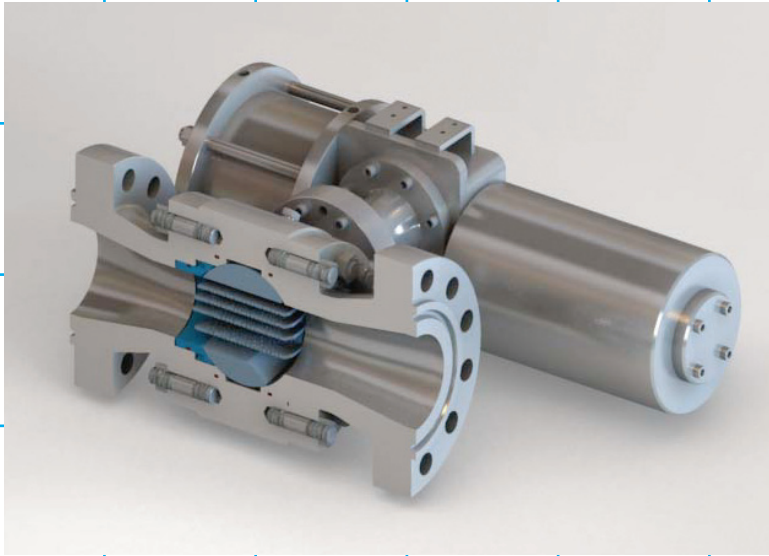


CONTROL BALL VALVES



**LOW NOISE HIGH CAPACITY
ROTARY CONTROL VALVE**

CBV-8600





CBV-8600 Rotary Control Valve

The CBV-8600 design is the solution to applications where increased capacity and large control range is needed, and where noise, cavitation or plugging fluid are a problem.

Range of Production

Size: from 8" to 48"

ANSI Rating class: 150 to 2,500

API Rating: 2,000 to 7,500 psi

Intermediate rating also available.

Valve body type: forged side entry three piece, trunnion mounted, cast or forged top entry

Design Features

Seat Design

Standard single upstream metal seat

Polymeric double seat as an option for Double Block & Bleed

Shut Off Class

Metal seated: IEC 60534-4 C Class V

Polymeric seated: in accordance with API 6D

Maximum Differential Pressure

Metal seated with tungsten carbide trim: pressure differential equal to body ratings.

Polymeric seat: up to 150 psi (10 barg), higher pressure differential may affect the isolation service capability.

Design Options

- Extended stem for buried service
- Low emission stem design according to latest ISO standards
- Special trim for low and high temperature service

Material Selection

The material selection for the valve components is based on the specified service condition. The sizing of the pressure envelope, as well as of the drive train, is based on the mechanical properties of the selected material.

Sealing areas and other critical parts of the valve can be clad in case of corrosive service. In case of metal seated design, the ball and the seat contact surfaces are hard faced with tungsten carbide or chromium carbide coating to improve resistance to wear and prevent scratching caused by solid particles contained in the process media.

For material selection contact the Engineering Department.

CBV-8600

Rotary Control Valve

Product Features

- ❑ Low noise rotary control valve for large mass flow
- ❑ Bi-directional
- ❑ Wide control range
- ❑ Self cleaning flow path
- ❑ Minimum pressure loss at fully open position
- ❑ Long life tightness

Applications

- Anti surge
- Partial throttling
- Large mass flow control
- By-pass to condensers
- Back pressure valve
- Tank loading/uploading
- Flaring/venting
- Choke service
- Depressurisation
- Throttling / By-pass

Principle

This very simple design provides a multistage, variable trim resistance combined with high capacity. The flow through parallel drilled plates achieves noise reduction and anticavitation benefit. This result is accomplished thanks to its high recovery factor available up to approx. 60° opening. Trim outlet is expanded to reduce the exit velocity and improve the noise reduction.

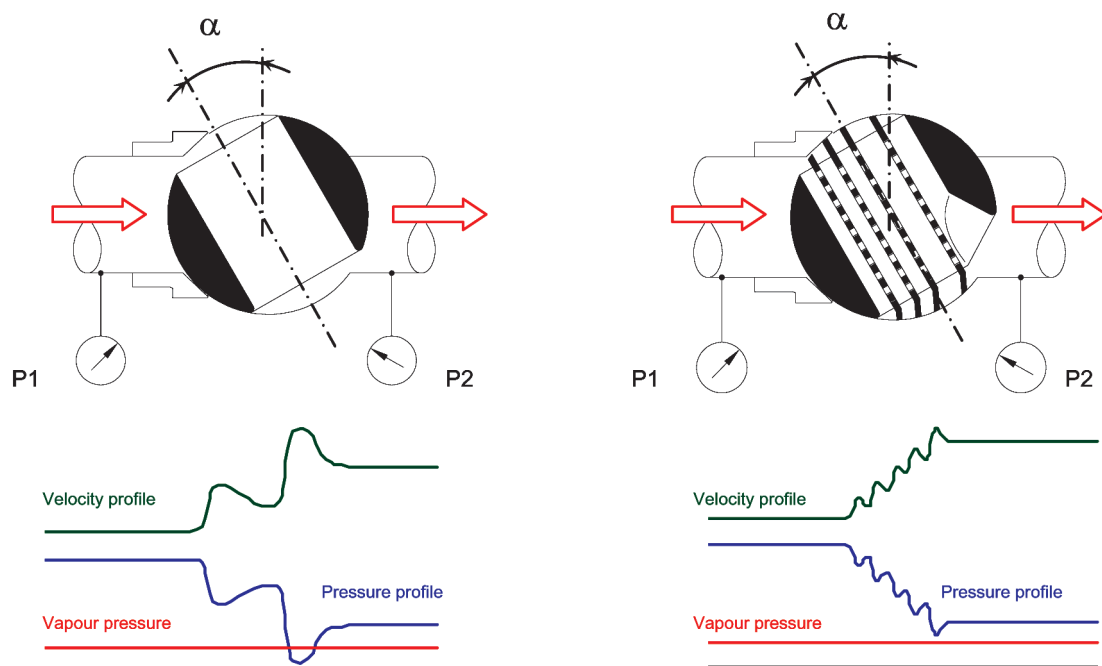
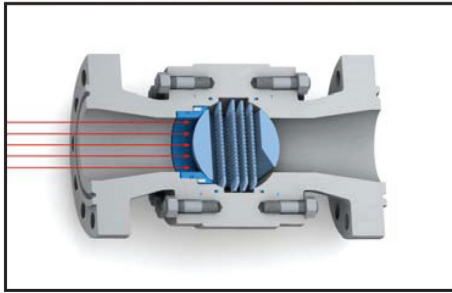
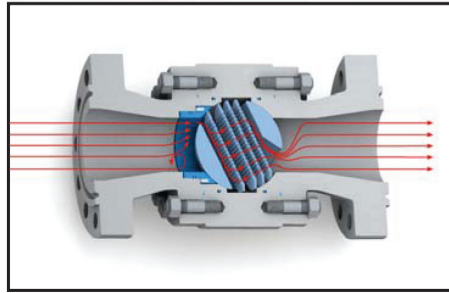


Fig. 1. Energy conversion compared to conventional ball valve at given opening angle α

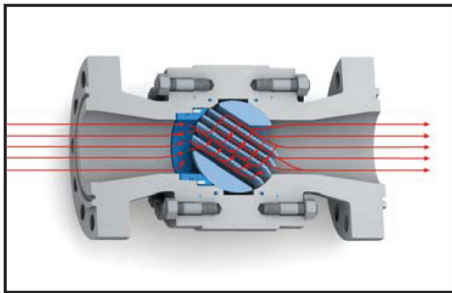
CBV-8600 Rotary Control Valve



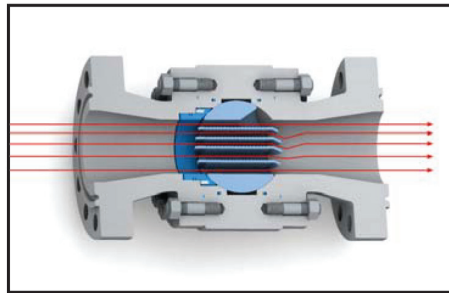
A. Valve closed, bi-directional tightness



B. Valve cracking open into serial resistance and ball expansion



C. Valve in throttling position, variable resistance and ball expansion



D. Valve in fully open position, minimum resistance and self flushing

Equal Percentage or Modified Linear Characteristic

Unlike most other low noise or anticavitation trims, the CBV-8600 provides inherent equal percentage characteristics. This means that the CBV-8600 will provide a quasi linear installed characteristic in most piping systems, which will allow better control. By adding a multiple orifice plate, or diffuser or low dB plate the inherent flow characteristics can become a modified linear characteristic.

Non Plugging Trim Design

CBV-8600 has a rotating trim which allows for a "self cleaning" of the attenuator plates. CBV-8600 can successfully be used in almost contaminated or gravity loaded fluids.

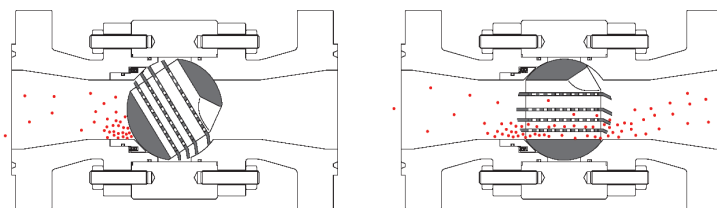


Fig. 2. Deplugging flow

CONTROL BALL VALVES

CBV-8600 Rotary Control Valve



Dynamic Torque Balancing

The profile of the tail end of the attenuator plates has been optimized to reduce the valve dynamic torque.

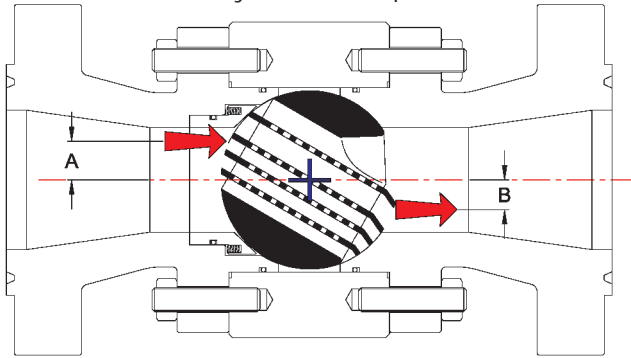


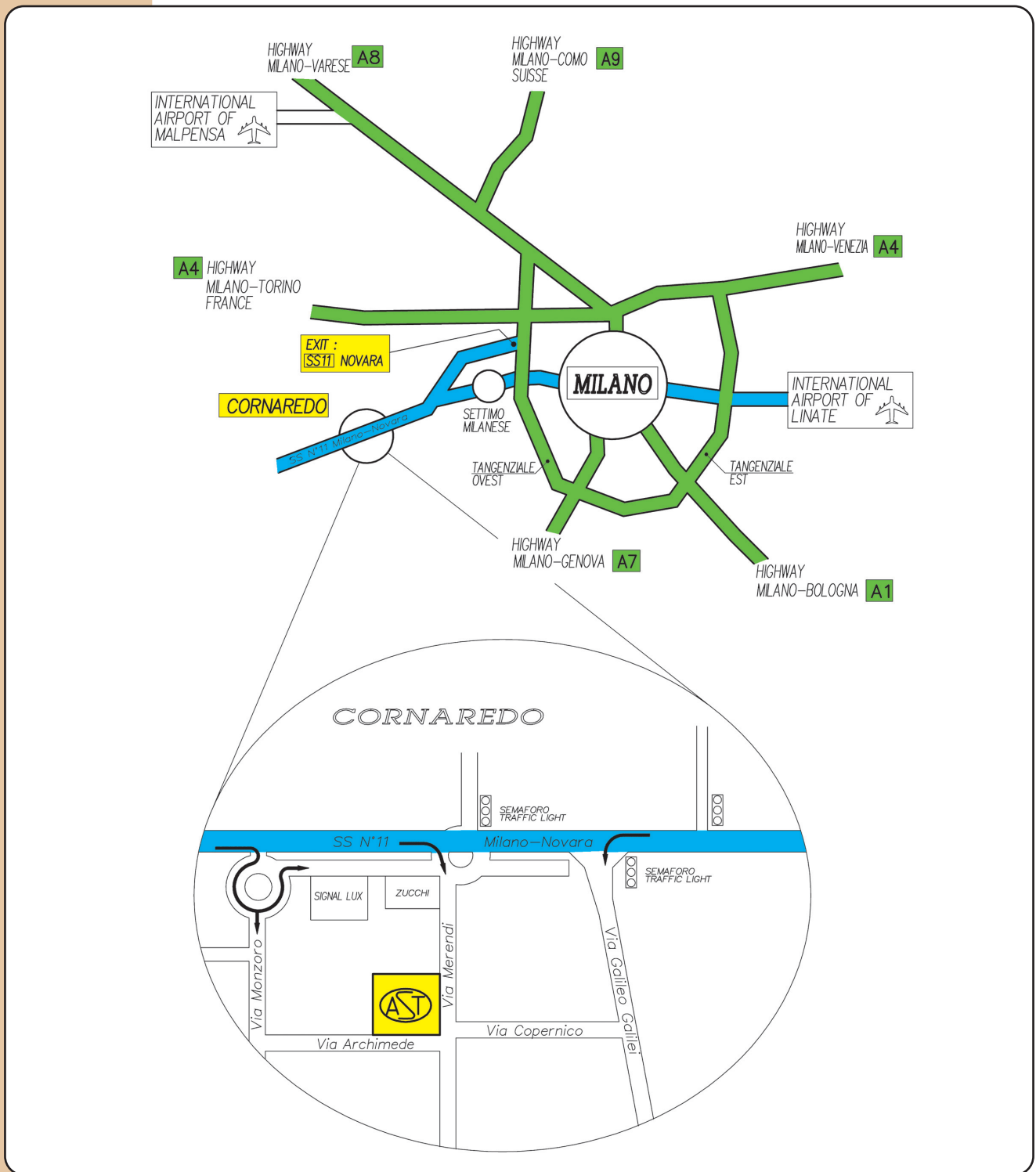
Fig. 3. Optimized plates profile

Flow Data

VALVE SIZE	FLOW COEFFICIENT			
	C_v min	Rating up to #600 C_v max	Rating #900 C_v max	Rating #1500 C_v max
8"	6	2 090	2 090	2 006
10"	11	3 528	3 528	3 387
12"	15	4 644	4 644	4 458
14"	24	6 175	6 175	5 805
16"	36	8 271	8 271	7 775
18"	49	11 520	11 520	10 829
20"	61	14 580	13 851	13 705
24"	84	22 500	21 375	21 150
28"	102	25 110	23 855	23 603
30"	124	32 580	30 951	30 625
32"	154	37 170	34 568	33 453
36"	184	47 910	44 556	43 119
40"	305	59 900	55 707	53 910
44"	410	75 600	70 308	68 040
48"	520	143 100	133 083	128 790

C_v values must be corrected with F_p (line swaging factor).
For all other sizing factor refer to sizing program.
For actuator sizing contact the Engineering Department.

CONTROL BALL VALVES



A.S.T. - APPARECCHI DI SICUREZZA E DI TENUTA S.p.A.

Via R. Merendi, 20
 20010 CORNAREDO (Milano) ITALY
 Tel.: ++ 39 02 93 48 48 1
 Fax: ++ 39 02 93 62 248
 www.astspa.it
 info@astspa.it