



Vehicles With An Automated Manual Transmission Model F (AMT-F) With Crawler Gearbox - Diagnostic Trouble Code (DTC) P10C7-97 Crawler Gear Engagement System Blocked Shift To Neutral Position; Vehicle Stuck In Limp Mode Or Will Not Shift Into Gear



> Internal Content

Guided Diagnostics are under review for this fault. Until improvements are made to GD, please use this CBR to diagnose this fault.

Crawler function:

The crawler shifter cannot be engaged if the splitter shifter is in a gear. The splitter shifter MUST be in neutral for the crawler shifter to move. Likewise, the splitter cannot move from the neutral position if the crawler is in gear. The lockout function is mechanical and internal to the gearbox.

• **Before claiming a stuck crawler shift assembly ensure the splitter is in Neutral.**

If the fault is inactive with high counts.

1. In Premium Tech Tool (PTT), run [Test 4320-08-03-40 Gears](#) or [4320-08-03-49 Ultra-low Crawler Cylinder](#) several times, or shift the transmission into and out of crawler gear with the shift lever several times.


- See if the unit will log P10C7 and stop shifting.

- Listen for air leaks during the tests/shifting.

1.1 If the unit stops shifting and logs a fault: Go to the Active Fault section below.

1.2 If the vehicle will not log the fault:

1.2.1. Remove the EVU from the upper right side of the extension section.

 Live UI . Manually manipulate the plunger.

- The return spring is very stiff but the plunger should feel smooth and not hang up in its travel or feel like it is dragging in the bore.

1.2.3. If the plunger feels like it is dragging, replace the EVU

If the fault is Active or becomes active during the above listed steps:

1. Carefully remove the EVU from the upper right side of the extension section.

2. Check that the position sensor plunger is not stuck.

2.1. If the plunger is found to be sticking: Replace the EVU.

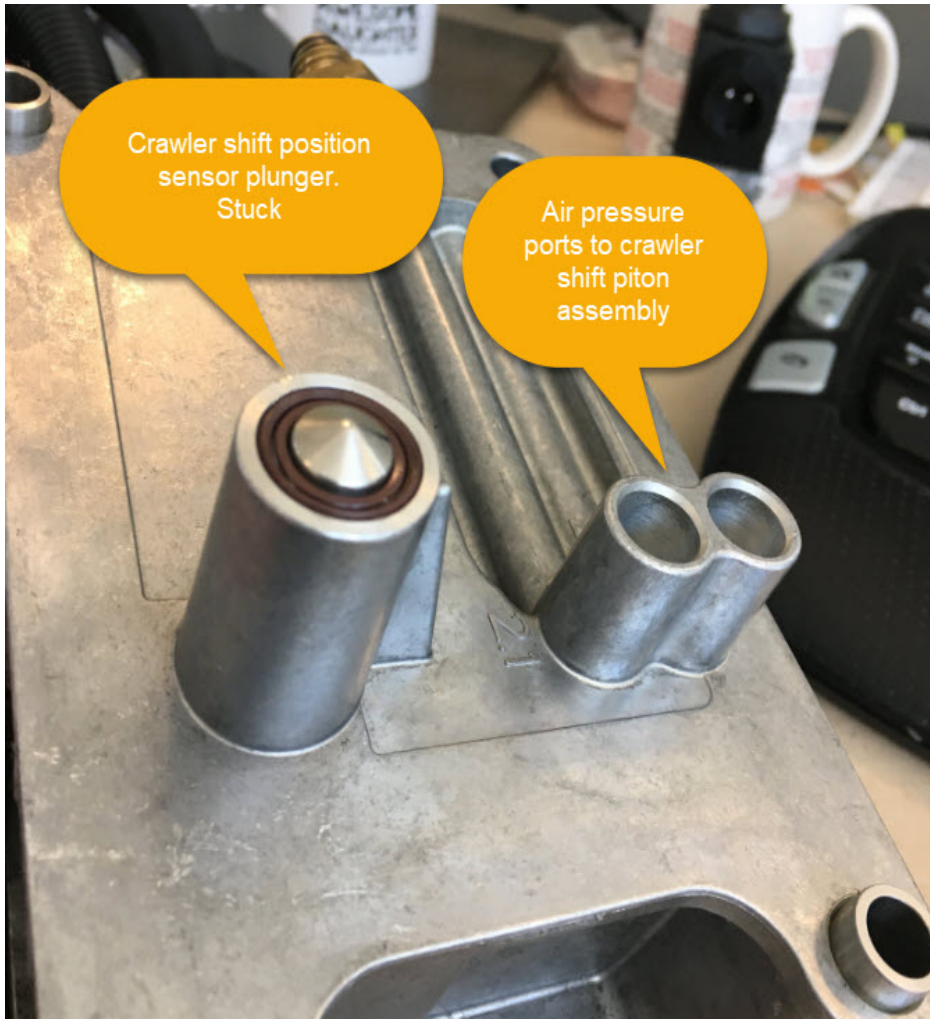
2.2. If the plunger is not stuck and moves smoothly: Check the crawler shifter for freedom of movement.

2.2.1. If the crawler is engaged, the shifter will be in the forward position (closer to the engine).

2.2.1.1. Insert a pry bar in front of the shifter and pry the shifter rearward. It should move freely except for the detent plunger pressure that is internal to the gearbox.

2.2.1.2. If the crawler shifter moves easily manually: Use a rubber tipped air blower to put air to the two ports inside the gearbox to shift the unit with air pressure.





 Tags

[k03785558](#)

[p10c7-97](#)

[p10c797](#)

[volvo](#)

[mack](#)

 Live UI

Related links and attachments

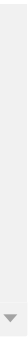
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Select a gear to engage

Gear R4



...

Selected gear

...

Engaged gear

94 psi

Air pressure

Cylinder position

Split

R-N-1

2-N-3

Range

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 >



1	 = 0 rpm	0 rpm	
2	 = 0 mph	0 mph	
3	 > 94 psi	99 psi	

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

Select a gear to engage

Gear R4



...

Selected gear

...

Engaged gear

94 psi

Air pressure

Cylinder position

Split

R-N-1

2-N-3

Range

4320-08-03-40 Gears

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Select one of the following alternatives

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- Not OK

Continue >