

# PARTS LIST

## ARO PNEUMATIC LOGIC CONTROL LOGIC FUNCTION ASSEMBLY

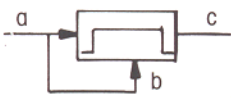
MODEL 59165-

FORM 5925

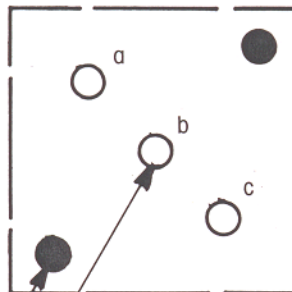
REV. 3/88

### TIMING ELEMENT — FIXED DELAY



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

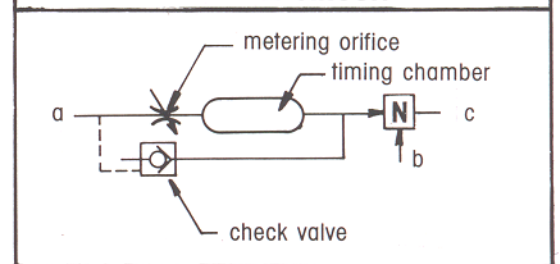
#### CIRCUIT PATTERN



(3) CIRCUIT HOLES

(2) MOUNTING HOLES

#### INTERNAL CIRCUIT



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

#### DESCRIPTION

This element performs a pulse function. Time is measured pneumatically by filling a timing chamber through a metering orifice. Pressure rise in the chamber actuates the piston operated valve portion of the element. The element has three bottom ports, designed 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.

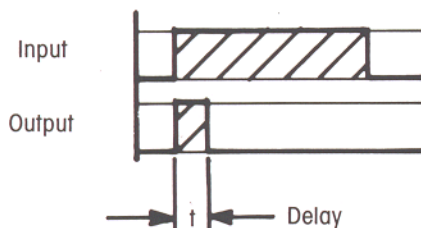
#### TEMPERATURE RANGE

+32° to +160°F

#### FLOW CHARACTERISTICS

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

#### FUNCTION DIAGRAM



#### DELAY CHARACTERISTICS

Typical delays with inputs of 100 P.S.I.G.  
t (ms) measured at 35% of supply pressure

MODEL NO.	DELAY (MS.)
59165-1	95 ± 10
59165-2	145 ± 15
59165-3	225 ± 30
59165-4	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

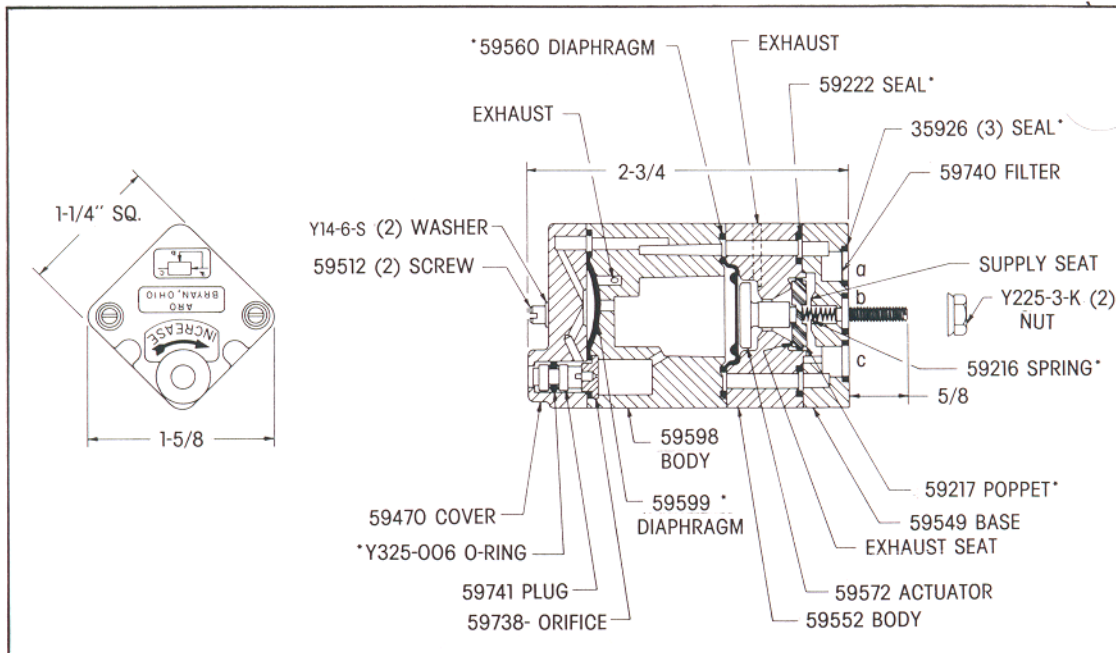
When inputs **a** and **b** are turned on, supply air from port **b** can pressurize output **c**. Exhaust seat is closed, therefore, output **c** is on. Air pressure applied at port **a** is metered through an orifice. Pressure in the chamber increases at a set rate.

The increasing pressure on diaphragm 59560 forces actuator 59572 and poppet 59217 downward, which opens output **c** to exhaust and closes the supply seat. Therefore, output **c** is off (discharged).

Diaphragm 59599 permits flow to by-pass the metering orifice when the 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 the circuit board. 35926 seals provide sealing between the circuit base plate and element ports.

## PARTS LIST



\*Parts included in Repair Kit

## SERVICE (Use Repair Kits No. 59573 & 59476)

In the event of a malfunction;

Check diaphragm 59560 for rupture or defects.

Check poppet 59217 for excessive wear or defects.

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