MerCruiser
STERN DRIVES/INBOARD ENGINES

# service bulletin

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A. Loose Coupling/Flywheel on MerCruiser Stern Drive Engines - MCM 120 - 260
B. Exhaust Manifold Stud Breakage - MCM 120 Engine
C. Shift Cable Travel Dimensions for MerCruiser 120 thru 260 Stern Drives

CIRCULATE TO:
SERVICE MANAGER
PARTS MANAGER
MECHANICS

## A. LOOSE COUPLING/FLYWHEEL ON MERCRUISER STERN DRIVE ENGINES - MCM 120-260

If an above model engine has a "rattling" or "knocking" noise in it, inspect the coupling/flywheel attaching nuts for proper torque. This noise usually occurs at idle RPM or as engine RPM is decreased quickly. If, for any reason, an engine has been removed from the boat for service work, check the torque of the coupling/flywheel attaching nuts. Following is a list of models and serial numbers that may be affected.

**MCM 120 S.N. 5554835 to 6028974**
**MCM 140 S.N. 5567940 to 6044881**
**MCM 165 S.N. 5568540 to 5860349**
**MCM 470 S.N. 5545960 to 6028369**
**MCM 485 S.N. 5685395 to 6040096**
**MCM 898 S.N. 5610748 to 6021586**
**MCM 228 S.N. 5610848 to 6028141**
**MCM 260 S.N. 5610948 to 6034474**

If a loose coupling/flywheel is found to be the cause of the noise as described above, use the following procedure to repair.

1. Remove all coupling/flywheel attaching nuts.
2. Remove washers, coupling and flywheel.
3. Inspect mating surfaces between crankshaft-flywheel and flywheel-coupling for damage
   - If coupling surface is damaged or mounting holes are elongated, replace coupling.
   - If flywheel mounting holes are elongated, replace flywheel. If mounting surfaces are damaged, have surfaces refaced at a machine shop. A maximum of .020" (.508mm) can be removed. If damage is so severe to mounting surface that it cannot be resurfaced, replace flywheel.
   - If crankshaft mounting surface is damaged, have surface refaced. A maximum of .020" (.508mm) can be removed. If damage is so severe to mounting surface that it cannot be resurfaced, replace crankshaft.

*NOTE: When having mounting surfaces refaced, make sure surface is perpendicular to crankshaft. Remove only enough material to remove transferred metal. The removal of all pit marks is not necessary.*

4. Inspect coupler mounting studs for damage and tightness. If damaged or loose, replace and use Loctite 'A' on threads before installing into crankshaft.
5. Place flywheel, coupling and washers onto crankshaft studs.

*NOTE: MCM 470/485 only. Replace small O.D. washers with larger O.D. washers, Part No. B-12-45176.*

6. Use suitable flywheel holding tool and torque coupling/flywheel attaching nuts to 60 lbs. ft. (81.3 N.m).

## B. EXHAUST MANIFOLD STUD BREAKAGE - MCM 120 Engine

Broken exhaust manifold studs on the above model engine has been reported to our service department. The causes for this type of failure centers around two problems:

1. Manifold stud(s) not properly tightened into cylinder head and;
2. Loss of torque on nuts securing exhaust manifold to cylinder head.

To minimize the chance of stud breakage it is recommended that you retorque all manifold attaching nuts to 23 lbs. ft. (33.2N.m) before delivery or at the 20-hour checkup. On engines that have a "3rd" lifting ring installed on the rear manifold stud, remove this lifting ring and discard. Use Loctite "A" and tighten stud securely into cylinder head, torque attaching nut to proper tightness.

On engines that have stud breakage, use the following procedure:

1. Remove manifold from cylinder head.
2. Remove all manifold stud(s) from cylinder head.
3. Clean gasket surfaces on cylinder head and manifold.
4. Check cylinder head and manifold mating surfaces for warpage. Resurface if necessary.
5. Install ALL NEW STUDS into cylinder head. Apply Loctite "A" to stud threads before installing.
6. Use new gasket and install manifold to cylinder head.
7. Use NEW manifold attaching nuts and torque to 23 lbs. ft. (33.2 N.m).
8. Use suitable flush device and start engine up. Allow engine to get up to operating temperature and check for all leaks.
9. Shut engine off and allow it to cool.
10. Retorque manifold attaching nuts to 23 lbs. ft. (33.2 N.m).

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| **B-11-49910** | **Nut, Manifold 6 required per engine** |
| **B-16-49915** | **Stud, Manifold 4 required per engine** |
| **B-16-60799** | **Stud, Manifold 2 required per engine** |
| **B-27-52546** | **Gasket, Manifold 1 required per engine** |

## C. SHIFT CABLE TRAVEL DIMENSIONS FOR MERCRUISER 120 thru 260 STERN DRIVES

Following are the MINIMUM cable travels needed to properly shift the MerCruiser 120 thru 260 stern drives. This information will aid you when troubleshooting shift problems. If minimum shift control cable travel is not achieved, problem is in shift control and/or shift control cable. Dimensions are from full forward to full reverse position measured at connecting points located on shift plate. See Figures 1 and 2.

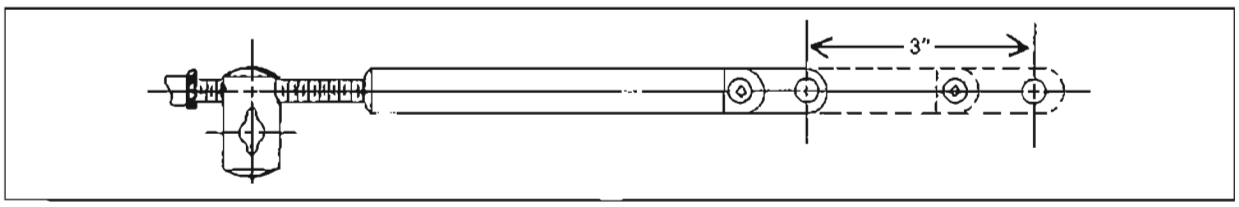


**Figure 1. MINIMUM Shift Control Cable Travel (3 inches)**

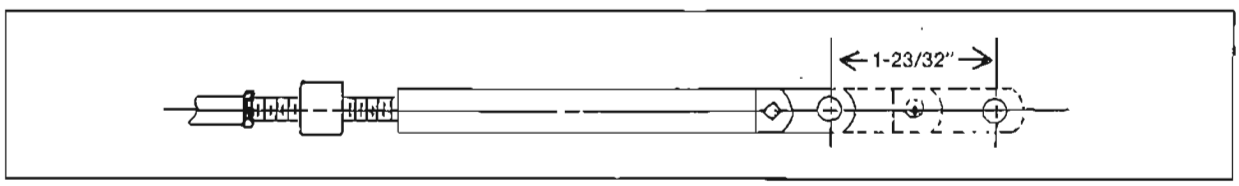


**Figure 2. MINIMUM Drive Unit Shift Cable Travel (1-23/32 inches)**