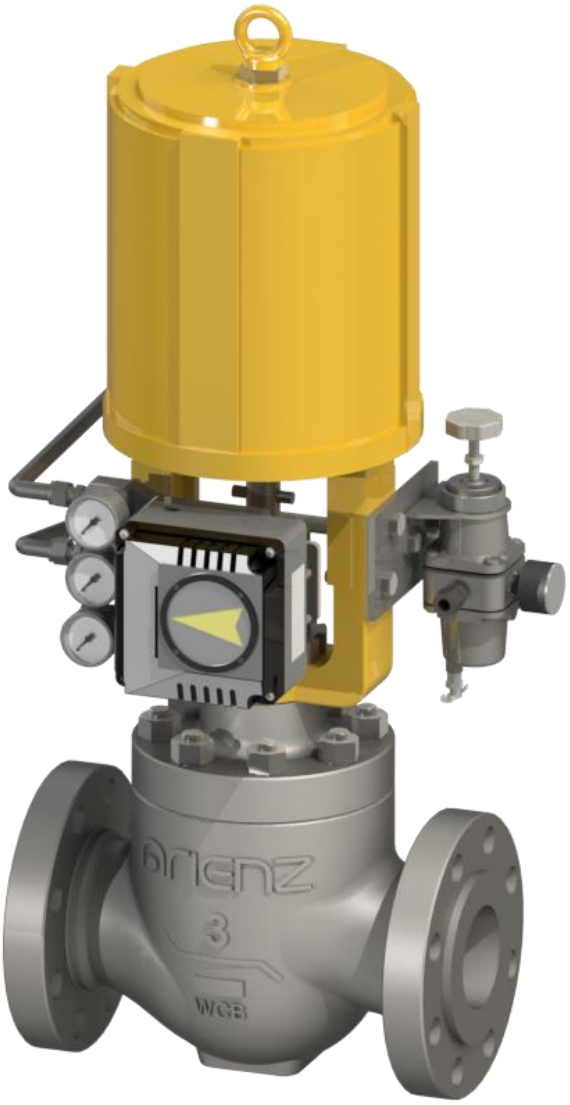
Engineering Excellence and Innovation

ORIENZ SOLUTIONS

ISO 9001 CERTIFIED
Cert No : Q-065/21

Process Control Valves



Innovative Design
Precision Engineering
Reliable Performance

Arienz Solutions believes that trusted design with fundamentally simple construction, operation and maintenance features will optimize the process performance.

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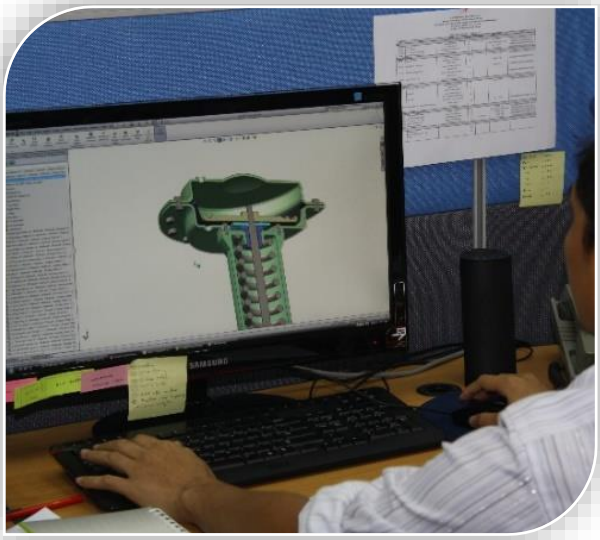
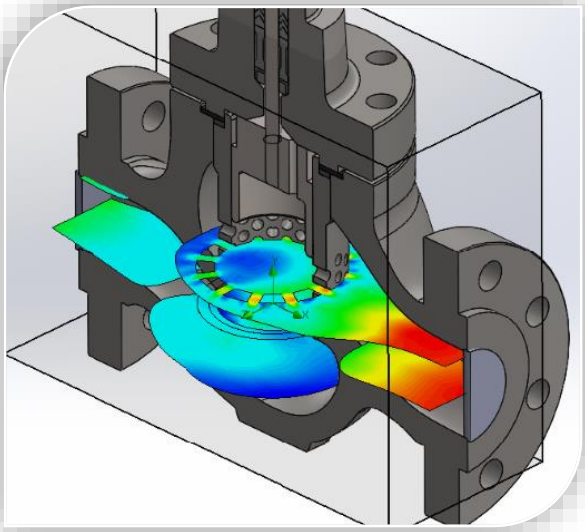
ARIENZ Solutions Sdn Bhd was established in 2018, is a sales, manufacturing and service organization, providing a variety of standard and specialized services for the process industries in the Petroleum, Chemical, Gas, Power Generation and Process industries. As a medium size company, ARIENZ Solutions Sdn Bhd takes the advantages of a fully dedicated team of people with years of vast experience in their respected field mainly the oil, gas and petrochemical industries. We provide a depth specialized knowledge and hands-on experience in instrumentations, wellhead, pipeline and process valves. Our teams of dedicated staffs keep abreast with the latest technological developments, ensuring that we are capable of successfully compete in the global market in terms of performance quality and price. Our ambition is to continue to generate a strong growth in both local and overseas market.

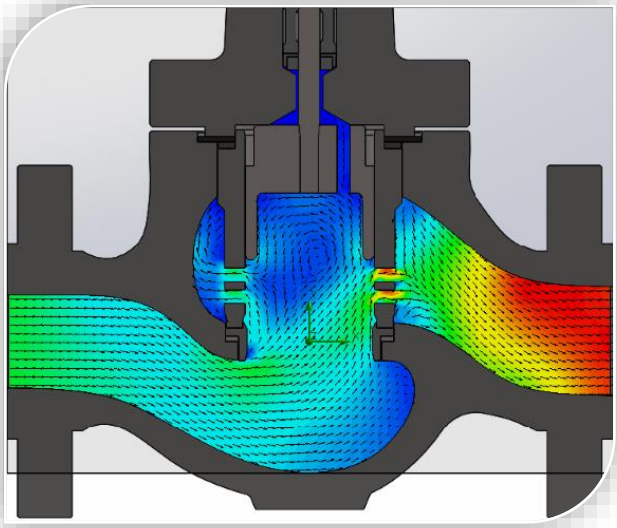
Engineering Capabilities

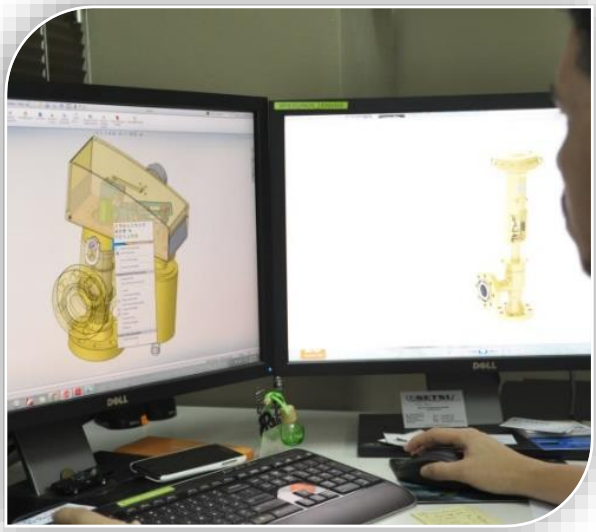
Compliance to our customer requirements is ARIENZ Solutions main goal, to ensure their satisfaction, our engineering team will strictly adhere to most of the recognized international standards such as, API, ANSI, ASME, ASTM, MSS, NACE, among others. Our extensive expertise in valve design, together with integrated CAD/CAM systems enable us to fully exploit the opportunities for innovative and competitive engineering solutions.

ARIENZ has put tremendous efforts in R&D to produce quality products. To ensure our design capabilities and engineered solutions are among the best. We continued our investment in the cutting-edge technology such as 3D Solid Modelling, Finite Element Analysis (FEA) and Computational Fluid Dynamics (CFD).







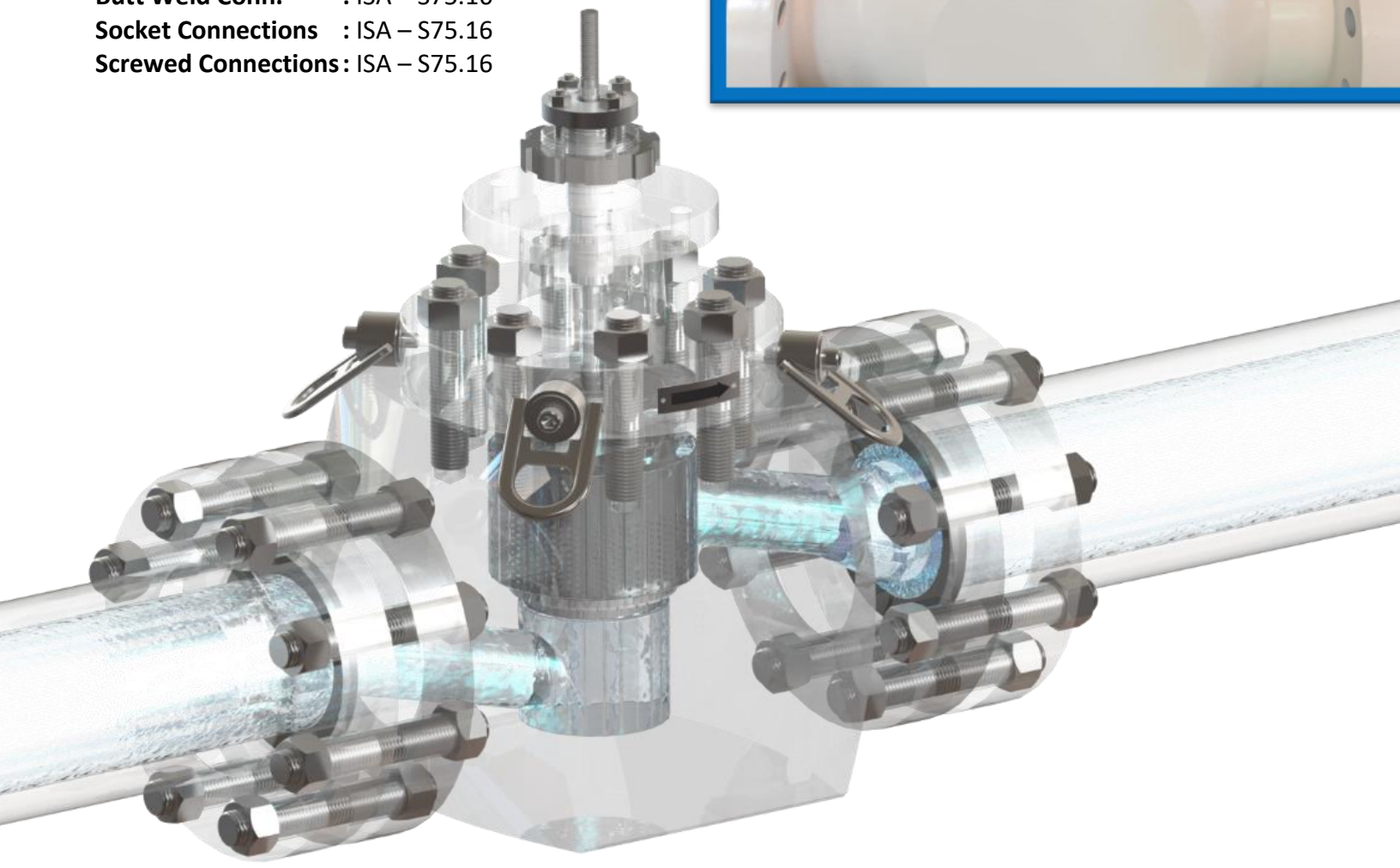


Quality Manufacturing

ARIENZ Solutions is determined to achieve the highest standard of products quality throughout our manufacturing process. We take great care and give immense attention to detail in our product performance and functionality. We have rigorously tested our products to ensure specified performances are met. ARIENZ Solutions is in strict compliance with Quality Management System ISO-9001. We also ensure that our products are manufactured in conformance with the ISA – S75, ANSI B16.5 and API6A specification standards.

ARIENZ Technologies high pressure globe style control valves are in accordance with the following standards.

Flanged Connection : ANSI – B16.5/API 6A
ISA – 75.16
Butt Weld Conn. : ISA – S75.16
Socket Connections : ISA – S75.16
Screwed Connections : ISA – S75.16



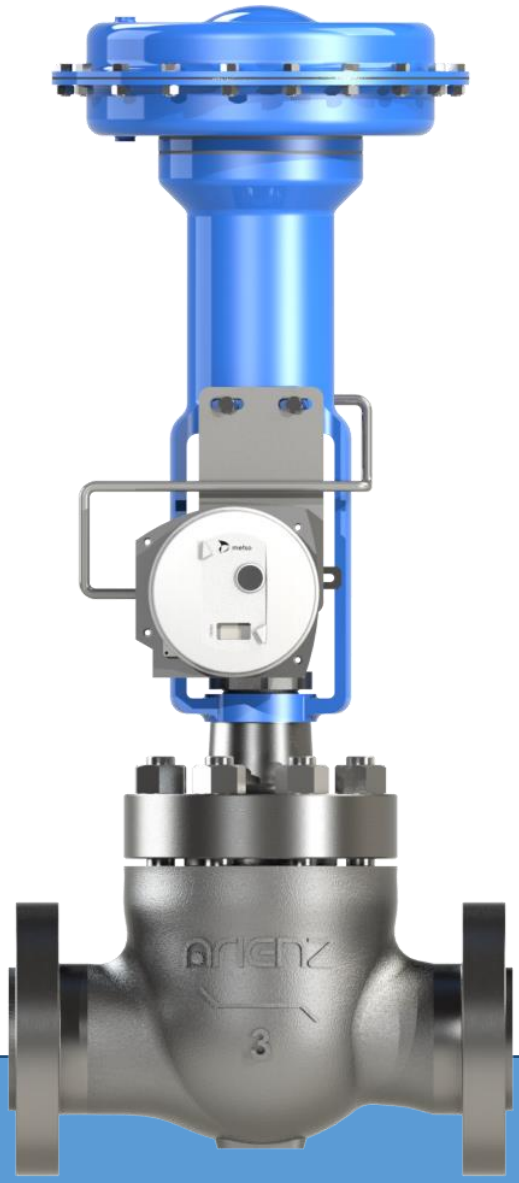
SERIES M PRODUCT SPECIFICATIONS

MVE Technologies M series design is well known for its unprecedented durability and precision manufacturing makes it among the most reliable and trouble-free process control valves in the market. M series process control valves are available with balanced or non-balanced trim configuration for oil, gas, chemical, refining and energy applications. Body styles include both globe and angle configurations with a choice of flanged, butt-weld or threaded connections.

Design Code	ASME B16.34 and API 6A
Valve Size	25 to 600mm (1” to 24”) nominal bore
Body Styles	Globe and Angle
Body Material	Carbon steel, Chrome-moly steel, Stainless steel, Monel, Alloy 20, Hastelloy B/C, Duplex steel, Aluminum bronze
Bonnet	Standard up to 400°C Normalizing between 250°C to 500°C Extended cold service -20°C to -100°C Cryogenic -100°C to -250°C Bellow seal
Rating	ANSI 150 to 4500; API 2000 to 15,000
End Connections	ANSI and API flanges, Hubbed, Butt weld, Screwed
Gland Packing	PTFE Chevrons, Graphite, Low emission
Valve Trims	Ported cage, Low recovery cage, Solid or balanced in single or multistage design
Flow Characteristics	Linear, Equal percentage or Quick opening
Trim Material	Stainless steel, Duplex stainless steel, 13% Chrome steel, Monel, Hastelloy B/C, Stelite and Tungsten Carbide
Seat Leakage	As per ANSI / FCI 70-2-2006 Class III, IV, V and VI
Actuator Form	Diaphragm, Piston or Electric
Actuator Type	Direct / Reverse Acting
Diaphragm	Nitrile / Neoprene (nylon reinforced)
Accessories	Valve Positioners – Pneumatic, Electro-Pneumatic, Smart Instruments – Air-set, Solenoid valves, Volume booster, Airlock, Limit Switches Features – Top or Side mounted handwheel, Limit stops, and Removable blindheads, Steam jacketing and purging assemblies

SERIES MEP – Process Control Valves

The MEP series innovative design makes it among the most versatile process control valves design with its Kwik-Change trim style which does not require body changes. It is a field proven reliability to assured our customer satisfaction. In any condition either from general service, high pressure or high capacity, MEP will handle any demand with ease. MEP series is available in balanced or non-balanced configuration with variety of trim styles.



Features

- 100% materials traceability
- High flow capacity
- Internal parts interchangeability
- Low recovery trims available to combine multi-stage pressure reduction and velocity control
- Wide range of material options
- Top entry facilitates ease of parts removal and maintenance

Technical Specifications:

Size	: 1” to 8” nominal bore
Body styles	: Globe and Angle
Bonnets	: Standard, normalizing, bellows seal and cryogenic bonnets suit application requirements
Ratings	: ANSI Class 150 to 600 and 900 to 2500
Connections	: ANSI RF or RTJ flanged, screwed through 2”, welding ends as specified butt weld or socket
Valve Trims	: M-TS1, M-TS3 & M-TS-4 – cage guided, balanced or unbalanced in single or multi-stage design M-TS2 – post guided and unbalanced, Low recovery trims options available
Characteristics	: Linear, equal percentage or quick opening

SERIES MEB – Process Control Valves

The MEP series Globe Style Control Valve are designed for both general and high-performance applications in most process control industries including gas & oil transportation, petrochemical refining and production and power generation.

Whether high or low pressure, severe service or benign, Series **XXXXX** control valves have been developed to serve the most demanding conditions. The overall construction is a modular, high performance concept, capable of extending numerous standard variations into specialized applications

Features

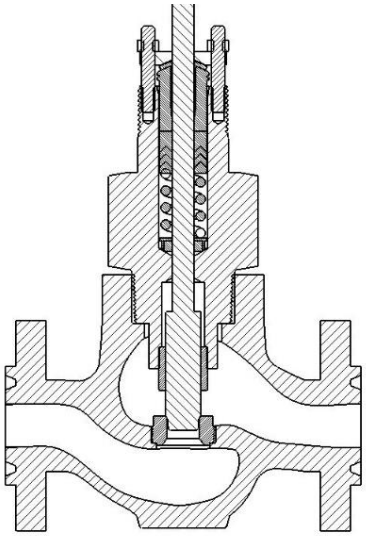
- Modular construction facilitates different size and connections
- Top entry trim designs to suit specific target applications
- High CV to size ratio
- Streamlined flow path to optimize capacity
- Standard and low recovery trim options combine multi-stage pressure reduction with velocity control
- Wide range of material options
- ISO 9001 Q.A. Manufacturing processes

Technical Specifications:

Size	: 10” to 24” nominal bore
Body styles	: Globe
Bonnets	: Standard, high and low temperature bonnets are supplied to suit application requirements
Ratings	: ANSI Class 150 to 600 and 900 to 1500
Connections	: Flanged and butt weld ends, 10” to 30”, for other connections consult factory
Valve Trims	: Full or reduced, ported cage, low recovery cage, in balanced single, multi-stage or high duty
Characteristics	: Linear, Equal Percentage or Quick Opening. Modified characteristics may be produced to suit requirements

SERIES MD – Single Seated Globe Control Valves

MD series control valves are designed for many kinds of applications from standard through severe service condition in many types of process industries including Offshore and Onshore oil production, Refining, Petrochemical, Power Generation and General Industries. The designed is very well suited for erosive, viscous and particle contaminated fluids. It is a simple top entry design with a screwed body and bonnet arrangement. The valve plug is guided by a heavy post with a screwed in seat and it is easy for maintenance purpose.



Features

- 100% materials traceability
- Economic alternative for standard or severe services
- Trim options for erosive service
- Design flexibility
- Top entry allows ease of repair and maintenance
- ANSI and API end connections
- Wide range of material options

Specifications:

Size	: 1” to 2” nominal bore
Body styles	: Globe and Angle with screwed on bonnet
Bonnets	: Standard bonnets are supplied to suit application requirements to 450 deg. F
Ratings	: ANSI Class 150 to 1500; API 2000 to 3000
Connections	: ANSI and API flanges, screwed connections, welding ends as specified butt weld or socket
Trims	: Unbalanced Micro-Form, Micro-Flow and Micro-Flute. Micro-Form available in seat sizes up to 1-1/4” nominal bore. Severe service and erosion resistant trims are available to suit demanding applications
Characteristics	: Linear, equal percentage or quick opening

SERIES MH – Heavy Duty Single Seated Globe Control Valves

MH series control valves are designed for high and severe duty applications in most process control environment from oil and gas production, power generation, refining and petrochemical industries. The forged body construction ensures high material integrity and is proportioned to handle high stresses without any distortion. The design provides a high-performance concept which is capable or extending many standard variations into specialized applications.

M-HA

M-HG

Features

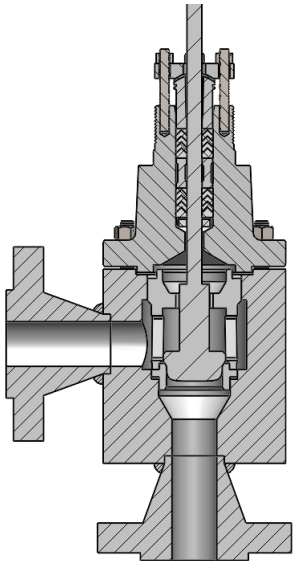
- 100% materials traceability
- High Integrity pressure containment
- Forged body facilitates high pipe stress, eliminating distortion
- Low recovery trims available to combine multi-stage pressure reduction and velocity control
- Wide range of material options are readily available which reduces lead times normally encountered with high pressure casting

Specifications:

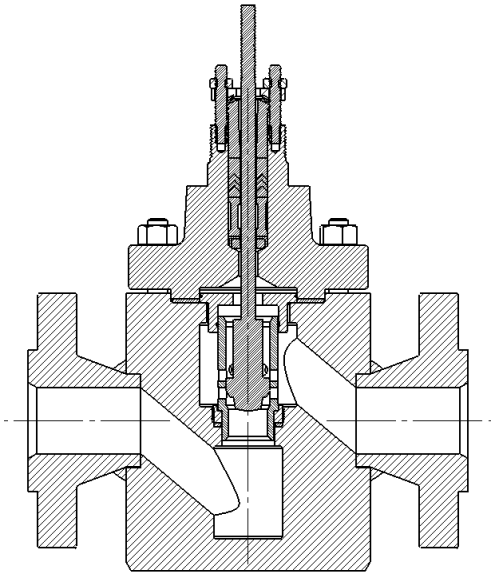
Size	: 1” to 8” nominal bore
Body styles	: Globe and Angle
Bonnets	: Standard, normalizing, bellows seal and cryogenic bonnets are supplied to suit application requirements
Ratings	: ANSI Class 150 to 600
Connections	: ANSI RF or RTJ flanged, screwed through 2”, welding ends as specified butt weld or socket
Trims	: M-TS1, M-TS3 & M-TS-4 – cage guided, balanced or unbalanced in single or multi-stage design M-TS2 – post guided and unbalanced, Low recovery trims options available
Characteristics	: Linear, equal percentage or quick opening

SERIES MEF – High Duty Globe and Angle Control Valves

MEF series control valve is a fabricated body and bonnet from wide range of bar stock or forged materials. Materials availability is the main advantage for this design as it can reduce the delivery time which normally encountered with casting body and bonnet. It is using a similar Kwik-change trim configuration of ME series and available in balanced and non-balanced designs.



M-EFA



M-EFG

Features

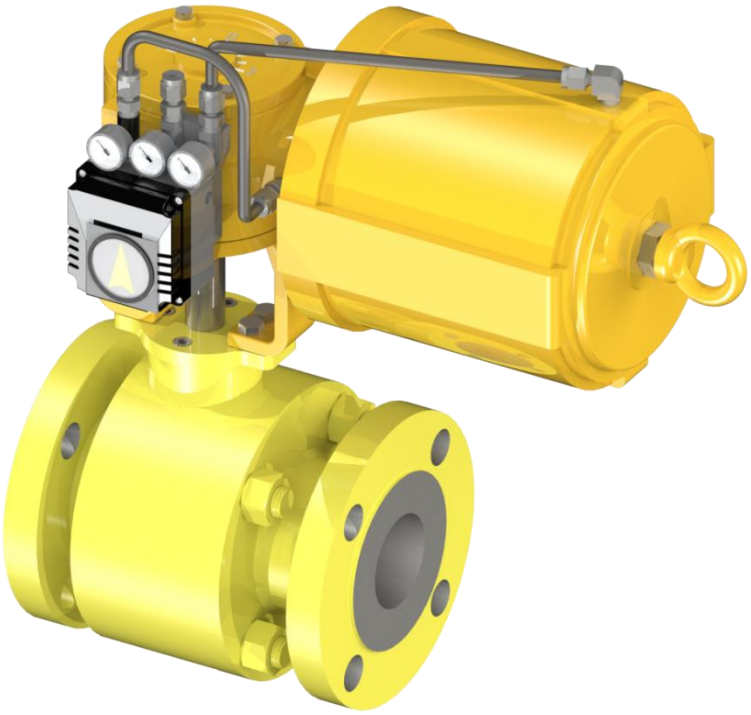
- 100% materials traceability
- Internal parts interchangeability with MEP series
- High integrity pressure containment
- Wide ranges of material from standard to exotic in the form of forged or 'bar stock'
- Available trims design from Anti-Cavitation and Low Noise
- Top entry facilitates ease of parts removal and maintenance

Specifications:

Size	: 1/2" to 4" nominal bore (please consult factory for other sizes
Body styles	: Globe and Angle
Bonnets	: Standard, normalizing, bellows seal and cryogenic bonnets suit application requirements
Ratings	: ANSI Class 150 to 600
Connections	: ANSI RF or RTJ flanged, screwed through 2", welding ends as specified butt weld or socket
Trims	: M-TS1, M-TS3 & M-TS-4 – cage guided, balanced or unbalanced in single or multi-stage design M-TS2 – post guided and unbalanced, Low recovery trims options available
Characteristics	: Linear, equal percentage or quick opening

SERIES MR – Rotary Control Valves

MEF series control valve is a fabricated body and bonnet from wide range of bar stock or forged materials. Materials availability is the main advantage for this design as it can reduce the delivery time which normally encountered with casting body and bonnet. It is using a similar Kwik-change trim configuration of ME series and available in balanced and non-balanced designs.



Features

- 100% materials traceability
- Internal parts interchangeability with MEP series
- High integrity pressure containment
- Wide ranges of material from standard to exotic in the form of forged or 'bar stock'
- Available trims design from Anti-Cavitation and Low Noise
- Top entry facilitates ease of parts removal and maintenance

Specifications:

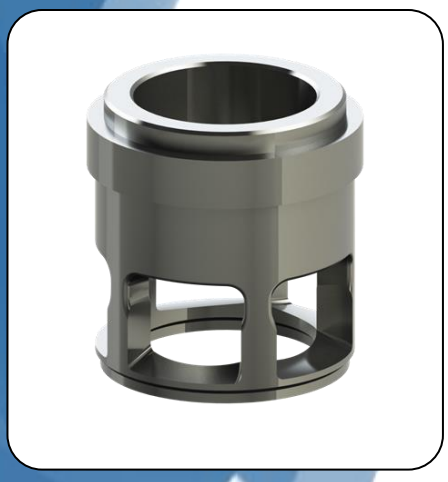
Size	: 1/2" to 4" nominal bore (please consult factory for other sizes
Body styles	: Globe and Angle
Bonnets	: Standard, normalizing, bellows seal and cryogenic bonnets suit application requirements
Ratings	: ANSI Class 150 to 600
Connections	: ANSI RF or RTJ flanged, screwed through 2", welding ends as specified butt weld or socket
Trims	: M-TS1, M-TS3 & M-TS-4 – cage guided, balanced or unbalanced in single or multi-stage design M-TS2 – post guided and unbalanced, Low recovery trims options available
Characteristics	: Linear, equal percentage or quick opening

KWIK-CHANGE CAGES

Linear

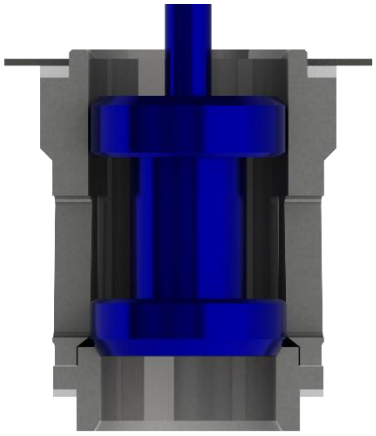
Cavitation/Low Noise

Equal Percentage



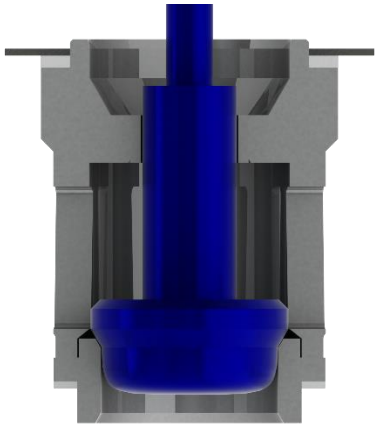
Equal Percentage

Trim Styles



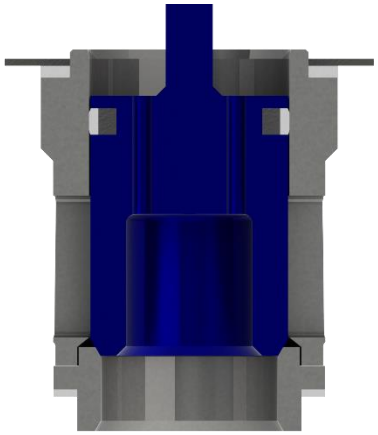
AR-ES

This trim design is recommended for general flow control applications, with standard metal-to-metal seating, the trim is economical while offering excellent accuracy of flow control and shutoff (ANSI Class IV and V for standard or ANSI Class VI with optional PTFE seat) across a wide range of pressure and temperature fluctuations.



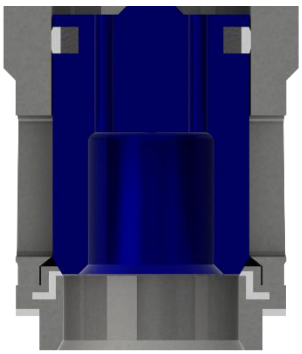
AR-EZ

This trim design is un-balanced with rugged “post-guiding” and plug profiled flow characteristics for hard to control applications such as non-lubrication, viscous or other specialized fluids. Offering shut-off classes IV, V and VI, this design is uniquely suited for the most severe ranges of pressure and temperature fluctuations.



AR-ED

This trim design is balanced and cage guided. It is an economical type trim which is a top choice for general service applications for variety of fluids where shutoff is not critical over a wide range of temperature fluctuations. With balanced construction its substantially reduces the thrust requirements on the actuators. Standard class II shutoff, with class III and IV optional.



AR-ET

This trim design is for accurate flow control at moderate temperatures, combined with excellent shutoff of class IV and V. This trim is recommended in general purpose applications. The economical and balanced design of M-TS4 offers a “soft seat” insert within the seat ring to achieve class VI shutoff. Metal seating is optional. Maximum temperature limit is 260°C.

DHS – Diffusion Hardened Systems

Originally developed by NASA, the **Boron Hardening Process** is not a coating, heat treatment or other form of mechanical, chemical, alloy-ing bonding to the surface by for example plasma impingement. This process diffuses into the host material (**Impregnates**) to form an intermetallic structure which improves the resistance to impact, wear, corrosion, and erosion as required by the specific application.

Hardness	: 1600-2500 KHN (KNOOP) depends on base material
Wear Resistance	: Excellent against all hard surfaces
Corrosion Resistance	: Excellent against HCL, H2SO4, HF, Salt Water and Molten Salts
Coefficient of Friction	: Approximately 33% of base material
Gas Barrier	: Excellent against oxygen, hydrogen and H2S
Surface Finish	: The Surface finish will remain unaltered and tolerance change (< 0.001”).
Penetration	: Up to 0.040” depending on the base material, Penetration is uniform and continuous
Masking	: Surfaces not requiring the processes e.g., threads or welding ends, may be masked.

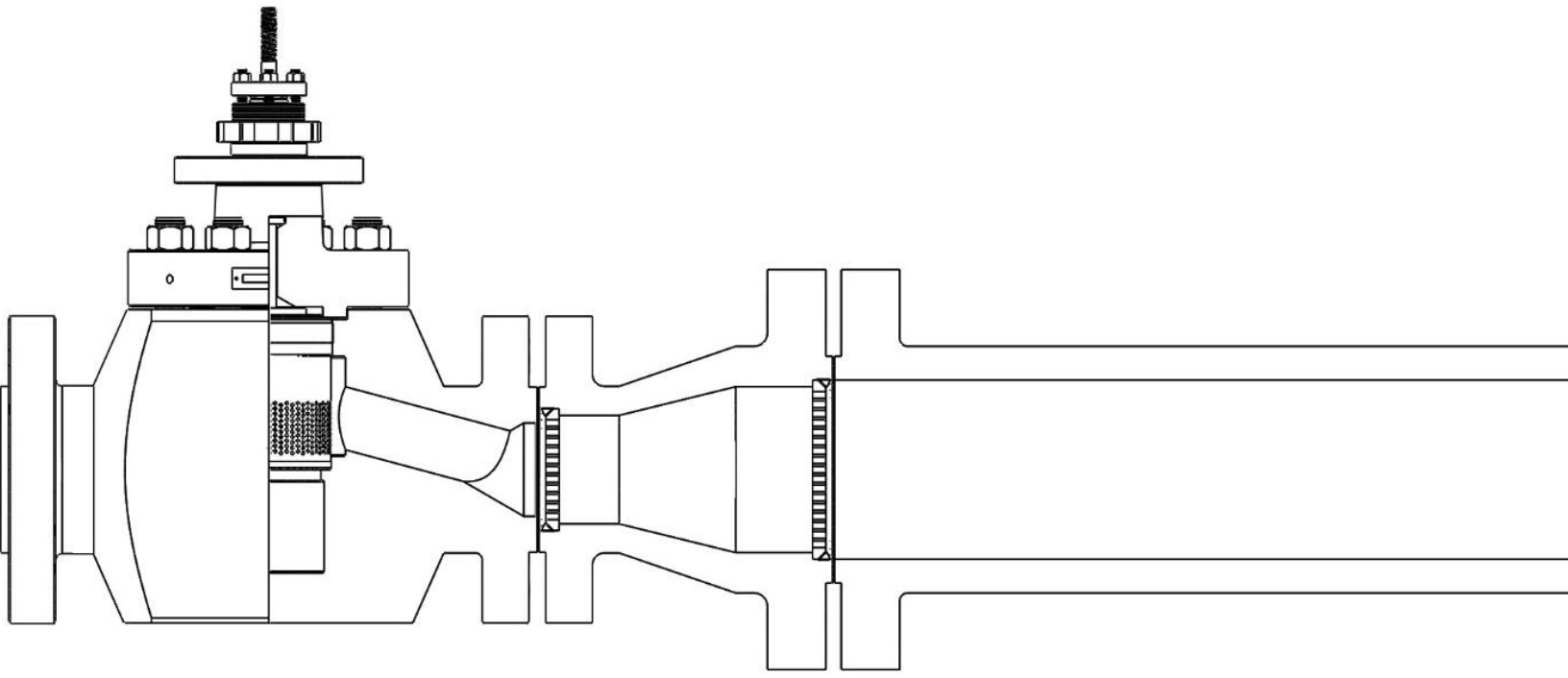
Baffle (Noise Reduction System)

ARIENZ diffusers and baffles play an important role in the reduction of high pressures and converting energy levels to minimize potential noise and cavitation problems. These 'fixed-area' devices maybe used in conjunction with both standard and severe service control valves, or as a stand-alone unit. A baffle is a single-stage multi-hole orifice plate. A diffuser is a device having two or more baffles to make up a multi-stage pressure reduction element. The consideration of diffusers and baffles are particularly beneficial where flow conditions are reasonably constant and on high Xp vapor applications in attenuating noise levels and limiting exit velocities from the primary control source.

Staged pressure reduction from a series of gradually expanding baffles creates a resistance and allows the vapor to adjust its volume in a control manner as the pressure decreases. An added advantage of diffusers and baffles is the collimating effect on the flow stream which reduces turbulence and potential shock waves in the downstream pipework. In prevention of cavitation, a diffuser or baffle installed downstream of a process control valve creates a back pressure to the valve trim. By carefully scheduling the P1/P2 ratios across both trim and baffles, choked flow, and subsequently cavitation, is avoided.

Features:

- Diffuser and Baffle packages combine static pressure reduction with velocity control
- A cost-effective solution to high duty valve applications
- Full and reduced flow capacities
- Design flexibility
- Modular construction accommodates retrofit into most installations
- Wide range of material options



Series M/DA and M/RA – Pneumatic Diaphragm Actuator

ARIENZ pneumatic diaphragm actuators make available in wide range of choices to suit majority of control valve applications. Even when subjected to the most extreme uses, the series M/DA and M/RA type actuator ensure efficient and stable valve operation. We provide both direct-acting and reverse-acting construction of rigid materials that can be used for both globe and angle style control valve assemblies. We are using a high-quality spring material to ensure peak performance for both modulating and on/off applications. Life-extending design enhancements like stainless steel actuator stem and spring adjustor thrust bearings for smooth, accurate bench settings are standard features on all MVE actuators

Series M/DA

Series M/RA

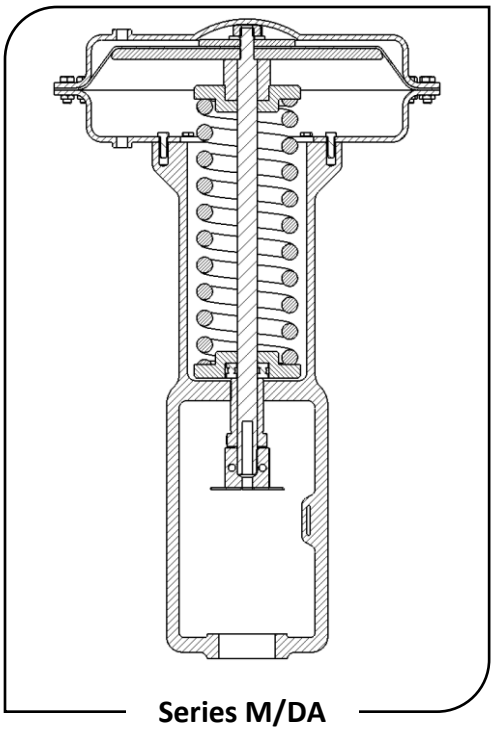
FEATURES:

- High Power
- Fast response, excellent stability and low hysteresis
- Design flexibility – a wide range of size, travel and spring options
- Positive stem connector, split for ease of attachment
- Stainless steel actuator stem; friction bearings for spring adjustment are standard features

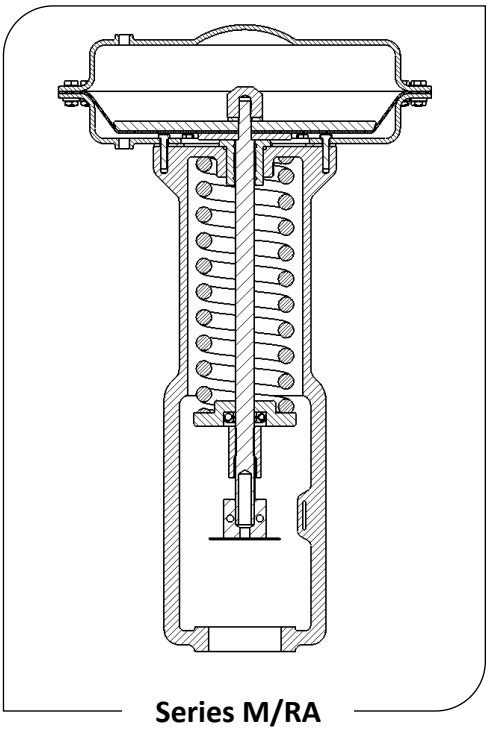
SPECIFICATIONS:

Size	: 45S, 59S, 59M, 87M, 87L, 169M, 169L, 240L
Styles	: M/DA – Direct acting (Fail Up) and M/RA – Reverse acting (Fail Down)
Travel Indication	: Stainless steel disc and graduated scale
Accessories	: Top-mounted handwheel
	Side-mounted handwheel
	Maximum / minimum limit stops
	Snubbers

Series M/DA and M/RA – Pneumatic Diaphragm Actuator



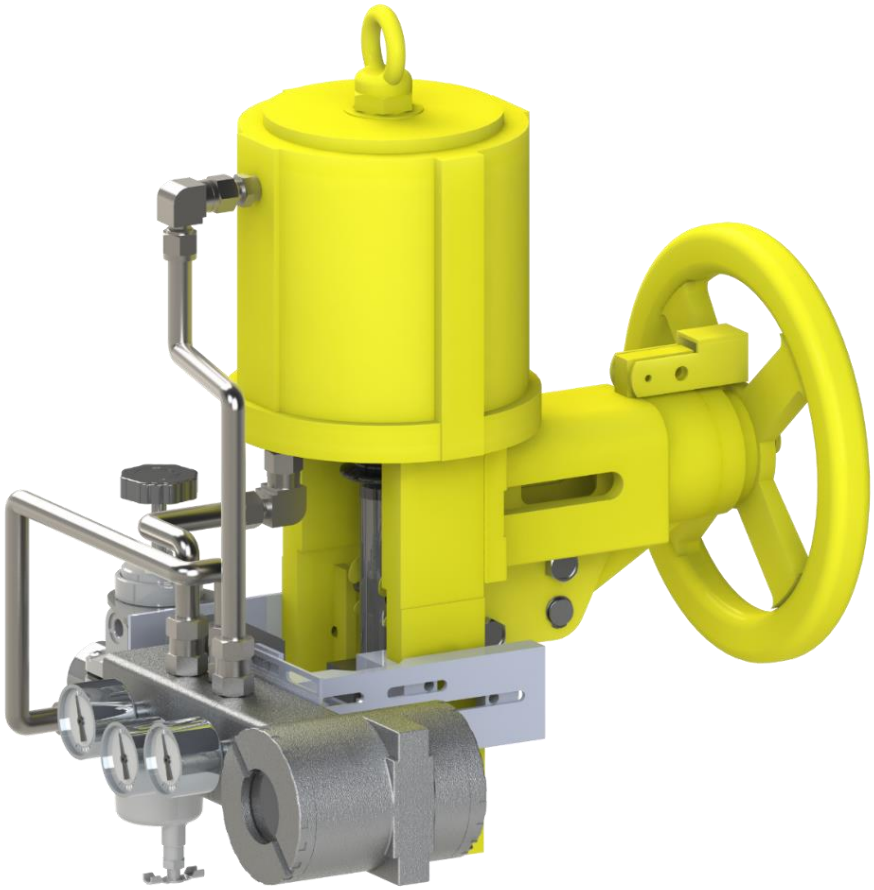
Series M/DA



Series M/RA

SPECIFICATION	ACTUATOR SIZE							
	45S	59S	59M	87M	87L	169M	169L	240L
Nominal Effective Area (Square inches)	45	59	59	87	87	169	169	240
Yoke Boss Diameter (inches)	2-1/8	2-1/8	2-13/16	2-13/16	3-9/16	2-13/16	3-9/16	3-9/16
Actuator Stem Size (inches)	3/4	3/4	3/4	3/4	1-1/8	3/4	1-1/8	1-1/8
Valve Stem Size (inches)	0.375	0.375	0.5	0.5	0.75	0.5	0.75	0.75
Maximum Thrust (Pounds per foot)	2025	2655	2655	4350	4350	7605	7605	9600
Maximum Continuous W.P. (PSIG)	60	60	60	65	65	60	60	55
Maximum Travel (inches)	3/4	1-1/8	1-1/2	2	2	3	3	4
Approximate Weights (Kg)	34	48	50	90	94	121	122	175
Pressure Connections	¼" NPT Standard Larger Sizes Available							

Series M/DA and M/RA – Pneumatic Piston Actuator



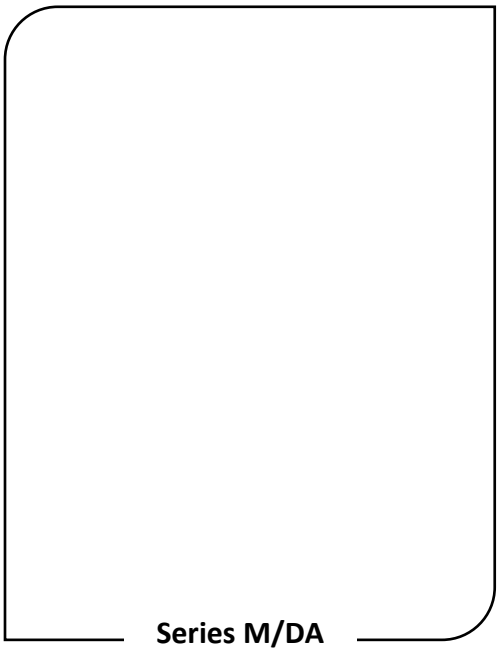
FEATURES:

- High Power
- Fast response, excellent stability and low hysteresis
- Design flexibility – a wide range of size, travel and spring options
- Positive stem connector, split for ease of attachment
- Stainless steel actuator stem; friction bearings for spring adjustment are standard features

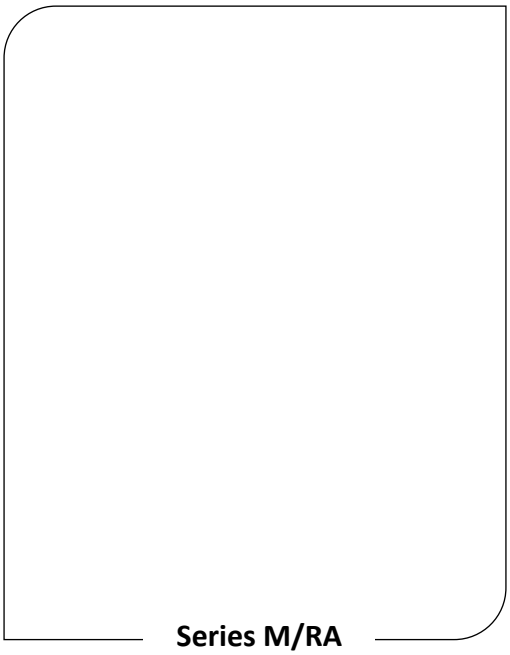
SPECIFICATIONS:

Size	: 45S, 59S, 59M, 87M, 87L, 169M, 169L, 240L
Styles	: M/DA – Direct acting (Fail Up) and M/RA – Reverse acting (Fail Down)
Travel Indication	: Stainless steel disc and graduated scale
Accessories	: Top-mounted handwheel
	Side-mounted handwheel
	Maximum / minimum limit stops
	Snubbers

Series M/DA and M/RA – Pneumatic Piston Actuator



Series M/DA



Series M/RA

SPECIFICATION	ACTUATOR SIZE									
Cylinder Size	25	50*	50	100*	100	200	300	400*	500	600
Cylinder Bore Dia. (in.)	5.50	7.75	7.75	11.00	11.00	15.50	19.50	15.50	25.25	19.50
Upper Cylinder Area (sq. in.)	23.76	47.17	47.17	95.03	95.03	188.7	298.6	371.5	500.7	590.2
Lower Cylinder Area (sq. in.)	22.97	46.39	45.67	93.26	91.06	184.7	292.7	365.5	494.8	583.1
Stem Diameter (in.)	1.00	1.00	1.38	1.50	2.25	2.25	2.75	2.75	2.75	3.00
Stem Area (sq. in.)	0.79	0.79	1.50	1.77	3.98	3.98	5.94	5.94	5.94	7.07
Maximum Volume Over Piston (cu. In.}	100	331	331	1031	1031	2087	3733	3033	5519	5661
Stroke (Inches)	3/4 to 1-1/2	1-1/2 to 3		2 to 4						
Maximum Thrust (Pounds per foot)										

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