SERVICE MANUAL

T7.240 / T7.245 / T7.260

Tractor

Part number 47770440A
English
February 2017

AGRICULTURE

Basic instructions - Shop and assembly

Shimming

For each adjustment operation, select adjusting shims and measure the adjusting shims individually using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, or the rated value shown on each shim.

Rotating shaft seals

For correct rotating shaft seal installation, proceed as follows:

1. Before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes.
2. Thoroughly clean the shaft and check that the working surface on the shaft is not damaged.
3. Position the sealing lip facing the fluid.

   NOTE: *With hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will move the fluid towards the inner side of the seal.*
4. Coat the sealing lip with a thin layer of lubricant (use oil rather than grease). Fill the gap between the sealing lip and the dust lip on double lip seals with grease.
5. Insert the seal in its seat and press down using a flat punch or seal installation tool. Do not tap the seal with a hammer or mallet.
6. While you insert the seal, check that the seal is perpendicular to the seat. When the seal settles, make sure that the seal makes contact with the thrust element, if required.
7. To prevent damage to the seal lip on the shaft, position a protective guard during installation operations.

O-ring seals

Lubricate the O-ring seals before you insert them in the seats. This will prevent the O-ring seals from overturning and twisting, which would jeopardize sealing efficiency.

Sealing compounds

Apply a sealing compound on the mating surfaces when specified by the procedure. Before you apply the sealing compound, prepare the surfaces as directed by the product container.

Spare parts

Only use CNH Original Parts or NEW HOLLAND Original Parts.

Only genuine spare parts guarantee the same quality, duration, and safety as original parts, as they are the same parts that are assembled during standard production. Only CNH Original Parts or NEW HOLLAND Original Parts can offer this guarantee.

When ordering spare parts, always provide the following information:

- Machine model (commercial name) and Product Identification Number (PIN)
- Part number of the ordered part, which can be found in the parts catalog

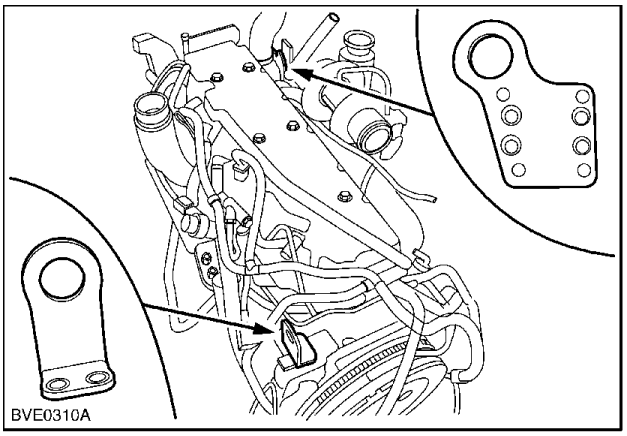
Contents

Engine - 10

Engine and crankcase - 001

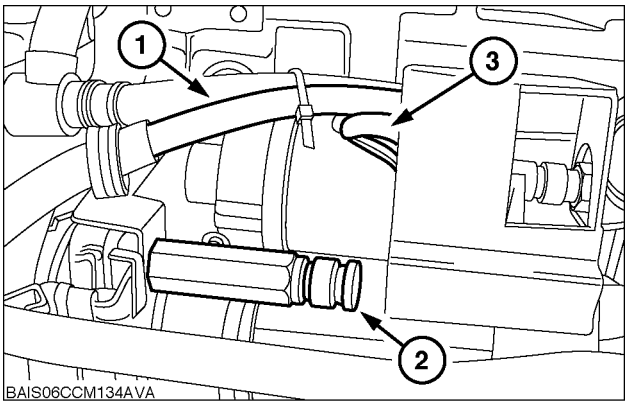
(*) See content for specific models

4. Remove the engine lift supports.



BVE0310A 3

5. Connect the positive **(1)** and negative **(2)** cables to the starter motor and the electrical connector **(3)**.



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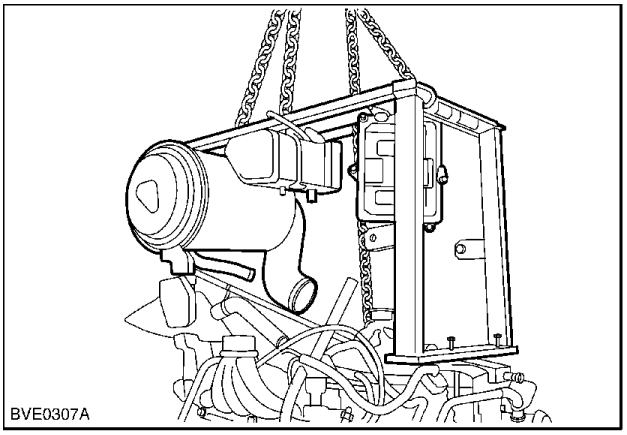
6. Install the air filter mounting frame with a suitable chain and hoist.



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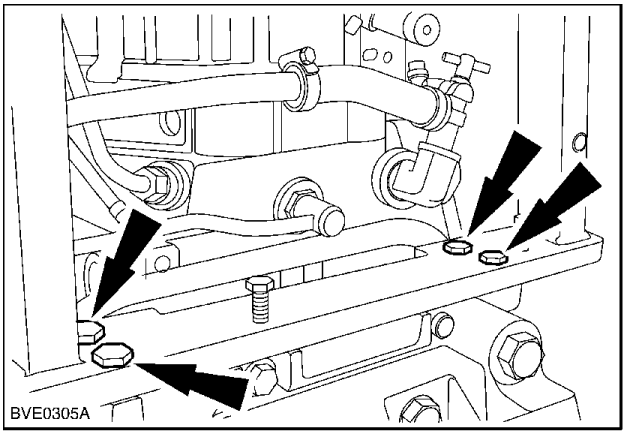
7. Install the rear fixing bolts of the air filter mounting frame.



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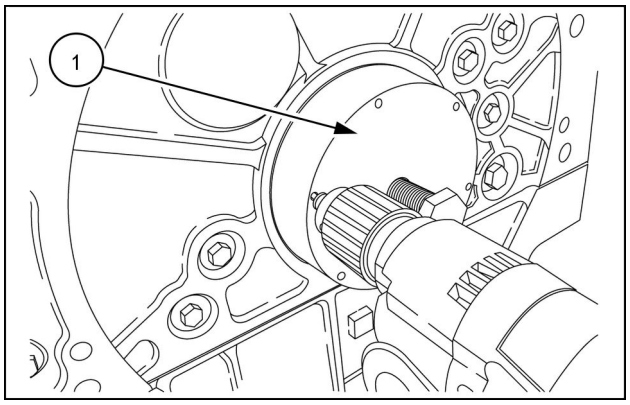
Crankshaft oil seal - Remove Rear Seal

1. Fit the tool **380000663 (1)** onto the crankshaft.



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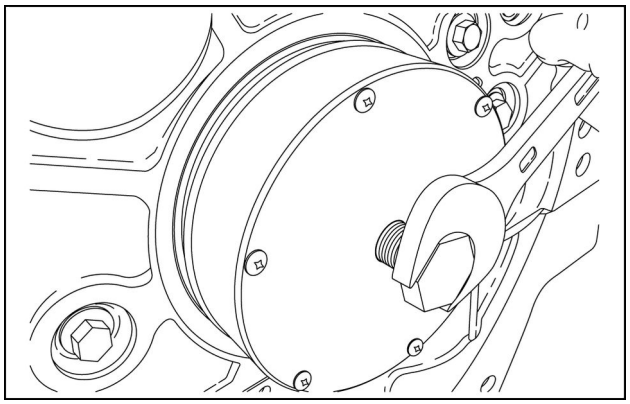
2. Use the tool as a template to drill holes **3,5 mm** in diameter and **5 mm** deep in the retainer.

ATTENTION: *Do not allow the drilling filings to get into the engine.*



CUIL15TR00318AA 2

3. Install the bolts. Tighten the central bolt to remove the retainer.

Engine - 10

Fuel injection system - 218

T7.240 With cab, 18X6, TIER 3 [HCCZ7240CFCP38297 -]
T7.245 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]

Common rail - Overview

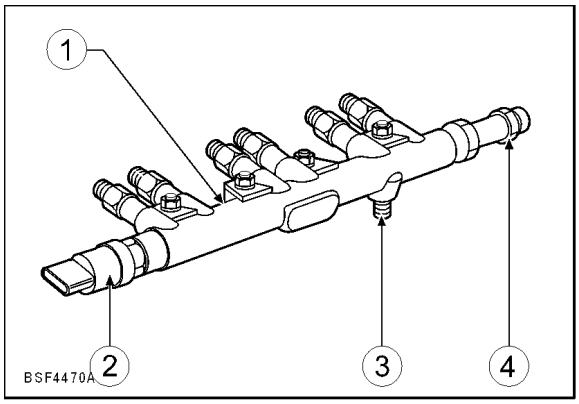
T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

Rail (Pressure Accumulator)

The rail volume is smaller to permit fast pressurization when starting, at slow idling and when there are high flow rates.

However, its volume is sufficient to minimize the phenomena caused by the injectors opening and closing and the pump working at high pressure. This function is helped further by a calibrated orifice downstream from the high-pressure pump.

Screwed onto the rail there is a fuel pressure sensor **(3)**. The signal sent from this sensor to the electronic control unit is feedback on the basis of which the level of pressure in the rail is checked and, if necessary, corrected.



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1. Rail
2. Fuel inlet from the high-pressure pump
3. Pressure sensor
4. Pressure relief valve

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Engine - 10

Fuel injection system - 218

(*) See content for specific models

Contents

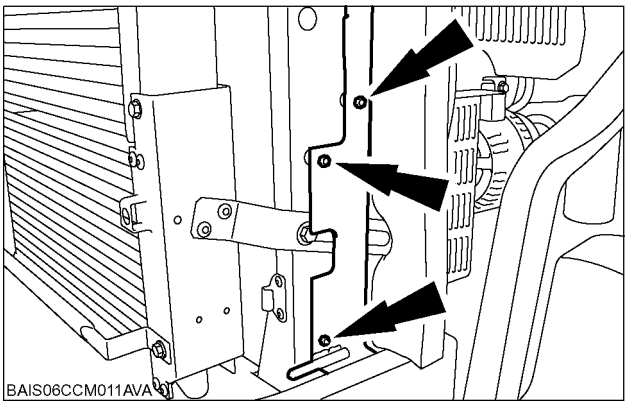
Engine - 10

Engine cooling system - 400

(*) See content for specific models

10. Remove the side shield support clamp.

NOTE: *Repeat this step for both sides of the tractor.*



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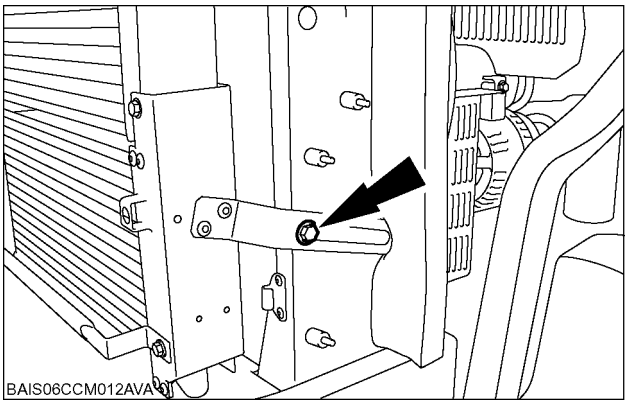
11. Remove the fixing bolt from the transmission oil cooler/engine air cooler.

NOTE: *Repeat this step for both sides of the tractor.*



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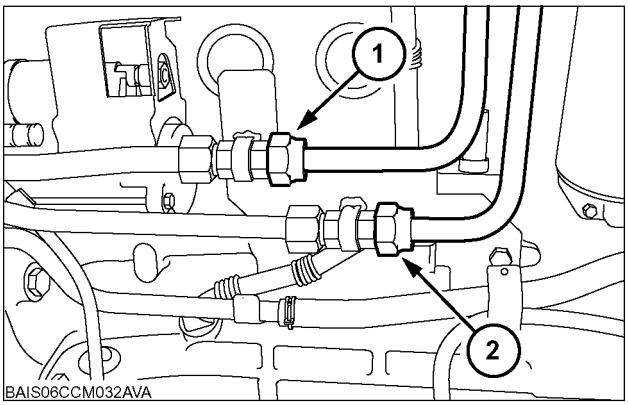
12. Disconnect the inlet lines from the transmission oil cooler **(1)** and the outlet lines **(2)**.

NOTE: *Install suitable blind plugs.*



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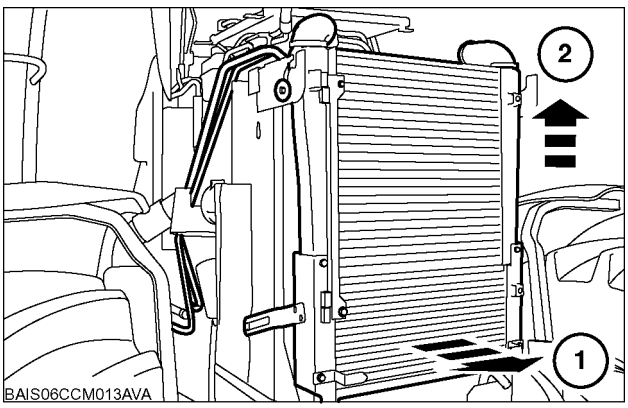
13. Pull the lower part of the transmission oil cooler/engine air cooler cooling unit **(1)** forward. Slide the unit upward **(2)** and remove it from the tractor.



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Belt tensioner - Torque

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

Description	Torque
Spring loaded automatic drive belt tensioner bolt M10 x 1.5 x 80	**43 Nm +/- 5 Nm** (**31.7 lbft +/- 4 lbft**)
Pulley mounting bolt M12 x 35	**60 Nm +/- 10 Nm** (**44.3 lbft +/- 7 lbft**)

Engine - 10

Oil cooler and lines - 408

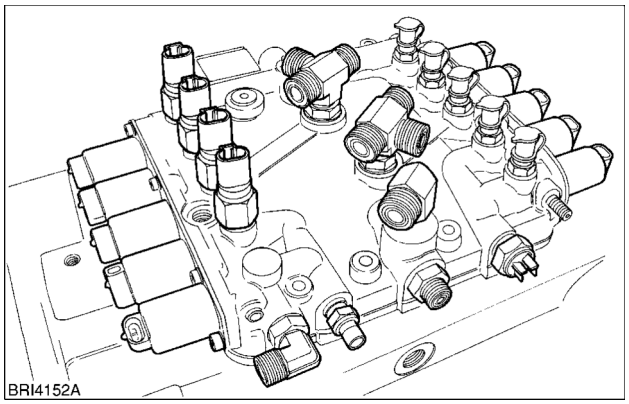
T7.240 With cab, 18X6, TIER 3 [HCCZ7240CFCP38297 -]
T7.245 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]

Powershift transmission - Static description

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

The Powershift transmission installed is available in the 40 km/h version. This version consists of 9 multi-disk clutches in the transmission case that supply 18 forward gears and 6 reverse gears.

Each clutch within the transmission is controlled by the PWM (pulse-width modulation) solenoid valve located on top of the hydraulic system case.



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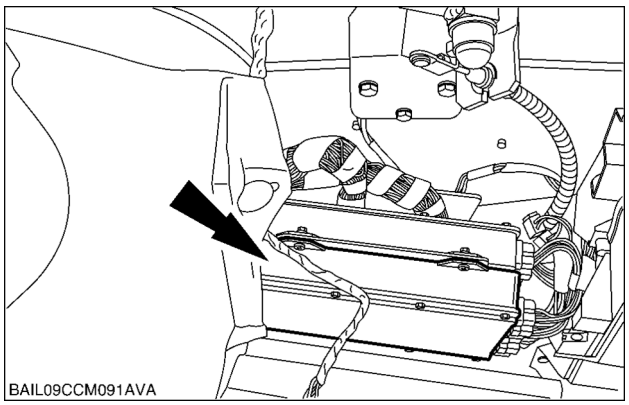
The PWM valve drive is controlled by the RT module **(1)** located inside the cab trim, behind the operator seat.



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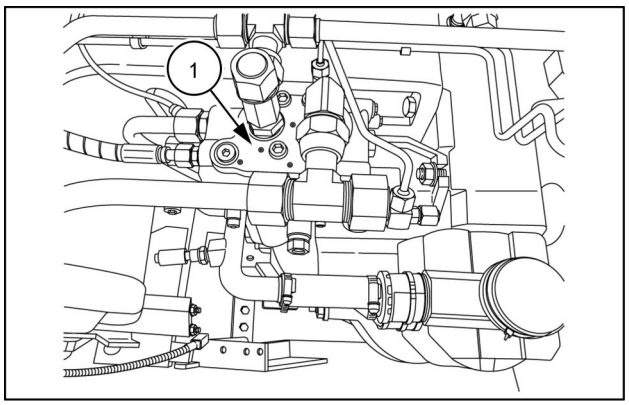
The oil pressure for engaging the clutches is provided by the low-pressure regulating valve **(1)** located in the valve block above the main hydraulic pump, which maintains the pressure at **23 bar**.



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DATAR SCOPE SETUP INSTRUCTIONS

All test files captured should be saved by machine model and serial number for reference later. Save the files in the Waveforms folder on your computer, identified in a specific machine folder. This will allow future comparison on test data.

Step 1. Verify the DATAR Scope adapter is connected to the computer USB port.

Step 2. Prepare to switch between the DATAR Scope and the Valve Test Assistant Tool:

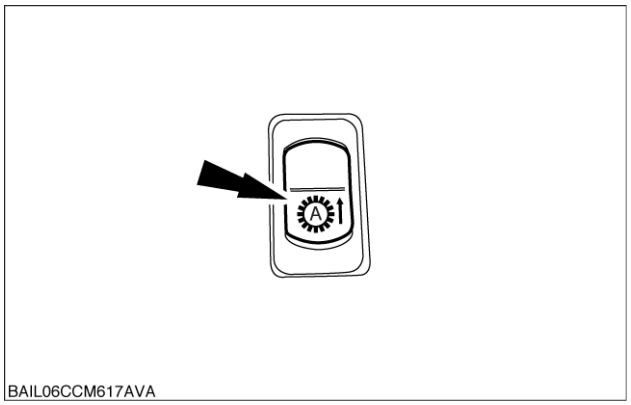
1. The valve test setup requires the following two programs to simultaneously run on the computer.
   - EST Tractor Valve Test Assistant Tool
   - DATAR Scope Tool
2. When you start the DATAR Scope in Step 3 below, you will no longer see the Valve Test Assistant Tool. You will need to be able to manually switch between these two programs above. This is required to be able to continue to review the instructions and the expected reference traces displayed in the Valve Test Assistant Tool while also running the test from the DATAR Scope. To switch between these two programs you can use either of the following techniques.

   - Select the program buttons at the bottom center of the screen using the mouse to change the view to that program.
   - Use the ALT-TAB key to switch between the existing open programs on the computer. Press and hold the ALT key while pressing the tab to move through the list of existing program icons. If the last program selected is the one you want, then you can quickly switch between two programs by pressing ALT-TAB quickly.

Step 3. Start the DATAR Scope Tool with the proper PSSETTINGS file for the selected test:

The DATAR Scope uses PSSETTINGS files to automatically setup the scope (for specific probe inputs, time scalings, voltage scalings, filtering settings, triggering settings). By opening these PSSETTINGS setup files this makes it easy to obtain the exact same setup as used by the CNH experts when they collected the reference waveforms. For the valve tests, there are different PSSETTINGS setup files for each test type, (ramp, step, accumulator). Therefore, to be able to compare the results of the test is it very important that you use the correct setup file for the test.

19. Press the automatic function switch to start automatic calibration.



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NOTE: *For vehicles not equipped with the automatic function, press and hold the “m” push button for two seconds.*

20. The upper part of shows “End” when the process is complete and all the clutches are calibrated.

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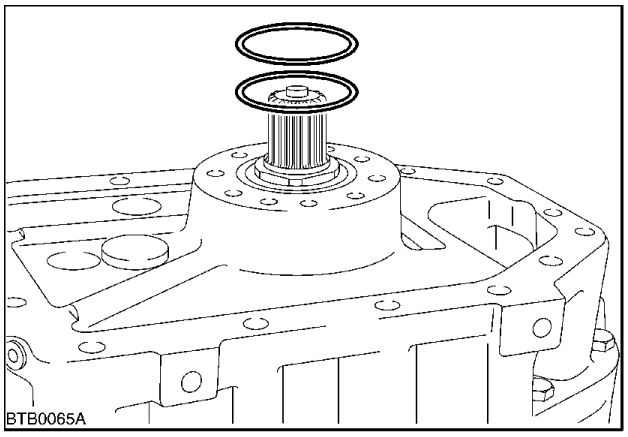
21. Switch the ignition key to OFF to store the calibration values.

NOTE: *If a fault occurs during calibration, a U code appears and the process must be repeated. See the list of the U codes in* ***Electronic modules - Calibration (55.640)****.*

Adjustment of the jackshaft end play (fast/slow)

3. Insert the test shims until they are level with the machined face of the case. Measure all the test shims (Sp). Install the thrust plate and tighten the bolts to the specified torque. The outer edges of the plate springs should meet the thrust plate.



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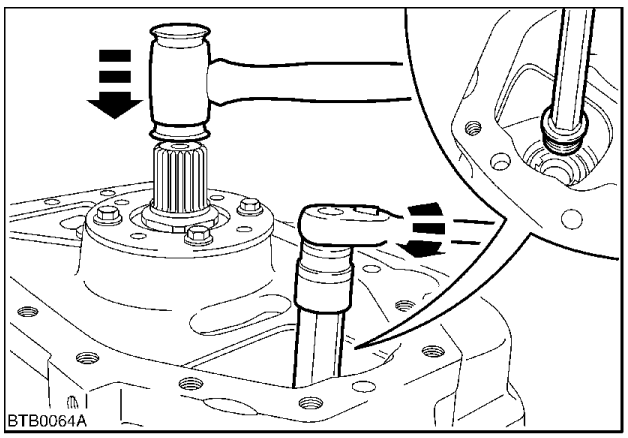
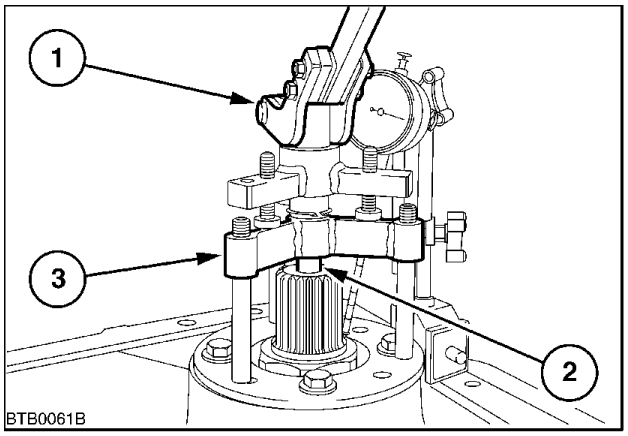
4. Rotate the transmission several times using the special tool on the end of the medium range shaft. Between rotations, hit the end of the jackshaft with a rubber-tipped hammer to ensure that the shaft is fitted tightly into the transmission.



BTB0064A 4

5. Install special tools , **380000568 (3)** on the jackshaft with the double-ended threaded bar **(2)** screwed into the jackshaft. Attach the lever assembly, tool **380000458 (1)** to the threaded bar. Position the calibration gauge on the end case with the tip on the jackshaft nut. The calibration gauge dial must be as vertical as possible. Zero the gauge.
   Use special tool **380000458** to lift up the jackshaft. The gauge reading must be **0.04 – 0.09 mm**, which is the shaft end play.



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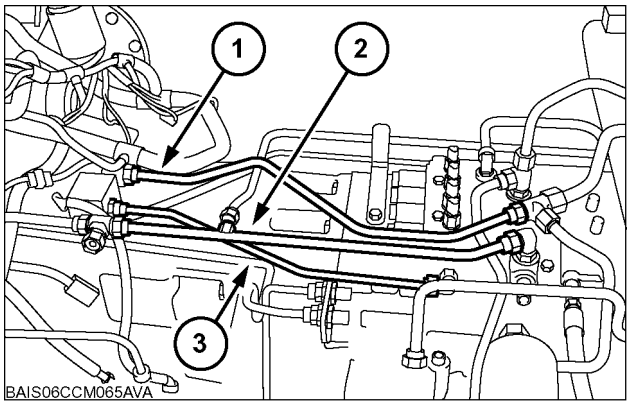
6. Calculate the shim required:
   S1 = H + Sp - (**0.065 mm**)
   Where:
   S1 = Final dimension of the shim
   Sp = Test shim
   H = calibration gauge travel reading
   0.065 mm = End play specification medium range
7. Check the end play again until it meets the specifications. Torque the thrust plate bolts to **35 Nm** (**26 lbf.ft**).

6. Install the lift piston return line **(1)**. Install the main feed line **(2)**. Install the feed line for the 19th gear **(3)** (if equipped).



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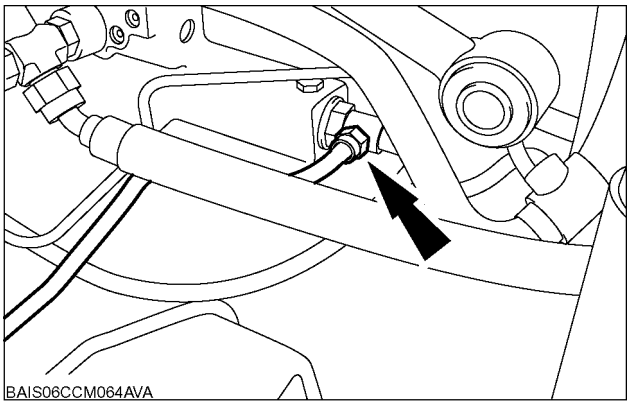
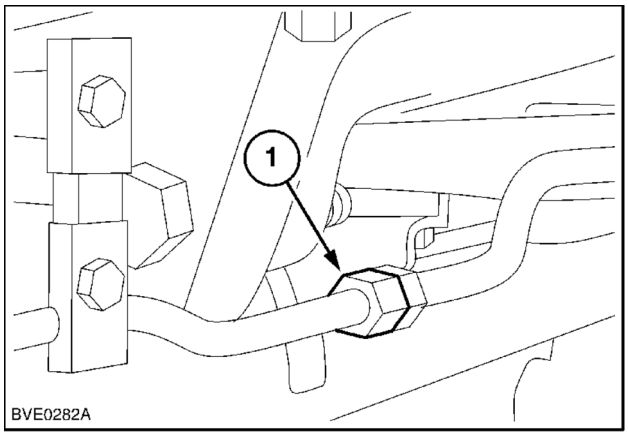
7. Install the differential lock feed line.



BAIS06CCM064AVA 4

8. Connect the differential lock feed line.



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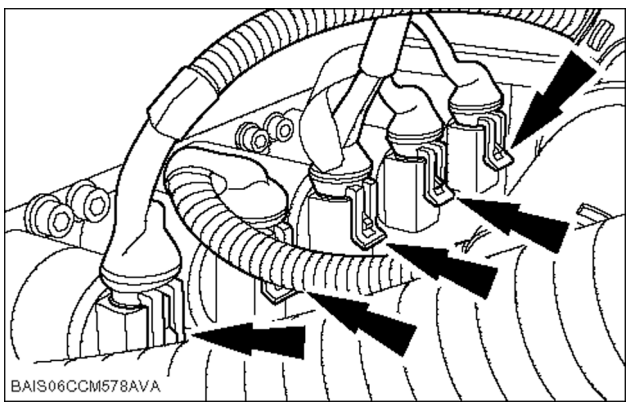
9. Reposition the wiring harness through the upper part of the transmission. Connect the electrical connectors of the clutch solenoid.



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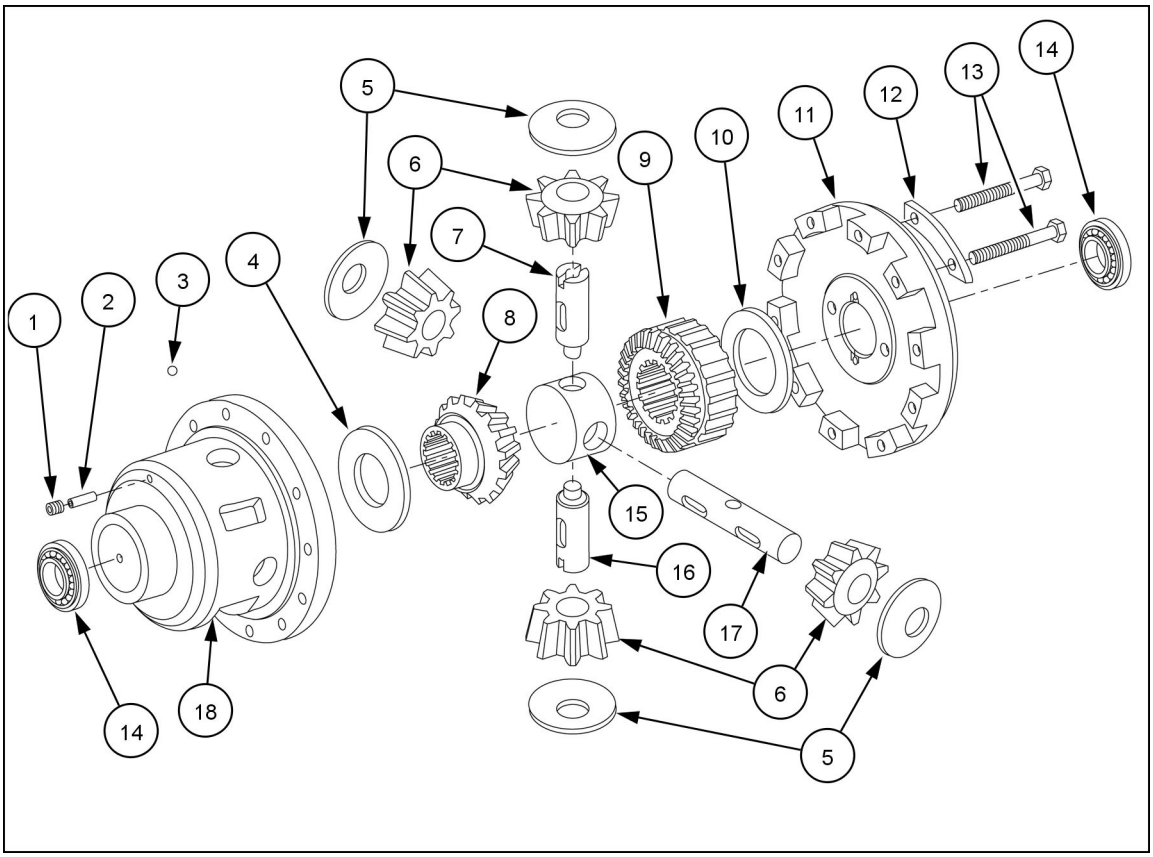
Differential gears



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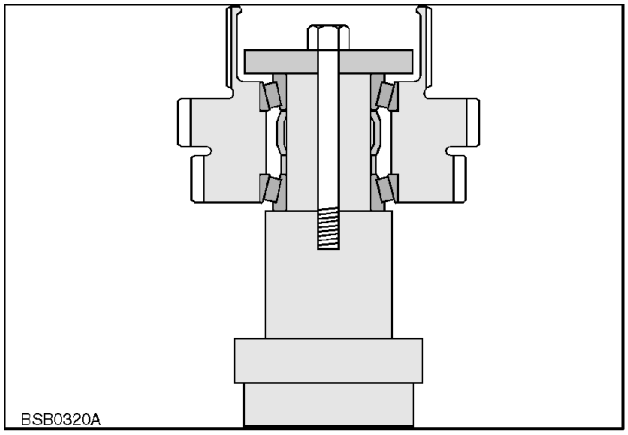
(1) Adjustment bolt, Allen, M10 x **22 mm**	**(10)** Adjustment shim
(2) Guide, M7 x **75 mm**	**(11)** Cover
(3) Ball, M7.14	Plate **(12)**
(4) Thrust ring	Bolt, **(13)** x M14 x **55 mm**
(5) Thrust ring	**(14)** Bearing **90 mm** (**3.543 in**) x **140 mm** (**5.512 in**) x **32 mm** (**1.260 in**)
(6) Pinion	Support **(15)**
(7) Pin	**(16)** Pin
(8) Pinion	**(17)** Pin
(9) Pinion	**(18)** Housing

Adjustment of the tapered bearing of the clutch C hub

See **Powershift transmission internal components - Exploded view - Clutch C (21.155)**

18. Assemble the clutch "C" hub on the tool **380000497**. Position the bearings, the spacer, and the original shim. Torque the screw to **140 Nm**.



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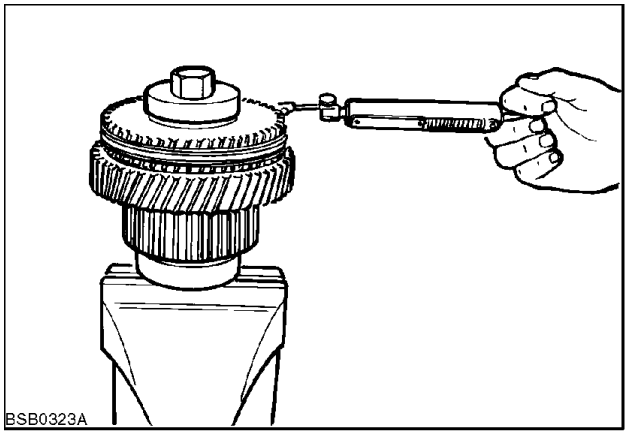
19. Unroll a length of line around the smaller of the two gears and fix it to an appropriate spring scale. Measure the rolling distance of the bearings during rotation, not the point where rotation starts.
The rolling resistance must be equal to **0.5 – 0.8 Kg** on the spring scale. If it does not meet the specifications, install a small shim to increase resistance or a thicker shim to reduce resistance.



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20. You can only install the bearing **(7)** one way because there is a notch for the lock ring **(6)**.

See **Powershift transmission internal components - Exploded view - Clutch D (21.155)**

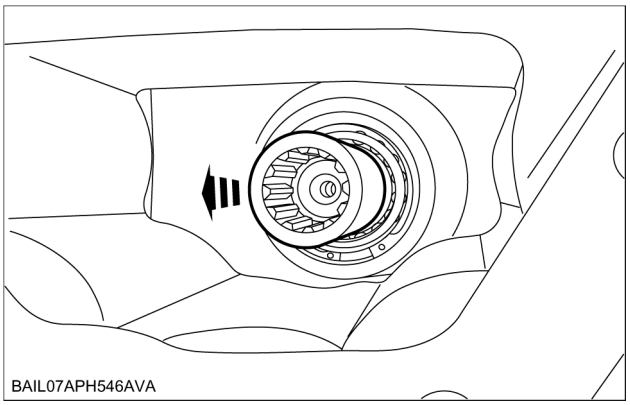
21. You can only install the bearing **(7)** one way because there is a notch for the lock ring **(6)**.

See **Powershift transmission internal components - Exploded view - Clutch E (21.155)**

Removal of the end bearing (item 12)

See **Powershift transmission internal components - Exploded view - Clutch F (21.155)**

4. Remove the sliding sleeve from the 4WD clutch drive shaft.



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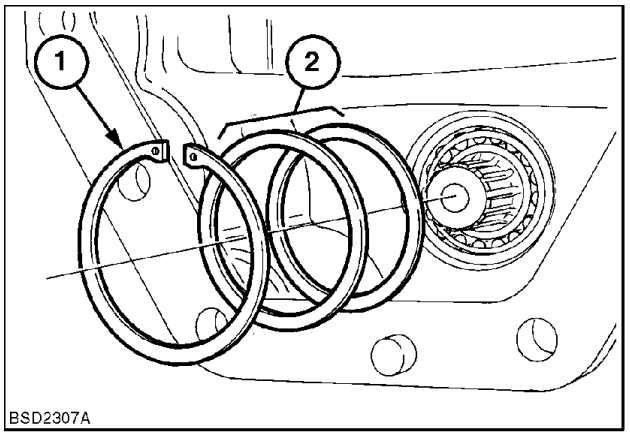
5. Remove the locking ring from the 4WD clutch drive shaft **(1)** and the shims **(2)**.



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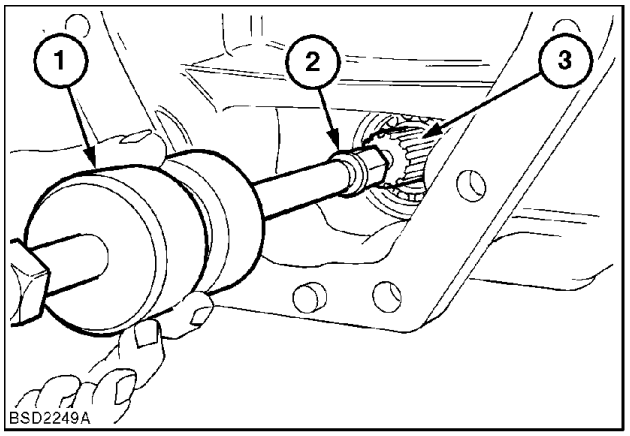
6. Use a slide hammer **380000549 (1)** and an adapter **380000479 (2)** to partially remove the 4WD clutch drive shaft **(3)**.



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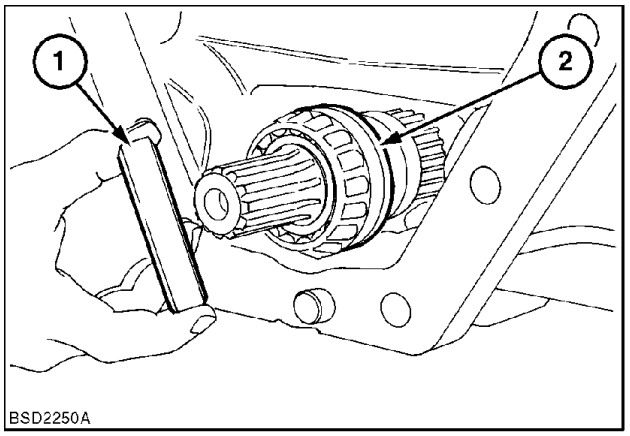
NOTICE: *You will need to support the 4WD clutch when you have moved the drive shaft forward.*

7. Remove the bearing cap **(1)** while supporting the 4WD clutch case. Fully remove the 4WD drive shaft **(2)**.



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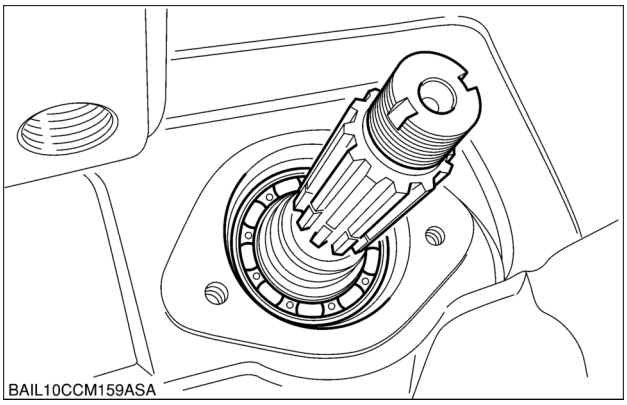
9. Remove the retainer from the shaft.

NOTE: *The retainer is destroyed during removal.*



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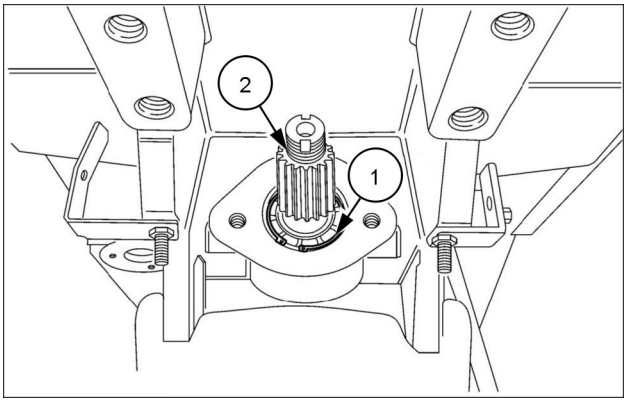
10. Remove the lock ring **(1)**. Remove shaft **(2)**.

NOTE: *When removing this shaft, you need to take extra care that the connecting tube remains in the 4WD clutch shaft.*

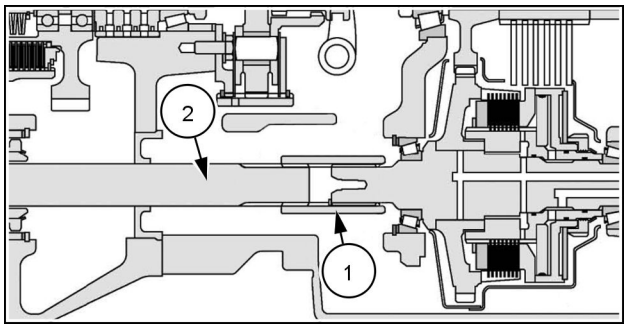
NOTE: *If you drop this connecting tube into the transmission case, you will need to disconnect the case to recover the tube.*



CUIL13TR00306AA 9

11. Hold the sleeve **(1)** and remove the shaft **(2)**.

NOTE: *Two people will be needed to perform this task.*



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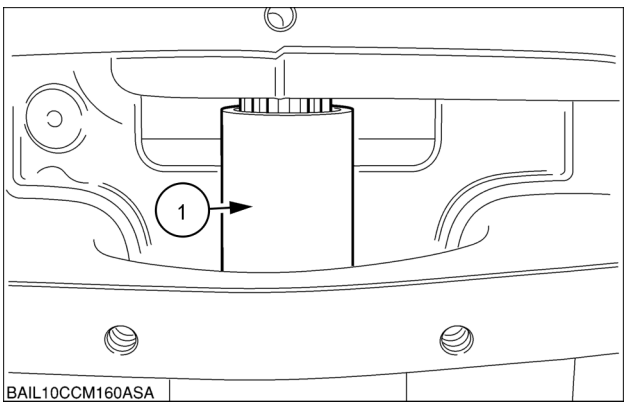
12. Remove the transmission connecting collar **(1)** (collar removed from the shaft).



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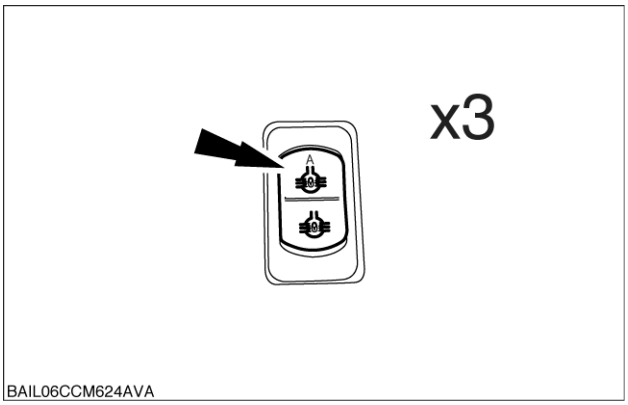
(*) See content for specific models

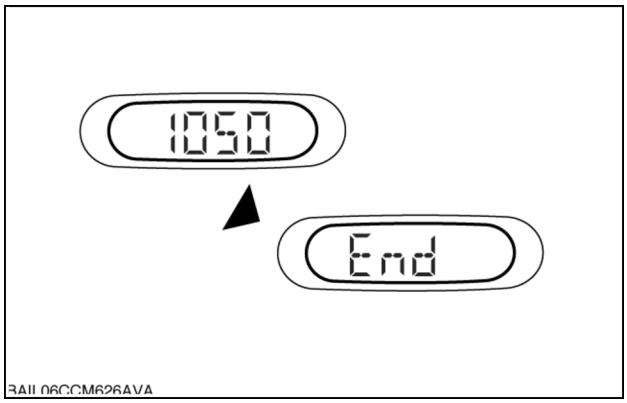
6. Press the automatic differential lock switch three times.



BAIL06CCM624AVA 5

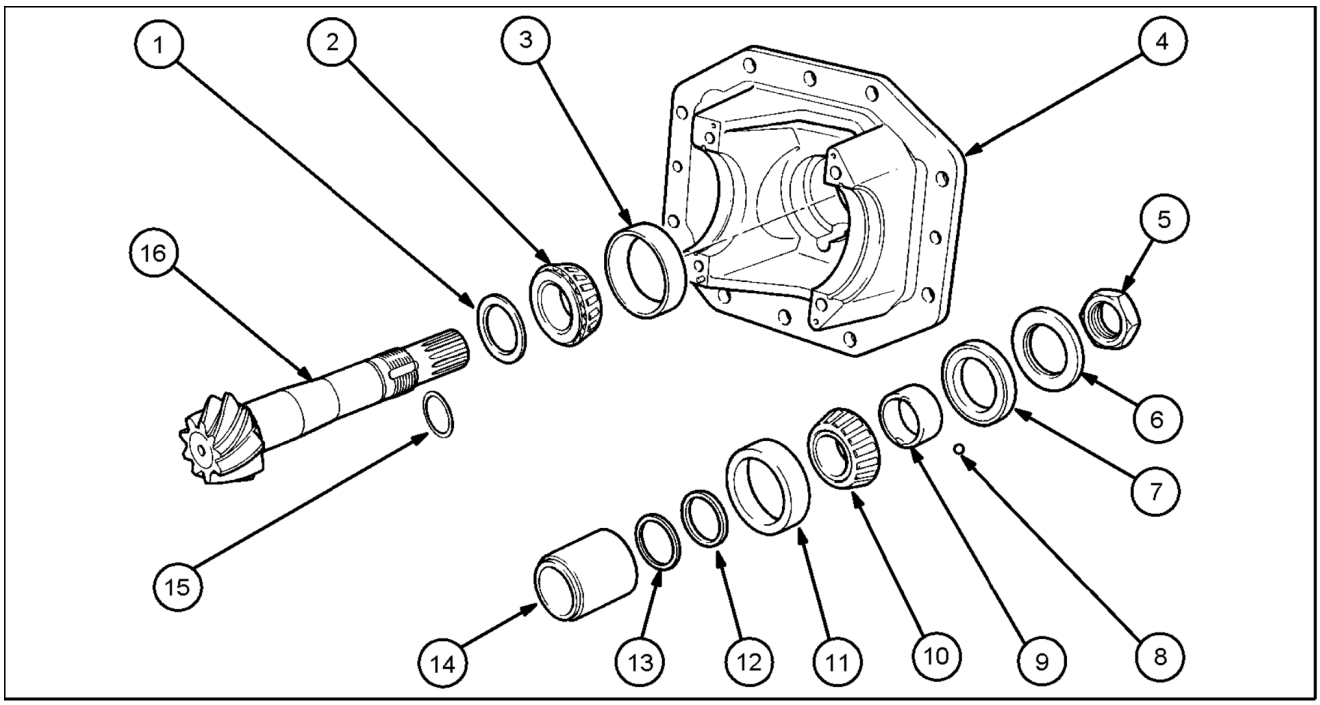
7. The upper section shows the measured value of the steering angle sensor and then “End” to show that the calibration procedure is complete.
8. Switch the ignition key to “OFF” to store the calibration values.

NOTE: *If a fault occurs during calibration, a U code appears and the process must be repeated. See the list of the U codes in* ***Electronic module - Configure (55.640)*** *.*



BAIL06CCM626AVA 6

Front bevel gear set and differential - Exploded view



CUIL16TR00256FA 1

Reference	Description	Reference	Description
(1)	Shim	**(2)**	Bearing
(3)	Bearing ring	**(4)**	Differential cradle
(5)	Nut	**(6)**	Protective cap
(7)	Seal	**(8)**	Ball
(9)	Sleeve	**(10)**	Bearing
(11)	Bearing ring	**(12)**	Shim
(13)	Shim	**(14)**	Spacer
(15)	Ring	**(16)**	Pinion

Front axle system - 25

Final drive hub, steering knuckles, and shafts - 108

T7.240 With cab, 18X6, TIER 3 [HCCZ7240CFCP38297 -]
T7.245 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]

Contents

Rear axle system - 27

Powered rear axle - Disassemble

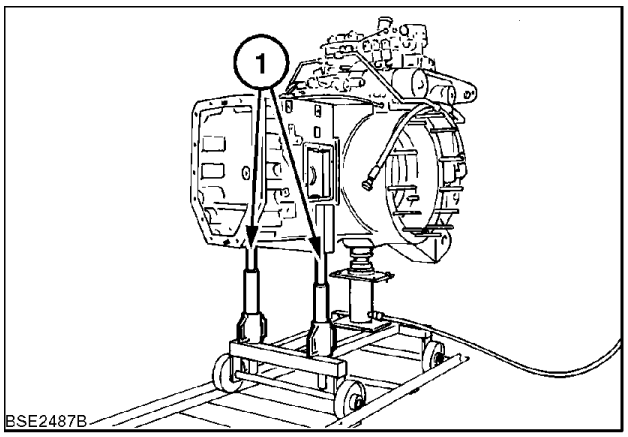
T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

⚠ WARNING

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in death or serious injury.

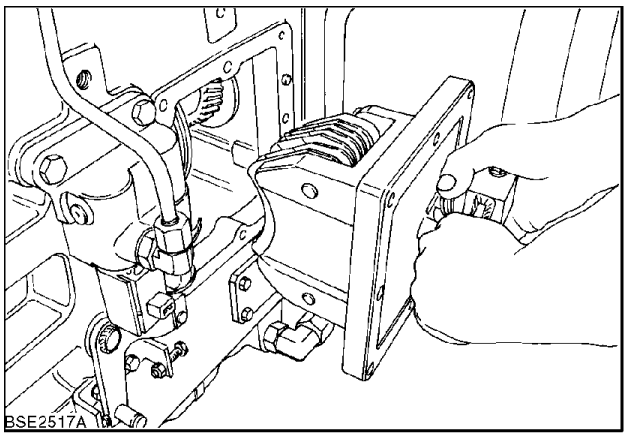
W0208A

1. Use the tractor's splitter tool and a suitable cradle **(1)** to support the rear axle case.



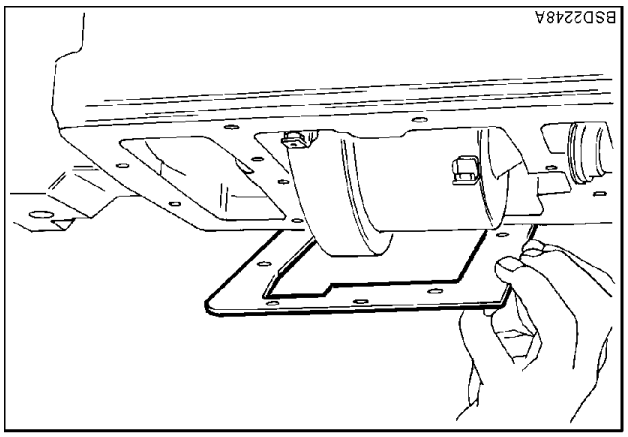
BSE2487B_134 1

2. Remove the fastening bolts. Remove the parking brake control assembly.



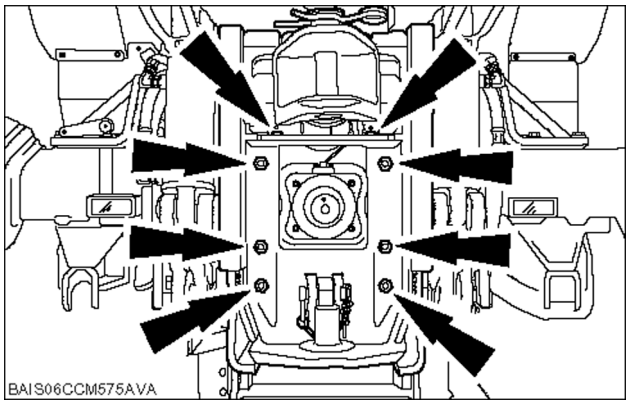
BSE2517A 2

3. Remove the transfer box inner protection.



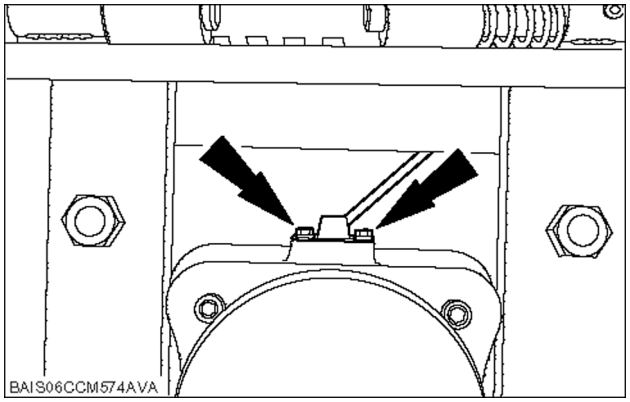
BSD2248A_135 3

14. Use a suitable lifting mechanism to install the hitch mount cradle.



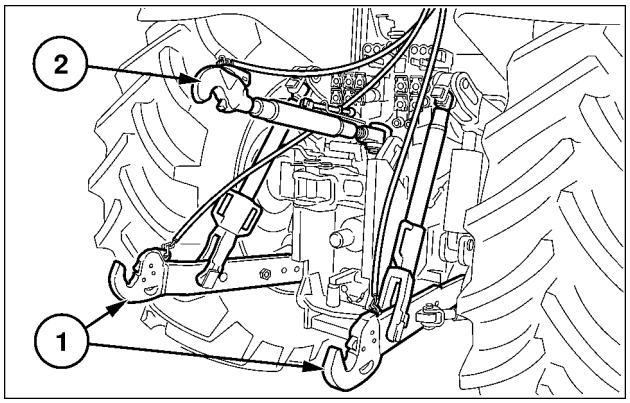
BAIS06CCM575AVA 11

15. Install the power take-off speed sensor.



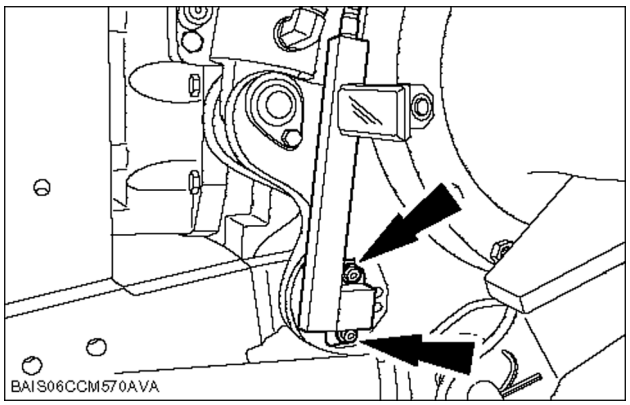
BAIS06CCM574AVA 12

16. Install the lift arm assembly **(1)**.



BRI4214C 13

17. Install the EDC sensor.



BAIS06CCM570AVA 14

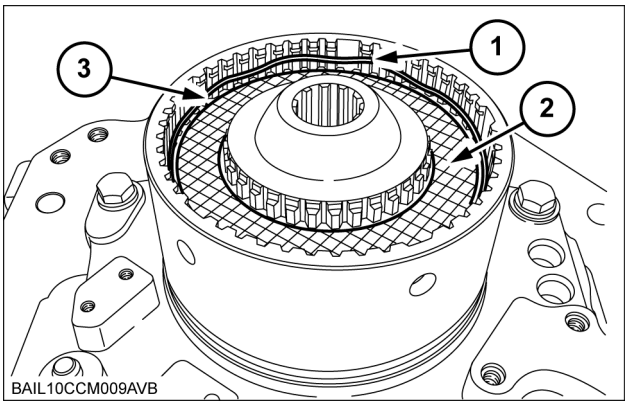
Differential lock - Troubleshooting

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

Problem	Possible Cause	Correction
Differential lock not engaging.	Low rear axle oil level.	Top up to correct level.
	Blocked oil filter.	Replace filter.
	Faulty hydraulic pump.	Overhaul or replace pump.
	Oil leaks through the seals with consequent pressure drop: cylinder piston oil supply line seals.	Replace faulty seals.
Differential lock not disengaging	Faulty diff lock-unlock switch	Replace switch
	Power supply not reaching solenoid valve: detached or damaged connectors, faulty remote switch.	Restore electrical connection and replace faulty parts.
	Diff lock control solenoid valve stuck on delivery.	Overhaul or replace solenoid valve.
	Oil leaks through the seals with consequent pressure drop: cylinder piston or supply line seals.	Replace faulty seals.
With differential lock engaged and control switch on automatic mode, the diff lock does not disengage when raising lift arms using the Fast Raise switch.	Faulty diff lock switch (connected to the Fast Raise switch).	Replace switch.
With differential lock engaged, the diff lock does not disengage when brake pedals are pressed.	Faulty diff lock switch (connected to the brake pressure switches/foot pedal switches).	Replace switch.

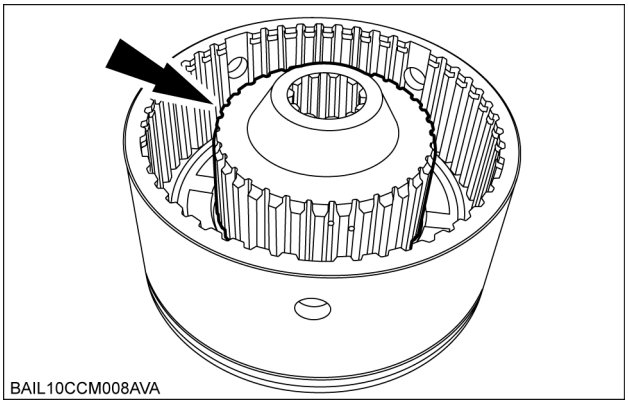
Next operation:
Driving wheel shaft - Assemble (27.120)

8. Remove the spring separators **(1)**, the sintered disks and the steel disks **(2)**, and the clutch plate separators **(3)**.



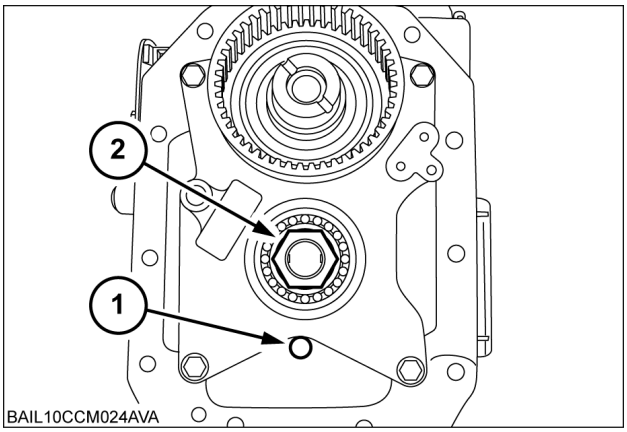
BAIL10CCM009AVB 8

9. Remove the hub.



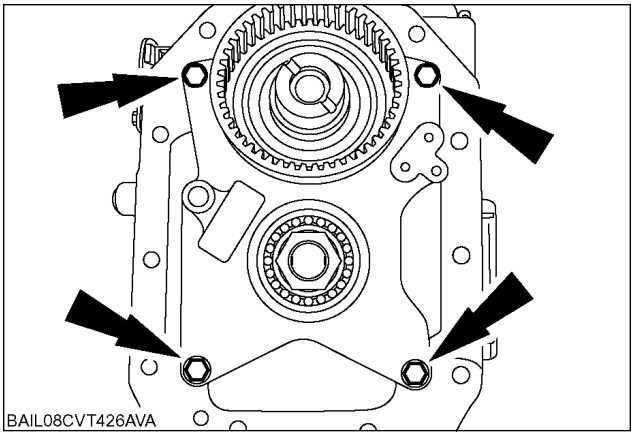
BAIL10CCM008AVA 9

10. Use a suitable pin **(1)** to lock the gear. Unlock and loosen the shaft nut **(2)**.



BAIL10CCM024AVA 10

11. Remove the fixing bolts for the support plate.



BAIL08CVT426AVA 11

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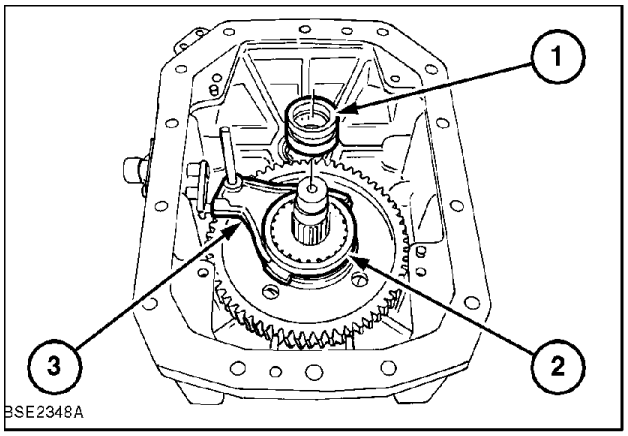
Power Take-Off (PTO) - 31

Rear electro-hydraulic control - 104

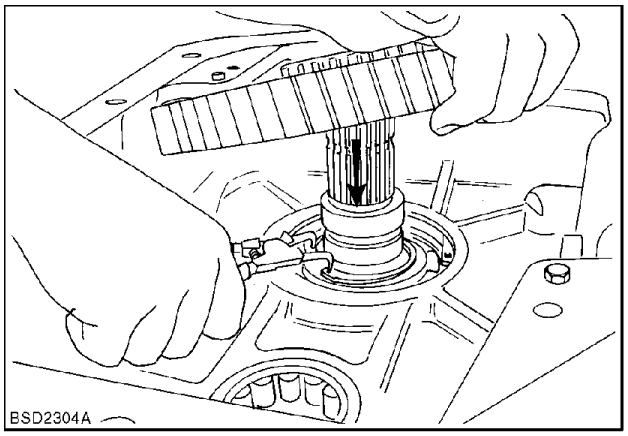
(*) See content for specific models

16. Remove the bushing **(1)**, the fork **(3)**, and the coupling assembly **(2)** .



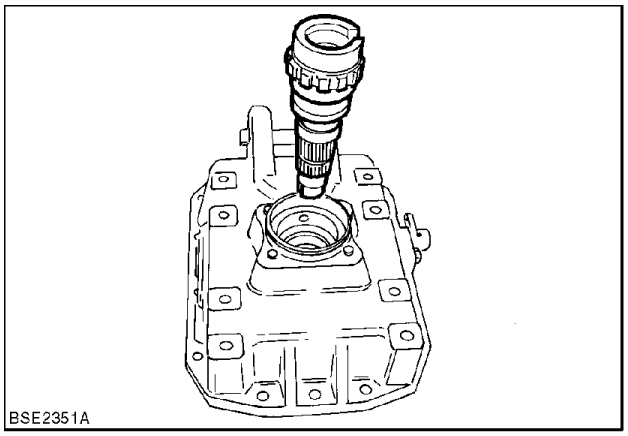
BSE2348A 16

17. Remove the lower gear. If you have difficulty removing the gear, loosen the shaft retaining ring and push the shaft forward.



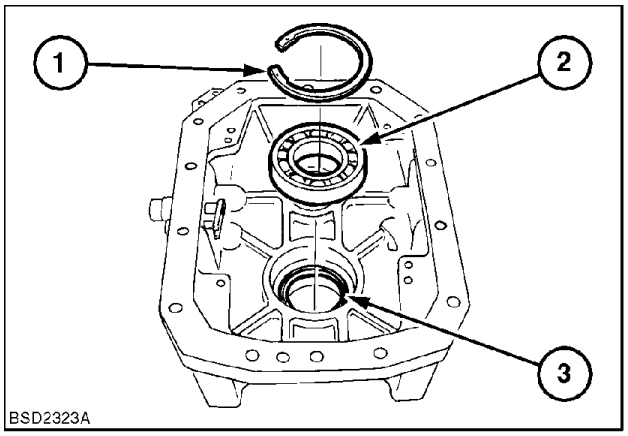
BSE2304A 17

18. Remove the shaft.



BSE2351A 18

19. Remove the lock ring **(1)**, the bearing **(2)**, and the seal **(3)**.



BSD2323A_160 19

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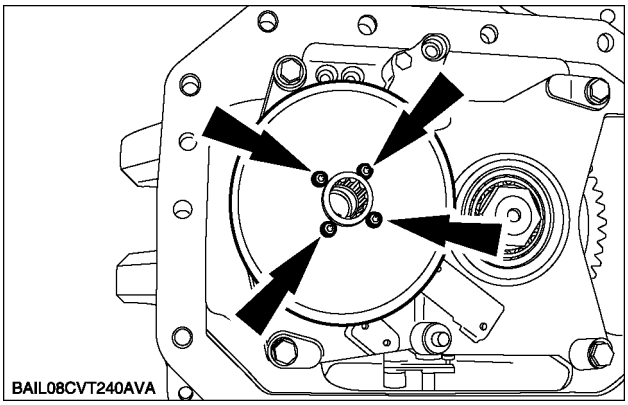
Power Take-Off (PTO) - 31

Rear electro-hydraulic control - 104

(*) See content for specific models

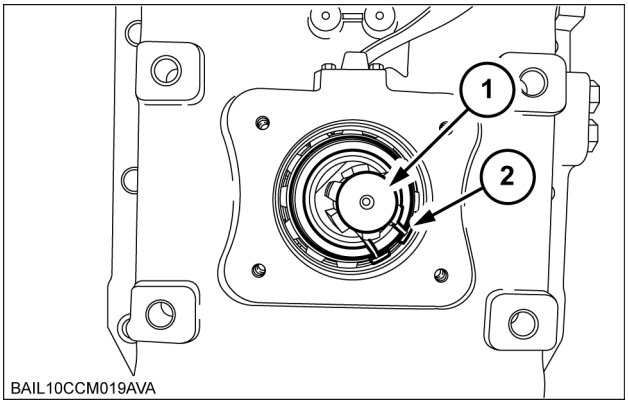
16. Install the generator wheel, where appropriate.



BAIL08CVT240AVA 16

17. Install the PTO shaft **(1)**. Install the fastening ring **(2)**.

NOTE: *Check that the opening on the fastening ring is on the opposite side to the flat surface of the PTO output shaft.*



BAIL10CCM019AVA 17

Hydraulic service brakes - Dynamic description

The service brakes are hydraulic with sintered disks bathed in oil. The service brakes are located between the rear axle housing and the final drives, and are coupled with splines on the differential outlet axle shafts.

The two master cylinders, one per pedal, are located in the front of the cab and are connected to their respective pedals by two rods. You can operate the cylinders individually or together. To be operated as a set, the pedals must be mechanically interconnected by a pin.

The cylinders are connected by a union line that guarantees balanced braking even when the brake disks are worn unevenly. The oil is supplied from the master cylinders to the rear brake when the pedals are pressed.

The braking system hydraulic fluid level is maintained from a reservoir located on top of the right-hand side of the engine compartment.

Pneumatic service brakes - General specification

Location	Left-hand side of the engine
Acionamento	Belt driven by the crankshaft
Typè	Single air-cooled cylinder
Speed	**3000 RPM**
Lubrification	Fed by engine pressure
Internal diameter of the cylinders and piston stroke	**75 mm** x **36 mm**
Cylinder displacement	**159 cm³**
Operating pressure	**18 bar** (**261 psi**)
Operating pressure of the system	**7.8 – 8.3 bar** (**113.1 – 120.4 psi**)
Relief Valve Setting	**12 bar** (**174 psi**)
The low pressure warning switch works at	**4.5 – 5.0 bar** (**65.2 – 72.5 psi**)

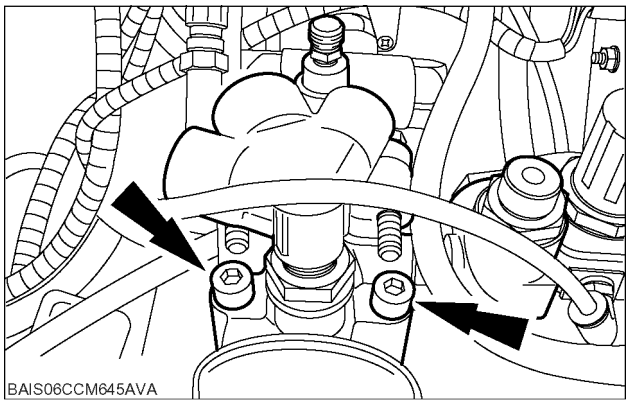
Air brake valve - Install

⚠ WARNING

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in death or serious injury.

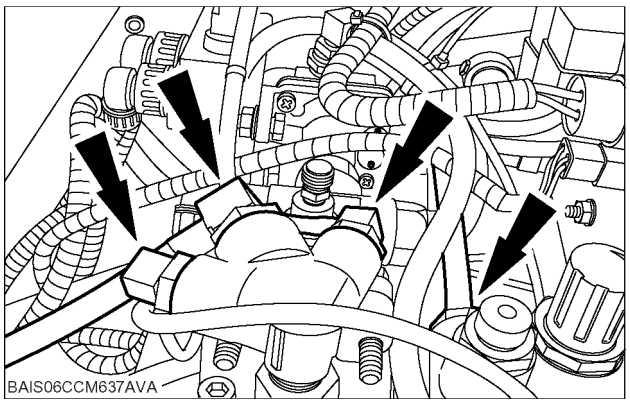
W0208A

1. Position the control valve. Install the bolts. Torque to **20 – 25 N·m** (**15 – 18 lb ft**).



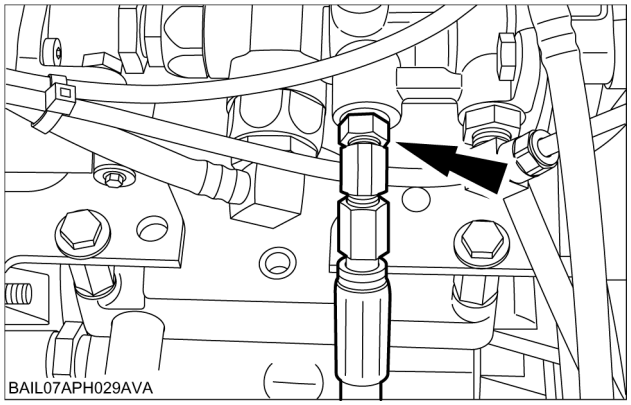
BAIS06CCM645AVA 1

2. Connect the air lines.



BAIS06CCM637AVA 2

3. Connect the hydraulic brake connection.
4. Bleed the service brake. Consult the procedures in **Hydraulic service brakes - Bleed (33.202)**.



BAIL07APH029AVA 3

Hydraulic systems - Static description

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

The hydraulic system covers the following oil circuits:

High pressure Circuit

1. Rear hydraulic lift
2. Remote valves

Oil circuit of the steering hydraulic system

1. Steering pump and steering cylinder

Low Pressure Circuit

1. Engine PTO
2. Differential Lock
3. Auxiliary Front Wheel Drive (AFWD)
4. Activation of the transmission couplings and the synchronizer units
5. Engagement of the track gear
6. Main cylinder of the servo-controlled brake

Lubrication system layout

1. PTO engagement
2. Transmission engagement
3. Transmission shaft pressure lubrication
4. Pump drive pinion bearing
5. Hydraulic lifter lift shaft

The high-pressure circuit is a closed load-sensing system. The configuration of the high-pressure circuit is different dependent on the equipment variants for each machine model. The steering circuit, the low-pressure circuit and the lubrication circuit are an open system.

Hydraulic systems - Troubleshooting

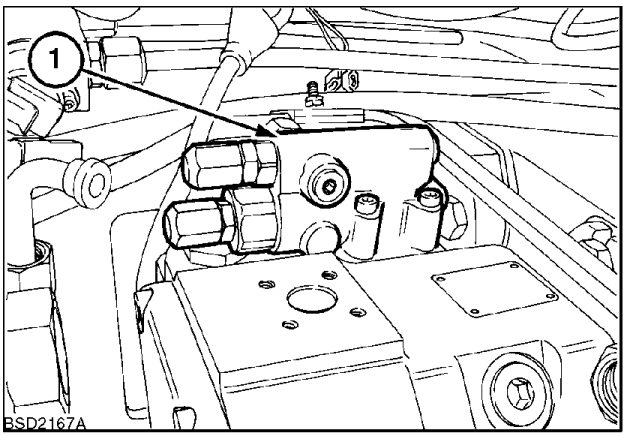
T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

Problem	Possible Cause	Correction
Initial checks for locating faults to be performed before continuing with the general diagnostic procedure	Error code identified by the control module. Incorrect operation of the component	Look up the location of faults by error code in Módulos eletrônicos - Descrição estática (55.640-C.30.A.20)
	Incorrect rear axle oil level Oil level not checked and adjusted at appropriate service interval	Add oil to rear axle
	Oil contaminated with dirt, water, or antifreeze The filters have not been changed at the correct service intervals	Change all the pump filters. See **Oil filters - Replace (35.300)**
	Warning light displayed on instrument cluster Component not functioning correctly	Identify the component that is not working properly and consult the appropriate fault location table
Clogged filter warning light lit	Incorrect rear axle oil level Oil level not checked and adjusted at suitable service intervals	Add oil to the rear axle
	Charge pressure filter and inlet filter not working Filters contaminated	Change the filters. Refer to. **Oil filters - Replace (35.300)**
	If the wiring to the clogged filter switch is disconnected and the light stays lit Short circuit to chassis in the B/N colored cable of connector pin 16 for the instrument console and clogged filter switch C175	Locate and repair the short circuit
	If the wiring to the clogged filter switch is disconnected and the light turns off Fault in the clogged inlet filter switch	Change the clogged inlet filter switch
Power steering works incorrectly or does not work	Steering pressure warning light is on Incorrect pressure in the steering system	Test the pressure in the steering system as described in **Hydraulic control components - Pressure test (41.200)**.
	Steering pressure warning light is on Faulty steering pump	Remove the steering pump. Examine the pump drive. If the pump drive is in good condition, repair or replace the steering pump assembly (see **Auxiliary hydraulic pump - Remove (35.220)**)
	The pressure is correct to the steering cylinders Mechanical fault in the steering components	If the pump output is good, but the pressure to the cylinders is low or zero, there may be a defect in the steering motor. See **Power steering control valve - Remove (41.200)** for removal of the steering motor.

Pump compensator - Static description

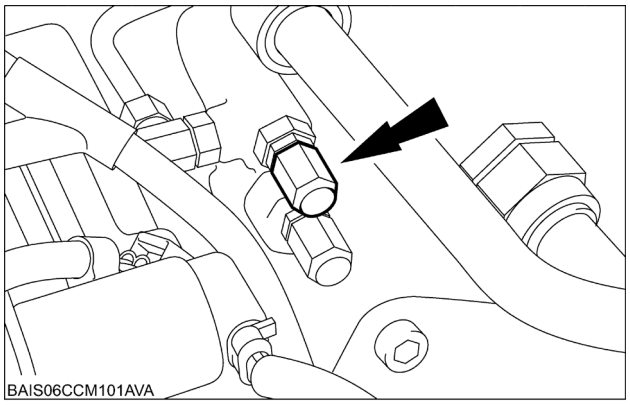
The flow and pressure compensation valves block consists of a high pressure control valve **(1)** and an oil flow control valve. The valve receives signals from the hydraulic control of the driven components and transmits the signals to the oil pump. The oil pump then combines the volume of the hydraulic supply with the system's oil requirements.

The angle of the pump swash plate is adjusted to determine the output from the variable flow piston pump. The flow compensation valve senses the circuit operating pressure and adjusts the angle of the swash plate to control the pump output. If the pump output and the circuit pressure rise to **205 bar** (**2973 lbf/in2**), the pressure compensation valve will cancel the flow compensation valve and will adjust the angle of the swash plate to limit the maximum system pressure.



BSD2167A_561 1

6. If the display value deviates slightly from the desired value, adjust the flow control valve.

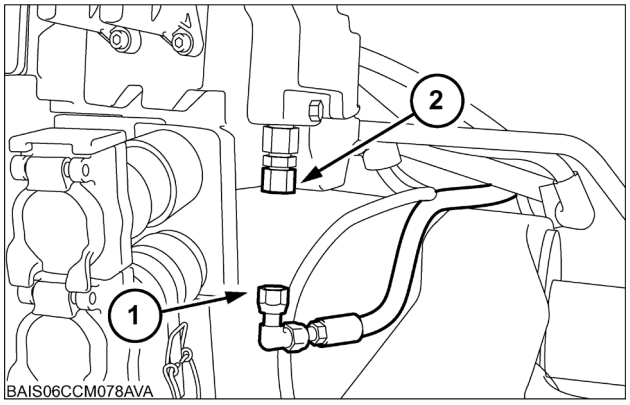


BAIS06CCM101AVA 4

7. If the value displayed is too high, check that the control pin of the flow command valve has been pressed.

NOTE: *One full turn changes the pressure by around* ***16 bar*** *(* ***232 lbf.in2****).*

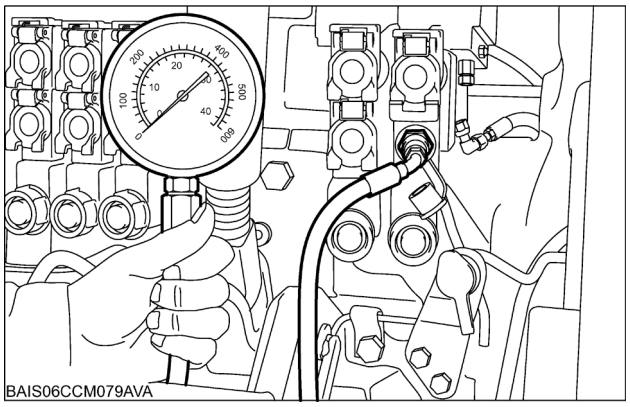
8. Remove the connection **(2) 380000574**.
9. Connect the Load Sensing line **(1)** again.



BAIS06CCM078AVA 5

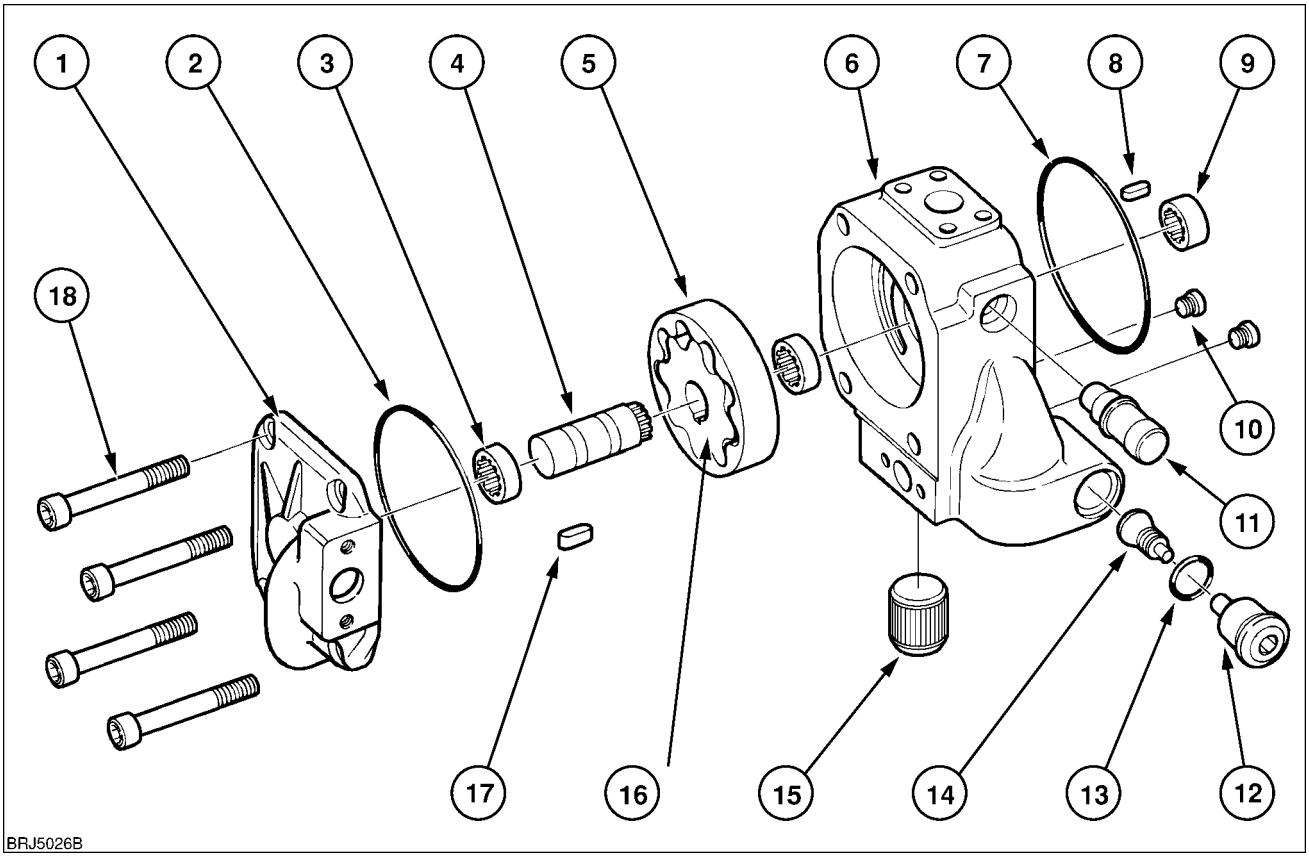
High-pressure standby

10. Connect a **255.0 bar** (**3697.5 psi**) pressure gauge to the remote connection of the command unit. Use the oil coupling **380000554**, the connection **380000576**, the quick hitch mount sleeve **380000492**, the quick hitch plug **380000543**, and the hose **380200147**.



BAIS06CCM079AVA 6

11. Set the engine rpm to **1500 rev/min**.

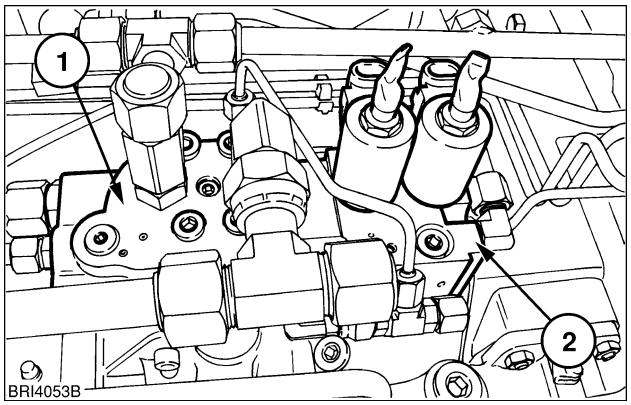


BAIL07APH346FSA 2

Charge Pump Components

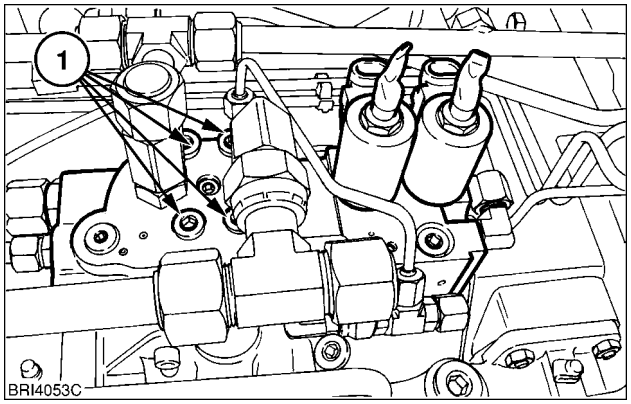
1 End Plate
2 Seal
3 Coupling
4 Shaft
5 Rotor Housing
6 Charge Pump Housing
7 Seal
8 Pin
9 Hub
10 Screw Plug
11 System Relief Valve (**245 bar** (**3552.5 psi**))
12 Check Valve Plug
13 Seal
14 Check Valve Spool
15 Main Charge Filter
16 Pump Rotor
17 Key
18 Screws

4. Remove the load level control valve **(2)** (where installed).



BAIL06CCM091ASA 4

5. Loosen and remove the four Allen screws **(1)** from the top of the priority valve. Lift the priority valve out of the hydraulic pump assembly.



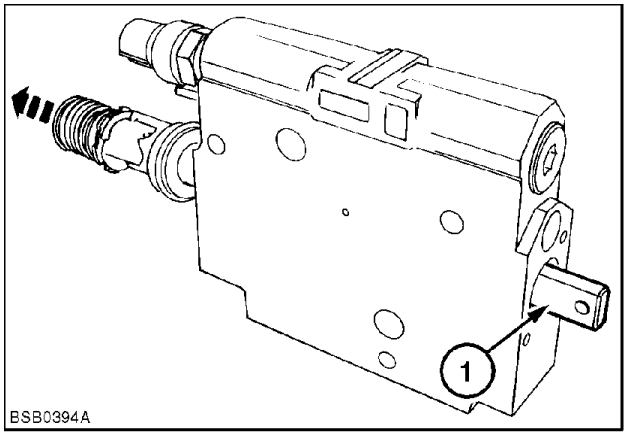
BAIL06CCM169ASA 5

Next operation:
Low pressure valve Priority/Regulator valve - Disassemble (35.322)

(1)	Valve section	**(2)**	O-ring
(3)	Hitch	**(4)**	Hitch case
(5)	Base	**(6)**	O-ring

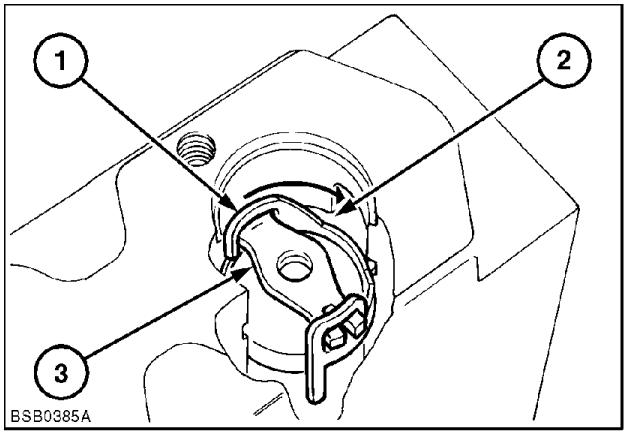
2. The hitch mounts are repaired as an assembly and must not be disassembled. Remove spool.

NOTE: *Before removing the spool, check that the flats* ***(1)*** *at the end of the spool are in the vertical position, as shown. If it is necessary to rotate the spool, do not use force, because this will damage the spool and the load check valve pin.*



BSB0394A 3

3. Use a small screwdriver to open two slots **(1)** in the retainer **(2)**. Rotate the retainer **90 deg**.
4. Remove the spring base **(3)** from the housing.
5. Remove the load check valve and the plunger.



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Auxiliary hydraulic pump - 220

(*) See content for specific models

channel with the operating pressure of the hydraulic lift. The valve regulates flow to the hydraulic lift circuit based on the demand of the hydraulic lift circuit.

Lift spool

The lift spool directs flow to the lift circuit. The lift spool is directly controlled by the pulse width-modulated lifting solenoid.

Lifting solenoid

The lifting solenoid is a pulse width-modulated solenoid controlled by the electronic draft control processor. Activation of the solenoid is controlled by the electronic draft control processor. Activation is proportional to the lift speed required.

Load check valve

The load check valve prevents oil trapped in the lift cylinder from escaping to the reservoir. The valve only opens when the pressure that passes the lift spool is greater than the pressure of the trapped oil in the lift cylinder.

Lift cylinder relief valve

The lift cylinder relief valve protects the lift cylinder from excessive shock loads. The valve operates at **230 bar**.

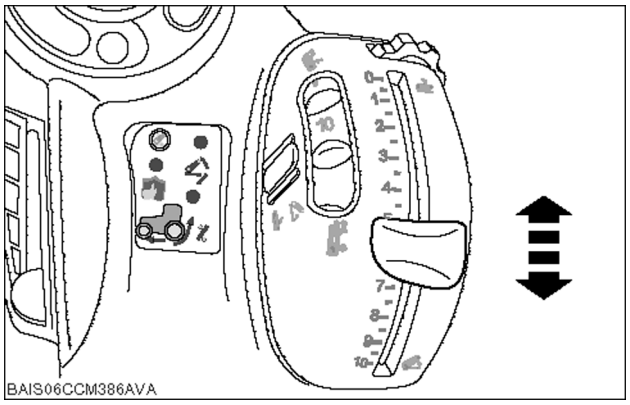
Reduction solenoid

The reduction solenoid has a design identical to the pulse width-modulated lifting solenoid. The solenoid is activated by the processor. The solenoid controls the operation of the reduction control valve in order to maintain the desired speed for the implement drop.

Reduction control valve

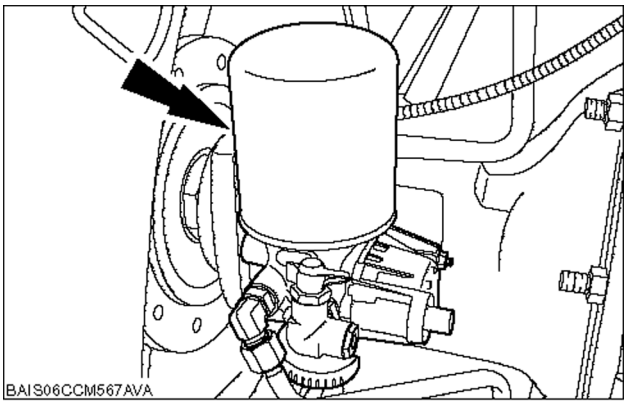
The reduction control valve controls the flow from the lift cylinder to the reservoir when you lower the hydraulic lift. The valve is operated by the pulse width-modulated lifting solenoid.

10. Move the position control fully down and then fully up. A maximum pump pressure will be applied for approximately **2 seconds** as the pressure relief valve operates.
    The gauge should reach **210±5 bar** (**3046±73 lbf/in2**).
    If the pressure is low, this could indicate that the EDC valve/control valve with lift cover has a fault or that there is a fault in one of the lift arms.



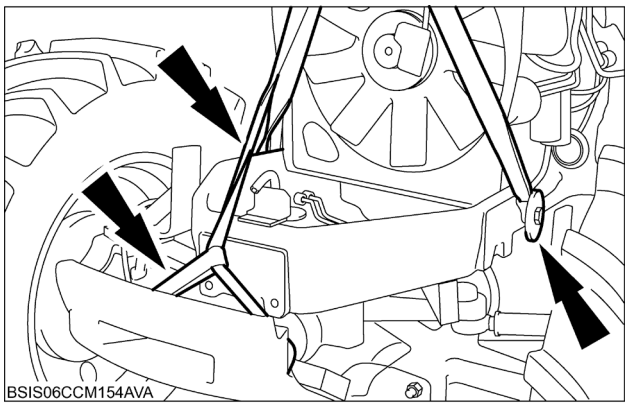
BAIS06CCM386AVA 8

4. Remove the relief valve.



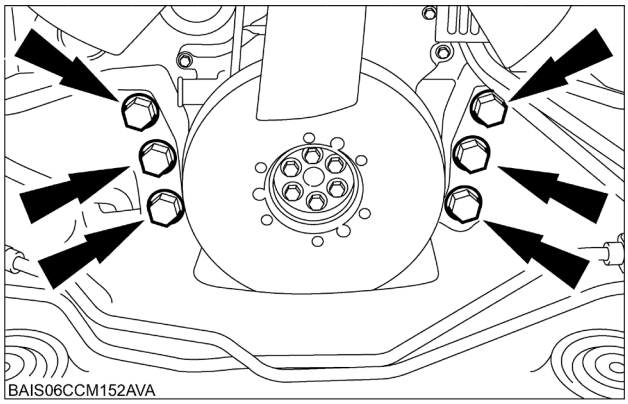
BAIS06CCM567AVA 4

12. Use a suitable chain or strap to attach the front and rear of the cradle assembly to a mobile hoist from above.



BAIS06CCM154AVA 8

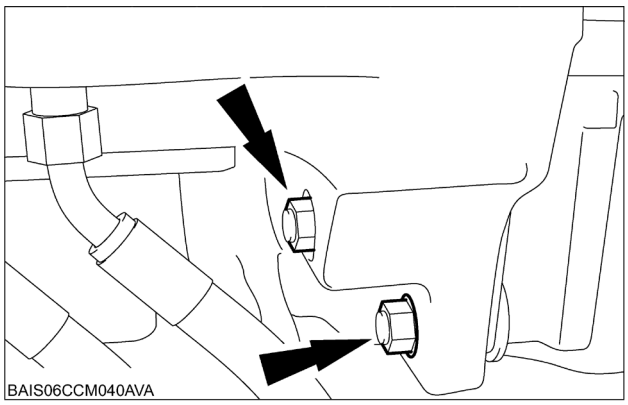
13. Remove the front cradle for the upper fixing bolts of the engine.



BAIS06CCM152AVA 9

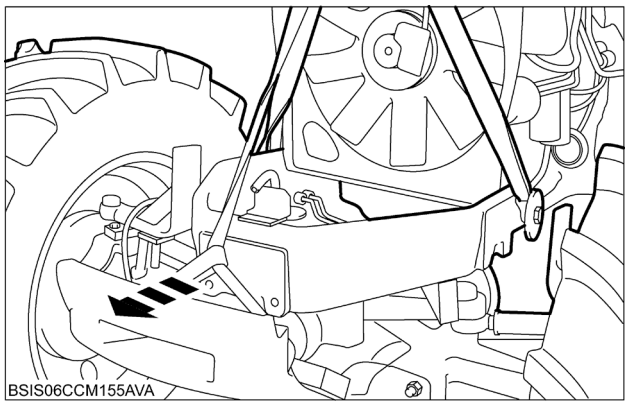
14. Remove the front cradle on the lower fixing nuts of the engine.

NOTE: *Repeat this step for both sides of the tractor.*



BAIS06CCM040AVA 10

15. Separate the front cradle for the engine.



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16. Support the assembly with axle trestles at the front and the rear of the cradle.

Index

Frames and ballasting - 39

Ballasts and supports - 140

Steering - 41

Tie rods - 106

T7.240 With cab, 18X6, TIER 3 [HCCZ7240CFCP38297 -]
T7.245 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]

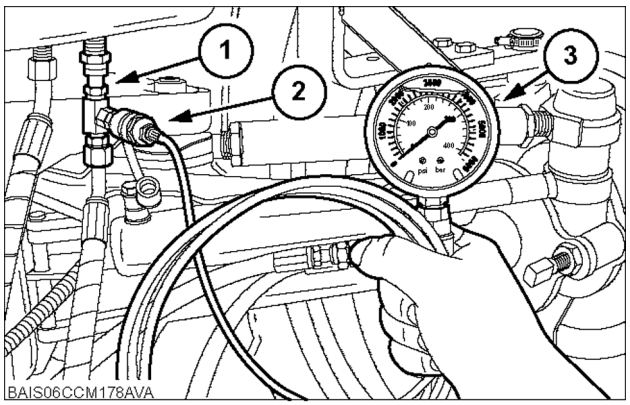
Hydraulic control components - Pressure test

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

NOTICE: *Before conducting any flow test or pressure test, turn on the tractor until the rear axle oil is at normal operating temperature.* ***65 °C*** *(* ***145 °F****).*

Steering circuit pressure test

1. Install the T adapter **(1) 380000573** and the quick unhitch fitting **(2) 380000492** on the hose toward the steering cylinder.
   Connect the **0 – 250 bar** (**0 – 3600 lbf/in2**) pressure gauge **(3)** to hose **380200147** using quick unhitch coupler **380000543**.
   Set the engine rpm to **1500 rev/min**.
   Turn the steering wheel to the maximum wheel angle and hold the position.
   You should get a pressure reading of **185 – 195 bar** (**2683 – 2828 lbf/in2**).



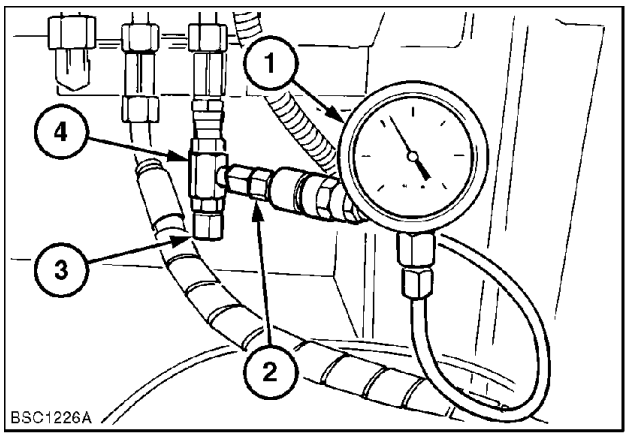
BAIS06CCM178AVA 1

NOTE: *If you perform this test with cold hydraulic oil, the pressure reading could be up to* ***197 – 207 bar*** *(* ***2857 – 3002 lbf/in2****) because of the back pressure.*

NOTICE: *There is no relief valve in the low pressure/steering pump. You must only perform the following pressure test in accordance with the instructions. If you fail to observe this precaution, you could seriously damage the hydraulic pump.*

Steering relief valve pressure test

2. Turn the steering all the way to the left.
   Disconnect the left-hand turn supply hose.
   Install the T adapter **(4) 380000570** and the quick unhitch fitting **(2) 380000492** on the solid tube. Cap the bottom of the T piece with blind cap **380000599** or standard cap no. 6 (**11/16 in** ORFS threaded female cap bought locally **(3)**).
   Connect the **0 – 250 bar** (**0 – 3600 lbf/in2**) pressure gauge **(1)** to the hose **380200147**. Use the quick-release coupler **380000543**.
   Turn the engine on and set the speed to **1450 rev/min**.
   Pull the steering wheel to the left with a force of approximately **22 N** (**2.25 kgf**, **5 lbf**) and take the pressure reading.
   The pressure reading should be:–
   185 – 195 bar (**2683 – 2828 lbf/in2**).
   If the system is not at the specified pressure, adjust the relief valve located in the steering motor.

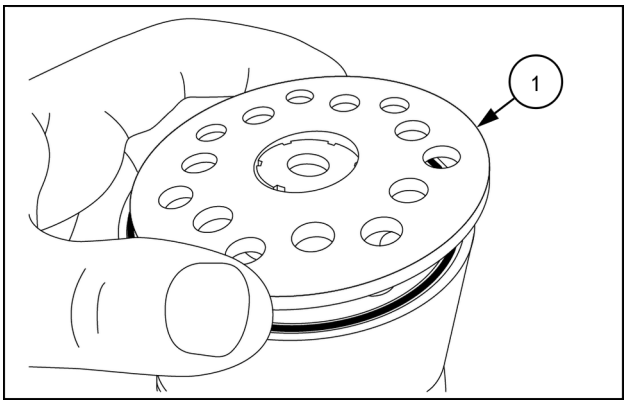


BSC1226A 2

NOTE: *To adjust the steering system relief valve, you must remove the steering motor from the steering bracket to access the adjusting screw. See* ***Power steering control valve - Remove (41.200)****. Half a turn of the adjuster corresponds to approximately* ***13.8 bar*** *(****200.1 psi****).*

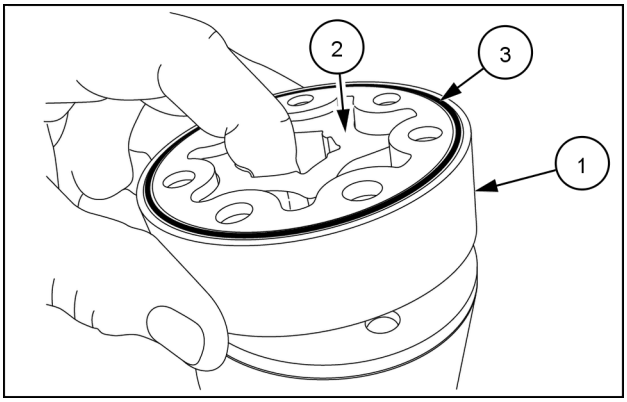
NOTE: *Applying greater force to the steering wheel ring results in a higher reading.*

28. Assemble the manifold plate **(1)**.



CUIL16TR00876AA 13

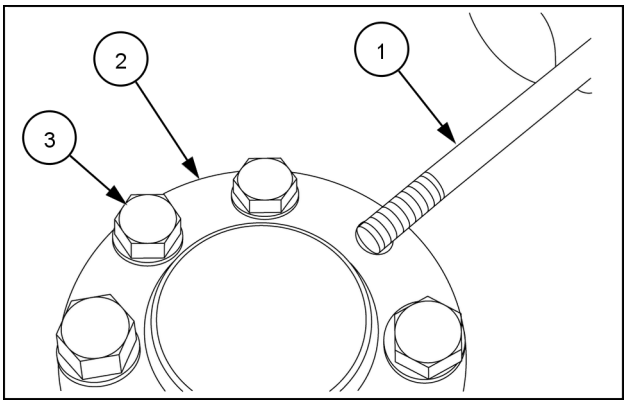
29. Assemble the rotor **(2)** and the stator **(1)**.
30. Assemble the O-rings **(3)** on both sides.



CUIL16TR00875AA 14

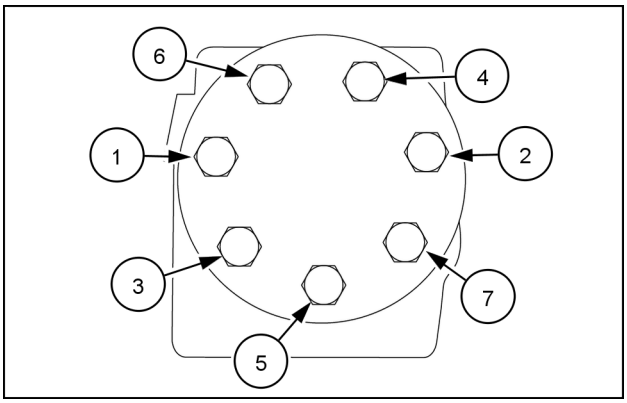
31. Install the end plate **(1)** and the bolts **(2)**.

NOTE: *Ensure that the guide pin **(3)** is installed in the correct position.*



CUIL16TR00883AA 15

32. Torque the bolts to **24.0 – 36.0 N·m** (**212.4 – 318.6 lb in**) in the sequence **(1)**, **(2)**, **(3)**, **(4)**, **(5)**, **(6)**, and **(7)**.



CUIL16TR00835AA 16

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Cylinders - 216

(*) See content for specific models

Front wheels - Torque

T7.240	LA
T7.245	LA
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]	LA

	Wheel unit with manual adjustment	Bolt/nut torque
Front 4WD	Disc to hub nuts	**210 N·m** (**155 lb ft**)
	Disc to rim nuts	**250 N·m** (**184 lb ft**)

Tires - Compatibility table

The compatibility table shows the combinations that you can use when you choose new tractor tires. Cells with “X” indicate released combinations of front and rear tires. Empty cells indicate combinations that have not been tested or released.

NOTE: *Never use tires from unapproved combinations.*

NOTICE: *The compatibility tables are continually reviewed by NEW HOLLAND. New combinations that may be more suitable to your activity are often released. See your NEW HOLLAND dealer when you change your machine’s tires.*

Table of Acronyms

Acronym	Meaning	Acronym	Meaning
GY	Goodyear	ALLT	All Traction
BF	Bfgoodrich	DYT II	Dyna Torque II
T	Titan	DYT III	Dyna Torque III
TR	Trelleborg	MXB	Maxibib
MI	Michelin	AGB	Agribib
FI	Firestone	125A6	Power Grip 125 A6
PI	Pirelli	RDT 23	Radial DT **23°**
S-ARZ	Super Rice Tire	SAT 23	Super All Traction **23°**
S-ARZ TD8	Super Rice Tire TD8	T 414	Twin 414
SSG TD8	Special Sure Grip TD8	PWT	Power Torque
TFR	Traction Field & Road	PWG	Power Gripper
STR	ST Radial	R1	Normal grip
SAT FWD	Super All Traction FWD	R2	High Grip
CF-151	Champion F-151	GZ	Guizhou
CGG	Champion G.G.	CAP	Load capacity
CSG II	Champion Space Grid II.	F.T.	Front Tires
S-LM	Super Mud Tire	R.T.	Rear Tires
TRC-CA	Cultivator Tractor	MANUF	Manufacturer

Contents

Cab climate control - 50

Air conditioning

(*) See content for specific models

Evaporator air not cool.

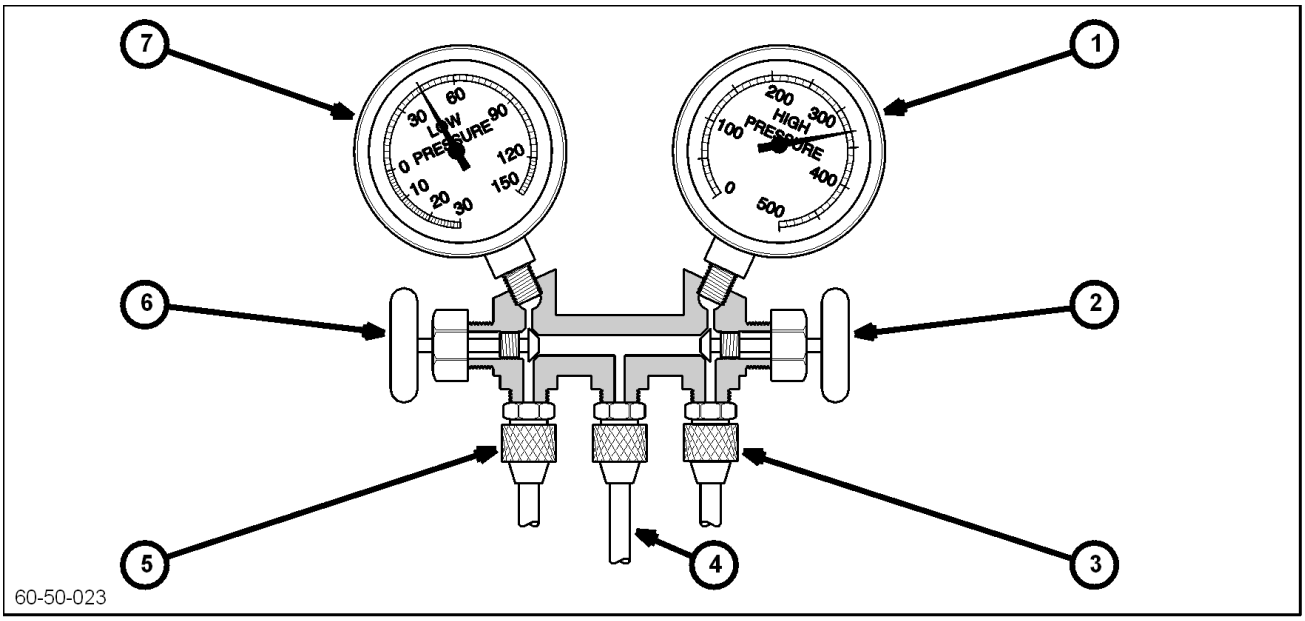
Corrective Procedure

1. Change the compressor.

Diagnosis: Internal leak in the compressor as a result of wear or cracks in the pistons, segment rings, or cylinders.

NOTE: *Test procedure based on an ambient temperature of* ***35 °C*** *(* ***95 ° F****). For correct reading of the high side pressure gauge in other ambient temperatures, see the temperature and pressure table* ***Air conditioning - Service instruction (50.200)****.*

Performance Test Example 5



60-50-023 5

Performance Test Example 5

(1) High side high
(2) High side manual valve closed
(3) High side hose connected to the high side service connector
(4) Not used
(5) Low side hose connected to the low side service connector
(6) Low side manual valve closed
(7) Low side high

Issue:

Insufficient or no cooling. Engine overheats in some cases.

Cause:

Inadequate condenser operation.

Conditions*

Low side pressure too high. The pressure gauge reading must be **1 – 2 bar** (**15 – 30 lbf/in2**).

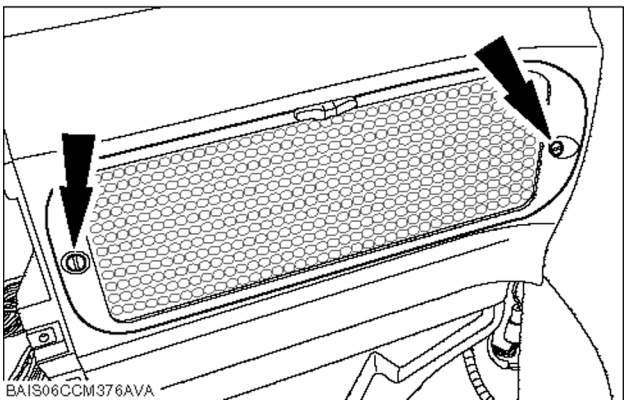
High side pressure too high. The pressure gauge reading must be **16 – 18 bar** (**230 – 260 lbf/in2**).

Liquid line hot.

Warm air in the evaporator.

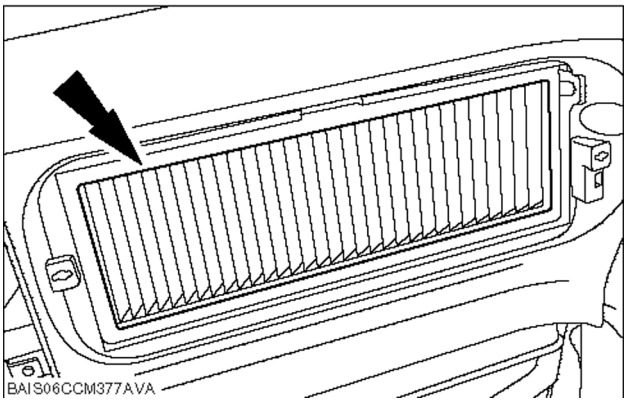
High pressure switch off.

9. Remove the air circulation grill.



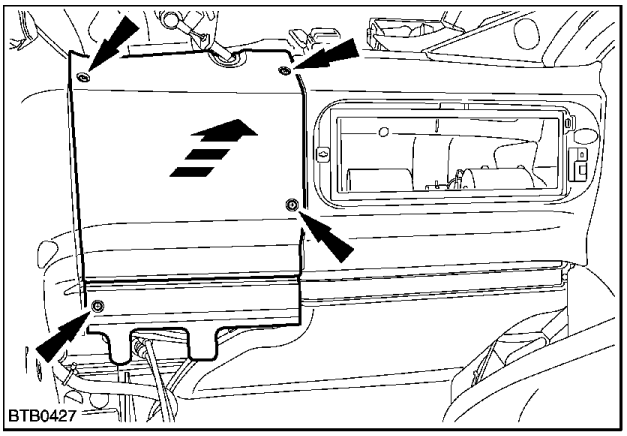
BAIS06CCM376AVA 8

10. Remove the air circulation filter element.



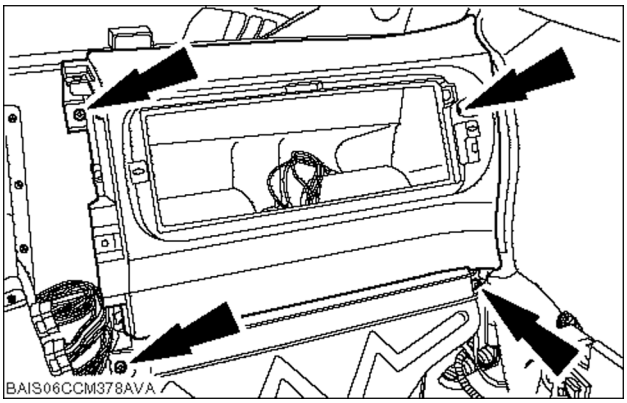
BAIS06CCM377AVA 9

11. Remove the cover.



BTB0427 10

12. Remove the bolts.



BAIS06CCM378AVA 11

Problem	Possible Cause	Correction
Insufficient cooling. Low pressure reading does not fluctuate with changes in temperature control switch (pressure should drop until compressor cycles). Evaporator air not cool. **Gauge reading:** **Low Pressure - Normal** **High Pressure - Normal.**	System low on charge. Air or moisture present in system.	Perform a leak test. Discharge the System. Repair the leaks. Replace the receiver/drier. Check the oil level. Drain the system. Charge the system. Re- test the system.
Low pressure switch cutting out. **Gauge reading:** **Low Pressure - Low** **High Pressure - Low.**	Stuck valve	1. Check expansion valve as follows: Set at maximum cooling. Low pressure gauge should drop slowly. 2. If expansion valve is defective: Discharge the System. Replace the expansion valve. Evacuate the system. Charge the system. Re- test the system.
Expansion valve to evaporator tube shows considerable condensation or frost. **Gauge reading:** **Low Pressure - Low** **High Pressure - Low.**		1. Check expansion valve as follows: Set at maximum cooling. Low pressure gauge should drop slowly. 2. If expansion valve is defective: Discharge the System. Replace the expansion valve. Evacuate the system. Charge the system. Re- test the system.
Too cold to touch. **Gauge reading:** **Low Pressure - Low** **High Pressure - Low.**		1. Check expansion valve as follows: Set at maximum cooling. Low pressure gauge should drop slowly. 2. If expansion valve is defective: Discharge the System. Replace the expansion valve. Evacuate the system. Charge the system. Re- test the system.
Liquid line hot (condenser outlet to expansion valve tube). **Gauge reading:** **Low Pressure - High** **High Pressure - High.**	Overcharged with refrigerant.	Inspect for dirty condenser restricting air flow and cooling. Check operation of condenser cooling fans. Repair replace as required. Check for overloading as follows: Switch off the engine. Recover and recycle the charge using correct recovery equipment. Recharge the system with the correct quantity of refrigerant, replacing any lost lubricant. Recheck performance of air conditioning system.

SERVICE

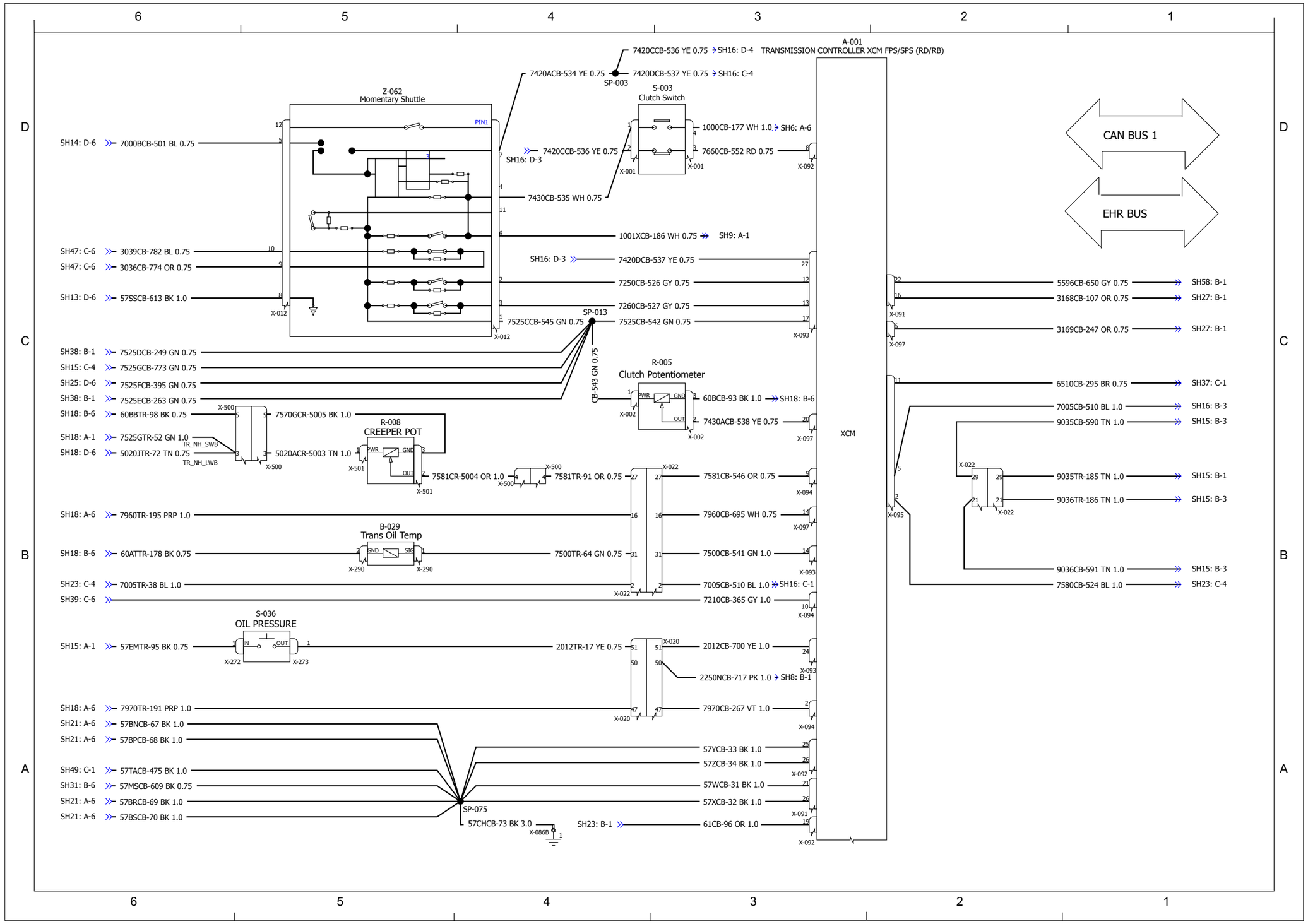
Fuse and relay box

Wiring harnesses - Electrical schematic sheet 08 SH08 - FUSES 55-60

Type	Component	Connector / Link	Description
Fuse	F-042		BATT+ BATTERY ISOLATOR
Fuse	F-048		Front Hitch +12v Ign
Fuse	F-055		HPL/EHR SWS
Fuse	F-056		PTO Front
Connector	X-071	**X-071**	F41 TO F60 MINI FUSE
Connector	X-101	**X-101**	ACU-CN3B
Connector	X-110	**X-110**	FENDER 2
Connector	X-127	**X-127**	
Connector	X-620	**X-620**	FRONT BREAK AWAY

Wire Break

Component	Connector / Link	Description
WB-043	**Wiring harnesses - Electrical schematic sheet 17 SH17 - TRANSMISSION CONTROLLER - EDC (55.100)**	
WB-055	**Wiring harnesses - Electrical schematic sheet 37 SH37 - JOYSTICK (55.100)**	
WB-073	**Wiring harnesses - Electrical schematic sheet 02 SH02 - POWER DISTRIBUTION-MAXI FUSES 1-6 (55.100)**	
WB-084	**Wiring harnesses - Electrical schematic sheet 17 SH17 - TRANSMISSION CONTROLLER - EDC (55.100)**	
WB-1007	**Wiring harnesses - Electrical schematic sheet 38 SH38 - PTO SWITCH & LAMP (55.100)**	
WB-1027	**Wiring harnesses - Electrical schematic sheet 57 SH57 - Electro-Hydraulic Remote (EHR) VALVE SELECT SWITCH (55.100)**	
WB-1106	**Wiring harnesses - Electrical schematic sheet 02 SH02 - POWER DISTRIBUTION-MAXI FUSES 1-6 (55.100)**	
WB-1127	**Wiring harnesses - Electrical schematic sheet 28 SH28 - CAN SYSTEM (55.100)**	
WB-1178	**Wiring harnesses - Electrical schematic sheet 17 SH17 - TRANSMISSION CONTROLLER - EDC (55.100)**	
WB-1419	**Wiring harnesses - Electrical schematic sheet 21 SH21 - AUXILIARY CONTROL UNIT (55.100)**	
WB-1434	**Wiring harnesses - Electrical schematic sheet 53 SH53 - Electro-Hydraulic Remote (EHR) Valve CAN (55.100)**	
WB-1538	**Wiring harnesses - Electrical schematic sheet 29 SH29 - CLIMATE CONTROL AUTO (55.100)**	
WB-1659	**Wiring harnesses - Electrical schematic sheet 22 SH22 - STEERING CONTROL UNIT (55.100)**	
WB-508	**Wiring harnesses - Electrical schematic sheet 17 SH17 - TRANSMISSION CONTROLLER - EDC (55.100)**	
WB-624	**Wiring harnesses - Electrical schematic sheet 20 SH20 - AUXILIARY CONTROL UNIT (55.100)**	
WB-735	**Wiring harnesses - Electrical schematic sheet 21 SH21 - AUXILIARY CONTROL UNIT (55.100)**	
WB-792	**Wiring harnesses - Electrical schematic sheet 21 SH21 - AUXILIARY CONTROL UNIT (55.100)**	
WB-842	**Wiring harnesses - Electrical schematic sheet 21 SH21 - AUXILIARY CONTROL UNIT (55.100)**	
WB-872	**Wiring harnesses - Electrical schematic sheet 57 SH57 - Electro-Hydraulic Remote (EHR) VALVE SELECT SWITCH (55.100)**	

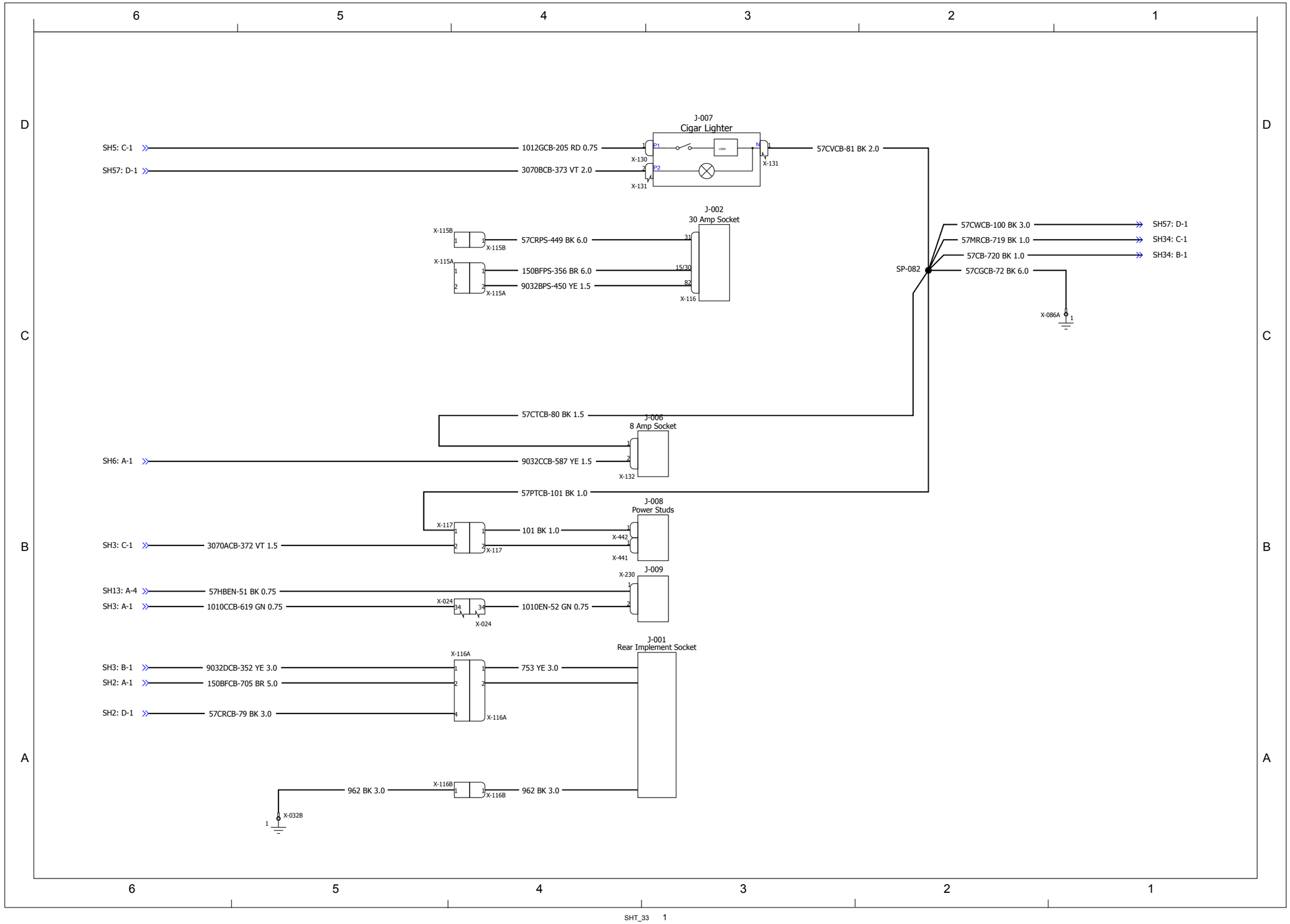

A-001
TRANSMISSION CONTROLLER XCM FPS/SPS (RD/RB)
XCM
7420CCB-536 YE 0.75 SH16: D-4
7420DCB-537 YE 0.75 SH16: C-4
SP-003
7420ACB-534 YE 0.75
Z-062
Momentary Shuttle
PIN1
S-003
Clutch Switch
SH14: D-6 7000BCB-501 BL 0.75
SH16: D-3 7420CCB-536 YE 0.75
1000CB-177 WH 1.0 SH6: A-6
7660CB-552 RD 0.75
7430CB-535 WH 0.75
1001XCB-186 WH 0.75 SH9: A-1
SH47: C-6 3039CB-782 BL 0.75
SH47: C-6 3036CB-774 OR 0.75
SH13: D-6 57SSCB-613 BK 1.0
SH16: D-3 7420DCB-537 YE 0.75
7250CB-526 GY 0.75
7260CB-527 GY 0.75
7525CCB-545 GN 0.75
7525CB-542 GN 0.75
SP-013
CB-543 GN 0.75
SH38: B-1 7525DCB-249 GN 0.75
SH15: C-4 7525GCB-773 GN 0.75
SH25: D-6 7525FCB-395 GN 0.75
SH38: B-1 7525ECB-263 GN 0.75
R-005
Clutch Potentiometer
60BCB-93 BK 1.0 SH18: B-6
7430ACB-538 YE 0.75
SH18: B-6 60BBTR-98 BK 0.75
7570GCR-5005 BK 1.0
R-008
CREEPER POT
SH18: A-1 7525GTR-52 GN 1.0
SH18: D-6 5020JTR-72 TN 0.75
TR_NH_SWB
TR_NH_LWB
5020ACR-5003 TN 1.0
7581CR-5004 OR 1.0
7581TR-91 OR 0.75
7581CB-546 OR 0.75
SH18: A-6 7960TR-195 PRP 1.0
7960CB-695 WH 0.75
B-029
Trans Oil Temp
SH18: B-6 60ATTR-178 BK 0.75
7500TR-64 GN 0.75
7500CB-541 GN 1.0
SH23: C-4 7005TR-38 BL 1.0
7005CB-510 BL 1.0 SH16: C-1
SH39: C-6
7210CB-365 GY 1.0
S-036
OIL PRESSURE
SH15: A-1 57EMTR-95 BK 0.75
2012TR-17 YE 0.75
2012CB-700 YE 1.0
2250NCB-717 PK 1.0 SH8: B-1
SH18: A-6 7970TR-191 PRP 1.0
7970CB-267 VT 1.0
SH21: A-6 57BNCB-67 BK 1.0
SH21: A-6 57BPCB-68 BK 1.0
57YCB-33 BK 1.0
57ZCB-34 BK 1.0
SH49: C-1 57TACB-475 BK 1.0
SH31: B-6 57MSCB-609 BK 0.75
57WCB-31 BK 1.0
SH21: A-6 57BRCB-69 BK 1.0
57XCB-32 BK 1.0
SH21: A-6 57BSCB-70 BK 1.0
SP-075
57CHCB-73 BK 3.0
SH23: B-1 61CB-96 OR 1.0
CAN BUS 1
EHR BUS
5596CB-650 GY 0.75 SH58: B-1
3168CB-107 OR 0.75 SH27: B-1
3169CB-247 OR 0.75 SH27: B-1
6510CB-295 BR 0.75 SH37: C-1
7005CB-510 BL 1.0 SH16: B-3
9035CB-590 TN 1.0 SH15: B-3
9035TR-185 TN 1.0 SH15: B-1
9036TR-186 TN 1.0 SH15: B-3
9036CB-591 TN 1.0 SH15: B-3
7580CB-524 BL 1.0 SH23: C-4
SHT_16 1

Wiring harnesses - Electrical schematic sheet 25 SH25 - ARMREST T7

Type	Component	Connector / Link	Description
ECU	A-002		Arm Rest T7
Ground	GND-007		
Motor	M-010		Armrest Adjust Motor
Resistor	RES-010		Resistor
Switch	S-063		Armrest Adjust Switch
Switch	SW-007		Switch
Connector	X-080	**X-080**	ARMREST 1
Connector	X-093	**X-093**	CCU-CN1B
Connector	X-400	**X-400**	
Connector	X-776	**X-776**	
Connector	X-777	**X-777**	
Connector	X-787	**X-787**	
Connector	X-788	**X-788**	

Wire Break

Component	Connector / Link	Description
WB-1175	**Wiring harnesses - Electrical schematic sheet 18 SH18 - TRANSMISSION CONTROLLER (55.100)**	
WB-1264	**Wiring harnesses - Electrical schematic sheet 17 SH17 - TRANSMISSION CONTROLLER - EDC (55.100)**	
WB-1491	**Wiring harnesses - Electrical schematic sheet 18 SH18 - TRANSMISSION CONTROLLER (55.100)**	
WB-168	**Wiring harnesses - Electrical schematic sheet 38 SH38 - PTO SWITCH & LAMP (55.100)**	
WB-621	**Wiring harnesses - Electrical schematic sheet 39 SH39 - HEADLAMPS and WORK LAMPS HOOD (55.100)**	
WB-720	**Wiring harnesses - Electrical schematic sheet 16 SH16 - TRANSMISSION CONTROLLER (55.100)**	
WB-878	**Wiring harnesses - Electrical schematic sheet 18 SH18 - TRANSMISSION CONTROLLER (55.100)**	


6
5
4
3
2
1
D
C
B
A
J-007
Cigar Lighter
SH5: C-1
SH57: D-1
1012GCB-205 RD 0.75
3070BCB-373 VT 2.0
X-130
X-131
P1
P2
N
LOAD
57CVCB-81 BK 2.0
J-002
30 Amp Socket
X-115B
57CRPS-449 BK 6.0
X-115A
150BFPS-356 BR 6.0
9032BPS-450 YE 1.5
31
15/30
87
X-116
SP-082
57CWCB-100 BK 3.0
57MRCB-719 BK 1.0
57CB-720 BK 1.0
57CGCB-72 BK 6.0
SH57: D-1
SH34: C-1
SH34: B-1
X-086A
57CTCB-80 BK 1.5
J-006
8 Amp Socket
SH6: A-1
9032CCB-587 YE 1.5
X-132
57PTCB-101 BK 1.0
J-008
Power Studs
X-117
101 BK 1.0
X-442
X-441
SH3: C-1
3070ACB-372 VT 1.5
J-009
X-230
SH13: A-4
57HBEN-51 BK 0.75
SH3: A-1
1010CCB-619 GN 0.75
X-024
1010EN-52 GN 0.75
J-001
Rear Implement Socket
X-116A
SH3: B-1
9032DCB-352 YE 3.0
753 YE 3.0
SH2: A-1
150BFCB-705 BR 5.0
SH2: D-1
57CRCB-79 BK 3.0
X-116B
962 BK 3.0
962 BK 3.0
X-032B

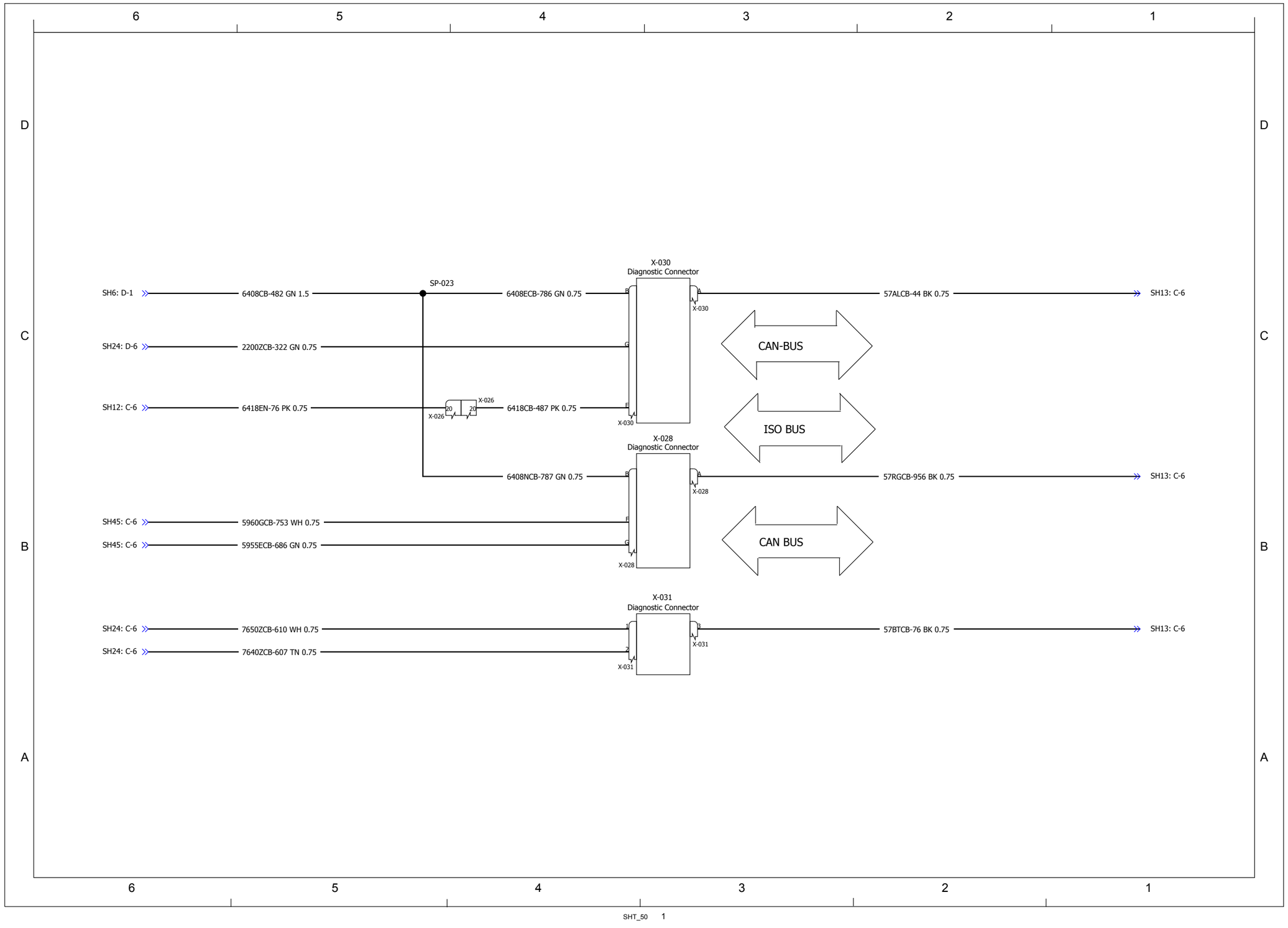
SHT_33 1

Wiring harnesses - Electrical schematic sheet 42 SH42 - STOP LAMPS, TAIL LAMPS and WORKLAMPS

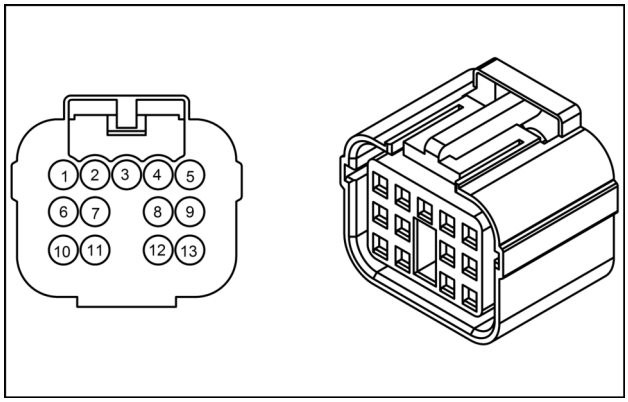
Type	Component	Connector / Link	Description
Lamp	E-018		RH Stop & Tail Lamp
Lamp	E-019		LH Stop & Tail Lamp
Lamp	E-024		Work Lamp Fender LH
Lamp	E-025		Work Lamp Fender RH
Lamp	E-055		License Lamp
Lamp	E-057		License Lamp
Relay	K-008		Stop Lamps
Relay	K-016		Rear Work lamps
Switch	S-044		Stop Lamp Switch RH
Switch	S-045		Stop Lamp Switch LH
Connector	X-013	**X-013**	STOP LAMP SWITCH LEFT
Connector	X-014	**X-014**	STOP LAMP SWITCH RIGHT
Connector	X-036	**X-036**	F=R7, E=R8, D=R9, C=R10, B=R11, A=R20
Connector	X-039	**X-039**	DIODE CONNECTOR
Connector	X-074	**X-074**	F=R15, E=R16, D=R17, C=R18, B=19, A=R20
Connector	X-111	**X-111**	RH FENDER CONNECTOR 1 TAIL LAMP
Connector	X-126	**X-126**	
Connector	X-403	**X-403**	WORK LAMP
Connector	X-404	**X-404**	LICENCE LAMP 1
Connector	X-405	**X-405**	
Connector	X-409	**X-409**	STOP AND TAIL LIGHT

Wire Break

Component	Connector / Link	Description
WB-002	**Wiring harnesses - Electrical schematic sheet 13 SH13 - POWER EARTHING (55.100)**	
WB-1088	**Wiring harnesses - Electrical schematic sheet 40 SH40 - TRAILER (55.100)**	
WB-1157	**Wiring harnesses - Electrical schematic sheet 15 SH15 - TRANSMISSION CONTROLLER (55.100)**	
WB-118	**Wiring harnesses - Electrical schematic sheet 34 SH34 - FLASHER UNIT (55.100)**	
WB-1190	**Wiring harnesses - Electrical schematic sheet 35 SH35 - WORK LAMPS AND BEACONS (55.100)**	
WB-1222	**Wiring harnesses - Electrical schematic sheet 04 SH04 - FUSES 15-21 (55.100)**	
WB-127	**Wiring harnesses - Electrical schematic sheet 38 SH38 - PTO SWITCH & LAMP (55.100)**	
WB-1299	**Wiring harnesses - Electrical schematic sheet 24 SH24 - INSTRUMENT CLUSTER (55.100)**	
WB-144	**Wiring harnesses - Electrical schematic sheet 04 SH04 - FUSES 15-21 (55.100)**	
WB-1585	**Wiring harnesses - Electrical schematic sheet 05 SH05 - FUSES 22-30 (55.100)**	
WB-1656	**Wiring harnesses - Electrical schematic sheet 13 SH13 - POWER EARTHING (55.100)**	
WB-277	**Wiring harnesses - Electrical schematic sheet 13 SH13 - POWER EARTHING (55.100)**	
WB-371	**Wiring harnesses - Electrical schematic sheet 05 SH05 - FUSES 22-30 (55.100)**	
WB-390	**Wiring harnesses - Electrical schematic sheet 04 SH04 - FUSES 15-21 (55.100)**	
WB-475	**Wiring harnesses - Electrical schematic sheet 38 SH38 - PTO SWITCH & LAMP (55.100)**	
WB-496	**Wiring harnesses - Electrical schematic sheet 38 SH38 - PTO SWITCH & LAMP (55.100)**	
WB-816	**Wiring harnesses - Electrical schematic sheet 03 SH03 - POWER DISTRIBUTION-FUSES 1-14 (55.100)**	
WB-854	**Wiring harnesses - Electrical schematic sheet 15 SH15 - TRANSMISSION CONTROLLER (55.100)**	
WB-911	**Wiring harnesses - Electrical schematic sheet 13 SH13 - POWER EARTHING (55.100)**	
WB-941	**Wiring harnesses - Electrical schematic sheet 04 SH04 - FUSES 15-21 (55.100)**	


6
5
4
3
2
1
D
C
B
A
SH6: D-1
6408CB-482 GN 1.5
SP-023
6408ECB-786 GN 0.75
X-030
Diagnostic Connector
B
A
X-030
57ALCB-44 BK 0.75
SH13: C-6
SH24: D-6
2200ZCB-322 GN 0.75
G
CAN-BUS
SH12: C-6
6418EN-76 PK 0.75
X-026
20
20
X-026
6418CB-487 PK 0.75
F
X-030
ISO BUS
X-028
Diagnostic Connector
6408NCB-787 GN 0.75
B
A
X-028
57RGCB-956 BK 0.75
SH13: C-6
SH45: C-6
5960GCB-753 WH 0.75
F
SH45: C-6
5955ECB-686 GN 0.75
G
X-028
CAN BUS
X-031
Diagnostic Connector
SH24: C-6
7650ZCB-610 WH 0.75
1
B
X-031
57BTCB-76 BK 0.75
SH13: C-6
SH24: C-6
7640ZCB-607 TN 0.75
2
X-031
SHT_50 1

X-012 - SHUTTLE SWITCH (82862752) (Male)

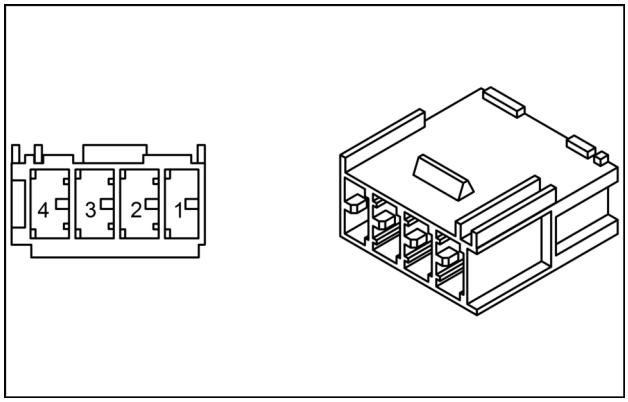


82862752 3

82862752

Pin	From	Wire	Description	Color-Size	Frame
1	SP-013-P-X	CB-545	CB-545	GN - 0.75	**SHEET 16**
2	**X-093 (Male) pin 12** CCU-CN1B	CB-526	CB-526	GY - 0.75	
3	**X-093 (Male) pin 13** CCU-CN1B	CB-527	CB-527	GY - 0.75	
4	**X-001 (Male) pin 1** CLUTCH SWITCH	CB-535	CB-535	WH - 0.75	
5	SP-057-P-X	CB-501	CB-501	BL - 0.75	**SHEET 14**
6	SP-002-P-X	CB-186	CB-186	WH - 0.75	**SHEET 09**
7	SP-003-P-X	CB-534	CB-534	YE - 0.75	**SHEET 16**
8	SP-102-P-X	CB-613	CB-613	BK - 1.0	
9	**X-745 (Male) pin A4** ELECTRONIC PARK BRAKE	CB-774	CB-774	OR - 0.75	
10	**X-745 (Male) pin C7** ELECTRONIC PARK BRAKE	CB-782	CB-782	BL - 0.75	

X-013 - STOP LAMP SWITCH LEFT (82918052) (Male)



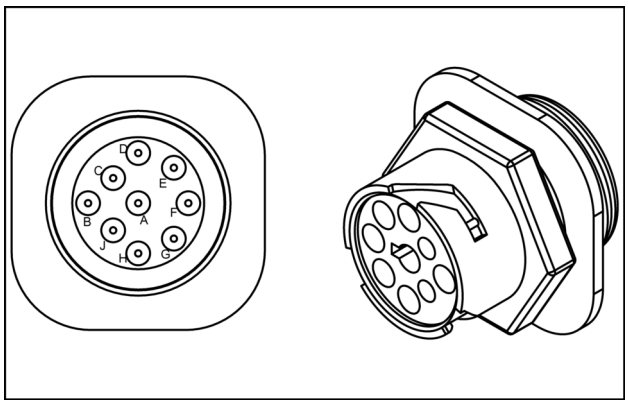
82918052 4

82918052

Pin	From	Wire	Description	Color-Size	Frame
1	**GND-001 (Male) pin 1**	BT-001	BT-001	BK - 70.0	**SHEET 02**
1	SP-007-P-X	CB-4	CB-4	GN - 1.0	
2	SP-007-P-X	CB-3	CB-3	GN - 1.0	**SHEET 42**
3	SP-004-P-X	CB-164	CB-164	GN - 1.0	
4	SP-032-P-X	CB-364	CB-364	RD - 1.0	

Wire connectors - Component diagram 03

X-030 - DIAGNOSTIC 1 (87736919) (Male)

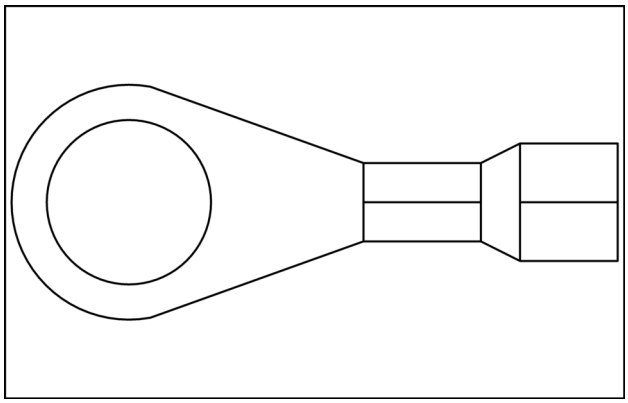


87736919 1

87736919

Pin	From	Wire	Description	Color-Size	Frame
A	SP-102-P-X	CB-44	CB-44	BK - 0.75	**SHEET 13**
B	SP-023-P-X	CB-786	CB-786	GN - 0.75	**SHEET 50**
C	SP-321A-P-X	CB-713	CB-713	YE - 0.75	**SHEET 51**
D	SP-321B-P-X	CB-714	CB-714	GN - 0.75	
E	**X-026 (Female) pin 20** ENGINE 1	CB-487	CB-487	PK - 0.75	**SHEET 50**
G	**X-009 pin 19** ADIC/ICU2 CN3	CB-322	CB-322	GN - 0.75	**SHEET 24**
H	SP-304A-P-X	CB-657	CB-657	YE - 0.75	**SHEET 55**
J	SP-304B-P-X	CB-662	CB-662	GN - 0.75	

X-030A - (84122130) (Male)



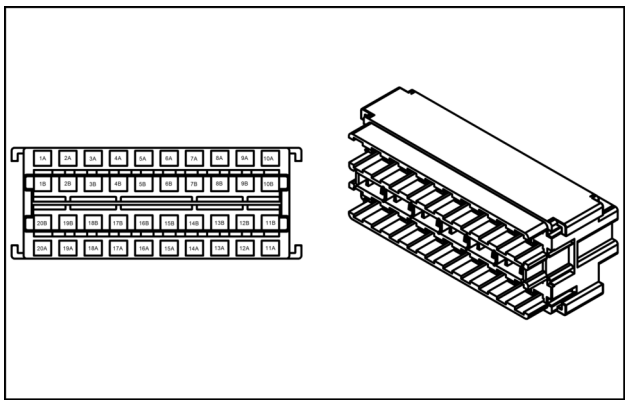
84122130 2

84122130

Pin	From	Wire	Description	Color-Size	Frame
1	SP-102-P-X	CB-58	CB-58	BK - 3.0	**SHEET 13**

Pin	From	Wire	Description	Color-Size	Frame
1B	SP-053-P-X	CB-135	CB-135	BL - 3.0	**SHEET 06**
3B	SP-034-P-X	CB-627	CB-627	WH - 0.75	
4B	SP-051-P-X	CB-120	CB-120	BR - 2.0	
5B	SP-052-P-X	CB-200	CB-200	YE - 2.0	
6B	SP-038-P-X	CB-683	CB-683	GN - 2.5	**SHEET 07**
7B	**X-026 pin 15** ENGINE 1	CB-682	CB-682	GN - 1.5	
9B	**X-026 (Female) pin 14** ENGINE 1	CB-677	CB-677	OR - 1.5	
11B	SP-050-P-X	CB-785	CB-785	BR - 2.5	
13B	SP-259-P-X	CB-799	CB-799	BR - 4.0	
20B	SP-098-P-X	CB-697	CB-697	RD - 1.5	**SHEET 08**

X-072 - F21 TO F40 MINI FUSE (87733581) (Male)



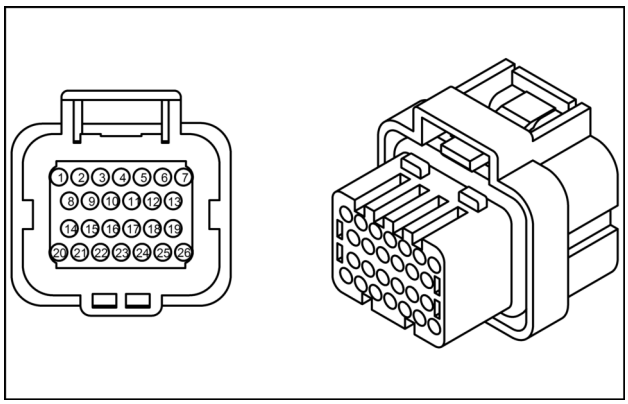
87733581 3

87733581

Pin	From	Wire	Description	Color-Size	Frame
1A	**X-026 pin 25** ENGINE 1	CB-9	CB-9	GN - 0.75	**SHEET 04**
2A	SP-060-P-X	CB-206	CB-206	RD - 2.0	**SHEET 05**
3A	SP-073-P-X	CB-211	CB-211	RD - 2.0	
4A	SP-049-P-X	CB-201	CB-201	RD - 1.5	
5A	SP-100-P-X	CB-28	CB-28	BL - 2.5	
6A	**X-036 pin D3** F=R7, E=R8, D=R9, C=R10, B=R11,	CB-227	CB-227	BL - 2.0	
7A	**X-074 pin F3** F=R15, E=R16, D=R17, C=R18, B=19	CB-253	CB-253	VT - 1.5	
8A	**X-106 pin A1** ROOF HARNESS	CB-175	CB-175	GN - 1.5	
9A	SP-093-P-X	CB-250	CB-250	VT - 3.0	
10A	**X-074 pin E3** F=R15, E=R16, D=R17, C=R18, B=19	CB-174	CB-174	GN - 1.5	
11A	**X-106 pin A8** ROOF HARNESS	CB-402	CB-402	VT - 1.5	**SHEET 06**
12A	SP-044-P-X	CB-357	CB-357	GN - 2.0	
13A	SP-023-P-X	CB-482	CB-482	GN - 1.5	
14A	SP-014-P-X	CB-583	CB-583	VT - 1.0	
15A	SP-068-P-X	CB-404	CB-404	VT - 1.0	
16A	**X-005 (Male) pin 24**	CB-136	CB-136	YE - 1.0	
17A	SP-057-P-X	CB-499	CB-499	BL - 2.0	
18A	SP-054-P-X	CB-293	CB-293	GN - 2.0	
19A	SP-058-P-X	CB-439	CB-439	BR - 2.0	
20A	**X-106 pin C4** ROOF HARNESS	CB-376	CB-376	RD - 0.75	
1B	SP-052-P-X	CB-199	CB-199	YE - 1.5	**SHEET 03**
3B	**X-034 pin B87** R3 & R4	CB-224	CB-224	BR - 2.5	**SHEET 05**
5B	**X-034 pin B30** R3 & R4	CB-223	CB-223	BR - 4.0	
6B	SP-050-P-X	CB-127	CB-127	BR - 4.0	
7B	SP-059-P-X	CB-126	CB-126	BR - 2.5	
10B	SP-041-P-X	CB-115	CB-115	BR - 2.5	
11B	SP-050-P-X	CB-122	CB-122	BR - 3.0	**SHEET 06**
14B	**X-147 pin 1** MEMORY +	CB-119	CB-119	BR - 3.0	**SHEET 02**
17B	SP-053-P-X	CB-133	CB-133	BL - 3.0	**SHEET 06**
18B	SP-053-P-X	CB-134	CB-134	BL - 3.0	
20B	**X-003 (Male) pin 2** STARTER SWITCH	CB-111	CB-111	WH - 1.5	

Pin	From	Wire	Description	Color-Size	Frame
17	**X-022 (Female) pin 13** TRANSMISSION 1	CB-270	CB-270	RD - 1.0	**SHEET 15**
20	**X-002 (Male) pin 2** CLUTCH POTENTIOMETER	CB-538	CB-538	YE - 0.75	**SHEET 16**
21	**X-020 (Female) pin 39** TRANSMISSION 2	CB-403	CB-403	RD - 1.0	**SHEET 17**
23	**X-066 pin A3** SWITCH PANEL	CB-540	CB-540	RD - 0.75	**SHEET 19**
24	**X-681 (Male) pin 9** EHR LOCK SW	CB-82	CB-82	GY - 1.0	**SHEET 17**
25	**X-684 (Male) pin 2** FRONT HITCH DETECT	CB-272	CB-272	WH - 1.0	

X-098 - AUXILIARY CONTROL UNIT (ACU) -CN2 (87694552) (Male)

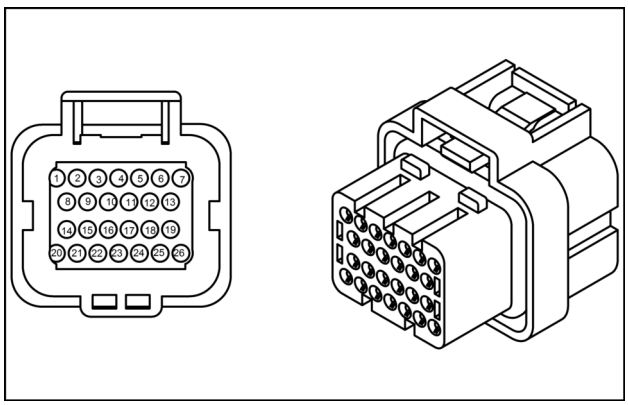


87694552 8

87694552

Pin	From	Wire	Description	Color-Size	Frame
1	**X-020 (Female) pin 14** TRANSMISSION 2	CB-383	CB-383	OR - 1.0	**SHEET 20**
3	**X-020 (Female) pin 8** TRANSMISSION 2	CB-508	CB-508	TN - 1.0	
6	**X-020 (Female) pin 10** TRANSMISSION 2	CB-397	CB-397	TN - 1.0	
7	**X-024 (Female) pin 14** ENGINE 2	CB-290	CB-290	OR - 0.75	**SHEET 21**
13	**X-020 (Female) pin 13** TRANSMISSION 2	CB-385	CB-385	OR - 1.0	**SHEET 20**
18	**X-066 pin C3** SWITCH PANEL	CB-400	CB-400	OR - 0.75	**SHEET 21**
19	**X-061-2 pin 1** FRONT PTO LAMP	CB-332	CB-332	OR - 0.75	
21	SP-075-P-X	CB-67	CB-67	BK - 1.0	**SHEET 16**
26	SP-075-P-X	CB-68	CB-68	BK - 1.0	

X-099 - AUXILIARY CONTROL UNIT (ACU) -CN1A (82028493) (Male)

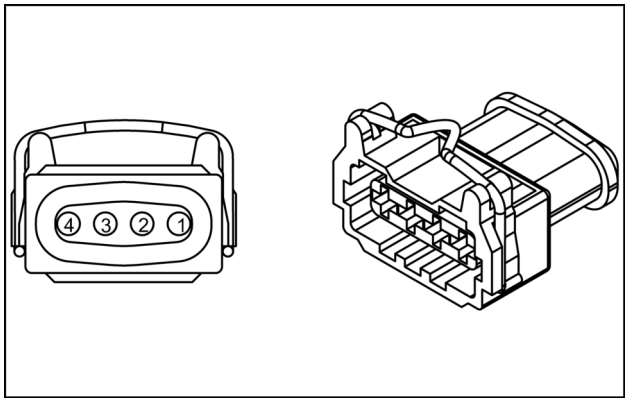


82028493 9

82028493

Pin	From	Wire	Description	Color-Size	Frame
1	SP-082-P-X	CB-80	CB-80	BK - 1.5	**SHEET 33**
2	**X-071 pin 5A** F41 TO F60 MINI FUSE	CB-587	CB-587	YE - 1.5	

X-225 - A/C PRESSURE SWITCH (87696713) (Male)

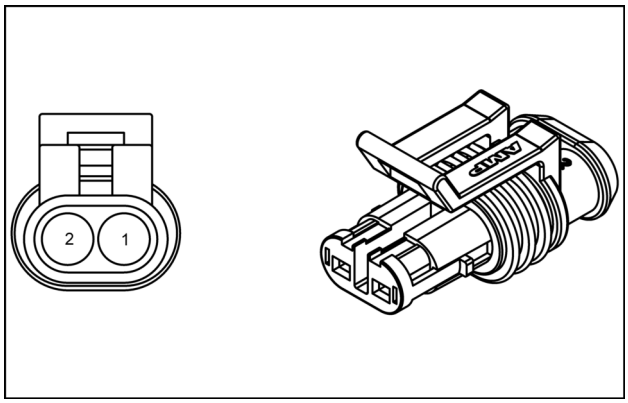


87696713 3

87696713

Pin	From	Wire	Description	Color-Size	Frame
1	**X-024 (Male) pin 40** ENGINE 2	EN-12	EN-12	BL - 0.75	**SHEET 29**
2	**X-024 (Male) pin 39** ENGINE 2	EN-13	EN-13	BL - 0.75	
2	**X-024 (Male) pin 39** ENGINE 2	13	13	PRP - 0.75	
3	**X-024 (Male) pin 44** ENGINE 2	EN-92	EN-92	YE - 0.75	
3	**X-024 (Male) pin 44** ENGINE 2	92	92	YE - 0.75	
4	**X-024 (Male) pin 42** ENGINE 2	EN-91	EN-91	BR - 0.75	
4	**X-024 (Male) pin 42** ENGINE 2	91	91	BR - 0.75	

X-226 - (82012083) (Male)



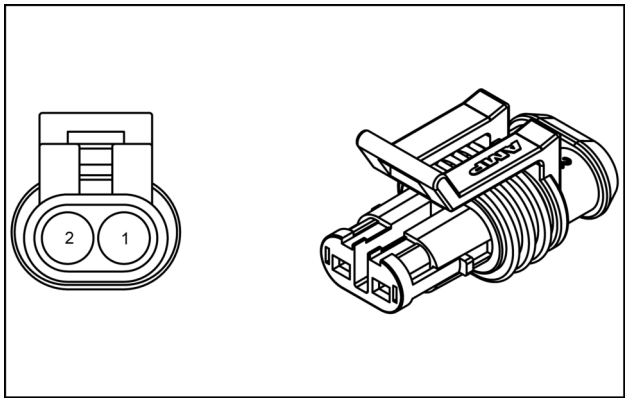
82012083 4

82012083

Pin	From	Wire	Description	Color-Size	Frame
1	**X-024 (Male) pin 38** ENGINE 2	EN-10	EN-10	LG - 1.0	**SHEET 29**
1	**X-024 (Male) pin 38** ENGINE 2	EN-10	EN-10	LG - 1.0	
2	SP-139-P-X	EN-11	EN-11	BK - 1.0	**SHEET 13**
2	**X-226 (Male) pin 2**	1458	1458	BK - 1.0	
2	**X-226 (Male) pin 2**	1458	1458	BK - 1.0	

Pin	From	Wire	Description	Color-Size	Frame
A	SP-153-P-X	TR-67	TR-67	BK - 0.75	**SHEET 18**
A	SP-153-P-X	TR-66	TR-66	BK - 0.75	
B	SP-427-P-X	TR-71	TR-71	TN - 0.75	
B	SP-167-P-X	TR-65	TR-65	TN - 0.75	
C	**X-472 (Male) pin 1** TRANS OIL TEMP SENDER	TR-57	TR-57	YE - 0.75	

X-276 - PTO SOLENOID (82012083) (Male)

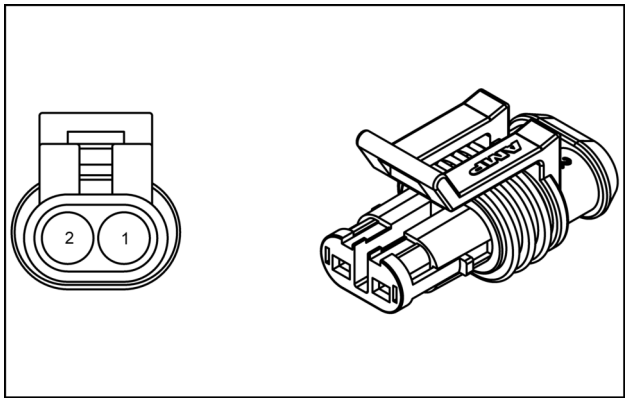


82012083 4

82012083

Pin	From	Wire	Description	Color-Size	Frame
1	**X-022 (Male) pin 3** TRANSMISSION 1	TR-56	TR-56	LG - 1.0	**SHEET 15**
1	**X-278 pin 1** DIFF LOCK SOLENOID	TR-11	TR-11	OR - 0.75	
2	SP-152-P-X	TR-10	TR-10	BK - 1.0	
2	**X-022 (Male) pin 5** TRANSMISSION 1	TR-19	TR-19	OR - 0.75	

X-277 - PTO BRAKE (82012083) (Male)



82012083 5

82012083

Pin	From	Wire	Description	Color-Size	Frame
1	**X-022 (Male) pin 4** TRANSMISSION 1	TR-31	TR-31	BR - 1.0	**SHEET 19**
2	SP-152-P-X	TR-13	TR-13	BK - 1.0	**SHEET 15**

Wire connectors - Component diagram 44

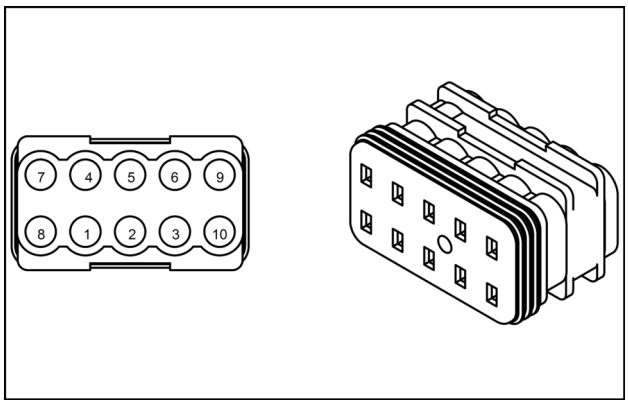
X-441 - (Male)

X-442 - (Male)

Pin	From	Wire	Description	Color-Size	Frame
1	**X-117 (Male) pin 1** POWER STUDS	101	101	BK - 1.0	**SHEET 33**

Wire connectors - Component diagram 61

X-611 - HEATED MIRROR SWITCH (84819781) (Male)

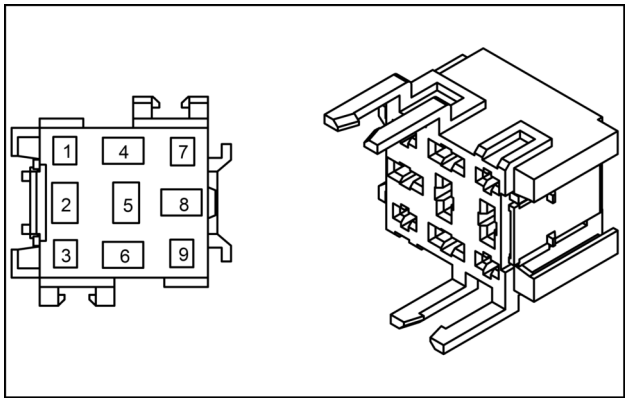


84819781 1

84819781

Pin	From	Wire	Description	Color-Size	Frame
2	SP-117-P-X	CB-553	CB-553	RD - 0.75	**SHEET 31**
3	**X-612 pin 6** HEATED MIRRIRS RELAY	CB-598	CB-598	RD - 0.75	
7	SP-075-P-X	CB-609	CB-609	BK - 0.75	**SHEET 16**
8	SP-127-P-X	CB-576	CB-576	RD - 0.75	**SHEET 31**
9	SP-089-P-X	CB-762	CB-762	BK - 0.75	
10	SP-049-P-X	CB-764	CB-764	RD - 0.75	

X-612 - HEATED MIRRORS RELAY (87715146) (Male)

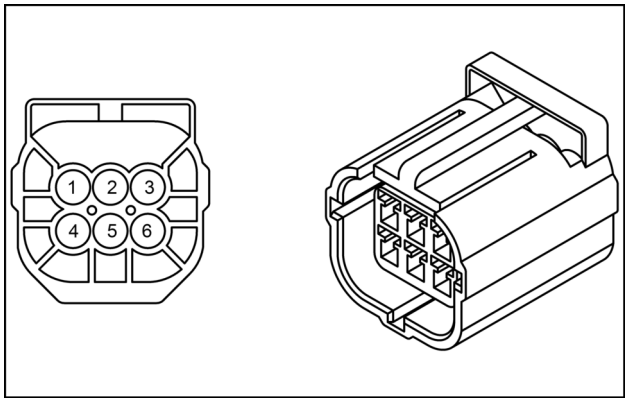


87715146 2

87715146

Pin	From	Wire	Description	Color-Size	Frame
2	SP-127-P-X	CB-577	CB-577	RD - 0.75	**SHEET 38**
4	SP-087-P-X	CB-578	CB-578	BK - 0.75	
5	SP-117-P-X	CB-574	CB-574	RD - 1.5	
6	**X-611 (Male) pin 3** HEATED MIRROR SW	CB-598	CB-598	RD - 0.75	
8	SP-120-P-X	CB-608	CB-608	VT - 1.0	

X-659 - LINK LEVELLING (82002274) (Female)



82002274 5

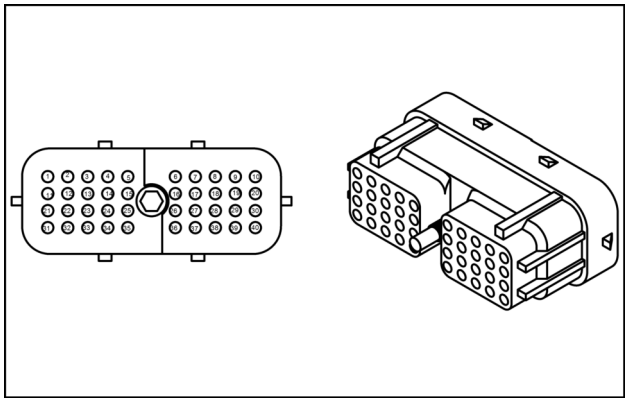
82002274

Pin	From	Wire	Description	Color-Size	Frame
1	SP-152-P-X	TR-171	TR-171	BK - 1.0	**SHEET 15**
2	**X-020 (Male) pin 33** TRANSMISSION 2	TR-21	TR-21	WH - 1.0	**SHEET 20**
3	**X-020 (Male) pin 34** TRANSMISSION 2	TR-22	TR-22	WH - 1.0	
4	**X-020 (Male) pin 35** TRANSMISSION 2	TR-62	TR-62	WH - 1.0	
5	**X-020 (Male) pin 36** TRANSMISSION 2	TR-94	TR-94	WH - 1.0	
6	**X-020 (Male) pin 38** TRANSMISSION 2	TR-156	TR-156	WH - 1.0	

X-659 - LINK LEVELLING (Male)

Pin	From	Wire	Description	Color-Size	Frame
1	SP-261-P-X	1	1	BK - 1.0	**SHEET 15**
2	**X-672 (Male) pin 1**	4	4	WH - 0.75	**SHEET 20**
3	**X-673 (Male) pin 1**	5	5	WH - 0.75	
4	**X-674 (Male) pin 1**	2	2	WH - 0.75	
5	**X-675 (Male) pin 1**	3	3	WH - 0.75	
6	**X-671 (Male) pin 1**	6	6	WH - 0.75	

X-716 - (87706495) (Male)

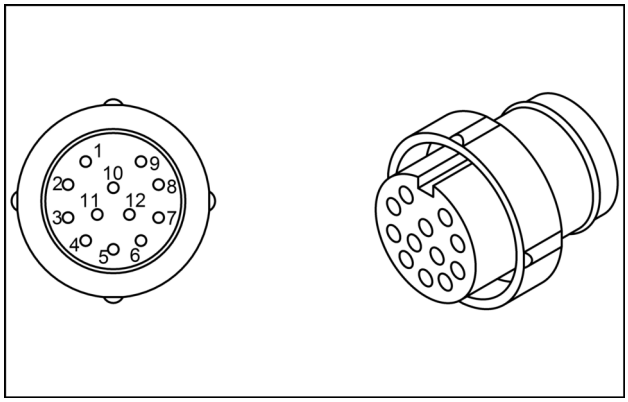


87706495 7

87706495

Pin	From	Wire	Description	Color-Size	Frame
3	SP-340A-P-X	30	30	RD - 0.75	**SHEET 52**
13	SP-340B-P-X	31	31	PRP - 0.75	

X-717 - (84164959) (Male)

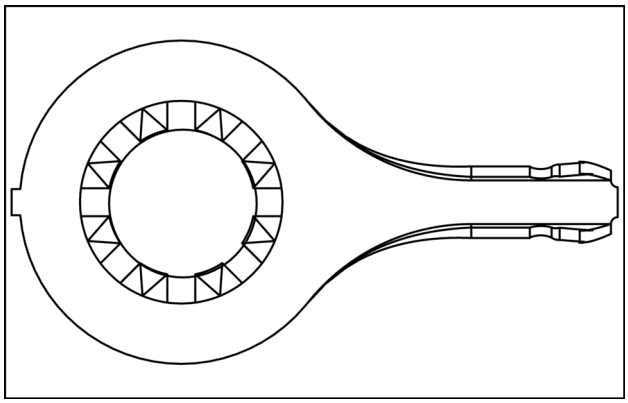


84164959 8

84164959

Pin	From	Wire	Description	Color-Size	Frame
2	SP-119-P-X	70	70	BR - 0.35	**SHEET 27**
3	SP-121-P-X	71	71	WH - 0.35	
5	SP-118-P-X	72	72	YE - 0.35	
10	SP-004-P-X	73	73	SL - 0.35	
11	SP-005-P-X	74	74	BK - 0.35	

X-718 - (82867096) (Male)

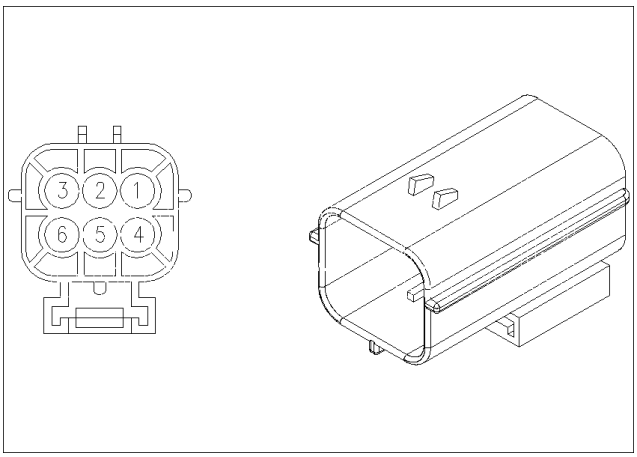


82867096 9

82867096

Wire connectors - Component diagram 78

X-787 - (87688721) (Female)



87688721 1

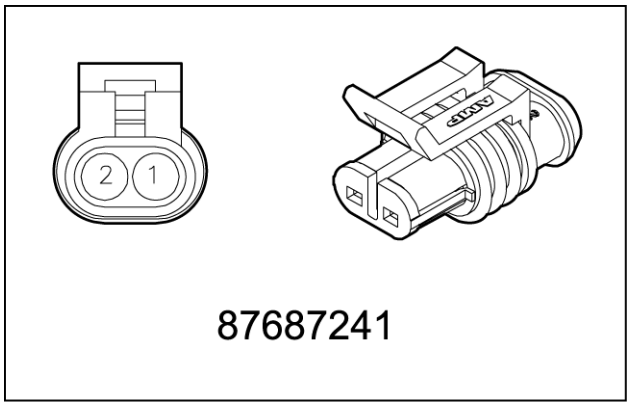
87688721

Pin	From	Wire	Description	Color-Size	Frame
3	**X-788 (Male) pin 1**	39	39	BK - 1.0	**SHEET 25**
4	**X-788 (Male) pin 2**	10	10	GN - 1.0	

X-787 - (Male)

Pin	From	Wire	Description	Color-Size	Frame
1	SP-398-P-X	1	1	GN - 1.0	**SHEET 25**
2	SP-399-P-X	2	2	BK - 1.0	
3	**X-777 (Male) pin 2**	7	7	BK - 1.0	
4	**X-777 (Male) pin 5**	6	6	GN - 1.0	
5	**X-400 (Male) pin 4**	9	9	BR - 0.75	

X-788 - (87687241) (Male)



87687241 2

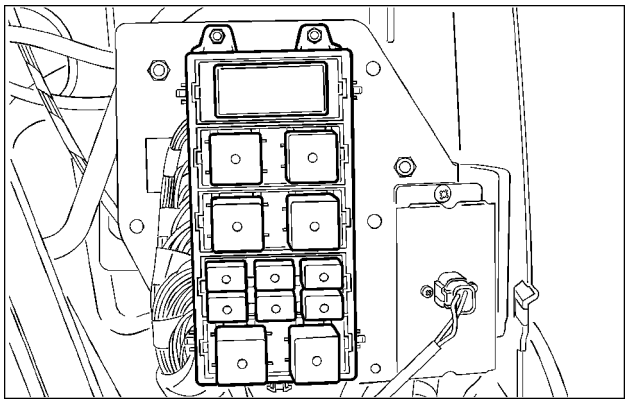
87687241

Pin	From	Wire	Description	Color-Size	Frame
1	**X-787 (Female) pin 3**	39	39	BK - 1.0	**SHEET 25**
2	**X-787 (Female) pin 4**	10	10	GN - 1.0	

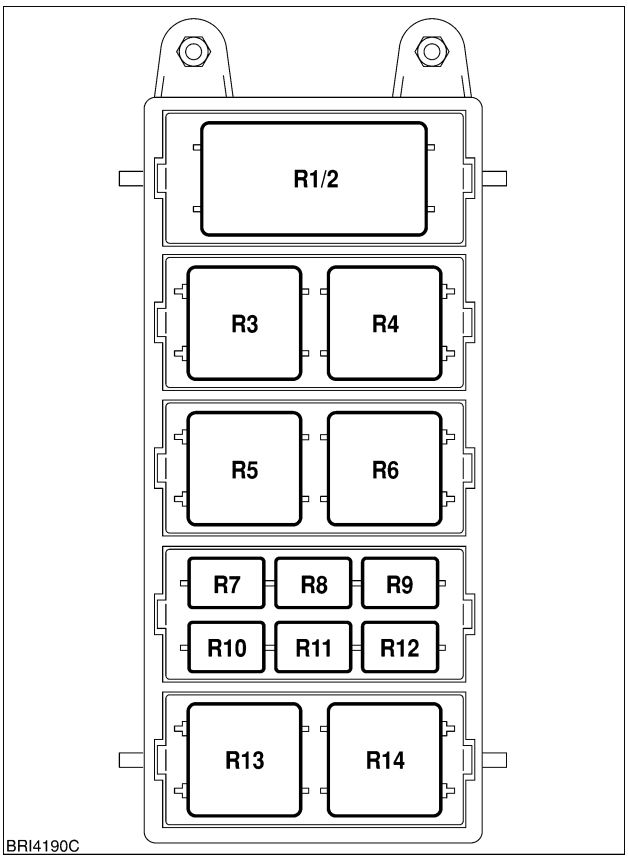
Relay box

The relay box is located on the front of the right-hand control console. To access the relays, remove the screws and protective cover.

NOTICE: *Always keep the machine shut down with the ignition key in the off position (OFF) when removing or installing a relay.*



BRI4212A 3



BRI4190C 4

Relay	Role
R1 / R2	Wiper switches module for the front wind shield and wiper switches module for the rear wind shield
R3	Ignition Relay
R4	Side lights
R5	Starter on
R6	Fan motor
R7	Low Beam
R8	Brake lights
R9	High beam
R10	Power source for trailer hydraulic brake
R11	Power source for trailer pneumatic brake
R12	Power source for air braking system
R13	Power source for engine electronic system
R14	not used

Contents

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Alternator - 301

(*) See content for specific models

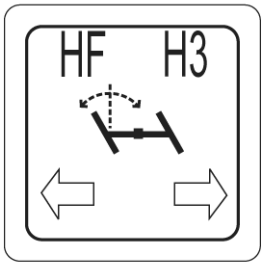
Electrical systems - 55

Engine cooling system - 012

T7.240 With cab, 18X6, TIER 3 [HCCZ7240CFCP38297 -]
T7.245 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]
T7.260 With cab, 18X6, TIER 3 [HCCZ7245CFCP38297 -]

STEERING SENSOR SELECTION OPTIONS

Press the Dimmer button to select the steering sensor sub-system.

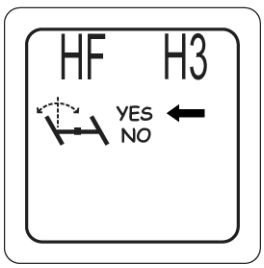


BAIL06CCM412AVA

BAIL06CCM412AVA 10

NOTE: *The default setting is "No", without steering angle sensor.*

Scroll through the available options using the "h" and "m" buttons.



BAIL06CCM413AVA

BAIL06CCM413AVA 11

Press and hold the "h" or "m" buttons to store the selection. A beep sounds to confirm the selection.

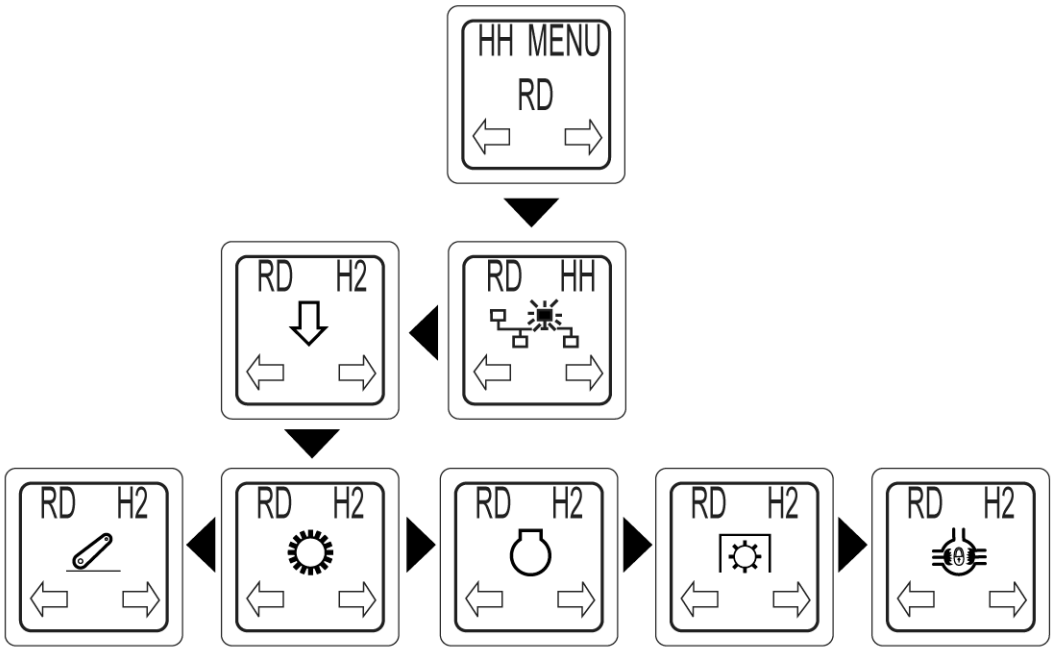
To use the "HH" menu further, press the Dimmer button.

H2 - DISPLAY STORED CALIBRATION VALUES

This menu is used to display the calibration values of the following units, stored in the control units:

1. Transmission clutches and synchronisers
2. Differential lock (for steering angle sensor)
3. Engine (for PTO torque sensor)
4. Electronic draft control valve
5. Rear PTO clutch

H2 Menu page selection diagram



BAIL06CCM444FVA

BAIL06CCM444FVA 2

Channel 1 - Dynamometer power boost test

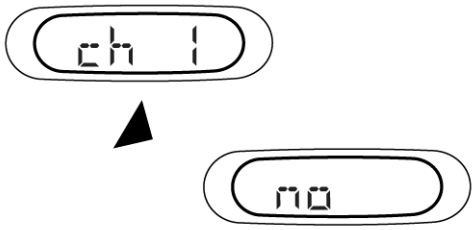
This channel makes it possible to test the tractor with a dynamometer with maximum boost.

NOTE: *The boost is only active for* ***45 minutes****.*

Scroll through the available options using the "h" and "m" buttons.

The available options are:

- YES - Power boost activated
- NO - Power boost deactivated



BAIL06CCM506AVA

BAIL06CCM506AVA 27

To store the desired option, press and hold the "h" or "m" button until the instrument cluster indicates by a beep that the selection has been stored.
To use the "HH" menu further, press the Dimmer button.

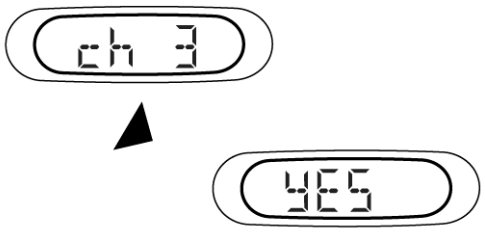
Channel 2 - Not used

Channel 3 - Grid heater selection

Scroll through the available options using the "h" and "m" buttons.

The available options are:

- YES - Grid heater installed
- NO - Grid heater not installed



BAIL06CCM505AVA

BAIL06CCM505AVA 28

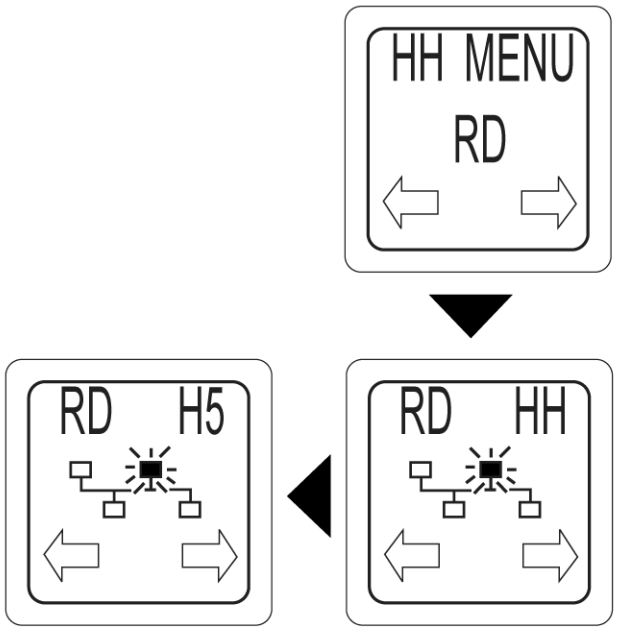
To store the desired option, press and hold the "h" or "m" button until the instrument cluster indicates by a beep that the selection has been stored.
To use the "HH" menu further, press the Dimmer button.

H5 - SWITCH OPERATION TEST

This menu shows a pre-defined code, if a switch's signal exchange is recorded.

This function is available in all sub-systems.

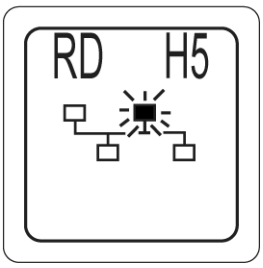
H5 Menu page selection diagram



BAIL06CCM461FVA

BAIL06CCM461FVA 53

Press the Dimmer button to call up the H5 Menu.



BAIL06CCM462AVA

BAIL06CCM462AVA 54

Channel	Con-troller pin	Description	Typical reading	Comments
37	CN1B - 7	Slip limit control potentiometer	84 Clockwise - 14 Anti-clockwise	
38	CN1B - 9	Right hand load sensing pin	46	No mounted implement
39	CN1B - 10	Left hand load sensing pin	46	No mounted implement
40	CN1B - 8	Draft load control potentiometer	88 Clockwise - 10 Anti-clockwise	
41	CN3A - 7	EDC raise switch (bone)	30 Not actuated - 68 Actuated	
42	CN3A - 26	EDC lower switch (bone)	30 Not actuated - 68 Actuated	
43	CN2 - 8	Current solenoid valve clutch A	70 Engaged - 0 Disengaged	
44	CN2 - 1	Current solenoid valve clutch B	70 Engaged - 0 Disengaged	
45	CN2 - 5	Current solenoid valve clutch C	70 Engaged - 0 Disengaged	
46	CN2 - 3	Current solenoid valve clutch D	70 Engaged - 0 Disengaged	
47	CN3B - 1	Current solenoid valve clutch E	70 Engaged - 0 Disengaged	
48	CN3A - 6	EDC raise / work fault line	0 Not actuated - 99 Actuated	
49	CN3B - 18	Rear PTO solenoid current	0 Off - 99 On	
52	CN3B - 2	Creeper solenoid current	0 Off - 99 On	
58	CN3B - 3	Low range solenoid current	0 Off - 70 On	
59	CN2 - 7	Mid range solenoid current	0 Off - 70 On	
60	CN2 - 2	High range solenoid current	0 Off - 70 On	
61	CN2 - 13	19th gear solenoid current		
62	CN3B - 10	19th gear dump solenoid current		
66	CN3B - 4	Reverse range solenoid current	0 Off - 70 On	
76	CN1B - 12	Forwards position sensor of the shuttle lever	30 Not actuated - 68 Actuated	
77	CN1B - 13	Reverse position sensor of the shuttle lever	30 Not actuated - 68 Actuated	
80	CN4 - 16	Park lock switch (shuttle lever)	30 Park lock On - 68 Park lock Off	
81	CN3A - 10	Upshift button	30 Not actuated - 68 Actuated	
82	CN3A - 11	Downshift button	30 Not actuated 68 Actuated	
83	CN3A - 17	Hand throttle low idle input	0 at low idle - 99 not at low idle	
84	via CAN	Boost pressure engine intake		
85	via CAN	Engine intake boost pressure sensor		
86	via CAN	Oil temperature sensor		
87	via CAN	Rail pressure sensor		
88	via CAN	Fuel temperature sensor		
89	CN3A - 2	Hand throttle potentiometer 2	4 at idle - 36 at maximum rpm	
90	CN3A - 1	Hand throttle potentiometer 1	6 at idle - 73 at maximum rpm	
91	CN1B - 1	Foot throttle potentiometer	10 at idle - 85 at maximum rpm	
97	via CAN	EHR joystick (X)		
98	via CAN	EHR joystick (Y)		

Explanations:

VF input signal: This is the input voltage into the controller to transmission components not directly affected by the clutch pedal switch, i.e. forward and reverse synchroniser solenoid, creeper solenoid and four wheel drive solenoids.

Code	Description	Possible Failure
U14	Valve 31 (lower lockout) solenoid open circuit	1) Check the wiring harness
U15	Valve 30 (upper lockout) and Valve 31 (lower lockout) solenoid connectors swapped	1) Check the wiring harness
U16	Valve 30 (upper lockout) and Valve 31 (lower lockout) current sense inputs swapped	1) Check the wiring harness
U17	Front Suspension pressure switch open circuit	1) Check the wiring harness 2) Check the pressure switch
U18	Front Suspension pressure switch short circuit	1) Check the wiring harness 2) Check the pressure switch

Rear Hydraulic Electronic Remote Valves Calibration 'U' Error Codes

Code	Description	Possible Failure
U61	Lever No.1 not in neutral	Ensure that lever No.1 is set to the neutral position before starting the calibration procedure for that lever
U62	Lever No.2 not in neutral	Ensure that lever No.2 is set to the neutral position before starting the calibration procedure for that lever
U63	Lever No.3 not in neutral	Ensure that lever No.3 is set to the neutral position before starting the calibration procedure for that lever
U64	Lever No.4 not in neutral	Ensure that lever No.4 is set to the neutral position before starting the calibration procedure for that lever

Front Hitch Calibration 'U' Error Codes

Code	Description	Possible Failure
U110	Position potentiometer value too high or the hitch is not raised	Hitch was not raised before height limit control was changed from ON to OFF position

Steering Calibration 'U' Error Codes

Code	Description	Possible Failure
U21	ERPM is below 1300, increase throttle	1) Operator has not set the correct engine speed 2) Instrument cluster is not powered 3) Broken CAN bus Note: Use the HE menu to see if the engine speed is being detected
U71	Calibration attempted while enable switch is off	1) The enable switch is in the off position 2) The enable switch is in the on position at start up but needs to be cycled through off then on to enable the system
U72	Proximity sensor input is out of range - open	1) Incorrect position of steering wheel 2) Faulty proximity sensor 3) Check the proximity sensor connection
U73	Proximity sensor input is out of range - closed	1) Incorrect position of steering wheel 2) Faulty proximity sensor 3) Check the proximity sensor connection
U74	LVDT calibration has been unsuccessful (out of range after 4th attempt)	1) Faulty LVDT sensor 2) Faulty steering hydraulic valve 3) Incorrect assembly of hydraulic valve 4) Check the LVDT sensor connection

H Menu - General Functions

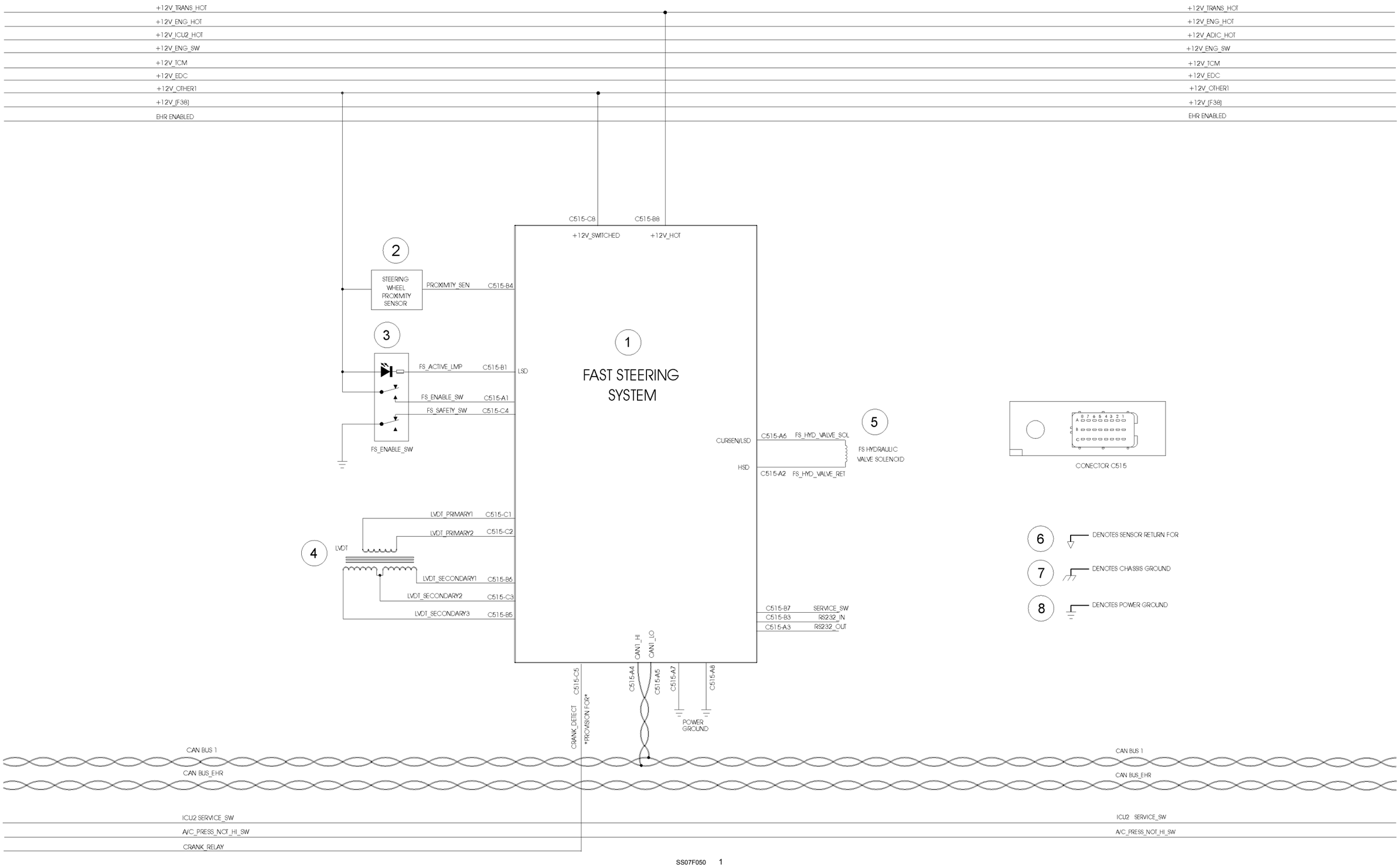
The H Menus include the following menu codes.

NOTE: *Please note that not all of the H Menus listed here are available for all control units.*

HH	Service menu
H1	Calibration procedures
H2	Display stored calibration values
H3	Configurations and options
H4	Display software version number
H5	Switch operation test
H6	Display vehicle information
H7	Vehicle test modes
H8	Clearing the EEPROM memory
H9	Voltmeter
HA	Demonstration mode
HB	Display stored fault codes
HC	Clear all stored fault codes
HD	Direct access to transmission set-ups (not available using the diagnostics switch)
HE	Display frequency inputs
HF	Display controller hardware information
HJ	EHR valve number programming

Symbols in the dot matrix display

1. Engine 
2. Transmission 
3. Differential lock 
4. EDC 
5. Front hitch 
6. PTO 
7. EHR valves 
8. Front axle suspension 
9. Four-wheel drive 
10. Fast steer system 


+12V_TRANS_HOT
+12V_ENG_HOT
+12V_ICU2_HOT
+12V_ENG_SW
+12V_TCM
+12V_EDC
+12V_OTHER1
+12V_(F38)
EHR ENABLED
+12V_TRANS_HOT
+12V_ENG_HOT
+12V_ADIC_HOT
+12V_ENG_SW
+12V_TCM
+12V_EDC
+12V_OTHER1
+12V_(F38)
EHR ENABLED
C515-C8
+12V_SWITCHED
C515-B8
+12V_HOT
2
STEERING WHEEL PROXIMITY SENSOR
PROXIMITY_SEN
C515-B4
3
FS_ACTIVE_LMP
C515-B1
LSD
FS_ENABLE_SW
C515-A1
FS_SAFETY_SW
C515-C4
FS_ENABLE_SW
1
FAST STEERING SYSTEM
CURSEN/LSD
C515-A6
FS_HYD_VALVE_SOL
HSD
C515-A2
FS_HYD_VALVE_RET
5
FS HYDRAULIC VALVE SOLENOID
CONECTOR C515
LVDT_PRIMARY1
C515-C1
LVDT_PRIMARY2
C515-C2
4
LVDT
LVDT_SECONDARY1
C515-B6
LVDT_SECONDARY2
C515-C3
LVDT_SECONDARY3
C515-B5
C515-B7
SERVICE_SW
C515-B3
RS232_IN
C515-A3
RS232_OUT
6
DENOTES SENSOR RETURN FOR
7
DENOTES CHASSIS GROUND
8
DENOTES POWER GROUND
CAN1_HI
CAN1_LO
C515-A4
C515-A6
C515-A7
C515-A8
C515-C5
CRANK_DETECT
PROVISION FOR
POWER GROUND
CAN BUS 1
CAN BUS_EHR
CAN BUS 1
CAN BUS_EHR
ICU2 SERVICE_SW
A/C_PRESS_NOT_HI_SW
CRANK_RELAY
ICU2 SERVICE_SW
A/C_PRESS_NOT_HI_SW

SS07F050 1

Channel Number	Description
Ch 4	Fuel filter heater selection

Channel 1 - Dyno Power Boost Test

This channel is used to allow the tractor to be dynamometer tested with maximum powerboost.

Use the "h" and "m" buttons to toggle between the available options:
"OFF" - Dyno power boost test mode is off (normal vehicle operation).
"Std" - Dyno power boost test mode is on (straight unboosted curve without any limitations).
"bSt" - Dyno power boost test mode is on (straight boosted curve without any limitations).

When the desired option is displayed depress and hold the "h" or "m" button until the instrument cluster bleeps, indicating the selection has been stored.

NOTE: *If enabled, the dyno power boost test will only be active for 45 minutes.*

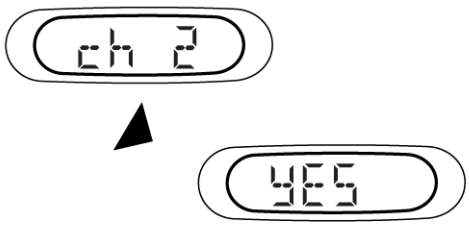
NOTE: *The default setting for this option is “OFF”.*

Depress the "dimming" button to continue navigating the "HH" menus.

Channel 2 - Auto Modes Option

This channel is used to enable or disable the vehicle’s auto modes, e.g. Autoshift, CRPM and Powerboost.

After a delay the current stored option will be displayed.



BAIL06CCM501AVA

BAIL06CCM501AVA 13

Use the "h" and "m" buttons to toggle between the available options:
"Yes" - Auto modes enabled
"No" - Auto modes disabled

When the desired option is displayed depress and hold the "h" or "m" button until the instrument cluster bleeps, indicating the selection has been stored.

Depress the "dimming" button to continue navigating the "HH" menus.

Index

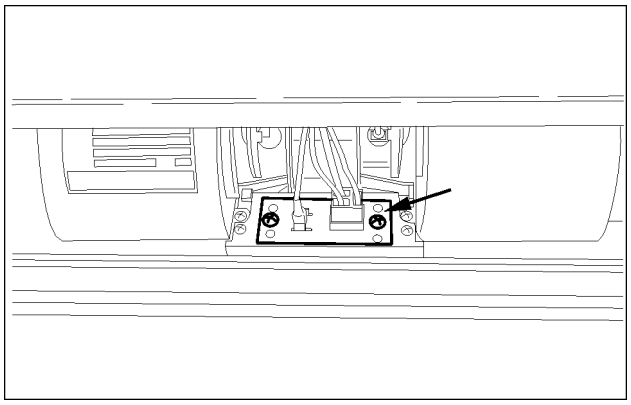
Electrical systems - 55

Front axle control system - 045

(*) See content for specific models

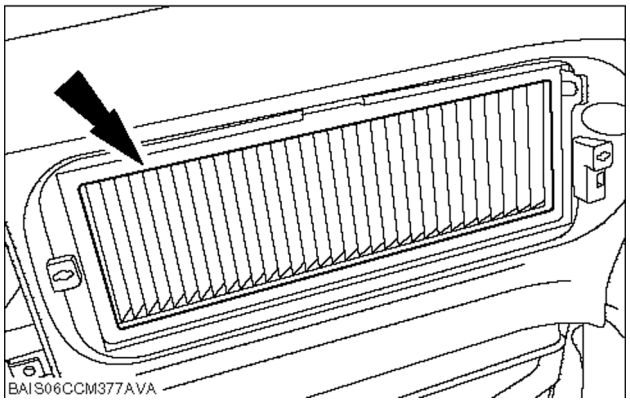
Assembly

4. Fit the voltage divider.
   Tighten the retaining screws and connect the connector.



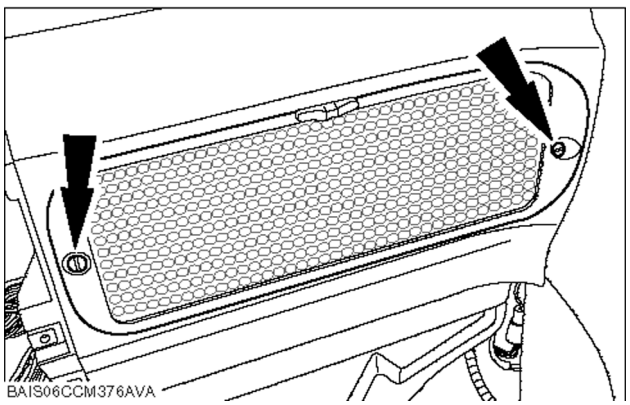
SS08D014 4

5. Insert the air circulation filter element again.



BAIS06CCM377AVA 5

6. Re-fit the air circulation grating.



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The processor **(1)** is located behind the panel, to the rear of the operator's seat

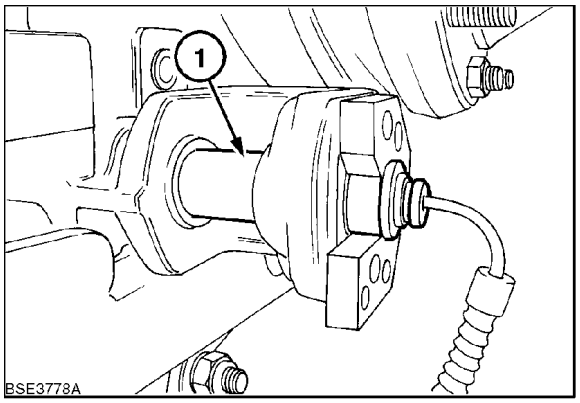
The processor converts the electronic signals from the operator's commands, from the lifting arm positioning sensor potentiometer and from the lower linkage load sensor pins to operate the pulse width modulation valve and raise/lower the hydraulic lift.

The processor also has a self-diagnostic feature that detects when the system is not working correctly. When this occurs, an error code is generated and kept in the processor's memory so it can be recovered during tractor fault diagnostics.

Draft sensor

The load sensor pins **(1)** detect variations in the drag force applied by the implement to the lower linkages.

The pins react to the drag shear forces in the horizontal plane, but not to the force from the implement's weight.



BSE3778A 5