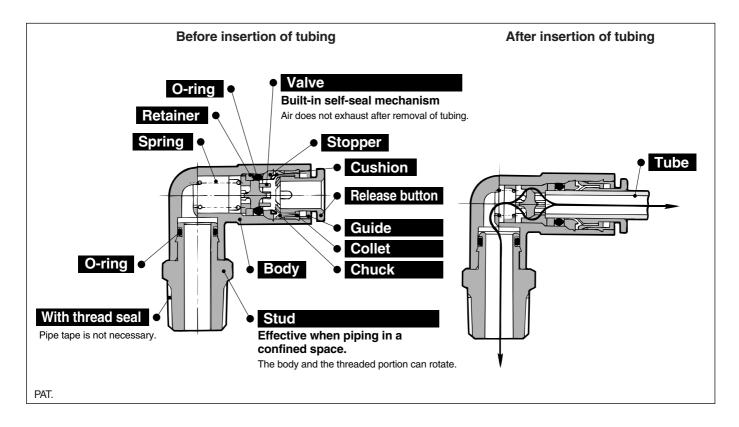


Self-seal Fittings Series KC



One-touch fitting (built-in self-seal mechanism) to prevent air exhaust when removing tube.

Best for multiple use areas when pressure cannot be shut down.

10 styles are available.

Electroless nickel plated for copper-free applications.



Applicable Tubing

Tubing material	Nylon, Soft nylon, Polyurethane
Tubing O.D.	ø4, ø6, ø8, ø10, ø12

Specifications

Fluid		Air				
Maximum operating pr	ressure	1.0 MPa				
Proof pressure		3.0 MPa				
Ambient and fluid tem	perature	-5 to 60°C (No freezing)				
Thus a d	Mounting section	JIS B 0203 (Taper thread for piping)				
Thread	Nut section	JIS B 0211 Class 2 (Metric fine thread)				
Thread seal (Standard)	With thread seal				
Copper-free (Standard	i)	Brass parts are all electroless nickel plated				

Principal Parts Material

Body	C3604BD, PBT
Stud	C3604BD (Thread portion)
Chuck, Spring	Stainless steel 304
Guide	Stainless steel 304, POM
Collet, Release button	POM
Valve, Retainer	POM
Stopper	C3604BD, POM
Seal, O-ring	NBR





Self-seal Fittings Series KC

K□

 $M\square$

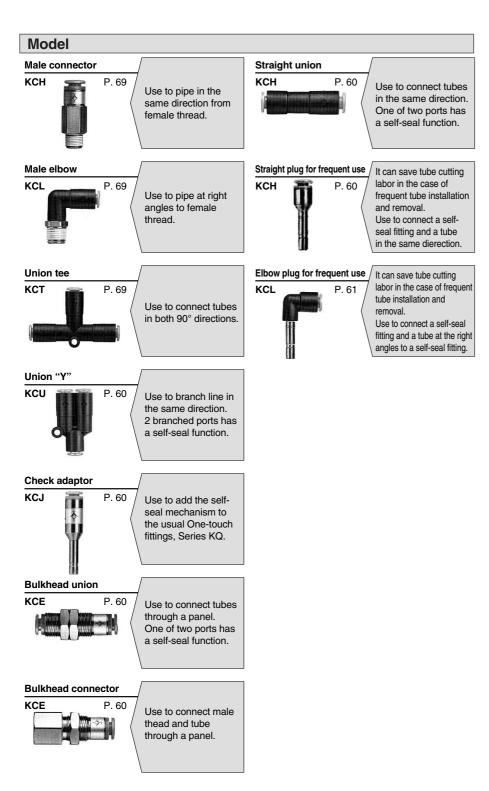
 $H\square$

 $\mathsf{D}\square$

MS

 $\mathsf{T}\Box$

VMG



⚠ Precautions

Be sure to read before handling.

Refer to pages 15-18-3 to 15-18-4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 15-1-10 to 15-1-11 for Precautions on every series.

Tube Insertion and Removal from Self-seal Fittings

⚠ Caution

Installing of tube

- Cut the tube perpendicularly, taking care not to damage the outside surface. (Use tube cutter TK-1, 2 or 3. Do not cut the tube with cutting pliers, nippers, scissors, etc.) Flat or angled cuts will make it difficult to connect to fittings or, if connected, tube will release or air leakage will occur.
- 2. Grasp the tube, then slowly push it until it comes to a stop.
- Pull it back gently to make sure that it has a positive seal. Incomplete installation may cause air

Removing of tube

leakage or tube release.

- **1.** Push the release button into the fitting. The button should be pushed evenly.
- Pull out the tube while keeping the release button depressed. (If the release button is not held down, the tube cannot be withdrawn.)
- 3. To reuse the tubing, cut off the previously lodged portion of the tube. If using tubing without cutting the damaged portion off, it may cause the air leakage or make it difficult to release the tube.

No. of Insertions and Removals from Self-seal Fittings

↑ Caution

- 1. The number of insertions and removals as a rough guide is as follows.
 - Tube......300 times
 - Metal stem ······ 1000 times

Installation of Self-seal Fittings

∆ Caution

 The fitting should be installed (installation of R thread portion) by screwing with a spanner at the hexagonal portion of the body. The position of spanner should be a root as close as possible to R thread.

Hex. across flats may be deformed, if using an improper wrench for hex. across flats.

Tightening the Thread Portion of an M5 Size Fittings

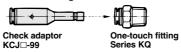
⚠ Caution

1. First, tighten it by hand, then give it an additional 1/6 turn with the wrench. Excessive tightening may damage the threaded portion or deform the gasket to cause air leakage. Insufficient tightening may leave the thread loosened or cause air leakage.

Distinction of Plug and Applicable Fittings

∧ Caution

- **1.** The applicable fitting should be chosen depending on the style of plug.
- Check Adaptor
- How to use: Use it for addition of selfseal mechanism to a standard Onetouch fitting series KQ. Self-seal fittings with check adaptor are not available. It causes air leakage.



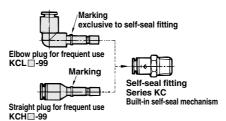
Do not insert check adaptor into the port thread sizes M5 and M6 of KJ and KQ fittings.

It cannot be secured and the fittings will shoot out.

 Elbow plug for frequent use, straight plug for frequent use.

How to use: For use in the case of frequent tube installation and removal, tube cutting labor can be saved. These plugs are not available for a standard One-touch fittings Series KQ.

If trying to install the plug into a KQ, plug will jump out of the fitting. Note the exclusive marking for self-seal fittings before use.



Tube Insertion and Removal under Pressurized Condition

⚠ Caution

 When inserting/removing the tubing is difficult under a pressurized condition, it should be inserted or removed by lowering the pressure or after fully exhausting.

Self-seal Fittings Series KC

<R>

Male Connector: KCH

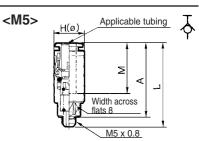
<M5>

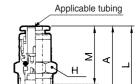




Applicable tubing O.D. (mm)	Connection thread R	Model	(width across flats)	L	A *	M	(mı	ve area m²) Urethane	Weight (g)	
4	M5 x 0.8	KCH04-M5	9.8	30.8	27.3	18	2.1	2.1	8	
4	1/8	KCH04-01S	10	26.1	22.1	10	2.6	2.6	0	
	M5 x 0.8	KCH06-M5	11.8	32.4	28.9	19.5	2.4	2.4	10	
6	1/8	KCH06-01S	12	37.4	33.4	19	6.8	6.8	16	
	1/4	KCH06-02S	14	28.9	22.9	19	0.0	0.0	14	
	1/8	KCH08-01S	14	42.4	38.4				20	
8	1/4	KCH08-02S	14	45.7	39.7	21.5	16.2	13.1	27	
	3/8	KCH08-03S	17	34	27.5				25	
10	1/4	KCH10-02S	17	50.5	44.5	24	25.6	20.4	34	
10	3/8	KCH10-03S	17	51.5	45	24	25.0	20.4	43	
12	3/8	KCH12-03S	19	54.2	47.7	25.5	35.4	30.4	48	
12	1/2	KCH12-04S	22	41.6	33.6	20.0	33.4	30.4	41	

* Reference dimensions after R thread installation.





М

øD2

Connection thread (With sealant)

Applicable tubing

Connection thread (With sealant)

T□

 $\mathsf{K}\square$

 $M\square$

VMG





Applicable tubing O.D. (mm)	Connection thread R	Model	(width across flats)	Note) Ø D1	øD2	L1	L2	A *	М	(mı	ve area m²) Urethane	Weight (g)	
4	M5 x 0.8	KCL04-M5	8	10.4	8	25.3	16.7	18.4	18	1.9	1.9	6	
4	1/8	KCL04-01S	10	10.4	10	25.5	23	24.2	10	2.3	2.3	11_	
	M5 x 0.8	KCL06-M5	8		8	26.8	17.4	20.3	19.5	2.2	2.2	7	
6	1/8	KCL06-01S	12	12.8	12	28	25.1	27.5	10	6.2	6.2	13	
	1/4	KCL06-02S	14		12	20	29.1	29.5	19	6.2	6.2	21	
	1/8	KCL08-01S	14				27.1	30.7				16	
8	1/4	KCL08-02S	14	15.2	14	34.1	31.1	32.7	21.5	13.0	10.5	24	
	3/8	KCL08-03S	17				31.1	34.2				37	0
10	1/4	KCL10-02S	47	10.5	47	38	33.9	37.2	0.4	10.5	10.5	29	
10	3/8	KCL10-03S	17	18.5	17	38	35.9	38.7	24	19.5	16.5	38	
12	3/8	KCL12-03S	00	20.9	20.9	40.7	40.3	44.3	05.5	04.0	04.0	63	
12	1/2	KCL12-04S	22	20.9	20.9	40.7	43.2	45.7	25.5	24.8	21.3	81	

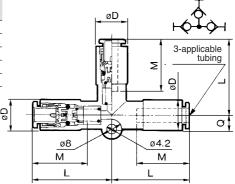
* Reference dimensions after R thread installation. Note) øD1: Max. diameter





tubing	Model	Note) ØD	L	Q	М	(m	m²)	Weight
O.D. (mm)						Nylon	Urethane	(g)
4	KCT04-00	10.4	28.6	5.3	18	2.8	2.8	8
6	KCT06-00	12.8	32.7	6.1	19	7.6	7.6	15
8	KCT08-00	15.2	39.2	7.1	21.5	13.7	11.1	23
10	KCT10-00	18.5	45.5	7.9	24	21.1	19.0	39
12	KCT12-00	20.9	49.2	8.6	25.5	28.3	24.3	52

Note) øD: Max. diameter

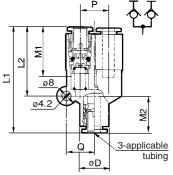


Union "Y": KCU



Applicable tubing	Model	Note) ØD	L1	L2	Р	Q	M1	M2	Effectiv (m	ve area m²)		
O.D. (mm)									Nylon	Urethane	(g)	
4	KCU04-00	10.4	43.1	27.3	10.4	10.6	18	16	3.7	3.7	8	
6	KCU06-00	12.8	48	31.2	12.8	12.5	19	17	10.0	10.0	14	
8	KCU08-00	15.2	57.6	38.9	15.2	14.7	21.5	18.5	21.7	15.1	22	
10	KCU10-00	18.5	65.2	44.9	18.5	17.1	24	21	33.3	25.6	37	
12	KCU12-00	20.9	70.1	48.8	20.9	19.1	25.5	22	48.9	38.7	49	

Note) øD: Max. diameter



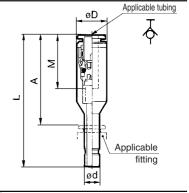


Series KC

Check Adaptor: KCJ



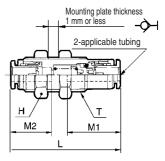
Applicable tubing	Model	ød	Note) ØD	L	A	М	Effective area (mm²)		Weight (g)
O.D. (mm)							Nylon	Urethane	(9)
4	KCJ04-99	4	9.8	49.5	33.5	18	2.6	2.6	9
6	KCJ06-99	6	11.8	54	37	19	6.8	6.8	13
8	KCJ08-99	8	14	61	42.5	21.5	16.2	13.1	20
10	KCJ10-99	10	17	70.4	49.4	24	25.6	20.4	33
12	KCJ12-99	12	19	74.4	52.4	25.5	35.4	30.4	43
							Note) øE): Max. dia	ameter



Bulkhead Union: KCE



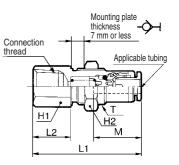
Applicable tubing O.D. (mm)	Model	T (M)	(width across flats)	L	Mounting hole	M1	M2	(mi	ve area m²) Urethane	Weight (g)
4	KCE04-00	M12 x 1	14	42	13	18	16	2.6	2.6	21
6	KCE06-00	M14 x 1	17	45.5	15	19	17	6.8	6.8	30
8	KCE08-00	M16 x 1	19	52.5	17	21.5	18.5	16.2	13.1	39
10	KCE10-00	M20 x 1	24	59.5	21	24	21	25.6	20.4	84
12	KCE12-00	M22 x 1	27	63.2	23	25.5	22	35.4	30.4	115



Bulkhead Connector: KCE



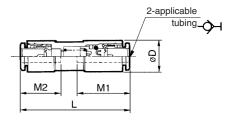
Applicable tubing O.D. (mm)	Connection thread Rc	Model	T (M)	H1 (width across flats)	H2 (width across flats)	L1	L2	Mounting hole	IVI	Effectiv (mi Nylon	11 /	Weight (g)
4	1/4	KCE04-02	M12 x 1	17	14	40.5	14.7	13	18	2.6	2.6	32
6	1/4	KCE06-02	M14 x 1	17	17	42.7	14.7	15	19	6.8	6.8	36
8	3/8	KCE08-03	M16 x 1	19	19	49.4	15	17	21.5	16.2	13.1	42
10	3/8	KCE10-03	M20 x 1	22	24	53.9	14.2	21	24	25.6	20.4	79
12	3/8	KCE12-03	M22 x 1	24	27	56.1	13.7	23	25.5	35.4	30.4	105

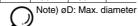


Straight Union: KCH



Applicable tubing	Model	Note) Ø D	L	M1	M2		Effective area (mm²)		
O.D. (mm)						Nylon	Urethane	(g)	
4	KCH04-00	10.4	42.1	18	16	2.6	2.6	5	
6	KCH06-00	12.8	45.8	19	17	6.8	6.8	7	
8	KCH08-00	15.2	52.8	21.5	18.5	16.2	13.1	10	
10	KCH10-00	18.5	59.8	24	21	25.6	20.4	18	
12	KCH12-00	20.9	63.5	25.5	22	35.4	30.4	24	

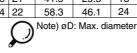


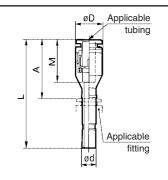


Straight Plug for Frequent Use: KCH



Applicable tubing O.D. (mm)	Model	ød	Note) Ø D	L	A	М	Effective area (mm²) Nylon Urethane		Weight (g)
4	KCH04-99	4	9.8	40.6	22.6	16	5.6	4	5
6	KCH06-99	6	11.8	43.1	24.1	17	13.1	10.4	8
8	KCH08-99	8	14	46.7	25.2	18.5	26.1	18.0	11
10	KCH10-99	10	17	52.6	28.6	21	41.5	29.5	18
12	KCH12-99	12	19	54.9	29.4	22	58.3	46.1	24



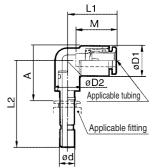


Self-seal Fittings Series KC

Elbow Plug for Frequent Use: KCL



Applicable tubing O.D. (mm)	Model	ød	Note) Ø D1	Note) ØD2	L1	L2	A	M	(m	ve area m²) Urethane	(a)	
4	KCL04-99	4	10.4	10	18	34.3	22.6	16	4.2	4.2	7	
6	KCL06-99	6	12.8	10	20	36.5	24.1	17	11.4	9.0	8	
8	KCL08-99	8	15.2	12	23	40.3	25.2	18.5	21.6	14.9	12	
10	KCL10-99	10	18.5	17	26.5	44.3	28.6	21	35.2	25.0	25	
12	KCL12-99	12	20.9	17	28.5	46.8	29.4	22	50.2	39.7	30	
Note) øD1, øD2: Max. diameter												



K□

M

 $H\square$ D□

MS

 $\mathsf{T}\Box$

VMG



Safety Instructions

These safety instructions are intended to prevent a hazardous situation and/or equipment damage. These instructions indicate the level of potential hazard by labels of **"Caution"**, **"Warning"** or **"Danger"**. To ensure safety, be sure to observe ISO 4414 Note 1), JIS B 8370 Note 2) and other safety practices.

Caution: Operator error could result in injury or equipment damage.

Warning: Operator error could result in serious injury or loss of life.

Danger: In extreme conditions, there is a possible result of serious injury or loss of life.

Note 1) ISO 4414: Pneumatic fluid power--General rules relating to systems.

Note 2) JIS B 8370: General Rules for Pneumatic Equipment

Marning

1. 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 are used in various operating conditions, their compatibility for the specific pneumatic system must be based on specifications or after analysis and/or tests to meet your specific requirements. The expected performance and safety assurance will be the responsibility of the person who has determined the compatibility of the system. This person should continuously review the suitability of all items specified, referring to the latest catalog information with a view to giving due consideration to any possibility of equipment failure when configuring a system.

2. 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 operators.

- 3. Do not service machinery/equipment or attempt to remove components until safety is confirmed.
 - 1. Inspection and maintenance of machinery/equipment should only be performed once measures to prevent falling or runaway of the driver objects have been confirmed.
 - 2. When equipment is to be removed, confirm the safety process as mentioned above. Cut the supply pressure for this equipment and exhaust all residual compressed air in the system.
 - Before machinery/equipment is restarted, take measures to prevent shooting-out of cylinder piston rod, etc.
- 4. Contact SMC if the product is to be used in any of the following conditions:
 - 1. Conditions and environments beyond the given specifications, or if product is used outdoors.
 - 2. Installation on equipment in conjunction with atomic energy, railway, air navigation, vehicles, medical equipment, food and beverages, recreation equipment, emergency stop circuits, clutch and brake circuits in press applications, or safety equipment.
 - 3. An application which has the possibility of having negative effects on people, property, or animals, requiring special safety analysis.



M

Common Precautions

Be sure to read before handling. For detailed precautions on every series, refer to main text.

Selection

⚠ Warning

1. Confirm the specifications.

Products represented in this catalog are designed for use in compressed air appllications only (including vacuum), unless otherwise indicated.

Do not use the product outside their design parameters.

Please contact SMC when using the products in applications other than compressed air (including vacuum).

Mounting

Marning

1. Instruction manual

Install the products and operate them only after reading the instruction manual carefully and understanding its contents. Also keep the manual where it can be referred to as necessary.

2. Securing the space for maintenance

When installing the products, please allow access for maintenance.

3. Tightening torque

When installing the products, please follow the listed torque specifications.

Piping

1. Before piping

Make sure that all debris, cutting oil, dust, etc, are removed from the piping.

2. Wrapping of pipe tape

When screwing piping or fittings into ports, ensure that chips from the pipe threads or sealing material do not get inside the piping. Also, when the pipe tape is used, leave 1.5 to 2 thread ridges exposed at the end of the threads.

Air Supply

⚠ Warning

1. Operating fluid

Please consult with SMC when using the product in applications other than compressed air (including vacuum). Regarding products for general fluid, please ask SMC about applicable fluids.

2. Install an air dryer, aftercooler, etc.

Excessive condensate in a compressed air system may cause valves and other pneumatic equipment to malfunction. Installation of an air dryer, after cooler etc. is recommended.

3. Drain flushing

If condensate in the drain bowl is not emptied on a regular basis, the bowl will over flow and allow the condensate to enter the compressed air lines.

If the drain bowl is difficult to check and remove, it is recommended that a drain bowl with the auto-drain option be installed.

For compressed air quality, refer to "Air Preparation Equipment" catalog.

4. Use clean air

If the compressed air supply is contaminated with chemicals, cynthetic materials, corrosive gas, etc., it may lead to break down or malfunction.

Operating Environment

\land Warning

- 1. Do not use in environments where the product is directly exposed to corrosive gases, chemicals, salt water, water or steam.
- 2. Do not expose the product to direct sunlight for an extended period of time.
- 3. Do not use in a place subject to heavy vibrations and/or shocks.
- 4. Do not mount the product in locations where it is exposed to radiant heat.

Maintenance

\land Warning

1. Maintenance procedures are outlined in the operation manual.

Not following proper procedures could cause the product to malfunction and could lead to damage to the equipment or machine.

2. Maintenance work

If handled improperly, compressed air can be dangerous. Assembly, handling and repair of pneumatic systems should be performed by qualified personnel only.

3. Drain flushing

Remove drainage from air filters regularly. (Refer to the specifications.)

4. Shut-down before maintenance

Before attempting any kind of maintenance make sure the supply pressure is shut of and all residual air pressure is released from the system to be worked on.

5. Start-up after maintenance and inspection

Apply operating pressure and power to the equipment and check for proper operation and possible air leaks. If operation is abnormal, please verify product set-up parameters.

6. Do not make any modifications to be product.

Do not take the product apart.



Quality Assurance Information (ISO 9001, ISO 14001)

Reliable quality of products in the global market

To enable our customers throughout the world to use our products with even greater confidence, SMC has obtained certification for international standards "ISO 9001" and "ISO 14001", and created a complete structure for quality assurance and environmental controls. **SMC** products to pursue meet customers' expectations while also considering company's contribution in society.

Quality management system $ISO\ 9001$

This is an international standard for quality control and quality assurance. SMC has obtained a large number of certifications in Japan and overseas, providing assurance to our customers throughout the world.







Environmental management system $ISO\ 14001$

This is an international standard related to environmental management systems and environmental inspections. While promoting environmentally friendly automation technology, SMC is also making diligent efforts to preserve the environment.

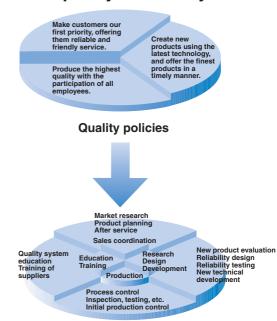






SMC

SMC's quality control system



Quality control activities

SMC Product Conforming to Inter

SMC products complying with EN/ISO, CSA/UL standards are supporting



The CE mark indicates that machines and components meet essential requirements of all the EC Directives applied.

It has been obligatory to apply CE marks indicating conformity with EC Directives when machines and components are exported to the member Nations of the EU.

Once "A manufacturer himself" declares a product to be safe by means of CE marking (declaration of conformity by manufacturer), free distribution inside the member Nations of the EU is permissible.

■ CE Mark

SMC provides CE marking to products to which EMC and Low Voltage Directives have been applied, in accordance with CETOP (European hydraulics and pneumatics committee) guide lines.

■ As of February 1998, the following 18 countries will be obliged to conform to CE mark legislation lceland, Ireland, United Kingdom, Italy, Austria, Netherlands, Greece, Liechtenstein, Sweden, Spain, Denmark, Germany, Norway, Finland, France, Belgium, Portugal, Luxembourg

■ EC Directives and Pneumatic Components

Machinery Directive

The Machinery Directive contains essential health and safety requirements for machinery, as applied to industrial machines e.g. machine tools, injection molding machines and automatic machines. Pneumatic equipment is not specified in Machinery Directive. However, the use of SMC products that are certified as conforming to EN Standards, allows customers to simplify preparation work of the Technical Construction File required for a Declaration of Conformity.

Electromagnetic Compatibility (EMC) Directive

The EMC Directive specifies electromagnetic compatibility. Equipment which may generate electromagnetic interference or whose function may be compromised by electromagnetic interference is required to be immune to electromagnetic affects (EMS/immunity) without emitting excessive electromagnetic affects (EMI/emission).

Low Voltage Directive

This directive is applied to products, which operate above 50 VAC to 1000 VAC and 75 VDC to 1500 VDC operating voltage, and require electrical safety measures to be introduced.

• Simple Pressure Vessels Directive

This directive is applied to welded vessels whose maximum operating pressure (PS) and volume of vessel (V) exceed 50 bar/L. Such vessels require EC type examination and then CE marking.



national Standards

you to comply with EC directives and CSA/UL standards.



■ CSA Standards & UL Standards

UL and CSA standards have been applied in North America (U.S.A. and Canada) symbolizing safety of electric products, and are defined to mainly prevent danger from electric shock or fire, resulting from trouble with electric products. Both UL and CSA standards are acknowledged in North America as the first class certifying body. They have a long experience and ability for issuing product safety certificate. Products approved by CSA or UL standards are accepted in most states and governments beyond question.

Since CSA is a test certifying body as the National Recognized Testing Laboratory (NRTL) within the jurisdiction of Occupational Safety and Health Administration (OSHA), SMC was tested for compliance with CSA Standards and UL Standards at the same time and was approved for compliance with the two Standards. The above CSA NRTL/C logo is described on a product label in order to indicate that the product is approved by CSA and UL Standards.

■ TSSA (MCCR) Registration Products

TSSA is the regulation in Ontario State, Canada. The products that the operating pressure is more than 5 psi (0.03 MPa) and the piping size is bigger than 1 inch. fall into the scope of TSSA regulation.

Products conforming to CE Standard

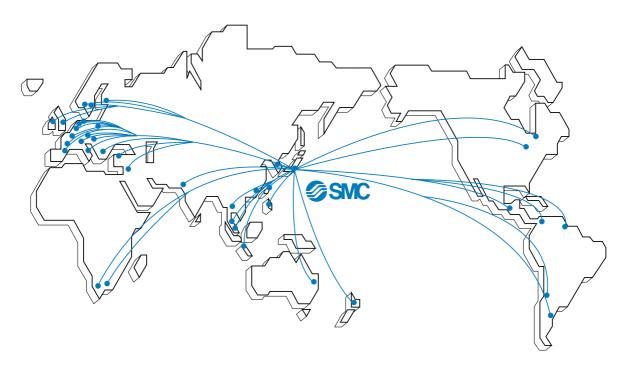


In this catalog each accredited product series is indicated with a CE mark symbol. However, in some cases, every available models may not meet CE compliance. Please visit our web site for the latest selection of available models with CE mark.

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