

TO: SERVICE MANAGER MECHANICS
PARTS MANAGER

No. 86-20

- A. Over-Travel Shift Conditions on MR and Alpha One Drive Unit
- B. Drive Unit Shift Cable Brass Fitting
- C. Alpha One Over Shift at the Control Handle
- D. Hole Saw and Hole Saw Kit

A. OVER-TRAVEL SHIFT CONDITIONS ON MR and Alpha One DRIVE UNIT

If the control handle has to be moved past center to get the drive unit out of gear when shifting from forward to neutral or from reverse to neutral (Figure 1), the following should be checked.

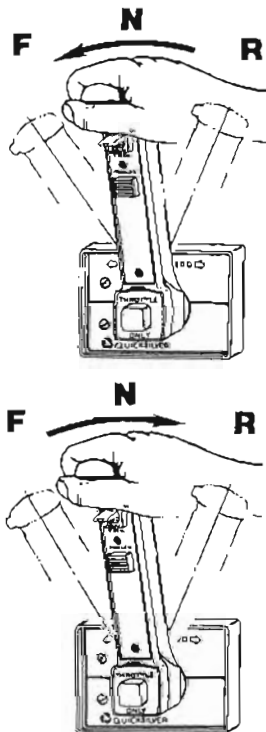
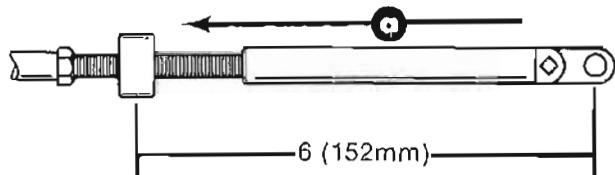


Figure 1.

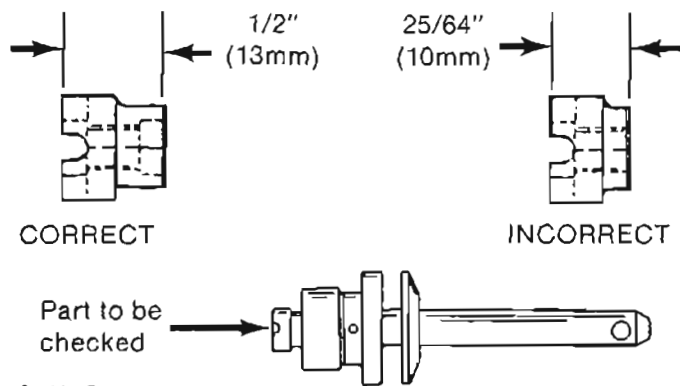
1. Check the drive unit shift cable dimension in full forward throttle position (Figure 2).



a - Push In On Cable End Guide

Figure 2.

2. If the dimension of the shift cable does not meet to the specification given in Figure 2, check sleeve 23-66068 on shift spool assembly for proper size (Figure 3). If not to dimension shown replace sleeve.

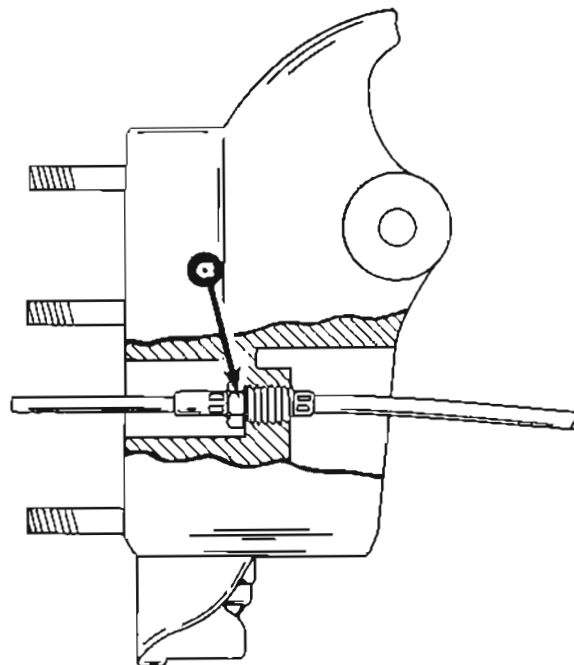


(Shift Spool Assembly)

Figure 3. Sleeve

B. DRIVE UNIT SHIFT CABLE BRASS FITTING

If shift cut out switch kills engine when shifting into reverse or if reverse cannot be obtained, check that shift cable brass fitting (a) is tightened properly into bell housing as shown in Figure 4.



a - No More Than 2 Threads of Fitting Should Be Exposed

Figure 4. Checking Shift Cable Fitting

C. Alpha One OVER SHIFT at the CONTROL HANDLE

1. Drive unit checking procedure:

Using a 1/2" open end wrench on the bronze intermediate shift shaft, (Figure 5) in the drive shaft housing, check the amount of movement from preload on bronze shaft if there is more than 10 degrees movement from straight forward, the castle nut on the spool assembly should be replaced because of wear.

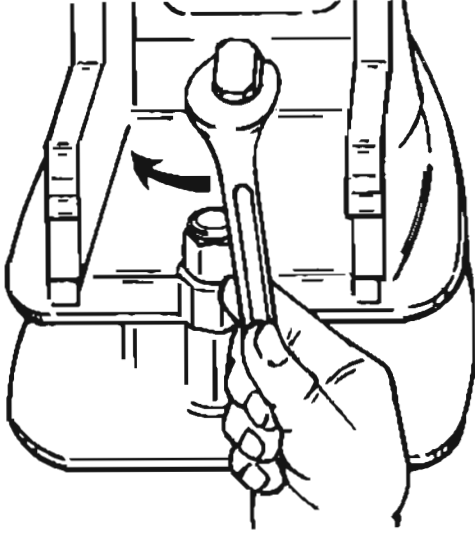


Figure 5.

2. Transom plate gimbals housing checking procedure:

Check shift slide end movement by measuring from the bell housing gasket surface to the end of the shift slide assembly (Figure 6). This measurement must not exceed 1/16" (2mm) of end movement, the allen set screw will have to be readjusted. The screw must back out no more than 1/4 turn and resafety wired.

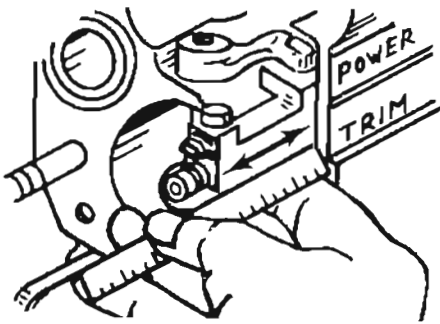


Figure 6.

3. Reverse gear shift travel check:

If engine stalls when accelerating in reverse gear, check the shift slide (a) for contact at the brass nut (b) on the shift cable in the bell housing (Figures 7 and 8). The slide must have side-to-side clearance to move freely, otherwise the shift interrupt switch may be activated.

4. Shift plate on engine:

Place drive unit in full forward gear and check 6" (152mm) measurement on drive unit shift cable and readjust if necessary. Then shift remote control to forward gear, w.o.t. Position and adjust shift cable as necessary following instructions on page 2A-15 in 90-12934 service manual.

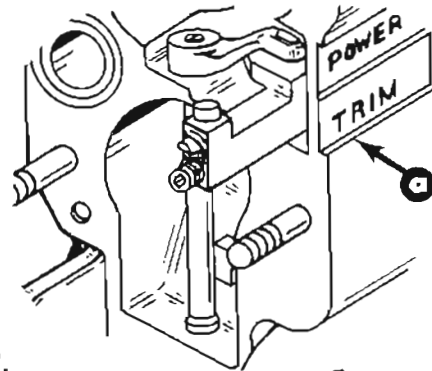


Figure 7.

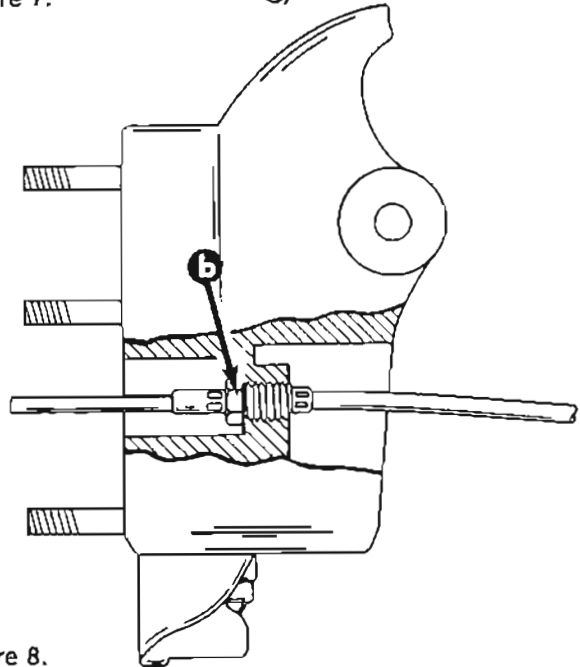


Figure 8.

D. HOLE SAW AND HOLE SAW KIT

1. The 91-86191 hole saw and the 91-86191A1 hole saw kit (used to cut the access holes in the gimbal housing for ease in removal of the steering arm cross bolt) are now listed NLA. The 1-1/8 inch diameter hole saw can be purchased locally from a hardware store. The 1" diameter NPT #180 tap may be purchased locally from a hardware store on a special order or from a local machine shop.