

## AIR AMPLIFIER SELECTION CHART

DRIVE SIZE In (mm)	MAX AIR DRIVE PSIG (kPa)	MODEL	RATIO	MAX INLET PSIG (kPa)	MAX OUTLET PSIG (kPa)	DISPL/ CYCLE In <sup>3</sup> (ML)
2.87 (73)	125 (862)	HAA31-2.5	2.5:1	125 (862)	320 (2206)	2.40 (39.3)
2.87 (73)	125 (862)	HAA31-3.5	3.5:1	125 (862)	450 (3103)	1.77 (29.0)
2.87 (73)	125 (862)	HAA31-4.5	4.5:1	125 (862)	600 (4137)	1.35 (22.1)
4 (102)	125 (862)	4AAD-2	2:1	250 (1723)	250 (1723)	62.5 (1024)
5.75 (146)	150 (1034)	AA-8	8:1	1250 (8618)	2500 (17236)	13.2 (216)
		AA-15	15:1	2250 (15513)	2250 (15513)	6.2 (101)
		AA-30	30:1	4500 (31026)	4500 (31026)	3.1 (51)
		AAD-2	2:1	300 (2068)	300 (2068)	201 (3294)
		AAD-5	*5:1 (4:1)	1250 (8618)	1250 (8618)	19.3 (316)
		AAD-15	15:1	2500 (17236)	2500 (17236)	12.4 (203)
		AAD-30	30:1	4500 (31026)	4500 (31026)	6.2 (101)
		AAT-7/30	7/30	300 (2068)	4500 (31026)	13.2 (216)
		AAT-15/30	15/30	1000 (6895)	4500 (31026)	6.2 (101)
		AAT-30/50	30/50	3000 (20684)	5000 (34474)	3.1 (51)
8 (203)	130 (896)	8AAD-2	2:1	300 (2068)	300 (2068)	400 (6555)

### MODEL NUMBER CODES

**HAA31** Single acting, single stage air pressure amplifier.

**& AA** Maximum Po ("Stall") = Pa x Ratio

**AAD** Double acting, single stage air pressure amplifier provides outlet flow on each stroke of cycle and gains "lift" from inlet pressure.

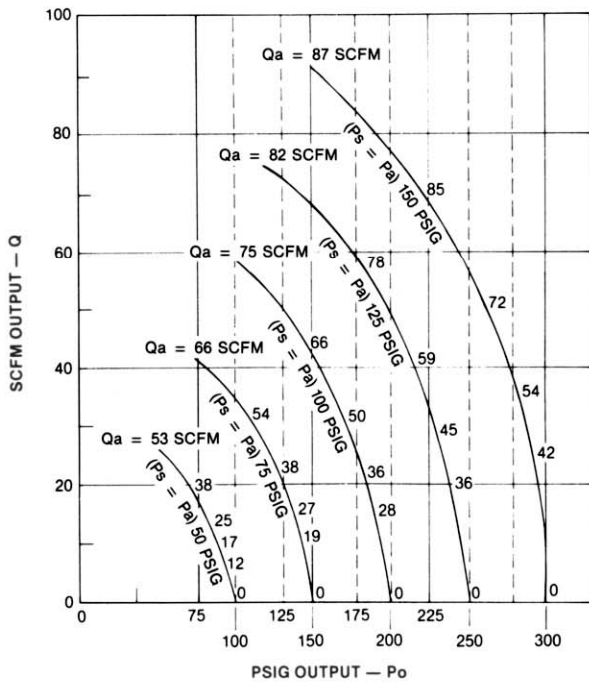
Maximum Po ("Stall") = Pa x Ratio + Ps (\*Often Pa = Ps)

**AAT** Two-stage air pressure amplifier provides two high pressure pistons of different ratios within a single unit for maximum efficiency at higher outlet pressures.

Maximum Po ("Stall") = Pa x Ratio 2nd Stage + Ps x Ratio Stages

# AA-2, AAD-5 PERFORMANCE

MODEL AAD-2

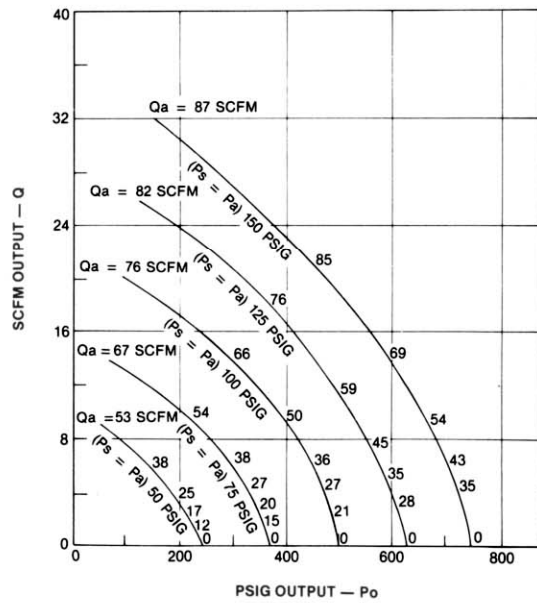


NOTE: Total input air volume required = Q + Qa

**CONVERSION:**

1 bar = 14.5 psig  
 1 normal cubic meter per minute = 35.31 scfm

MODEL AAD-5



NOTE: Total input air volume required = Q + Qa

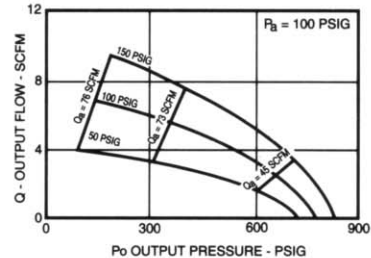
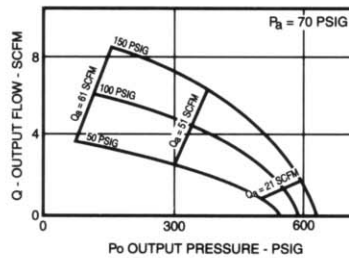
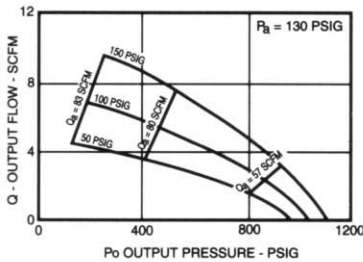
**CONVERSION:**

1 bar = 14.5 psig  
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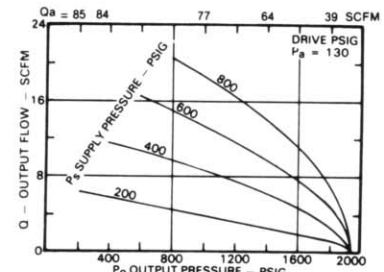
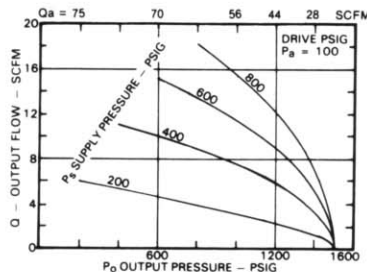
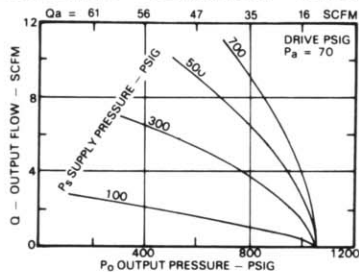
# AA SERIES PERFORMANCE

The following models are often used in applications where the drive pressure, Pa, is regulated below a higher supply pressure, Ps, (e.g., if bottled nitrogen is supply and plant air is drive). The shaded areas on three charts are beyond rated maximum working pressure.

MODEL AA - 8

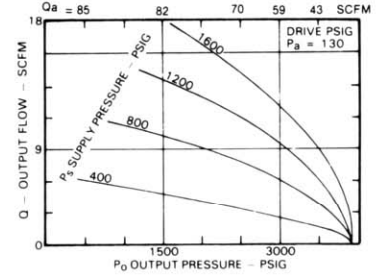
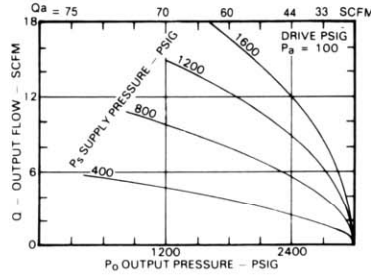
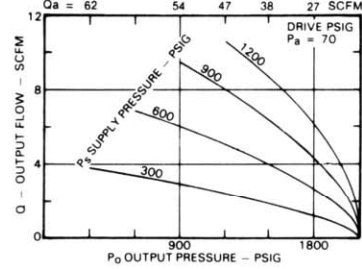


MODEL AA - 15 Single Acting - Single Stage

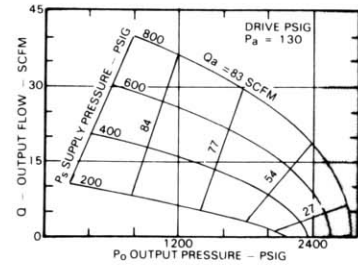
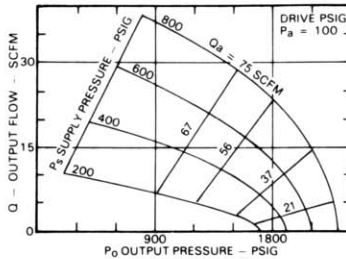
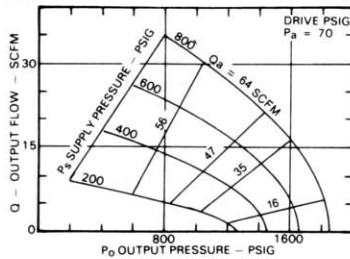


# AA SERIES PERFORMANCE

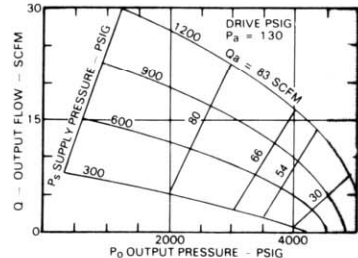
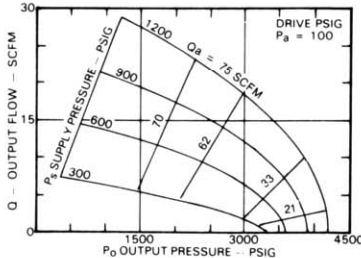
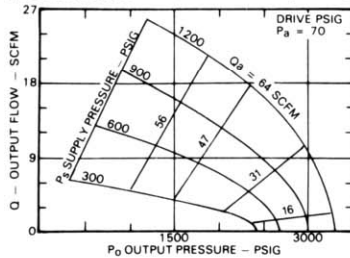
**MODEL AA — 30 Single Acting — Single Stage**



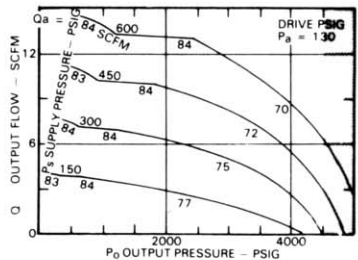
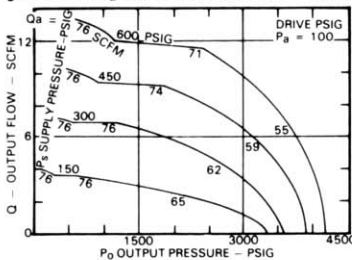
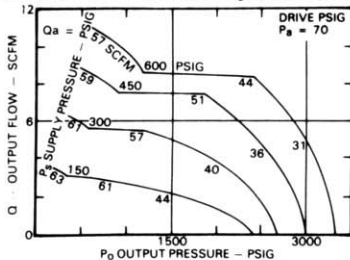
**MODEL AAD — 15 Double Acting — Single Stage**



**MODEL AAD — 30 Double Acting — Single Stage**



**MODEL AAT-15/30 Two Stage (Intermediate numbers along curves are Qa air drive flow consumed — scfm.)**



**CONVERSION:**

1 bar = 14.5 psig

1 normal cubic meter per minute = 35.31 scfm

**NOTE:** \*Total input air volume required = Q + Qa

\*Consult factory for model AAT-7/30 performance data.

# AA SERIES CONTROLS & OPTIONS

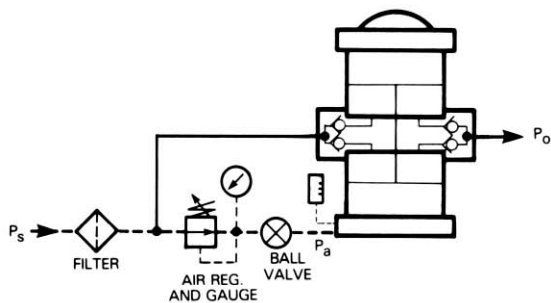
All models are available with factory installed controls at extra cost. There are many control options. Details will vary depending on pressures and application requirements and which amplifier models are used. The schematics and charts below describe some of the more common options.

Note that options 3 and 4 control start/stop with external pilot air. Any model can be converted to cycle with external pilot air only. (Specify modification No. 28881.)

NUMBER	DESCRIPTION
-C	Air (F-R, Gauge & Valve) Controls
28881	External Pilot Modification
-MA1	28881 & Air Pilot Switch
17860	Electrical Stroke Counter
25721	Mechanical Stroke Counter
29376	Three Way Cycling Spool
29702	Single Stroke Modification

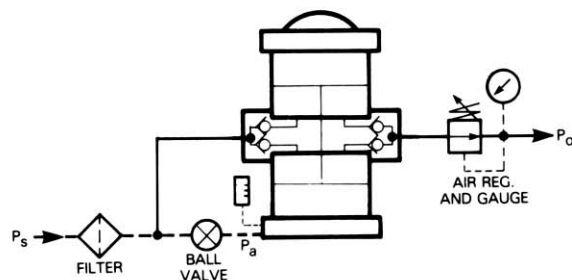
NUMBER	DESCRIPTION
29960	AAD-2 Receiver and Controls
51050	Extreme Service Cycling Mod
53375	125PSIG Downstream Regulator AAD-2
53375-1	200PSIG Downstream Regulator AAD-2
53376	Regulator, Air Pilot Switch, and Relief Valve AAD-5

## STANDARD AIR CONTROLS — All Models



Specify Using	Provides	Remarks
-C after model number	Rough max. $P_o$ control by regulating $P_a$ only if $P_s$ is constant.	Regulation of $P_a$ will reduce peak performance.

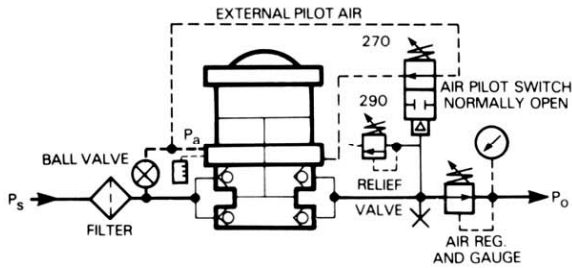
## SEMI-STANDARD AIR CONTROLS — AAD-2 Only



Specify Using	Provides	Remarks
-53375 before model AAD-2-C	Good max. $P_o$ control with peak performance. Max. reg. $P_o$ 125 psi. 200 psi spring optional.	Max. input to reg. is 300 psi. Therefore, use AAD-2 only.
-53375-1	Optional 200 psi spring.	

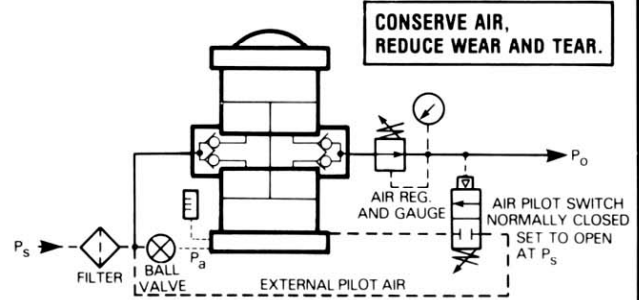
# AA SERIES CONTROLS & OPTIONS

## NORMALLY OPEN AIR PILOT SWITCH With Relief Valve and Air Controls — AAD-5



Specify Using	Provides	Remarks
—53376 before model AAD-5	Good max. $P_o$ control to 200 psi with port to add 1-1/2 or 5 gal. ASME receiver (290 psi).	Good selection where $P_s$ falls into 60–80 psi range.

## NORMALLY CLOSED AIR PILOT SWITCH — All Models To Prevent No-load Runaway

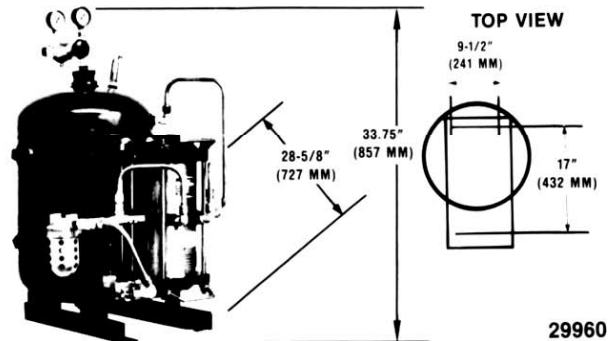


Specify Using	Provides	Remarks
MA-1 (after model number) and requested setting within 50-180 psi (increasing) range. e.g.: AAD-2-MA-1 set at 70 psi increasing.	Anchor on drive so unit will <b>not start until</b> $P_s$ has <b>equalized</b> throughout system.	Reduces maintenance. Locate air pilot switch as close to work as possible. May be added to any schematic 1–5.



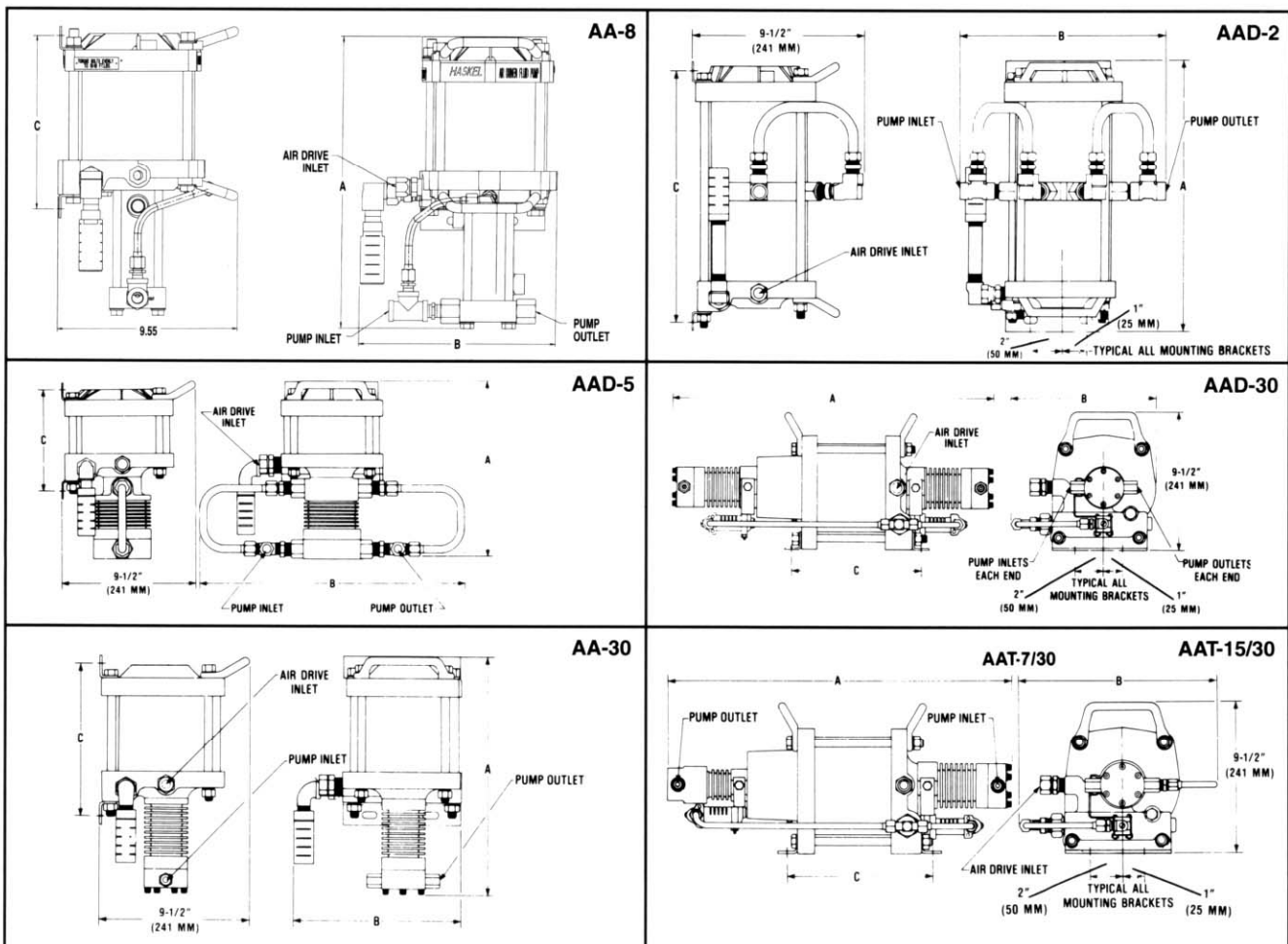
## ASME CODED 15 GALLON RECEIVER WITH CONTROLS — AAD-2 Only

Model 29960 is a complete pneumatic system designed to provide amplified pressure and momentary high flow. It utilizes available plant air (up to 95 psi) to both the supply and drive inlets of the model AAD-2 which automatically stalls once the storage tank has been filled to about double the supply pressure. The amplifier will sense any use of air from the tank, and resume operation again to stall at about 2 times supply pressure. The regulator on the tank output is provided to control the output pressure and flow, up to about (momentarily) 150 scfm. Also included is an ASME coded safety relief valve on the tank set at 200 psig.

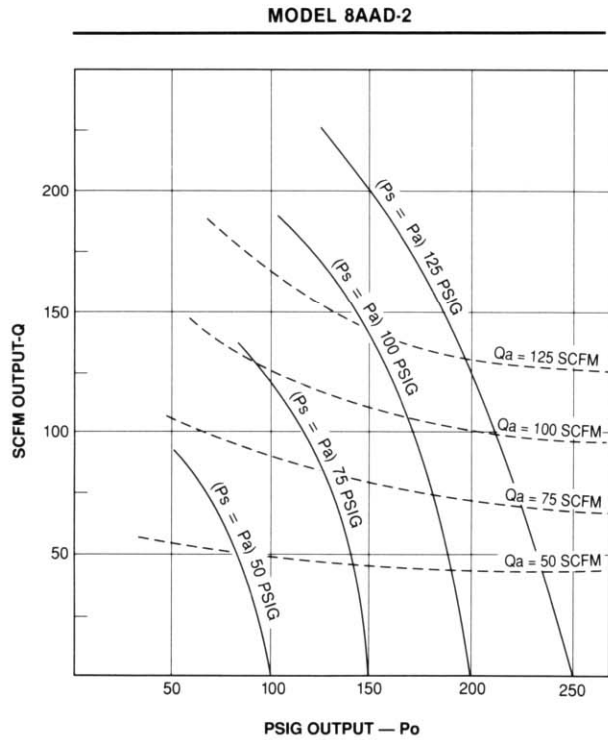


# AA SERIES DIMENSIONAL DATA

MODEL	IN-PORT	OUT-PORT	A DIM	B DIM	C DIM
AA-8	3/8" NPT	3/8" NPT	14-3/4" 325mm	9-3/4" 248mm	9-1/4" 235mm
AA-15	1/4" NPT	1/4" NPT	14-3/4" 325mm	9-3/4" 248mm	9-1/4" 235mm
AA-30	1/4" NPT	1/4" NPT	14-3/4" 325mm	9-3/4" 248mm	9-1/4" 235mm
AAD-2	3/8" NPT	3/8" NPT	16-5/8" 422mm	14" 356mm	15-1/2" 394mm
AAD-5	1/2" Tube	1/2" Tube	12-1/4" 311mm	18-1/2" 470mm	7" 128mm
AAD-15	1/4" NPT	1/4" NPT	21-5/8" 549mm	9-1/2" 241mm	9-1/8" 232mm
AAD-30	1/4" NPT	1/4" NPT	20-1/2" 521mm	9-1/2" 241mm	9-1/8" 232mm
AAT-7/30	3/8" NPT	1/4" NPT	21-1/4" 540mm	12-3/4" 321mm	9-1/8" 232mm
AAT-15/30	1/4" NPT	1/4" NPT	21-1/4" 540mm	12-3/4" 321mm	9-1/8" 232mm



# 8AAD-2 SERIES PERFORMANCE, CONTROLS & OPTIONS



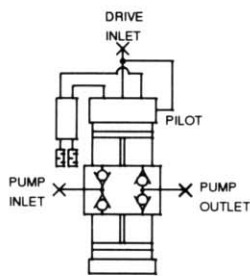
NUMBER	DESCRIPTION
-C	Air (F-R, Gauge & Valve) Controls
29125	External Pilot Modification
-MA1	29125 & Air Pilot Switch
17860	Electrical Stroke Counter
25721	Mechanical Stroke Counter
29702	Single Stroke Modification
54312	Extreme Service Cycling Mod
59790	No Load Run Away Mod
59791	59790 With Air Controls
59462	8AAD-2 With Receiver and Controls

**NOTE:** Total input air volume required =  $Q + Q_a$

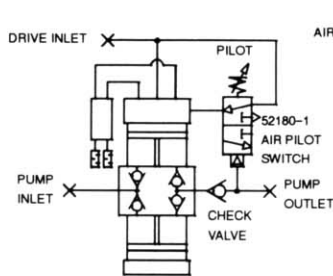
**CONVERSION:**

1 bar = 14.5 psig

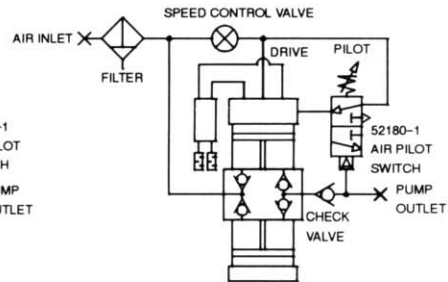
1 normal cubic meter per minute = 35.31 scfm



**BASIC 8AAD-2**



**59790-8AAD-2**



**59791-8AAD-2**

**59462**

