



Installation Instructions Super 700 Series Sprinkler

Introduction

The versatile Super 700 Series Sprinkler is designed to meet a wide range of applications in both residential and commercial irrigation systems. For best results, read through the instruction manual completely first to familiarize yourself with the product specifications, recommended installation methods and adjustment procedures.

Specifications

Model	Inlet	Pop-Up Height (To Nozzle)		Body Diameter		Height (Overall)		Cap Diameter		Nozzle Trajectory
S700	3/4" FNPT	3-1/2"	79.4 mm	2-3/8"	6.03 cm	6-7/8"	17.46 cm	3"	7.62 cm	25° & 15°
S700C	3/4" FNPT	3-1/8"	79.4 mm	2-3/8"	6.03 cm	6-7/8"	17.46 cm	3"	7.62 cm	25° & 15°
S700 HP	3/4" FNPT	10-3/8"	26.35 cm	2-3/8"	6.03 cm	16-1/2"	41.91 cm	3"	7.62 cm	25° & 15°
S700S	3/4" FNPT	—	—	1-3/4"	4.45 cm	5-1/8"	13.01 cm	—	—	25° & 15°

Model	Working Pressure			Maximum Pressure		
S700	25 - 50 psi	2.0 - 3.5 kg/cm ²	172 - 345 kpa	75 psi	5.27 kg/cm ²	517 kpa
S700HP	25 - 50 psi	2.0 - 3.5 kg/cm ²	172 - 345 kpa	75 psi	5.27 kg/cm ²	517 kpa
S700S	25 - 50 psi	2.0 - 3.5 kg/cm ²	172 - 345 kpa	75 psi	5.27 kg/cm ²	517 kpa
S700C	25 - 60 psi	2.0 - 4.2 kg/cm ²	172 - 414 kpa	75 psi	5.27 kg/cm ²	517 kpa

Nozzle Performance (at nominal pressure)

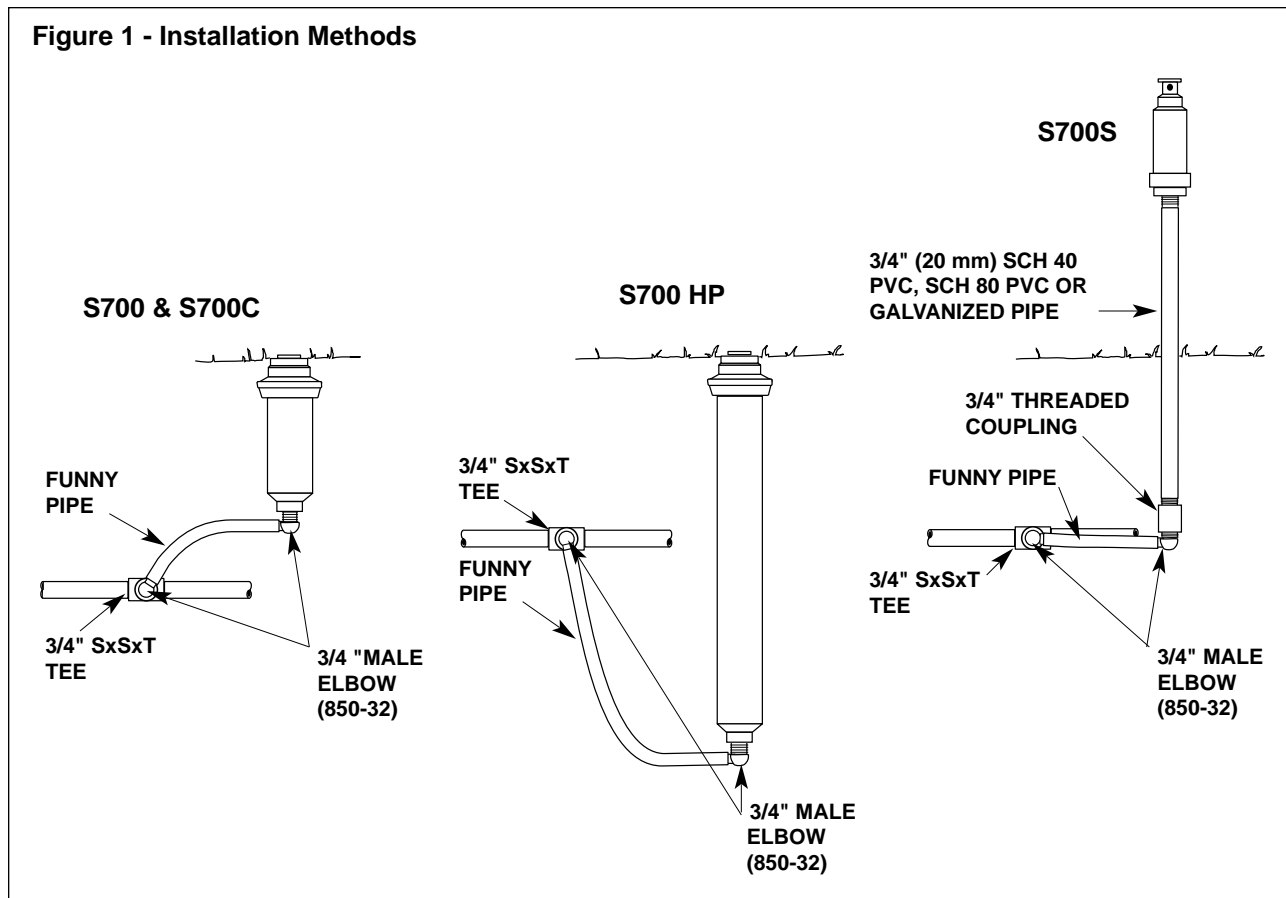
Nozzle	Pressure			Radius				Flow		
	psi	kpa	kg/cm ²	25° Trajectory		15° Trajectory		gpm	lpm	m ³ /hr
				ft.	m	ft.	m			
1.0	40	276	2.81	37	11.0	31	9.4	1.0	3.9	.23
1.5	40	276	2.81	39	11.9	32	9.8	1.5	5.5	.34
2.0	40	276	2.81	41	12.5	34	10.4	2.0	7.6	.45
3.0	40	276	2.81	44	13.4	37	11.0	3.0	11.4	.68
4.5	40	276	2.81	45	13.7	38	11.6	4.5	17.0	1.0
6.0	40	276	2.81	47	14.3	38	11.6	6.0	22.7	1.4
7.5	50	345	3.52	50	15.2	45	13.7	7.5	28.4	1.7
9.0	50	345	3.52	52	15.8	43	13.1	9.0	34.1	2.0

Installation Procedure

The S700, S700C and S700 HP sprinklers are designed for installation in-ground, aligned perpendicular to the coverage area with the top of the cap level with compacted finish grade. When operated, the sprinkler will extend, positioning the rotating nozzle above the turf or ground cover. When turned off, the nozzle and riser will retract, by spring pressure, into the sprinkler body assembly.

The S700S shrub sprinkler is designed for installation above ground on a riser, constructed from 3/4" (20mm) schedule 40 or 80 PVC or galvanized steel pipe, positioned perpendicular to the coverage area.

Installation of a flexible connection between the sprinkler or shrub riser and the lateral line is recommended. Unlike a rigid connection, the flexible link enables easy, accurate positioning of the sprinkler and helps protect the PVC piping and fittings from breakage due to downward or lateral sprinkler movement. See **Figure 1** for typical installation methods.



Referring to **Figure 1**, install the sprinklers as follows:

1. Complete all pipe connections from lateral lines.
2. Thoroughly flush all dirt and debris from system.
3. Thread sprinkler onto 3/4 in. male NPT fitting and tighten by hand until snug – do not overtighten.

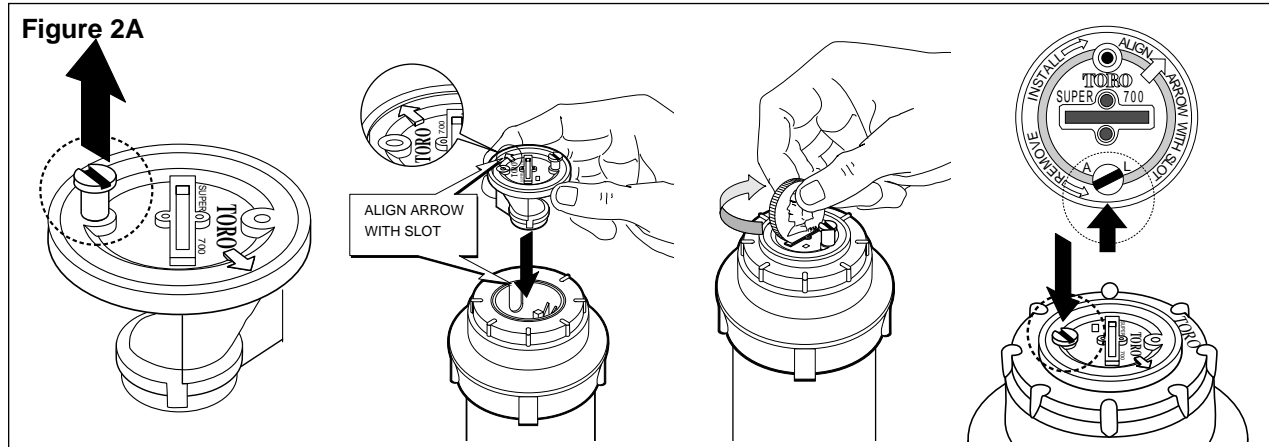
▲ CAUTION: Use only Teflon™ tape on plastic threaded connections. Use of pipe dope or other pipe sealing compounds may damage plastic components.

4. Backfill soil around sprinkler or shrub riser. Thoroughly compact soil around components to maintain correct installation position.
5. If sprinkler nozzle is not installed, remove protective cover and install nozzle at this time. See "Nozzle Installation and Removal" instructions on page 3.
6. Activate sprinklers and observe operation. If necessary, adjust part circle arc and/or spray radius as explained in following sections: "Part Circle Arc Adjustment" (pages 3 - 5), "Spray Radius Adjustment" (page 6).

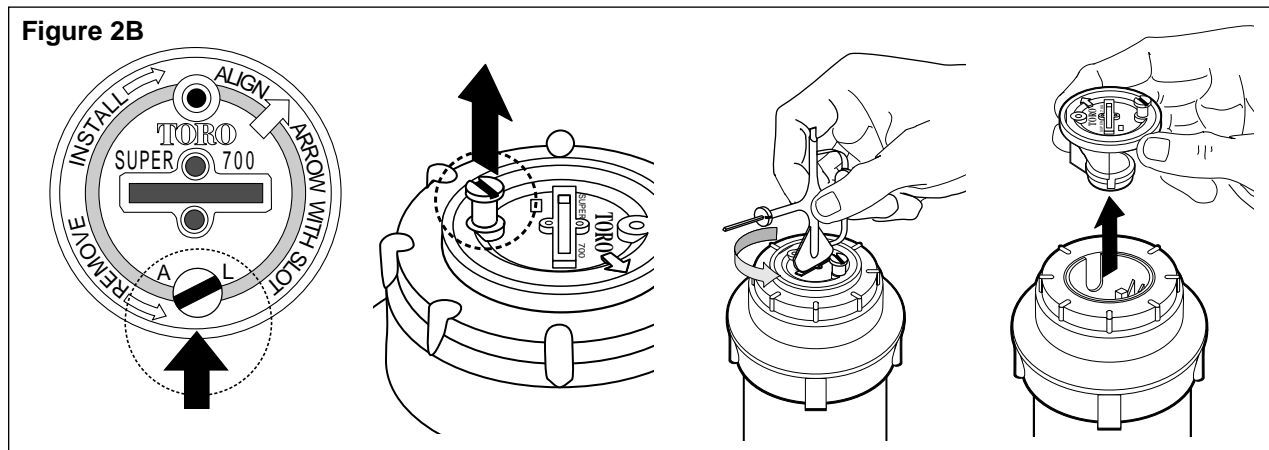
Nozzle Installation and Removal

To install nozzle: (Refer to Figure 2A.) Pull lock pin up. Align arrow on nozzle top with slot in nozzle turret and insert nozzle. Using a coin or Super 700 Nozzle Tool & Wrench (89-1376), press and turn nozzle clockwise until seated in turret. Turn lock pin to align slot with “L” (lock) on nozzle top (part circle models only). Press lock pin down.

Note: On part circle models, nozzle turret may ratchet to end of arc before nozzle seats or releases.



To remove nozzle: (Refer to Figure 2B.) Turn lock pin to align slot with “L” (lock) on nozzle top (part circle models only). Pull lock pin up. Insert a coin or Super 700 Nozzle Tool & Wrench (89-1376) into slot on top of nozzle. Turn nozzle counterclockwise to release. Lift nozzle out of nozzle turret.



Part Circle Arc Adjustment

The S700 part circle sprinkler arc is adjustable from 40° – 330°. The left reversing point, located at the end of counterclockwise nozzle travel, is stationary or “fixed” and is not adjustable. Therefore, the left end of the arc must be aligned with the left watering border by turning the sprinkler on its pipe fitting. This will establish a reference point for an increase or decrease adjustment to the right reversing point, which occurs at the end of clockwise nozzle travel.

1. Open water supply line to sprinkler. Turn nozzle by hand in same direction of current travel to reversing point at end of arc. Immediately rotate nozzle in opposite direction to reversing point at other end of arc. This procedure enables arc to be viewed without waiting for nozzle to traverse at normal speed.

CAUTION: Turning nozzle against current direction of travel may damage sprinkler drive mechanism.

2. Using a small screwdriver or Super 700 Nozzle Tool and Wrench, turn lock pin 1/4 turn counterclockwise to align slot with “A” (adjust) on nozzle top. See **Figure 3**.
3. To **Decrease** arc: See **Figure 4** and follow steps A - C on page 4.
To **Increase** arc: See **Figure 5** and follow steps A - D on page 5.

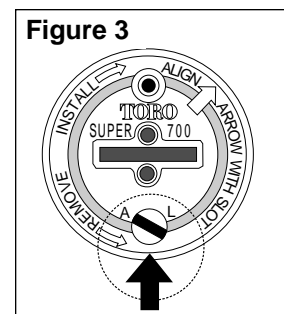
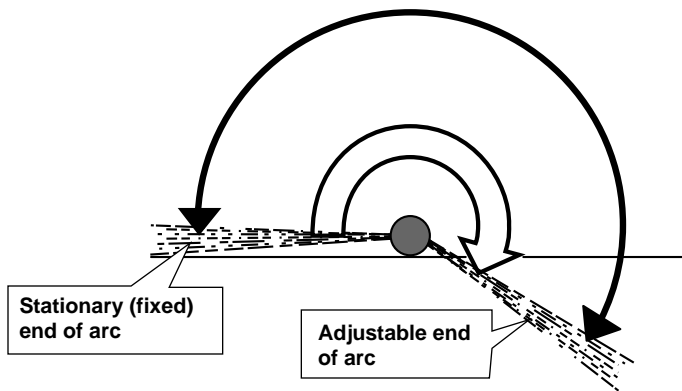


Figure 4 - Decreasing Arc

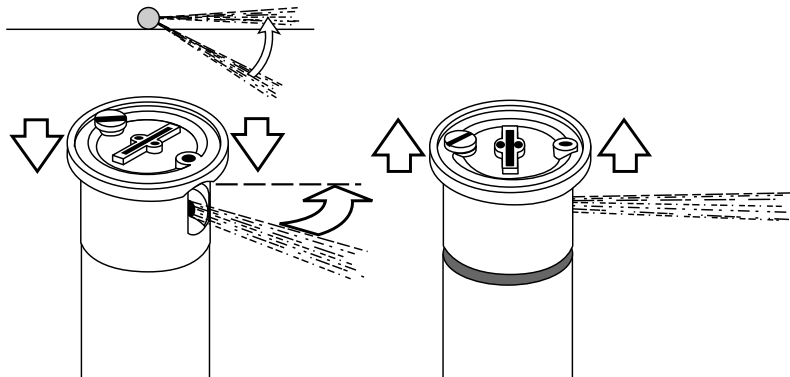
A

Rotate nozzle clockwise to right
(adjustable) end of arc.



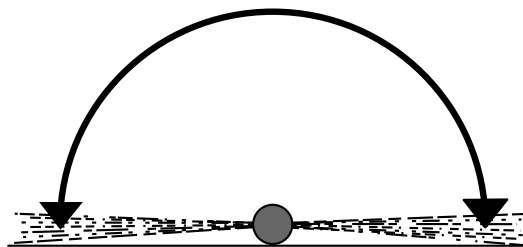
B

Press down and turn nozzle
counterclockwise to align spray
with right border of watering area.
Immediately pull up nozzle and
release.



C

Check for proper arc setting.
Amount of arc adjusted from
right will decrease right end of
arc.

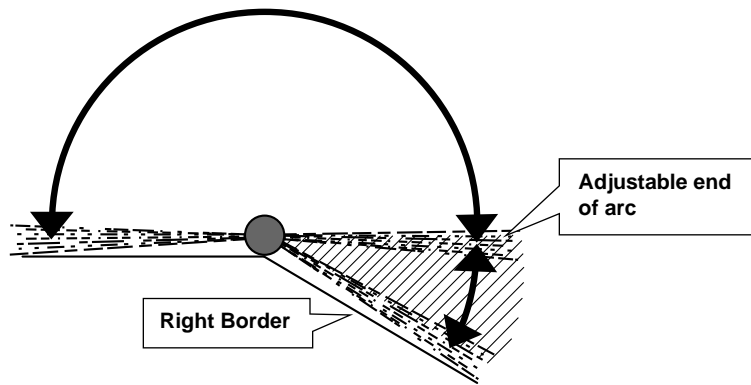


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Figure 5 - Increasing Arc

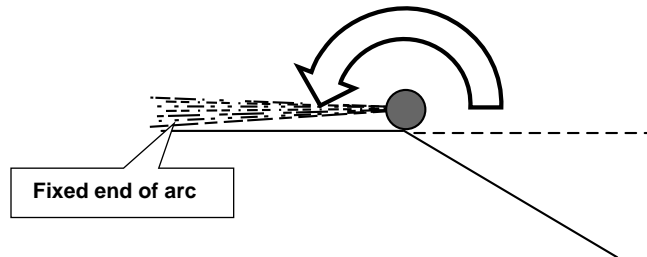
A

Estimate additional amount of arc required to align nozzle with right border of watering area.



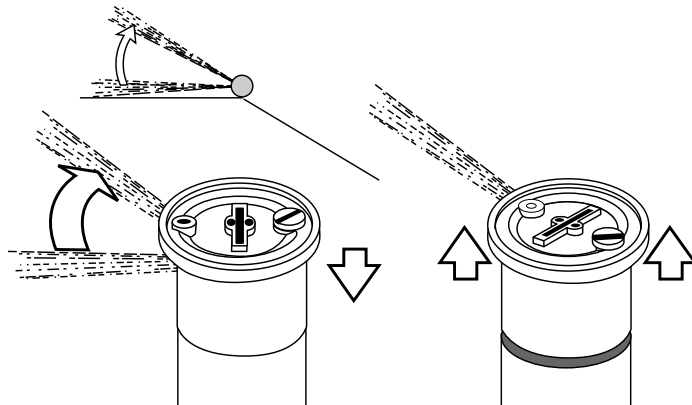
B

Turn nozzle counterclockwise to left (fixed) end of arc.



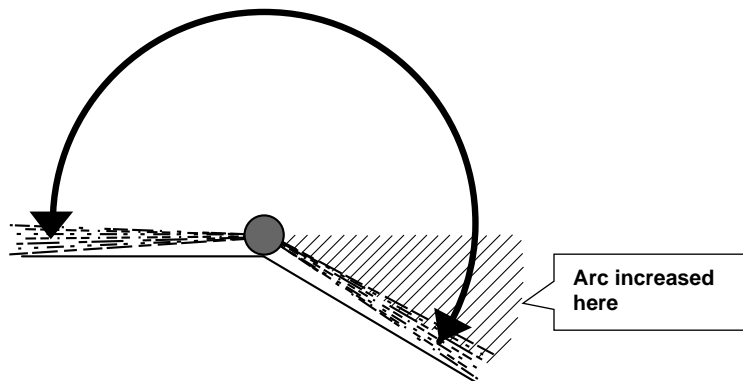
C

Press down and turn nozzle clockwise to add amount of arc estimated in Step A. Immediately pull nozzle up and release.



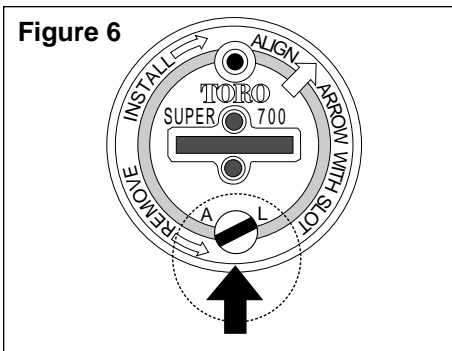
D

Check for proper arc setting. Amount of arc adjusted from left end of arc will be added to right end of arc.



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- Turn lock pin 1/4 turn clockwise to align slot with “L” on nozzle top as shown in **Figure 6**.

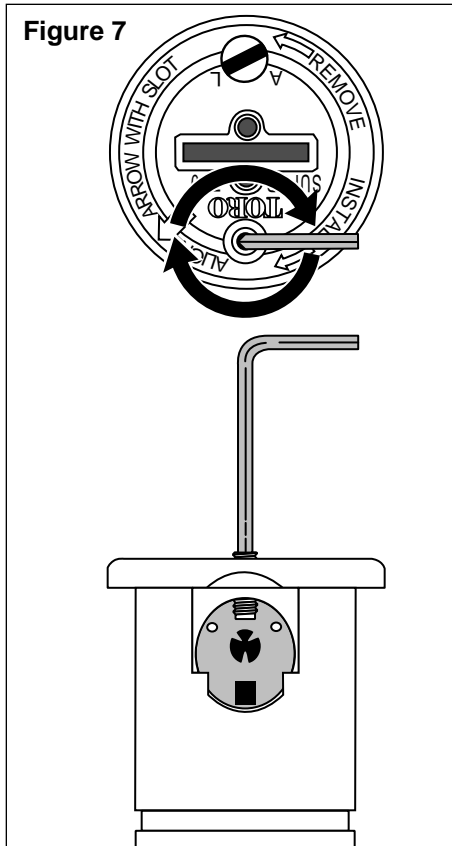


Spray Radius Adjustment

The Spray Radius Adjustment Screw is provided primarily to reduce the radius (throw) of the spray without decreasing pressure to the sprinkler. (Reduction exceeding 25% of radius is not recommended.) In addition, it can also be used when the sprinkler is operated at low pressure to slightly diffuse the spray, preventing a possible dry area near the sprinkler.

CAUTION: Adjustment screw can be swept into spray and lost if turned excessively.

- Using a 1/16 in. hex wrench, turn adjustment screw inward (clockwise) as required to reduce/diffuse spray as shown in **Figure 7**.



Cleaning Sprinkler

(See Figures 8 - 11 to identify sprinkler parts)

S700, S700C and S700HP

- S700C and S700 HP Only: Using a 1/16" hex wrench, loosen set screw on side of cap.
- Part Circle Models Only: To maintain correct arc alignment of nozzle during reassembly, observe location of nozzle orifice before disassembling sprinkler components
- Unscrew cap from body (carefully to avoid changing body alignment on pipe fitting). Remove sprinkler assembly from body.
- Pull basket screen and variable stator assembly from bottom of riser assembly.
- Flush screen and stator assembly thoroughly with clean water to remove all debris.
- Reassemble parts in reverse order. Align keyways in sprinkler riser assembly with keys in body to maintain correct radial location of nozzle. Tighten cap by hand only – do not overtighten.
- S700C and S700 HP Only: Tighten cap set screw.

S700S

- Unscrew sprinkler body assembly from cap (base).
- Using small screwdriver, carefully pry screen and stator assembly from body assembly.
- Flush parts thoroughly with clean water and reassemble in reverse order. Tighten body by hand only – do not overtighten.

Note – Nozzle Replacement Part Numbers

All S700 sprinkler models manufactured after December 1991 require a locking nozzle (designated by an “L” after the part number). For S700 sprinklers manufactured prior to December 1991, omit the “L” from the part number when ordering. Identify sprinkler versions as shown at right. Square peg model requires “L” type nozzle.

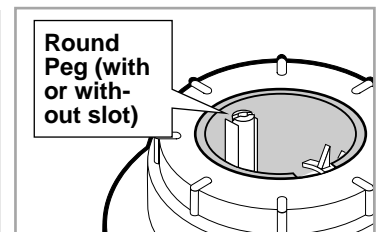
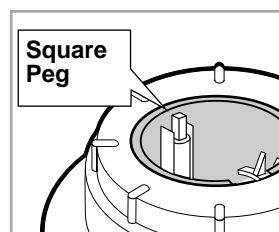
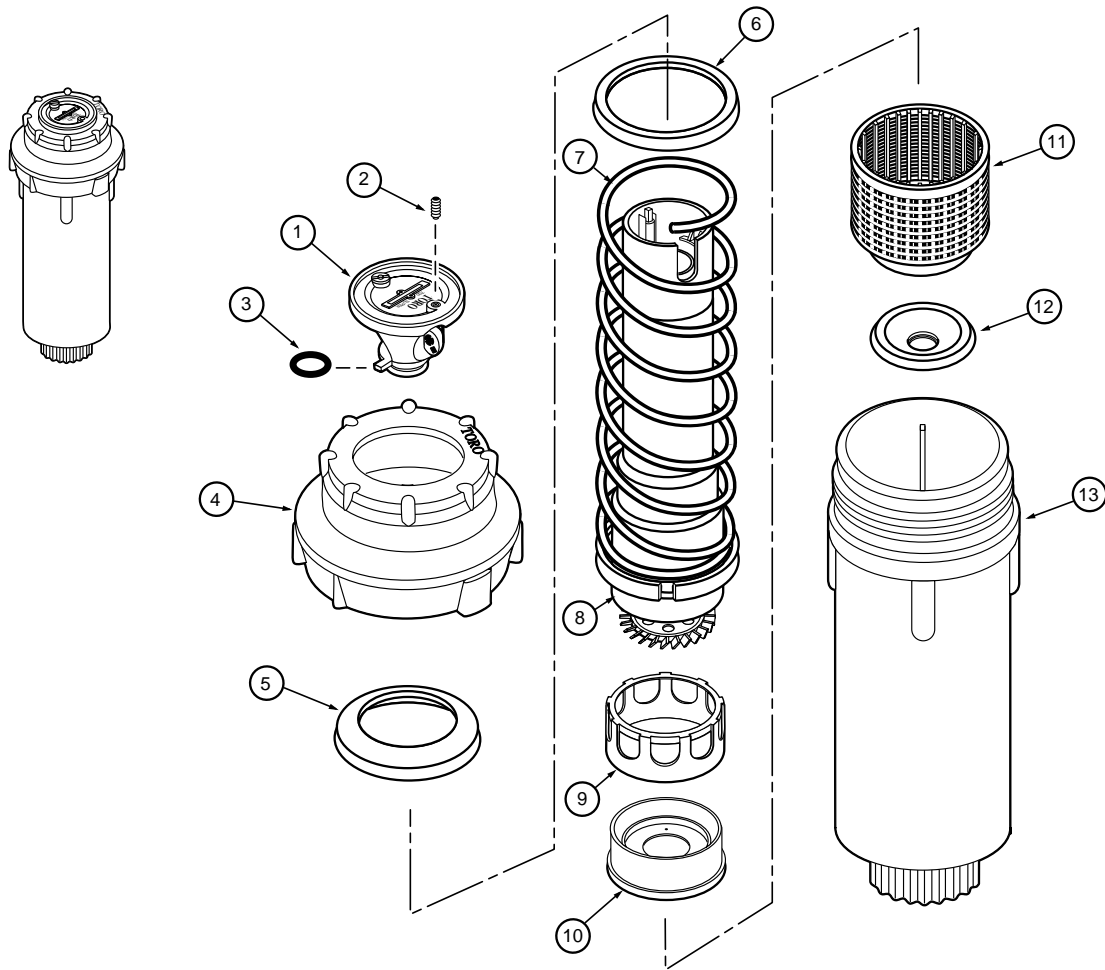
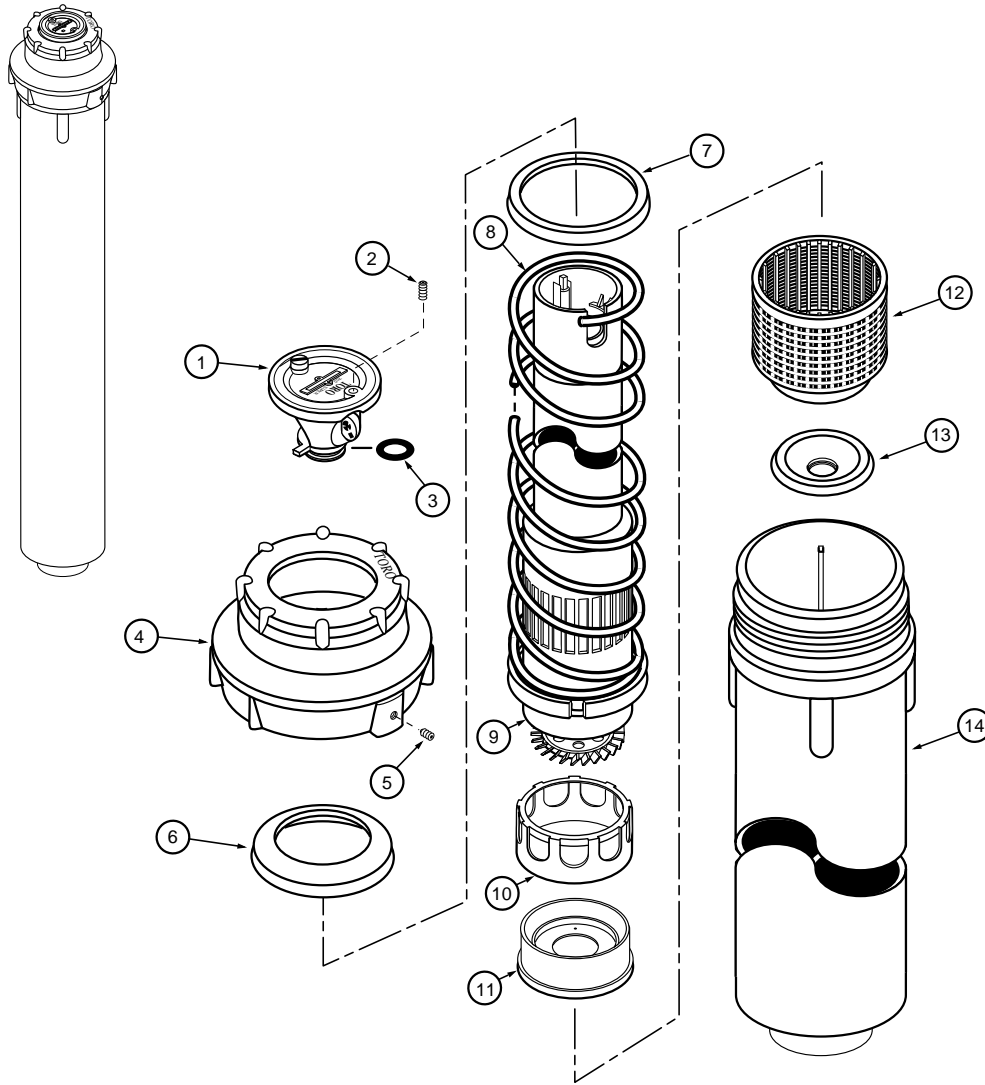


Figure 8 S700 Lawn



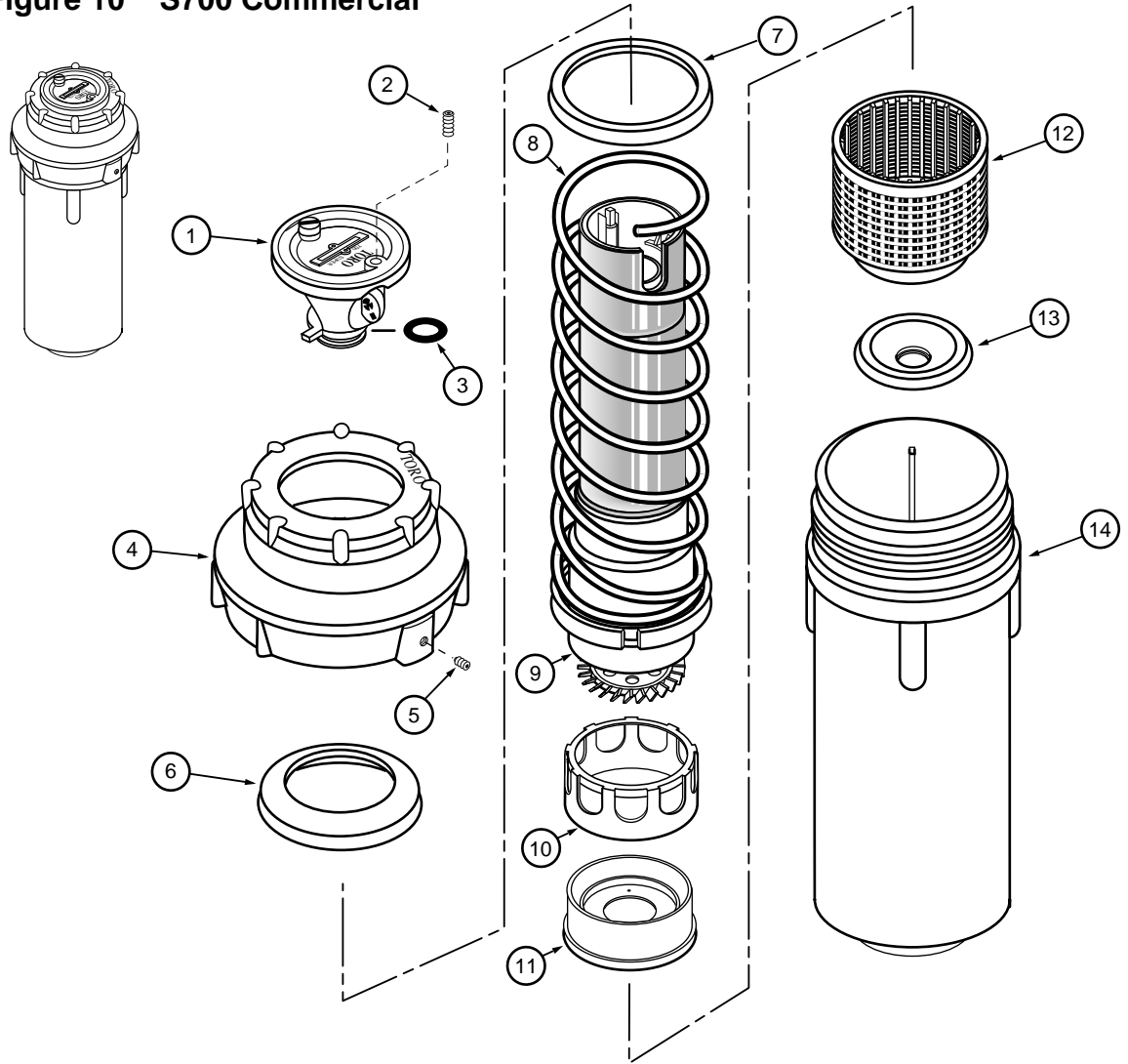
Item	Part No.	Nomenclature	Item	Part No.	Nomenclature
-	35-8911	Sprinkler, S700-PC, less Nozzle	2	360-0223	Screw, Set, Half Dog, 6-32
-	35-8910	Sprinkler, S700-FC, less Nozzle	3	360-0494	O-Ring, .070 in. x .426 in. x .566 in.
-	35-1656	Sprinkler, S700-PC, less Nozzle, w/Check Valve	4	35-8962	Cap, Molded
-	35-1655	Sprinkler, S700-FC, less Nozzle, w/Check Valve	5	35-3145	Seal, Riser
-	89-0612	Sprinkler, S700-PC-1.5	6	89-0995	Sleeve, Spring
-	89-0275	Sprinkler, S700-PC-3.0	7	35-4508	Spring, Retraction
-	89-0769	Sprinkler, S700-PC-6.0	8	35-8912	Riser Assy., FC
-	89-0770	Sprinkler, S700-FC-1.5	8	35-8913	Riser Assy., PC
-	89-0277	Sprinkler, S700-FC-3.0	9	-----	Sleeve, Stator
-	89-0771	Sprinkler, S700-FC-6.0	10	-----	Diaphragm, Stator
1	89-0892 L	Kit, Nozzle, 1.0, Yellow	11	9-1691	Screen
1	89-0893 L	Kit, Nozzle, 1.5, Orange	12	89-0266	Valve, Check
1	89-0894 L	Kit, Nozzle, 2.0, Red	13	9-1661	Body
1	89-0895 L	Kit, Nozzle, 3.0, Black			Service Items
1	89-0896 L	Kit, Nozzle, 4.5, Blue	N/S	700-10	Kit, Cover, Rubber
1	89-0897 L	Kit, Nozzle, 6.0, Green	N/S	35-6323	Stator Assy., Variable (includes items 9 & 10)
1	89-0898 L	Kit, Nozzle, 7.5, Tan	N/S	89-1376	Super 700 Nozzle Tool & Wrench
1	89-0899 L	Kit, Nozzle, 9.0 Gray	N/S	89-3003	Lock, Nozzle Pin, Std. Angle
1	89-1091 L	Kit, Nozzle, 1.0, Yellow, Low Angle	N/S	89-0323	Cover, Nozzle
1	89-1093 L	Kit, Nozzle, 1.5, Orange, Low Angle			(For use with non "L" version nozzles only)
1	89-1095 L	Kit, Nozzle, 2.0, Red, Low Angle	N/S	89-0266	Check Valve
1	89-1097 L	Kit, Nozzle, 3.0, Black, Low Angle	N/S	89-0805	Restrictor, Low Pressure
1	89-1099 L	Kit, Nozzle, 4.5, Blue, Low Angle			
1	89-1101 L	Kit, Nozzle, 6.0 Green, Low Angle			
1	89-1103 L	Kit, Nozzle, 7.5, Tan, Low Angle			
1	89-1105 L	Kit, Nozzle, 9.0, Gray, Low Angle)			

Figure 9 S700 High Pop



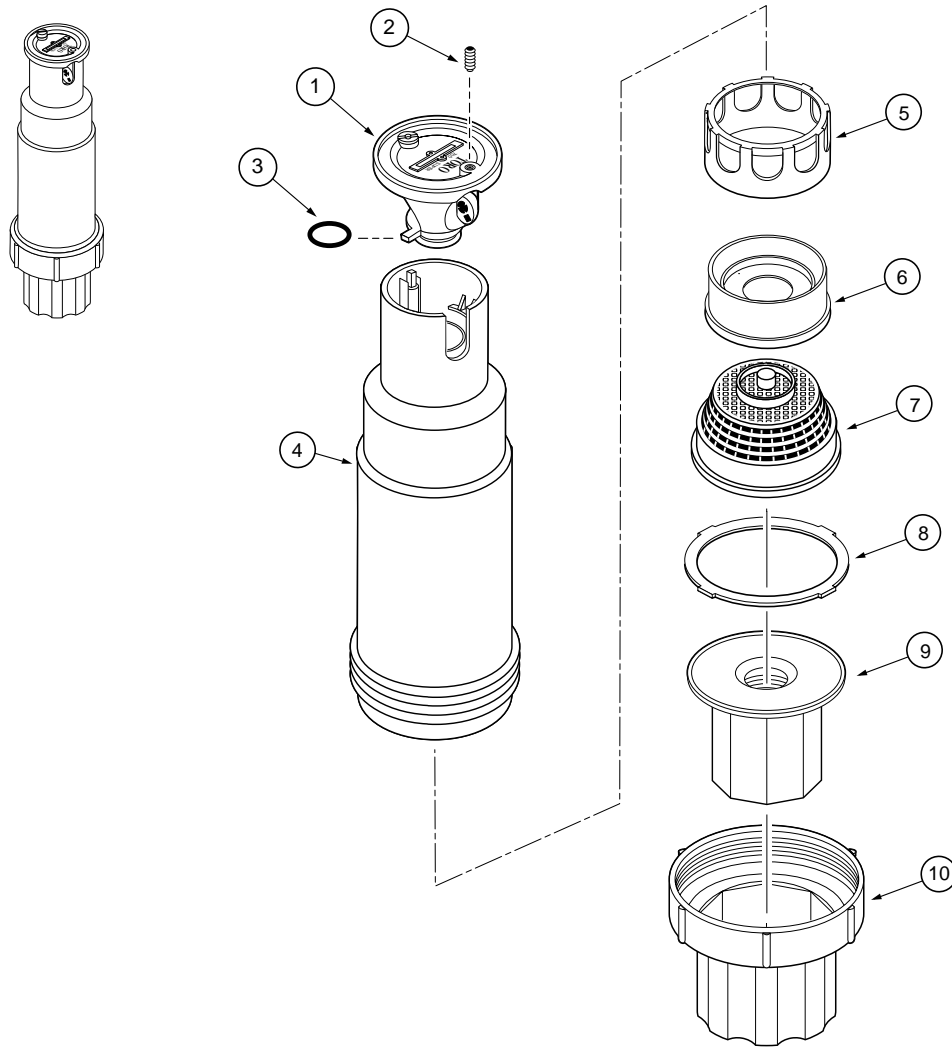
Item	Part No.	Nomenclature	Item	Part No.	Nomenclature
-	35-8917	Sprinkler, S700HP-PC, less Nozzle	2	360-0223	Screw, Set, Half Dog, 6-32
-	35-8919	Sprinkler, S700HP-FC, less Nozzle	3	360-0494	O-Ring, .070 in. x .426 in. x .566 in.
-	89-0707	Sprinkler, S700HP-PC-1.5	4	360-0223	Screw, Set, Half Dog, 6-32
-	89-0709	Sprinkler, S700HP-PC-3.0	5	89-0111	Cap, Molded
-	89-0711	Sprinkler, S700HP-FC-6.0	6	35-3145	Seal, Riser
1	89-0892 L	Kit, Nozzle, 1.0, Yellow	7	89-0995	Sleeve, Spring
1	89-0893 L	Kit, Nozzle, 1.5, Orange	8	35-5196	Spring, Retraction
1	89-0894 L	Kit, Nozzle, 2.0, Red	9	35-8916	Riser Assy., FC
1	89-0895 L	Kit, Nozzle, 3.0, Black	9	35-8918	Riser Assy., PC
1	89-0896 L	Kit, Nozzle, 4.5, Blue	10	-----	Sleeve, Stator
1	89-0897 L	Kit, Nozzle, 6.0, Green	11	-----	Diaphragm, Stator
1	89-0898 L	Kit, Nozzle, 7.5, Tan	12	9-1691	Screen
1	89-0899 L	Kit, Nozzle, 9.0, Gray	13	89-0266	Valve, Check
1	89-1091 L	Kit, Nozzle, 1.0, Yellow, Low Angle	14	9-4569	Body
1	89-1093 L	Kit, Nozzle, 1.5, Orange, Low Angle			Service Items
1	89-1095 L	Kit, Nozzle, 2.0, Red, Low Angle	N/S	700-10	Kit, Cover, Rubber
1	89-1097 L	Kit, Nozzle, 3.0, Black, Low Angle	N/S	35-6323	Stator Assy., Variable (includes items 10 & 11)
1	89-1099 L	Kit, Nozzle, 4.5, Blue, Low Angle	N/S	89-1375	Super 700 Nozzle Tool & Wrench
1	89-1101 L	Kit, Nozzle, 6.0, Green, Low Angle	N/S	89-3003	Lock, Nozzle Pin, Std. Angle
1	89-1103 L	Kit, Nozzle, 7.5, Tan, Low Angle			
1	89-1105 L	Kit, Nozzle, 9.0, Gray, Low Angle			

Figure 10 S700 Commercial



Item	Part No.	Nomenclature	Item	Part No.	Nomenclature
	35-8929	Sprinkler, S700C-PC, less Nozzle	1	89-1105 L	Kit, Nozzle, 9.0, Gray, Low Angle
-	35-8930	Sprinkler, S700C-FC, less Nozzle	2	360-0223	Screw, Set, Half Dog, 6-32
-	89-0613	Sprinkler, S700C-PC-1.5	3	360-0494	O-Ring, .070 in. x .426 in. x .566 in.
-	89-0276	Sprinkler, S700C-PC-3.0	4	35-8963	Cap, Molded
-	89-0614	Sprinkler, S700C-PC-6.0	5	360-0223	Screw, Set, Half Dog, 6-32
-	89-0278	Sprinkler, S700C-FC-6.0	6	35-8964	Seal, Riser
-	89-0615	Sprinkler, S700C-FC-9.0	7	89-0995	Sleeve, Spring
1	89-0892 L	Kit, Nozzle, 1.0, Yellow	8	89-0122	Spring, Retraction
1	89-0893 L	Kit, Nozzle, 1.5, Orange	9	35-8931	Riser Assy., PC
1	89-0894 L	Kit, Nozzle, 2.0, Red	9	35-8932	Riser Assy., FC
1	89-0895 L	Kit, Nozzle, 3.0, Black	10	-----	Sleeve, Stator
1	89-0896 L	Kit, Nozzle, 4.5, Blue	11	-----	Diaphragm, Stator
1	89-0897 L	Kit, Nozzle, 6.0, Green	12	9-1691	Screen
1	89-0898 L	Kit, Nozzle, 7.5, Tan	13	89-0266	Valve, Check
1	89-0899 L	Kit, Nozzle, 9.0, Gray	14	9-1661	Body
1	89-1091 L	Kit, Nozzle, 1.0, Yellow, Low Angle			Service Items
1	89-1093 L	Kit, Nozzle, 1.5, Orange, Low Angle	N/S	700-10	Kit, Cover, Rubber
1	89-1095 L	Kit, Nozzle, 2.0, Red, Low Angle	N/S	35-6323	Stator Assy., Variable (includes items 10 & 11)
1	89-1097 L	Kit, Nozzle, 3.0, Black, Low Angle			
1	89-1099 L	Kit, Nozzle, 4.5, Blue, Low Angle	N/S	89-1375	Super 700 Nozzle Tool & Wrench
1	89-1101 L	Kit, Nozzle, 6.0, Green, Low Angle	N/S	89-3003	Lock, Nozzle Pin, Std. Angle
1	89-1103 L	Kit, Nozzle, 7.5, Tan, Low Angle			

Figure 11 S700 Shrub



Item	Part No.	Nomenclature	Item	Part No.	Nomenclature
-	35-8923	Sprinkler, S700S-PC	1	89-1103 L	Kit, Nozzle, 7.5, Tan, Low Angle
-	35-8928	Sprinkler, S700S-FC	1	89-1105 L	Kit, Nozzle, 9.0, Gray, Low Angle
-	89-0708	Sprinkler, S700S-PC-1.5	2	360-0223	Screw, Set, Half Dog, 6-32
-	89-0710	Sprinkler, S700S-PC-3.0	3	360-0494	O-Ring, .070 in. x .426 in. x .566 in.
-	89-0712	Sprinkler, S700S-FC-6.0	4	35-8922	Body Assy., PC
1	89-0892 L	Kit, Nozzle, 1.0, Yellow	4	35-8927	Body Assy., FC
1	89-0893 L	Kit, Nozzle, 1.5, Orange	5	-----	Sleeve, Stator
1	89-0894 L	Kit, Nozzle, 2.0, Red	6	-----	Diaphragm, Stator
1	89-0895 L	Kit, Nozzle, 3.0, Black	7	35-2175	Screen
1	89-0896 L	Kit, Nozzle, 4.5, Blue	8	9-5211	Seal
1	89-0897 L	Kit, Nozzle, 6.0, Green	9	89-6094	Threaded Insert, 3/4"-1/2"
1	89-0898 L	Kit, Nozzle, 7.5, Tan	10	89-8305	Base, Shrub
1	89-0899 L	Kit, Nozzle, 9.0, Gray			
1	89-1091 L	Kit, Nozzle, 1.0, Yellow, Low Angle			
1	89-1093 L	Kit, Nozzle, 1.5, Orange, Low Angle	N/S	89-1375	Super 700 Nozzle Tool & Wrench
1	89-1095 L	Kit, Nozzle, 2.0, Red, Low Angle	N/S	35-6323	Stator Assy., Variable (includes items 5 & 6)
1	89-1097 L	Kit, Nozzle, 3.0, Black, Low Angle			
1	89-1099 L	Kit, Nozzle, 4.5, Blue, Low Angle			
1	89-1101 L	Kit, Nozzle, 6.0, Green, Low Angle	N/S	89-3003	Lock, Nozzle Pin, Std. Angle