

MACGREGOR

OWNER'S INSTRUCTIONS V21, V22, V25

This manual was retyped by Roger Garland

Special Warnings:

If your mast or any part of your boat or rigging comes in contact with a power line, you could be killed or injured. Don't sail your boat into a power line. Don't step your mast into a power line, or don't move your boat, on its trailer, into a power line. Masts, wires shrouds, or wet fiberglass are good conductors and can carry current directly to you. Look up and make sure you have clearance before doing anything with your boat.

If you are caught in a electrical storm, don't touch anything that is metal, including the mast, shrouds, boom, lifelines, rudder, tiller or metal hardware. If possible, don't touch anything that is wet. Many experts recommend that a heavy gauge copper wire be securely fastened to one of the shrouds and allowed to hang in the water to carry off the electricity from a lightening strike.

CAUTION: Our boats have 12 volt batteries. Batteries produce explosive gases, corrosive acid and levels of electrical current high enough to cause burns. To lessen the chance of personal injury or property damage, the instructions below must be followed exactly.

1. Always wear eye protection or shield your eyes when working near any battery. Remove all metal rings and jewelry.
2. Never expose a battery to open flames or electric sparks. Also, do not smoke near a battery. It could blow up.
3. Do not allow battery acid to contact eyes, skin, fabrics or painted surfaces. Flush any contacted area with water immediately and thoroughly. Get medical help if eyes are affected.
4. Do not charge the battery, adjust post connections or use booster cables without making sure the battery compartment is properly ventilated. When charging the battery, carefully follow the instructions on the charger.
5. Keep the battery filled to the proper level with distilled water.
6. Always keep vent caps tight and level with the top of the battery.
7. Do not allow metal tools or metal parts to contact the positive (+) terminal and the negative (-) terminal or any metal connected to these terminals.

Preperation for Trailering:

1. Stow the boom, rudder, tiller and all loose gear inside the cabin. Leave enough separation to avoid chafing.
2. Secure the trailer winch rope to the trailer winch, and secure the other end to the bow eye with a bowline knot. Keeping tension on the rope, winch the rope onto the winch and winch the nose of the boat snugly into the rubber bow support.
3. The keel should be lowered onto the trailer to relieve unnecessary strain on the hull.
4. Carefully store or secure all lines, halyards, and shrouds to avoid entanglement in the trailer wheels while towing.
5. Check light connections and attach the safety chain to the car.
6. The mast is carried on the boat with the bottom end forward and the slotted side down. Bolt it to the hinged mast step with a 1/4" x 4" bolt and lock (nylon insert) nut. The 1/4" bolt hole in the mast is near the spreaders. Put a rubber washer on the bolt on each side of the mast to keep it from wearing on the hinged mast step. Make sure the nut is tight. If it comes off, things could get very bad. The wood mast support slips into the brackets at the rear of the cockpit. A thumb screw in the bracket is tightened into the wood to keep the wood from jumping out. Tie the mast securely into the V notch in the top of the wood support.
7. Flag the end of the mast with a 18" square red cloth. (at night, a light on the mast may be required under some state laws.)
8. As an extra security measure, tie a line to one of the trailer side rails (near the end of the trailer). Pass the line over the boat, pull it tight, and tie it to the other trailer rail.

Ramp Launching:

We tie the keel to the trailer before the boat leaves the plant. Make sure this line is removed. Using the winch, lift the keel clear of the trailer. Remove lights and license plate. Attach a line to the bow of the boat. Back the trailer into the water until the boat floats free.

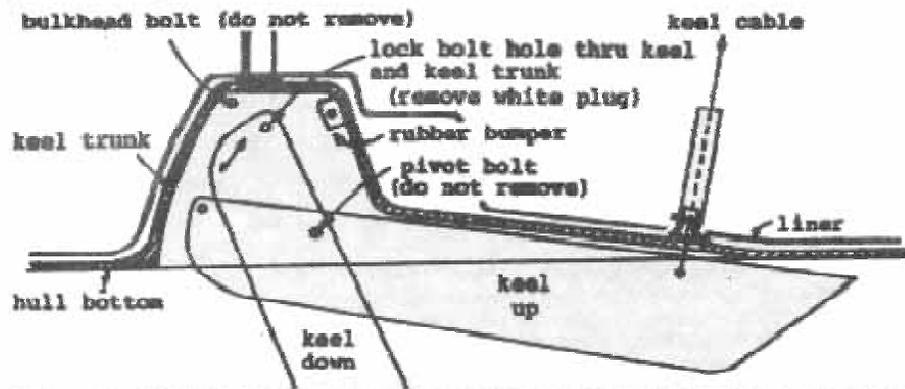
Before pulling the boat out of the water, winch the bow securely to the trailer to prevent the boat from sliding backward off the trailer.

Raising and Lowering the Keel:

With the boat in the water, lower the keel by gripping the handle firmly and rotating it counter-clockwise. The winch handle works through a friction clutch, and shout stay in place wherever you leave it. Release your hand from it very carefully, making sure it will stay where it is. If the

winch slips, it is probably because of oil, wax or other contamination on the clutch face. To correct the problem, lower the keel to the full down position, and unscrew the winch handle by turning it counter clockwise. This will expose the composition clutch face. Lightly sand the clutch face and the bearing surface on the handle with 220 grit sandpaper to remove all contamination, then reassemble.

Never mess around with the winch innards with load on the cable. Never get your face near enough to the handle that it can strike you. There can be a lot of weight on the winch and a spinning handle can be very dangerous. Lower the keel until the hole in the top of the keel lines up with the lock hole in the keel trunk. Insert the 3/8 x 3 1/2" lock bolt through the keel trunk and the keel, with a rubber washer on each side of the keel trunk. Secure the nut finger tight. Never stick your finger in the lock hole to search for the keel. Something could slip and might get bitten. Make sure the lock bolt passes through the keel. See the following diagram for a guide as to where everything is.



If you are sailing in shallow water, where you can reasonable expect to hit bottom, install the lock bolt in the top keel trunk hole before lowering the keel. Then lower the keel until it comes to rest against the bolt. Since the lock bolt now does not pass through the keel, it will swing back if you hit bottom. However, if a severe knockdown is taken, bear in mind that the keel may swing back up against the hull and cause damage. Caution should be exercised while sailing with the keel positioned in this manner.

To raise the keel, crank the handle until the keel just touches the hull. When resistance is felt, stop cranking.

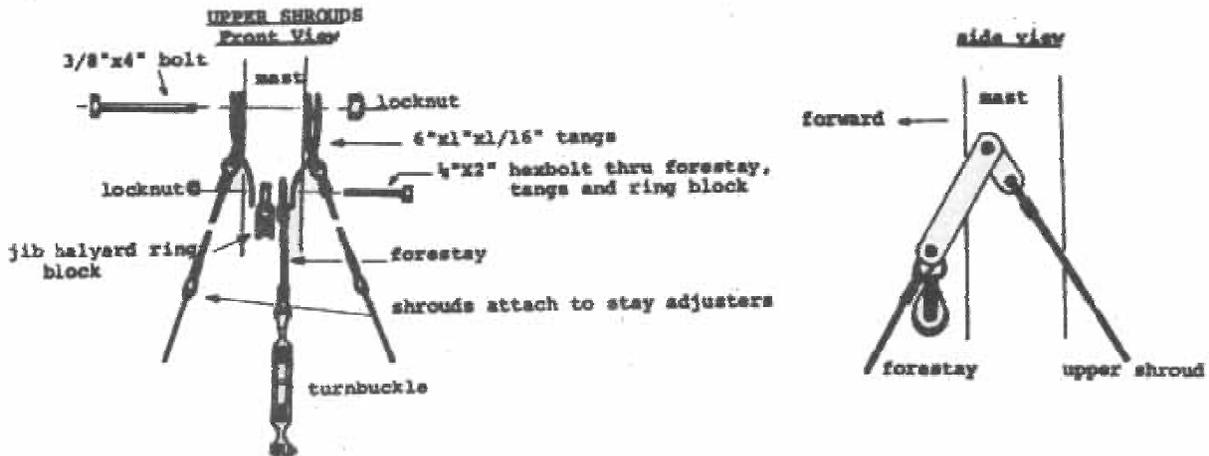
When the boat is launched for the first time, check for leakage around the lower pivot bolt. The nut should be tightened securely enough to stop all leakage, but not so tight as to damage the rubber.

The boat is self-righting only with the keel locked down. The lock bolt will assure that the keel angle is proper, and that the keel stays down in the event of a severe knockdown.

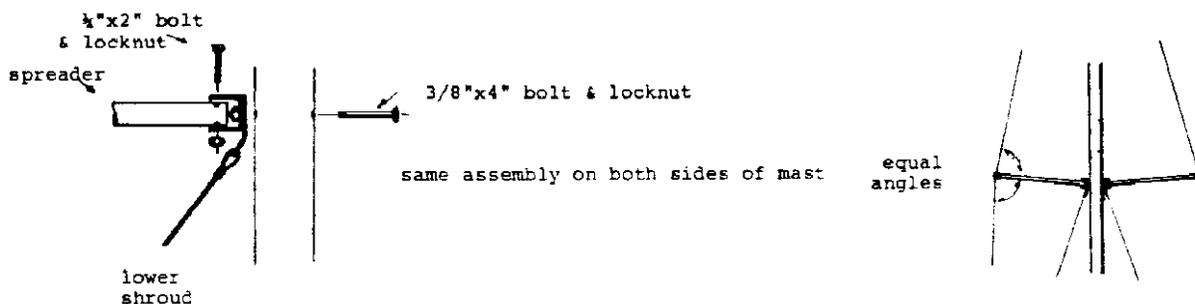
To eliminate vibration and hum from the keel cable, allow a few inches of slack in the cable after the keel is locked down.

Rigging the Mast:

Install the upper shrouds, forestay and jib halyard to the uppermost 3/8" hole in the mast.



Make sure the tangs are mounted with the smooth center surface of the tang contacting the mast. If the tangs are mounted wrong side out, the edges of the tangs may cut into the mast. Tighten the bolts snug, but not tight enough to deform the mast and fittings.



Install the lower shrouds and spreaders. Connect the spreaders to the upper shrouds. Make sure the spreader and fittings are clamped securely to the upper shrouds.

On the 21 and 22 the backstay bent tang slips over the 3/8" bolt protruding from the rear of the masthead and is held firmly in place with a 3/8" locknut. On the 25, the backstay wire loop bolts (with a 1/4" x 1 1/2" bolt and locknut) between the rear holes in the masthead fitting. Make sure the nut is fully engaged in the threads.

The main halyard passes through the cheek pulley at the masthead and the forward end ties off to the cleat on the starboard side of the mast. Tie a twist pin shackle (with a short bowline) to the aft end of the halyard (the end nearest the sail feed track).

The jib halyard passes through the pulley near the top of the forestay and ties off to the cleat on the port side of the mast. Tie a twist pin shackle (with a bowline) to the forward end of the

halyard.

The spinnaker halyard passes through a second ring pulley that hangs directly beside the jib halyard pulley. It ties off to a second cleat on the port side of the mast. Tie a twist pin shackle to the forward end of the halyard.

Raising the Mast:

Lay the mast on top of the boat with the base near the mast step on the cabin top, and with the other end of the mast in the aft mast carrier.

Attach the stay adjuster slides (fastened to the upper and lower shrouds) to the stay adjuster bodies. Use 1/4" clevis pin and cotter ring. Put the clevis pin through the second hole down on the body and through the end hole on the slide. Connect the stay adjuster bodies to the chainplates with 1/4" clevis pins and cotter rings. (The upper shroud stay adjuster goes in the rear hole of the chainplate.)

Connect the backstay to the U bolt on the rear cockpit coaming in exactly the same manner as the shrouds.

Attach the mast to the slot in the hinged step with the 3/8" bolt and nut.

Make sure that the shrouds are not entangled on the boat or trailer, and then raise the mast. The task is made much easier if a second person stands on the foredeck and pulls on the forestay as the mast goes up. Connect the forestay turnbuckle to the forward hole in the foredeck fitting. Be careful not to hit a power line with the mast or rigging. You could be injured or killed.

Do not release forward pressure on the mast until the forestay is connected.

Set the mast at right angles to the waterline. When properly tuned, the shrouds, backstay and forestay should be snug, but not excessively tight. Use the following sequence to set the rigging.

1. Adjust the backstay to give the mast the proper fore and aft position.
2. Take up the slack in the forestay by adjusting the forestay turnbuckle. At this point, don't pull it tight.
3. Adjust the upper shrouds so that the mast is straight from side to side. Try to make them reasonably snug (Note: the stay adjusters are designed as "verniers" to provide adjustments in 1/8" increments. This is accomplished by having the holes in the slides spaced at different intervals than the holes in the bodies. As the shroud is extended every 1/8", a new set of holes will line up, allowing very precise tuning adjustments. A small screwdriver can be inserted in one of the sets of holes to provide leverage to get tension on the shrouds while the bolt is being inserted in the proper holes.
4. Adjust the lower shrouds as described above, Don't get them too tight or the center of the mast will be pulled toward the rear of the boat.

5. Tighten the cotter pin in the forestay turnbuckle to tension the entire rig.

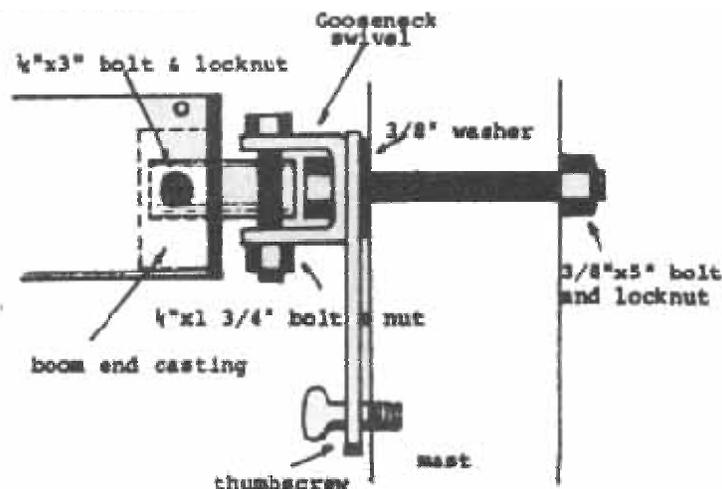
In general, the mast should be reasonably straight when no sails are up. In heavy winds, the masthead should curve gently back and downwind on the 25. The downwind shrouds will be slack when sailing hard. The backstay will be somewhat slack when sailing into the wind, since the sail and mainsheet then take over the task of supporting the mast.

Another method of adjusting the shrouds is as follows: with all the rigging in place, grip the upper shroud about 4 feet above the deck and pull inward (toward the center of the boat). The lower shroud will go slack and allow another hole to be taken up in the stay adjuster. To loosen the upper shroud, pull inboard on the lower shroud. This method, of course, takes 2 people, and can get the rigging far tighter than is desirable.

The mast is lowered by reversing the above process. (Loosen the forestay turnbuckle, but leave all the other shrouds and the backstay connected.)

Connect the Boom to the Mast:

The finished assembly is shown below



Mainsheet:

Attach the double block to the boom end tang with the small shackle. Run the mainsheet through the swivel cam cleat block, through the forward pulley in the double block on the boom, through the pulley on the starboard rail, back through the aft pulley on the boom, and tie the end to the deck eye just aft of the swivel cam cleat.

Mainsail:

First slide the foot of the sail into the boom. Pass a 1 1/2" pin through the boom and through the small ring in the forward lower corner of the sail. (the tack). Tie off the aft end of the sail to the

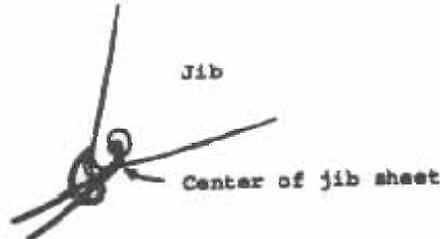
eye at the end of the boom.

Connect the halyard shackle to the head of the sail, and feed the bolt rope on the leading edge of the sail into the spread portion of the mast.

For light winds, the sail should be full and somewhat baggy along the boom. As the wind increases the sail can be flattened for better efficiency by tightening the halyard and outhaul. A common error is not having the halyard tight enough, However, don't get it so tight that the sail has long vertical wrinkles along the mast.

Jib:

Attach the forward corner of the jib to the rear hole in the foredeck fitting, clip the jib to the forestay, and tie the jib sheet as shown. When the jib is raised, get the halyard really tight. When sailing there should be no scallops or sagging between the clips on the forestay. A loose leading edge is the most common error and generally harmful to the boat's windward performance



Roller Furling

To reduce the size of the mainsail, unscrew the thumbscrew on the gooseneck so that the gooseneck is free to turn. Loosen the halyard and droll the sail evenly on the boom. Tighten the thumbscrew and make sure it locks into the sail track on the mast. Re tighten the halyard. Don't hesitate to reef when it blows hard. The boat will be more manageable and usually faster.

Rudder Lock:

The rudder slips over the pins on the two fittings ("pintles") bolted to the stgren of the boat. After the rudder is in place, insert a 1 1/2" cotter pin into the hole on the top pin, trapping the rudder on the pintles. Spread each side of the cotter pin at least 45° to make sure that the rudder doesn't get loose from the pintles.

Self-Righting Characteristics and Foam Flotation:

With sails rigged to the mast and boom, the keel locked in the down position, and the masthead pulled to the level of the water, the boat, when released, will return to an upright position. With

virtually any sailboat, it is possible for the belly of the sails to trap enough water to hold the boat down on its side if the mainsheet, jib sheet, genoa sheet, or spinnaker sheets are secured. In the event of a knockdown, release all sheets to prevent this possibility. In relatively calm sea conditions, water will not enter the cabin hatch in the event of a knockdown. In rough seas, however, it is possible for waves to enter the cabin through open hatches if the boat is held on its side. While sailing in rough weather, it is advisable to keep the hatches closed.

With the normal gear and crew, MacGregor boats have sufficient foam flotation to keep the boats afloat in the event the cabin fills. When completely filled with water, the boat will be relatively unstable. **Do not remove the foam flotation blocks in the interior of your boat under any circumstances.**

Maintenance:

The fiberglass finish should be protected in the same manner as an automobile finish. An occasional polishing and waxing (with good quality automotive polish and wax) will keep the surface in excellent condition. If the boat is left in the water (either fresh or salt water), apply a good coat of anti-fouling bottom paint.

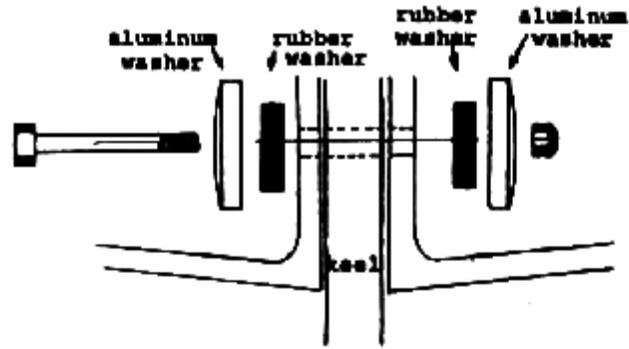
The trailer should be hosed down completely after exposure to salt water.

Periodically check the keel lift wire for fraying or abrasion.

On the MacGregor 21, the keel cable passes behind a wear bolt directly below the cockpit drain. On the other boats, the cable passes through a stainless tube containing a wear surface. If the cable, the wear bolt, or stainless tube show any noticeable wear or abrasion, replace the worn part. Be sure to re-assemble the new part or parts exactly as they were before being disassembled.

If the boat is kept in the water, it is recommended that the keel pivot bolt be removed every 12 months [while the boat is on a trailer] and inspected for signs of wear. The holes in the keel and the inside of the keel trunk should be given a similar inspection. To gain access to the pivot hole, remove the keel pin and lower the head of the keel until the hole is exposed. Keep the retraction cable snug to prevent the keel from falling sideways on the trailer. The rubber washers on the keel pin bolt should also be inspected. Cover all washers with a liberal coat of a good quality bedding compound. Re-assembly of the keel pivot bolt should be as follows:

Be very careful when working with the keel--it is **very** heavy and can cause injury if it falls on you.



When the keel pivot bolt is re-installed, **make sure that it passes though the hole in the keel.**