

NUMBER: 82-6

DATE: 6/9/82

CIRCULATE TO:
SERVICE MANAGER
PARTS MANAGER
MECHANICS

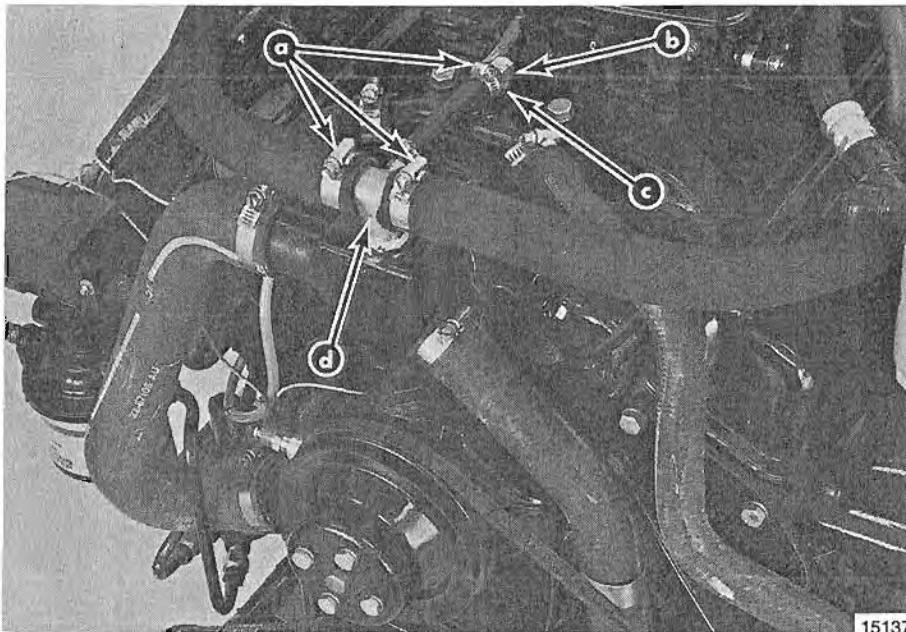
- A. Overheating at Idle RPM — MIE 230/260/340 Model Engines
- B. Shift Cable Adjustment and Installation on Mercury Marine Transmissions with Mechanical Shift - MCM 228TR, MCM 255TR and MCM 330TR-TRS Models
- C. Tune-Up Specifications for Hi-Performance Stern Drive (MCM) Engines — MCM 400 Cyclone and 475 Turbo

A. OVERHEATING AT IDLE RPM MIE 230/260/340 MODEL ENGINES

Under certain operating conditions, the above model engines may overheat at idle RPM. Usually by increasing the engine RPM, the engine temperature will drop.

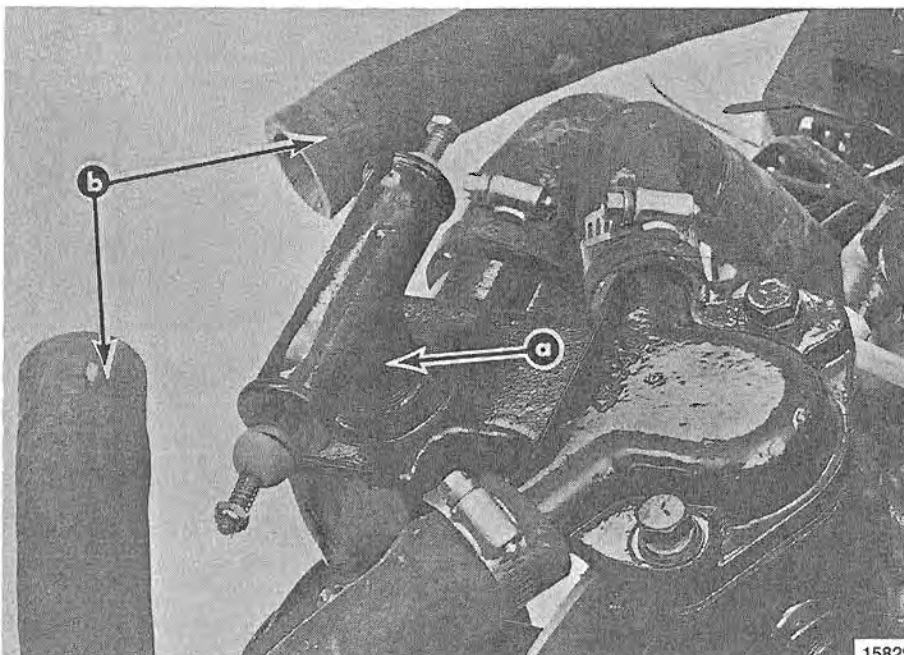
If this condition exists, order a new Tee Fitting (22-98477A1). Install as shown in Figures 1 and 2.

NOTE: This does not apply to engines with Closed Cooling Systems.



- a - Remove Clamps and Hoses
- b - Remove 90° Elbow
- c - Install 1/8" Pipe Plug
- d - Remove Tee Fitting

Figure 1. Removing Tee Fitting and Air Bleed Hose



- a - Put Teflon Tape Around Threads and Install 22-98477A1 Tee Fitting
- b - Reinstall Hoses and Clamps

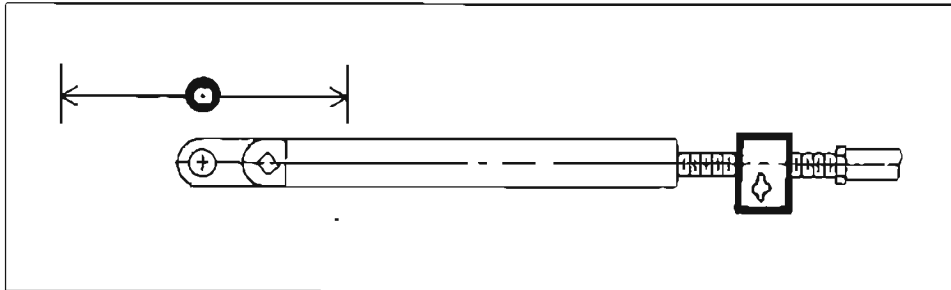
Figure 2. Installing New Tee Fitting

B. SHIFT CABLE ADJUSTMENT AND INSTALLATION ON MERCURY MARINE TRANSMISSIONS WITH MECHANICAL SHIFT — MCM 228TR, MCM 255TR and MCM 330TR-TRS MODELS

Insufficient shift cable travel or improper adjustment may prevent transmission from being fully shifted into gear, which could cause forward clutch pack and/or reverse clutch band to fail.

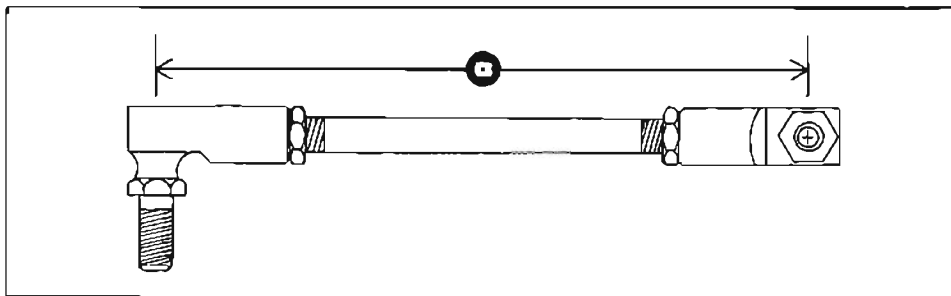
Remote Control shift cable **MUST** have a **minimum travel of 2-13/16" (71.4mm)** [ideal 3" (76.2mm)] from full forward to full reverse (Figure 3).

Transmission shift rod assembly is preset to dimension shown in Figure 4 and **MUST NOT** be changed. Check dimension to ensure that it has not been changed.



a - 2-13/16" (71.4mm) Minimum, 3" (76.2mm) Ideal

Figure 3. Shift Cable Minimum Travel



a - 5-1/32" (12.8cm)

Figure 4. Transmission Shift Rod Dimension

Adjust Remote Control shift cable as follows:

1. Place remote control lever in neutral position.
2. Remove elastic stop nuts, flat washer and spacer from anchor stud and from shift lever stud. Remove shift cable.
3. While holding barrel, move remote control shift cable end guide in both directions to determine limits of end play. Position end guide at mid-travel position.
4. While maintaining end guide at mid-travel position, adjust shift cable barrel as follows:

Without Shift Cable Adjusting Tool (Figure 5):

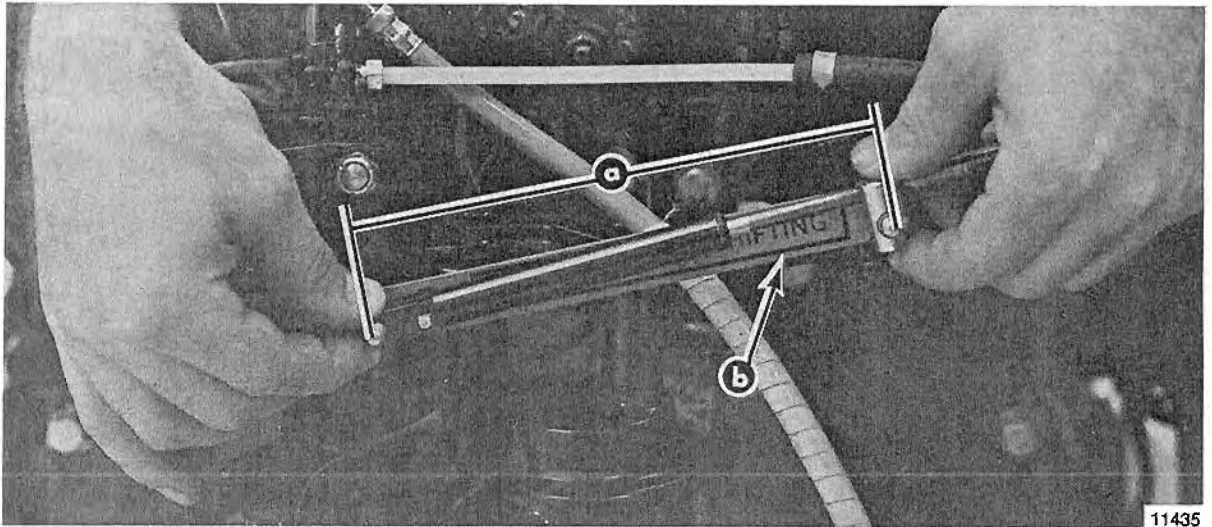
Adjust shift cable barrel until the center of the barrel is exactly 7 $\frac{1}{8}$ " (18.1cm) from the center of the hole in the cable end guide.

With Shift Cable Adjusting Tool (Figure 5):

NOTE: An Adjusting Tool is shipped with each new MerCruiser TR, TRS Power Package and Mechanical Shift Conversion Kit and is given to the boat owner after initial installation. Obtain tool from boat owner to perform the following adjusting.

NOTE: This tool is not available from our Service Department.

- a. Place Adjusting Tool on studs and reinstall spacer on anchor stud.
 - b. Adjust shift cable barrel to align attaching holes with studs.
 - c. Remove Adjusting Tool from studs.
5. Being careful not to disturb barrel adjustment, install cable on studs and secure with flat washer, spacer and elastic stop nuts. Torque nuts to 60-70 lbs. in. (6.8 - 7.9 Nm).



a - 7-1/8" (18.1cm)
b - Shift Adjustment Tool

Figure 5. Adjusting Shift Cable Barrel

C. TUNE-UP SPECIFICATIONS FOR HI-PERFORMANCE STERN DRIVE (MCM) ENGINES — 400 CYCLONE AND 475 TURBO

The MCM 400 Cyclone and MCM 475 Turbo tune-up specifications are listed below.

**STERN DRIVE (MCM) HI-PERFORMANCE MODELS
TUNE-UP SPECIFICATION CHART**

MCM Model	Serial Number	Cu. In. Displacement	Spark Plugs			Plug Gap
			AC	Champion	Autolite	
400 Cyclone	All	454	MR43T	RBL-8	ARF3	.035" (.89mm)
475 Turbo	All	454	MR41T	BL-3	ARF2	.028" (.71mm)

Point Gap	Point Dwell	Timing	Fuel Pressure	Oil Pressure @ 200 RPM	Idle RPM (In Gear)	WOT RPM
.016-.019 (.41-.48mm)	28°-31°	10° BTDC	3-7 psi (21-48kPa)	30-70 psi (207-483 kPa)	800-850	4800-5200
.016-.019 (.41-.48mm)	18°-31°	NOTE 1	3-7 psi (21-48kPa)	30-70 psi (207-483 kPa)	800-850	4800-5200

NOTE 1: 16° BTDC @ 900 RPM; 28° BTDC @ 3500 RPM - Timing must be checked at both RPM. If timing does not fall within limits, replace distributor. Order from Hi-Performance Division.