

## Transmission-Differential Specifications

	330	325	318
<i>Pinion Depth</i>	A = 50.5 mm with 10 mm bolts A = 51 mm with 11 mm bolts	A = 48.5 mm	A = 47.5 for old-type crown- wheel A = 48.5 for new crownwheel
<i>Differential Bearing Shim</i> K = 2.30 mm right 2.50 mm left	C = K - J	C = C <sub>1</sub> - C <sub>2</sub>	C = C <sub>1</sub> - C <sub>2</sub>
<i>Primary Shaft Offset</i>	C - A = D - B		
<i>New Bearing Preload</i>	2 to 7 lbs	3 lbs 12 oz to 8 lbs 1 oz	3 lbs 12 oz to 8 lbs 2 oz
<i>Old Bearing Preload</i>		7 to 16 in.-lbs	7 to 16 in.-lbs
<i>Backlash</i> Crownwheel Pinion J = right 0.80 mm left 0.95 mm Backlash 0.12-0.25 mm			

speedometer drive worm (85 ft-lbs). Lock the worm.

Pull back the 3rd-4th shift fork and fit the fork. Pin it in place. Fit the ball and the spring. Screw down and tighten the locking system stop after first smearing its thread with sealing compound. Insert the reverse shaft ball and spring. Screw down the locking plug after smearing its thread with compound. Tighten the lock nut by turning it through a quarter of a turn after it has made contact with the housing.

Fit the seal, the speedometer drive pinion and its nylon bush (align its slot with the set bolt hole into the speedometer drive housing).

Engage second gear. Fit the shift fork shaft control lever. Fit the housing with its paper gasket smeared with jointing compound.

Fit the control-lever shaft, and pin the lever in place. Return to the neutral position and secure the cover housing in place. Fit the lower cover plate with its paper gasket smeared with jointing compound.

Place the differential in the housing. Refit the clutch shaft together with its pin-retaining spring. Fit the pin and lock it by means of the spring.

Refit the differential carriers together

with their paper gaskets, smeared with jointing compound (*follow the reference marks made during dismantling*).

Fit the universal joints. Temporarily fit the differential carrier half shells to hold the carriers in place. Refit the end plate with its paper gasket smeared with jointing compound.

NOTE: Fill the gearbox with oil after it is installed in the car.

*Remove and refit the speedometer drive housing as described for gearbox type 330.*

## Automatic Transmission

The Renault automatic transmission, still basically the same design as when introduced in 1963, consists of a three-speed fully synchronized transmission, with an electric servo actuating motor for shifting, an electromagnetic clutch, a decelerator solenoid to cut engine speed for shifts, a control governor, and a sealed relay unit that initiates and synchronizes the shifting action.

Shifting speeds are generally as listed with slight variations according to size and inflation pressure of tires.

ACCELERATION	Light to Moderate	Full
1st to 2nd	at 10-12 mph	at 21-24 mph
2nd to 3rd	at 23-24 mph	at 42-48 mph
DOWN SHIFT	Gas Pedal Released (Slowing Down)	Pedal Pressed (Passing)
3rd to 2nd	at 18-22 mph	at 36-42 mph
2nd to 1st	at 8-9 mph at 7 mph on "city"	at 16 mph

### Operating Tips

The engine can only be started while transmission is in neutral (N).

While engine idles to warm up, keep the automatic transmission in neutral. Keep button N pushed at any time while car is parked and idling.

If the car has been parked in freezing weather for a length of time, first drive a few hundred yards at moderate speed with the 1 drive button pushed, to warm up the transmission. Then place the switch in "city" position and push button D. Use EP 75 gear oil all year round.

To go into reverse gear, stop car fully, push N button and then push R button.

To utilize engine braking on down-hill grades, use button 2 or 1 which will keep transmission from up shifting.

Do not hold car from rolling back down-hill by accelerating engine. *Use only the brakes to prevent rolling back.*

### Emergency Tips

*Starting engine with discharged battery.* Apply handbrake, press N button, turn ignition on, and crank engine with hand crank.

When on downgrade or being pushed, push button N, turn ignition on, push button D, release handbrake, and let car roll downhill. When car reaches about 15 mph, the engine should start. Then accelerate normally.

When a booster battery is used, connect the negative terminals of both batteries together and connect the positive terminals together.

*Towing car with automatic transmission.* Explain to the tow operator that the car can only be towed when the rear wheels are off the ground.

When working on any part of engine electrical system, caution mechanic against grounding the wires carrying current to the ignition coil, to the decelerator solenoid, and to the coupling unit. Shorting these wires to ground will damage the relay unit.

### Troubleshooting the Automatic

*Creeps forward at idle with first gear engaged:*

- Adjust governor linkage to throttle
- Engine idling too fast—reduce idle speed
- Check for frayed harness to transmission
- Governor damaged—replace

*Slips when starting in first gear:*

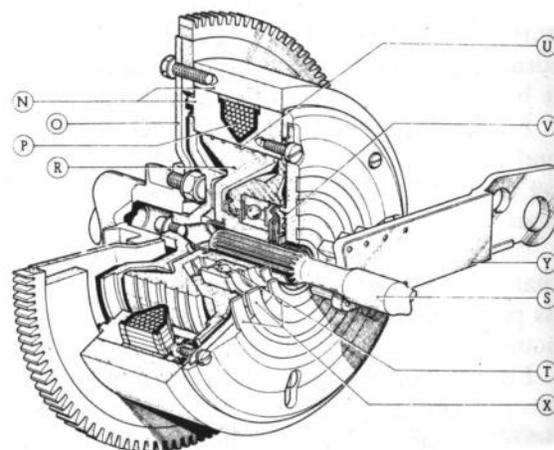
- Adjust governor linkage
- Damaged governor

*Coupling unit slips constantly:*

- Governor 6-11 switch malfunctioning
- Coupling synchronizer switch not operating properly
- Defective brush holder at coupling unit—replace holder
- Coupling unit harness wire No. 18 grounded

*Coupling unit does not engage smoothly when starting in first gear. Clashing of first and reverse gears:*

- Governor harness wire No. 28 broken
- Governor 6-11 switch not operating properly



- |               |                             |
|---------------|-----------------------------|
| N. Outer pole | T. Ball bearing             |
| O. Flywheel   | U. Air space                |
| P. Coil       | V. Contact ring             |
| R. Inner pole | X. Slip rings               |
| S. Mainshaft  | Y. Electrical brush carrier |

The coupling is a powder-type, electromagnetic unit.

*Rough coupling unit engagement after gears have shifted. Clashing of first and reverse gears:*

- a. Defective synchronizer switch
- b. Defective brush holder
- c. Coupling unit harness wire No. 18 broken

*Coupling unit slips; gears clash, bearing noisy:*

- a. Defective coupling unit

*Coupling unit does not operate. No current draw:*

- a. Coupling unit harness wire No. 20 or No. 10 broken
- b. Defective brush holder—replace
- c. Defective coupling unit

*Coupling unit relay cuts out when accelerator is depressed:*

- a. Coupling unit harness or brush holder grounded
- b. Short circuit in coupling unit

*Coupling unit slips after each shift:*

- a. Decelerator adjusted too high
- b. Defective wire No. 11 is disconnected or broken
- c. Poor decelerator ground
- d. Damaged decelerator
- e. Ignition contact points incorrectly adjusted

*Engine races during a gear shift:*

- a. Decelerator adjusted too high
- b. Decelerator wire No. 11 broken
- c. Poor ground at decelerator
- d. Damaged decelerator
- e. Damaged relay case—check for decelerator movement by pressing shift buttons
- f. Decelerator improperly mounted or loose

*Engine stalls during a gear shift:*

- a. Decelerator adjusted too low
- b. Engine not tuned properly
- c. Carburetor main jet too lean

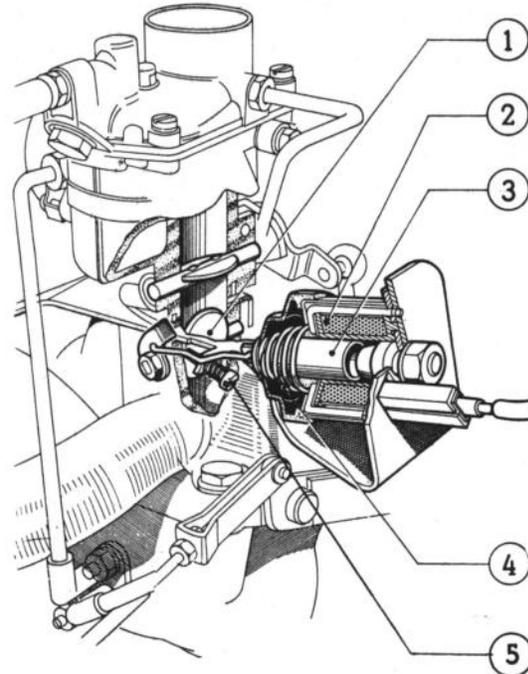
*Car does not move:*

- a. Damaged trans-axle gears

*Clashing of gears during shifts; delayed shifts:*

- a. Damaged actuator
- b. Damaged trans-axle
- c. Lubricant too heavy—use EP 75

*Gears clash when going into particular gear—usually on downshift:*



The decelerator actuates a flap valve (1) that cuts off carburetor throat during shifts. The adjustment screw (5) prevents engine stalling. Numbers 2, 3, and 4, are parts of solenoid.

- a. Synchronizer in transmission broken off

*Erratic gear shifting:*

- a. Damaged governor-drive cable
- b. Damaged governor-drive pinion

*Starting motor does not operate:*

- a. Weak battery
- b. Damaged starting motor
- c. Defects in the battery cable
- d. Defective ignition switch
- e. Defective selector panel neutral switch
- f. Engine ground straps making poor connections

*Engine does not start:*

- a. Defective ignition circuit
- b. Wire connecting the ignition coil to the relay case is broken or disconnected
- c. Defective current feed to relay case. Check the fuse, ignition switch, and wires
- d. Selector panel harness wire No. 30 is disconnected or broken
- e. Defective relay case