

innovation in irrigation™

**NELSON**800 SERIES CONTROL VALVE — CONTROL FUNCTION and MAINTENANCE  
**MANUAL ON-OFF****Valve Control Function:**

The MANUAL ON-OFF model of the 800 Series Control Valve is a hydraulically operated sleeve type valve with a manual control function. The MANUAL ON-OFF control is used to open or close the valve. The flow through the valve is controlled by a rubber sleeve which is actuated by hydraulic pressure. The valve is either in the fully opened or the closed (*shut off*) position. The "AUTO" position on the selector has no effect on valve control but is used when the valve is equipped with automatic controls. The manual selector can be used to hold the valve partly open by opening the valve part way and then pointing the selector handle midway between "OPEN" and "CLOSE".

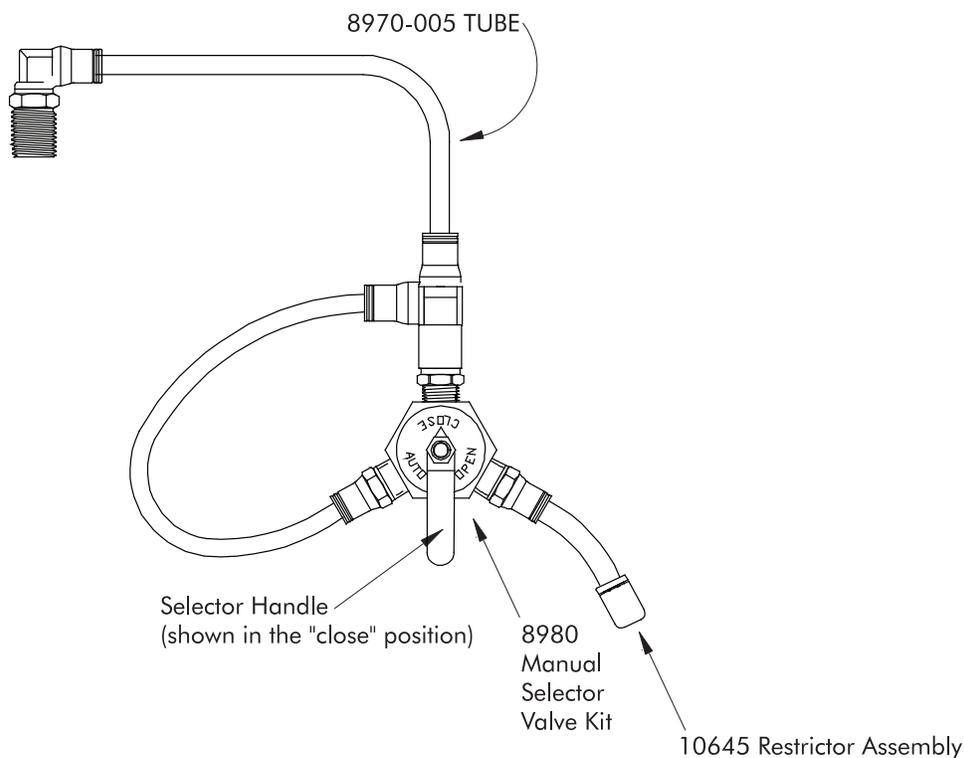
The information on this sheet is for the MANUAL ON-OFF control function with plastic tubing (*items D1 and H1 on the VALVE SELECTION GUIDE apply to this sheet.*)

**MANUAL SELECTOR**

See reverse side  
for trouble shooting  
information

**FLOW DIRECTION**

UPSTREAM —————> DOWNSTREAM



**SYMPTOM:** Valve will not open or has excessive pressure drop when the manual selector valve is in the "OPEN" position.

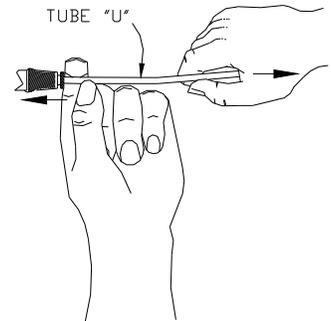
- CHECK ITEMS:**
- ✓ Check all tube lines and fittings for blockages and kinks. If there are no obstructions then check that upstream pressure is adequate. The 200 psi rated valve starts to open at 8 psi and is fully open at 30 psi. The 80 psi rated valve starts to open at 10 psi and is fully open at 18 psi. The 50 psi rated valve starts to open at less than 8 psi and is fully open at 10 psi.
  - ✓ Check the total volume of water in the sleeve chamber to verify that the valve is between full open and full closed. This water volume can be measured as it flows from the "OPEN" port. (See table below for volume of each valve size.) If there is still a large pressure drop across the valve, then debris could be blocking the flow on the upstream side of the cage. This type of obstruction will require removing the valve from the line and cleaning out the debris.

WATER VOLUME REQUIRED TO FULLY OPEN OR CLOSE VALVE	
8"	4 quarts
6"	2 quarts
4"	1 pint
3"	1 cup
2"	5 oz. (145ml)

NOTE: Be sure to drain the system to reduce the potential of winter freeze damage.

**SYMPTOM:** Valve will not close when the manual selector valve is in the "CLOSE" position.

- CHECK ITEMS:**
- ✓ Check for leaks on all tube lines and fittings. If it is necessary to remove any control tube lines from the fittings then use opposing force as shown here. Pull the tube while pressing in the opposite direction on the fitting ring.
  - ✓ Check that water can flow through the tube "U" which connects the upstream (high pressure) side of the main valve to the "CLOSE" port of the manual selector valve. Refer to the control function diagram. If little or no flow, find the reason for the blockage and clear it.



**CAUTION! BE CAREFUL TO SHUT DOWN PRESSURE ON THE SYSTEM BEFORE SERVICING THIS VALVE! IF THE VALVE IS CLOSED AND UNDER PRESSURE, THEN DISCONNECTING THE CONTROL TUBE "U" (8970-005) WILL CAUSE RAPID OPENING OF THE VALVE! SYSTEM DAMAGE COULD OCCUR!**

- ✓ Check the filter (if one is present) to assure it can pass adequate water flow. This can be deceptive because when you unhook the line from the filter some water can still flow. A partially blocked filter will reduce the valve closing response time. If little or no flow is present then clean the filter.
- ✓ Check the sleeve for damage. To do this, point the manual selector valve to the "OPEN" position. A total volume of two quarts of water (see table above) should flow from the sleeve chamber through the "OPEN" port. If more than this volume of water continues to flow, then the sleeve has been punctured and must be replaced.