



# Installation Instructions Flo-Pro® 1" & 3/4" Anti-Siphon Valve

## Introduction

The Toro Flo-Pro Anti-Siphon Valve is a combination Atmospheric Vacuum Breaker (AVB) and electrically-actuated control valve designed for ease of installation, operation and service.

The AVB portion of the valve is designed to help prevent back-siphoning of contaminants into the potable water supply. Therefore, proper installation is essential. Please read through the instructions completely and comply with all safety requirements.

## Specifications

Operating Pressure Range: 20–150 psi (1.4–10.6 kg/cm<sup>2</sup>)

Flow Range: .5–30 GPM (1.9–114 lpm)

Opening Time: 5 Seconds (max.)

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

Friction Loss:

@ 10 gpm (38 lpm) — Less than 5.5 PSI (.39 kg/cm<sup>2</sup>)

@ 20 gpm (76 lpm) — Less than 8 PSI (.56 kg/cm<sup>2</sup>)

@ 30 gpm (114 lpm) — Less than 12 PSI (.84 kg/cm<sup>2</sup>)

Solenoid:

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

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

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

- Control Wiring Accepted (QuickLink™): 12–20 AWG solid-core or 12–16 AWG stranded

Dimensions: 6 3/4" H x 6 3/4" L x 3 1/4" W (17 cm H x 17 cm L x 8 cm W)

## Backflow Prevention Requirements

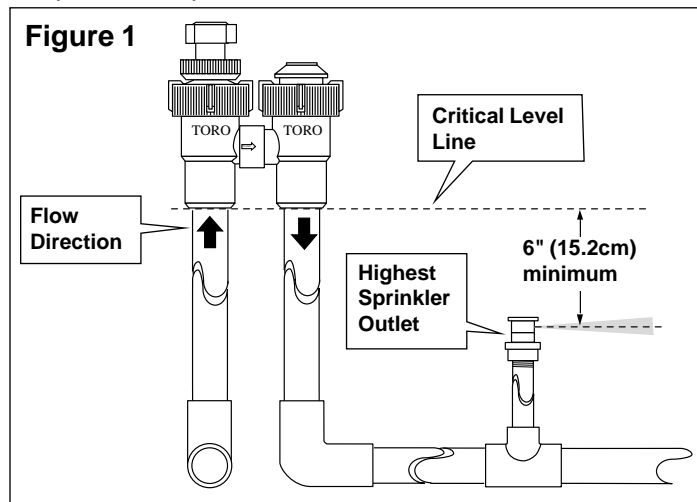
Ensure the following requirements, in addition to all local code requirements, are met when installing the Flo-Pro Anti-Siphon valve:

- The installed height, measured from the Critical Level line (valve base), must not be less than 6" (15.2cm) above the highest downstream outlet controlled by the valve.
- The AVB valve must not be subject to standing water which can rise to less than 6" from the base of the valve.
- The AVB valve must not be installed indoors (some spillage may occur) or in a valve box below ground level.
- The installation site must be accessible to allow inspection and servicing.
- Additional control valves must **not** be installed downstream of the AVB.
- The AVB valve must be installed vertically with the top of AVB cap level.
- The valve must not be operated continuously for more than 12 hours in any 24-hour period.

## Installation Procedure

1. Flush valve supply line thoroughly to remove all dirt and debris.
2. Install valve to 1" (25mm) or 3/4" (19mm) threaded pipe (depending on model) observing flow direction arrow on side of body. See **Figure 1**.

**CAUTION: Use only Teflon™ tape on threaded valve connections. Pipe dope or similar thread sealant compounds will damage plastic threads.**



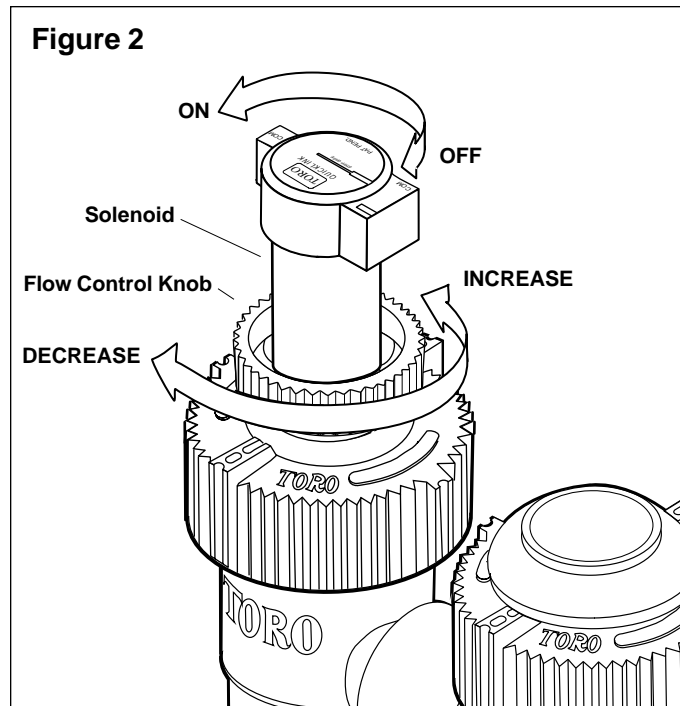
## Adjusting Flow Control

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. With flow properly adjusted, hold flow control knob stationary while turning 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" (30.4cm) slack in wires at valve to prevent binding.

**Wired (Non-QuickLink) Solenoids Only:**

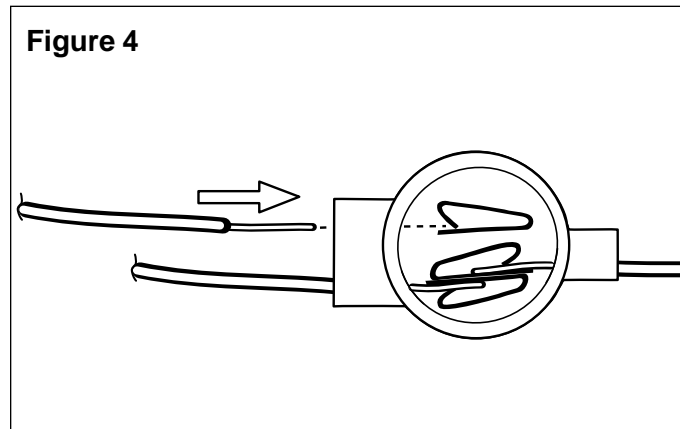
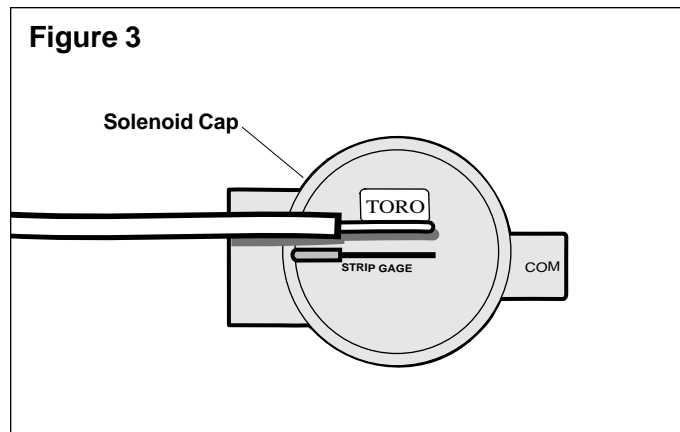
2. Attach a control wire to either solenoid lead and a common wire to the remaining solenoid lead using an approved waterproof splicing method.

**Quick-Link Solenoids Only:**

2. 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.

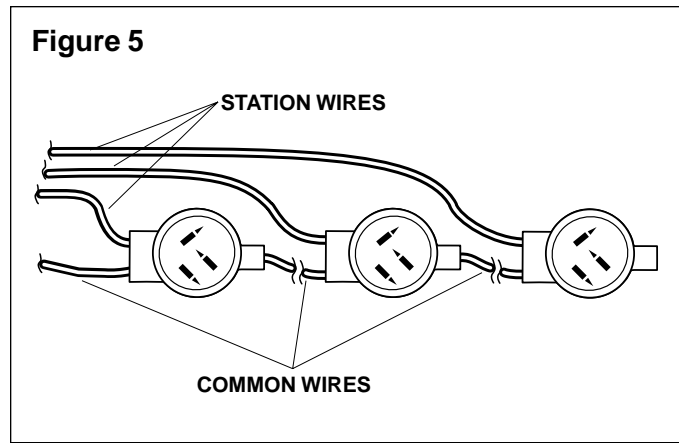
3. Remove solenoid cap.
4. Insert station and common wire(s) into solenoid as shown in **Figure 4**. Pull lightly on wires after insertion to make sure wires are securely connected.



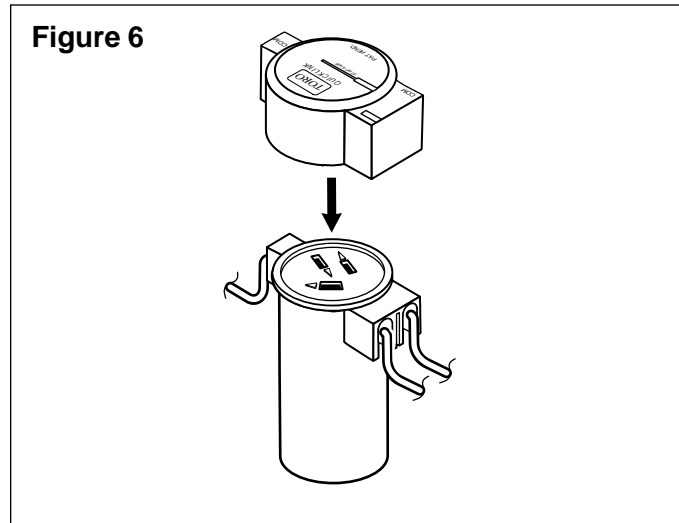
(continued)

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

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



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



### Removing Control Wires (QuickLink™ Solenoid)

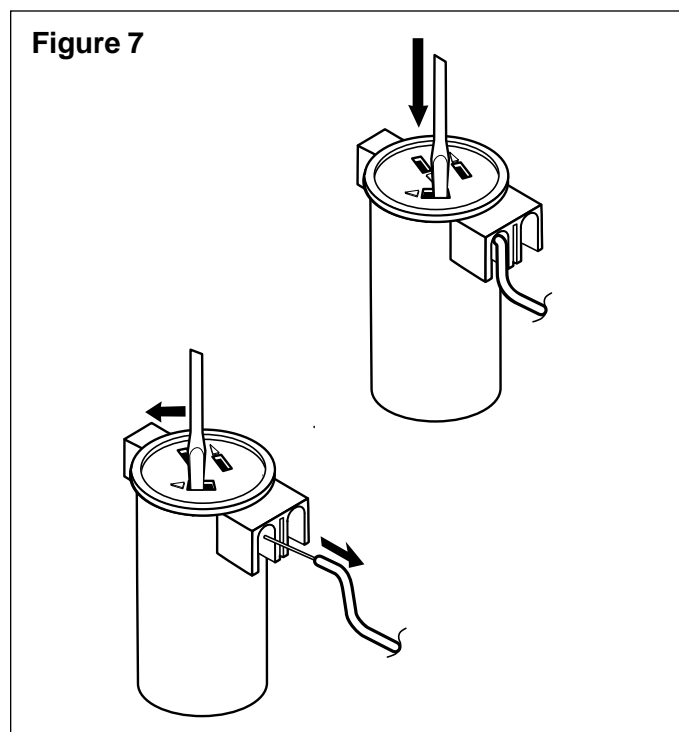
Three small slots, located on the top of the solenoid assembly, provide access to the wire retention clips. Each slot has an arrow on one end indicating which direction the retention clip must be pressed to release the wire. A 1/8" (3mm) slotted screwdriver will be required for this procedure.

- Remove solenoid cap.
- Using a clean cloth, remove any excess sealant from top of solenoid.
- 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**.

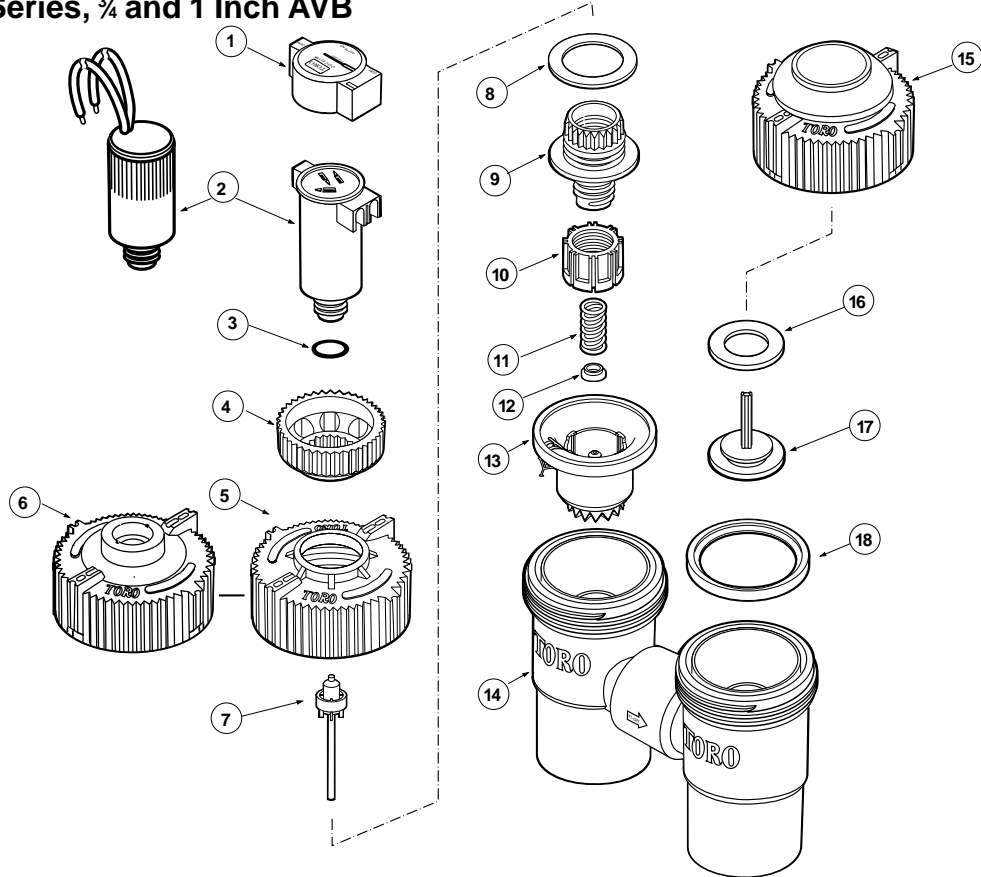
#### CAUTION

**Forcibly removing wires can permanently damage solenoid. If wire removal procedure is performed correctly, little or no resistance on wire will be felt.**

- Install solenoid cap.



# Flo-Pro Series, 3/4 and 1 Inch AVB



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, .070" x .614"	1
4	35-8292	Knob (Flow Control Models)	1
5	35-8289	Cap (Flow Control Models)	1
6	35-8289	Cap (w/o Flow Control)	1
7	89-0069	Seat Assy., Discharge	1
8	89-1155	Washer, Teflon (Flow Control Models)	1
9	89-0142	Stem Assy. (Includes Item 10 and O-Ring, Flow Control Models)	1
10	35-8294	Nut	1
11	89-2042	Spring, Diaphragm	1
12	89-3423	Bearing, Spring Sleeve (Flow Control Models)	1
13	89-2031	Diaphragm Assy., EI, 2-Pc. (Includes Blue Debris Arrestor)	1
14	89-0665	Body Assy., AVB, 1"	1
14	89-1265	Body Assy., AVB, 3/4"	1
15	89-0120	Cap Assy.	1
16	35-8305	Seat, Float	1
17	35-8304	Float	1
18	89-1020	Seal	1
		<b>SERVICE PARTS AND ASSEMBLIES</b>	
	89-4104	Drip Kit (Includes Items 9, 11 and 12)	
	89-2031	Diaphragm Assy., Old Style (Blue Debris Arrestor w/White Center Cup)	

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