

Amp Eater Notes

Shaft drive assembly hardware

From instructions:

COMMENT: The following lists the items required for the shaft drive assembly as noted alphabetically on Plansheet 3 of 4. Most parts are available from GLEN-L with the respective part numbers noted. See the GLEN-L On-Line "Inboard Hardware" catalog for prices and more details.

"A" RUDDER: Part No. **90-019**. Rudder size approximately 9" x 9" with 1" shaft.

"B" RUDDER STUFFING: Part No. **90-102**. A Rudder Stuffing Box acts as a bearing and prevents water from entering the boat around the rudder shaft. Locate atop blocking #12 so the lower section protrudes approximately 1/4" below the boat bottom.

"C" TILLER: Part No. **90-028**. A 7" tiller arm is keyed or otherwise held securely to the rudder shaft. The tiller can be mounted directly atop the rudder post bracket bearing and act as a collar to hold the rudder in place. Optional, and better practice, is to use a safety collar with set screw (GLEN-L Part No. **90-400**) to prevent the Rudder from sliding out.

"D" RUDDER SHAFT SUPPORT: The upper portion of the rudder shaft must be adequately supported to prevent side motion. The rudder post shelf, described under #12, can be made of oak or other hardwood bored to match the rudder diameter and used as a bearing. However, a commercially available bronze or nylon bearing is more durable.

"E" STERN BEARING: Part No. **92-700**. A stern bearing is the underwater aft bearing that supports the prop shaft and bolts to the skeg aft end blocking with hanger, lag, or through-bolt as shown on the pattern. Counter bore the aft end blocking as required to fit flush to the skeg, and the aft end of the PVC tube butts to the stern bearing casting. The metal sleeved rubber bearing is a separate item for inserting in the stern bearing casting (Part No. 93001) for a 1" prop shaft.

"F" PROP SHAFT: Part No. **90-734**. The 1" prop shaft is keyed, tapered, and threaded to accommodate a standard propeller and the opposite end keyed for the drive pulley. Overall length should be approximately 44", however, take the actual measurement directly from the work.

"G" PROP NUT KIT: Part No. **90-723**. Lock the prop to the shaft with a key, nut, and cotter key.

"H" THRUST BEARING: The self aligning thrust bearing is for a 1" shaft with eccentric (or other) locking collar. It is bolted to a 2" x 6" x width to suit member

that in turn through-bolts to the Thrust Blocking #14. See #14 pattern. Position the thrust bearing so the prop shaft turns freely through it and the stern bearing ; it must spin with the least resistance possible.

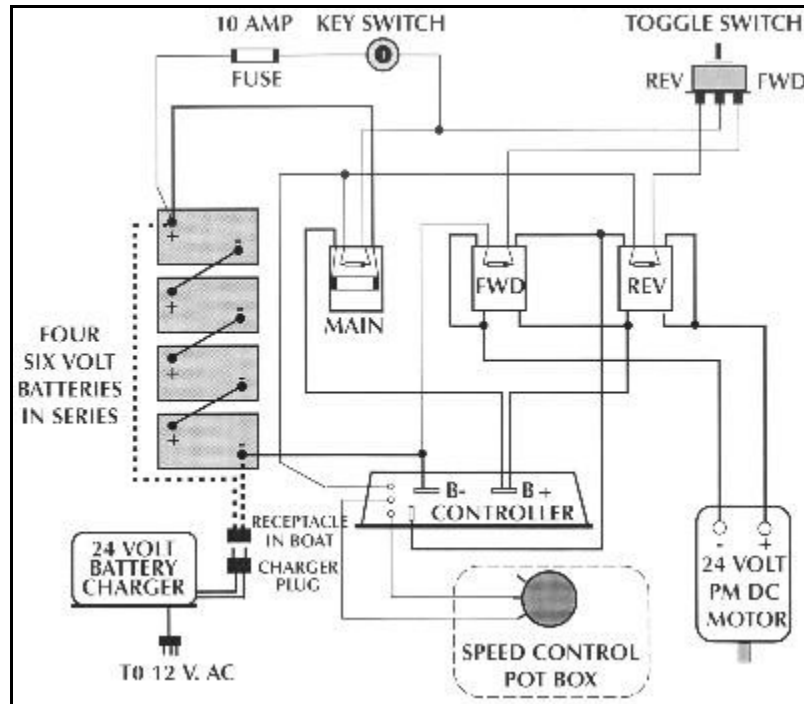
"I" STUFFING BOX: Part No. **90-234**. A seal type stuffing gland for a 1" shaft is mounted on the forward inside end of the PVC shaft tube and coupled to it with a rubber hose. Trim the tube length to be minimal but adequate for the rubber coupling hose with two clamps. The hose is Part No. **90-232** and the clamps Part No. **90-818** (3 required). Leave the hose clamps holding the stuffing box to the shaft tube loose, install the prop shaft, rotate it, and allow the hose to adjust the stuffing box for least resistance; then tighten the two clamps on the shaft tube and the one on the stuffing box. Grease the stuffing box bearing through the fitting and recheck the shaft alignment. It is important that the shaft rotates freely, without binding, in the stern bearing, stuffing box, and thrust bearing.

"J" PROPELLER (PROP): The maximum propeller diameter for the shown skeg and shaft angle is 11" with the pitch varying with the prop shaft rpm and motor horsepower. The prototype used an 11" X 12" three blade prop turning 830 rpm.

The Following is for estimating only. Prices are current as of October 2012. Check on-line Inboard Hardware catalog for current prices.

Part #	Quan	Price each
90-019	1	275.00
90-102	1	106.50
90-028	1	43.00
90-400	1	11.25
92-700	1	163.31
93-001	1	81.30
90-734	1	175.00
90-723	1	5.40
90-234	1	35.25
90-232	1	12.95
90-818	3	6.30
		\$915.26

A typical wiring diagram



Note: While this is the wiring diagram for the equipment we used on the Amp Eater, it will not apply to all variations of hardware that can be used. Refer to the literature that comes with the components you use. Do not try to impose this wiring on your components unless it matches the recommendations of your equipment manufacturer. A Curtis pulse modulator controller was used in the above set up.

Electrical components used on the test model

- Motor: Pacific Scientific, 24 volts DC, 1 hp, 1750 rpm
Cat #BAF 3644-5081-48B, Continuous duty
- Controller: Curtis-PMC #1204-001
24-36 VDC/275 A