AeroStar MARINE CORPORATION

Power Pitch® Pro & Switch Blade® Pro Marine Propeller Transmissions

INSTALLATION INSTRUCTIONS

This document is a quick reference version of the installation and set up instructions. For more complete product information consult the "Detailed Operation and Installation Instructions."

Figure 1, shows all the items you should have received in the carton; thrust washer, propeller transmission, locking tab washer and drive shaft nut.

1. Using proper safety procedures (see Warning on next page) remove existing propeller, and retain the mounting hardware with the old propeller. (see Figures 2 and 3)

A - Forward Thrust Washer
B - Propeller
C - Nut
D - Locking Tab Washer
E - Aft Thrust Collar
F - Continuity Washer
G - Cotter Pin
H - Trim Fin

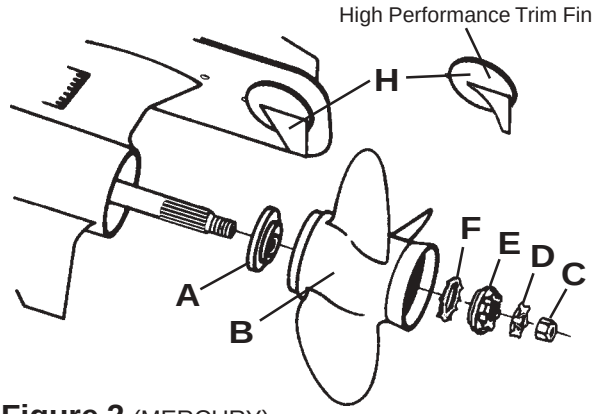


Figure 2 (MERCURY)

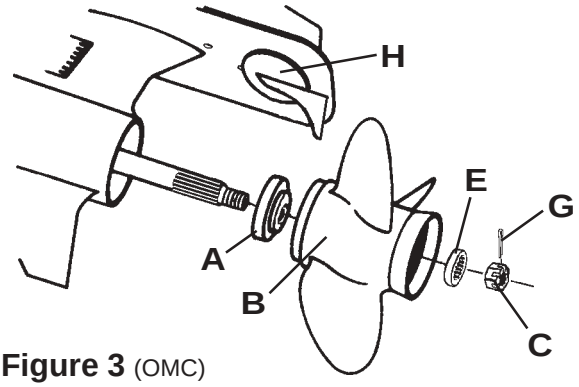
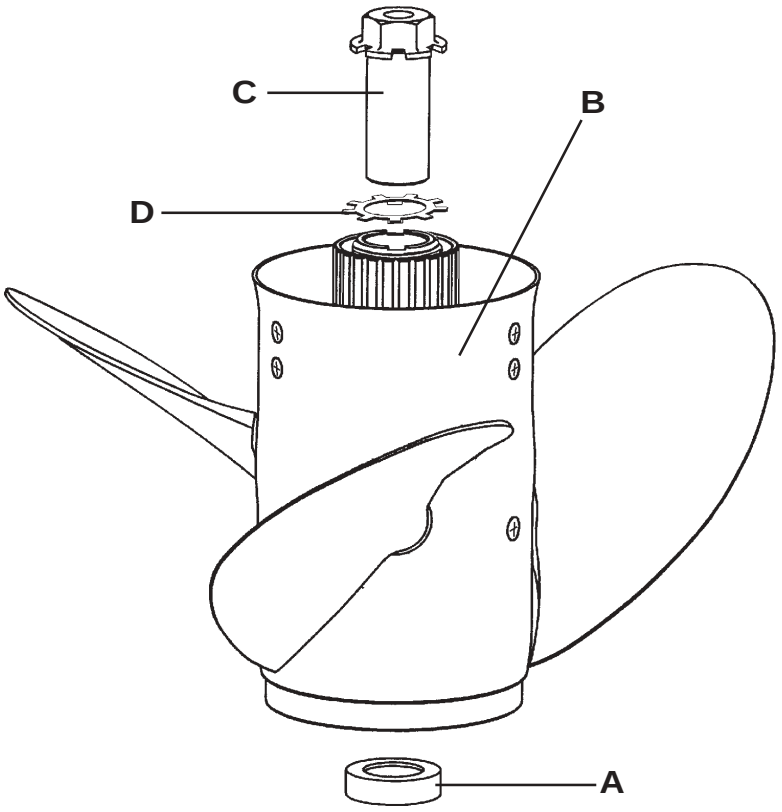


Figure 3 (OMC)

2. Place a liberal amount of a suitable waterproof lubricant on the splines, threads and thrust taper of the propeller shaft. (see Figure 4)

Notice to Installer
After completing installation, the abbreviated and detailed instructions should be kept in the boat for the operator's future use.

Figure 1



KIT COMPONENTS

A - Thrust Washer*
B - Transmission Hub
C - Drive Shaft Nut*
D - Locking Tab Washer*

Tools for Installation:
- 1-1/16" / 25mm Box End Wrench or Socket Pliers

Tools for Trim Fin Removal:
- 3/8" or 5/16" Allen Wrench or a 1/2" Socket with Short Extension

* Drive shaft nut, locking washer and thrust washer package are located in carton. Check to insure you have the proper mounting hardware for your application (Mercury, OMC, Volvo, Yamaha, or Suzuki).

NOTE: ***Check for adequate clearance*** *(1/4 inch min.)* ***between trim fin*** *(see Figure 2)* ***and blade tip. Installing the Power Pitch Pro and Switch Blade Pro on some Mercruiser applications may require the installation of a high performance trim fin*** *(Mercury P/N 822-777A1). Some other applications may require that the trim fin be modified or removed.*

INSTALLATION INSTRUCTIONS

3. Place new thrust washer on drive shaft shaft (match thrust washer taper with taper on drive shaft). (see Figure 4)

4. While aligning splines, slide transmission hub onto shaft until seated against thrust washer. (see Figure 4)

5. Place the new locking tab washer onto the drive shaft nut with the attached keys (teeth) facing forward, then insert the drive shaft nut into the center hub opening and position the washer against the hub center shaft and align and engage the two keys (teeth) into the slots at the aft end of the hub center shaft. (see Figure 5)

6. Tighten the bronze drive shaft nut onto propeller shaft with a 1-1/16 inch box end wrench or socket. Tighten to approximately 55-65 ft/lb. Use block of wood between anti-ventilation plate and propeller blade to keep transmission from turning while tightening the drive shaft nut. (see Figure 6)

7. To positively lock the nut onto the drive shaft, locate the particular tab on the locking tab washer that best aligns with one of the slots in the drive shaft nut flange. Then, with pliers or a flat bladed screwdriver pull the outer edge of the tab aft and inward to bend it so that it fully engages the appropriate slot in the propeller nut flange.

WARNING

When adjusting, installing or removing the propeller (or transmission) on any boat, because of the engine's ease in starting, it is imperative that the engine control lever be in the "NEUTRAL" position and that the ignition key switch is "OFF". Place a block of wood (see Figure 6) **between the anti-ventilation plate and the blade to protect hands from the blades while removing drive shaft nut and prevent propeller from turning which could cause accidental engine starting.**

IMPORTANT

To prevent damage to the bronze drive shaft nut you must use a box end wrench or socket when tightening onto the drive shaft.

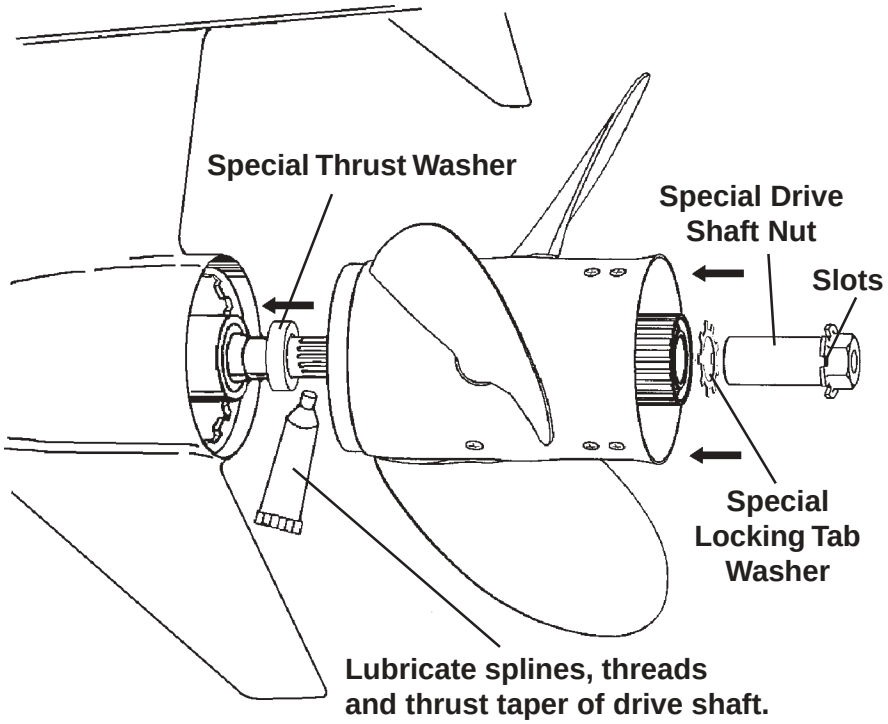


Figure 4

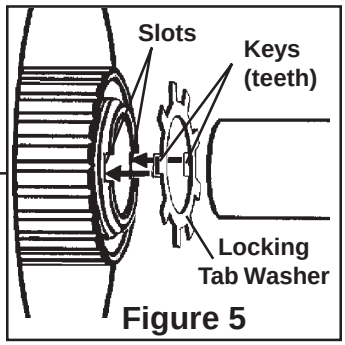


Figure 5

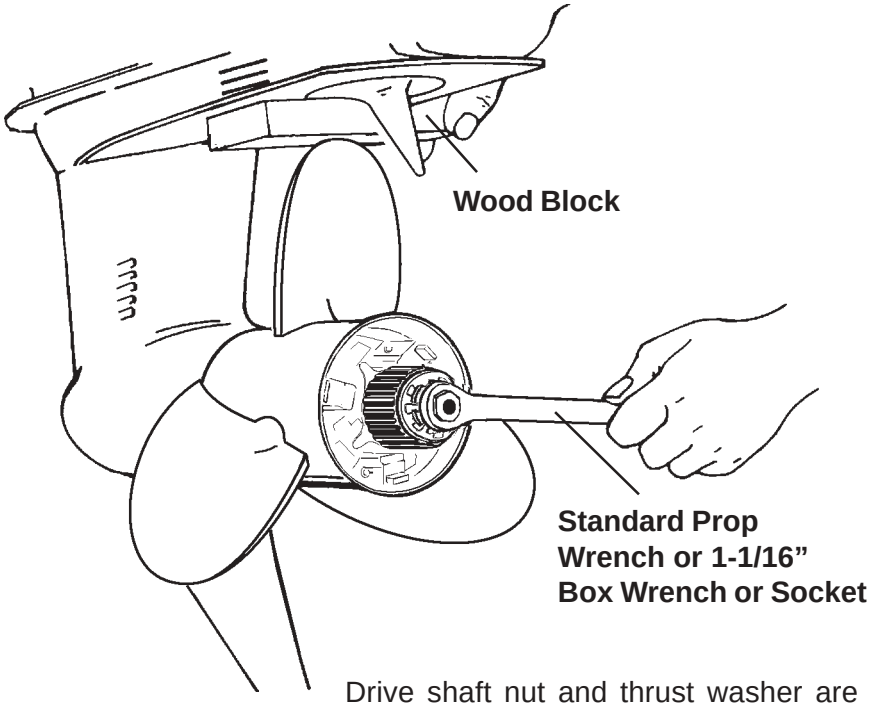


Figure 6

Drive shaft nut and thrust washer are available for a variety of manufacturers.

INCREASING SHIFT POINT RPM

Turn Shift-Point Control Knob **CLOCKWISE** to increase RPM at which Transmission shifts.

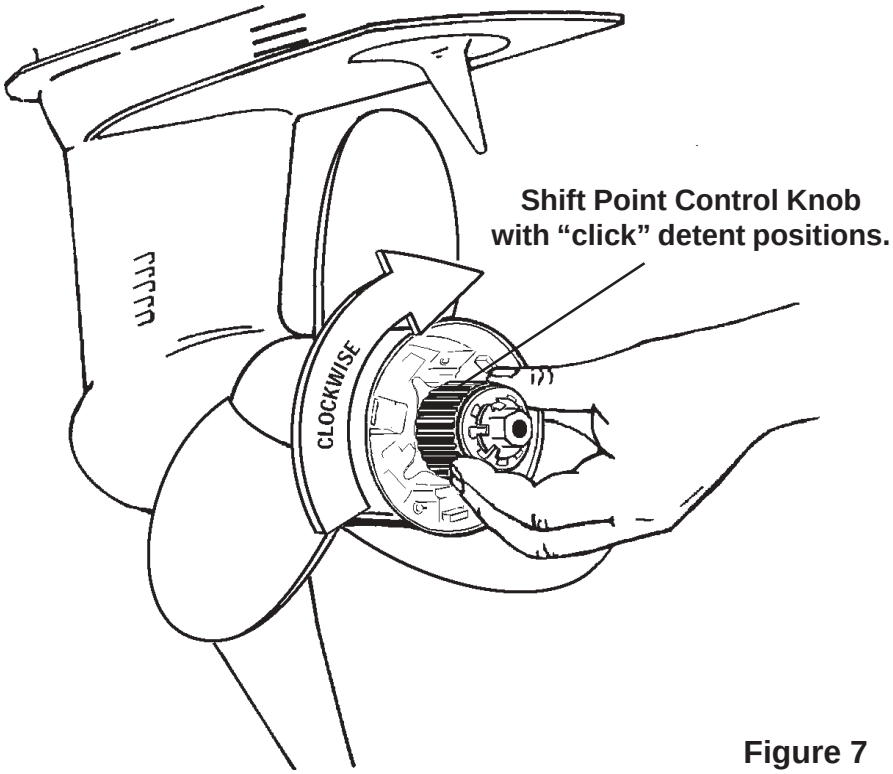


Figure 7

DECREASING SHIFT POINT RPM

Turn Shift-Point Control Knob **COUNTER CLOCKWISE** to decrease RPM at which Transmission shifts.

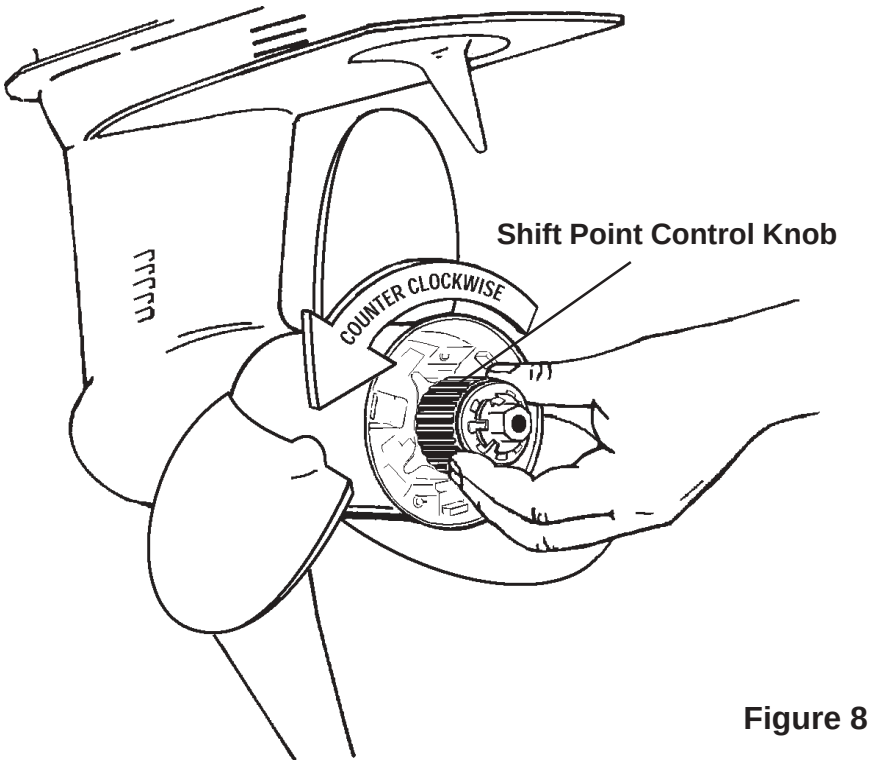


Figure 8

SHIFT POINT ADJUSTMENTS

NOTE: After installation of the PowerPitch® Pro or Switch Blade® Pro propeller transmission, the boat should be water tested to verify operation and perform final adjustment. The transmission shift point is factory set at a nominal RPM and readjusting will normally be required.

First, accelerate gradually take care not to exceed the engine's maximum RPM limit to check the operation of the propeller. If the propeller shifts before the engines RPM limit is reached, but after the boat has planed, make a minimum of three additional rapid full throttle acceleration test before adjusting the Shift Point Control Knob. Ideally, the propeller transmission should shift to high just as the boat reaches plane and the bow comes down. **DO NOT allow the engine to over-rev above engine operating range!** If the transmission has not shifted by then, pull back on the throttle. If the propeller does not shift or shifts before the boat planes you will need to adjust the Shift Control Knob before continuing.

To adjust RPM shift point, turn off the engine, raise the lower unit and turn the "click" (detent) Shift Control Knob **CLOCKWISE TO INCREASE** (see Figure 7) and **COUNTER CLOCKWISE TO DECREASE SHIFT POINT** (see Figure 8).

Each click or detent position of the Shift Point Control Knob will make a 50-300 RPM change in the full throttle shift point.

NOTE: The shift RPM change becomes more sensitive with each click-stop turn of the adjustment knob as you approach the ideal shift point.

CAUTION: Continued hard twisting of the Shift Point Control Knob after it reaches full counter clockwise rotation can damage the Shift Control Knob.

MAINTENANCE

IMPORTANT

Any type of fresh or salt water marine fouling may adversely affect the operation/performance of the transmission. It is important to keep the transmission as clean as possible for best performance and operation.

For both brackish and salt water areas, it is recommended that the propeller transmission be flushed with fresh water often to insure consistent operation. For fresh water areas, it is also recommended that the transmission be flushed with clean fresh water periodically.

Power Pitch® Pro / Switch Blade® Pro Troubleshooting Guide

SITUATION	POSSIBLE CAUSE	SOLUTION
Transmission Does Not Shift	A - Shift point adjustment too high. B - Debris in transmission hub. C - Blade damaged. D - Corrosion or damage to components. E - Wrong blade series or pitch.	A - Readjust shift point down. B - Clean transmission hub. C - Replace blade. D - Replace components. E - Change blade series or pitch.
Premature Shift, No Acceleration Enhancement or Poor Propeller Thrust	A - Shift point adjustment too low. B - Blade damaged. C - Corrosion or damage to components. D - Wrong blade series or pitch. E - Debris in transmission hub. F - Thrust washer not seated.	A - Readjust shift point up. B - Replace blade. C - Replace components. D - Change blade series or pitch. E - Clean transmission hub. F - Check thrust washer.
Vibration	A - Blades out of balance. B - Blade missing or damaged. C - Debris in or around transmission hub.	A - Check for damage. B - Replace missing blade. C - Clear transmission hub.
Engine's RPM is Too High	A - Shift point adjustment too high. B - Outdrive/engine over trimmed. C - Debris in transmission hub. D - Blade damaged. E - Corrosion or damage to components. F - Engine mounting height incorrect. G - Wrong blade series or pitch.	A - Readjust shift point down. B - Reduce outdrive/engine trim. C - Clean transmission hub. D - Replace blade. E - Replace components. F - Adjust mounting height. G - Change blade series or pitch.
Can Not Adjust Transmission	A - Debris in transmission hub. B - Corrosion or damage to components.	A - Clean transmission hub. B - Replace components.
Shift Control Knob Deformed (melted)	A - Inadequate engine exhaust cooling water flow.	A - Repair propeller and check operation of engine water cooling system. If engine is an outboard the engine may be mounted too high.

WARNING DO NOT OPERATE TRANSMISSION IF ANY BLADE HAS MAJOR DAMAGE OR HAS ANY SIGNS OF CRACKING, ESPECIALLY NEAR THE BLADE SHANK REGION!
Damaged blades must be replaced or repaired by AeroStar Marine or an authorized repair center.

*Propeller Transmission Power and RPM Limits**

Model	Max H.P.	Max RPM (aft shaft)
PowerPitch® Pro, Pro X, and Switch Blade® Pro	420**	3700**

WARNING Do not exceed specific power or RPM limits.
Replace blades after 15 years or 5000 hrs of operation, whichever occurs first.

**Specifications and limits are subject to change without notice. Contact: AeroStar Marine or an authorized dealer or service center regarding latest specifications, limitations or suitability before installing or using these propeller transmissions.*
***Power or RPM limits may be reduced for some blade applications. Contact: AeroStar Marine or an authorized dealer or service center for specific limitations.*

2 YEAR LIMITED WARRANTY

AeroStar Marine will repair or replace any PowerPitch® or Switch Blade® Pro component which fails to function due to faulty material or workmanship for a period of 2 years of normal use. Actions such as hitting an object, use with modified engines or outdrives, exceeding the manufacturer's rated HP or RPM, racing, surface piercing, wave jumping, etc. are excluded.

All information, specifications, terms and conditions subject to change without notice.

AeroStar MARINE CORPORATION

800-442-4245 · 208-762-1456 · Fax 208-762-8349 · 10555 Airport Drive · Hayden Lake, Idaho · 83835