



# PRESSURE REGULATORS

PILOT OPERATED



‡®

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<b>GAS BACK PRESSURE:</b> . . . . .	<b>A:10.1 - A:10.6</b>
APPLICATIONS: Vent lines on oil and gas separators, flow treaters, compressor stations, gas gathering systems.	
OPERATING PRESSURE RANGES: 5 psig to 500 psig	
<b>GAS BACK PRESSURE NON VENTING:</b> . . . . .	<b>A:15.1 - A:15.3</b>
APPLICATIONS: Vent lines or pressure regulation on separators, heater treaters, compressor stations, gas gathering and distribution systems where it is desired that no gas be vented.	
OPERATING PRESSURE RANGES: 5 psig to 285 psig	
<b>PRESSURE REDUCING:</b> . . . . .	<b>A:20.1 - A:20.6</b>
APPLICATIONS: Regulation of inlet pressure to gas compressors. Control of supply or distribution systems pressures.	
OPERATING PRESSURE RANGES: 5 psig to 500 psig	
<b>PRESSURE REDUCING NON VENTING:</b> . . . . .	<b>A:25.1 - A:25.4</b>
APPLICATIONS: Regulation of inlet pressure to gas compressors. Control of supply or distribution system pressures.	
Regulation of down stream pressure where it is desired that no gas be vented.	
OPERATING PRESSURE RANGES: 5 psig to 300 psig	
<b>PRESSURE REDUCING BALANCED:</b> . . . . .	<b>A:30.1 - A:30.4</b>
APPLICATIONS: Regulation of inlet pressure to gas compressors and control of supply or distribution system pressures where the pressure to the regulator varies more than 2:1.	
OPERATING PRESSURE RANGES: 5 psig to 300 psig	
<b>LIQUID BACK PRESSURE:</b> . . . . .	<b>A:40.1 - A:40.4</b>
APPLICATIONS: Control back pressure in liquid packed systems where an auxiliary source of supply gas pressure is available.	
OPERATING PRESSURE RANGES: 5 psig to 300 psig	
<b>GAS PRESSURE DIFFERENTIAL:</b> . . . . .	<b>A:50.1 - A:50.4</b>
APPLICATIONS: For maintaining a constant pressure drop across meter systems.	
OPERATING PRESSURE RANGES: 5 psig to 300 psig	
<b>GAS BACK PRESSURE VACUUM:</b> . . . . .	<b>A:70.1 - A:70.2</b>
APPLICATIONS: Positive pressure control of systems flowing into downstream vacuum gathering lines.	
OPERATING PRESSURE RANGES: 5 psig to 125 psig	
<b>LOW PRESSURE BACK PRESSURE:</b> . . . . .	<b>A:90.1 - A:90.2</b>
APPLICATIONS: Control 3 to 20 psig back pressure on low pressure vessels and vent line of separators, treaters, compressors, and gas gathering systems.	
OPERATING PRESSURE RANGES: 5 psig to 20 psig	
<b>OUNCES BACK PRESSURE TO ATMOSPHERE:</b> . . . . .	<b>A:95.1 - A:95.3</b>
APPLICATIONS: Valve designed to regulate ounces (0.5 oz to 20 psig) back pressure on a tank and vent to atmosphere when pressure exceeds set point. An outside supply of 10 psig is raised to operate motor valve.	
OPERATING PRESSURE RANGES: 0.5 psig to 20 psig	
<b>OUNCES BACK PRESSURE TO VACUUM:</b> . . . . .	<b>A:100.1 - A:100.2</b>
APPLICATIONS: To maintain ounces of positive pressure on systems flowing into a downstream vacuum, such as vapor recovery systems.	
OPERATING PRESSURE RANGES: 0.5 psig to 20 psig	
<b>OUNCES PRESSURE REDUCING:</b> . . . . .	<b>A:110.1 - A:110.3</b>
APPLICATIONS: This valve is used to regulate downstream pressure (sense line) from 0.5 oz to 2.5 psig or on vapor recovery systems to bypass a compressor when tank pressure falls too low.	
OPERATING PRESSURE RANGES: 0.5 psig to 20 psig	
<b>OUNCES PRESSURE REDUCING VACUUM:</b> . . . . .	<b>A:120.1 - A:120.3</b>
APPLICATIONS: Used to regulate a downstream vacuum from 1" to 6" Hg.	
OPERATING PRESSURE RANGES: 0.5 psig to 20 psig	
<b>FLOW COEFFICIENT</b>	<b>A:I</b>
<b>DIMENSIONS</b>	<b>A:II</b>
<b>SEALS</b>	<b>A:III</b>
<b>MATERIAL SPECIFICATIONS</b>	<b>A:IV</b>
<b>TEMPERATURE</b>	<b>A:V</b>

### Creating a Kimray Part Number with Options

Base Part Number from Catalog (Example:AAA) See following pages to select base code

Characteristics such as Flange connection size & type, thru & angled body are inherent in the Base Part Number.

Reduced Inner Valve (see following pages for sizes of reduced trim)

**5** = Reduced Inner Valve

Misc. Options:

**LB** = No Body (Upper Portion only)

**TF6** = Tubing and Fittings 316 Stainless (Not necessary if S6 or S6B below is chosen)

**TF6G** = Gage, Tubing, & Fittings 316 Stainless (Not necessary if S6 or S6B below is chosen)

**NL** = Non Lube lower housing / stem sleeve

Trim Material Options:

**S6** = 316 Stainless steel Trim, Tubing and Fittings (Adding S6 makes valve NACE compliant)

**S6B** = 316 Stainless steel Body, Trim, Tubing, and Fittings (only available on steel valves)

Seal Options: Nitrile is standard

**HSN** = Highly Saturated Nitrile on all seals (HNBR)

**V** = FKM on all seals

**AF** = Aflas® on all seals

**G** = Gylon® seals

Spring

**125** = Changes 300# spring to 125# spring (lower operating pressure)

Coating

**KC** = Kimcoat (for wear and corrosion resistance)

Certifications

**NC** = NACE certificate

**MTR** = Material Test Report

**SPT** = Static pressure Test

								*
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Leave blank where no options are desired. Consolidate by removing blanks

Example:

AAA			S6			KC	
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reduces to **AAAS6KC**





\* NOTE: Some options could **drastically** affect lead times. Contact your local Kimray representative to finalize your product code.

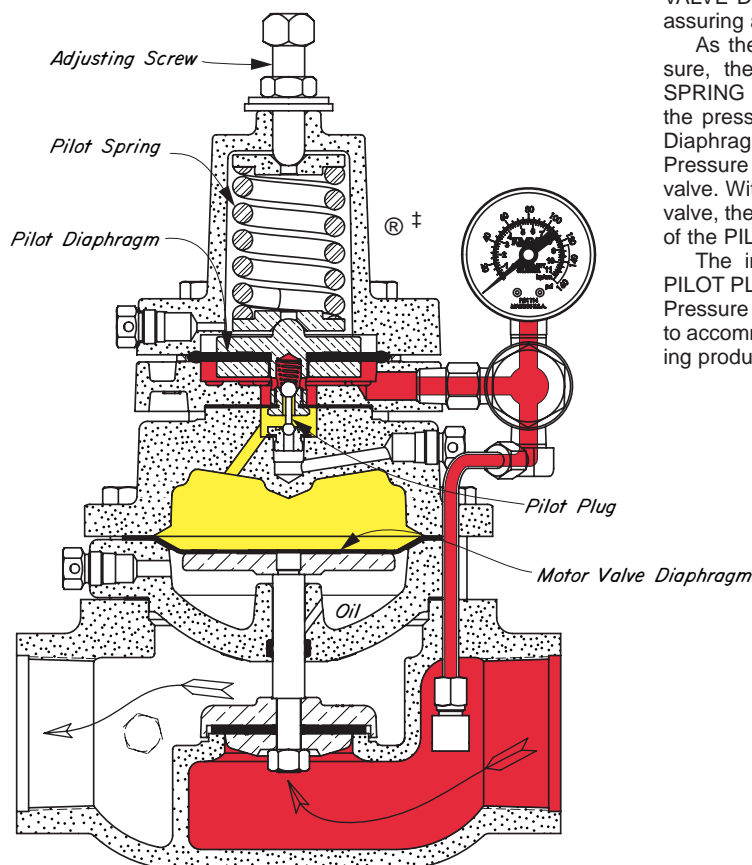
#### APPLICATION:

Vent lines on oil separators, flow treaters, compressor stations, gas gathering systems.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
 0C16234.24567890NTY (Ductile)  
 0C15604.24567890NTY (Steel)

-  Pilot Assembly
-  Motor Valve Stem Assembly
-  Upstream Pressure
-  Motor Valve Diaphragm Pressure



#### OPERATION:

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The lower seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere).

The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Pressure (Red).

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Atmosphere) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is open. This lets full Upstream Pressure (Red) load the motor valve. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

As the Upstream Pressure (Red) increases to the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to first close the upper seat (Red to Yellow) and open the pressure vent (Yellow to Atmosphere). As the Motor Valve Diaphragm Pressure (Yellow) is decreased, the Upstream Pressure (Red) acting under the motor valve seat, opens the valve. With relief of Upstream Pressure (Red) through the motor valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.



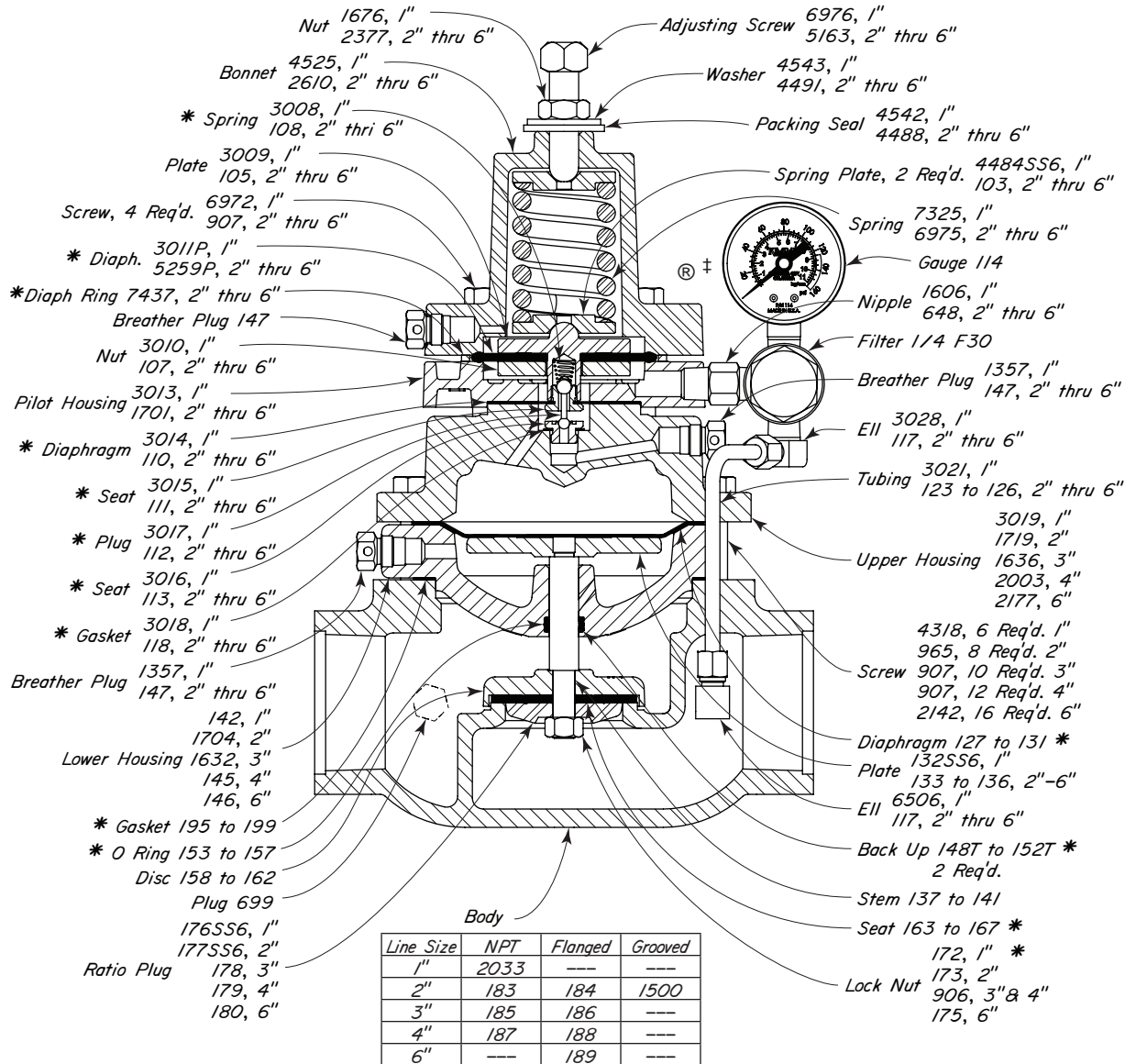
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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS BACK PRESSURE

DUCTILE IRON 5-125 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AKA	1" NPT	112 SGT BP	5-125	175	RRT
AAA	2" NPT	212 SGT BP	5-125	175	RAA
AAB	2" 150RF	212 FGT BP	5-125	175	RAA
AAC	2" GRVD.	212 GGT BP	5-125	175	RAA
AAD	3" NPT	312 SGT BP	5-125	175	RAB
AAE	3" 150RF	312 FGT BP	5-125	175	RAB
AAF	4" NPT	412 SGT BP	5-125	175	RAC
AAG	4" 150RF	412 FGT BP	5-125	175	RAC
AAH	6" 150RF	612 FGT BP	5-125	175	RAD

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

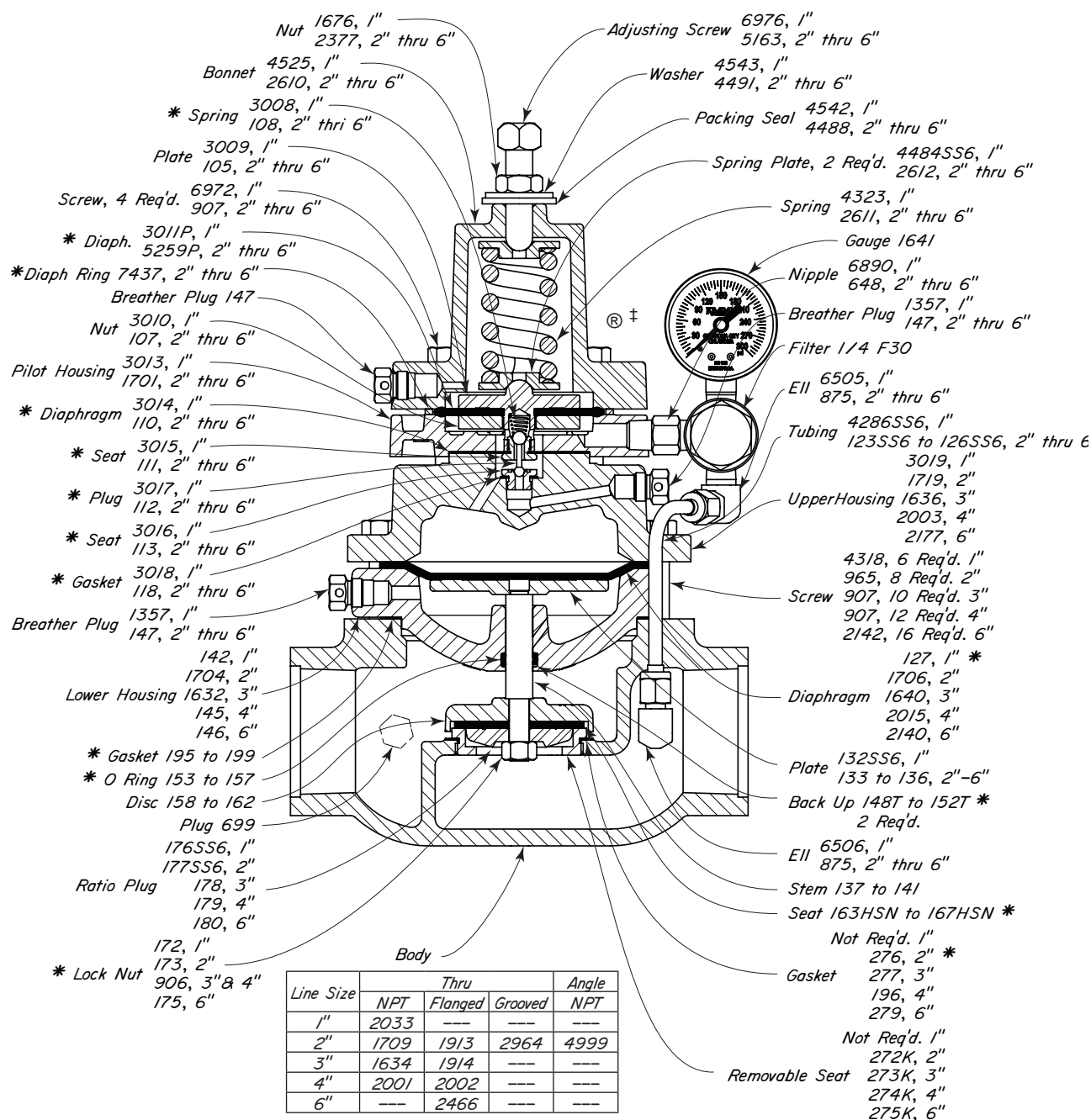
<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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GAS BACK PRESSURE  
DUCTILE IRON 10-300 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AKB	1" NPT	130 SGT BP-D	10-300	300	RRU
AAR	2" NPT	230 SGT BP-D	10-300	300	RDG
AAS	2" 150RF	218 FGT BP-D	10-250	250	RDG
AAQ	2" GRVD.	230 GGT BP-D	10-300	300	RDG
AAT	3" NPT	330 SGT BP-D	10-300	300	RDH
AAU	3" 150RF	318 FGT BP-D	10-250	250	RDH
AAW	4" NPT	430 SGT BP-D	10-300	300	RDI
AAX	4" 150RF	418 FGT BP-D	10-250	250	RDI
AAY	6" 150RF	618 FGT BP-D	10-250	250	RDJ

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

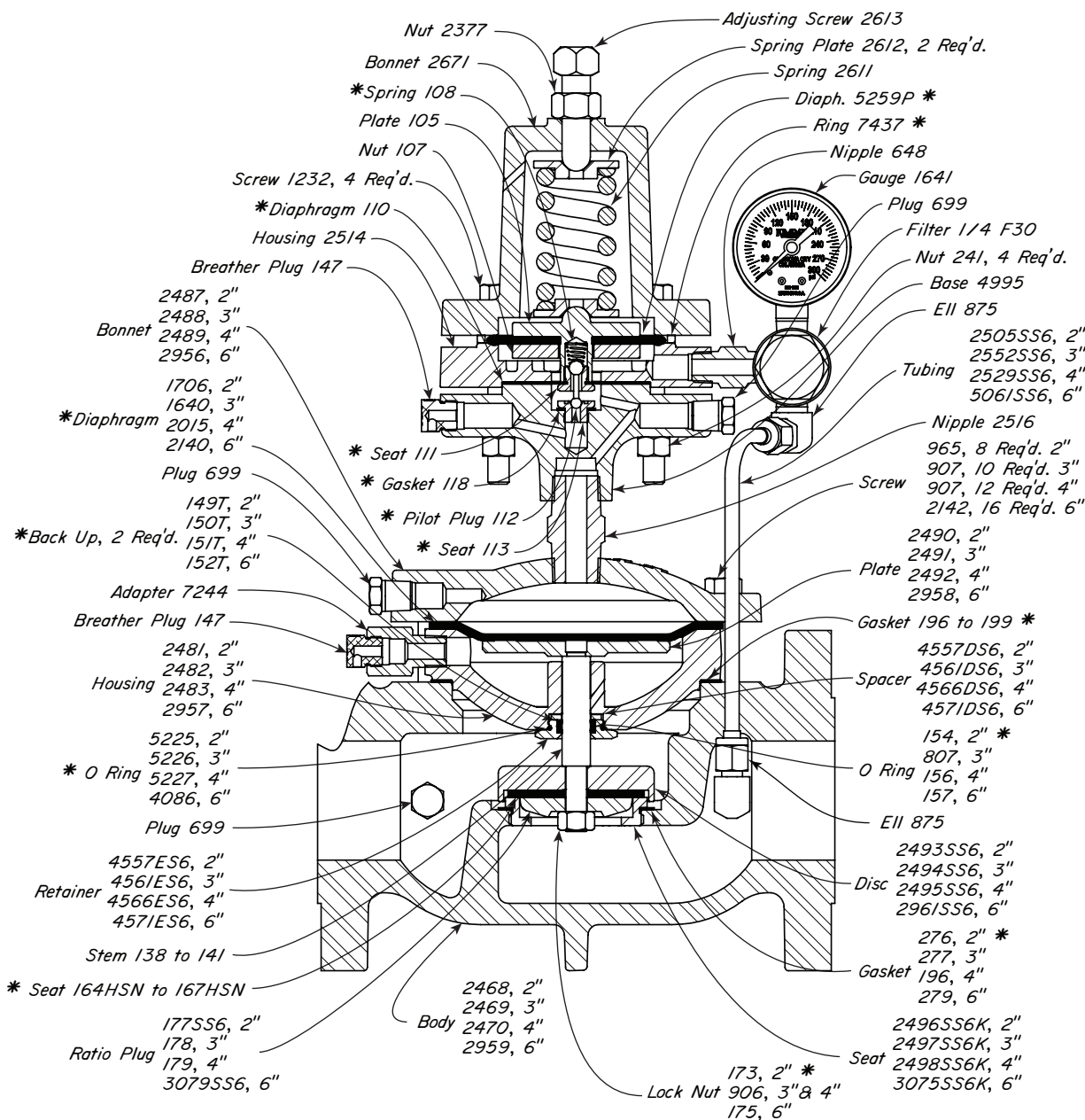
<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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# PRESSURE REGULATORS

# KIMRAY INC.®

## GAS BACK PRESSURE STEEL 10-285 OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AGB	2" 150RF	227 FGT BP-S	10-285	285	RAE
AGC	3" 150RF	327 FGT BP-S	10-285	285	RAF
AGD	4" 150RF	427 FGT BP-S	10-285	285	RAG
AGE	6" 150RF	627 FGT BP-S	10-285	285	RAH

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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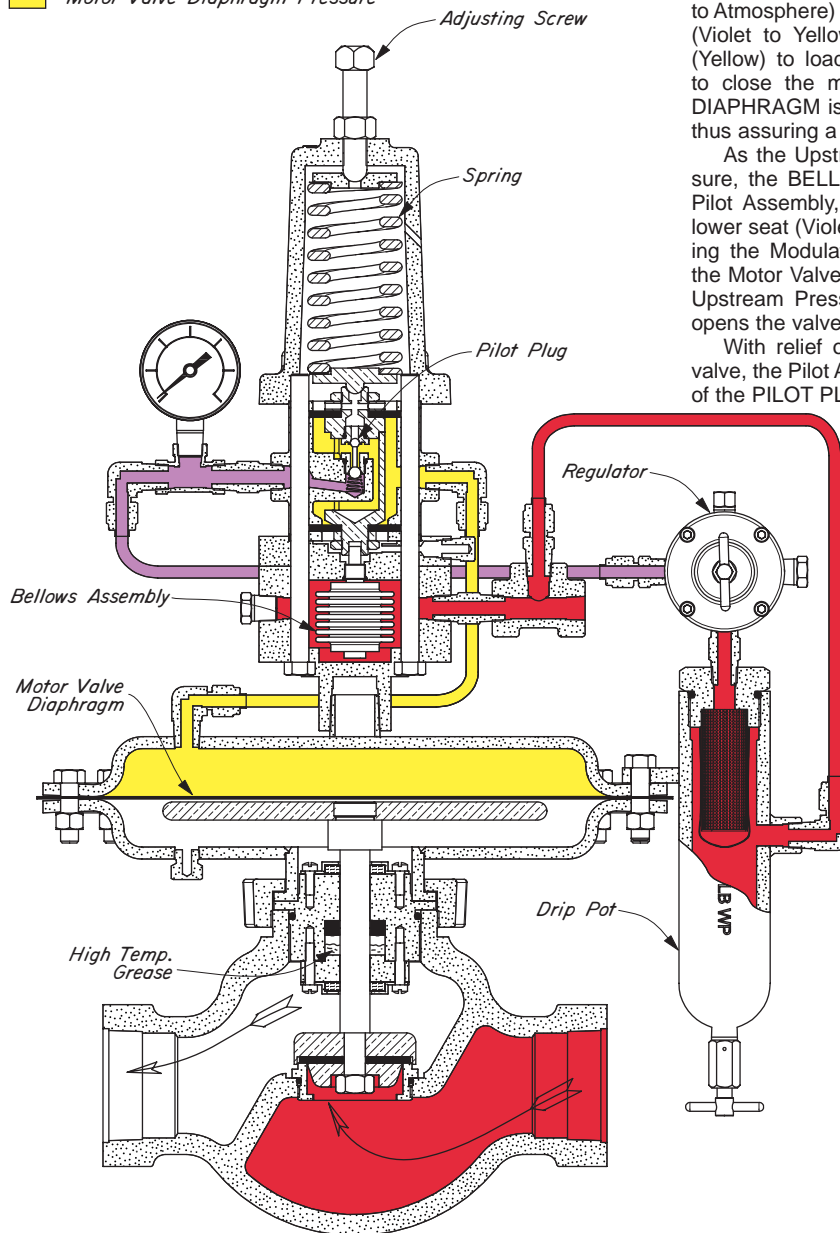
#### APPLICATION:

Vent lines on oil separators, flow treaters, compressor stations, gas gathering systems.

#### PILOT SUPPLY PRESSURE:

40 psig.

-  Pilot Bellows Assembly
-  Motor Valve Stem Assembly
-  Upstream Pressure
-  Pilot Supply Pressure
-  Motor Valve Diaphragm Pressure



#### OPERATION:

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Violet to Yellow). The lower seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere).

The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Pressure (Red) in the BELLOWS ASSEMBLY.

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Sense Pressure (Red). The DIAPHRAGM ASSEMBLY is forced downward by the SPRING. The upper seat of the PILOT PLUG (Yellow to Atmosphere) is closed and the lower seat for the PILOT PLUG (Violet to Yellow) is open. This allows Pilot Supply Pressure (Yellow) to load the top of the MOTOR VALVE DIAPHRAGM to close the motor valve. The area of the MOTOR VALVE DIAPHRAGM is sixteen times the area of the motor valve seat, thus assuring a Class VI positive shut-off.

As the Upstream Pressure (Red) increases to the set pressure, the BELLOWS ASSEMBLY expands upward against the Pilot Assembly, moving the PILOT SPRING to first close the lower seat (Violet to Yellow) and then open the upper seat allowing the Modulated Output to vent (Yellow to Atmosphere). As the Motor Valve Diaphragm Pressure (Yellow) is decreased, the Upstream Pressure (Red) acting under the motor valve seat, opens the valve.

With relief of Upstream Pressure (Red) through the motor valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve Stem Assembly to accommodate any rate of flow within the valves capacity. The rapid but stable repositioning produces a true throttling action.



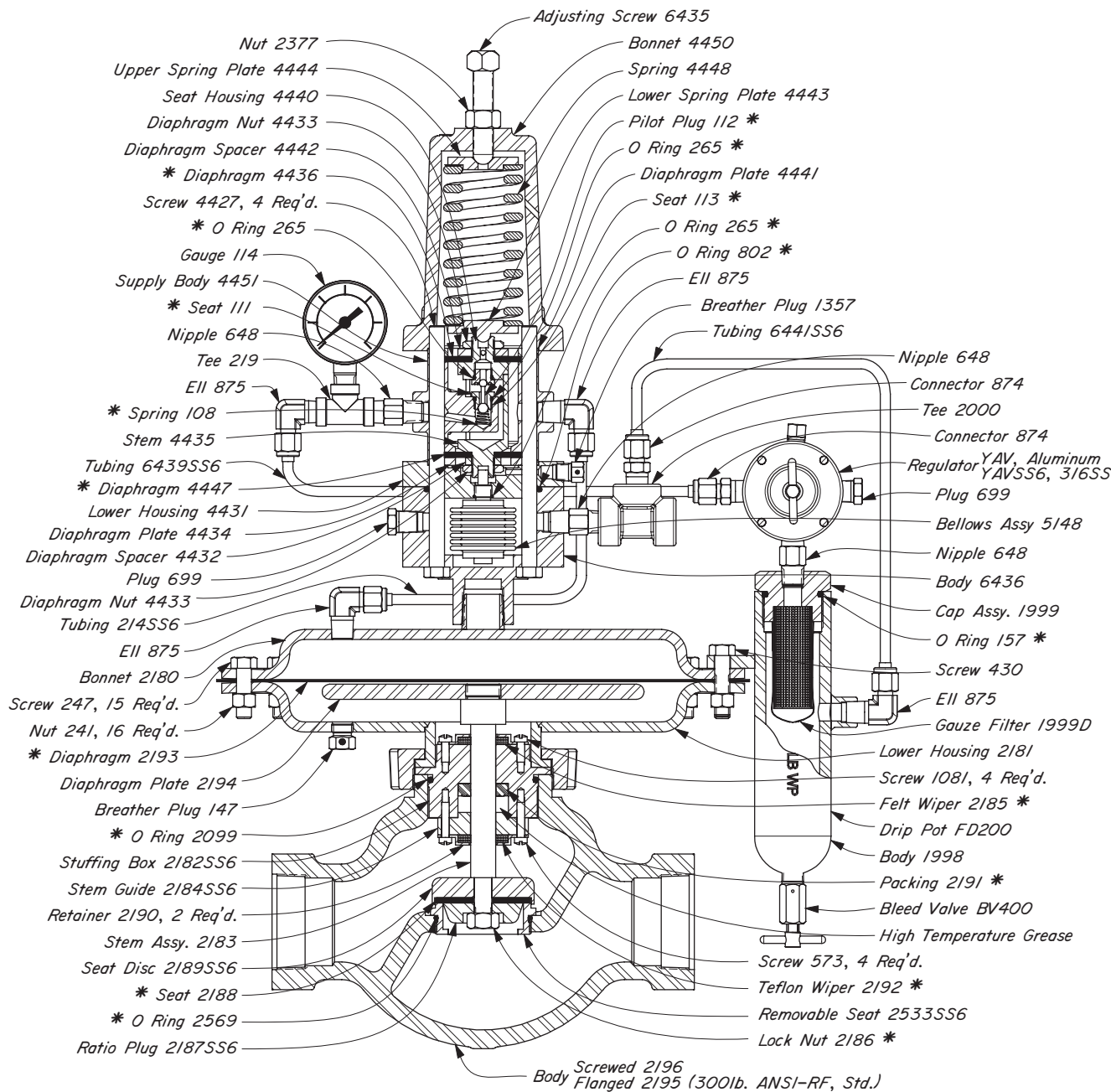
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# PRESSURE REGULATORS



## GAS BACK PRESSURE

STEEL / ALL STEEL 75-500 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ABB	2" NPT	250 SGT BP-S	75-500	500	RAI
ABA	2" 300RF	250 FGT BP-S	75-500	500	RAI
ABB1	2" NPT	250 SGT BP-STL	75-500	500	RAI
ABA1	2" 300RF	250 FGT BP-STL	75-500	500	RAI

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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#### APPLICATION:

Vent lines or pressure regulation on separators, heater treaters, compressor stations, gas gathering and distribution systems where it is desired that no gas be vented.






- Inside Buildings
- In populated areas
- Emissions regulated areas
- Sour or poisonous gas systems

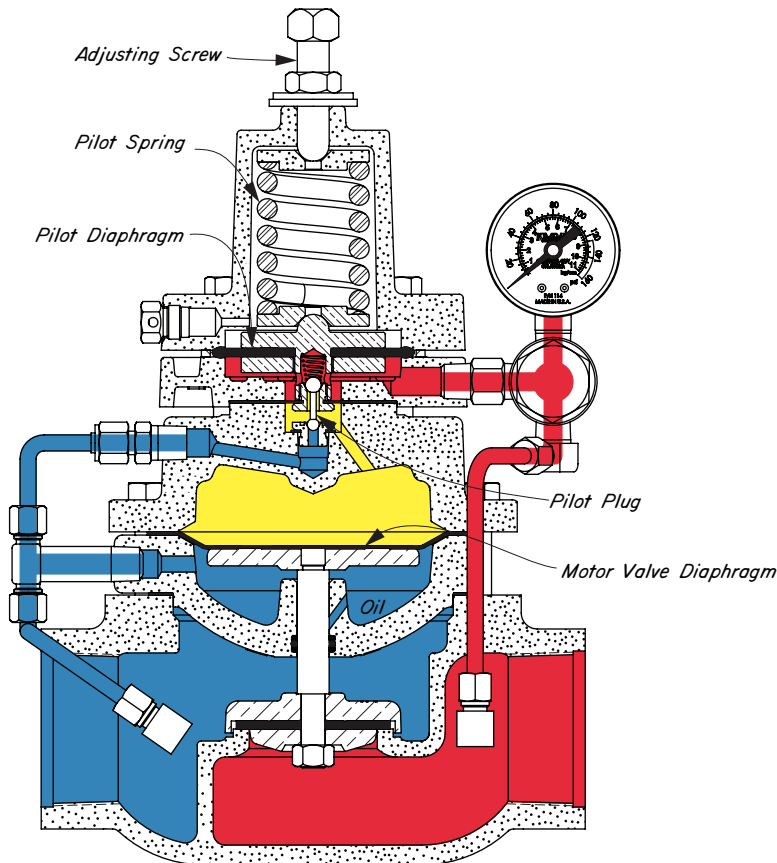
#### CERTIFICATIONS:

Canadian Registration Number (CRN):

0C16234.24567890NTY (Ductile)

0C15604.24567890NTY (Steel)

-  Pilot Assembly
-  Motor Valve Stem Assembly
-  Upstream Pressure
-  Motor Valve Diaphragm Pressure
-  Downstream Pressure



#### OPERATION:

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Blue) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is open. This lets full Upstream Pressure (Red) load the MOTOR VALVE DIAPHRAGM to close the valve.

As the Upstream Pressure (Red) increases to the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to first close the upper seat (Red to Yellow) and open the lower seat (Yellow to Blue). Motor Valve Diaphragm Pressure (Yellow) is vented to the Downstream (Blue).

As the Motor Valve Diaphragm Pressure (Yellow) is decreased, the Upstream Pressure (Red) acting under the motor valve seat, opens the valve. With relief of the Upstream Pressure (Red) through the valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Motor Valve Diaphragm Pressure (Yellow) is regulated by the three-way valve action of the PILOT PLUG to reposition the Motor Valve Stem Assembly for changes in flow rate. The rapid but stable repositioning produces a true throttling action.

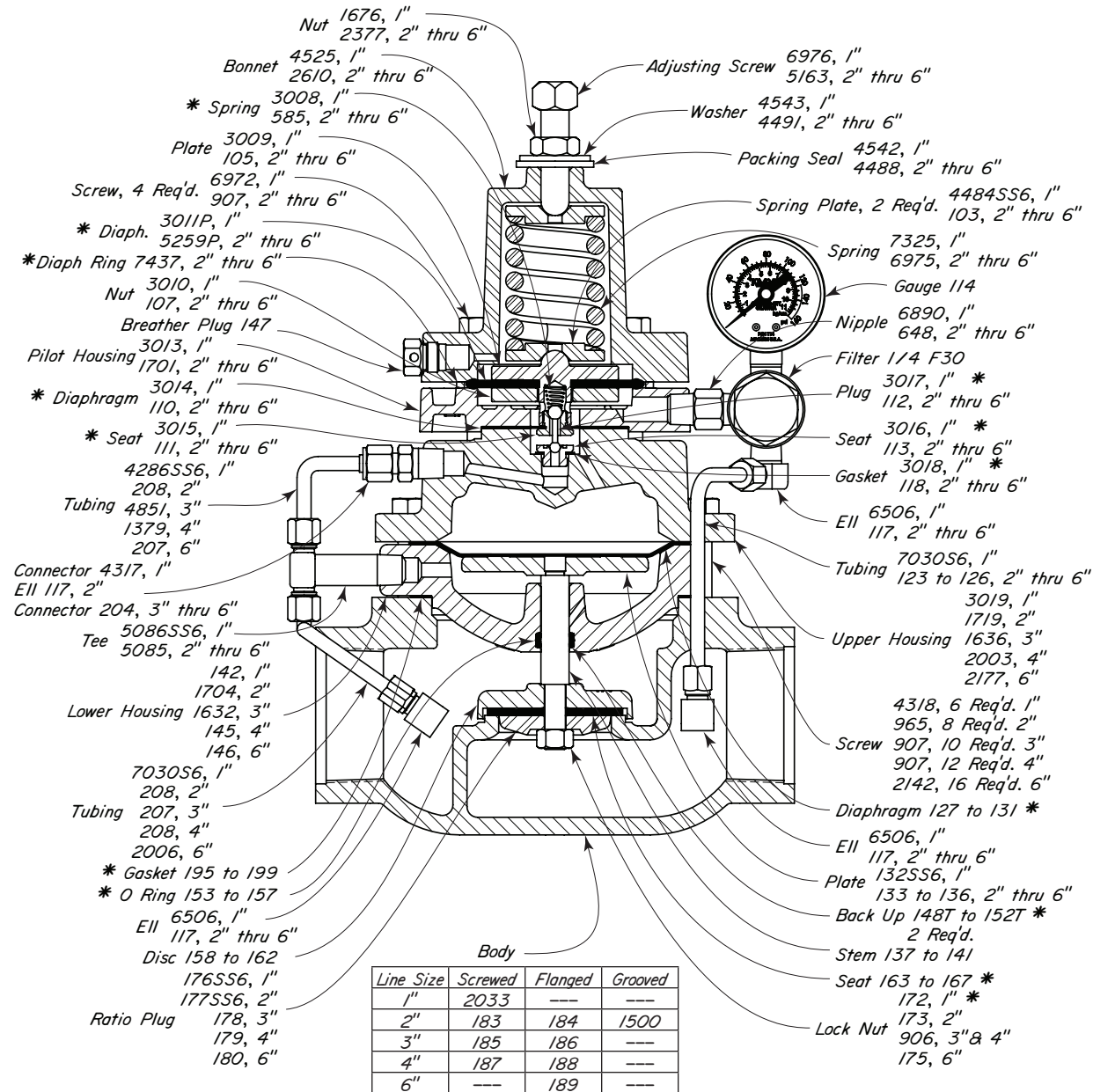


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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS BACK PRESSURE NON VENTING  
DUCTILE IRON 5-125 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ALD	1" NPT	112 SGT BP-NV	5-125	175	RRT
ALE	2" NPT	212 SGT BP-NV	5-125	175	RAANV
ALF	2" 150RF	212 FGT BP-NV	5-125	175	RAANV
ALG	2" GRVD	212 GGT BP-NV	5-125	175	RAANV
ALH	3" NPT	312 SGT BP-NV	5-125	175	RABNV
ALI	3" 150RF	312 FGT BP-NV	5-125	175	RABNV
ALJ	4" NPT	412 SGT BP-NV	5-125	175	RACNV
ALK	4" 150RF	412 FGT BP-NV	5-125	175	RACNV
ALL	6" 150RF	612 FGT BP-NV	5-125	175	RADNV

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

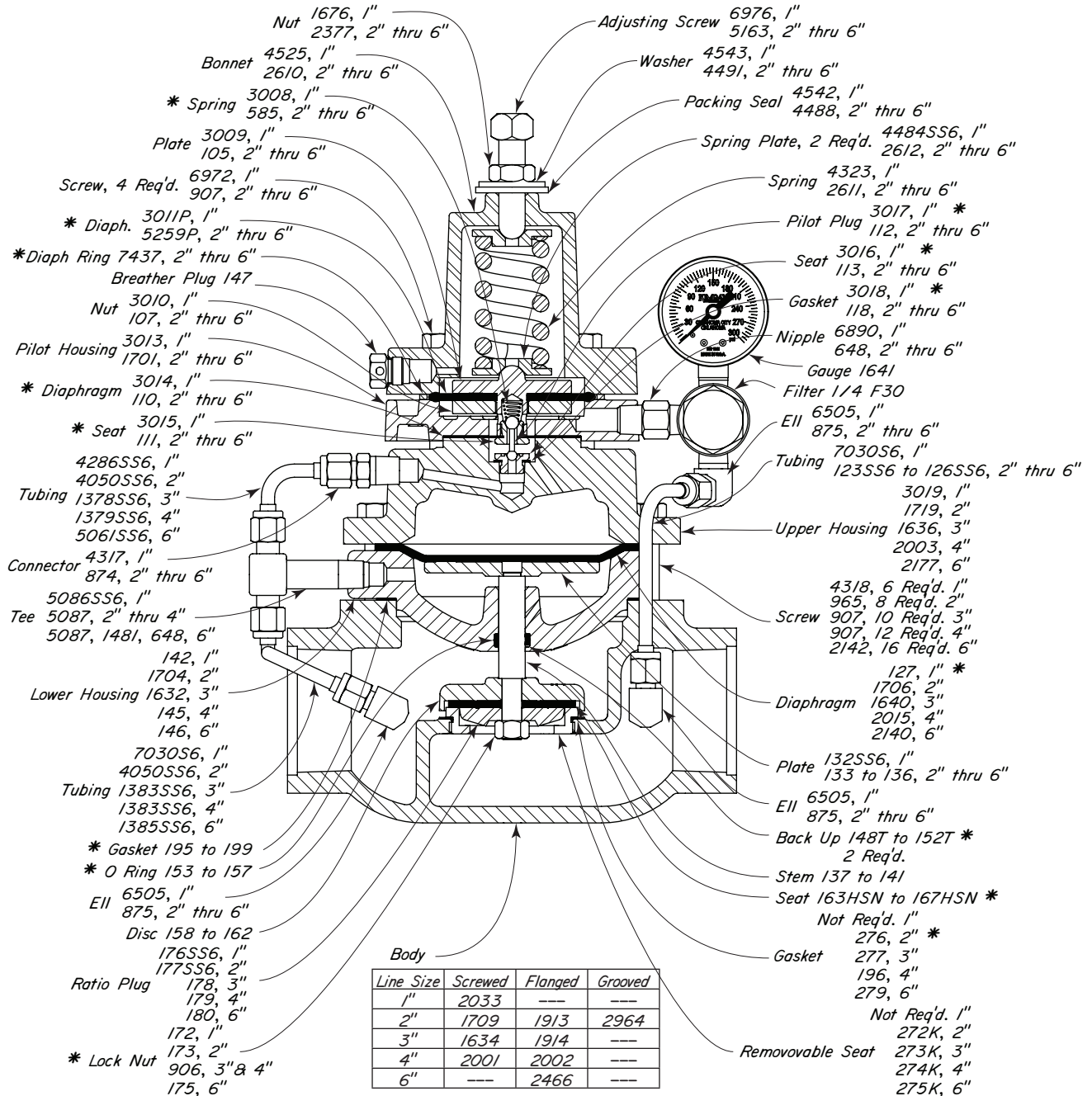
<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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### GAS BACK PRESSURE DUCTILE IRON 10-300 psig OPER. PRES.



#### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ALDD	1" NPT	130 SGT BP-NV-D	10-300	300	RRU
ALED	2" NPT	230 SGT BP-NV-D	10-300	300	RDGNV
ALFD	2" 150RF	218 FGT BP-NV-D	10-250	250	RDGNV
ALGD	2" GRVD	230 GGT BP-NV-D	10-300	300	RDGNV
ALHD	3" NPT	330 SGT BP-NV-D	10-300	300	RDHNV
ALID	3" 150RF	318 FGT BP-NV-D	10-250	250	RDHNV
ALJD	4" NPT	430 SGT BP-NV-D	10-300	300	RDINV
ALKD	4" 150RF	418 FGT BP-NV-D	10-250	250	RDINV
ALLD	6" 150RF	618 FGT BP-NV-D	10-250	250	RDJNV

#### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

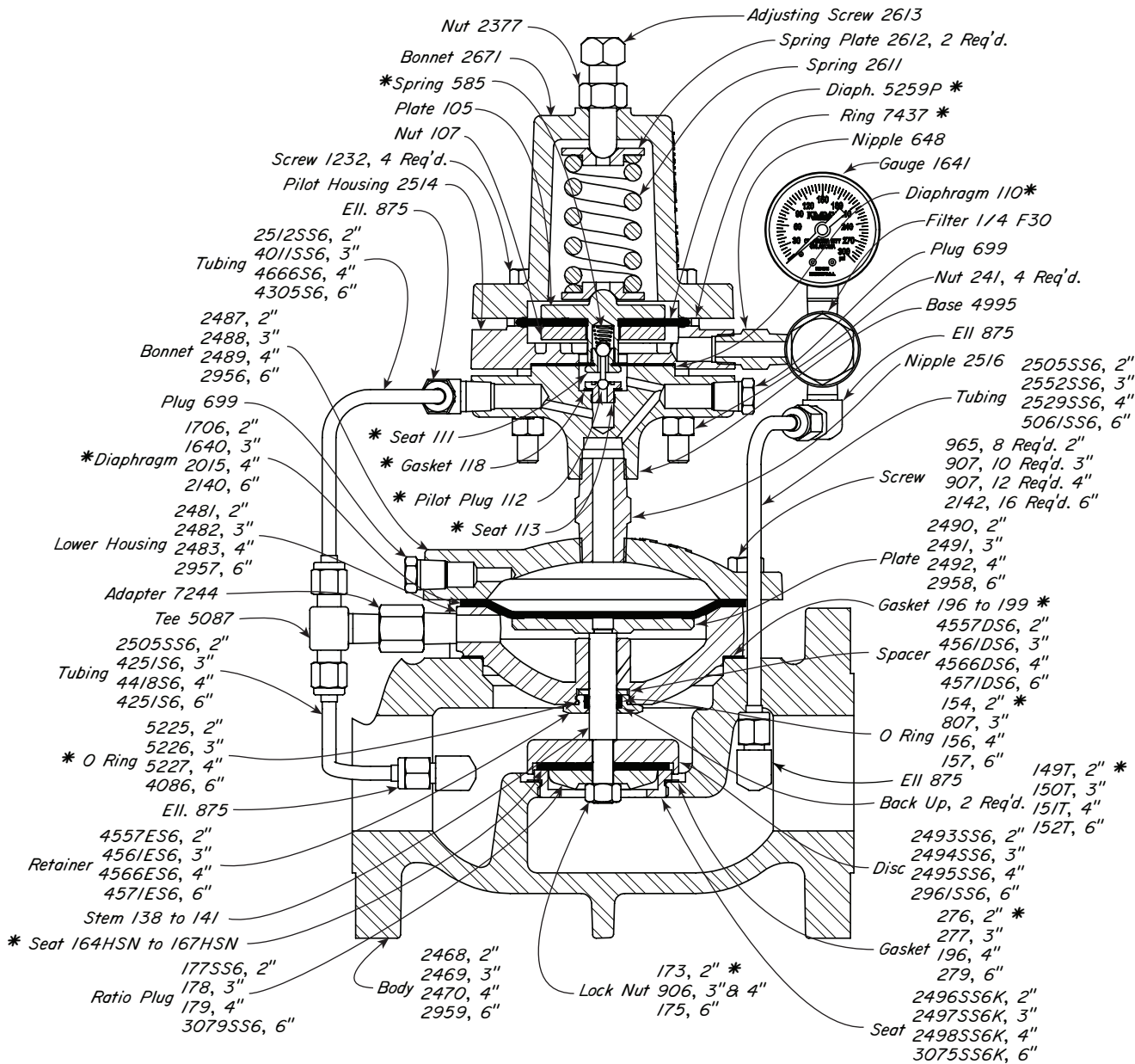
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# PRESSURE REGULATORS



GAS BACK PRESSURE  
STEEL 10-285 OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AGF	2" 150RF	227 FGT BP-S-NV	10-285	285	RAENV
AGV	3" 150RF	327 FGT BP-S-NV	10-285	285	RAFNV
AGP	4" 150RF	427 FGT BP-S-NV	10-285	285	RAGNV
AGU	6" 150RF	627 FGT BP-S-NV	10-285	285	RAHNV

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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#### APPLICATION:

Regulation of inlet pressure to gas compressors. Control of supply or distribution system pressure

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)  
0C15604.24567890NTY (Steel)

#### OPERATION:

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator.

The PILOT PLUG consists of two stainless balls rigidly connected together. Upstream Pressure (Red) is the supply pressure to the pilot and is also in constant communication with the top side of the MOTOR VALVE DIAPHRAGM. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

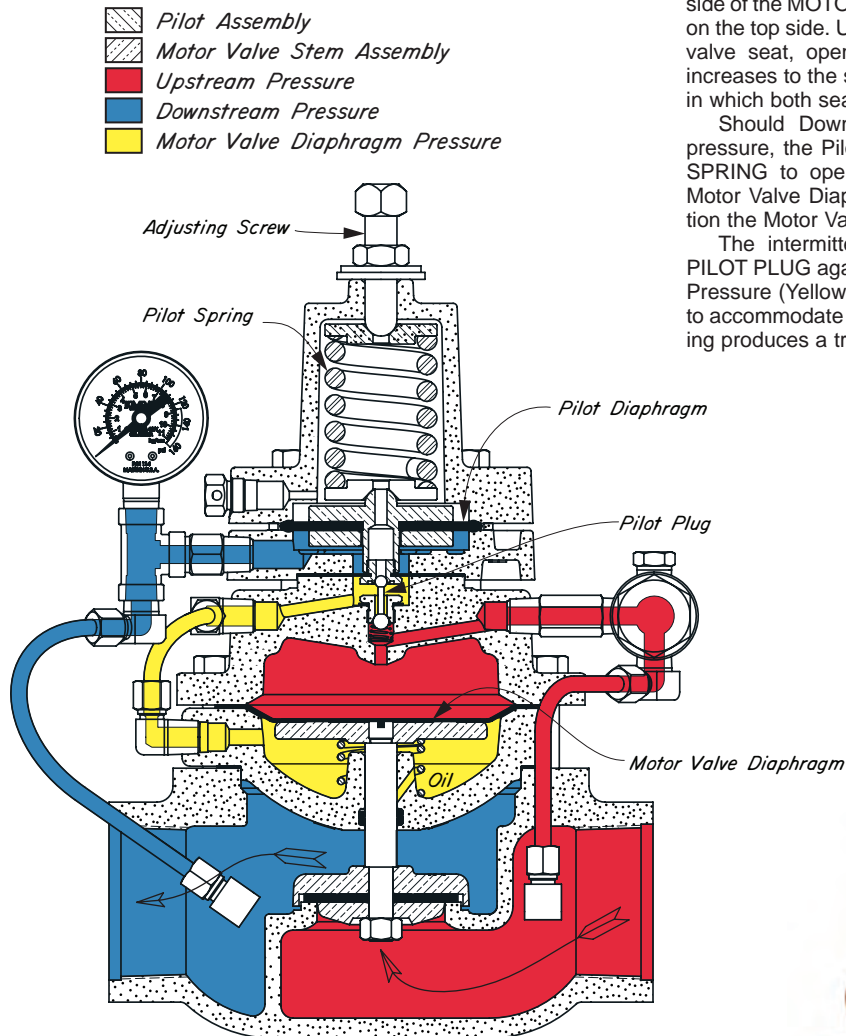
The lower seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The upper seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere). The PILOT SPRING loads the upper side of the Pilot Assembly and is opposed on the underneath side by the controlled Downstream Pressure (Blue).

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a desired Downstream Pressure setting. With Downstream Pressure (Blue) too low, the PILOT SPRING forces the Pilot Assembly downward to close the upper seat (Yellow to Atmosphere) and open the lower seat (Red to Yellow).

This lets full Upstream Pressure (Red) load the underneath side of the MOTOR VALVE DIAPHRAGM to balance the pressure on the top side. Upstream Pressure (Red) acting under the motor valve seat, opens the valve. As Downstream Pressure (Blue) increases to the set pressure Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Should Downstream Pressure (Blue) rise above the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to open the pressure vent (Yellow to Atmosphere). Motor Valve Diaphragm Pressure (Yellow) decreases to reposition the Motor Valve Stem Assembly.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.

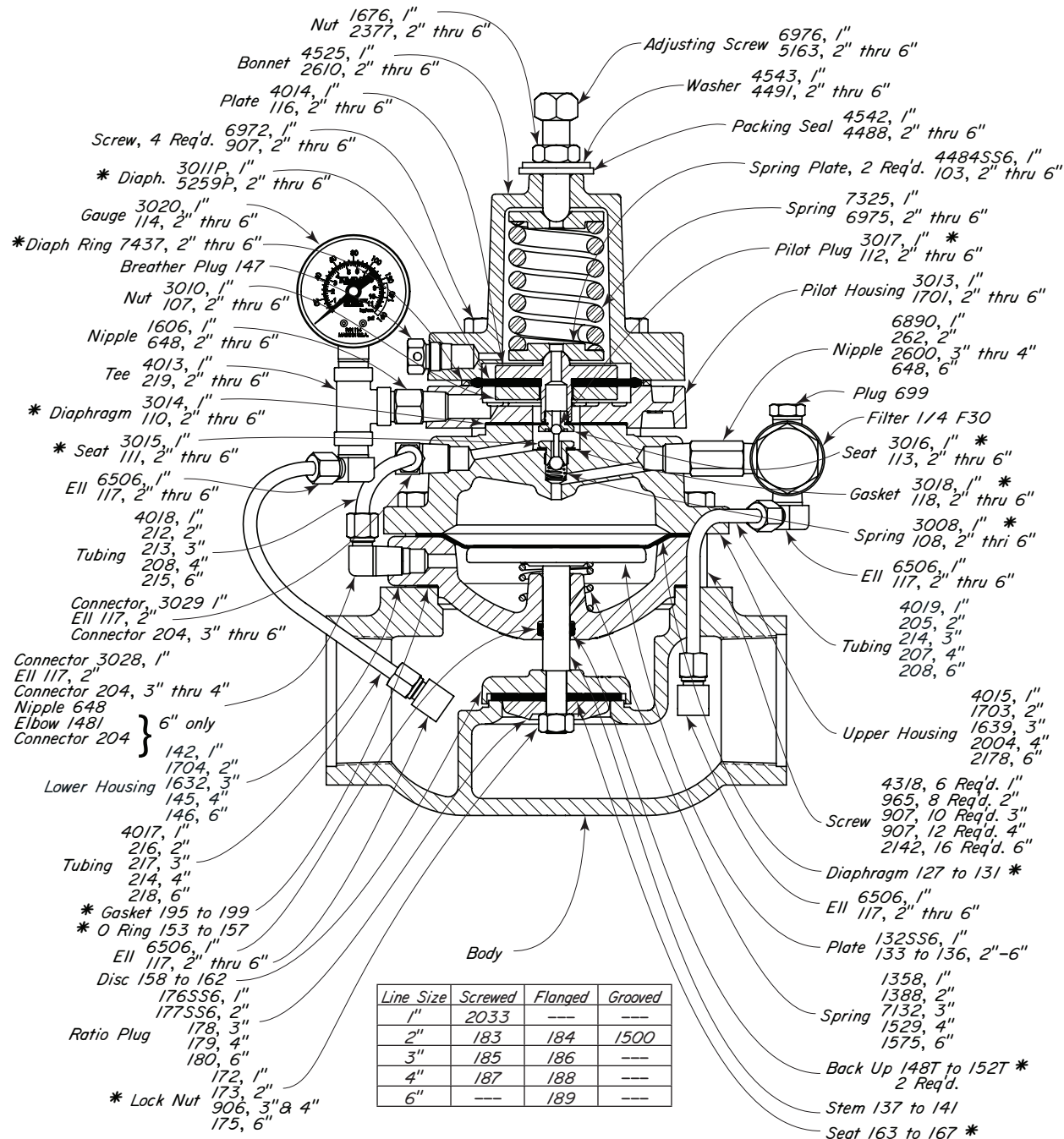


Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

# KIMRAY INC.®

GAS PRESSURE REDUCING  
DUCTILE IRON 5-125 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AKE	1" NPT	112 SGT PR	5-125	175	RRT
ABK	2" NPT	212 SGT PR	5-125	175	RAA
ABL	2" 150RF	212 FGT PR	5-125	175	RAA
ABM	2" GRVD	212 GGT PR	5-125	175	RAA
ABN	3" NPT	312 SGT PR	5-125	175	RAB
ABP	3" 150RF	312 FGT PR	5-125	175	RAB
ABR	4" NPT	412 SGT PR	5-125	175	RAC
ABS	4" 150RF	412 FGT PR	5-125	175	RAC
ABT	6" 150RF	612 FGT PR	5-125	175	RAD

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

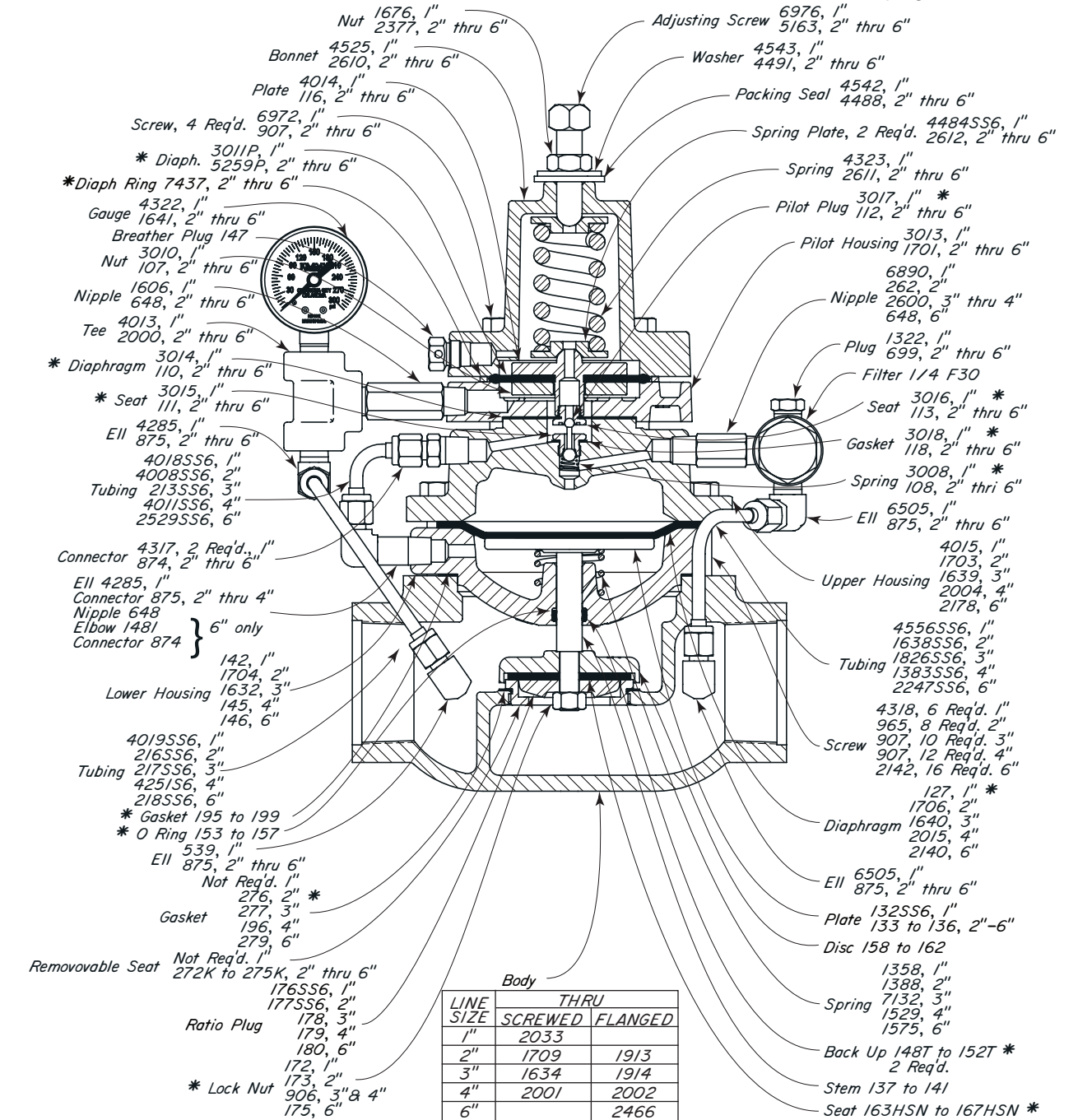
For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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### GAS PRESSURE REDUCING DUCTILE IRON 10-300 psig OPER. PRES.

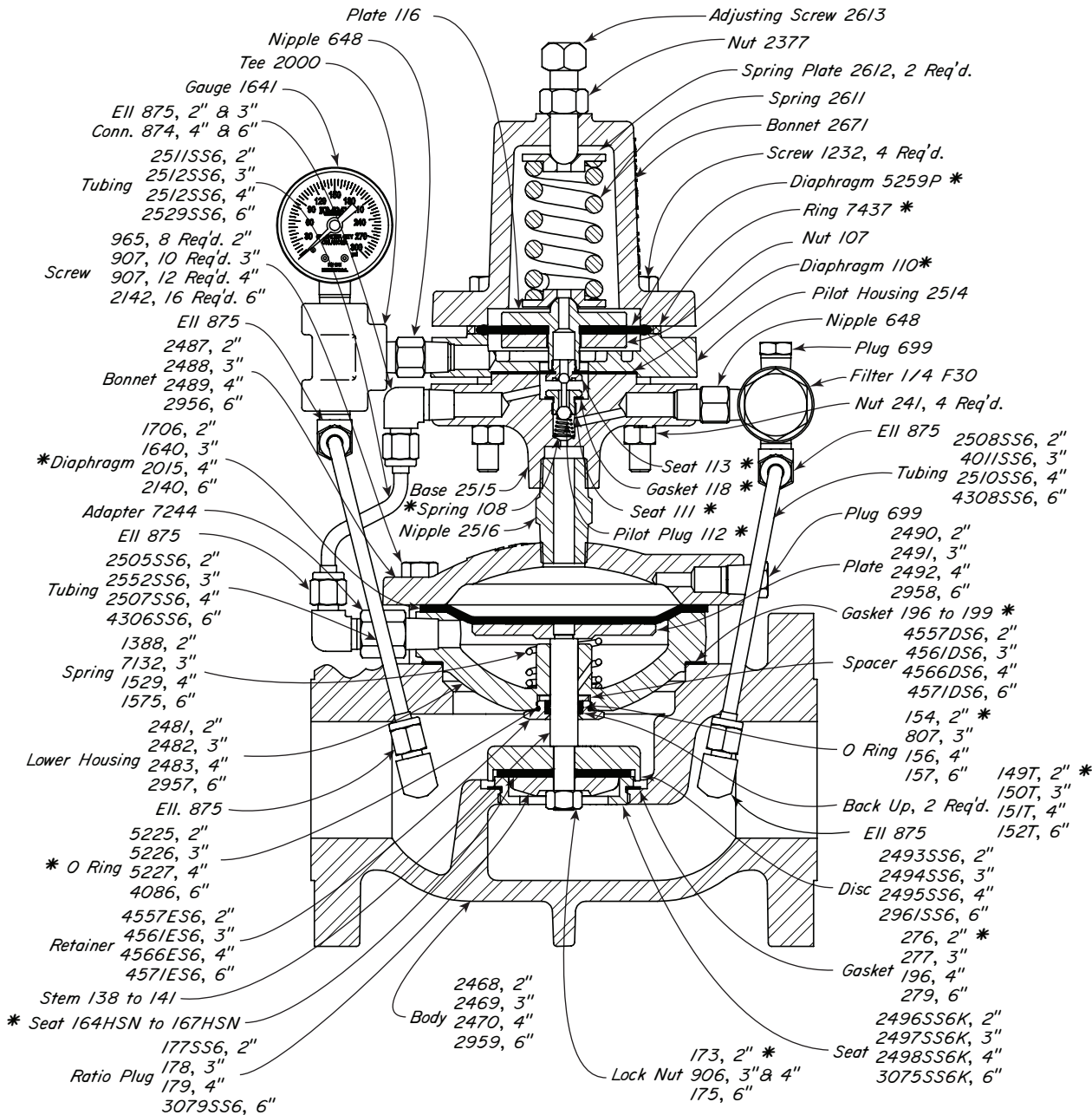




# PRESSURE REGULATORS

GAS PRESSURE REDUCING  
STEEL 10-285 OPER. PRES.

# KIMRAY INC.®



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AGG	2" FLGD.	227 FGT PR-S	10-285	285	RAE
AGH	3" FLGD.	327 FGT PR-S	10-285	285	RAF
AGI	4" FLGD.	427 FGT PR-S	10-285	285	RAG
AGJ	6" FLGD.	627 FGT PR-S	10-285	285	RAH

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.



#### APPLICATIONS:

Regulation of inlet pressure to gas compressors. Control of supply or distribution system pressures.

#### PILOT SUPPLY PRESSURE:

40 psig.

#### NOTE:

For upstream pressure less than 50 psig use outside source of supply to operate MOTOR VALVE DIAPHRAGM.

#### OPERATION:

The Pilot assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Violet to Yellow). The lower seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere).

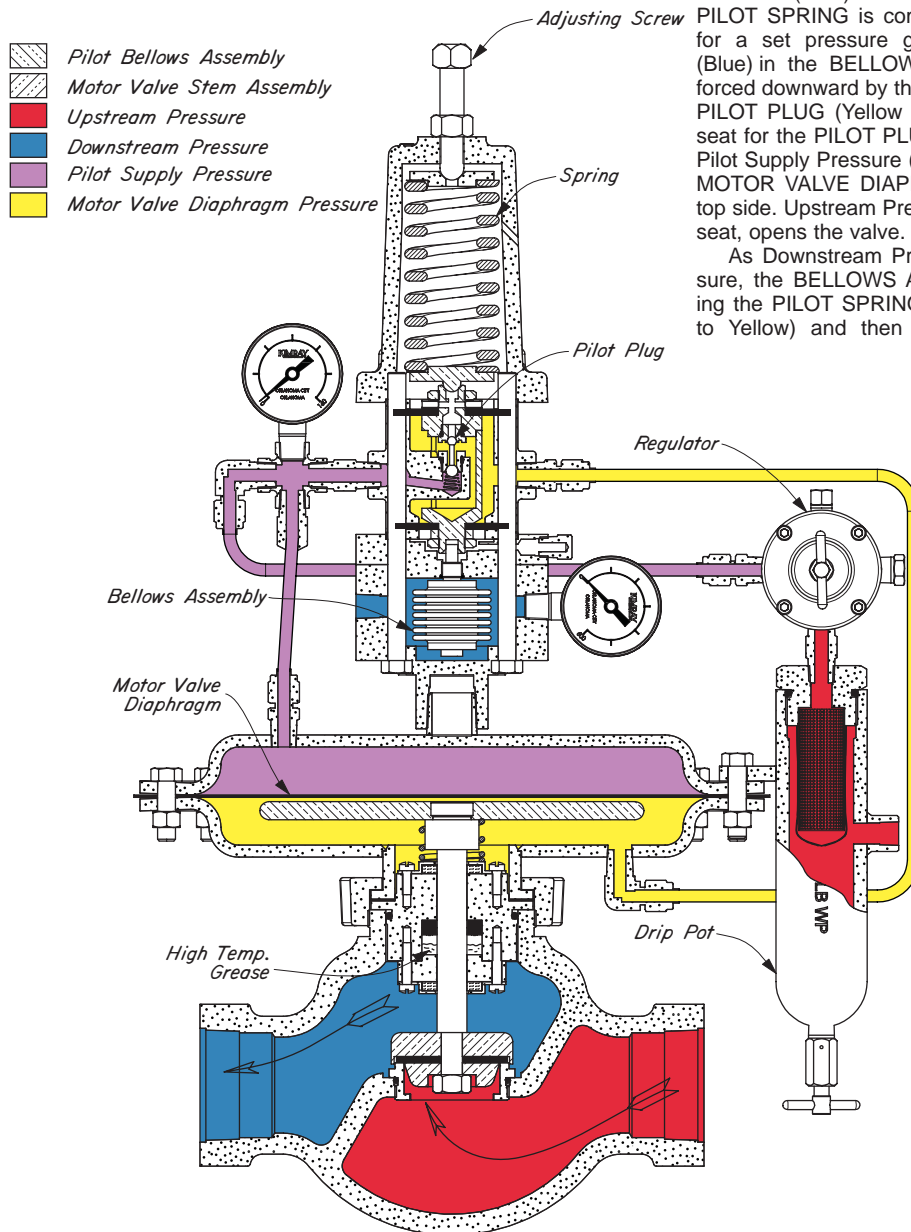
The Pilot Supply Pressure (Violet) leads the MOTOR VALVE DIAPHRAGM to provide the closing force for the Motor Valve against the Upstream Pressure.

The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed in the under side by Downstream Pressure (Blue) in the BELLOWS ASSEMBLY. Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Downstream Pressure (Blue) in the BELLOWS ASSEMBLY. The Pilot Assembly is forced downward by the PILOT SPRING. The Pilot Assembly is closed and the upper seat for the PILOT PLUG (Violet to Yellow) is open. This allows Pilot Supply Pressure (Violet) to load the underneath side of the MOTOR VALVE DIAPHRAGM to balance the pressure on the top side. Upstream Pressure (Red) acting under the motor valve seat, opens the valve.

As Downstream Pressure (Blue) increases to the set pressure, the BELLOWS ASSEMBLY expands upward, compressing the PILOT SPRING and first closing the upper seat (Violet to Yellow) and then opening the pressure vent (Yellow to Atmosphere). As the MOTOR VALVE DIAPHRAGM PRESSURE (Yellow) is decreased, the PILOT SUPPLY PRESSURE acting on top of the Motor Valve Diaphragm begins to close the valve.

With increase of Downstream Pressure (Blue) to the set pressure, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seats adjusts the Motor Valve Stem Assembly to accommodate any flow rate. The rapid but stable repositioning produces a true throttling action.

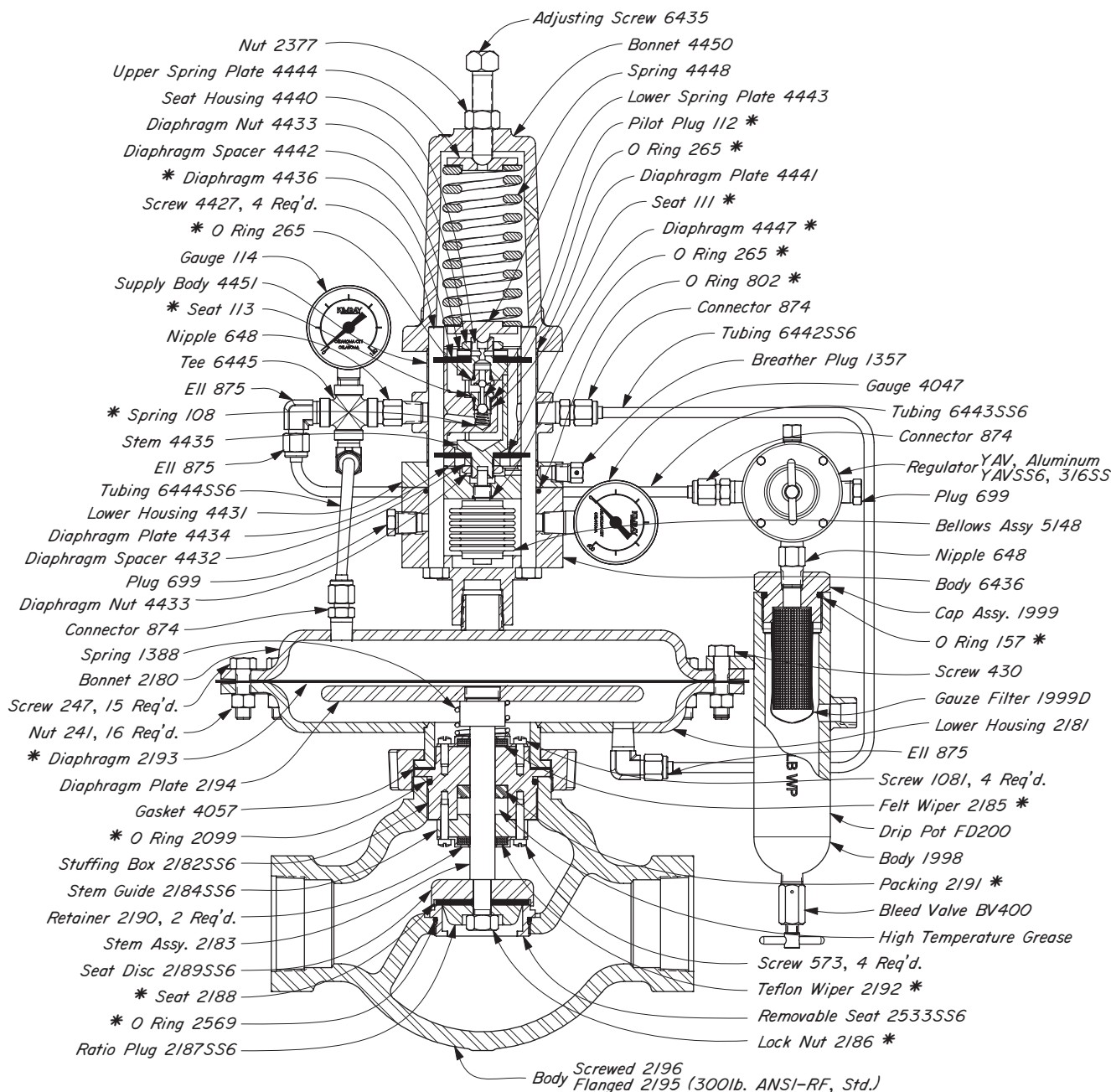


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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS PRESSURE REDUCING  
STEEL / ALL STEEL 75-500 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ACD	2" NPT	250 SGT PR-S	75-500	500	RAI
ACE	2" 300RF	250 FGT PR-S	75-500	500	RAI
ACD1	2" NPT	250 SGT PR-STL	75-500	500	RAI
ACE1	2" 300RF	250 FGT PR-STL	75-500	500	RAI

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:

Regulation of inlet pressure to gas compressors. Control of supply or distribution system pressures.

Regulation of down stream pressure where it is desired that no gas be vented.

- Inside Buildings
- In Populated Areas
- Emissions Regulated Areas
- Sour or Poisonous Gas Systems

#### CERTIFICATIONS:

Canadian Registration Number (CRN):

0C16234.24567890NTY (Ductile)

0C15604.24567890NTY (Steel)

#### OPERATION:

The Pilot assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. Upstream Pressure (Red) is the supply pressure to the pilot and is also in constant communication with the top side of the MOTOR VALVE DIAPHRAGM. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

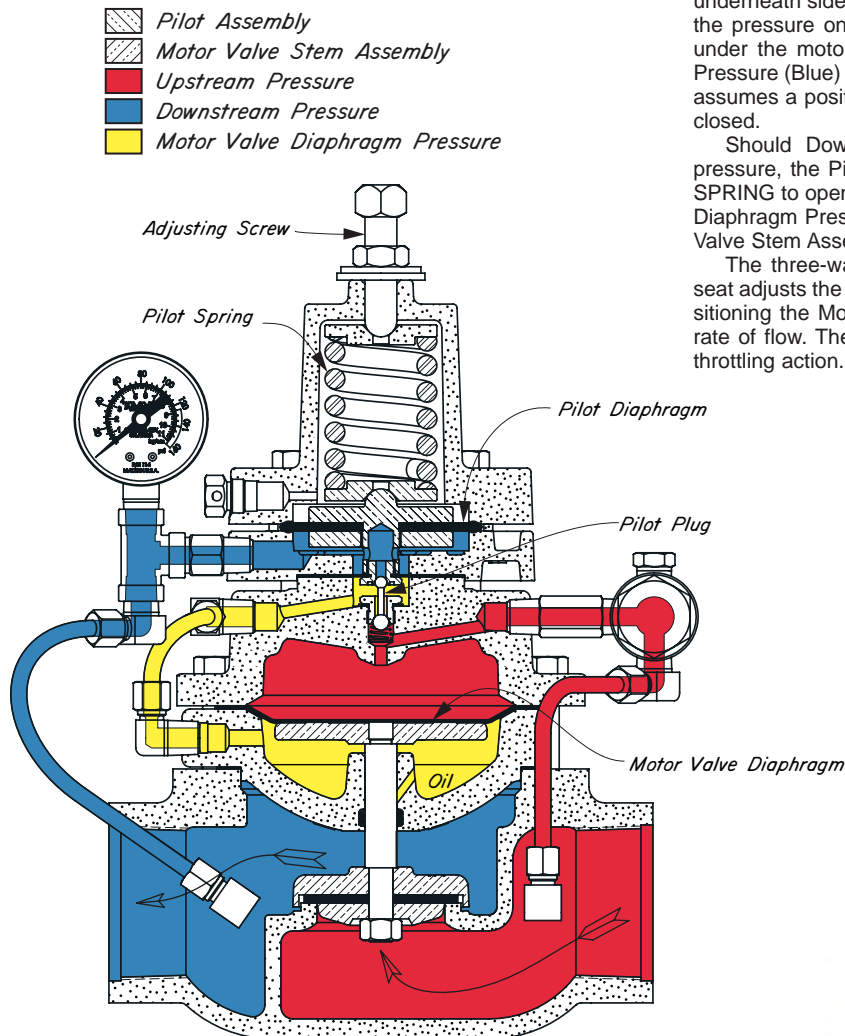
The lower seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The upper seat for the PILOT PLUG is the pressure vent (Yellow to Blue). The PILOT SPRING loads the upper side of the Supply Assembly and is opposed on the underneath side by controlled Downstream Pressure (Blue).

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a desired Downstream Pressure setting. With Downstream Pressure (Blue) too low, the PILOT SPRING forces the Pilot Assembly downward to close the upper seat (Yellow to Blue) and open the lower seat (Red to Yellow).

This lets full Upstream Pressure (Red), if necessary, load the underneath side of the MOTOR VALVE DIAPHRAGM to balance the pressure on the top side. Upstream Pressure (Red) acting under the motor valve seat, opens the valve. As Downstream Pressure (Blue) increases to the set pressure, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Should Downstream Pressure (Blue) rise above the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to open the pressure vent (Yellow to Blue). Motor Valve Diaphragm Pressure (Yellow) decreases to reposition the Motor Valve Stem Assembly.

The three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.

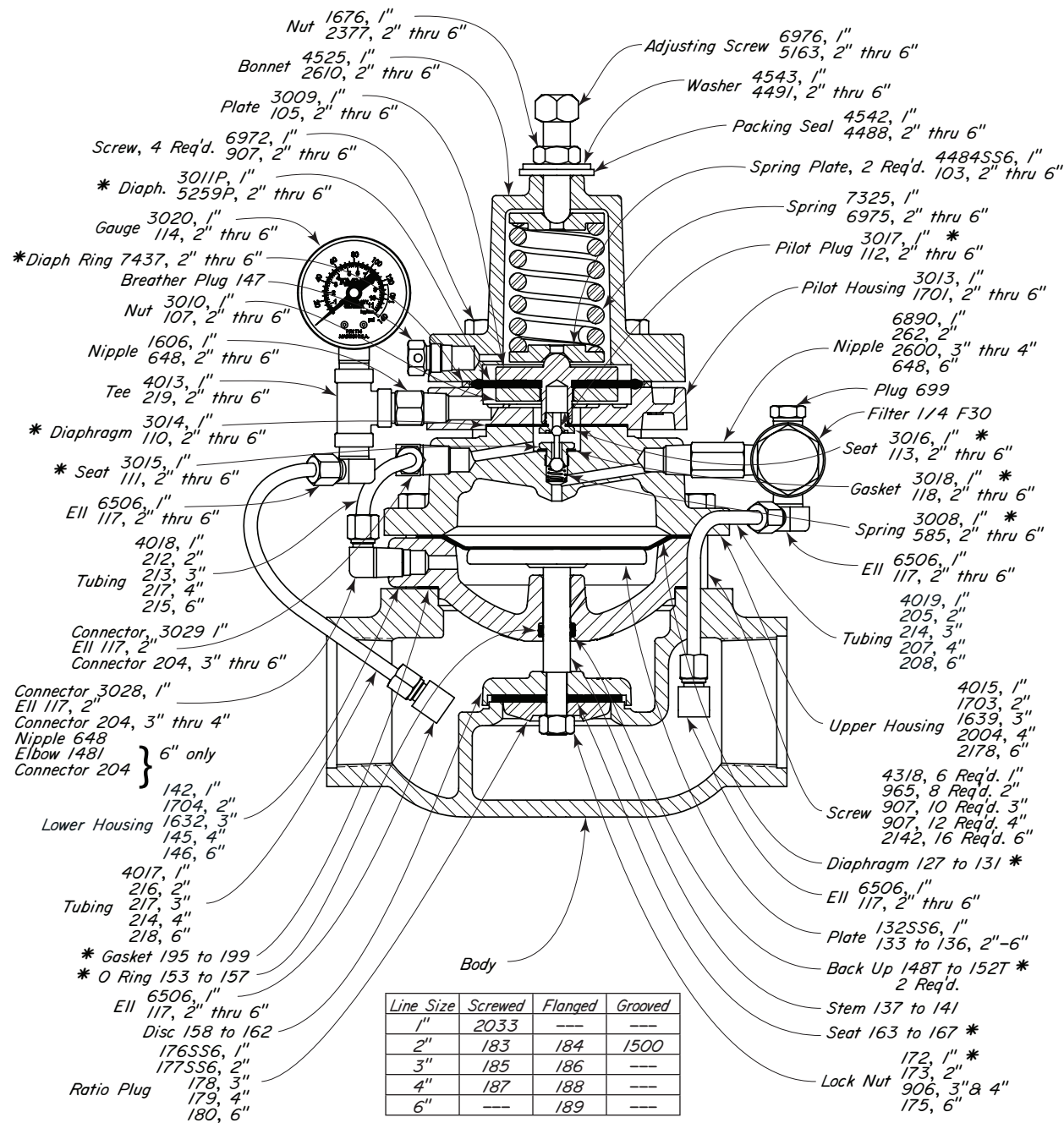


Kimray is an ISO 9001- certified manufacturer.

## PRESSURE REGULATORS

*GAS PRESSURE REDUCING NON VENTING  
DUCTILE IRON 5-125 psig OPER. PRES.*

**KIMRAY**  
**INC.**®



THRU VALVES AVAILABLE:

PART NO.	BODY CONNECTION	MODEL NO.	OPER. PRES.	MAX W.P. <sup>1†</sup>	REP. KIT
AKL	1" NPT	112 SGT PR-NV	5-125	175	RRT
AKM	2" NPT	212 SGT PR-NV	5-125	175	RAANV
AKN	2" 150RF	212 FGT PR-NV	5-125	175	RAANV
AKO	2" GRVD.	212 GGT PR-NV	5-125	175	RAANV
AKP	3" NPT	312 SGT PR-NV	5-125	175	RABNV
AKQ	3" 150RF	312 FGT PR-NV	5-125	175	RABNV
AKR	4" NPT	412 SGT PR-NV	5-125	175	RACNV
AKS	4" 150RF	412 FGT PR-NV	5-125	175	RACNV
AKT	6" 150RF	612 FGT PR-NV	5-125	175	RADNV

NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

† Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

†† Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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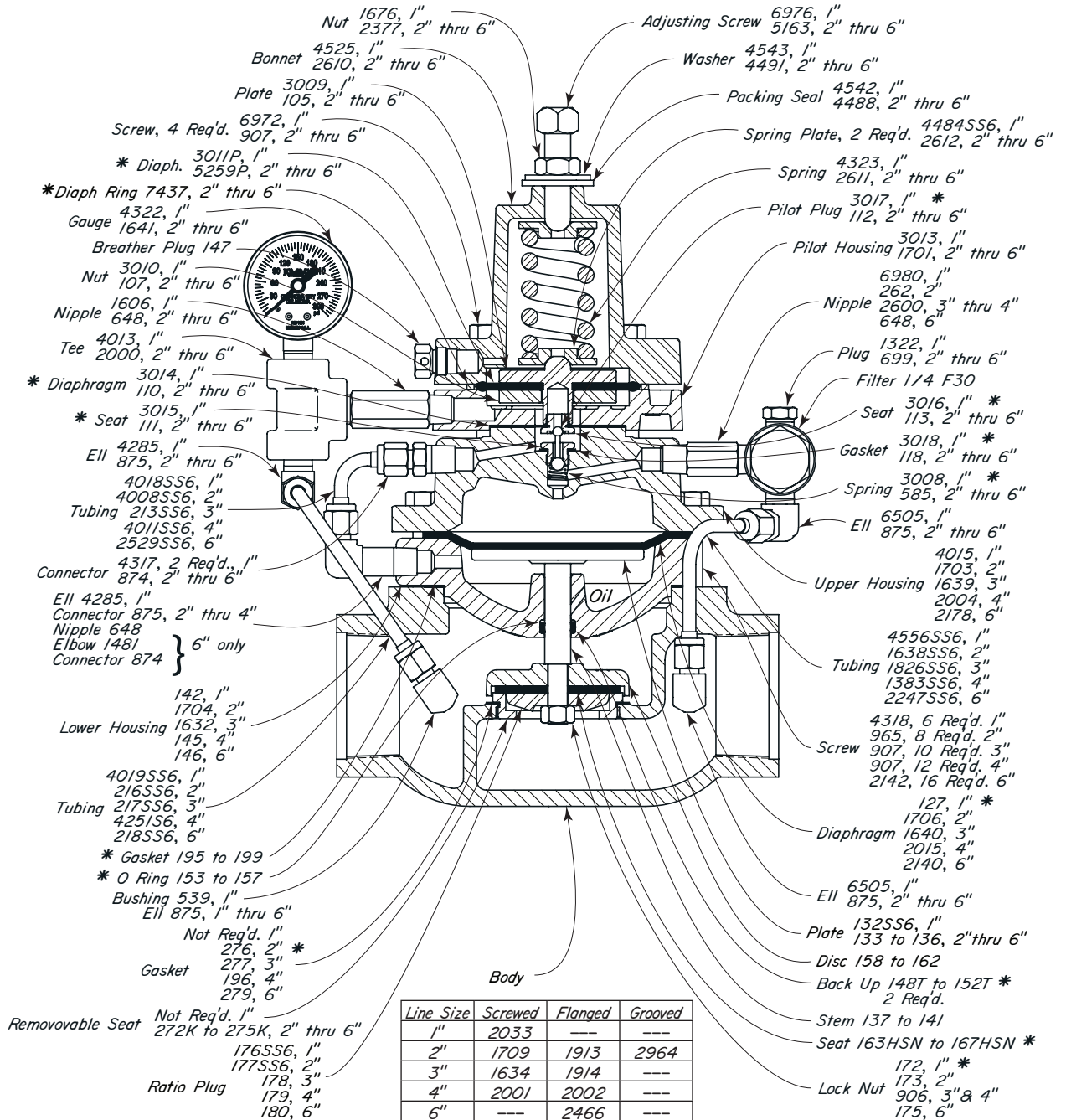
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Issued 11/16

[www.kimray.com](http://www.kimray.com)

Current Revision:  
Change Diaphragm Ring number



### GAS PRESSURE REDUCING NON VENTING DUCTILE IRON 10-300 psig OPER. PRES.



#### THRU VALVES AVAILABLE:

PART NO.	BODY CONNECTION	MODEL NO.	OPER. PRES.	MAX W.P.	REP. KIT
AKLD	1" NPT	130 SGT PR-NV-D	10-300	300	RRU
AKMD	2" NPT	230 SGT PR-NV-D	10-300	300	RDGNV
AKND	2" 150RF	218 FGT PR-NV-D	10-250	250	RDGNV
AKOD	2" GRVD.	230 GGT PR-NV-D	10-300	300	RDGNV
AKPD	3" NPT	330 SGT PR-NV-D	10-300	300	RDHNV
AKQD	3" 150RF	318 FGT PR-NV-D	10-250	250	RDHNV
AKRD	4" NPT	430 SGT PR-NV-D	10-300	300	RDINV
AKSD	4" 150RF	418 FGT PR-NV-D	10-250	250	RDINV
AKTD	6" 150RF	618 FGT PR-NV-D	10-250	250	RDJNV

#### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

† Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

†† Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

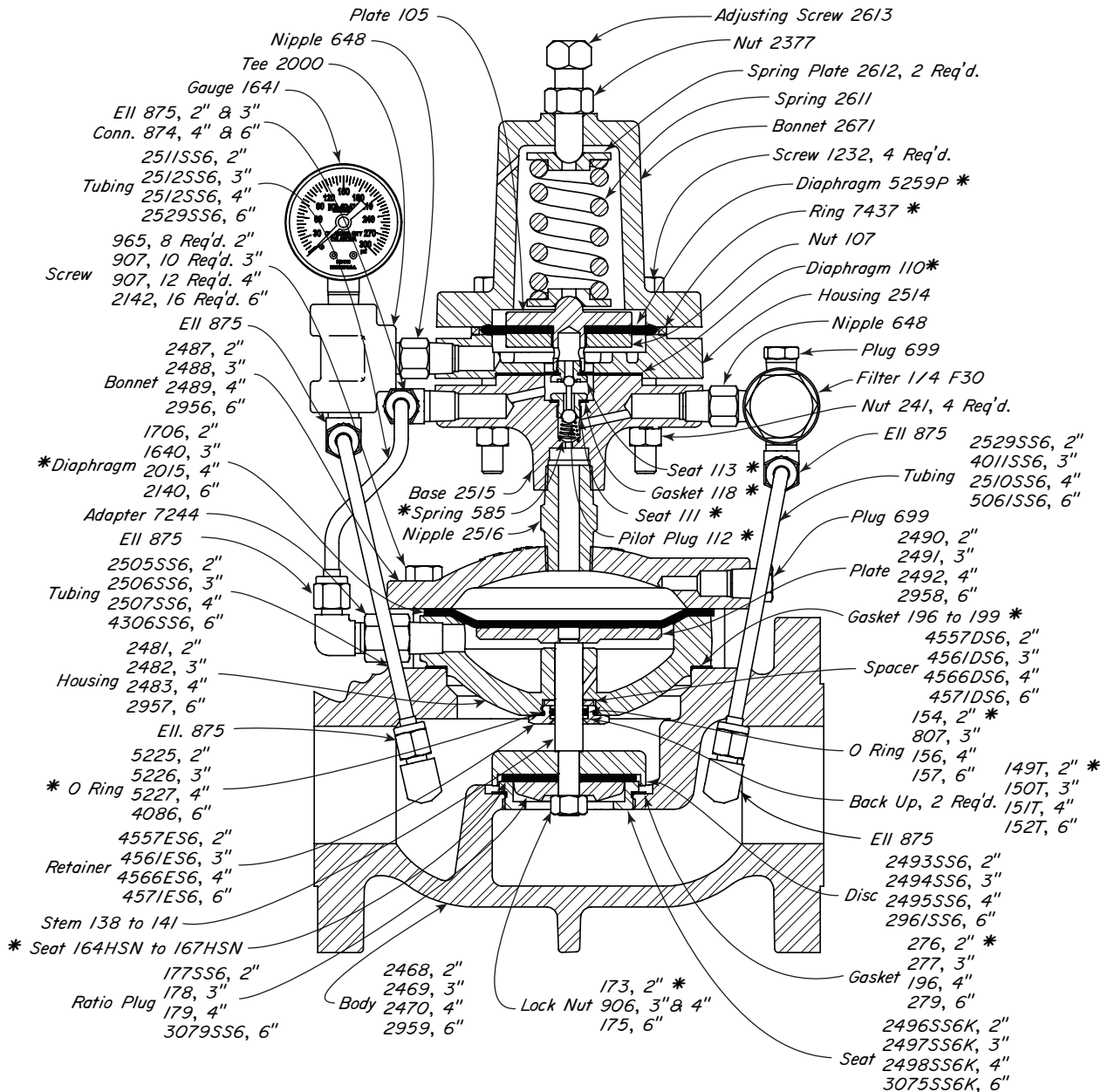
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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS PRESSURE REDUCING NON VENTING  
STEEL 10-285 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AEV	2" 150RF	227 FGT PR-S NV	10-285	285	RAENV
AEW	3" 150RF	327 FGT PR-S NV	10-285	285	RAFNV
AEX	4" 150RF	427 FGT PR-S NV	10-285	285	RAGNV
AEY	6" 150RF	627 FGT PR-S NV	10-285	285	RAHNV

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:

Regulation of inlet pressure to gas compressors and control of supply or distribution system pressures where the pressure to the regulator varies significantly and regulated pressure must remain constant.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
OC16234.24567890NTY (Ductile)  
OC15604.24567890NTY (Steel)

#### NOTE:

For upstream pressure less than 10 psig use outside source of supply to operate MOTOR VALVE DIAPHRAGM.

#### OPERATION:

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator.

The PILOT PLUG consists of two stainless balls rigidly connected together. Upstream Pressure (Red) is the supply pressure to the pilot and is also in constant communication with the top side of the MOTOR VALVE DIAPHRAGM. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

The lower seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The upper seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere). The PILOT SPRING loads the upper side of the Pilot Assembly and is opposed on the underneath side by the controlled Downstream Pressure (Blue).

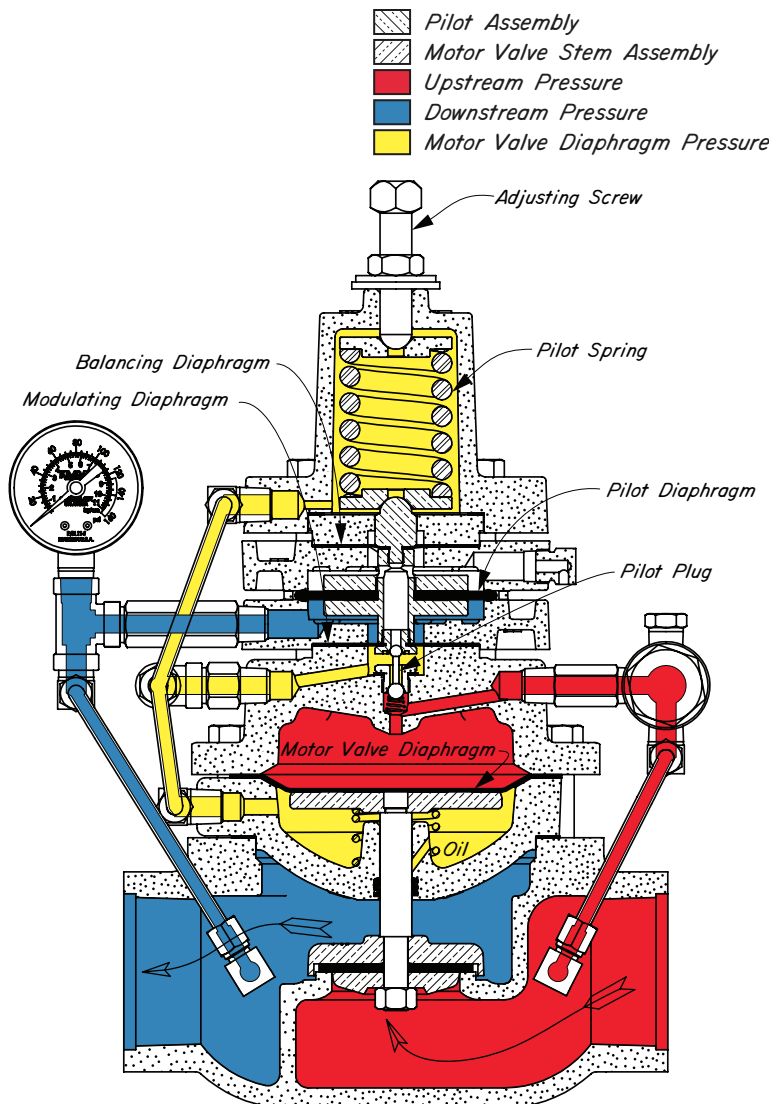
Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a desired Downstream Pressure setting. With Downstream Pressure (Blue) too low, the PILOT SPRING forces the Pilot Assembly downward to close the upper seat (Yellow to Atmosphere) and open the lower seat (Red to Yellow).

This lets full Upstream Pressure (Red) load the underneath side of the MOTOR VALVE DIAPHRAGM to balance the pressure on the top side. Upstream Pressure (Red) acting under the motor valve seat, opens the valve. As Downstream Pressure (Blue) increases to the set pressure, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Should Downstream Pressure (Blue) rise above the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to open the pressure vent (Yellow to Atmosphere). Motor Valve Diaphragm Pressure (Yellow) decreases to reposition the Motor Valve Stem Assembly.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.

The Motor Valve Diaphragm Pressure (Yellow) is communicated to the bonnet area, this pressure acts on the BALANCING DIAPHRAGM to counteract the equal and opposite pressure on the MODULATING DIAPHRAGM. This balancing action reduces the effect of variation in Upstream Pressure (Red) on the controlled or Downstream Pressure (Blue) resulting in constant Downstream Pressure (Blue).

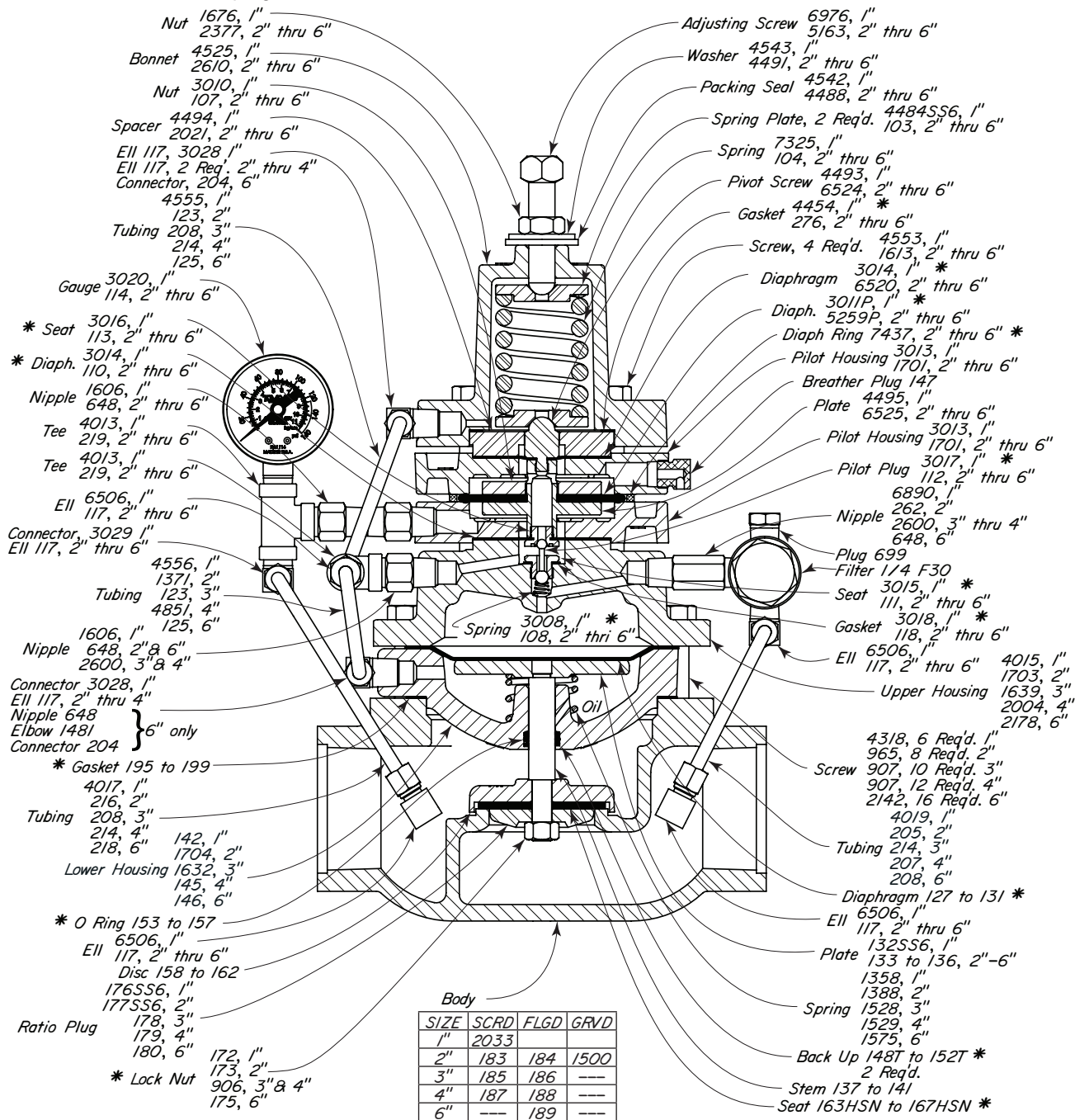


Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

# KIMRAY INC.®

GAS PRESSURE REDUCING BALANCED  
DUCTILE IRON 5-125 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AKI	1" NPT	112 SGT PRB	5-125	175	RRF
AJA	2" NPT	212 SGT PRB	5-125	175	RRI
AJB	2" 150RF	212 FGT PRB	5-125	175	RRI
AJC	2" GRVD.	212 GGT PRB	5-125	175	RRI
AJD	3" NPT	312 SGT PRB	5-125	175	RRJ
AJE	3" 150RF	312 FGT PRB	5-125	175	RRJ
AJF	4" NPT	412 SGT PRB	5-125	175	RRK
AJG	4" 150RF	412 FGT PRB	5-125	175	RRK
AJH	6" 150RF	612 FGT PRB	5-125	175	RRL

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

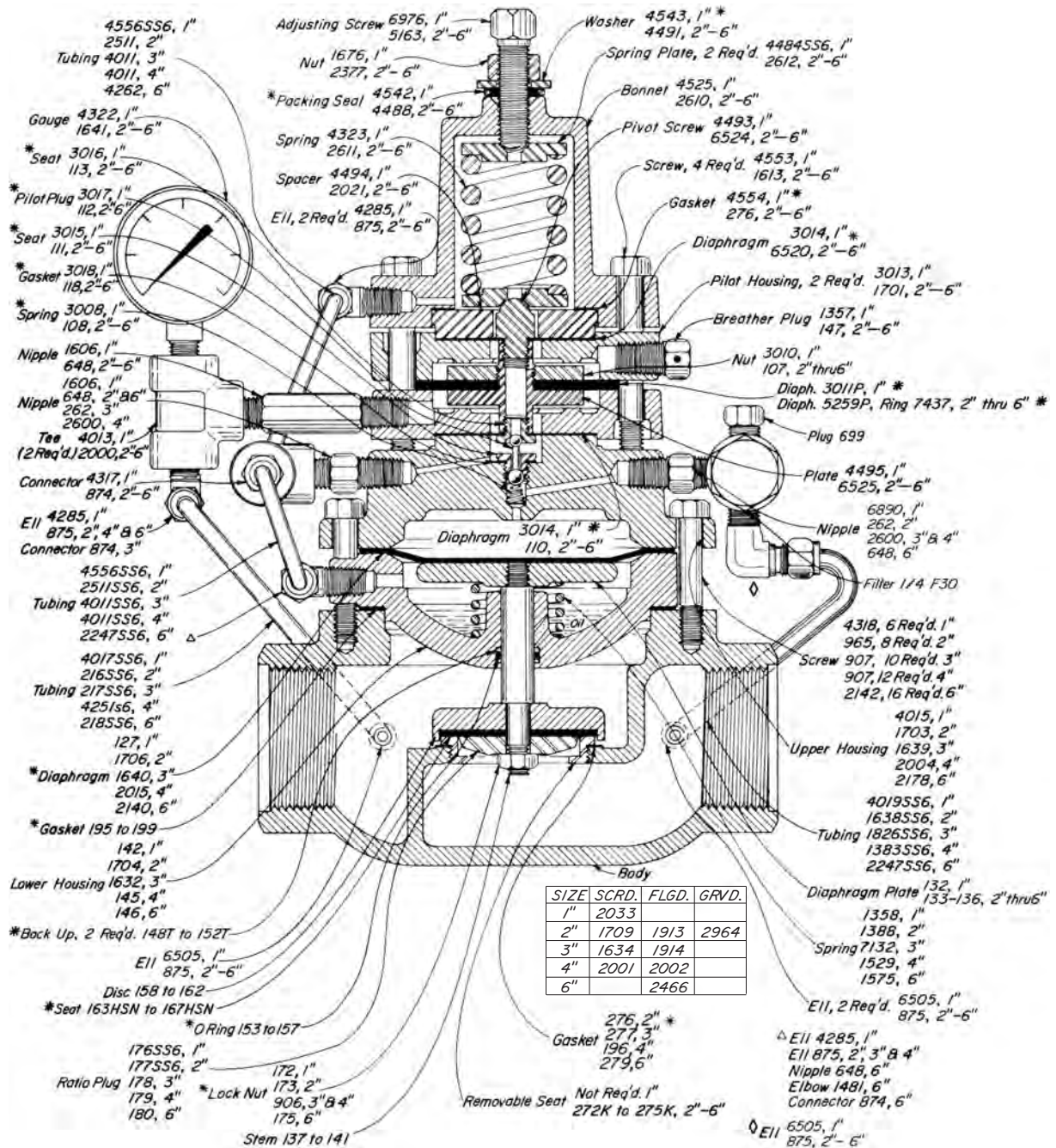
<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.



GAS PRESSURE REDUCING BALANCED  
DUCTILE IRON 10-300 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY CONNECTION	MODEL NO.	OPER. PRES.	MAX W.P.	REP. KIT
AKJ	1" NPT	130 SGT PRB-D	10-300	300	RYA
AJI	2" NPT	230 SGT PRB-D	10-300	300	RRM
AJJ	2" 150RF	218 FGT PRB-D	10-250	250	RRM
AJK	3" NPT	330 SGT PRB-D	10-300	300	RRN
AJL	3" 150RF	318 FGT PRB-D	10-250	250	RRN
AJM	4" NPT	430 SGT PRB-D	10-300	300	RRO
AJN	4" 150RF	418 FGT PRB-D	10-250	250	RRO
AJP	6" 150RF	618 FGT PRB-D	10-250	250	RRP

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

† Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

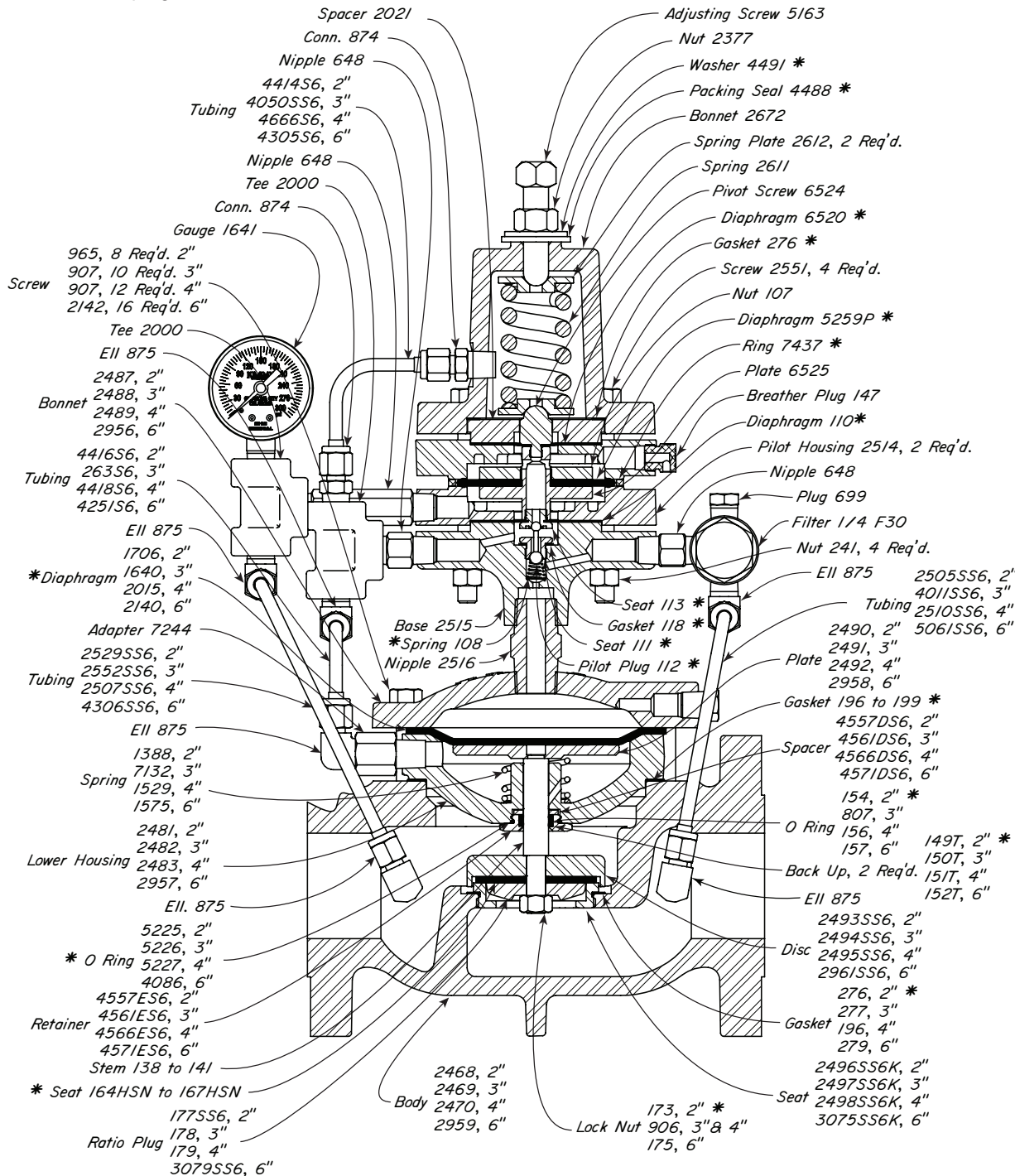
†† Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS PRESSURE REDUCING BALANCED  
STEEL 10-285 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AJR	2" 150RF	227 FGT PRB-S	10-285	285	RRQ
AJS	3" 150RF	327 FGT PRB-S	10-285	285	RRR
AJT	4" 150RF	427 FGT PRB-S	10-285	285	RRS
AJU	6" 150RF	627 FGT PRB-S	10-285	285	RRX

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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#### APPLICATION:






Control back pressure in liquid packed systems where an auxiliary source of supply gas pressure is available.

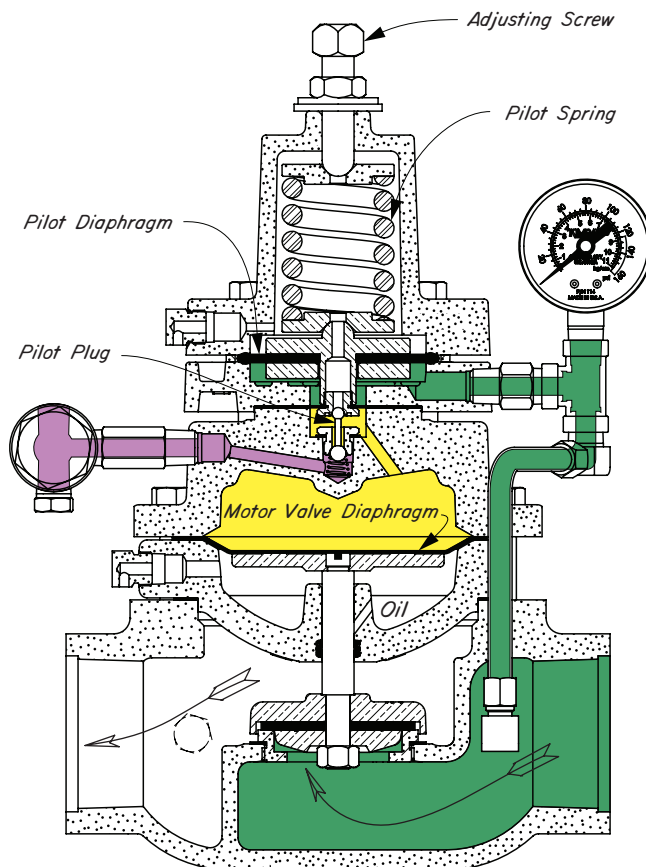
#### SUPPLY PRESSURE:

Equal to or not less than 60% of controlled pressure upstream

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
 0C16234.24567890NTY (Ductile)  
 0C15604.24567890NTY (Steel)

-  Pilot Assembly
-  Motor Valve Stem Assembly
-  Upstream Liquid Pressure
-  Motor Valve Diaphragm Pressure
-  Supply Pressure (outside source)



#### OPERATION:

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The lower seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Purple to Yellow). The upper seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere).

The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Liquid Pressure (Green).

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Liquid Pressure (Green). The Pilot Assembly is forced downward by the PILOT SPRING. The upper seat for the PILOT PLUG (Yellow to Atmosphere) is closed and the lower seat for the PILOT PLUG (Purple to Yellow) is open. This lets full Supply Pressure (Purple) load the MOTOR VALVE DIAPHRAGM to close the motor valve. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

As the Upstream Liquid Pressure (Green) increases to the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to first close the lower seat (Purple to Yellow) and open the pressure vent (Yellow to Atmosphere). As the Motor Valve Diaphragm Pressure (Yellow) is decreased, the Upstream Liquid Pressure (Green) acting under the motor valve seat, opens the valve. With relief of Upstream Liquid Pressure (Green) through the motor valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow), repositioning the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.



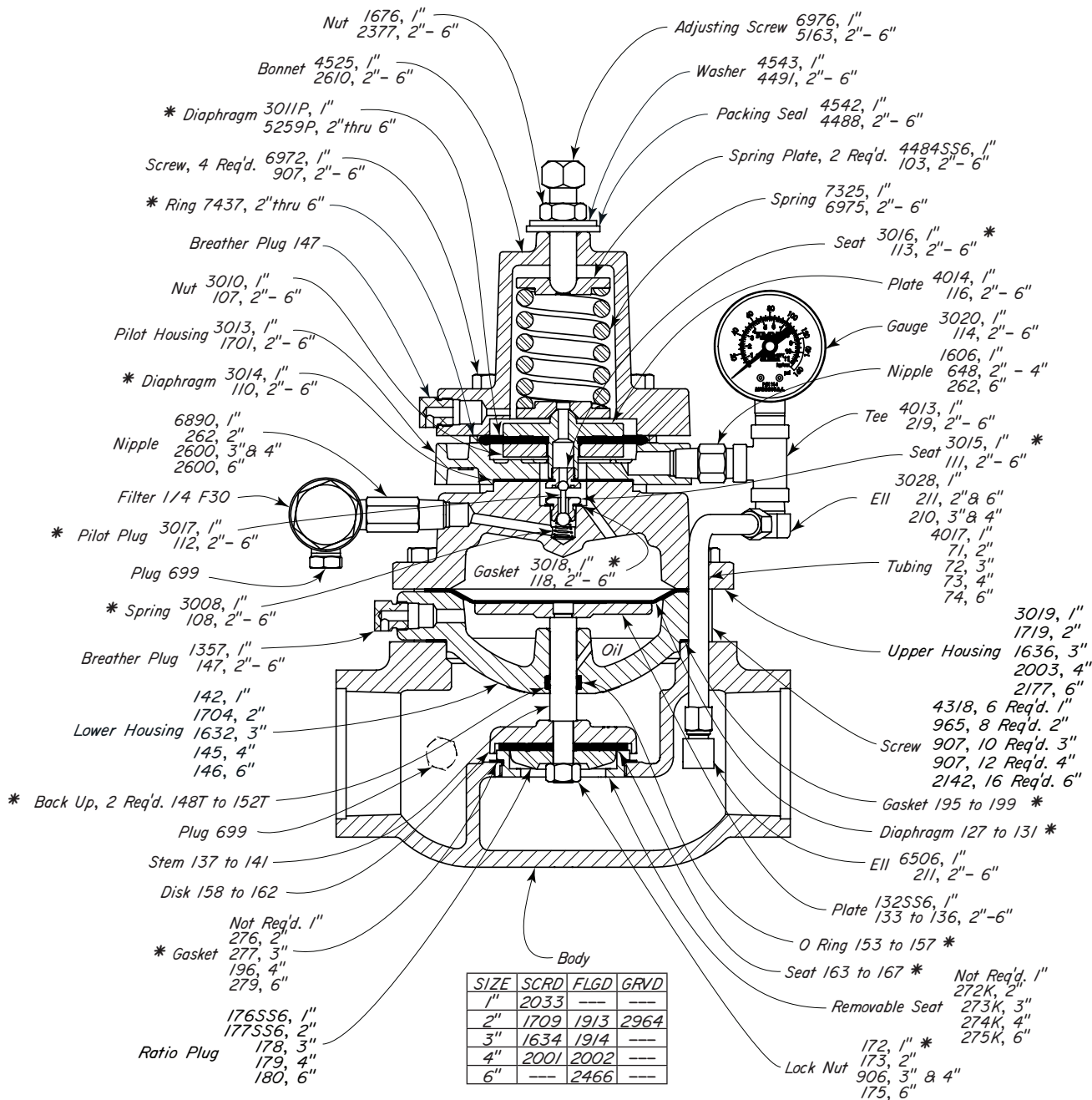
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# PRESSURE REGULATORS

# KIMRAY INC.®

## LIQUID BACK PRESSURE

DUCTILE IRON 5-125 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ACF	1" NPT	112 SGT LBP	5-125	175	RRT
AEE	2" NPT	212 SGT LBP	5-125	175	RAA
AEF	2" 150RF	212 FGT LBP	5-125	175	RAA
AEG	2" GRVD	212 GGT LBP	5-125	175	RAA
AEH	3" NPT	312 SGT LBP	5-125	175	RAB
AEI	3" 150RF	312 FGT LBP	5-125	175	RAB
AEJ	4" NPT	412 SGT LBP	5-125	175	RAC
AEK	4" 150RF	412 FGT LBP	5-125	175	RAC
AEL	6" 150RF	612 FGT LBP	5-125	175	RAD

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

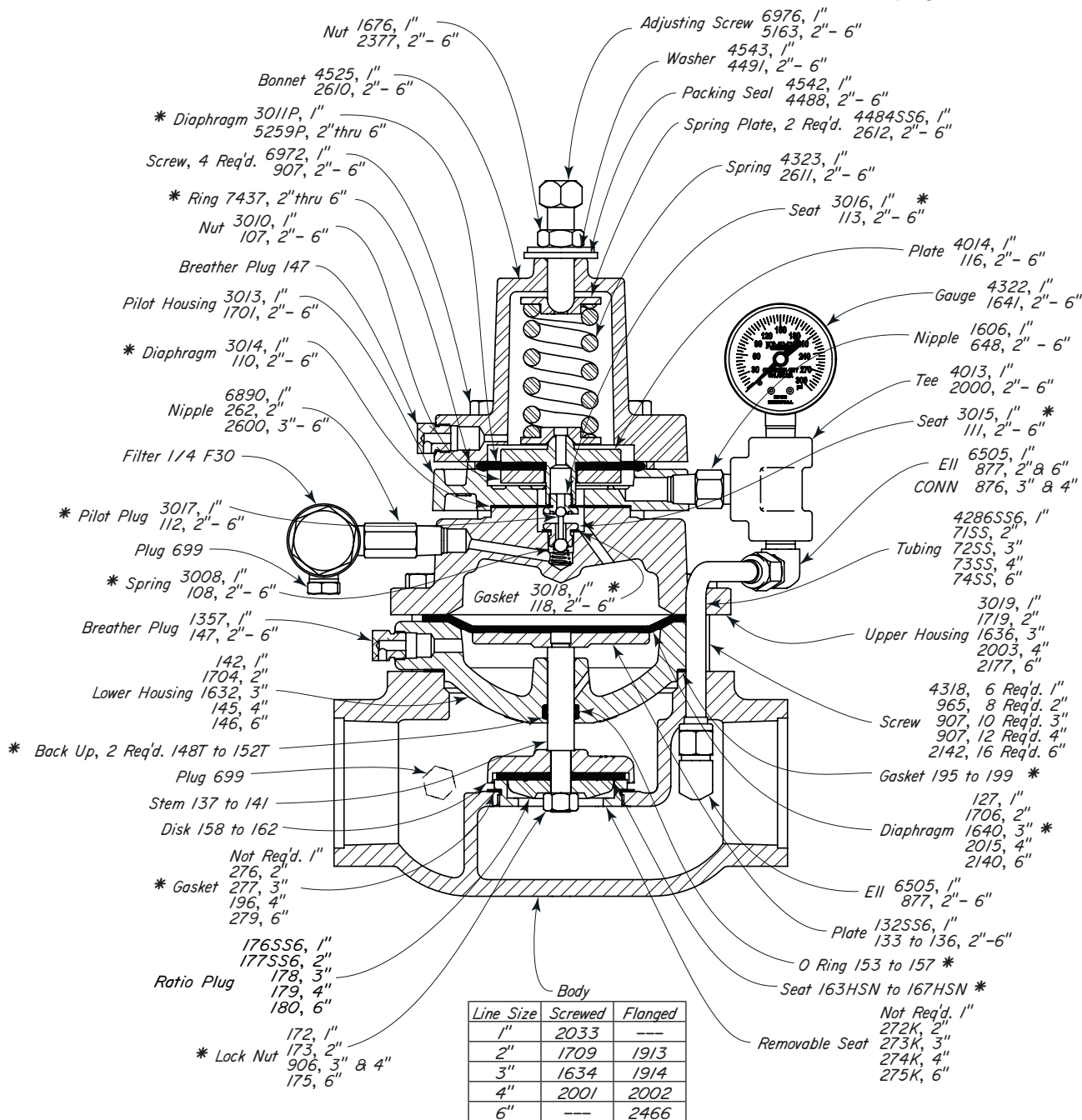
For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

### LIQUID BACK PRESSURE DUCTILE IRON 10-300 psig OPER. PRES.



#### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ACG	1" NPT	130 SGT LBP-D	10-300	300	RRU
AEM	2" NPT	230 SGT LBP-D	10-300	300	RDG
AEN	2" 150RF	218 FGT LBP-D	10-250	250	RDG
AEP	3" NPT	330 SGT LBP-D	10-300	300	RDH
AER	3" 150RF	318 FGT LBP-D	10-250	250	RDH
AES	4" NPT	430 SGT LBP-D	10-300	300	RDI
AET	4" 150RF	418 FGT LBP-D	10-250	250	RDI
AEU	6" 150RF	618 FGT LBP-D	10-250	250	RDJ

#### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

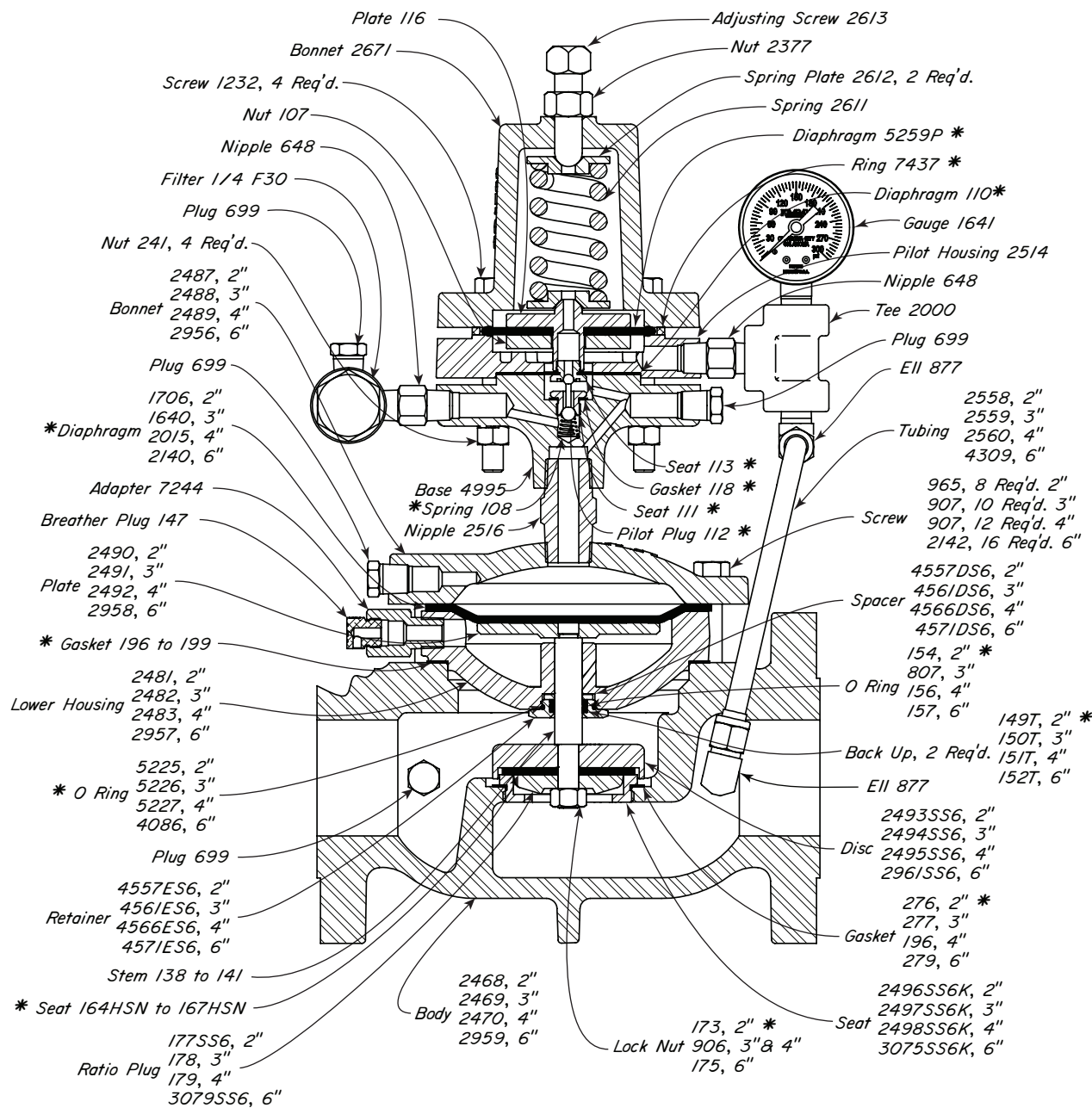
<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

# KIMRAY INC.®

LIQUID BACK PRESSURE  
STEEL 10-285 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AGW	2" 150RF	227 FGT LBP-S	10-285	285	RAE
AGX	3" 150RF	327 FGT LBP-S	10-285	285	RAF
AGY	4" 150RF	427 FGT LBP-S	10-285	285	RAG
AGZ	6" 150RF	627 FGT LBP-S	10-285	285	RAH

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.



#### APPLICATION:

For maintaining a constant pressure drop across meter systems.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)  
0C15604.24567890NTY (Steel)

#### OPERATION:

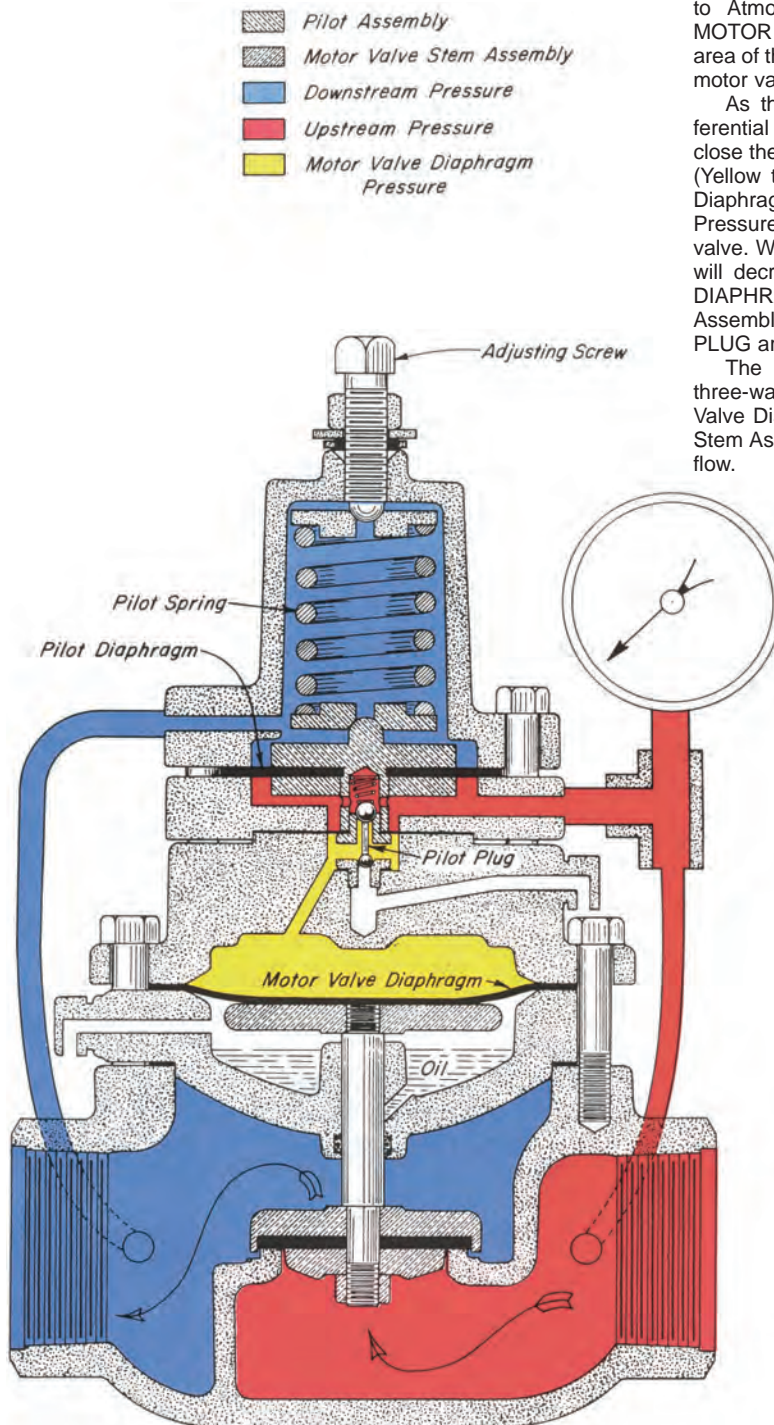
This regulator is designed to control a set difference between Upstream Pressure (Red) and Downstream Pressure (blue). The differential pressure is set by changing the PILOT SPRING load with the ADJUSTING SCREW.

Any change in Downstream Pressure (Blue) will position the Motor Valve Stem Assembly until a like change in Upstream Pressure (Red) has occurred to maintain the set differential pressure.

Assume the load produced by the PILOT SPRING and Downstream Pressure (Blue) acting on the Pilot Assembly has caused it to move downward. This opens the upper seat of the PILOT PLUG (Red to Yellow) and closes the lower seat (Yellow to Atmosphere) admitting full Upstream Pressure (Red) to the MOTOR VALVE DIAPHRAGM, closing the motor valve seat. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

As the Upstream Pressure (Red) increases to the set differential pressure, the Pilot Assembly moves upward to first close the upper seat (Red to Yellow) and open the pressure vent (Yellow to Atmosphere). The resulting decrease in Motor Valve Diaphragm Pressure (Yellow) permits the increased Upstream Pressure (Red), acting under the motor valve seat, to open the valve. With the motor valve open, the Upstream Pressure (Red) will decrease until the differential pressure across the PILOT DIAPHRAGM reaches the set point at which time the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

The rapid but stable repositioning, intermittent vent pilot, three-way valve action of the PILOT PLUG adjust the Motor Valve Diaphragm Pressure (Yellow) to position the Motor Valve Stem Assembly and provide true throttling action for any rate of flow.

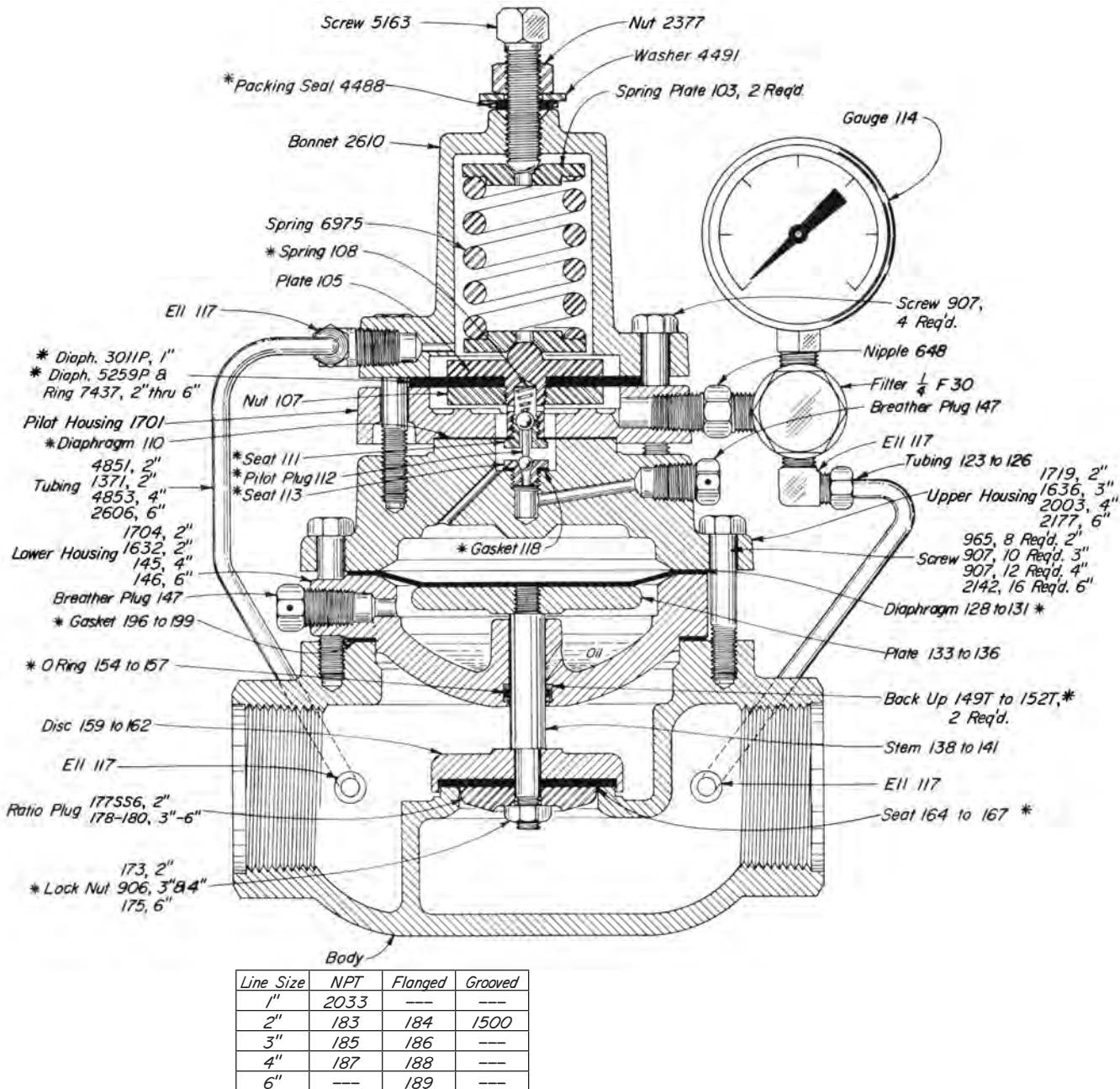


Kimray is an ISO 9001- certified manufacturer.

## PRESSURE REGULATORS

*GAS PRESSURE DIFFERENTIAL  
DUCTILE IRON 5-125 psig OPER. PRES.*

**KIMRAY**  
**INC.**®



THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ACK	2" NPT	212 SGT PD	5-125	175	RPO
ACL	2" 150RF	212 FGT PD	5-125	175	RPO
ACM	2" GRVD.	212 GGT PD	5-125	175	RPO
ACN	3" NPT	312 SGT PD	5-125	175	RPP
ACP	3" 150RF	312 FGT PD	5-125	175	RPP
ACR	4" NPT	412 SGT PD	5-125	175	RPQ
ACS	4" 150RF	412 FGT PD	5-125	175	RPQ
ACT	6" 150RF	612 FGT PD	5-125	175	RPR

NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

† Standard Trim size is same as connection size. For Reduced trim sizes, see A:|

†† Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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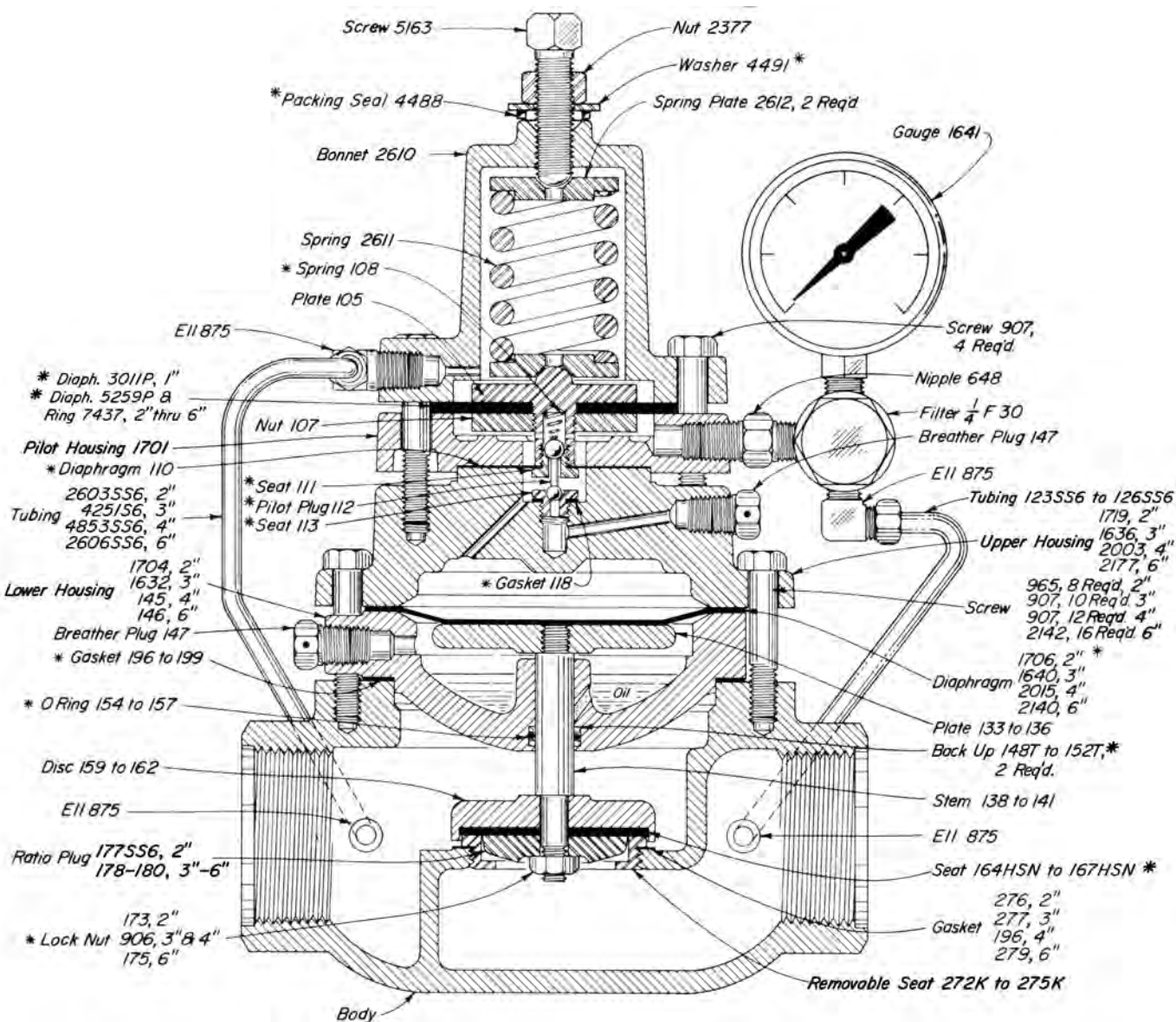
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Issued 11/16

[www.kimray.com](http://www.kimray.com)

Current Revision:  
Change Diaphragm Ring number



GAS PRESSURE DIFFERENTIAL  
DUCTILE IRON 10-300 psig OPER. PRES.



LINE SIZE	THRU	
	SCREWED	FLANGED
2"	1709	1913
3"	1634	1914
4"	2001	2002
6"	-----	2466

### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ACU	2" NPT	230 SGT PD-D	10-300	300	RPK
ACW	2" 150RF	218 FGT PD-D	10-250	250	RPK
ACX	3" NPT	330 SGT PD-D	10-300	300	RPL
ACY	3" 150RF	318 FGT PD-D	10-250	250	RPL
ADA	4" NPT	430 SGT PD-D	10-300	300	RPM
ADB	4" 150RF	418 FGT PD-D	10-250	250	RPM
ADC	6" 150RF	618 FGT PD-D	10-250	250	RPN

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

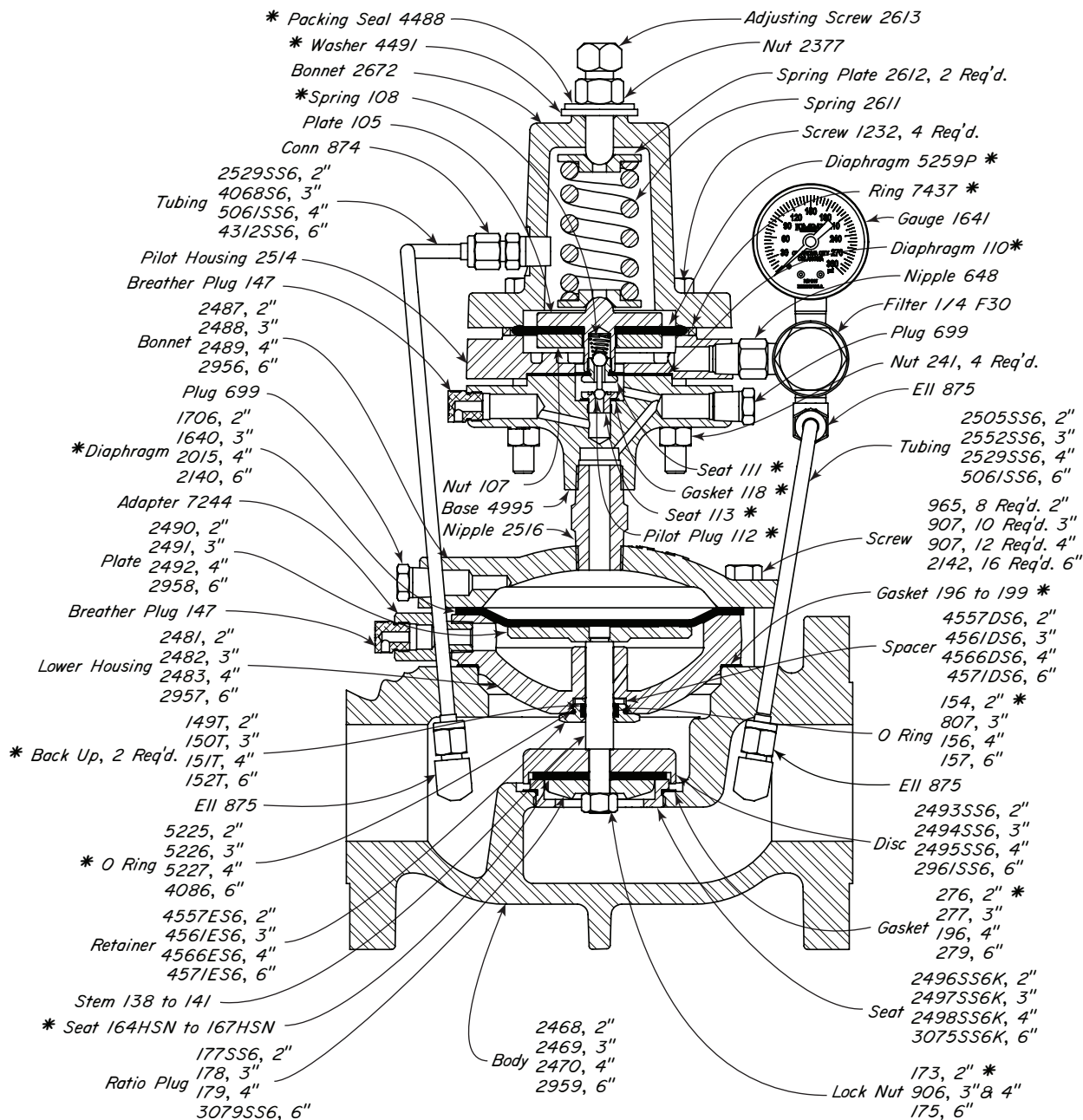
<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

GAS PRESSURE DIFFERENTIAL  
STEEL 10-285 psig OPER. PRES.

# KIMRAY INC.®



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AGL	2" 150RF	227 FGT PD-S	10-285	285	RBV
AGM	3" 150RF	327 FGT PD-S	10-285	285	RBZ
AGN	4" 150RF	427 FGT PD-S	10-285	285	RCA
AGO	6" 150RF	627 FGT PD-S	10-285	285	RBW

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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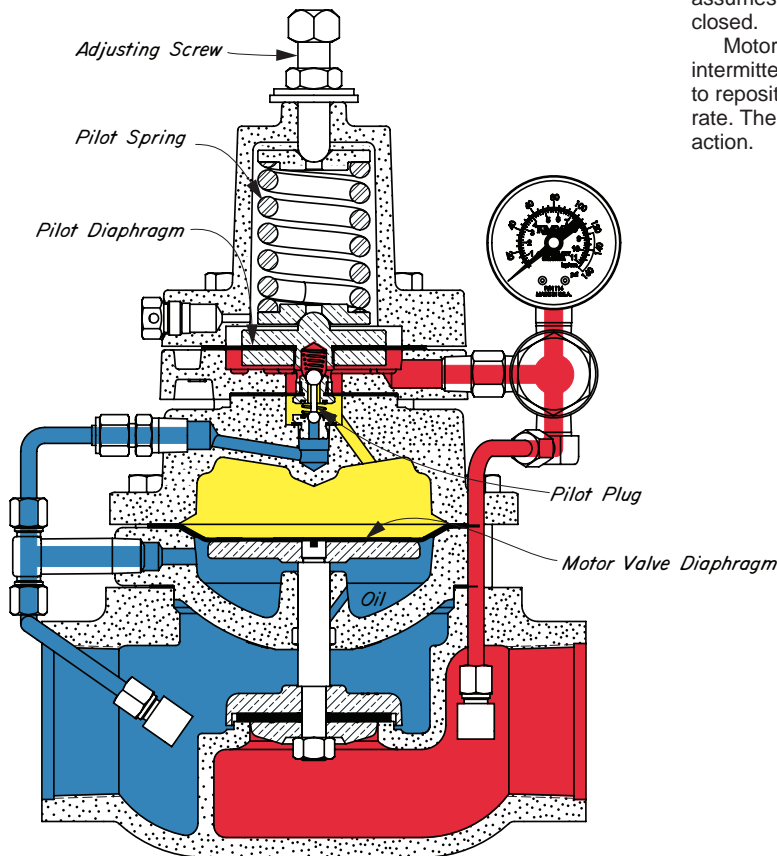
#### APPLICATION:

Positive pressure control of systems flowing into downstream vacuum gathering line.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)

-  Pilot Assembly
-  Motor Valve Stem Assembly
-  Upstream Pressure
-  Motor Valve Diaphragm Pressure
-  Downstream Pressure



#### OPERATION:

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Blue) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is open. This lets full Upstream Pressure (Red) load the MOTOR VALVE DIAPHRAGM to close the valve. Additional closing effort is provided by Downstream Vacuum Pressure (Blue) under the MOTOR VALVE DIAPHRAGM.

As the Upstream Pressure (Red) increases to the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to first close the upper seat (Red to Yellow) and open the lower seat (Yellow to Blue). Motor Valve Diaphragm Pressure (Yellow) is vented to the Downstream Vacuum Pressure (Blue).

As the Motor Valve Diaphragm Pressure (Yellow) is decreased, the Upstream Pressure (Red) acting under the motor valve seat and the Downstream Vacuum Pressure (Blue) acting on top of the motor valve seat, opens the valve. With relief of the Upstream Pressure (Red) through the valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Motor Valve Diaphragm Pressure (Yellow) is regulated by the intermittent vent pilot three-way valve action of the PILOT PLUG to reposition the Motor Valve Stem Assembly for changes in flow rate. The rapid but stable repositioning produces a true throttling action.

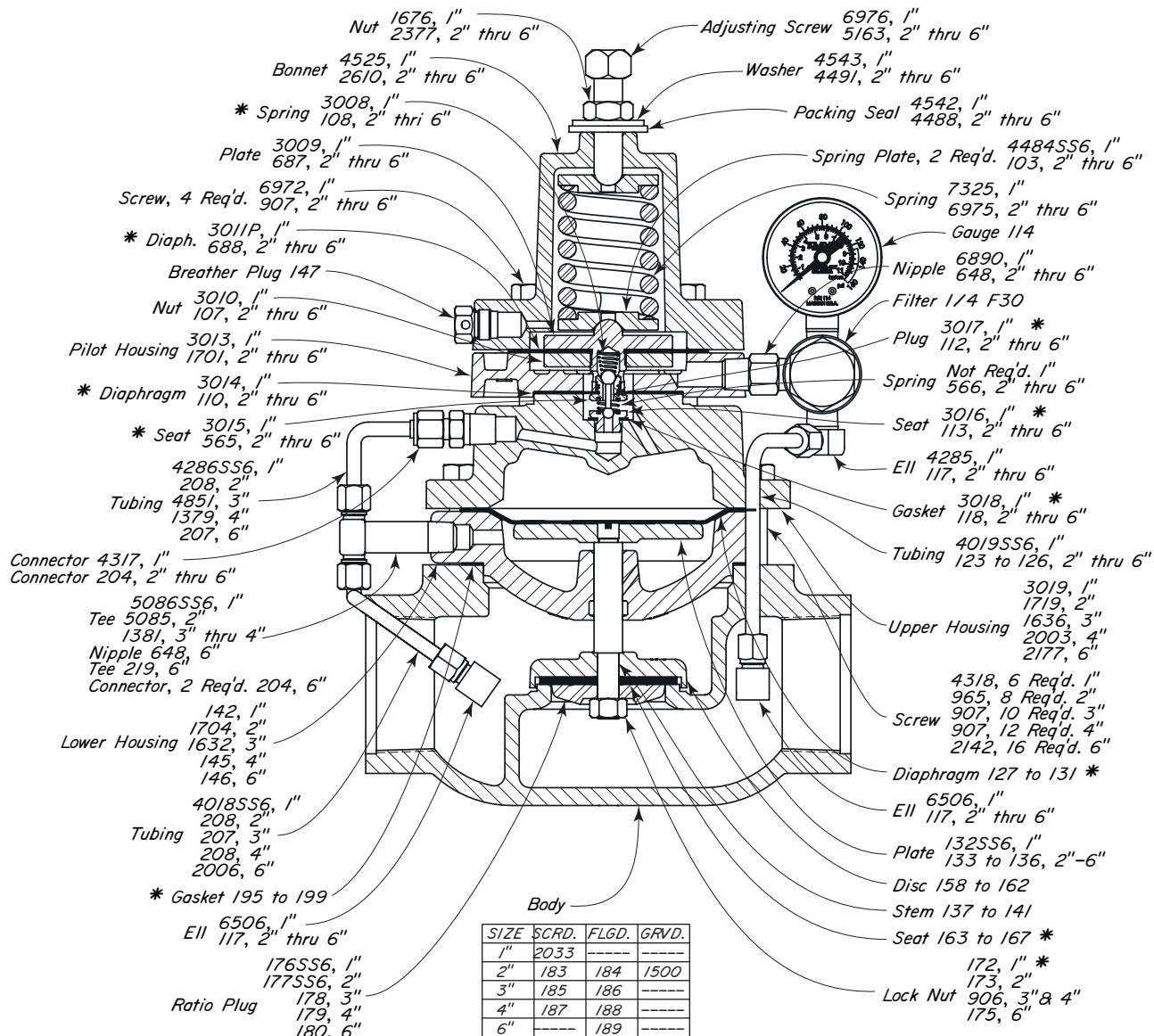


Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

# KIMRAY INC.®

GAS BACK PRESSURE TO VACUUM  
DUCTILE IRON 5-125 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AMS	1" NPT	112 SGT BPV	5-125	175	RBB
ADU	2" NPT	212 SGT BPV	5-125	175	RBC
ADW	2" 150RF	212 FGT BPV	5-125	175	RBC
ADX	2" GRVD.	212 GGT BPV	5-125	175	RBC
ADY	3" NPT	312 SGT BPV	5-125	175	RBD
AEA	3" 150RF	312 FGT BPV	5-125	175	RBD
AEB	4" NPT	412 SGT BPV	5-125	175	RBE
AEC	4" 150RF	412 FGT BPV	5-125	175	RBE
AED	6" 150RF	612 FGT BPV	5-125	175	RBF

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:

Control 5 to 20 psig back pressure on low pressure vessels and vent lines of separators, treaters, compressors, and gas gathering systems.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)

#### OPERATION:

This valve maintains a constant back pressure (upstream of the valve) in the 5 psig to 20 psig range. It has a high degree of sensitivity to upstream changes and extremely fine set-point adjustment capability.

The moving parts in this regulator are the Pilot Assembly and the Motor Valve Stem Assembly (crosshatched). The PILOT PLUG consists of two stainless balls rigidly connected. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure vent (Yellow to Atmosphere). The lower seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow).

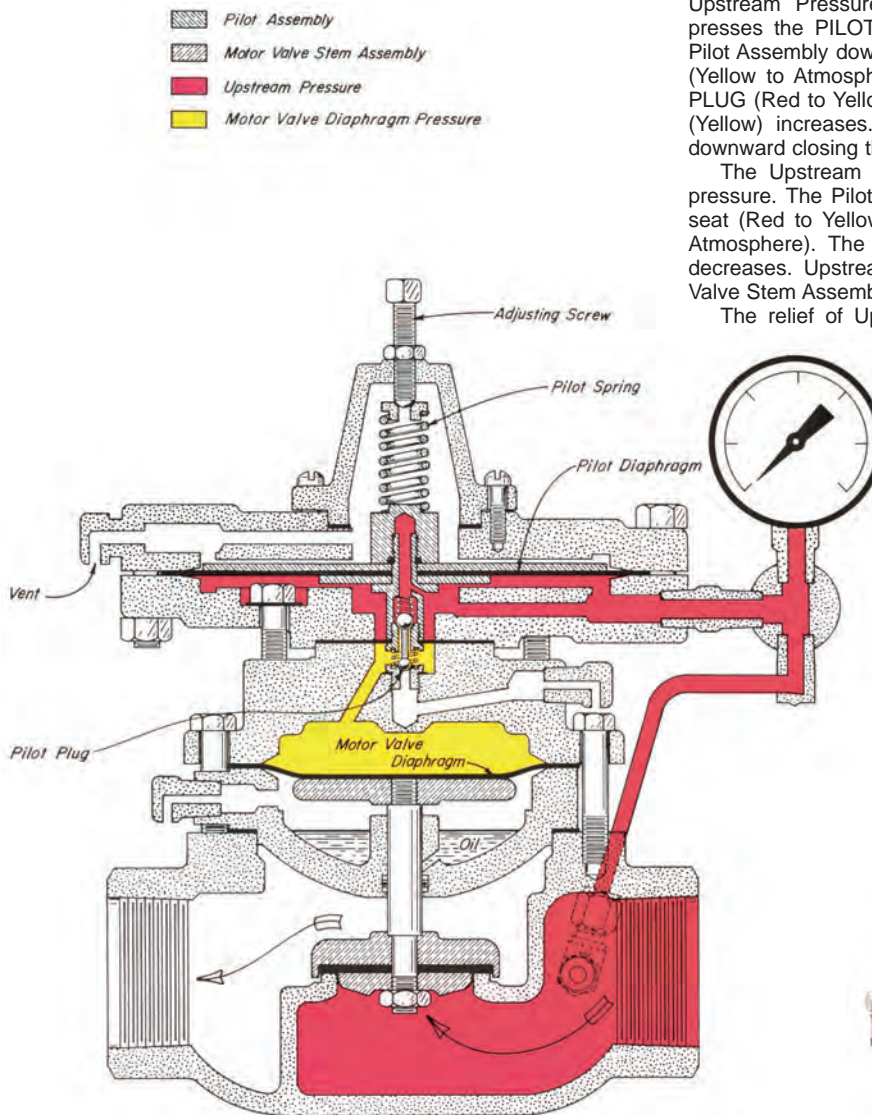
The PILOT SPRING loads the upper side of the Pilot Assembly. Upstream Pressure (Red) opposes the PILOT SPRING from the under side of the Pilot Assembly.

Assume a desired pressure setting greater than current Upstream Pressure (Red). The ADJUSTING SCREW compresses the PILOT SPRING. The PILOT SPRING forces the Pilot Assembly downward. The upper seat for the PILOT PLUG (Yellow to Atmosphere) closes. The lower seat for the PILOT PLUG (Red to Yellow) opens. Motor Valve Diaphragm Pressure (Yellow) increases. The Motor Valve Stem Assembly moves downward closing the valve.

The Upstream Pressure (Red) increases towards the set pressure. The Pilot Assembly moves upward closing the lower seat (Red to Yellow) then opening the upper seat (Yellow to Atmosphere). The Motor Valve Diaphragm Pressure (Yellow) decreases. Upstream Pressure (Red) acting under the Motor Valve Stem Assembly opens the motor valve.

The relief of Upstream Pressure (Red) through the motor valve brings the Pilot assembly to a position closing both seats of the PILOT PLUG.

The intermittent vent pilot, three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow) to reposition the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.



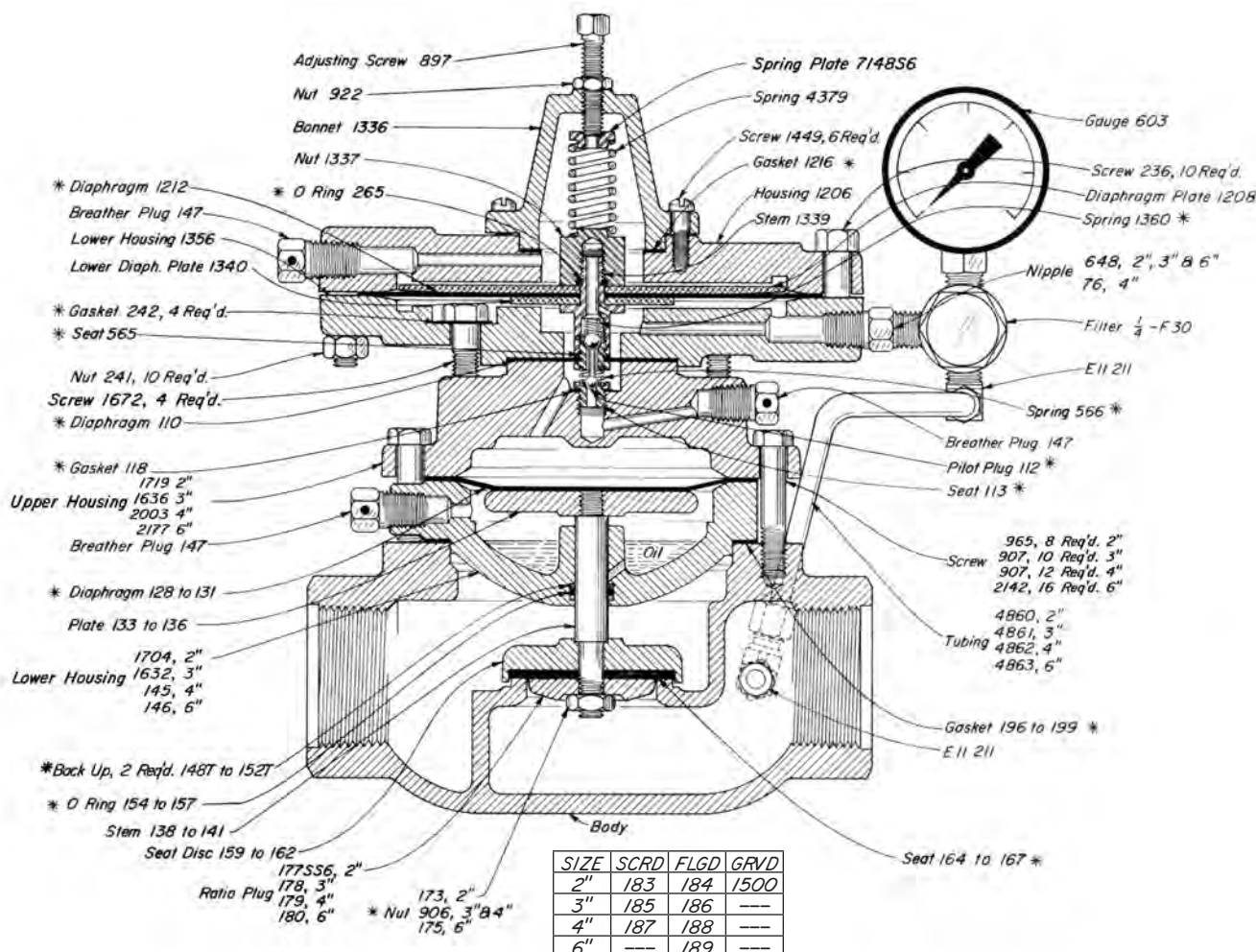
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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS LOW PRESSURE BACK PRESSURE  
DUCTILE IRON 5-20 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AOD	2" NPT	202 SGT BP	5-20	175	RUI
AOE	2" 150RF	202 FGT BP	5-20	175	RUI
AOF	2" GRVD.	202 GGT BP	5-20	175	RUI
AOG	3" NPT	302 SGT BP	5-20	175	RUI
AOH	3" 150RF	302 FGT BP	5-20	175	RUJ
AOJ	4" NPT	402 SGT BP	5-20	175	RUK
AOK	4" 150RF	402 FGT BP	5-20	175	RUK
AON	6" 150RF	602 FGT BP	5-20	175	RUP

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.



#### APPLICATIONS:







Valve designed to regulate ounces (0.5 oz to 2.5 psig) back pressure on a tank and vent to atmosphere when pressure exceeds set point. A minimum outside supply of 10 psig is required to operate motor valve.

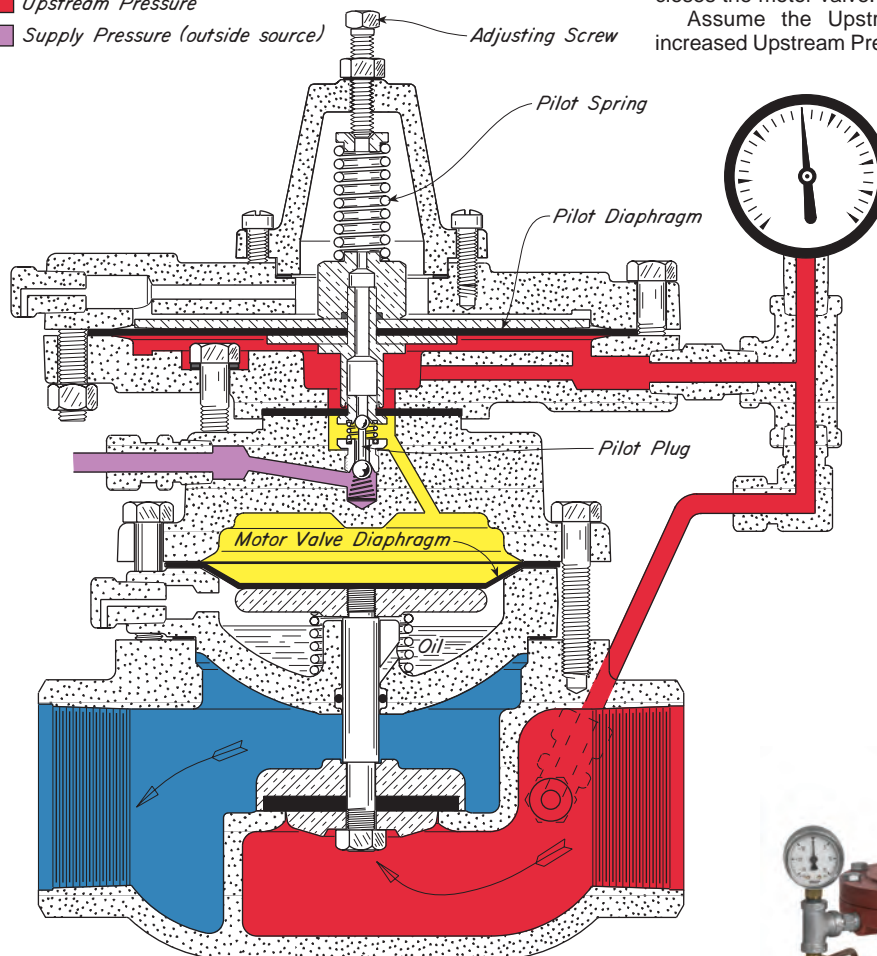
#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)

#### UPSTREAM PRESSURE RANGE:

- 1 Inch valves:  
Full port 10 psig min. or outside supply source is required  
Reduced port 5 psig min. or outside supply source is required
- 2 thru 6 inch valves:  
5 psig min. or outside supply source is required

-  Motor Valve Assembly
-  Pilot Assembly
-  Motor Valve Diaphragm Pressure
-  Downstream Pressure
-  Upstream Pressure
-  Supply Pressure (outside source)



#### OPERATION:

This Regulator maintains a low pressure back pressure by relieving to a lower pressure or atmosphere. The pressure to operate the valve is an outside pressure source. The Regulator consists of a three-way pilot operating a motor valve. The only moving parts are the Pilot Assembly and the Motor Valve Stem Assembly (Crosshatched). The three-way pilot action is due to the operation of the PILOT PLUG. The PILOT PLUG consists of two stainless balls rigidly connected. The upper PILOT PLUG seat is the Motor Valve Diaphragm Pressure vent (Yellow to Atmosphere). The lower PILOT PLUG seat is the Motor Valve Diaphragm Pressure inlet (Violet to Yellow). The Pilot Assembly actuates the PILOT PLUG. The force of the PILOT SPRING above the PILOT DIAPHRAGM acts against the Upstream Pressure (Red) below the PILOT DIAPHRAGM to determine the motion of the Pilot Assembly.

Assume a desired Upstream Pressure (Red) greater than the current setting. The ADJUSTING SCREW compresses the PILOT SPRING. The PILOT SPRING forces the Pilot Assembly downward. First, the upper PILOT PLUG seat (Yellow to Atmosphere) closes, then the lower PILOT PLUG seat (Violet to Yellow) opens. Increased Motor Valve Diaphragm Pressure (Yellow) pushes the Motor Valve Stem Assembly downward and closes the motor valve.

Assume the Upstream Pressure (Red) increases. The increased Upstream Pressure pushes the Pilot Assembly upward against the PILOT SPRING. This first, closes the lower PILOT PLUG seat (Violet to Yellow), then opens the upper PILOT PLUG seat (Yellow to Atmosphere). Motor Valve Diaphragm Pressure (Yellow) decreases, Upstream Pressure (Red) pushes the Motor Valve Diaphragm Assembly upward. The motor valve opens.

This rapid but stable interaction of the Pilot Assembly and Motor Valve Diaphragm Assembly produce a true throttling action.



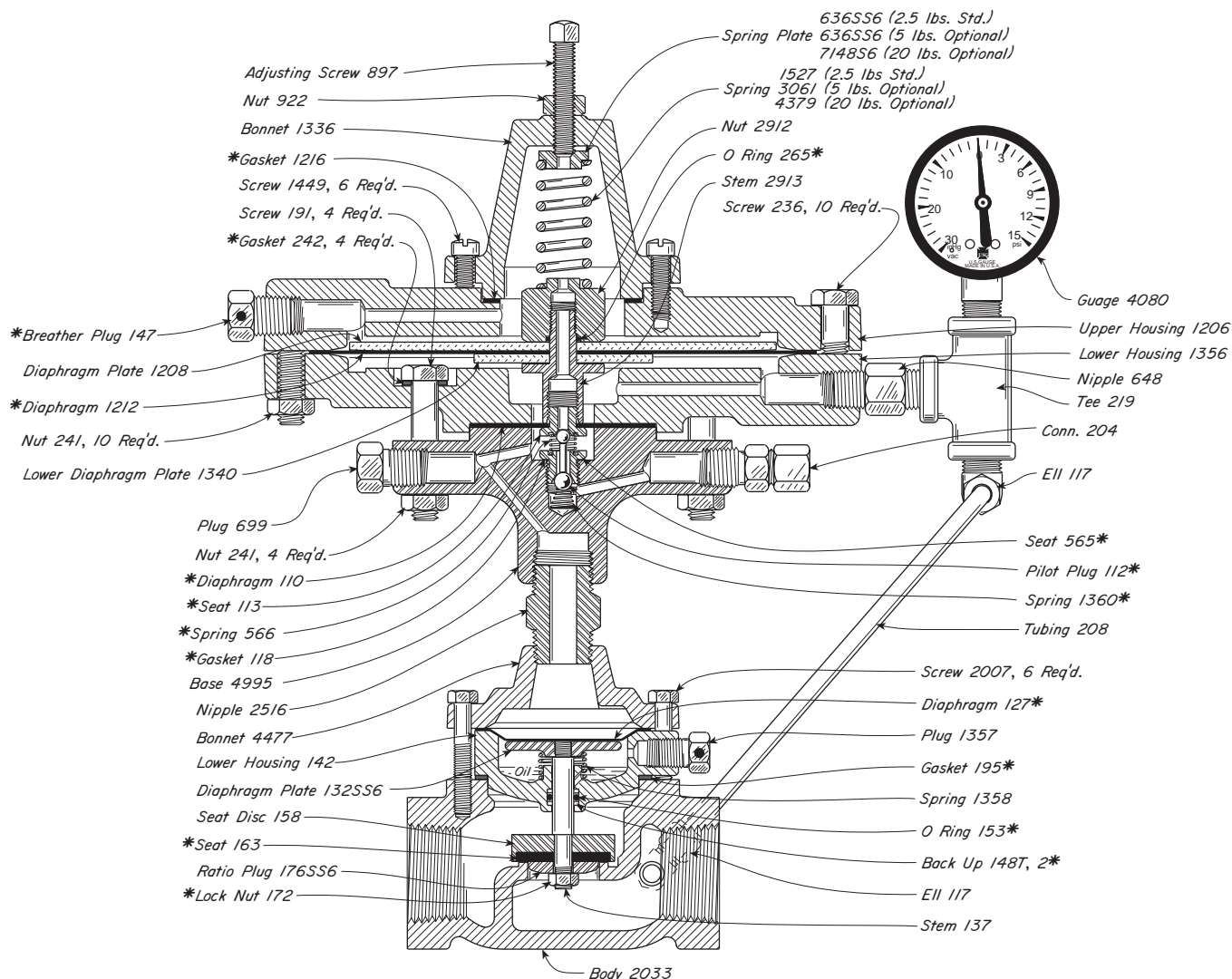
Kimray is an ISO 9001- certified manufacturer.

# PRESSURE REGULATORS

GAS OUNCES BACK PRESSURE TO ATMOSPHERE W/OUTSIDE SUPPLY  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.

# KIMRAY

INC.®



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
ABG2.5	1" NPT	1.2 SGT OBPA	.5 oz - 2.5 psig	175	RRY
ABG5	1" NPT	1.5 SGT OBPA	1 oz - 5 psig	175	RRY
ABG20	1" NPT	102 SGT OBPA	1 psig - 20 psig	175	RRY

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

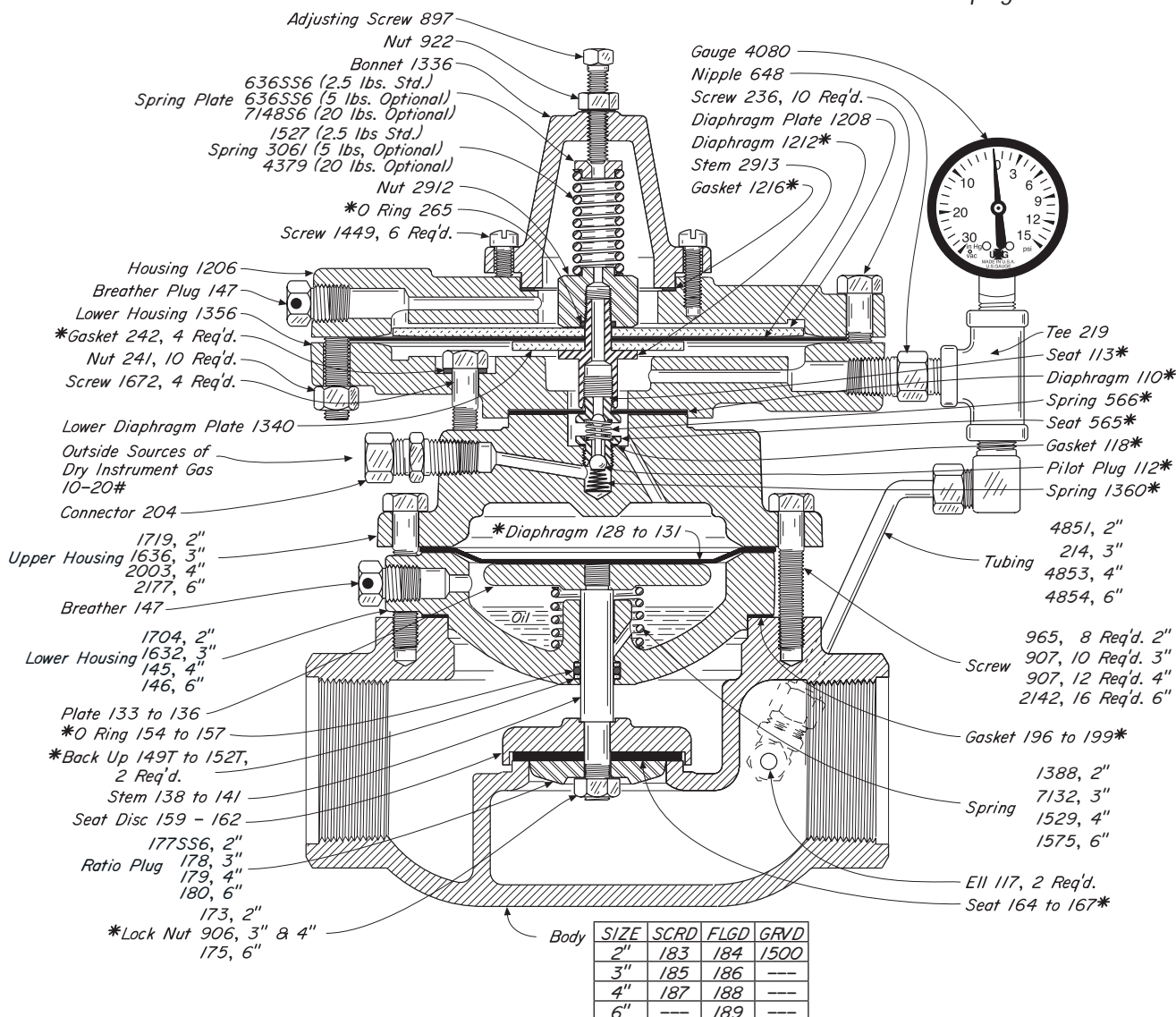
For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

GAS OUNCES BACK PRESSURE TO ATMOSPHERE W/OUTSIDE SUPPLY  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AAI2.5	2" NPT	2.2 SGT OBPA	.5 oz - 2.5 psig	175	RUI
AAI5	2" NPT	2.5 SGT OBPA	1 oz - 5 psig	175	RUI
AAI20	2" NPT	202 SGT OBPA	1 psig - 20 psig	175	RUI
AAJ2.5	2" 150RF	2.2 FGT OBPA	.5 oz - 2.5 psig	175	RUI
AAJ5	2" 150RF	2.5 FGT OBPA	1 oz - 5 psig	175	RUI
AAJ20	2" 150RF	202 FGT OBPA	1 psig - 20 psig	175	RUI
AAK2.5	2" GRVD.	2.2 GGT OBPA	.5 oz - 2.5 psig	175	RUI
AAK5	2" GRVD.	2.5 GGT OBPA	1 oz - 5 psig	175	RUI
AAK20	2" GRVD.	202 GGT OBPA	1 psig - 20 psig	175	RUI
AAL2.5	3" NPT	3.2 SGT OBPA	.5 oz - 2.5 psig	175	RUJ
AAL5	3" NPT	3.5 SGT OBPA	1 oz - 5 psig	175	RUJ
AAL20	3" NPT	302 SGT OBPA	1 psig - 20 psig	175	RUJ
AAM2.5	3" 150RF	3.2 FGT OBPA	.5 oz - 2.5 psig	175	RUJ
AAM5	3" 150RF	3.5 FGT OBPA	1 oz - 5 psig	175	RUJ
AAM20	3" 150RF	302 FGT OBPA	1 psig - 20 psig	175	RUJ
AAN2.5	4" NPT	4.2 SGT OBPA	.5 oz - 2.5 psig	175	RUK
AAN5	4" NPT	4.5 SGT OBPA	1 oz - 5 psig	175	RUK
AAN20	4" NPT	402 SGT OBPA	1 psig - 20 psig	175	RUK
AAO2.5	4" 150RF	4.2 FGT OBPA	.5 oz - 2.5 psig	175	RUK
AAO5	4" 150RF	4.5 FGT OBPA	1 oz - 5 psig	175	RUK

### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AAO20	4" 150RF	402 FGT OBPA	1 psig - 20 psig	175	RUK
AAP2.5	6" 150RF	6.2 FGT OBPA	.5 oz - 2.5 psig	175	RTY
AAP5	6" 150RF	6.5 FGT OBPA	1 oz - 5 psig	175	RTY
AAP20	6" 150RF	602 FGT OBPA	1 psig - 20 psig	175	RTY

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

*NOTES:*

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#### APPLICATIONS:

To maintain ounces of positive pressure on systems flowing into a downstream vacuum, such as vapor recovery systems.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)

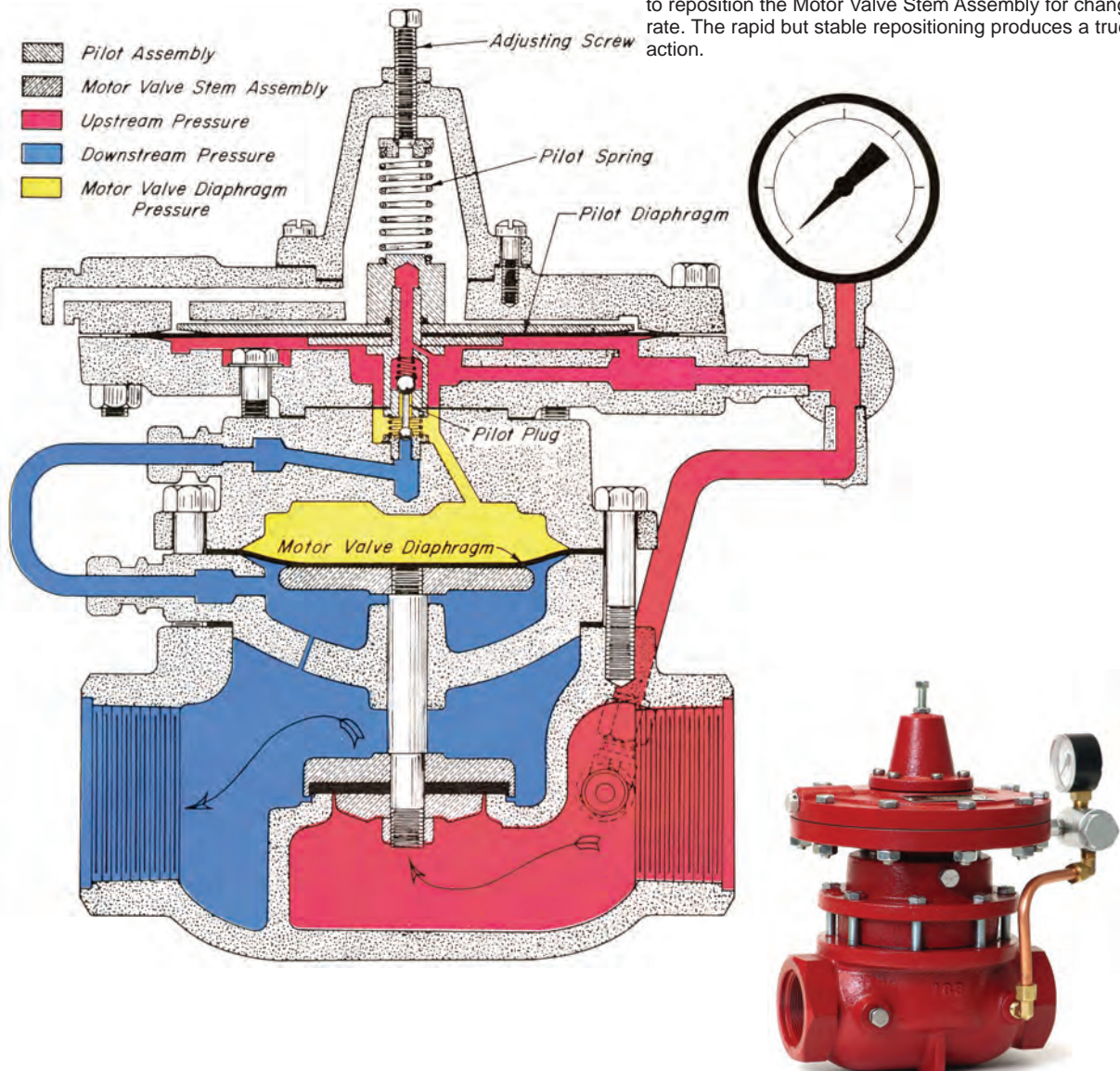
#### OPERATION:

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Blue) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is open. This lets full Upstream Pressure (Red) load the MOTOR VALVE DIAPHRAGM to close the valve. Additional closing effort is provided by Downstream Vacuum (Blue) under the MOTOR VALVE DIAPHRAGM.

As the Upstream Pressure (Red) increases to the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to first close the upper seat (Red to Yellow) and open the lower seat (Yellow to Blue). Motor Valve Diaphragm Pressure (Yellow) is vented to the Downstream Vacuum (Blue).

As the Motor Valve Diaphragm Pressure (Yellow) is decreased the Upstream Pressure (Red) acting under the motor valve seat and the Downstream Vacuum (Blue) acting on top of the motor valve stem, opens the valve. With relief of the Upstream Pressure (Red) through the valve, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Motor Valve Diaphragm Pressure (Yellow) is regulated by the intermittent vent pilot three-way valve action of the PILOT PLUG to reposition the Motor Valve Stem Assembly for changes in flow rate. The rapid but stable repositioning produces a true throttling action.

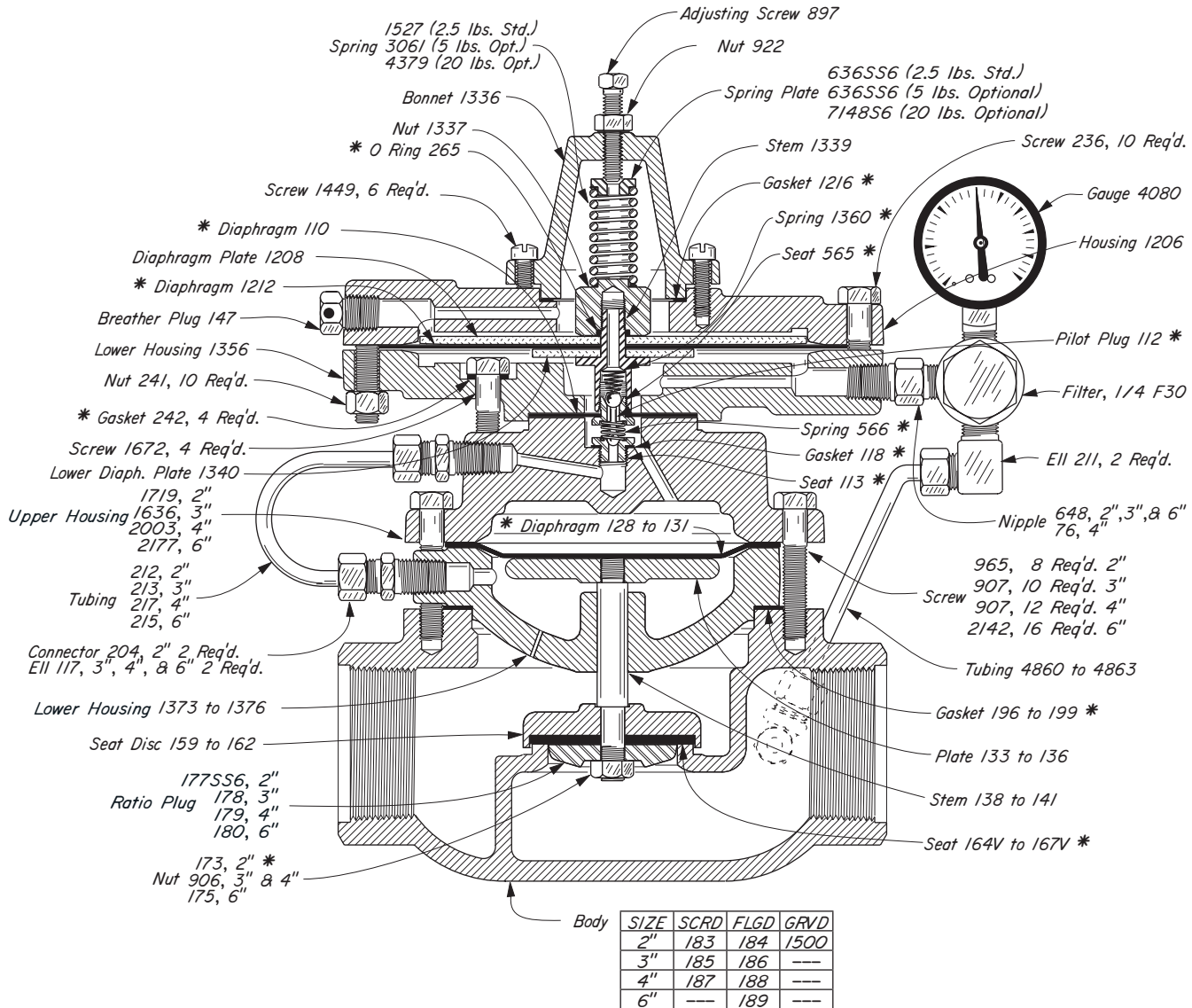


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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS OUNCES BACK PRESSURE TO VACUUM  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AFE2.5	2" NPT	2.2 SGT OBPV	.5 oz - 2.5 psig	175	RBG
AFE5	2" NPT	2.5 SGT OBPV	1 oz - 5 psig	175	RBG
AFE20	2" NPT	202 SGT OBPV	1 psig - 20 psig	175	RBG
AFF2.5	2" 150RF	2.2 FGT OBPV	.5 oz - 2.5 psig	175	RBG
AFF5	2" 150RF	2.5 FGT OBPV	1 oz - 5 psig	175	RBG
AFF20	2" 150RF	202 FGT OBPV	1 psig - 20 psig	175	RBG
AFG2.5	2" GRVD	2.2 GGT OBPV	.5 oz - 2.5 psig	175	RBG
AFG5	2" GRVD	2.5 GGT OBPV	1 oz - 5 psig	175	RBG
AFG20	2" GRVD	202 GGT OBPV	1 psig - 20 psig	175	RBG
AFH2.5	3" NPT	3.2 SGT OBPV	.5 oz - 2.5 psig	175	RBH
AFH5	3" NPT	3.5 SGT OBPV	1 oz - 5 psig	175	RBH
AFH20	3" NPT	302 SGT OBPV	1 psig - 20 psig	175	RBH
AFI2.5	3" 150RF	3.2 FGT OBPV	.5 oz - 2.5 psig	175	RBH
AFI5	3" 150RF	3.5 FGT OBPV	1 oz - 5 psig	175	RBH
AFI20	3" 150RF	302 FGT OBPV	1 psig - 20 psig	175	RBH
AFJ2.5	4" NPT	4.2 SGT OBPV	.5 oz - 2.5 psig	175	RBI
AFJ5	4" NPT	4.5 SGT OBPV	1 oz - 5 psig	175	RBI
AFJ20	4" NPT	402 SGT OBPV	1 psig - 20 psig	175	RBI
AFK2.5	4" 150RF	4.2 FGT OBPV	.5 oz - 2.5 psig	175	RBI
AFK5	4" 150RF	4.5 FGT OBPV	1 oz - 5 psig	175	RBI
AFK20	4" 150RF	402 FGT OBPV	1 psig - 20 psig	175	RBI

## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AFL2.5	6" 150RF	6.2 FGT OBPV	.5 oz - 2.5 psig	175	RBK
AFL5	6" 150RF	6.5 FGT OBPV	1 oz - 5 psig	175	RBK
AFL20	6" 150RF	602 FGT OBPV	1 psig - 20 psig	175	RBK

DOWNSTREAM PRESSURE: 6" Hg. Vacuum, minimum

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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#### APPLICATIONS:

Low pressure regulator for maintaining vapor pressure on storage tanks, controlling compressor by-pass for gas recirculation and maintaining low pressure head on flash separators.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
OC16234.24567890NTY (Ductile)

#### UPSTREAM PRESSURE RANGE:

1 Inch valves:

Full port 10 psig min. or outside supply source is required

Reduced port 5 psig min. or outside supply source is required

2 thru 6 inch valves:

5 psig min. or outside supply source is required

#### OPERATION:

This valve is used to regulate Downstream Pressure (Blue) from 0.5 oz to 20 psig by metering gas from the upstream source to the downstream side as required.

The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator.

The PILOT PLUG consists of two stainless balls rigidly connected together. Upstream Pressure (Red) is the supply pressure to the pilot and is also in constant communication with the top side of the MOTOR VALVE DIAPHRAGM. The area of the MOTOR VALVE DIAPHRAGM is twice the area of the motor valve seat, assuring a Class VI positive shut-off.

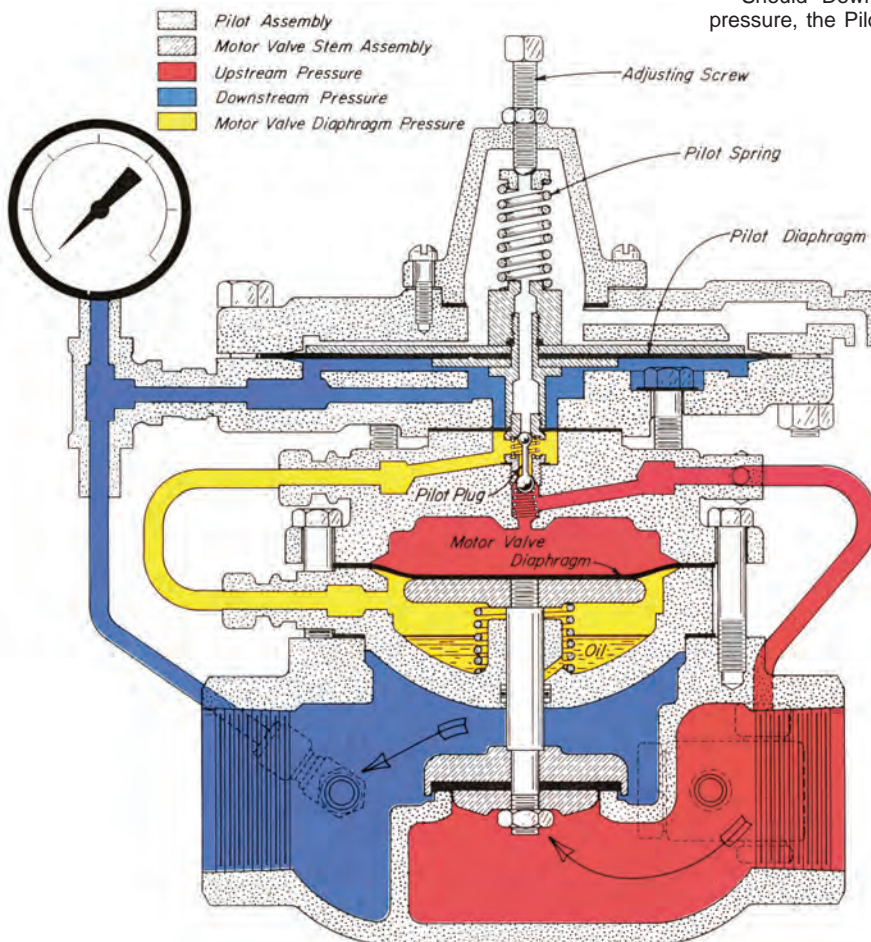
The upper seat for the PILOT PLUG is the pressure vent (Yellow to Atmosphere). The lower PILOT PLUG seat is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The Pilot Assembly actuates the PILOT PLUG. The PILOT SPRING loads the upper side of the Pilot Assembly and is opposed on the underneath side by the controlled Downstream Pressure (Blue).

Assume the PILOT SPRING is compressed with the ADJUSTING SCREW for a desired Downstream Pressure setting. With Downstream Pressure (Blue) too low, the PILOT SPRING forces the Pilot Assembly downward to close the upper seat (Yellow to Atmosphere) and open the lower seat (Red to Yellow).

This lets full Upstream Pressure (Red) load the underneath side of the MOTOR VALVE DIAPHRAGM to balance the pressure on the top side. Upstream Pressure (Red) acting under the motor valve seat, opens the valve. As Downstream Pressure (Blue) increases to the set pressure, the Pilot Assembly assumes a position in which both seats of the PILOT PLUG are closed.

Should Downstream Pressure (Blue) rise above the set pressure, the Pilot Assembly moves upward against the PILOT SPRING to open the pressure vent (Yellow to Atmosphere). Motor Valve Diaphragm Pressure (Yellow) decreases to reposition the Motor Valve Stem Assembly.

The intermittent vent pilot three-way valve action of the PILOT PLUG against its seat adjusts the Motor Valve Diaphragm Pressure (Yellow) to reposition the Motor Valve Stem Assembly to accommodate any rate of flow. The rapid but stable repositioning produces a true throttling action.

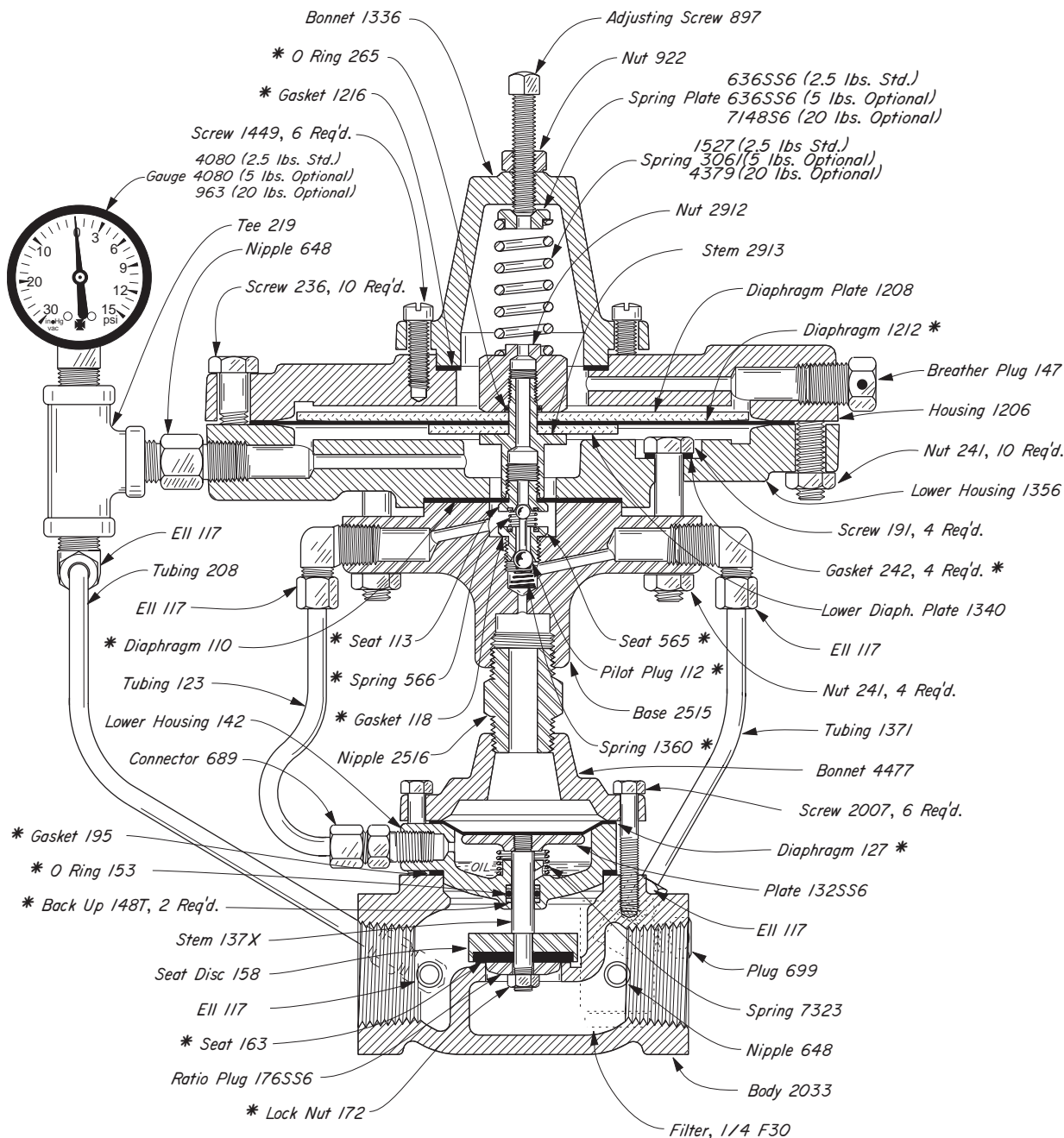


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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS LOW PRESSURE PRESSURE REDUCING  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AOP-2.51" NPT	1.2 SGT OPR	.5 oz - 2.5 psig	175	RRY	
AOP-5 1" NPT	1.5 SGT OPR	1 oz - 5 psig	175	RRY	
AOP-20 1" NPT	102 SGT OPR	1 psig - 20 psig	175	RRY	

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

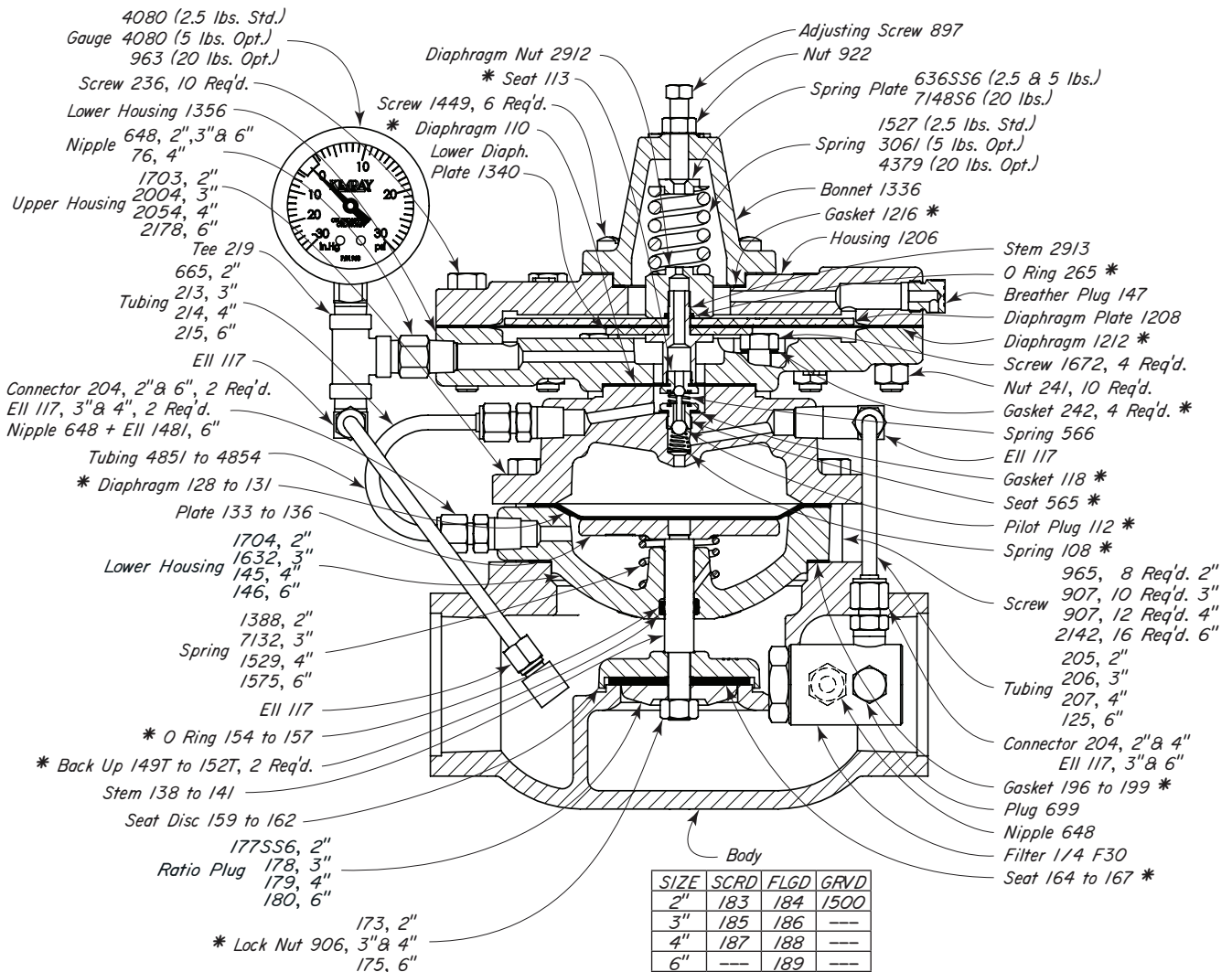
<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.



### GAS LOW PRESSURE PRESSURE REDUCING DUCTILE IRON .5 oz - 20 psig OPER. PRES.



#### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AOS2.5	2" NPT	2.2 SGT OPR	.5 oz - 2.5 psig	175	RUA
AOS5	2" NPT	2.5 SGT OPR	1 oz - 5 psig	175	RUA
AOS20	2" NPT	2.0 SGT OPR	1 psig - 20 psig	175	RUA
AOT2.5	2" 150RF	2.2 FGT OPR	.5 oz - 2.5 psig	175	RUA
AOT5	2" 150RF	2.5 FGT OPR	1 oz - 5 psig	175	RUA
AOT20	2" 150RF	2.0 FGT OPR	1 psig - 20 psig	175	RUA
AOU2.5	2" GRVD	2.2 GGT OPR	.5 oz - 2.5 psig	175	RUA
AOU5	2" GRVD	2.5 GGT OPR	1 oz - 5 psig	175	RUA
AOU20	2" GRVD	2.0 GGT OPR	1 psig - 20 psig	175	RUA
AOV2.5	3" NPT	3.2 SGT OPR	.5 oz - 2.5 psig	175	RUB
AOV5	3" NPT	3.5 SGT OPR	1 oz - 5 psig	175	RUB
AOV20	3" NPT	3.0 SGT OPR	1 psig - 20 psig	175	RUB
AOW2.5	3" 150RF	3.2 FGT OPR	.5 oz - 2.5 psig	175	RUB
AOW5	3" 150RF	3.5 FGT OPR	1 oz - 5 psig	175	RUB
AOW20	3" 150RF	3.0 FGT OPR	1 psig - 20 psig	175	RUB
AOY2.5	4" NPT	4.2 SGT OPR	.5 oz - 2.5 psig	175	RUC
AOY5	4" NPT	4.5 SGT OPR	1 oz - 5 psig	175	RUC
AOY20	4" NPT	4.0 SGT OPR	1 psig - 20 psig	175	RUC
AOZ2.5	4" 150RF	4.2 FGT OPR	.5 oz - 2.5 psig	175	RUC
AOZ5	4" 150RF	4.5 FGT OPR	1 oz - 5 psig	175	RUC

#### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AOZ20	4" 150RF	402 FGT OPR	1 psig - 20 psig	175	RUC
APC2.5	6" 150RF	6.2 FGT OPR	.5 oz - 2.5 psig	175	RUD
APC5	6" 150RF	6.5 FGT OPR	1 oz - 5 psig	175	RUD
APC20	6" 150RF	602 FGT OPR	1 psig - 20 psig	175	RUD

#### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

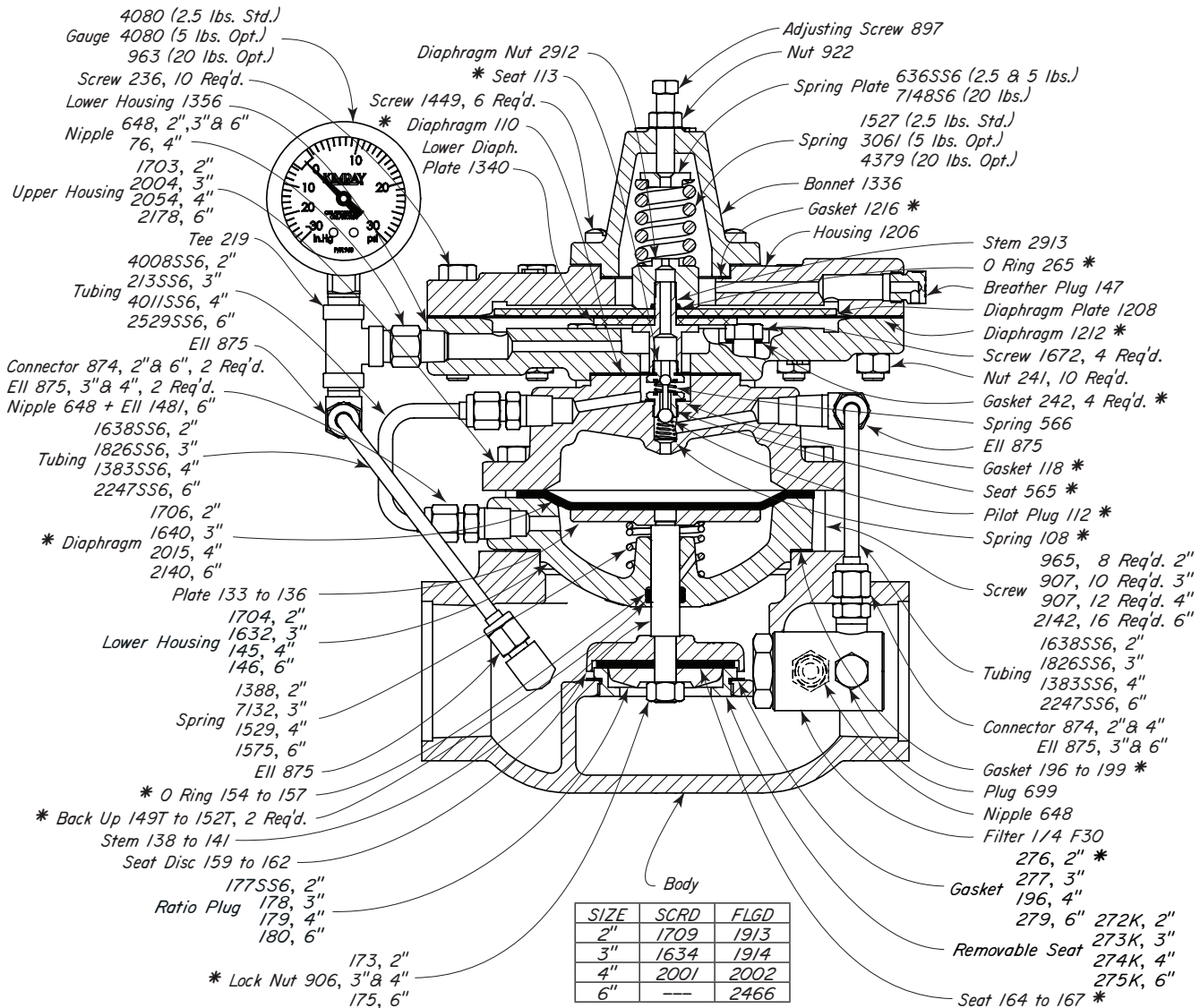
<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS LOW PRESSURE PRESSURE REDUCING  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
AOSD2.5	2" NPT	2.2 SGT OPR-D	.5 oz - 2.5 psig	300	RUAD
AOSD5	2" NPT	2.5 SGT OPR-D	1 oz - 5 psig	300	RUAD
AOSD20	2" NPT	202 SGT OPR-D	1 psig - 20 psig	300	RUAD
AOTD2.5	2" 150RF	2.2 FGT OPR-D	.5 oz - 2.5 psig	300	RUAD
AOTD5	2" 150RF	2.5 FGT OPR-D	1 oz - 5 psig	300	RUAD
AOTD20	2" 150RF	202 FGT OPR-D	1 psig - 20 psig	300	RUAD
AOVD2.5	3" NPT	3.2 SGT OPR-D	.5 oz - 2.5 psig	300	RUZ
AOVD5	3" NPT	3.5 SGT OPR-D	1 oz - 5 psig	300	RUZ
AOVD20	3" NPT	302 SGT OPR-D	1 psig - 20 psig	300	RUZ
AOWD2.5	3" 150RF	3.2 FGT OPR-D	.5 oz - 2.5 psig	300	RUZ
AOWD5	3" 150RF	3.5 FGT OPR-D	1 oz - 5 psig	300	RUZ
AOWD20	3" 150RF	302 FGT OPR-D	1 psig - 20 psig	300	RUZ
AOYD2.5	4" NPT	4.2 SGT OPR-D	.5 oz - 2.5 psig	300	RUCD
AOYD5	4" NPT	4.5 SGT OPR-D	1 oz - 5 psig	300	RUCD
AOYD20	4" NPT	402 SGT OPR-D	1 psig - 20 psig	300	RUCD
AOZD2.5	4" 150RF	4.2 FGT OPR-D	.5 oz - 2.5 psig	300	RUCD
AOZD5	4" 150RF	4.5 FGT OPR-D	1 oz - 5 psig	300	RUCD
AOZD20	4" 150RF	402 FGT OPR-D	1 psig - 20 psig	300	RUCD

## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
APCD2.5	6" 150RF	6.2 FGT OPR-D	.5 oz - 2.5 psig	300	RUDD
APCD5	6" 150RF	6.5 FGT OPR-D	1 oz - 5 psig	300	RUDD
APCD20	6" 150RF	602 FGT OPR-D	1 psig - 20 psig	300	RUDD

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

Kimray is an ISO 9001- certified manufacturer.

#### APPLICATIONS:

Gas compressor suction regulation. Vapor pressure recovering systems and vacuum distribution systems, and compressor by-pass lines.

#### CERTIFICATIONS:

Canadian Registration Number (CRN):  
0C16234.24567890NTY (Ductile)

#### UPSTREAM PRESSURE RANGE:

- 1 Inch valves:  
Full port 10 psig min. or outside supply source is required  
Reduced port 5 psig min. or outside supply source is required
- 2 thru 6 inch valves:  
5 psig min. or outside supply source is required

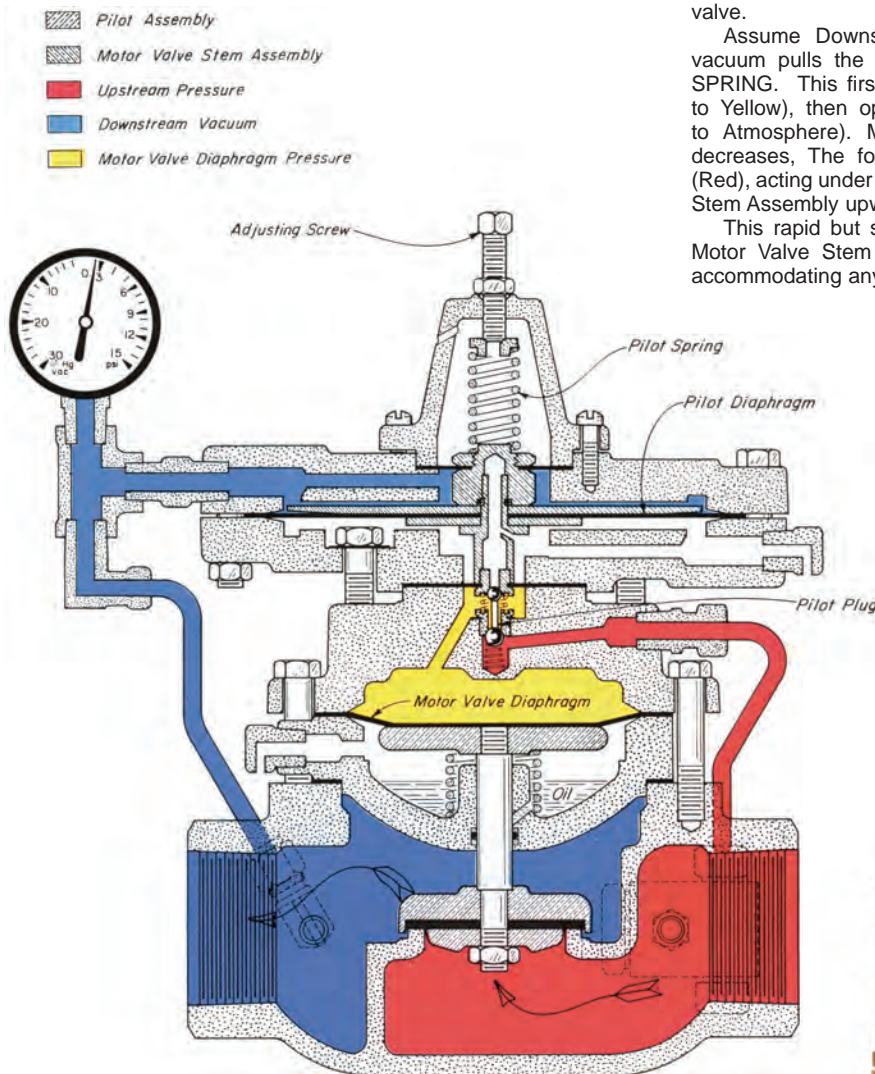
#### OPERATION:

This valve is used to regulate a downstream vacuum from 1" to 6" Hg. with an upstream pressure of 0.5 psig or more. The only moving parts are the Pilot Assembly and the Motor Valve Stem Assembly (Crosshatched). The three-way pilot action is due to the operation of the PILOT PLUG. The PILOT PLUG consists of two stainless balls rigidly connected. The upper PILOT PLUG seat is the Motor Valve Diaphragm Pressure vent (Yellow to Atmosphere). The lower PILOT PLUG seat is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The Pilot Assembly actuates the PILOT PLUG. The combined forces of the PILOT SPRING and the Downstream Vacuum (Blue) above the PILOT DIAPHRAGM working against atmosphere below the PILOT DIAPHRAGM determine the motion of the Pilot Assembly.

Assume a desired Downstream Vacuum greater than the current gauge reading. The ADJUSTING SCREW compresses the PILOT SPRING. The PILOT SPRING forces the Pilot Assembly downward. First, the upper PILOT PLUG (Yellow to Atmosphere) closes, then the lower PILOT PLUG seat (Red to Yellow) opens. Increasing Motor Valve Diaphragm Pressure (Yellow) pushes the Motor Valve Stem Assembly downward and closes the motor valve.

Assume Downstream Vacuum increases. The increased vacuum pulls the Pilot Assembly upward against the PILOT SPRING. This first, closes the lower PILOT PLUG seat (Red to Yellow), then opens the upper PILOT PLUG seat (Yellow to Atmosphere). Motor Valve Diaphragm Pressure (Yellow) decreases. The force of the spring and Upstream Pressure (Red), acting under the motor valve seat, pushes the Motor Valve Stem Assembly upward. The motor valve opens.

This rapid but stable interaction of the Pilot Assembly and Motor Valve Stem Assembly produce a true throttling action accommodating any rate of flow.



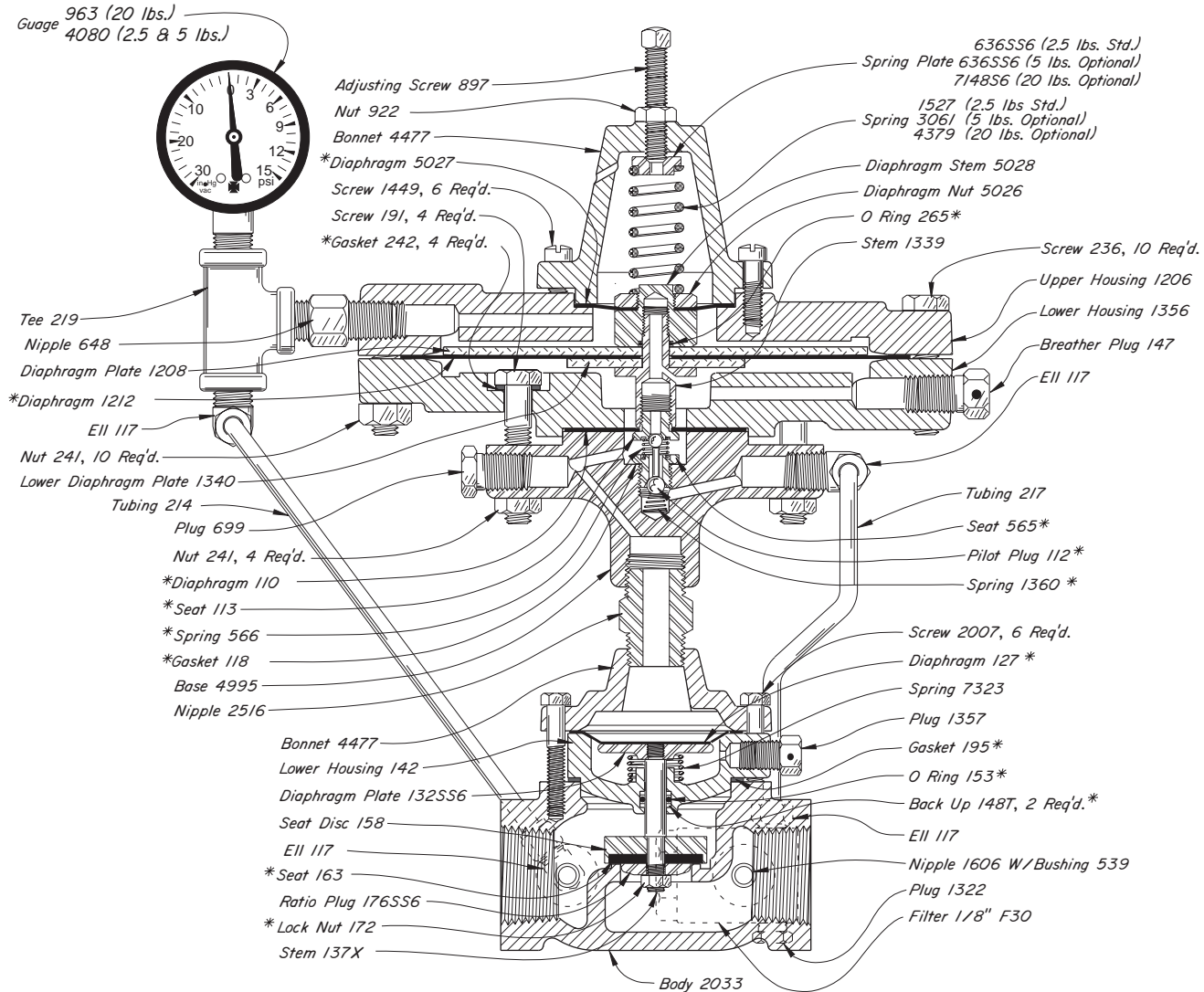
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# PRESSURE REGULATORS

# KIMRAY INC.®

GAS OUNCES PRESSURE REDUCING VACUUM  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



## THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
APE2.5	1" NPT	1.2 SGT OPRV	.5 oz - 2.5 psig	175	RUL
APE5	1" NPT	1.5 SGT OPRV	1 oz - 5 psig	175	RUL
APE20	1" NPT	102 SGT OPRV	1 psig - 20 psig	175	RUL

## NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:I - A:V

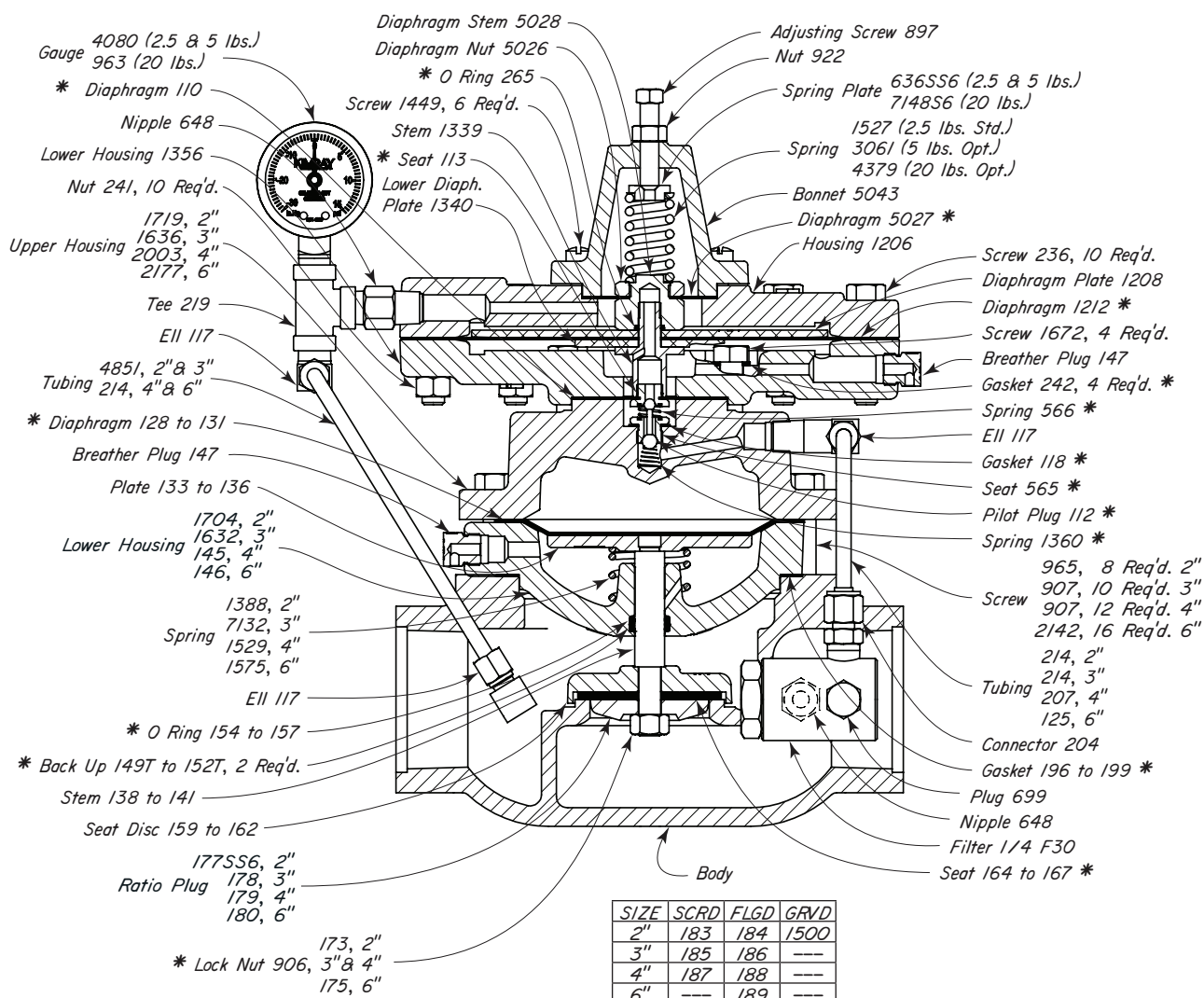
<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:I

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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GAS OUNCES PRESSURE REDUCING VACUUM  
DUCTILE IRON .5 oz - 20 psig OPER. PRES.



### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
APH2.5 2"	NPT	2.2 SGT OPRV	.5 oz - 2.5 psig	175	RUI
APH5 2"	NPT	2.5 SGT OPRV	1 oz - 5 psig	175	RUI
APH20 2"	NPT	202 SGT OPRV	1 psig - 20 psig	175	RUI
API2.5 2"	150RF	2.2 FGT OPRV	.5 oz - 2.5 psig	175	RUI
API5 2"	150RF	2.5 FGT OPRV	1 oz - 5 psig	175	RUI
API20 2"	150RF	202 FGT OPRV	1 psig - 20 psig	175	RUI
APJ2.5 2"	GRVD.	2.2 GGT OPRV	.5 oz - 2.5 psig	175	RUI
APJ5 2"	GRVD.	2.5 GGT OPRV	1 oz - 5 psig	175	RUI
APJ20 2"	GRVD.	202 GGT OPRV	1 psig - 20 psig	175	RUI
APK2.5 3"	NPT	3.2 SGT OPRV	.5 oz - 2.5 psig	175	RUJ
APK5 3"	NPT	3.5 SGT OPRV	1 oz - 5 psig	175	RUJ
APK20 3"	NPT	302 SGT OPRV	1 psig - 20 psig	175	RUJ
APL2.5 3"	150RF	3.2 FGT OPRV	.5 oz - 2.5 psig	175	RUJ
APL5 3"	150RF	3.5 FGT OPRV	1 oz - 5 psig	175	RUJ
APL20 3"	150RF	302 FGT OPRV	1 psig - 20 psig	175	RUJ
APN2.5 4"	NPT	4.2 SGT OPRV	.5 oz - 2.5 psig	175	RUK
APN5 4"	NPT	4.5 SGT OPRV	1 oz - 5 psig	175	RUK
APN20 4"	NPT	402 SGT OPRV	1 psig - 20 psig	175	RUK
APO2.5 4"	150RF	4.2 FGT OPRV	.5 oz - 2.5 psig	175	RUK
APO5 4"	150RF	4.5 FGT OPRV	1 oz - 5 psig	175	RUK

### THRU VALVES AVAILABLE:

PART NO.	BODY <sup>†</sup> CONNECTION	MODEL NO.	OPER. PRES.	MAX <sup>††</sup> W.P.	REP. KIT
APO20 4"	150RF	402 FGT OPRV	1 psig - 20 psig	175	RUK
APR2.5 6"	150RF	6.2 FGT OPRV	.5 oz - 2.5 psig	175	RTY
APR5 6"	150RF	6.5 FGT OPRV	1 oz - 5 psig	175	RTY
APR20 6"	150RF	602 FGT OPRV	1 psig - 20 psig	175	RTY

### NOTES:

\*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Stem 137-1", 138-2", 139-3", 140-4", 141-6".

For standard & optional Seals, Metals, Cv values, Material specifications & Dimensions see Technical Data on pages A:1 - A:V

<sup>†</sup> Standard Trim size is same as connection size. For Reduced trim sizes, see A:1

<sup>††</sup> Max W.P. valves based on -20°F to 100°F. See page A:V for temps above 100°F

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*NOTES:*

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Table 1 - Flow Coefficient(Cv) at % stem travel for Pilot Operated Regulators											
1" Pressure Regulator											
Trim Size in.(mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1/2 in (12mm) Reduced	0.75	0.4	0.7	0.9	1.3	1.8	2.5	3.2	3.9	4.5	5
1 in (25mm) Full Port	0.74	1.1	1.8	2.4	3.4	4.8	6.6	8.5	10.2	11.9	13.2
2" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1 1/4 in (31 mm) Reduced	0.75	1.8	2.8	3.9	5.4	7.7	10.5	13.6	16.2	19.0	21.0
2 in Removable Full Port *	0.84	4.0	6.2	8.6	12.1	17.2	23.5	30.4	36.3	42.5	47.0
2 in (50 mm) Full Port *	0.75	4.4	6.9	9.5	13.4	19.1	26.0	33.6	40.2	47.0	52.0
3" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
1 5/8 in (66 mm) Reduced	0.82	2.9	4.5	6.2	8.8	12.5	17.0	22.0	26.3	30.7	34.0
3 in (76 mm) Full Port	0.75	9.9	15.6	21.5	30.2	42.9	58.6	75.7	90.4	105.7	117.0
4" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
2 in (50 mm) Reduced	0.80	4.7	7.3	10.1	14.2	20.2	27.5	35.6	42.5	49.7	55.0
4 in (100 mm) Full Port	0.75	17.8	27.9	38.6	54.2	77.0	105.2	135.9	162.2	189.8	210.0
6" Pressure Regulator											
Trim Size in. (mm)	Cf	Valve Opening Percentage									
		10	20	30	40	50	60	70	80	90	100
3 in (76 mm) Reduced	0.80	10.2	16.0	22.0	30.9	44.0	60.1	77.7	92.7	108.4	120.0
6 in (152 mm) Full Port	0.75	40.6	63.8	88.1	123.8	176.0	240.4	310.6	370.7	433.7	480.0

Kimray flow equations conform to ANSI/ISA - 75.01.01-2002

Kimray inherent flow characteristics conform to ANSI/ISA 75.11.01 -1985

\* Use "2 inch Removable Full Port" values for regulators with operating pressure ranges of 10-250psig, 10-285psig & 10-300psig

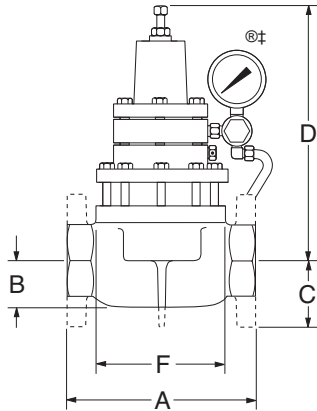
# PRESSURE REGULATORS

## DIMENSIONS

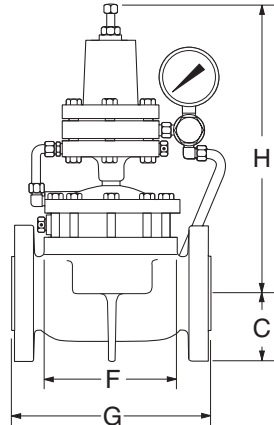


**FOR:** BACK PRESSURE  
UPSTREAM DIFFERENTIAL PRESSURE  
PRESSURE REDUCING-BALANCED  
PRESSURE REDUCING VACUUM

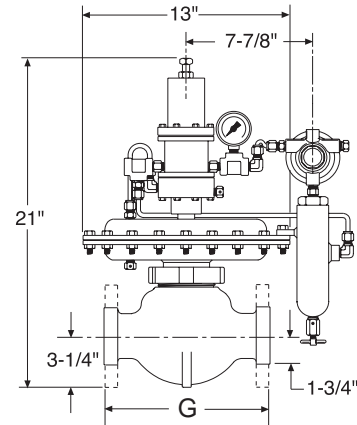
PRESSURE DIFFERENTIAL  
PRESSURE REDUCING  
BACK PRESSURE VACUUM  
LIQUID BACK PRESSURE



**DUCTILE**

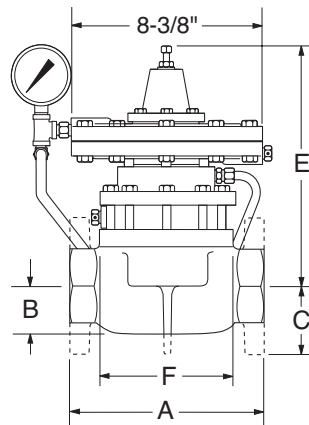


**STEEL**

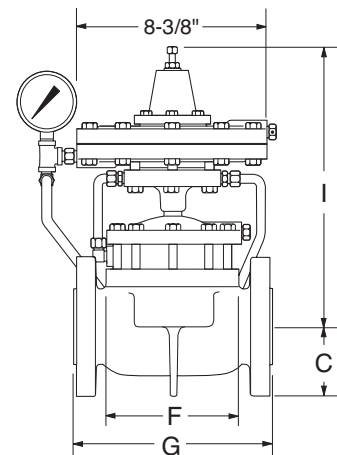


**250 S/FGT-BP-S**

**FOR:** LOW PRESSURE BACK PRESSURE  
OUNCES BACK PRESSURE TO VACUUM  
OUNCES PRESSURE REDUCING  
OUNCES PRESSURE REDUCING VACUUM  
VACUUM BACK PRESSURE TO VACUUM



**DUCTILE**



**STEEL**

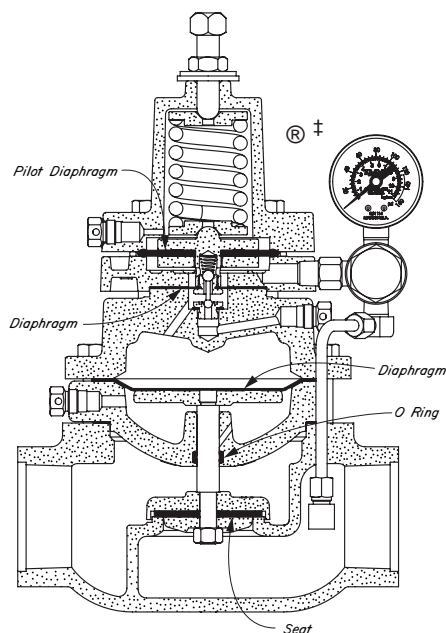
LINE SIZE	BODY SIZE	A	B	C	D *	E	F	G	H *	I
1"	NPT	4 3/8"	1 1/8"		7 1/2"	11 5/8"	3 1/4"			
2"	NPT	8 1/2"	2 1/8"		11 1/2"	10 1/2"	6 1/2"			
	FLANGED	9"		3"	11 1/2"	10 1/2"	6 1/2"	9 1/8"	14 1/2"	14"
	GROOVED	8 3/4"	2 1/8"		11 1/2"	10 1/2"	6 1/2"			
250 S/FGT	NPT							10 1/2"		
	FLANGED							10 3/8"		
3"	NPT	12 1/16"	3 1/16"		13"	12"	8 1/2"			
	FLANGED	12 3/16"		3 3/4"	13"	12"	8 1/2"	12 3/8"	16 1/2"	15 1/2"
4"	NPT	15" 1/16"	4"		14 1/2"	13 3/16"	10 1/2"			
	FLANGED	15 1/16"		4 1/2"	14 1/2"	13 3/16"	10 1/2"	15 1/16"	18 1/2"	16 11/16"
6"	FLANGED	22"		5 1/2"	17"	17 7/8"	16"	21 15/16"	20 1/2"	18 3/8"

FLANGE DIMENSIONS ARE ANSI 125/150 STANDARD. \*Add 7/8" to Pressure Reducing Balanced and Up Stream Differential Pressure Regulators for this dimension.



**Table 2 - Seal Options**

Part	Standard Material	Optional Material
Seat	Nitrile	FKM, HSN, AFLAS <sup>®</sup> , Gylon <sup>®</sup>
O-rings	Nitrile	FKM, HSN, AFLAS <sup>®</sup> , Gylon <sup>®</sup>
All Diaphragms Except Pilot Diaphragm	Nitrile	FKM, HSN, AFLAS <sup>®</sup> , Gylon <sup>®</sup>
Pilot Diaphragm	Polyurethane	FKM, HSN, AFLAS <sup>®</sup> , Gylon <sup>®</sup>

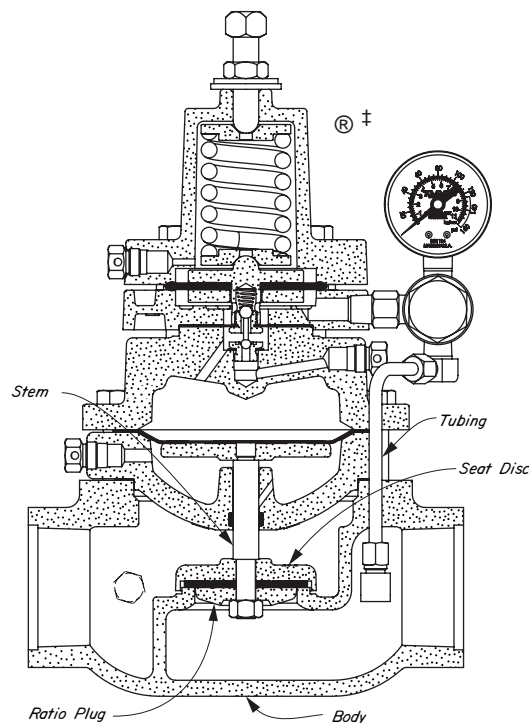


**Table 3 - Seal Specifications**

		NITRILE	HIGHLY SATURATED NITRILE	FKM	AFLAS <sup>®</sup>	POLY-URETHANE	GYLON
	Kimray Suffix	-	HSN	V	AF	P	GY
Resistance	Abrasion	G	G	G	GE	E	E
	Acid	F	E	E	E	P	E
	Chemical	FG	FG	E	E	FG	E
	Cold	G	G	PF	P	G	E
	Flame	P	P	E	E	P	P
	Heat	G	E	E	E	F	E
	Oil	E	E	E	E	G	E
	Ozone	P	G	E	E	E	E
	Set	GE	GE	E	PF	F	P
	Tear	FG	FG	F	PF	GE	E
	Water/Steam	FG	E	P	GE	P	E
	Weather	F	G	E	E	E	E
	CO2	FG	GE	PG	GE	G	E
	H2S	P	FG	P	E	G	E
	Methanol	G	E	PF	PF	P	E
Properties	Dynamic	GE	GE	GE	GE	E	P
	Electrical	F	F	F	E	FG	E
	Impermeability	G	G	G	G	G	E
	Tensile Strength	GE	E	GE	FG	E	E
	Temp. Range (°F)	-40 to +220°F	-15° to +300°F	-10° to +350°F	+25° to +450°F	-40° to +220°F	-350 to +500°F
	Temp. Range (°C)	-40 to +105°C	-26° to +149°C	-23° to +177°C	0° to +232°C	-40° to +104°C	-212 to +260°C
	Form	O,S,D	O,S,D	O,S,D	O,S,D	S,D	S,D
RATINGS: P-POOR, F-FAIR, G-GOOD, E-EXCELLENT							

**Table 5 - Materials of Construction**

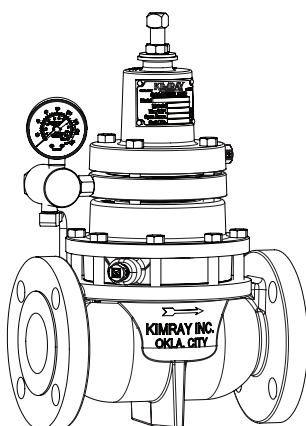
Part Description	Valve Size	Standard Material	Optional Material(s)
Ratio Plug	1" & 2"	316 Powdered Metal SS-316NI-25	N/A
	1" & 2" Reduced Trim	Steel, ASTM A-108	316 Stainless Steel ASTM A-479
	3"	Powdered Metal F-008	316 Stainless Steel ASTM A-479
	4" & 6"	Ductile, ASTM A-395	316 Stainless Steel ASTM A-479
Seat Disc	1"	Powdered Metal F-0008-30	316 Stainless Steel ASTM A-479
	2", 3" & 4"	Ductile, ASTM A-395	Stainless Steel ASTM A-351 CF8M
	6"	Ductile, ASTM A-395	Stainless Steel ASTM A-240
Stem	1" thru 6"	303 Stainless Steel, ASTM A-582	316 Stainless Steel ASTM A-479
Body	1" thru 6"	Ductile, ASTM A-395	N/A
Body	2" thru 6"	Steel, ASTM A-216 WCB	Stainless Steel ASTM A-351 CF8M
Tubing	175 W.P. or Less	Copper Tubing ASTM B-380 UNS C-12200	316 Stainless Steel ASTM A-213
		Copper Tubing ASTM B-280 UNS C-12200	316 Stainless Steel ASTM A-213
	Greater Than 175 W.P.	304 Stainless Steel ASTM A-249	316 Stainless Steel ASTM A-213
Removable Seat	2" thru 6" Ductile Body	Ductile, ASTM A-395	Stainless Steel ASTM A-351 CF8M
	2" thru 6" Steel Body	Stainless Steel ASTM A-351 CF8M	N/A



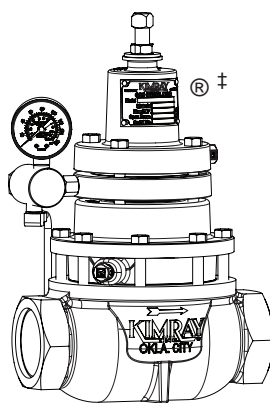
**Table 4 - Material Specification**

	Body		Inner Parts		
	CAST STEEL	CAST DUCTILE	303 STAINLESS STEEL	316 STAINLESS STEEL	17-4 PH STAINLESS STEEL
<b>KIMRAY SUFFIX</b>	CS	CD	SS6	SS6	PH
<b>ASTM GROUP</b>	ASTM A-216	ASTM A-395	ASTM A-582	ASTM A-479	ASTM A-564
<b>GRADE</b>	WCB	60-40-18	303	316	630
<b>UNS</b>	J03002	F32800	S30300	S31600	S17400
<b>NACE Compliant</b>	Yes	Yes	No	Yes	Yes

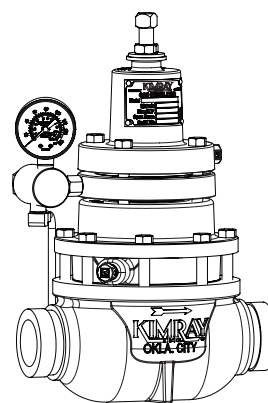
Table 6 - Temperature vs. Pressure Rating	
ASTM Class Temperature °F (°C)	Flange Class
	150 RF
	Static Test Pressure (psig)
	450 (31 bar)
Maximum Allowable Non-Shock Pressure (psig)	
CAST DUCTILE ASTM A-395	
	Flange Class
	150 RF
-20 to 100 (-28 to 37)	250 (17.2 bar)
200 (93)	235 (16.2 bar)
300 (148)	215 (14.8 bar)
400 (204)	200 (13.7 bar)
500 (260)	170 (11.7 bar)
600 (315)	140 (9.6 bar)
650 (343)	125 (8.6 bar)
700 (371)	
CAST STEEL ASTM A-216 - WCB	
	Flange Class
	150 RF
-20 to 100 (-28 to 37)	285 (20.0 bar)
200 (93)	260 (17.9 bar)
300 (148)	230 (15.9 bar)
400 (204)	200 (13.8 bar)
500 (260)	170 (11.7 bar)
600 (315)	140 (9.7 bar)
650 (343)	125 (8.6 bar)
700 (371)	110 (7.6 bar)



FLANGED (150RF)



SCREWED (NPT)



GROOVED

Kimray valves conform to ASME B16.34-2009 for working pressure vs working temperature & ASME B16.5-1996 for flanges and flanged fittings.

*NOTES:*

**KIMRAY**  
INC.®

Kimray is an ISO 9001- certified manufacturer.