Related Products: Auto Drain Valve AD402/600

Drainage automatically is reliable discharged in requiring manner, without human operators.

Highly resistant to dust and corrosion, operates reliably, and a bowl guard is provided as standard equipment.



JIS Symbol



Model/Specifications

Model	AD402	AD600
Proof pressure	1.5 MPa	1.5 MPa
Max. operating pressure	1.0 MPa	1.0 MPa
Operating pressure range Note)	0.1 to 1.0 MPa	0.3 to 1.0 MPa
Ambient and fluid temperature	-5 to 60°C (No freezing)	-5 to 60°C (No freezing)
Port size	Rc 1/4, 3/8, 1/2	Rc ³ / ₄ ,1
Drain discharge port size	3/8	3/4,1
Weight (g)	620	2100



Note) Use for air compressor with flow larger than 400 ℓ /min (ANR)

Option Specifications

Metal bowl	AD402-□-2	_

⚠ Precautions

Be sure to read before handling. Refer to pages 14-21-3 to 4 for Safety Instructions and Common Precautions on the products mentioned in this catalog, and refer to pages 14-14-6 to 8 for Precautions on every series.

Selection

⚠ Warning

- 1. Use auto-drain under the following operating conditions, or it will lead to malfunctions.
 - 1) Operate the compressor above 3.7 kw {400 ℓ/min (ANR)}.
 - 2) Use AD402 at an operating pressure above 0.1 MPa and AD600 above 0.3

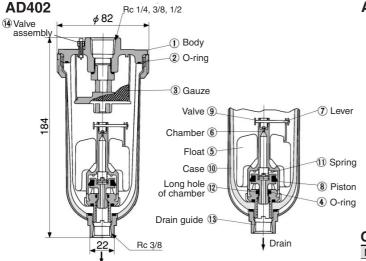
Piping

\land Warning

1. Use auto-drain under the following operating conditions, or it will lead to malfunctions.

To connect a drain discharge pipe, use a pipe with a minimum bore of ø10, and a maximum length of 5 m. Avoid using a riser pipe.

Construction/Dimensions



Working principle (AD402)

When no pressure is applied internally to bowl 10, float 5 descends of its own weight and valve (9) closes chamber hole (6). Piston (8) is pushed down by spring (11), and the drainage passes through the chamber's elongated hole 12 to enter the housing and is discharged.

• When pressure is applied internally to the bowl:

When pressure is larger than 1 MPa, it overcomes the force of spring ①, allowing piston ® to ascend, and comes in contact with O-ring ④ Thus, the inside of bowl 10 is isolated from the outside.

• When drainage has accumulated:

Float 5 ascends due to flotation and opens the chamber's hole 6, allowing the pressure to enter chamber 6. Piston 8 descends due to the force of the internal pressure and spring (1), and the accumulated drainage is discharged through drain guide 13.

φ 112 **AD600** 48 Rc 3/4, 1 -1) Body Piston assembly **Component Parts**

No.	Description	Material
1	Body	Aluminum die-casted

Replacement Parts

No.	Description	Material	Model	
			AD402	AD600
2	O-ring	NBR	113136	JIS B 2401G-100
3	Gauze	Stainless steel	20062	_
(1)	Internal assembly	_	AD34PA	_
8	Piston assembly	_	_	20025A
14)	Valve assembly	_	201037P	_

Note 1) Internal assembly: Assembly for parts 4 to 12 except 10.

Note 2) Part no. for bowl assembly: AD34

Note 3) Part no. for bowl 10: 201016



 $HA\square$

AT

 $\mathsf{ID}\square$

AMG

AFF

 $AM\square$

Misc.



AUTO DRAIN SERIES (N)AD

✓ Port Sizes ¼~1 Float Type Automatic Drain Valve

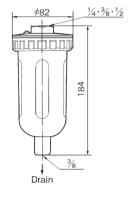


Туре	(N)AD402	(N)AD600
Operating Pressure	1.5~9.9 Bar	3~9.9 Bar
	22~145PSI	45~145PSI
Max Supply Pressure	15 Bar / 220PSI	
Max Operating Pressure	9.9 Bar / 145PSI	
Ambient & Fluid Temperature	5 ~ 60°C / 40~140°F	
Port Size	1/2	3/4, 1
Drain Port	3/4	3/4, 1





AD402



How To

ORDER

AUTODRAIN SERIES AD

AD402-02 (1/4) PT

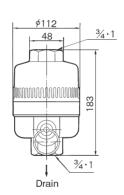
AD402-03 (3/8) PT

AD402-04 (1/2) PT

AD600-06 (3/4) PT

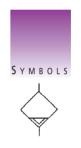
AD600-10 (1) PT

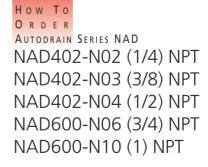
AD600



PRODUCT CONSULT SMC CUSTOMER SERVICE

FOR FURTHER TECHNICAL DETAILS ON THIS

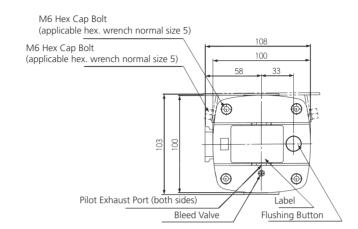


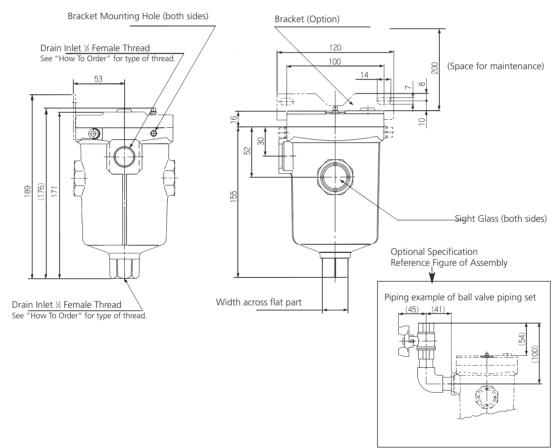
















Safety Instructions

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.
 - 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.





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

⚠ Warning

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

⚠ Caution

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

⚠ 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.
- 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

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 pursue to meet its 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

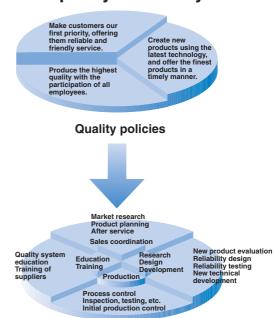
This is an international standard related to environmental management systems and environmental inspections. While promoting environmentally friendly automation technology, SMC is also making diligent efforts to preserve the environment.







SMC'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 Iceland, 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).

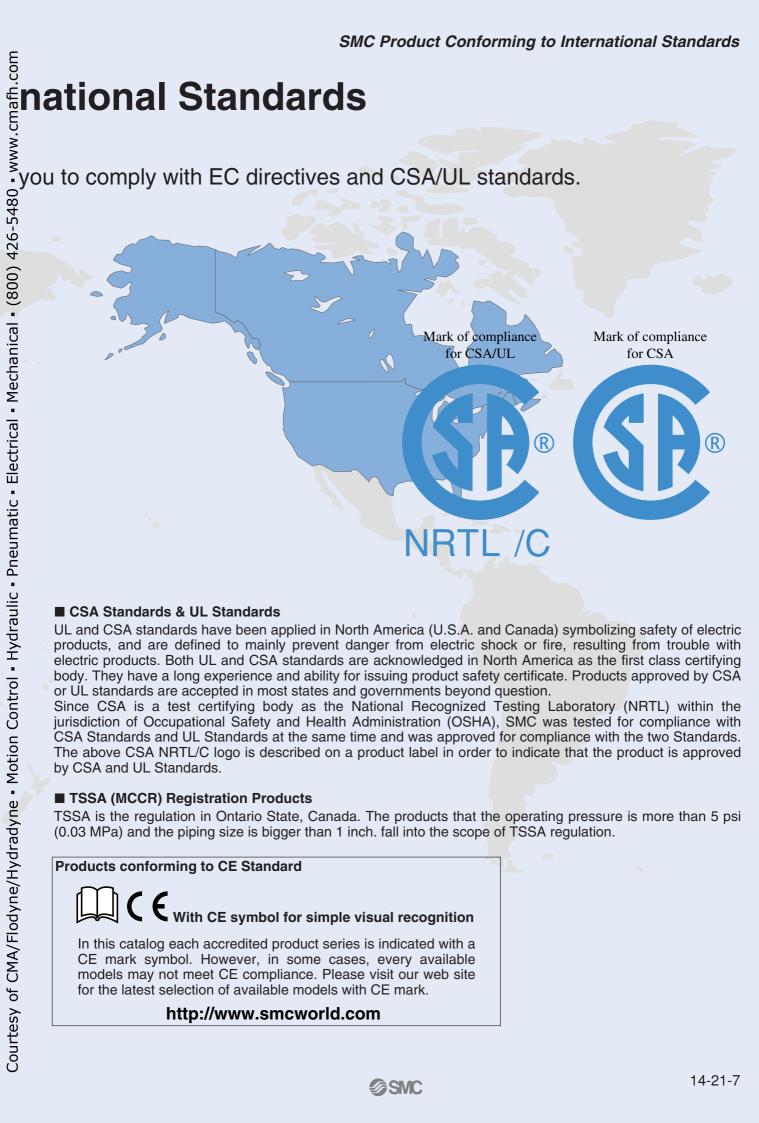
Low Voltage Directive

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.





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

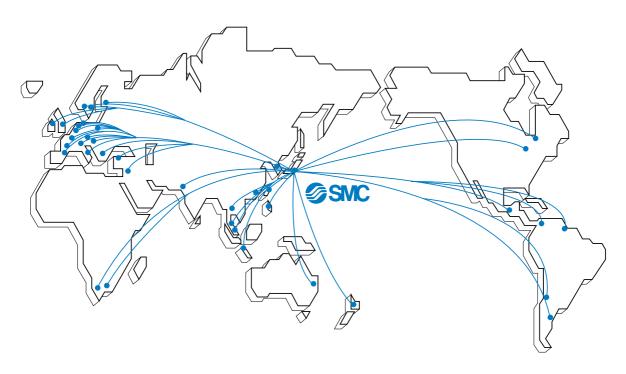
Since CSA is a test certifying body as the National Recognized Testing Laboratory (NRTL) within the jurisdiction of Occupational Safety and Health Administration (OSHA), SMC was tested for compliance with CSA Standards and UL Standards at the same time and was approved for compliance with the two Standards.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

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.





SMC's Global Service Network



America

U.S.A. SMC Corporation of America 3011 North Franklin Road Indianapolis, IN 46226, U.S.A TEL: 317-899-4440 FAX: 317-899-3102

CANADA SMC Pneumatics (Canada) Ltd.

6768 Financial Drive Mississauga, Ontario, L5N 7J6 Canada TEL: 905-812-0400 FAX: 905-812-8686

MEXICO SMC Corporation (Mexico), S.A. DE C.V. Carr. Silao-Trejo K.M. 2.5 S/N, Predio San Jose del Duranzo C.P. 36100, Silao, Gto., Mexico

TEL: 472-72-2-55-00 FAX: 472-72-2-59-44/2-59-46

CHILE SMC Pneumatics (Chile) S.A. Av. La Montaña 1,115 km. 16,5 P. Norte Parque Industrial Valle Grande, Lampa Santiago, Chile TEL: 02-270-8600 FAX: 02-270-8601

ARGENTINA SMC Argentina S.A.

Teodoro Garcia 3860 (1427) Buenos Aires, Argentina TEL: 011-4555-5762 FAX: 011-4555-5762

BOLIVIA SMC Pneumatics Bolivia S.R.L.

Avenida Beni Numero 4665

Santa Cruz de la Sierra-Casilla de Correo 2281, Bolivia

TEL: 591-3-3428383 FAX: 591-3-3449900

VENEZUELA SMC Neumatica Venezuela S.A.

Apartado 40152, Avenida Nueva Granada, Edificio Wanlac,

Local 5, Caracas 1040-A, Venezuela

TEL: 2-632-1310 FAX: 2-632-3871

PERU (Distributor) IMPECO Automatizacion Industrial S.A.

AV. Canevaro 752, Lince, Lima, Peru TEL: 1-471-6002 FAX: 1-471-0935

URUGUAY (Distributor) BAKO S.A.

Galicia 1650 esq. Gaboto C.P. 11200, Montevideo, Uruguay

TEL: 2-401-6603 FAX: 2-409-4306

BRAZIL SMC Pneumaticos Do Brasil Ltda.

Rua. Dra. Maria Fidelis, nr. 130, Jardim Piraporinha-Diadema-S.P.

CEP: 09950-350, Brasil

TEL: 11-4051-1177 FAX: 11-4071-6636

COLOMBIA (Distributor) Airmatic Ltda.

Calle 18 69-05 Apart. Aereo 081045 Santa Fe de Bogotá, Colombia TEL: 1-424-9240 FAX: 1-424-9260

Europe

U.K. SMC Pneumatics (U.K.) Ltd.

Vincent Avenue, Crownhill, Milton Keynes, MK8 0AN, Backinghamshire, U.K.

TEL: 01908-563888 FAX: 01908-561185

GERMANY SMC Pneumatik GmbH

Boschring 13-15 D-63329 Egelsbach, Germany

TEL: 06103-4020 FAX: 06103-402139

ITALY SMC Italia S.p.A.

Via Garibaldi 62 I-20061 Carugate Milano, Italy

TEL: 02-9271365 FAX: 02-9271365

FRANCE SMC Pneumatique S.A.

1 Boulevard de Strasbourg, Parc Gustave Eiffel, Bussy Saint Georges, F-77600 Marne La Vallee Cedex 3 France

TEL: 01-64-76-10-00 FAX: 01-64-76-10-10

SWEDEN SMC Pneumatics Sweden AB Ekhagsvägen 29-31, S-141 05 Huddinge, Sweden

TEL: 08-603-07-00 FAX: 08-603-07-10

SWITZERLAND SMC Pneumatik AG

Dorfstrasse 7, Postfach 117, CH-8484 Weisslingen, Switzerland

TEL: 052-396-3131 FAX: 052-396-3191

AUSTRIA SMC Pneumatik GmbH (Austria)

Girakstrasse 8, A-2100 Korneuburg, Austria

TEL: 0-2262-6228-0 FAX: 0-2262-62285

SPAIN SMC España, S.A.

Zuazobidea 14 Pol. Ind. Júndiz 01015 Vitoria, Spain

TEL: 945-184-100 FAX: 945-184-510

IRELAND SMC Pneumatics (Ireland) Ltd.

2002 Citywest Business Campus, Naas Road, Saggart, Co. Dublin, Ireland

TEL: 01-403-9000 FAX: 01-466-0385

NETHERLANDS (Associated company) SMC Pneumatics BV De Ruyterkade 120, NL-1011 AB Amsterdam, Netherlands TEL: 020-5318888 FAX: 020-5318880

GREECE (Distributor) S.Parianopoulos S.A.

7, Konstantinoupoleos Street 11855 Athens, Greece

TEL: 01-3426076 FAX: 01-3455578 **DENMARK SMC Pneumatik A/S**

Knudsminde 4 B DK-8300

Odder, Denmark

TEL: 70252900 FAX: 70252901



Europe

FINLAND SMC Pneumatics Finland OY PL72, Tiistinniityntie 4, SF-02231 ESP00, Finland TEL: 09-8595-80 FAX: 09-8595-8595

NORWAY **SMC Pneumatics Norway A/S** Vollsveien 13C, Granfoss Næringspark N-1366 LYSAKER, Norway TEL: 67-12-90-20 FAX: 67-12-90-21

BELGIUM (Distributor) SMC Pneumatics N.V./S.A. Nijverheidsstraat 20 B-2160 Wommelgem Belguim TEL: 03-355-1464 FAX: 03-355-1466

POLAND **SMC Industrial Automation Polska Sp.z.o.o.** ul. Konstruktorska 11A, PL-02-673 Warszawa, Poland TEL: 022-548-5085 FAX: 022-548-5087

TURKEY (Distributor) **Entek Pnömatik San.ve Tic. Ltd. Sti**Perpa Tic. Merkezi Kat:11 No.1625 80270 Okmeydani Istanbul, Türkiye
TEL: 0212-221-1512 FAX: 0212-221-1519

RUSSIA SMC Pneumatik LLC. 36/40 Sredny prospect V.O. St. Petersburg 199004, Russia TEL: 812-118-5445 FAX: 812-118-5449

CZECH SMC Industrial Automation CZ s.r.o. Hudcova 78a, CZ-61200 Brno, Czech Republic TEL: 05-4121-8034 FAX: 05-4121-8034

HUNGARY SMC Hungary Ipari Automatizálási kft. Budafoki ut 107-113 1117 Budapest TEL: 01-371-1343 FAX: 01-371-1344

ROMANIA SMC Romania S.r.I.

Str. Frunzei, Nr. 29, Sector 2, Bucharest, Romania TEL: 01-3205111 FAX: 01-3261489

SLOVAKIA SMC Priemyselná automatizáciá, s.r.o

Nova 3, SK-83103 Bratislava TEL: 02-4445-6725 FAX: 02-4445-6028

SLOVENIA **SMC Industrijska Avtomatilca d.o.o.** Grajski trg 15, SLO- 8360 Zuzemberk, Slovenia TEL: 07388-5240 FAX: 07388-5249

LATVIA **SMC Pneumatics Latvia SIA** Šmerļa ielā 1-705, Rīga LV-1006 TEL: 777 94 74 FAX: 777 94 75

SOUTH AFRICA (Distributor) **Hyflo Southern Africa (Pty.) Ltd.** P.O.Box 240 Paardeneiland 7420 South Africa TEL: 021-511-7021 FAX: 021-511-4456

EGYPT (Distributor) Saadani Trading & Ind. Services 15 Sebaai Street, Miami 21411 Alexandria, Egypt TEL: 3-548-50-34 FAX: 3-548-50-34

Oceania/Asia

AUSTRALIA SMC Pneumatics (Australia) Ptv.Ltd.

14-18 Hudson Avenue Castle Hill NSW 2154, Australia TEL: 02-9354-8222 FAX: 02-9894-5719

NEW ZEALAND SMC Pneumatics (New Zealand) Ltd. 8C Sylvia Park Road Mt.Wellington Auckland, New Zealand TEL: 09-573-7007 FAX: 09-573-7002

TAIWAN SMC Pneumatics (Taiwan) Co.,Ltd.
17, Lane 205, Nansan Rd., Sec.2, Luzhu-Hsiang, Taoyuan-Hsien, TAIWAN TEL: 03-322-3443 FAX: 03-322-3387

HONG KONG SMC Pneumatics (Hong Kong) Ltd. 29/F, Clifford Centre, 778-784 Cheung, Sha Wan Road, Lai Chi Kok, Kowloon,

Hong Kong TEL: 2744-0121 FAX: 2785-1314

SINGAPORE **SMC Pneumatics (S.E.A.) Pte. Ltd.** 89 Tuas Avenue 1, Jurong Singapore 639520 TEL: 6861-0888 FAX: 6861-1889

PHILIPPINES **SHOKETSU SMC Corporation**Unit 201 Common Goal Tower, Madrigal Business Park,
Ayala Alabang Muntinlupa, Philippines
TEL: 02-8090565 FAX: 02-8090586

MALAYSIA SMC Pneumatics (S.E.A.) Sdn. Bhd. Lot 36 Jalan Delima1/1, Subang Hi-Tech Industrial Park, Batu 3 40000 Shah Alam

Selangor, Malaysia

TEL: 03-56350590 FAX: 03-56350602

SOUTH KOREA SMC Pneumatics Korea Co., Ltd.

Woolim e-BIZ Center (Room 1008), 170-5, Guro-Dong, Guro-Gu,

Seoul, 152-050, South Korea

TEL: 02-3219-0700 FAX: 02-3219-0702

CHINA SMC (China) Co., Ltd.

7 Wan Yuan St. Beijing Economic & Technological Development Zone 100176, China TEL: 010-67882111 FAX: 010-67881837

THAILAND SMC Thailand Ltd

134/6 Moo 5, Tiwanon Road, Bangkadi, Amphur Muang, Patumthani 12000, Thailand

TEL: 02-963-7099 FAX: 02-501-2937

INDIA SMC Pneumatics (India) Pvt. Ltd. D-107 to 112, Phase-2, Extension, Noida, Dist. Gautaim Budh Nagar,

U.P. 201 305, India

TEL: (0120)-4568730 FAX: 0120-4568933

INDONESIA (Distributor) P.T. Riyadi Putera Makmur Jalan Hayam Wuruk Komplek Glodok Jaya No. 27-28 Jakarta 11180 Indonesia TEL: 021-625 5548 FAX: 021-625 5888

PAKISTAN (Distributor) Jubilee Corporation
First Floor Mercantile Centre, Newton Road Near Boulton Market P.O. Box 6165

Karachi 74000 Pakistan

TEL: 021-243-9070/8449 FAX: 021-241-4589

ISRAEL (Distributor) Baccara Automation Control

Kvutzat Geva 18915 Israel TEL: 04-653-5960 FAX: 04-653-1445

SAUDI ARABIA (Distributor) **Assaggaff Trading Est.** P.O. Box 3385 Al-Amir Majed Street, Jeddah-21471, Saudi Arabia

TEL: 02-6761574 FAX: 02-6708173

