

PARTS LIST

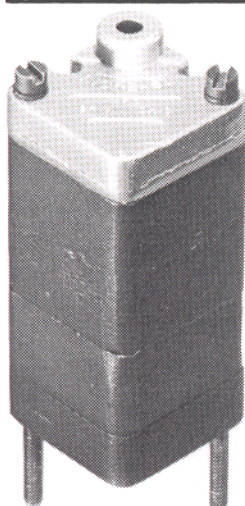
ARO PNEUMATIC LOGIC CONTROL LOGIC FUNCTION ASSEMBLY

59166-

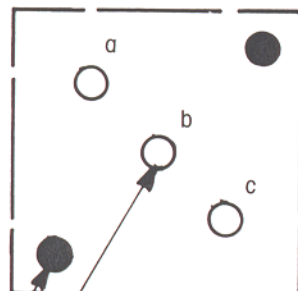
FORM 5926

REV. 3/88

TIMING ELEMENT — FIXED DELAY



CIRCUIT PATTERN

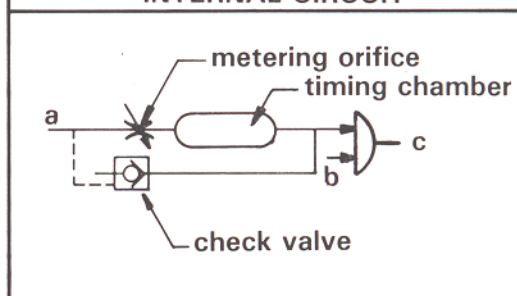


(3) CIRCUIT HOLES

(2) MOUNTING HOLES

LOGIC SYMBOL	LOGIC FUNCTION	PORT DESIGNATION
	<p>If the input switches ON, the output will switch ON delayed.</p> <p>If the input switches OFF, the output will switch OFF at the same time.</p>	<p>a = input</p> <p>b = input</p> <p>c = output</p>

INTERNAL CIRCUIT



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

DESCRIPTION

This element performs the logic function "TIMING IN". Delay time is fixed. Time is measured pneumatically by filling a timing chamber through a metering orifice. Pressure rises in the 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. The ports connect to the circuit board, or function bases, and through circuit passages in the circuit module allows the required circuitry to be performed.

OPERATING PRESSURE RANGE

30 to 150 P.S.I.G.

TEMPERATURE RANGE

+32° to +160°F

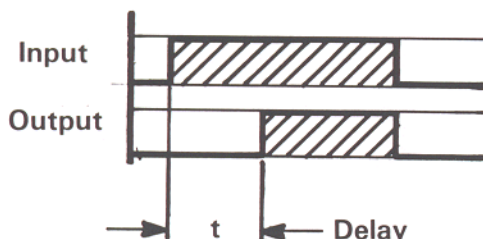
FLOW CHARACTERISTIC

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

DELAY CHARACTERISTICS

Typical delays with inputs of 100 P.S.I.G.
t (ms.) measured at 65% of supply pressure.

FUNCTION DIAGRAM



MODEL NO.	DELAY (MS.)
59166-1	95 ± 10
59165-2	145 ± 15
59166-3	255 ± 30
59166-4	450 ± 40

INSTALLATION

Pressure regulation is mandatory for optimum repeatability.

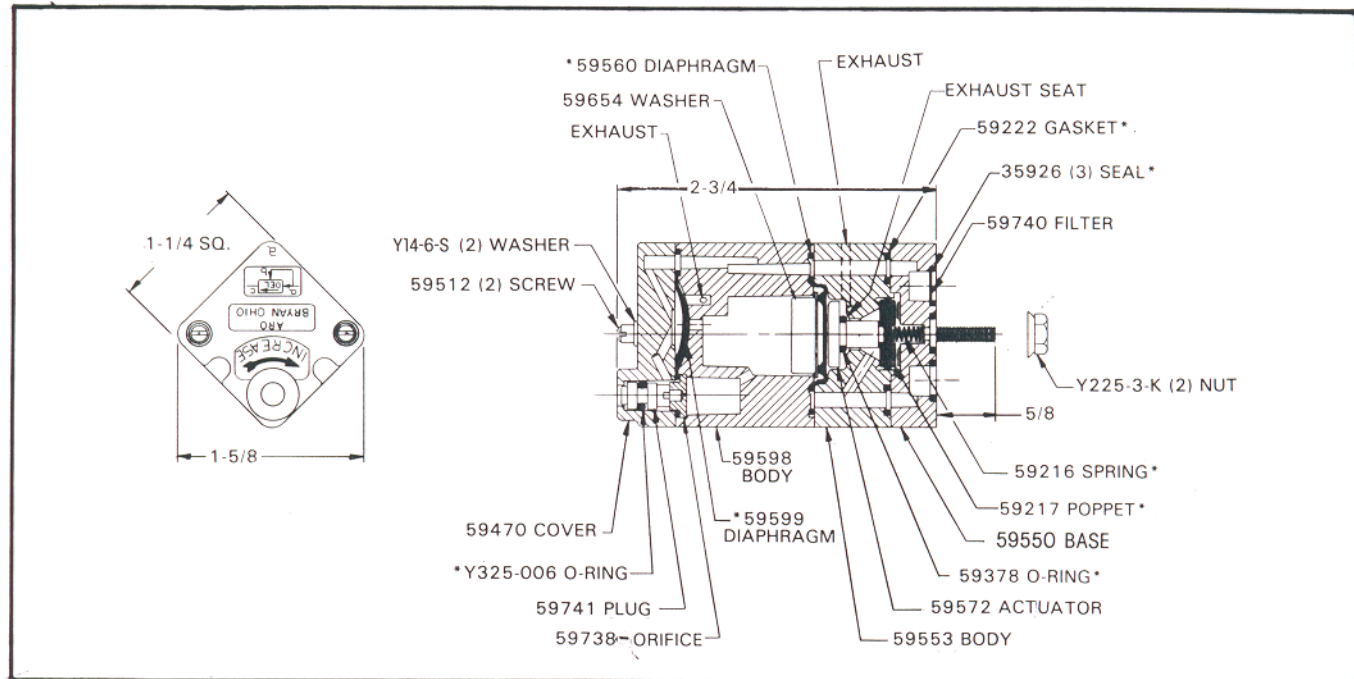
Lubrication is not required.

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 an orifice. Pressure in the chamber increases at a set rate. The increasing pressure on 59560 diaphragm forces 59572 actuator and 59217 poppet downward. 59358 o-ring closes the exhaust seat, thereby making connection **b** to **c**. Therefore, the output **c** is on. 59599 diaphragm permits flow to by-pass the metering orifice when input **a** is discharged. 59512 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.

PARTS LIST



*Parts included in repair kit

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 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 metering orifice for plugging.

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.