



1.5” QuadraFog and QuadraCup Series Maintenance and Service Procedure

⚠ WARNING

It is the responsibility of service technicians to ensure the 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
5/64”, 5/32”, 1/8” and 7/32” Hex Keys
3/16” Two-Pronged Face Spanner Wrench
Loctite® #263 or #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)
Torch, oxyacetylene or propane

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 is used requires a minimal application of heat with an 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 on 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 INDEX RING. 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 100 REAR SEAT (36) is recommended.
- Coupling service kits, which include all hardware and Loctite are available. Couplings with special or standard threads are available. Specify desired threads when ordering.

2.2 COUPLING REMOVAL

Couplings are retained with a ball race and PORT PLUG (25).

- Use the seal pick to remove the PORT PLUG from the side of the BASE (21 or 45).
- Turn coupling so that hole faces down over a container, and rotate coupling back and forth to allow the 3/16" SS BALLS (26) to drop out.
- When all balls are out of the groove, the coupling can be removed.

2.3 COUPLING INSTALLATION

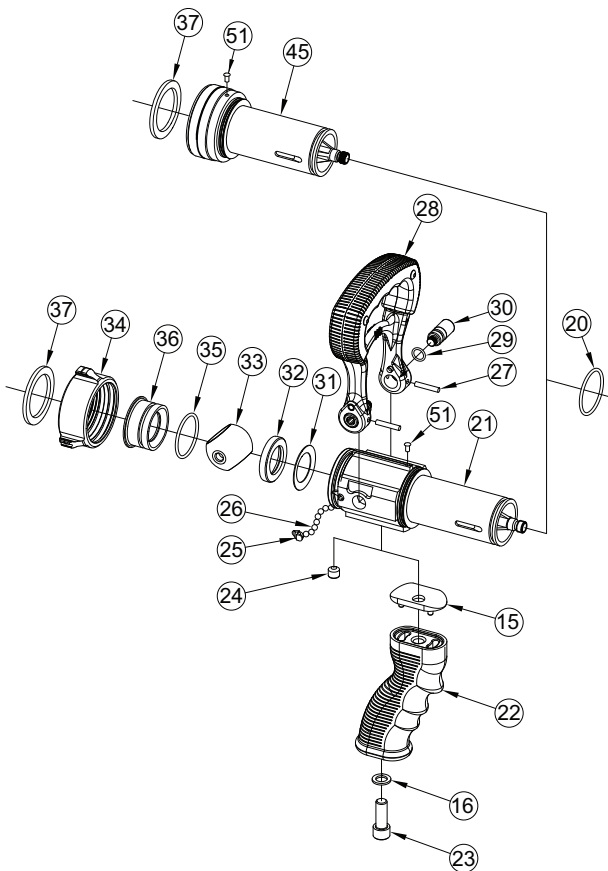
- Grease the ball bearing race and place the COUPLING (34) on the BASE.
- Load 3/16" SS BALLS into the ball groove through the port.
 - Insertion of the balls is easier if the coupling is rotated slightly back and forth as the balls are loaded.
- Insert the PORT PLUG into the port until flush with the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

3.0 BOLT ON PISTOL GRIP SERVICE

- Remove SOCKET HEAD SCREW (23) and WASHER (16) with a 5/16" ball end hex key to remove PISTOL GRIP (22) and PISTOL GRIP SPACER (15).
- To reinstall, clean thread and apply Loctite #263 or #271.
- Tighten screw to 95 in-lb (8 ft-lb).

4.0 VALVE AND HANDLE SERVICE PROCEDURE

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



ITEM	DESCRIPTION	QTY	PART #
15	PISTOL GRIP SPACER	1	HM693-F
16	FLAT WASHER	1	VM4901
20	O-RING-127	1	VO-127
21	QUADRAFOG BASE	1	FT202
22	PISTOL GRIP	1	HM692-BLK
23	3/8-16 X 1 SOCKET HEAD SCREW	1	VT37-16SH1.0
24	SET SCREW	1	VT37-16SS312
25	PORT PLUG	1	B770
26	STAINLESS STEEL BALLS	34	V2120
27	SPIROL PIN	2	V1900
28	FQ HANDLE SUBASSEMBLY	1	FQ860
29	O-RING-012	2	VO-012
30	TRUNNION	2	F10040
31	BELLVILLE WASHER	1	F10090
32	FRONT SEAT	1	F10070
33	BALL	1	F10030
34	COUPLING	1	F10097
35	O-RING-126	1	VO-126
36	REAR SEAT	1	F10080
37	GASKET	1	V3130
45	FQ BASE KIT	1	FQ805
51	6 X 1/4 SS DRIVE SCREW	1	VT06E00DS250
** -SPECIFY DESIRED THREAD WHEN ORDERING			

5.0 FRONT END DISASSEMBLY SEQUENCE

Disassembly for Fixed Teeth, Spinning Teeth, and QuadraCup differ. Choose the step for the model you are servicing.

5.1 SPINNING TEETH DISASSEMBLY

1. Using a 5/32" Hex Key, remove BUTTON HEAD SCREWS (40).
2. Slide BUMPER (39) and O.D. WEAR RING (38) off of the HEAD (44).
3. Remove SPINNING TEETH (41), I.D. WEAR RING (42), and "V" FOLLOWERS (6) from the HEAD.
4. The HEAD will now slide off the GALLONAGE SLEEVE (10).

5.2 FIXED TEETH DISASSEMBLY

1. Using a razor blade knife, cut through one side of the BUMPER (4) from top to bottom.
2. Remove the BUMPER from the HEAD (5).
3. Use a torch to heat the CUPS (7) to break the Loctite.
4. Remove the CUPS using a 7/32" Hex Key.
5. Remove the "V" FOLLOWERS (6) from the HEAD.
6. The HEAD will now slide off the GALLONAGE SLEEVE (10).

5.3 QUADRACUP DISASSEMBLY

1. Using an 1/8" Hex Key, remove the DETENT SCREWS (47).
2. The SPRINGS (13) and 3/16" TORLON BALLS (14) can now be removed from the CUP (46).
3. Slide the CUP off the HEAD and remove O-RING (48).
4. Use a torch to heat the CUPS to break the Loctite.
5. Remove the "V" FOLLOWERS (6) from the HEAD (50).
6. The HEAD will now slide off the GALLONAGE SLEEVE (10).

5.4 DEFLECTOR DISASSEMBLY

1. Cut the DEFLECTOR LABEL (1) off the DEFLECTOR (3) to expose spanner wrench holes.
2. Remove the HOLLOW LOCK SET SCREW (2).
3. Remove the DEFLECTOR using a spanner wrench.

5.5 GALLONAGE SLEEVE AND INDEX RING DISASSEMBLY

1. Using a torch, heat the CUPS (7) in the INDEX RING (17). Placing a wet rag over the NAME LABEL (12) will help to not damage the label while heating the part.
2. Remove the CUPS using a 7/32" Hex Key.
3. Remove the "V" FOLLOWERS(6), SPRINGS (13) and TORLON BALLS (14) from the INDEX RING.
4. The GALLONAGE SLEEVE (10) can now be removed from the INDEX RING.
5. Using a torch, heat the SET SCREW (18) in the INDEX RING.
6. Remove the SET SCREW using a 5/64" Hex Key.
7. Remove the ACETAL BALLS (19) from the INDEX RING [16] by rotating the INDEX RING while holding the assembly with the set screw hold down.
8. Slide INDEX RING off the BASE (21 or 45).
9. Remove the KEY PINS (11) from the GALLONAGE SLEEVE.
10. Remove the QUAD RING (9) and O-RING (20).

6.0 FRONT END ASSEMBLY SEQUENCE

6.1 GALLONAGE SLEEVE AND INDEX RING ASSEMBLY

1. Slide the BASE into the INDEX RING (17).
2. Load ACETAL BALLS (19) into INDEX RING through the small tapped hole. Rotate the ring to help with ball loading.
3. Apply Loctite 271 to SET SCREW (18) and install in the INDEX RING until flush, using a 5/64" Hex Key.
4. Apply Molykote #112 High Performance Silicone Grease to the inside of the GALLONAGE SLEEVE (10) and the slots in the BASE (21 or 45).
5. Install O-RING (20) on the BASE.
6. Slide GALLONAGE SLEEVE into INDEX RING.
7. Place a "V" FOLLOWER(6), HELICAL SPRING (13), and TORLON BALL (14) into 2 CUPS (7).
8. Grease detent grooves and cam grooves in GALLONAGE SLEEVE.
9. Thread the cup assemblies into INDEX RING (do not apply Loctite and tighten completely) making sure that cup assemblies line up with the detent grooves.
 - A. The INDEX RING should feel snug when indexed / rotated.
 - B. Align the center of the word "FLUSH" on the INDEX RING with arrow on the NAME LABEL (12).
10. Insert KEY PINS into the GALLONAGE SLEEVE until flush.
11. Go back and apply Loctite 271 to cup assemblies then thread flush to surface of INDEX RING.
12. Install the QUAD-RING (9) on the GALLONAGE SLEEVE.

6.2 SPINNING TEETH ASSEMBLY

1. Apply grease to cam grooves in GALLONAGE SLEEVE (10) and to the I.D. of the HEAD (44).
2. Slide the HEAD over the GALLONAGE SLEEVE.
3. Align the large holes in the side of the HEAD with the cam grooves in the sleeve.
4. Straight stream icon on PATTERN LABEL (8) should line up with arrow on NAME LABEL (12).
5. Insert "V" FOLLOWERS (6) in the grooves in the HEAD until flush.
6. Place the I.D. WEAR RING (42) and SPINNING TEETH (41) on the HEAD.
7. Place the O.D WEAR RING (38) in the groove in the BUMPER (39).
8. Slide the BUMPER over the HEAD aligning the holes in the BUMPER with the small holes in the HEAD.
9. Using a 5/32" Hex Key, install the BUTTON HEAD SCREWS (40), securing with blue Loctite.

6.3 FIXED TEETH ASSEMBLY

1. Apply grease to cam grooves in GALLONAGE SLEEVE (10) and to the I.D. of the HEAD (5).
2. Apply grease to "V" FOLLOWERS (6) and place each one into a CUP (7).
3. Slide HEAD over end of GALLONAGE SLEEVE.
4. Align the holes in the HEAD with cam grooves in the GALLONAGE SLEEVE.
5. Straight stream icon on PATTERN LABEL (8) should line up with arrow on NAME LABEL (12).
6. Apply Loctite 271 to the cup assemblies and thread through the HEAD and into cam groove in GALLONAGE SLEEVE.
7. Tighten until "V" FOLLOWERS make contact with cam groove in the GALLONAGE SLEEVE, then back out a 1/8 of a turn.
8. Rotate the head to make sure cup subassemblies are not threaded too tight. Loosen if needed.
9. Slide BUMPER (4) over the HEAD with grooves in the bumper lining up with the cups on the HEAD.

6.4 DEFLECTOR ASSEMBLY

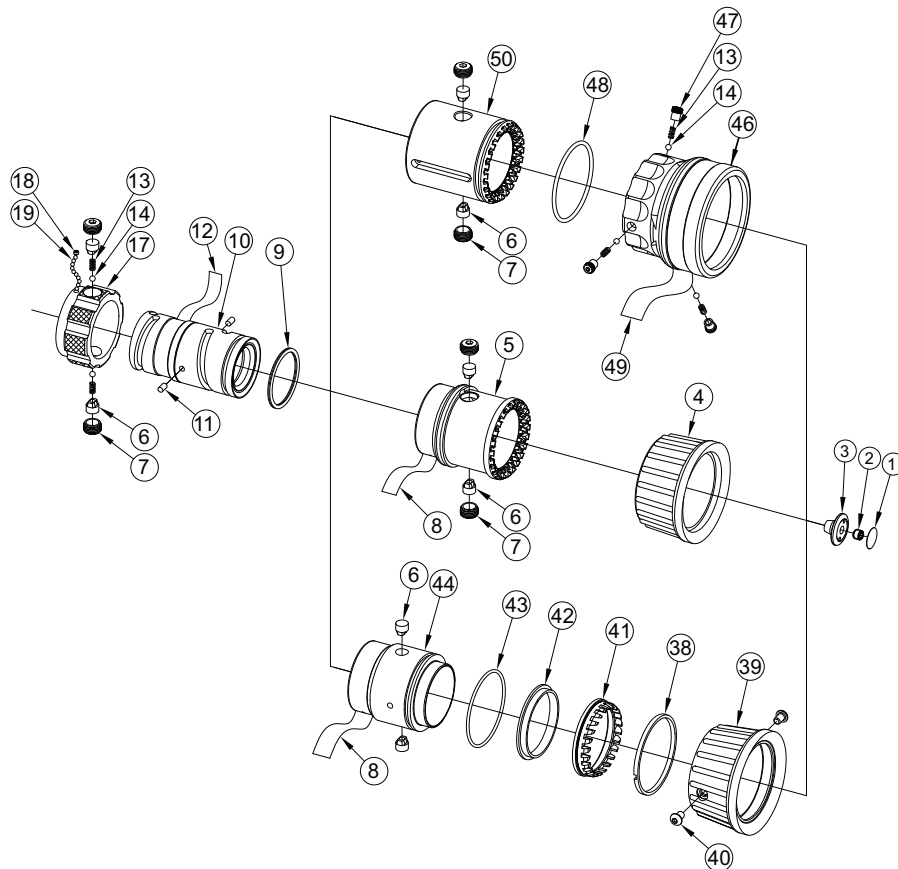
1. Set the nozzle to the lowest operating flow rate.
2. Apply a small amount of Loctite 271 to threads on end of the BASE (21 or 45).
3. Start screwing on the DEFLECTOR (3) by hand, to make sure it is going on straight.
4. Continue to screw the DEFLECTOR in using a spanner wrench.
5. Adjust the gap between the DEFLECTOR and face of the GALLONAGE SLEEVE (10) per the chart below.
6. Install the HOLLOW LOCK SET SCREW (2) until tight.
7. Allow the Loctite on the DEFLECTOR to cure and ensure the DEFLECTOR is not loose before testing.
8. Test nozzle to ensure that nozzle generates the proper pressure at the correct flow rate. Adjust the DEFLECTOR in or out as needed.
9. Clean and dry the DEFLECTOR.
10. Apply the DEFLECTOR LABEL (1).

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
30 GPM	75 PSI	.018" - .020"
30 GPM	100 PSI	.040"
110 L/min	7 bar	1.0 mm
100 L/min	6 bar	1.0 mm

6.5 QUADRACUP ASSEMBLY

1. Apply grease to the cam grooves in the GALLONAGE SLEEVE and to the I.D. of the HEAD.
2. Apply grease to the "V" FOLLOWERS and place each one into a CUP.
3. Slide HEAD over end of GALLONAGE SLEEVE.
4. Align the holes in the HEAD with cam grooves in the GALLONAGE SLEEVE.
5. Apply Loctite 271 to the cup assemblies and thread through the HEAD and into cam groove in the GALLONAGE SLEEVE.
6. Tighten until "V" FOLLOWERS make contact with cam groove in the GALLONAGE SLEEVE, then back out a 1/8 of a turn.
7. Rotate the head to make sure cup subassemblies are not threaded too tight. Loosen if needed.
8. Install greased O-RING in the groove on OD of the HEAD.
9. Apply grease to outside of the HEAD, then slide the CUP on the HEAD making sure that holes in CUP line up with slots in HEAD.
10. Place a SPRING and TORLON BALL into each DETENT SCREW.
11. Begin screwing the Detent assemblies into the CUP.
12. Apply Loctite #271 to the remaining thread and continue to tighten the screws until flush with the CUP.



ITEM	DESCRIPTION	QTY	PART #
1	DEFLECTOR LABEL	1	FL10
2	3/8-24 X 3/16 LOCK SET SCREW	1	VT37-24HL187
3	DEFLECTOR	1	FT210
4	BUMPER	1	FT270
5	HEAD	1	FT220
6	"V" FOLLOWER	2	JT263
7	CUP	2	FT260
8	PATTERN LABEL	2	FL200
9	QUAD-RING-4225	1	VOQ-4225
10	GALLONAGE SLEEVE	1	FT24
11	KEY PIN	2	FT252
12	NAME LABEL	1	FL24
13	HELICAL SPRING	3	VM4195
14	3/16" TORLON BALL	3	V2120-TORLON
* -CONSULT FACTORY FOR SPECIFIC PART NUMBERS			
** -SPECIFY DESIRED THREAD WHEN ORDERING			

ITEM	DESCRIPTION	QTY	PART #
17	INDEX RING	1	FT23
18	8-32 X 1/8" SET SCREW	1	VT08-32SS125
19	1/8" ACETAL BALL	50	VB125AC
38	O.D.WEAR RING	1	FT267
39	SPINNING TEETH BUMPER	1	FT265
40	1/4-20 X 3/8 BTN HEAD SCREW	2	VT25R20BH375
41	SPINNING TEETH	1	FT222
42	I.D. WEAR RING	1	FT227
43	O-RING-145	1	VO-145
44	SPINNING TEETH HEAD	1	FT225
46	CUP	1	F675
47	DETENT SCREW	3	D290
48	O-RING-231	1	VO-231
49	PATTERN LABEL QUADRACUP	1	FL205
50	FOAM HEAD	1	FT226

7.0 REPAIR KITS

F100 BAIL HANDLE/VALVE REPAIR KIT	F100-HRK
FRONT END REPAIR KIT-F TWISTER	F20-KIT
LOCTITE MINI DISPENSER (BLUE)	VSA-125
RED PISTOL GRIP KIT	HM692RED-KIT
GREEN PISTOL GRIP KIT	HM692GRN-KIT
BLUE PISTOL GRIP KIT	HM692BLU-KIT
BLACK PISTOL GRIP KIT	HM692BLK-KIT
ORANGE PISTOL GRIP KIT	HM692ORG-KIT
WHITE PISTOL GRIP KIT	HM692WHT-KIT
YELLOW PISTOL GRIP KIT	HM692YEL-KIT
GREY PISTOL GRIP KIT	HM692GRY-KIT
PURPLE PISTOL GRIP KIT	HM692PPL-KIT
PINK PISTOL GRIP KIT	HM692PNK-KIT
TAN PISTOL GRIP KIT	HM692TAN-KIT

F100 VALVE REPAIR KIT	F100-KIT
BUBBLE CUP REPAIR KIT-F SERIES	F685-KIT
LOCTITE MINI DISPENSER (RED)	V5010
RED HANDLE COVER KIT	HM925RED-KIT
GREEN HANDLE COVER KIT	HM925GRN-KIT
BLUE HANDLE COVER KIT	HM925BLU-KIT
BLACK HANDLE COVER KIT	HM925BLK-KIT
ORANGE HANDLE COVER KIT	HM925ORG-KIT
WHITE HANDLE COVER KIT	HM925WHT-KIT
YELLOW HANDLE COVER KIT	HM925YEL-KIT
GREY HANDLE COVER KIT	HM925GRY-KIT
PURPLE HANDLE COVER KIT	HM925PPL-KIT
PINK HANDLE COVER KIT	HM925PNK-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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