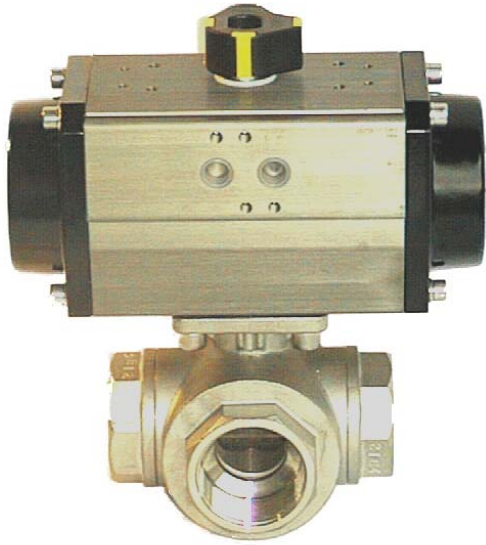


PNEUMATICALLY OPERATED 3 WAY STAINLESS BALL VALVE



Features:

**** Actuator CE & ATEX approved ****

- > Valve designed for automation
- > Compact—no mounting kit
- > L port (diverting) & T Port (Mixing)
- > Valve rated at 64 bar
- > Available double acting or spring return
- > Local visual position indicator

TYPE 2301/ 2302

General:

Utilising a 3 way valve specifically designed for automation, this compact valve package provides excellent reliability in service.

With a direct mounted pneumatic actuator the package is available in either double acting (air open, air close) or failsafe (air open, spring close).

The actuator conforms to international standards and allows simple fitting of position confirmation / control devices and pilot solenoids.

Specifications:

Valve body and ends	CF8M (Cast 316 SS)
Valve ball	SS 316
Ball seats	PTFE
Stem seals	RPTFE
Valve pressure range	64 bar
Valve temp. limits	-40C to + 200C **
Air supply to actuator	Min 5.5 bar, max 8 bar

Applications:

Water, oil, air & most non-corrosive media, subject to compatibility with wetted parts in contact with media.

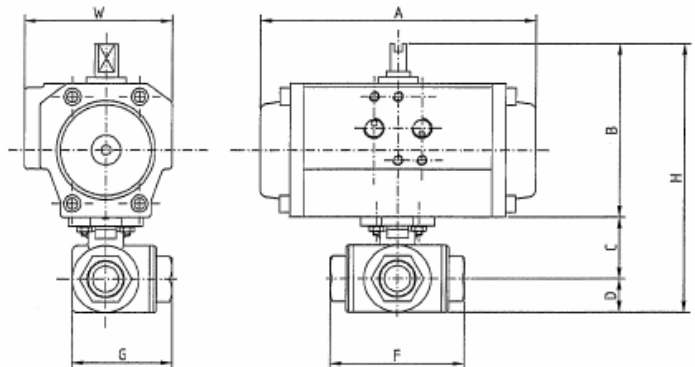
* Actuators sized using max differential of 10 bar wet service – if this is to be exceeded, or dry applications, call to check actuator sizing.

** Actuator temperature limit = +80C. For applications above this temperature, see Type 2111 and 2112.

Installation:

Can be mounted in any orientation. Valve ends are screwed female x female BSP (UNI ISO 7/1). Use thread sealant suitable for flowing media. Actuator supply air connections are 1/8" or 1/4" BSP depending on size.

Dimensions:



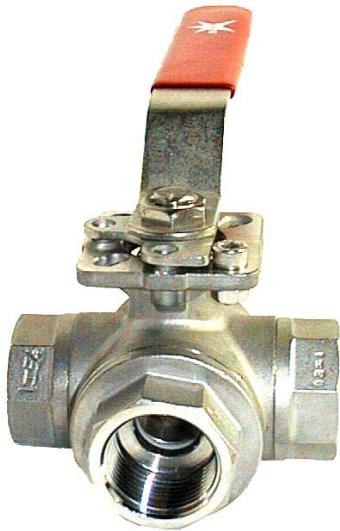
Double Acting (Air open, air close): Type 2301

SIZE	A	B	C	D	F	G	H	W	ACT.
1/2	138	87			80	62		75	CH050
3/4	138	87			89	73		75	CH050
1	152	103			105	84		86	CH063
1 1/4	152	103			113	92		86	CH063
1 1/2	205	120			140	110		94	CH075
2	228	130			161	118		104	CH085

Failsafe (air open, spring close): Type 2302

SIZE	A	B	C	D	F	G	H	W	ACT.
1/2	138	87			80	62		75	CH050SR
3/4	152	103			89	73		86	CH063SR
1	205	120			105	84		94	CH075SR
1 1/4	205	120			113	92		94	CH075SR
1 1/2	228	130			140	110		104	CH085SR
2	274	145			161	118		120	CH100SR

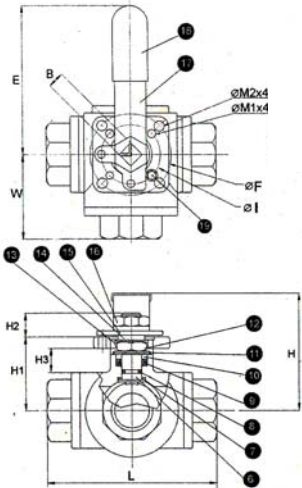
REDUCED BORE STAINLESS 3 WAY DIRECT MOUNT BALL VALVE



- > **L or T port versions**
- > **Actuators direct mount**
- > **1000 psi Rated**
- > **CE Marked where appropriate**
- > **Full BSP thread length**
- > **4 Seat design**
- > **Economically priced**

TYPE BVM-39

GENERAL	VALVE TYPE	REDUCED BORE 1/4 TURN BALL VALVE	
	VALVE MODEL	BVM-39	
	OPERATOR	LOCKABLE LEVER	
	DESIGN STANDARDS	MANUFACTURERS OWN, BASED ON ISO5211/ DIN3337	
	FACE TO FACE DIMS	MANUFACTURERS OWN	
	TESTING STANDARDS	MANUFACTURERS OWN	
	CERTIFICATION	CERTIFICATE OF CONFORMITY ONLY -MASS PRODUCED ITEM	
	ACTUATOR MOUNTING	ISO 5211 DIRECT MOUNTS WITHOUT MOUNTING KIT	
	SIZE RANGE	1/2" TO 2"	
	PRESSURE RATING	1000 PSI	
TEMPERATURE LIMITS	-20C ~ +210C		
MATERIALS	BODY	CF8M	
	BALL	SS316	
	STEM (BLOW-OUT PROOF)	SS316	
	SEATS	PTFE (4 OFF)	
	SEALS	VITON / PTFE	
END CONNECTIONS	BSPP		
FEATURES	ANTI-STATIC DEVICE	NO	
	FIRE SAFE	NO	
	PRIMARY STEM SEAL	VITON O RING	
	SECONDARY STEM SEAL	PTFE	
	STEM SEAL ADJUSTMENT	BELVILLE WASHERS	
	IN-LINE MAINTAINABLE	NO	
OTHER			



DIMENSIONS							
SIZE DN	BORE	B	E	H	L	W	ISO5211
1/2"	12	9	130	62	72	36	F03/04
3/4"	15	9	130	64	83	42	F03/04
1"	20	11	165	82	99	50	F04/05
1 1/4"	25	11	165	89	112	56	F04/05
1 1/2"	32	14	205	98	125	63	F05/07
2"	38	14	205	108	149	75	F05/07

CH-air CE/ ATEX APPROVED PNEUMATIC ACTUATORS



Features:

**** CE & ATEX approved ****

- > High quality components & assembly
- > Durable in service - fit & forget
- > Fully compliant with all actuator standards
- > Available double acting or spring return
- > Local visual position indicator
- > Fully balanced air and spring strokes
- > Body coating options

CH-air Pneumatic Actuators

General:

CE Marked in acc with EC Machinery Directive 98/37/CEE

ATEX approved EX II 2 GD Tmax=95°C (ATEX 94/9/CEE Cert: EX9 04 04 52727 001)

Actuator bore machined to Ra 0.4~0.6 to minimise friction and maximise the life of the actuator.

Sliding parts made of low friction coefficient avoid metal to metal contact extending working life.

Running test and 100% seal test using electronic equipment on every actuator.

Valve mounting drilling to ISO5211—dual drilled on most sizes for maximum flexibility.

Output drive to ISO5211/DIN3337 in double square form (star) for maximum mounting flexibility.

Air connections according to NAMUR standard.

Position control and monitoring connections according to NAMUR standard.

Factory lubrication is guaranteed for 1,000,000 manoeuvres.

Visual position indicator

Adjustable end of travel stops in both directions.

Working temperature limits: -20°C to +80°C

Materials of construction:	
Body:	Aluminium alloy, extruded acc. to ASTM 6063, anodised acc. To UNI 4522
Ends:	Die-cast in aluminium alloy acc. To ASTM B179, epoxy-polyester coated
Pistons:	Die-cast in aluminium alloy acc. To ASTM B179
Pinion:	Nickel-plated steel
Slideways:	Acetal resin (LAT LUB 731320T)
Fasteners:	AISI 304 Stainless steel
Springs:	Epoxy coated steel, pre-compressed (de-energise before end cap bolts are removed)
Seals:	NBR Nitrile rubber (Viton or EPDM on request)
Lubricant:	MoS2

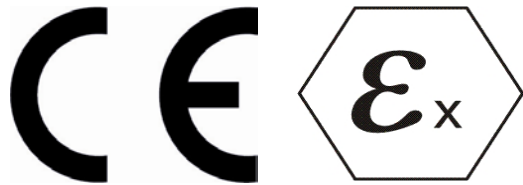
Dimensions: See separate sheet

Torques: See separate sheet

Installation : Can be mounted in any orientation. Actuator supply air connections are 1/8" or 1/4" BSP depending on size. Use filtered compressed air min 1 bar, max 8 bar.

Maintenance: Maintenance free during normal use . Full spare seal kits available.

DECLARATION OF CONFORMITY:
CH-air PNEUMATIC ACTUATORS
ATEX - 94/9/CEE



The manufacturer declares that the entire range of CH-air pneumatic rack & pinion actuators in aluminium alloy are engineered and manufactured in accordance with the CE directive ATEX—94/9/CEE

In accordance with:	EN1127-1 & EN13463-1 Machinery Directive 98/37/CEE
Other standards:	ISO5211, DIN3337, VDI/VDE3845 UNI EN ISO 9001:2000
Certificate No:	EX9 04 04 52727 001

CE Directive PED—97/23/CEE states:
 Actuators are not considered to be ‘recipients under pressure’ or ‘safety accessories’. To respect the directive, and also as a general safety norm, switching on the machine where the device will be assembled, is forbidden before the machine is declared to conform to the directive.

SAFETY INSTRUCTIONS In compliance with ATEX 94/9/CEE Directive -Rev 01/01/2004

1 DESCRIPTION & IDENTIFICATION:

The application filed of the present documentation is represented by Rack & Pinion actuators (APR) in aluminium alloy: SERIES AP (90° rotation) SERIES APY (120° rotation) SERIES APX (180° rotation)

The identification nameplate shows:

MODEL: CH xx (xx = size)

SERIAL NO: xx yy zzzzz (xx = year of manufacture, yy = month of manufacture, zzzzz = progressive serial number)

Rack and pinion (APR) actuators in aluminium alloy are engineered and manufactured according to ATEX 94/9/CEE directive and EN1127-1 and EN13463-1 standards as components to be used in explosive atmospheres. They can be used in the following dangerous zones: 1 and 2 (gas) & 21 and 22 (dust)

2 TECHNICAL FEATURES:

The identification nameplate shows:

Ambient temperature –Low temperature -40 to +80 C

Ambient temperature –Standard -20 to +80 C

Ambient temperature –High temperature -20 to +150 C

Maximum supply pressure for continuous operation: 8 BAR


WARNING: Maximum supply pressure: 10 BAR


Motion fluid: dry or lubricated compressed air, inert gases, water, or non-dangerous fluids.


3 MARKING:

Rack and pinion (APR) actuators in aluminium alloy are classified according to the following type of protection:

Group of Devices II (surface) - Category 2 (surface excluding mines) G (gas) and D (dust)

Low temperature: -40 to +80  II 2GD Tmax = 95C

Standard: -20 to +80  II 2GD Tmax = 95C

High temperature: -20 to +150C  II 2GD Tmax = 165C

4 WARNINGS AND NOTES FOR USE:

- Before installation, read our ‘Instruction Manual for Use and Maintenance’ carefully.
- Follow the expected use.
- Follow the indications of maximum temperature/ environment stated on the nameplate.
- Do not supply any flammable or explosive media to drive the actuator (oxygen, acetylene etc).
- Avoid the penetration of explosive atmospheres inside the actuator.
- Do not allow the external parts of the actuator to be struck by metallic objects as this may create a spark.
- Do not force the actuator manually over its maximum output torque.
- Avoid the accumulation of combustible dusts on the external surfaces of the actuator.
- Avoid the accumulation of electrostatic charges on insulating surfaces of the actuator by grounding (eg: fixing bolts to valve).
- All components and accessories installed on the actuator for position monitoring and control purposes must be suitable for use in accordance with the danger classification of the area in which they are being installed and used.
- Maintenance of the actuator must be in accordance with the applicable standards (eg: EN50281 or E 60079 etc) and with the danger classification of the area in which the maintenance is to be performed.
- Do not carry out maintenance in areas with potentially explosive atmospheres.
- Verify the functionality of the springs every 100,000 (one hundred thousand) cycles and replace only with complete CH-air spring cartridges when necessary—do not try to disassemble the spring cartridges.
- Verify all rubber sealing elements (‘O’ rings and gaskets) and all plastic anti-friction pads every 300,000 (three hundred thousand) cycles, replace only with CH-air spare seal kits when necessary.
- It is the user’s responsibility to ensure that the CH-air actuators are used only in complete compliance with the ‘Instruction Manual for Use and Maintenance’ and the above instructions as, non compliant use may cause danger to persons and property, and any non compliant use invalidates any warranty from the manufacturer or any legal obligation from, or claim on the manufacturer.

FEATURE	BENEFITS
THE CH-air RANGE OF PNEUMATIC ACTUATORS OFFER SIMPLE INSTALLATION AND USE & ARE DESIGNED TO BE DURABLE IN SERVICE. FIT & FORGET.	
MANUFACTURED IN ACC. WITH ISO9001	1. INDEPENDANTLY ASSESSED PROCEDURES TO PRODUCE A QUALITY PRODUCT.
CE MARKED	1. CONFORMS TO REQUIREMENTS OF EC MACHINERY DIRECTIVE
ATEX APPROVED	1. CONFORMS TO REQUIREMENTS FOR ATEX- HAZARDOUS AREA APPROVAL
DURABLE IN SERVICE - GUARANTEED FOR 1 MILLION CYCLES	1. HIGHLY ACCURATE MACHINING OF INTERNALS PRODUCES AN ASSEMBLED ACTUATOR WITH LOW FRICTION CHARACTERISTICS IMPROVING RELIABILITY & DURABILITY IN SERVICE 2. FACTORY LUBRICATED FOR LIFE
FULLY SUPPORTED PINION WITH TEFLON BEARINGS	1. MAINTAINS CONCENTRICITY OF PINION 2. REDUCES RISK OF METAL TO METAL CONTACT WITH BODY
CONFORMS TO ISO5211/ DIN3337	1. SIMPLE MOUNTING TO COMPLIANT VALVES AND MOUNTING KITS 2. STAR OUTPUT DRIVES ALLOWS MOUNTING TO IN-LINE VALVE STEMS OR STEMS AT 45 DEGREES. MORE FLEXIBLE THAN SINGLE SQUARE DRIVE.
CONFORMS TO NAMUR/ VDI-VDE3845	1. SIMPLE FITTING OF POSITION CONTROL & MONITORING DEVICES: EG; PILOT OLENOIDS, SWITCH BOXES, POSITIONERS
RACK & PINION DESIGN	1. INDUSTRY STANDARD, PROVEN IN SERVICE 2. HIGHER MID-POSITION TORQUE OUTPUT COMPARED TO SCOTCH YOKE,
HARD ANODISED ALUMINIUM BODY, EPOXY COATED END CAPS	1. EXCELLENT RESISTANCE FROM CORROSION IN NORMAL ATMOSPHERES
BALANCED SPRING RETURN VERSION	1. AIR STROKE OUTPUT = SPRNG STROKE OUTPUT 2. SAME LOAD ON VALVE STEM IN BOTH DIRECTIONS 3. EASIER TO SIZE – NO JUGGLING WITH AIR STROKE Vs SPRING STROKE
ADJUSTABLE OPEN AND CLOSED POSITION	1. OPEN POSITION ADJUSTABLE EXTRNALLY VIA END CAPS 2. CLOSED ADJUSTMENT INTERNAL. PROTECTS AGAINST MAL-ADJUSTMENT
LOCAL VISUAL POSITION INDICATOR	1. AT A GLANCE LOCAL VISUAL POSITION INDICATION WITH BRIGHT YELLOW INDICATORS.
IN-LINE MAINTAINABLE WITHOUT SPECIALIST TOOLS	1. NO NEED TO RETURN TO SUPPLIER FOR OVERHAUL 2. SPRING RETURN VERSIONS HAVE PRE-COMPRESSED SPRING CARTRIDGES THAT FULLY RELAX BEFORE THE END CAP SECURING SCREWS ARE REMOVED 3. SOFT SEAL KITS AVAILABLE FOR ALL SIZES
OPTIONAL BODY COATINGS	1. ENP (ELECTROLESS NICKEL PLATING) GIVES STAINLESS LIKE APPEARANCE, IDEAL FOR FOOD AND PHARMACEUTICAL APPLICATIONS 2. TEFLON COATING SUPERCEDES FORMER EPOXY COATING
SERIAL NUMBERED NAMEPLATE	1. SHOWS MODEL NUMBER, DA OR SR VERSION & SERIAL NUMBER 2. SERIAL NUMBER DATE CODED
SPECIAL CONFIGURATIONS	1. DIRECTION OF ROTATION CAN BE CHANGED BY REVERSING PISTONS 2. 120 AND 180 DEGREE VERSIONS AVAILABLE IN SOME MODELS 3. ELEVATED TEMPERATURE VERSION (SEAL & GREASE CHANGE)