

Notes

The test methods described below are used to check the normal functions of the automatic transmission. Judging the operation and troubles, if any, of transmission obviously requires experience in handling automatic transmissions. Without such experience it will be of advantage to use another automatic transmission in good order and of the same design for making comparisons. If the test shows irregular functions, reference to a system of „**Programmed Repairs**“ will assist in finding the causes of such faults.

Prior to starting, be sure to check oil level, idling speed of engine, adjustment of selector rod of control pressure rod and of kickdown switch.

An example for checking the shifting sequence of model 107.044, partially under the influence of accelerator pedal and selector lever with the assistance of a pertinent program follows.

Shifting down with Kickdown

In selector lever position “D”, accelerate vehicle while maintaining accelerator pedal position up to 70 km/h, then apply kickdown; transmission will shift back to 2nd speed.

Shifting up with Full Throttle

Return accelerator pedal to “full throttle” and accelerate. Shifting up from 2nd to 3rd speed occurs at 138 km/h.

Deceleration Shifts

Accelerator pedal in idling speed position.

Decelerate vehicle to approx. 80 km/h and move selector lever into position “S” (down shift into 2nd speed. Time up to begin of shift: max. 1 sec.).

Following a deceleration to approx 50 km/h, raise selector lever slightly and move into position “L”. (Down shift into 1st speed. Time up to begin of shift: max. 1 sec.). Down shifts are effected under increased engine speed and a clearly shown decelerating effect on vehicle.

Accelerations with Kickdown

At a driving speed of approx. 35 km/h, move selector lever again to position “D”; transmission shifts to 2nd speed. Apply kickdown and hold pedal in kickdown position; transmission will shift back to 1st speed, upshift to 2nd speed will occur at 68 km/h.

Checksum of Parking Locks and Reverse Speed Lock

Above approx. 15 km/h, no shifting to selector lever positions “P” and “R” should be possible.

Starting at Full Throttle and Accelerating

Apply full throttle in selector lever position “D” and maintain full throttle position. Vehicle will start from stop in 1st speed and will shift to 2nd speed at 68 km/h. Keep accelerator pedal in full throttle position and wait for the upshift from 2nd to 3rd speed at 138 km/h. Decelerate vehicle up to stop.

Starting in Selector Lever Position “L”

Engage selector lever position “L” and start at part throttle. Vehicle will start from stop in 1st speed, there will be no changeover.

Shifting down at Part to Full Throttle

Decelerate vehicle in selector lever position “D” to 56 km/h, then apply full throttle; transmission will shift down to 2nd speed for acceleration. Move selector lever to position “S” and decelerate vehicle to 20 km/h, then apply full throttle; transmission will shift down to 1st speed for acceleration.



27.2 Checkups during Test Drive

Shifting up at part throttle should be noticed only when listening carefully. At **full throttle** and **kickdown** the gear changes are clearly heard, but the new gear speed should obtain a smooth hold and the impression of an energetically pulling engine should remain. Sudden revving up of the engine when shifting up indicates the slipping of a servo member (brake or clutch) and should be checked.

Automatic **downshifts without applying the throttle** occur at very low speeds and will be heard only when listening very carefully (speed increase of engine). On the other hand, **downshifts under kickdown** are coupled with a clearly felt shifting impulse in addition to an increase in engine speed. At certain speed ranges, a downshift under part throttle to full throttle is possible.

Downshifts with the selector lever are either downshifts while applying the throttle (for example uphill) or decelerating shifts without applying throttle (for example downhill or when decelerating). Downshifts while applying the throttle require only a few fractions of a second for changing gears, while decelerating

shifts without application of the throttle require from 1 to 2 seconds.

During the checkup make sure that the transmission, particularly under load, is not constantly shifting. During the shifting, the servo members develop considerable heat and pertinent dispersal requires some time. A **reference value** is: **Repeat a gear shift under load only max. once within 15 seconds.**

Driving in Reverse

Check transmission while driving in reverse. Move selector lever to position "R", accelerate vehicle quickly while backing up and decelerate again.

Caution! When decelerating, the engine provides no braking effect.

Shift Points

Vehicle model		107.024 107.044	
Position of gas pedal	Shift	▲ km/h	▼ km/h
Selector Lever Position "D"			
Idle throttle	1-2-1	30	19
	2-3-2	45	35
Full throttle	1-2-1	68	19
	2-3-2	138	60
Kickdown	1-2-1	68	51
	2-3-2	138	123
Selector Lever Position "S"			
Idle throttle	1-2-1	34	23
Full throttle	1-2-1	77	27
Kickdown	1-2-1	77	62

Explanation of symbols: ▲ Shifting up
 ▼ Shifting down

All speed values are approximate.