2WD-4WD SYSTEM Hydraulic D.14.C
STEERING Hydraulic D.20.C
STEERING Autoguidance D.20.E
SERVICE BRAKE Hydraulic D.30.C
SERVICE BRAKE Pneumatic D.30.E
PARKING BRAKE Mechanical D.32.B
PARKING BRAKE Electronic D.32.D
BRAKE CONNECTION Hydraulic D.34.C
SUSPENSION Hydraulic D.40.C
WHEELS AND TRACKS Wheels D.50.C
FRAME AND CAB ..... E
FRAME Primary frame E.10.B
SHIELD E.20.A
USER CONTROLS AND SEAT E.32.A
USER PLATFORM E.34.A
ENVIRONMENT CONTROL Heating, ventilation and air-conditioning E.40.D
HITCH AND WORKING TOOL ..... H
HITCH Front hitch H.10.B
HITCH Rear hitch H.10.C
HITCH Electronic draft control H.10.D

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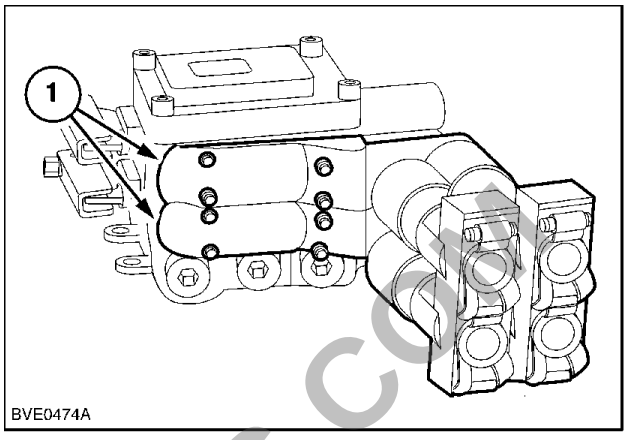
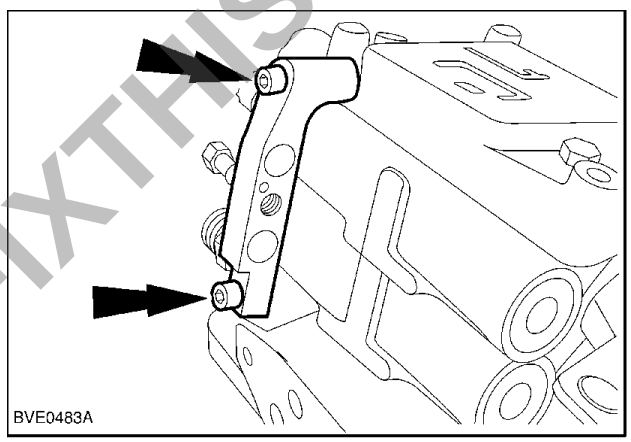
Remote control valve - Disassemble

1. Remove the remote control valve quick release coupling manifolds **(1)**.
   The couplers are serviced as an assembly and should not be disassembled.



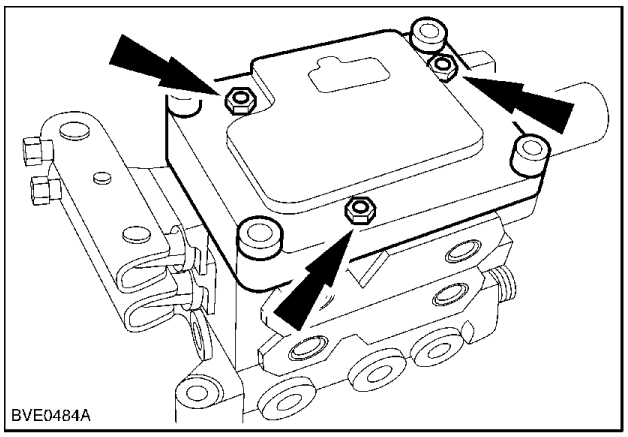
BVE0474A 1

2. Remove the remote control valve control cable retaining bracket.



BVE0483A 2

3. Remove the remote control valve end cover retaining nuts.
   Remove the remote control valve end cover.



BVE0484A 3

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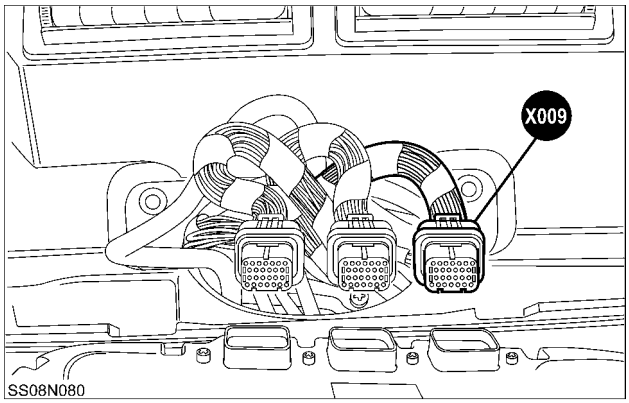
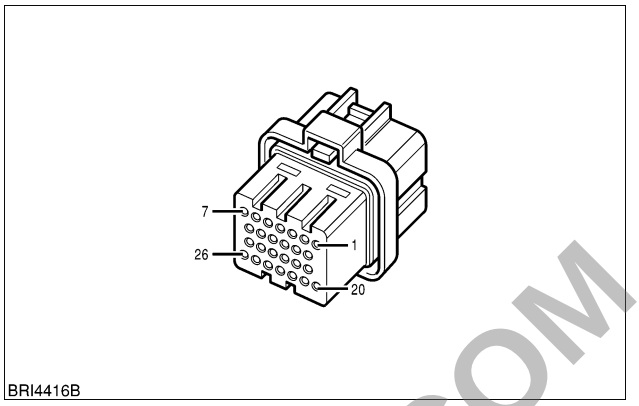


SS08N080 17



BRI4416B-01 18

BEHIND INSTRUMENT CLUSTER

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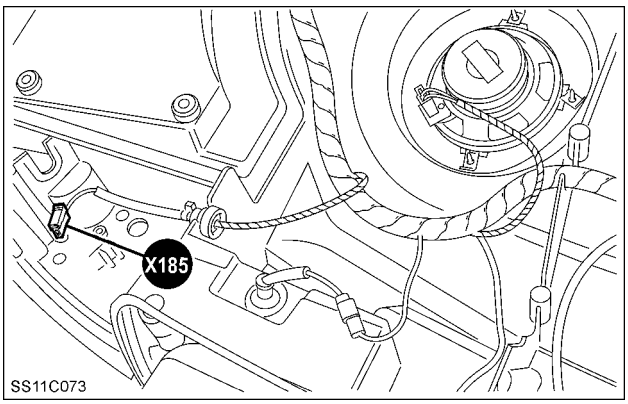
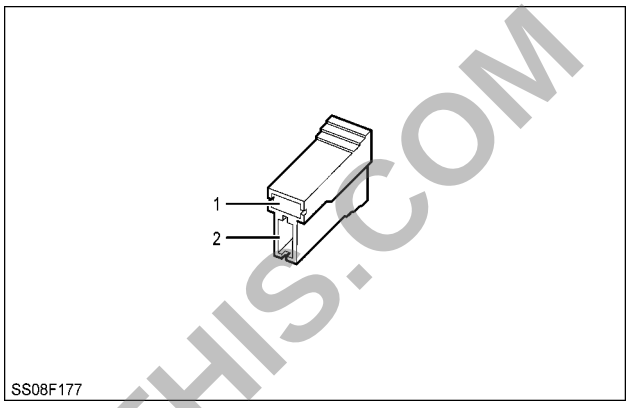
X185 Rotating Beacon Left Hand

POS.	COLOR	WIRE NUMBER	CIRCUIT REFERENCE
1	**VT**	4012	ROTATING BEACON FEED
2	**BK**	57	EARTH (ALL)

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



SS11C073 7



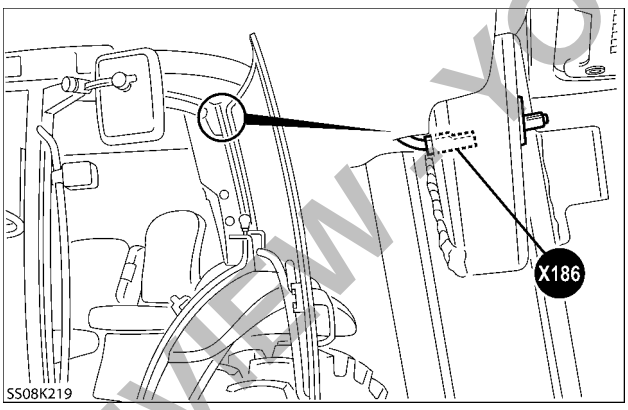
SS08F177 8

REAR LEFT HAND CAB ROOF

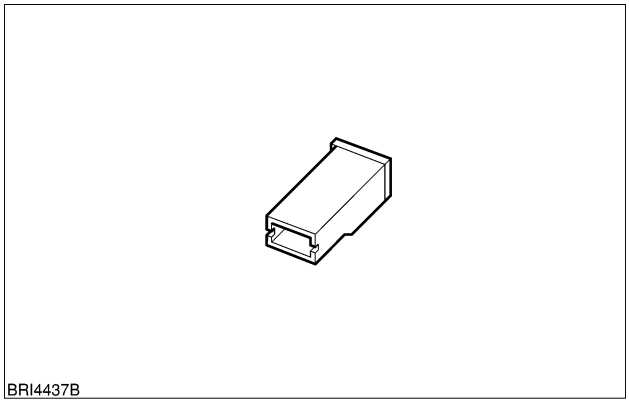
X186 Door Switch Left Hand

POS.	COLOR	WIRE NUMBER	CIRCUIT REFERENCE
1	**VT**	3052	DOME LAMP TO DOOR SWITCH

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



SS08K219 9



BRI4437B 10

TOP REAR LEFT HAND CAB DOOR

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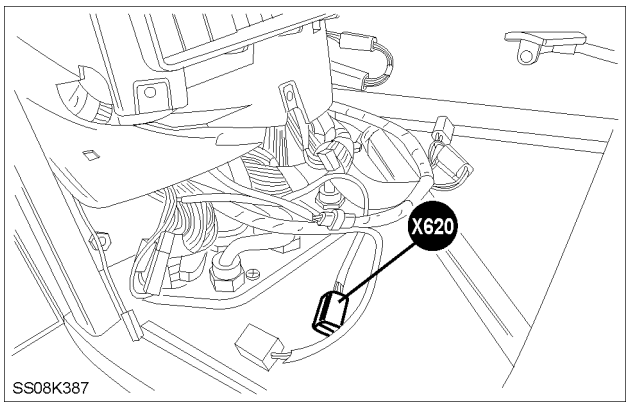
Connector - Component diagram 62

X620 ISO BUS Front

POS.	COLOR	WIRE NUMBER	CIRCUIT REFERENCE
1	**BL / OR**	5980 / 5970	ISO BUS ECU SIGNAL
2	**OR / BL**	5970 / 5980	ISO BUS IMPLEMENT SIGNAL
3	**PK**	2250	PTO FRONT - SUPPLY

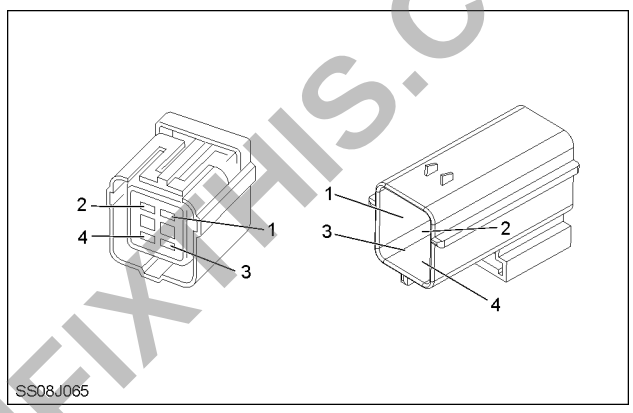
NOTE: *For the wiring color code refer to,* ***Wiring harness - Identification (A.30.A)****.*

T7.170, T7.185, T7.200, T7.210 Auto Command
T7.170, T7.185, T7.200, T7.210 Range / Power Command - With Sidewinder



SS08K387 1

FRONT RIGHT HAND CAB FLOOR



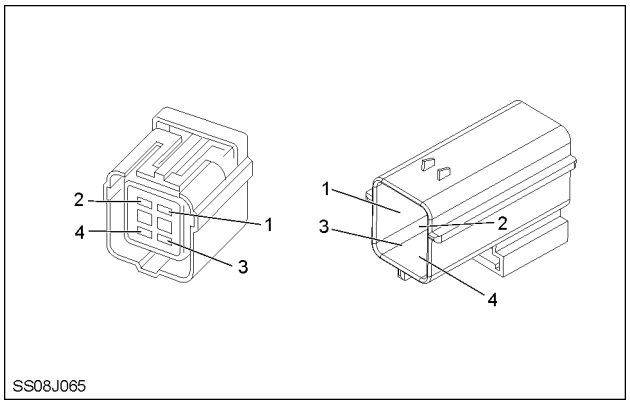
SS08J065 2

T7.170, T7.185, T7.200, T7.210 Range / Power Command - Without Sidewinder

IMAGE NOT AVAILABLE

INA 3

FRONT RIGHT HAND CAB FLOOR



SS08J065 4

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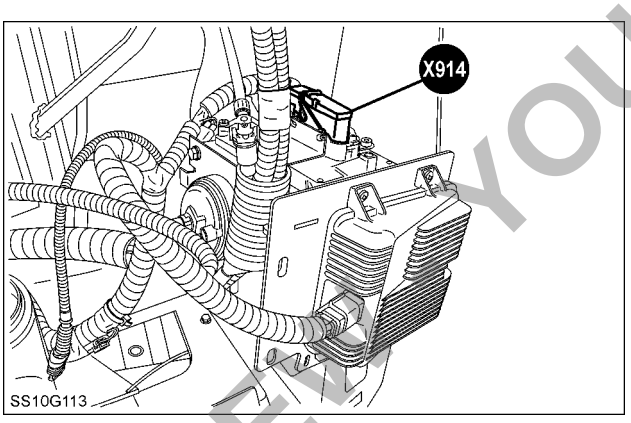
X914 SCR Controller

POS.	COLOR	WIRE NUMBER	CIRCUIT REFERENCE
1	**BR**	9272	24V FUSED SUPPLY
2	**BR**	9230	ECU B+ OUTPUT (EDC7_)
3	**GN**	9272	24V FUSED SUPPLY
4	**GN**	9272	24V FUSED SUPPLY
7	**YE**	5400	CAN H
8	**GN**	5420	CAN L
11	**OR**	9262	ECU TO DOSING VALVE RETURN
12	**YE**	9261	ECU TO DOSING VALVE
14	**BK**	57	EARTH (ALL)
15	**BK**	57	EARTH (ALL)
17	**YE**	9250	ECU TO CATALYST TEMP SENSOR (UPTREAM) RETURN
18	**YE**	9246	SIGNAL REDUCTION LEVEL AGENT SENSOR
19	**BL**	9247	GROUND REDUCTION LEVEL AGENT SENSOR
23	**YE**	9254	ECU TO BLOW BY 3 WAY VALVE
24	**GN**	9272	24V FUSED SUPPLY
25	**YE**	9252	ECU TO CATALYST TEMP SENSOR (DOWNSTEAM) RET
26	**YE**	9251	ECU TO CATALYST TEMP SENSOR (DOWNSTREAM)
28	**YE**	9249	ECU TO CATALYST TEMP SENSOR (UPSTEAM)
29	**YE**	9248	REDUCTION AGENT LEVEL TEMP SENSOR
31	**PK**	ISOK2	

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



SS10G113 9

LEFT HAND TOP OF FUEL TANK

IMAGE NOT AVAILABLE

INA 10

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T7.170, T7.185, T7.200, T7.210 Range Command - With **Sidewinder**

Component	Connector	Description
A-080	**X950**, **X952**, **X953**, **X954**, **X955**, **X956**, **X957**	Universal Controller (UCM)
B-029	**X290**	Transmission Oil Temperature Sensor
B-036	**X273**	System Oil Pressure Sensor
R-038	**X666**	Slow/Fast Potentiometer
R-039	**X667**	Med/Rev Potentiometer
R-005	**X002**	Clutch Potentiometer
R-008	**X632**	Creeper Potentiometer
S-003	**X001**	Clutch Switch
S-090	**X012**	Park Switch
S-091	**X012**	Neutral- Switch
S-092	**X012**	Deadman Switch
S-093	**X012**	Not Park- Switch
S-094	**X012**	FWD- Switch
S-095	**X012**	REV- Switch
Y-039	**X631**	Creeper Solenoid
Y-053	**X637**	Solenoid Clutch C
Y-054	**X638**	Solenoid Clutch D
Y-055	**X639**	Solenoid Clutch E
Y-058	**X643**	High Range Solenoid
Z-062	**X012**	Shuttle Lever
Additional Connectors: **X020**, **X022**, **X633**		

Wire Colour Codes

BK Black	**GN** Green	**PK** Pink	**BL** Blue
TN Light Brown	**BR** Brown	**OR** Orange	**LG** Light Green
RD Red	**GY** Grey	**LB** Light Blue	
WH White	**YE** Yellow	**VT** Violet	

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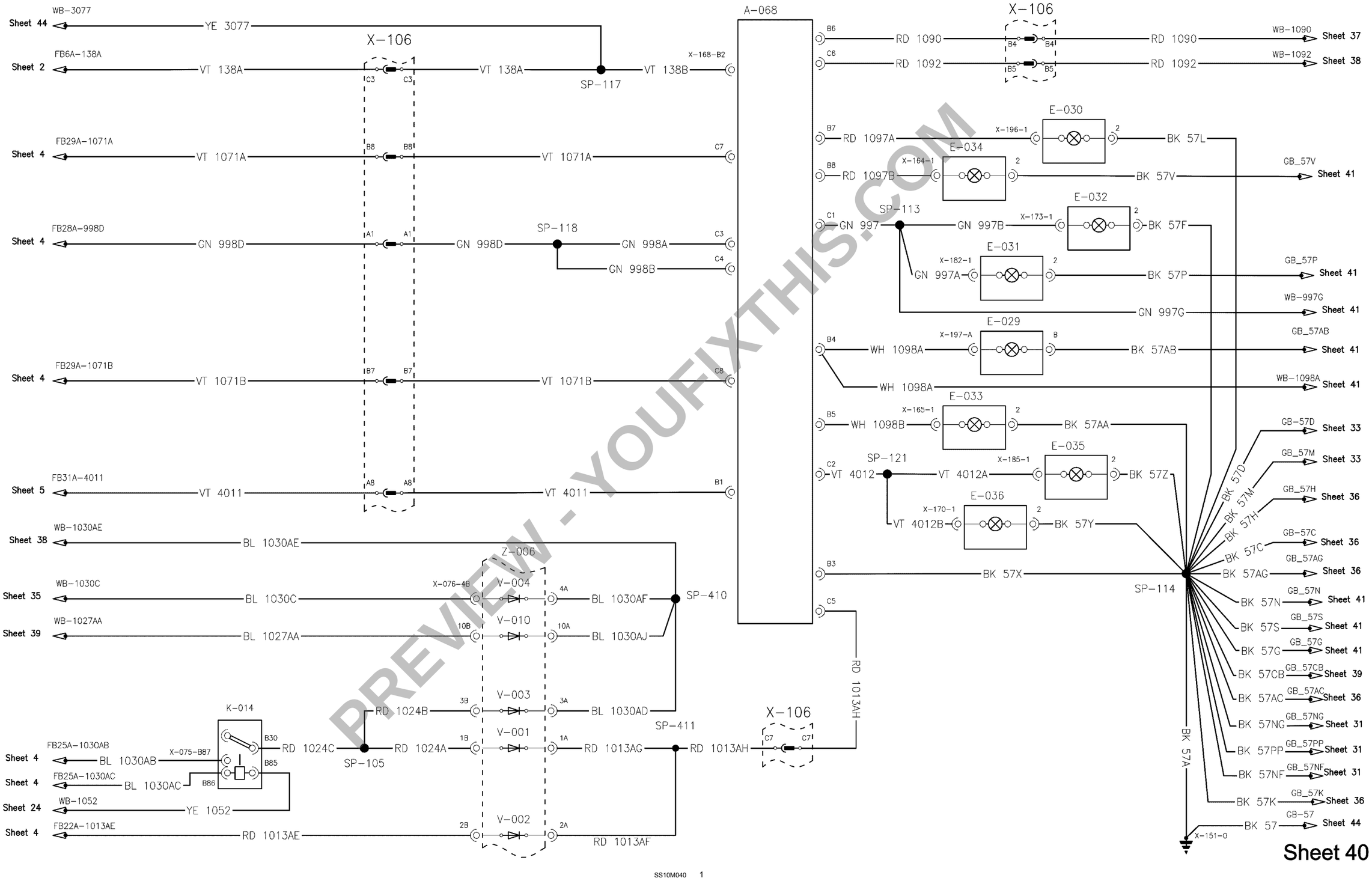

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Control module Electronic park lock (EPL) controller - Electronic schema

T7.170 AutoCommand, T7.185 AutoCommand, T7.200 AutoCommand, T7.210 AutoCommand, T7.170 Range Command with Sidewinder, T7.170 Power Command with Sidewinder, T7.185 Range Command with Sidewinder, T7.185 Power Command with Sidewinder, T7.200 Range Command with Sidewinder, T7.200 Power Command with Sidewinder, T7.210 Range Command with Sidewinder, T7.210 Power Command with Sidewinder

Component Identification	
1.	Electronic Park Brake **(EPL)** Unit (Module and Motor assembly)
2.	**EPL** Motor
3.	Trailer Brake Relay
4.	Sensor Ground
5.	Chassis Ground
6.	Power Ground

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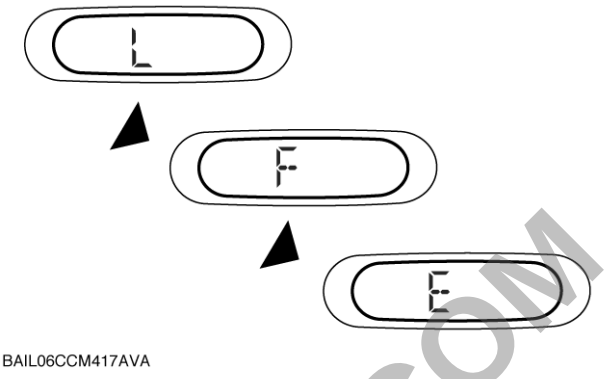
Scroll through the available options using the “h" or “m" button.
"Factory" (F) - factory error mode, displays all error codes for a period of 6 minutes then reverts to error code reduction (ECR).
"ECR" (E) - error code reduction mode, only displays critical errors.
"Live" (L) live error code mode, displays all error codes.



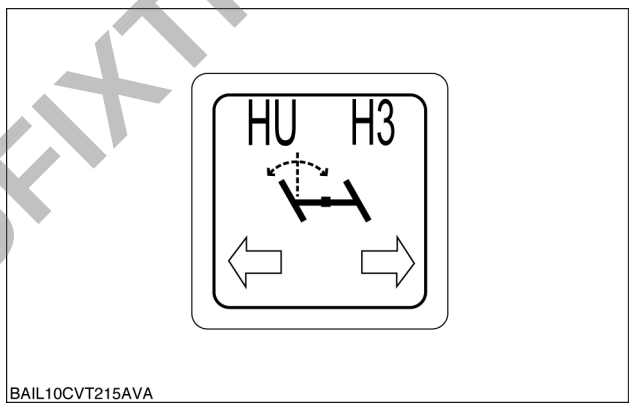
BAIL06CCM417AVA

BAIL06CCM417AVA 4

Depress and hold the “h" or “m" button to store the selection, an audible tone will be heard to confirm the selection. Depress the “dimming" button to continue navigating through the “HH" menus.

Steering Sensor Selection Options

Select the steering sensor sub-system by depressing the “dimming" button.

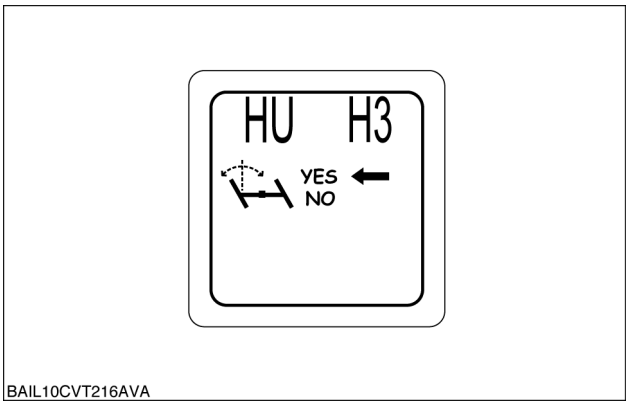


BAIL10CVT215AVA

BAIL10CVT215AVA 5

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

Scroll through the available options using the “h" or “m" button.
Depress and hold the “h" or “m" button to store the selection, an audible tone will be heard to confirm the selection. Depress the “dimming" button to continue navigating through the “HH" menus.



BAIL10CVT216AVA

BAIL10CVT216AVA 6

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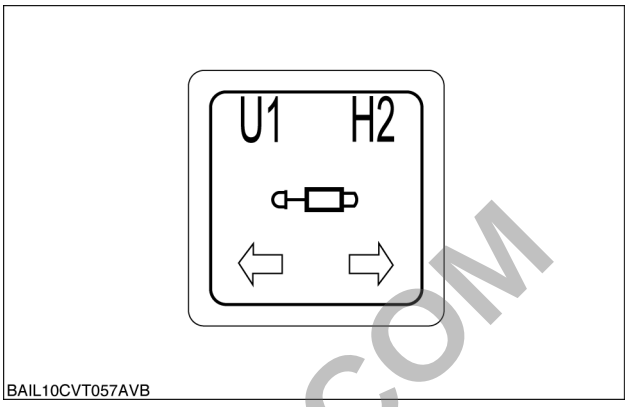
Rear EHR Calibration Values

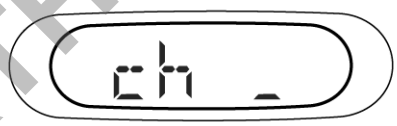
Use the "h", "m" and "dimming" buttons on the instrument cluster to navigate the HH menus to H2 and the rear EHR symbol on the U1 controller.



BAIL10CVT057AVB

BAIL10CVT057AVB 13

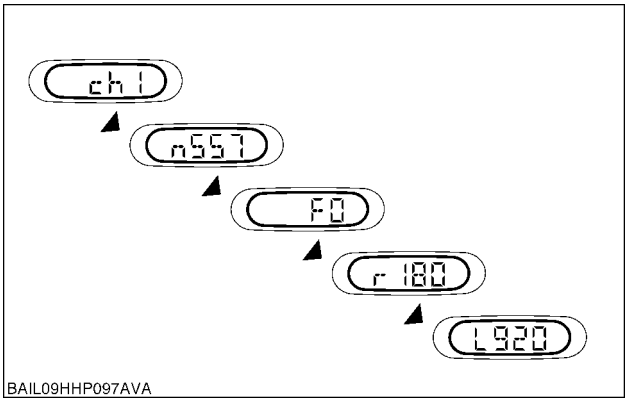
The lower central display will show "Ch_ _"



BAIL06CCM446AVA

BAIL06CCM446AVA 14

The required channel can be selected by using the “h" and “m" buttons.
After displaying the channel number, the stored calibration value for each lever position is displayed, (refer to the table below for a description of each channel).



BAIL09HHP097AVA

BAIL09HHP097AVA 15

Channel Number	Item		Display	Value Range
Ch 1	Lever number 1	Neutral position	nxxx	520 to 560
		Float position	Fxxx	0 to 20
		Raise position	rxxx	160 to 220
		Lower position	Lxxx	890 to 930
Ch 2	Lever number 2	Neutral position	nxxx	520 to 560
		Float position	Fxxx	0 to 20
		Raise position	rxxx	160 to 220
		Lower position	Lxxx	890 to 930
Ch 3	Lever number 3	Neutral position	nxxx	520 to 560
		Float position	Fxxx	0 to 20
		Raise position	rxxx	160 to 220
		Lower position	Lxxx	890 to 930

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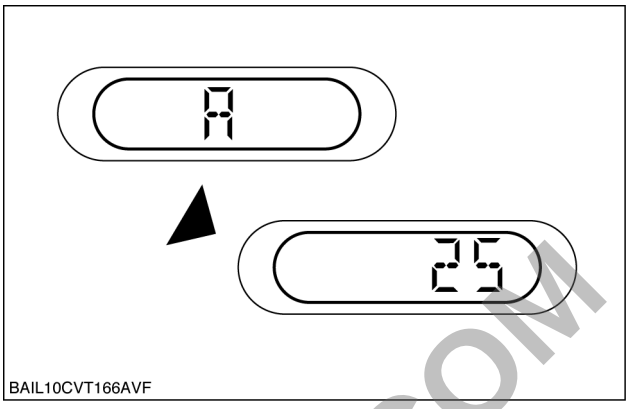
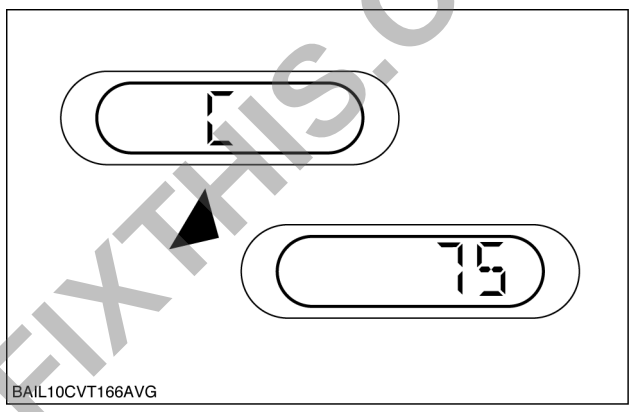
Press and hold the downshift button to display the ‘Low’ position as a percentage of the potentiometer movement.
The lower central display will show ‘A’ followed by a value of approximately **25 %**



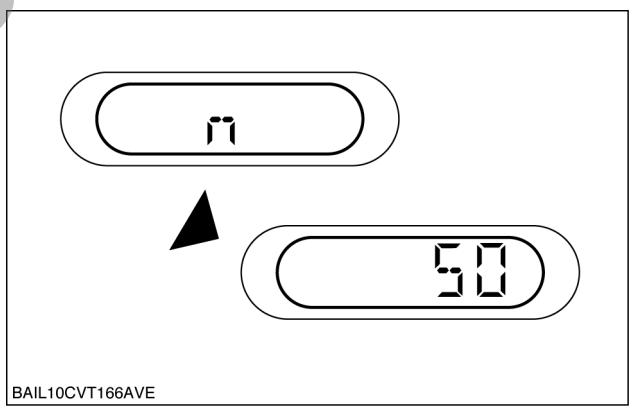
BAIL10CVT166AVF 16

Press and hold the upshift button to display the ‘High’ position as a percentage of the potentiometer movement.
The lower central display will show ‘C’ followed by a value of approximately **75 %**



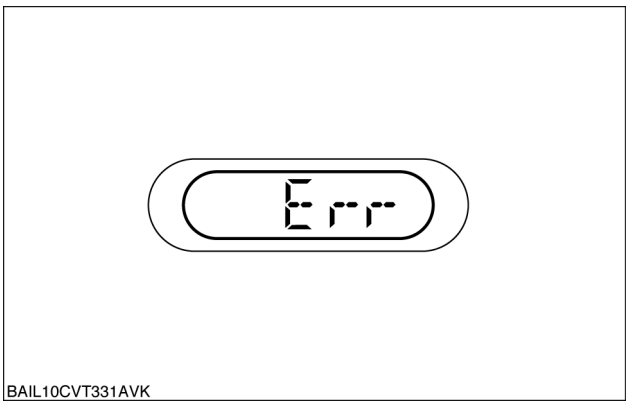
BAIL10CVT166AVG 17

Press and hold both buttons to return the syncro to the neutral position.
The lower central display will show ‘n’ followed by a value of approximately **50 %**



BAIL10CVT166AVE 18

Release the clutch pedal. If the display shows ‘Err’ when the clutch pedal is released then depress the pedal and ensure that the low/high synchroniser is in the neutral position.



BAIL10CVT331AVK 19

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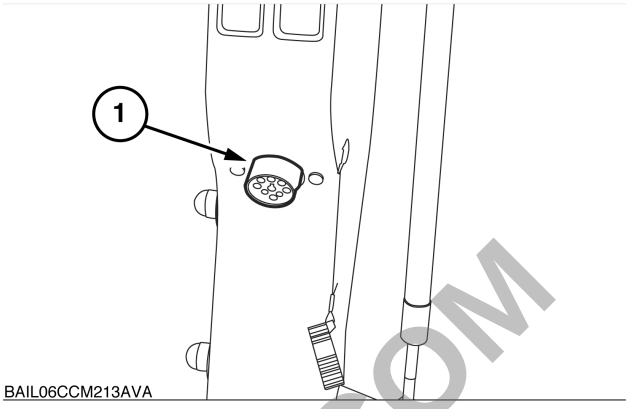
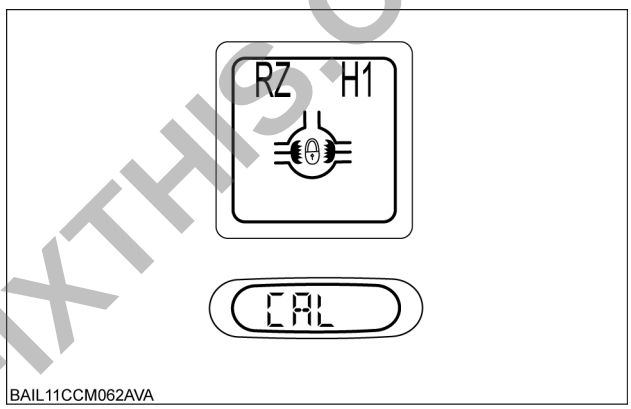
Install the diagnostic connector **380000843** into the diagnostic socket **(1)**.



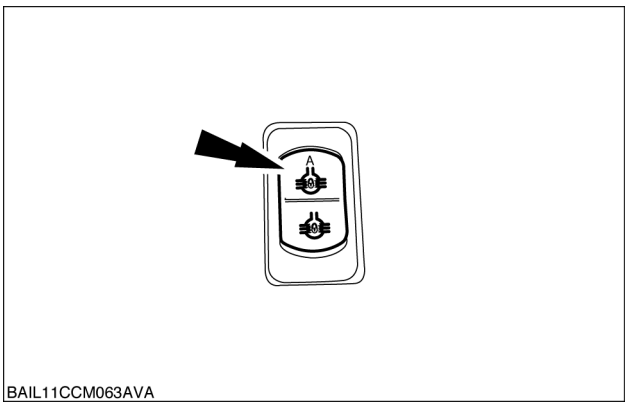
BAIL06CCM213AVA 24

Use the "h" "m" and "dimming" buttons on the instrument cluster to navigate the HH menus to H1 and the differential lock symbol on the RY controller. The lower central display will show “CAL”.



BAIL11CCM062AVA 25

Press and hold the automatic differential lock switch for two seconds.

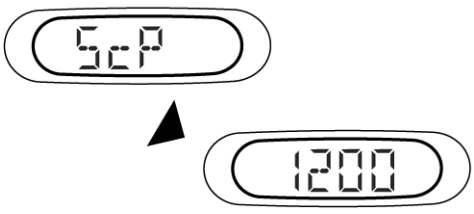


BAIL11CCM063AVA 26

The lower central display will show "ScP" followed by the current steering sensor reading.

NOTE: *If the display indicates the number "-1", the steering angle sensor option must be activated with the H3 menu, before the steering angle sensor can be calibrated, for further information refer to* ***Control module Central Control Unit - H3 - Configurations and options (A.50.A)****.*

NOTE: *If the display shows “-2” then this indicates an error with the steering angle sensor input to the instrument cluster. Review associated instrument cluster error codes to determine the fault.*



BAIL06CCM625AVA 27

Turn the steering wheel so the front wheels are in line with the driveline.

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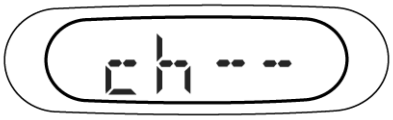
The lower central display will display "ch - -".



BAIL06CCM534AVA

BAIL06CCM534AVA 3

The required channel can be selected by using the "h" and "m" buttons.

Refer to the table below for the available channels.

After a delay the value will be displayed.

Channel	Description	Typical Reading	Notes
0	Not used		
1	Not used		
2	Not used		
3	Not used		
4	Not used		
5	Not used		
6	Not used		
7	Not used		
8	Not used		

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

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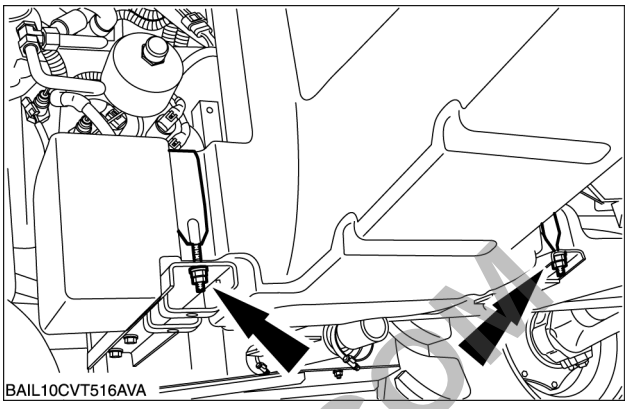
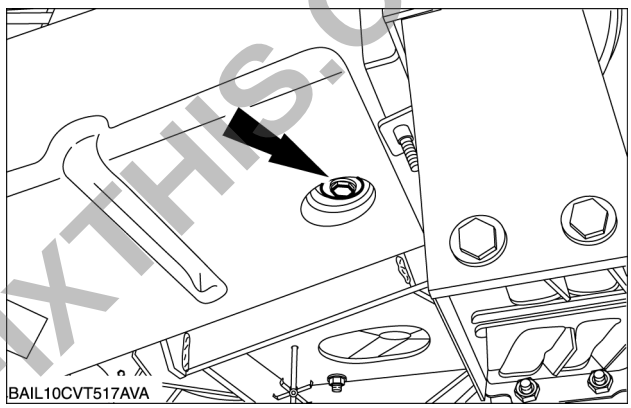
26. Remove the right-hand fuel tank retaining straps.



BAIL10CVT516AVA 23

27. Remove the right-hand fuel tank retaining bolt.



BAIL10CVT517AVA 24

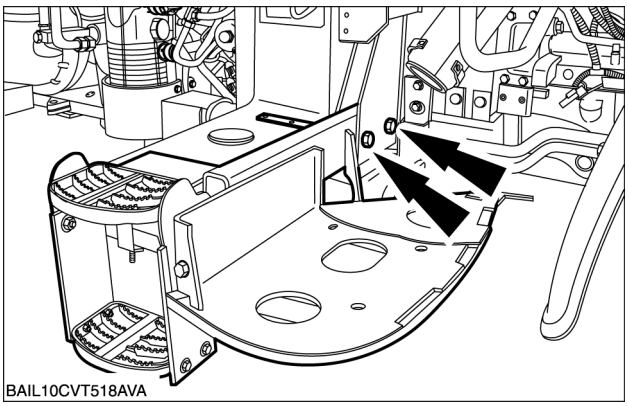
28. Remove the selective catalytic reduction (SCR) muffler, for additional information refer to **Selective Catalytic Reduction (SCR) SCR muffler - Remove (B.40.B)**.

29. **⚠ WARNING**

Heavy objects!
Lift and handle all heavy components using lifting equipment with adequate capacity. Always support units or parts with suitable slings or hooks. Make sure the work area is clear of all bystanders.
Failure to comply could result in death or serious injury.

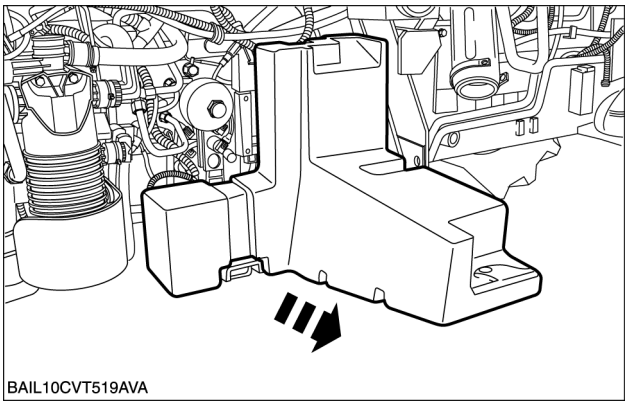
W0398A

With the aid of an assistant or suitable lifting equipment, remove the SCR muffler mounting bracket.



BAIL10CVT518AVA 25

30. With the aid of an assistant or trolley jack remove the right-hand fuel tank.



BAIL10CVT519AVA 26

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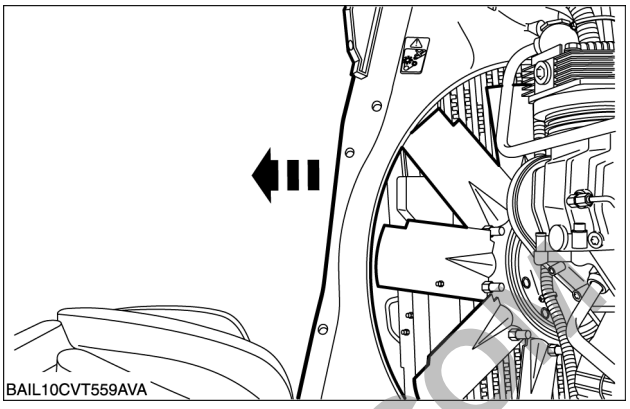
12. Manoeuvre the reversible fan and shroud to the left-hand side of the vehicle to allow the reversible fan to be removed.



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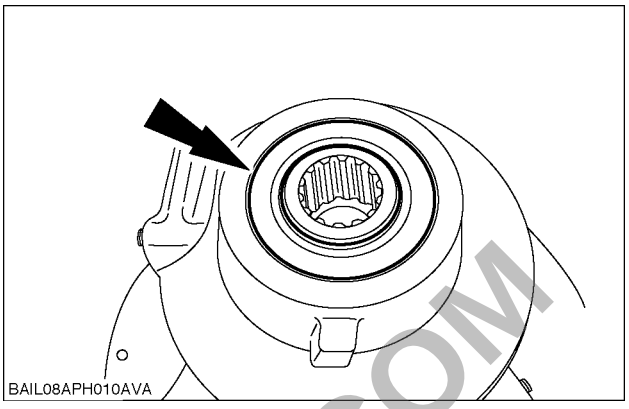
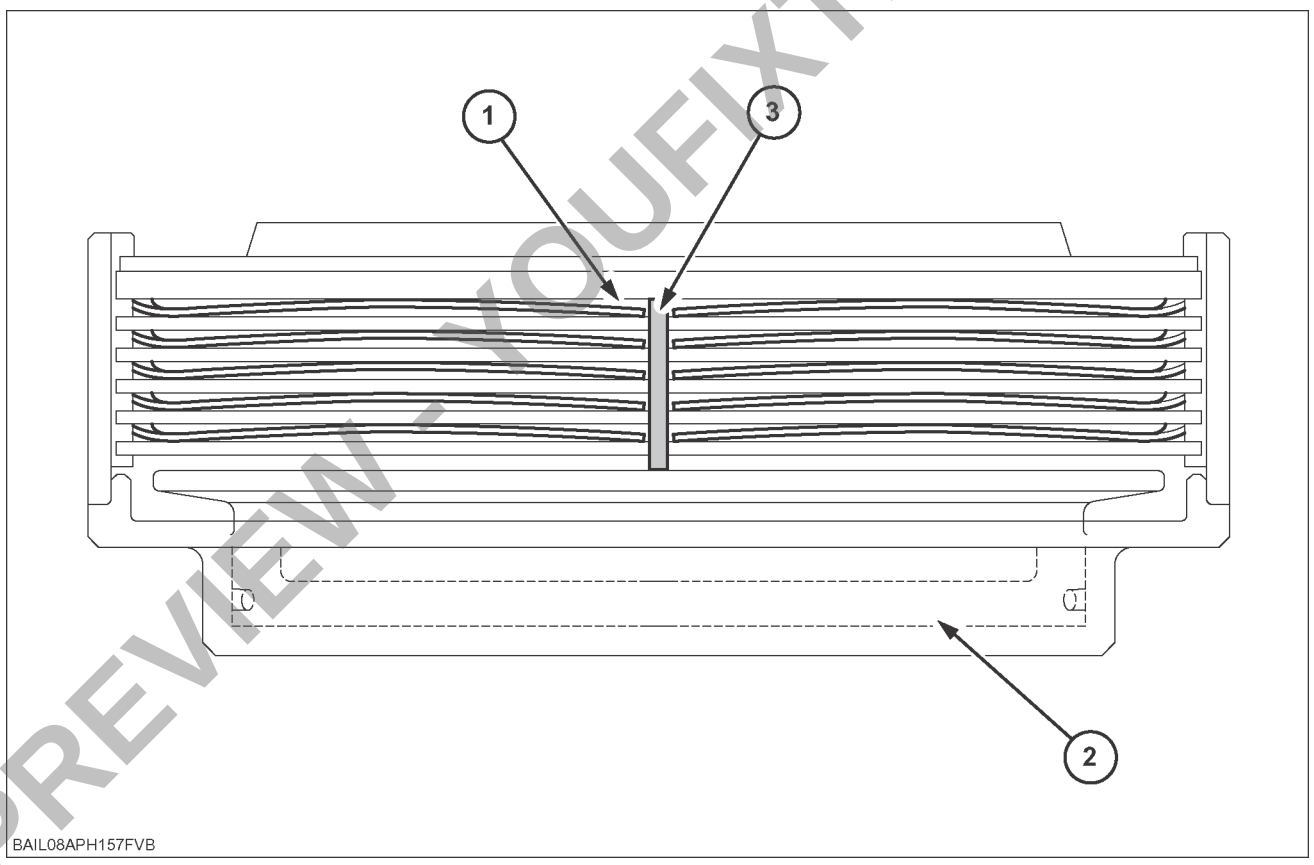
9. Install a new master clutch housing seal.



BAIL08APH010AVA 9

10. When installing the centering springs in step **11**, make sure that:
the open ends of the springs **(1)** are all aligned with the same tooth in the clutch housing
the ends of the springs are oriented towards the piston **(2)**
the locating pin **(3)** fits into the groove



BAIL08APH157FVB 10

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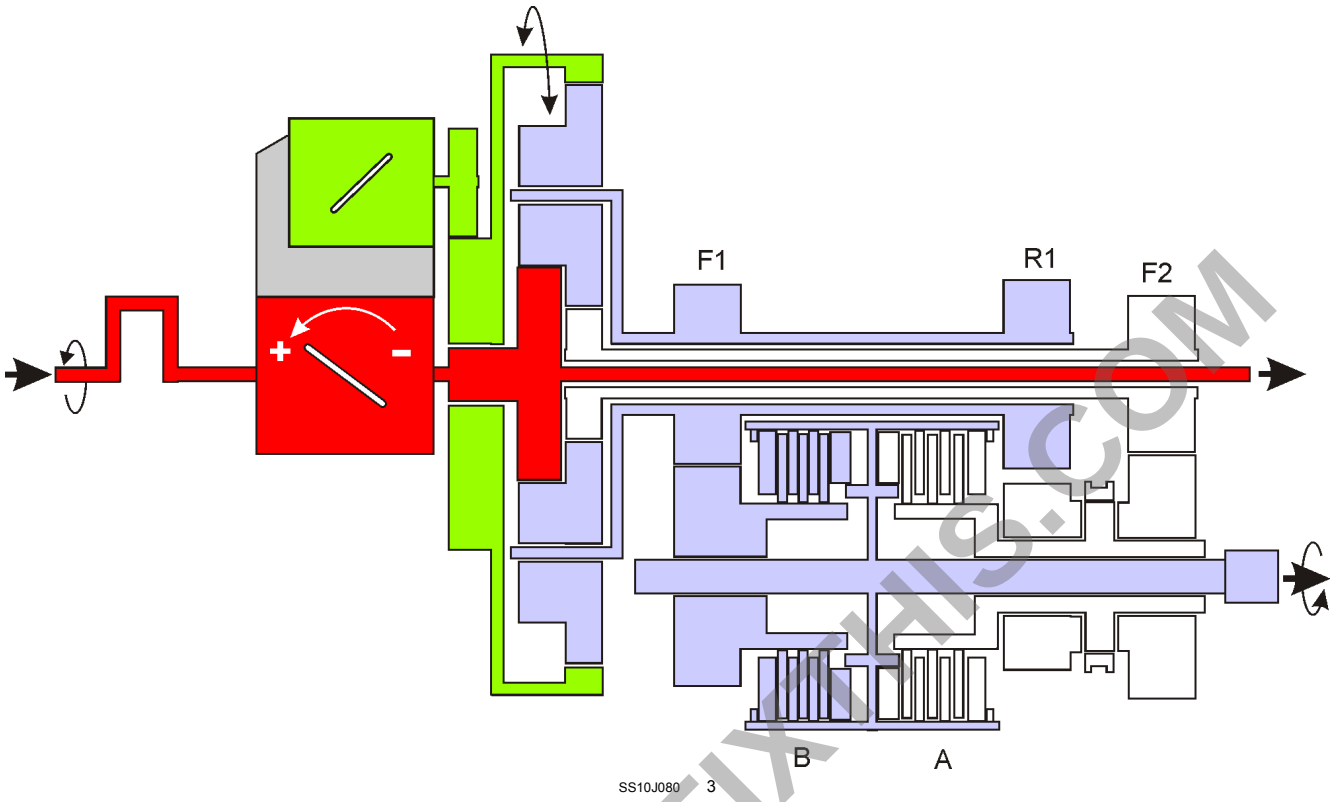

Gear level F1

The power train from the summing planetary gear / planetary carrier via the gear wheel pair **(F1)** to clutch **(B)** is engaged. The swivel angle of the swash plate in the hydrostat is adjusted in the direction of the positive swivel angle (+) in order to increase the travelling speed.

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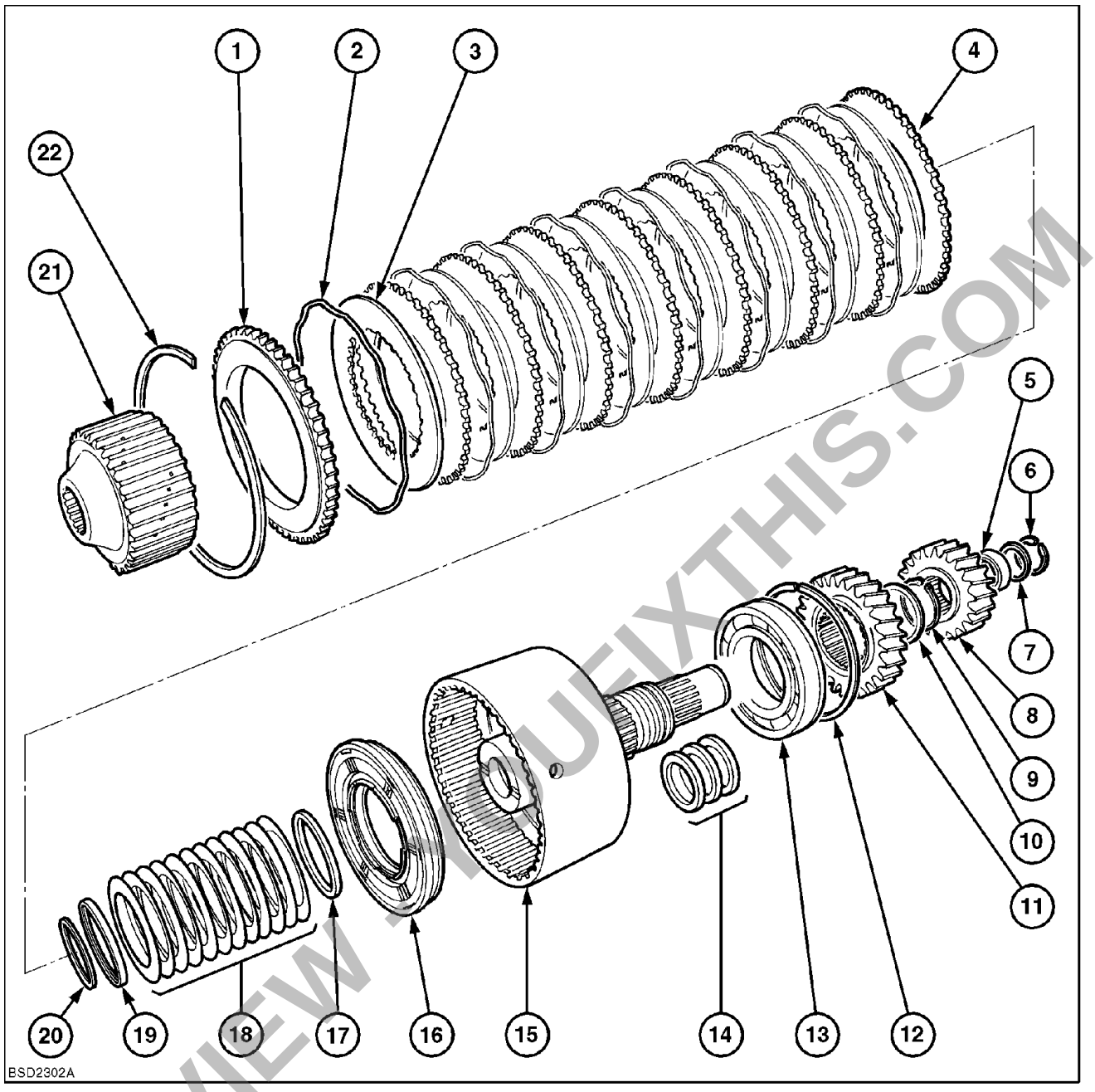

BSD2302A 29

PTO Clutch Assembly

1 End Plate
2 Spring Separator
3 Clutch Plate
4 Clutch Plate Separator
5 Bearing
6 Circlip
7 Spacer
8 Drive Gear **540 rpm**
9 Circlip
10 Spacer
11 Drive Gear **1000 rpm**
12 Retainer
13 Bearing
14 Sealing Rings (3 off)
15 Clutch Housing
16 Piston
17 Washer
18 Belleville Springs
19 Spacer
20 Retaining Ring
21 Hub
22 Retaining Ring

Next operation:
Adjust the PTO brake band, for further information, refer to **PTO brake - Adjust (C.40.C)**.
Next operation:
Adjust the PTO speed selection, for further information, refer to **REAR PTO Mechanical - Adjust (C.40.B)**.

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SERVICE MANUAL

AXLES, BRAKES AND STEERING

T7.170 AutoCommand , T7.170 Power Command , T7.170 Range Command ,
T7.185 AutoCommand , T7.185 Power Command , T7.185 Range Command ,
T7.200 AutoCommand , T7.200 Power Command , T7.200 Range Command ,
T7.210 AutoCommand , T7.210 Power Command , T7.210 Range Command

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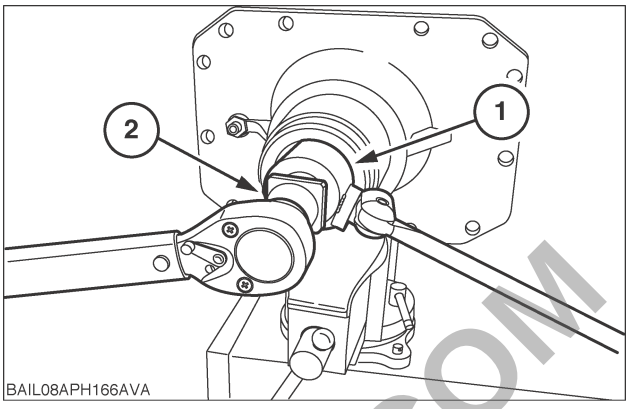
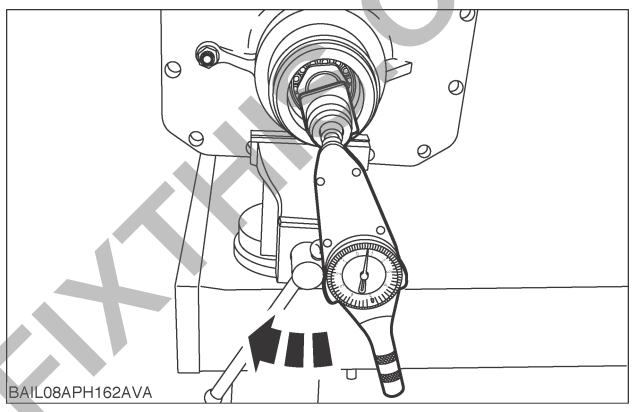
10. Using special tool **380000268 (1)** to hold the pinion nut and special tool **380000257 (2)** to rotate the pinion counter clockwise, slowly tighten the pinion to **392 N·m** (**289 lb ft**).



BAIL08APH166AVA 10

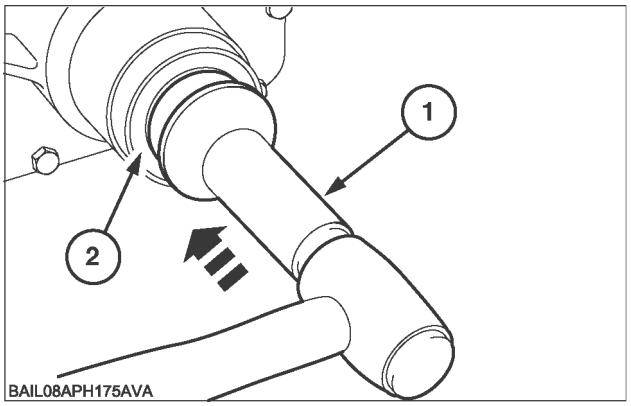
11. Using a suitable torque wrench, check that the rolling torque of the pinion shaft bearings is between **0.49 N·m** (**0.3614 lb ft**) and **0.98 N·m** (**0.7228 lb ft**).



BAIL08APH162AVA 11

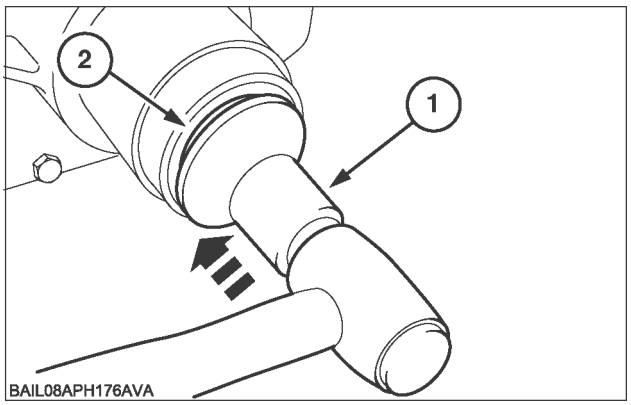
12. Stake the pinion nut.

13. Using special tool **380200042 (1)**, install the pinion shaft seal **(2)**.



BAIL08APH175AVA 12

14. Using special tool **380200041 (1)**, install the pinion shaft seal protector **(2)**.



BAIL08APH176AVA 13

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Assemble 52
Remove - 4WD Clutch removal without splitting the transmission 55
Install 4WD Clutch Installation Procedure 62

DIAGNOSTIC

2WD-4WD SYSTEM Hydraulic

Troubleshooting 76

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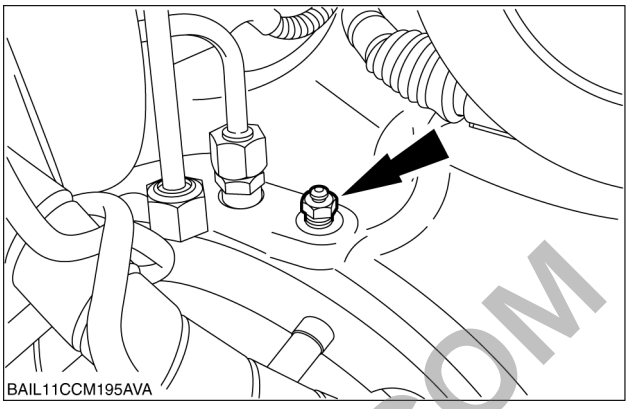
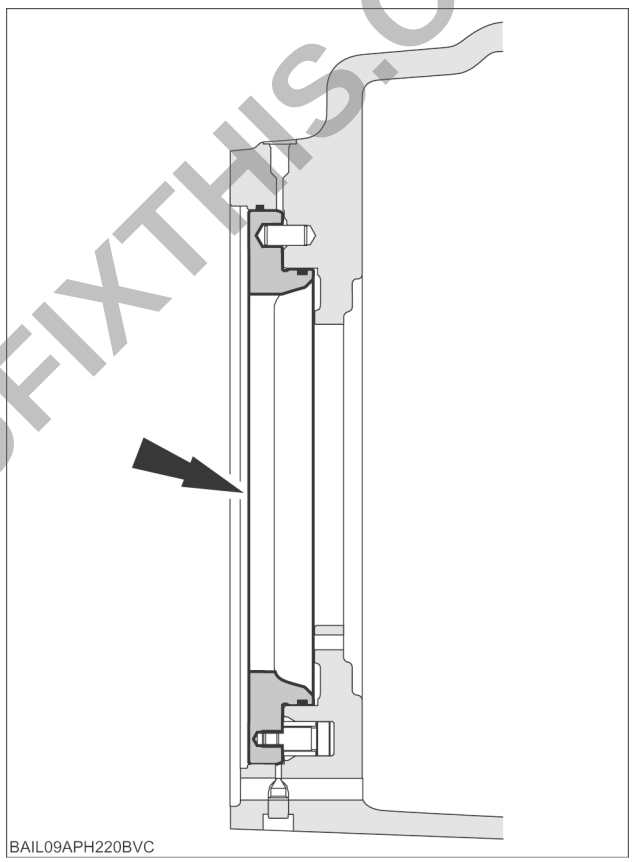
7. Loosen the relevant bleed nipple (right-hand side shown).



BAIL11CCM195AVA 7

8. Install the piston into the rear axle housing.

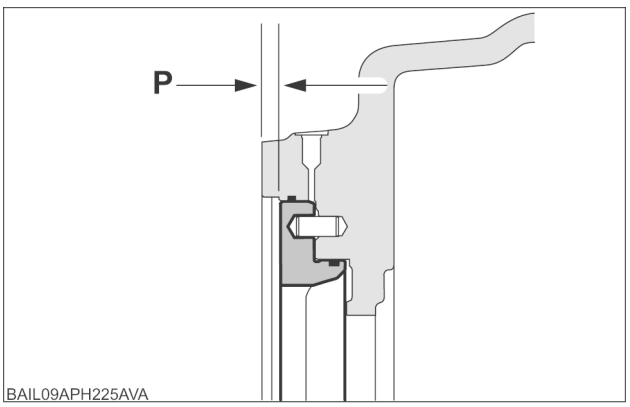
NOTICE: *Soak the piston assembly in transmission oil before installation.*



BAIL09APH220BVC 8

9. Measure the distance between the outer face of the piston and the mating surface of the rear axle housing **(P)**.

NOTICE: *If measurement **(P)** is less than **11 mm** the piston has not seated correctly.*



BAIL09APH225AVA 9

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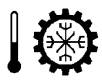
Symbol on display	Indicator light	Warning light	Acoustic warning	Cause	Signal
	-	-	Action required	Electrical park brake **(EPL)** is not engaged. Request to engage park brake - see **TRANSMISSION Continuously Variable Transmission (CVT) - Dynamic description (C.20.G)**	**CAN** message from **EPL**
	-	-	Action required	Electrical park brake **(EPL)** is not disengaged. Request to disengage park brake.	**CAN** message from **EPL**
		illuminates	Non-critical	The automatic engagement of the **EPL** was deactivated for towing the tractor.	**CAN** message from **UCM** **CAN** message from **TCM**
		flashes **4 s**/ illuminates	Non-critical	Pressure in air brake container: < **5.4 bar** (**78.3 psi**) warning "on" > **6 bar** (**87 psi**) warnung "off". Or equipped with hydr. trailer brake, Italy version: hydraulic pressure < **10 bar** (**145 psi**)	Switch in sensor ***B-040** switches to ground < **5.4 bar** (**78.3 psi**). (***B-040** pressure sensor for air brake system) ground ***S-027** (***S-027** brake line pressure switch 1/2)
	-	flashes **4 s**/ illuminates	-	Brake fluid too low: Tractor moving > **2 min** Tractor stationary > **5 s**	+ **12 V *S-029** (***S-029** switch, brake fluid level)
	-	flashes	Critical	Hydraulic pressure for brake force amplification too low: This warning is displayed if the engine is running and the pressure is < **15 bar** (**217.5 psi**).	+ **12 V *S-008** (***S-008** switch, exhaust brake)
		flashes	-	Hydraulic pressure for brake force amplification too low: This warning is displayed if the engine is turned off and the pressure is < **15 bar** (**217.5 psi**).	+ **12 V *S-008** (***S-008** switch, exhaust brake)

Transmission

Symbol on display	Indicator light	Warning light	Acoustic warning	Cause	Signal
	-	-	Action required	Transmission oil too cold. Heat transmission oil - see **TRANSMISSION Continuously Variable Transmission (CVT) - Dynamic description (C.20.G)**	**CAN** message from **UCM** **CAN** message from **TCM**
	-	-	Action required	Driver's seat switch was disengaged for more than **5 s** and driver attempts to select a direction of travel. Press clutch pedal once.	**CAN** message from **UCM** **CAN** message from **TCM**

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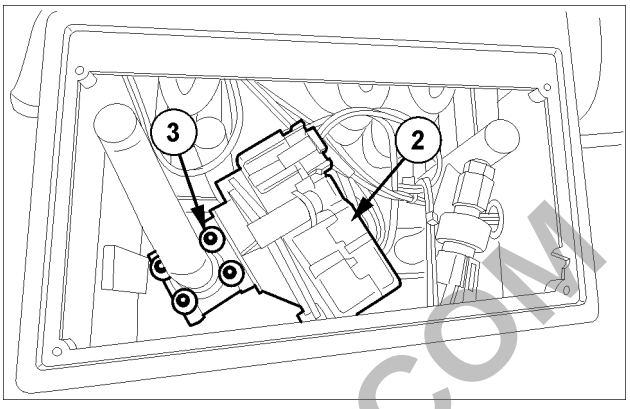
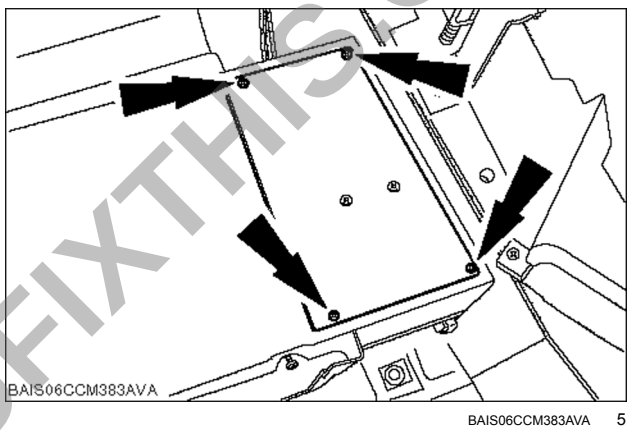
Assembly

4. Fit the heat valve using the mounting screws **(3)**. Attach the connector to the electric heat valve **(2)**.



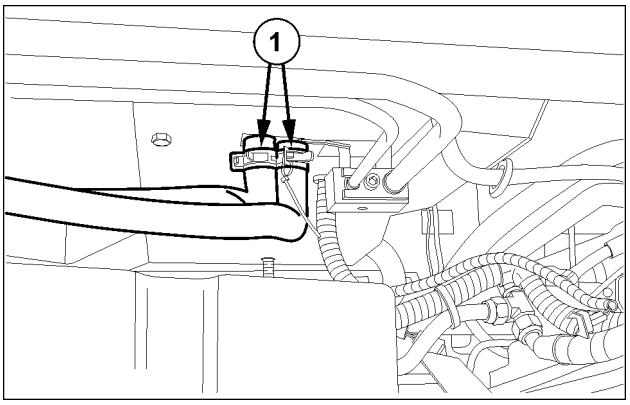
SS08D020 4

5. Mount the cover plate of the heating and air conditioning unit.



BAIS06CCM383AVA 5

6. Fit the cab heating hoses **(1)**.



SS08D110 6

Next operation:
Install the heating and air conditioning unit - see **ENVIRONMENT CONTROL Heating, ventilation and air-conditioning - Install (E.40.D)**. To do this, carry out only Step 4 and Step 8 and Steps 20 to 23.

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