



## AIR LOADED HIGH PRESSURE *Back Pressure Regulators*

# 3100AL SERIES

### PREMIER INDUSTRIES

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Minneapolis, MN 55449  
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**MADE IN THE USA**

*Minneapolis, MN*

### DESCRIPTION

The Premier 3100AL Series air loaded, piston sensed, single stage, high pressure, back pressure regulators feature control pressures up to 10000 PSIG (689.48 bar), and Cv 0.03, 0.06, 0.14, or 0.2. Premier 3100AL Series regulators are used to regulate to a broad range of non-corrosive and corrosive media (*based on materials of construction*).

### FEATURES

- Compatible with electro pneumatic controllers
- Cv 0.03, 0.06, 0.14, or 0.2
- Control pressures up to 10000 PSIG (689.48 bar)
- Machined bar stock body, bonnet and piston eliminates porosity found in castings
- Numerous optional features are available
- Hydraulic design available



# AIR LOADED HIGH PRESSURE Back Pressure Regulators



## SPECIFICATIONS

- **MAXIMUM INLET PRESSURE:**
  - REGULATOR: 10000 PSIG / 689.5 bar (316 Stainless Steel)  
6000 PSIG / 689.5 bar (SAE 360 Brass)
  - AIR ACTUATOR: 100 PSIG (6.89 bar)
- **CONTROL PRESSURE RANGES:**
  - 10-1500 PSIG (0.69 - 103.42 bar)  
Diameter: 1.000"  
Area: 0.7854 in<sup>2</sup>  
Ratio: 16/1 \*\*
  - 15-2500 PSIG (1.03 - 172.37 bar)  
Diameter: 0.750"  
Area: 0.4418 in<sup>2</sup>  
Ratio: 28/1 \*\*
  - 50-6000 PSIG (3.45 - 413.69 bar)  
Diameter: 0.500"  
Area: 0.1964 in<sup>2</sup>  
Ratio: 64/1 \*\*
  - 100-10000 PSIG (6.89 - 689.5 bar)  
Diameter: 0.375"  
Area: 0.1104 in<sup>2</sup>  
Ratio: 114/1 \*\*

\*\* 4.0" diameter diaphragm  
Diaphragm area: 12.5664 in<sup>2</sup>

- **FLOW (Cv):** 0.03, 0.06, 0.14, or 0.20

## MATERIALS OF CONSTRUCTION

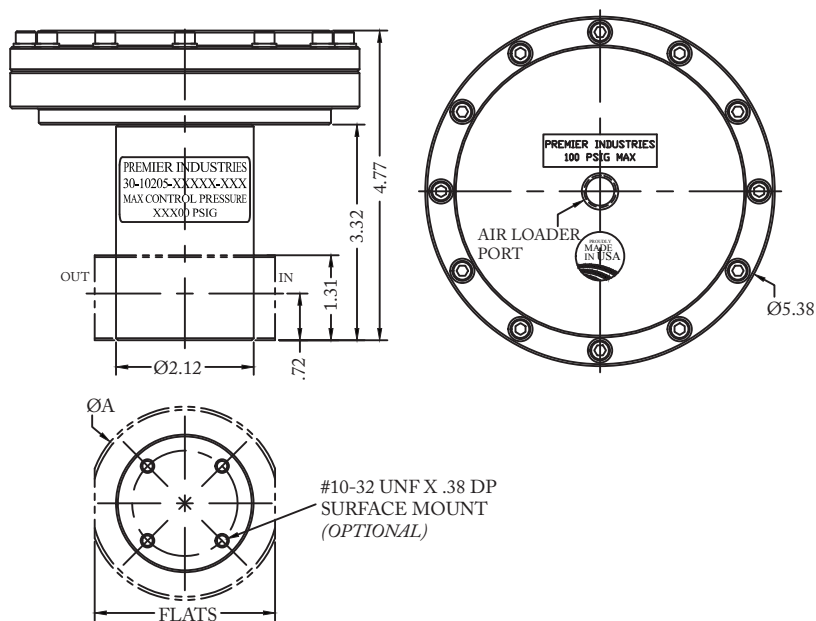
- **BODY OPTIONS:**
  - SAE 360 brass
  - 316 Stainless Steel
- **HOUSING, AIR ACTUATOR :**
  - 6061-T6 Aluminum/clear anodized
- **DIAPHRAGM, AIR ACTUATOR :**
  - Neoprene, nylon fabric-reinforced
- **MAIN VALVE STEM:** 316 Stainless Steel
- **MAIN VALVE SEAT OPTIONS:**
  - Vespel®
  - PEEK®
- **ELASTOMER SEAL OPTIONS:**
  - BUNA-N
  - Viton-A®
  - EPDM
  - Kalrez® (Contact factory for pricing)
- **WETTED PARTS:**
  - 316 Stainless Steel
  - 17-4 Stainless Steel
- **BACK-UP RINGS:**
  - PTFE
  - PCTFE

## PORTING

- **INLET/OUTLET**
  - 1/4", 3/8", 1/2" FNPT
  - 1/4", 3/8", 1/2" SAE J1926
  - 1/4", 3/8", 1/2" SAE AS5202 (MS33649\*\*)
  - 1/4", 3/8", 9/16" MEDIUM PRESSURE
  - 1/4", 3/8", 1/2" NPTF
- **AIR ACTUATOR:**
  - 1/4-18" FNPT (Standard)
  - 1/4" SAE AS5202 (mod)
  - 1/4" SAE J1926 (mod)
  - 1/8" FNPT (mod)

## OPTIONAL ITEMS

- Panel mounting bracket: P/N: 30-10059  
(Ø2.15 panel hole)
- Surface mount
- Private label



(Part number: 30-10205G shown above)

BODY DIMENSIONS		
PORT TYPE	ØA	FLATS
1/4 & 3/8 NPT	Ø2.12	—
1/4" M.P.	Ø2.12	1.98
1/2" NPT, NPTF	Ø2.48	—
1/4" SAE	Ø2.48	2.36
3/8" M.P.	Ø2.48	2.36
3/8" SAE	Ø2.73	2.58
1/2" SAE	Ø2.98	2.81
9/16" M.P.	Ø2.98	2.81

\*\*SAE AS5202 supersedes MS33649

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PEEK® is a registered trademark of Victrex PLC



# AIR LOADED HIGH PRESSURE Back Pressure Regulators



PART #	-	1	2	3	4	5	-	6	7 8	-	MODS
30-10205G	-						-			-	

1	BODY MATERIALS (MAX. INLET PRESSURE)	
1	SAE 360 Brass (6000 psig / 413.7 bar)	
2	316 Stainless Steel (10000 psig / 689.5 bar)	
2	CONTROL PRESSURE	
3	10-1500 psig (0.69-103.4 bar)	Diameter: 1.000" Area: 0.7854 in <sup>2</sup> Ratio: 1 <sup>6</sup> / <sub>1</sub> **
4	15-2500 psig (1.0-172.4 bar)	Diameter: 0.750" Area: 0.4418 in <sup>2</sup> Ratio: 2 <sup>8</sup> / <sub>1</sub> **
6	50-6000 psig (3.4-413.7 bar)	Diameter: 0.500" Area: 0.1964 in <sup>2</sup> Ratio: 6 <sup>4</sup> / <sub>1</sub> **
7	100-10000 psig (6.9-689.5 bar) (stainless steel only)	Diameter: 0.375" Area: 0.1104 in <sup>2</sup> Ratio: 1 <sup>14</sup> / <sub>1</sub> **
** 4.0" diameter diaphragm Diaphragm area: 12.5664 in <sup>2</sup>		
3	FLOW (C <sub>v</sub> )	
A	C <sub>v</sub> 0.03	
0	C <sub>v</sub> 0.06	
1	C <sub>v</sub> 0.14	
2	C <sub>v</sub> 0.2	

4	PORT SIZE
4	1/4"
6	3/8"
8	1/2"*
9	9/16"***
*1/2" not available in medium pressure **9/16" only available in medium pressure	
5	PORT TYPE
1	FNPT
2	SAE J1926
3	SAE AS5202 (MS33649**)
4	MEDIUM PRESSURE
6	NPTF
**SAE AS5202 supersedes MS33649	

6	VALVE SEAT
0	Vespel®
3	PEEK®
7 8	O-RING MATERIAL
00	BUNA-N
02	VITON-A®
05	EPDM
11	KALREZ® (Contact factory for pricing)
MODIFICATIONS Separate multiple mods with a dash	
BLANK	NONE
AS	1/4" SAE AS5202 LOADER PORT
E	1/8" NPT AIR LOADER PORT
J	1/4" SAE J1926 LOADER PORT
SM	SURFACE MOUNT

10000 PSIG MAX INLET (Stainless Steel)  
6000 PSIG MAX INLET (Brass)

The end user is responsible to ensure adequate fittings are used to connect regulator to plumbing.

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Contact factory for material certifications. Fees may apply.