fluid	Air
Max. operating pressure	1.0 MPa
Min. operating pressure	0.05 MPa
Ambient and fluid temperature	-10 to 120°C
Lubrication	Not required
Operating piston speed	50 to 1000 mm/s
Cushion	Air cushion
Allowable kinetic energy	0.91 J
Explosive atmosphere	Gas and Dust
Zone	1, 21, 2 and 22

Warning

- In case the kinetic energy exceeds the value given in the table, please contact SMC.

2.2 Production batch code

The production batch code printed on the label indicates the month and year of production as per the following table:

Production batch codes									
Year	2013	2014	2015	...	2021	2022	2023	...	
Month	R	S	T	...	Z	A	B	...	
Jan	O	RO	SO	TO	...	ZO	AO	BO	...
Feb	P	RP	SP	TJ	...	ZP	AP	BP	...
Mar	Q	RQ	SQ	TQ	...	ZQ	AQ	BQ	...
Apr	R	RR	SR	TR	...	ZR	AR	BR	...
May	S	RS	SS	TS	...	ZS	AS	BS	...
Jun	T	RT	ST	TT	...	ZT	AT	BT	...
Jul	U	RU	SU	TU	...	ZU	AU	BU	...
Aug	V	RV	SV	TV	...	ZV	AV	BV	...
Sep	W	RW	SW	TW	...	ZW	AW	BW	...
Oct	X	RX	SX	TX	...	ZX	AX	BX	...
Nov	Y	RY	SY	TY	...	ZY	AY	BY	...
Dec	Z	RZ	SZ	TZ	...	ZZ	AZ	BZ	...

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 or steam are present.
- Do not use in an explosive atmosphere except within the specified rating.
- Do not expose to direct sunlight. Use a suitable protective cover.

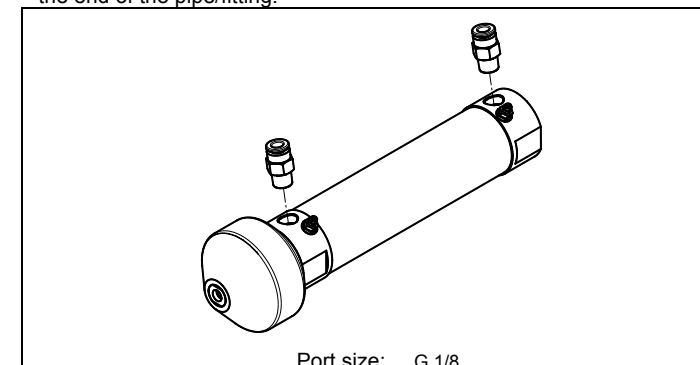
3 Installation (Continued)

- Do not install in a location subject to vibration or impact. Check the product specifications.
- Do not mount in a location exposed to radiant heat.
- Do not use in case of heavy dusty environment where dust can penetrate into the cylinder and dry the grease.

3.3 Piping

Warning

- Before 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 1.5 to 2 threads exposed on the end of the pipe/fitting.



Port size: G 1/8

3.4 Lubrication

Caution

- SMC products have been lubricated for life at manufacture, and do not require lubrication in service.

3.5 Electrical connection

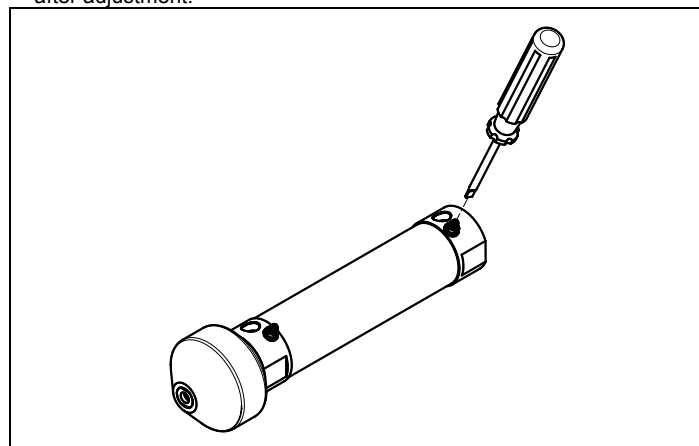
Warning

- Provide a grounding connection to the actuator to avoid any spark arising from potential differences.

4 Settings

4.1 Air cushion adjustment

- For air-cushion adjustment, tighten or loosen the cushion valve using a suitable screwdriver and a spanner. Ensure to tighten the lock nut firmly after adjustment.



Warning

- Do not rotate the cushion valve more than 4 turns counter clockwise from the closed position, as this will cause the valve to be damaged or ejected from the assembly.
- Do not operate the cushion valve in the fully closed or fully opened state. Using it in the fully closed state will cause the cushion seal to be damaged. Using it in the fully opened state will cause the piston rod assembly or the cover to be damaged.
- Be certain to activate the air cushion at the stroke end. When the cylinder is used with the cushion valve in a fully open position, a suitable external device should be installed to absorb all of the kinetic energy of the mechanism, of which the actuator is part, before reaching each end of stroke. If this is not done, the piston rod assembly will be damaged.

5 How to order

Refer to the customer drawing for this product.

6 Outline dimensions

Refer to the customer drawing for this product.

7 Maintenance

7.1 General Maintenance

Caution

- 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.
- Do not make any modification to the product.
- Do not disassemble this product.
- Periodically check the rod surface, the rod seal and the cylinder tube external surface. Any damage or rust appearing on these components could increase friction and lead to dangerous conditions. Replace the whole actuator if any of these conditions should appear.
- Do not allow dust to form deposits on the outer surface of the actuator and mounting bracket. Periodically clean the area between the piston rod end and the front cone, using a blow gun.
- Periodically check for presence of lubrication.

8 Limitations of use

Danger

- Do not exceed any of the specifications listed in section 2 of this document or the specific product catalogue.
- Air equipment has standard air leakage within certain limits. Do not use the equipment when the air itself can lead to explosion.

- Do not use this equipment where vibration could lead to equipment failure. Contact SMC for this specific situation.
- External impacts on the cylinder body could result in spark and/or cylinder damage. Avoid any application where foreign objects can hit the cylinder. In such situations install a suitable guard to prevent such impacts.
- Do not install or use this actuator in applications where the piston rod can impact foreign objects.
- Avoid applications where the piston rod end and the application joining parts create a possible ignition source.
- Do not use in the presence of strong magnetic fields that could generate a surface temperature higher than the value given for the temperature class.

9 Contacts

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URL : <http://www.smcworld.com> (Global) <http://www.smceu.com> (Europe)
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