PUMA® 150
PUMA® 165
PUMA® 150 CVT
PUMA® 165 CVT
Tier 4B (final)
Tractor

SERVICE MANUAL

Part number 47936459
1st edition English
January 2016

CASE IH AGRICULTURE

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Chapters

Each Chapter is identified by a number e.g. Engine - Engine and crankcase - 10.001. The first number is identical to the Section number i.e. Chapter 10.001 is inside Section 10, Engine. The second number is representative of the Chapter contained within the Section.

CONTENTS

The Chapter Contents lists all the technical data (specifications), functional data (how it works), diagnostic data (fault codes and troubleshooting), and service data (remove, install, adjust, etc.), that have been written in that Chapter for that function or system on the machine.

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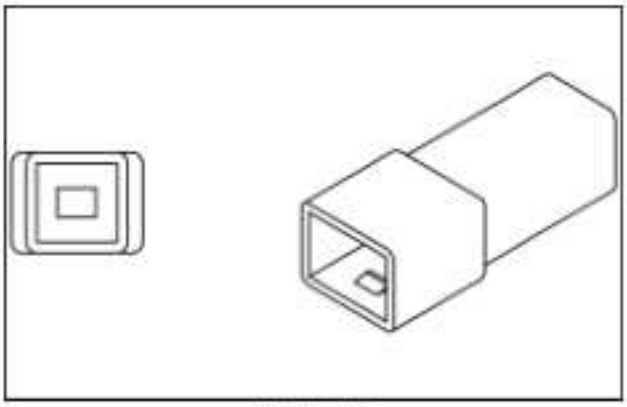
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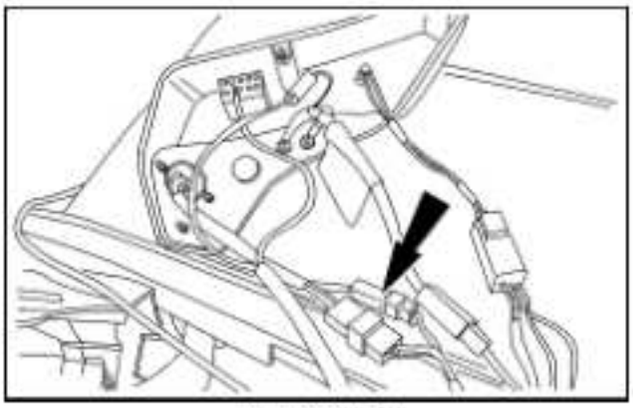
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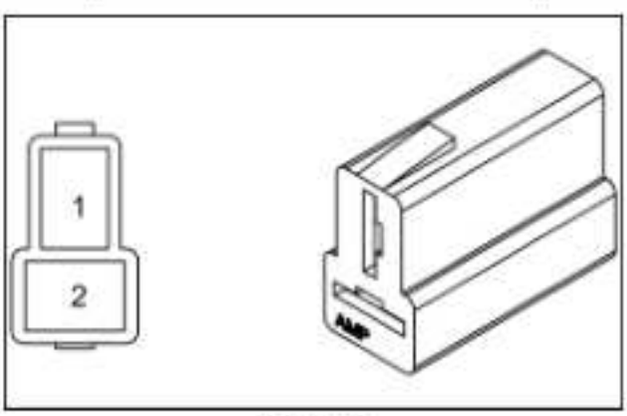
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Behind right-hand side switch panel

CONNECTOR X-116A - Power socket 40 A – Cab outside

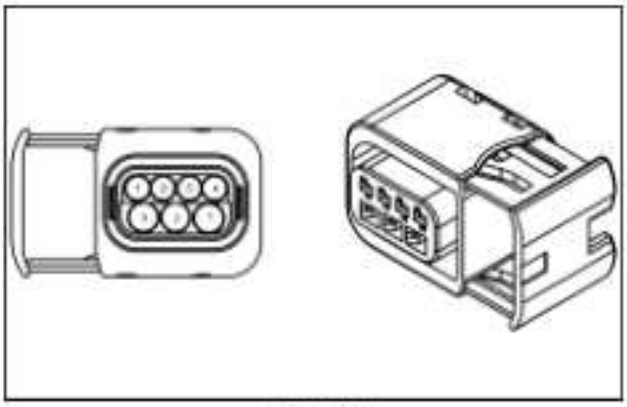
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Puma 150 CVT, Puma 165 CVT

CONNECTOR X-116A - On harness 47662232 [up to 10/2014], 47729957 [from 11/2014 – up to 08/2015]			
PIN NUMBER	WIRE NUMBER	CIRCUIT REFERENCE	ELECTRICAL SCHEMATIC FRAME
1	CM-150BF (BR)	-	Wiring harnesses - Electrical schematic sheet 34 (55.100)
2	CM-9032D (YE)	-	



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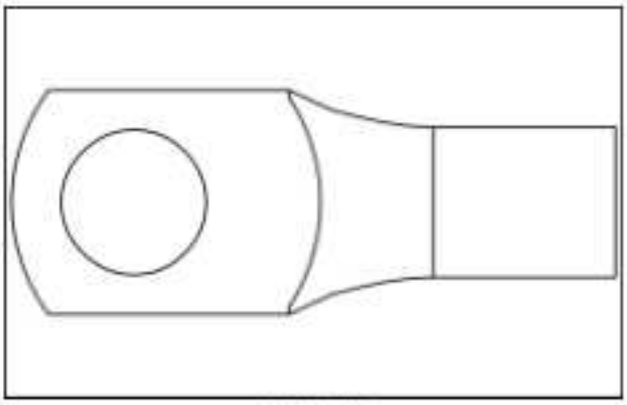


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CONNECTOR X-898 - Battery isolator

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CONNECTOR X-898 - On harness 47679910 [up to 08/2015]			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	RI-150AS (BR)	From X-898 to **X-608**	**Wiring harnesses - Electrical schematic sheet 10 (55.100)**



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CONNECTOR X-898 - On harness 47725732 [from 09/2015]			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	RI1-150AS (RD)	From X-898 to **X-608**	**Wiring harnesses - Electrical schematic sheet 10 (55.100)**

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12054-Fault on power supply voltage reading

Control Module : EPL

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

NOTE: *To electronically release and disable the Electronic Park Lock (EPL) when carrying out maintenance on the system, use the H1 calibrations menu in the XA module. Select* ***(SC)*** *and perform the accelerometer stroke calibration procedure but stop the process when* ***(M)*** *is displayed and turn the ignition switch OFF. For further information, refer to* ***Electronic park lock actuator/controller - H1 - Calibration procedures (55.031)****.*

If electronic release is not possible, remove the EPL cover and use the special tool supplied in the cab to manually disengage the EPL.

NOTE: *When clearing the stored memory in H8 in the XA module or installing a new EPL, make sure the correct EPL orientation is selected in H3 in the XA module, channel 3. Refer to* ***Electronic park lock actuator/controller - H3 - Configurations and options (55.031)****.*

Cause:
The fault triggering condition is 'always'.

Possible failure modes:

1. Faulty EPL assembly

Solution:

1. Make sure the machine is parked on a level surface and chock the front wheels using suitable wheel stops.

   A. Continue to Step **2**.

2. Before proceeding clear the error code using either the on board HH menu or approved diagnostic equipment. Turn the ignition switch OFF, wait for 5 seconds and then turn the ignition switch ON. Operate the system and check for the error code.

   A. If the error code is not indicated, check that the system is operating correctly.

   B. If the error code is indicated, continue to Step **3**.

3. Using H8 in the XA module, clear the EPL memory, refer to **Electronic park lock actuator/controller - H8 - Clear stored calibration information (EEPROM) (55.031)**. Using H3 in the XA module, re-enable the EPL, refer to **Electronic park lock actuator/controller - H3 - Configurations and options (55.031)**. Re-calibrate the EPL, refer to **Electronic park lock actuator/controller - H1 - Calibration procedures (55.031)**. Operate the system and check for the error code.

   A. If the error code is not indicated, check that the system is operating correctly.

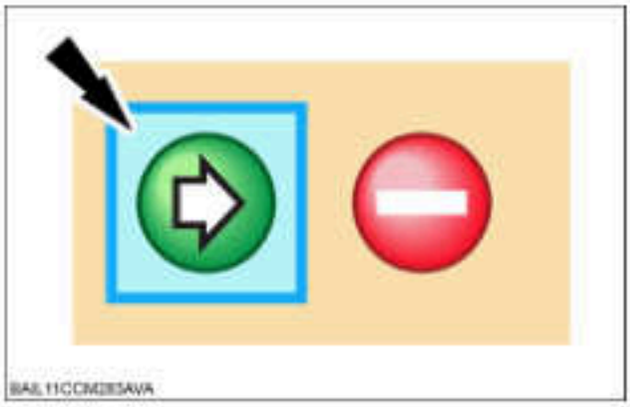
   B. If the error code is indicated or it was not possible to calibrate the EPL, remove and replace the EPL assembly. Refer to **Electronic park lock actuator/controller - Remove (55.031)** and **Electronic park lock actuator/controller - Install (55.031)**. Calibrate the EPL, refer to **Electronic park lock actuator/controller - H1 - Calibration procedures (55.031)**.

Wiring harnesses - Electrical schematic sheet 46 – ELECTRONIC PARKING BRAKE (55.100.DP-C.20.E.46)

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Step 5c. Accumulator Test Procedure:

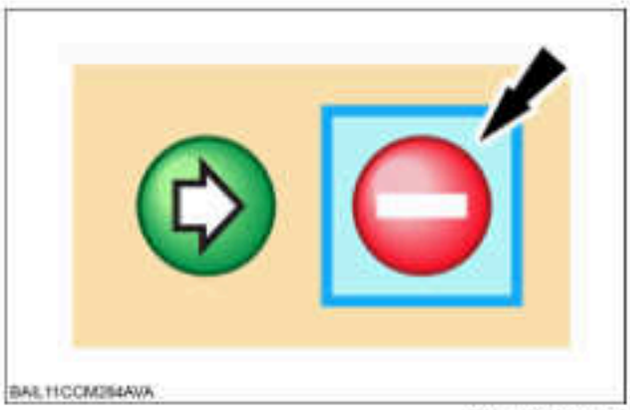
- On the DATAR Scope, in the bottom left corner, verify the capture trigger is "ready" to start capturing data. This is indicated with a green ball highlighted in blue as shown in the figure to the right. If the scope is not ready, then press the keyboard SPACE bar to change the scope trigger state to ready.
- Press and hold the DOWN SHIFT button on the transmission shift lever to run the accumulator test. The machine display will count up from 1 to 10. When the test is finished the display will show "END". This test will take about 15 seconds.



BAIL11CCM283AVA 49

NOTE: *The accumulator test can only be run if "ACC" is selected in step 3 above. Only the down shift button is used with this test.*

- On the DATAR Scope, when the test ramp is finished, then press the PC SPACE bar to capture and hold the result trace.
- Compare the DATAR measured trace with the expected result trace shown on the next Valve Test Assistant screen. (Remember ALT-TAB to switch between the programs)



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NOTE: *During the ACC test, the machine software makes five quick engagements of the L, M, H clutches.*

Step 6. Save the waveform in DATAR Scope:

- On the DATAR scope, go to the FILE menu and select one of the SAVE options to store the waveform on the PC (e.g. Save Current Waveform).

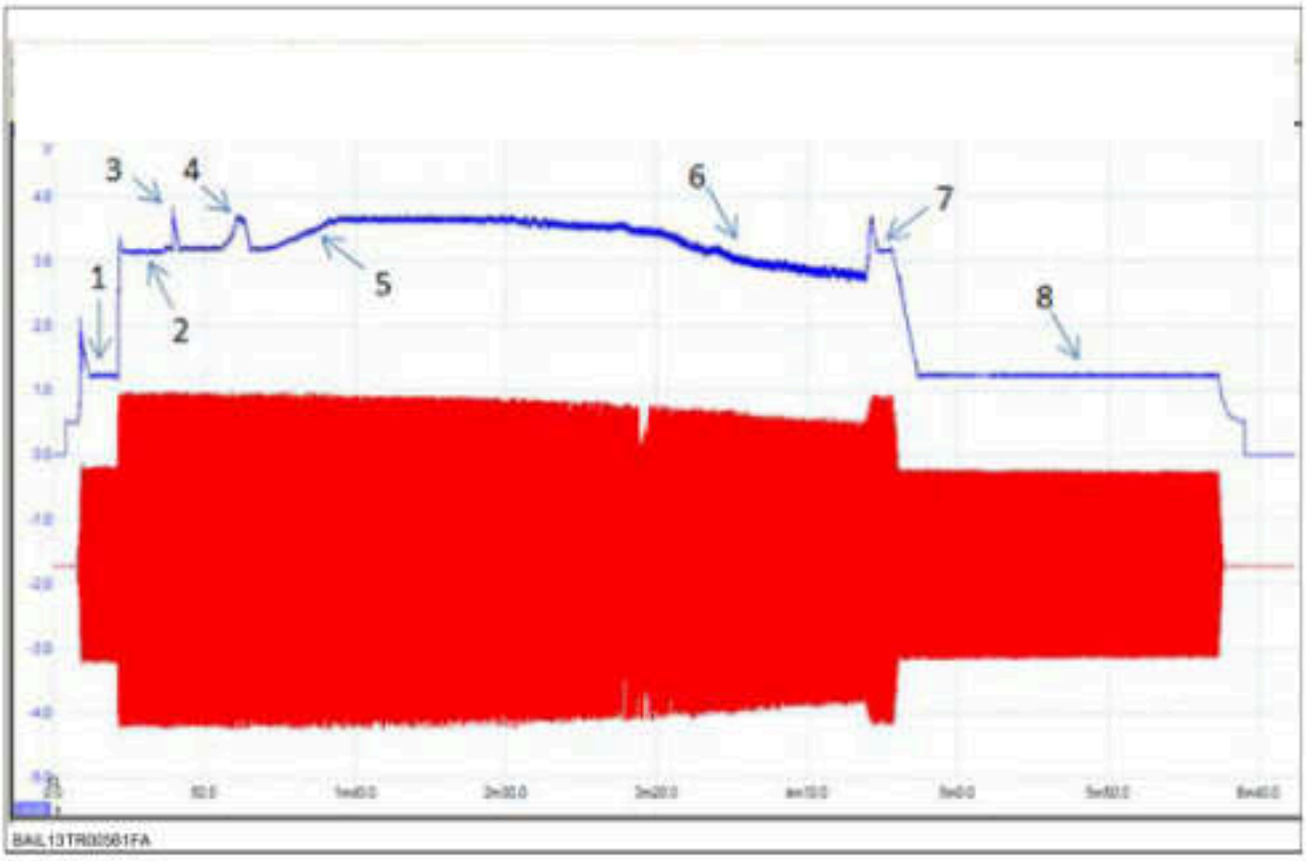
NOTE: *It is recommended that you save the waveform so that you can refer to this historical data in the future for this machine serial number.*

Unexpected Conditions

If the test conditions are not correct then the following fault codes will be displayed:

Code	Error
CL	Transmission oil temperature is below **45 °C** (**113 °F**)
CH	Transmission oil temperature is above **55 °C** (**131 °F**)
U17	Seat switch not activated (Operator not in seat)
U20	Handbrake not applied
U21	Engine speed is below **1100 RPM**
U22	Engine speed is above **1300 RPM**
U23	Shuttle lever is in neutral, shift to forward
U26	Clutch pedal is not fully up, release clutch pedal
U127	Transmission oil temperature is below **10 °C** (**50 °F**)
U128	Transmission oil temperature is above **105 °C** (**221 °F**)

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Waveform notes (with load applied)

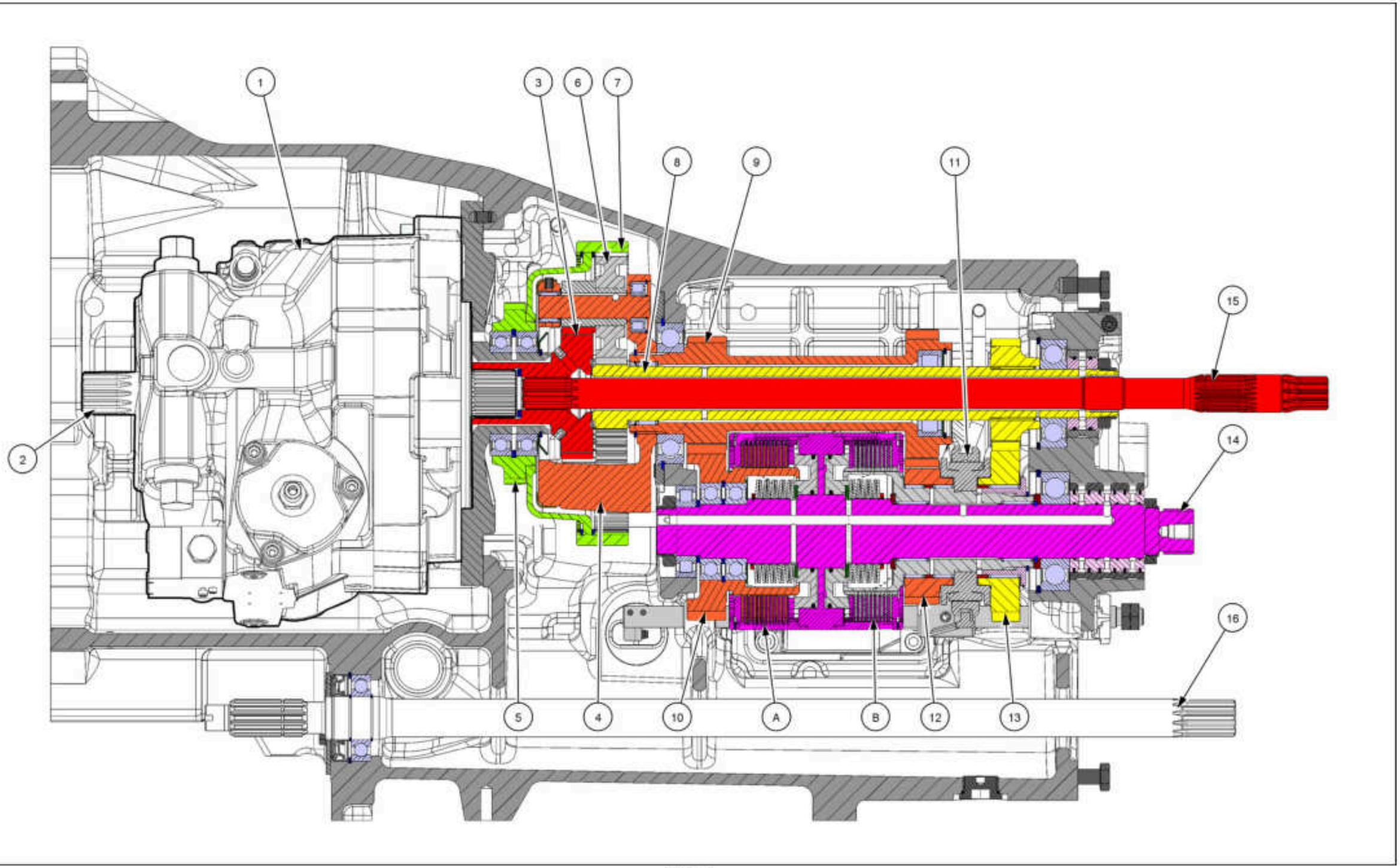
The example waveform shows the same test, but with load applied (dyno test).

During the example waveform the tractor is started and run at idle for approximately 20 seconds. It is then increased to maximum RPM and dyno tested. Once the dyno test has finished the engine RPM was increased to maximum and then returned to idle at the end of the trace.

The fuel rail pressure signal has been annotated to aid analysis

1. Engine at low idle
2. Engine at maximum RPM
3. Dyno engaged
4. Dyno auto run started
5. Fuel rail pressure gradually increases as engine load increases
6. Fuel rail pressure starts to drop off as engine rpm falls due to dyno load
7. Test finished and engine goes back to maximum RPM, rail pressure returns to high RPM pressure
8. Engine is returned to idle for cool down before being keyed off, rail pressure falls to idle pressure

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