

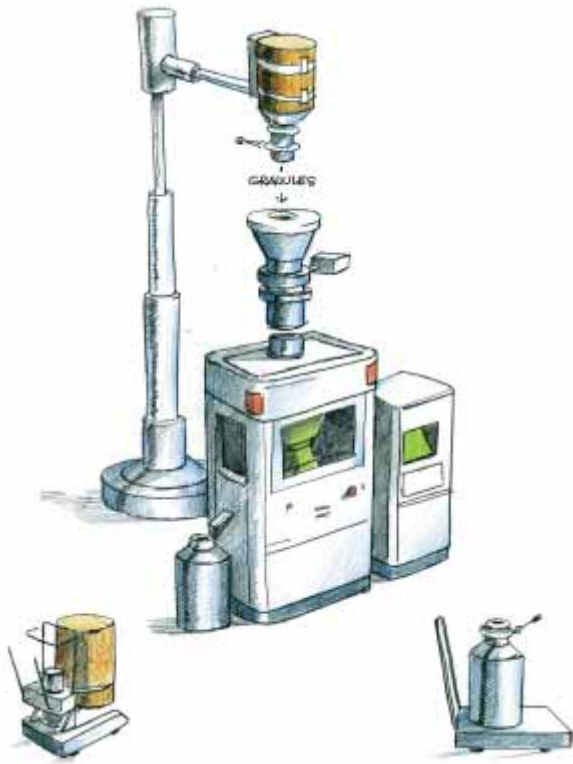
ROTARY
VALVE



CO,RA[®]



ROTARY VALVE



The **Rotary Valve** was designed to meet the need for a valve which offers good product control without obstructing the flow. It is useful in controlling the flow of granules, powders and especially with the feeding of mills, tablet press machines, capsule filling machines, micro-dosing machines and sieving machines.

The Rotary Valve was designed to be quickly and easily cleaned without the use of tools. This kind of valve is ideal for the pharmaceutical industry's demanding environment, particularly in sterile rooms.

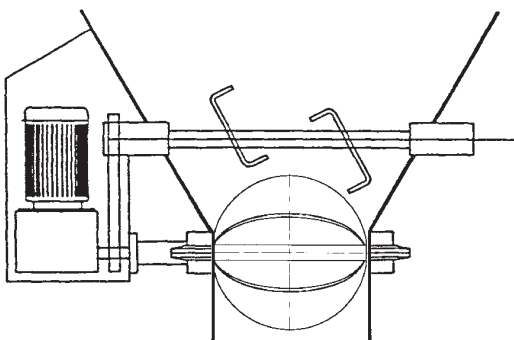


View of a six pocket **Rotary Valve**

The **Rotary Valve** was designed based on the Sole Valve philosophy, successfully used in hundreds of pharmaceutical plants around the world. It was developed to provide a uniform dosing of the product. Its star shaped configuration and its alternating movement (180° in one direction and 180° in the other direction) allow the transfer of product into the charging machine. the alternating movement eliminates product demixing. The speed and pause of the valve movement can be regulated as required.

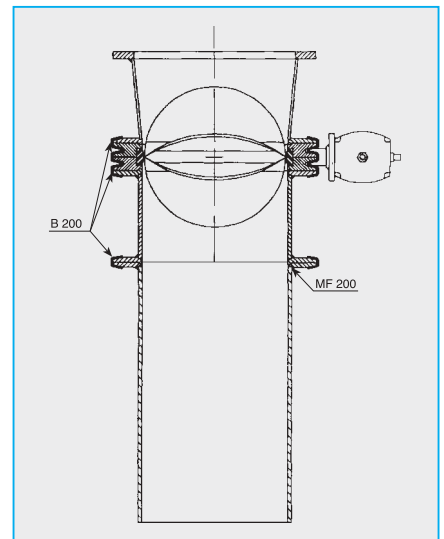
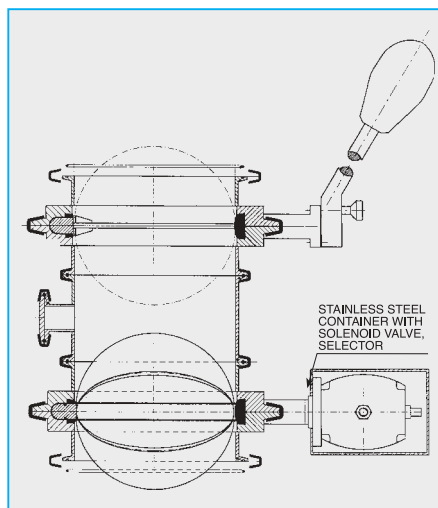
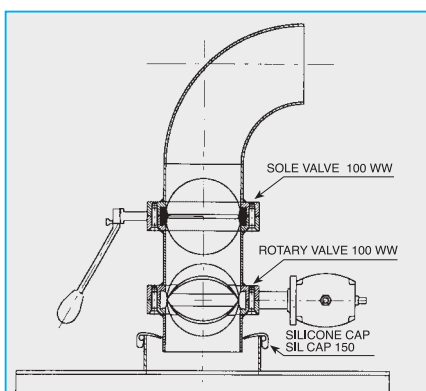
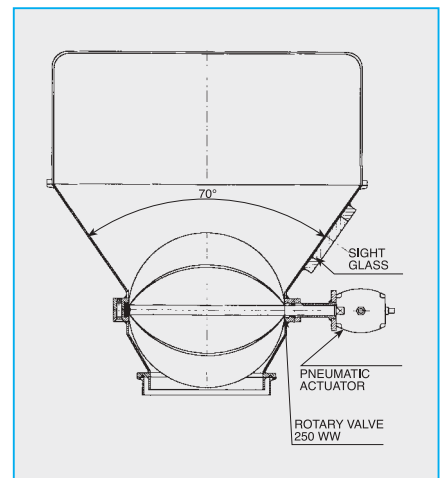
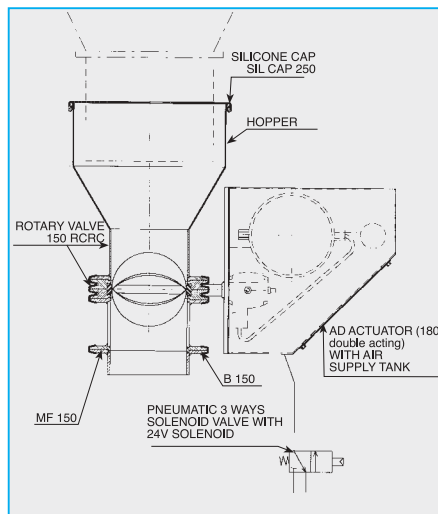
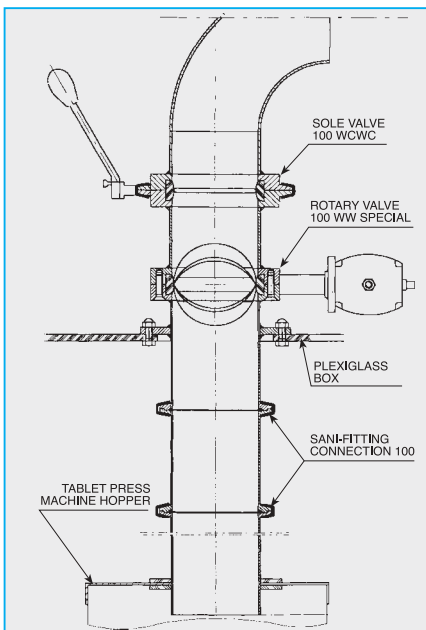
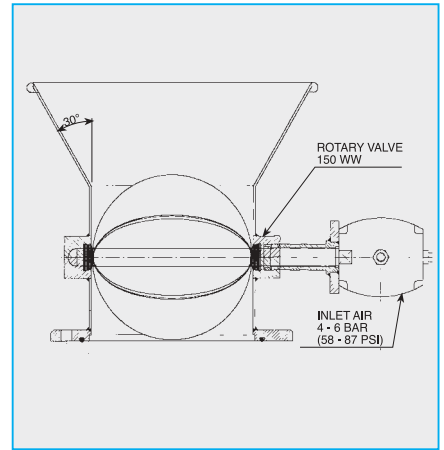
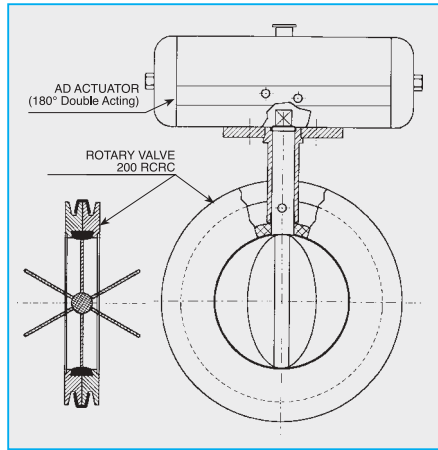
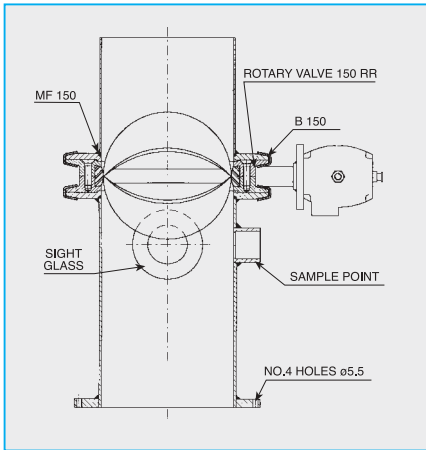
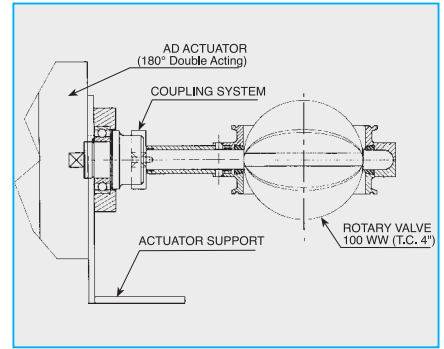
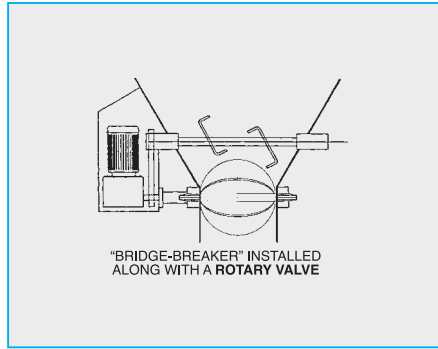
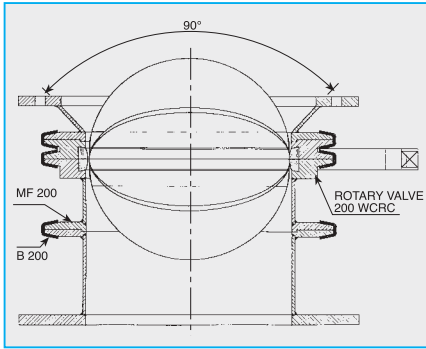


The unique design of the **Rotary Valve** provides a flow control system in less space and with smaller f.t.f. compared to conventional valves.



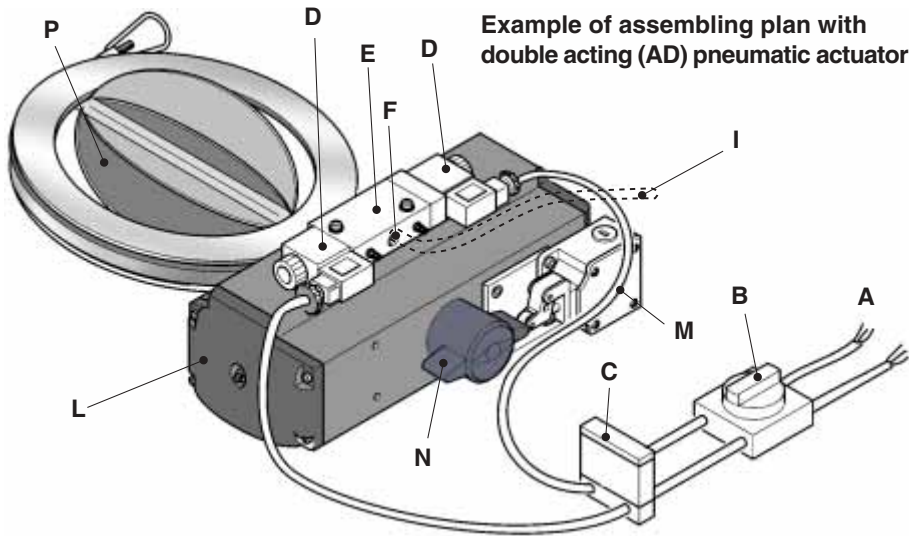
Rotary Valve installed with "bridge-breaker".

Application examples





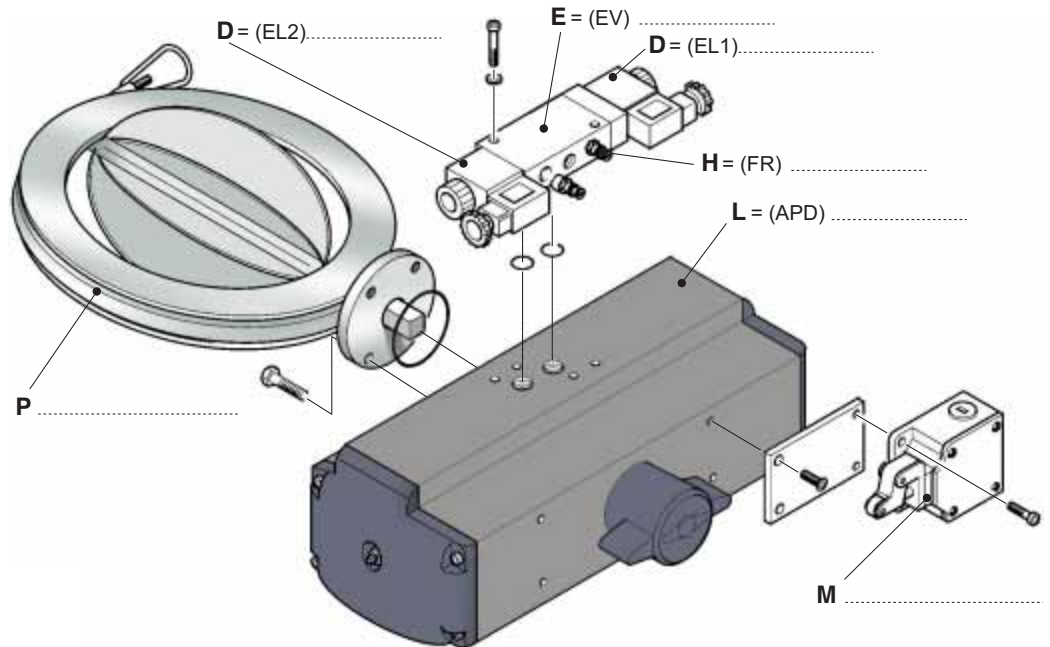
Installation



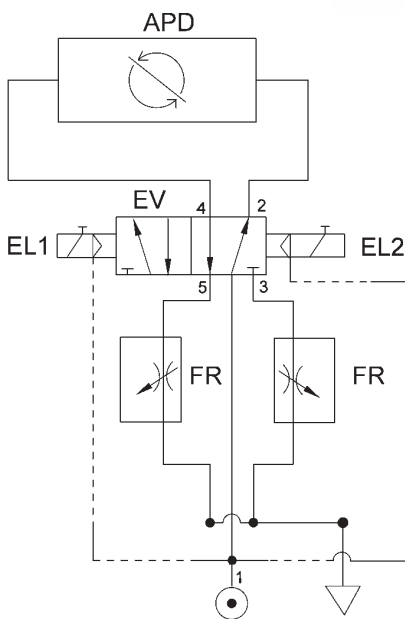
Example of assembling plan with double acting (AD) pneumatic actuator

Pos.	Item
A	Electricity supply
B	Selector switch
C	Relay
D	Solenoid
E	5/3 ways Solenoid Valve
F	Inlet air 4 - 6 bar (58 - 87 psi)
G	Air exhaust
H	Flow controllers
I	Air supply pipe
L	AD actuator 180°
M	Limit switch
N	Position cam On/ Off
P	Rotary Valve
Q	Movement adjusting On/ Off screw
R	Electric cablepress
S	Electric connector

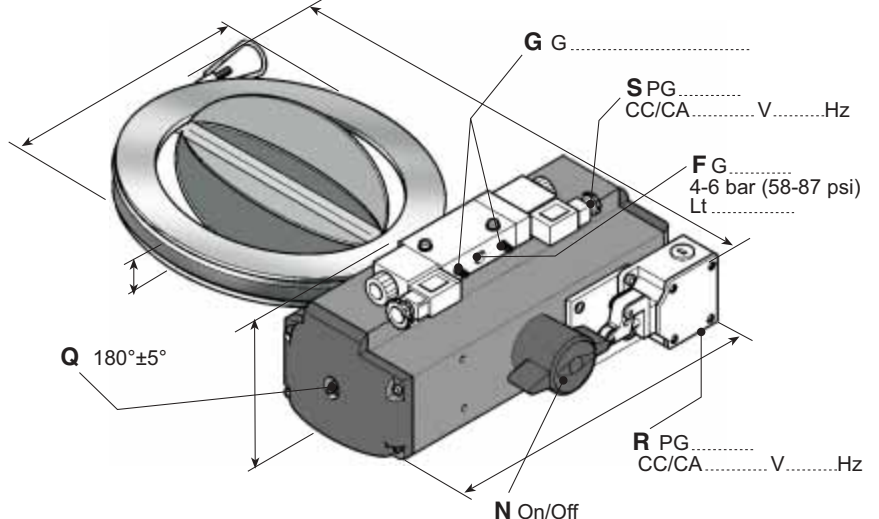
Exploded view for spare parts ordering (for spares for each main component ask for detail drawings)



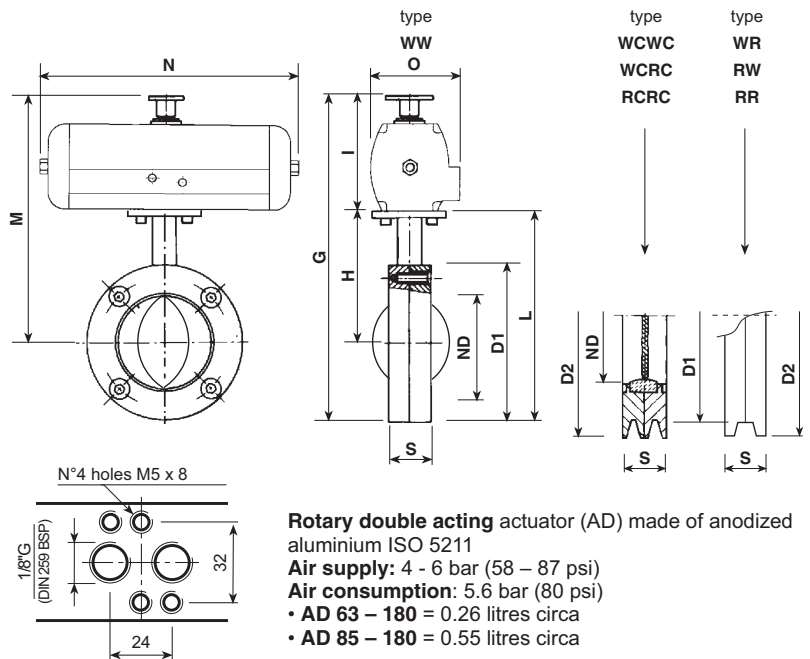
Pneumatic plan



Example of assembly with overall dimensions and power requirements (we will provide completed schedule on request)



Actuation, dimensions and features



On request the Rotary Valve can be equipped with:

- Double acting actuator in a stainless steel carter;
- NAMUR mono or bistable solenoid 3/2, 5/2 and 5/3 – standard or Ex rated (explosion proof);
- Proximity, pneumatic, electric limit switches;
- Electric and/or pneumatic actuator, motor or gear unit;
- Electro-pneumatic control panel for the regulation of opening and closing speed.

ND	D1	D2	S	G	H	I	L	M	N	O
100	150	180	38	298	130	93	205	223	250	80
150	200	230	38	348	155	93	255	248	250	80
200	250	280	38	398	180	93	305	273	250	80

Dimensions and technical details can be subject to variation without notice
 The measurements for G and L are related to D1, for dimensions of D2 add 15mm to D1

Features

- AISI 316L (DIN 1.4404 – X2CrNiMo17132) satin finished body (mirror polished on request)
- AISI 316L (DIN 1.4404 – X2CrNiMo17132) mirror polished rotor
- 6 pocket (8 on request) rotor operated by an alternating movement to feed uniform quantity of product
- No o-ring (OR) type seal on the shaft
- Easy to disassemble, inspect and clean – particularly the “quick release” series with “CLAMP”
- Very light weight and compact
- Materials: stainless steel and silicon

- Manufactured according to GMP
- Allows continuous feeding of granules and powder without obstructing the product flow
- Can handle pressure and vacuum (in closed position)
- High temperature resistant
- Interchangeable with Sole Valve and Tablet Valve
- Each valve bears the CO.RA trademark and identification batch number.
Ex.: CO.RA I/00/298/AG
- Surface finish protocol, material certificates and valve test reports available on request

Advantages

- Very light weight and compact compared to traditional star valves
- Stops only in the closed position
- Little friction between the rotor and gasket thanks to reduced surface contact
- No need for lubricants
- Sterilizable in autoclave

Applications

- Valve for powder containers
- Anywhere a controlled flow of product is required, particularly the feeding of mills, tablet press machines, capsule filling machines, micro-dosing machines and sieving machines

Rotary Valve capacity calculation (Litres/Minute)

To calculate the capacity, multiply the hemisphere volume (see “Total per Cycle”) by the cycles per minute

$$\text{Capacity (P)} = \frac{2}{3} \pi r^3 \cdot n$$

(l/min.)

where:

$$\frac{2}{3} \pi r^3 = \text{Half-sphere volume}$$

$$r = \text{Rotor radius } \left(\frac{ND}{2}\right) \text{ on dm}$$

$$n = \text{Cycle in a minute}$$

ND	CAPACITY CYCLE (Litres/cycle)					SEALING			AVERAGE TORQUE (Nm)
	N° of Pockets	Pocket capacity	N° of Pockets	Pocket capacity	Half-sphere volume	Vacuum (MM Hg)	Pressure (bar)	(psi)	
100	6	0.09	8	0.07	0.26	735	1.5	22.5	23
150	6	0.29	8	0.22	0.88	735	1	15	30
200	6	0.7	8	0.52	2.09	700	0.5	7.5	35
250 P	6	1.36	8	1.02	4.09	650	0.3	4.5	60

Cycle = a 180° rotation

Assembly, types and weights

Model	Valve in section	Type
Wafer - Q. clean + welded spigot		WCWC +S
Wafer + welded spigot		WW +S
Wafer - Q. release + mounting flange + «CLAMP» band		WR + MF + B
Wafer - Q. clean - Q. release + mounting flange + «CLAMP» band		WCRC + MF + B
Wafer + two clamping flanges		WW + 2F
Wafer with clearance holes + two clamping flanges		WW + FP
Wafer with dead holes + support flange		WW + FVC
Wafer with clearance holes + support flange		WW + FVP

Rotary Valve: Applications Table

Model	Valve in section	Type
Wafer		W
Quick release		R
Wafer, Quick clean		WC
Quick clean, quick release		RC
Wafer		WW
Wafer - Q. release screws on W side		WR
Wafer - Q. release screws on R side		RW
Q. release - Q. release		RR
Wafer - Q. clean (without screws)		WCWC
Wafer - Q. clean - Q. release		WCRC
Q. release - Q. clean		RCRC
Hand lever with locking pin		L
Double acting pneumatic actuator		AD
«CLAMP» band		B
Mounting flange		MF *
Blanking plate		P
Spigot welded on the valve		S *
Hopper and spigot welded on the valve		TS

* Standard measurement: welded spigot S 3 mm thickness, Mounting flange MF spigot thickness 5 mm, both of height 30 mm

For the exploded view and the order example see SOLE VALVE catalogue

ND	ACTUATOR AD 180°	VALVE BODY-WEIGHT IN KG					
		WW	WR/RW	RR	WCWC	WCRC	RCRC
100	AD 63 - 180	4	4.2	4.4	4.8	5.1	5.5
150	AD 63 - 180	5.6	5.9	6.2	6.6	6.9	7.4
200	AD 63 - 180	7.6	7.9	8.1	8.8	9.2	9.7
250 P	AD 85 - 180	11.5	11.7	12	13	13.6	14.3

ACTUATOR WEIGHT: type AD 63-180: 1.7 kg
type AD 85-180: 3.4 kg



The MF mounting flange has a male end MF/M to be mated with valves, but can also be supplied with female end MF/F to meet other mating requirements. MF/M + OR are also available upon request. Sil caps can also be ordered as P/M, P/F, P/M + OR, P/F + OR. The O-R'S are in silicone, but other elastomers can be supplied upon request.



ATEX 94/09/CE