SERVICE MANUAL

T7.230 / T7.245 / T7.260
T7.230 AutoCommand™ / T7.245 AutoCommand™
T7.260 AutoCommand™ / T7.270 AutoCommand™

Tier 4B (final)

Tractor

Part number 47936455
1st edition English
February 2016

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tractor Service Manual | Publication 47936455

Order the manual at mid-west-tech.com >

Contents

INTRODUCTION

Engine 10

[10.001] Engine and crankcase 10.1

[10.216] Fuel tanks 10.2

[10.218] Fuel injection system 10.3

[10.254] Intake and exhaust manifolds and muffler 10.4

[10.500] Selective Catalytic Reduction (SCR) exhaust treatment 10.5

[10.400] Engine cooling system 10.6

[10.414] Fan and drive 10.7

[10.408] Oil cooler and lines 10.8

[10.101] Cylinder heads 10.9

Clutch 18

[18.112] Slip clutch or flywheel damper 18.1

Transmission 21

[21.113] Powershift transmission 21.1

[21.155] Powershift transmission internal components 21.2

[21.160] Creeper 21.3

[21.166] Overdrive 21.4

[21.504] Continuously Variable Transmission (CVT) 21.5

[21.505] Continuously Variable Transmission (CVT) external controls 21.6

[21.507] Continuously Variable Transmission (CVT) internal components 21.7

[21.506] Continuously Variable Transmission (CVT) lubrication system 21.8

[21.109] Transmission cooler and lines 21.9

Four-Wheel Drive (4WD) system 23

[23.202] Electro-hydraulic control 23.1

[23.314] Drive shaft 23.2

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

Front axle system 25
[25.100] Powered front axle 25.1
[25.102] Front bevel gear set and differential 25.2
[25.108] Final drive hub, steering knuckles, and shafts 25.3
[25.122] Axle suspension control 25.4
Rear axle system 27
[27.100] Powered rear axle 27.1
[27.106] Rear bevel gear set and differential 27.2
[27.120] Planetary and final drives 27.3
[27.126] Spur gear and final drives 27.4
Power Take-Off (PTO) 31
[31.101] Rear mechanical control 31.1
[31.104] Rear electro-hydraulic control 31.2
[31.114] Two-speed rear Power Take-Off (PTO) 31.3
[31.116] Three-speed rear Power Take-Off (PTO) 31.4
[31.119] Four-speed rear Power Take-Off (PTO) 31.5
[31.146] Front Power Take-Off (PTO) 31.6
Brakes and controls 33
[33.202] Hydraulic service brakes 33.1
[33.110] Parking brake or parking lock 33.2
[33.220] Trailer brake hydraulic control 33.3
[33.224] Trailer brake pneumatic control 33.4
[33.350] Anti-lock Brake System (ABS) 33.5
Hydraulic systems 35
[35.000] Hydraulic systems 35.1
[35.300] Reservoir, cooler, and filters 35.2
[35.106] Variable displacement pump 35.3
[35.102] Pump control valves 35.4

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

[35.105] Charge pump 35.5
[35.230] Priority valves 35.6
[35.322] Regulated/Low pressure system 35.7
[35.204] Remote control valves 35.8
[35.220] Auxiliary hydraulic pump 35.9
[35.114] Three-point hitch control valve 35.10
[35.160] Front hitch controls and lines 35.11
[35.162] Front hitch cylinders and lines 35.12
Pneumatic system 36
[36.100] Pneumatic system 36.1
Hitches, drawbars, and implement couplings 37
[37.120] Rear three-point hitch linkage 37.1
[37.110] Rear three-point hitch 37.2
[37.162] Front hitch 37.3
[37.106] Automatic pickup hitch 37.4
Frames and ballasting 39
[39.100] Frame 39.1
Steering 41
[41.101] Steering control 41.1
[41.106] Tie rods 41.2
[41.200] Hydraulic control components 41.3
[41.216] Cylinders 41.4
[41.432] Autoguidance steering 41.5
Wheels 44
[44.511] Front wheels 44.1
[44.520] Rear wheels 44.2
Cab climate control 50

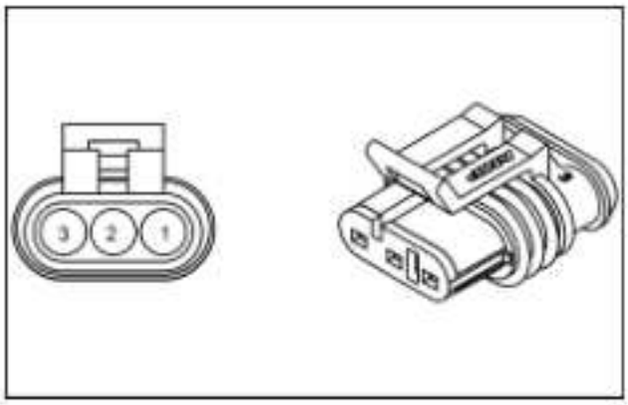
MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

CIRCUIT	COLOR	DESCRIPTION
5135	LB (TQ)	EDC +WHEEL SPEED SIGNAL
5140	LB (TQ)	EDC -WHEEL SPEED SIGNAL
5145	LB (TQ)	EDC SLIP LIMIT POT
5150	GN (G)	EDC EXTERNAL SWITCH SUPPLY
5155	BL (U)	EDC LOWER LIMIT POT
5160	LB (TQ)	EDC HEIGHT LIMIT POT FEED
5170	TN (LN)	SERIAL DATA FROM CLUSTER
5175	RD (R)	ADIC KEY PAD DISABLE
5180	LB (TQ)	EDC SLIP INDICATOR LAMP
5190	RD (R)	HPL INTERLOCK / LIFT-O-MATIC
5200	BR (N)	EDC VALVE SUPPLY
5205	BR (N)	INTERNAL FENDER HITCH SWITCH - UP
5210	BR (N)	EDC VALVE ENABLE
5215	BR (N)	INTERNAL FENDER HITCH SWITCH - DOWN
5220	YE (Y)	EDC RAISE LAMP
5230	YE (Y)	EDC LOWER LAMP
5240	OR (O)	EDC RAISE SIGNAL-RAISE WORK SWITCH No.2
5250	OR (O)	EDC WORK SIGNAL-RAISE WORK SWITCH No.2
5260	TN (LN)	HYDRAULIC MASTER SW #1
5265	TN (LN)	HYDRAULIC MASTER SW #2
5270	BR (N)	JOYSTICK LED – FRONT
5300	PK (K)	ECU FLASH PROGRAM SIGNAL
5400	YE (Y)	CAN H
5420	GN (G)	CAN L
5500	RD (R)	EHR CAN HIGH
5510	BL (U)	EHR CAN LOW
5515	GY (S)	EHR +12V IGN.
5520	LG	EHR 5V REF.
5521	LG	EHR MOTOR #1
5522	LG	EHR MOTOR #2
5523	LG	EHR MOTOR #3
5524	LG	EHR MOTOR #4
5531	LG	EHR NEUTRAL SWITCH VALVE #1
5532	GN (G)	EHR NEUTRAL SWITCH VALVE #2
5533	PK (K)	EHR NEUTRAL SWITCH VALVE #3
5534	LG	EHR NEUTRAL SWITCH VALVE #4
5535	LG	EHR FLOAT SWITCH VALVE#1
5536	TN (LN)	EHR FLOAT SWITCH VALVE#2
5537	BR (N)	EHR FLOAT SWITCH VALVE#3
5538	OR (O)	EHR FLOAT SWITCH VALVE#4
5541	OR (O)	EHR MAX.FLOW SWITCH VALVE #1
5542	VT (P)	EHR MAX.FLOW SWITCH VALVE #2
5543	GY (S)	EHR MAX.FLOW SWITCH VALVE #3
5544	LB (TQ)	EHR MAX.FLOW SWITCH VALVE #4
5551	OR (O)	EHR POTENTIOMETER SIGNAL VALVE#1
5552	BL (U)	EHR POTENTIOMETER SIGNAL VALVE#2
5553	WH (W)	EHR POTENTIOMETER SIGNAL VALVE#3
5554	BL (U)	EHR POTENTIOMETER SIGNAL VALVE#4
5561	OR (O)	EHR TIMED FLOW SWITCH #1
5562	OR (O)	EHR TIMED FLOW SWITCH #2
5563	OR (O)	EHR TIMED FLOW SWITCH #3
5564	VT (P)	EHR TIMED FLOW SWITCH #4
5570	VT (P)	FENDER 3RD EHR SWITCH (RES)
5571	VT (P)	FENDER 3RD EHR SWITCH (RES)
5572	VT (P)	FENDER 3RD EHR SWITCH (RES)

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

T7.230, T7.245, T7.260

CONNECTOR X-907 - On harness 47579332			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	DE-9246 (YE)	From X-907 to **X-901**	**Wiring harnesses - Electrical schematic sheet 14 (55.100)**
2	DE-9247B (BL)	From X-907 to DE-SP-9247	
3	DE-9248 (YE)	From X-907 to **X-901**	

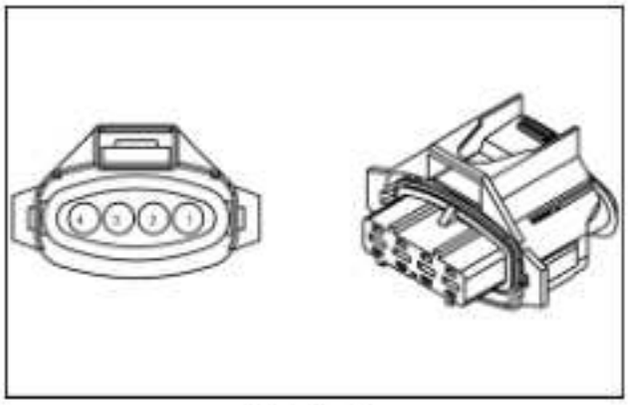


84302580 14

CONNECTOR X-908 - Air humidity and temperature sensor

T7.230, T7.245, T7.260, T7.270 AutoCommand
T7.230, T7.245, T7.260

CONNECTOR X-908 - On harness 47706948 [up to 08/2015], 47810174 [from 09/2015]			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	EN-9276 (YE)	From X-908 to **X-911**	**Wiring harnesses - Electrical schematic sheet 12 (55.100)**
2	EN-9277 (YE)	From X-908 to **X-911**	
3	EN-927A (BL)	From X-908 to EN-SP-9279	
4	EN-9278 (YE)	From X-908 to **X-911**	



87706609 15

CONNECTOR X-909 - Downstream NOx sensor controller

T7.230, T7.245, T7.260, T7.270 AutoCommand

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

2363-Clutch B not calibrated

T7.230 AutoCommand™	NA
T7.245 AutoCommand™	NA
T7.260 AutoCommand™	NA
T7.270 AutoCommand™	NA

Control Module : UCM

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

Context:
Poor clutch performance of the uncalibrated clutch.

Possible failure modes:

1. Faulty solenoid
2. Faulty hydraulic circuit
3. Mechanical fault

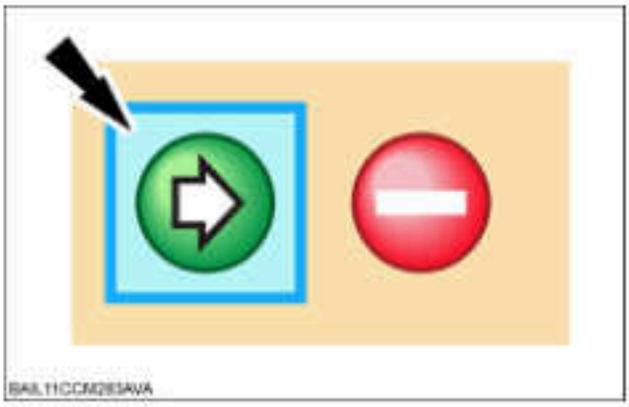
Solution:

1. Perform the transmission calibration procedure. Refer to **Electronic module Universal controller - H1 - Calibration procedures (55.640)**.
   A. If the error code is still displayed, continue to Step **2**.
2. Check for other error codes being displayed.
   A. If any other error code is being displayed, continue to these tests.
   B. If no other error code is displayed, continue to Step **3**.
3. Check the solenoid of the faulty clutch.
   A. Remove the solenoid, clean or replace as required.
   B. If the error code is still displayed, check the clutch pack pressures. Refer to **Hydraulic systems - Pressure test (35.000)**.

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

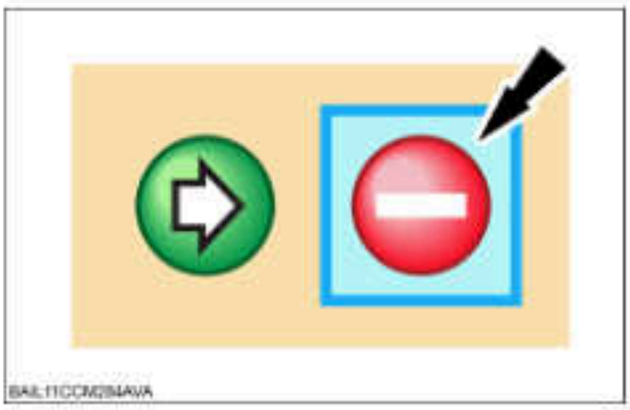
Step 5a. RAMP Test Procedure:

- 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 UP SHIFT button on the transmission shift lever to run the RAMP test. The machine display will count up to 100 and then back to 0. When the test is finished the display will show "END". This test will take about 20 seconds.



BAIL11CCM283AVA 27

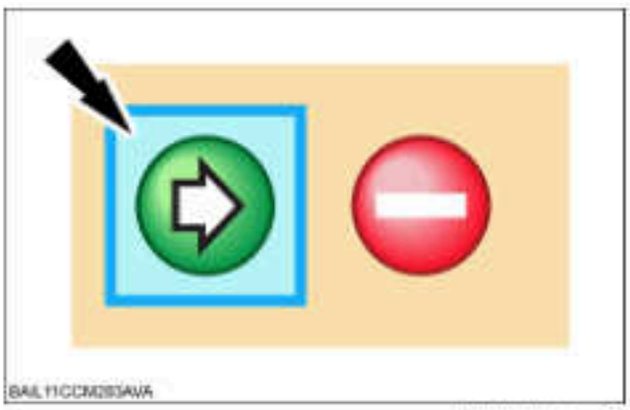
- On the DATAR Scope, when the test ramp is finished, then press the PC SPACE bar to capture and hold the result trace.
- Compare the DATAR measured trace with the expected result trace shown on the next Valve Test Assistant screen. (Remember ALT-TAB to switch between the programs)



BAIL11CCM284AVA 28

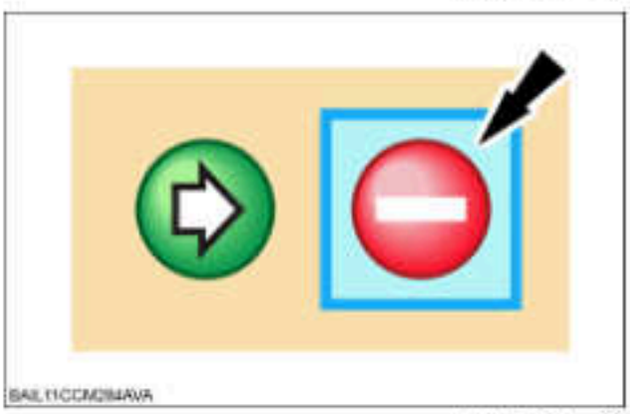
Step 5b. STEP test procedure:

- 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 STEP test. The machine display will count up from 1 to 4. When the test is finished the display will show "END". This test will take about 5 seconds.



BAIL11CCM283AVA 29

- 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)



BAIL11CCM284AVA 30

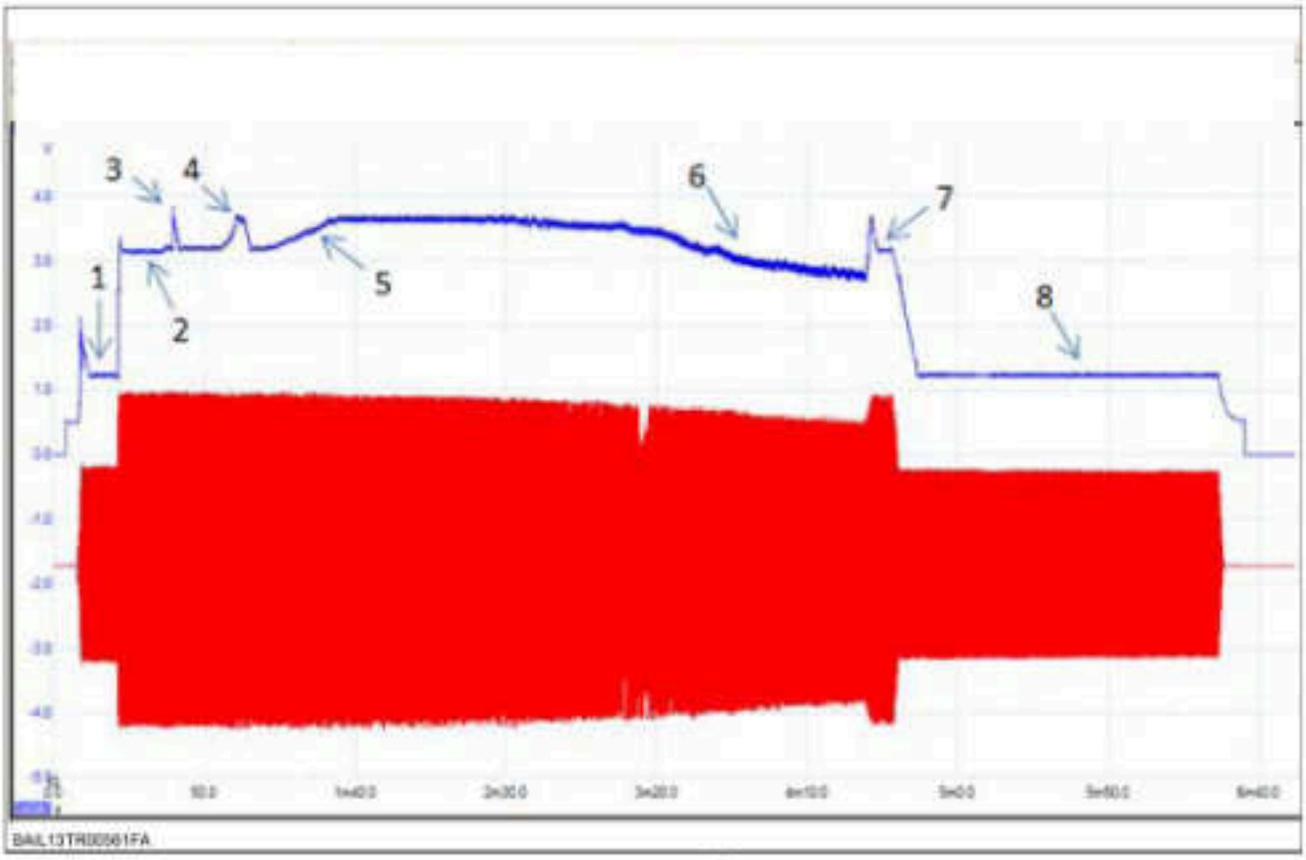
NOTE: *During the step test, the machine software makes two quick engagements of the clutch. With some clutches, there will be a banging sound.*

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >

4. This test is carried out on an engine without load applied. On an engine with load applied the center section of the graph will rise above **2.5 V**, but will not exceed **4.5 V**. This is a plausibility check on the sensor. If it does exceed **5 V** (the sensor supply voltage), there could be a fault with the sensor.

Example waveform

The test below shows an example waveform of an engine with load applied.



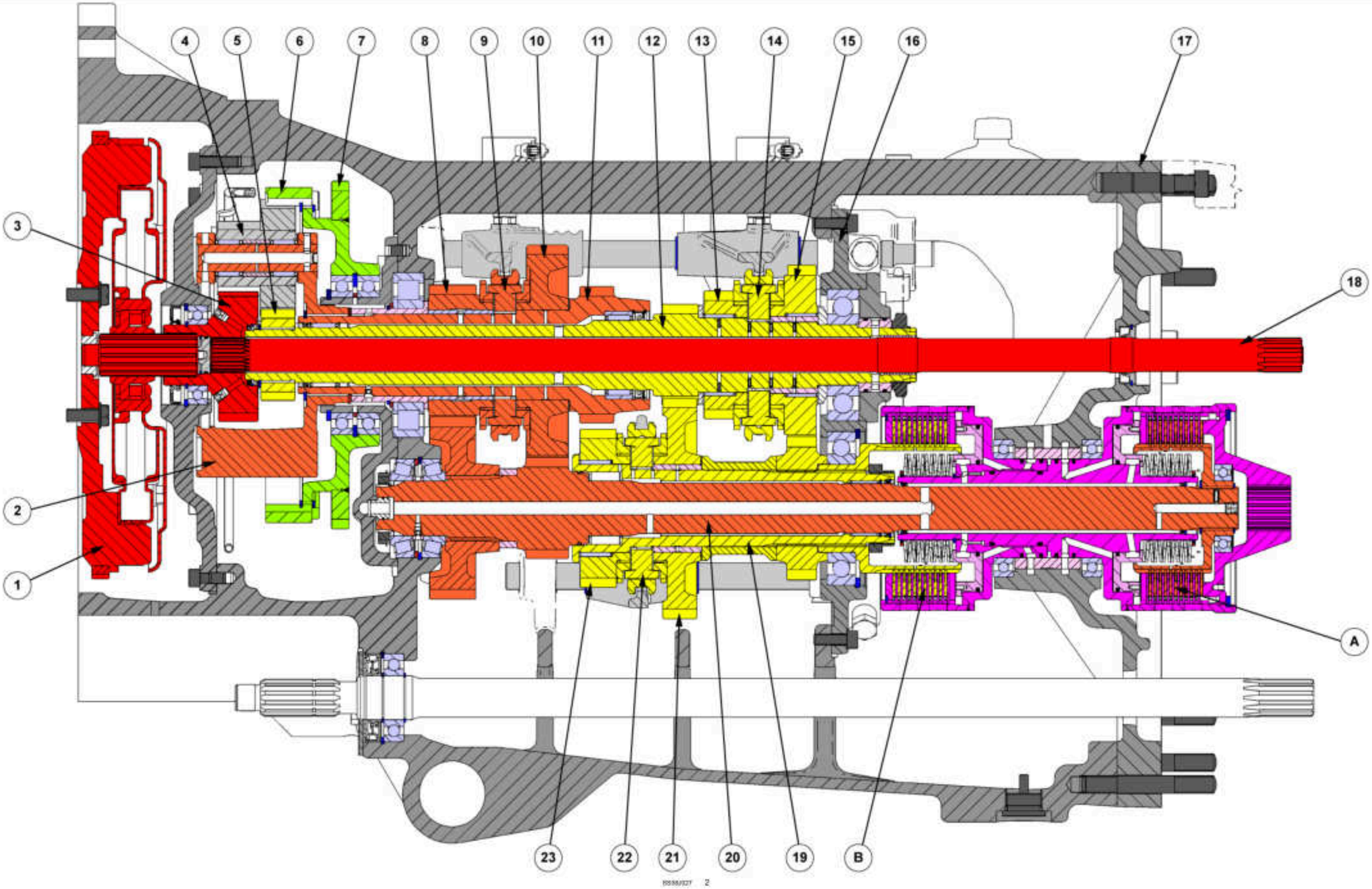
BAIL13TR00661FA 7

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.

MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tr... Order the manual at mid-west-tech.com >



MidWestTech | New Holland T7.230, T7.245, T7.260, T7.270 AutoCommand Tier 4B Tractor Service Manual | Publication 47936455
Order the manual at mid-west-tech.com >