

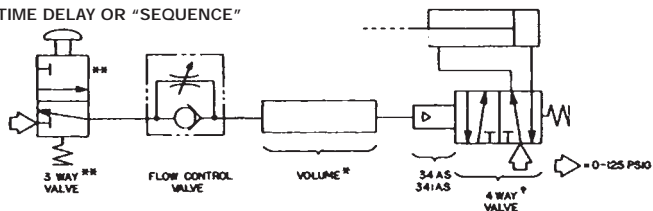
# Humphrey® TAC VALVE CIRCUITS

## “Time Delay” or “Sequence”

Circuit provides delay between functions.

Maintained actuation of 3-way valve supplies pilot pressure through SC1 valve and volume chamber at controlled rate, resulting in slowly building (Time Delay) of pilot pressure upon actuator (34/341AS). When actuation pressure of actuator is achieved, actuator shifts 4-way valve and extends cylinder. Cylinder remains extended until 3-way valve is released and pilot system is exhausted. Note: Rate of cycling of this circuit may be limited to the time required to exhaust pilot system.

TIME DELAY OR “SEQUENCE”



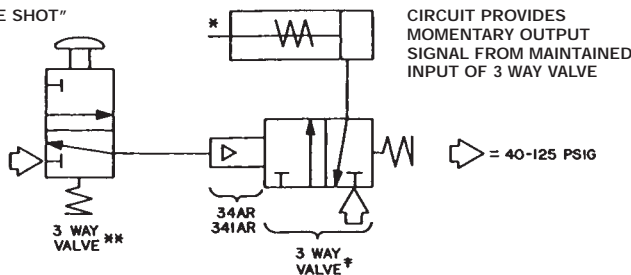
\* One cubic inch of volume equals approximately two seconds delay.  
† Valve used with 34AS or 341AS actuator must be TAC Series but can be either 2-, 3- or 4-way depending on work function (Double Acting Cylinder shown).  
\*\* Valve used can be any 3-way or from one side of any 4-way.

## “One Shot”

Circuit provides momentary output signal from maintained input signal of 3-way valve.

Maintained actuation of manual 3-way valve\*\* supplies pilot pressure to actuator (34/341AR) which actuates 3-way valve† and extends cylinder. Actuator automatically resets and permits valve to de-actuate, even though pressure to actuator is maintained. 3-way valve\*\* must be released and pilot system exhausted before another output can be generated.

“ONE SHOT”

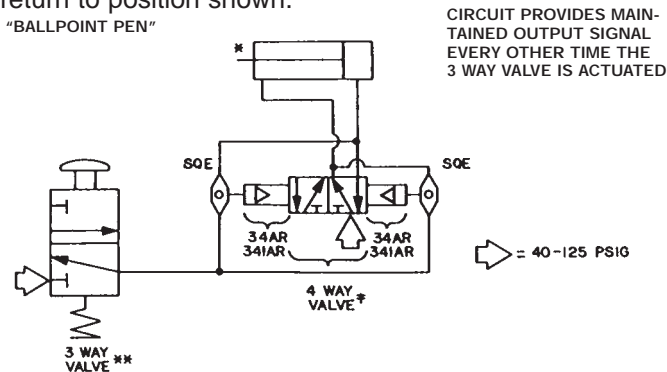


\* Single acting cylinder shown.  
\*\* Valve used can be any 3-way or from one side of any 4-way.  
† Valve used with 34AR or 341AR operator must be TAC Series, but can be 2-, 3-, or 4-way depending on work function.

## “Ballpoint Pen”

Circuit provides a maintained output signal every other time the 3-way valve is actuated.

Momentary actuation of 3-way valve supplies pressure to both shuttle valves (SQE). Right-hand shuttle and operator (34AR) will be pressurized and rest due to pressure from 4-way valve. Left-hand shuttle and operator shift 4-way valve to opposite position and extend cylinder. Cylinder remains extended until 3-way valve is released and re-actuated causing circuit to return to position shown.



\* Double acting cylinder shown. Single acting cylinder can be used.  
† Valve used with 34AR or 341AR operator must be TAC Series 4-way model: 4PP, 41PP, or 42PP.  
\*\* Valve used can be any 3-way or from one side of any 4-way.

## TROUBLESHOOTING

Circuit malfunction problems are normally caused by circuit design errors, insufficient or slow building of pressure, improper lubrication, or contaminated air supplies.

It should be determined conclusively that it is in fact the valve that is causing a malfunction. Often it is other components or factors.

1. Insure presence of pressure; blocked or defective fittings are frequent causes of circuit start-up problems.
2. Insure adequate duration of pilot signal to air pilot operators.
3. Insure proper stroke of manual, mechanical, or air pilot operators. See specific model description.
4. Insure that contamination does not cause improper valve/actuator stroke. **Note:** Model 34/341AR and 34/341ASR can accumulate water under the actuator piston if air system is contaminated with water.