

TOMOE[®]
Technology diversification by hydrodynamics

ULTIMATE ROTARY PROCESS CONTROL VALVE

ANSI 125 TO 2500 lb



TOMOE VALVE CO., LTD.

Tomoe, at the forefront of technology in the design and manufacture of Rotary Process Control Valves.

With over fifty years experience in the manufacture of Rotary valves, Tomoe can offer one of the most diversified ranges of Rotary control valves in the market today. The range extends from high performance triple offset design double offset design, low noise trim to the low leakage seatless style control valves used for pure control applications.

This large design range allows Tomoe to offer the correct Rotary control valve to suit the customers requirements with no concession to using a "standard suit all" mentality which invariably leads to the wrong type of design being used in a specific application.

Through the use of the Tomoe flow test facility, Accurate CV tables and various flow characteristics for all of our trim designs can be provided.

The Tomoe valve sizing & noise prediction formulas are used for accurate prediction of valve size and generated noise levels for all flowing conditions.

Below is a brief list of the options that can be offered from the Tomoe range of Rotary control valves. This should be used as a guide only as custom made designs can be supplied on special request.

Body Styles

- Wafer
- Tapped lug
- Through drilled lug
- Double flanged
- Butt weld
- But weld top entry
- Clamp hub

Seat Designs

- Triple offset-zero leakage
- Triple offset-low leakage
- Double offset-zero and low leakage
- Concentric -0.5% to 5% leakage
- Concentric-rubber seated designs

Flang Face Finishes

- Raised face
- RTJ
- Large & small groove
- Lens ring
- Other special designs

Trim Design

- Triple offset
- Double offset
- Concentric design
- Anti cavitation / low noise designs
- Resistance plates & diffusers
- Vent silencers

Bonnet Designs

- Standard -50 to 200°C
- Medium Temperature open design 201 to 650°C
- High Temperature design 651 to 1000°C
- Cryogenic -190 to -200°C

Pressure Ratings

- ANSI class 125 to 2500 lb
- DIN/BS PIN2.5 to 400
- JIS 5K to 63K
- BS10 -all ratings

Size Range

40 to 2000mm

Materials

All commercially available materials in either cast, forged or plate forms.

Actuation

- Manual
- Pneumatic, spring return & double acting
- Electric
- Hydraulic
- Electro hydraulic
- Hydraulic + fail safe+ counter weight for turbine isolation applications

Face to Face Dimensions

- API 609 table 1 and 2
- BS 5155
- ISO 5752
- ANSI B16.10 -butterfly, gate globe & ball
- DIN
- Special designs

General Options

- Low emission gland packings
- Live loaded gland packings
- Lubricated gland & isolator
- Hard faced trims-titanium nitride, stellite, tungsten carbide etc...
- Stem jacketed, full & partial
- Sub sea design
- Three way diverting & converging arrangements
- Firesafe, BS 6755 part 2, API 6FA & API 607 4TH edition
- Characterised discs
- Complete actuated control packages

Triple offset valve

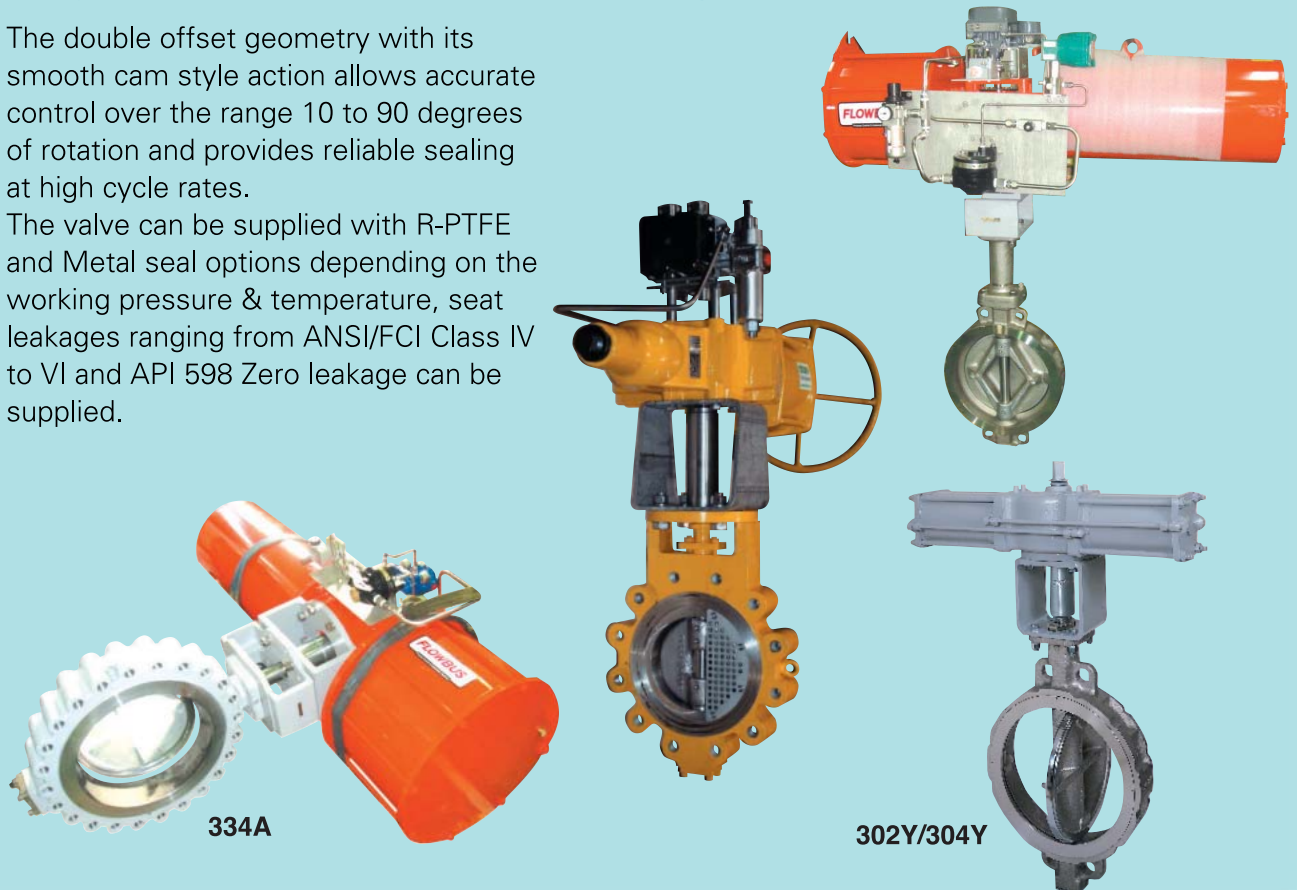
The Triple off set metal seated valves with friction-free operation of rotation provides widest range ability and zero-leakage with metal seal under critical applications. Triple off set geometry can be used up to 2500Lb rating



High performance butterfly valve

The double offset geometry with its smooth cam style action allows accurate control over the range 10 to 90 degrees of rotation and provides reliable sealing at high cycle rates.

The valve can be supplied with R-PTFE and Metal seal options depending on the working pressure & temperature, seat leakages ranging from ANSI/FCI Class IV to VI and API 598 Zero leakage can be supplied.



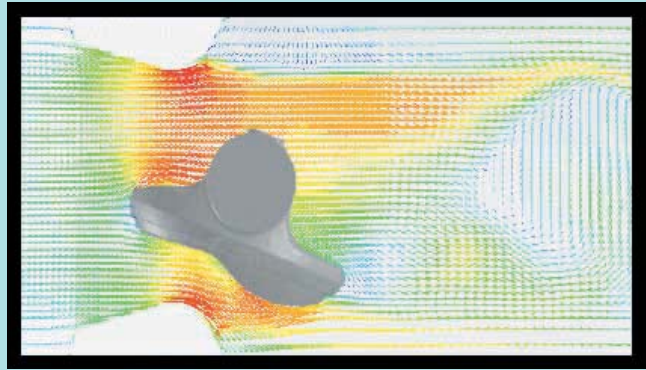
334A

302Y/304Y

Rotary control valve

As an optional solution, Tomoe can offer a range of anti-cavitation / low noise trims baffle plates which allows us offer Rotary control valves more demanding pressure drop applications. The Tomoe Anti-cavitation cow noise disc offers exceptional resistance to cavitation and can, in many cases, replace a standard globe valve in control applications.

TOMOE 3D Fluid analysis of control valve



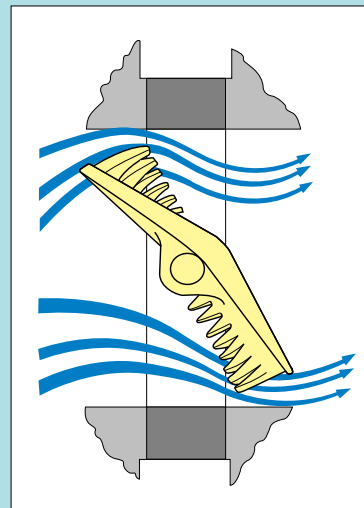
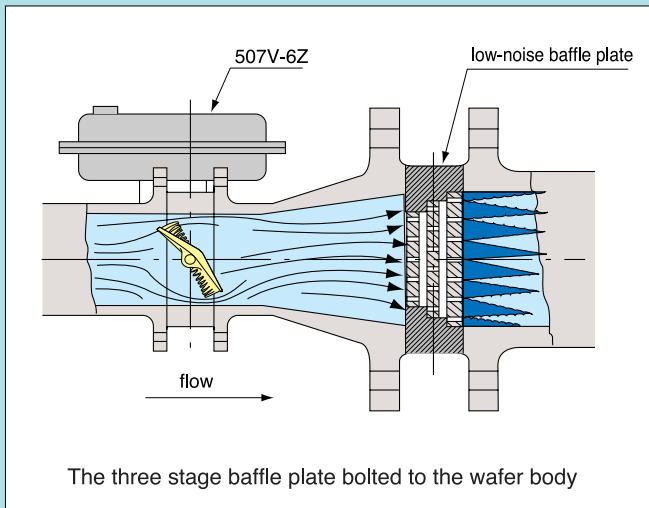
TOMOE'S unique 3D flow dynamic analysis allows ideal design of rotary control valve to provide solutions for noise reduction, cavitation prevention and better flow characteristic.



507V



508V



Baffle plate



Half baffle plate



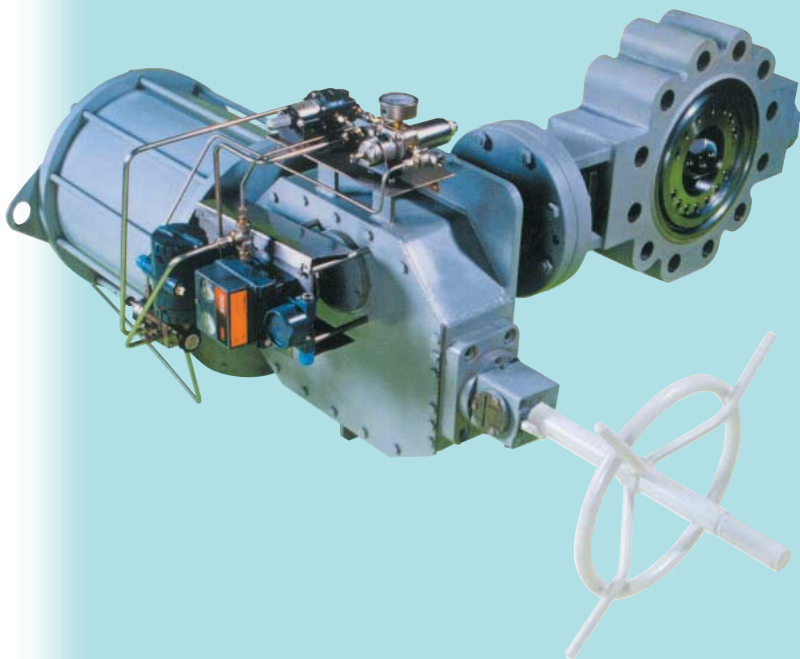
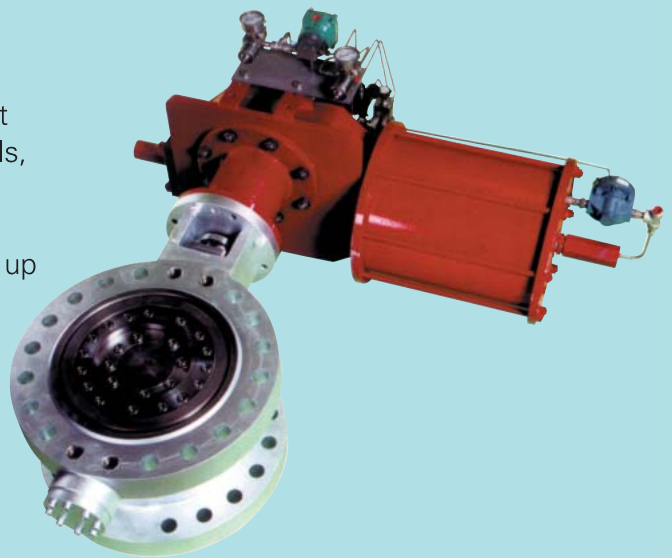
Single stage baffle plate



Three stage baffle plate

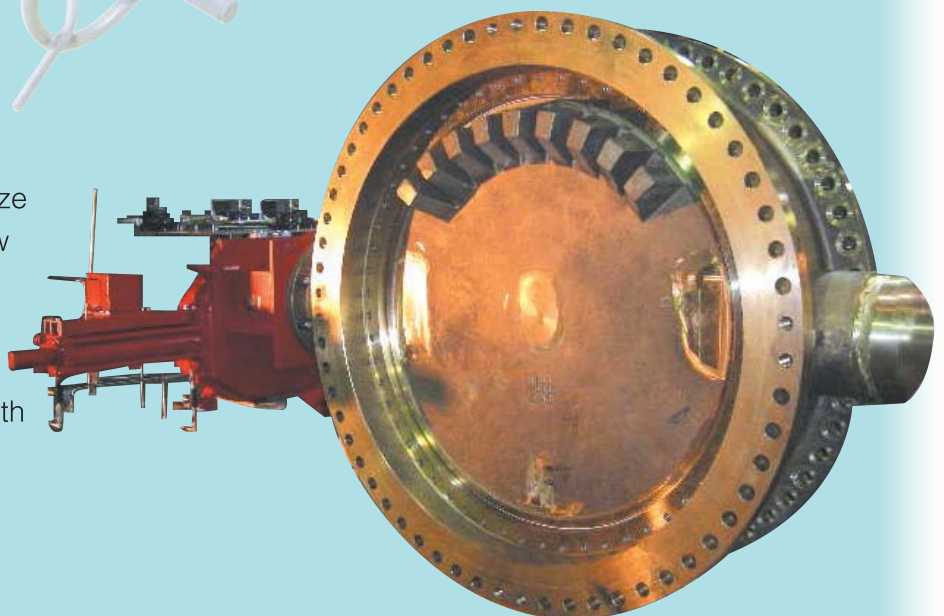
Typical applications for Tomoe control valves

8" Double Flanged 2500 lb RTJ Tritec Triple Offset control valve with pneumatic actuator and controls, part of batch of high pressure control valves for a Chinese fertilizer plant. The valves are on Synthesis gas at temperatures up to 450°C

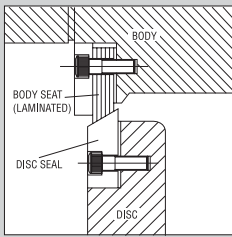


10" Lugged 1500 lb RTJ Tritec Triple Offset control valve actuator and controls, part of a batch of valves supplied for an FPSO for use in the Norwegian sector of the North sea. The valves are on Hydrocarbon service providing full control and zero leakage.

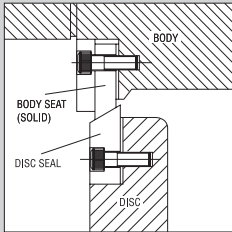
72" double flanged 300lb Al.bronze made rotary control valve with low noise type disc, supplied for use on a desalination plant in Saudi Arabia. Noise level has been reduced by 15 dBA compared with standard disc under very high pressure drop sea water application.



**TRIPLE OFFSET –
ZERO LEAKAGE / CLASS 6**

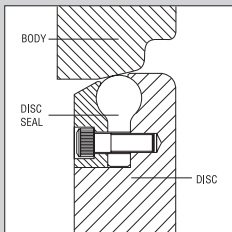


Laminated Seat
Max P = 225 bar
Max T = -200 to + 600°C

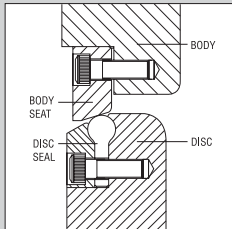


Solid Seat CLASS IV
Max P = 225 bar
Max T = -200 to + 250°C

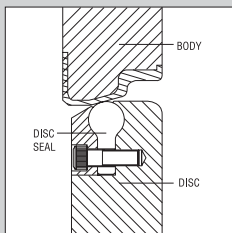
**DOUBLE OFFSET –
ZERO LEAKAGE / CLASS 6**



Rubber seal (Integral Body Seat)
Max P = 51 bar g
Max T = -10 to + 200°C



Rubber seal (Replacement Seat)
Max P = 51 bar g
Max T = -10 to + 200°C



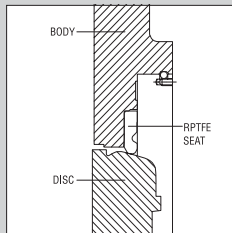
Rubber seal + Rubber lined Body
Max P = 51 bar g
Max T = -10 to + 120°C

Seat designs

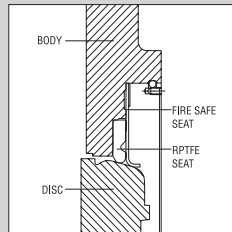
Tomoe can offer one of the most comprehensive ranges of seat designs to suit all process control conditions.

The main range is shown below with outline design parameters. Special designs can be supplied to suit specific customer requirements.

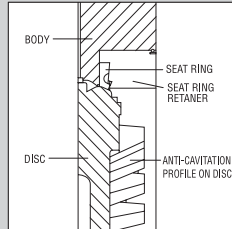
**DOUBLE OFFSET –
METAL SEATED & PTFE SEATED**



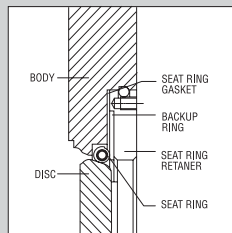
RPTFE Seat
Max P = 51 bar g
Max T = -50 to + 232°C



Metal & RPTFE Seat
Max P = 51 bar g
Max T = -50 to + 232°C

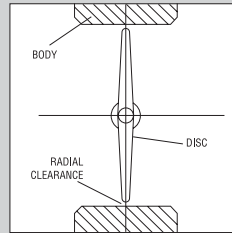


RPTFE Seat
Max P = 51 bar g
Max T = -50 to + 232°C

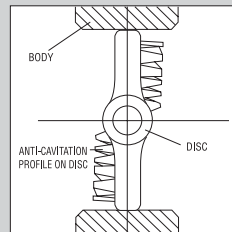


Metal Seat
Max P = 20 bar g
Max T = -50 to + 600°C

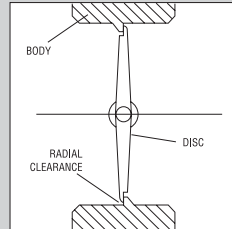
**CONCENTRIC/DOUBLE OFFSET –
METAL SEATED**



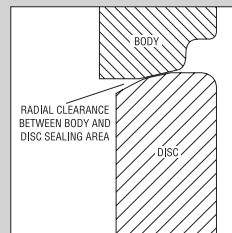
Concentric CLASS II LEAKAGE
Max P = 225 bar
Max T = -200 to + 200°C



Concentric CLASS II LEAKAGE
Max P = 51 bar g
Max T = -50 to + 232°C

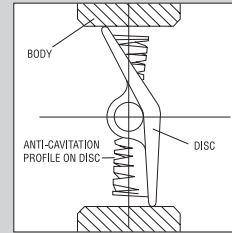


Concentric + Metal Ledge CLASS II / III LEAKAGE
Max P = 225 bar (Limited DP)
Max T = -200 to + 800°C

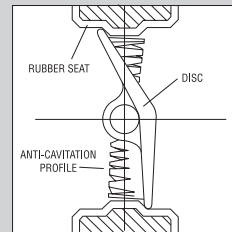


Double Offset CLASS II / III
Max P = 225 bar g
Max T = -200 to + 200°C

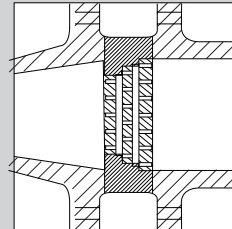
**ANTI CAVITATION &
BAFFLE PLATE**



Metal seat + Anti Cav Disc CLASS II LEAKAGE
Max P = 225 bar
Max T = -200 to + 200°C



Rubber Seated + Anti Cav Disc CLASS VI / ZERO LEAKAGE
Max P = 16 bar



BAFFLE PLATE

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