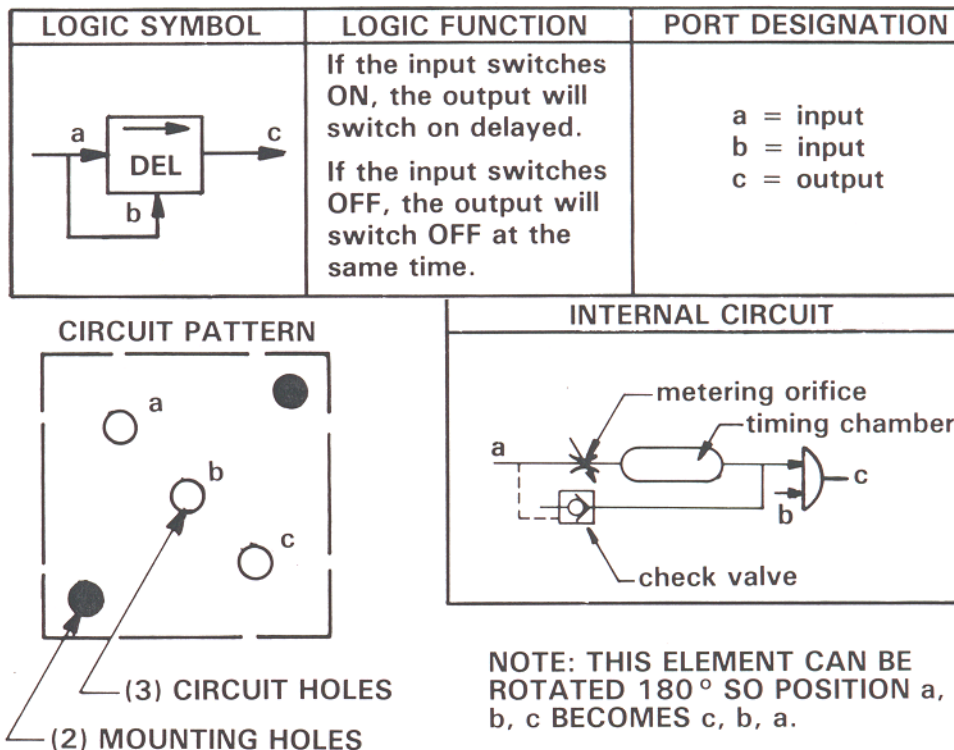
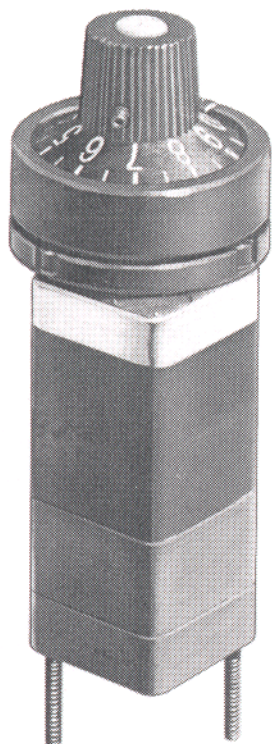


PARTS LIST

ARO® PNEUMATIC LOGIC CONTROL
LOGIC FUNCTION ASSEMBLY
TIMING ELEMENT
("TIMING IN" FUNCTION)

MODEL 59156

FORM 5784
REV. 3/88



DESCRIPTION

This element performs the logic function "TIMING IN". Delay time is .08 to 7.5 seconds. Time is measured pneumatically by filling a timing chamber through a metering orifice. Pressure rise in the chamber actuates the pilot operated valve portion of the element. The element has three bottom ports designated a,b,c, and is marked on the cover to correspond to their position on the base. These ports connect to the circuit board, or function bases, and through circuit passages in the circuit module allow the required circuitry to be performed.

OPERATING PRESSURE RANGE

30 to 150 P.S.I.G.

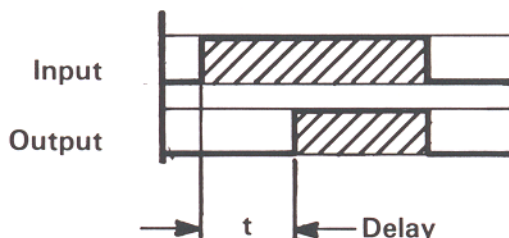
TEMPERATURE RANGE

+32°F to +160°F

FLOW CHARACTERISTIC

Flow b → c at 100 P.S.I.G. = 9.3 C.F.M. free air. Capacity factor Cv = 0.14

FUNCTION DIAGRAM

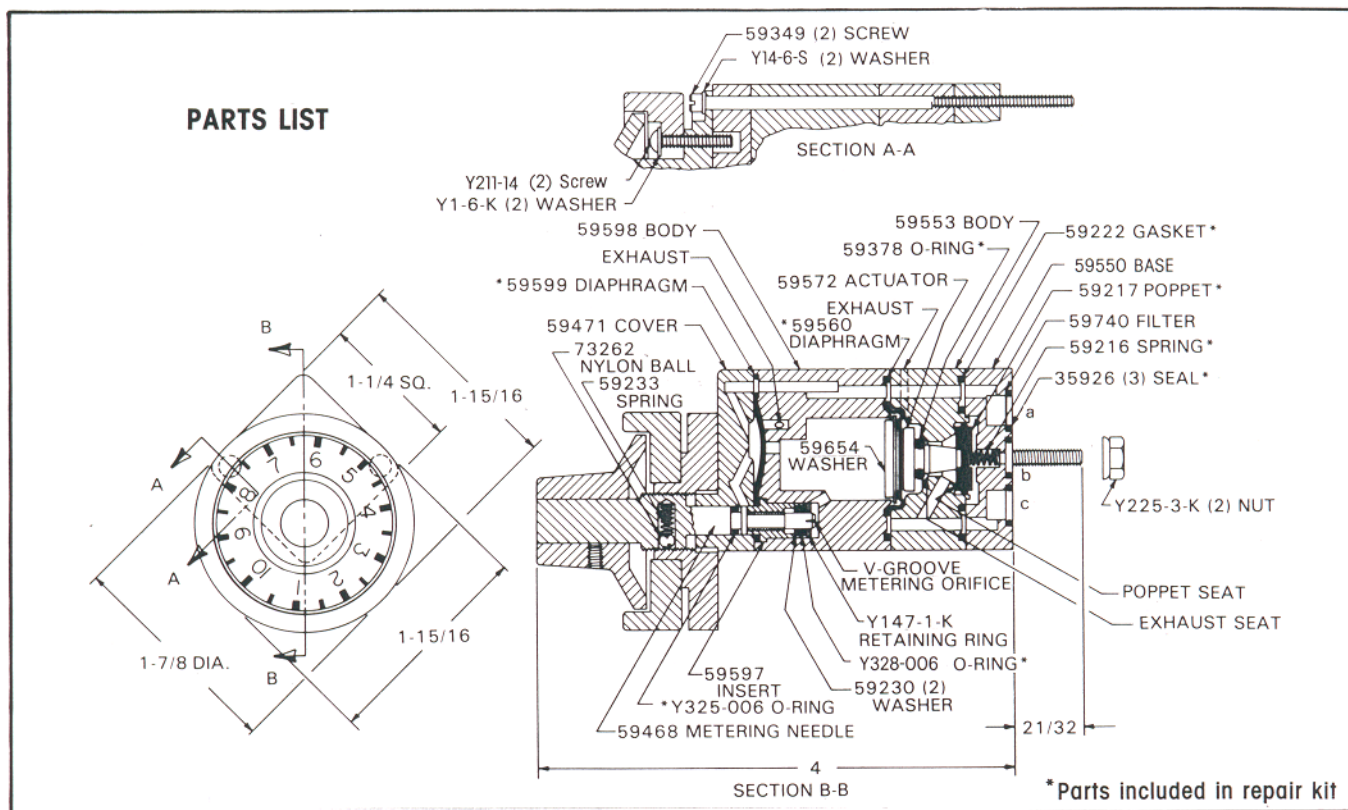


INSTALLATION

Pressure regulation is mandatory for optimum repeatability
Lubrication is not required
Filtration is mandatory to assure a clean, dry air supply for optimum repeatability.

OPERATING DESCRIPTION

When inputs a and b are off, output c is connected to exhaust. When inputs a and b are on, air pressure applied at port a is metered through a V-groove in the metering needle. The exposed depth of the groove changes as the 59468 metering needle is moved in relation to Y328-006 O-ring. Pressure in the chamber increases at a set rate. The increasing pressure on the 59560 diaphragm forces 59572 actuator and 59217 poppet downward. The 59378 O-ring closes the exhaust seat, thereby making the connection b to c. Therefore, the output c is on. The 59599 diaphragm permits flow to by-pass the metering needle when input a is discharged. The 59349 screws thread into the base to assemble the element, but also extend beyond the base for insertion into mounting holes in the circuit board assembly (or function bases). Two Y225-3-K nuts are used to attach the assembly to the circuit board. Three 35926 seals provide sealing between the circuit base plate and the element ports.

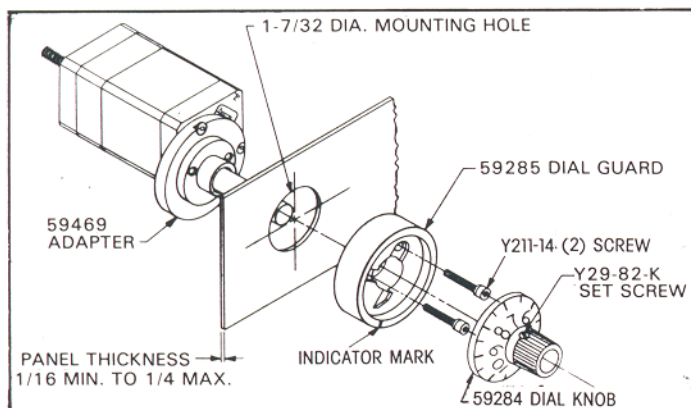


PANEL MOUNTING

To panel mount timing element, loosen Y29-82-K set screw and remove the 59284 dial knob. Remove the two Y211-14 screws and 59285 dial guard. Insert timing element through the mounting hole in the panel (from back side). Pilot diameter on 59469 adapter will align element in panel. Attach dial guard with the two Y211-14 screws. Before tightening these two screws, rotate the timing assembly until indicator mark is in the desired location. Replace the dial knob and tighten the Y29-82-K set screw. Adjust timing range as shown below.

TO ADJUST TIMING RANGE

Remove dial knob, and adjust 59468 metering needle to high limit of desired timing range. Replace dial knob so digit "10" is lined up with the indicating mark, and tighten the Y29-82-K set screw. Position knob so stop is engaged. Only one complete turn is possible.



SERVICE (Use Repair Kits No. 59573 & 59476)

In the event of a malfunction:

- Check 59560 diaphragm for rupture or defects.
- Check 59217 poppet for excessive wear or defects.
- Check 59378 O-ring for wear or rupture.
- Check poppet and exhaust seats for damage.
- Check 59222 gaskets, 35926 seals, and Y325-006 O-ring for imperfections if external leakage occurs.

For improper timing:

- Check 59599 diaphragm for rupture or defects.
- Check V-groove (metering orifice) for plugging.
- Check Y328-006 O-ring for excessive wear or defects.

Testing (element mounted on function base). Apply pressure at port a, no output should appear at port c. Apply pressure at port b, no output should appear at port c. Apply pressure at ports a and b, after a short delay the output should appear at port c, no leakage at exhaust port. Remove pressure at port a. Pressure at port c should disappear instantly.