

Thunderstruck Gear Reduction

Chain Drive Option for ME-1616, ME-1507, AC-34/35

Parts List

Gear reduction assembly

2 angle bracket mounts

2 support arms

Motor sprocket

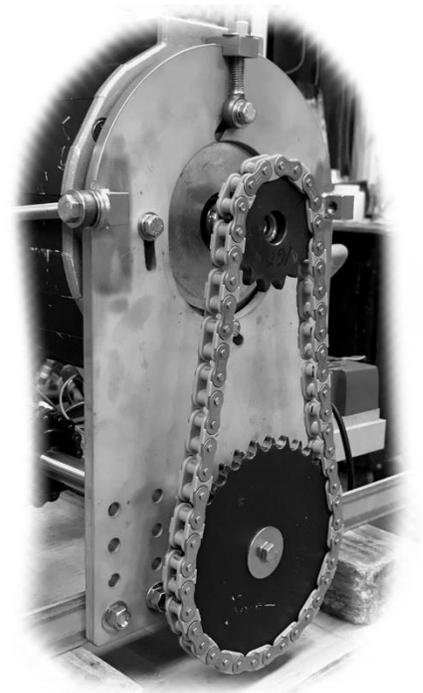
Prop shaft coupler

Hardware

- chain tensioner
- bolts, nuts and washers
- shaft keys

Two chain options included

- #50 Steel
- #50 Composite (steel and poly)



Hello, and congratulations on your purchase of a Thunderstruck Motors gear reduction. There are several things you need to know in order to make installation as easy as possible.

For starters, it is important that the reduction shaft is correctly aligned with your existing prop shaft. **Before** removing the old engine, it is a good idea record shaft position - either by taking precise measurements, or by making an armature to hold the prop shaft in its current position. When initially positioning the motor plate, note that the angle it tilts to match the angle of the prop shaft may not be vertical. It is advisable to replace your stuffing box and cutlass bearing at this time. If your cutlass bearing is worn out, your shaft may not be properly aligned, potentially causing noise and/or vibration while running.

At the bottom of the plate are two sets of holes for attaching the 1 ½” angle bracket. These pieces of angle will also be mounted to your boat. There are multiple holes to make it easier to get the plate at the right height, although you'll likely need to use some shims or washers to get both shafts aligned. You can use a straightedge along the two shafts to confirm alignment. Check it along the top and side of the two shafts.

How you choose to mount the angle brackets to the boat is up to you, but we've had success drilling a hole in the bottom of the angle and using lag bolts directly into the old wooden engine blocks, or by bolting to engine mounts that have dampers on them to isolate any vibration. When drilling into the stainless-steel angle brackets, center punch the hole location, drill steadily and use lubricant. Check alignment again after mounting the plate and motor, to see if the location has changed.

At the top of the plate are two blocks with 3/8" threaded holes. These are used to attach additional support arms (provided with kit) which will lock the proper alignment angle. Angle brackets are included to anchor these supports to the hull structure. All major components are made of stainless steel, except for the chain and sprockets.

Check that your prop shaft can be turned by hand. To connect our shaft to your prop shaft, use the double chain sprocket coupler. This style allows for slight shaft misalignments. We've included a longer set screw that sits in the pre-drilled well on our shaft to prevent it from sliding fore and aft. It's advisable to do something similar on your prop shaft. If your shaft does not have a keyway for a machine key you may choose instead to drill a hole through the shaft and install a roll pin through both the coupler and shaft. In this case you'd remove the coupler set screw and drill through the set screw hole into the shaft, all the way through. This option is less ideal as it can be difficult to drill through stainless steel.



After you have the plate mounted and supported, installing the motor, sprocket, and chain should be fairly easy. Tighten the motor mounting bolts lightly to hold it in position and alignment. Rotate the shaft so the keyway is on top, and fit the machine key. Install the small sprocket onto your motor shaft, making sure that it lines up with the lower sprocket as shown in the photo. If a sprocket is difficult to slide onto the shaft, try cleaning just the inside edge of the sprocket with a round file. **Do Not** hammer the sprocket onto the shaft. **The most common cause of excessive noise and wear is misaligned sprockets.** Check that the machine key is positioned properly, and lock the sprocket in place by tightening the two set screws.

Loosen the motor mounting bolts and tension adjustment so that chain installation and adjustment can be performed. Install the chain and connect the ends using the provided master link. Install the locking clip onto the master link with the open end aiming away from the forward direction of rotation.



To adjust, tighten the tensioner nut. Test by pushing on the chain half way between the two sprockets until you notice firm resistance. The proper tension will yield about 3/8" motion away from a straight line, as shown in the picture. Tighten the motor mounting bolts to lock the motor in position.

Thunderstruck reduction drives with chain and sprockets are being developed in part because of supply issues with belts and pulleys needed for our higher performance kits. In order to offer a quiet and durable option, we are providing a #50 chain in two styles.

One is a new option made from a combination of stainless steel and poly materials. This option has been tested in-house, but has not been proven by many hours of use in actual installations. We are very interested to hear from you about how this chain performs for you, but understand you may want to keep it as an emergency spare if you do not feel comfortable with using it as part of your standard system. If used, the chain can be lubricated lightly with silicone spray. Other lubrication options are being researched, and your feedback about this is valuable.

The steel chain is a proven option, with possibly greater noise levels than the composite one. Lubrication is required, and we recommend a spray-on motorcycle chain lubricant, which tends to stick well and last longer than grease or oil.

We believe that parts for the belt drive will be available in the future. These components can be mounted onto the chain drive systems without machining or modification. We will advise when belt drive parts become available again.

When it's time to try out your system, take note of any excess noise, heat, vibration, or current draw. These can be signs of a misaligned or mispositioned shaft(s), or sprockets, or over-tightened bearings. The lower bearing assembly comes pre-filled with grease, but there is a grease fitting which may need to be topped off periodically with NLGI #2 lithium complex grease if you notice any leaking over time. Be careful as over filling will cause grease to come out of the hub near the pulley. It's a good idea to measure tension on the chain periodically to verify if tightening or replacement is needed.

We appreciate any feedback you have that will help us to improve our products or make your installation easier. Have fun and send us a photo of your boat kit!

Thunderstruck Motors
2985 Dutton Ave. Ste 3
Santa Rosa, CA 95407
connect@thunderstruck-ev.com
707.578.7973

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