

## Diagnostic protocol - Automatic gearbox

DATE	VEHICLE LICENSE PLATE NO.	DIAGNOSIS PERFORMED BY (FULL NAME)
.....	.....	.....
CAR MAKE / MODEL	MODEL YEAR	
.....	.....	
ENGINE SIZE / FUEL	MILEAGE (KM)	
.....	.....	
VEHICLE IS A	GENERAL USE	
<input type="checkbox"/> Commercial vehicle <input type="checkbox"/> Emergency vehicle <input type="checkbox"/> Taxi <input type="checkbox"/> Courier / delivery vehicle <input type="checkbox"/> Vehicle for other heavy use	<input type="checkbox"/> Private vehicle	<input type="checkbox"/> Regularly carry heavy load <input type="checkbox"/> Regularly pulls a trailer <input type="checkbox"/> Regularly travels in city traffic <input type="checkbox"/> Regularly travels on the freeway <input type="checkbox"/> Regularly transports passengers

The gearbox is damaged and must be repaired if any of the questions marked with a >> ! << is answered with a **yes**.

### Description of problem / error

Did the problem occur at a particular event / time? When? Where? How? Describe the circumstances thoroughly:

.....

.....

.....

.....

.....

.....

.....

ERROR CODES FROM THE GEARBOX	ERROR CODES FROM THE ENGINE	OTHER ERROR CODES
.....	.....	.....

### Oil

- |                                   |                              |                             |                                      |
|-----------------------------------|------------------------------|-----------------------------|--------------------------------------|
| Is the oil level correct?         | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not checked |
| ! Is the oil (ATF) burned?        | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not checked |
| ! Metal parts / chips in the oil? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not checked |
| ! Is there any glycol in the oil? | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> Not checked |
- .....
- .....
- .....

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## Symptoms

**!** Lacking drive on any gear?  Yes  No  No information  
What gear?.....

Any audible noise?  Yes  No  No information  
What gear?.....  
Noise level?.....  
What kind of noise?.....  
Increase with acceleration?.....

Any slip?  Yes  No  No information  
What gear?.....  
When changing gear.....

Problems with shifting gear?  Yes  No  No information  
What gear?.....  
Sporadic or constant error?.....  
When the gearbox is cold or warm?.....

Any vibrations?  Yes  No  No information  
How strong?.....  
Increase with acceleration?.....  
When? (specify speed, throttle and engine brake) .....

## Comments

Car mechanic's comments on the vehicle's problems, the use of the vehicle and the customer's style of driving:

.....  
.....  
.....

If the automatic box also can be shifted manually; are the problems different when shifting manually?

.....  
.....  
.....

## Instructions for driving a car with error symptoms in the automatic transmission

The test run is an important part of trouble shooting and should be performed both when the gearbox is cold and when it is warm (some symptoms are only noticeable when the gearbox is cold and some symptoms are only noticeable when the gearbox is warm).

**Avoid to test drive of a car with:**

- audible noise
- heavy sliding
- too little oil
- glycol in the oil

1. Please note the customer's description of the problems experienced. Be sure to also test drive according to the customer's instructions for the best chance to repeat the experienced problems. The rest of the test

run can then be used to find other potential errors.

2. Start the car in parking position (P).
3. With the brake pedal depressed, shift to D and then R.
4. Shift to R and back up a little bit.
5. Shift to D and drive with light acceleration.
6. Be particularly observant of lock-up (usually on top gear, but it is now common with lock-up on lower gear). Keep an eye on the tachometer. With lockup locked, the speed increases only with the car's speed - otherwise it increases as soon as you press the accelerator pedal.
7. Engine brake so that the gearbox switches a gear. Press the gas pedal to accelerate slightly. Does the gear shift appear nor-

mal? Brake the engine again so that the gearbox shifts to a lower gear and repeat this procedure until all gears are tested.

8. Accelerate faster until you reach the highest gear (be aware of speed limits - retrieve last gear if necessary).
9. Try kick-down from any of the higher gear by gassing.

The gearbox should now be warm, repeat the test run with the same accuracy as before. If error codes are indicated during the test run: does the car set emergency mode? **Thoroughly write down all observations that take place during test run 1 (cold) and 2 (hot).**

**Archive this diagnostic document and other notes regarding the vehicle.**