



# Masoneilan

Putting You In Control

**41005 Series**  
**Heavy Duty - Severe Service**



## 41005 Series

Maximum Performance  
Globe Style Control Valves



# EXCELLENT PERFORMANCE IN SEVERE SERVICE CONDITIONS



EXPERIENCE,  
KNOWLEDGE,  
TECHNOLOGY.



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# Heavy Duty Dependable Solutions





# 41005 Series Cage-Guided Globe Valves

## Heavy Duty

Masoneilan's 41005 Series cage-guided control valves are designed to meet a variety of industrial process control applications. Product features and materials of construction provide excellent performance in general purpose and severe service conditions.

## Dependable Solutions

The 41005 Series provides highly dependable, field-proven performance for critical process control applications within various industries including: Power, Onshore and Offshore Oil & Gas, Petrochemical, and Refining. The rugged design and breadth of material options provides customers with a standardized product offering covering an extensive application range.





# Design Flexibility

Some of the standard options provided in the 41005 Series product line includes:

- High Capacity Globe or Angle Bodies
- Lo-dB® Noise Attenuation Trim
- Anti-Cavitation Trim
- Single & Multi-Stage Trim Options
- Pilot Balanced Tight Shutoff Trim
- Reduced Capacity Trim
- Soft Seat Trim
- Tungsten Carbide Trim
- Low Emissions Packing
- Extension Bonnets
- Cryogenic Design
- NACE Compliant Configuration
- Spring-Diaphragm or Piston Actuation
- Advanced Digital Positioning & Control





# Key Features

## Pressure Balanced Trim

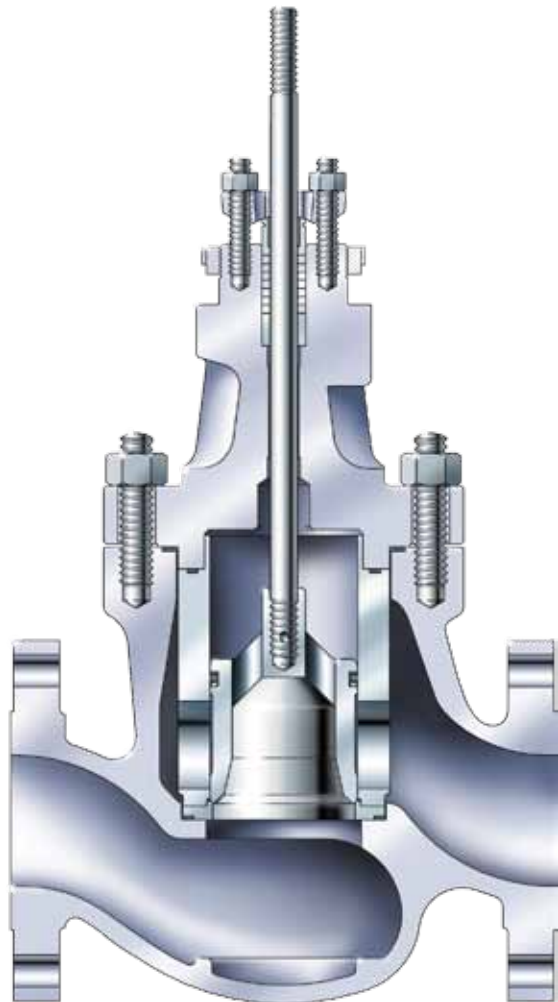
- Reduced Actuator Size & Thrust Requirements
- High Pressure Drop Capability
- Smooth & Efficient Throttling Process Control

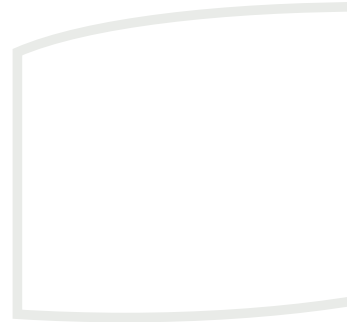
## High Capacity Design

- Large Streamlined Body Bowl Design
- Maximum Single Port Orifice Sizes
- Flexible Flow Characterization
- Optional High Capacity Version

## Heavy Cage Guiding

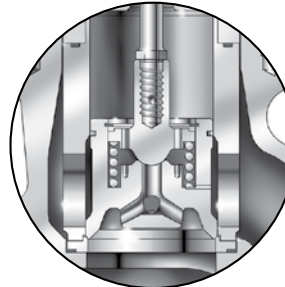
- Valve Plug Guiding Over Full Stroke Range
- Excellent Trim Alignment & Dynamic Stability
- Maximum Guiding Minimizes Mechanical & Flow Induced Vibration Effects



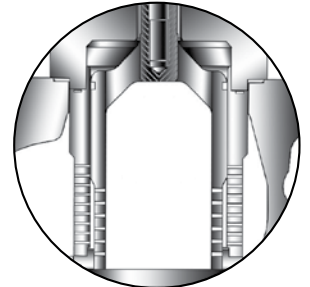


## Wide Operating Range

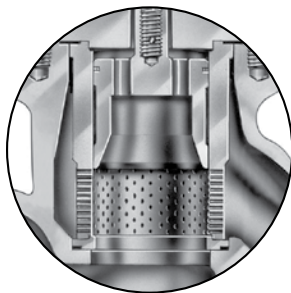
- Various Noise Attenuation & Anti-Cavitation Trims
- Optimized Price-to-Performance Balance Seal Options
- Wide Range of Standard Sizes & Pressure Ratings
- High and Low Temperature Configurations



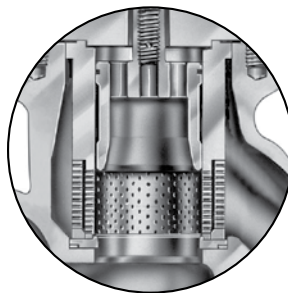
Pilot Balanced Construction



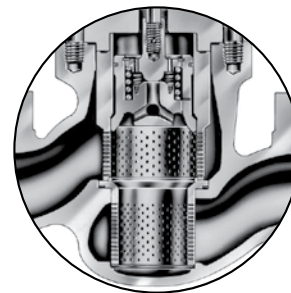
Multi-Stage Anti-Cavitation



Single Stage Lo-dB<sup>®</sup>  
or Anti-Cavitation



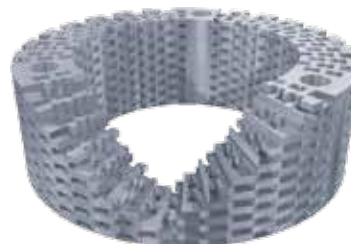
Multi-Stage Lo-dB<sup>®</sup>



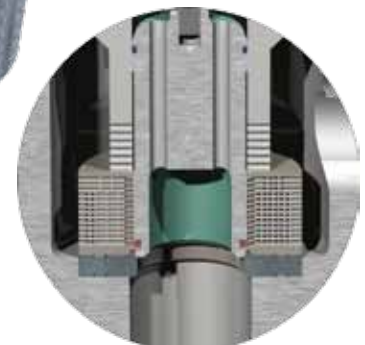
Single Stage Lo-dB<sup>®</sup>  
with Diffuser

## Severe Service Options

- Multi-Stage Anti-Cavitation Trim
- V-LOG<sup>®</sup> Tortuous Path Energy Management Trim
- High Pressure Anti-Cavitation Variable Resistance Trim (VRT<sup>®</sup>)
- Custom Characterized Cages



V-Log Trim



VRT Trim





# Customer Benefits

## High Process Yields

Excellent throttling control performance provided by the 41005 Series results in efficient process output and high process yields. The balanced trim construction reduces the resultant forces acting on the valve plug, which decreases the actuator thrusts required to move and position the plug. Throttling performance is further enhanced by the use of low friction Teflon® packing even at higher temperatures. This is made possible due to the extended packing box design in the standard 41005 Series bonnet.

## Lower Operating Costs

Dependable control valve tight shutoff helps to minimize the loss of valuable process fluids and can potentially eliminate the need for separate isolation valves. Excessive valve seat leakage could also lead to premature trim wear and reduced performance.

The 41005 Series is available with a Pilot Balanced trim option for tight shutoff (Class V) at high temperature, and a soft seat design for bubble tight (Class VI) shutoff in accordance with ANSI/FCI and IEC specifications.





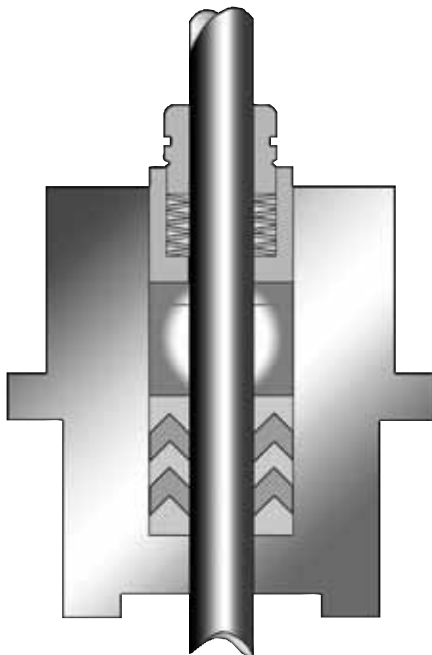


## High Reliability

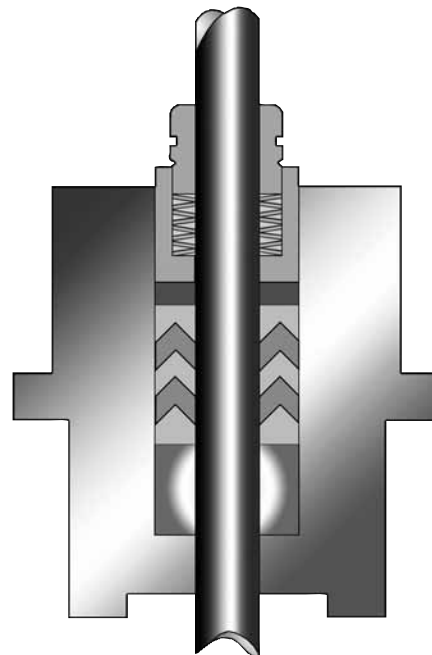
Standard hardened trim materials in the 41005 Series provides excellent wear resistance and long life even under high pressure and high temperature conditions. Various trim options are available to control and eliminate the potential damaging effects of noise and cavitation. Overall valve reliability is also enhanced with minimized application of soft goods such as gaskets and seals.

## Low Emissions Compliance

Masoneilan offers low emissions packing options for all globe valve designs meeting various global and regional requirements, in order to address growing environmental concerns relative to industrial plant fugitive emissions. Masoneilan's EPA compliant LE<sup>®</sup> Packing design is also available in a fire safe version.



Standard LE Packing



Fire Safe LE Packing



# Customer Benefits

## Design Simplicity

Sizing and selection is simplified with the versatile 41005 Series valve design, which provides various trim options in a common platform to handle a wide range of applications. This also allows users to easily modify, upgrade or change trim style in the field by simply replacing trim components to accommodate changes in process conditions.

## Compact Design

Compared to equivalent valve designs, the 41005 Series offers ease of handling and installation with a compact, low weight, and low profile assembly. Valve orifice sizes are optimized for capacity and noise performance, while body bowl dimensions are minimized resulting in a highly efficient valve package.





## Ease of Maintenance

Simple top entry access to the 41005 Series trim components provides a maintenance friendly design, which is further enhanced with the quick change trim construction. The versatility and minimum number of parts used in the 41005 Series design can help reduce overall plant inventory costs. There are no special components, such as shims required in the assembly, thus further simplifying the maintenance and repair process.



SVI II AP



FVP

## Advanced Digital Performance

Greater control resolution and accuracy are available when the 41005 Series is supplied with Masoneilan's smart valve instrumentation such as the SVI®II AP or the Masoneilan FVP®. Both instruments are available in single or double-acting configurations and offer advanced control technology, providing higher precision for pneumatically actuated control valves. In addition, Masoneilan's ValVue® smart communications software provides real time preventive and predictive diagnostics data, ensuring critical control valve asset availability and maximizing end user return on investment.





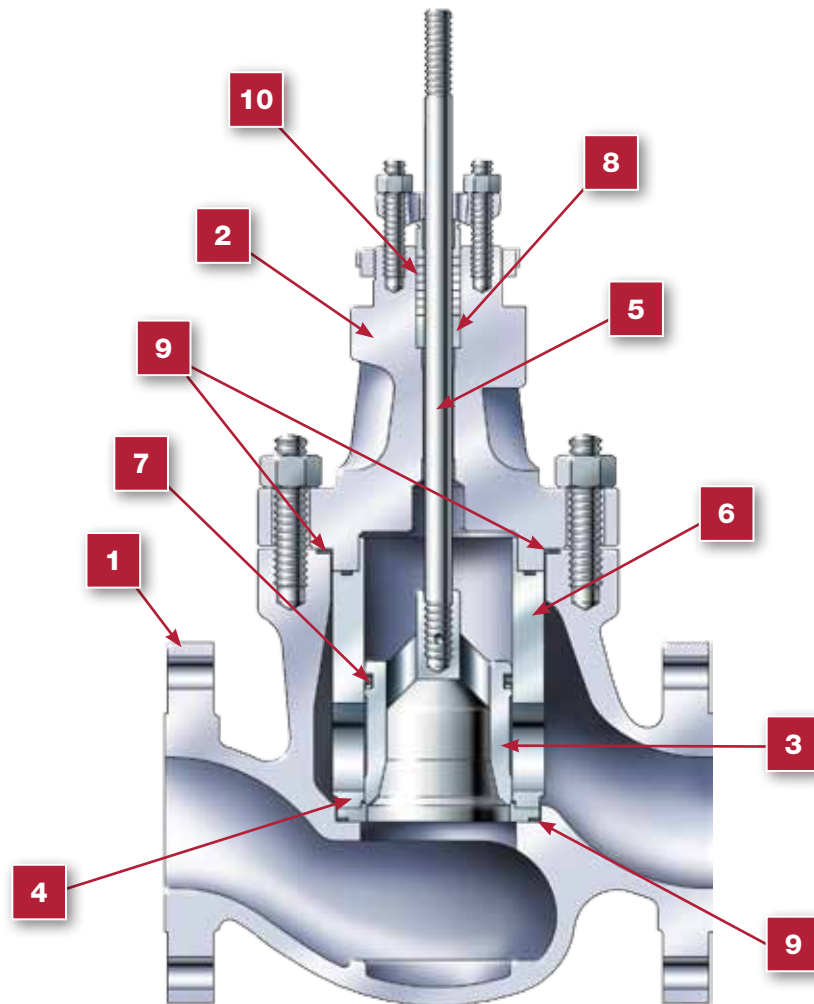
# Product Specifications

Operating Envelope	
Sizes	2" to 24" (50mm to 610mm)
Pressure Ratings	ASME Class 150 to 2500 (Equivalent PN)
Seat Leakage	ANSI/FCI/IEC Class II, III, IV, V and VI
C <sub>v</sub> Range	10 to 7000
Temperature Range	-320°F to +1050°F (-196°C to +566°C)

\* Consult factory for details on available sizes, ratings, and configurations.

End Connections		
ASME Class 150 - 2500		
Connections	Valve Sizes	
	2" (50mm)	3" to 24" (80 to 610 mm)
RF Flanged	●	●
Socket Weld	●	
Threaded	●	
RT Joint	●	●
Butt Weld	●	●

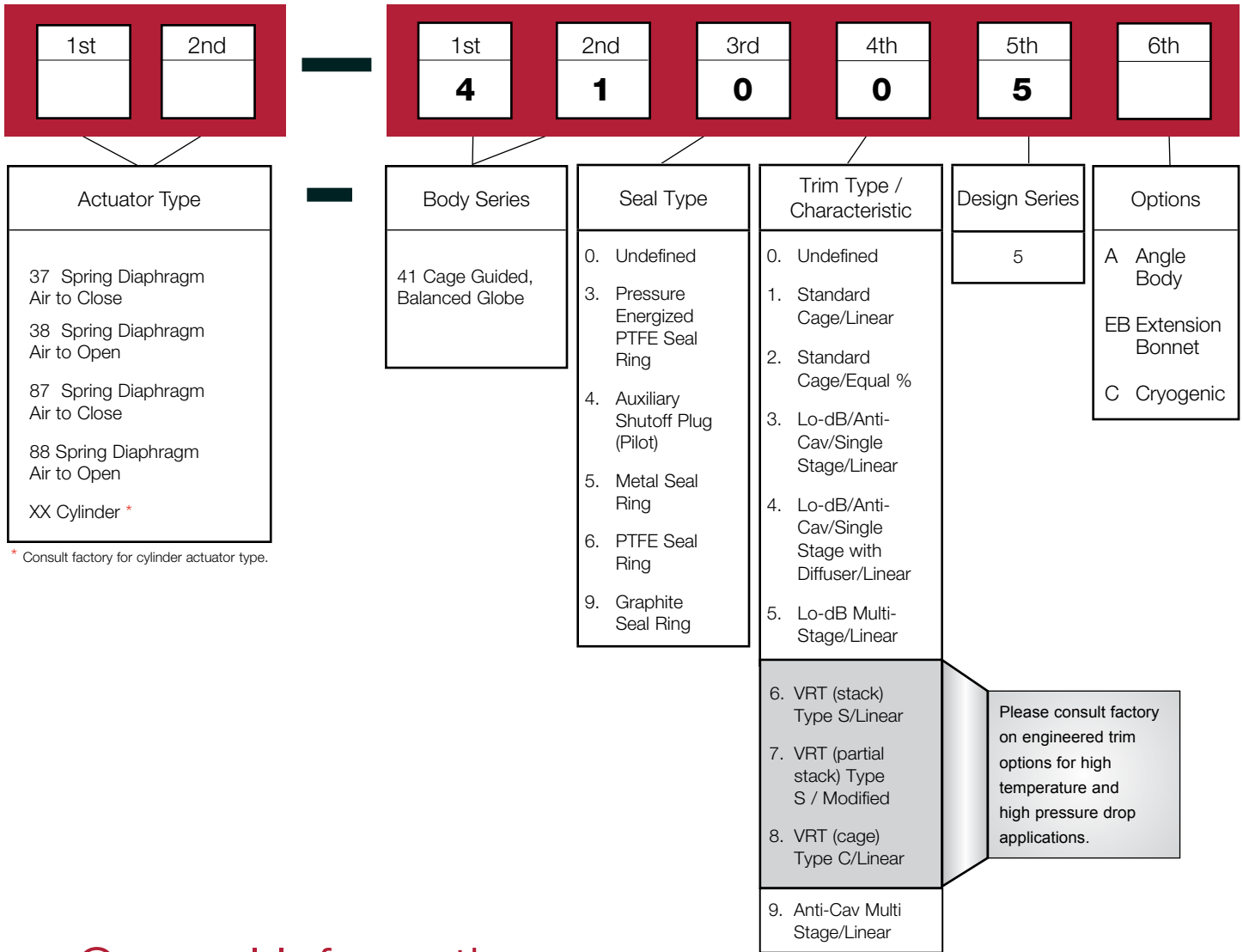
# Materials of Construction



Materials of Construction		
1	Body	Carbon Steel, Stainless Steel, Chrome-Moly, Other Alloys
2	Bonnet	
3	Plug	Stainless Steel, Stainless Steel with Stellite Hardfacing and Nitrided Surfaces
4	Seat Ring	Hardened Stainless Steel, Stainless Steel with Stellite Hardfacing
5	Stem	Stainless Steel, Inconel
6	Cage	Stainless Steel with Chrome-Plating and Nitriding
7	Balance Seal Ring	Teflon, Ni-Resist, Nitrided Stainless Steel, Graphite, and Spring Energized Teflon
8	Guide Bushing	Hardened Stainless Steel, Stainless Steel with Hardfacing
9	Gaskets	Stainless Steel with Flexible Graphite Filler
10	Packing	Teflon, Flexible Graphite and Low Emissions

Note: Refer to 41005 Series Specification Data Bulletin CH41005 for detailed material specifications and operating temperature limits.

# Numbering System



## General Information

<p>■ <b>Flow Direction</b></p> <p>Standard Trim: flow-to-open or flow-to-close          Lo-dB® Trim: flow-to-open          Lo-dB® Trim w/ Diffuser: flow-to-close          Anti-Cavitation Trim: flow-to-close</p> <p>■ <b>Body</b></p> <p>Type: high capacity globe or angle</p> <p>■ <b>Body and Bonnet</b></p> <p>Materials: carbon steel          316 stainless steel          chrome-molybdenum steel          others</p>	<p>■ <b>Trim</b></p> <p>Cage Type: cylindrical ported drilled hole (Lo-dB or Anti-cav)          single or multi-stage          Plug Type: pressure balanced          Seal Rings: teflon, metal or graphite          Seat Ring: quick change          Guide: heavy cage guiding          Capacity: full area or reduced          Cv Ratio: 50:1          Flow Characteristics: linear or equal %</p> <p>■ <b>Actuation</b></p> <p>Type: multi-spring diaphragm          spring diaphragm          spring-return cylinder          double-acting cylinder          handwheel (optional)</p>
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Heavy Duty  
General Service  
Severe Service

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## About Dresser, Inc.

Dresser, Inc. is one of the leading providers of reliable, highly engineered infrastructure products for the global energy industry. Dresser's highly regarded portfolio of brands includes Wayne® payment and fueling systems; Waukesha® natural gas-powered engines and generator sets, Masoneilan® control valves, Consolidated® pressure relief valves, and Roots® blowers and compressors. With locations worldwide, Dresser, Inc. serves customers in more than 100 countries. [www.dresser.com](http://www.dresser.com).

## About Dresser Masoneilan

Dresser Masoneilan, headquartered in Houston, Texas, has been the leading global partner in process control valves and solutions for more than 100 years. A business segment of Dresser, Inc., the company delivers customized products, services and diagnostic solutions for oil and gas, process and power generation applications. [www.dresser.com](http://www.dresser.com)

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