



#### 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.

# Notor Volve Stem Assembly Destreom Versure Motor Volve Diophrogm Pressure

#### **OPERATION:**

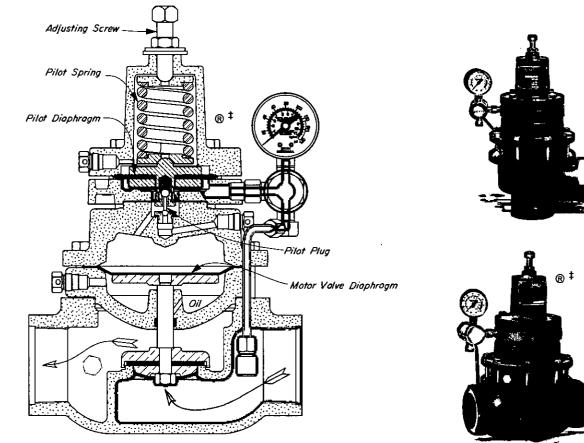
The Pilot Assembly and Motor Valve Stem Assembly (Crosshatched) are the only moving units in the regulator. The PILOT PLUG consists of two stainless balls rigidly connected together. The upper seat for the PILOT PLUG is the Motor Valve Diaphragm Pressure inlet (Red to Yellow). The lower seat for the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

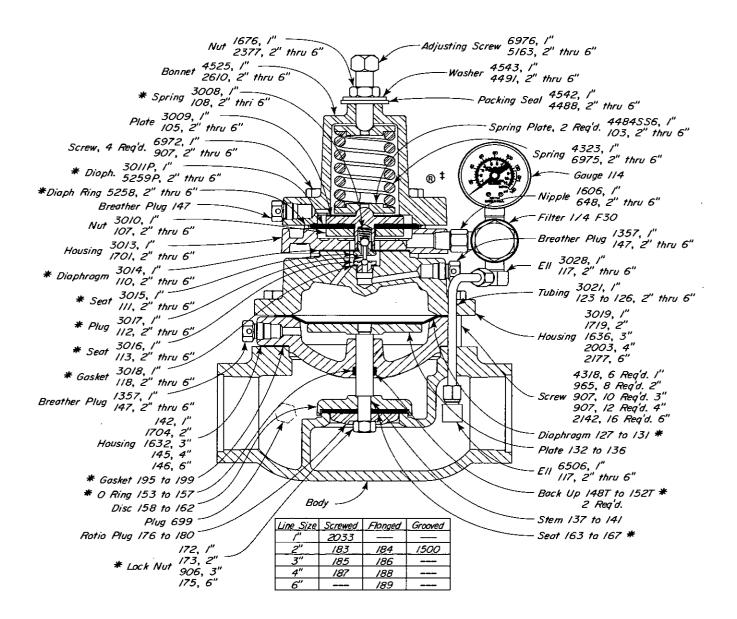
Assume the PILDT SPRING is compressed with the ADJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Atmosphere) is closed and the upper seat for the PILOT PLUG (Red to Yellow)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



GAS BACK PRESSURE DUCTILE IRON



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

#### NOTES:

Dimensions, refer to Table of Contents.

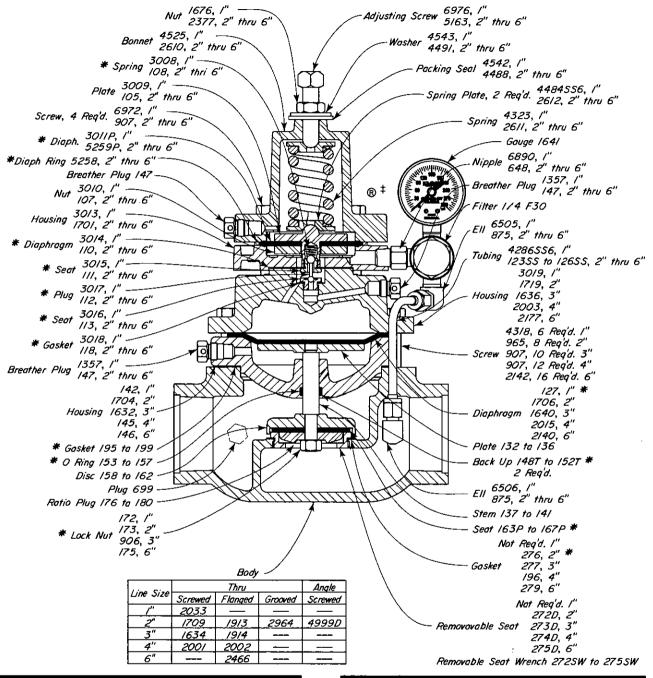
\*These parts are recommended spare parts and are stocked as repair kits.

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.

# KIMRAY

#### GAS BACK PRESSURE DUCTILE IRON



#### THRU VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	REG. NO	OPER. PRES.	MAX W.P.	КІТ
АКВ	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

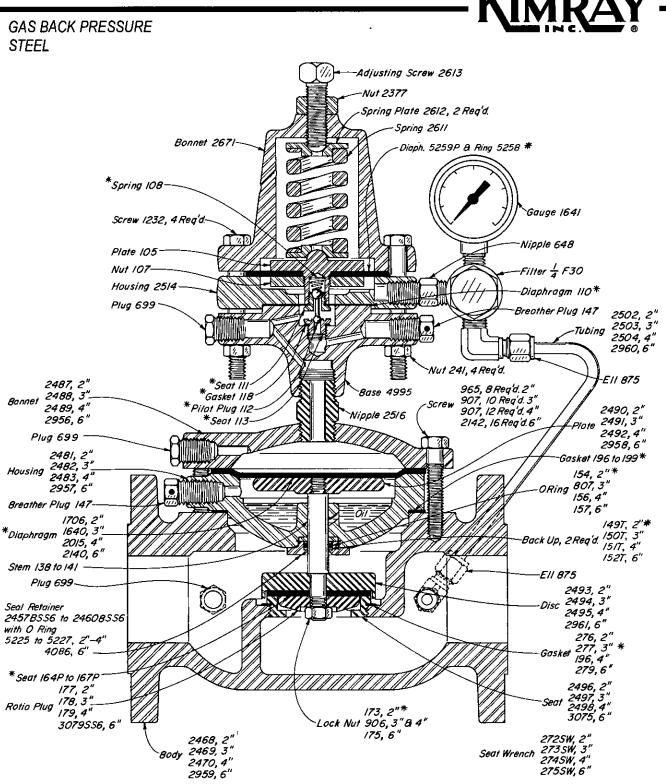
CAT. NO.	SIZE TYPE	REG. NO	oper. Pres.	 KIT
ASR		230 SGA BP-D	300	 RDG

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.



#### THRU VALVES AVAILABLE:

CAT. NO.	SIZE TYPE	REG. NO	OPER. PRES.	Max W.P.	кіт
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.

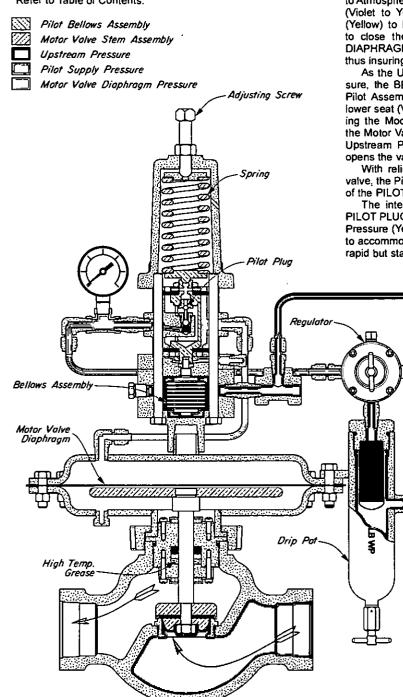
### PRESSURE RANGE:

75 psig to 500 psig

#### PILOT SUPPLY PRESSURE: 40 psig

#### CAPACITY:

Refer to Table of Contents.



#### **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).

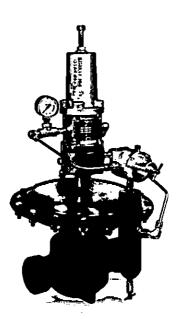
The PILOT SPRING in the bonnet loads the upper side of the Pilot Assembly and is opposed on the underside by Upstream Pressure (Red) in the BELLOWS ASSEMBLY.

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 (Yellow) 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.

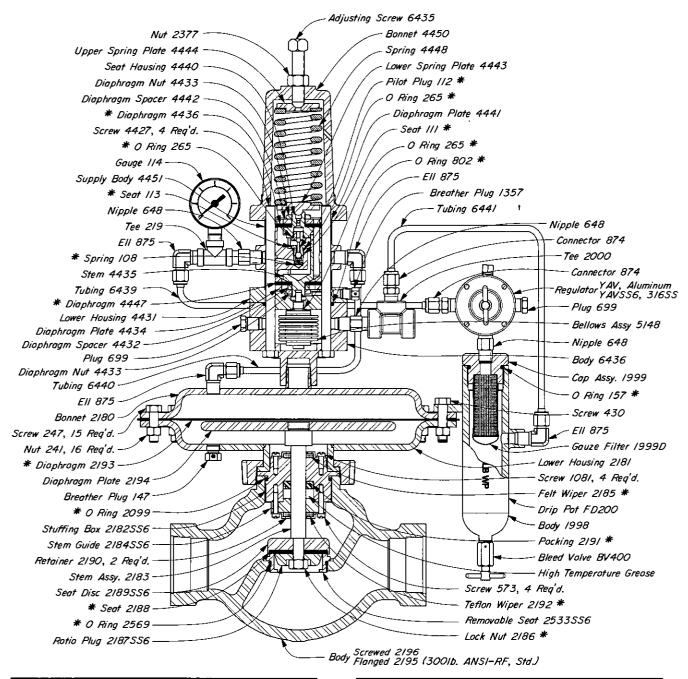
As the Upstream Pressure (Red) increases to the set pressure, the BELLOWS ASSEMBLY expands upward against the Pilot Assembly, moving the PILOT SPRING to first close the lower seat (Violet to Yellow) and then open the upper seat allowing the Modulated Output to vent (Yellow to Atmosphere). As the Motor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



#### GAS BACK PRESSURE STEEL / ALL STEEL



#### THRU VALVES AVAILABLE:

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

#### NOTES:

Dimensions, refer to Table of Contents.

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

KIM



#### 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

#### GAS BACK PRESSURE NON VENTING

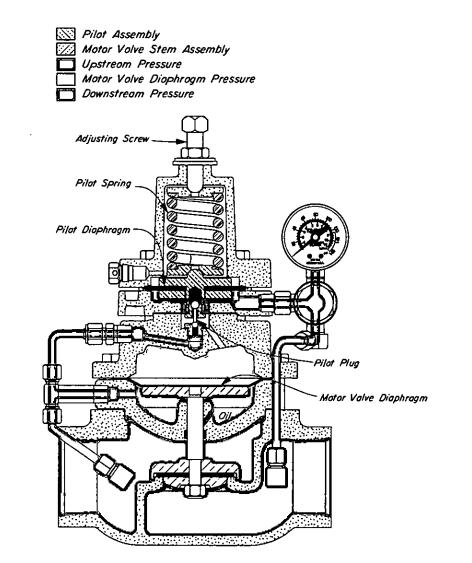
#### **OPERATION:**

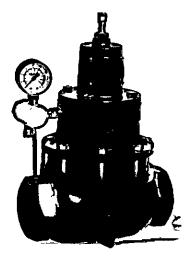
Assume the PILOT SPRING is compressed with the AOJUSTING SCREW for a set pressure greater than the Upstream Pressure (Red). The Pilot Assembly is forced downward by the PILOT SPRING. The lower seat for the PILOT PLUG (Yellow to Blue) is closed and the upper seat for the PILOT PLUG (Red to Yellow) is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





# GAS BACK PRESSURE NON VENTING DUCTILE IRON



Bonnet 4525, /" Adjusting Screw 6976, 1" 5/63, 2" thru 6" 2610, 2" thru 6 3008. /" -Washer 4543, /" 449/, 2" thru 6" \* Spring 108, 2" thri 6" 3009, /" Plate 105, 2" thru 6" Packing Seal 4542, /" 4488, 2" thru 6" Screw, 4 Req'd. 907, 2" thru 6' Spring Plate, 2 Req'd. 4484SS6, /" 103, 2" thru 6" \* Dioph. 30/1P, 1" \_\_\_\_\_\_ Spring 4323, /" 6975, 2" thru 6" Z \*Diaph Ring 5258, 2" thru 6' Ø Ō - Gauge 114 Nipple 1606, 1" Ø Ø Breather Plug 147 648, 2" thru 6" Filter 1/4 F30 Plug 112, 2" thru 6" \* Diaphragm 110, 2" thru 6" \* Seat 111, 2" thru 6" 30/6, /" **\*** Seat //3, 2" thru 6" Gasket //8, 2" thru 6" 4286556, /" 208, 2 Tubing 4851, 3" Ê Ell 6506, /" |/7, 2" thru 6" ΓT /379, 4' 207, 6' 7030\$6, /" Tubing 123 to 126, 2" thru 6" Connector 48/7, / Ell //7, 2" \_\_\_ 3019, 1" Connector 204, 3" thru 6' 1719, 2" 5086556, /" Housing /636, 3" Tee 5085, 2" thru 6" 2003, 4" 142, 1" 1704, 2" 2177, 6" 4318, 6 Reg'd. / Housing 1632, 3" 965, 8 Req'd. 2" 145, 4" Screw 907, 10 Reg'd. 3" 146, 6" 907, 12 Reg'd. 4" 703056, 1 2142, 16 Reg'd. 6" 208, 2 Tubing 207, 3" Diaphragm 127 to 131 🕷 208, 4" Ell 6505, /" 117, 2" thru 6" 2006, 6" \* Gasket 195 to 199 Plate 132 to 136 \* O Ring /53 to /57 Back Up 148T to 152T \* Ell 6505, 1" \_\_\_\_\_\_ II7, 2" thru 6" Body 2 Req'd. Line Size Screwed Flanged Grooved Stem /37 to /4/ Disc 158 to 162 2033 Ratio Plug 176 to 180 Seat 163 to 167 \* 2 184 1500 183 172, 1 3" /85 186 \* Lock Nut 906, 3 4 187 188 189 175, 6'

THRU VALVES AVAILABLE:						
CAT. NO.	ŚIZE TYPE	REG. NO	OPER. PRES.	MAX W.P.	κιτ	
ALD ALE ALF ALG ALH ALI ALJ ALK ALI	1" SCRD. 2" SCRD. 2" FLGD. 2" GRVD. 3" SCRD. 3" FLGD. 4" SCRD. 4" FLGD. 6" FLGD.	112 SGT BP-NV 212 SGT BP-NV 212 FGT BP-NV 212 GGT BP-NV 312 SGT BP-NV 312 FGT BP-NV 412 SGT BP-NV 412 FGT BP-NV 612 FGT BP-NV	125 125 125 125 125 125 125 125 125	175 175 175 175 175 175 175 175 175	RRT RAA RAA RAB RAB RAC RAC RAC	

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

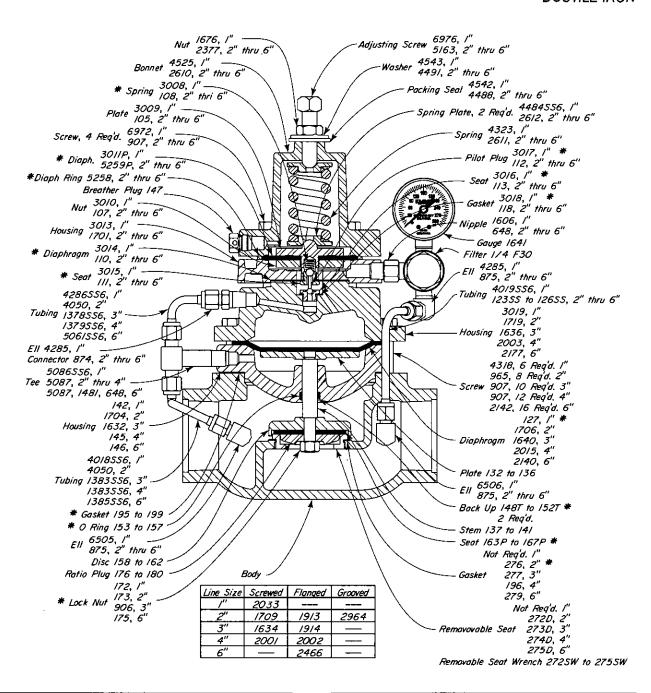
#### NOTES:

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".

#### GAS BACK PRESSURE NON VENTING DUCTILE IRON



THRU VALVES AVAILABLE:						
CAT. NO.	SIZE TYPE	REG. NO	OPER. PRES.	Max W.P.	кіт	
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	RD!	
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".

GAS BACK PRESSURE NON VENTING STEEL



Adjusting Screw 26/3 Nut 26/4 Bonnet 2671 Spring Plate 26/2, 2 Reg'd. \*Spring 108 Spring 2611 Plate 105 -Diaph. 5259p & Ring 5258 🕷 Nut 107 Nipple 648 Screw 1232, 4 Reg'd. -Gauge 1641 Housing 2514 Conn. 874 Diaphragm 110\* Ø, 44/4, 2" 40/1, 3" Tubing 4666, 4" Ò -Filter I/4 F30  $\oslash$ Ø Plug 699 4305, 6" Ø -Nut 24/, 4 Reg'd. 2487, 2 Base 4995 2488, 3" \*Bannet 2489, 4' - Ell 875 2956, 6" Nipple 25/6 2505, 2' Plug 699 2552, 3" 1706, 2' Tubing 2529. 4" 1640, 3" 5061, 6" \*Diaphragm 2015, 4" 2140, 6" \* Seat III 965, 8 Req'd. 2" 907, 10 Req'd. 3" 907, 12 Req'd. 4" \* Gasket 118 Conn. 874 Screw Plilot Plug 112 2142, 16 Reg'd. 6" 2481, 2" 2482, 3" 2490, 2" # Seat 113 \*Housing 2483, 4" 2491, 3" Plate 2492, 4" 2957, 6" 2958, 6" Nipple 648 Gasket 196 to 199 \* Tee 2000 154, 2" ZZ\* Ell 875 807 3" 44*16*, 2" O Ring 156, 4" Tubing 4251, 3" 4418, 4" /49T, 2" **\*** /50T, 3" 157, 6" Back Up, 2 Req'd. 15/T, 4" 4251, 6" 1527, 6" 5225, 2" Ell 875 5226, <u>3</u>" 2493, 2" \* O Ring 5227, 4" 2494, 3" 4086, 6" Disc 2495, 4" Ell. 875 2961, 6" Seal Retainer 276, 2" \* 2457BSS6 to 2460BSS6 277, 3" Stem |38 to |4| Gasket 196, 4" \* Seat 164P to 167P 279, 6' 2496, 2" 177556, 2 2497, 3" 2498, 4" \*Ratio Plug 178, 3" 2468, 2" Seat 173, 2" \* 2469, 3" 2470, 4" Lock Nut 906, 3"8 4" 175, 6" 3075, 6" 2725W. 2" 3079556, 6" Body 273SW, 3" 2959, 6" Seat Wrench 274SW, 4"

<sup>2755</sup>W 6"

27	25	w,	ь	

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

#### NOTES:

Dimensions, refer to Table of Contents.

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

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