ORIGINAL INSTRUCTIONS

Instruction Manual

Residual Pressure Release Valve with One-touch fitting

KE series



The intended use ofthis product is to vent the air from an isolated systemby manually pressing the actuator button.

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) *1), and other safety regulations.

*1) ISO 4414: Pneumatic fluid power - General rules relating to systems.
ISO 4413: Hydraulic fluid power - General rules relating to systems.
IEC 60204-1: Safety of machinery - Electrical equipment of machines. (Part 1: General requirements)
ISO 10218-1: Manipulating industrial robots -Safety. etc.

- 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.

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

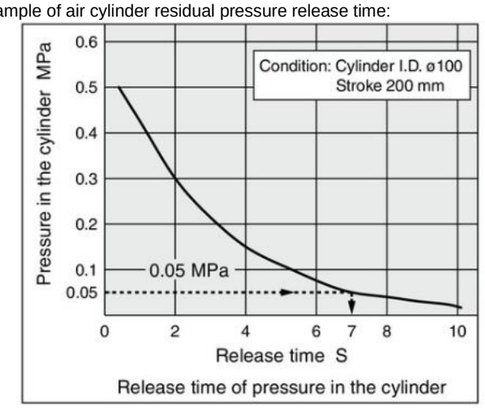
2 Specifications

Model	Without a push button guard	KEA06	KEA08	KEA10	KEA12
	With a push button guard	KEB06	KEB08	KEB10	KEB12
	Rc thread with a push button guard	—	KEC-02	—	KEC-03
Applicable tubing O.D. or connection thread		ø6	ø8, Rc1/4	ø10	ø12,Rc3/8
Applicable tubing material		Nylon, Soft nylon, Polyurethane, FEP, PFA			
Fluid		Air			
Operating pressure range		0 to 1 MPa			
Ambient and fluid temperature		–5 to 60°C (No freezing)			
Maximum operating frequency		30 per minute			
Minimum operating frequency		Every 30 days			
Effective area [mm²]	Nylon	13.1	26.1	41.5	58.3
	Polyurethane	13.1	18.0	29.5	46.1
Residual pressure release effective area		1.8 mm²			
Colour	Body	Red			
	Push button				
	Release button (Tube connection part)	Blue			

2 Specifications - continued

Residual pressure release time
Residual pressure release time is approximately 7 seconds. Time required for pressure to fall from 0.5MPa to 0.05MPa.

Example of air cylinder residual pressure release time:



3 Installation

3.1 Installation

⚠ Warning

- Do not install the product unless the safety instructions have been read and understood.
- If surge pressure exceeds the max operating pressure, the fitting may be damaged.
- Do not use fluids other than listed in the specification. Consult with SMC if using other fluids.
- Use clean air. Ensure that the air supply system is filtered to 5 µm.
If the compressed air includes chemicals, synthetic materials (including organic solvents), salinity, corrosive gas, etc., it may lead to damage or malfunction.
- Do not apply unnecessary forces such as twisting, pulling, moment loads, vibration and impact, etc. on fittings or tubing. This will cause damage to fittings and will crush, burst or release tubing.
- First, tighten the fitting by hand, then use a wrench appropriate for the hexagon flats of the body to tighten it a further two or three turns. For a tightening torque guide, see the table below.

Thread	Tightening Torque, Nm
Rc 1/4	8 to 12
Rc 3/8	15 to 20

- To install a fitting, screw the fitting into the hexagonal face of the body and tighten with an appropriate wrench. Use a second wrench on the adjacent body to contain the torque in the metal part of the component.
- Do not allow tubing to twist or rotate the component in service. Avoid
- **Installation of tubing**
1. Cut the tubing perpendicularly, being careful not to damage the outside surface. Use an SMC tube cutter TK-1, 2, 3, 5 or 6. Do not cut the tubing with pliers, nippers, scissors, etc., otherwise, the tubing will be deformed and trouble may result.

2. The outside diameter of the polyurethane tubing swells when internal pressure is applied to it. Therefore, it may be possible that the tubing cannot be re-inserted into the One-touch fitting. Check the tubing outside diameter, and when the accuracy of the outside diameter is +0.15mm or larger, insert into the One-touch fitting again, without cutting the tubing to use it. When the tubing is re-inserted into the One-touch fitting, confirm that the tubing goes through the release button smoothly.

3. Grasp the tubing, slowly push it straight (0 to 5º into the One-touch fitting until it comes to a stop.

3 Installation - continued

4. Pull the tubing back gently to make sure it has a positive seal. Insufficient installation may cause air to leak or the tubing to release.

As a guide for checking the tubing is not pulled out, refer to the following table.

Tubing size	Tensile force of tubing [N]
φ6	12
φ8	20
φ10	30
φ12	35

- **Removal of tubing**
1. Press the release button flange evenly and sufficiently to release the tube. Do not push in the tubing before pressing the release button.

2. Pull out the tubing while keeping the release button depressed. If the release button is not held down sufficiently, the tubing cannot be withdrawn.

3. To reuse the tubing, remove the previously lodged portion of the tubing. If the lodged portion is left on without being removed, it may result in air leakage and removal of the tubing difficult.

- twisting or rotating the tubing when the valve is operated.
- There may be cases of the tubing detaching from the fitting and thrashing around uncontrollably due to tubing degradation or fitting breakage. To prevent the situation from becoming uncontrollable, fit the tubing with a protective cover or fix it in place.

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 .
- Do not mount in a location exposed to radiant heat that would result in temperatures in excess of the product’s specifications
- Do not use in environments where foreign matter may stick to the product or get mixed in the product’s interior.

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.

4 How to Order

Refer to the catalogue for ‘How to Order’.

5 Outline Dimensions (mm)

Refer to the catalogue for outline dimensions.

6 Maintenance

6.1 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
- Ensure the component remains clean. Debris might cause the valve to leak and debris might to be ejected when the valve is used. Eye protection must be worn when using the valve.
- Replace the valve if it develops leakage.
- Wear safety glasses at all times during periodical inspections.

7 Limitations of Use

7.1 Limited warranty and Disclaimer/Compliance Requirements
Refer to Handling Precautions for SMC Products.

8 Contacts

Refer to www.smcworld.com for contacts.

SMC Corporation

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