

**Product Summary** 





# About Circor Energy

CIRCOR Energy is a global manufacturer of highly engineered valve and pipeline products that continuously develops precision technologies to improve our customers' ability to control the flow of the world's natural resources — from sub-sea to land, and in severe environments.

For over 60 years, CIRCOR Energy and its market-leading brands have been delivering customer-focused, product and service solutions for the world's most demanding energy applications – with an emphasis in the upstream oil and gas, midstream oil and gas, and petrochemical processing industries.

For more information about the products featured within this summary, or our entire portfolio of flow control products, please contact any of our offices listed on the back cover of this document, or visit us at www.circorenergy.com.

# KF Valves

# **Ball Valves | Floating** Threaded & Grooved-End Floating Ball Valves Commodity Ball Valves **Ball Valves | Trunnion Mounted** 3-Piece -Series P3/M3, 2-Piece -Series FA/FAE, Wafer Series 10, 12, 18, 20/22, Threaded Series 31, Flanged Series 35, Needle Valves & Isolator Valves **Butterfly Valves** Gate, Globe & Check Valves **Specialty Ball Valves** Mallard **Liquid Level Switches, Controllers & Accessories** Valves & Gauges Pressure Controllers **Pressure Regulators**



# Hydroseal

Safety Relief & Pilot Valves

called, none and not called
Series 1500 Threaded & Flanged Safety Relief Valves
Series 2500 Flanged High Capacity Safety Relief Valves
Series 1200 & 1400 Safety Relief Valves & Series 3500 Pilot Operated Relief Valves 21
Series 3500 Pilot Operated Relief Valves
Series 1-4 Ball & Seat Threaded Safety Relief Valves
Series 5-8 Ball & Seat Safety Relief Valves
FT, HC (Air) & HD (Liquid) SeriesThreaded Flanged Safety Relief Valves
Bronze Safety Relief Valves

High Pressure Ball Check Valves, and "Y" Strainers & Pressure Monitor Plugs and Probe . . . . . 22

# Contromatics

Ball Valves	
Series 6100-M3, Series 6000-M3	24
Series 7000-M3, Series 8000-M3, Series 7100-M3 & 8100-M3, Series 7200-M3, Series 8200-M3 & Series 3200-M3.	. 25
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Series 1500 & 2500 and Series 1800 & 2800	28
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# Our Quality Commitment

We're dedicated to providing our customers with technically superior products that are designed, manufactured & tested to the exacting standards of various qualifying authorities.

Other additional non-destructive or destructive examination may be performed to customer requirements or specifications.

When it comes achieving customer and industry goals for reliability, durability and structural integrity, CIRCOR Energy delivers.



# KF Valves Product Summary



# KF Threaded & Grooved-End Floating Ball Valves

### **Features**

- > Full & Reduced Port
- > Threaded & Grooved End Connections
- External Grease Fitting for Stem Journal Lubrication
- > Weather Seal (Stem)
- Fire Safe Designed & Tested to: API 607
- > Blowout Proof Stem Design
- > Heavy Duty Flatted Stem Design
- > Metal-To-Metal Fire Safe Sealing
- > Integral Locking Device
- > Manual Operation Handle

### **Optional Features**

- > Antistatic Device
- Actuation & Square Nut Assemblies
- ➤ Enduro-Bond<sup>™</sup> Coating for Corrosion Resistance
- Valves Specified with StainlessSteel Trim Meet NACE MR0175/ISO 15156
- > Anti-Freeze Design (Optional)



### Series A & AH

Ductile Iron Body

Series A-1"FP-4"RP, 1000-1500 psi

Series AH-1"FP-3"RP, 1500-2000 psi



### Series C, CH & CXH

Carbon or Stainless Steel Body

Series C-1"FP-4"FP, 1000-2500 psi

Series CH-1"FP-4"FP, 2000-3000 psi

Series CXH-1"FP-2"RP, 5000 psi

### Series CA & CAH

Carbon Steel Body

2-3/8"EUE X 21/16"Bore & 27/8"EUE X 29/16" Bore

Series CA-1000-2000 psi

Series CAH-3000 psi



### Series CB & CBH

Nickel Aluminum Bronze Body

1"FP-2"FP

Series CB-1000-2500 psi

Series CBH-3000 psi



### Series E, EH & EC

Series E-Ductile Iron Body, 2"RP-4"RP, 750 CWP
Series EH-Ductile Iron Body, 2"RP-4"RP, 1000 CWP

Series EC-Stainless Steel Body, 2"RP-3"RP, 600 psi

Note: Padlocks not included. Consult Factory.



# KF Commodity Ball Valves

### **Features**

- > 2-Piece & Unibody, Cast, Investment Cast & Bar Stock Body
- Designed for Hydraulic Hook-Ups, Offshore Applications, Well Heads, Production Lines, Petroleum & Chemical Plant Applications
- > Reinforced PTFE Seats
- > Blowout Proof Stem
- > Optional Locking Device
- Fire Safe Designed & Tested to: API 607 4th Edition (Only HC-710 & HS 810)



### Series HC-730, 740 & 710, HS-810 & 820 & HB-600

HC-730-Carbon Steel Unibody, 1/2"-2", 1500-2000 CWP

HC-740-Carbon Steel 2-Piece, 1/4"-2", 1500-2000 CWP

HC-710/HS-810-Carbon & Stainless Steel Unibody, 1/4"-2", 2000 CWP

HS-820-Stainless Steel Seal Welded

2-Piece, 1/4"-2", 2000 CWP

HB-600-Bronze 2-Piece

1/4"-4", 400-600 CWP

# KF Floating Threaded Bolted Body Ball Valves

### **Features**

- > Full & Reduced Port
- > Threaded End Connections
- > Bolted Body Adapter Connection
- > External Grease Fitting for Stem Journal Lubrication
- > Weather Seal (Stem)
- > Fire Safe Designed & Tested to: API 607
- > Blowout Proof Stem Design
- > Heavy Duty Flatted Stem Design
- > Metal-To-Metal Fire Safe Sealing
- > Integral Locking Device
- > Manual Operation Handle

### **Optional Features**

- > Antistatic Device
- Actuation & Square Nut Assemblies
- ➤ Enduro-Bond<sup>™</sup> Coating for Corrosion Resistance
- ➤ Valves Specified with Stainless Steel Trim Meet NACE MR0175/ISO 15156
- > Anti-Freeze Design (Optional)



### Series AF & AFH

Ductile Iron Body

Series AF-2"RP-4"RP, 1000-1500 psi

Series AFH-2"RP-3"RP, 2000 psi



### Series CF, CFH & CFXH

Carbon Steel Body

Series CF-2"RP-4"FP,1500-2500 psi

Series CFH-2"RP-4"FP, 3000 psi

Series CFXH-2"RP & 2"FP, 5000 psi



# KF Threaded End Floating Ball Valves

### **Features**

- > Full & Reduced Port
- Threaded, Socked Weld and Male End Connections Available
- > Packed (Stem)
- > Blowout Proof Stem Design
- > Heavy Duty Flatted Stem Design
- > Metal-To-Metal Fire Safe Sealing
- > Manual Operation Handle

### **Optional Features**

- > Antistatic Device
- > Actuation Assemblies
- ➤ Enduro-Bond<sup>™</sup> Coating for Corrosion Resistance
- Valves Specified with StainlessSteel Trim Meet NACE MR0175/ISO 15156



### Series B & BH | 3-Piece Design

Carbon, Stainless or Low Temp Carbon Steel Body
Series B-1/4"FP-2"RP, 2250-3000 psi
Series BH-1/4"FP-1"FP, 5000 psi





### Series W

Carbon or Stainless Steel Body

1/4"FP-2"RP, 1500-2000 CWP

# KF Flanged End Floating Ball Valves

Series F/FE

### **Features**

- > NACE MR0175/ISO 15156 (SS Ball /Stem Configuration)
- Weather Seal (Class 600 & Higher)
- Actuator Mounting Pad (4 Bolt Machined)
- > Fire Safe Designed & Tested to: API 607\* (O-Ring & Graphite)
- API 6D Monogrammed (O-Ring & Graphite)
- Secondary Metal-to-Metal Sealing
- > Full Rated Bi-Directional Dead End Service
- > Antistatic Device (Class 150 & 300)
- > Lockable Handle
- > O-Ring Design (Std.)
- Graphite or Teflon® Packing (Optional for Class 150 & 300)
- > Anti-Freeze Design (Optional)

\*Not applicable to Teflon® packed.

### Series F/FE

Carbon, Stainless or Low Temp Carbon Steel Body
1"FP-12"RP, ANSI Class 150, 300, 600, 900 & 1500





# KF Trunnion Supported Ball Valves

### **Features**

- > Double Block & Bleed
- > Blowout Proof Stem Design
- Corrosion Resistant Low Friction Bearings
- Inconel Wave Springs Assist in Low Pressure Sealing
- > Fire Safe Designed & Tested to: API 6FA, API 607, ISO 10497
- ➤ Stainless Steel Injection Fittings for Emergency Stem or Seat Sealant & Lubrication Maintenance
- Antistatic Grounding Between Ball, Stem & Body
- > NACE MR0175/ISO 15156
- Integral Topworks Direct Mounting Pad
- > 8" & Larger Valves are Equipped with Lifting Lugs\*
- > Bi-Directional
- Double Piston and Self-Relieving Designs Available
- > API 60

\*Not applicable for series T/TE and FA/FAE.



### Series P3/M3 │ 3-Piece Design

3-Piece Carbon Steel, Low Temp Carbon Steel or Stainless Steel Body

14"FP-24"FP, ANSI Class 150 & 300

2"FP-36"FP, ANSI Class 600

2"FP-24"FP, ANSI Class 900

2"FP-12"FP, ANSI Class 1500 & 2500



### Series WB/WM

Welded Body, Internal Stops
Low Temp Carbon Steel, Carbon Steel Body
8"FP-48"FP ANSI Class 300 & 600



### Series FA/FAE | 2-Piece Design

2-Piece Carbon Steel, Low Temp Carbon Steel or Stainless Steel Body

2"FP-14"RP, ANSI Class 150 & 300



### Series T/TE Top Entry (Inline Repairable)

Top Entry One-Piece Carbon Steel, Low Temp Carbon Steel or Stainless Steel Body

2"FP-16"FP, ANSI Class 600

2"FP-12"FP, ANSI Class 900, 1500 & 2500

2<sup>1</sup>/<sub>16</sub>"FP-7 <sup>1</sup>/<sub>16</sub>"FP, API 2000, 3000 & 5000



# KF Check Valves

### **Features**

- > Long Pattern
- > Short Pattern
- > Single Disc
- > Internal Spring Assist
- > No Spring Assist
- > External Spring Assist
- > Air Cushion

### **Specifications**

- > ANSI B16.34
- > ANSI B16.5
- > API 6D (Monogrammed)
- > Fire Safe Designed & Tested to: API 607
- > API 594
- > API 6A
- > API 6FD
- > NACE MR0175/ISO 15156

### Certified

> CE Mark (Optional)

Series 10



### **Series 10 & 10S**

2"-72", ANSI Class 150, 300, 600, 900, 1500 & 2500; API 2000, 3000 & 5000

Wafer Long Pattern Single Disc, Internal Spring Assist

NACE MR0175/ISO 15156 & CE Mark

Series 12



### Series 12

2"-24", ANSI Class 150, 300, 600, 900 & 1500

Wafer Short Pattern

Single Disc, No Spring Assist

Series 18



### Series 18

4"-12", ANSI Class 125 & 150

Wafer Style, External Spring Assist w/Back Flush Lever

ANSI B16.1 & ANSI B16.5

Series 20



### Series 20 & 22

2"-72", ANSI Class 125 & 150

Wafer Semi-Lug Single Disc External Spring Assist, Air Cushion (Series 22 only)

ANSI B16.1 & ANSI B16.47

Series 31



### Series 31

1"-4", MOP 300, 750, 2200, 3000 & 5000 psi

Threaded and Grooved Ends, Single Disc, No Spring Assist

NACE MR0175/ISO 15156

Series 35



### Series 35

2"-24", ANSI Class 150, 300, 600, 900, 1500 & 2500; API 2000, 3000 & 5000

Flanged End, Weld-End, Long Pattern, Single Disc, Internal Spring Assist, No Spring Assist

ANSI B16.34, API 6A, API 6D (Monogrammed), API 594, Fire Safe Designed & Tested to API 607 4th Edition, CE Mark, NACE MR0175/ISO 15156

Series 50



### Series 50

2"-8", ANSI Class 300, 600 & 900

Spring Assisted Closure, Precisely Metered Piston Orifice

ANSI B16.34 & ANSI B16.5

Series 60



### Series 60

Threaded Horizontal or Vertical "Upflow" Installation. Gravity Return Eliminates Need for Ball Return Spring.

1" & 2" MOP 1000-5000 psi



# KF Needle Valves

### Features

### **Packed Bonnet Style**

- Available in Hard & Soft Seat for Pressures Up to 10,000 psi
- > Stainless Steel Stem & Teflon® or Grafoil® Packing
- ➤ Optional Grafoil® Packing for Temperatures Up to 1000°F
- > NACE MR0175/ISO 15156 Conformance Available

### **0-Ring Style**

- Accurate Regulation at Pressures Up to 6000 psi for Soft Seat & 10,000 psi for Metal Seat
- > Temperature Limit 400°F
- ➤ NACE MR0175/ISO 15156 Conformance Available



# Packed Bonnet & O-Ring Style Needle Valves

Carbon or Stainless Steel Body

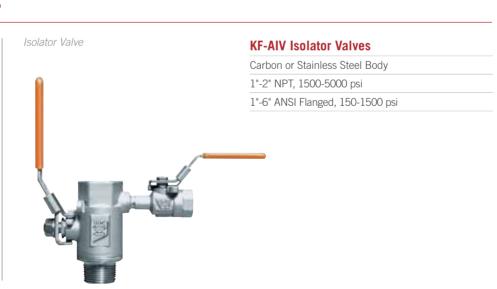
Packed Bonnet -1/4"-1" NPT, Up to 10,000 psi

O-Ring  $^{-1}\!/_4$  " $^{-1}\!/_2$  " NPT, Soft Seated, Up to 6000 psi, Metal Seated, Up to 10,000 psi

# KF Isolator Valves

### **Features**

- > Enables Isolation of the Safety Relief Valve from the Pressure Source for Relieving Set Point Verification Without Shutdown or Removal
- Latch-Lock Handles on Isolator& Test Port Valve
- Seal Welded Body & Test Port Valve





# KF Butterfly Valves - Series BG

### **Features**

- Installs Between ANSI 125 or 150 Flanges
- > PTFE Bushings 2"-12"
- > Bronze Bushings 14"-36"
- ➤ Lugged Style Valves Suitable for Bi-Directional Dead End Service at Full Rated Pressure
- > Seats Available in Buna-N & Viton® A
- > One-Piece Shaft Through 24"
- > 29" HG Vacuum Rating
- > ISO 5211 Topworks (2"-12")

### **Specifications**

- > MSS SP-67
- > API 609



### **Series BG**

2"-36", Wafer or Lug Ductile Iron Body

2"-12", 200 psi

14"-36", 150 psi

# KF Butterfly Valves – Series 2200

### **Features**

- ➤ Lockable Handle, Easily Locked in Full Open or Full Closed Position
- Maximum Size Stem Diameter Offers Greater Strength & Increases the Life of the Valve
- Standard Polished Bronze Disc with Replaceable Buna-N O-Ring
- Optional Fluoroelastomer O-Ring Material is Available
- Disc & Stem O-Rings are Easily Replaced in the Field
- One-Piece Cast Iron, Nickel Plated Body for Corrosion Resistance
- > Trim for Salt Water is Available





### Series 2200

One-Piece Cast Iron Body (Electro Plated Nickel) 2"-6", 200 WOG



# KF Gate, Globe & Check Valves

### **Forged Steel**

A Wide Range of Steel Materials

Including ASTM A105N A350-LF2

A182-F11-F5-F304-F316 & F316L

1/4"-2", ANSI Class 800-2500



### **Cast Steel**

A Wide Range of Steel Materials

Including ASTM A216-WCB

A352-LCC, A217-C5 & A351-CF8M

2"-48", ANSI Class 150 -2500

Cast Steel Valves



# KF Specialty Ball Valves

### **Features**

- > NACE MR0175/ISO 15156
- > Mounting Pad for Automation
- > Locking Handle



### Series K1

One-Piece Stainless Steel

Investment Cast Body

1/4"-2" NPT, 2000 psi



### Series K3

Rugged 3-Piece

Forged Steel Design

1/4"-2" NPT

3000 & 6000 psi

A105 & A350-LF2 Material



# Mallard Control Product Summary





# Mallard Liquid Level Switches

### **Features**

- Maximum Working Pressure to 2000 PSIG
- > Maximum Temperature to 400°F
- > SPDT or DPDT Options
- Optional External Chamber Mounting



### Model 3100E Electric Level Switch

Float-actuated, compact electric level switch for use as a high or low level alarm. Available in either Carbon Steel or Stainless Steel.

### **Features**

- Maximum Working Pressure to 2000 PSIG
- Maximum Temperature to 400°F
- > 2-Way or 3-Way Switch Options
- > Optional External Chamber Mounting





# Model 3100P/3100P1 Pneumatic Level Switch

Float-actuated, compact pneumatic level switch for use as a high or low level alarm. Available in either Carbon Steel or Stainless Steel.

### **Features**

- Pneumatic Pilots (Snap, Throttle, ECO Pilot-non bleed)
- Wide Variety of Displacer Sizes & Materials Offered
- > Right or Left-hand Mount
- Optional SPDT or DPDT Electric Switches
- Optional Wetted Materials Meet NACE MR0175/ISO 15156



### Model 3200

Rugged and versatile pneumatic liquid level controller with a sealed weatherproof case and field reversible action (direct or reverse acting); ideal for offshore applications.

### Model 3201

Pneumatic liquid level controller with non-sealed case, primarily for onshore applications.

### **Features**

- ➤ Hammer Nut Closure for Quick & Easy Installation & Removal
- Built-in Sight Glasses for Local Liquid Level Indication



### **Model 40MU Hammer Union Connection**

Hammer nut closure designed to be used in conjunction with the Model 3200/3201 liquid level controller. The Mallard union also incorporates compact sight glasses for liquid level indication at the entry point of the level control into the vessel.



# Mallard Liquid Level Controllers and Accessories

### 3208-H Features

- > Compact Design for Limited Spaces
- Threaded Level Controller & Vessel Connections

### 3208-V Features

- > Rotatable Head Design
- Available with Threaded or Flanged Controller & Vessel Connections
- NACE MR0175/ISO 15156 Compliance Option



# Model 3208-H Horizontal-Style Chamber Model 3208-V Vertical-Style Chamber

Designed to be used with the 3200/3201 liquid level controller in applications where internal obstructions prevent direct installation of the level control, or to isolate the level control from fluid turbulence within the vessel.

### **Features**

- Multiple Vessel Connection Sizes & Flange Ratings (ANSI 150 Through ANSI 1500)
- Screwed or Flanged Level Controller Connections
- NACE MR0175/ISO 15156 Compliance Option



### Model 3208-D Dome-Style Chamber

Designed to be used with the 3200/3201 liquid level controller in applications where the vessel connection is located on top of the vessel.

### **Features**

- > Electric or Pneumatic (Non-Bleeding Pneumatic Snap Acting/SPDT or DPDT)
- > Field Reversible Switch Action
- Standard Stainless Steel Internals Suitable for Marine Environments
- Optional Wetted Materials Meet NACE MR0175/ISO 15156



### Model 3900 Liquid Level Controller

Pneumatic snap-acting or electric SPDT or DPDT. high/low level switch designed for level safety systems or other level control requirements.

### **Features**

- > 2" Threaded or 4"
  Union Connections
- Choice of Float Size & Float Arm Extension Length
- > Cost Effective



### Model 3150 Pneumatic Liquid Level Switch

Pneumatic control device designed for low pressure applications. The Model 3150 is designed with few moving parts to provide consistent, dependable service.



# Mallard Control Valves

### **Features**

- > Stainless Steel Trim
- > Threaded End Connections
- > NACE MR0175/ISO 15156 Compliance Option
- Maximum Operating Pressure 2,220 PSIG @ 200°F



# Model 5100 "Freezeless" Control (Dump) Valve

Perfectly suited for high pressure fluid control in the oil and gas industry for separators and other process vessels. Body design allows the plug and seat to be constantly submerged in the process media, giving the valve its "Freezeless" characteristic.

### **Features**

- > Adjustable or Nonadjustable Actuators
- > Stainless Steel or Tungsten Carbide Trim
- Lightweight Design Enables Quick & Easy Installation with Minimal Labor
- Marine Option for Harsh Environments with Corrosion & Salt Buildup



# Model 5127/5126 "Freezeless" Control (Dump) Valve

"Freezeless" dump valve designed for fluid control in oil and gas separators, gas compressor scrubbers and other process vessels. The valve body screws directly into the vessel and submerges the plug and seat in the process fluid.

### **Features**

- > Stainless Steel Trim Material Options
- > Variety of End Connections
- Choice to Set Actuator to Direct or Reverse Acting



### Model 5300 3-Way Control Valve

3-way, 2-position control valve designed to blend two inlet flows into one outlet or to divide one inlet flow into two outlets. The 5300 can withstand hard to handle applications such as system switching when high differential and static pressures are prevalent providing positive shut-off.

### **Features**

- > Rugged Steel Construction
- Available in Flanged, Threaded or Welded Connections
- ➤ Bi-directional Flow, can be Installed for "Flow Up" or "Flow Down" Operation
- > Multiple Trim, Size & Material Options
- Marine and/or Sour Gas Service Option (Available)
- > Simple Maintenance & Installation



# Model 5400 Open Yoke Control (Dump) Valve

Designed to meet high pressure and erosive applications and ideally suited for pressure, level, temperature, and flow control applications on separators, scrubbers, wellheads and other oilfield equipment.

### **Features**

- > Flexible to Meet a Wide Variety of Applications
- > Hardened Trim (Available)
- > All Model 5400 Features are Applicable



# Model 5450 Close-Coupled Control (Dump) Valve

Close-coupled design allows installations where space is limited. Available in globe, tee, or angle body configurations. Similar to the Mallard Model 5400.



# Mallard Control Valves & 3-Way Control Valves

### **Features**

- Engineered with Wide Flow Passages for Maximized Flow Capacities
- > Equal Percent, Linear or Quick Opening Flow for Cage Control
- > Modified Percent for Plug Control
- > Anti-cavitation or Noise Abatement Trim Sets
- Raised Face, Ring Type Joint or Female Threaded End Connections
- > Spring-loaded Packing
- Excellent Shut-off Performance with Zero Leakage (ANSI Class VI) Achieved with Soft Seat Trim Option

Model 5500



### Model 5500 Control Valve

Suited for throttling or on/off control of gas, liquid or steam. Can be used over a broad range of pressure drops and temperatures for reliable accurate control.

### **Features**

- > Rugged Construction
- > Optimized Flow Path
- > Equal Percent, Linear, Quick Opening (On/Off)
- Anti-cavitation, Noise Abatement & Modified Percent Trims Available
- > Balanced Trim Design

Note: All Model 5500 Features are applicable

Model 5520



### Model 5520 Control Valve

Durable and reliable control valve designed for throttling or on/off control of non-lubricating, viscous, or other hard to handle fluids. Used over a broad range of pressure drops and temperatures.

### **Features**

- Available w/Balanced or Unbalanced Cage-guided Trim
- Models are Available in a Variety of Integral End Connection Styles
- > Application Flexibility for Piping Designs

Model 5530

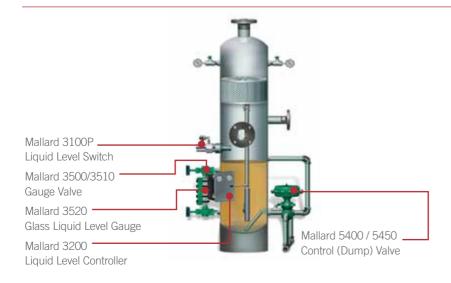


### Model 5530/5540 3-Way Control Valve

3-way control valve designed for throttling or on/off service in converging (blending) or diverging (flow splitting) applications.

Available with Common Part on Bottom (5530) or on Left (5540)

# Oil/Water Separator Level Control



# Gas Compressor Scrubber With Internal Blowcase

This is a fully dressed scrubber with an internal blowcase. It uses the Mallard 3100P for a high liquid level switch which sends a signal to the Mallard 5400/5450 dump valve.

The Mallard 3200 liquid level controller maintains the proper liquid level in the internal blowcase along with the Mallard 3520 sight glass for visual inspection. Some manufactures and/or packagers prefer this arrangement, scrubber with internal blowcase, to allow more area on a skid mounted unit.



# Mallard Level Gauges & Gauges

### **Features**

- ➤ All Gauges Tested to 1.5 Times Rated Pressure at 100°F
- > Available in Reflex or Transparent Styles
- Wetted Parts Conform to NACE MR0175/ISO 15156
- Optional 316 SS Bolts & Nuts, Plus 3-Coat Paint System for Optimal Protection in Corrosive Environments

Model 3520



### Model 3520 Liquid Level Gauge

Rugged flat glass gauge for liquid level indication. Standard construction includes a solid one-piece chamber machined from bar, forged steel covers, alloys steel bolts and nuts, and tempered glass.

### **Features**

- Union Gauge Connection Enables Gauge Removal Without Removing the Gauge Valves
- ➤ Stainless Steel Ball Check Located Upstream of the Seat, Which Instantaneously Shuts Off Flow in Case of Gauge Glass Breakage
- > NACE MR0175/ISO 15156 Option

Model 3500



### Model 3500/3510 Gauge Valve

Recommended for use with Mallard Model 3520 liquid level gauges, and is compatible with all armored flat glass liquid level gauges.

# Mallard Piston Check Valves

### **Features**

- > Non-slamming Piston
- > Simple Maintenance
- > Smooth Opening
- > NACE MR0175/ISO 15156 Option



### Model 5800 Piston Check Valve

Optimized for the prevention of gas or liquid backflow. Common applications for this valve are gas and liquid pipelines, air or gas compressors, production leases, or safety systems. A variety of available end connections makes this piston check valve adaptable to almost any application.

# Mallard Pressure Controllers

### **Features**

- > Field Reversible Controller Action
- > Single Knob Adjustment
- > Rugged Design
- > Flexible Mounting Options

Model 3300



### Model 3300 Pneumatic Pressure Controller

This pressure controller, used in conjunction with a control valve, make up a complete control loop which reacts automatically to changes occurring in a process and provides precise control within a set range.

### **Features**

- > Wide Range of Bourdon Tubes
- > Low Air (Gas) Consumption
- > Sour Service Capability
- > Field Reversible
- > Vibration Resistance

Model 3360



### Model 3350/3360 Pressure Controller

Provides pressure control in proportional only (Model 3350) and proportional plus reset (Model 3360) configurations. Preferred by production operators and technicians worldwide.



Mallard Control

# Mallard Pressure Regulators

### **Features**

- > Applicable for Sweet or Sour Gas Services
- > Available in Ductile Iron or WCC Carbon Steel
- > Excellent Control at Low Pressure Settings
- > Variety of Flow Capacities
- > Flanged Connections (Available)

### Model 5600



### Model 5600 Pressure Regulator Model 5600R Relief Valve

Spring-loaded, self-operated pressure regulator built to withstand the most difficult processes and environments and offered in high or low pressure services.

### **Features**

- > Self-relieving
- > Low Drop at High Flow
- > Variety of Mounting Options
- > Corrosion-resistant Construction
- > Superior Regulation Characteristics
- > Excellent Stability & Repeatability
- > Built-in 40 Micron Filter & Dripwell (5601 Only)

### Model 5601



### Model 5601/5601NF Air Set Regulator

Rugged, adjustable air regulator designed for instrumentation and general purpose. Careful design and quality materials throughout assure long, trouble-free operation in the most difficult industrial environments.

### **Features**

- > High Flow Capacity (Up to 80 SCFM)
- > Simplified Maintenance
- > Sensitive
- > Stable Output, Low Noise

### Model 5607



### Model 5607 High Flow Pressure Regulator

Designed for applications requiring substantial flow capacity and accurate pressure controls. A balanced poppet valve, utilizing a rolling diaphragm, ensures constant output pressures even during wide supply pressure variations. An aspirator tube, which adjusts the air supply in accordance with the flow velocity, accurately maintains the stability of the regulated pressure. The 5607 is an accurate and reliable high flow capacity regulator designed to give millions of cycles.

### **Features**

- ➤ Union Connection Between Diaphragm Case & Body Allows Easy Access to Trim Parts
- > Wide Range of Flow Capacities
- > Available with Ductile Iron or Steel Body
- ➤ Tight Shut-off (Soft-Seat Disk Available in Buna, Viton® or Polyurethane)
- Installation Flexibility Including Rotation of Diaphragm Case

### Model 5646



### Model 5646 Pressure Regulator

Self-operating pressure reducing regulator, equipped with an integral pitot (boost) tube for increased flow capacities and stability, provides economic control of natural gas, air and other gasses in commercial and industrial applications.

### **Features**

- > Rugged Construction, Non-venting
- > Inlet Pressures to 6000 PSIG
- > Variety of Flow Capacities
- NACE MR0175/ISO 15156 Compatibility

### Model 5660



Model 5670



### Model 5660/5670 SS High Pressure Regulator

Designed to reduce high inlet pressures to working pressures.



# Hydroseal Product Summary



# Hydroseal High Performance, Economy and Pilot Valve Series

### **Features**

- Versatility to Handle Air, Gas, Steam & Liquid Service with the Same Configuration & Trim
- Both Flat Lapped Metal-To-Metal Seat & Bubble Tight Soft Seat Designs Available
- Manufactured in Accordance with ASME Code Section VIII, NBBI Capacity Certified
- > Pressure Ranges from 5 PSI to 6173 PSI
- > Temperature Ranges from -320 °F to +800 °F

# Series 1500 Threaded & Flanged Safety Relief Valves

Series 1500



### **Features**

- Same Internals for Air, Gas, Liquid & Steam Service Applications
- > Self Aligning Disc & Guided One-Piece Disc Holder Assembly
- > Interchangeable Discs for Metal-To-Metal & Soft Seat Seals
- ➤ Meets Fire Safe Designed & Tested to: API 526 & API 527 with Available Orifices "D" through "T"
- > Available with NACE MR0175/ISO 15156 & Bellows Option
- Manufactured in Accordance with ASME Code Section VIII, NBBI Capacity Certified
- > Replaceable O-Ring Soft Seats

Series 2500 Flanged High Capacity Safety Relief Valves

Series 2500



### **Features**

- > ½"-2" Inlets
- > Pressures to 2000 PSI
- > ASME UV Code Stamped for Gas & Liquids
- > Same Design for Gas & Liquids
- > Soft Seat Design for Bubble Tight Service
- The Ideal SRV for Both OEM, Gas Compression, Separators, Dehydrators, Gas Production Units & Similar Applications

# Series 1200 & 1400 Oilpatch Safety Relief Valves

Series 1200



Series 1400



### **Features**

- > Snap Acting & Modulating Options Available
- > API Orifice Sizes "D" through "T"
- > Air & Gas Applications
- > Replaceable O-Ring Seals
- > Meets API 526 & API 527
- > Meets API Class 150 through 2500 Flange Ratings

### Series 3500 Pilot Operated Relief Valves

Series 3500





Hydroseal

# Hydroseal Ball & Seat/High Capacity and Special Applications

### **Features**

- > Ideal for Economical Low Flow Overpressure Protection
- > Incorporates Hydroseal's "Self-Seeking Seat" Design
- > ASME UV Code Stamped for Air & Gas
- > 1/4"-1" NPT Inlet Sizes, Operating Temperatures to 450 °F

### Series 1-4 Ball & Seat Threaded Safety Relief Valves

Series 1-4



- > 11/4"-2" Inlet Sizes
- > Incorporates Hydroseal's "Self-Seeking Seat" Design
- Viton® Soft Seat Option Provides Primary Seal with a Metal-To-Metal Secondary Seal
- Manufactured in Accordance with ASME Code Section VIII, NBBI Capacity Certified
- > ASME Sec VIII UV Code Stamped for Air & Gas (Non-Code Liquid)

Series 5-8 Ball & Seat Safety Relief Valves

Series 5-8 Thread





> Disc & O-Ring Soft Seat Design Provide High Flow

- > Bubble Tight Seal for Various Relief Applications
- > Inlets from 3/4"-2" with Set Pressures to 3500 PSI
- > ASME Semi-Nozzle Fixed Blowdown Valve

Series FT, HC (Air) & HD (Liquid) Threaded and Flanged Safety Relief Valves

Series FT







- Compact Affordable Alternative for Air, Gas & Liquid Service Under 300 PSI
- > Available in 1/2"-3" Inlets
- Ideal Overpressure Protection for Steam Boilers, Sterilizers, Distillers, Cookers, Piping Systems & Unfired Pressure Vessels

**Bronze Safety Relief Valves** 

Series 78/79





- > For High Pressure Applications Requiring an Easy Maintenance, Collapse Resistant Screen
- > In-Line Cleanout Access
- > Spiral Wound Stainless Steel Screen
- $^{1}/_{2}$ "-2" FNPT & SW, Pressures to 3000 PSI

High Pressure "Y" Strainers

"Y" Strainer



- > 1/2"-2" FNPT & SW
- > Pressures to 3000 PSI
- > Operating Temperatures to 400 °F
- > Easy Service Cartridge Barrel Design
- > For Applications Requiring a High Pressure Easy-To-Maintain Steel Check Valve
- High Pressure Ball Check Valves

Ball Check Valve



- > For Wellheads, Flow Lines, Pressure Vessels, Water Purification Systems, Steel Mills, Chemical Plants, Waterflood Injection Systems & Reverse Osmosis Systems
- > 1/2" MNPT Connection, 316 Stainless Steel Materials, 10,000 PSI Working Pressure
- > Mesh Screen Filters Debris, Eliminating Clogs & Reducing Cost of Expensive Gauges
- Bubble Tight Seal, Gauge Hazardous Materials Safely, take Pressure Readings & Sample Line Fluids in Seconds & Troubleshoot Without Breaking Pressure in Lines

### **Pressure Monitor Plug and Probe**



Pressure Monitor Probe



Hydroseal

# Contromatics Product Summary





### **Features**

- > Unibody Construction
- > Bottom Loaded Blowout Proof Stem
- > 125 WSP Steam Rating
- > Adjustable Packing Gland
- > Double Reduced Port
- > Oval Handles (Optional)
- > 316 Stainless Steel Ball & Stem (Optional)

### **Specifications**

- > MSS SP-110
- > ANSI B1.20.1

### Series 6100-M3





### **Features**

- > Full Port Thru 3"
- > 150 WSP Steam Rating
- > Bottom Loaded Blowout Proof Stem
- > Adjustable Packing Gland
- > Oval Locking Handles (Optional)
- > 316 Stainless Steel Ball & Stem (Optional)
- > UL & CSA Approved\*

\*Lever Locking Handle (Standard 1/4"-2")

### **Specifications**

- > MSS SP-110
- > ANSI B1.20.1

### Certified

- > CRN
- > UL
- > CGA 3.16

Series 6000-M3



Bronze Body

1/4"-4", 600 WOG, NPT Ends





### **Features**

- > Full Port
- > Locking Handle Standard
- > Bottom Loaded Blowout Proof Stem
- > Adjustable Packing Gland
- > ISO 5211 4-Bolt Mounting Pad
- > 316 Stainless Steel Trim Standard
- > Positive Grounding
- > 150 WSP Steam Rating
- > Oval Locking Handle (Optional)
- > Mineral Filled Seats (Optional) (250 WSP Steam Rating)

Series 8000-M3



### Series 7000-M3 & Series 8000-M3

7000-Carbon Body/Stainless Trim

8000-All Stainless Construction

1/4"-2", 2000 WOG, NPT Ends

### **Specifications**

- > ANSI B1.20.3
- > MSS SP-110
- > ISO 5211
- > NACE MR0175/ISO 15156

### Certified

- > CE 11/4" & Larger
- > CRN# OC 7841.50126789
- > CSA 6.5
- > CGA 3.16

### **Features**

- > Unibody Construction
- > 316 Stainless Steel Trim Standard
- > Locking Handle Standard
- > Bottom Loaded Blowout Proof Stem
- > Positive Grounding
- > 150 WSP Steam Rating
- > Oval Locking Handle (Optional)
- > Mineral Filled Seats (Optional) (250 WSP Steam Rating)
- > Adjustable Packing Gland





### Series 7100-M3 & 8100-M3

7100-Carbon Body/Stainless Trim

8100-All Stainless Construction

1/4"-2", 2000 WOG, NPT Ends

### **Specifications**

- > ANSI B1.20.3 > MSS SP-110
- > NACE MR0175/ISO 15156

### Certified

- > Fire Safe Designed & Tested to: API 607 4th Edition
- > CRN# OC 7841.50126789
- > CE 1 1/4" and Larger (Optional)

### **Features**

- > Full Port
- > 2-Piece Seal Welded Construction
- > 316 Stainless Steel Trim Standard
- > Locking Handle Standard
- > Bottom Loaded Blowout Proof Stem
- > Adjustable Packing Gland
- > ISO 5211 4-Bolt Mounting Pad
- > Positive Grounding
- > 150 WSP Steam Rating
- > Oval Locking Handle (Optional)

Series 8200-M3



### Series 7200-M3, 8200-M3 & 3200-M3

7200-Carbon Body/Stainless Trim

8200-All Stainless Construction

3200-All Alloy 20 Construction (1/2"-2")

1/4"-2", 2000 WOG, NPT Ends

 $2^{1}/_{2}$ "-4", 1500 WOG, NPT Ends

### **Specifications**

- > ANSI B1.20.3
- > MSS SP-110
- > AAR
- > ISO 5211
- > NACE MR0175/ISO 15156

### Certified

- > CE 11/4" & Larger
- > CRN# OC 7841.50126789



### **Features**

- > Full Port
- → 3-Piece Construction for Ease of Maintenance
- > Bottom Loaded Blowout Proof Stem
- > Live Loaded PTFE Stem Packing
- > ISO 5211 Direct Actuator Mounting
- > Uniseal<sup>™</sup> Seats
- Mineral Filled Seats (Optional) (250 WSP Steam Rating)
- > Locking Handles
- > Oval Locking Handle (Optional)
- > Positive Grounding

Series 8780-M3



### Series 7700, 8700 & 3700

7700-Carbon Body/Stainless Trim

8700-All Stainless Construction

3700-All Alloy 20 Construction (1/2"-2")

1/4"-4", 1000 PSI WOG, NPT & Socket Weld Ends

### **Specifications**

- > ANSI B1.20.3
- > ANSI B16.11
- > NACE MR0175/ISO 15156

### Certified

- > CE 1 1/4" & Larger
- > CRN# OC 7841.50126789

### **Features**

- > 3-Piece Construction
- Operating Pressures to 4500 PSI with Optional Trim Materials
- ➤ All Wall Thicknesses Comply with ANSI B16.34 Class 1500
- > Bottom Loaded Blowout Proof Stem
- > Adjustable Packing Gland
- > Positive Grounding
- Drilled & Tapped for Actuator Mounting
- > Oval & Locking Handles (Optional)
- > Various Seat Options



### Series 7300 & 8300

7300-Carbon Body/Stainless Trim

8300-All Stainless Construction

<sup>3</sup>/<sub>4</sub>"-2<sup>1</sup>/<sub>2</sub>", 1500 WOG, Reduced Port, NPT, Socket Weld or Butt Weld Ends

 $^1\!/_4$ "-2", 1500 WOG, Full Port, NPT, Socket Weld or Butt Weld Ends, ANSI Class 600

### **Specifications**

- > ANSI B1.20.3
- > ANSI B16.11
- > ANSI B16.25
- > ANSI B16.34
- **>** API 598
- Fire Safe Designed & Tested to: API 607 4th Edition
- > ASME B31.1
- > NACE MR0175/ISO 15156

### Certified

- > CRN# OC 7841.50126789
- > CE 11/4" & Larger
- > CGA 3.16



### **Features**

- → 3-Piece 4-Bolt Construction with Enclosed Body Bolts
- > Bottom Loaded Blowout Proof Stem
- > Adjustable Packing Gland
- > Center Section Actuation Mounting
- ➤ ISO 5211 Direct Mount Actuator Mounting Pad
- ➤ Live Loaded High Cycle, TFE V-Ring Style Packing
- Optional TFE Coated "S" Gasket Body Seals for High Temperature & API 607 Applications
- > Integral Fire Lip
- > Full ANSI Class 600 Wall Thicknesses
- > Locking Handle Standard

### **Optional Trim Materials Available Seats**

- > Uniseal™
- > Mineral Filled PTFE
- > PEEK™
- > Delrin®

### **Specifications**

- > MSS SP-110
- > ANSI B1.20.3
- > ANSI B16.11
- > ANSI B16.25
- > ANSI B16.34
- > API 598
- Fire Safe Designed & Tested to: API 607 4th Edition

### Certified

- > CRN# OC 11383.50126789
- > CGA 3.16
- > CSA 6.5

### **Available End Connections**

- > NPT Ends
- > Socket Weld
- > Butt Weld (Specify Pipe Schedule)
- > Extended Pipe Ends
- > Combinations of Above

### Series 7400 & Series 8400

7400 -Carbon Steel Body/Stainless Steel Trim

8400 - All Stainless Steel Construction

NPT, Socket Weld or Butt Weld Ends

3/4"-2 1/2" Standard Port, 1/4"-2" Full Port

Operating Pressures to 4000 WOG



Series 8450





### **Features**

- > Unibody Standard Port\*
- > Blowout Proof Grounded Stem
- Adjustable Stem Packing for Extended Life
- > Fully Machined Actuator Mounting Pad
- > Optional Materials Available
- > Locking Handle
- > Oval Locking Handle (Optional)
- > 1/2"-1" Spring Loaded Packing

### **Specifications**

- > ANSI B16.10
- > API 598
- > ANSI B16.34
- > ASME B31.1
- > ANSI B16.5
- > NACE MR0175/ISO 15156

### Certified

- > CE Mark 11/2" & Larger
- > CRN# OC 7841.50126789
- > CGA 3.16
- > Fire Safe Designed & Tested to: API 607 4th Edition

### Series 2501



### Series 1500 & 2500

1501/1503-WCB Body/Stainless Steel Trim 2501/2503-CF8M Body/Stainless Steel Trim  $^{1}/_{2}$ "-8" ANSI Class 150, Flanged End, Standard Port  $^{1}/_{2}$ "-6" ANSI Class 300, Flanged End, Standard Port

\* 8" 2-Piece Design

### **Features**

- 2-Piece Body Design for Ease of Maintenance
- > Full Port
- > Blowout Proof Grounded Stem
- Adjustable Stem Packing for Extended Life
- > Fully Machined Actuator Mounting Pad
- > Optional Materials Available
- > Locking Handle

### **Specifications**

- > ANSI B16.10
- **>** API 598
- > ANSI B16.34
- > ASME B31.1
- > ANSI B16.5
- > NACE MR0175/ISO 15156

### Certified

- > CE Mark 11/2" & Larger
- > CRN# OC 7841.50126789
- > Fire Safe Designed & Tested to: API 607 4th Edition



Contromatics

### Series 2801



### Series 1800 & 2800

1801/1803-WCB Body/Stainless Steel Trim 2801/2803-CF8M Body/Stainless Steel Trim 1"-10" ANSI Class 150, Flanged End, Full Port 1"-8" ANSI Class 300, Flanged End, Full Port

### **Features**

- Same Materials & Design as Standard Flanged Valve
- Multiple PTFE V-Ring Style Stem Packing
- ➤ Live Loaded 17-7 Stainless Steel Belleville Spring Mechanism for Increased Sealing Capacity
- > Field Retro-Fit Kit Available
- Anti-Vibration Nuts on Packing Neutralizes Pipeline Vibration

### **Specifications**

- > ANSI B16.10
- > ANSI B16.34
- > ANSI B16.5
- > API 598

### Certified

- > CE 11/4" & Larger
- > CRN# OC 7841.50126789
- > CGA 3.16
- > CSA 6.5

### Series 1501-S1



Secure Locking Device



### Series 1500-S1 & 2500-S1

 $1^1/2$ "-8", ANSI Class 150, Flanged End, Std. Port 1"-8", ANSI Class 150, Flanged End, Full Port  $1^1/2$ "-6", ANSI Class 300, Flanged End, Std. Port 1"-8", ANSI Class 300, Flanged End, Full Port



# Contromatics Pneumatic & Electric Actuators

### **Features**

- > Rack & Pinion Design
- > Fully Encapsulated Springs for Safety
- > Mounting Dimensions to ISO 5211
- > Hard Anodized Extruded Aluminum Body Painted with Powder Epoxy Polyester Paint
- > Nickel Plated & Stainless Steel Units (Optional)
- > Double Travel Stops Standard
- > Easily Converted from Double Acting to Spring Return
- > Accessory Mounting Dimensions to NAMUR Specifications
- > -10°F to 195°F Optional -55°F to 250°F



ISO 5211 Mounting Pattern



### Series PA/PAS M5

Pneumatic, 15 Sizes, In 90° & 180° Rotation

From 200 in./lbs. to 37,200 in./lbs.

### **Specifications**

- > ISO 5211
- > NAMUR

### Certified

- > CGA 6.5
- > Factory Mutual

### **Features**

- > Combination NEMA IV, VII & IX Enclosure
- > Protective Hybrid Epoxy Coating
- > Stainless Steel Cover Bolts
- > Split Phase Reversing Motor with Thermal Overload Protection
- > 4140 Hardened Steel Gear Drive
- > Highly Visible Position Indicator
- > Declutchable Manual Override
- > 16-Point Terminal Strip

### **Optional Features**

- > Electro-Mechanical Motor Brake
- > Auxiliary Limit Switches (2)
- > Heater/Thermostat
- > Extended Duty Cycle Motors
- > 4-20 MA Positioner Board
- > Cycle Length Control Module
- > Center Off Operation
- > 120VAC, 220VAC, 12VAC, 24VAC, 24VDC, 12VDC
- > Multi-Turn Operation
- > Failsafe Capability
- > 0-1000 OHM Feedback Potentiometer

# Series 92 PF SERIES ELECTRIC

### Series 92

Reversing Electric Actuator

4 Models, from 400 in./lbs. to 2000 in./lbs.

### **Specifications**

- > NEMA
- > Class I Group C & D
- > Class II Group E, F & G
- > NEMA 4, 7 & 9

### Certified

> CSA

### **Features**

- > 360° Limit Switch Adjustability
- > ISO 5211 Mounting
- > Hardened Steel Gearing
- > F03, F05 and F07
- > 75% Duty Cycle @ 105°F
- > Manual Override Standard
- > Permanently Lubricated Gears and Bearings
- > Extra Switch, Heaters/Thermostats Available
- > 115 VAC 60 Hz, 230 VAC 60 Hz
- > 1/2" NPT Conduit Connections
- > NEMA 4 and 4x



Series EA 600

### Series EA 600

Unidirectional Electric Actuator

Torque Output 600 in./lbs.

115 VAC & 230 VAC

### **Specifications**

> NEMA 4 & 4X



Contromatics

# **Contromatics Automation Accessories**

### **Features**

- > Convertible from 3-Way to 4-Way
- > 35 to 150 PSI Operation
- > -20°F to 180°F, Option to 300°F
- > Optional Voltages Available
- > NAMUR Mount
- > NEMA 4, 4X, 7 & 9 Enclosures\*
- > Block Mounted Solenoid
- > UL, FM & CSA Approved

### **BMS Solenoids**

BMS-2N Solenoid



### **Features**

- > Pneumatic & Electric Pneumatic
- > High Gain Pilot Valve
- > Built in Gauge Ports
- > Stainless Steel Cam
- > Tapped Exhaust Port
- > Sturdy, Simple, Reliable Design
- > Easy to Add on Feedback Unit F5
- > Simple Calibration, External Zero Adjustment
- > Bright Visible Indicator, Flat or Dome Style

### **PMV Positioners**

PMV-EP5 Positioner



### **Features**

- > Highly Visible Position Indicator
- > Co-Polyester; Eastar® Housing
- > Aluminum & Stainless Housings Available
- > NAMUR Direct Mountable
- > NEMA 3, 4, 4X, 7 & 9 Enclosures\*
- > Mechanical, Inductive & Proximity Switches
- > Precise Cam Positioning
- > Easy Wire Termination

### **Contromatics Limit Switch**

Contromatics Limit Switch



NAMUR Direct Mount



### Features

- > Highly Visible Position Indicators
- > Mechanical & Proximity Switches
- > NEMA 4, 4X, 7 & 9 Enclosures\*
- > Resin & Aluminum Housings
- > Prewired Terminal Block
- > UL, FM & CSA Approved





<sup>\*</sup>Varies Depending on Model



pipeline products that continuously develops precision technologies to improve our customers' ability to control the flow of the world's natural resources, from sub-sea to land, and in severe environments.

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