

Building A Ripped-Off Weedeater Long-Tail Outboard

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Design by Ripped-Off

By: ripped off

Location: midwest

OK, I intentionally neglected posting or replying to emails on this for the last few months because I'm a firm believer in letting people figure things out for themselves. I figured that posting teaser pics of a successful modle with no directions would spark folks to tap into their creativity and start experimenting rather than assembling pieces from a parts list. Appearantly there are more people on here that prefer the latter rather than the former. KUDOS to those of you who did take the leap and come up with working designs of your own. Heres how mine are built.



Materials list:

- * 5' length of 1.00" x 0.125" wall aluminum tube (drive tube)
- * 5' length of 3/8" stainless steel round rod (drive shaft)
- * 4' length of 7/8" x 1/16" wall aluminum tube (handle)
- * 15" x 4" of 0.10" aluminum flat (for skeg, will make 2)
- * 2" x 4" x 1" thick aluminum flat bar (universal mount)
- * 3 bronze plain bearings, 3/8" I.D. x 1/2" O.D.
- * 3 bronze plain bearings 1/2" I.D. x 3/4" O.D.
- * 1- 3/8" shaft collar
- * 3 oil seals, National/ Federal-Mogul brand #330385 (got them at O'reilly)
- * 3 Stainless 10-32 x 1/4" cap screws and nuts (bearing set screws)
- * T-10 prop from www.Youngprops.com
- * 30 cc or larger weedwacker powerhead
- * Handelbar mounting bracket for a Stihl brush trimmer

First lets start with the powerhead. Choose one that is at least 30 cc, and one that will mount to the shaft independent of the throttle grip. I also recomend that you bypass the clutch if present. Belive me, I melted the plastic housing on the trial run with my first prototype when the clutch slipped under load. The one on the right here is what I use:



About the bronze bushings; the smaller ones nestle inside the larger ones. When you go to the hardware store to get them you will notice that some will fit inside each other very easily and others won't. Sort through them and select ones that won't quite nestle. You will press them together with a vise or C clamp. Next use a 3/8" nut and bolt as an arbor and chuck each bushing in a drill or a lathe. With the drill running, work the outside down with emery cloth or a fine file until they will slip easily into the drive tube.

Cut the drive tube to be 1 1/4" shorter than the driveshaft.

Drill and tap a 10-32 hole for a set screw at each bearing location, one in the center and one near each end.

Cut the skeg plate corner to corner and file it to your desired shape, and have it welded to the drive tube.

Insert the bearings and secure them with the set screws. On the prop side, insert the bearing 1/2" below flush. On the engine side, 2" below flush.

Grind 1 1/2" of the driveshaft square to fit the engine's output shaft. Do this as precisely as possible. Any machine shop could do this pretty reasonable.

Secure the shaft collar about 3/8" below the squared off end. You may need to file the outside of the collar down a bit so it does not rub on the inside of the drive tube. The collar sits on top of the upper bearing and you'll want to adjust it so the square end of the driveshaft is flush with the end of the tube.

Press two of the oil seals into the prop end of the drive tube. Fill it with some gear oil or marine grease and insert the shaft, then install the upper oil seal.

Fabricate the tiller handle from the 7/8" tube (bend or cut and weld to desired configuration). Mount the tiller to the drive with the handelbar mounting block. Heres a pic of the mount.

Add the throttle grip to the end of the tiller and rig up a longer cable.



Here are some pics of my universal mount. I built this entirely with a hacksaw, files and a drill press, but a machining shop could probably whip one out for you for next to nothing.



This mount pivots forward unrestricted but is limited on how far back it will tip (this is to set the drive angle) and will rotate 360 degrees. The pin on the bottom is merely a 1/2" bolt with the head cut



off, and is threaded into the bottom of the mount. On the boat you will need to mount the female half of a standard oar lock. In the side view you can see a slight angle on the bottom right hand side of the upper half of the universal mount. The more angle you file here, the farther back the drive will tilt. I recomend that you start with no angle at all and file a little at at time until you get the drive angled the way you want. I recomend as shallow a drive angle as possible without the prop cavitating.

Install the prop and the powerhead and you're good to go.

You will need to note that because weedwackers run at such high RPM, you will get the best performance at about 1/3 throttle. Any more than that and the thrust drops off and motor starts to bog.

Heres another pic:



Note also, if you are building a “lower unit” style like Paintballer’s, the prop will turn the opposite direction as the engine. I recomend the T-8 or the T-13. If you are building a straight shaft where the prop turns the same direction as the engine, I recomend the T-10.