Filter/Clone® DUST CONTROL SYSTEMS

AT-1000 PNEUMATIC TIMER

PERFORMANCE AND OPERATING INSTRUCTIONS

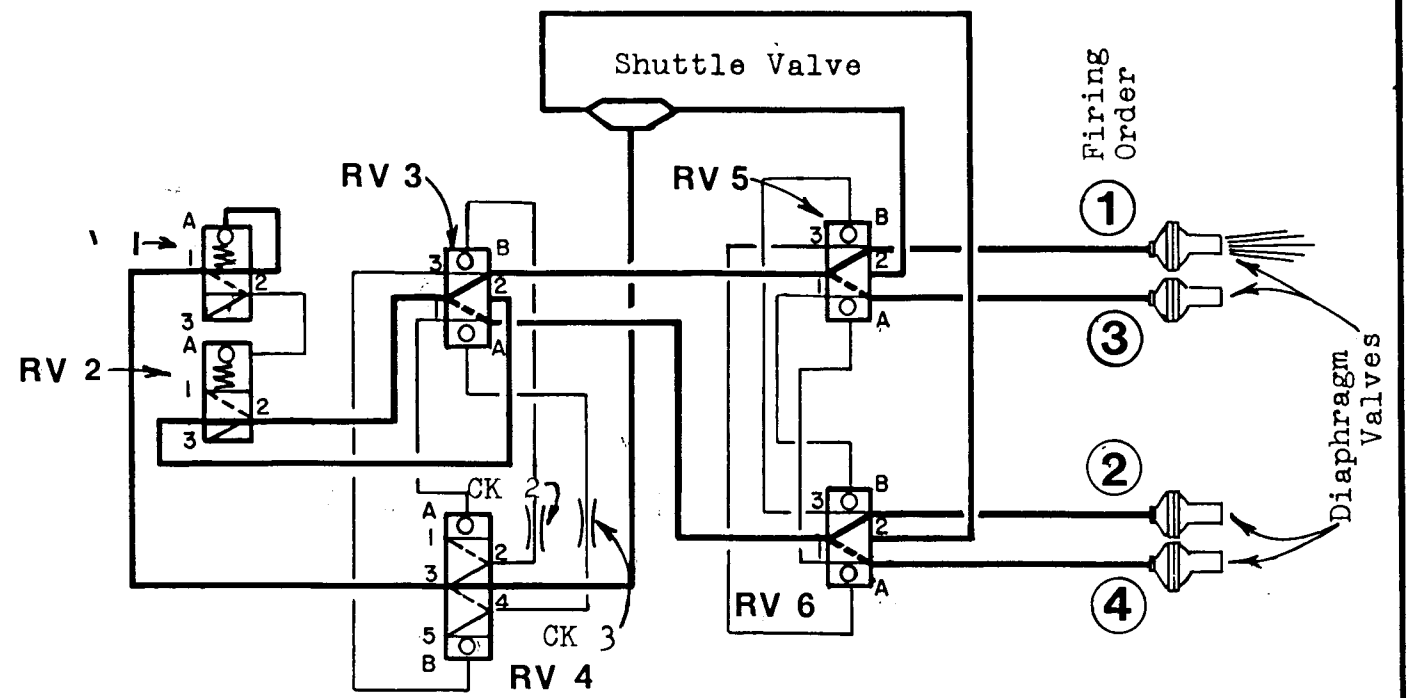
All FILTER/CLONE Dust Collectors are equipped with the AT-1000 air-logic timer to provide sequential back-pulsing of filter elements. The timer consists of a series of pilot-operated three-way and four-way pneumatic valves interconnected by polyurethane tubing, and also connected to the dust collector's pressure manifold via the four impulse valves. The timer is shown schematically and pictorially on the attached drawing.

Operation of the timer can be summarized as follows:

1. Pressure from the manifold is applied equally to both sides of the diaphragm in the impulse valve, thus keeping the valve seated and transferring air into the timer.
2. As pressure builds in the system, the spring loaded RV1 shifts position, applying pressure to the pilot A of RV2. This pressure shifts RV2 and exhausts air through port 1, which in turn exhausts the air from the interconnecting tubing back to one of the diaphragm valves (through RV3 and either RV5 or RV6).
3. As air is exhausted, pressure on top of the diaphragm in one of the impulse valves is reduced, allowing the valve to unseat and discharging air from the manifold through the filter element in a direction opposite the normal direction of air flow. When system pressure drops sufficiently, the spring in RV1 returns the valve to its original position, and pressure begins building again. The diaphragm valve thus remains open only a fraction of a second, but during that interval air is discharged at a very high rate to insure proper cleaning of the filter.
4. Interconnecting tubing between pilots of RV3 and RV4, and between RV5 and RV6 causes the valve spools to change position when air is exhausted and thus changes the path of air flow during the succeeding fill-exhaust cycle. Thus, the diaphragm valves are opened sequentially at regulated intervals.

The AT-1000 timer is virutally maintenance-free. If problems should arise, it is generally preferable to replace the timer, rather than attempt to repair it. Before deciding to replace the timer, however, the following trouble-shooting procedures should be performed:

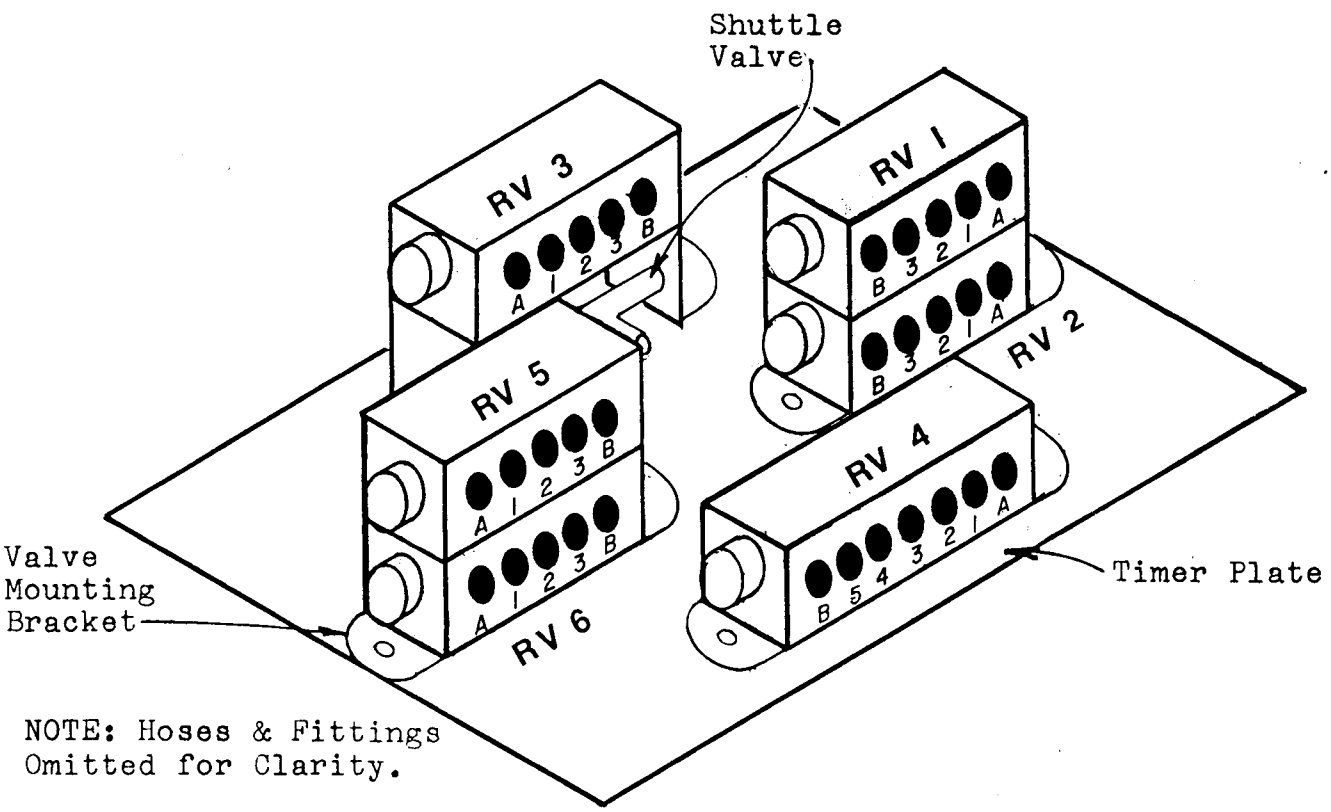
1. Check impulse air pressure - 40 to 50 psig minimum is required to shift RV1 to initiate the pulsing cycle.
2. Inspect all hosing on the timer to determine if hose has been crimped, cracked, or punctured. Be sure all hoses are securely attached to the proper fittings.
3. Inspect the timer to insure that no plugs have blown out or worked loose.
4. Operate each 3-way and 4-way valve manually several times to insure that the valve spool is not being restricted by the mounting bracket.
5. Inspect impulse air to determine whether moisture, drill oil, or other foreign substances are being properly removed by the impulse air filter.



Primary Air Supply Line

Pilot Supply Line

HOSING SCHEMATIC



NOTE: Hoses & Fittings Omitted for Clarity.

ISOMETRIC VIEW

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AT-1000
PNEUMATIC TIMER