

PARTS LIST

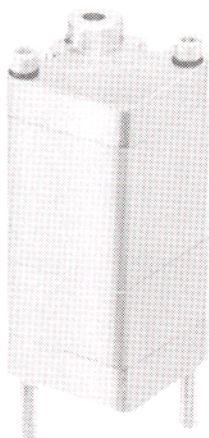
ARO PNEUMATIC LOGIC CONTROL
LOGIC FUNCTION ASSEMBLY

VIBRATOR LOGIC ELEMENT

MODEL 59890

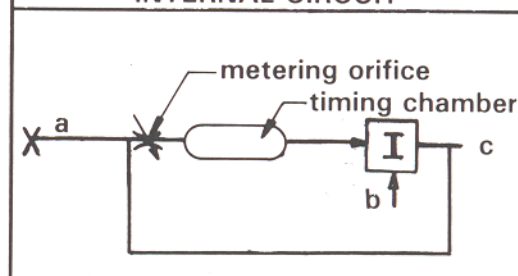
FORM 2104-2

REV. 3/88

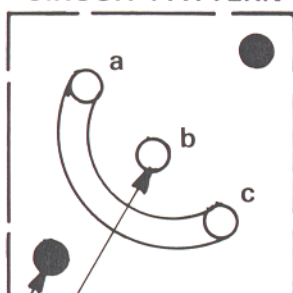


LOGIC SYMBOL	LOGIC FUNCTION	PORT DESIGNATION
	output c oscillates if supply b is on	a = pilot, connected to port c b = supply c = output

INTERNAL CIRCUIT



CIRCUIT PATTERN



(3) CIRCUIT HOLES
(2) MOUNTING HOLES

a & c must be interconnected in the circuit module

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

DESCRIPTION

The **VIBRATOR** has one input and one output. It performs an adjustable oscillator function. 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. Continuous rise and falls of pressure in the timing chamber causes an oscillating output at port c. The element has three bottom ports, designated a, b, and 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.

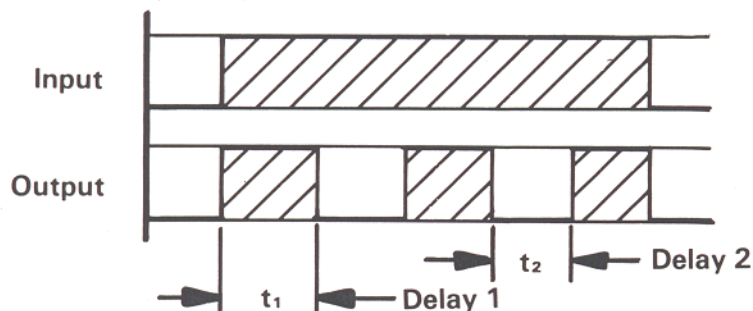
OPERATING PRESSURE RANGE

30 to 150 P.S.I.G.

TEMPERATURE RANGE

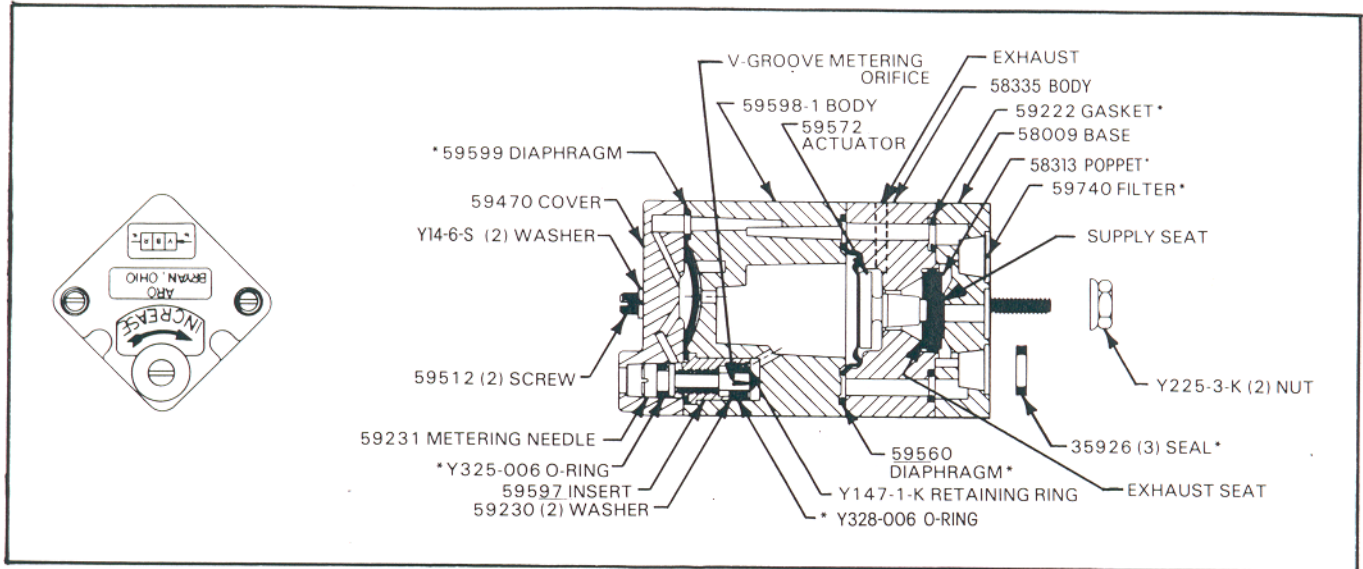
+32 °F to +160 °F

FUNCTION DIAGRAM



Delay 1 = "on" time
Delay 2 = "off" time

PARTS LIST



SERVICE (Use Repair Kits No. 58011 & No. 59476)

***Parts included in repair kit.**

OPERATING DESCRIPTION

Supply from port **b** can pressurize output **c** is channeled through a module to port **a**. The air pressure applied to port **a** is metered through a v-groove in the metering needle. The exposed depth of the groove changes as the 59231 needle is moved in relationship to the 59234 orifice seal varying the cycle time. Pressure in the chamber increases at a set rate. The increasing pressure on the 59560 diaphragm forces the 59572 actuator and 58313 poppet downward, which opens output **c** to exhaust and closes the supply seat. Therefore output **c** is off (discharged). Air pressure at port **a** is exhausted back through port **c** and the 58313 poppet is forced upward by supply pressure at port **b** starting the next cycle. This oscillation continues as long as there is a supply to port **b**. If supply pressure is removed from port **b** the output at port **c** is off simultaneously.

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

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.

SERVICE (Use Repair Kits No. 58011 & No. 59476)

In the event of a malfunction:

Check 59560 diaphragm for ruptures or defects.

Check 58313 poppet for excessive wear or defects.

Check supply seat and exhaust seats for damage.

Check Y325-006 O-ring, 35926 Seals, 59599 diaphragm, and 59222 Gasket for imperfections if external leakage occurs.

Check for proper connection between port **c** and port **a**.

For improper timing:

Check 59599 diaphragm for rupture or defects.

Check seat-diaphragm for damage.

Check V-groove (metering orifice) for plugging.

Check Y328-006 orifice seat for excessive wear or defects.

Testing (element mounted on function base)

Port **a** must be connected to port **c** by module.

Apply pressure at port **b**, output oscillates off and on at port **c**.

Cycle time is variable by adjusting the metering needle.

Remove pressure at port **b**. Oscillating output at port **c** disappears instantly.