



Installation Instructions

Flo-Pro™ Male Globe Valve Series

Introduction

The Toro Flo-Pro valve series is designed for ease of installation, operation and service.

To ensure proper installation and optimum valve performance, please read through the following instructions completely before starting the installation procedure.

Note: Valve installation must be in compliance with all applicable local plumbing and electrical codes.

Specifications

Operating Pressure Range: 20 – 150 psi (1.4 – 10.6 kg/cm²)

Flow Range: .25 – 30 GPM

Opening Time: 5 Seconds (max.)

Closing Time: 60 Seconds (max.), less than 10 Seconds (typical)

Friction Loss -

@ 10 gpm (38 lpm) - Less Than 5 PSI (.35 kg/cm²)

@ 20 gpm (76 lpm) - Less Than 7 PSI (.49 kg/cm²)

@ 30 gpm (151 lpm) - Less Than 12 PSI (.84 kg/cm²)

Solenoid: Quick Link™

- 24 VAC nom., 19 VAC (min.), 50/60 Hz

- Inrush Current @ 60 Hz: .300 Amps, (max.) @ 24 VAC

- Holding Current @ 60 Hz: .200 Amps, (max.) @ 24 VAC

- Inrush Current @ 50 Hz: .300 Amps, (max.) @ 24 VAC

- Holding Current @ 50 Hz: .200 Amps, (max.) @ 24 VAC

- Control Wiring Accepted (Quick-Link™): 12 – 20 Gauge solid core or 12 – 16 Gauge stranded

Dimensions: 5-1/2 in. H x 4 in. L x 3-1/4 in. W (14 cm H x 10 cm L x 8 cm W)

Installation Procedure

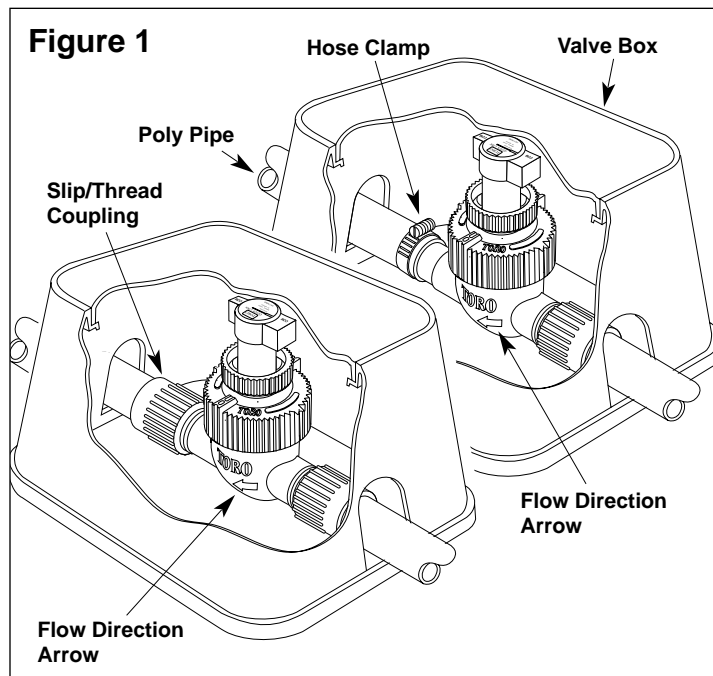
1. Flush valve supply line thoroughly to remove all dirt and debris.
2. Using a 1 in. (25 mm slip/thread coupling, install inlet side of valve to 1 in. (25 mm) PVC or ABS supply line. **Observe flow direction arrow on side of body.** See Figure 1.

Note: Valve box installation enables valve(s) to be easily located and serviced as well as providing additional protection.

CAUTION

Use only Teflon tape on pipe connection to valve. Pipe dope or similar compounds will damage valve body threads.

3. Install sprinkler line to valve outlet. For threaded fitting, connect as in step 2. For barbed fitting, slip hose clamp onto 1 in. (25 mm) poly pipe, push pipe onto valve fitting (completely covering barbs), position clamp and tighten securely.



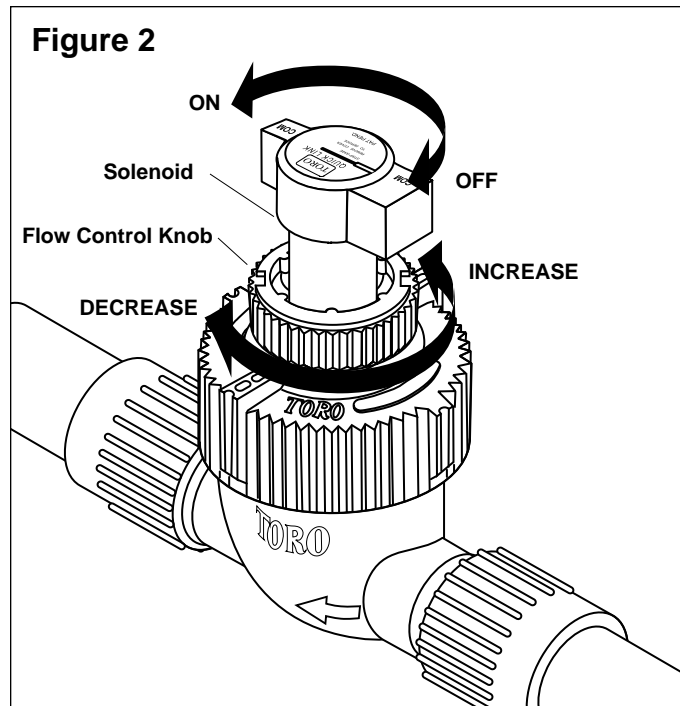
Adjusting Flow Control (Flow Control Models Only)

Adjustable flow control enables downstream flow rate and pressure to be adjusted for optimum sprinkler operation.

Note: The solenoid is designed to turn with the flow control knob. Therefore, flow adjustment should be made before installing the valve control wires.

1. To manually activate valve, turn solenoid counterclockwise 1/2 turn while holding flow control knob stationary.
2. Turn flow control knob clockwise to decrease flow or counterclockwise to increase flow (allowing solenoid to turn with knob). See Figure 2.
3. When flow is properly adjusted, hold flow control knob stationary and turn solenoid clockwise to close valve (do not overtighten).

Note: Valve may take up to 60 seconds to close when operated manually.



Connecting Control Wires

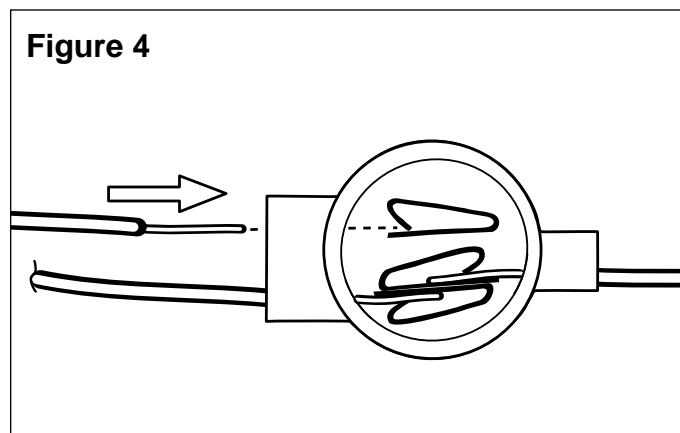
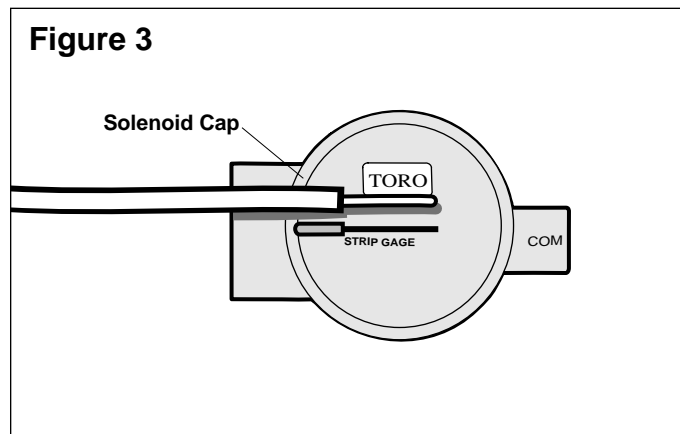
1. Route a control wire and a common wire to valve location. Leave at least 12 in. (30.4 cm) slack in wires at valve to prevent binding.
2. Non-Quick-Link Solenoids Only:
Attach control and common wires to solenoid leads using an approved waterproof splicing method.

Quick-Link Solenoids Only:

Using Strip Gauge located on top of solenoid cap, mark proper amount of insulation to be removed. Carefully remove insulation using wire strippers to prevent nicking or cutting exposed wire lead. See Figure 3.

Note: To avoid fraying and loose connections, twist stranded wire tightly prior to insertion into solenoid.

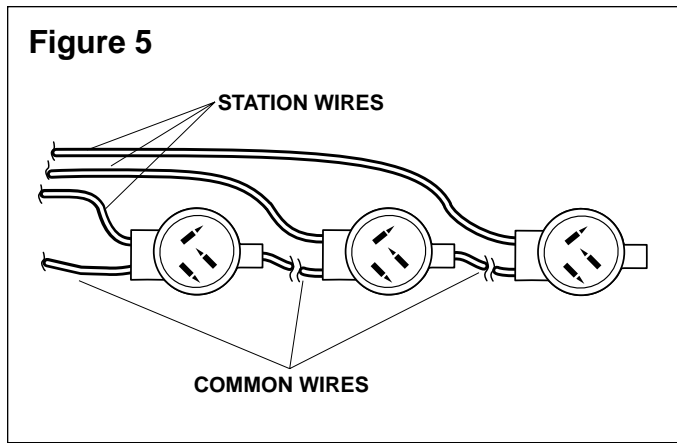
3. Remove solenoid cap.
4. Insert station and common wire(s) into solenoid as shown in Figure 4. Pull lightly on wires after insertion to confirm retention in solenoid.



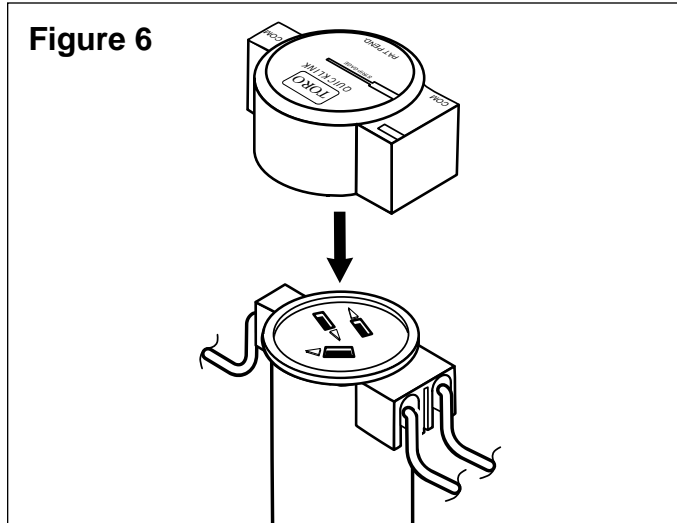
(continued)

5. Connect common wires to multiple valve installation as shown in Figure 5.

Note To enable solenoids to be turned for manual operation, common wires should be at least 6 in. (15.2 cm) longer than distance between solenoid connections.



6. Bend wires down and install solenoid cap as shown in Figure 6.



Removing Control Wires

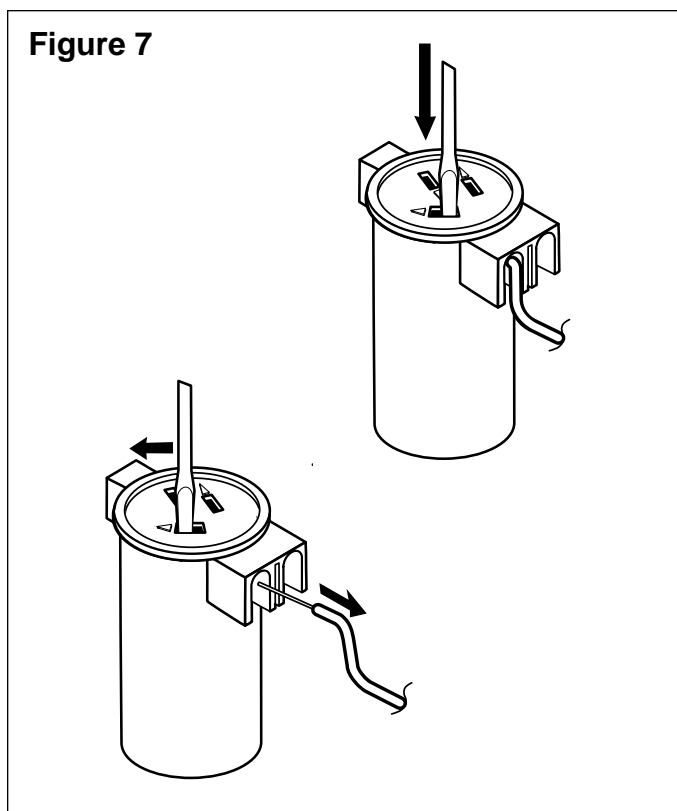
Three small slots, located on the top of the solenoid assembly, provide access to the wire retention clips. An arrow, located on one end of each slot, indicates the direction in which the retention clip must be pressed to release the wire. A 1/8 in. (3 mm) flat blade screwdriver or similar tool will be required for this procedure.

1. Remove solenoid cap.
2. Using a clean cloth, remove all excess sealant from top of solenoid.
3. Locate slot directly over wire to be removed. Insert screwdriver blade behind edge of retaining clip and apply pressure in direction of arrow. While pushing clip, pull outward on wire to remove. See Figure 7.

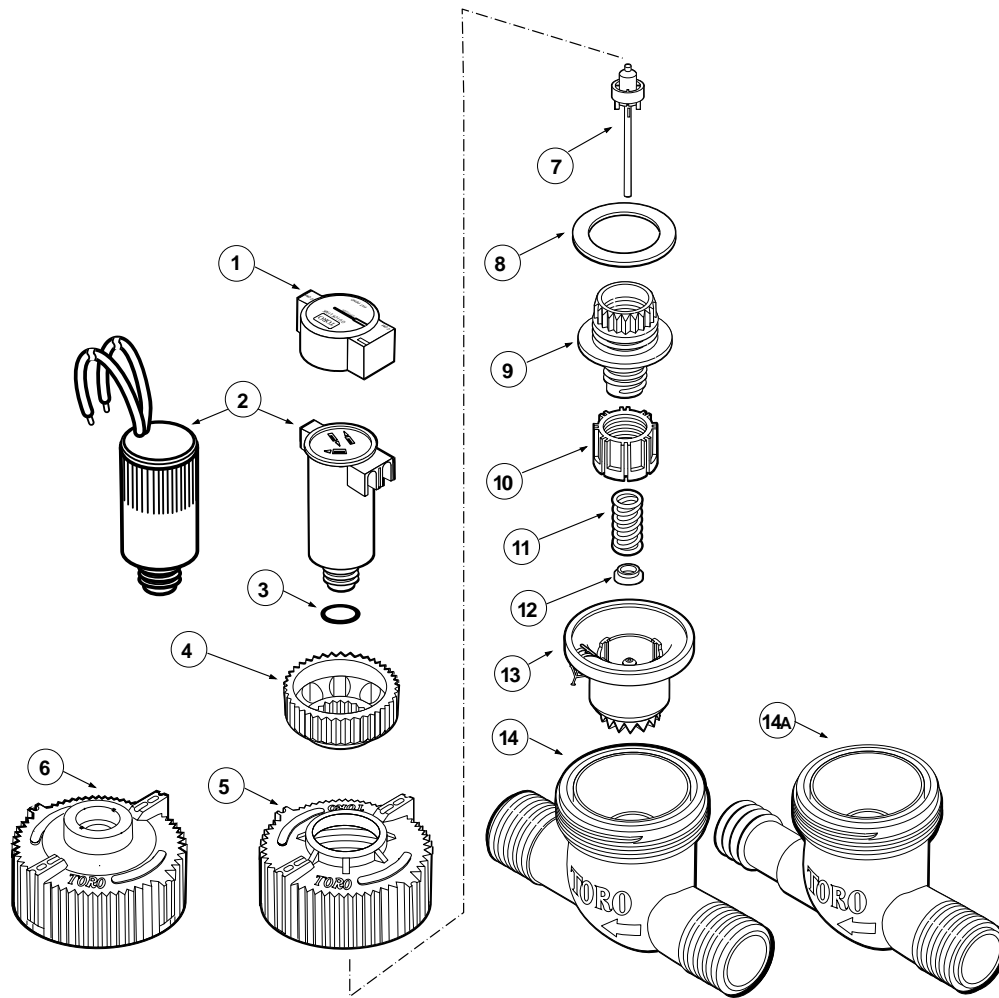
CAUTION

Forcibly removing wires can permanently damage solenoid. Little or no resistance on wire will be felt if removal procedure is performed correctly.

4. Install solenoid cap.



Flo-Pro Series, 1 Inch Male



Item No.	Part No.	Nomenclature	Quantity Per Assy.
1	89-0880	Cap, Solenoid	1
2	89-0889	Solenoid Assy. w/o Wires (Includes Item 3)	1
2	89-0114	Solenoid Assy. w/Wires (Includes Item 3)	1
3	363-3138	O-Ring, 1/6 in. x 5/8 in.	1
4	35-8292	Knob (Flow Control Models)	1
5	35-9987	Cap (Flow Control Models)	1
6	35-9986	Cap (w/o Flow Control)	1
7	89-0069	Seat Assy., Discharge	1
8	89-1155	Washer, Teflon (Flow Control Models)	1
9	35-0142	Stem Assy. (Includes Item 10 and O-Ring, Flow Control Models)	1
10	35-8294	Nut (Flow Control Models)	1
11	89-2042	Spring, Diaphragm (Flow Control Models)	1
12	89-3423	Bearing, Spring Sleeve (Flow Control Models)	1
13	89-9861	Diaphragm Assy. (Rubber, w/Black Center Cup)	1
14	35-8192	Body Assy., 1 in., M x M NPT	1
14	35-8226	Body Assy., 1 in., M x M BSP	1
14A	35-8227	Body Assy., 1 in., M x B NPT	1
		SERVICE PARTS AND ASSEMBLIES	
	89-4104	Drip Kit, Flow Control (Includes Items 9, 11 and 12)	
	89-0993	Diaphragm Assy., Old Style (Red Debris Arrestor, w/White Center Cup)	

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