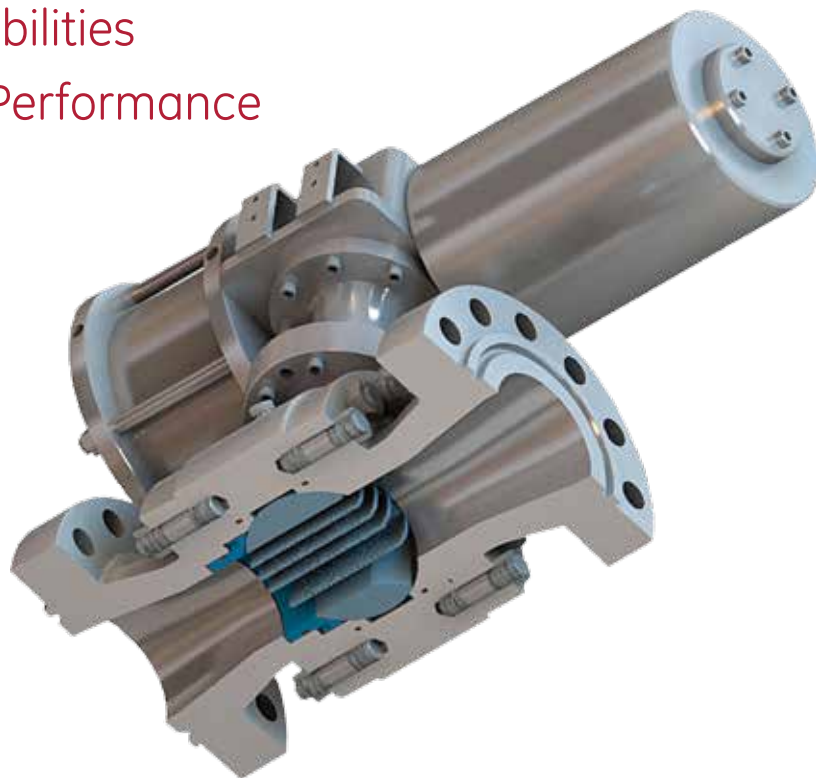


Masoneilan* Products

34003 Series Ultra-Max*

Low-Noise Control Ball Valves

- Multi-Stage Pressure Reduction
- Large Mass Flow Capabilities
- Optimum Application Performance



34003 Series Ultra-Max* Low-Noise Control Ball Valve

Industries:

Oil and Gas Processing
Exploration
LNG
FPSO
Petrochemical
Power Plants

Applications:

Two-Phase Particulates
Rich/Lean Amine Service
Turret Protection
Ethane Separation
High-Volume Liquid Flow
Erosive Service
Corrosive Service
High-Velocity Noise
Abatement
Condensate Control

Customer Benefits

Cost Savings
Increased Flow Rate
Reduced Envelope
Dimensions
High Rangeability
Valve Performance
Design Flexibility for
Special Applications
Increased Cycle Life and
Reliability

Noise Reduction and Cavitation Control in a Field Proven Ball-Valve Platform

Combining leading product technology with application expertise, GE's Masoneilan Best Fit approach delivers the right valve for a wide range of industries, including applications requiring low noise, precise control, and large mass flow capabilities while suppressing cavitation and erosion. GE's Masoneilan 34003 Series Ultra-Max* control ball valve is designed to address these requirements with exceptional noise reduction (up to 23 dBA), controllability, and flow paths. The large flow areas also allow the Ultra-Max valve to effectively handle fluids with entrained particles. Its flexible customization means valves can be engineered to meet customers' exact specifications, while its compact size helps simplify maintenance and reduce support costs. The Ultra-Max valve addresses critical needs from high process yield and field-proven reliability to life cycle cost effectiveness.

Better Control Through Modified Equal Percentage Characteristic
Unlike most other low-noise control valve designs, the Ultra-Max* valve provides an inherent modified equal percentage characteristic resulting in better control.

Customized Solutions Provide Optimum Application Performance

Exceptional Noise Reduction by Design

GE's Ultra-Max valve design reduces noise through a multi-stage, variable-resistance trim. As fluids and particles flow through the valve, parallel plates gradually reduce pressure and the amount of dissipated energy. The expanded trim outlet reduces fluid-exit velocity for further noise attenuation. The custom-trim stage trim within the Ultra-Max valve allows for moderate-to-severe noise attenuation with reduction levels up to 23 dBA. Noise reduction not only improves worker safety and helps meet environmental regulations, it also reduces the cost of equipment and piping damage caused by high noise vibration.

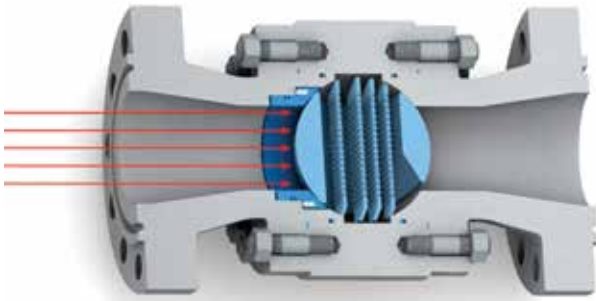
Industry Leading Cavitation Control

Unlike most other low-noise control valve designs, the Ultra-Max valve provides an inherent modified equal percentage characteristic. As a result, the Ultra-Max valve offers an approximately linear installed characteristic in most piping systems for better control. The addition of a Lo-dB*, or multiple-orifice diffuser plate, results in an inherent modified linear flow characteristic.

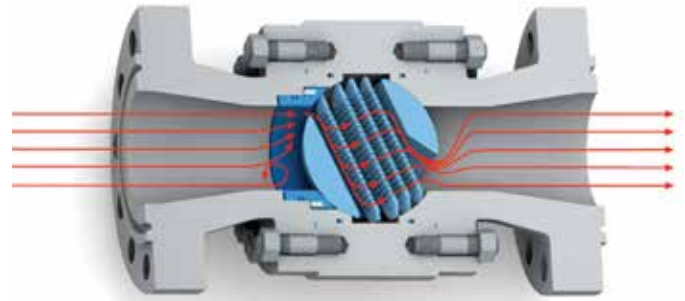
For exceptional control, the valve's design provides a low-pressure recovery factor to 60 degrees. Torque balancing provides a simple yet effective way to increase valve and actuator stability under harsh conditions. Through this approach, the attenuation plate edges are contoured to balance the dynamic flow-induced torque.

Exceptional Noise Reduction by Design

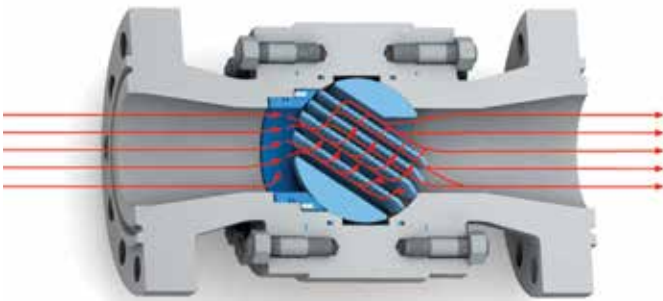
GE's Masoneilan Ultra-Max control ball valve features a multi-stage, variable-resistance trim design combined with high-capacity capabilities for noise reduction, exceptional control, and dirty fluid applications.



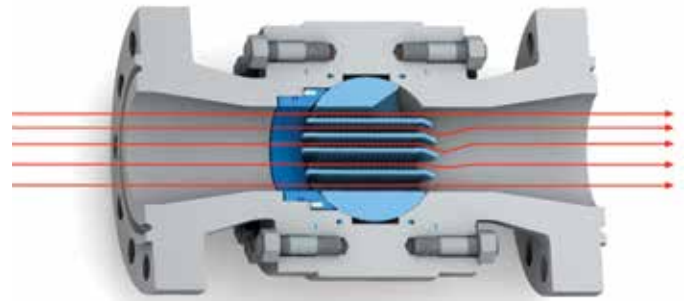
A. Valve closed, bi-directional tightness



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

Ultra-Max* Valve Handles Large Mass Flow

The Ultra-Max control ball valve handles fluids and slurries with solid particles. In addition to its rugged construction, the valve features a non-plugging trim design. Its rotating trim element is designed to "self-clean" as the process fluid flows through the valve. Entrained particles are effectively flushed through the valve.

Compact Size Increases Simplicity and Reduces Cost

The compact, rotary construction provides a significant reduction in size and weight compared to traditional globe valve designs. A more compact, lighter design reduces the need for expensive piping support and makes handling during installation and maintenance easier. The Ultra-Max valve also features reduced component weight for simplified in-line servicing.

Expertly Customized for Optimum Application Performance

The Ultra-Max valve can be easily customized by our experienced engineers to suit specific application requirements. Custom trim designs are available to provide precise flow characterization. In addition, special construction materials provide maximum service life and performance in rugged applications. GE offers a wide range of material options including exotic alloys and hardened overlays.

For applications that require high mass-flow rates without the need for noise attenuation, the Ultra-Max valve is also available in a conventional ball trim design without the multi-stage plate element.

High Capacity and Low Noise Trim

Ultra-Max* Valve Capacity (C_v ratings)*

TRIM NOMINAL SIZE		UP TO CLASS 600	CLASS 900	CLASS 1500
NPS	DN	C _v MAX	C _v MAX	C _v MAX
4	100	510	510	489
6	150	1330	1360	1276
8	200	2090	2090	2006
10	250	3528	3528	3386
12	300	4644	4644	4458
14	350	6175	6175	5804
16	400	8271	8271	7774
18	450	11520	11520	-
20	500	14580	13851	-
24	600	22500	21375	-
28	700	25110	23854	-
30	750	32580	30951	-
32	800	37170	34568	-
36	900	47910	44556	-
40	1000	59900	-	-
44	1100	75600	-	-
48	1200	143100	-	-

* These ratings represent the maximum C_v rating available within that valve size and pressure class. Reduced capacity and custom flow characterization are available to suit application requirements.

Conventional Ball Trim Design

Ultra-Max* Valve Capacity (C_v ratings)**

TRIM NOMINAL SIZE		UP TO CLASS 600	CLASS 900	CLASS 1500
NPS	DN	C _v MAX	C _v MAX	C _v MAX
4	100	2160	2160	2160
6	150	5150	5150	4746
8	200	9420	9420	8595
10	250	15500	15500	13942
12	300	22700	22700	20365
14	350	28500	26488	25349
16	400	38200	35855	33400
18	450	48520	45669	-
20	500	60540	56627	-
24	600	87400	81664	-
28	700	120040	113463	-
30	750	138500	129967	-
32	800	151250	143961	-
36	900	195300	185083	-
40	1000	235760	-	-
44	1100	285300	-	-
48	1200	345000	-	-

** Custom characterization and reduced-capacity trim designs are available to suit application requirements.

Industry-Leading Knowledge and Technology

Integrated, Smart-Engineered, Best-Fit Technology

Make the most of the Ultra-Max control ball valve's operational benefits with our leading micro-processor-based Masoneilan field instrumentation technology. Award-winning HART* communicating GE's Masoneilan* SVI* II AP digital valve positioner and GE's Masoneilan* Fieldbus Valve Positioner (FVP*) help improve asset effectiveness, resulting in higher returns on investment. These digital positioners deliver improved process yields through patented tuning algorithms that optimize valve control performance.

Flexibility is built into GE's Masoneilan digital instrumentation offering. FVP* positioners and SVI* II AP positioners mount on any control valve actuator and interface effectively with HART or Foundation Fieldbus® distributed-control schemes. Increase flexibility and functionality with our smart-instrument companion software such as GE's Masoneilan ValVue* software, a tool that monitors real-time device status. In addition, GE's Masoneilan ValvKeep* valve database management and AMS Snap-on* asset management software provide a comprehensive view into valve asset maintenance history and performance trends. These software support tools, in conjunction with the advanced diagnostic capabilities of smart devices, help save significant operations and maintenance costs.

Putting You In Control

With manufacturing units worldwide supported by an integrated network of sales and service offices, we provide a wide range of GE's Masoneilan control valves and services to customers around the globe. Our broad portfolio of GE's Masoneilan products consists of general service and severe service control valves, actuators, pressure regulators, and valve-mounted smart instrumentation and accessories. We have the expertise, experience and technology to deliver the Best Fit solution for virtually every process control application. GE's Masoneilan designs include industry-leading products such as GE's Masoneilan LincolnLog* liquid letdown control valve, butterfly valves and customized solutions such as Ultra-Max parallel plate technology and patented V-LOG* labyrinth-trim technology.

Customer For Life

To fully leverage our product excellence and operating-margin-improvement tools and technologies, we offer comprehensive local support through Masoneilan Authorized Repair Centers (MARC) and direct service centers. These global service organizations are driven by a "Customer for Life" philosophy executed through a comprehensive suite of aftermarket services including OEM Rapid Parts, ValvFAST 24-48 hour part replacement, ValvKeep valve management, ValvScope-Pro valve monitoring, and onsite diagnostics, service and repair.



Product Range

Size: NPS 4 to NPS 48
Rating: ANSI class 150 to 2500
API Rating: 2000 to 7500 psi
Intermediate ratings also available

Body Type

Side Entry: Forged three piece, trunnion-mounted
Top Entry: Cast or forged, trunnion-mounted

Materials of Construction

Per Customer Requirements

Carbon Steel, Stainless Steel, Monel,
Inconel, Hastelloy

Features

Seat Design

Standard:
Single upstream metal seat

Optional:
Polymeric double seat for Double Block and Bleed

Temperature

-29° C to 250° C
(-20° F to 482° F)

Noise Attenuation Trim

-5 dBa (3-stage) to -23 dBa (7-stage)

Shut Off Class

Metal Seated:
IEC 60534-4 Class V ANSI/PCI 70.2
Polymeric Seated:
IEC 60534-4 Class VI ANSI/PCI 70.2

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

Highlighted Features

- Rigid body and ball including oversized stem
- Stem and ball connected by four pins to prevent backlash
- Case constructed of thick plates with additional stiffening
- Compact assembly
- Bi-directional operation
- Wide control range
- Self-cleaning flow path
- Minimum pressure loss at fully open position
- Long, reliable seat tightness
- Fire safe approved

Options

- Ball expansion for multi-phase service
- Bi-directional flow
- Extended stem for buried service
- Low-emission stem seal design according to ISO test standards
- Special trim for low and high temperature service
- Expanded end connections to match piping size
- Fire safe approved

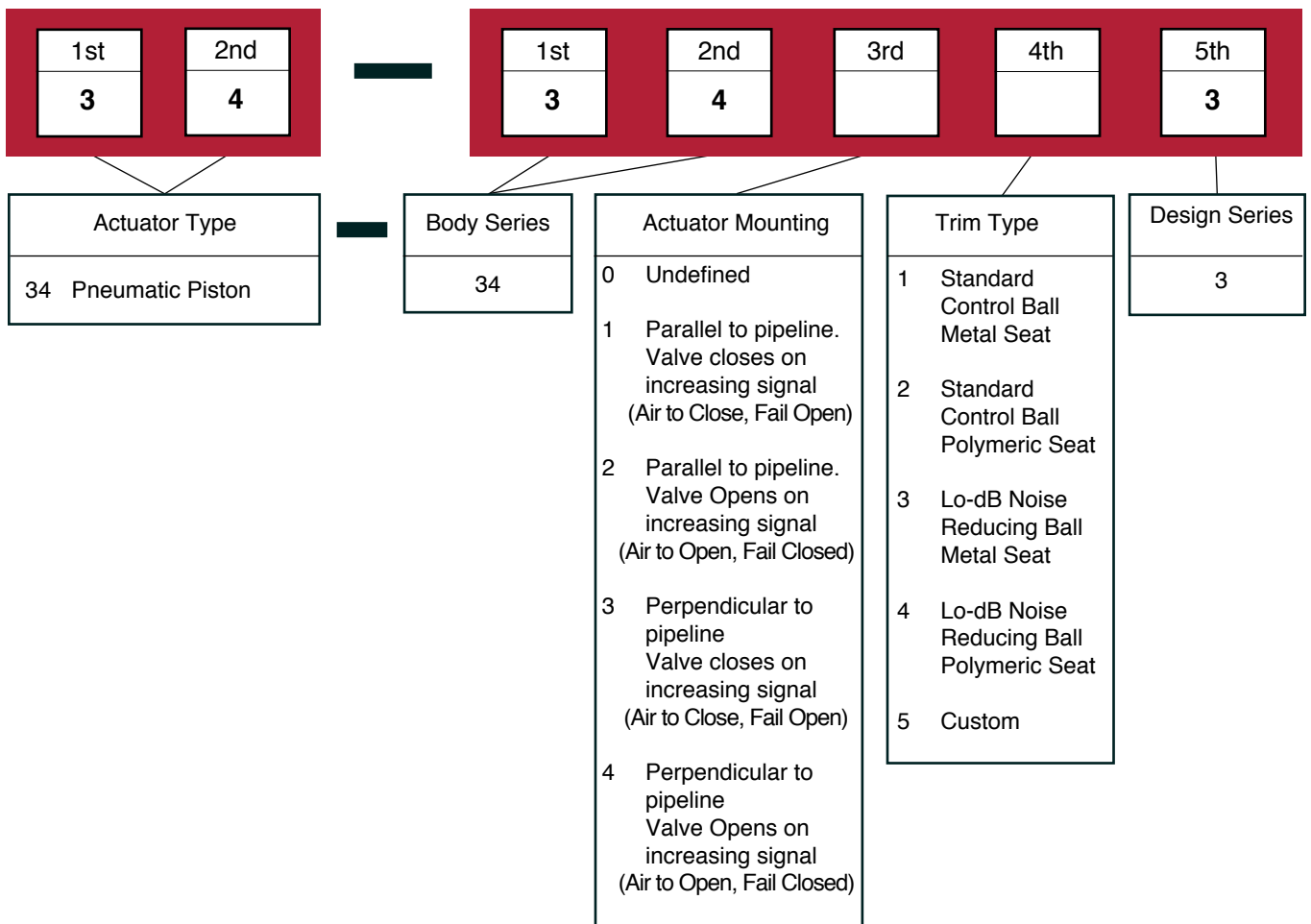
Material Selection

Material selection for the valve components is based on the specific 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.

In highly corrosive service, sealing areas and other critical parts of the valve can be cladded. For metal-seated valves, the ball and 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.

Consult your local sales office and/or factory for any questions on valve sizing and material selection.

Numbering System



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