Helpful Hints - for

Installation of Federal Flexible Couplings

A Federal Flexible Coupling is a flexible propeller shaft coupling, consisting of an outer flange containing compressed rubber bushings, and an inner hub attached by spider pins through the bushings. The Federal Flexible Coupling is not designed to correct engine misalignment, or bent shafts, or damaged engine bed components. Before doing installation, be certain engine alignment is proper. Typically, the shape of the boat and the engine bed, are different on land compared to in the water. Proper engine alignment needs to be done in the water, after boat and engine bed re-shape, and using a fixed (rigid) shaft flange. Fiberglass boats can take up to a couple weeks to reshape, wood boats can take longer to swell. Alignment requires moving engine/transmission assembly around on motor mounts. The industry standard for proper alignment of engine/transmission assembly, to a solid (rigid - non flexible) propeller shaft flange, is within .002" or .003" or less maximum. Be certain shaft flange, propeller shaft, motor mounts, and engine bed are in proper condition, so proper alignment can be achieved.

Propeller shafts vary in actual diameter by small amounts. The actual diameter of shaft will effect how a coupling (or flange) assembles on to it- Some shaft flanges have been lightly sanded or fitted to particular shafts. Since shafts vary, there is no exact knowing how each flange will assemble, including a Federal Flexible Coupling. The object is a tight fit on shaft (not slip on and off). Be certain to remove any burr and raised edge on shaft (especially from thrust area at key way, and any set screw burr). In reference to straight shafts, (not tapered), if shaft fit is too tight- a light polishing or sanding of inner hub bore can help. Shafts vary.

When assembling a coupling (flange) onto shaft, some people are tempted to use a wooden board and hammer, and drive flange on shaft. While not the best method, please note that the Federal Flexible Couplings will resist progress, as the rubbers will do their job, absorbing much of the force you are trying to direct to inner hub. **If required** it would be more efficient to go **direct** to the inner hub. If clearance allows, you can place an object direct to inner hub from inside, and apply reasonable force. The more direct to inner hub area, the less the rubbers will absorb efforts to get hub on the shaft. Be certain not to harm components or shaft bore-

Like many couplings / flanges , the Federal Flexible Coupling uses set screws to help keep shaft from sliding out. These are 7/16"- 14 square head and hardened, cup point set screws with a hole in for safety wire. Like all flanges using set screws, be certain shaft is properly drilled the whole drill point, using proper size drill bit, so cup point of set screw fits down into the drilled "V" in shaft- If drilling the coupling in place, be certain not to ruin threads. Then properly safety wire the set screws. Some flanges have set screws holes in different places. Examine the installation and re-drill if required. Proper installation is important.

If you are not experienced with doing proper engine alignment, or flange removal or installation, perhaps an experienced marine mechanic would be a solution.