ELKHART BRASS
Fire Fighting Equipment

ELKHART REMOTE CONTROLLED MONITOR MODEL 8394-02 RC

INSTALLATION AND MAINTENANCE INSTRUCTIONS

The standpipe that the monitor is to be mounted on must be designed to withstand the weight of the monitor assembly full of water plus the reaction force of the nozzle. Nozzle flow and pressure should be limited to produce no more than 505 lbs. of nozzle reaction force. This is the equivalent force of a combination fog nozzle flowing 1000 gpm @ 100 psig nozzle pressure in a straight stream pattern. Maximum pressure at the monitor base is 200 psig.

Nozzle back pressure or reaction force can be calculated by using one of the following formulae.

Fog Nozzle Reaction (pounds) = $0.0505 \times GPM \times \sqrt{NOZZLE\ PRESSURE}$

Smooth Bore Nozzle Reaction (pounds) = $1.5 \times NOZZLE\ DIA^2 \times NOZZLE\ PITOT\ PRESSURE$

Allowable Height of 8394-02 RC Monitor

The maximum height allowed between the monitor discharges center of rotation and the inlet end of the monitor base sub-assembly is 10 feet without additional support. When the height exceeds 10 feet one or more model 295 support bearings should be used for additional support. See guide below.

10-20 feet one 295 support bearing is required.
20-40 feet two 295 support bearings are required.
40-60 feet three 295 support bearings are required.

The first 295 support bearing should be located approximately 3 feet below the upper monitor section. Additional 295 support bearings should be evenly spaced on the 4” pipe between the first support bearing and the lower gearcase & base assembly.

Installation

Refer to drawing 8394-02 RC (Rev-E) for the general assembly and arrangement of parts for the elevated monitor.

It is suggested that the monitor be assembled on the ground, then raised and mounted on the standpipe as a completed unit.

1. Assemble the 4” pipe between the upper monitor sub-assembly and lower gearcase & base assembly as shown in the drawing. (See note 4 on drawing to remove the gear case from the monitor base sub-assembly before installing the 4” pipe.) Use a suitable pipe thread sealant on each joint. If installation requires the #295 support bearing(s), slide it (them) over the pipe before assembling pipe.

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2. Install the two rod guides (Item 24) onto the 4” pipe using the U-bolts and nuts provided. The upper rod guide should be located 1/3 of the distance measured in step 3 from the upper sleeve (Item 27). The lower rod guide should be located 1/3 of the distance measured in step 3 from the upper rod guide. (The maximum distance between rod guides is 10 feet. Add additional rod guides as needed to meet this requirement.)

3. Paint the 4” pipe section of the assembled unit with paint suitable for the environment and let dry.

4. Assemble the lower 90º gear case sub-assembly to the 4” pipe using the two U-bolts and nuts provided. Locate it 3” to 4” above the lower gearcase & base assembly with the sleeves (Items 21 & 27) aligned.

5. Measure the distance from the center of lower sleeve (Item 21) to center of upper sleeve (Item 27). Provide 5/8 dia. brass or stainless steel rod to this length.

6. Loosen the two U-bolts and slide the lower 90º gear case down against the monitor base assembly. Insert one end of the 5/8” rod through each of the rod guides and into the upper sleeve (Item 27). Position the 5/8” rod and the rod guides on the 4” pipe so the 5/8” rod is aligned with the upper sleeve (Item 27). Move the lower 90º gear case into position so the lower sleeve (Item 21) will slip onto the lower end of the 5/8” rod and slide it up onto the 5/8” rod as far as possible. The 5/8” rod should be loosely bottomed in both the upper and lower sleeves. Align lower 90º gear case and rod guides so the 5/8” shaft(s) are in line as shown on the drawing and tighten the U-bolts around 4” pipe. Position rod guides and tighten U-bolts.

7. Use the hole located on one side of the upper and lower sleeves (Item 21) and (Item 27) as a guide and drill a 3/16 hole through the 5/8” rod and out through the other side of each sleeve. Insert a roll pin (Items 20 & 28) in each of the newly drilled holes.

8. Assemble the nozzle (see installation instructions included with nozzle).

9. Grease all bearings at grease fittings using a good grade of waterproof grease. Put a heavy coating of silicone grease on all exposed gears and worms.

10. Turn hand wheels for elevation and horizontal control to check unit for free operation.

11. Assemble unit to standpipe and attach support bearing(s) if required.

12. Run water through monitor and nozzle at rated volume and pressure. Operate monitor through its entire range of motion as final check of proper alignment and operation.

Maintenance

1. Maintain paint as required by environment.

2. Maintain heavy coating of silicone grease (Dow Corning #4 compound MIL-SC-8660B or equal) on exposed gears, especially in freezing temperatures.

3. Grease upper monitor section bearings and enclosed gears through the grease fitting every 6 months, or after each use, using a good grade of water proof grease. Start at one end of travel and pump in fresh grease until fresh grease can be seen coming out the vertical rotation joint. Move the monitor 30 degrees towards the opposite end of travel and repeat. Keep repeating this procedure until you've reached the other end of travel. Move the monitor up & down through its entire range of motion several times to distribute the fresh grease. Wipe off any excess grease.

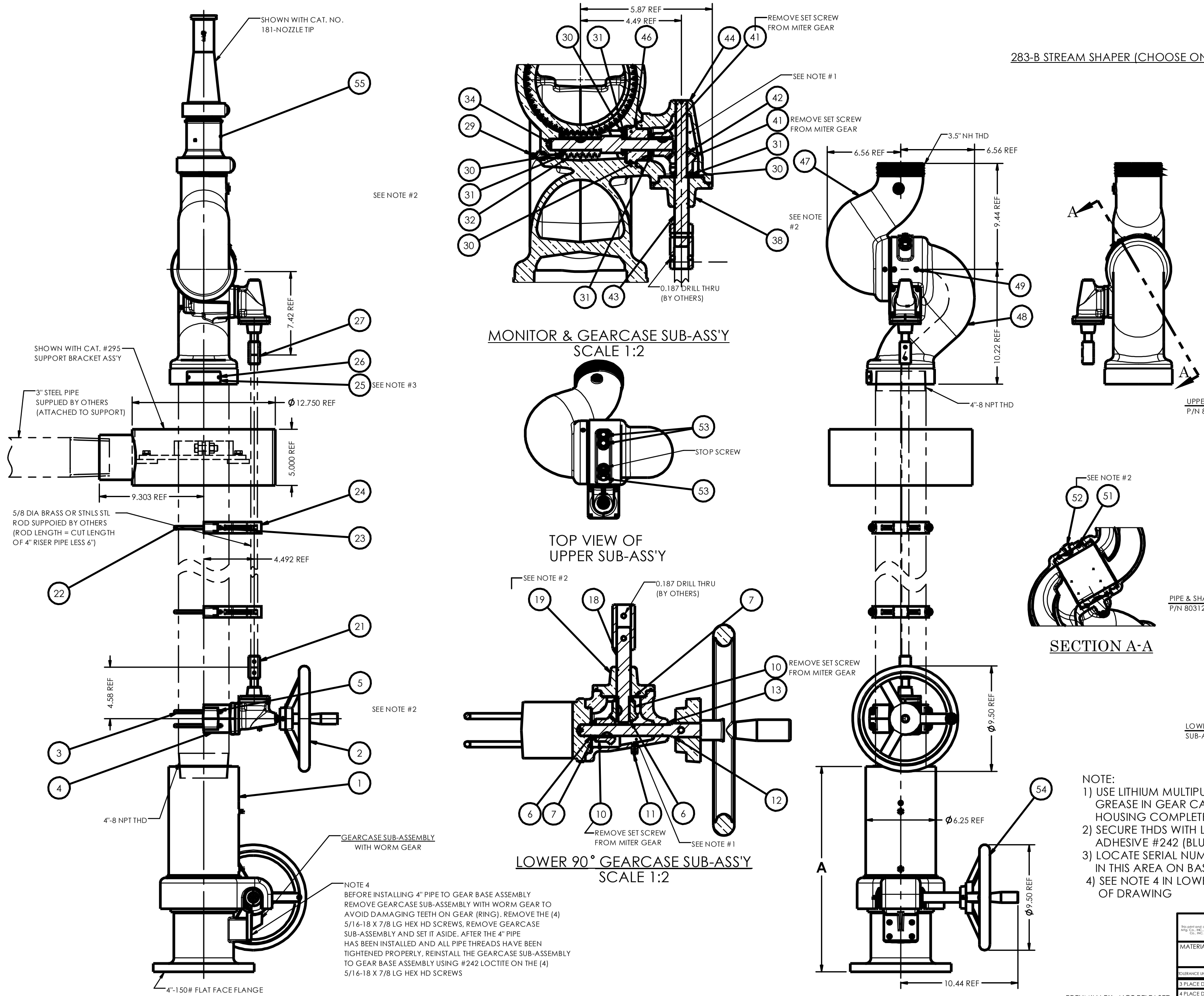
4. Grease lower monitor base section bearings through the grease fittings every 6 months, or after each use, using a good grade of water proof grease. Start at the upper grease fitting on the side and pump in fresh grease for minimum of 5 seconds. Move to the lower grease fitting and pump in fresh grease until fresh grease can be seen coming out the rotation joint. Turn the monitor 30 degrees and repeat. Keep repeating this procedure until the entire 360 degrees of rotation have been covered. Pump fresh grease into the gear case assembly through the fitting on the end of the hand wheel shaft until fresh grease comes out at both sides of the gear case. Move the monitor left & right through its entire range of motion several times to distribute the fresh grease. Wipe off any excess grease.

5. Operate monitor once a month. Preferably with water flowing at the rated volume and pressure to assure that monitor is operating properly.

Repair Parts

Refer to Elkhart Brass Mfg. Co., Inc. Drawing 8394-02 RC (Rev-E) for parts list.

REV.	ZONE	DESCRIPTION	BY	ECN NUMBER
E	F1	P/N'S: 80383001, 803896001, 80762001, 81714001 WERE REMOVED BECAUSE OF NO USE AND ARE NOW OBSOLETE	JS	170719



80385001	18-1/2"
80384001	18-1/2"
PART NO.	"A" DIM

OPTIONAL BASE SUB-ASSEMBLIES (USE ONE)

UPPER MONITOR SUB-ASS'Y P/N 81354001

PIPE & SHAFT CALMP SUB-ASS'Y P/N 80312001 (2 REQ'D)

LOWER 90° GEARCASE SUB-ASS'Y P/N 81355001

ITEM NO.	PART NUMBER	DESCRIPTION	QTY.
54	80162001	9.5" HANDWHEEL ASS'Y (BRASS) "W/ 0.875 BORE"	1
53	51863000	PLUG STOP (BRASS HEX) 8394	3
52	61088001	SCREW (CAM) DRIVE	1
51	15027000	BALL (0.250 DIA) STAINLESS STEEL	124
49	61248000	SCREW-SET (SLOTTED) BRASS 3/8-24 X 0.250-LG	2
48	17914001	BODY - BASE (INLET) 4" NPTF (WITH CAST VANE)	1
47	81054001	OUTLET BODY SUB-ASSEMBLY	1
46	65559001	SPACER, BEARING	1
44	20399001	CASE-GEAR (90 Deg) (RIGHT ANGLED BRASS)	1
43	64049001	SHAFT - UPPER GEAR (S/S)	1
42	57590000	RING - EXTERNAL RETAINING	1
41	33692000	GEAR - MITER	2
38	10448001	ADAPTER - FLANGED (BRASS)	1
34	63936001	SHAFT - WORM (S/S) 8294	1
32	71246000	GEAR - WORM (8294)	1
31	15698000	BEARING THRUST 1/2"	4
30	71511000	Washer Thrust for 2940 1/2" SS	8
29	31001000	ALEMITE FITTING	1
27	61642001	SLEEVE (5/8)	1
26	61215100	Screw 4x0.187 RD Head Drive SS	2
25	44242000	LABEL - SERIAL NUMBER (UNIVERSAL)	1
24	20431001	CLAMP - PIPE & SHAFT	1
23	47460000	NUT (HEX) 0.250-20 THDS	2
22	16407001	BOLT - "U" (BRASS) FOR 4.0" PIPE	1
21	61642001	SLEEVE (5/8) FOR REMOTE CONTROLLED ELEVATED MONITOR	1
19	10448001	ADAPTER - FLANGED (BRASS)	1
18	64049101	SHAFT - UPPER GEAR (S/S)	1
13	23588001	GEARCASE (90 DEGREE) BRASS	1
12	64048001	SHAFT - HANDWHEEL (S/S)	1
11	31011000	Grease Fitting (3/16 DR-SS)	1
10	33692000	GEAR - MITER	2
8	71511000	Washer Thrust for 2940 1/2" SS	4
6	57590000	RING - EXTERNAL RETAINING	2
5	47460000	NUT (HEX) 0.250-20 THDS	4
4	20430001	CLAMP - 90 DEGREE GEARCASE	1
3	16407001	BOLT - "U" (BRASS) FOR 4.0" PIPE	2
2	80162101	9.5" HANDWHEEL ASS'Y (BRASS) "W/ 0.625 BORE"	1
55	02517004	283-B STREAM SHAPER (3.5 NHT F X 2.5 NHT M) CP	1
55	02517002	283-B STREAM SHAPER (3.5 NHT F X 2.5 NHT M) SB	1
1	81714001	LOWER GEARCASE & BASE ASS'Y 6"-300# FALNGE X 4" NPT THD	1
1	80762001	LOWER GEARCASE & BASE ASS'Y 6"-150# FLANGE X 4" NPT THD	1
1	80386001	LOWER GEARCASE & BASE ASS'Y 6"-300# FLANGE X 4"-150# FLANGE	1
1	80385001	LOWER GEARCASE & BASE ASS'Y 4"-150# FLANGE X 4"-150# FLANGE	1
1	80384001	LOWER GEARCASE & BASE ASS'Y 4"-150# FF FLANGE X 4" NPT THD	1
1	80383001	LOWER GEARCASE & BASE ASS'Y 4" NPT THD X 4" NPT THD	1

NOTE:
1) USE LITHIUM MULTIPURPOSE GREASE IN GEAR CASE. FILL HOUSING COMPLETELY.
2) SECURE THDS WITH LOCTITE ADHESIVE #242 (BLUE).
3) LOCATE SERIAL NUMBER TAG IN THIS AREA ON BASE.
4) SEE NOTE 4 IN LOWER LEFT OF DRAWING

PRELIMINARY - NOT RELEASED

ELKHART BRASS MFG. CO., INC.
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DRAWN BY: RDM	DATE: 2/11/2003	CHECKED BY: RDM	DATE: 2/11/2003
MATERIAL	WEIGHT (LBS): 237.6571	CAT.NO.: 8394-02 RC	
TOLERANCE UNLESS OTHERWISE SPECIFIED	3 PLACE DEC. ± .010"	4 PLACE DEC. ± .005"	ANGLES ± 0°30' 0"
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES; 63 SURFACE FINISH; REMOVE BURRS AND SHARP CORNERS; DO NOT SCALE PRINT	INTERPRET DIMENSIONS AND TOLERANCES PER ASME Y14.5M 1994	CAD MODEL: 8394-02 RC (08394061)	THIRD ANGLE PROJECTION

ELKHART BRASS
Fire Fighting Equipment

DESCRIPTION: "SPIT-FIRE" REMOTE CONTROLLED ELEVATED MONITOR (1000-GPM)

SIZE	PART NUMBER	REV.
D	8394-02 RC (08394061)	E

CAD SCALE 1:4 SHEET 1 OF 1