

# SERIES AK 12PA TIED DIAPHRAGM REGULATOR PNEUMATIC ACTUATION



- ◆ Actuation 'fail safe' normally closed (NC)
- ◆ Vacuum to 1,700 psig (117 bar) inlet, 150 psig (10 bar) outlet
- ◆ Flow capacity\*  
1 to 1,000 slpm (HF option)
- ◆ Stainless Steel or Brass construction
- ◆ Poppet attached to diaphragm (tied diaphragm) improves positive shut off across the seat
- ◆ 100 psig outlet achieved with 80 psig control pressure or less
- ◆ Actuation control pressure isolated from process gas
- ◆ Cleaned for O2 service
- ◆ Field repairable
- ◆ Diffusion resistant Stainless Steel diaphragm
- ◆ Installation and operating instructions available at [www.aptech-online.com](http://www.aptech-online.com) in the Tech Briefs section

## ENGINEERING DATA

### Operating Parameters

Source pressure	vacuum to 1,700 psig (117 bar) AK 12PA HR vacuum to 3,000 psig (207 bar)**
Delivery pressure	7 to 150 psig (0.5 to 10 bar)
Proof pressure	2,550 psig (176 bar); HR 4,500 psig (310 bar)
Burst pressure	8,000 psig (552 bar); HR 9,000 psig (620 bar)
Control pressure	150 psig (10 bar) maximum

### Other Parameters

Inlet/outlet ports	1/4", 3/8" and 1/2" NPT and compression (optional porting available)
Control pressure port	1/8 inch NPT
Bonnet vent port	1/8 inch NPT
Flow coefficient, Cv	0.9 (HF option 1.1)**
Internal volume	1.32 in <sup>3</sup> (21.6 cm <sup>3</sup> )
Operating temperature	-40 to +160F (-40 to +71C)
Leak rate	1 x 10 <sup>-9</sup> sccs
Delivery pressure rise	3.5 psig per 100 psig source pressure drop (HF 4.2 psig per 100 psig)

## MATERIALS OF CONSTRUCTION

	<b>AK 12PAB</b>
Body	brass
Poppet	SS 316
Diaphragm	Hastelloy C-22
Seat	PCTFE (Vespel® opt.)

	<b>AK 12PAS</b>
Body	SS 316
Poppet	SS 316
Diaphragm	Hastelloy C-22
Seat	PCTFE (Vespel® opt.)

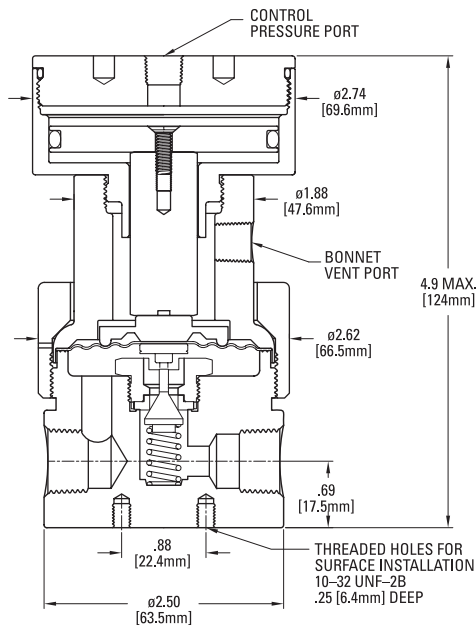
	<b>AK 12PASH</b>
Body	SS 316
Poppet	Hastelloy C-22
Diaphragm	Hastelloy C-22
Seat	PCTFE

\*Flow rating based upon N2 @ 100 psig inlet, varying gas type and, or inlet/outlet pressures will effect rating.

\*\*HR and HF option may not achieve rated outlet pressure at all inlet pressures.

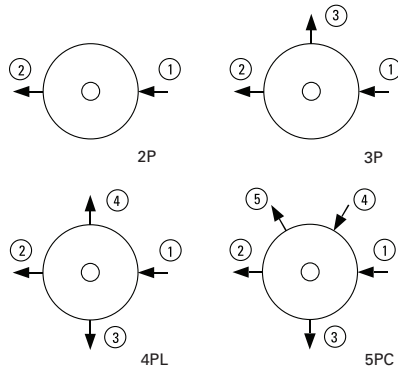
All specifications subject to change without notice.  
Hastelloy® C-22® Haynes Corporation  
Vespel® DuPont

# SERIES AK 1200 — QUALITY, RELIABILITY & PERFORMANCE!



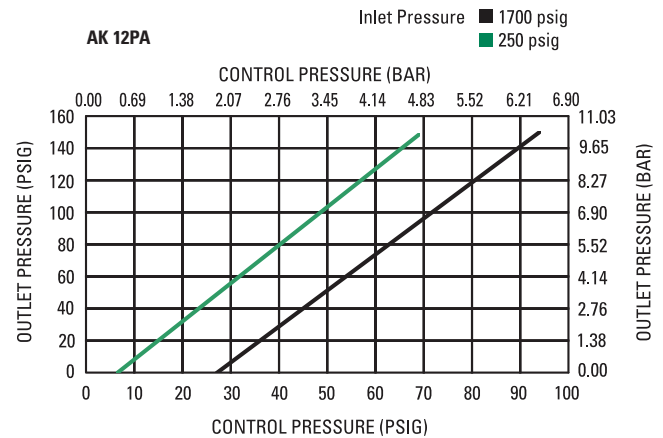
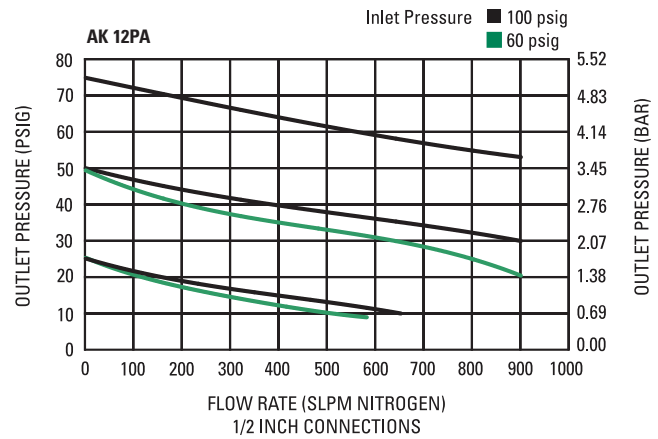
All dimensions in inches (mm).  
Metric dimensions are for reference only.

## Porting Configurations



**NOTE:** Not all porting configurations available in brass or every connection size.  
Ports, other than 1 & 2, are only available 1/4 inch NPT.

**CAUTION:** Product selection is the sole responsibility of the user, regardless of any recommendations or suggestions made by the factory. The user shall make selections based upon their own analysis and testing with regard to function, material compatibility and product ratings. Proper installation, operation and maintenance are also required to assure safe, trouble free performance.



## ORDERING INFORMATION

AK 12PA Series	S Material	4PL Ports	6 6 ① ② Ports	0 V3 ③ ④ ⑤ Ports (Gauge/Accessory)	Options
AK 12PA = 7-150 psig (.5 to 10 bar)		2P = 2 Ports 3P = 3 Ports 4PL = 4 Ports 5PC = 5 Ports	4 = 1/4 inch NPT 6 = 3/8 inch NPT 8 = 1/2 inch NPT 4T = 1/4 inch comp 6T = 3/8 inch comp 8T = 1/2 inch comp	0 = No gauge or device installed V3 = 30-0-30 psig/bar 1 = 30-0-100 psig/bar 2 = 0-200 psig/bar 10 = 0-1000 psig/bar 40 = 0-4000 psig/bar	VS = Vespel seat *HF = High flow *HR = High inlet pressure
S = Stainless steel (SS) SH = SS with Hastelloy internals B = Brass					

**NOTE:** Designators required for all ports, but "0" not required if there isn't a port. A 2P has designators only for ① & ② ports, as example AK 12PA S 2P 44 not AK 12PA S 2P 44 000. \*HF and HR options are only available separately. These options may not be combined. Full outlet pressure rating may not be achieved at all inlet pressures.