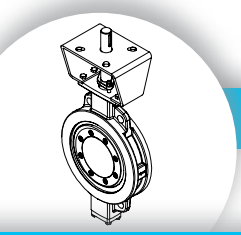
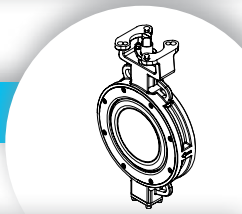
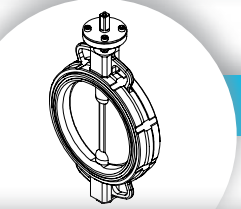
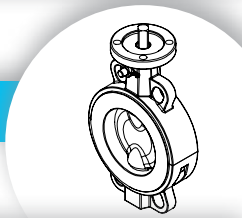
JIRCA
INTERNATIONAL S.P.A.

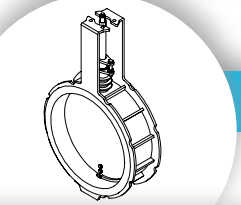
PRODUCT GUIDE

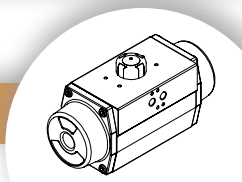


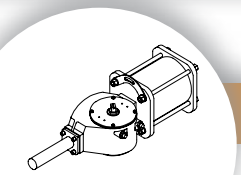


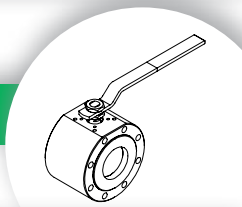


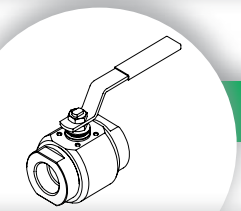


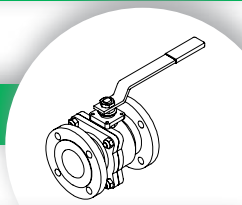


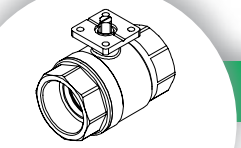


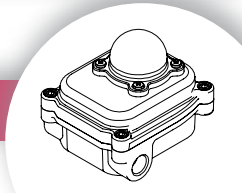


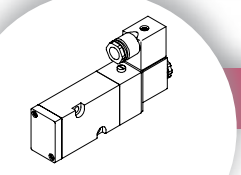












JIRCA INTERNATIONAL S.P.A.

COMPANY PROFILE

Sirca International SpA was founded in the late seventies, and started doing business as a manufacturer of complete automation and pneumatic regulation systems.
Our flagship product is rotating pneumatic quarter-turn actuators which are compact, lightweight and highly reliable.

Subsequently, our company entered the Italian market with the production and sale of rubber-seated butterfly valves, double eccentric butterfly valves, ball valves and check valves.
In time at Sirca International we began marketing and producing accessories to actuate, control and regulate valves. These were installed on our own valves and actuators in order to offer our customers complete “assemblies” that are capable of meeting the most varied system requirements.

Beginning in the 1990s, our company began looking at foreign markets and in a short time we started exporting more than 60% of our production.
This type of market development requires continuous product innovation as well as continuous effort to maintain product competitiveness and quality.
With this motivation and these objectives, with the arrival of the new millenium we at Sirca International began designing and producing the triple eccentric butterfly valve metal-seated that are currently top of the range of the valves produced at Sirca.

The main strong points of Sirca International SpA lie in our product quality, competitive price, large warehouse stocks and in the reliability of our services. These confirm our status as a Leading Company on the national and international markets.

MACHINERY DEPARTMENT

Production site

Accuracy in producing valve and pneumatic actuator components is fundamental. And it is for this reason that at Sirca International we have a large stock of top-of-the-range CNC machines with CAD-CAM technology. Amongst the machine tools we use are automatic saws, twin-spindle lathes, with double/triple tower and horizontal machining centres.

Coordinate Measuring Machine.
CMM

Optical emission spectrometer.
PMI testing (Positive Material Identification)

Coating thickness gauges.
For coating thickness measurement on metals.

Hardness testing machine.
Metal and rubber materials.

Vertical idraulic test machine.
For butterfly and ball valves.

Leack test machine.
For pneumatic rotary actuators.

501M series Triple Eccentric Metal Seated Butterfly Valves

Size range	2.1/2" ÷ 56" (DN65 ÷ DN1400)
Type	Wafer, Lug, Double flanged , Butt welding
Design	ASME B16.34, EN 12516-2, EN 593
Face to face	API 609, EN 558, ANSI B16.10
Operating temperature	-196°C + 815°C (-320 °F ÷ +1500 °F)
Pressure ratings	ASME class 150, 300, 600, PN10 ÷ PN160 – bidirectional
Flange drilling	ASME B16.5, ASME B16.47 series A, EN1092-1
Testing	API 598, API 6D, EN 12266-1
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Standard materials	Body: Carbon Steel, Stainles Steel, Al/Bronze Body seat: Stellite® (overlay welding) Disc: Carbon Steel, Stainles Steel, Al/Bronze Stem: AISI 420, AISI 630, NITRONIC 50
Applications	High pressure, High temperature, Critical service, Cryogenic Service
Certifications	97/23/CE PED, 94/9/CE ATEX, Fire Safe API 607, ISO 10497, API 6FA CU TR 10 – CU TR 32, GOST-R

401N series Double Eccentric Butterfly Valves

Size range	3” ÷ 56” (DN80 ÷ DN1400)
Type	Wafer, Lug, Double flanged on request
Design	ASME B16.34, EN 12516-2, EN 593
Face to face	API 609, EN 558
Operating temperature	-40°C + 220°C (-40 °F ÷ +428 °F)
Pressure ratings	ASME class 150 - bidirectional
Flange drilling	ASME B16.5, ASME B16.47 series A, EN1092-1
Testing	API 598, EN 12266-1
Leakage class	Rate “A” - No leakage – according to EN 12266-1
Standard materials	Body: Ductile Iron, Carbon Steel, Stainles Steel Disc: Ductile Iron, Carbon Steel, Stainles Steel Stem: AISI 304, AISI 316, AISI 630 Seat: PTFE + Carbographite INCONEL 625 LCF on request for metal to metal seated
Applications	Chemical and Pharmaceutical industries, sistems for solvent recovery, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, Fire Safe API 607, ISO 10497, API 6FA (on request) SIL - IEC 61508, IEC 61511, GOST-R, CU TR 10 – CU TR 32

301 series Butterfly Valves with rubber seat

Size range	1.1/2" ÷ 40" (DN40 ÷ DN1000)
Type	Wafer, Lug, Double flanged
Face to face dimension	EN 558 series 20
Top flange	ISO 5211
Max working pressure	20 bar - bidirectional
Flange drilling	PN6, PN10, PN16 / ANSI class 150
Operating temperature	-20 °C ÷ +160 °C (-4 °F ÷ +320 °F)
Standard materials	Body: Ductile Iron, Carbon Steel, Stainless Steel, Al/Bronze, F51 Disc: Ductile Iron, Carbon Steel, Stainless Steel, Al/Bronze Stem: AISI 316, AISI 420, AISI 630, MONEL K Seat: NBR, EPDM, EPDM HT, VITON, more (all seats have inside a metal ring reinforcement)
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Liquids or gases in industrial environments, plants, water treatment, vacuum, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, SIL IEC 61508 - IEC 61511 GOST-R, CU TR 10 – CU TR 32, TA-Luft

301E series Butterfly Valves with rubber seat

Size range	1.1/2" ÷ 20" (DN40 ÷ DN500)
Type	Wafer, Lug
Face to face dimension	EN 558 series 20
Top flange	ISO 5211
Max working pressure	16 bar - bidirectional
Flange drilling	PN10, PN16 / ANSI 150
Operating temperature	-20 °C ÷ +100 °C with NBR seat -20 °C ÷ +120 °C with EPDM seat
Standard materials	Body: Cast Iron Disc: Ductile Iron, Stainless Steel Stem: AISI 316, AISI 420, AISI 630 Seat: NBR, EPDM (the seat is fitted on the valve body)
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Liquids or gases in industrial environments, generic plants, water treatment, other applications with compatible materials to working conditions
Certifications	97/23/CE PED - 94/9/CE ATEX - SIL - IEC 61508, IEC 61511 GOST-R, CU TR 10 – CU TR 32

301TSS series Butterfly Valves with PTFE lined

Size range	1.1/2" ÷ 16" (DN40 ÷ DN400)
Type	Wafer, Lug
Face to face dimension	EN 558 series 20
Top flange	ISO 5211
Max working pressure	10 bar - bidirectional
Flange drilling	PN6, PN10, PN16, ANSI class 150
Operating temperature	-20 °C ÷ +130 °C (-4 °F ÷ +266 °F) other on request
Standard materials	Body: Ductile Iron, Carbon Steel, Stainless Steel, Disc: Stainless steel Stem: AISI 316, AISI 630, Seat: PTFE liner thickness 1,6 mm + EPDM (all seats have inside an aluminum ring reinforcement)
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Pharmaceutical, Chemical and Food industries, Naval installation, other applications with compatible materials to working conditions
Certifications	97/23/CE PED - 94/9/CE ATEX - SIL - IEC 61508, IEC 61511 GOST-R, CU TR 10 – CU TR 32

301TT series Butterfly Valves with PTFE lined

Size range	1.1/2" ÷ 12" (DN40 ÷ DN300)
Type	Wafer, Lug
Face to face dimension	EN 558 series 20
Top flange	ISO 5211
Max working pressure	10 bar - bidirectional
Flange drilling	PN10, PN16, ANSI150
Operating temperature	-20 °C ÷ +150 °C (-4 °F ÷ +302 °F)
Standard materials	Body: Ductile iron GGG40.3 Disc: Stainless Steel CF8M + PTFE Stem: AISI 316 Seat: PTFE liner thickness 3 mm min + Silicon
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Higly corrosive fluids, toxic media, Pharmaceutical, Chemical and Food industries, Naval installation, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, SIL IEC 61508 - IEC 61511 GOST-R, CU TR 10 – CU TR 32

HT600 series Damper valves for high temperature

Size range	2" ÷ 72" (DN50 ÷ DN1800)
Type	Wafer, Flanged
Face to face dimension	EN 558 series 16 for DN50÷500, series 20 for DN600÷1800
Top flange	ISO 5211
Max working pressure	2 bar - bidirectional
Flange drilling	PN6, PN10, PN16, ANSI class 150
Operating temperature	-20 °C ÷ +600 °C (-4 °F ÷ +1112 °F)
Standard materials	Body: Carbon Steel, Stainless Steel, Disc: Carbon Steel, Stainless Steel Stem: AISI 316, AISI 630 Seal: Metal to metal
Max leakage class	Class II - ASME B16.104
Applications	For interception and control of fumes, steam and air with high temperatures
Certifications	94/9/CE ATEX - SIL - IEC 61508, IEC 61511 GOST-R, CU TR 10 – CU TR 32

AP/APM series Pneumatic Rotary Actuators

Series	AP / APM DA Double Acting / SA Single Acting
Size range	AP0 ÷ AP12 (Ø32mm to Ø330mm)
Stroke	90° with single travel adjustment ±3° (AP series) 90° with double travel adjustment ±5° (APM series)
Pressure range	2 bar ÷ 8 bar for Double Acting 3 bar ÷ 8 bar for Single Acting
Torque range	2,4 ÷ 7500 Nm (21,4 ÷ 66875 lbf.in)
Operating temperature	-20 °C ÷ +80 °C (-4 °F ÷ +175 °F) standard
Design reference	UNI EN 15714-3, ISO 5211, VDI / VDE 3845
Flange interface	ISO 5211
Stem connection	Square or polygonal shape ISO 5211
Interface for pilot valve	NAMUR type
Accessories flange	VDI / VDE 3845, UNI EN 15714-3
Standard materials	Body: Aluminum alloy extrude bar Cap and piston: Die casting aluminum alloy Stem: Carbon Steel nickel plated
Applications	They find their best application for actuation of quarter turn valves, such as: ball valve, butterfly valve, plug valve
Certifications	94/9/CE ATEX, SIL IEC 61508 - IEC 61511 GOST-R, CU TR 10 – CU TR 32

APG series Schotch Yoke Pneumatic Actuators

Series	APG, single or double cylinder DA Double Acting / SA Single Acting
Size range	APG200 – APG250 (Ø200mm - Ø250mm)
Stroke	90° with std adjustment ±5°
Pressure range	3 bar ÷ 7 bar for Double Acting
Torque range	658 Nm ÷ 7400 Nm
Operating temperature	-20 °C ÷ +80 °C (-4 °F ÷ +175 °F) standard
Design reference	ISO 5211 - VDI / VDE 3845
Flange interface	ISO 5211
Stem connection	Round with key
Air connection	1/4" GAS
Accessories flange	VDI / VDE 3845 - UNI EN 15714-3
Standard materials	They find their best application for actuation of quarter turn valves, such as: ball valve, butterfly valve, plug valve.
Applications	They find their best application for actuation of quarter turn valves, such as: ball valve, butterfly valve, plug valve
Certifications	94/9/CE ATEX, SIL IEC 61508 - IEC 61511 GOST-R, CU TR 10 – CU TR 32

S10 series Wafer Flat Body Ball Valves

Size range	1/2" ÷ 8" (DN15 ÷ DN200) full bore
Type	Wafer
Design	ASME B16.34, EN 12516-2, ISO 14313
Face to face dimension	EN 558 series 100
Top flange	ISO 5211
Max working pressure	40 bar bidirectional
Flange drilling	PN6, PN10, PN16, PN25, PN 40, ANSI class 150, class 300
Operating temperature	-20 °C ÷ +200 °C (-4 °F ÷ +392 °F)
Standard materials	Body: Carbon Steel, Stainless Steel Ball: AISI 304, CF8M Stem: AISI 304, AISI 316 Seat: PTFE + fiber glass, PTFE + carbographite
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Air, gas, liquids free from impurities for industrial environments, plants, waters treatment, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, Fire Safe API 607, ISO 10497, API 6FA SIL - IEC 61508, IEC 61511, GOST-R, CU TR 10 – CU TR 32

S20 series Two-pieces 800 p.s.i. Ball Valves

Size range	1/4" ÷ 2.1/2" (DN08 ÷ DN65) full bore and reduced bore
Type	2-pieces, from bar
Design	ASME B16.34, EN 12516-2, ISO 14313, DIN 3202 M3
Top flange	ISO 5211
Max working pressure	800 p.s.i. (55 bar) bidirectional
End type	Threaded: ISO 228-1 GAS, ASME B1.20.1 NPT Butt welding: with nipples ASME B36.10 sch. 80 Socked welding: ASME B16.11
Operating temperature	-20 °C ÷ +200 °C (-4 °F ÷ +392 °F)
Standard materials	Body: Carbon Steel, Stainless Steel Ball: AISI 304, CF8M Stem: AISI 304, AISI 316 Seat: PTFE + fiber glass, PTFE + carbographite
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Air, gas, liquids free from impurities, chemical agents in each field, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, Fire Safe API 607, ISO 10497, API 6FA SIL - IEC 61508, IEC 61511, GOST-R, CU TR 10 – CU TR 32

S30 series Split Body Ball Valves

Size range	1/2" ÷ 8" (DN15 ÷ DN200) full bore
Type	Split body from bar or casting
Design	ASME B16.34, EN 12516-2, ISO 14313, EN 1759-1
Top flange	ISO 5211
Max working pressure	20 bar bidirectional
Flange drilling	PN10, PN16, PN25, PN40, ANSI class 150, 300
Operating temperature	-20 °C ÷ +200 °C (-4 °F ÷ +392 °F)
Standard materials	Body: Carbon Steel, Stainless Steel Ball: AISI 304, CF8M Stem: AISI 304, AISI 316 Seat: PTFE + fiber glass, PTFE + carbographite
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Air, gas, liquids free from impurities, chemical agents in each field, other applications with compatible materials to working conditions
Certifications	97/23/CE PED, 94/9/CE ATEX, Fire Safe API 607, ISO 10497, API 6FA GOST-R, CU TR 10 – CU TR 32

S40/S40M series Threaded actuated and manual ball valves

Size range	1/4" ÷ 4" (DN08 ÷ DN100) full bore
Type	2-pieces with handle or with flange for automation
Top flange	ISO 5211
Max working pressure	16 ÷ 40 bar bidirectional
End type	Threaded ISO 228-1 GAS
Operating temperature	-20 °C ÷ +120 °C (-4 °F ÷ +248 °F)
Standard materials	Body: Brass nickel plated Ball: Brass nickel plated Stem: Brass Seat: PTFE
Applications	Mounting into fixed pipe system for each type of hydraulic system, heating services, pneumatic.
Certifications	97/23/CE PED, 94/9/CE ATEX, GOST-R, CU TR 10 – CU TR 32, TA-Luft

S50/S50M series Threaded actuated and manual ball valves

Size range	1/4" ÷ 3" (DN08 ÷ DN80) full bore
Type	2-pieces with handle or with flange for automation
Top flange	ISO 5211
Max working pressure	40 bar bidirectional
End type	Threaded: ISO 228-1 GAS ASME B1.20.1 NPT on request
Operating temperature	-25 °C ÷ +200 °C (-13 °F ÷ +392 °F)
Standard materials	Body: Stainless Steel CF8M Ball: Stainless Steel CF8M Stem: AISI 304 Seat: PTFE + fiber glass
Applications	Mounting into fixed pipe system for each type of hydraulic system, heating services, pneumatic
Certifications	97/23/CE PED - 94/9/CE ATEX, GOST-R, CU TR 10 – CU TR 32 - TA-Luft

S60/S60M series Threaded actuated and manual ball valves

Size range	1/4" ÷ 4" (DN08 ÷ DN100) full bore
Type	3-pieces with handle or with flange for automation
Top flange	ISO 5211
Max working pressure	40 bar bidirectional
End type	Threaded: ISO 228-1 GAS ASME B1.20.1 NPT on request Socket weld ASME B16.11 -25 °C ÷ +200 °C (-13 °F ÷ +392 °F)
Temperature range	Body: Stainless Steel CF8M
Standard materials	Ball: Stainless Steel CF8M Stem: AISI 304 Seat: PTFE + fiber glass
Leakage class	Rate "A" - No leakage – according to EN 12266-1
Applications	Mounting into fixed pipe system for each type of hydraulic system, heating services, pneumatic
Certifications	97/23/CE PED - 94/9/CE ATEX, GOST-R, CU TR 10 – CU TR 32 - TA-Luft

S70/S70M series Threaded actuated and manual ball valves

Size range	1/4" ÷ 2" (DN08 ÷ DN50) full bore
Type	3-ways "L" with handle or with flange for automation
Top flange	ISO 5211
Max working pressure	40 bar bidirectional
End type	Threaded ISO 228-1 GAS
Operating temperature	-20 °C ÷ +120 °C (-4 °F ÷ +392 °F)
Standard materials	Body: Stainless Steel CF8M Ball: Stainless Steel CF8M Stem: AISI 304 Seat: PTFE + fiber glass
Applications	Mounting into fixed pipe system for each type of hydraulic system, heating services, pneumatic
Certifications	97/23/CE PED, 94/9/CE ATEX, GOST-R, CU TR 10 – CU TR 32

S80/S80M series Threaded actuated and manual ball valves

Size range	1/4" ÷ 2" (DN08 ÷ DN50) full bore
Type	3-ways "L" with handle or with flange for automation
Top flange	ISO 5211
Max working pressure	30 bar bidirectional
End type	Threaded ISO 228-1 GAS
Operating temperature	-20 °C ÷ +120 °C (-4 °F ÷ +248 °F)
Standard materials	Body: Brass nickel plated Ball: Brass nickel plated Stem: Brass nickel plated Seat: PTFE
Applications	Mounting into fixed pipe system for each type of hydraulic system, heating services, pneumatic
Certifications	97/23/CE PED, 94/9/CE ATEX, GOST-R, CU TR 10 – CU TR 32, TA-Luft

MBX series Limit Switch Box

Models	MBX10EM2 with mechanical switches MBX20EX2 with mechanical explosion-proof switches MBX3_PN_ with intrinsically safety proximity switches MBX4_PN_ with amplifier proximity switches MBX50MP2 with pneumatic switches
Construction	Suitable for indoor and outdoor installation
Operating temperature	-25 °C ÷ +85 °C (-13 °F ÷ +185 °F) Lower and higher temperature available on request
Weight	0,95 kg (2.09 lbs)
Enclosure grade	IP 67
Bracket	VDI / VDE 3845, UNI EN 15714-3
Cable entries	Two cable entry M20x1,5 Different entries cable available on request
Standard materials	Body: Die casting aluminum Cover: Die casting aluminum Stem: AISI 303
Applications	Compact limit switch box, designed for safe and hazardous areas, provides a visual and electrical remote position feedback on automated valves with 90° of rotation
Certifications	94/9/CE ATEX (some models only), SIL IEC 61508 - IEC 61511 GOST-R, CU TR 10 – CU TR 32, TA-Luft

SVS series Solenoid valve 5/2 way

Models	Single or double solenoid
Construction	Suitable for indoor and outdoor installation
Temperature range	-20 °C ÷ +70 °C (-4 °F ÷ +158 °F)
Weight	0,310 ÷ 0,400 kg (0,683 ÷ 0,881 lbs)
Protection	IP 65
Fluid	Filtered air
Acting	Internal piloted
Port size	In = Out = 1/4" GAS or NPT
Connection	NAMUR
Body materials	Aluminum alloy
Accessories	Solenoid, LED standard connector, adapter plate for use as 3/2 regulator exhaust silencer
Solenoid specification	
Standard voltage	AC220V, AC110V, AC24V, DC24V, DC12V
Temperature range	-20 °C ÷ +50 °C (-4 °F ÷ +122 °F)
Activating time	0,05 sec and below
Protection	IP 65

MULTI-POSITION HAND LEVER

ELECTRO-PNEUMATIC Positioner 4 ÷ 20 mA signal

GEAR BOX

PNEUMATIC POSITIONER

DISENGANGEABLE GEAR BOX

ELECTRIC ACTUATORS

SIRCA INTERNATIONAL S.P.A.

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Pneumatic Rotary Actuators

(AP SERIES)

(APM SERIES)

CE Ex II 2 G/D

Foreword

Thanks to its achieved experience in the field of the automation, since last 1979 SIRCA INTERNATIONAL has been producing and selling its rotary pneumatic actuators series AP.

The actuators are of rack and pinion type, and a kinetic energy turns a linear moving into a rotary one.
The opposed movement of the pistons is protected, as performed in a cylinder, on which extremities two end-cups are inserted.

They can be easily mounted on each type of equipment, and have light weight.

You can easily mount any fitting on them (limit switches, solenoid valves, positioners, disengageable gear boxes, levers, and so on).

They find their best appliance on the actioning of ball, butterfly and plug valves, which have a rotation angle of 90°; they can also be used on other equipment, having rotation angle of 120°-180°.

The torque they generate is proportional to the air supply pressure; therefore, a higher supply pressure corresponds to a higher torque.

Both double acting and spring return actuators have twin cylinders horizontally opposed and incorporate piston guides to ensure correct contact between the rack and pinion, at any pressure.

Double acting and spring return models are of similar overall size.

Sirca Actuators offer an excellent cost-performance ratio

SPECIFICATIONS

- **Pressure range:**
2 bar (29 psig) to 8 bar (116 psig) double acting
3 bar (44 psig) to 8 bar (116 psig) spring return
max. working pressure 10 bar (145 psig).

- **Supply:**
filtered dry or lubricated air.
For non corrosive gas water or light hydraulic oil please check with Sirca's technical department.

- **Temperature range:**
STD -20°C (-4°F) a + 80°C (175°F)
on request +20°C (+68°F) a +150°C (302°F)
on request - 50°C (-58°F) a +100°C (212°F).

- **Rotation:**
counterclockwise when Port'A' is pressurized;
clockwise when PORT 'B' is pressurized
and for spring return actuators (see principle of operation).

- **Stroke:**
90° with standard adjustment ±3° (AP Series)
or bi-directional travel adjustment ±5° (APM Series).

- **Lubrication:**
all moving parts are factory lubricated for cycle life of the actuator.

- **Construction:**
in accordance to "Equipment or Protective system intended for use in potentially explosive atmosphere directive 94/9/CE".
Suitable for indoor and outdoor installation.

- **Connections:**
bottom drilling to match valve is in accordance with ISO 5211/DIN 3337 Interface for solenoid valve, shaft top end and top drilling to assemble accessories are in accordance with VDI / VDE 3845, NAMUR.

- **Inspection:**
each unit is hydraulically tested and certified and guaranteed for a minimum of 500.000 moves.

MATERIALS

- **Actuator body:**
extruded aluminium alloy.

- **End cap:**
pressure die casting aluminium alloy

- **Pinion:**
E.N.P. Carbon steel or 303 S.S.

- **Piston:**
pressure die casting aluminium alloy

- **Guide:**
Acetal resin

- **"O" rings:**
Buna-n (NBR), FKM or Silicone

- **Springs:**
Epoxy coated spring steel

- **Screws and nuts:**
Stainless Steel

SIRCA INTERNATIONAL S.P.A. (ITALY)
TÜV MANAGEMENT SERVICE ISO 9001

SALES AND ACCOUNTING DEPARTMENT WAREHOUSE
20060 TREZZANO ROSA (MI - ITALY) - Via Trieste n° 8
Phone ++39 02 92010204 (six lines)
Fax ++39 02 92011954 Sales and Accounting Dept.
Fax ++39 02 92010216 Purchase and Technical Dept.
E-mail: sirca@tin.it - web site: www.sircainternational.com

AIR CONSUPTION FOR STROKE AIR (FREE AIR) in liters

Model	AP1 DA/SR	AP2 DA/SR	AP3 DA/SR	AP3.5 DA/SR	AP4 DA/SR	AP4.5 DA/SR	AP5 DA/SR	AP5.5 DA/SR	AP6 DA/SR	AP8 DA/SR	AP10 DA/SR
Counter clockwise	0.08	0.12	0.24	0.48	0.68	1	1.4	1.6	3.2	5.3	14.2
Clockwise (DA only)	0.10	0.16	0.44	0.56	0.96	1.6	2.16	2.56	4	8.6	16.5

OPENING / CLOSING TIME (sec) at 5.6 bar/*80 p.s.i.*

Model	AP1	AP2	AP3	AP3.5	AP4	AP4.5	AP5	AP5.5	AP6	AP8	AP10
Double Acting	Less than 1 Sec	Less than 1 Sec	Less than 1 Sec	Less than 1 Sec	Less than 1 Sec	Less than 1 Sec	Less than 1.25 Secs	Less than 1.5 Secs	1.5÷2 Secs	3÷4 Secs	5÷6 Secs
Spring Return	Less than 1 Sec	Less than 1 Sec	Less than 1 Sec	Less than 1.5 Sec	Less than 1.5 Secs	Less than 1 Sec	1.5÷2 Secs	2 Secs	2÷3 Secs	4÷6 Secs	7÷8 Secs

*WEIGHTS in Kgs

Model	AP1	AP2	AP3	AP3.5	AP4	AP4.5	AP5	AP5.5	AP6	AP8	AP10
Double Acting	1.15	1.60	2.80	4.28	5.80	8.26	11.63	14.15	21.70	40.10	110
Spring Return*	1.27	1.85	3.36	4.91	6.92	9.72	14.15	17.35	25.90	48.62	128

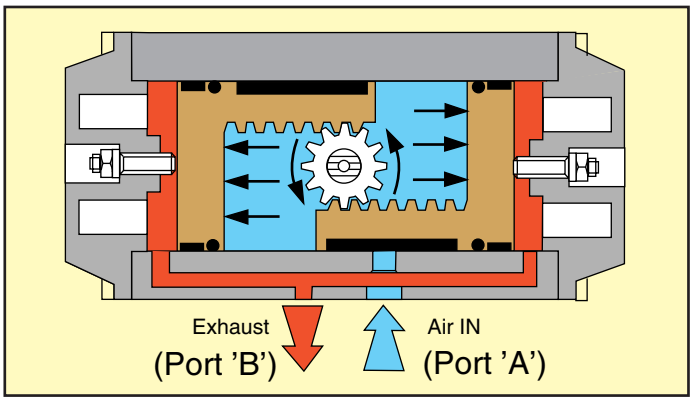
** Weights considering 6 (six) springs on each side of the caps*

DOUBLE ACTING ACTUATOR (DA) ISO 5211

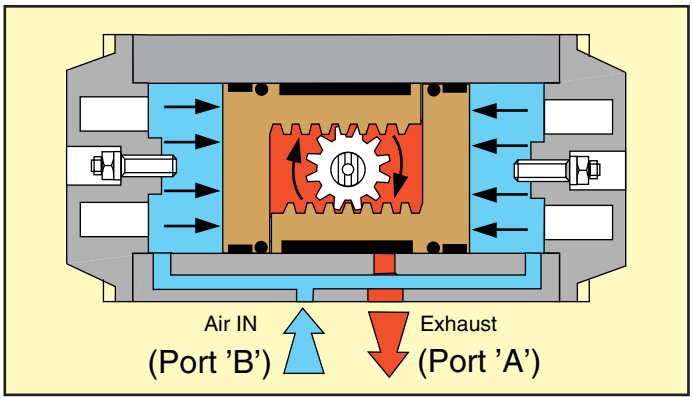
PRINCIPLE OF OPERATION

Counter clockwise output operation is achieved by inserting pressure into **Port "A"**, to force the pistons apart thus rotating the actuator pinion counter clockwise.
During the operation, air from the outer chambers is exhausted through **Port "B"**.
Clockwise output operation is achieved by reverse of the above and inserting pressure into **Port "B"**.

COUNTER CLOCKWISE OUTPUT ROTATION



CLOCKWISE OUTPUT ROTATION

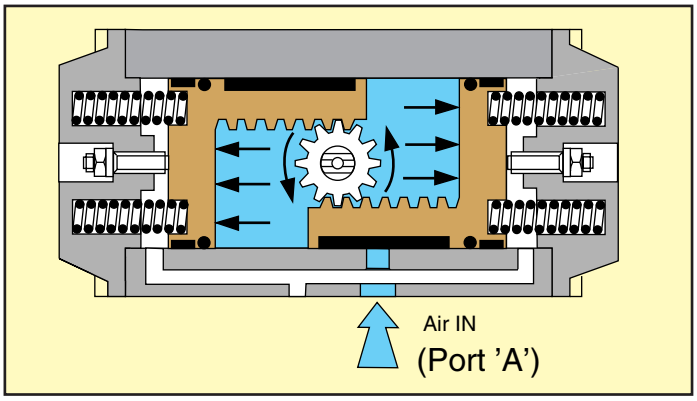


SPRING RETURN ACTUATOR (SR) ISO 5211

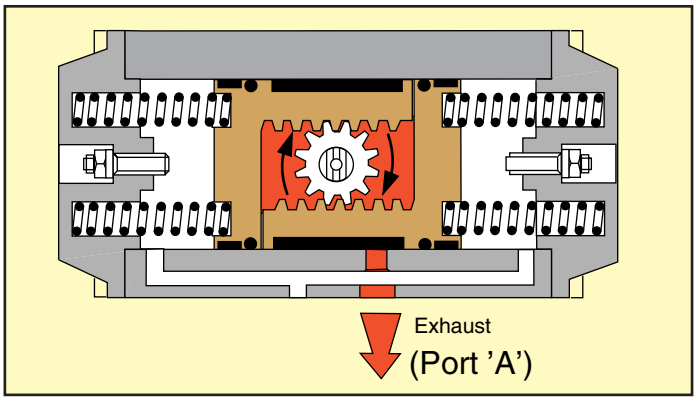
PRINCIPLE OF OPERATION

Pressure applied to **Port "A"** will cause the inner chambers to be pressurised, forcing the pistons outward to compress the springs.
The pinion is rotated counter counteil clockwise. Upon release of pressure through **Port "A"** the springs will exert pressure to close the pistons and rotate the pinion clockwise rapidly.This action will often be used to close a 90° turn valve in shutdown mode.

COUNTER CLOCKWISE OUTPUT ROTATION



CLOCKWISE OUTPUT ROTATION



TORQUE OUTPUT DOUBLE ACTING ACTUATORS (DA) in Nm

Model	OPERATING PRESSURE - bar / *p.s.i.*						
	2	3	4	5	6	7	8
	30	44	58	73	87	102	116
AP1 DA	5.9	8.9	11.8	14.8	17.7	21.7	24.8
AP2 DA	9.4	14.1	18.8	23.5	28.2	32.9	37.6
AP3 DA	20	30	40	50	60	70	80
AP3.5 DA	34	51	68	85	102	119	136
AP4 DA	48	71	95	119	142	168	192
AP4.5 DA	87.2	130.8	174.4	218	261.6	305.2	348.8
AP5 DA	111	167	222	278	333	388.5	444
AP5.5 DA	157.6	236.4	315.3	394.1	473	551.8	630.6
AP6 DA	227	340	454	567	680	794.5	908
AP8 DA	426	638	851	1064	1276	1491	1704
AP10 DA	1078	1617	2156	2695	3234	3773	4312

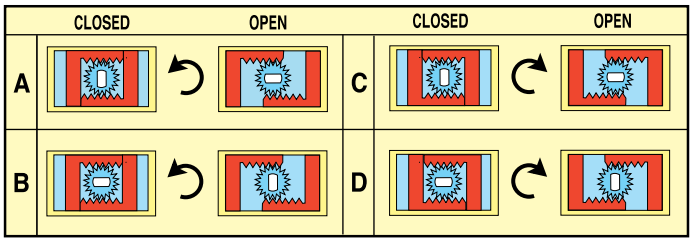
NOTE: The output torque of selected actuator should never be less the requised valve torque

TORQUE OUTPUT SPRING RETURN ACTUATORS (SR) in Nm

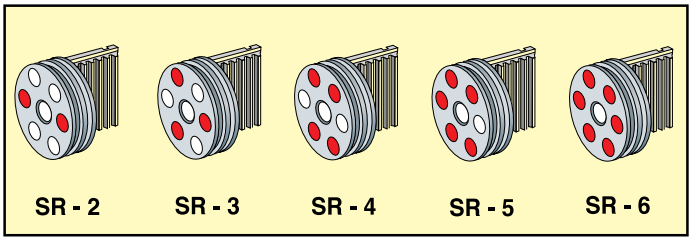
Model	N° of Springs for each side of cap	OPERATING PRESSURE - bar / *p.s.i.*												SPRING STROKE	
		3 / 44		4 / 58		5 / 73		6 / 87		7 / 102		8 / 116			
		0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	90°	0°
AP1SR	2	6.5	5.4	9.4	8.3	12.4	11.3	15.3	14.2	19.3	18.2	22.4	21.3	3.5	2.4
	3	5.3	3.7	8.2	6.6	11.2	9.6	14.1	12.5	18.1	16.5	21.2	19.6	5.2	3.6
	4	4.1	1.9	7.0	4.8	10.0	7.8	12.9	10.7	16.9	14.7	20.0	17.8	7.0	4.8
	5	=	=	3.1	2.7	8.8	6.1	11.7	9.0	15.7	13.0	18.8	16.1	8.7	6.0
	6	=	=	=	=	7.6	4.3	10.5	7.2	14.5	11.2	17.6	14.3	10.5	7.2
AP2SR	2	10.3	8.5	15.0	13.2	19.7	17.9	24.4	22.6	29.1	27.3	33.8	32.0	5.6	3.8
	3	8.4	5.7	13.1	10.4	17.8	15.1	22.5	19.8	27.2	24.5	31.9	29.2	8.4	5.7
	4	=	=	11.2	7.6	15.9	12.3	20.6	17.0	25.3	21.7	30.0	26.4	11.2	7.6
	5	=	=	=	=	14.0	9.5	18.7	14.2	23.4	18.9	28.1	23.6	14.0	9.5
	6	=	=	=	=	12.1	6.7	16.8	11.4	21.5	16.1	26.2	20.8	16.8	11.4
AP3SR	2	22.0	18.0	32.0	28.0	42.0	38.0	52.0	48.0	62.0	58.0	72.0	68.0	12.0	8.0
	3	18.0	12.0	28.0	22.0	38.0	32.0	48.0	42.0	58.0	52.0	68.0	62.0	18.0	12.0
	4	=	=	24.0	16.0	34.0	26.0	44.0	36.0	54.0	46.0	64.0	56.0	24.0	16.0
	5	=	=	=	=	30.0	20.0	40.0	30.0	50.0	40.0	60.0	50.0	30.0	20.0
	6	=	=	=	=	26.0	14.0	36.0	24.0	46.0	34.0	56.0	44.0	36.0	24.0
AP3.5SR	2	41.5	30.0	58.5	47.0	75.5	64.0	92.5	81.0	109.5	98.0	126.5	115.0	21.0	9.5
	3	32.0	20.0	49.0	37.0	66.0	54.0	83.0	71.0	100.0	88.0	117.0	105.0	31.0	19.0
	4	=	=	43.0	20.0	60.0	37.0	77.0	54.0	94.0	71.0	111.0	88.0	48.0	25.0
	5	=	=	=	=	53.0	33.0	70.0	50.0	87.0	67.0	104.0	84.0	52.0	32.0
	6	=	=	=	=	47.0	22.0	64.0	39.0	81.0	56.0	106.4	73.0	63.0	38.0
AP4SR	2	52.7	42.4	76.7	66.4	100.7	90.4	123.7	113.4	149.7	139.4	173.7	175.2	28.6	18.3
	3	43.0	28.0	67.0	52.0	91.0	76.0	114.0	99.0	140.0	125.0	164.0	153.6	43.0	28.0
	4	=	=	58.0	38.0	82.0	62.0	105.0	85.0	131.0	111.0	155.0	132.0	57.0	37.0
	5	=	=	=	=	73.0	47.0	96.0	70.0	122.0	96.0	146.0	110.4	72.0	46.0
	6	=	=	=	=	64.0	33.0	87.0	56.0	113.0	82.0	137.0	88.8	86.0	55.0
AP4.5SR	2	96.8	77.5	140.4	121.1	184.0	164.7	227.6	208.3	271.2	251.9	314.8	295.5	53.3	34.0
	3	79.8	50.9	123.4	94.5	167.0	138.1	210.6	181.7	254.2	225.3	297.8	268.9	79.9	51.0
	4	62.8	24.2	106.4	67.8	150.0	111.4	193.6	155.0	237.2	198.6	280.8	242.2	106.6	68.0
	5	=	=	89.4	41.1	133.0	84.7	176.6	128.3	220.2	171.9	263.8	215.5	133.3	85.0
	6	=	=	72.4	14.4	116.0	58.0	159.6	101.6	203.2	145.2	246.8	188.8	160.0	102.0
AP5SR	2	123.7	99.4	178.7	154.4	234.7	210.4	289.7	265.4	345.2	320.9	400.7	376.4	67.6	43.3
	3	103.0	66.0	158.0	121.0	214.0	177.0	269.0	232.0	324.5	287.5	380.0	343.0	101.0	64.0
	4	=	=	136.0	87.0	192.0	143.0	247.0	198.0	302.5	253.5	358.0	309.0	135.0	86.0
	5	=	=	=	=	170.0	109.0	225.0	164.0	280.5	219.5	336.0	275.0	169.0	108.0
	6	=	=	=	=	148.0	75.0	203.0	130.0	258.5	185.5	314.0	241.0	203.0	130.0
AP5.5SR	2	176.2	132.8	258.7	215.3	337.5	294.1	416.4	373.0	495.2	451.8	574.0	530.6	100.0	56.6
	3	147.9	82.8	230.4	165.3	309.2	244.1	388.1	323.0	466.9	401.8	545.7	480.6	150.0	84.9
	4	119.5	32.8	202.0	115.3	280.8	194.1	359.7	273.0	438.5	351.8	517.3	430.6	200.0	113.3
	5	=	=	173.7	65.3	252.5	144.1	331.4	223.0	410.2	301.8	489.0	380.6	250.0	141.6
	6	=	=	145.3	15.3	224.1	94.1	303.0	173.0	381.8	251.8	460.6	330.6	300.0	170.0
AP6SR	2	257.0	200.0	371.0	314.0	484.0	427.0	597.0	540.0	711.5	645.5	825.0	768.0	140.0	83.0
	3	215.0	130.0	329.0	244.0	442.0	357.0	555.0	470.0	669.5	584.5	783.0	698.0	210.0	125.0
	4	=	=	287.0	174.0	400.0	287.0	513.0	400.0	627.5	514.5	741.0	628.0	280.0	167.0
	5	=	=	=	=	358.0	217.0	471.0	330.0	585.5	444.5	699.0	558.0	350.0	209.0
	6	=	=	=	=	316.0	147.0	429.0	260.0	543.5	374.5	657.0	488.0	420.0	251.0
AP8SR	2	478.0	386.0	691.0	599.0	904.0	812.0	1116.0	1024.0	1331.0	1239.0	1704.0	1452.0	252.0	160.0
	3	398.0	260.0	611.0	473.0	824.0	686.0	1036.0	898.0	1251.0	1113.0	1464.0	1326.0	378.0	240.0
	4	=	=	531.0	347.0	744.0	560.0	956.0	772.0	1171.0	987.0	1384.0	1200.0	504.0	320.0
	5	=	=	=	=	664.0	434.0	876.0	646.0	1091.0	861.0	1304.0	1074.0	630.0	400.0
	6	=	=	=	=	584.0	308.0	796.0	520.0	1011.0	735.0	1224.0	948.0	756.0	480.0
AP10SR	2	1181.0	957.0	1720.0	1496.0	2259.0	2035.0	2798.0	2574.0	3337.0	3113.0	3876.0	3652.0	660.0	436.0
	3	963.0	628.0	1502.0	1167.0	2041.0	1706.0	2580.0	2245.0	3119.0	2784.0	3658.0	3323.0	989.0	654.0
	4	=	=	1284.0	837.0	1823.0	1376.0	2362.0	1915.0	2901.0	2454.0	3440.0	2993.0	1319.0	872.0
	5	=	=	=	=	1605.0	1046.0	2144.0	1585.0	2683.0	2124.0	3222.0	2663.0	1649.0	1090.0
	6	=	=	=	=	=	=	1909.0	1254.0	2448.0	1793.0	2987.0	2332.0	1980.0	1325.0

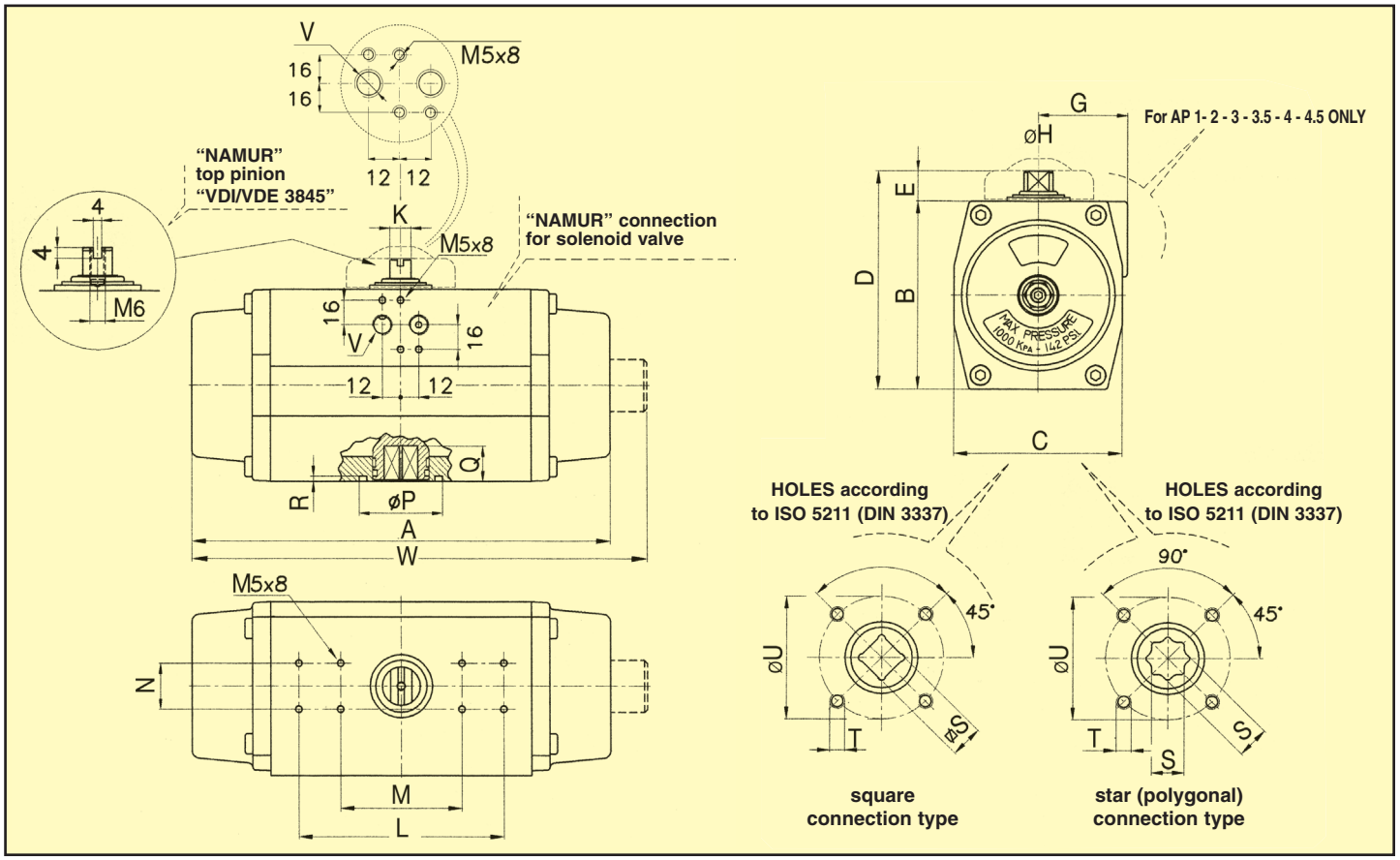
NOTE: The output torque of selected actuator should never be less the requised valve torque

MOUNTING VARIATIONS



RIGHT ARRANGEMENT OF SPRINGS





DIMENSIONS in mm

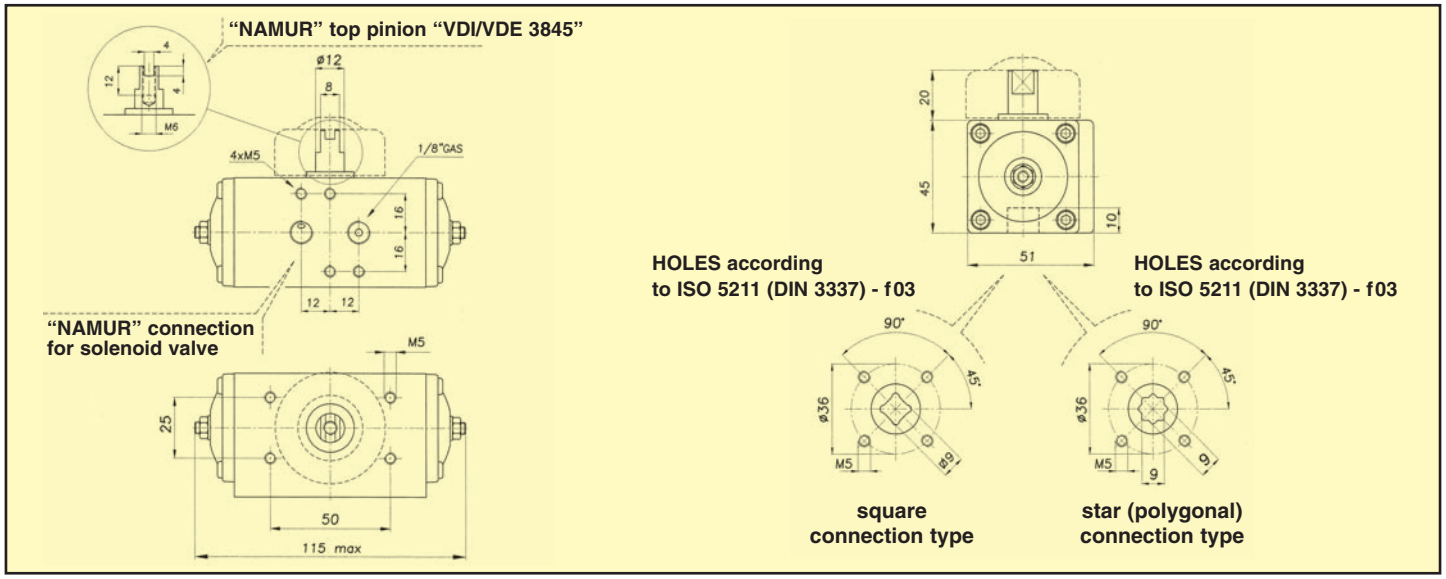
Model	A	W*	B	C	D	E	F	G	H	K	L	M	N	P	Q	R	⍁ S-S	T	U	V	ISO 5211 STD.	ISO 5211 SPECIAL
AP1	142	162	67	60	87	20	42	41	12	8	-	80	30	25	10	2	9/11**	M5/M6	36/50	1/8"	F03/F05	F04
AP2	155	171	83	73	103	20	42	44.5	12	8	-	80	30	30/35	12	2	11/14**	M5/M6	42/50	1/4"	F04/F05***	-
AP3	213	240	100	85	120	20	50	49.5	14	10	-	80	30	35	16	3	14/17**	M6/M8	50/70	1/4"	F05/F07	-
AP3.5	236	268	110	98	130	20	50	53	19	14	-	80	30	55	20	3.5	17/22**	M8	70	1/4"	F07	F05
AP4	276	304	125	110	145	20	50	58	19	14	-	80	30	55	20	3.5	17/22**	M8/M10	70/102	1/4"	F07/F10	-
AP4.5	310	350	142	128	172	30	58	69	28	20	130	80	30	70	24	3.5	17**/22	M10	102	1/4"	F10	F07
AP5	366	405	155	140	185	30	-	-	28	20	130	80	30	70	24	3.5	17**/22	M10	102	1/4"	F10	F07/F12
AP5.5	388	442	176	160	206	30	-	-	36	28	130	80	30	85	29	3.5	22**/27	M12	125	1/4"	F12	F10
AP6	468	500	200	175	230	30	-	-	36	28	130	80	30	85	29	3.5	22**/27	M12	125	1/4"	F12	F10
AP8	563	612	250	215	300	50	-	-	48	32	130	-	30	100	38	5	27**/36	M16	140	1/4"	F14	F12
AP10	750	838	335	290	385	50	-	-	48	32	130	-	30	130	50	5	36**/46	M20	165	1/4"	F16	F14

**Dimension W only for APM series*

***Dimension on request*

****To be chosen when ordering*

PNEUMATIC ACTUATOR AP0DA MODEL



SIRCA AP/Q. 04-05

TORQUE OUTPUT DOUBLE ACTING (DA) in Nm

OPERATING PRESSURE							
bar	2	3	4	5	6	7	8
p.s.i.	29	44	58	73	87	102	116
Nm	2.4	3.6	4.8	6	7.3	8.5	9.7

AIR CONSUMPTION FOR STROKE (FREE AIR) in Liters

Counter Clockwise	0.04
Clockwise (DA only)	0.05

OPENING/CLOSING TIME (sec.) at 5.6 bar/*80 p.s.i.*

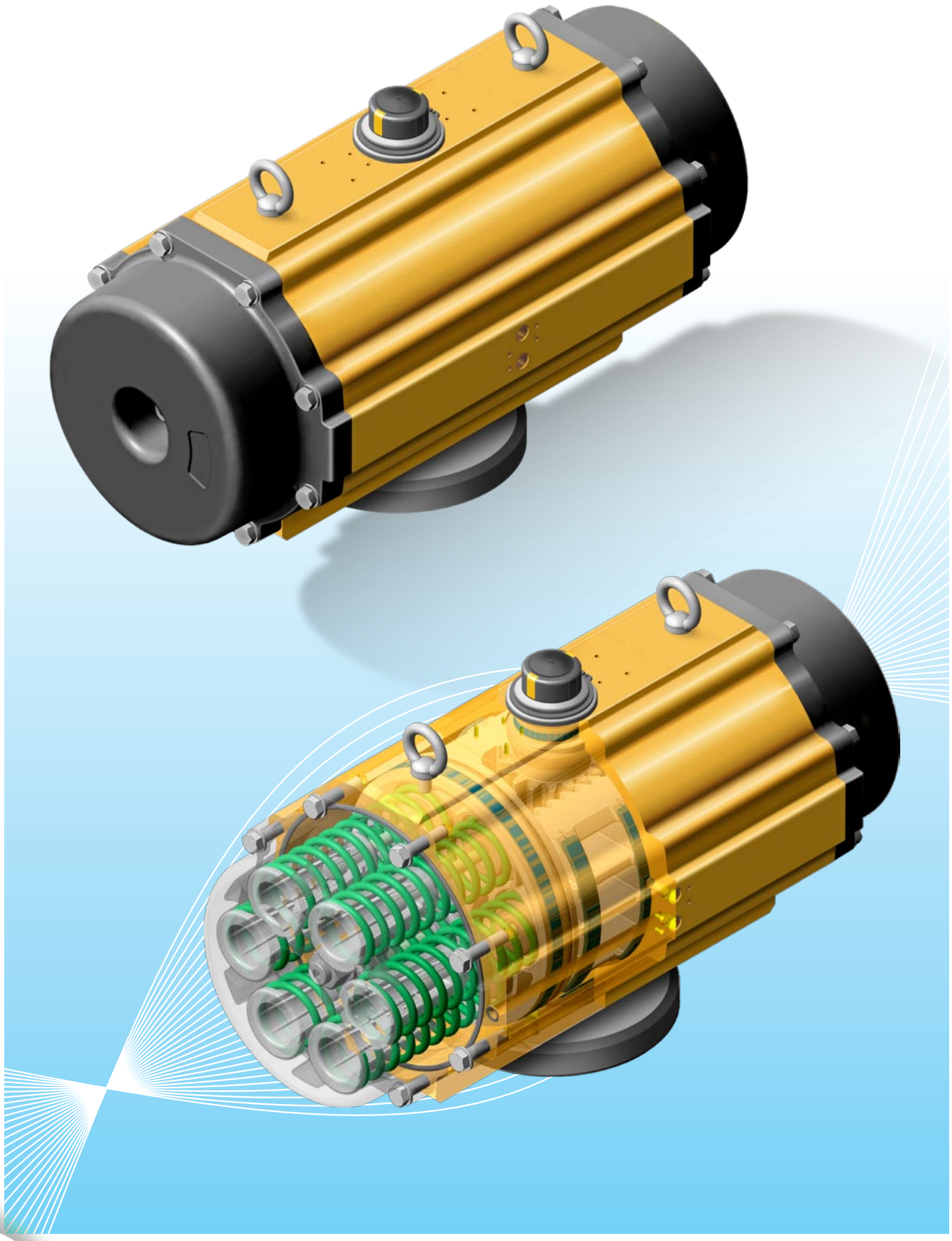
Double Acting	Less Than 0.5 sec

WEIGHT: Kg 0.58

SIRCA INTERNATIONAL S.P.A.

NEW model: AP12

PNEUMATIC ROTARY ACTUATOR



PNEUMATIC ROTARY ACTUATOR - NEW model: AP12

Technical features:

Series:	**AP** / **APM** - **DA** Double Acting / **SA** Single Acting
Stroke:	90° with single travel adjustment ±3° (AP series) 90° with double travel adjustment ±5° (APM series)
Pressure range:	2 bar ÷ 8 bar for Double Acting 3 bar ÷ 8 bar for Single Acting
Operating temperature:	-20 °C ÷ +80 °C (-4 °F ÷ +175 °F) standard
Bore:	Ø330mm
Air volume opening (lt)	22
Air volume closing (lt)	49
Opening time (sec.)	6 for DA / 7,5 for SA
Closing time (sec.)	7 for DA / 8,5 for SA
Approximate weight (kg)	150 for DA / 192 for SA
Design reference:	UNI EN 15714-3, ISO 5211, VDI / VDE 3845
Flange interface:	ISO 5211, F16 and F25
Stem connection:	ISO 5211, square or polygonal shape, 55mm
Interface for pilot valve:	NAMUR type, G1/2 or 1/2 NPT
Accessories flange:	UNI EN 15714-3 AA4 and AA5 type
Standard materials:	Body: Aluminum alloy extrude bar Cap and piston: Die casting aluminum alloy Stem: Carbon Steel nickel plated
Certifications:	94/9/CE ATEX, SIL - IEC 61508 IEC 61511 GOST-R, CU TR 10 – CU TR 32

Double Acting Torque (Nm):

PRESSIONE DI ALIMENTAZIONE - *Operating Pressure* (bar)						
2	**3**	**4**	**5**	**6**	**7**	**8**
1880	2820	3760	4701	5641	6581	7522

Single Acting Torque (Nm):

N° OF SPRING FOR EACH SIDE OF PISTON	PRESSIONE DI ALIMENTAZIONE - *Operating Pressure* (bar)												SPRING STROKE	
	3		**4**		**5**		**6**		**7**		**8**			
	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	0°	90°	**90°**	**0°**
2	2082	1723	3022	2663	3963	3604	4903	4544	5843	5484	6783	6424	1097	738
3	**1715**	**1174**	2655	2114	3596	3055	4536	3995	5476	4935	6416	5875	1646	1105
4	//	//	**2286**	**1565**	3227	2506	4167	3446	5107	4386	6047	5326	2195	1474
5	//	//	//	//	**2859**	**1958**	3799	2898	4739	3838	5679	4778	2743	1842
6	//	//	//	//	//	//	**3430**	**2349**	4370	3289	5310	4229	3292	2211

Overall dimensions: