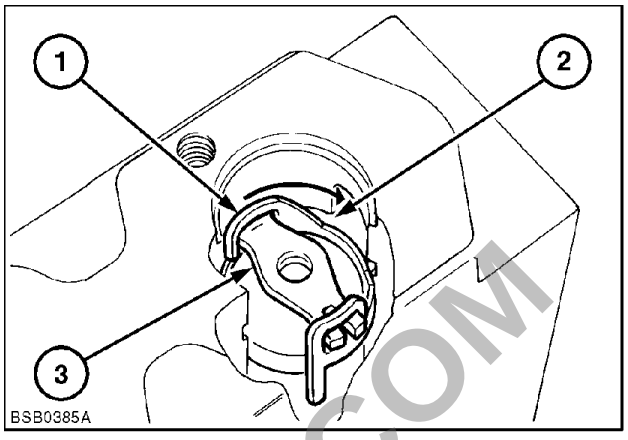
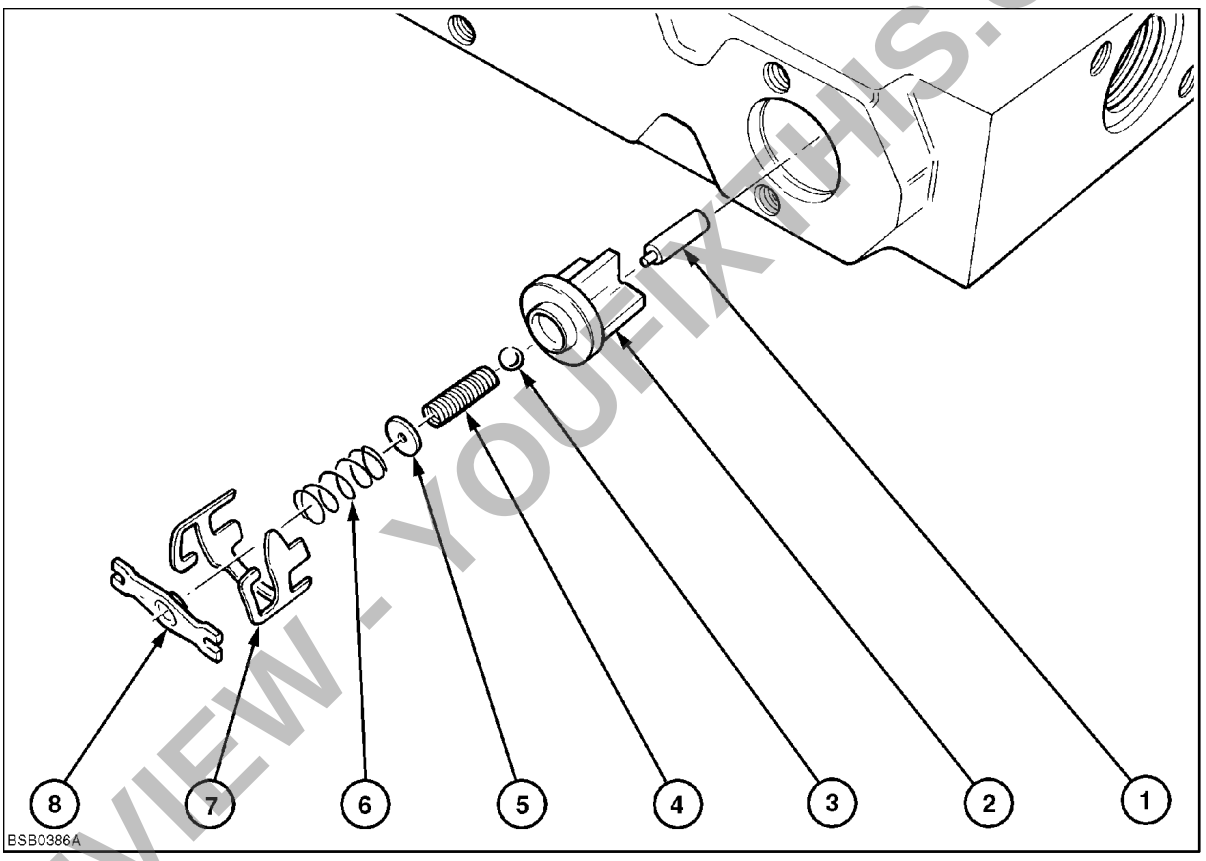
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3. Remove load holding valve from raise port as follows:-
   Using small screwdriver, open the two slots **(1)** on keeper **(2)** and turn keeper through **90 deg**.
   Remove spring seat **(3)** from housing
   Remove load check valve and plunger



BSB0385A 5



BSB0386A 6

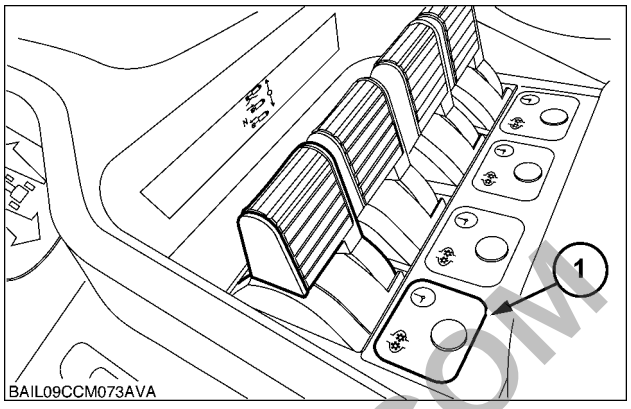
Load Check Valve

1 Plunger
2 Load Holding Valve
3 Ball
4 Spring
5 Washer
6 Spring
7 Spring Seat
8 Keeper

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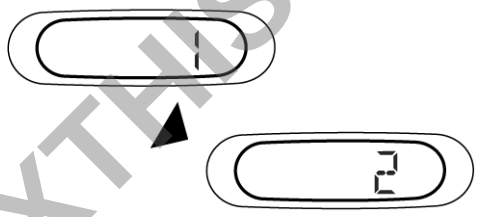
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5. Press and hold the program switch **(1)**, for lever No.1 for at least 2 seconds until the display changes.



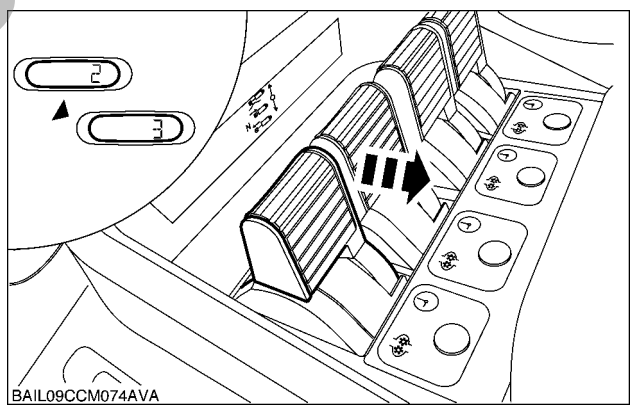
BAIL09CCM073AVA 3

6. The calibration will proceed, the program lamp for EHR 1 will be illuminated and the lower central display will show "1".
When the neutral position has been acquired and stored, the program lamp is turned off and the lower central display will show "2".



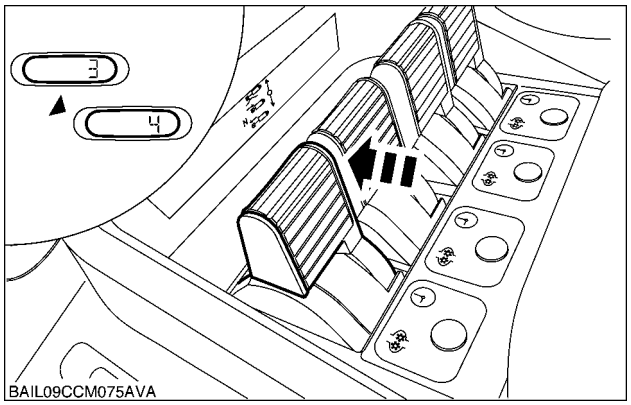
BAIL06CCM628AVA 4

7. While "2" is displayed, move the lever to the raise position, the program light will illuminate.
When movement is detected the program lamp for EHR 1 is turned off. After the raise position is established the lower central display will change to "3", the program light will switch off.



BAIL09CCM074AVA 5

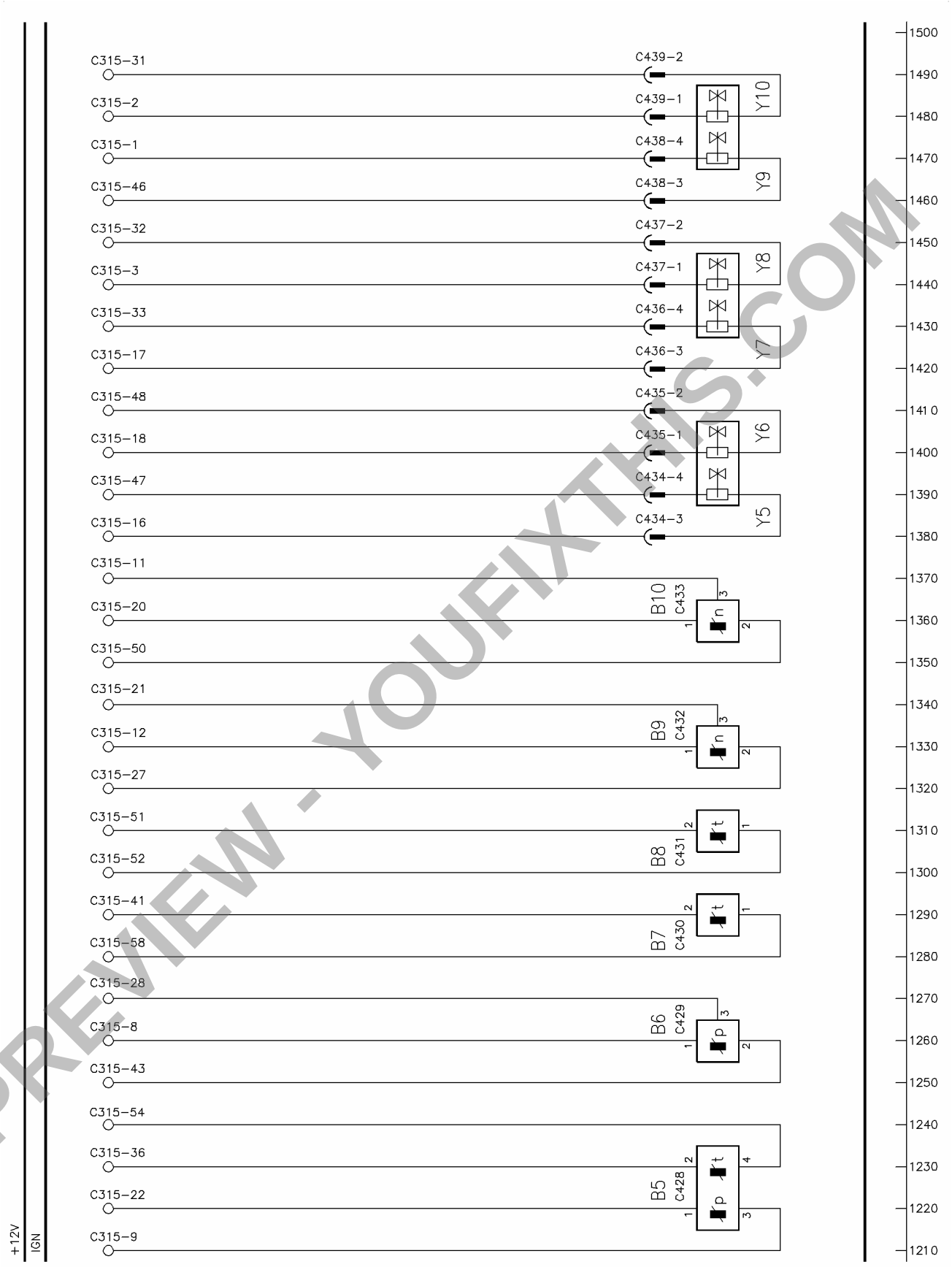
8. While "3" is displayed, move the lever to the full flow lower position, the program light will illuminate.
When a stable value for the full flow lower position of the lever is seen it is recorded with the minimum flow rate value, the lower central display will change to "4", the program light will switch off.



BAIL09CCM075AVA 6

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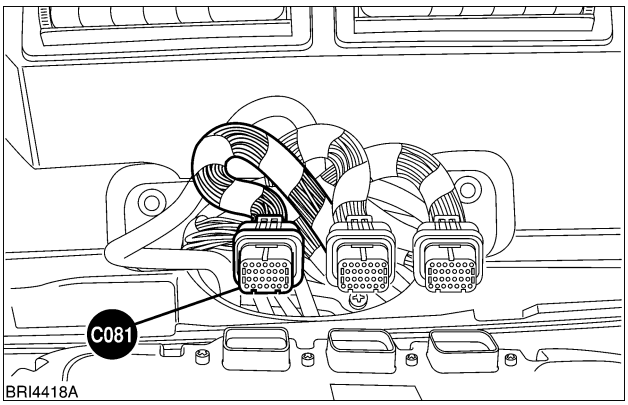
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FRAME 5A 1

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C081-BRI4418A 4

BEHIND THE ADIC

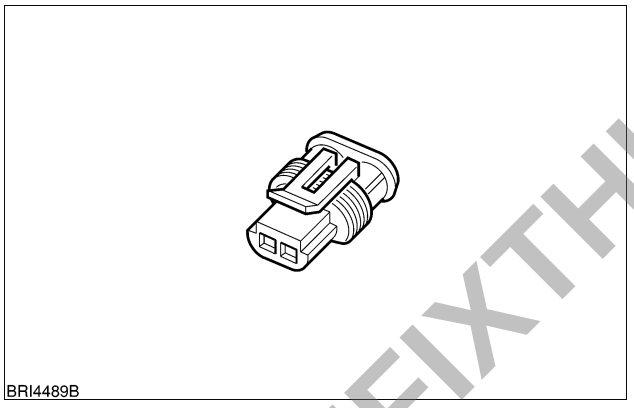
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C337 POWER LIFT ADJUSTMENT VALVE 4

PLUG CONNECTION C337 POWER LIFT ADJUSTMENT VALVE 4			
LOCATION	CABLE NUMBER	CIRCUIT	WIRING DIAGRAM
1	4057 (W)	HYDR. RIGHT LIFT LINK RAISE SOLENOID VALVE	**Wiring harness - Electrical schematic frame 13 (A.30.A)**
2	57MM (B)	VEHICLE EARTH (ALL)	

NOTE: *The colour coding of the cables is described in* ***Wiring harness - Overview (A.30.A)****.*



BRI4489B 7

REAR AXLE

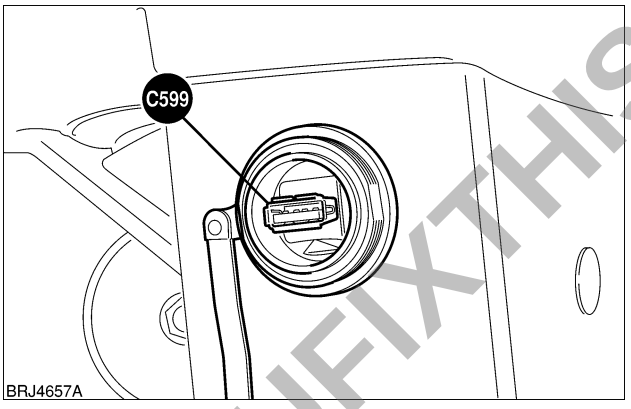
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C599 USB PLUG CONNECTION

PLUG CONNECTION C599 USB PLUG CONNECTION			
LOCATION	CABLE NUMBER	CIRCUIT	WIRING DIAGRAM
1	5962 (G)		**Wiring harness - Electrical schematic frame 35 (A.30.A)**
2	5966 (Y)		
3	5964 (R)		
4	5968 (B)		

NOTE: *The colour coding of the cables is described in* ***Wiring harness - Overview (A.30.A)****.*

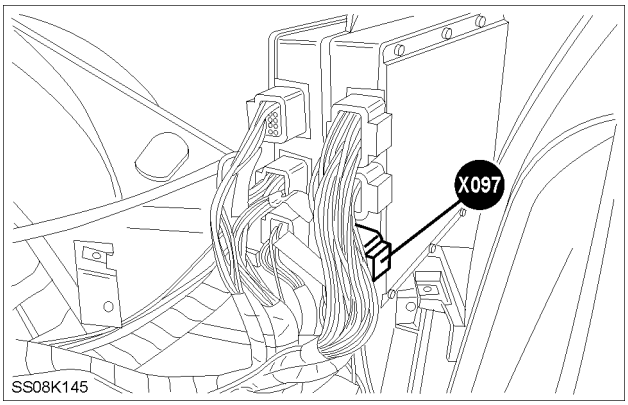


C599-BRJ4657A 7

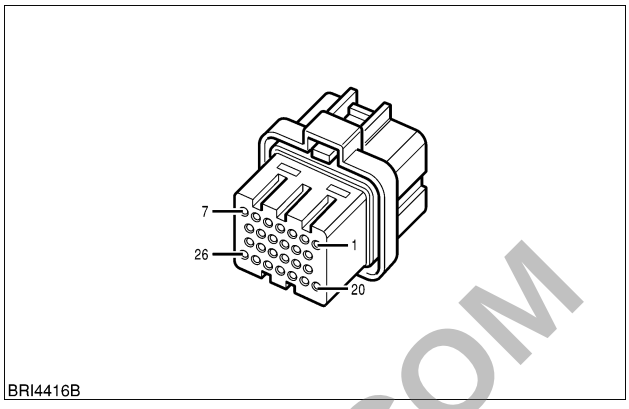
C-PILLAR TOP RIGHT-HAND SIDE

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SS08K145 13



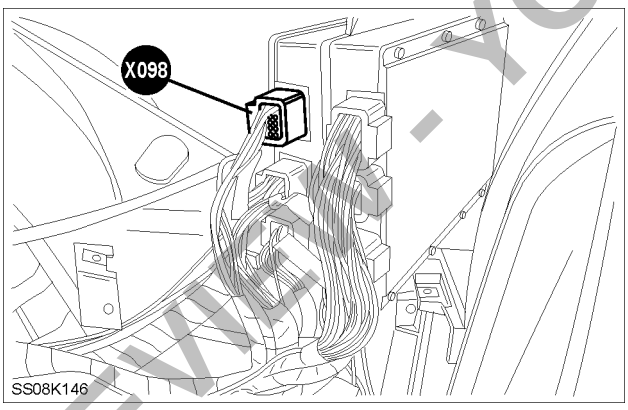
BRI4416B-02 14

BEHIND OPERATOR'S SEAT

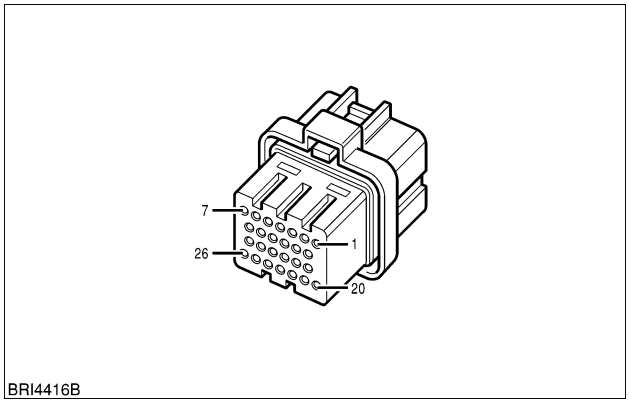
X098 ACU AUXILIARY CONTROL UNIT (CN2)

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	3250 (O)	RAISE SOLENOID RET
3	3286 (TN)	SUSPENSION LOCKOUT SOLENOID LOWER RETURN (-)
6	3281 (TN)	SUSPENSION LOCKOUT SOLENOID UPPER RETURN (-)
7	2044 (O)	PTO SOLENOID-FRONT RETURN(-)
13	3270 (O)	LOWER SOLENOID RET
19	2270 (O)	PTO FRONT - WARNING LAMP
21	57BN (B)	EARTH (ALL)
26	57BP (B)	EARTH (ALL)

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



SS08K146 15



BRI4416B-02 16

BEHIND OPERATOR'S SEAT

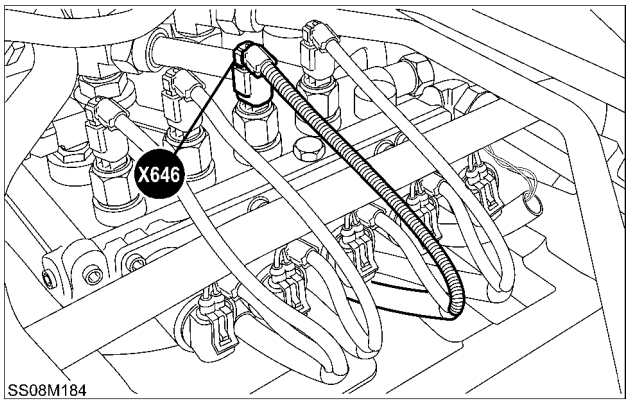
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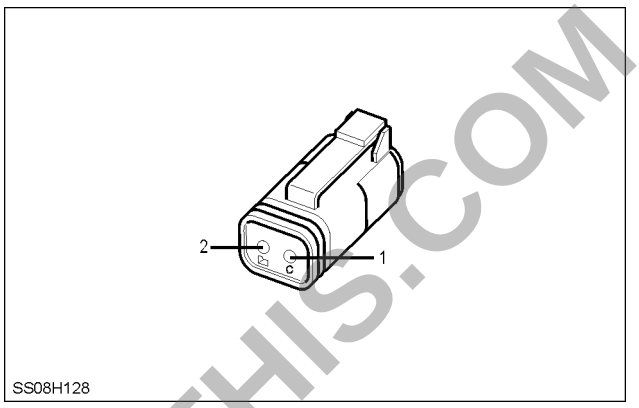
X646 LOW RANGE PRESS SWITCH

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	7770C (U)	TRANS FORWARD PRESSURE SWITCH
2	7000BD (U)	TRANS CONTROL SUPPLY

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



SS08M184 13



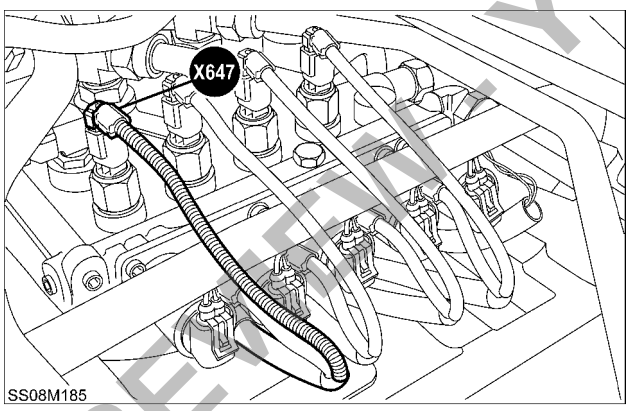
SS08H128 14

SLIDE VALVE HOUSING OF THE TRANSMISSION CONTROLS

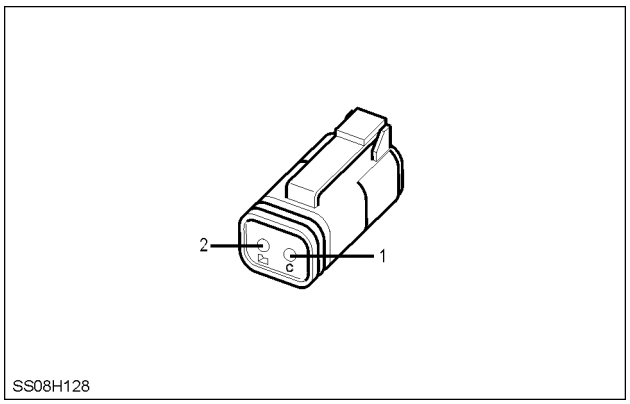
X647 MED RANGE PRESS SWITCH

POS.	WIRE NUMBER	CIRCUIT REFERENCE
1	7770B (U)	TRANS FORWARD PRESSURE SWITCH
2	7000BF (U)	TRANS CONTROL SUPPLY

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



SS08M185 15

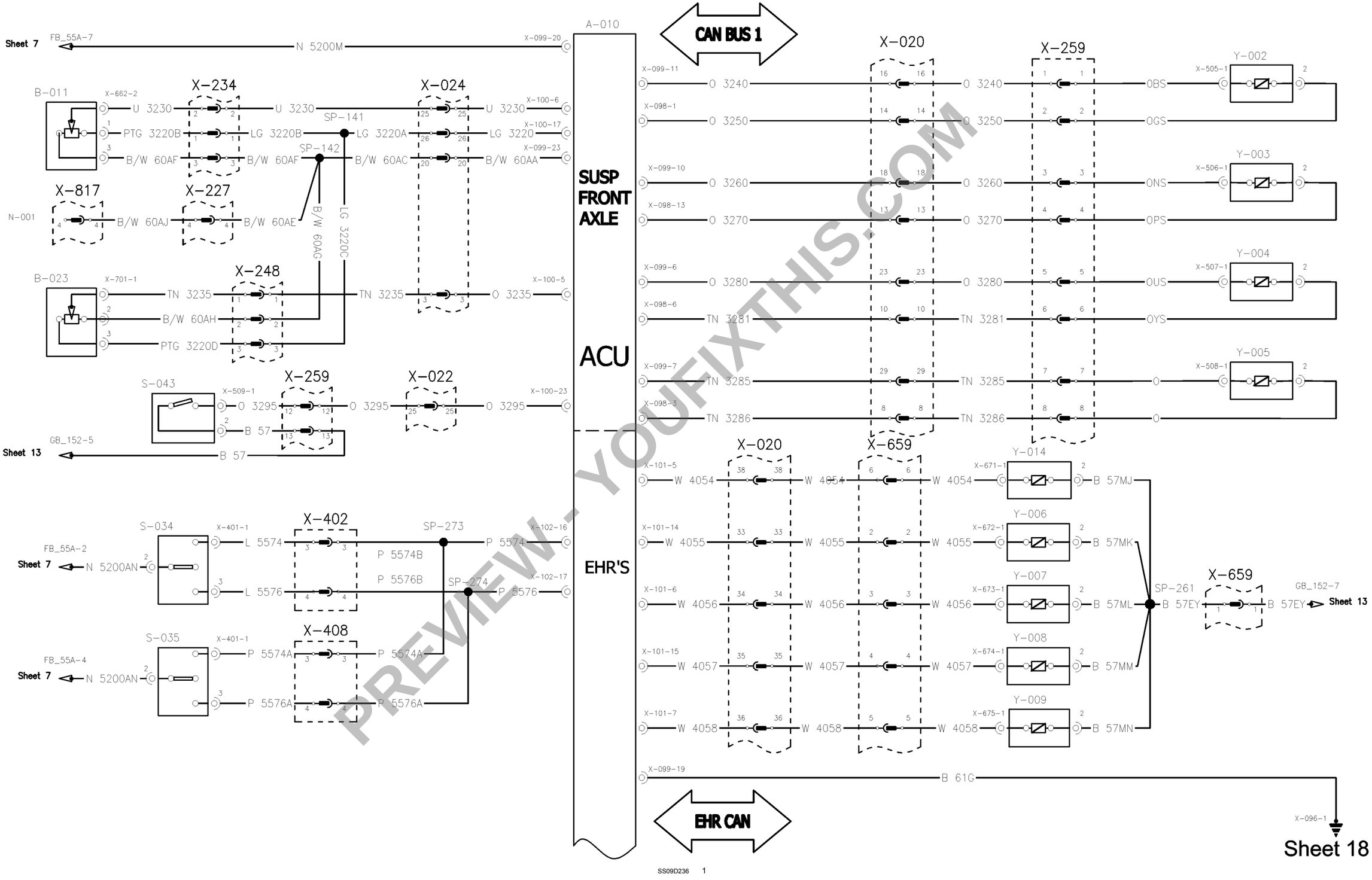


SS08H128 16

SLIDE VALVE HOUSING OF THE TRANSMISSION CONTROLS

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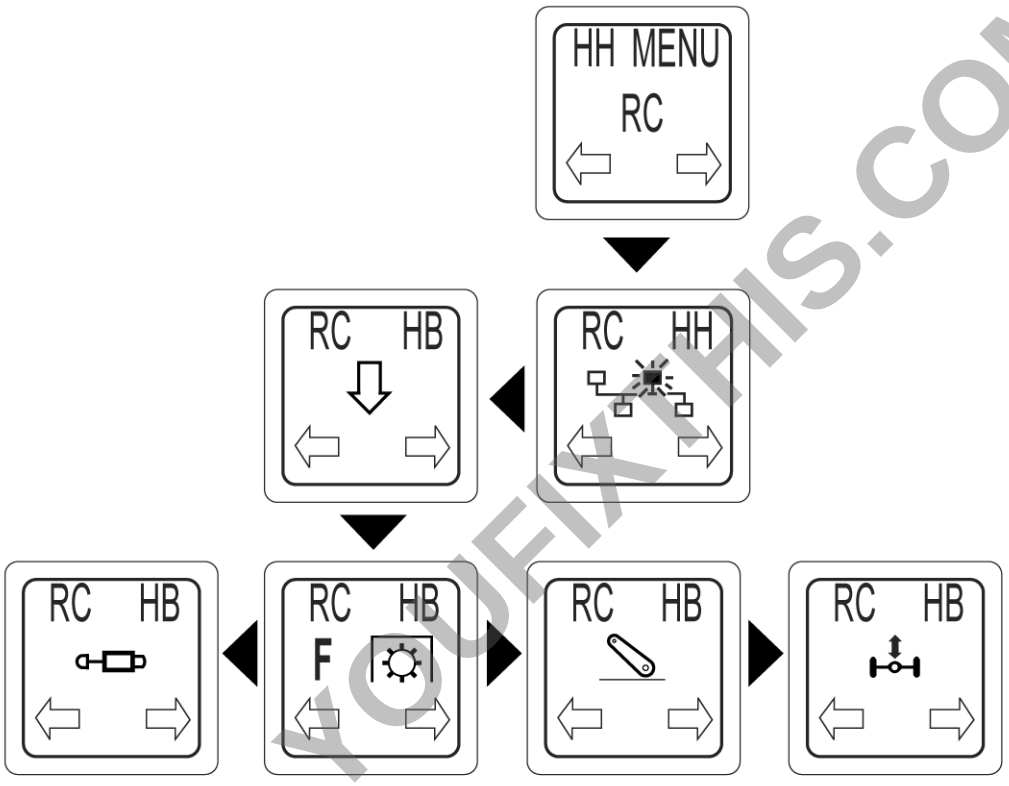
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HB - DISPLAY STORED FAULT CODES

This menu is used to display the fault codes, which are stored in the EEPROM of the electronic control unit. This function is available in all sub-systems.
Each control unit is capable of storing up to ten fault codes for each sub system.

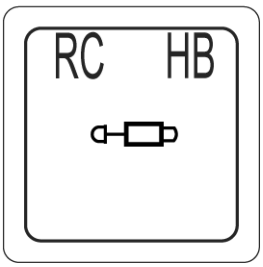
HB Menu page selection diagram



BAIL06CCM539FVA

BAIL06CCM539FVA 45

Press the Dimmer button to call up the HB Menu.



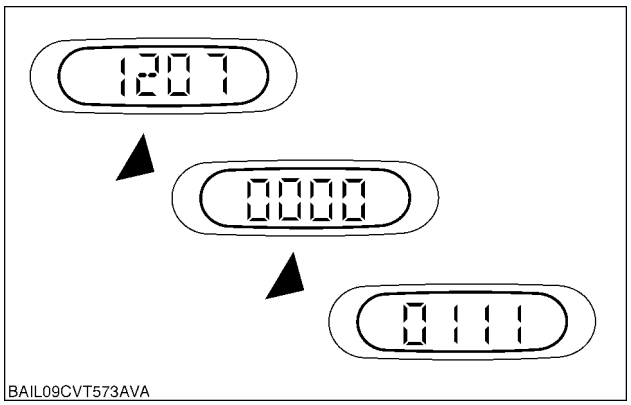
BAIL06CCM540AVA

BAIL06CCM540AVA 46

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The lower central display will automatically cycle through the software release as the example shown below, and will then return to allow navigation of the “HH" menus.

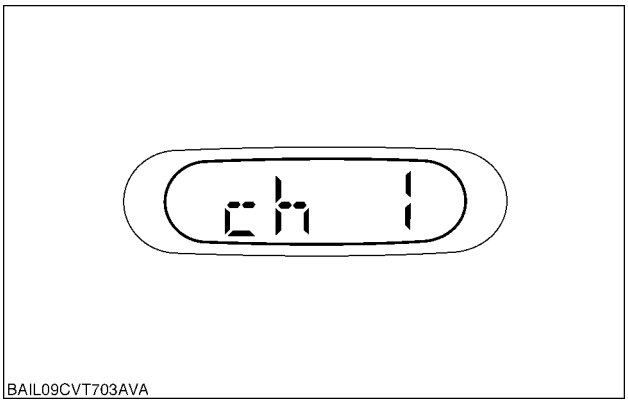


BAIL09CVT573AVA 16

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The display will show "ch 1"



BAIL09CVT703AVA 17

The required channel can be selected by using the "up" and "down" buttons.
After a delay the value will be displayed. Compare the value displayed with the typical reading shown in the table below.

NOTE: *The value is the input voltage or signal into the controller. This cannot be directly translated into a voltage due to the internal processes of the controller. A zero equates to* ***0 volts****.*

If the value displayed varies by more than **10 %** to that shown in the table below, a fault is indicated in either the component or the wiring harness relevant to that channel.

NOTE: *Check the connectors of the effected circuit, including the controller connectors, prior to replacing any components.*

Channel	Description	Module Pin	Typical Reading
1	LVDT secondary winding 1	B5	450 to 750
2	LVDT secondary winding 2	B6	450 to 750
3	Proximity sensor	B4	50 to 800
4	Electrovalve	A6	350 to 500 mA

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Code	Description	Cause	Controller Pin	Information
4146	Rear remote no.4 – under voltage	EHR4_DIAGNOSTIC CAN message indicates under voltage (Fault code = 0x21)	N/A	EHR valve and connector **X307**, inline harness connector **X020**. EHR valve. **Control module - Configure (A.50.A)**
4147	Rear remote no.4 – over voltage	EHR4_DIAGNOSTIC CAN message indicates over voltage (Fault code = 0x22)	N/A	External power supply connected. Charging system. EHR valve. **Control module - Configure (A.50.A)**
4148	Rear remote no.4 – spool movement too low	EHR4_DIAGNOSTIC CAN message indicates spool movement is too low (Fault code = 0x23)	N/A	EHR valve. Hydraulic pressures. **Hydraulic pump - Pressure test (A.10.A)**, EHR valve. **Control module - Configure (A.50.A)**
4149	Rear remote no.4 – spool movement too high	EHR4_DIAGNOSTIC CAN message indicates spool movement is too high (Fault code = 0x24)	N/A	EHR valve. Hydraulic pressures. **Hydraulic pump - Pressure test (A.10.A)**, EHR valve. **Control module - Configure (A.50.A)**
4150	Rear remote no.4 – float position not reached	EHR4_DIAGNOSTIC CAN message indicates float is not reached (Fault code = 0x25)	N/A	EHR valve. Hydraulic pressures. **Hydraulic pump - Pressure test (A.10.A)**, EHR valve. **Control module - Configure (A.50.A)**
4151	Rear remote no.4 – manually operated	EHR4_DIAGNOSTIC CAN message indicates valve is set for manual operation (Fault code = 0x26)	N/A	EHR lever. calibration **PRIMARY HYDRAULIC POWER SYSTEM Electro-hydraulic remote valve - Calibrate (A.10.C)**, EHR valve. **Control module - Configure (A.50.A)**
4152	Rear remote no.4 – driver faulty	EHR4_DIAGNOSTIC CAN message indicates driver is faulty (Fault code = 0x42)	N/A	Driveline oil temperature. Driveline oil contamination. Hydraulic pressures. EHR valve **Hydraulic pump - Pressure test (A.10.A)**, EHR valve. **Control module - Configure (A.50.A)**
4153	Rear remote no.4 – potentiometer faulty	EHR4_DIAGNOSTIC CAN message indicates pot is faulty (Fault code = 0x43)	N/A	Driveline oil temperature. EHR valve. **Control module - Configure (A.50.A)**

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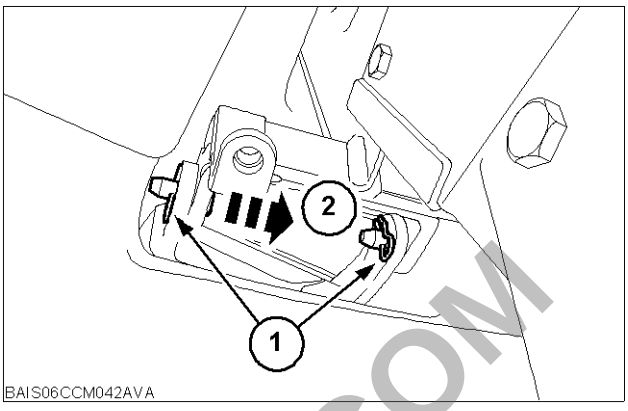
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Reference	Description	Controller
3102	Rail Pressure Sensor CP3 - Signal Below Range Minimum	EDC
3104	Rail Pressure Relief Valve - Open	EDC
3104	Rail Pressure Relief Valve - Open	EDC
3105	Rail Pressure Relief Valve - Pressure Shock Requested	EDC
3105	Rail Pressure Relief Valve - Pressure Shock Requested	EDC
3106	Rail Pressure Relief Valve - Did Not Open After Pressure Shock	EDC
3106	Rail Pressure Relief Valve - Did Not Open After Pressure Shock	EDC
3110	Rail Pressure Sensor Monitoring - Signal Above Range Maximum	EDC
3110	Rail Pressure Sensor Monitoring - Signal Above Range Maximum	EDC
3111	Rail Pressure Sensor Monitoring - Signal Below Range Minimum	EDC
3111	Rail Pressure Sensor Monitoring - Signal Below Range Minimum	EDC
3112	Rail Pressure Sensor CP3 - Signal Above Maximum Range	EDC
3112	Rail Pressure Sensor CP3 - Signal Above Maximum Range	EDC
3131	Grid Heater Always Switched On	EDC
3131	Grid Heater Always Switched On	EDC
3137	Metering Unit - Open Load	EDC
3137	Metering Unit - Open Load	EDC
3147	Oil Temperature Too High	EDC
3147	Oil Temperature Too High	EDC
3154	Grid Heater Relay - Short Circuit To Battery	EDC
3154	Grid Heater Relay - Short Circuit To Battery	EDC
3155	Grid Heater Relay - Short Circuit To Ground	EDC
3155	Grid Heater Relay - Short Circuit To Ground	EDC
3156	Grid Heater Relay - No Load	EDC
3156	Grid Heater Relay - No Load	EDC
3161	Fan Actuator - Short Circuit to Ground	EDC
3161	Fan Actuator - Short Circuit to Ground	EDC
3179	Time-out Of CAN Message BC2EDC2	EDC
3179	Time-out Of CAN Message BC2EDC2	EDC
3180	Time-out of CAN Message VM2EDC	EDC
3180	Time-out of CAN Message VM2EDC	EDC
3188	Cylinder 1 Warning - Open Load	EDC
3188	Cylinder 1 Warning - Open Load	EDC
3192	Cylinder 2 warning - Open Load	EDC
3192	Cylinder 2 warning - Open Load	EDC
3196	Cylinder 3 Warning - Open Load	EDC
3196	Cylinder 3 Warning - Open Load	EDC
3200	Cylinder 4 Warning - Open Load	EDC
3200	Cylinder 4 Warning - Open Load	EDC
3204	Cylinder 5 Warning - Open Load	EDC
3204	Cylinder 5 Warning - Open Load	EDC

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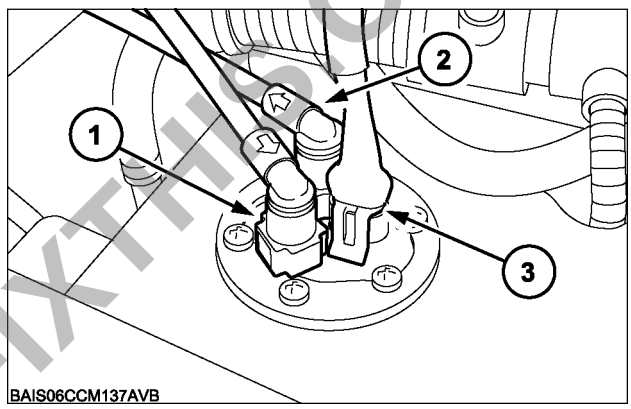
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5. Remove the R-clips **(1)** and remove the left-hand side steps **(2)**.



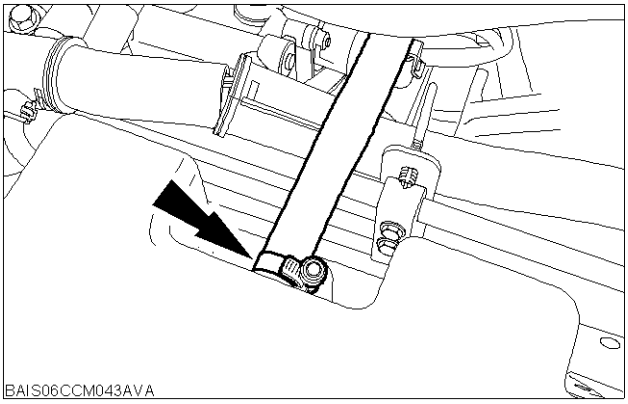
BAIS06CCM042AVA 4

6. Disconnect the fuel tank return line **(1)**, fuel tank supply line **(2)** and the fuel tank sender unit electrical connector **(3)**.



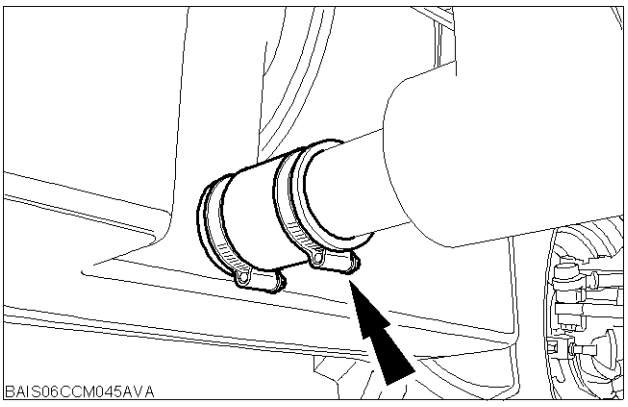
BAIS06CCM137AVB 5

7. Disconnect the fuel tank breather hose.



BAIS06CCM043AVA 6

8. Disconnect the fuel tank balance pipe



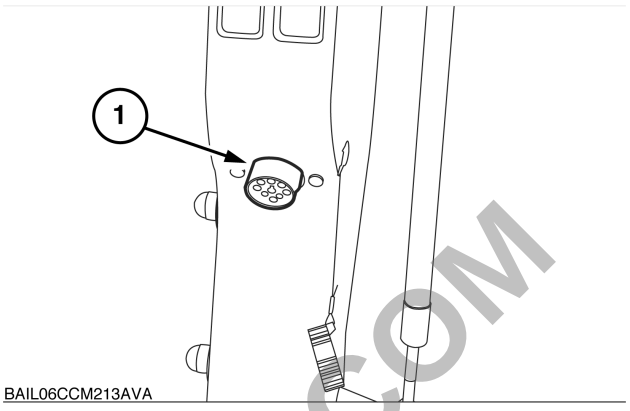
BAIS06CCM045AVA 7

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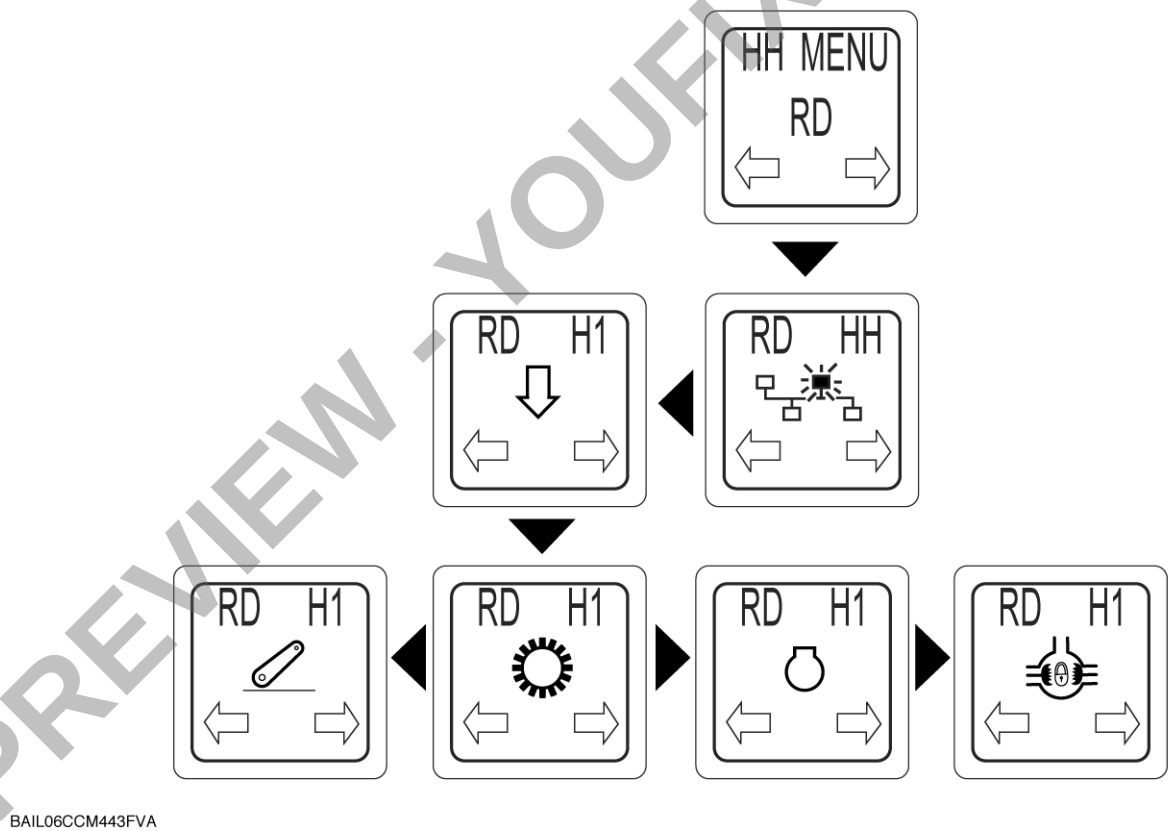
Call-up via the HH menu

5. Connect the Diagnostics plug **380000843** to the Diagnostics socket.



BAIL06CCM213AVA 3

6. Use the "h" and "m" buttons and the Dimmer button on the instrument cluster to scroll through the HH Menu, until the option H1 and the transmission symbol appear on the RD control unit.
"CAL" appears on the lower central display for a few seconds and then the transmission oil temperature is displayed.



BAIL06CCM443FVA 4

7. The engine speed is set to **1200 RPM**.

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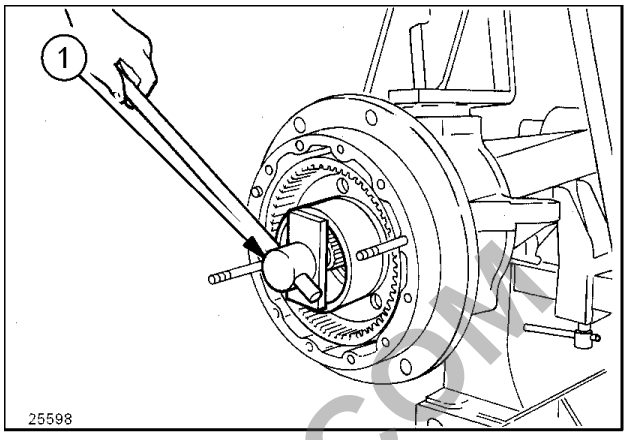
10. Turn the keystart to the 'off' position to store the calibration values.

NOTE: *If an error occurs during calibration a "U" code will be displayed and the procedure will need to be repeated. Refer to the "U" code listing in* ***Control module - Fault code index (A.50.A)****.*

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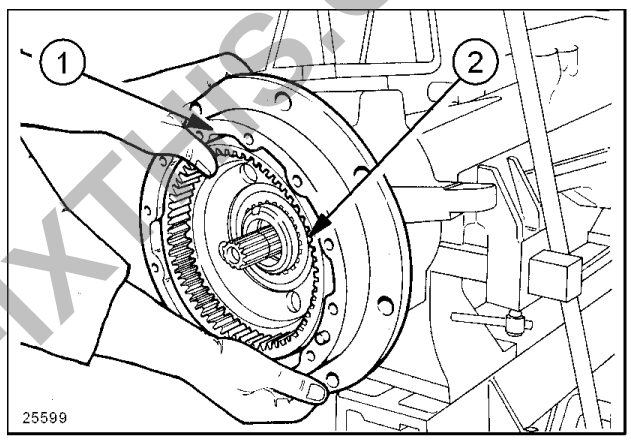
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8. Remove the wheel hub bearing lock nut using special tool **293881** .



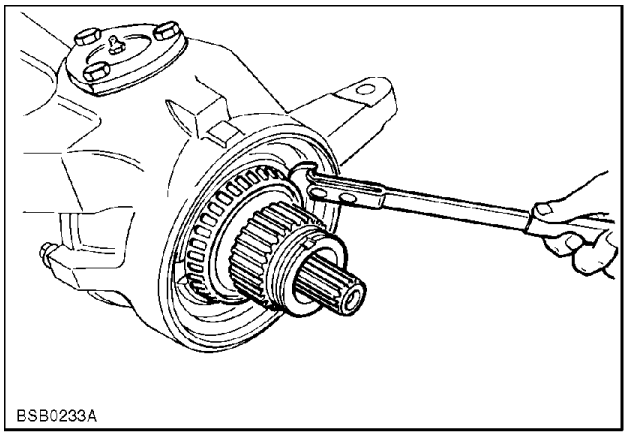
25598 8

9. Remove the wheel hub **(1)** with the ring gear **(2)**.



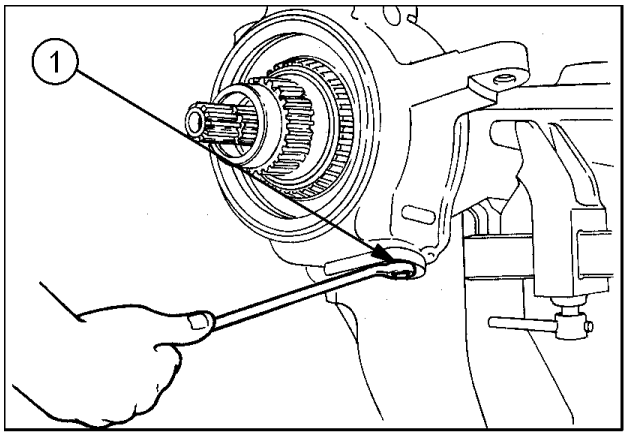
25599 9

10. Remove seal using suitable extracting tool.



BSB0233A 10

11. Unscrew the three retaining bolts **(1)** of the lower pin of the stub axle housing. Recover the lower pivot pin and the adjustment shims.

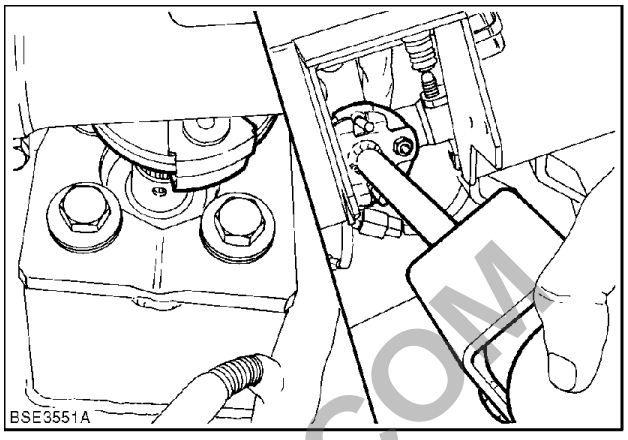


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4. Ease the coupling from the steering motor shaft and remove the steering shaft, Figure **4**.



BSE3551A 4

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1 Parking Brake
2 Parking Brake Switch
3 Relay
4 Discharge Solenoid
5 Delivery Solenoid
6 **11 bar** Pressure Regulating Valve
7 Trailer Brake Valve
8 Low Pressure Switch
9 Hydraulic Pump
10 Brake Pedal and Master Cylinder
11 Implement Valves and Hydraulic Lift
12 Trailer Brake Coupler
13 Spring
14 Spring
15 Trailer Brake Engaged Warning Lamp Switch
16 Trailer Brake Engaged Warning Lamp

Italian Trailer Brake Valve - Engine Stopped or Running but with Low Hydraulic Pump Flow.

When the engine has stopped or the output from the hydraulic implement pump is very low the pressure switch **(8)** closes. With the switch closed the current energizes the relay **(3)**. The relay closes and current reaches and energizes the solenoid valves **(4)** and **(5)**. The delivery solenoid **(5)** is now closed and discharge solenoid **(4)** is open. In this condition the oil in the trailer brake line discharges to reservoir through solenoid **(4)**. Their is now insufficient pressure to overcome the spring **(13)** and therefore the actuating pin moves forward to apply the brakes. Low pressure in the trailer brake line causes the switch **(15)** to close and illuminate the warning lamp **(16)**.

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ENVIRONMENT CONTROL Heating, ventilation and air-conditioning - Service instruction

⚠ WARNING ⚠

Before overhauling an air conditioning system read and observe the following Safety PrecautionsIf a repair or replacement becomes necessary, ensure that only certified Air Conditioning technicians are employed, using approved equipment to effect repairs. Do not attempt to disassemble the air conditioning system, It is possible to be severely frostbitten or injured by escaping refrigerant.

B042

IMPORTANT: *Do not allow refrigerant to escape into the atmosphere.*

1. Refrigerant must be handled with care in order to AVOID HAZARDS.
   Undue direct contact with liquid refrigerant can produce freezing of skin and eyes.
   Keep the refrigerant container and air conditioning system away from flame or heat sources, the resulting pressure increase can cause the container or system to explode.
   If in direct contact with open flames or heated metal surfaces, the refrigerant will decompose and produce products that are toxic and acidic.
   Make sure to comply with the following indications and simple precautions to avoid any risk of injury:
   Never discharge refrigerant into the atmosphere.
   When servicing air conditioning units a certified refrigerant recovery unit operated by a certified technician must be used.
2. When discharging the refrigerant in the system make sure you are operating in well-ventilated premises with good air circulation and far away from open flames.
3. When charging and discharging the system always wear goggles and take suitable precautions to protect the face in general and the eyes in particular, from accidental spillage of the refrigerant fluid.
4. The oil and refrigerant mixture inside the air conditioning system is pressurized. Consequently, never loosen fittings or tamper with lines unless the system has been properly discharged.
5. Before loosening any connection, cover the fitting in question with a cloth and wear gloves and goggles in order to prevent refrigerant from reaching the skin or eyes.
6. In the event of an accident, proceed as follows:-
   If the refrigerant has reached the eyes, wash them immediately with copious amounts of sterilised water or mains pressure tap water and transfer to hospital for immediate medical help.
   If the refrigerant has touched the skin, wash with cold water and transfer to hospital for immediate medical help.

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WORKING ARM - H

HITCH Rear hitch - 10.C

T7030
T7040
T7050
T7060

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Smoke control under acceleration

With heavy load demands, in accordance with signals received from the air inlet meter and the engine speed sensor, the control unit manages the pressure regulator and modulates the activation time of the electro-injectors to prevent the emission of smoke from the exhaust.

After Run

After the engine is stopped, the control unit microprocessor saves various parameters to the EEPROM memory, including the faults log so that they will be available the next time the engine is started.

Control of working speed in normal operating conditions

Each time work load varies, the control unit adjusts torque so as to maintain the engine in maximum power conditions. If the load causes a reduction in power, the control unit increases torque by increasing the amount of fuel injected in order to restore the engine to maximum power.

Recovery strategies

Recovery strategies are characterized by certain differences as application varies:

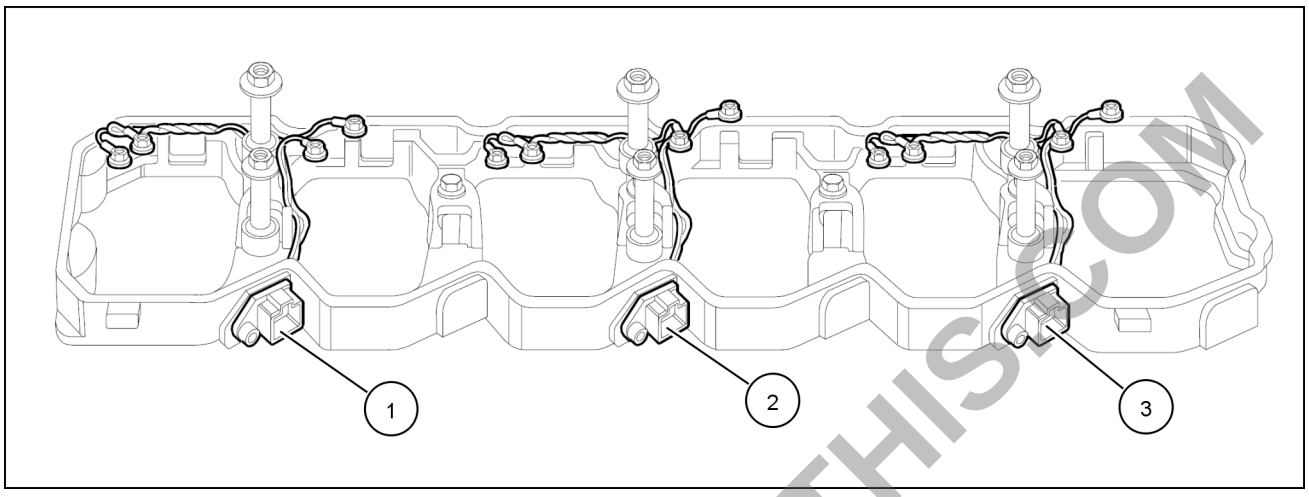
- Control of fuel leaks
  In the case of fuel supply problems, the system controls the engine with suitable constant power values obtained with a low number of RPMs and high torque values in order to inject the maximum quantity of fuel.
- Control of pressure in the rail
  When the pressure in the rail exceeds the safety values, the engine reduces power.
- Synchronism problems
  In the case of synchronism problems, faulty RPM sensors, the system controls the engine by increasing the number of RPMs in order to improve interpretation of the signals.
- Power restrictions as operating temperature increases
  When the temperature of the charge air rises above **88 °C** (**190 °F**), power reduction is started. When a temperature of **120 °C** (**248 °F**) is reached, performance is further reduced and is comparable to a naturally aspirated engine.
- Reduction of power as reference temperature varies
  In normal operating conditions, the system knows the charge air, oil and water temperatures.
  If the temperature of the engine water is not available, the system takes the temperature of the oil as a reference and when this reaches the threshold of **103 °C** (**217 °F**), it starts to reduce the power available. Upon reaching **113 °C** (**235 °F**), power is reduced to **50 %**.

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Electro-Injector Solenoid Valves

The electro-injectors are effectively N.O. solenoid valves.
Each injector is connected to the EDC control unit on connector A.
The Impedance of the coil of each injector is **0.56 - 0.57 Ω**.



COVERBASE 3

Reference	Description	EDC pin
Connector **(1)**		
Pin #1	Cylinder 2 injector	11A
Pin #2	Cylinder 2 injector	6A
Pin #3	Cylinder 1 injector	13A
Pin #4	Cylinder 1 injector	4A
Connector **(2)**		
Pin #1	Cylinder 4 injector	14A
Pin #2	Cylinder 4 injector	3A
Pin #3	Cylinder 3 injector	12A
Pin #4	Cylinder 3 injector	5A
Connector **(3)**		
Pin #1	Cylinder 6 injector	15A
Pin #2	Cylinder 6 injector	2A
Pin #3	Cylinder 5 injector	1A
Pin #4	Cylinder 5 injector	16A

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