AMT Control Housing Bench Testing - False Failures

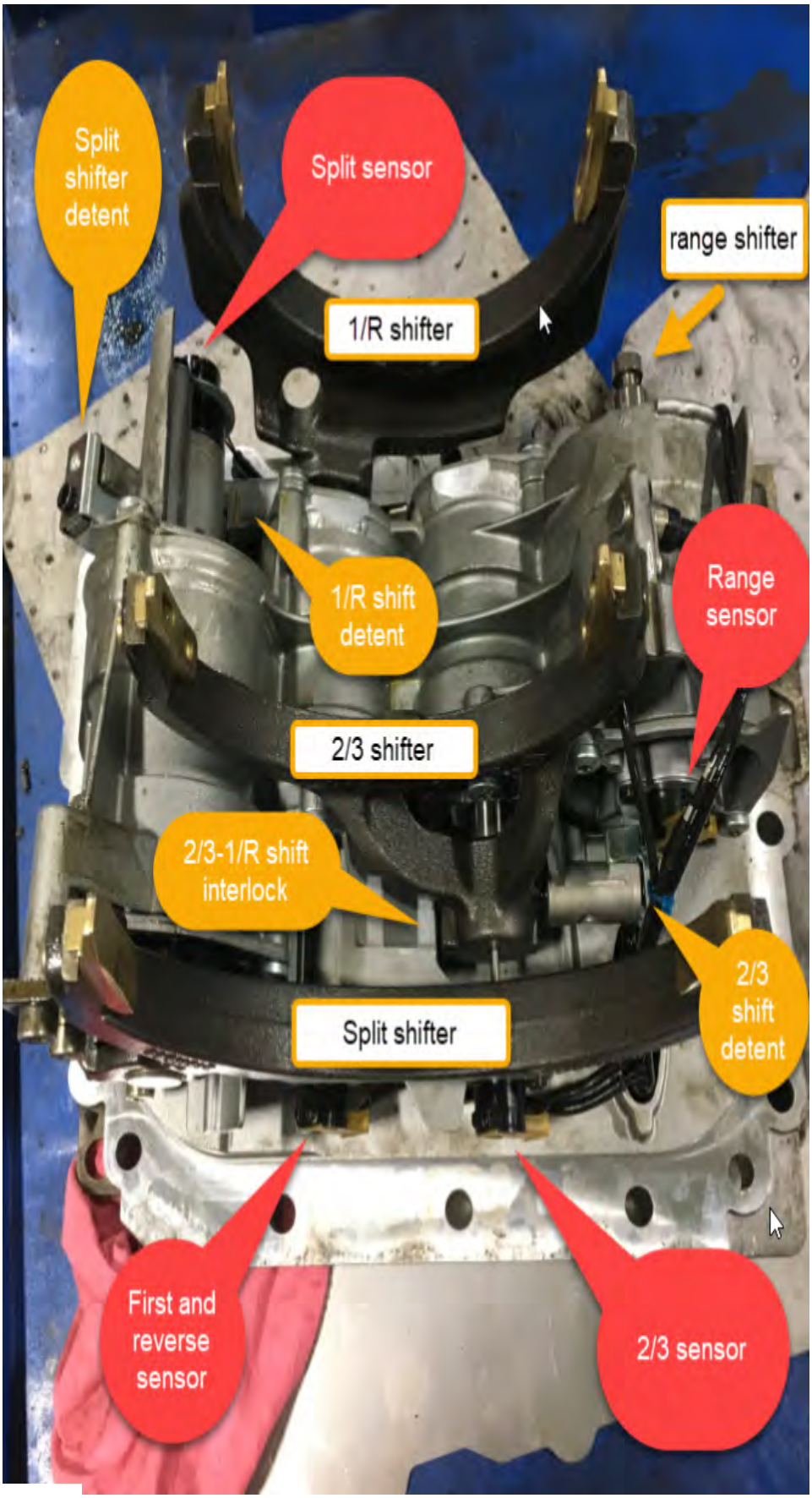
The bench test of the AMT control housing using Tech tool, **operation 4320-08-03-40 Gears**, should be performed with the control housing resting on its forks on a flat surface. **If the unit is placed upside down on the bench with the forks facing up the forks can rotate out of position and catch on the housing during the test resulting in a failed test result.**

Forks up is fine for Manual manipulation of the forks and inspection.

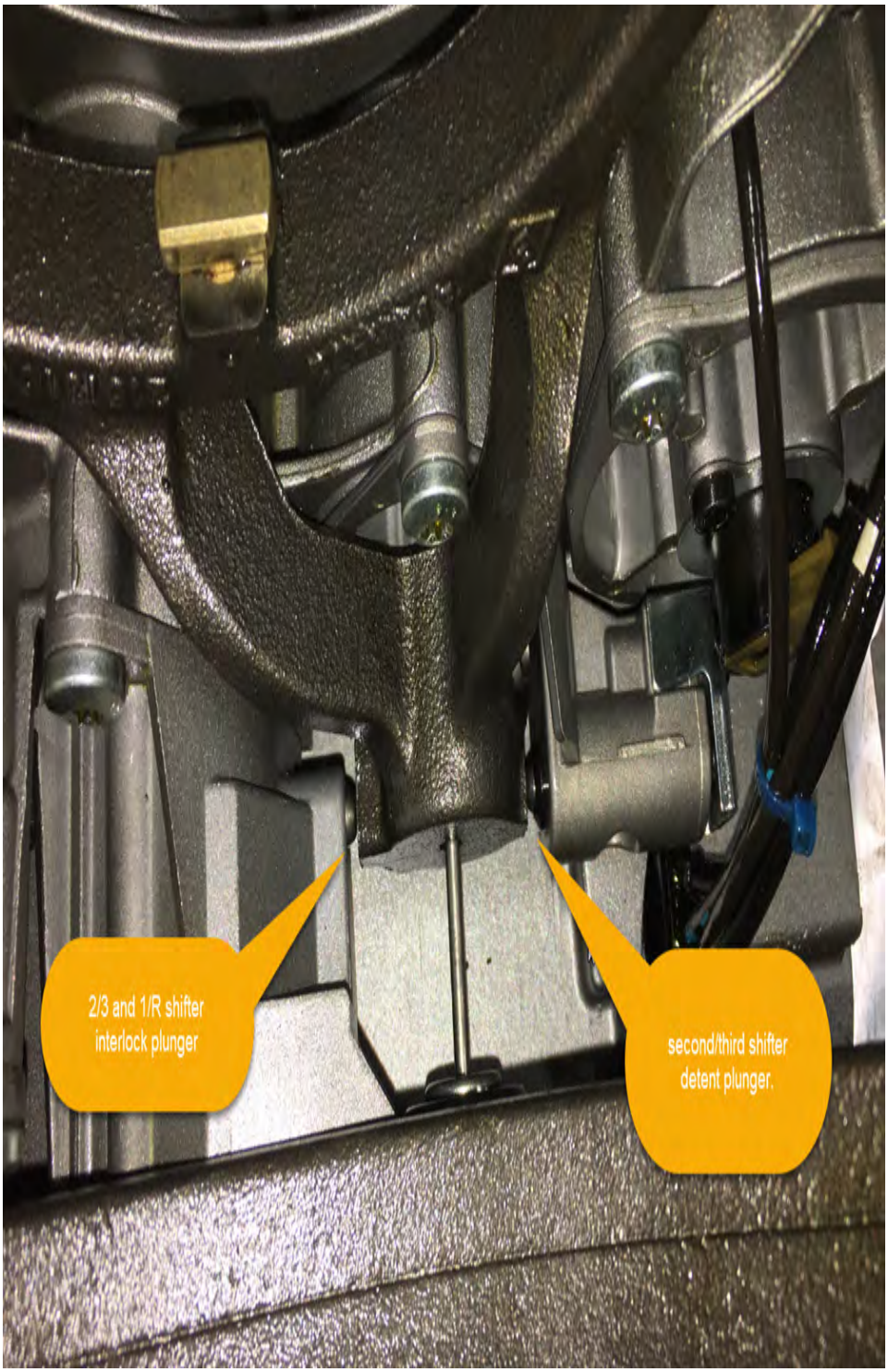
Live UI

For automated testing using Tech Tool rest the shift housing on its forks on a flat smooth surface.

The 2/3 and the 1/R shifter have a shift detent between them similar to a regular manual gearbox will have to prevent shifting into two gears at one time. If either of these shifters will not move when shifting manually then check the other shifter and verify that it is in the neutral position.

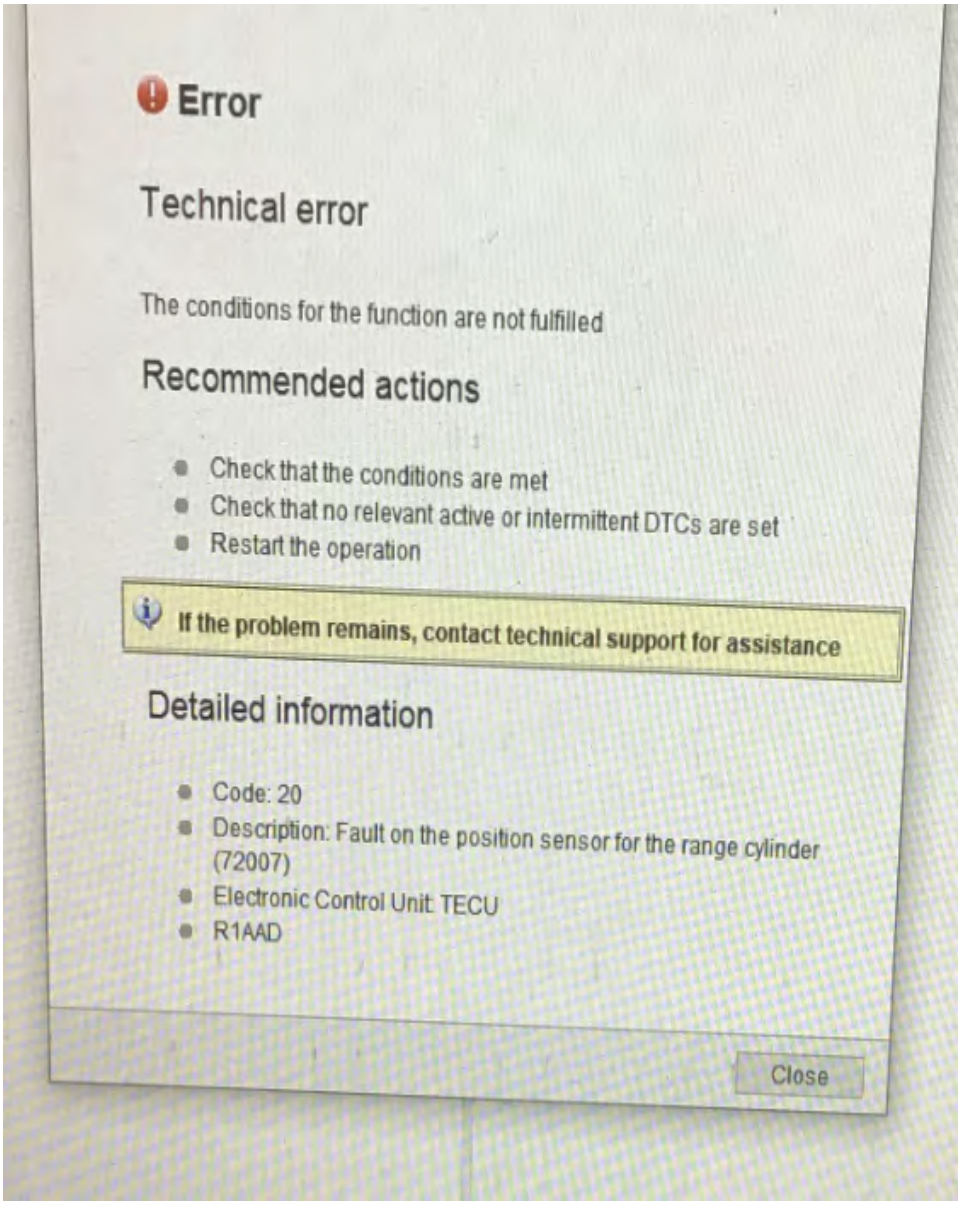

Split shifter detent
Split sensor
range shifter
1/R shifter
1/R shift detent
Range sensor
2/3 shifter
2/3-1/R shift interlock
2/3 shift detent
Split shifter
First and reverse sensor
2/3 sensor

Live UI



During bench testing the shifter calibrations or tests may fail for out of limits since there is nothing to limit the shifters from moving too far. The range piston is the most likely to do this but the 1/R and 2/3 shifter can also show this. If the housing functions correctly and can be shifted manually then installing it in the gearbox correctly will eliminate the error seen from the shifters being unrestrained during bench testing.

The message below may be recieved when the range piston is in the full extended or retracted position. Manually moving the piston from the end stop and re-running the test will likely allow the test to run until the piston reaches the end stop again and logs that error again. if there are no logged fault codes for the position sensor in the TECU memory no repairs should be needed.



Live UI

Tags

error 20 r1aad control housing

amt shift housing control housing fails test bench test

amt calibration calibration fail

Related links and attachments

KC-2028 4320-08-03-40 Gears IMG 1

KC-2028 4320-08-03-40 Gears IMG 2

KC-2028 4320-08-03-40 Gears IMG 3

KC-2028 4320-08-03-40 Gears IMG 4

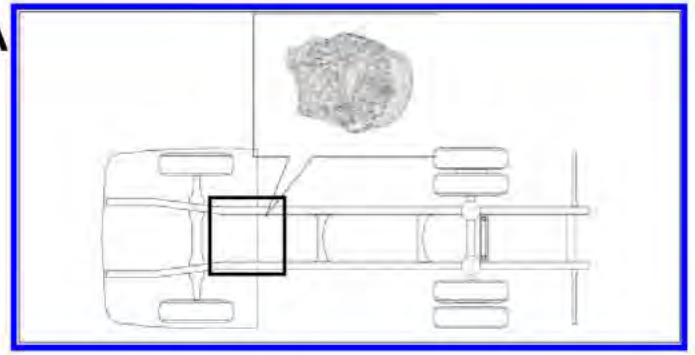
Feedback

Give feedback

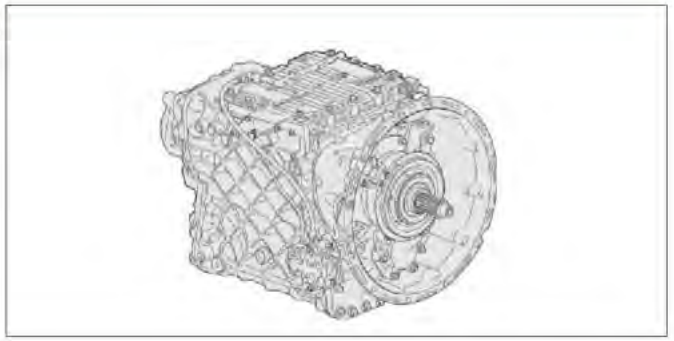
to help improve the content of this article

Live UI

A



B



4320-08-03-40 Gears

Simulation

Information >> Conditions >> Execution

Purpose

Check the engagement of a gear in the transmission

Check the position of the selector forks in the transmission

Components to be tested are:

- Solenoid valve(s)
- Air cylinder

Description

This test allows all gears to be engaged in the gearbox to see if the selected gear corresponds with the engaged gear and to verify that each solenoid valve moves to the correct position for each gear

Selections

Select the illustration corresponding to the method or test to be performed

A

Transmission installed

B

Transmission removed

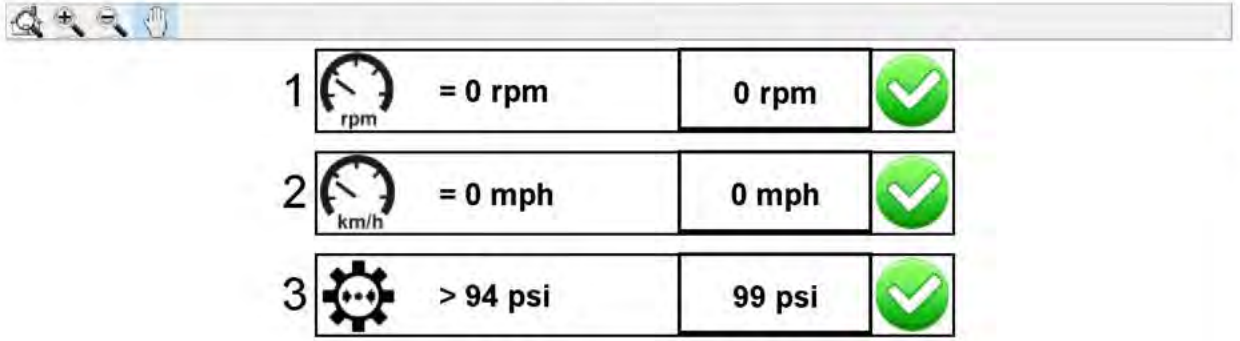
Continue > Cancel

Tech Tool

Tech Tool Links Help

BRADLEY PICKENS

Product Product History Diagnose Test Calibrate Program Impact



4320-08-03-40 Gears

Simulation

Information >> **Conditions** >> Execution

Automatically checked conditions

1 Engine not running
2 The product must be stationary
3 Air pressure above 94 psi

Continue > Cancel

Chassis ID: M744 41340 VIN: 1M1AW07Y9EM041340 Work Order: 9999

Product Online

1:05 PM
6/30/2022

Tech Tool

Tech Tool Links Help

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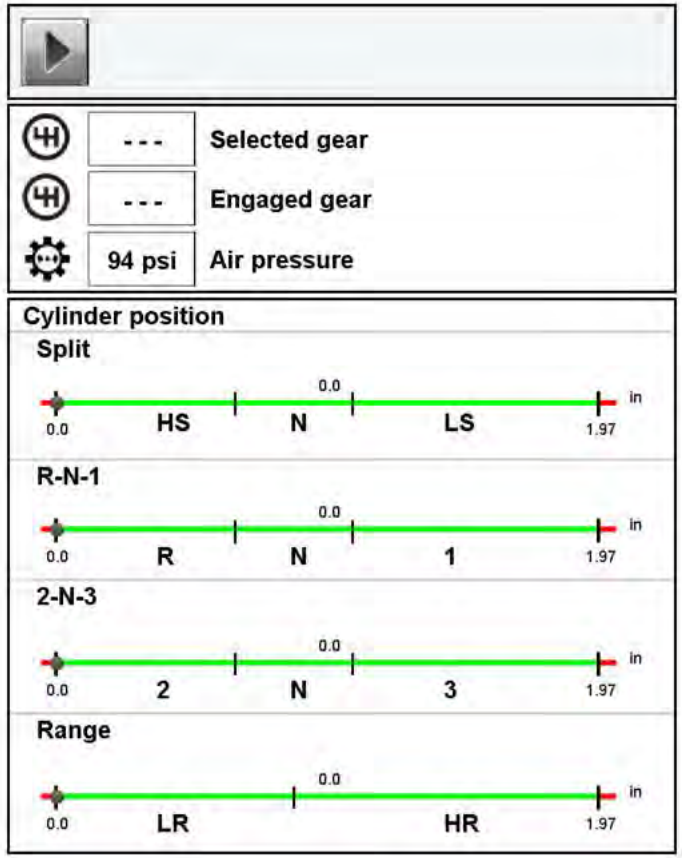
Product Product History Diagnose Test Calibrate Program Impact

Select a gear to engage

Gear R4



4320-08-03-40 Gears

Simulation

Information >> Conditions >> **Execution**

Action

- Select a gear to engage
- Start the test. Listen for activation sound

Note: In order to perform this test properly, air pressure must always be in the normal operating range

Evaluation

- The "selected gear" should correspond with the "engaged gear"
- The position for each graph should correspond to the expected value in the table
- After evaluation, repeat test sequence for the other gears

Note: Some products may not be programmed with all available reverse gears shown in the product's display; however this test has the ability to activate 4 reverse gears

Expected value:

Gear: R4

Cylinder	Split	R-N-1	2-N-3	Range
Cylinder Position	HS	R	N	HR

Test result

Select one of the following alternatives

- (•) OK
- ( ) Not OK

Continue >

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