Flo-Pro™ Globe/Angle Valve Series

Installation Instructions

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 (.95 – 114 lpm)

Opening Time: 5 Seconds (max.)

Closing Time: 60 Seconds (max.), 5 – 10 Seconds (typical)

Manual Flow Control: Adjustable To Zero Flow

Manual Bleed Control: Downstream, Internal Bleed Operation

Within 1/2 Turn of Solenoid from Closed Position

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 (114 lpm) - Less Than 12 PSI (.84 kg/cm²)

Solenoid:

- 24 VAC nom., 19 VAC (min.), 50/60 Hz
- Inrush Current @ 50/60 Hz: .300 Amps, (max.) @ 24 VAC
- Holding Current @ 50/60 Hz: .200 Amps, (max.) @ 24 VAC
- Control Wiring Accepted (Quick-Link™): 12 –20 Gauge Solid Core or 12 – 16 Gauge Stranded

Dimensions: 6-3/8 in. H x 4-1/4 in. L x 3-1/4 in. W (16.2 cm H x 10.8 cm L x 8.3 cm W)

Installation Procedure

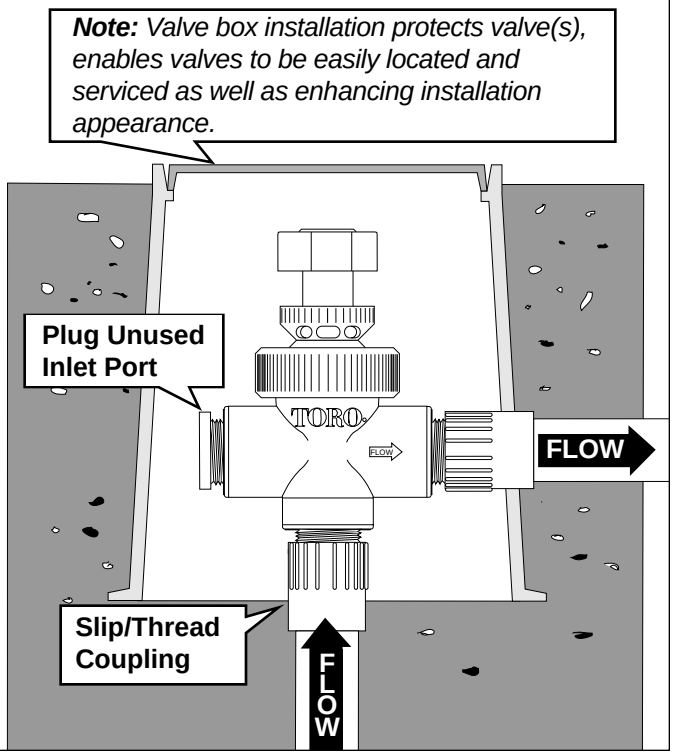
1. Apply Teflon™ tape to two 1 in.(13mm) slip/thread couplings and supplied pipe plug.

   CAUTION

   Use only Teflon tape. Pipe dope or similar compounds will damage valve body threads.

2. Observe flow direction arrow on side of valve body. Note that two inlet ports are provided. Install threaded coupling into inlet port best suited for your installation and seal remaining inlet port with pipe plug. Install threaded coupling into valve body outlet. Assure all fittings are tightened securely *but not over-tightened*.
3. Flush valve supply line thoroughly to remove all dirt and debris.
4. Using proper plastic pipe cement materials and application technique, attach valve to supply line. *Allow sufficient time for cement to cure before applying water pressure to valve.*
5. Install sprinkler lateral line to valve outlet.

Figure 1



Adjusting Flow Control

(Flow Control Models Only)

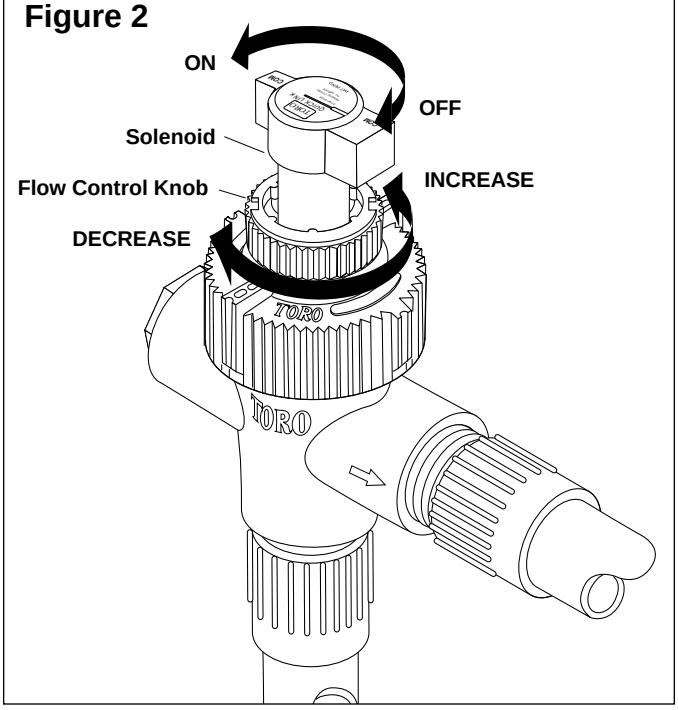
Adjustable flow control enables downstream flow rate and pressure to be adjusted for optimum sprinkler operation.

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: *Typically, valve will close within 5 – 10 seconds. However, valve may take up to 60 seconds to close when manually operated.*

Figure 2



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.

Figure 3

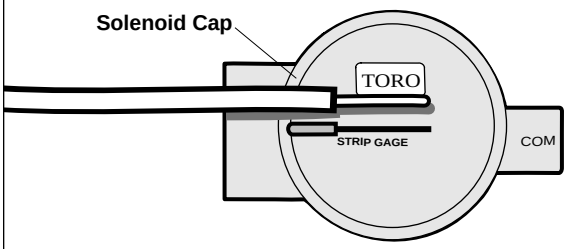
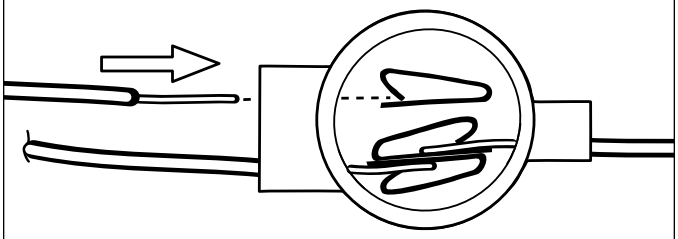


Figure 4

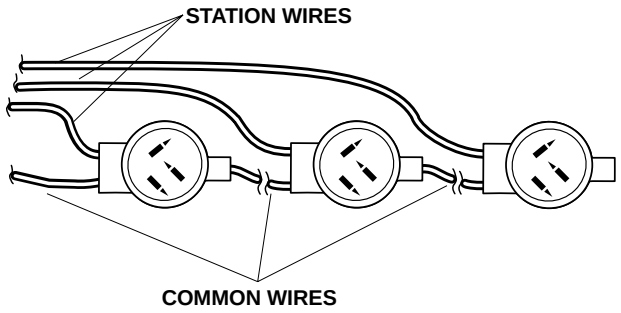


(continued)

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

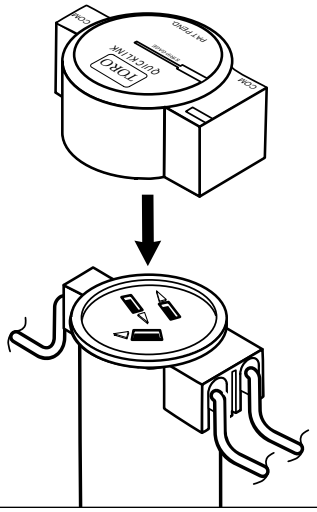
   Note *To enable solenoids to be turned for manual operation, common wires should be at least 6 in. (15.2. cm) longer than distance between solenoid connections.*

Figure 5



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

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.

Figure 7

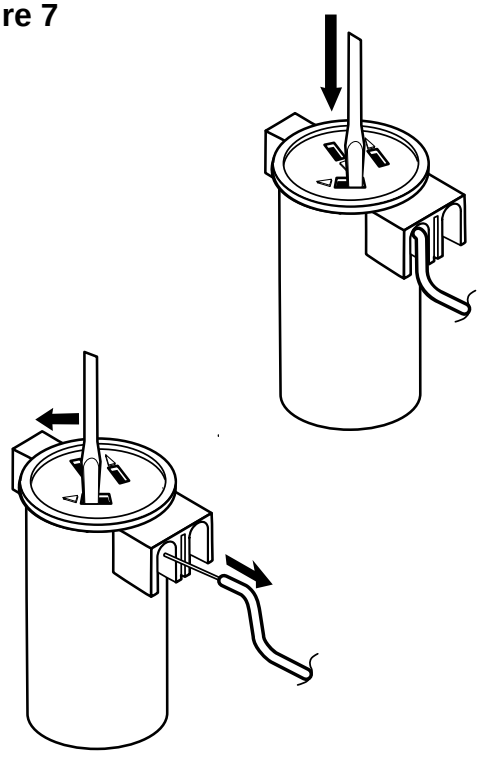
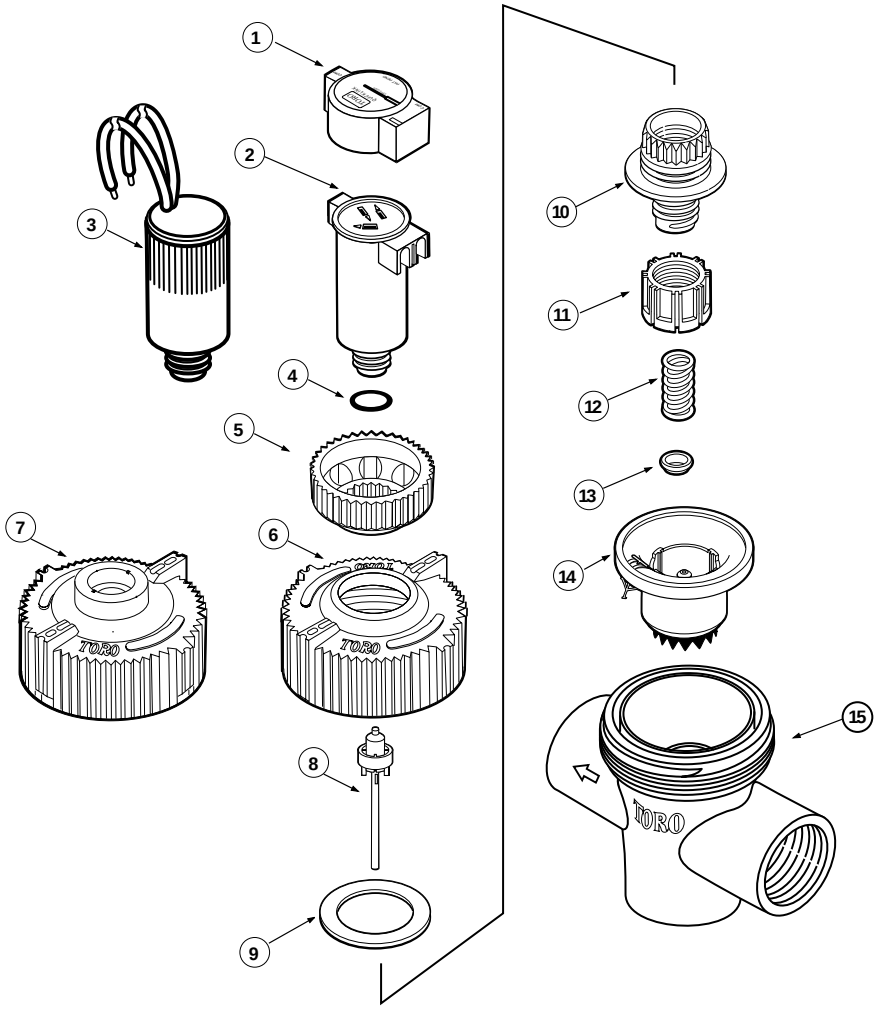


Figure 8 Flo-Pro Series, 1 Inch Globe



Item No.	Part No.	Nomenclature	Quantity Per Assy.
1	89-0880	Cap, Solenoid	1
2	89-0889	Solenoid Assy. w/o Wires	1
3	89-0114	Solenoid Assy. with Wires	1
4	363-3138	O-Ring, 1/6 in. x 5/8 in. i.d.	1
5	35-8292	Knob (Flow Control Models)	1
6	35-8289	Cap (Flow Control Models)	1
7	35-8193	Cap (w/o Flow Control)	1
8	89-0069	Seat Assy., Discharge	1
9	89-1155	Washer, Teflon (Flow Control Models)	1
10	89-0142	Stem Assy. (Includes Item 11 and O-Ring, Flow Control Models)	1
11	35-8294	Nut (Flow Control Models)	1
12	89-2042	Spring, Diaphragm	1
13	89-3423	Bearing, Spring Sleeve (Flow Control Models)	1
14	89-0993	Diaphragm Assy. (Includes Red Debris Arrestor)	1
15	89-0117	Body Assy., 1 in., F x F x F NPT	1
15	89-0118	Body Assy., 1 in., F x F x F BSP	1
		SERVICE PARTS AND ASSEMBLIES	
	89-4104	Drip Kit, Flow Control (Includes Items 9, 11 and 12)	

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