RED OX

REGULATORS

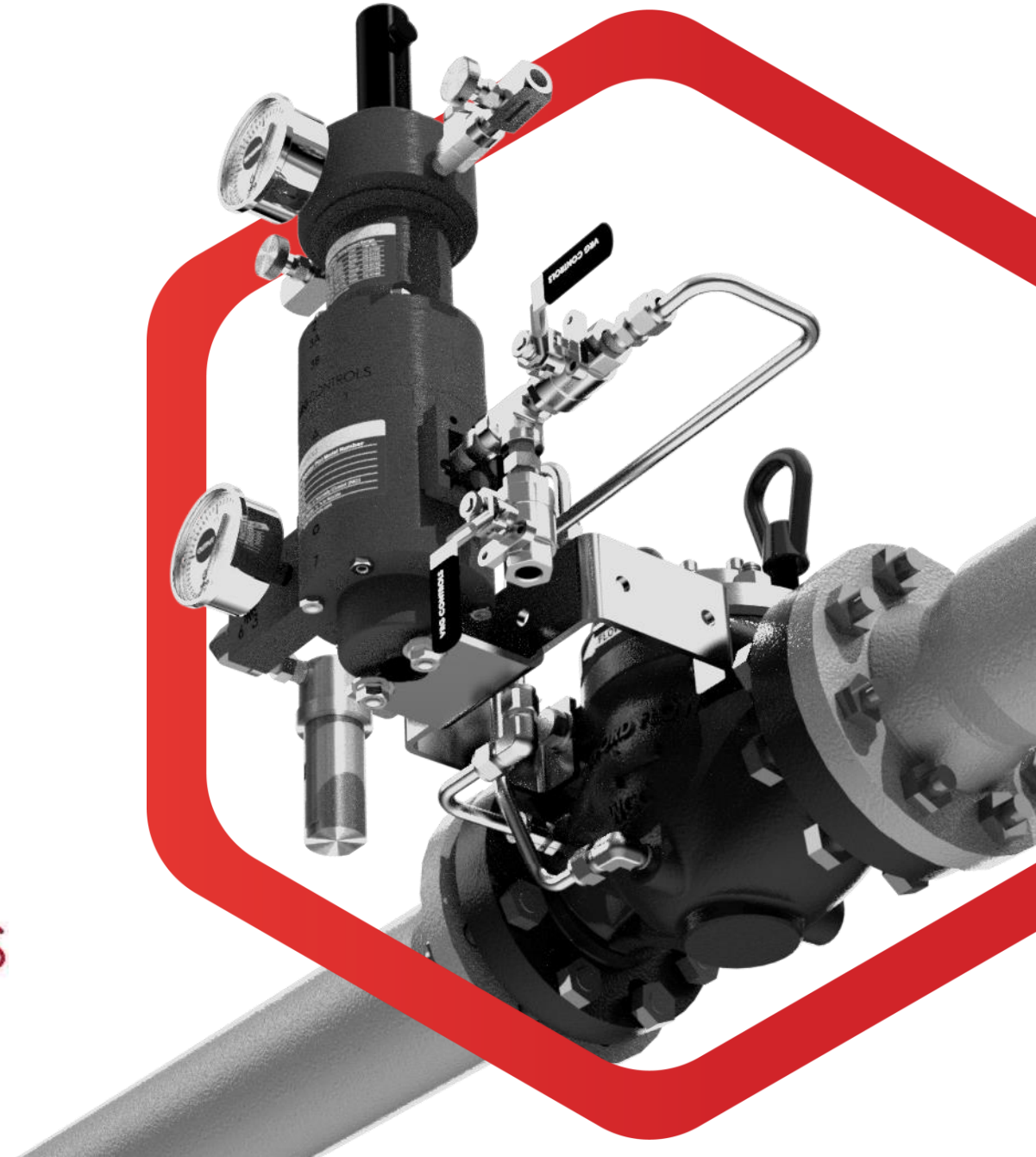
RED OX

OXFORD FLOW + VRG CONTROLS PARTNERSHIP

VRG Controls has partnered with Oxford Flow to provide revolutionary new regulation technology to meet the needs of today's gas pipelines and natural gas utilities. The Red Ox Regulators brand is the exclusive distributor in the USA of Oxford Flow based natural gas applications. Oxford Flow and Red Ox have "grabbed the bull by the horns" to provide innovative gas regulation solutions that ensure superior performance while exceeding the environmentally friendly demands of the industry.

OXFORD FLOW

VRG CONTROLS



RED OX
REGULATORS

IMC (TOP-ENTRY)

The IMC Series range offers excellent pressure or flow control for gas transmission, gas distribution, fuel gas control, and various industrial applications. The innovative cartridge insert design utilizes the patented piston control system to deliver superior process control in an easily accessible body for inline servicing. The unique design employs a single piston instead of a diaphragm, increasing reliability and reducing maintenance costs.

RED OX
REGULATORS

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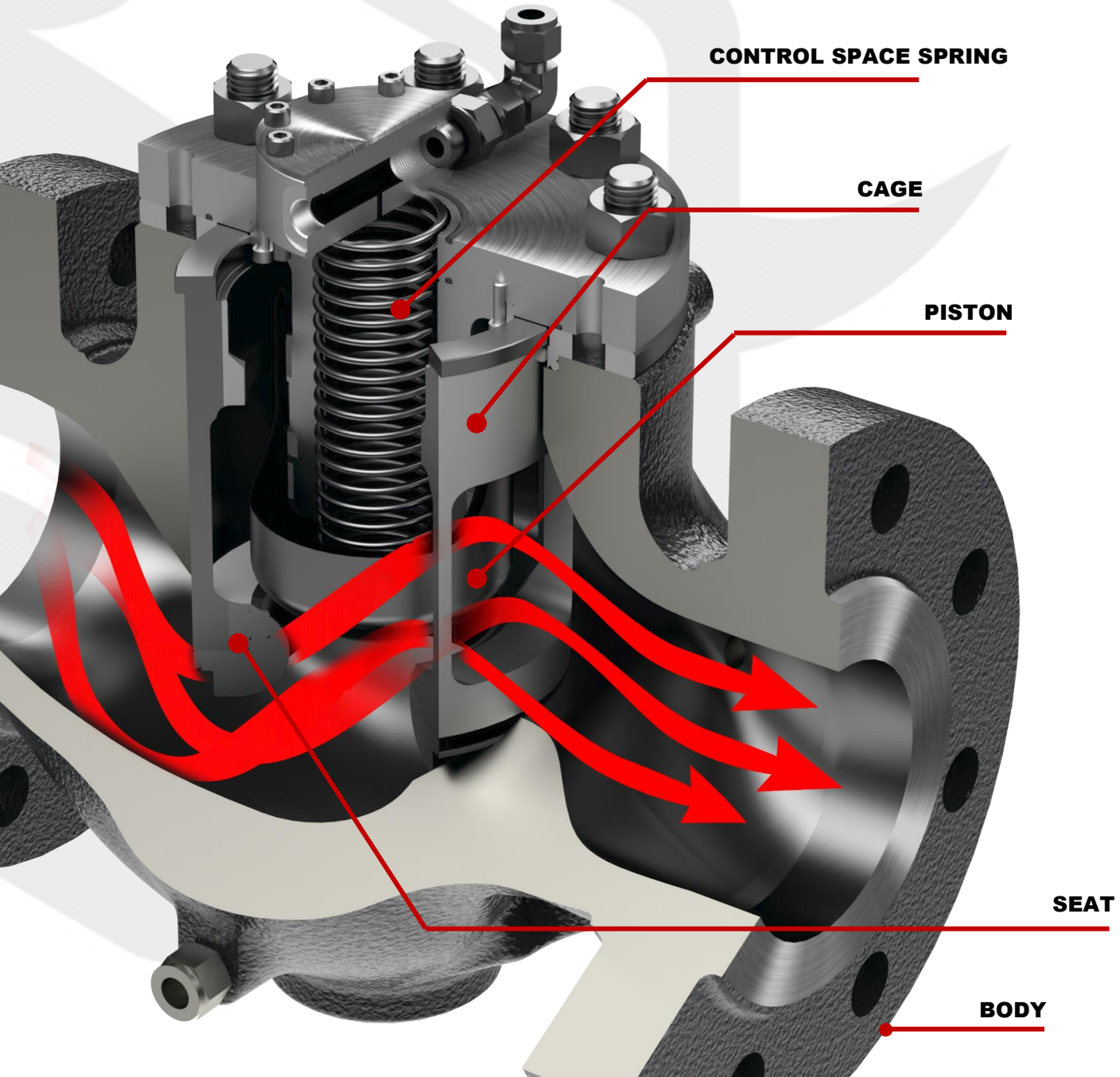
REGULATORS

TOP-ENTRY CONVENIENCE

The Red Ox IMC features a top-entry design commonly requested by operators to accommodate efficient maintenance protocol. The simple design of IMC regulator can be rebuilt rapidly without the need to remove the RP Regulator Pilot. Efficiency saves time! Efficiency saves money!



RED OX
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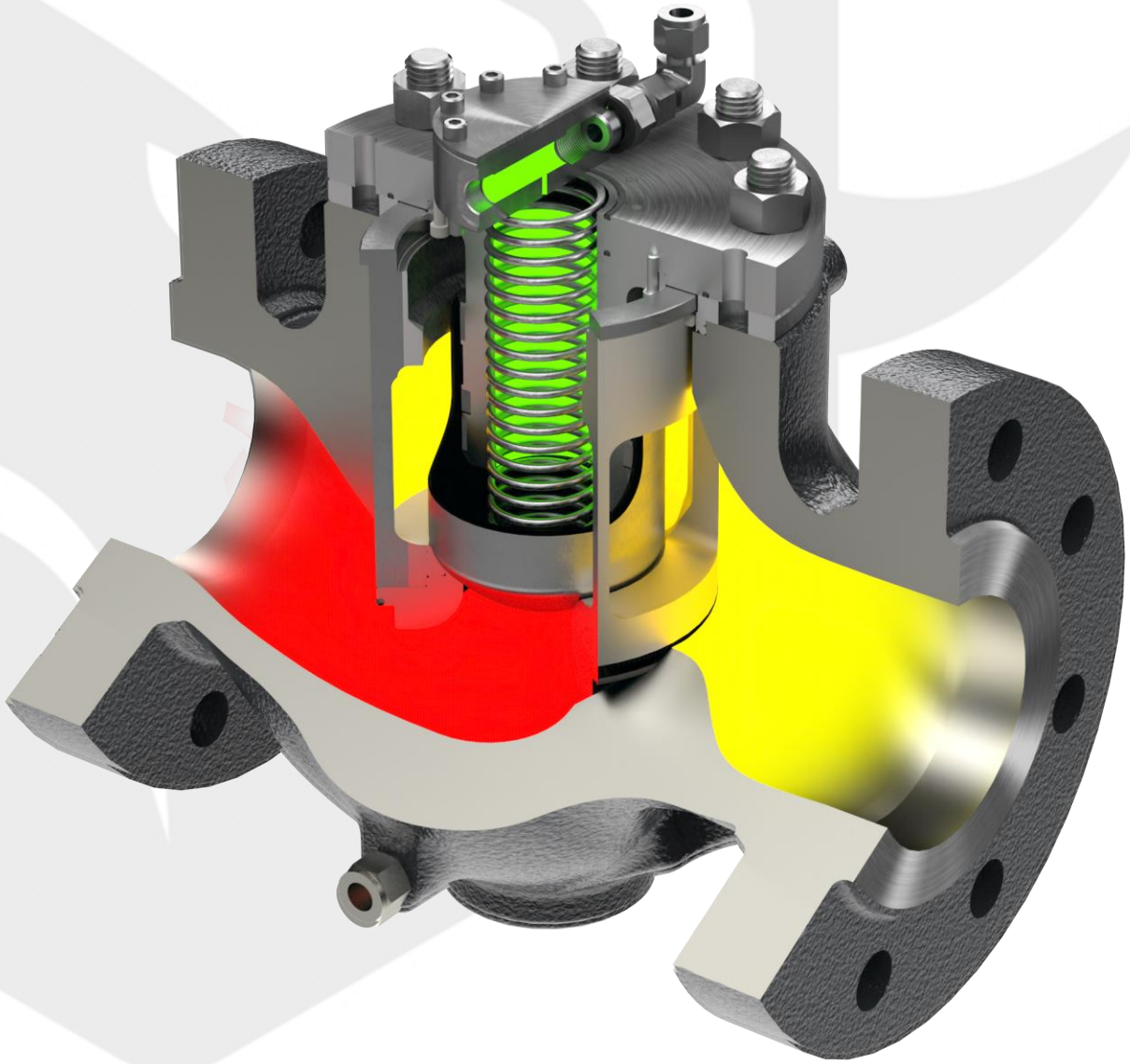
SINGLE MOVING PART. NO DIAPHRAGM.

The Red Ox IMC incorporates a unique top-entry cartridge configuration that ensures easy maintenance. The patented piston design eliminates diaphragms and ensures reliability.

RED OX
REGULATORS



SINGLE MOVING PART. NO DIAPHRAGM.

The Red Ox IMC incorporates a unique top-entry cartridge configuration that ensures easy maintenance. The patented piston design eliminates diaphragms and ensures reliability.

IMC SPECIFICATIONS

TABLE 1.0 – IMC SERIES – KEY SPECIFICATIONS

Size	NPS 2, 3, 4, 6, and 8 (DN50 to DN200)
Pressure Classes	ANSI Class 150, 300, and 600
Connections	RFFE per ASME B16.5
Temperature Range	-20 to 180°F (-29 to 82°C)
Flow Profile	Linear
Leakage	ANSI FCI 70-2; Class VI
Lock Up Class	Bubble Tight
Accuracy Class	±1.0% or better
Instrument Ports	0.250” Female NPT
Body Ports	0.250” Female NPT (QTY 2 Upstream / QTY 2 Downstream)
Face-Face Dimensions	Per ANSI / ISA-75.08.01-2016

TABLE 2.0 – IMC SERIES – CAPACTIES & SIZING DATA:

SIZE	C_V	C_G	K_V	K_G
2 in (DN50)	50.2	1446	43.4	1521
3 in (DN75)	108.9	3058	94.2	3217
4 in (DN100)	172.0	5023	148.8	5284
6 in (DN150)	355.0	10213	307.2	10744
8 in (DN200)	547.2	15830	473.5	16653

RED OX

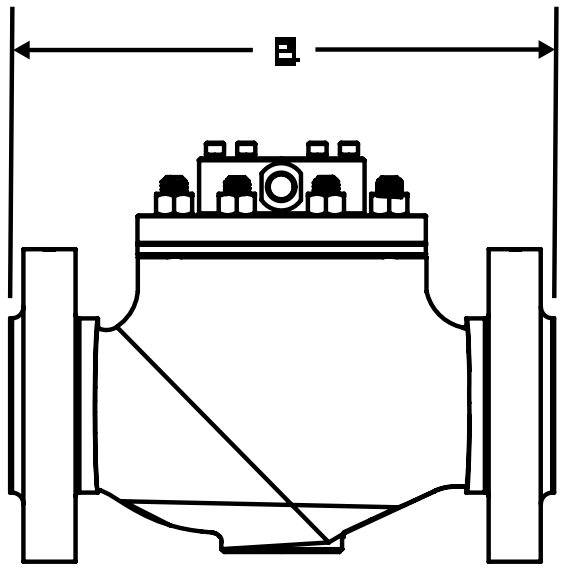
REGULATORS

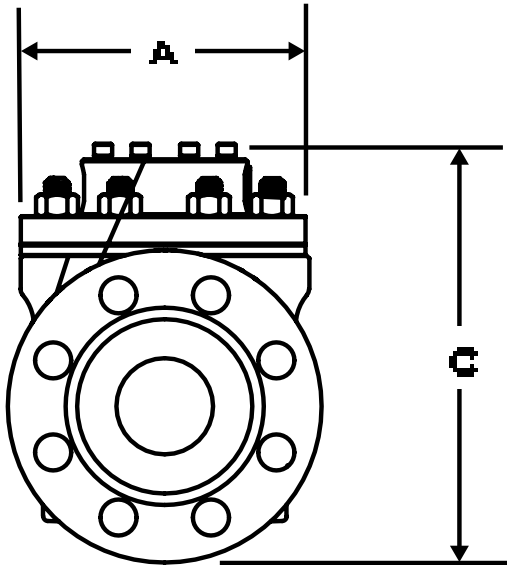
DIMENSIONS IMC

TABLE 3.0A - IMC SERIES, ANSI CLASS 600, RFFE

SIZE	CARTRIDGE DIAMETER (A)	FACE-TO-FACE (B)	HEIGHT (C)	WEIGHT[1]
2 in / DN50	6.0 in / 152 mm	11.3 in / 286 mm	9.0 in / 228 mm	64 lbs / 29 kg
3 in / DN80	7.0 in / 178 mm	13.3 in / 337 mm	11.1 in / 283 mm	116 lbs / 53 kg
4 in / DN100	8.8 in / 223 mm	15.5 in / 394 mm	13.8 in / 349 mm	222 lbs / 101 kg
6 in / DN150	12.4 in / 315 mm	20.0 in / 508 mm	17.3 in / 439 mm	476 lbs / 216 kg
8 in / DN200	15.4 in / 391 mm	24.0 in / 610 mm	21.0 in / 533 mm	855 lbs / 388 kg

Notes: 1. Weight does not include pilot/control instrumentation or other accessories.



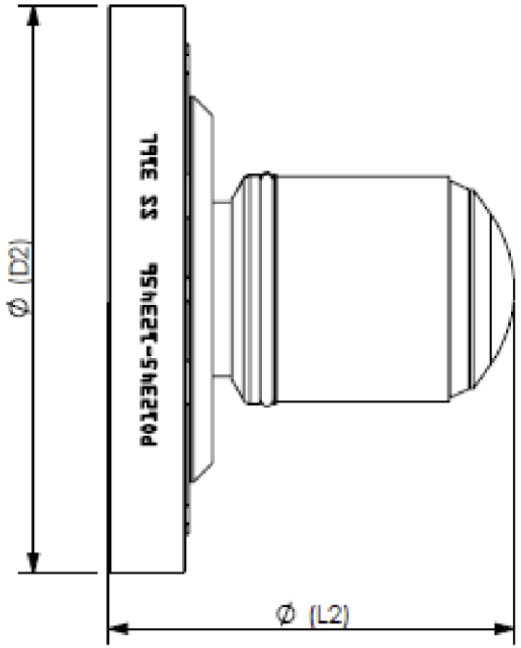


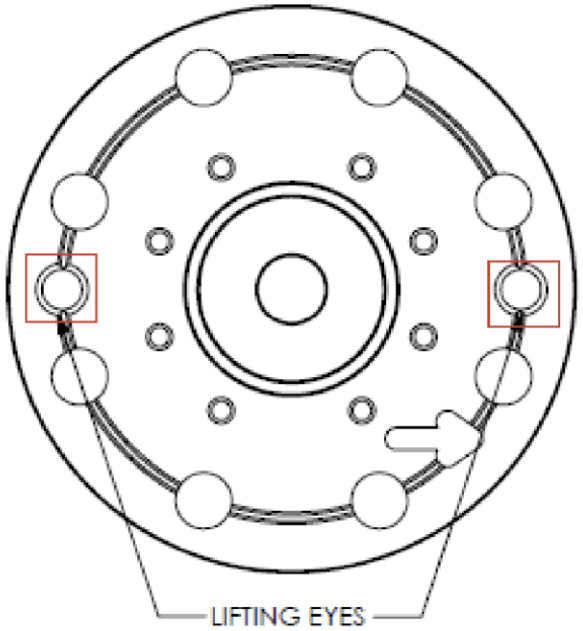
DIMENSIONS IMC CARTRIDGE

TABLE 3.0B - IMC SERIES CARTRIDGE DIMENSIONS AND WEIGHTS

SIZE	CARTRIDGE DIAMETER (A)	LENGTH (B)	WEIGHT[1] (C)	LIFTING EYE BOLT (B)
2 in / DN50	6.0 in / 152 mm	4.3 in / 108 mm	8.6 lbs / 4 kg	½" – 13 UNC
3 in / DN80	7.0 in / 178 mm	5.3 in / 135 mm	14.6 lbs / 7 kg	
4 in / DN100	8.8 in / 223 mm	6.5 in / 165 mm	27.4 lbs / 13 kg	
6 in / DN150	12.4 in / 315 mm	8.1 in / 206 mm	72.5 lbs / 33 kg	
8 in / DN200	15.4 in / 391 mm	10.6 in / 270 mm	169 lbs / 77 kg	

Notes: 1. Weight does not include pilot, control instrumentation or other accessories.

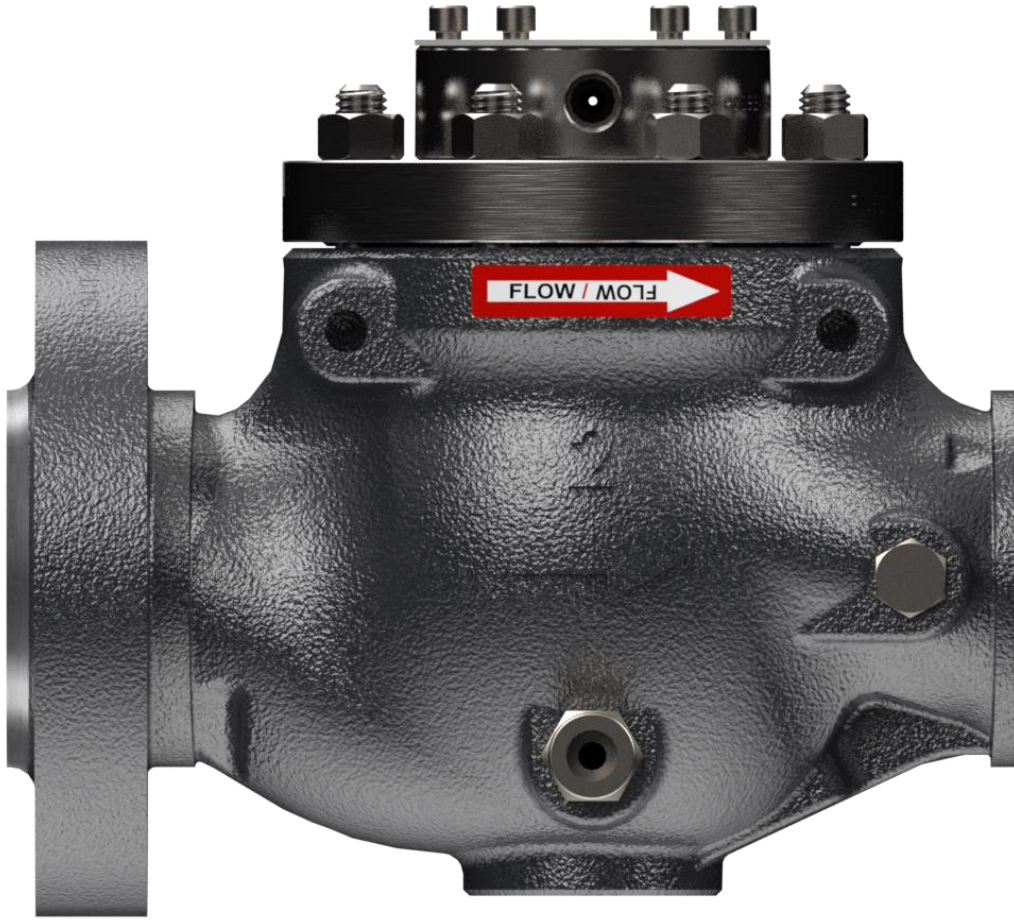




STANDARD MATERIALS IMC

COMPONENT	MATERIAL
Body	WCC Carbon Steel
Cap	316L SS
Trim	316L SS
Fittings	316L SS
Seat / Throat Seal	Viton™ (FKM)* / Buna-N (NBR)
Static Seals	Viton™ (FKM)* / Buna-N (NBR)
Piston Seal/Tri-lobe	Viton™ (FKM) / Buna-N (NBR)*

Notes:
1. * - Indicates standard issue material for stock product
2. Alternate materials available upon request.



IMC REGULATOR
SCOPE OF PRODUCT MATRIX

Size	150 ANSI RFFE	300 ANSI RFFE	600 ANSI RFFE
2 in	IN STOCK	IN STOCK	IN STOCK
3 in	IN STOCK	IN STOCK	IN STOCK
4 in	IN STOCK	IN STOCK	IN STOCK
6 in	N/A	IN STOCK	IN STOCK
8 in	N/A	IN STOCK	IN STOCK

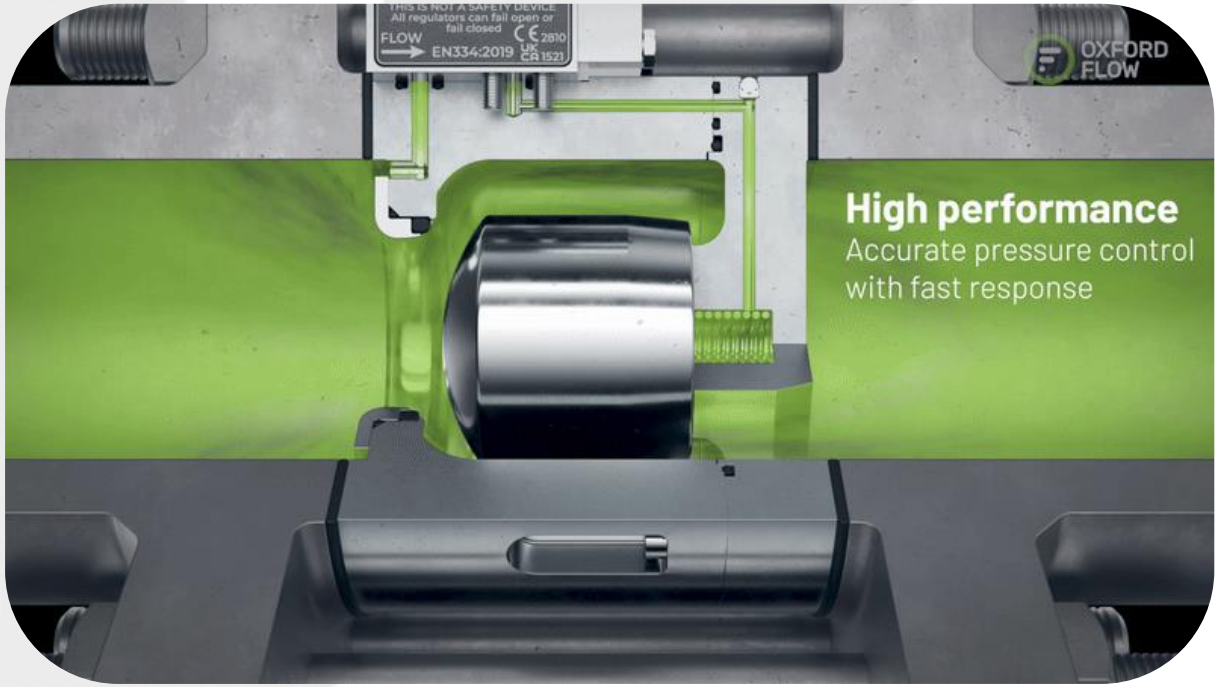
GREEN – IN STOCK
ORANGE – ON ORDER
RED – VIA FACTORY

RED OX
REGULATORS

IMS (WAFER)

The IMS Series range offers excellent pressure or flow control for gas distribution, gas transmission, fuel gas control, and various industrial applications. The compact design utilizes the patented piston control system to deliver superior process control in a full stainless-steel construction. The unique design employs a single piston instead of a diaphragm, increasing reliability and reducing maintenance costs. The IMS Series is fully tested and proven for use in newer hydrogen applications up to 100% H2 content.

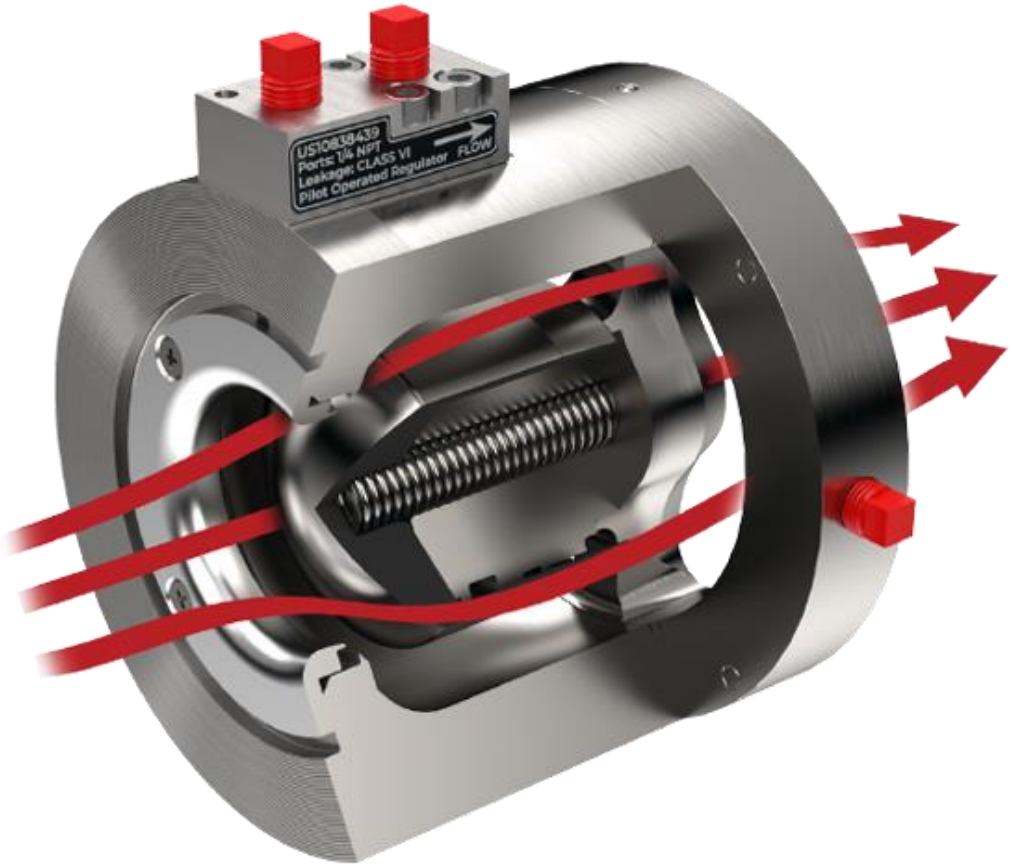
RED OX
REGULATORS



IMS (WAFER)

BENEFITS & FEATURES:

- Class Leading Hydrogen Ready Product
- Full Stainless Steel Construction
- High Capacity True Axial Flow Design
- Compact, Lightweight Design
- Piston Control Eliminates Diaphragm
- Protected Seat Insert for Shutoff Reliability
- Single Moving Part for Minimal Maintenance
- No Atmospheric Emissions
- Bubble-Tight Shutoff
- Long Life in Severe Applications
- Precision Pressure or Flow Control
- Low Costs Rebuild Kits
- Left Hand / Right Hand Reversible Mount Instrumentation
- Supported By VRG Controls Team



IMS SPECIFICATIONS

TABLE 4.0 - IMS SERIES – KEY SPECIFICATIONS

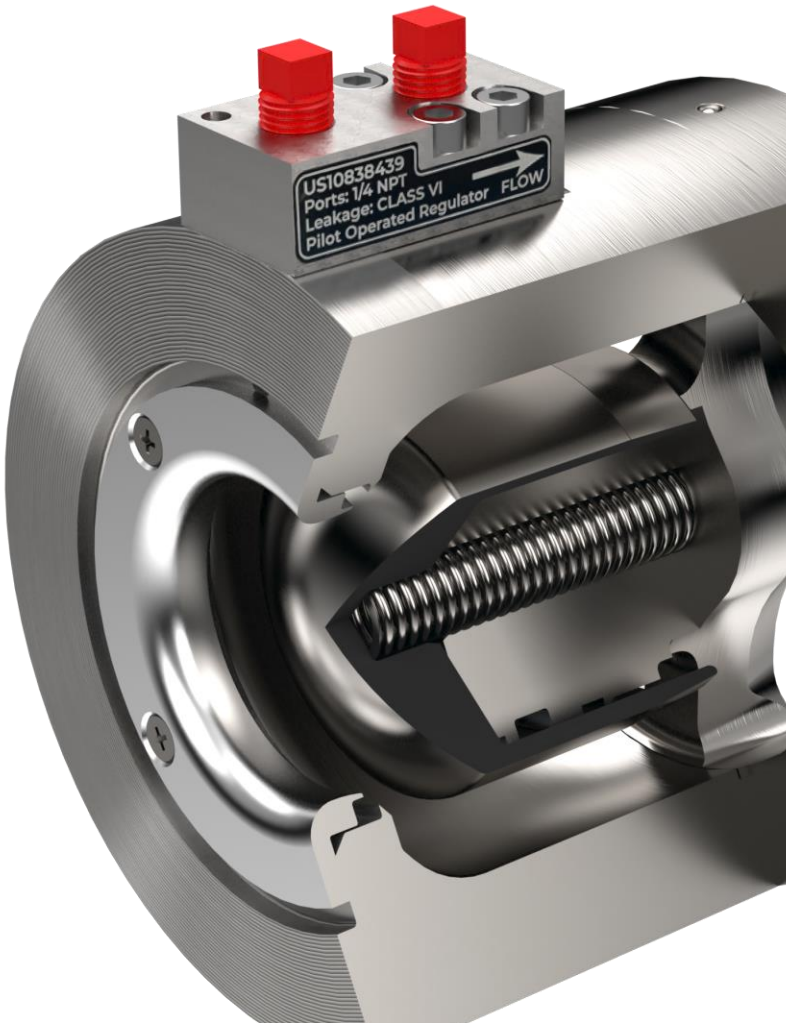
Size	NPS 2, 3, 4, 6, and 8 (DN50 to DN200)
Pressure Classes	ANSI Class 150, 300, and 600
Connections	RFFE per ASME B16.5
Temperature Range	-20 to 180°F (-29 to 82°C)
Flow Profile	Linear
Leakage	ANSI FCI 70-2: Class VI
Lock Up Class	Bubble Tight
Accuracy Class	±1.0% or better
Instrument Ports	0.250” Female NPT
Body Ports	0.250” Female NPT (QTY 2 Upstream / QTY 2 Downstream)
Face-Face Dimensions	N/A – Matches Honeywell American Meter AFV

TABLE 5.0 - IMS SERIES – CAPACITIES & SIZING DATA:

SIZE	C_V	C_G	K_V	K_G
2 in (DN50)	42	1177	36	1238
3 in (DN75)	101	2749	88	2891
4 in (DN100)	161	4451	140	4682
6 in (DN150)	320	9036	277	9506
8 in (DN200)	483	14016	418	14745

RED OX

REGULATORS

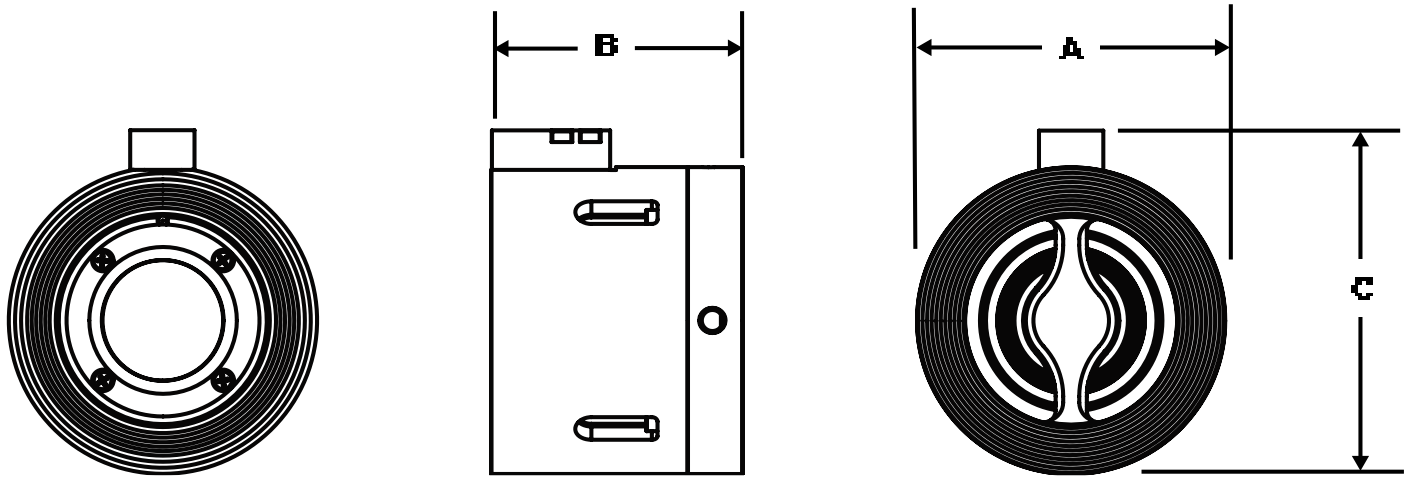


DIMENSIONS IMS

TABLE 6.0 - IMS SERIES, ANSI CLASS 600, RFFE

SIZE	CARTRIDGE DIAMETER (A)	FACE-TO-FACE (B)	HEIGHT (C)	WEIGHT[1]
2 in / DN50	4.1 in / 105 mm	3.4 in / 86.5 mm	4.9 in / 124 mm	10.8 lbs / 4.9 kg
3 in / DN80	5.4 in / 136.5 mm	4.1 in / 104 mm	6.1 in / 156 mm	19.8 lbs / 9.0 kg
4 in / DN100	6.4 in / 163 mm	5.2 in / 133 mm	7.2 in / 183 mm	33.5 lbs / 15.2 kg
6 in / DN150	8.6 in / 218 mm	6.9 in / 175 mm	9.8 in / 248 mm	73.4 lbs / 33.3 kg
8 in / DN200	10.8 in / 274 mm	8.1 in / 205 mm	12.0 in / 305 mm	139.1 lbs / 63.1 kg

Notes: 1. Weight does not include control instrumentation or other accessories.



RED OX
REGULATORS

STANDARD MATERIALS IMS

COMPONENT	MATERIAL
Body	316L SS
Cap	316L SS
Manifold	316L SS
Trim	316L SS
Fittings	316L SS
Seat/Throat Seal	Viton™ (FKM)* / Buna-N (NBR)
Static Seals	Viton™ (FKM)* / Buna-N (NBR)
Piston Seal/Tri-lobe	Viton™ (FKM) / Buna-N (NBR)*

Notes:
1. * - Indicates standard issue material for stock product
2. Alternate materials available upon request.

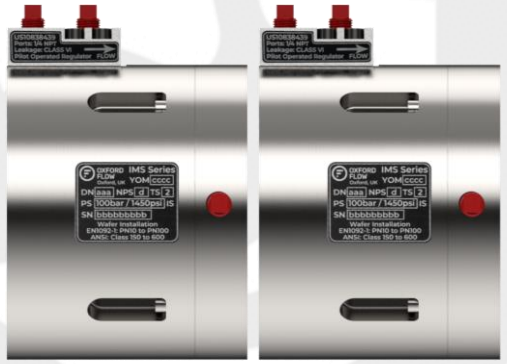
IMS REGULATOR
SCOPE OF PRODUCT MATRIX

Size	150 ANSI RFFE	300 ANSI RFFE	600 ANSI RFFE
2 in	STOCK		
3 in	STOCK		
4 in	STOCK		
6 in	STOCK		
8 in	FACTORY		

GREEN – IN STOCK
ORANGE – ON ORDER
RED – VIA FACTORY

2 IN IMS VS. IMC (ANSI CLASS 600) FACE-TO-FACE DIMENSIONS

RED OX REGULATORS



3.4 in
(86.5 mm)

6.8 in
(172.72 mm)

11.25in
(286 mm)

IM SERIES CAPACITY LIMITER

IMC and IMS Red Ox Regulators can be supplied or retrofit with the IM SERIES CAPACITY LIMITER. The Capacity Limiter restricts the opening travel of IMC or IMS Red Ox regulators. The Capacity Limiter restricts the full open flow without compromising controllability. Flow restriction can be beneficial when considering overpressure and relief valve sizing requirements.

Available Capacity Limits: 20%, 40%, 60%, and 80%
Compatible Models: IMC and IMS Series
Compatible Sizes: 2, 3, 4, 6, 8 in Bore

Applications:

- Max Flow Restriction
- Improve Efficiency of Relief Valve Sizing and Selection
- Prevention of Excess Noise or Flow Velocity

2 in – 40% Travel Limiter

IMC SERIES THROAT MODIFICATIONS
REDUCED PORT THROATS

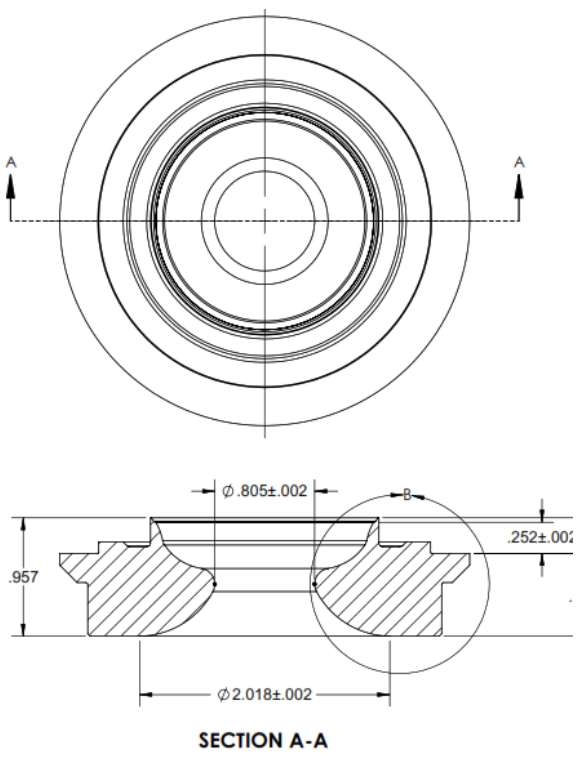
IMC Red Ox Regulators can now be supplied or retrofitted with the reduced port throats for varying the overall capacity of our regulators

Available Versions:
2”x1” & 2”x1-½”
3”x1”, 3”x1-½”, & 3”x2”
4”x2” & 4”x3”
6”x3”& 6”x4”
8”x4”& 8”x6”

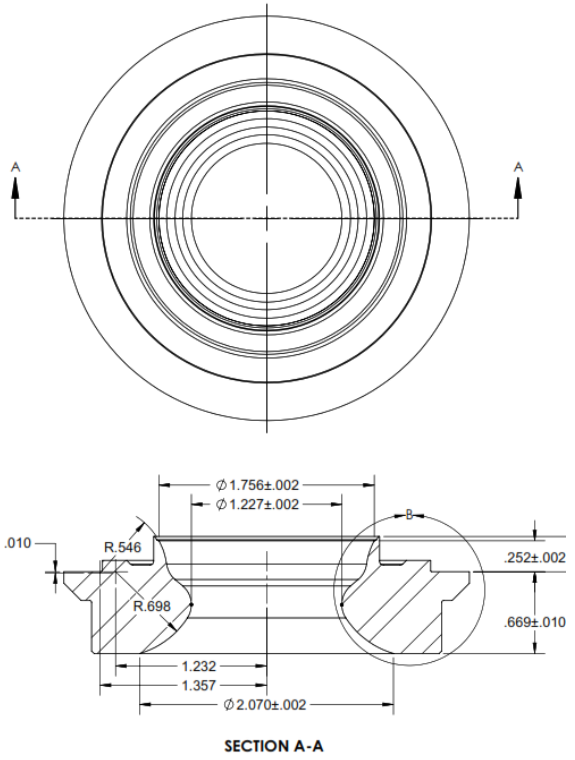
Compatible Models: IMC Series
Compatible Sizes: 2, 3, 4, 6, 8 in Bore

Applications:

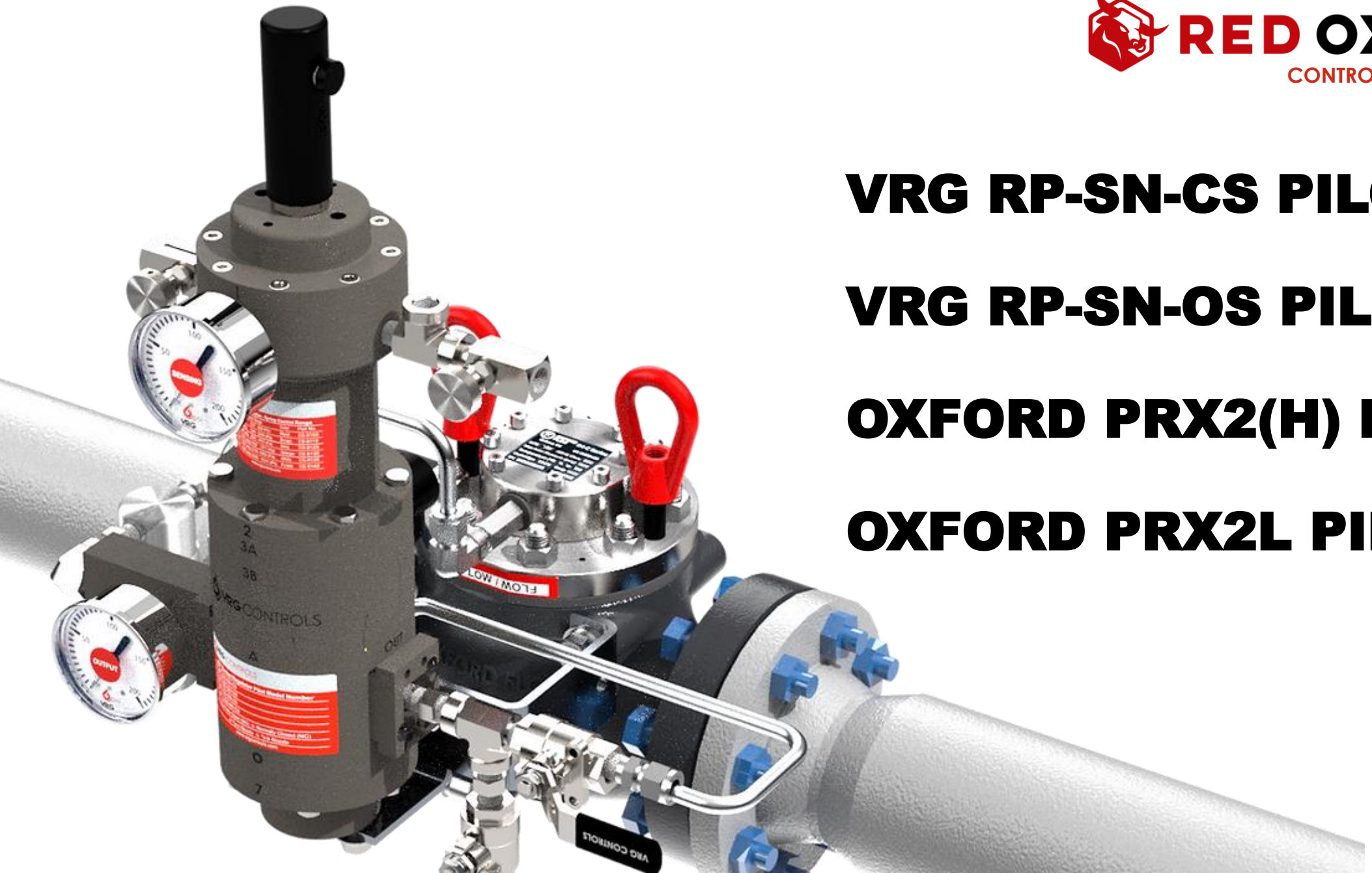
- Lower flow rate applications with process conditions that would have excessive exit velocity issues at the outlet flange



2”x1” Snip



2”x1.5” Snip



RED OX CONTROLS

VRG RP-SN-CS PILOTS

VRG RP-SN-OS PILOTS

OXFORD PRX2(H) PILOTS

OXFORD PRX2L PILOTS

VRG RP-SN-CS PILOTS

VRG RP-SN-CS Regulator Pilots: VRG Controls' RP-SN-CS Regulator Pilots are the perfect complement to Red Ox Regulators for the most demanding pressure control applications. The CS "Closed Spring" sensing chamber protects the Control Spring from aggressive environments and ensures "optimum" pressure control accuracy in installations like power plants, industrial gas feeds and pipeline applications.

- **Applications:** BEST Accuracy Pressure Control
- **Available Setpoint Ranges:** 1.25 – 1500 psig (9 – 10,342 kPa)

VRG RP-SN-OS PILOTS

VRG RP-SN-OS Regulator Pilots: VRG Controls' RP-SN-OS Regulator Pilots are well suited for use with Red Ox Regulators for high performance pressure control applications. The OS "Open Spring" design provides high performance in a moderate cost platform and ensures "very good" pressure control accuracy in installations like gas utility and pipeline applications.

- **Applications:** GOOD Accuracy Pressure Control
- **Available Setpoint Ranges:** 9.0 – 700 psig (62 – 4,826 kPa)

OXFORD PRX2(H) PILOTS

Oxford Flow's PRX2 Pressure Reducing Pilots are well suited for use with Red Ox Regulators for cost-effective pressure control applications. The PRX2 design features 100% 316 Stainless Steel Construction in a moderate cost platform and ensures "good" pressure control accuracy in installations like gas utility applications.

- **Applications:** GOOD Accuracy Pressure Control
- **Available Setpoint Ranges:** 7 – 1015 psig (0.5 – 70 barg)

OXFORD PRX2L PILOTS

Oxford Flow's PRX2L Low Pressure Reducing Pilots are well suited for use with Red Ox Regulators for cost-effective pressure control applications. The PRX2L design features 100% 316 Stainless Steel Construction in a moderate cost platform and ensures "good" pressure control accuracy in installations like low pressure gas utility, fuel gas, and other low delivery pressure applications.

- **Applications:** GOOD Accuracy Pressure Control
- **Available Setpoint Ranges:** 5 in wc – 15 psig (12 – 1000 mbarg)

RCV RESEARCH CONTROL VALVES

The Model RCV research Control Valve is a pneumatically operated control valve that is used in conjunction with Red Ox Regulators to provide control of a variety of processes. The RCV is typically used for flow control, remote electronic control, or “droopless” pressure control. The RCV is available in “fail open” or “fail closed” configurations.

Input: 3-15 psig, 6-30 psig, Split Range Capable
Failure Modes: Fail Open or Fail Closed

Applications:

- Cascade Control / Velocity Control
- Flow Control
- “Droopless” Pressure Control
- Electronic Pressure Control
- Override Applications

ERCV ELECTRONIC RESEARCH CONTROL VALVES

The Model ERCV research Control Valve is a electrically operated control valve that is used in conjunction with Red Ox Regulators to provide control of a variety of processes. The ERCV is typically used for electronic flow or pressure control. The ERCV is typically controlled via 4-20 mA command signal with 12 V_{DC}, 24 V_{DC}, or 120 V_{AC} power supply. The unit can “lock” last loading pressure upon loss of signal or power supply.

Input: 4-20 mA
Power: 12 V_{DC}, 24 V_{DC}, or 120 V_{AC}
Failure Mode: Lock Last Loss Signal / Power

Applications:

- Cascade Control / Velocity Control
- Electronic Flow Control
- Electronic Pressure Control
- Override and Underride Applications

RED OX
ACCESSORIES

ESC ELECTRONIC SETPOINT CONTROL

Module provides remote setpoint adjustment capability when paired with VRG Controls' RP Series Regulator Pilots. ESC modules may be powered with 120 V_{AC} or 24 V_{DC} Power. 4-20 mA analog or 24 V_{DC} discrete command signal will raise / lower pressure setpoint. In event of loss of command signal or power, the ESC will render the RP pilot to "lock" at last pressure setpoint, thereby maintaining control of the process. The ESC features an easy pushbutton programming and 4-20 mA feedback of ESC motor position.

RED OX
ACCESSORIES

ELIMINATOR PILOT FILTER

The Eliminator Pilot Filter provides 50µ filtration of pilot inlet gas to ensure reliable operation of your Red Ox control devices. The Eliminator features 316 Stainless Steel construction in a compact design with 0.250” FNPT inlet, outlet, and drain connections. The standard sintered polyethylene filter element can easily be changed inline.

Inlet / Outlet:	0.250” FNPT
MAOP:	5000 psig
Filtration:	50µ
Body:	316L Stainless Steel
Media:	Sintered Polyethylene

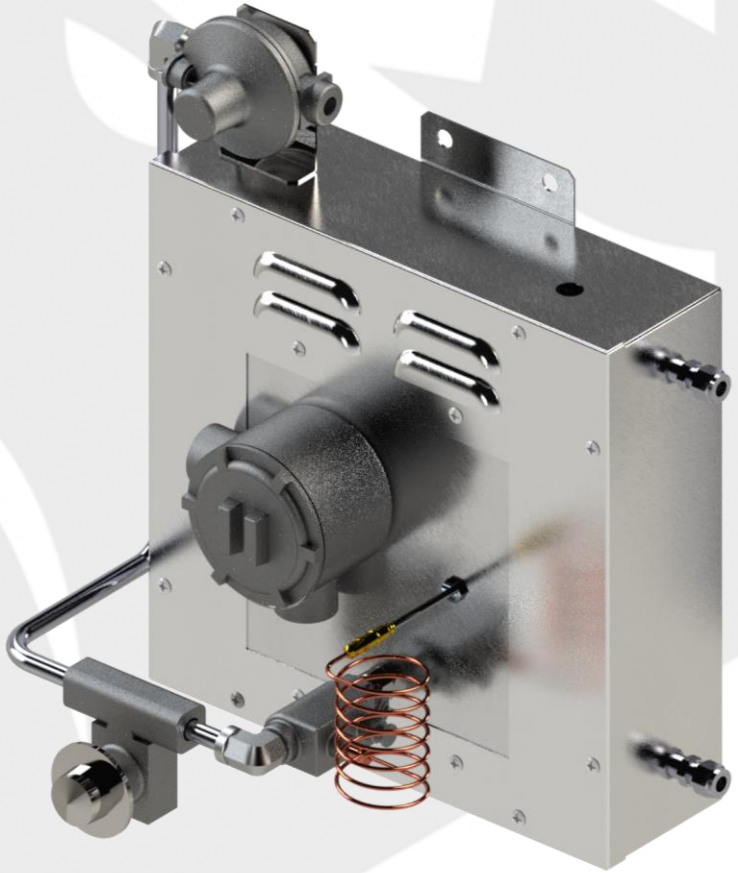
RED OX
ACCESSORIES

FD FILTER DRYER ASSEMBLIES

The FD Series of Filter assemblies provide high capacity, long-life 10µ filtration. The FD Series features a heavy-duty, high-pressure carbon steel construction with 0.250” FNPT inlet, outlet and drain connections. Various filter/dryer media filters are available to remove entrained moisture, gas odorant and trace sulfur.

Inlet / Outlet:	0.250” FNPT
Drain:	0.250” FNPT w/ Needle Valve
MAOP:	1500 psig
Filtration:	≥ 3µ
Body:	Painted Carbon Steel
Media:	Silica Gel - Standard
	Sulfa-Gon - Optional
	Activated Charcoal - Optional

RED OX
ACCESSORIES

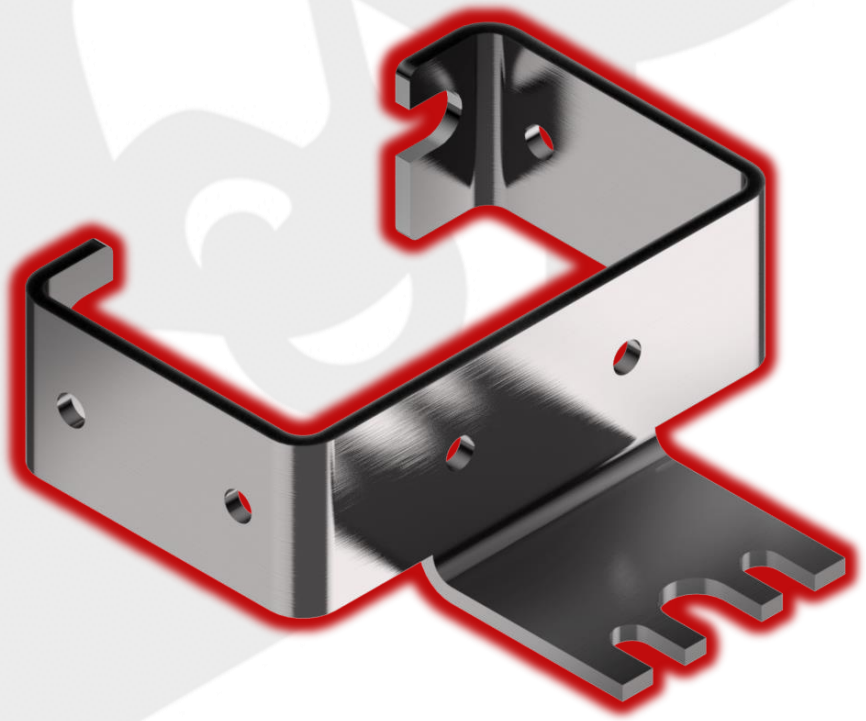


SUPPLY GAS HEATERS

Supply Gas Heaters provide a robust amount of self-contained heat to ensure reliable operation of Control Devices without the need for constant electrical power. Supply Gas Heaters are pre-tubed in a compact, durable stainless steel enclosure that includes an explosion proof catalytic heater, heat exchanger core, and low pressure supply gas heaters. Startup voltages available in 12 V_{DC} or 120 V_{AC}.

Connections:	0.250” FNPT / 3/8 in Tube
Streams:	2 Path Heating
MAOP:	3000 psig
Startup Voltage:	12 V_{DC} or 120 V_{AC}
Heating Capacity:	2600 BTU
Case:	Stainless Steel
Rating:	Cl. 1, Div 1 Ex Proof, CAS Approved

RED OX
ACCESSORIES



IMC RP PILOT MOUNTING BRACKET

The IMC RP Pilot Mounting Bracket provides a robust, convenient ability to mount VRG Controls' RP Series Regulator Pilots and other accessories. The 316SS bracket can be installed on **LEFT or RIGHT** hand side of all sizes of Red Ox IMC Top-Entry Regulators. The bracket allows the IMC Top-Entry Regulator to be rebuilt without removal of the RP Pilot.

RED OX
ACCESSORIES

NAJ NOISE ATTENUATING JACKETS

NAJ Series Noise Attenuating Jackets provide excellent acoustic noise reduction when paired with Red Ox Regulators. Noise attenuation can typically be reduced between 12-25 dBA when applied to aggressive regulation applications. The NAJ offers a cost-effective solution during design stage or retrofit to existing “problem” facilities. NAJ Jackets are equipped with easy removal and reinstallation without special tools or material.

USERS


BRICK WALL
CORP.


Florida Gas
Transmission
Company

City Of Chireno
Natural Gas System


RED OX


CenterPoint®
Energy


PSEG


Northern
Gas Networks


Williams®


SGN
Your gas. Our network.


ONEOK


UGI
Energy to do more®


CATERPILLAR


TC Energy


comgas


EthosEnergy


spire


Cadent
Your Gas Network


WALES&WEST
UTILITIES

RED OX

EthosEnergy

RED OX IMC
ETHOS ENERGY
POWER PLANT MAIN FUEL GAS TRIM RUN

EthosEnergy

POWER PLANT
MAIN FUEL GAS TRIM RUN

OVERVIEW

- Peaking power generation plant needed reliable and accurate trim run pressure regulator for meshed proportional deadband control application
- Red Ox IMC provided more accurate control in same face-to-face overall dimension
- Red Ox IMC features 100% Stainless Steel piston construction for durability and corrosion resistance to process conditions
- Paired with extreme accuracy Red Ox RP Pilots which are ideal for short system and power plant fuel gas feed

SETPOINT RANGE:
3.0 TO 1500 psig

POWER PLANT
INDIVIDUAL UNIT 6”
FUEL GAS
REGULATORS

KIELY BRICK ONE ASPHALT PLANT

OVERVIEW

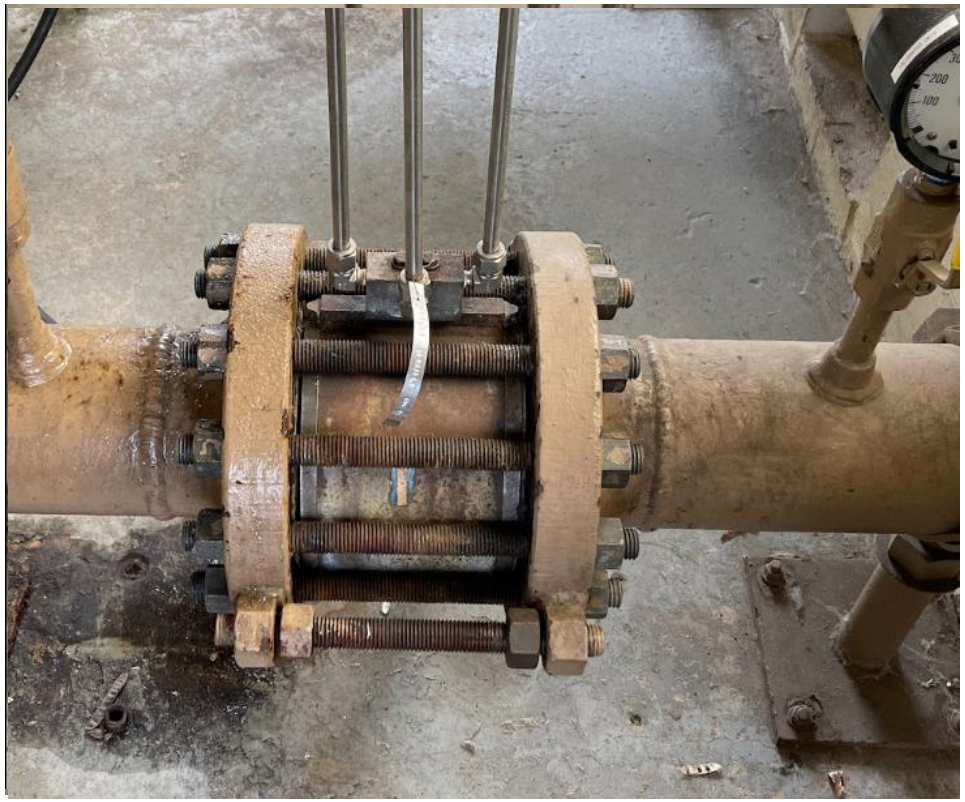
- Asphalt manufacturing plant needed reliable and cost-effective pressure regulation to operate
- Red Ox IMS provides compact and simple pressure regulation solution in a compact package
- Red Ox IMS features 100% Stainless Steel construction for durability and corrosion resistance
- Paired with extreme accuracy Red Ox RP Pilots which are ideal for short system and power plant fuel gas feed

SETPOINT RANGE:
3.0 TO 1500 psig

PSEG

ENERGY IMPACT PARTNERS

PSE&G TRENTON STATION IMS RETROFIT



OVERVIEW

- Red Ox IMS provides compact and simple pressure regulation solution in a compact package
- Red Ox IMS features 100% Stainless Steel construction for durability and corrosion resistance
- Paired with extreme accuracy Red Ox RP Pilots which are ideal for short system and power plant fuel gas feed

SETPOINT RANGE:
3.0 TO 1500 psig

TC ENERGY EAGLE COMPRESSOR STATION

PROBLEM

- Other Manufacturer's technology exhibited maintenance problems
- Other Manufacturer's spare parts are expensive
- Other Manufacturer's product is complex and requires heavy lifting

SOLUTION

- Red Ox IMC minimizes regular maintenance due to unique piston design
- IMC Spare Parts and New Body Assemblies are cost-effective
- IMC top-entry regulator is simple and eliminates heavy lifting

SETPOINT RANGE:
3.0 TO 1500 psig

VRG RP-SN-CS

VRG Controls' RP-SN-CS Regulator Pilots are the perfect complement to Red Ox Regulators for the most demanding pressure control applications. The CS "Closed Spring" sensing chamber protects the Control Spring from aggressive environments and ensures "optimum" pressure control accuracy in installations like power plants, industrial gas feeds and pipeline applications.

TC Energy

ENERGY IMPACT PARTNERS

TC ENERGY GLADY WV INSTALLATION

PROBLEM

- Other Manufacturer's technology exhibited maintenance problems
- Other Manufacturer's spare parts are expensive
- Other Manufacturer's product is complex and requires heavy lifting

SOLUTION

- Red Ox IMC minimizes regular maintenance due to unique piston design
- IMC Spare Parts and New Body Assemblies are cost-effective
- IMC top-entry regulator is simple and eliminates heavy lifting

SETPOINT RANGE:
3.0 TO 1500 psig

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UGI UTILITIES TEMPLE STATION

PROBLEM

- Other Manufacturer's technology exhibited substantial droop characteristics
- Other Manufacturer's spare parts are expensive
- Other Manufacturer's product is complex and requires heavy lifting

SOLUTION

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Williams®

ENERGY IMPACT PARTNERS

WILLIAMS HOCKESSIN PA STATION RETROFIT

PROBLEM

- Existing regulator technology is obsolete
- Existing regulator technology is very heavy and does not permit easy top-entry maintenance

SOLUTION

- Red Ox IMC with RP Pilots provides a rugged, reliable regulator technology
- New Technology supported with large USA inventory
- Technical and Field Support by key customer partner
- Red Ox IMC lessens maintenance frequency

SETPOINT RANGE:
3.0 TO 1500 psig

RED OX

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