SHOP NOTES - TROUBLE SHOOTING - SPECIFICATIONS - SERVICE TOOLS

SHOP NOTES

SERVICING ANTI-VIBRATION INSTRUMENT MOUNTINGS

Anti-vibration mountings (LORD mounts) are used in many places to absorb engine vibration in the mounting of instruments, drop relays, tachometers, etc. When it becomes necessary to service a part secured by Lord Mounts, care should be exercised during removal and installation of the part to avoid twisting the rubber diaphragm of the mounts. At the time the part is removed from the engine for service, the mounts should be inspected for tears and replaced, if necessary.

The attaching screw through the center of the mount must be held from turning during final tightening of the nut. If this screw turns, it will pre-load the rubber diaphragm in torsion and considerably shorten the life of the mount.

CHECK ENGINE STARTING SWITCH

If difficulty in starting motor engagement has been experienced in a vehicle which has been repowered by a diesel engine, check to see if the key-type starting switch on the instrument panel has been retained.

Key-type starting switches are usually not capable of carrying the current required for heavy-duty diesel engine starter solenoids. The excessive voltage drop in the solenoid circuit restricts the solenoid pull and results in failure of the starter to engage and crank. When tooth abutment occurs and the switch is turned off and on several times, breaking of the solenoid current causes burning or welding of the switch contacts.

Install a push button type starting switch which is capable of making, breaking and carrying the solenoid current without damage (refer to *Engine Starting Motor Switch* in Section 7.4). Otherwise, a heavy-duty magnetic switch should be used in the solenoid control circuit in addition to the key-type switch. The magnetic switch must be capable of making and breaking at least 90 amperes in a 12-volt system; the key switch would then carry no more than one ampere, which is sufficient to operate the magnetic switch.

ALIGNMENT TOOLS FOR TACHOMETER DRIVE COVERS AND ADAPTORS

Whenever a tachometer drive cover assembly or a tachometer drive adaptor is installed on an engine, it is important that the cover assembly or adaptor be aligned properly with the tachometer drive shaft.

Misalignment of a tachometer drive shaft can impose a side load on a tachometer drive cable adaptor resulting in possible gear seizure and damage to other related components.

To establish proper alignment, use one of the three tools in set J 23068. Because of the many different combinations of tachometer drive shafts, covers and adaptors, it is not practical to itemize specific usages for each tool. When confronted with an alignment job, test fit each tool to determine which provides the best fit and proceed to make the alignment with that tool as shown in Fig. 1.

Correct alignment is established when there is no tachometer drive shaft bind on the inside diameter of the tool when one complete hand rotation of the engine is made.

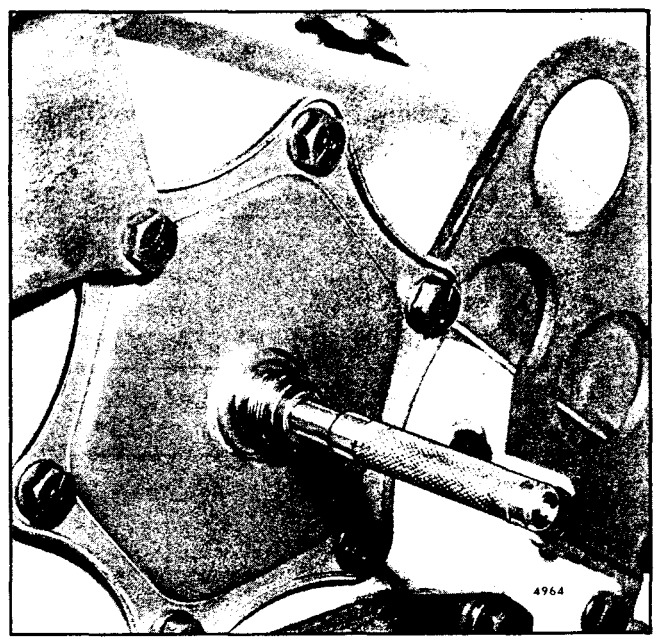

Fig. 1 - Checking Tachometer Drive Shaft Alignment

TROUBLE SHOOTING

CHECKING ENGINE ELECTRICAL GENERATING SYSTEM

In analyzing generator-regulator operation, check for one of the five following conditions.

1. A *fully charged battery* and *low charging rate* -- this indicates normal generator-regulator operation.

2. *Low battery* and *high charging rate*--indicates normal generator-regulator operation.

3. A *fully charged battery* and a *high charging rate*--this indicates the voltage regulator is not reducing the generator output as it should and will damage the battery--and may be caused by improper voltage regulator setting, defective regulator unit, short circuit or poor connections in the generator or regulator wiring or high battery temperature.

4. *Low battery* and *low or no charging rate*--indicates improper or no regulator operation--and may be due to loose connectons, damaged wires, low voltage or current regulator setting, oxidized contact points or a defective generator.

5. *Excessive arcing at contact points*--may be due to oxidized or misaligned contact points, defective regulator winding, poor cable connections or other causes.

If one of the latter three conditions exists, refer to the "Delco-Remy" electrical equipment operation and maintenance handbooks DR 324, DR 324A and DR 324S for correction of the problems. These manuals may be obtained from United Motors Service.

SPECIFICATIONS

STANDARD BOLT AND NUT TORQUE SPECIFICATIONS

THREAD SIZE	TORQUE (lb-ft)	THREAD SIZE	TORQUE (lb-ft)
1/4 -20	7-9	9/16-12	90-100
1/4 -28	8-10	9/16-18	107-117
5/16-18	13-17	5/8 -11	137-147
5/16-24	15-19	5/8 -18	168-178
3/8 -16	30-35	3/4 -10	240-250
3/8 -24	35-39	3/4 -16	290-300
7/16-14	46-50	7/8 - 9	410-420
7/16-20	57-61	7/8 -14	475-485
1/2 -13	71-75	1 - 8	580-590
1/2 -20	83-93	1 -14	685-695

EXCEPTIONS TO STANDARD BOLT AND NUT TORQUE SPECIFICATIONS

APPLICATION	THREAD SIZE	TORQUE (lb-ft)
Tachometer drive cover bolt	7/16 -14	30-35
Tachometer drive cover bolt	1/2 -13	30-35
Tachometer drive shaft (blower)	1/2 -20	55-65