## APPLICATION:

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

## PRESSURE RANGE:

Ductile Iron: 5 psig to 125 psig
Ductile Iron: 10 psig to 280 psig
Steel: 10 psig to 280 psig

## CAPACITY:

Refer to Table of Contents.

## OPERATION:

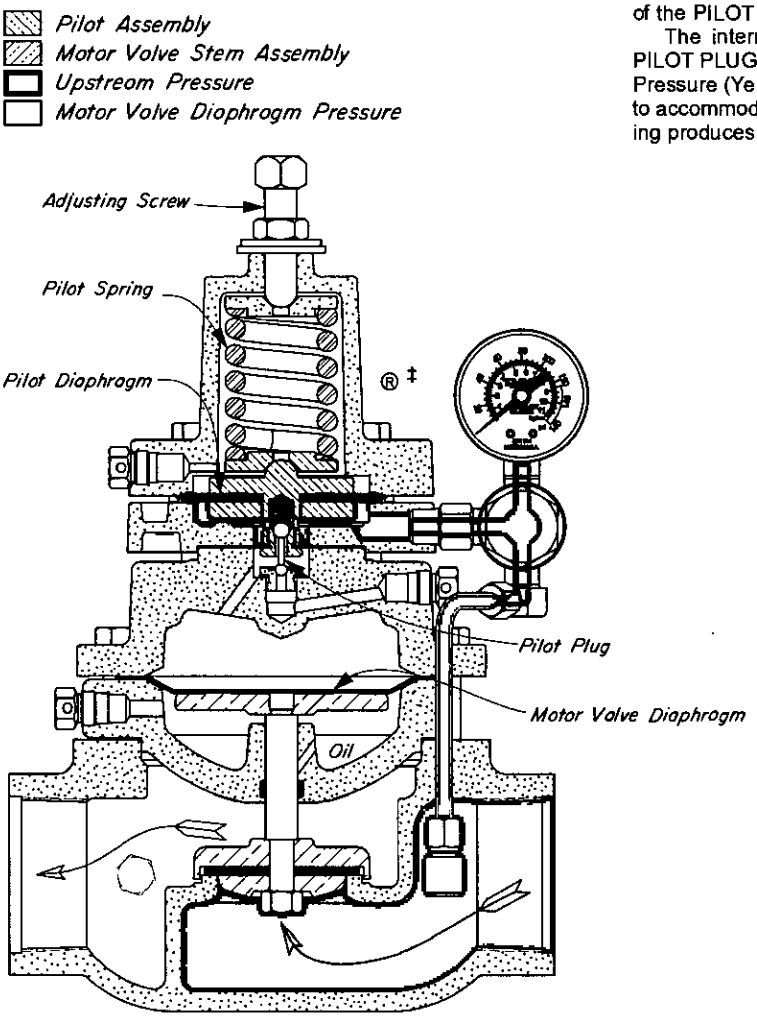
The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The lower seat for the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

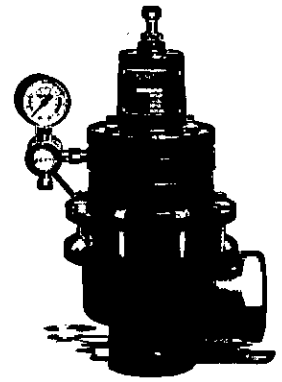
The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Pressure (Red).

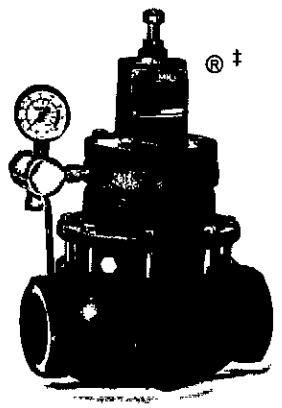
Assume the PILDT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Atmosphere) is closed and the upper seat for the PILOT PLUG (Red to Yellow) 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 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 bleed 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.








‡ Configuration of Back Pressure Valve is a trademark of Kimray, Inc.
www.kimray.com

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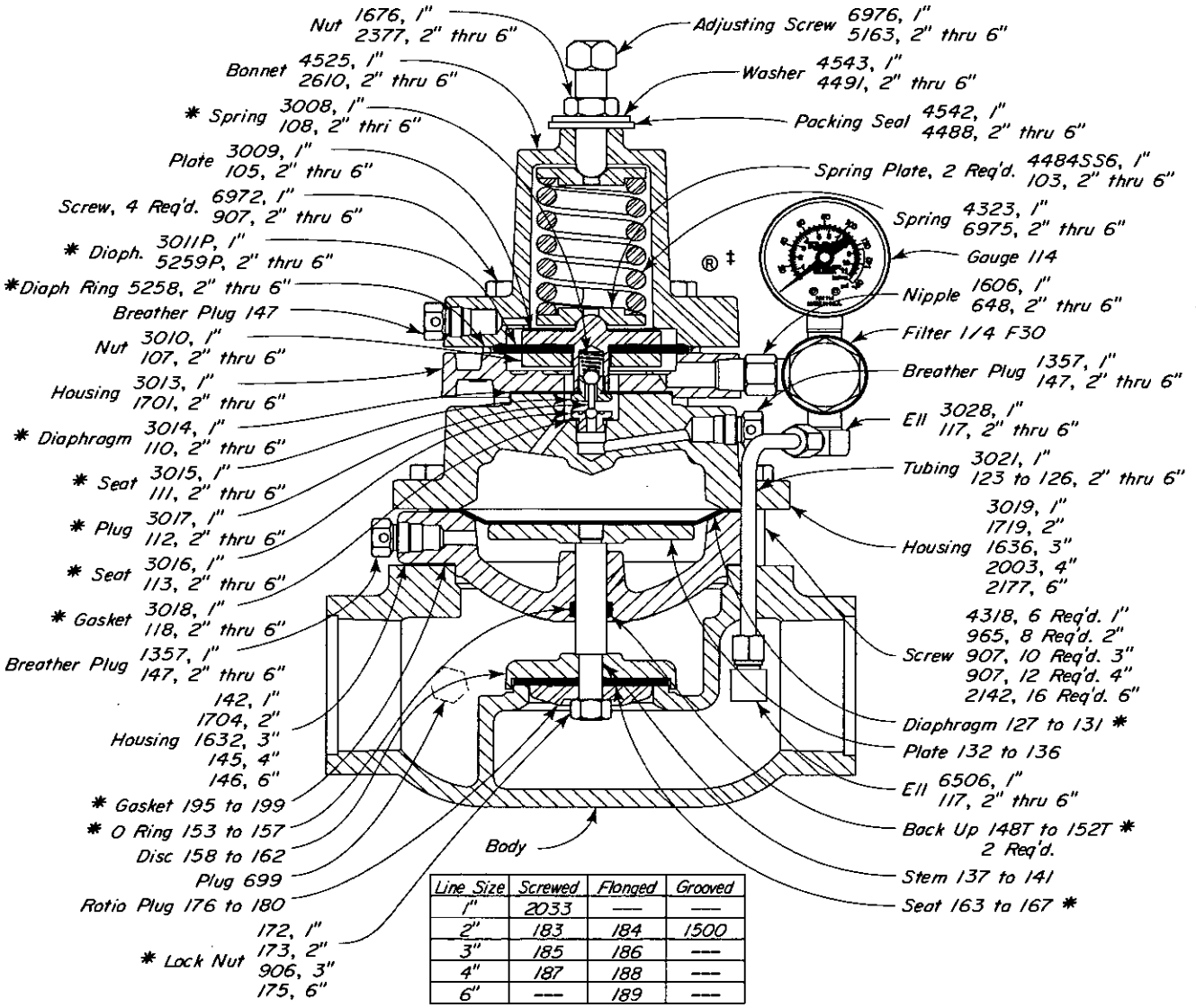
## GAS BACK PRESSURE
## DUCTILE IRON




| Line Size | Screwed | Flanged | Grooved |
|---|---|---|---|
| 1" | 2033 | — | — |
| 2" | 183 | 184 | 1500 |
| 3" | 185 | 186 | --- |
| 4" | 187 | 188 | --- |
| 6" | --- | 189 | --- |

### THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| AKA | 1" SCRD. | 112 SGT BP | 125 | 175 | RRT |
| AAA | 2" SCRD. | 212 SGT BP | 125 | 175 | RAA |
| AAB | 2" FLGD.• | 212 FGT BP | 125 | 175 | RAA |
| AAC | 2" GRVD. | 212 GGT BP | 125 | 175 | RAA |
| AAD | 3" SCRD. | 312 SGT BP | 125 | 175 | RAB |
| AAE | 3" FLGD.• | 312 FGT BP | 125 | 175 | RAB |
| AAF | 4" SCRD. | 412 SGT BP | 125 | 175 | RAC |
| AAG | 4" FLGD.• | 412 FGT BP | 125 | 175 | RAC |
| AAH | 6" FLGD.• | 612 FGT BP | 125 | 175 | RAD |

### NOTES:

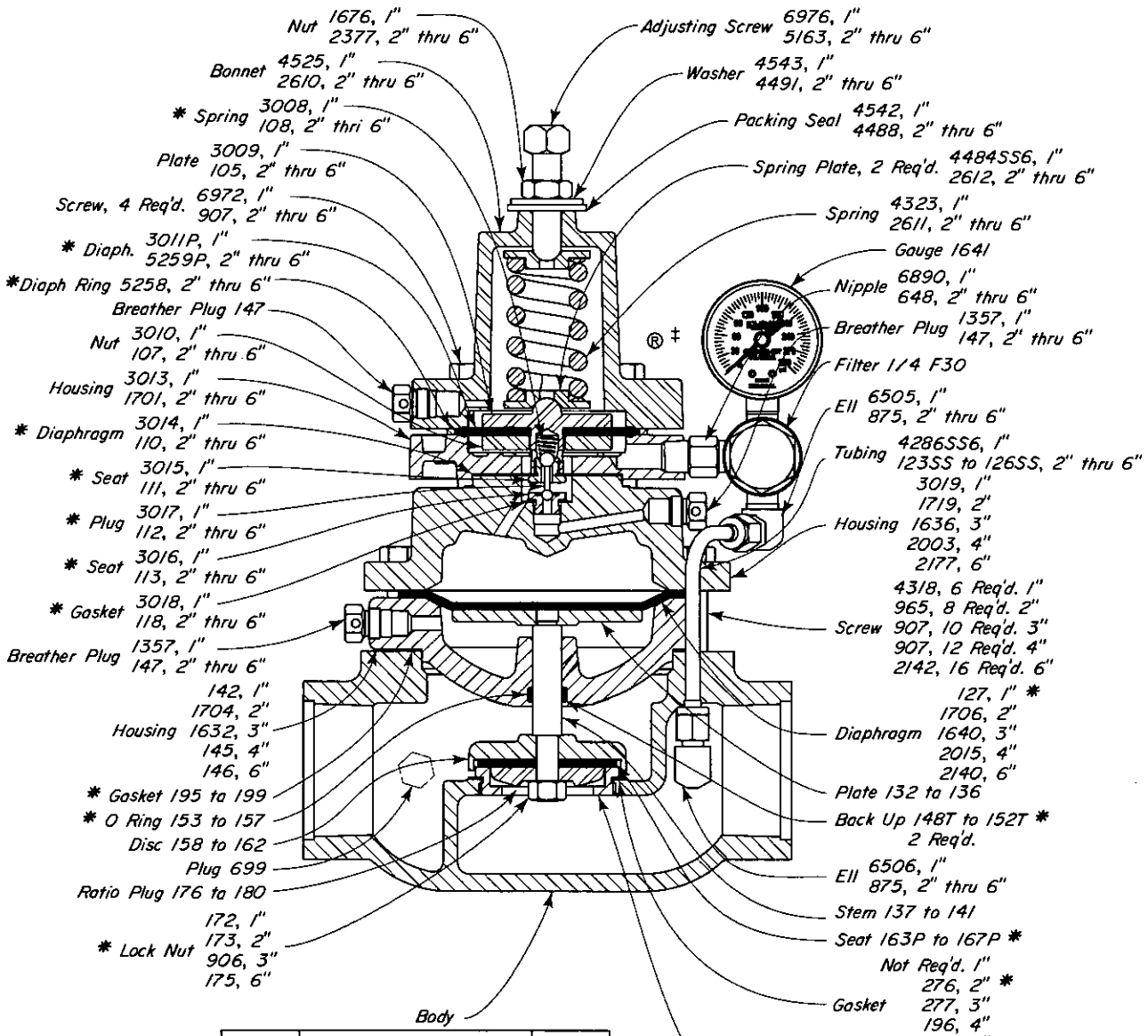
Dimensions, refer to Table of Contents.

*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: Diaphragm 127-1", 128-2", 129-3", 130-4", 131-6".

‡Configuration of Back Pressure Valve is a trademark of Kimray, Inc.

# GAS BACK PRESSURE
# DUCTILE IRON




| Line Size | Thru | | | Angle |
|---|---|---|---|---|
| | Screwed | Flanged | Grooved | Screwed |
| 1" | 2033 | — | — | — |
| 2" | 1709 | 1913 | 2964 | 4999D |
| 3" | 1634 | 1914 | — | — |
| 4" | 2001 | 2002 | — | — |
| 6" | — | 2466 | — | — |

## THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| AKB | 1" SCRD. | 130 SGT BP-D | 300 | 300 | RRU |
| AAR | 2" SCRD. | 230 SGT BP-D | 300 | 300 | RDG |
| AAS | 2" FLGD. | 218 FGT BP-D | 250 | 250 | RDG |
| AAQ | 2" GRVD. | 230 GGT BP-D | 300 | 300 | RDG |
| AAT | 3" SCRD. | 330 SGT BP-D | 300 | 300 | RDH |
| AAU | 3" FLGD. | 318 FGT BP-D | 250 | 250 | RDH |
| AAW | 4" SCRD. | 430 SGT BP-D | 300 | 300 | RDI |
| AAX | 4" FLGD. | 418 FGT BP-D | 250 | 250 | RDI |
| AAY | 6" FLGD. | 618 FGT BP-D | 250 | 250 | RDJ |

## ANGLE VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| ASR | 2" SCRD. | 230 SGA BP-D | 300 | 300 | RDG |

Dimensions, refer to Table of Contents.

*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: Seat 163P-1", 164P-2", 165P-3", 166P-4", 167P-6".

‡Configuration of the Back Pressure valve is a trademark of Kimray, Inc.

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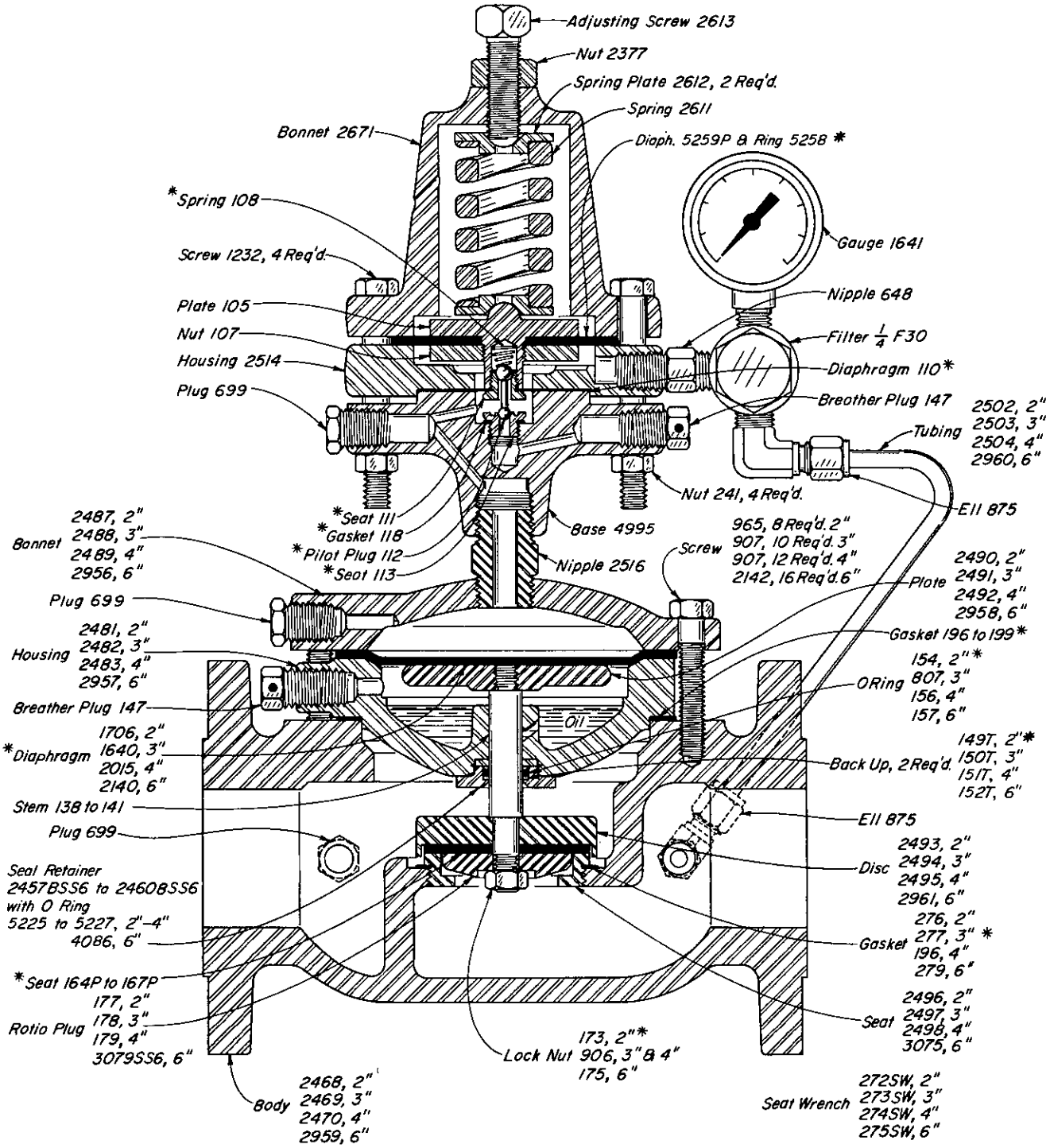
## GAS BACK PRESSURE
## STEEL




### THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| AGB | 2" FLGD. | 227 FGT BP-S | 285 | 285 | RAE |
| AGC | 3" FLGD. | 327 FGT BP-S | 285 | 285 | RAF |
| AGD | 4" FLGD. | 427 FGT BP-S | 285 | 285 | RAG |
| AGE | 6" FLGD. | 627 FGT BP-S | 285 | 285 | RAH |

### NOTES:

Dimensions, refer to Table of Contents.

*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 138-2", 139-3", 140-4", 141-6".

## APPLICATION:

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

## PRESSURE RANGE:

75 psig to 500 psig

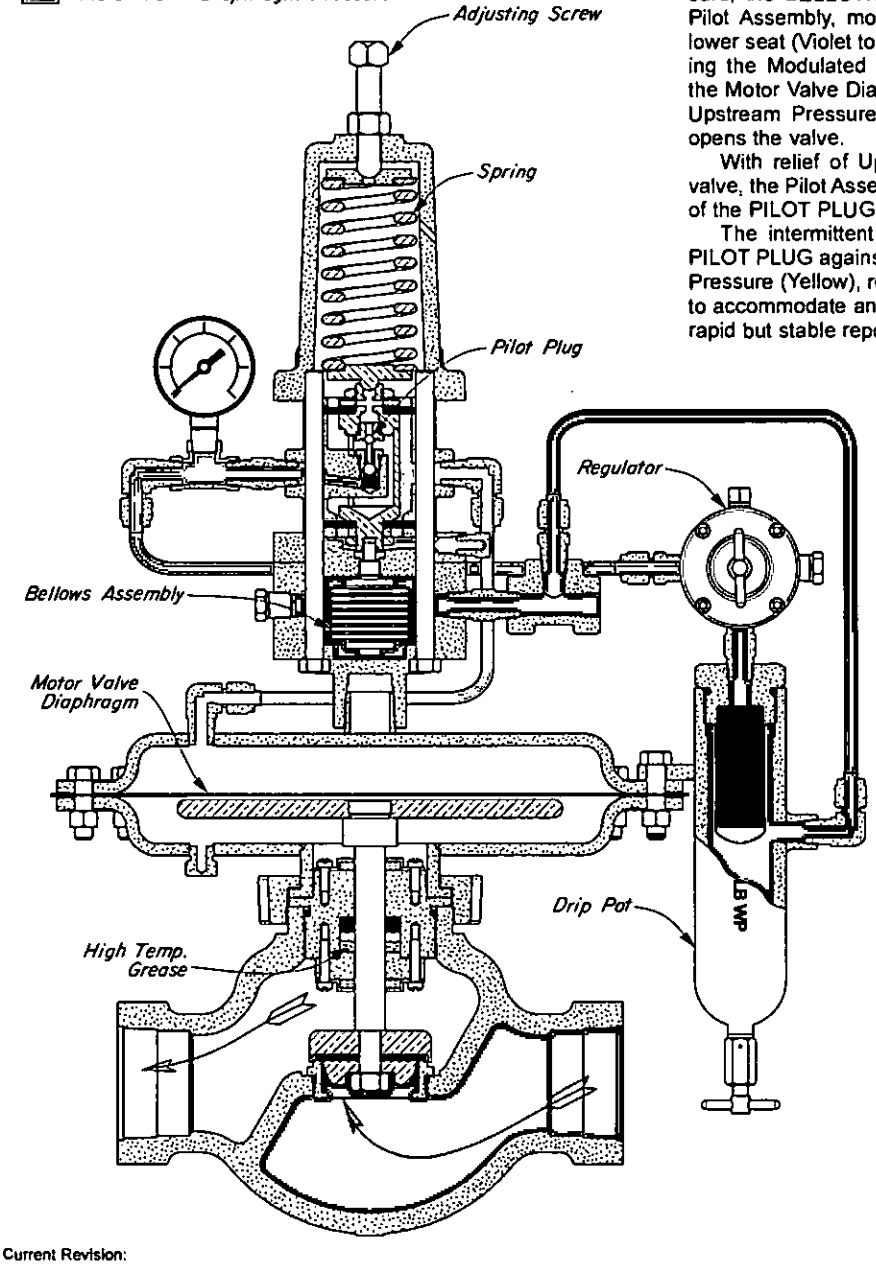
## PILOT SUPPLY PRESSURE:

40 psig

## CAPACITY:

Refer to Table of Contents.

- *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).

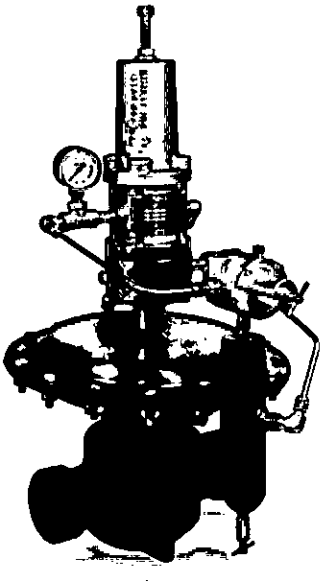
The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Pressure (Red) in the BELLOWS ASSEMBLY.

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 insuring a 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 bleed 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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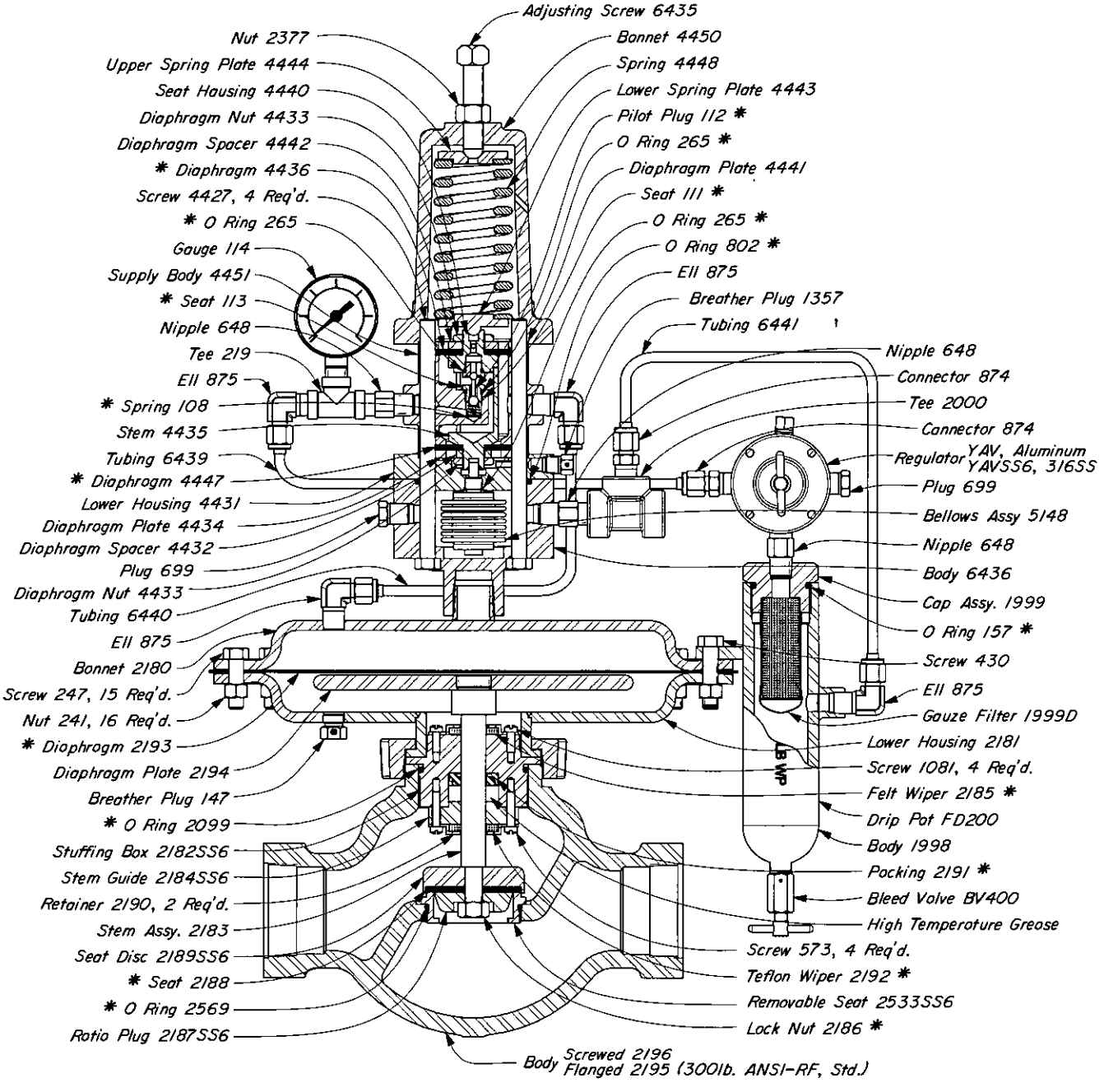
## GAS BACK PRESSURE
## STEEL / ALL STEEL




### THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| ABB | 2" SCRD. | 250 SGT BP-S | 500 | 500 | RAI |
| ABA | 2" FLGD. | 250 FGT BP-S | 500 | 500 | RAI |
| ABB1 | 2" SCRD. | 250 SGT BP-STL | 500 | 500 | RAI |
| ABA1 | 2" FLGD. | 250 FGT BP-STL | 500 | 500 | RAI |

### NOTES:

Dimensions, refer to Table of Contents.

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

## 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

## PRESSURE RANGE:

Ductile Iron: 5 psig to 125 psig
Ductile Iron: 10 psig to 280 psig
Steel: 10 psig to 280 psig

## CAPACITY:

Refer to Table of Contents

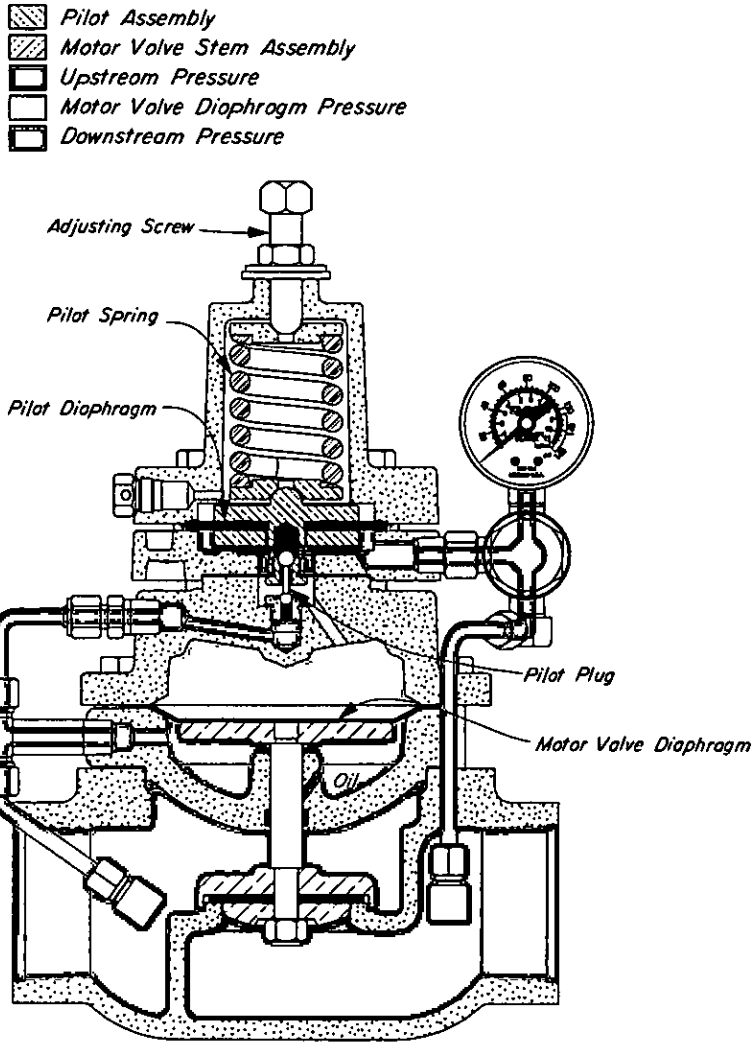
## OPERATION:

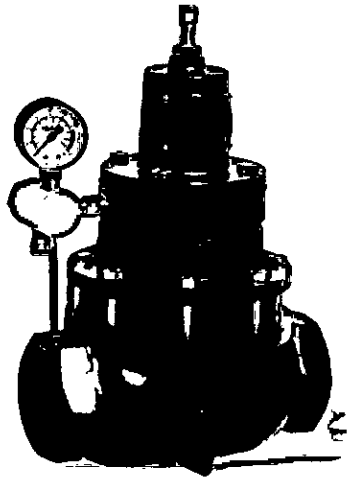
Assume the PILOT SPRING is compressed with the AOJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Blue) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is 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.

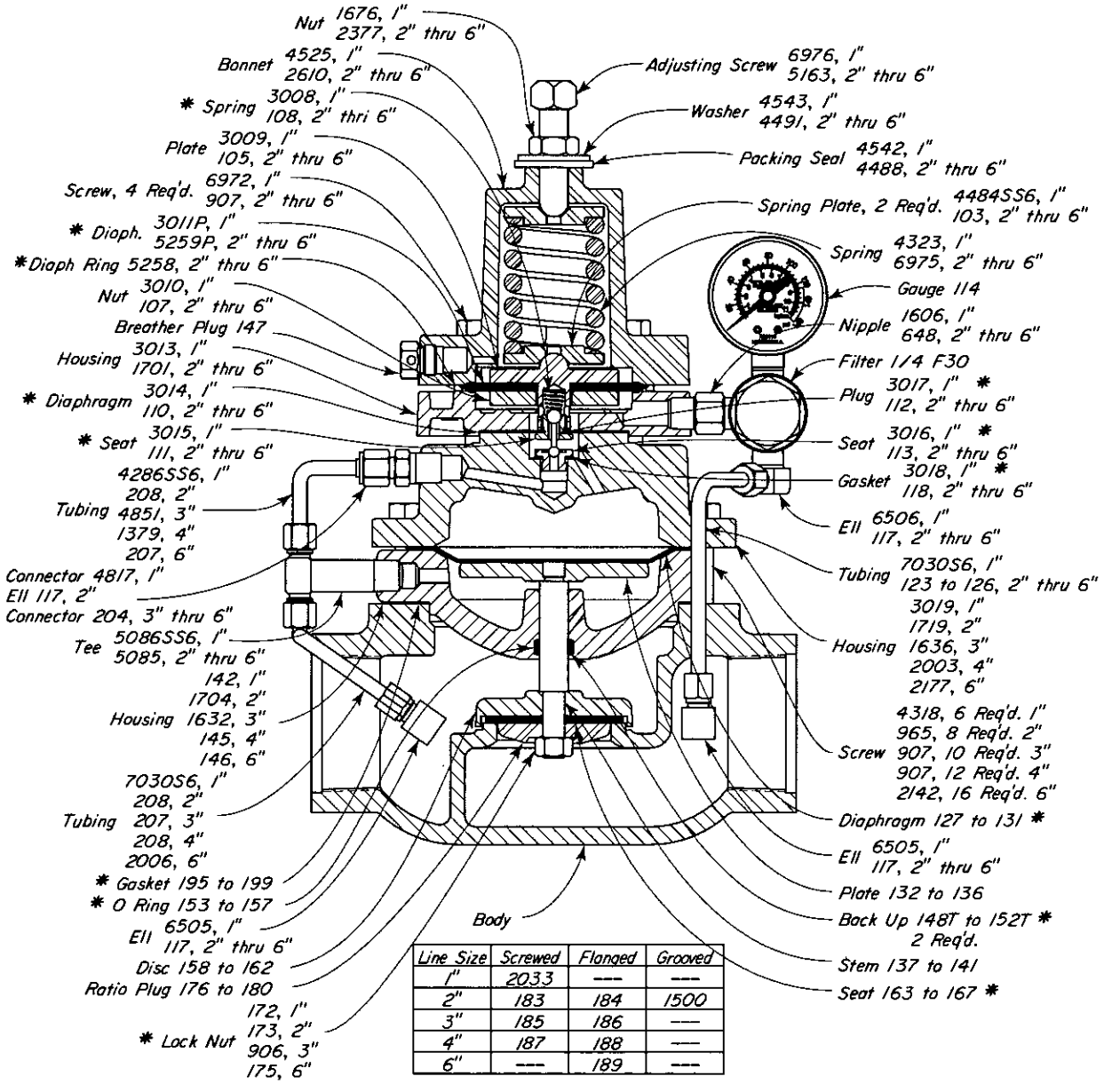
Motor Valve Diaphragm Pressure (Yellow) is regulated by the intermittent bleed pilot three-way valve action of the PILOT PLUG to reposition the Motor Valve Stem Assembly for changes in flow rate. The rapid but stable repositioning produces a true throttling action.



# PRESSURE REGULATOR

## GAS BACK PRESSURE NON VENTING
## DUCTILE IRON




| Line Size | Screwed | Flanged | Grooved |
|---|---|---|---|
| 1" | 2033 | --- | --- |
| 2" | 183 | 184 | 1500 |
| 3" | 185 | 186 | --- |
| 4" | 187 | 188 | --- |
| 6" | --- | 189 | --- |

## THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| ALD | 1" SCRD. | 112 SGT BP-NV | 125 | 175 | RRT |
| ALE | 2" SCRD. | 212 SGT BP-NV | 125 | 175 | RAA |
| ALF | 2" FLGD.• | 212 FGT BP-NV | 125 | 175 | RAA |
| ALG | 2" GRVD. | 212 GGT BP-NV | 125 | 175 | RAA |
| ALH | 3" SCRD. | 312 SGT BP-NV | 125 | 175 | RAB |
| ALI | 3" FLGD.• | 312 FGT BP-NV | 125 | 175 | RAB |
| ALJ | 4" SCRD. | 412 SGT BP-NV | 125 | 175 | RAC |
| ALK | 4" FLGD.• | 412 FGT BP-NV | 125 | 175 | RAC |
| ALL | 6" FLGD.• | 612 FGT BP-NV | 125 | 175 | RAD |

•Companion flanges, nuts, bolts and gaskets are furnished at extra cost. Refer to Section "Y" for ordering.

## NOTES:

Dimensions, refer to Table of Contents.

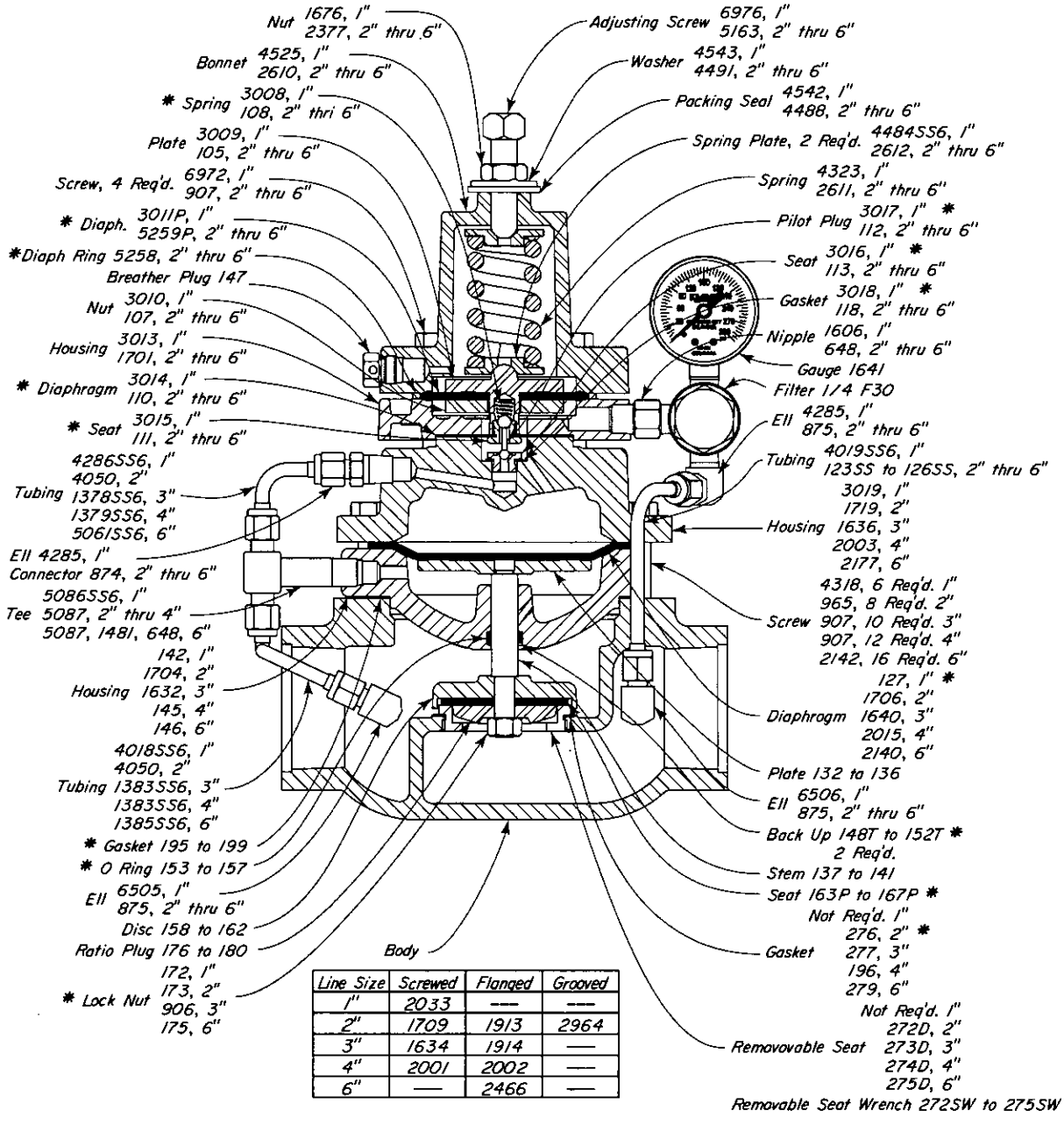
*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Diaphragm 127-1", 128-2",129-3", 130-4", 131-6".

# KIMRAY INC.®

# PRESSURE REGULATOR

## GAS BACK PRESSURE NON VENTING
## DUCTILE IRON




| Line Size | Screwed | Flanged | Grooved |
|---|---|---|---|
| 1" | 2033 | — | — |
| 2" | 1709 | 1913 | 2964 |
| 3" | 1634 | 1914 | — |
| 4" | 2001 | 2002 | — |
| 6" | — | 2466 | — |

## THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| ALDD | 1" SCRD. | 130 SGT BP-NV-D | 300 | 300 | RRU |
| ALED | 2" SCRD. | 230 SGT BP-NV-D | 300 | 300 | RDG |
| ALFD | 2" FLGD. | 218 FGT BP-NV-D | 250 | 250 | RDG |
| ALGD | 2" GRVD. | 230 GGT BP-NV-D | 300 | 300 | RDG |
| ALHD | 3" SCRD. | 330 SGT BP-NV-D | 300 | 300 | RDH |
| ALID | 3" FLGD. | 318 FGT BP-NV-D | 250 | 250 | RDH |
| ALJD | 4" SCRD. | 430 SGT BP-NV-D | 300 | 300 | RDI |
| ALKD | 4" FLGD. | 418 FGT BP-NV-D | 250 | 250 | RDI |
| ALLD | 6" FLGD. | 618 FGT BP-NV-D | 250 | 250 | RDJ |

## NOTES:

Dimensions, refer to Table of Contents.

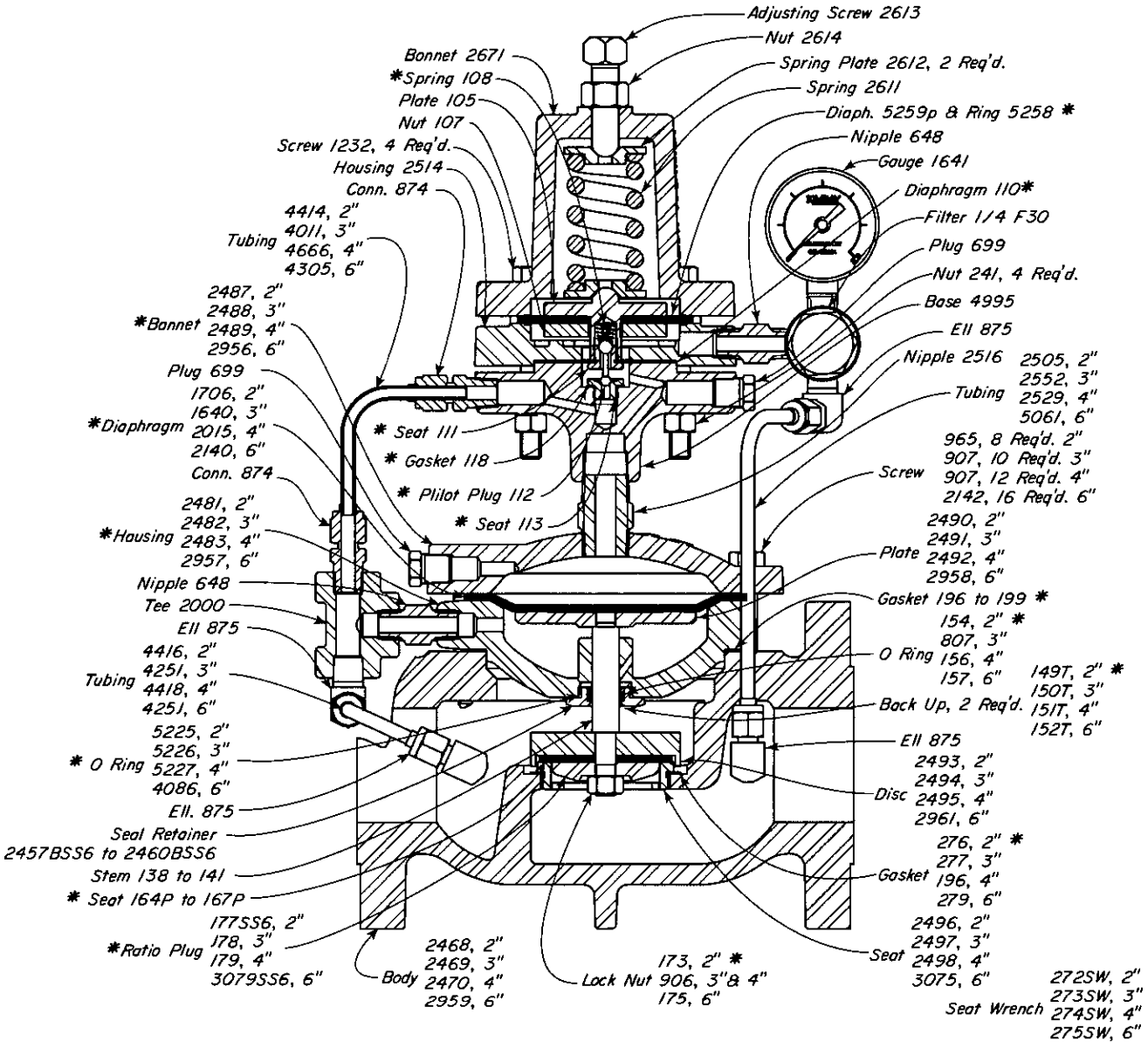
*These parts are recommended spare parts and are stocked as repair kits.

The numbers of a series assigned to a part indicate different line sizes. For example: Seat 163P-1", 164P-2",165P-3", 166P-4", 167P-6".

# PRESSURE REGULATOR

## GAS BACK PRESSURE NON VENTING

## STEEL




## THRU VALVES AVAILABLE:

| CAT. NO. | SIZE TYPE | REG. NO | OPER. PRES. | MAX W.P. | KIT |
|---|---|---|---|---|---|
| AGF | 2" FLGD. | 227 FGT BP-S-NV | 285 | 285 | RAE |
| AGV | 3" FLGD. | 327 FGT BP-S-NV | 285 | 285 | RAF |
| AGP | 4" FLGD. | 427 FGT BP-S-NV | 285 | 285 | RAG |
| AGU | 6" FLGD. | 627 FGT BP-S-NV | 285 | 285 | RAH |

## NOTES:

Dimensions, refer to Table of Contents.

*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 138-2", 139-3", 140-4", 141-6".