

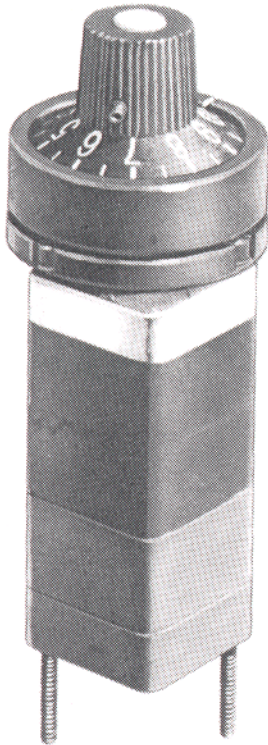
PARTS LIST

ARO® PNEUMATIC LOGIC CONTROL LOGIC FUNCTION ASSEMBLY

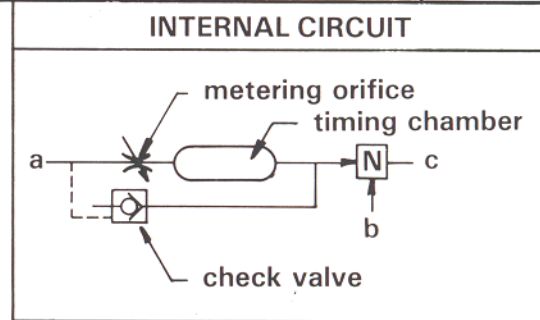
MODEL 59155

FORM 5783
REV. 3/88

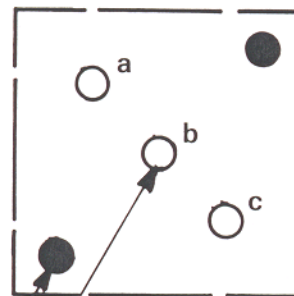
TIMING ELEMENT



LOGIC SYMBOL	LOGIC FUNCTION	PORT DESIGNATION
	If the input switches ON, the output will switch OFF delayed.	a = input b = input c = output



CIRCUIT PATTERN



(3) CIRCUIT HOLES
(2) MOUNTING HOLES

**NOTE: THIS ELEMENT CAN BE
ROTATED 180° SO POSITION a,
b, c BECOMES c, b, a**

DESCRIPTION

This element performs a pulse function, adjustable from .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 the 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.

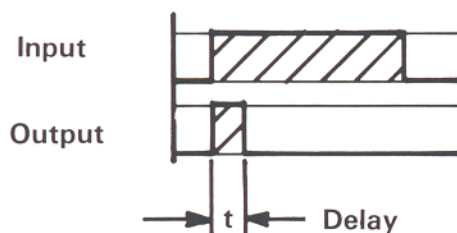
TEMPERATURE RANGE

+32 °F to +160 °F

FLOW CHARACTERISTICS

Flow **b** → **c** at 100 P.S.I.G. = 16.2 C.F.M. free air
Capacity Factor $C_v = 0.28$

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.

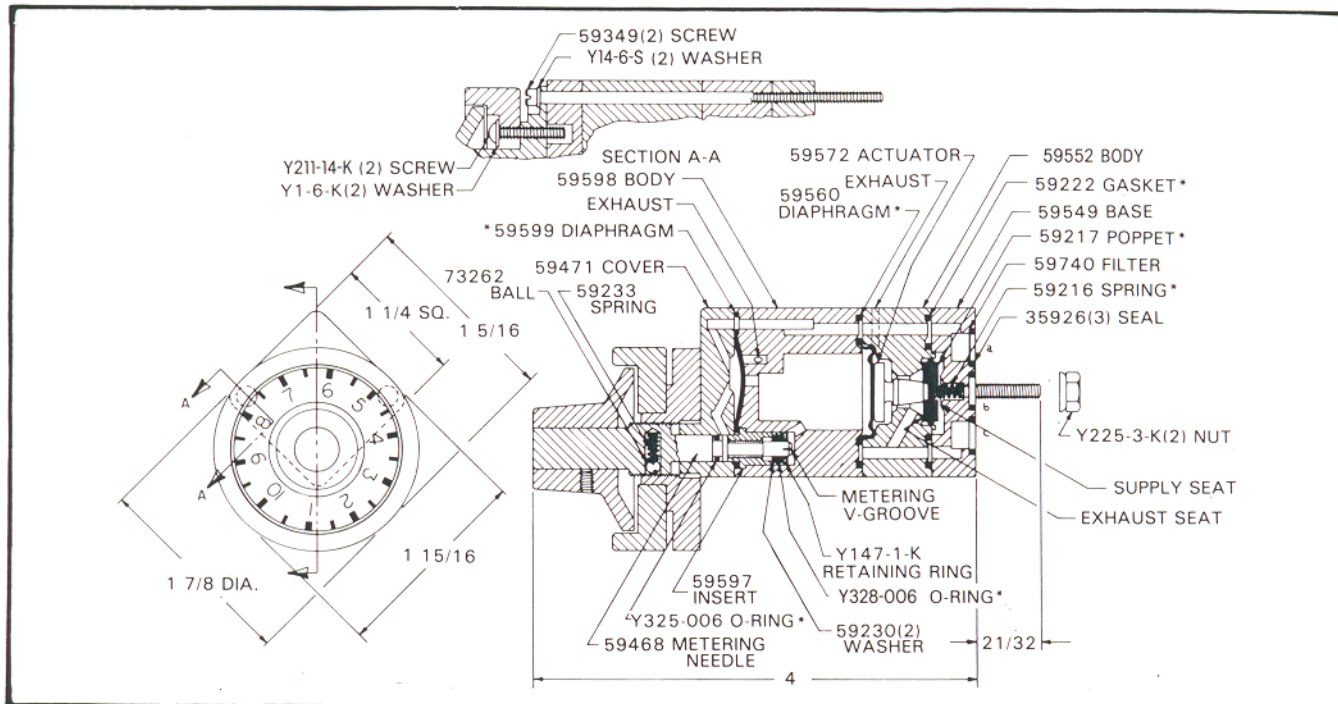
OPERATING DESCRIPTION

When inputs **a** and **b** are turned on, supply air from port **b** can pressurize output **c**. Exhaust seat is closed. Therefore, output **c** is on.

Air pressure applied at port **a** is metered through v-groove in the metering needle. The exposed depth of the groove changes as the metering needle 59468 is moved in relation to orifice seal Y328-006. Pressure in the chamber increases at a set rate. The increasing pressure on diaphragm 59560 forces actuator 59572 and poppet 59217 downward, which opens output **c** to exhaust and closes supply seat. Therefore output **c** is off (Discharged).

Diaphragm 59599 permits flow to by-pass the metering needle when input **a** is discharged.

Screws 59512 thread into the base to assemble element, but also extend beyond the base for insertion into mounting holes in circuit board assembly (or function bases). Y225-3-K nuts are used to attach assembly to circuit board. 35926 Seals provide sealing between circuit base plate and element ports.

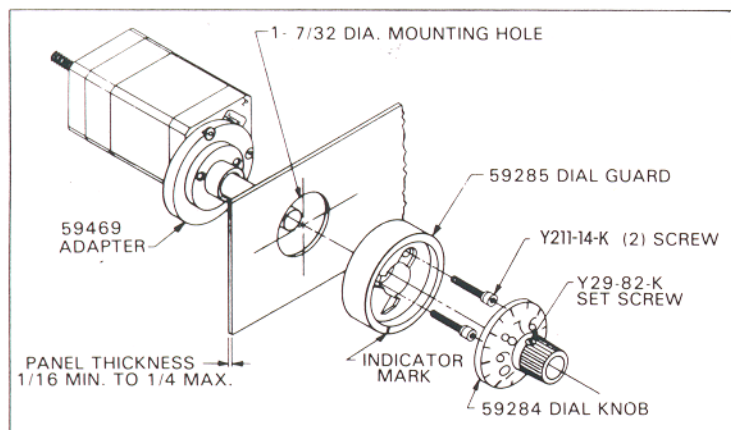


PANEL MOUNTING

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 malfunction.

Check diaphragm 59560 for rupture or defects.

Check poppet 59217 for excessive wear or defects. Check supply seat and exhaust seats for damage. Check 59222 gasket, 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 orifice seal for excessive wear or defects.

Testing (element mounted on function base)

Apply pressure at port **b**, output pressure appears at port **c**. Apply pressure at port **a** and port **b**, after a delay pressure absent at port **c**.