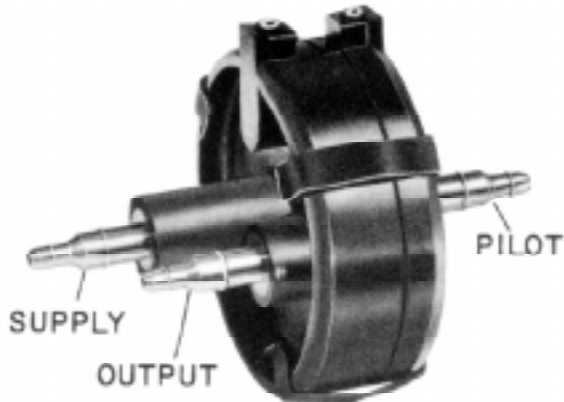


R-2080 1:1 Booster Relay

The R-2080 operates as a pneumatic repeater and volume amplifier. The pilot signal received by the R-2080 is repeated at its output at a 1:1 ratio. The pilot signal, usually from a non-relay (low volume) controller, is amplified to a large volume output signal to either improve the response time of a controlled device or to operate additional controlled devices. The R-2080 develops an accurate, direct acting 1:1 relationship between pilot and output pressures over its operating range.



**R-2080 1:1 Booster Relay
(Shown Actual Size)**

Operation

Pilot and output air chambers, of equal diameter, are on opposite sides of a single diaphragm resulting in an accurate 1:1 ratio of input to output pressure. An increase of pressure to the pilot chamber will cause the supply air valve to open. This will allow supply air to the output air chamber and the output connection. When the output pressure is equal to the pilot pressure, equilibrium is reached in the two chambers and the output pressure will be maintained until the pilot pressure changes. If the pilot pressure decreases, an exhaust port in the output chamber will be opened to exhaust the output air until both chambers again have equal pressure.

Installation

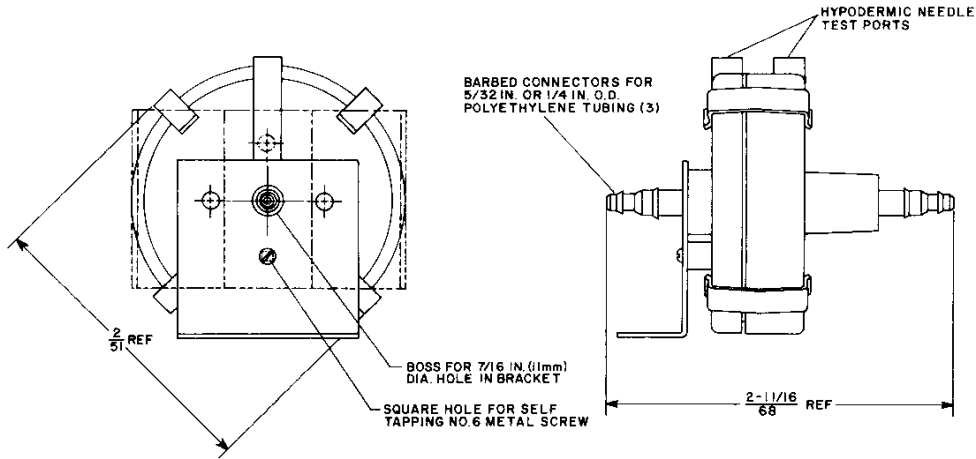
R-2080 1:1 Booster Relays are intended primarily for in-line mounting with provisions for a panel mounting bracket. Supply, output and pilot connections are marked on the instrument and are designed to accept 5/32 in. O.D. or 1/4 in. O.D. polyethylene tubing. Both output and pilot

pressures can be tested with the standard (X-200-140) hypodermic needle test probe.

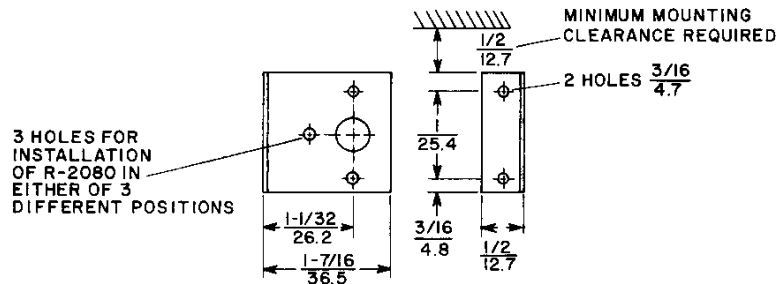
The R-2080 should be installed in a position so that test points are easily accessible for testing of chamber pressures.

Specifications

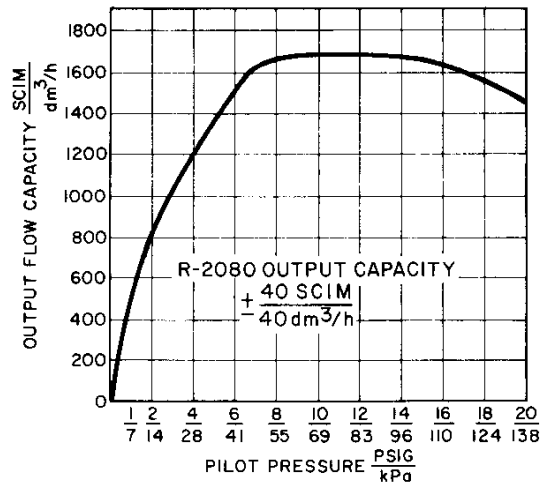
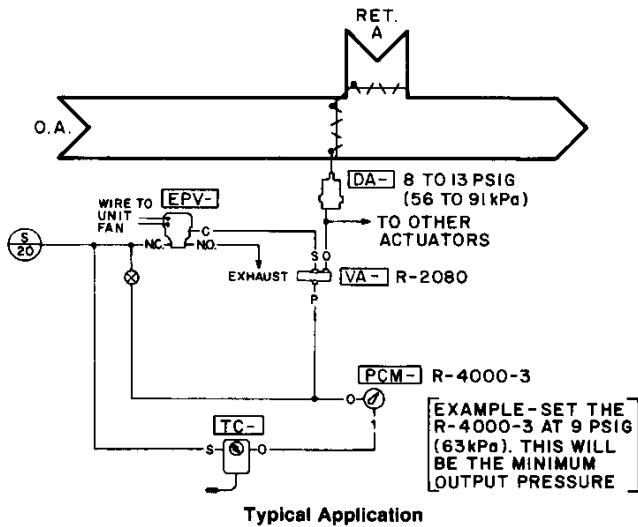
Product	R-2080 1:1 Booster Relay	
Air Connections	Supply "S" Output "O" Pilot "P"	Barbed Connectors for 5/32 in. or 1/4 in. O.D. Polyethylene Tubing
Output Capacity	See Graph on Page 2	
Accuracy	0.1 PSI (0.7 kPa) Maximum Deviation for Dead Ended Loads at 3 to 15 PSIG (21 to 105 kPa) Operating Range	
Air Consumption	10 SCIM (10 dm ³ /h) Maximum	
Maximum Supply Pressure	25 PSIG (170 kPa)	
Ambient Temperature Limits	+20 to 130F (-6 to 55C)	
Material	Body	Polysulfone (black)
	Diaphragm	Buna N Rubber
	Air Conn.	Brass
	Spring Clip	Steel
Accessory	Mounting Bracket	R-4000-100



R-2080 Dimensions $\frac{\text{in.}}{\text{mm}}$ Shown With Optional Bracket.
Drawing at Left Shows Bracket in Primary Position (Solid Lines) and Two Optional Positions (Dotted Lines).



Mounting Bracket Dimensions $\frac{\text{in.}}{\text{mm}}$



R-2080 Used to Increase the Capacity of the Low Volume R-4000-3 Minimum Position Pressure Regulator to Shorten the Response Time of the Damper Actuator or to Control Additional Actuators.

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