



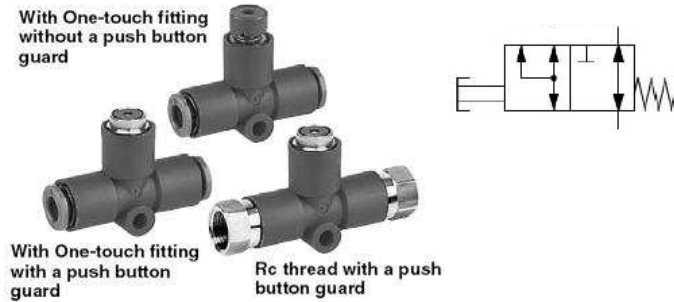
Original Instructions

Installation and Maintenance Manual

Product Name Residual Pressure Release Valve with One-touch fitting

Series KE

(Basic and Well-ried Safety principles in accordance to ISO 13849)



The intended use of the Residual Pressure Release Valve is to vent the air from an isolated system.

This product is validated according to ISO 13849 basic and well-ried safety principles. Refer to Doc. Nr.KQ*-RRQ0048

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.
- Always ensure compliance with relevant safety laws and standards including ISO 4414.

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.

1 Safety Instructions (continued)

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

Warning

Ensure the component remains clean. Debris might cause the valve to leak and debris might be ejected when the valve is used. Eye protection must be worn when using the valve.

Caution

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

2 Specifications

The function of the Residual Pressure Release Valve is to release the residual pressure in an isolated system by manually pressing the actuator button.

Table 1. 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		$\phi 6$	$\phi 8$, Rc 1/4	$\phi 10$	$\phi 12$, Rc 3/8
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 [mm ²]	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 mm ²				
Colour	Body	Red			
	Push button	Red			
	Release button (Tube connection part)	Blue			

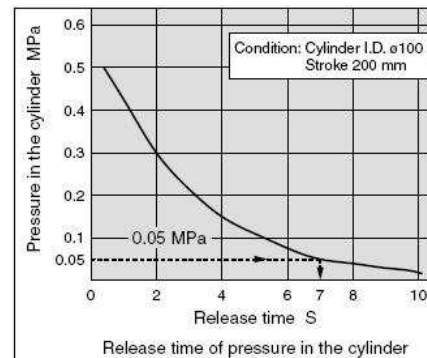


Figure 1

Residual pressure release time: approximately 7 seconds
(Time required for pressure to fall from 0.5MPa to 0.05MPa)

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. If the compressed air includes chemicals, synthetic materials (including organic solvents), salinity, corrosive gas, etc., it may lead to damage or malfunction.
- Before installing the product ensure the adjacent piping is clean with no 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.
- 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.
- Install male threaded fittings using the instructions for the fitting. As a guide, take care not to exceed the torque figures given below:

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

Table 2

- 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.
- To install tubing, prepare the tubing according to the tubing instructions. Ensure the end of the tube is square and clean with no burrs.
 - Grasp the tubing, slowly push it into the One-touch fitting until it comes to a stop.
 - Pull the tubing back gently to make sure it has a positive seal.

Improper installation may cause leakage or the tube to be released.

- To remove tubing, push the release flange evenly and sufficiently to release the tube.
 - Pull the tubing out while keeping the release flange depressed.
- Do not press the release flange before installing tubing. This might cause installation to fail.
- Do not allow tubing to twist or rotate the component in service. Avoid 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. Check the product specifications.
- Do not mount in a location exposed to radiant heat.
- Do not use in environments where foreign matter may stick to the product or get mixed in the product's interior.

3 Installation (continued)

3.3 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, use turbine oil Class 1 (no additive), ISO VG32. Once lubricant is used in the system, lubrication must be continued because the original lubricant applied during manufacturing will be washed away.

4 How to Order

See table 1.

5 Outline Dimensions (mm)

Refer to the catalogue for this product.

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.
- Do not make any modification to the product.
- Do not disassemble the product, unless required by installation or maintenance instructions.

- Be certain to wear safety glasses at all times during periodical inspections.
- Replace the valve if it develops leakage.

7 Limitations of Use

Danger

Any use in an EN ISO 13849 system must be within the specified limits and application condition. The user is responsible for the specification, design, implementation, validation and maintenance of the safety system (SRP/CS).

8 Contacts

AUSTRIA	(43) 2262 62280-0	LATVIA	(371) 781 77 00
BELGIUM	(32) 3 355 1464	LITHUANIA	(370) 5 264 8126
BULGARIA	(359) 2 974 4492	NETHERLANDS	(31) 20 531 8888
CZECH REP.	(420) 541 424 611	NORWAY	(47) 67 12 90 20
DENMARK	(45) 7025 2900	POLAND	(48) 22 211 9600
ESTONIA	(372) 651 0370	PORTUGAL	(351) 21 471 1880
FINLAND	(358) 207 513513	ROMANIA	(40) 21 320 5111
FRANCE	(33) 1 6476 1000	SLOVAKIA	(421) 2 444 56725
GERMANY	(49) 6103 4020	SLOVENIA	(386) 73 885 412
GREECE	(30) 210 271 7265	SPAIN	(34) 945 184 100
HUNGARY	(36) 23 511 390	SWEDEN	(46) 8 603 1200
IRELAND	(353) 1 403 9000	SWITZERLAND	(41) 52 396 3131
ITALY	(39) 02 92711	UNITED KINGDOM	(44) 1908 563888

SMC Corporation

URL : <http://www.smcworld.com> (Global) <http://www.smceu.com> (Europe)
SMC Corporation, Akihabara UDX15F, 4-14-1, Sotokanda, Chiyoda-ku, Tokyo 101-0021 JAPAN Specifications are subject to change without prior notice from the manufacturer. © 2013 SMC Corporation All Rights Reserved