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DISTRIBUTION SYSTEMS - A

PRIMARY HYDRAULIC POWER SYSTEM Electro-hydraulic remote valve - 10.C

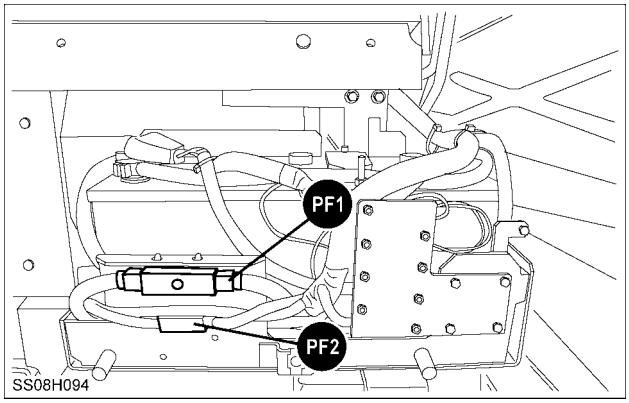
Puma 165 CVX
Puma 180 CVX
Puma 195 CVX
Puma 210 CVX
Puma 225 CVX

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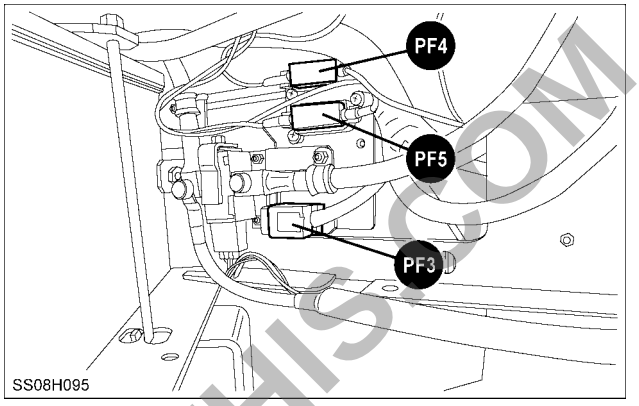
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Fuses for the electrical supply

Fuse No.	Amps	Fuse-protected power supply
PF1	250	Power Fuse, Main power supply B+ (250A)
PF2	30	Power Fuse, Power Supply CCU
PF3	30	Power Fuse, Power Supply Memory



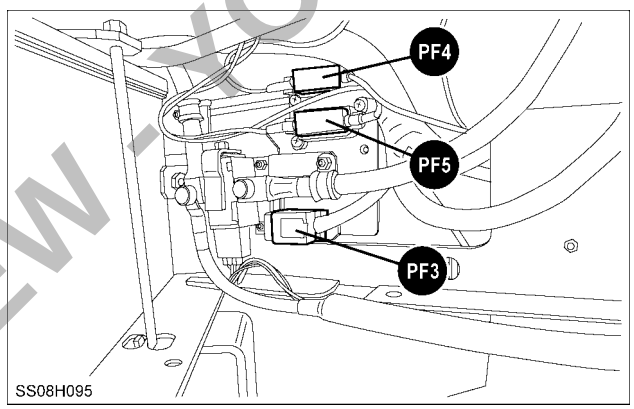
SS08H094 2



SS08H095 3

Main current fuses for the ISO BUS power supply (if installed)

Fuse No.	Amps	Fuse-protected power supply
PF4	30	Power Fuse, ISO Bus Rear
PF5	30	Power Fuse, ISO Bus Rear
PF6	30	Power Fuse, ISO Bus Front
PF7	30	Power Fuse, ISO Bus Front



SS08H095 4

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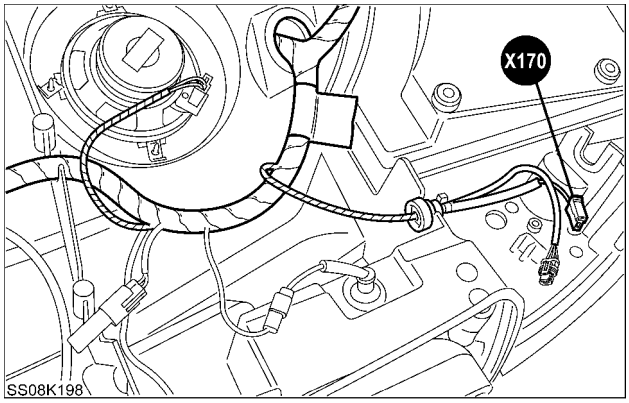
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Connector - Component diagram 17

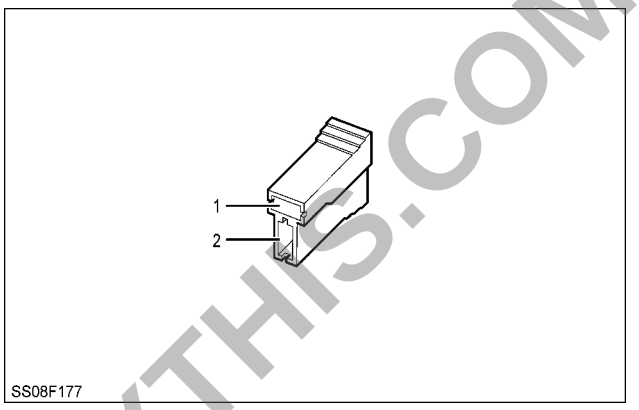
X170 ROTATING BEACON RIGHT HAND

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	4012B (L)	ROTATING BEACON FEED
2	57Y (B)	EARTH (ALL)

NOTE: *For the wiring color code refer to,* ***Wiring harness - Overview (A.30.A)****.*



SS08K198 1



SS08F177 2

RIGHT HAND CAB ROOF

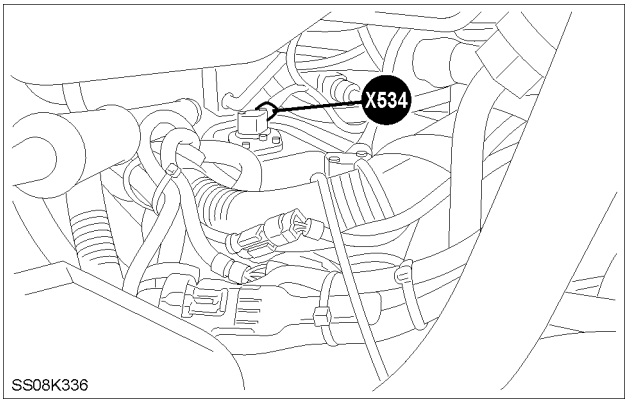
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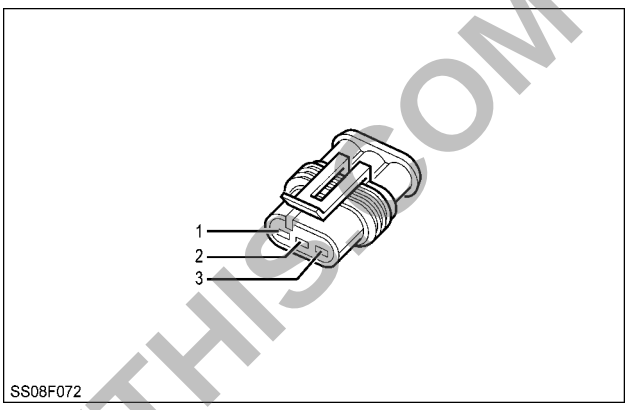
X534 POTENTIOMETER SYNCHRONISER F4 - R2

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	7970 (L)	TRANS MED/REV
2	5020P (TN)	EDC PROC +5V REF VOLTAGE DROP POSN/RATE
3	60BR (B/W)	SENSOR GROUND

NOTE: *For the wiring color code refer to,* ***Wiring harness - Overview (A.30.A)****.*



SS08K336 5



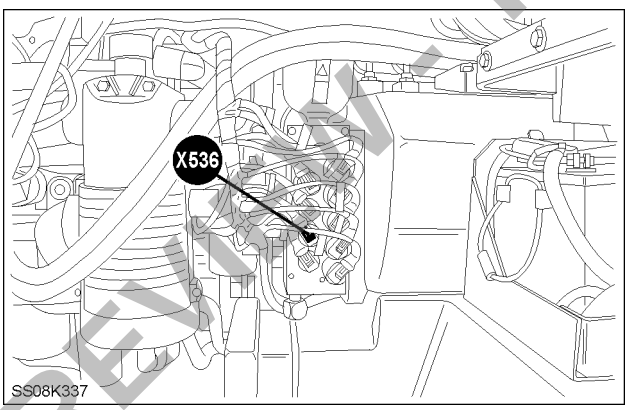
SS08F072 6

RIGHT HAND TOP OF TRANSMISSION

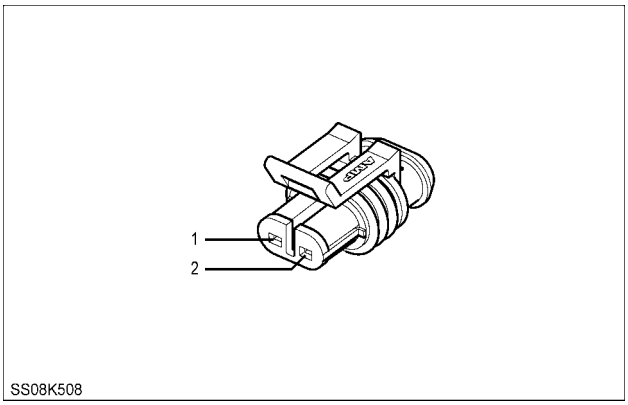
X536 SOLENOID VALVE R1

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	7220 (S)	TRANSMISSION HIGH RANGE
2	7225 (W)	TRANS HI RANGE SOL - RET

NOTE: *For the wiring color code refer to,* ***Wiring harness - Overview (A.30.A)****.*



SS08K337 7



SS08K508 8

RIGHT HAND TRANSMISSION

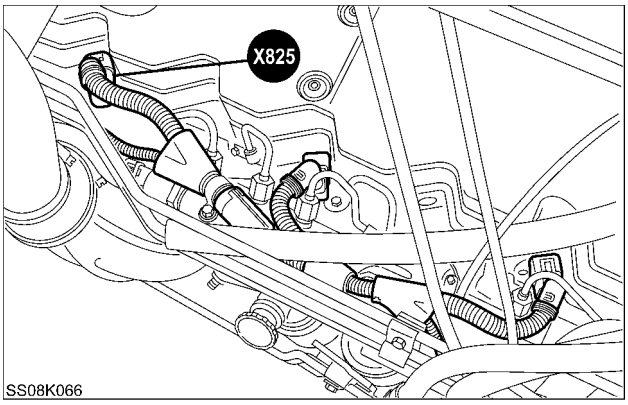
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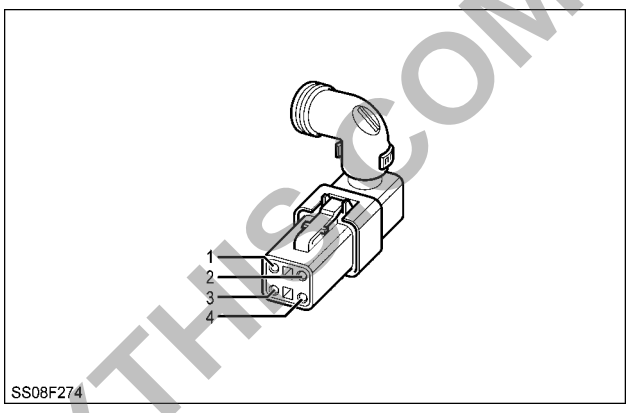
X825 INJECTOR CYLINDER 1 & 2 (EDC16)

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	N/B	PLUS
2	S/R	MINUS
3	S/Y	PLUS
4	N/W	MINUS

NOTE: *For the wiring color code refer to,* ***Wiring harness - Overview (A.30.A)****.*



SS08K066 5



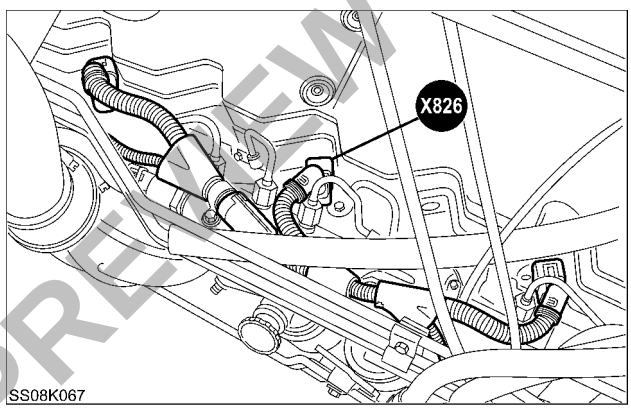
SS08F274 6

LEFT HAND TOP ENGINE

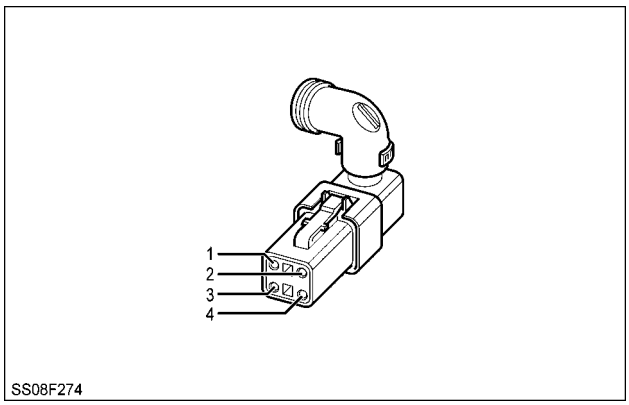
X826 INJECTOR CYLINDER 3 & 4 (EDC16)

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	W/G	PLUS
2	U/O	MINUS
3	S/B	PLUS
4	B/P	MINUS

NOTE: *For the wiring color code refer to,* ***Wiring harness - Overview (A.30.A)****.*



SS08K067 7



SS08F274 8

LEFT HAND TOP ENGINE

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Wiring harness - Electrical schematic frame 32 Lighting

Component	Connector	Description
A062	**X053**	Flasher Unit
E011	**X689**	Extremity Light Right Hand
E012	**X688**	Extremity Light Left Hand
K004	**X034**	Lights Relay
S021	**X004**	Main Light Switch
S046	**X434**	Hazard Switch
Additional Connectors: **X007**		

Wire Colour Codes

B	Black	S	Slate	G	Green	P	Purple
N	Brown	R	Red	LG	Light Green	K	Pink
LN	Light Brown	O	Orange	U	Blue	W	White
L	Lilac	Y	Yellow	TQ	Turquoise		

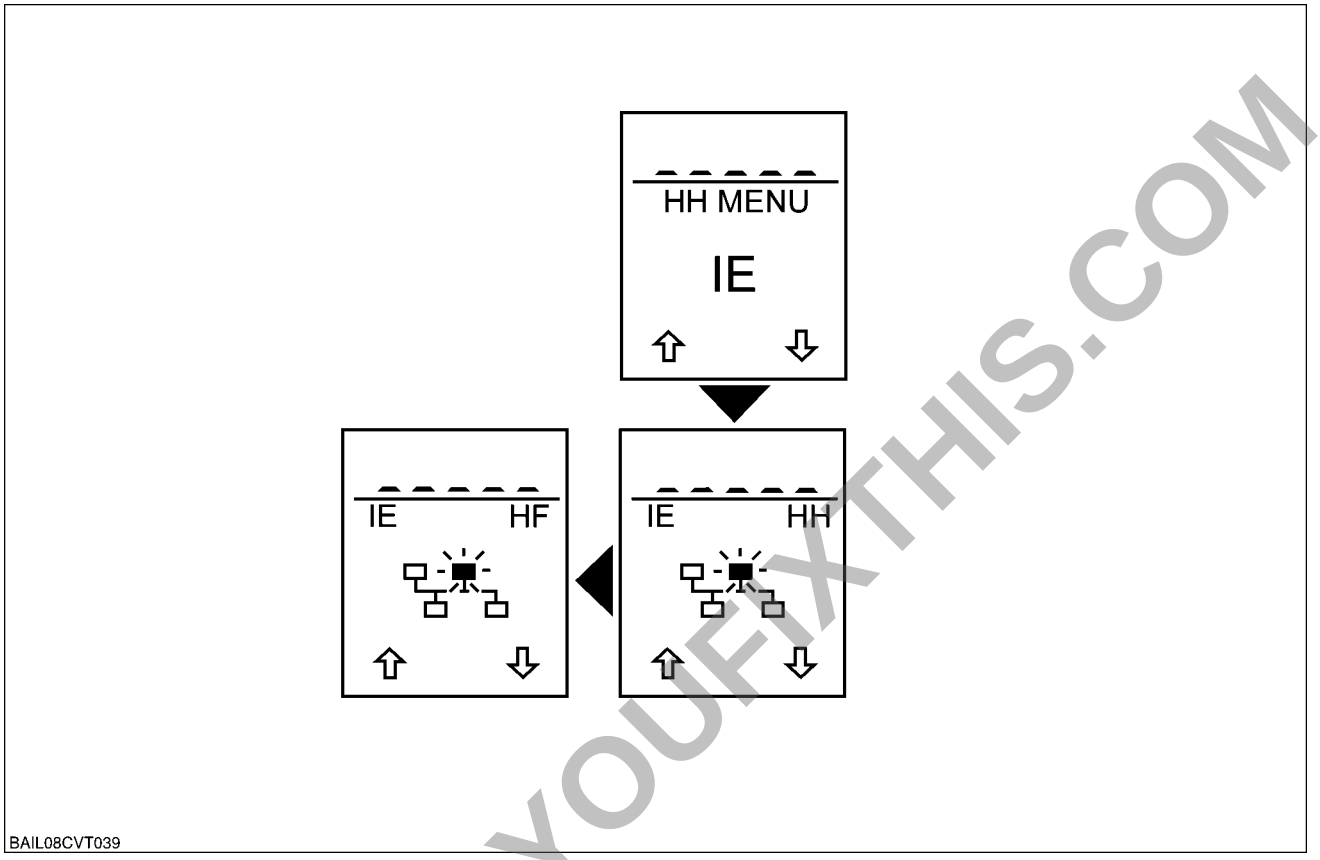
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HF - VIEW CONTROLLER HARDWARE INFORMATION

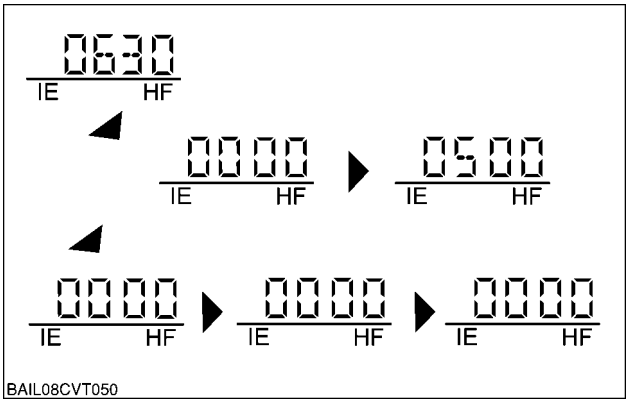
This menu allows the hardware identification, hardware version and serial number to be displayed.

HF Menu Screen Select Diagram



BAIL08CVT039 36

There is a sequence of six numbers. The first set indicates the hardware identification.
The second and third sets indicate the hardware version
The fourth, fifth and sixth sets indicate the 12 digit module serial number
562 Hardware identification
0000 0500 Hardware version
0000 0000 0000 Serial number
and return to allow navigation of the “HH" menus.

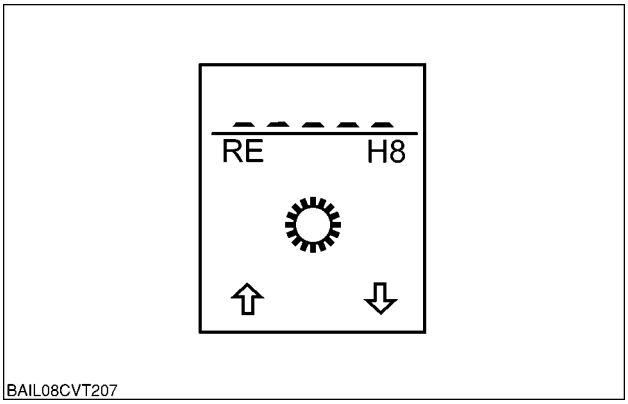


BAIL08CVT050 37

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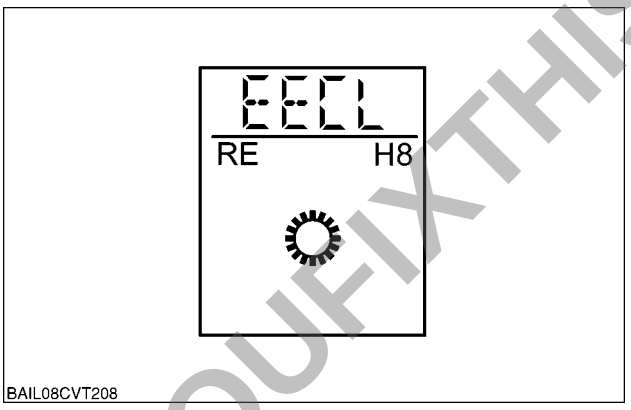
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If only a specific sub-system EEPROM requires to be reset, select the sub-system that requires the EEPROM to be reset by depressing the "menu" key, as the example shown.



BAIL08CVT207 59

The upper section of the display will display “EECL" .



BAIL08CVT208 60

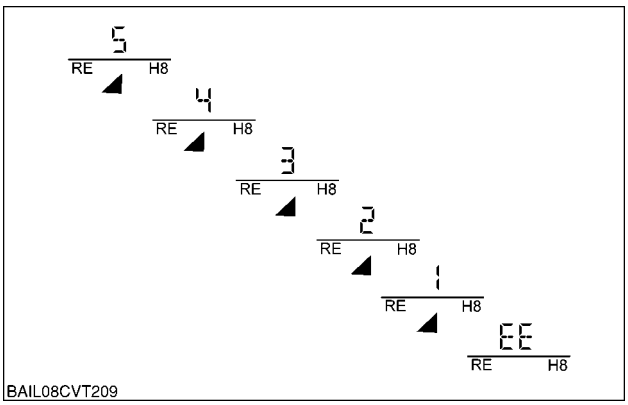
⚠ CAUTION ⚠

H8 will clear all calibrations values and stored error codes.

B006

NOTE: *If the navigation “down" key is released before the countdown finishes, the procedure will be aborted.*

Depress and hold the navigation “down" key to confirm the resetting of the EEPROM.
The upper section of the display will countdown from 5 to 1, then “EE" will be displayed to indicate the EEPROM has been cleared.
Turn the keystart OFF.

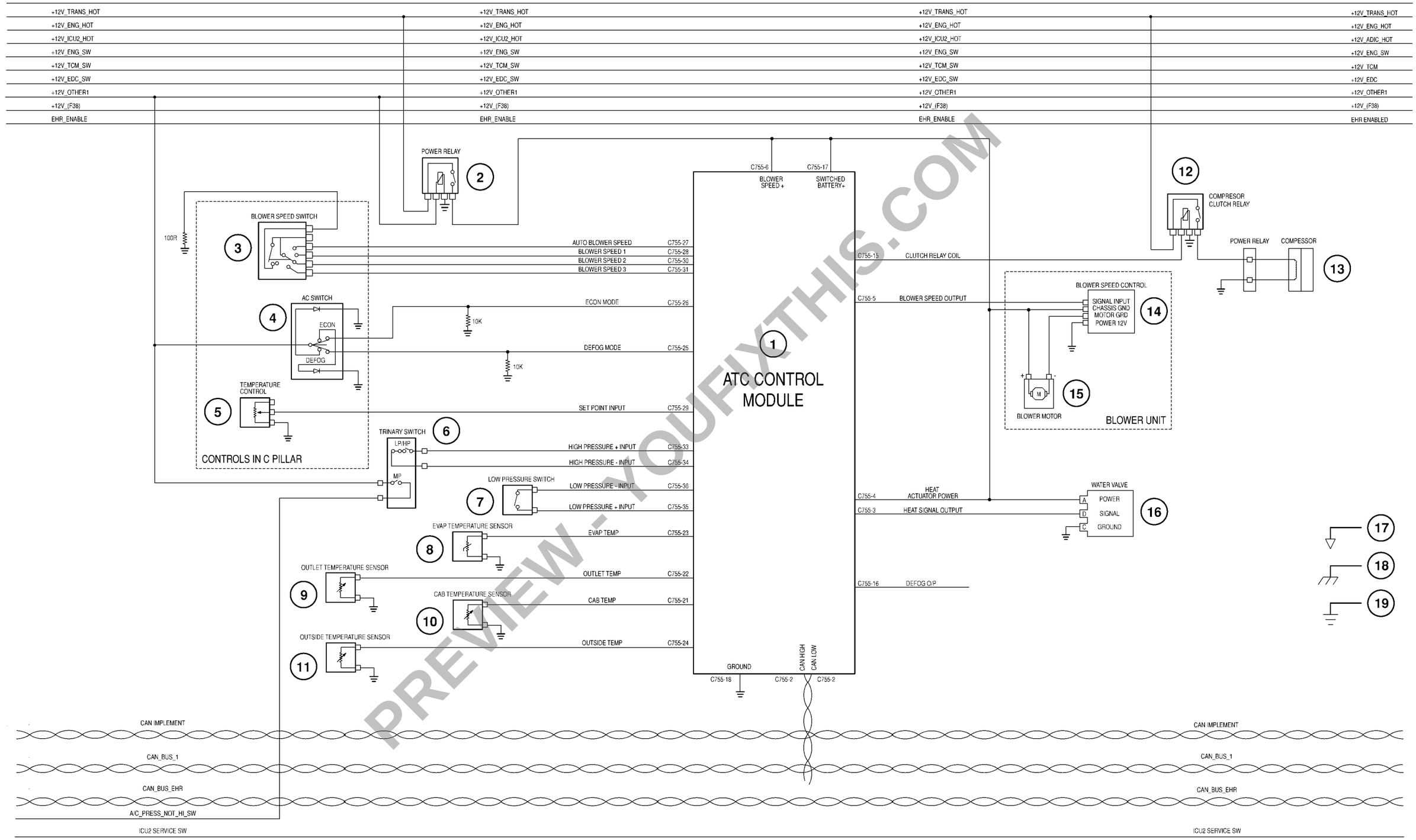


BAIL08CVT209 61

NOTE: *If the "down" key is released before the countdown finishes, the procedure will be aborted.*

Turn the keystart OFF.

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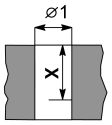
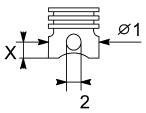
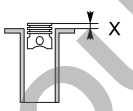
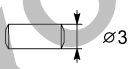
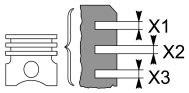
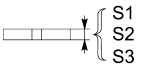
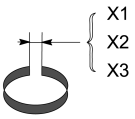


BRK5909B

5_BRK5909C 1

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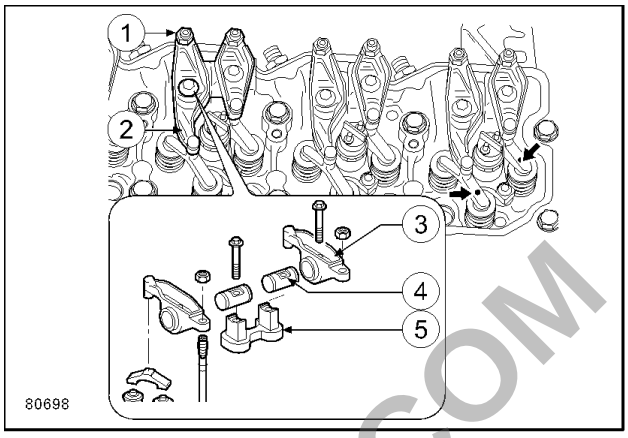
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ASSEMBLY CLEARANCES – DATA		
Engine		F4DE9684
Type		6 cylinders
CRANK GEAR AND CYLINDER ASSEMBLY DATA		
Cylinder linersØ1		**104 - 104.024 mm** (**4.0945 - 4.0954 in**)
Cylinder liners:		
outside diameter	Ø2	–
length	L	–
Cylinder liners – crankcase seats (interference)		–
Outside diameter	Ø2	–
Cylinder liners:		
inside diameter .	Ø2	–
Pistons supplied as spare parts:		–
measurementX		**55.9 mm** (**2.2008 in**)
outside diameter Ø1		**103.73 - 103.748 mm** (**4.0839 - 4.0846 in**)
seat for pin Ø2		**38.010 - 38.016 mm** (**1.4965 - 1.4967 in**)
Piston – cylinder liners		**0.252 - 0.294 mm** (**0.0099 - 0.0116 in**)
Piston diameter	Ø1	**0.5 mm** (**0.0197 in**)
Piston location from crankcase X		**0.28 - 0.42 mm** (**0.0110 - 0.0165 in**)
Piston pin Ø3		**37.994 - 38 mm** (**1.4958 - 1.4961 in**)
Piston pin – pin seat		**0.010 - 0.022 mm** (**0.0004 - 0.0009 in**)
Piston ring grooves X1*		**2.705 - 2.735 mm** (**0.1065 - 0.1077 in**)
X2		**2.44 - 2.46 mm** (**0.0961 - 0.0969 in**)
X3		**4.03 - 4.05 mm** (**0.1587 - 0.1594 in**)
Piston ringsS1*		**2.56 - 2.605 mm** (**0.1008 - 0.1026 in**)
S2		**2.350 - 2.380 mm** (**0.0925 - 0.0937 in**)
S3		**3.970 - 3.990 mm** (**0.1563 - 0.1571 in**)
* measured on Ø of **101 mm** (**3.98 in**)		
Piston rings – grooves1		**0.100 - 0.175 mm** (**0.0039 - 0.0069 in**)
2		**0.040 - 0.900 mm** (**0.0016 - 0.0354 in**)
3		**0.020 - 0.065 mm** (**0.0008 - 0.0026 in**)
Piston rings (oversize)		**0.4 mm** (**0.0157 in**)
Piston ring end opening in cylinder liner:		
X1		**0.3 - 0.4 mm** (**0.0118 - 0.0157 in**)
X2		**0.6 - 0.8 mm** (**0.0236 - 0.0315 in**))
X3		**0.30 - 0.55 mm** (**0.0118 - 0.0217 in**)

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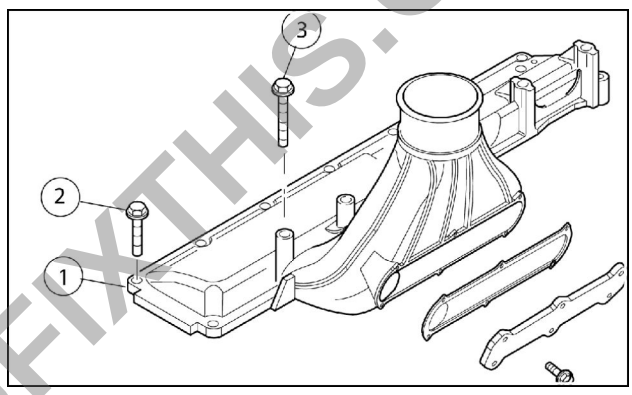
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65. Check that the tappet adjusters **(1)** are loose to prevent them sticking to the rods when refitting the rocker assembly. Fit the rocker assemblies comprising the support **(5)**, rocker arms **(3)**, and spindles **(4)**. Secure them to the cylinder head by tightening the retaining bolts to **36 Nm** (**26.55 lb ft**). To adjust clearance between rockers and valves refer to **Camshaft Tappet - Clearance (B.10.A)**



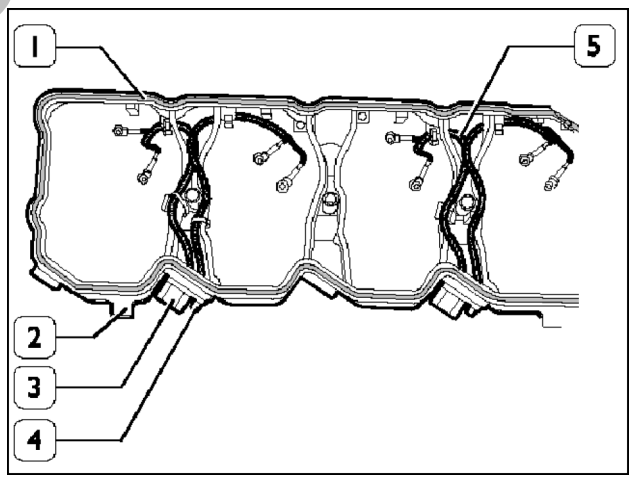
80698 58

66. Apply Loctite 5999 onto the mating surface of the intake manifold **(1)** and tighten the bolts **(2)** and **(3)** to the prescribed torque. Fit temperature and air pressure sensor.



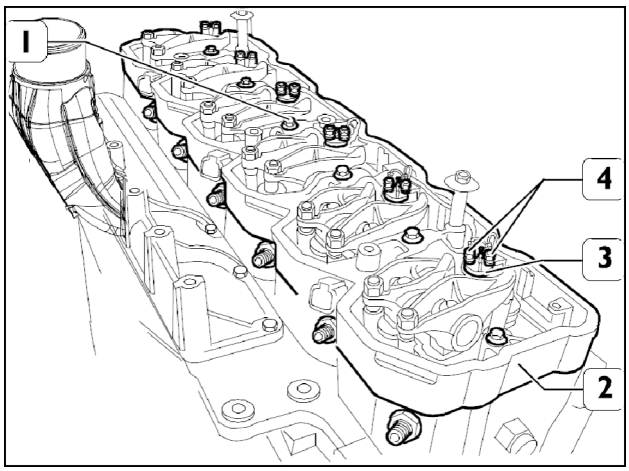
BAIL07APH400AMA 59

67. Check electrical cable **(5)** condition and replace if damaged by cutting the support **(2)** clamps and removing the screws **(4)** that secure it to the connections. Fit a new gasket **(1)** on to the support **(2)**.



BAIL07APH403AMA 60

68. Fit the wiring support **(2)** and tighten the screws **(1)** to the specified torque. Connect the electric cables to the electro-injectors **(3)** and using torque wrench **380000158** tighten the retaining nuts to the specified torque.



BAIL07APH416AMA 61

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Next operation:
Connect the battery, for further information refer to **Battery - Connect (A.30.A)**

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CASE IH
AGRICULTURE

SERVICE MANUAL

POWER TRAIN



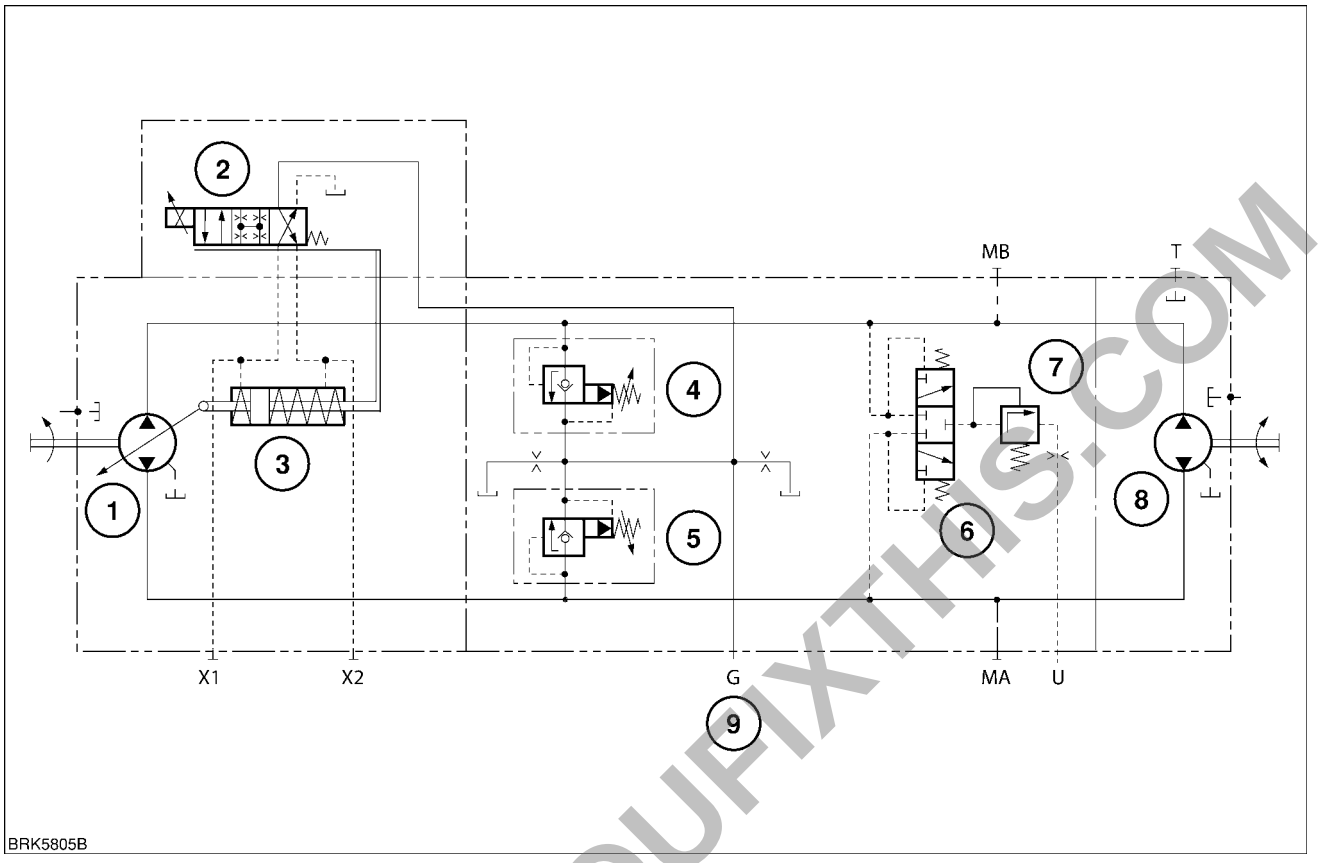
Puma 165 CVX
Puma 180 CVX
Puma 195 CVX
Puma 210 CVX
Puma 225 CVX

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C

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Hydrostat - Hydraulic schema



BAIL08CVT122FSA 1

1.Variable displacement pump
2.Hydrostatic controller
3.Swash plate
4.Pressure limiting valve
5.Pressure limiting valve
6.Flush valve spool
7.Relief valve **480 bar** (**6960.0 psi**)
8.Hydrostatic motor
9.Pressure port **22 bar** (**319.0 psi**)

(X1) and **(X2)** : Control pressure ports
(MA) and **(MB)** : High pressure gauge ports
(U) : Flushing oil port

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Clutch - Assemble ("A" and "B")

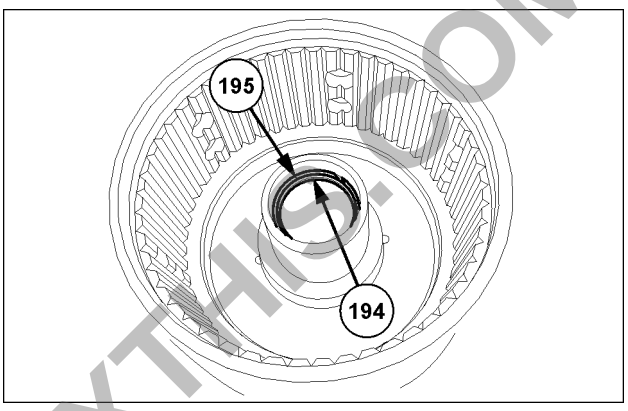
TRANSMISSION Continuously Variable Transmission (CVT) - Exploded view (Transmission output) (C.20.G)

Prior operation:
Clutch - Disassemble ("A" and "B") (C.20.G)

NOTE: *All parts must be oiled before being fitted.*

Clutch "A"

1. Insert the seal ring **(194)** using the drift **380200087** until firmly home and fit the snap ring **(195)**.



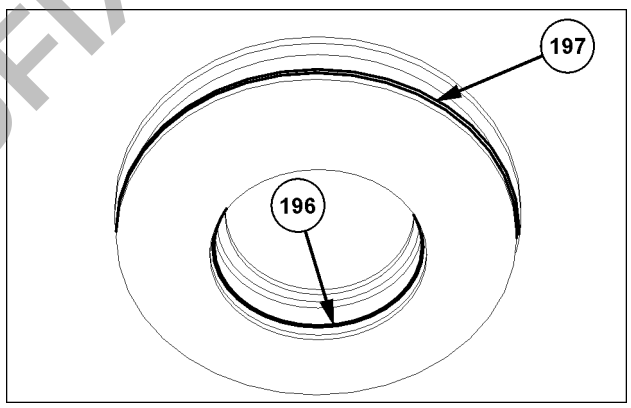
SS08H048 1

2. Heat the new seal rings **(196)** and **(197)** in approximately **60 °C** (**140 °F**) hot oil and fit them onto the piston **(198)**.

NOTE: *Do not stretch or bend the rings too much during assembly.*

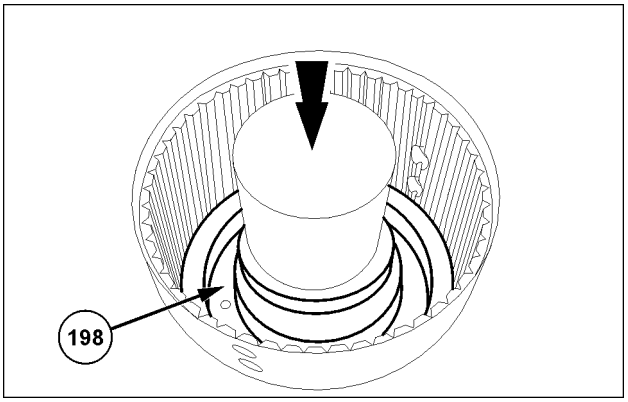
⚠ WARNING ⚠
Always wear heat protective gloves to prevent burning your hands when handling heated parts.

SM121A



SS08H004 2

3. Grease the seal rings with industrial vaseline. Carefully press the piston **(198)** into the outer disc support **(193)**.

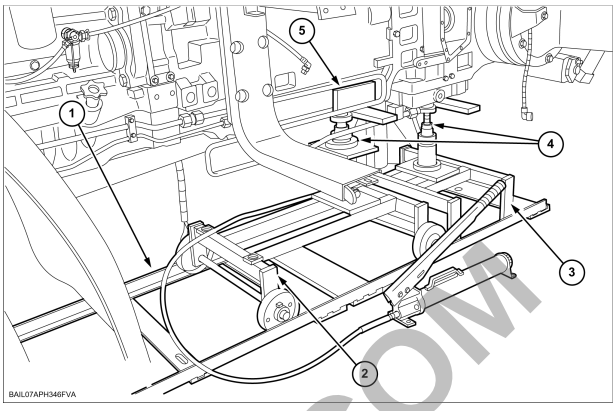


SS08H003 3

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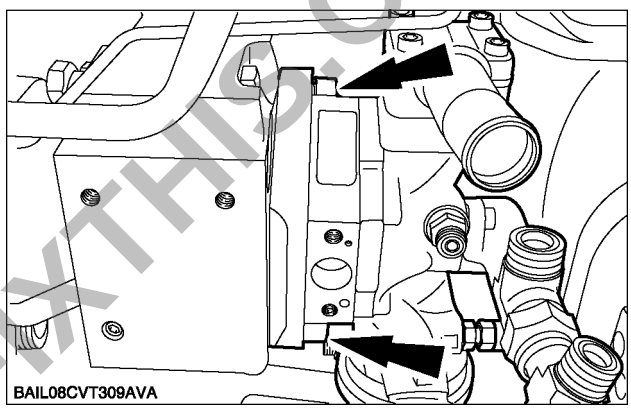
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8. Remove the static part of the splitting gear **(3) MS2700C-2** ,and **(4) MS2700C-4** from under the rear axle.
Remove the wheeled part of the splitting gear **(2) MS2700C-2**, **(4) MS2700C-4** and **(5) MS2700-3/33** from under the transmission.
Remove the splitting gear rails **(1) MS2700C-1** from under the vehicle.



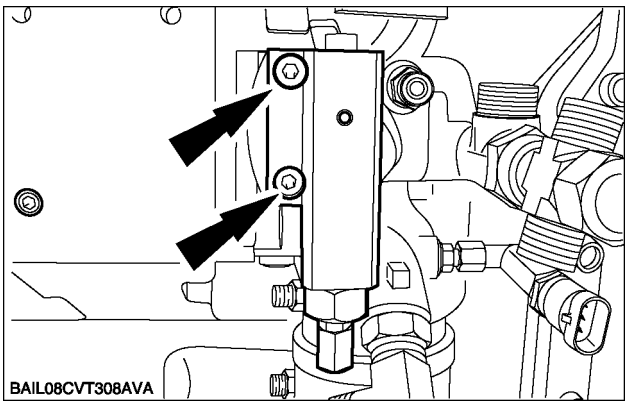
BAIL07APH346FVA 7

9. Install the vane pump.



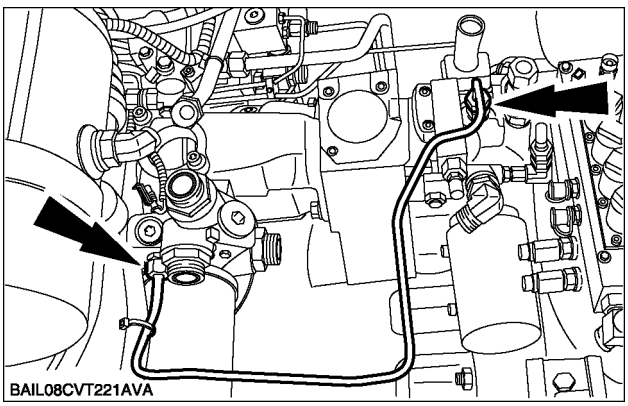
BAIL08CVT309AVA 8

10. Install the pressure control valve to the vane pump.



BAIL08CVT308AVA 9

11. Install the charge pump hydraulic pipe.

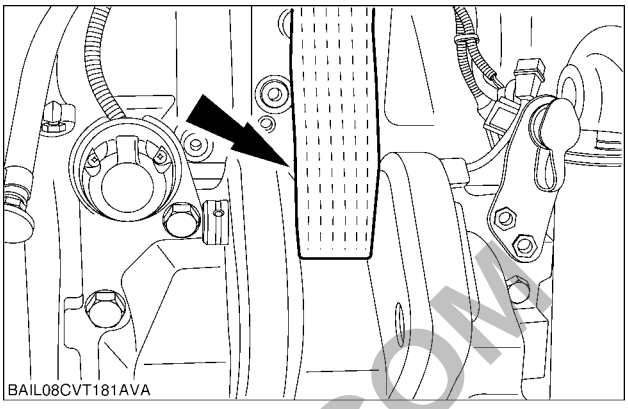


BAIL08CVT221AVA 10

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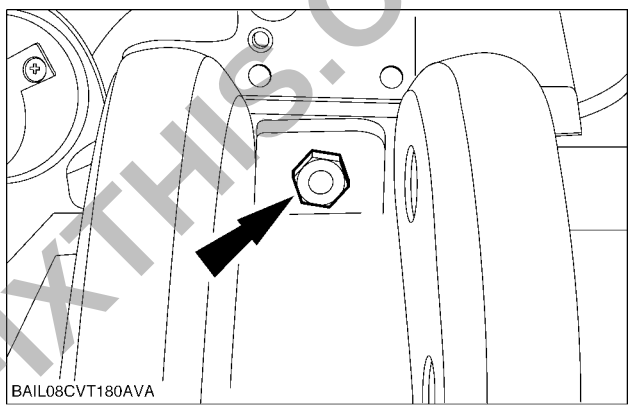
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3. Remove the support from the PTO housing.



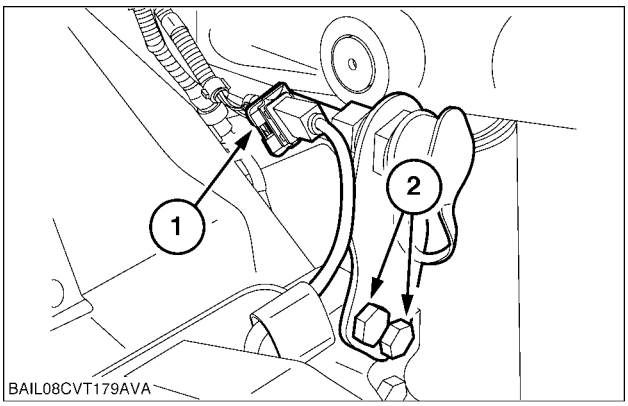
BAIL08CVT181AVA 3

4. Install the top central PTO housing retaining bolt. Tighten to **211 Nm** (**155 lb ft**).



BAIL08CVT180AVA 4

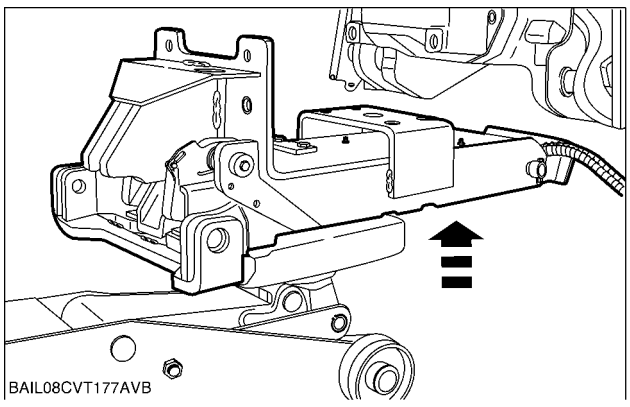
5. Connect the power take off (PTO) speed sensor electrical connector **(1)** and install the hydraulic trailer brake coupling bracket **(2)**.



BAIL08CVT179AVA 5

Vehicles with extending drawbar

6. Install the extending drawbar assembly.



BAIL08CVT177AVB 6

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Differential lock Multi plate clutch - Disassemble Class 4

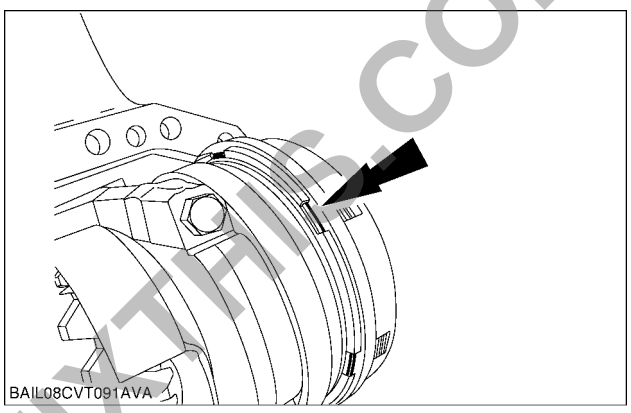
Prior operation:
Remove the Differential, for Further Information Refer to **Differential - Remove (D.10.A)**

⚠ **WARNING** ⚠

Handle all parts carefully. Do not put your hands or fingers between parts. Wear suitable safety clothing - safety goggles, gloves and shoes.

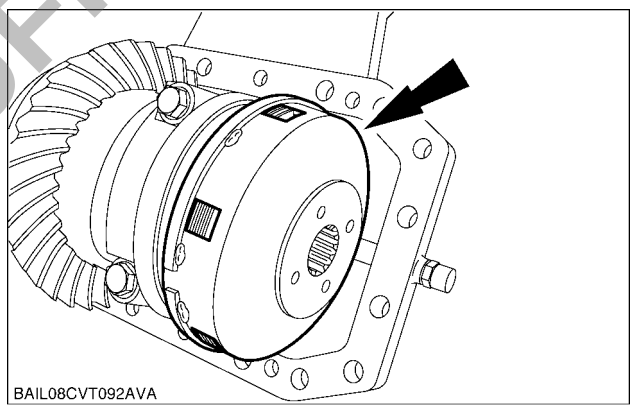
B026

1. Remove the clutch cover snap ring.



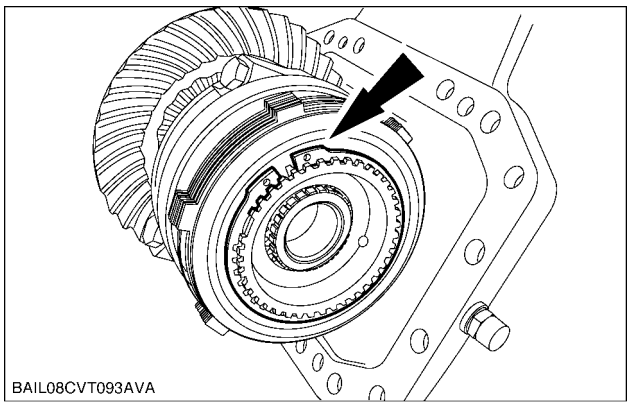
BAIL08CVT091AVA 1

2. Remove the clutch cover.



BAIL08CVT092AVA 2

3. Remove the circlip.



BAIL08CVT093AVA 3

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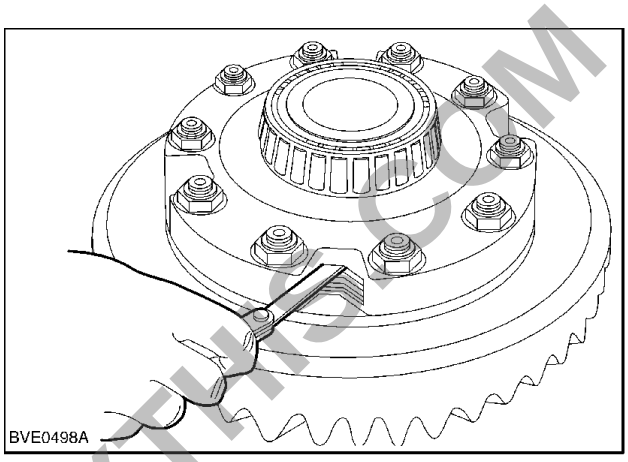
Differential lock - Overhaul

⚠ WARNING ⚠

Handle all parts carefully. Do not put your hands or fingers between parts. Wear suitable safety clothing - safety goggles, gloves and shoes.

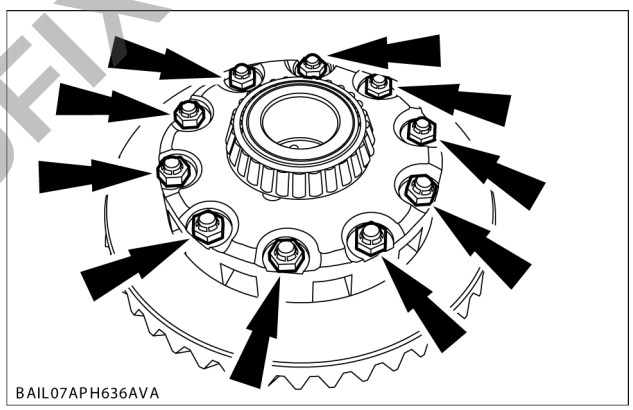
B026

1. Using suitable feeler gauges, check the clearance between the multi-wet plate clutch friction and steel discs. If the clearance is not between **1.35 - 3.1 mm** (**0.05 - 0.12 in**), install new multi-wet plate clutch friction and steel discs.



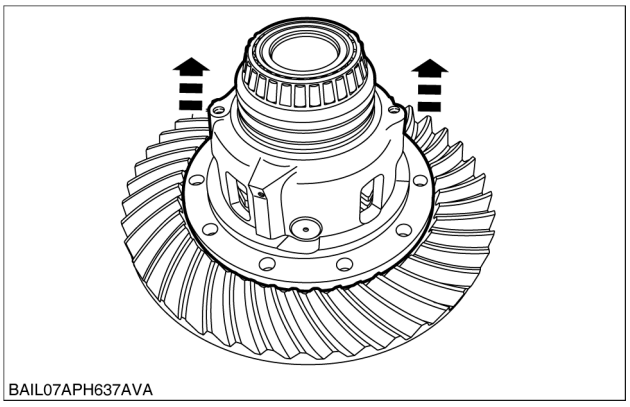
BVE0498A 1

2. Remove the crown wheel retaining nuts and bolts.



BAIL07APH636AVA 2

3. Remove the differential housing from the crown wheel.

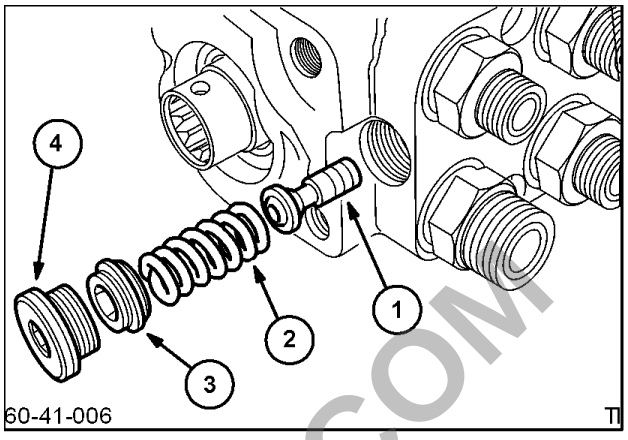


BAIL07APH637AVA 3

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12. Install the relief valve assembly, items **(1)**, **(2)** and **(3)** Figure **12**, leaving the plug, item **(4)** out until after the relief valve has been adjusted.
Check to ensure the motor turns freely without binding.
After the relief valve has been correctly set reinstall the steering motor onto the mounting bracket and tighten the securing bolts to a torque value of **10 - 15 lbf.ft**(**12 - 20 Nm**).
Reconnect the steering hoses, tighten to a torque value of **10 - 15 lbf.ft** (**12 - 20 Nm**).
Purge the air from the system by operating the steering system from lock to lock until the system functions correctly.



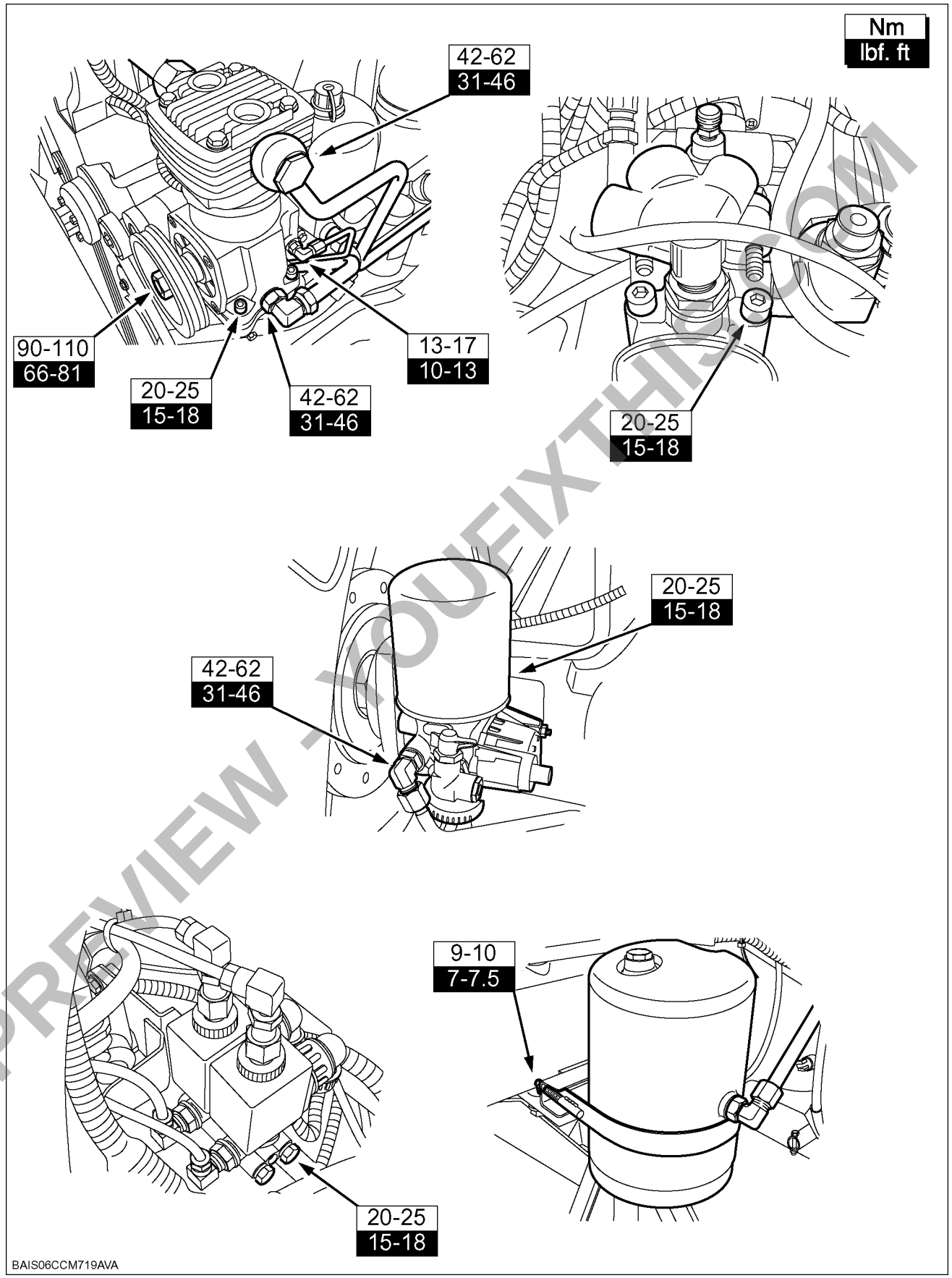
60-41-006_671 12

IMPORTANT: *The relief valve must be set to the correct pressure setting after the motor has been reassembled. Follow the correct procedure as detailed under 'Pressure relief valve setting', of this Chapter.*

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SERVICE BRAKE Pneumatic - Torque



BAIS06CCM719AVA 1

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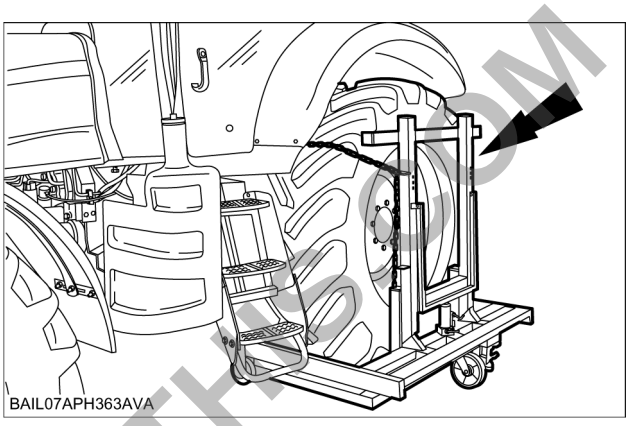
Rear wheel - Install

⚠ **WARNING** ⚠

Use suitable floor (service) jacks or chain hoist to raise wheels or tracks off the floor. Always block machine in placed with suitable safety stands.

M499

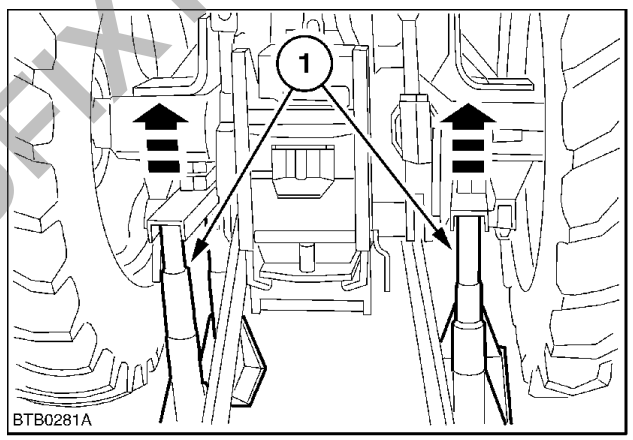
1. Install both rear wheels.
   Tighten to the specified torque, for further information refer to **Rear wheel - Torque (D.50.C)**.



BAIL07APH363AVA 1

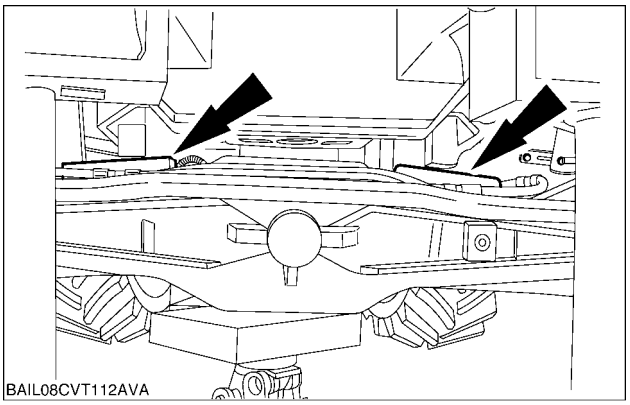
2. Remove the axle stands **(1)** from under the final drive cases.

NOTE: *If required, attach the lift rods to the lower links.*



BTB0281A 2

3. Remove the wooden wedges from between the front axle and front support.

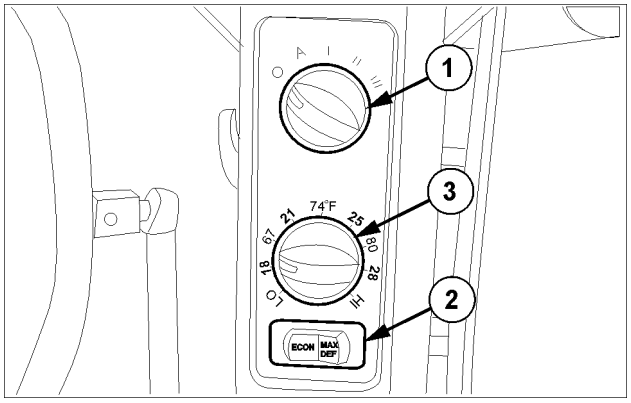


BAIL08CVT112AVA 3

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Control elements



SS08D105 1

Blower speed switch **(1)**	Selecting the blower speed manually overrides the selection made by the control unit.	Position "0": Blower switched off Position "A": Blower speed is automatically controlled by the controller. Position "I": Slow blower speed Position "II": Middle blower speed Position "III": Fast blower speed
Operating mode switch **(2)**	Determines the operating mode.	Position "ECON": Air conditioner is switched off Position "Middle": Air conditioner is switched on Position "MAX DEF": Dehumidifier/defroster mode
Temperature control potentiometer **(3)**	Determines the desired value of the cab temperature.	Position "LO": Maximum cooling power temperature range position 18-28. Desired cab temperature in °C/°F. Position "HI": Maximum heating power

"AUTOMATIC" control mode

The automatic mode is selected by moving the blower speed switch **(1)** to position "A" automatic and the operating mode switch **(2)** to the middle position. Use the temperature control potentiometer **(3)** to set the desired temperature. In this mode the system attempts to maintain the desired temperature value selected by the driver (from **16 °C** (**61 °F**) to **32 °C** (**90 °F**) using the temperature control (ATC) and in order to do this varies the air temperature and the blower speed.

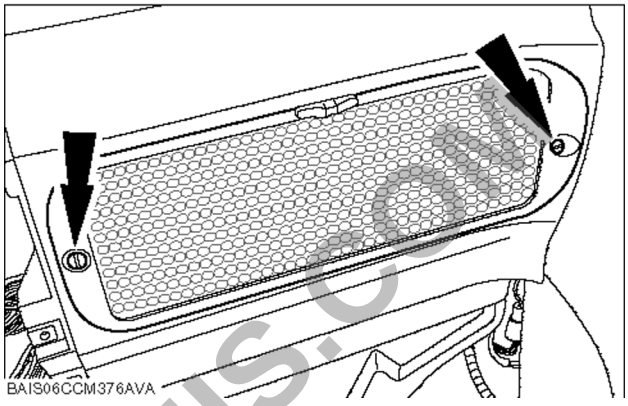
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Sensing system Temperature sensor - Replace (Outside temperature)

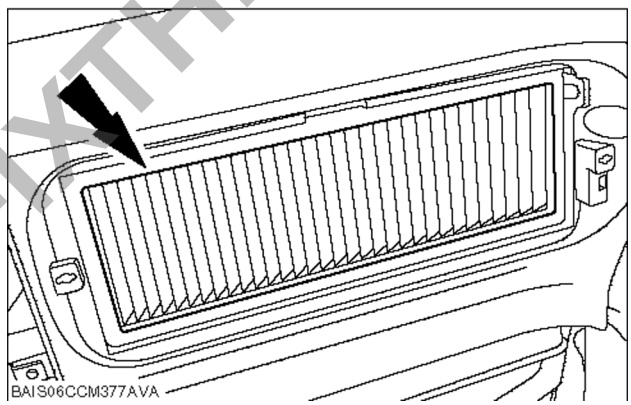
Removal

1. Turn the starter switch to the “OFF” position.
   Remove the air circulation grating.



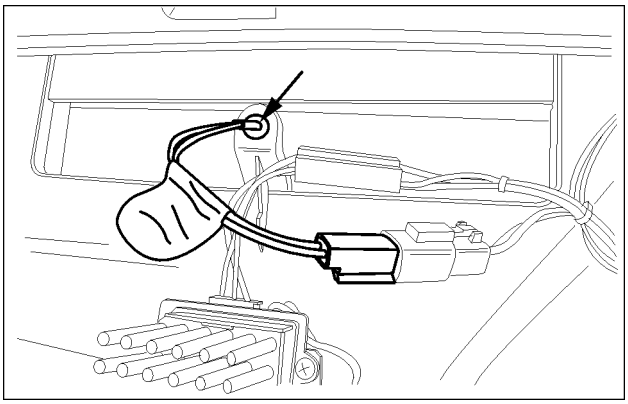
BAIS06CCM376AVA 1

2. Remove the air circulation filter element.



BAIS06CCM377AVA 2

3. Disconnect the plug connection.
   Remove the sensor.



SS08D024 3

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