

June 6, 1985

Dear Jim & Paula,

Enclosed find a sheet that I copied from an old MOTOR repair manual. I have sent one to Walter Deitchman in Shawnee Mission, Kansas. After I read the article by Bill Young I remembered in 1967 when I was trying to get ready for the Dayton Meet. I had gone through my overdrive and the day before I was ready to leave I pulled my overdrive control cable out to drive in town when I pushed it in the overdrive would not engage. I located the trouble about 1 a.m. (4 hours before we were to leave for Dayton). The

trouble was the vent hole under the speedomotor drive in the rear of the overdrive. This vent hole was plugged and I didn't notice it when I had it down the first time. This hole needs to be open to let pressure or vacuum out when the control cable is pushed in or out. If not, the lockout gear and shaft will not slide. Also make sure the chamfer on the inner bore of the gear is clean as well as the notches in the front face of the gear.

Hoping to see you in Monterey in September.

Harold Irwin
Rossville, Kansas

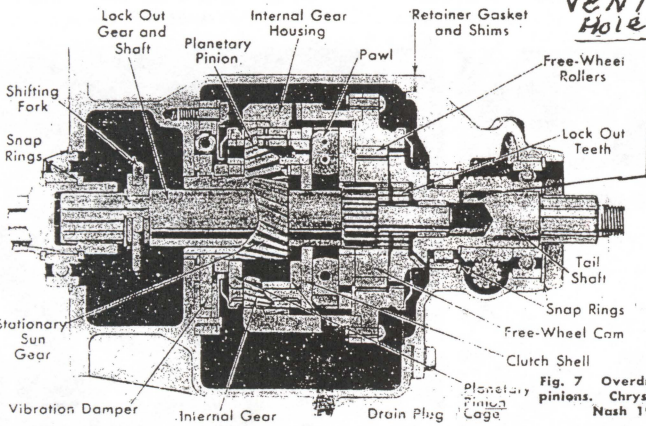


Fig. 7 Overdrive without electric control. Type with five planet pinions. Chrysler 1934-38 Eight-cylinder application. Typical of Nash 1936 series 20, 80; Studebaker 1936 President

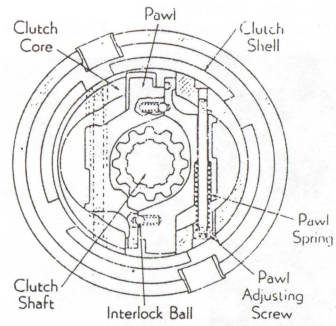


Fig. 30 Centrifugal clutch used on semi-electric units to control cut-in speeds

TYPES WITHOUT ELECTRIC CONTROL

These units may be divided into three classifications: (A) Type with three planet pinions and separate housings; (B) built-in type; (C) type with five planet pinions. Types A and B are quite similar in construction to the semi-electric unit previously described, so much so that the instructions given for that type may be used successfully in repairing these units. Fig. 41 is a layout of the parts comprising the type having three planet pinions and separate housing, while Fig. 42 shows the sequence of assembly of the built-in type.

In the five-pinion type, Fig. 7, the overdrive mainshaft (lockout gear and shaft) is spined to the mainshaft. The overdrive housing is bolted to the rear of the transmission so that if repairs to the overdrive only are required, the transmission need not be dismantled.

The overdrive may be removed from the transmission by simply unfastening it and sliding it straight back, disengaging the overdrive shaft from the transmission mainshaft. After separating the unit from the transmission, pry the snap ring from in front of the shift fork collar. Unfasten the rear bearing retainer from the housing and pull the retainer, together with the tailshaft and free wheel unit, from the housing. The pinion cage, centrifugal clutch and mainshaft

can now be removed from the rear. Remove the cap screws holding the sun gear and vibration damper to the housing and lift off these parts. Carefully collect and lay aside for future use the gasket and shims at the rear of the housing as they control the end play of the overdrive.

Reverse the order of the above procedure to assemble the unit and check the end play as follows: Replace the rear bearing retainer, together with the free wheel and tail shaft, without using any shims or gasket. Install the two top screws in the retainer and run them up finger tight. Now measure the clearance between the gasket faces of the housing and the retainer, using a feeler gauge. To this measurement, add not less than .015 inch of shimming. The total measurement thus obtained indicates the thickness of shims to be installed between the housing and the retainer.

OVERDRIVE CONTROL CABLE

A control cable is provided as a means of cutting the overdrive in or out at the will of the driver. It runs from the overdrive housing to the instrument panel. This cable insures proper travel of the overdrive shift collar so that in the overdrive, or operative position, the slots in the collar will be in line with the overdrive pawls and the shift collar will be completely engaged with the gear on the clutch hub to lock out the overdrive

mechanism.

The cable is adjusted for length at the lever on the overdrive housing. To make the adjustment, loosen the binding screw which holds the control wire to the lever. Then push the lever back as far as possible to place the overdrive in its engaged position. Now move the hand control button (on dash) in as far as it will go and then pull it back 1/8 in. to insure full travel of the button. Tighten the binding screw on the wire at the lever.

Be sure that the cable is properly anchored in the lever to prevent it from slipping. Looseness at this point will prevent proper engagement of the control into overdrive. The cable and conduit should be free from sharp bends and so located that they will not interfere with any other part of the car.

ADJUSTMENT OF CUT-IN SPEED

The centrifugal clutch shown in Fig. 30 is adjusted at the factory to cut in the overdrive at about 25 to 35 mph road speed depending on car make. These clutches are set at the factory, and range of adjustment is very limited. It is recommended that the original adjustment be maintained. If it is found that adjustment has been changed a correction may be effected as follows:

If the cut-in occurs above or below this range, remove the plug at the top of the overdrive housing or drain plug