

DYNA-LOK rotary Control Valves

DYNA-LOK rotary control valves are provided with a double eccentric disc and a very easy-to-be changed TFE based or metal seat ring. Thanks to DYNA-LOK disc off-set design, the torque tending to close the valve and, more in general the torque needed to control the disc rotation is sensitively reduced. In addition, the **cam effect** performed by second shaft eccentricity guarantees a seal ring longer life. These valves can offer a great flow control with an excellent shut-off withstanding also very high pressure drops, independently of the flow direction.



Technical characteristics:

Body:

- **Sizes:** wafer and lug body design: from DN 150 up to DN 2000
flanged body: from DN 250 up to DN 2000
- **Ratings:** up to ANSI 300, PN 40 up to DN 600 included, ANSI 150, PN16 for greater sizes
For water mains DYNA-LOK control valves can be supplied in accordance with AWWA std ratings and connections
- **Cast or fabricated construction** depending on body style, size and material selection
- Face-to-face dimensions as per EN 558, IEC 60534-3-1, ISO 5752
- **Materials:** all carbon and stainless steel grades, duplex and copper alloys

Disc:

- **Double eccentric** design when tightness in closed position is requested
- Full-bore swing-through construction with single off-set disc when no tightness is requested in closed position
- **Solid or wrought cast** construction
- Bi-directional flow but inlet on flat disc side gives better performance
- **Flow characteristic:** increasing gain up to approx. 50° opening, linear from 45° to max travel
- **Materials:** same as the body

Shaft:

- **Constructions:** one or two pieces depending on sizes
- **Connection** to the disc: by pins protected by set screws
- **External sealing:** single stuffing box actuator side
- **Packing materials:** teflon or graphite seal rings
- **Materials:** stainless steels, 17-4-PH, XM19



High pressure DYNA-LOK control valve with PRA actuator

Bearings:

- **Radial bearings:** Teflon-based compounds embedded in SS bushing. Over-sized bearings (total length = 3,5 x Φ) allow a smooth rotation and a long maintenance-free valve life
- **Axial bearings:** axial thrusts are held by a couple of anti-friction washers

Seat Ring:

- Two designs are available to fulfil different temperature conditions:
 - **spring-energized Teflon ring** for temperatures up to 200°C
 - **SS ring** for higher temperatures
 Both seal rings are locked inside the body by means of an easily removable spacer.

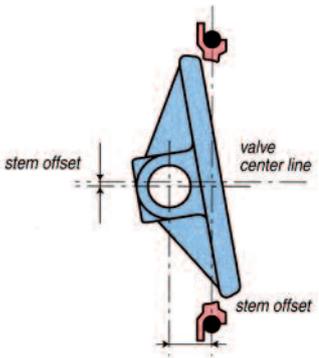
Leakage Class:

- **Teflon seal ring** assembly is consistent with class V (IEC 60534-4) for sizes up to 20". For higher dimensions IVS1 class or better depending on actuator
- For **metal SS** type IVS1 class is allowed for all sizes

Actuators:

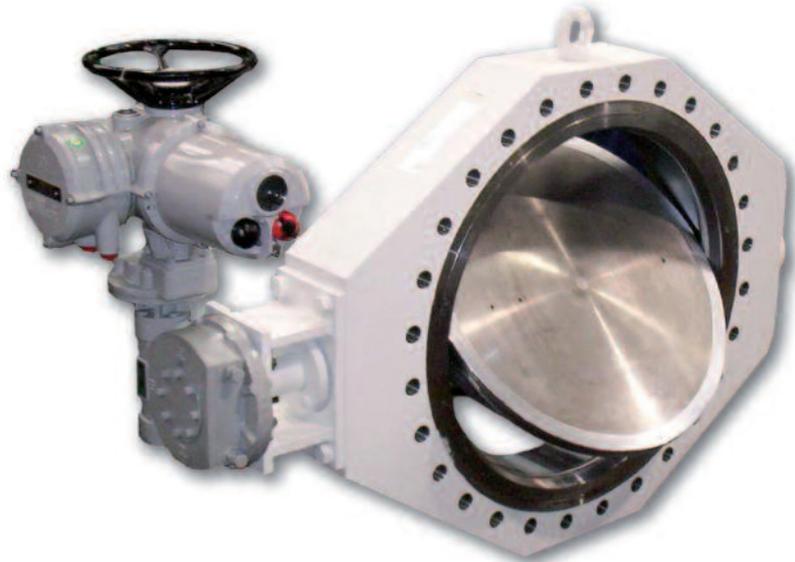
- **Valvitalia DRA pneumatic diaphragm** actuator for valve sizes up to 16"
- **Valvitalia PRA piston types** actuators with low friction scotch-yoke mechanism for larger valve sizes
- **Pneumatic rack and pinion** both single and double acting for sizes up 24" included
- **Electric, electro-hydraulic** and **hydraulic** actuators for heavy duties control purpose





The requested torque to move the disc of a DYNA-LOK valve is mainly depending on the differential pressure across the disc and on the values of pressures inside the body. The Δp increases friction of seal ring and shaft bearings in closed position, while, in opened position, it creates a dynamic force due to a not balanced distribution of pressures acting on the disc. DYNA-LOK disc design limits very much this second well-known effect especially in the usual working travel range from 40° to 90°.

Item	Part name
1	BODY
2	DISC
3	SHAFT
4	LOCKING RING
5	RADIAL BEARING
6	PACKING RING
7	PACKING WASHER
8	PACKING FOLLOWER
9	PACKING FLANGE </td
10	KEY
11	SEALING RING
12	THRUST BEARING
13	SPACER
14	GASKET
15	PIN
16	SET SCREW
17	SIDE COVER
18	WASHER
19	SCREW
20	NUT
21	STUD
25	SCREW
26	SCREW
27	WASHER
29	SCREW
30	ACTUATOR YOKE
40	SEAL RING (OPTIONAL)
41	SEAL RING (OPTIONAL)
42	SEAL RING (OPTIONAL)



32" DYNA-LOK control valve - lug body construction

