

Model 2175
MiniMast™ II
Upgrade Kit Instructions



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Revision Record


MANUAL, TECH. INSTALLATION, 2175 UPGRADE, Part #399784, Rev. B

Revision	Description	Date
A	Initial Release	October, 2006
B	Changed 2090 to EMCenter™	January, 2018

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Safety Symbol Definitions

This product and related documentation must be reviewed for familiarization with safety markings and instructions prior to operation.

Safety Symbol	Definition
	<p>Refer to Manual: When product is marked with this symbol, refer to the instruction manual for additional information.</p>

General Safety Considerations



Safety Symbol	Definition
	<p>CONTACT ETS-LINDGREN PRIOR TO SERVICING. Servicing (or modifying) the unit by yourself may void your warranty. If you attempt to service the unit by yourself, disconnect all electrical power before starting. There are voltages at many points in the instrument that could, if contacted, cause personal injury. Only trained service personnel should perform adjustments and/or service procedures upon this instrument. Capacitors inside this instrument may still be CHARGED even when instrument is disconnected from its power source.</p>
	<p>ONLY QUALIFIED PERSONNEL should operate or service this equipment.</p>

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1.0 Upgrade Kit Components

The following components are included in the Model 2175 MiniMast™ II Upgrade Kit.

Quantity	Part Description	Part Number
2 each	Bearing Mast Assembly	111026
1 each	Brake Carrier Assembly	108972B
2 feet	3/8 inch Neoprene Tubing	891084
1 each	Brace 2175 Base	111083
1 each	Plate Nut Base	109278B
44 feet	Mast Rope	860314
10 each	¼ inch Flat Washer	910455
10 each	¼ inch Nylon Lock Nut	910049
5 each	¼-20 x 3 inch Hex Bolt	910767
1 each	DP 190 Epoxy	920173
4 each	½ inch Flat Washer	910419
2 each	½ inch Split Lock Washer	910418
2 each	½-13 x 1 ¼ inch Hex Bolt	910414
4 each	Spacer Plate for Mast Upgrade	111293

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2.0 Other Tools Required

Make sure you have the following additional tools and supplies to complete the Model 2175 upgrade.

- .3/8 inch Drill gun (electric or battery)
- .3125 inch (5/16 inch) Drill bit
- .375 inch (3/8 inch) Drill bit
- #2 Phillips screwdriver
- 8 inch or 12 inch Crescent wrench
- 3/8 inch Socket set
- Coarse and fine bastard file
- Masking tape
- 180/220 grit sandpaper
- Clear polyurethane varnish aerosol
- Scissors or knife

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3.0 Upgrade Instructions



Drying time for the epoxy is three to five hours. To allow the epoxy time to dry while other modifications are performed, follow these upgrade steps in the given order.

1. Provide adequate space to lower the mast.
2. Ensure that the carrier assembly is positioned at zero (0) on the EMCenter™ Modular RF Platform, or at its lowest position on the mast.
3. Using tape or equivalent, mark the carrier location on the mast.
4. Remove the boom assembly from the carrier. Set the boom assembly aside.
5. Remove the pin on the lower mast bracket, and then carefully lower the mast to a manageable work height.
6. Remove the mast cap and the guy rope to allow the carrier assembly to slide off the top end of mast.

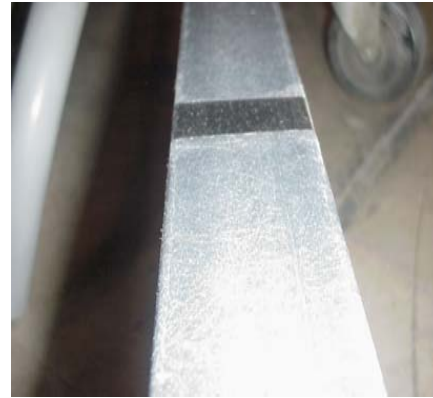


Note: If you are unfamiliar with the operation of the EMCenter, see the manual or page 9 of the *Model 2175 MiniMast™ User Manual*, available for download from ets-lindgren.com.

The EMCenter replaces the 2090 Controller, which has been discontinued.

The 2090 requires firmware revision V 3.21 or higher. It is available for download at ets-lindgren.com and requires the program Flash Upgrade Wizard V 4.0 (also available at ets-lindgren.com).

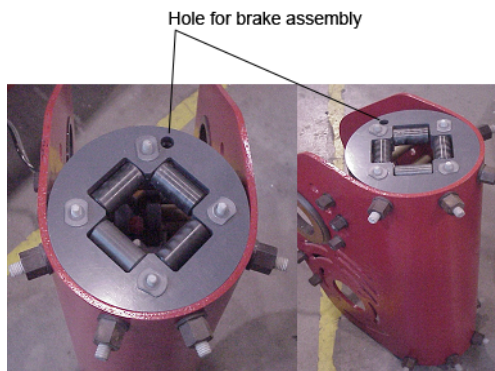
7. File the mast height indicator slots (red) using three spacer plates as templates.
8. File and sand the slots so the spacer plates are slightly below flush with the surface of fiberglass mast. The spacers are ½ inch smaller than the width of mast.
9. Center the spacer in the prepared slots with approximately ¼ inch space on each side.
10. Apply the DP 190 epoxy to the sanded side of the spacer. Attach the spacer to the prepared slot with the gloss side out.



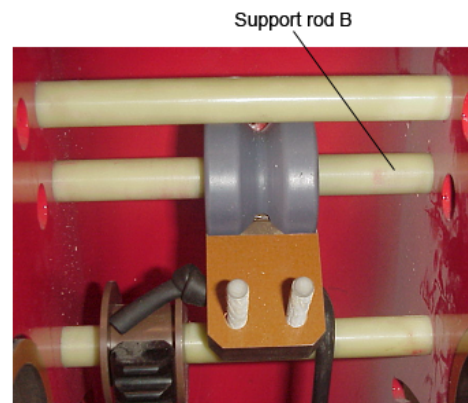
11. Remove any excess epoxy, and then place masking tape over the area until the epoxy is dry (three to five hours).
12. Repeat steps 7 through 11 for each indicator slot.
13. After the epoxy is dry, file and sand the glued areas. The areas must be smooth with no steps or uneven surfaces. If required, spray area with clear coat.
14. Remove the two existing plates (one on each end) and replace with bearing mast assembly (part #111026). Use existing hardware for reassembly.



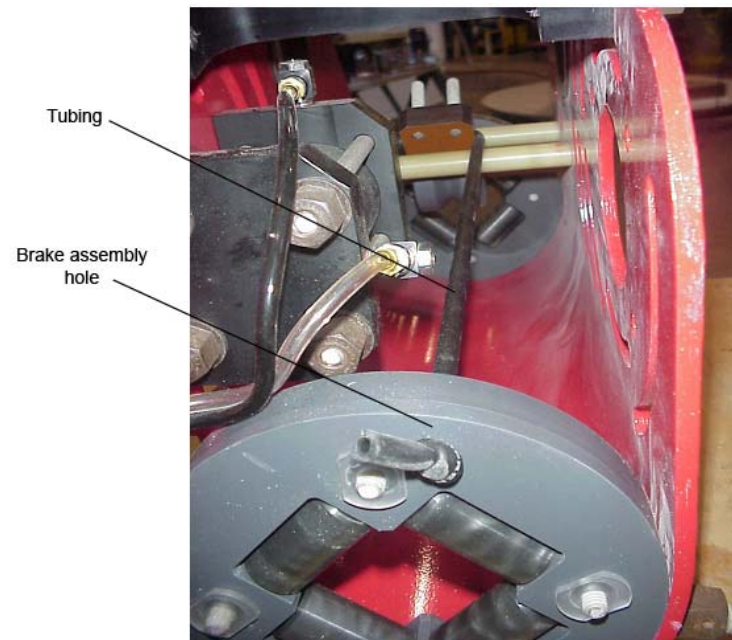
The brake assembly hole is critical to correctly position the brake assembly.



15. Remove support rod **B** to replace the brake assembly.
16. Using the brake assembly hole, make sure the brake assembly is correctly oriented.
17. Reattach support rod **B** using existing hardware.



18. Replace existing tubing with the 3/8-inch neoprene tubing (part #891084).
19. Pull on the tubing to provide a firm tension, and then tie a double knot in the tubing.



20. Manually test the brake for proper operation. You will need to test the brake again with the carrier attached to the mast during final reassembly.
21. Using the plate nut base (part #111083), transfer holes to the tower base. Drill through using a .265 diameter drill bit.
22. Attach the plate nut base using the following:
 - (10) ¼ inch flat washers (part #910455)
 - (5) ¼ inch nylon lock nuts (part #910049)
 - (5) ¼-20 x 3 inch hex bolts (part #910767)



Ensure Brace is positioned correctly for proper hole spacing.

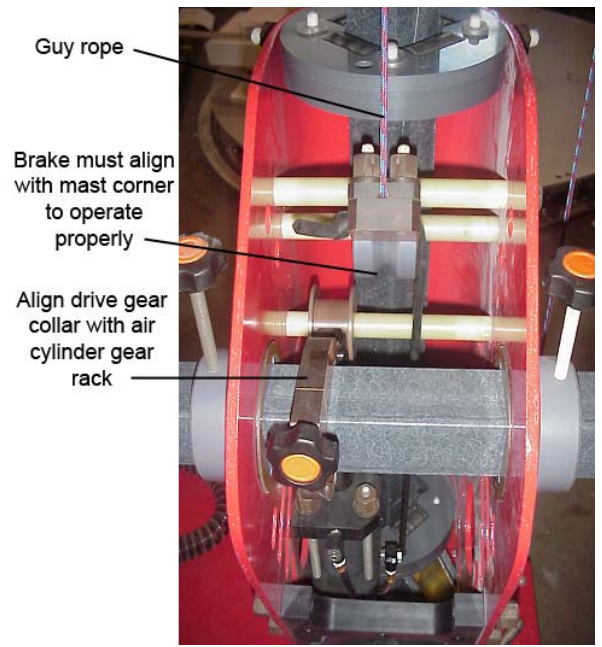


23. Replace existing plate nut under base assembly with plate nut base (part #109278B) for brace 2175 base (part #111083) installation.

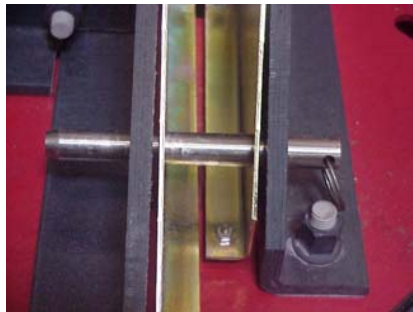


24. With a #2 Phillips screwdriver, remove cover from rope drum.
25. Replace existing rope with mast rope (part # 860314).
26. Tie the rope in a triple knot inside the drum.
27. Using existing hardware, replace cover.





➔ 12-13 x 1 ¼ inch hardware may be used in place of aligning pin for additional support. See contents list for ½ inch hardware required.



Before



After

4.0 Model 2175 MiniMast™ II Reassembly

1. Replace the carrier assembly on the tower mast. The brake assembly must align with the mast corner as the carrier is lowered onto the mast. Test the carrier rollers as the carrier is lowered onto the mast. The rollers should roll free and smooth.
2. Lower the carrier assembly down the mast to align with the mask marking. Replace the top mast cap.
3. Thread the replacement rope through the top mast cap and tie it off near the base assembly.
4. Tilt the mast back into vertical position and secure with pin or hex bolts.
5. Reposition the carrier on the mast at the marked location. Attach the guy rope to the carrier brake assembly.
6. Test the brake assembly on the Model 2175 to verify proper tension of neoprene tubing. If required, adjust the tension.
7. Replace the boom assembly.
8. Test the unit to make sure the carrier moves smoothly as the mast descends down the mast assembly.

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5.0 Final Checklist

Make sure these modifications are complete:

- Bearing Mast Assembly replaced, 2 each (part #111026)
- Brake Carrier Assembly replaced, 1 each (part #108972B)
- 38 inch Neoprene Tubing replaced, 2 feet (part #891084)
- Plate Nut Base replaced, 1 each (part #109278B)
- Brace 2175 Base installed, 1 each (part #111083)
- Mast Rope replaced, 25 feet (part #860314)
- Mast modified or replaced
- Mast pin replaced with ¼-20 x 3 inch Hex Bolt