

OMC SERVICE TRAINING

SHIFT SYSTEM ADJUSTMENTS for "KW-RG" (1986-1991) CLUTCH DOG MODELS

References: SB#4051, 4052, 4096, 4099, and Appropriate Service Manuals

A. Remove outdrive, replace the transom bracket shift cable if outer jacket is ribbed. Use the appropriate service manual.

"KW-AR" Models (1986-1987) will use Cable Kit #986955 superseded by 987662. This kit will supersede the shift system up to a "GD-RG" style system.

"GD-ME" Models (1988-1989) will use replacement cable #986654 superseded by 987661.

B. Disconnect the remote control shift cable and the transom bracket shift cable at the engine shift bracket. Also, disconnect the throttle cable at the carburetor.

C. Perform the transom bracket shift cable adjustment. Use only the 914017 alignment plate to hold the bellcrank at the 90 degree position. Always use the new 915271-M tool to hold the 7 9/16" dimension. "PW" (1990) and newer models may have a collared retainer nut on the aft end of the shift cable core wire, leave it off!

It is critical that the transom bracket shift cable move freely for its full range of travel and throw after all torquing operations are completed!

Cable drag cannot exceed 2 1/2 pounds when measured with a spring scale, and less drag is preferred. Check the drag in both directions, full travel!

D. Return the shift bellcrank to a 90 degree setting. Check the outdrive to make sure it shifts freely into both gears, then return the outdrive to the central neutral detent (SB #4096). Remove the front anode and check the shift rod height. "PW" and newer models can have the shift rod height set without removing the upper gear case. Shift rod height is a critical adjustment!

Install the Outdrive. Refer to the Appropriate Service Manual. (KWB-WXS models with the 983900 transom bracket do not use the nylon spacers on the aft trim/tilt pivot rod). If you are working on a KWB - ARY model (1986-1987). (*sic*) You must install the adaptor kit on the engine shift bracket. This consists of a new shift lever, special anchor blocks, and assorted hardware. KWB-ARY dual station systems will also require a new engine shift bracket lever & pin #913264.

"5 Steps of the Engine Shift Bracket Adjustment"

1. Forward Overstroke Adjustment

Center the cable anchor located in the angled slot on the top of the shift lever. Install the remote control shift cable, control box in FORWARD GEAR FULL THROTTLE. Pull out on the casing guide to remove any slack. Adjust the shift cable trunnion to center the forward (fixed) overstroke cam with the switch button on the overstroke switch.

2. Forward Gear Engagement

Install the transom bracket shift cable, control box is still in forward gear full throttle. PULL OUT ON THE TRANSOM BRACKET SHIFT CABLE TO FULLY ENGAGE THE CLUTCH DOG WHILE SOMEONE ROTATES THE PROPELLER. Make sure you pull back on the shift cable to remove all the end play from the system as you adjust the black barrel trunnion. When installed correctly and all slack is out of the system the load lever will **"rock upward stiffly"** and **"rock downward easily"** but should always center itself!

3. Reverse Gear Engagement

Shift the control box into REVERSE GEAR FULL THROTTLE, loosen the 7/16" nut in the angled slot at the top of the shift lever on the shift bracket. PUSH DOWN on the shift lever while someone rotates the propeller to FULLY ENGAGE THE CLUTCH DOG. While holding down on the shift lever, remove all slack from the remote control shift cable by pulling its casing guide to the rear of the boat. Be careful not to preload the system. Then tighten the 7/16" nut securely. When adjusted properly, and all play removed, the load lever will **"rock downward stiffly"** and **"rock upward easily"**, but will always center itself.

4. Reverse Overstroke Adjustment

Adjust the reverse overstroke cam to center itself with the switch button on the overstroke switch (3/8" nut). The control box is still in reverse gear full throttle. "PW thru RG" (sic) models will probably not have a reverse overstroke cam.

5. Throttle Cable Adjustment

Install and adjust the throttle cable. Control box should be moved into the forward gear idle position, then half-way back to neutral. Tension on the cable should be only enough to positively close the throttle plates. Excessive tension will cause the shift system to bind. (Unit should shift no harder with the cable installed than with it removed).

Now run the unit and check for smooth positive shifting, also check for proper operation of the ESA system by making the running checks at the engine shift bracket! Service Kits are available to upgrade the ESA module to the latest pulse pattern, time duration and RPM limits (SB #4099).