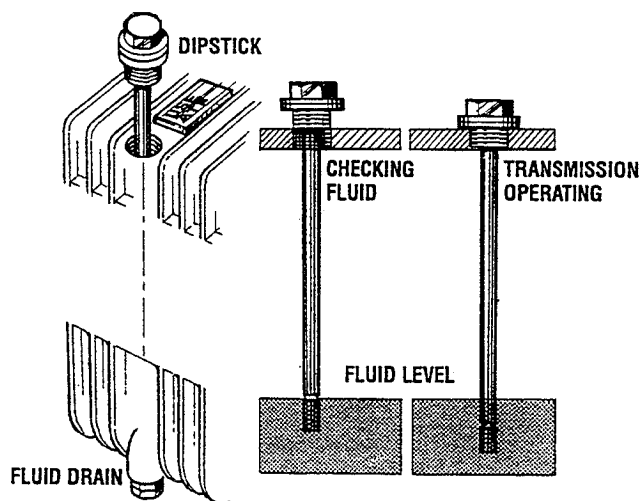


HURTH HBW TRANSMISSIONS

INITIAL OPERATION

All HBW marine transmissions are test-run on a test stand with the engine at the factory prior to delivery. For safety reasons the fluid is drained before shipment.

Fill the gearbox with Automatic Transmission Fluid (DEXTRON III). The fluid level should be up to the index mark on the dipstick. To check the fluid level, just insert the dipstick, do not screw it in. Screw the dipstick into the case after the fluid level is checked and tighten. Do not forget the sealing ring under the hexhead of the dipstick. Check for leaks and make a visual inspection of the coupling, oil cooler and hoses, and shift cables.



FLUID CHANGE

Change the fluid for the first time after about 25 hours of operation, then every 250 operating hours or at least once a year or when you change engine oil.

Removing the fluid

Push a suction pump hose down through the dipstick hole to the bottom of the housing and suck out the fluid. If space allows, use the transmission drain. Remove the drain plug from the bottom of the transmission and allow the fluid to drain into a container, then reinstall the plug with its sealing washer. Wipe down the transmission and properly dispose of the used fluid. After running the engine, shut down and recheck the fluid level.

DRAIN PLUG TORQUE 20 - 25 ft/lbs

NOTE : When changing the fluid, take care not to lose the drain plug sealing washer. The drain plug will leak without this sealing washer.

WARNING: Never pull out the dipstick while the engine is running. Hot fluid will splash from the dipstick hole. This could cause severe burns.

LOCKING THE PROPELLER

Locking of the propeller shaft by an additional brake is not required: use the gear shift lever position opposite your direction of travel for this purpose. Never put the gear shift in the position corresponding to the direction of travel of the boat.

WHEN UNDER SAIL OR BEING TOWED

Rotation of the propeller without load, such as when the boat is being sailed, being towed, or anchored in a river, as well as operation of the engine with the propeller stopped (for charging the battery), will have no detrimental effects on the transmission.

DAILY OPERATION

- Check the transmission fluid.
- Visually check the gear shift linkage and transmission.
- Start the engine in neutral, allowing a few minutes at idle to warm the fluid.
- Shift into gear.

NOTE : Too low an idle speed will produce a chattering noise from the transmission gear and damper plate. In such cases the idle speed should be increased

For additional information refer to the following text in this Transmission Section: *SHAFT COUPLINGS, MAINTENANCE AND TRANSMISSION TROUBLESHOOTING.*

HBW TRANSMISSIONS SPECIFICATIONS

General	(Hurth Standard Transmission) Case-hardened helical gears, with a servo-operated multiple disc clutch.
Gear ratio (optional)	2.63 : 1 (HBW 150A - 3R) 2.99 : 1 (HBW 150V - 3R) 2.74 : 1 (HBW 250 - 3R)
Propeller	See propeller recommendations.
Lubricating Fluid	ATF - type A or Dextron - II or III
Transmission Sump Capacity	HBW 150A 0.59 U.S. qts (0.561 liters) HBW 150V 1.11 U.S. qts (1.05 liters) HBW 250 0.75 U.S. qts. (0.79 liters)
Propeller Shaft Direction of Rotation	Right hand - standard transmission