



# 1” TWISTER and Bubble Cup Series Maintenance and Service Procedure

## ⚠ WARNING

Service technicians bear responsibility for ensuring use of appropriate protective clothing and equipment. The chosen protective clothing and equipment must provide protection from potential hazards users may encounter while servicing equipment. Requirements for protective clothing and equipment are determined by the Authority Having Jurisdiction (AHJ).

## ⚠ WARNING

After any maintenance or service, equipment must be inspected and tested for proper operation and function per NFPA 1962 test procedures and the FLOW CHARACTERISTICS and OPERATION and INSPECTION CHECKLIST in the operator manual.

## NOTICE

This publication is intended for those who prefer to perform service on their own equipment. Factory service is available and repair time seldom exceeds one day in our facility. Factory serviced nozzles are repaired by experienced technicians, fully tested, and promptly returned functioning to original specifications. Task Force Tips assumes no liability for damage to equipment or injury to personnel that is a result of user service.

## 1.0 GENERAL INFORMATION

### 1.1 REQUIRED TOOLS

Tools for COUPLING AND PISTOL GRIP Service
5/16” Hex Ball Driver
Seal Pick
Loctite® #263 or #271 (red) Thread Locking Adhesive

Tools for FRONT END Service
1/8” Hex Key
5/32” Hex Key
Loctite® #271 (red) Thread Locking Adhesive
Loctite® #242 (blue) Thread Locking Adhesive
Razor Blade Knife
Molykote #112 High Performance Silicone Grease
Acetone or methyl ethyl ketone (MEK)

### 1.2 THREADED JOINTS

Threaded joints have been secured at the factory using Loctite brand red or blue thread locking adhesive.

- Disassembly of joints where red Loctite has been used requires a minimal application of heat with a oxyacetylene torch to break the bond.
- The threads should be heated to approximately 450°F. Excessive heat application will cause damage to adjacent seals and labels.
- Replacement parts must be reinstalled using either red or blue Loctite where specified, or equivalent. Small vials of Loctite for field service are available. Order part V5010 (Loctite #271 Red Mini Dispenser) or VSA-125 (Loctite #242 Blue Mini Dispenser).
- Threads must be clean, dry, and free of grease or oil when applying Loctite.
- Allow Loctite to set up for at least one hour before using or subjecting to water.

### 1.3 LUBRICANTS

If parts are disassembled in an area where O-rings are present, apply Molykote #112 High Performance Silicone Grease to all O-rings and surfaces that the O-rings contact before reassembling. If nozzle is not disassembled, refer to the field lubrication procedure in the nozzle manual.

### 1.4 LABEL REPLACEMENT

If labels become damaged, remove old labels with razor knife. Remove adhesive with acetone or methyl ethyl ketone (MEK). Surface must be clean, dry, and free from grease. Remove protective backing and carefully apply new label.

### 1.5 ORDERING PARTS

Always specify the serial number of the nozzle when ordering parts. The serial number is found on the base of the HEAD (5, 7, 8, 15). Be sure to use complete DESCRIPTION and PART #, as printed on parts list. All requests for couplings must specify thread size. Pricing information will be given at time of order.

## 2.0 BACK END SERVICE PROCEDURE

### 2.1 GENERAL

- Occasional replacement of GASKET (37) and 75 REAR SEAT (36) is recommended.
- Coupling service kits, which include all hardware and Loctite are available. Couplings with special or standard threads are available and may be exchanged on new nozzles. Specify desired threads when ordering.

### 2.2 COUPLING REMOVAL

Couplings are retained with a ball race and PORT PLUG (29).

- Use the seal pick to remove the PORT PLUG from the side of the 75 TWISTER VALVE BODY (23).
- Turn coupling so that hole faces down over a container, and rotate coupling back and forth to allow the 3/16" SS BALLS (30) to drop out.
- When all balls are out of the groove, the coupling can be removed.

### 2.3 COUPLING INSTALLATION

- Grease the ball bearing race and place the COUPLING (34) on the 75 TWISTER VALVE BODY (23).
- Load 26 3/16" SS BALLS into the ball groove through the port.
  - Insertion of the balls is easier if the coupling is rotated slightly back and forth as the balls are loaded.
- Insert the PORT PLUG into the port until flush with the 75 TWISTER VALVE BODY.
- Replace the GASKET.

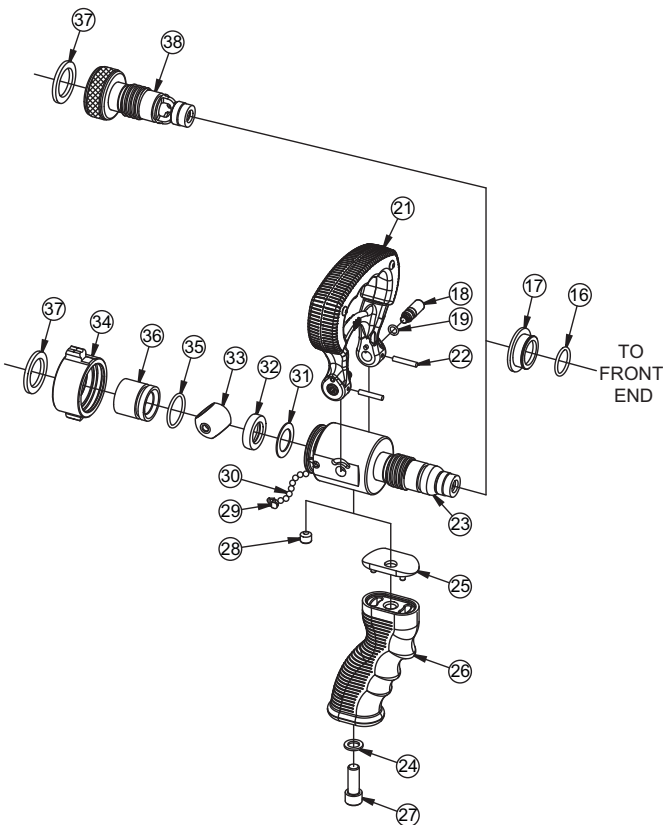
### 3.0 BOLT ON PISTOL GRIP SERVICE

- Remove SOCKET HEAD SCREW (27) and WASHER (24) with a 5/16" ball end hex key to remove PISTOL GRIP (26) and GRIP SPACER D075 (25).
- To reinstall, clean thread and apply Loctite #263 or #271.
- Tighten screw to 95 in-lb (8 ft-lbs).

### 4.0 VALVE AND HANDLE SERVICE PROCEDURE

See instructions included with Ball Valve Repair Kit (LKR-200).

## BACK END PARTS



ITEM	DESCRIPTION	QTY	PART #
16	O-RING-117	1	VO-117
17	Z STRIP	1	D405
18	75 TRUNNION	2	D07540
19	O-RING-010	2	VO-010
21	DQ HANDLE SUBASSEMBLY	1	DQ860
22	SPIROL PIN	2	V1900
23	75 TWISTER VALVE BODY	1	D07525
24	WASHER	1	VM4901
25	GRIP SPACER D075	1	HM693-D
26	PISTOL GRIP - BLACK	1	HM692-BLK
27	3/8-16 X 1 SOCKET HEAD SCREW	1	VT37-16SH1.0
28	3/8-16 X 5/8 SET SCREW	1	VT37-16SS312
29	PORT PLUG	1	B770
30	3/16" SS BALL	26	V2120
31	BELLEVILLE WASHER	1	D07590
32	75 FRONT SEAT	1	D07570
33	75 BALL	1	D07530
34**	COUPLING - 1.0"	1	D07597
35	O-RING-120	1	VO-120
36	75 REAR SEAT	1	D07580
37	GASKET - 1.0"	1	V3040
38**	BASE - 1.0"	1	D210
<b>** -SPECIFY DESIRED THREAD WHEN ORDERING</b>			

## 5.0 FRONT END SERVICE PROCEDURE

Service procedures differ for the TWISTER and BUBBLE CUP series nozzles. Proceed to the appropriate sections for your equipment.

### 5.1 TWISTER DISASSEMBLY

- Using a 5/32" Hex Key, remove FLAT HEAD SCREW (1), followed by the BAFFLE (2) and SEAT (3).
- Unscrew the HEAD (5 or 7) and D TWISTER BUMPER (4) assembly from the 75 TWISTER VALVE BODY (23) or BASE (38) from previous page.
  - If it is necessary to remove the D TWISTER BUMPER from the HEAD, use a razor knife to cut through one side of the bumper from top to bottom.
- Remove and replace O-RING-117 (16 previous page) after disassembly.

### 5.2 TWISTER ASSEMBLY

- Apply grease to the internal threads of the HEAD.
- Screw the HEAD onto the 75 TWISTER VALVE BODY or BASE.
- Place the SEAT on the boss on the back of the BAFFLE.
- Apply blue Loctite to the threads on the FLAT HEAD SCREW.
- Place the BAFFLE onto the end of the 75 TWISTER VALVE BODY or BASE and retain it with the FLAT HEAD SCREW.
- If BUMPER installation is needed, spray window cleaner such as Windex to the outside of the HEAD and press the BUMPER onto the HEAD making sure the nubs in the BUMPER align with the recesses in the HEAD.

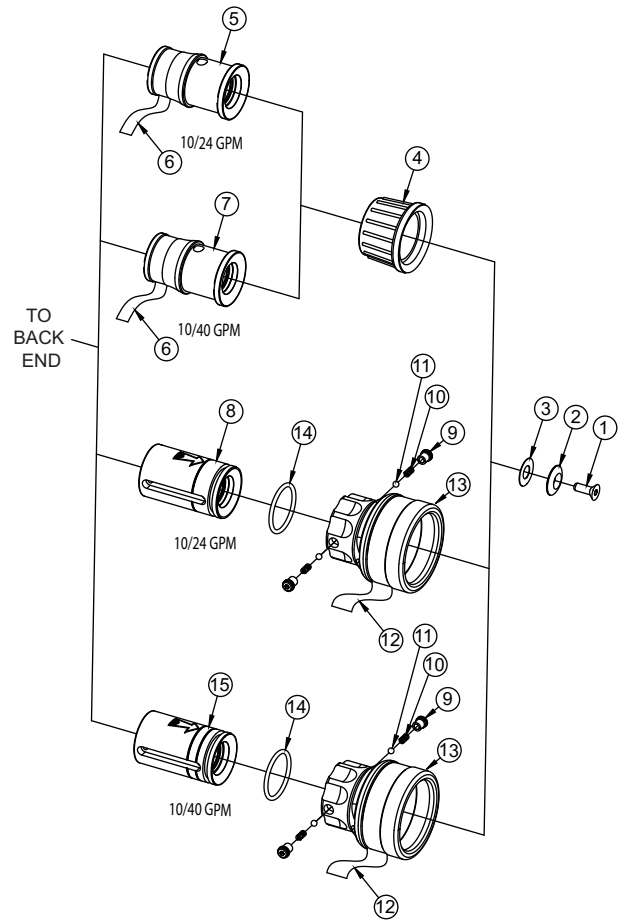
### 5.3 BUBBLE CUP DISASSEMBLY

- Using an 1/8" Hex Key, remove the DETENT SCREWS (9).
- The SPRINGS (10) and 3/16" TORLON BALLS (11) can now be removed from the CUP WITH TEETH (13).
- Using a 5/32" Hex Key, remove FLAT HEAD SCREW (1), followed by the BAFFLE (2) and SEAT (3).
- Slide the CUP off the HEAD (8 or 15) and remove O-RING-221 (14).
- Unscrew the HEAD from the 75 TWISTER VALVE BODY (23) or BASE (38) from previous page.
- Remove and replace O-RING-117 (16 previous page) after disassembly.

### 5.4 BUBBLE CUP ASSEMBLY

- Apply grease to the internal threads of the HEAD.
- Screw the HEAD onto the 75 TWISTER VALVE BODY or BASE.
- Place O-RING-221 in the O-ring groove around the HEAD.
- Apply grease to the outside of the HEAD, then slide the CUP WITH TEETH on the HEAD making sure the holes in the cup align with the slots in the HEAD.
- Place a SPRING and 3/16" TORLON BALL in each DETENT SCREW.
- Begin screwing the DETENT SCREW assemblies into the CUP WITH TEETH.
  - Apply red Loctite to the remaining threads on the DETENT SCREWS.
  - Continue to tighten screws allowing the CUP WITH TEETH to move freely over the HEAD.
- Place the SEAT on the boss on the back of the BAFFLE.
- Apply blue Loctite to the threads on the FLAT HEAD SCREW.
- Place the BAFFLE onto the end of the 75 TWISTER VALVE BODY or BASE and retain it with the FLAT HEAD SCREW.

## FRONT END PARTS



	DESCRIPTION	QTY	PART #
1	1/4-20 X 3/4 FLATHEAD	1	VT25E20FH750
2	BAFFLE	1	D230
3	SEAT	1	D250
4	D TWISTER BUMPER	1	D275
5	HEAD 10/24	1	D425
6*	NAME LABEL	1	DL75
			DL70
7	HEAD 10/40	1	D425
8	FOAM HEAD 10/24	1	D223
9	DETENT SCREW	2	D290
10	SPRING HELICAL COMP.	2	VM4195
11	3/16" TORLON BALL	2	V2120-TORLON
12*	NAME LABEL	1	DL74
			DL73
13	CUP WITH TEETH	1	D285
14	O-RING-221	1	VO-221
15	FOAM HEAD 10/40	1	D423
<b>* -CONSULT FACTORY FOR SPECIFIC PART NUMBERS</b>			

## 6.0 TESTING

Confirm flow rates and smooth operation.

Always perform NFPA 1962 operational testing and the Operation and Inspection Checklist in the nozzle operator manual prior to returning the nozzle to service.

FLOW RATE		PRESSURE		GAP SIZE
10 and 24 GPM	90 L/min	100 PSI	7 BAR	0.024" (0.62 mm)
10 and 40 GPM	152 L/min			

## 7.0 REPAIR KITS

D75 BAIL HANDLE/VALVE REPAIR KIT	D75-HRK	D75 VALVE REPAIR KIT	D75-KIT
FRONT END REPAIR KIT-D TWISTER	D10-KIT	BUBBLE CUP REPAIR KIT-D SERIES	D285-KIT
LOCTITE MINI DISPENSER (BLUE)	VSA-125	LOCTITE MINI DISPENSER (RED)	V5010
RED PISTOL GRIP KIT	HM692RED-KIT	RED HANDLE COVER KIT	HM925RED-KIT
GREEN PISTOL GRIP KIT	HM692GRN-KIT	GREEN HANDLE COVER KIT	HM925GRN-KIT
BLUE PISTOL GRIP KIT	HM692BLU-KIT	BLUE HANDLE COVER KIT	HM925BLU-KIT
BLACK PISTOL GRIP KIT	HM692BLK-KIT	BLACK HANDLE COVER KIT	HM925BLK-KIT
ORANGE PISTOL GRIP KIT	HM692ORG-KIT	ORANGE HANDLE COVER KIT	HM925ORG-KIT
WHITE PISTOL GRIP KIT	HM692WHT-KIT	WHITE HANDLE COVER KIT	HM925WHT-KIT
YELLOW PISTOL GRIP KIT	HM692YEL-KIT	YELLOW HANDLE COVER KIT	HM925YEL-KIT
GREY PISTOL GRIP KIT	HM692GRY-KIT	GREY HANDLE COVER KIT	HM925GRY-KIT
PURPLE PISTOL GRIP KIT	HM692PPL-KIT	PURPLE HANDLE COVER KIT	HM925PPL-KIT
PINK PISTOL GRIP KIT	HM692PNK-KIT	PINK HANDLE COVER KIT	HM925PNK-KIT
TAN PISTOL GRIP KIT	HM692TAN-KIT	TAN HANDLE COVER KIT	HM925TAN-KIT

**For questions regarding troubleshooting, parts, or repair, contact your local dealer or TFT's service department.**

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