Manual content

This manual is divided into Sections. Each Section is then divided into Chapters. Contents pages are included at the beginning of the manual, then inside every Section and inside every Chapter. An alphabetical Index is included at the end of each Chapter. Page number references are included for every piece of technical information listed in the Chapter Contents or Chapter Index.

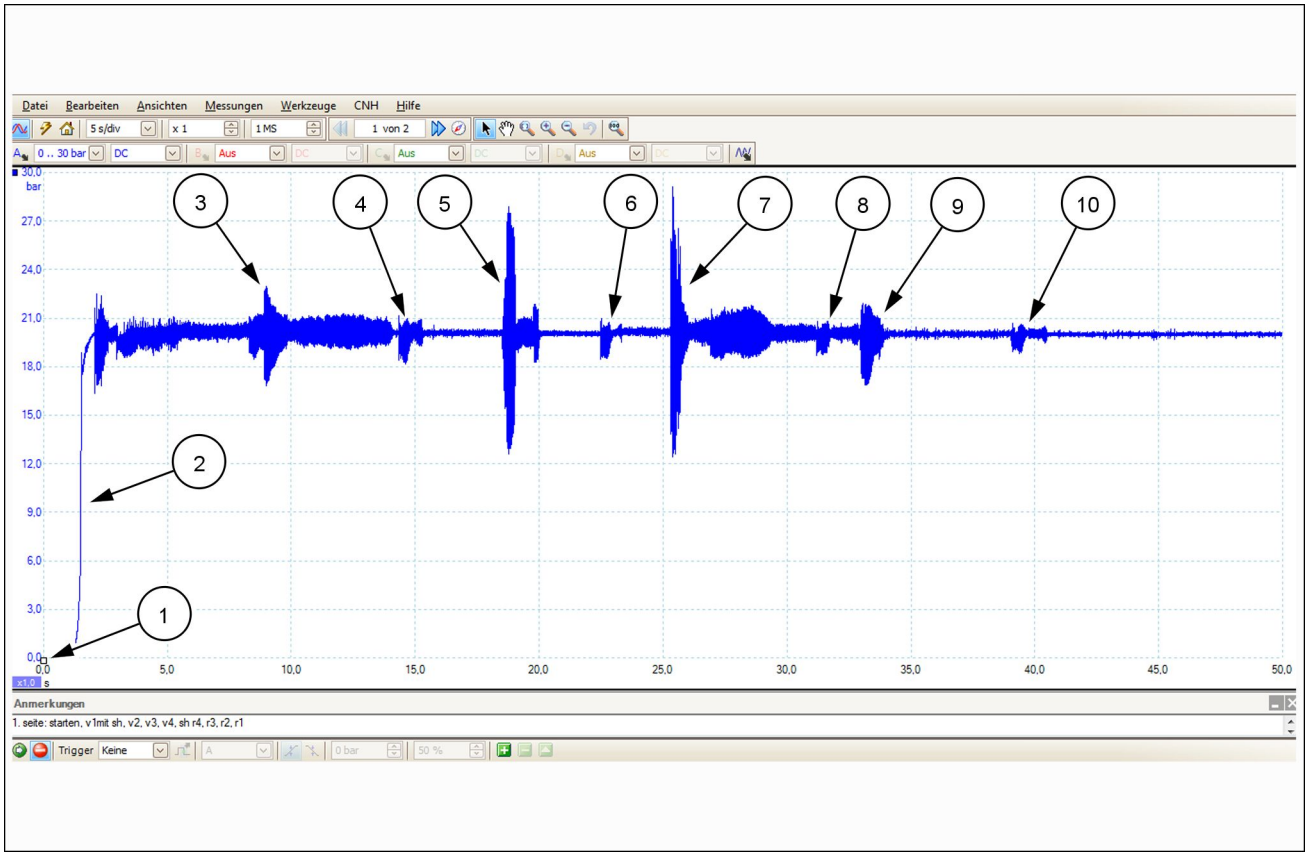
Each Chapter is divided into four Information types:

- Technical Data (specifications) for all the mechanical, electrical or hydraulic devices, components, assemblies or sub-assemblies.
- Functional Data (how it works) for all the mechanical, electrical or hydraulic devices, components, assemblies or sub-assemblies.
- Diagnostic Data (fault codes, electrical and hydraulic troubleshooting) for all the mechanical, electrical or hydraulic devices, components, assemblies or sub-assemblies.
- Service Data (remove disassemble, assemble, install) for all the mechanical, electrical or hydraulic devices, components, assemblies or sub-assemblies.

Sections

Sections are grouped according to the main functions or a systems on the machine. Each Section is identified by a number (00, 35, 55, etc.). The Sections included in the manual will depend on the type and function of the machine that the manual is written for. Each Section has a Contents page listed in alphabetic/numeric order. This table illustrates which Sections could be included in a manual for a particular product.

	PRODUCT				
	Tractors				
		Vehicles with working arms: backhoes, excavators, skid steers, ….			
			Combines, forage harvesters, balers, ….		
				Seeding, planting, floating, spraying equipment, ….	
SECTION					Mounted equipment and tools, ….
00 - Maintenance	X	X	X	X	X
05 - Machine completion and equipment	X	X	X	X	X
10 - Engine	X	X	X	X	
14 - Main gearbox and drive	X	X	X	X	
18 - Clutch	X	X	X		
21 - Transmission	X	X	X	X	
23 - Four wheel drive (4WD) system	X	X	X	X	
25 - Front axle system	X	X	X	X	
27 - Rear axle system	X	X	X	X	
29 - Hydrostatic drive	X	X	X	X	
31 - Power Take-Off (PTO)	X		X		
33 - Brakes and controls	X	X	X	X	
35 - Hydraulic systems	X	X	X	X	
36 - Pneumatic system	X	X	X	X	
37 - Hitches, drawbars and implement couplings	X		X	X	
39 - Frames and ballasting	X	X	X	X	X
41 - Steering	X	X	X	X	
44 - Wheels	X	X	X	X	
46 - Steering clutches					
48 - Tracks and track suspension	X	X	X		
50 - Cab climate control	X	X	X	X	
55 - Electrical systems	X	X	X	X	X
56 - Grape harvester shaking					
58 - Attachments/headers			X		
60 - Product feeding			X		

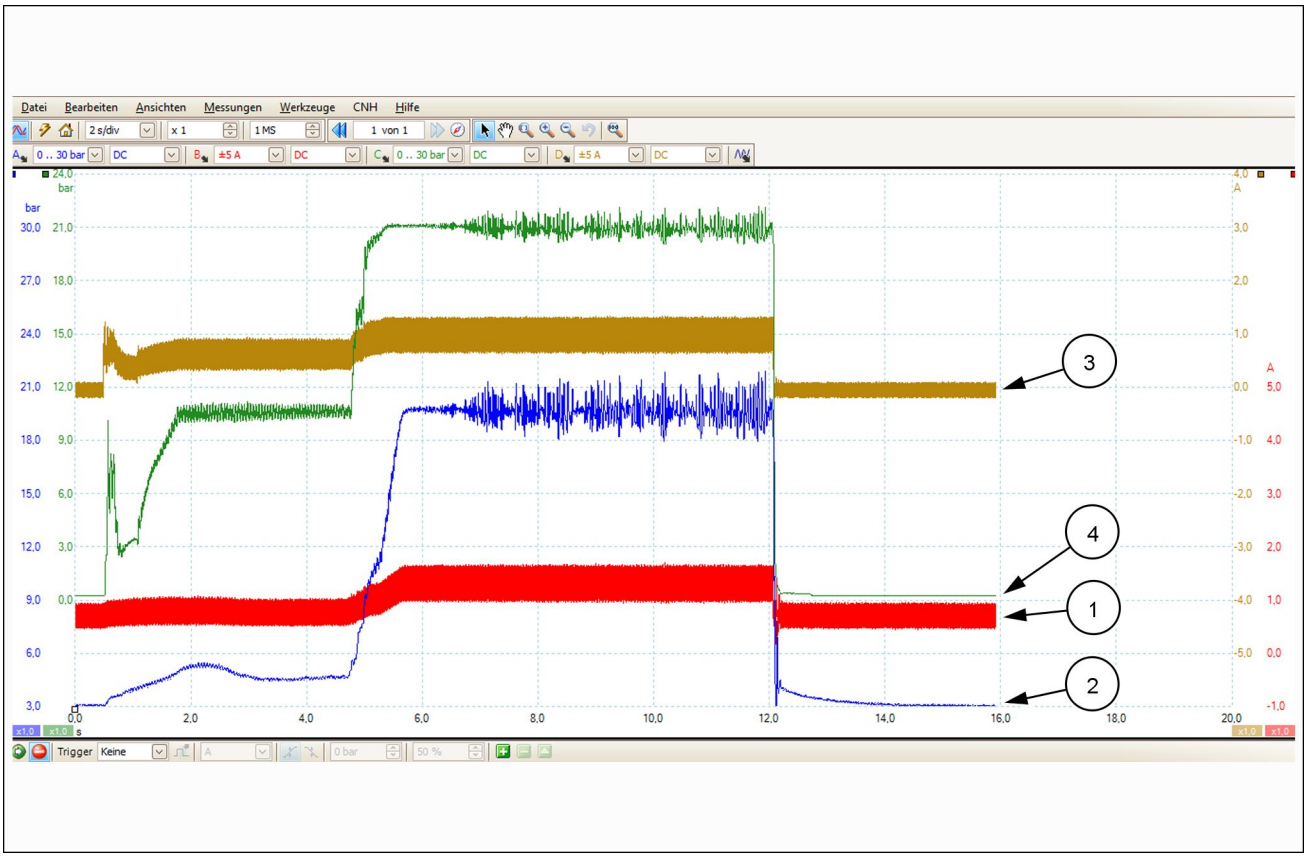


SS13K180 2

(1) Engine off (system pressure **0 bar** (**0 psi**))
(2) Engine start-up (system pressure builds)
(3) Set-off with shuttle lever
(4) Switch of powershift ratio from Forward 1 to Forward 2
(5) Switch of powershift ratio from Forward 2 to Forward 3
(6) Switch of powershift ratio from Forward 3 to Forward 4
(7) Switch from Forward travel to Reverse travel
(8) Switch of powershift ratio from Reverse 4 to Reverse 3
(9) Switch of powershift ratio from Reverse 3 to Reverse 2
(10) Switch of powershift ratio from Reverse 2 to Reverse 1

Test conditions for powershift ratio 3 Forward:

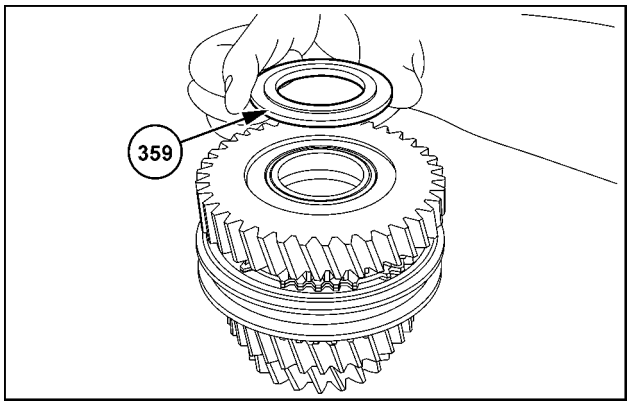
- Transmission oil temperature **50 °C** (**122 °F**)
- motor speed **1500 RPM**
- Flat road with no equipment present
- Second gear, road range and third powershift ratio
- Push the shuttle lever into the Forward position to move off. Then press the neutral button to stop again



SS13K184 4

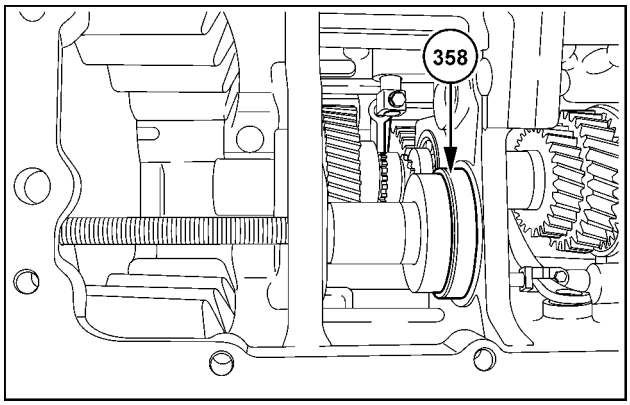
(1) Current through the solenoid valve for clutch C
(2) Hydraulic pressure in clutch C
(3) Current through the solenoid valve for clutch B
(4) Hydraulic pressure in clutch B

16. Grease the thrust washer **(359)** with industrial Vaseline.
17. Install the thrust washer **(359)** on the fourth gear. The oil pockets must face downward.



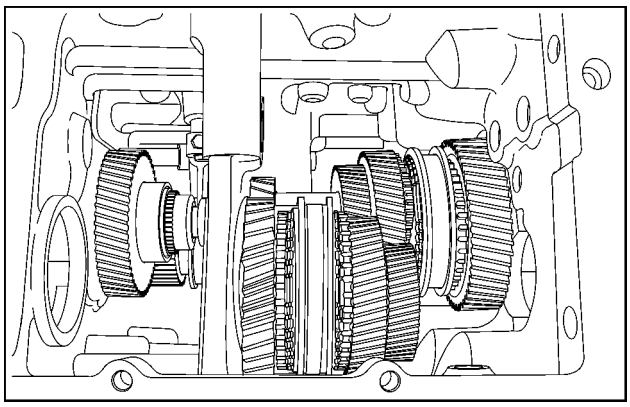
SVIL13TR00389AB 12

18. Use a suitable positioning tool to press the bearing **(358)** into the transmission housing via the bearing outer ring.



SVIL13TR00390AB 13

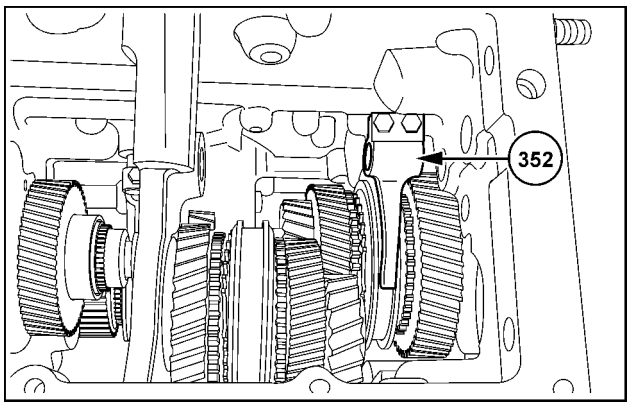
19. Install the prepared gear set with the synchronizer in the transmission housing on the main shaft.



SVIL13TR00391AB 14

20. Install the shift fork for first and second gear **(352)** over the shift collar.

NOTICE: *Subsequent installation of the shift fork is no longer possible.*

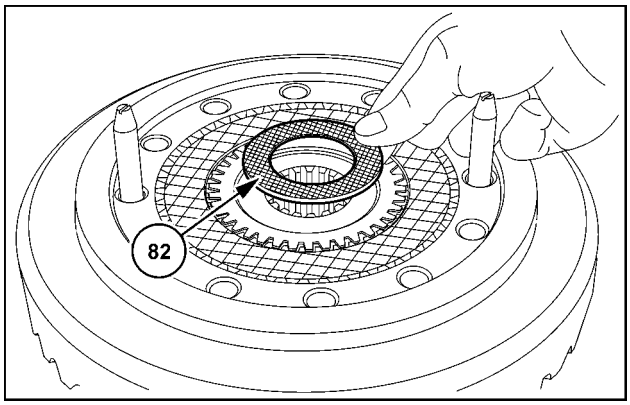


SVIL13TR00392AB 15

Differential lock - Troubleshooting

Problem	Possible Cause	Correction
The differential lock fails to engage.	Transmission oil level low.	Top up oil.
	Clogged oil filter.	Replace filter.
	Hydraulic pump faulty.	Overhaul or replace the pump.
	Faulty differential lock--unlock switch.	Replace switch.
	Lack of power supply to the solenoid valve: connections loose or damaged, contactor faulty.	Check electrical connections and replace defective parts.
	Differential lock control solenoid valve jammed in discharge position.	Overhaul or replace solenoid valve.
	Oil leakage through the seals with consequent pressure drop: piston seals or delivery pipe seals.	Replace damaged seals.
Differential lock fails to disengage.	Differential lock solenoid valve jammed in delivery position.	Overhaul or replace solenoid valve.
	Differential lock release spring broken.	Replace spring.
	Lack of power supply to the solenoid valve: connections loose or damaged, contactor faulty.	Check electrical connections and replace defective parts.
With differential lock engaged, the differential lock does not disengage when brake pedals are pressed.	Switch governed by the brake pedal, connected to the control unit, defective.	Change the switch or repair the electrical system.

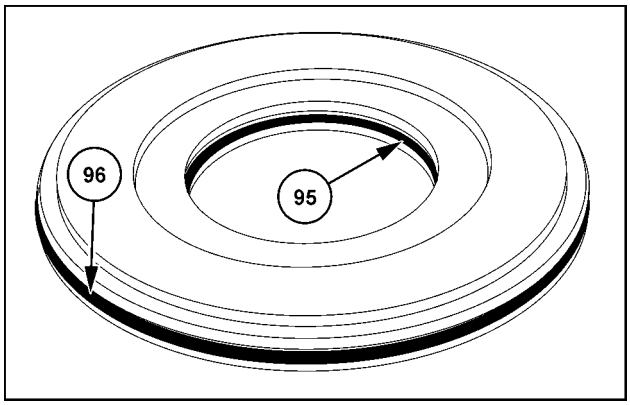
9. Insert the thrust washer **(82)** into the bevel gear **(80)**.



SS13H065 8

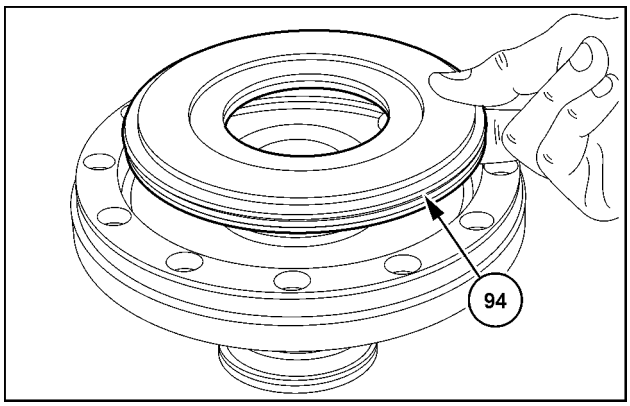
10. Insert the O-rings **(95)** and **(96)** into the ring grooves of the piston **(94)**.

NOTE: *Grease the O-rings with industrial Vaseline.*



SS13H066 9

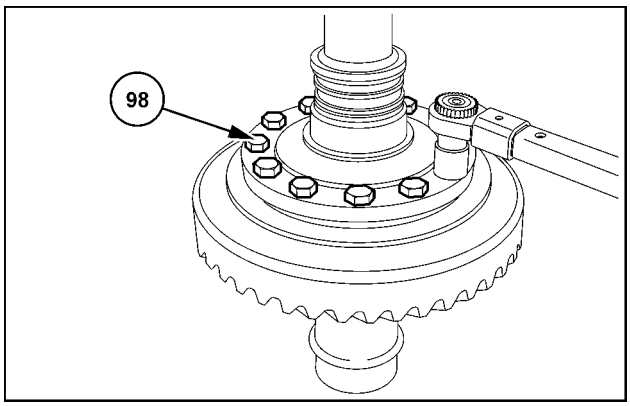
11. Fit the piston **(94)**. Make sure that the flat side of the piston faces the differential housing **(97)**.



SS13H067 10

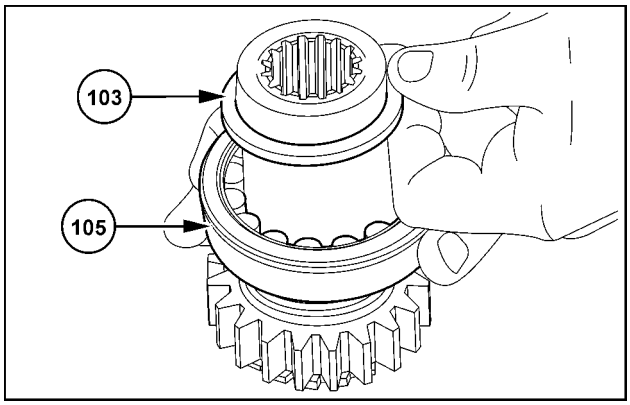
12. Coat the bolts **(98)** with **LOCTITE® 243**.
13. Fit the differential housing **(97)** on the differential housing **(73)**.
14. Insert screws and tighten to **115 Nm** (**84.8 lb ft**).

NOTE: *Use the press to secure the differential so that the differential does not turn.*



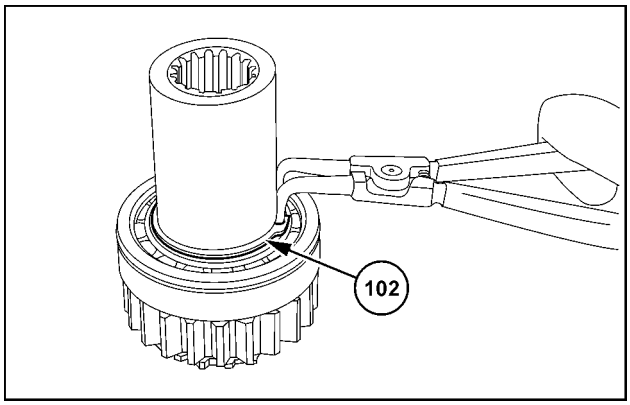
SS13H068 11

11. Fit the bearing **(105)** and the thrust washer **(103)** on the intermediate shaft. The internally chamfered side of the thrust washer must face the bearing.



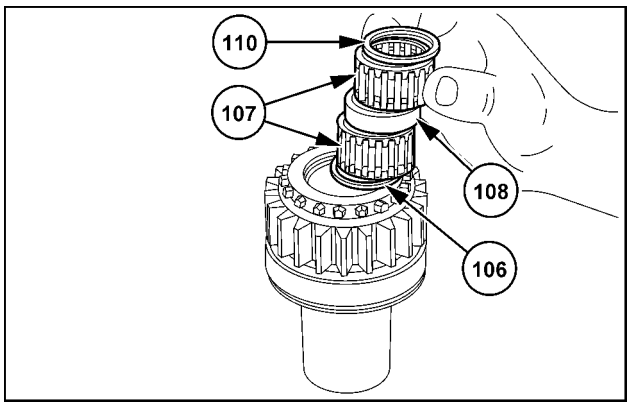
SVIL13TR00340AB 12

12. Fit the circlip **(102)**.



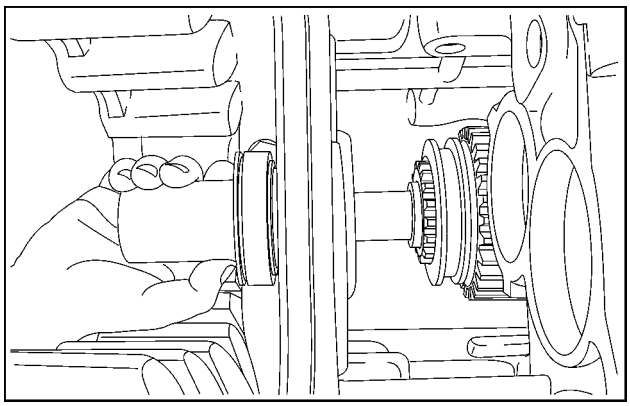
SVIL13TR00262AB 13

13. Fit the spacer disk **(106)**, the needle bearing **(107)**, the spacer ring **(108)**, the needle bearing **(107)** and the spacer disk **(110)**.



SVIL13TR00341AB 14

14. Fit the pre-assembled intermediate shaft in the transmission housing bore. See also figure **16**.



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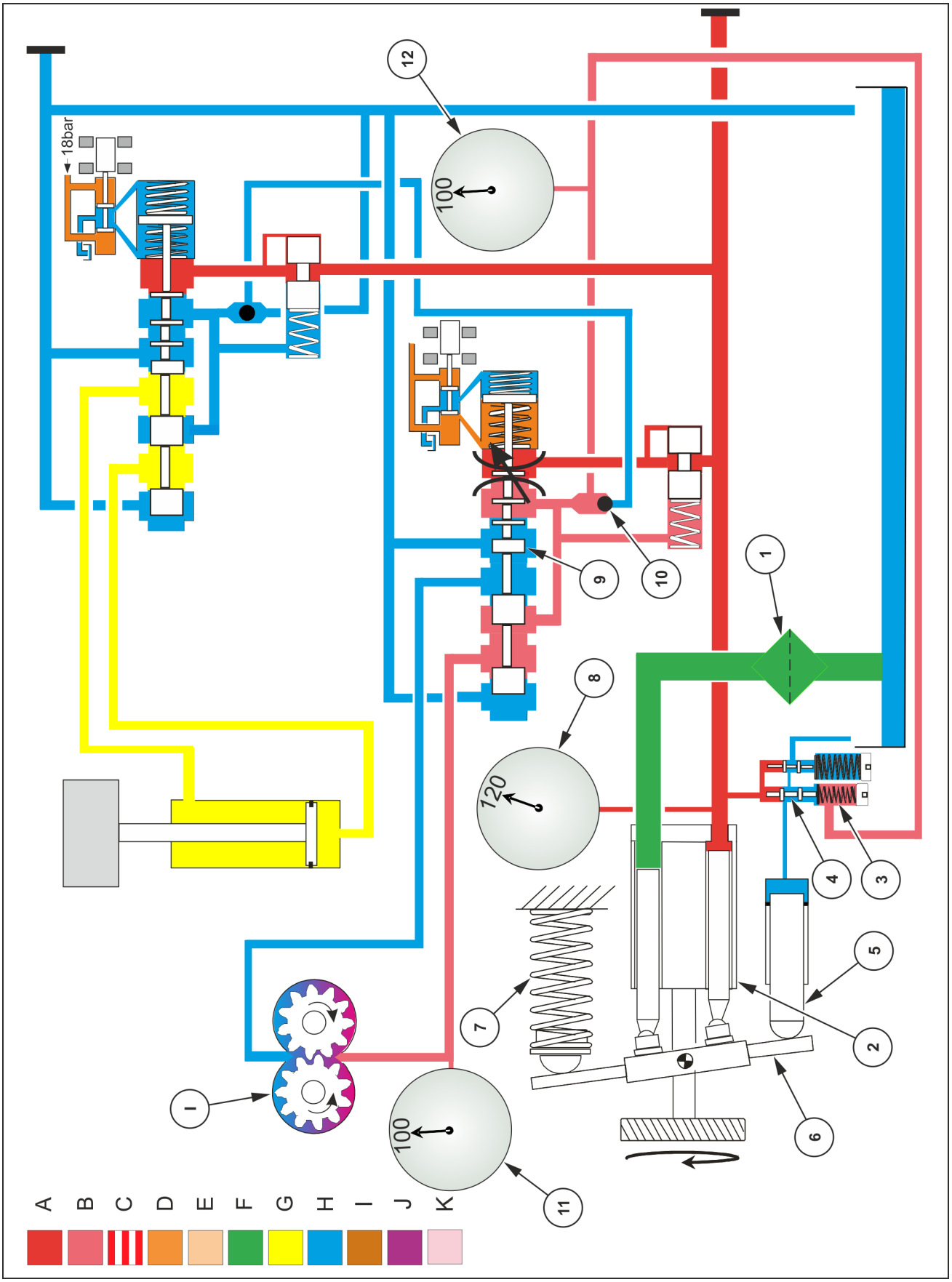


SS12N803 2

Rear wheels - Install

⚠ WARNING

Crushing hazard!
The wheels on this vehicle are very heavy. Always use a wheel remover or chain hoists to remove and install the wheels. Use an assistant as required.
Failure to comply could result in death or serious injury.

W0149A

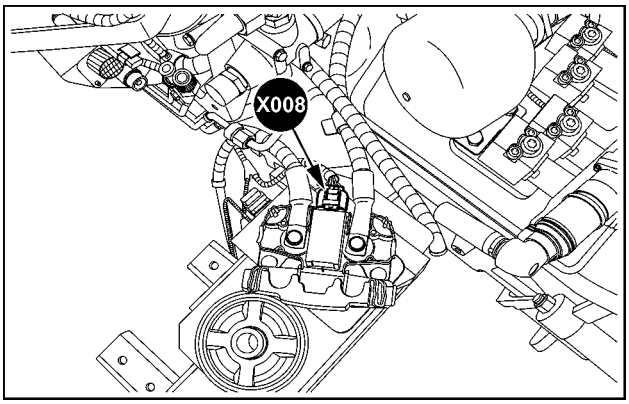
1. Install the rear wheels.
2. Tighten the nuts to **250 N·m** (**184 lb ft**).
3. Remove the axle stands from under the final drive cases.

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

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

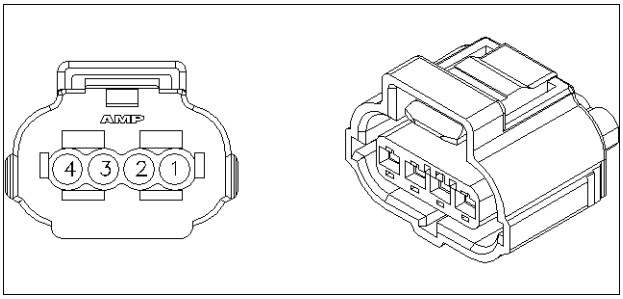
CONNECTOR X-008 - Battery isolator

CONNECTOR X-008 - Battery isolator			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	EN-172 (PK)	X-008 Battery isolator X-001 Cab main harness to engine harness 1	**Wiring harnesses - Electrical schematic sheet 01 (55.100)**
2	EN-057FM (BK)	X-008 Battery isolator SP-057FK	
3	EN-057FL (BK)	X-008 Battery isolator SP-057FK	
4	EN-171B (VT)	X-001 Cab main harness to engine harness 1 X-008 Battery isolator	



SVIL13TR00703AB 17

Left-hand behind steps

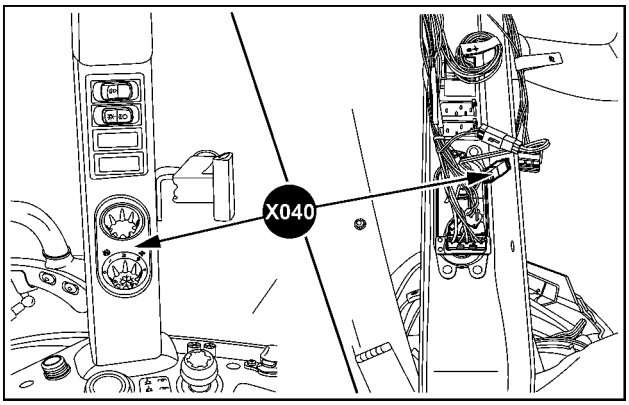


87745968 18

Wire connectors - Component diagram 04

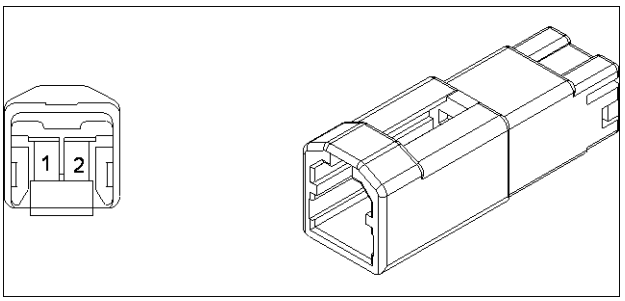
CONNECTOR X-040 - Air-conditioning system – ON/OFF indicator light

CONNECTOR X-040 - Air-conditioning system – ON/OFF indicator light			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	RF-057TK (BK)	SP-057T ROOF GROUND LH1 X-040 Air-conditioning system – ON/OFF indicator light	**Wiring harnesses - Electrical schematic sheet 17 (55.100)**
2	RF-9215C (BL)	X-040 Air-conditioning system – ON/OFF indicator light SP-9215	



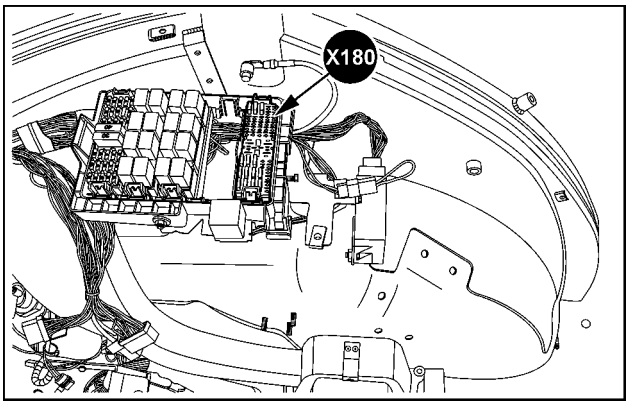
SS13J063 1

Right-hand B-pillar



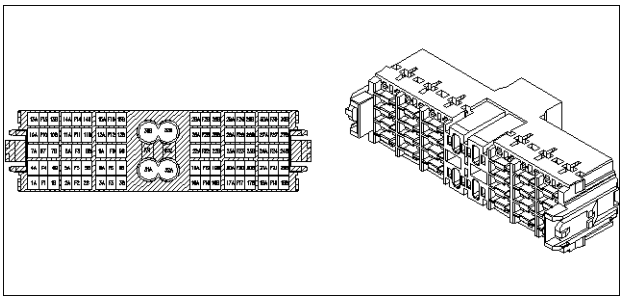
84278792 2

CONNECTOR X-180 - Fuse block (F-070 to F-101)			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
11B	CM-010H (GN)	X-393 Cab main harness to front loader harness X-180 Fuse block (F-070 to F-101)	**Wiring harnesses - Electrical schematic sheet 02 (55.100)** **Wiring harnesses - Electrical schematic sheet 04 (55.100)** **Wiring harnesses - Electrical schematic sheet 13 (55.100)** **Wiring harnesses - Electrical schematic sheet 14 (55.100)** **Wiring harnesses - Electrical schematic sheet 15 (55.100)** **Wiring harnesses - Electrical schematic sheet 16 (55.100)** **Wiring harnesses - Electrical schematic sheet 20 (55.100)** **Wiring harnesses - Electrical schematic sheet 23 (55.100)**
18A	CM-011 (GN)	X-120 Relay and diode block (K-007 to K-060 and V-040 to V-044) X-180 Fuse block (F-070 to F-101)	
18B	CM-011AA (GN)	X-180 Fuse block (F-070 to F-101) X-944 Cab main harness to Electronic Front Hitch (EFH) control unit harness	
21A	CM-001DZ (BL)	X-180 Fuse block (F-070 to F-101) SP-001DM	
21B	CM-1052D (YE)	X-180 Fuse block (F-070 to F-101) X-091 Steering column multi-function lever	
24A	CM-010K (GN)	X-180 Fuse block (F-070 to F-101) X-381 Cab main harness to hydraulic trailer brake harness	
24B	CM-071V (WH)	X-180 Fuse block (F-070 to F-101) SP-071	



SVIL13TR00695AF 1

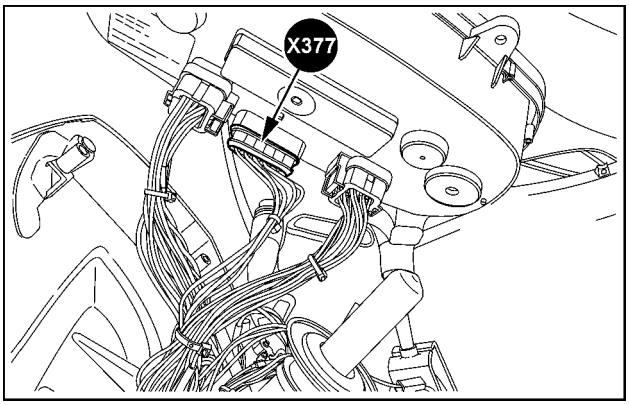
Cab left-hand side



87314761 2

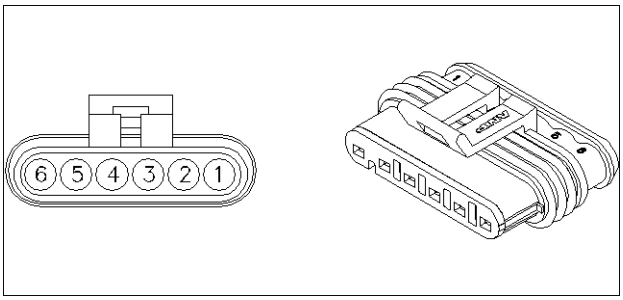
CONNECTOR X-377 - Instrument cluster CN3

CONNECTOR X-377 - Instrument cluster CN3			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	CM-2330 (VT)	X-404 Cab main harness to switch panel harness 1 X-377 Instrument cluster CN3	**Wiring harnesses - Electrical schematic sheet 03 (55.100)** **Wiring harnesses - Electrical schematic sheet 04 (55.100)**
2	CM-2320 (VT)	X-404 Cab main harness to switch panel harness 1 X-377 Instrument cluster CN3	
3	CM-2300 (VT)	X-404 Cab main harness to switch panel harness 1 X-377 Instrument cluster CN3	
4	CM-2310 (VT)	X-404 Cab main harness to switch panel harness 1 X-377 Instrument cluster CN3	
5	CM-8010 (BR)	X-377 Instrument cluster CN3 X-185 Air brake pressure sensor (signal)	
6	-	-	



SVIL13TR00791AB 16

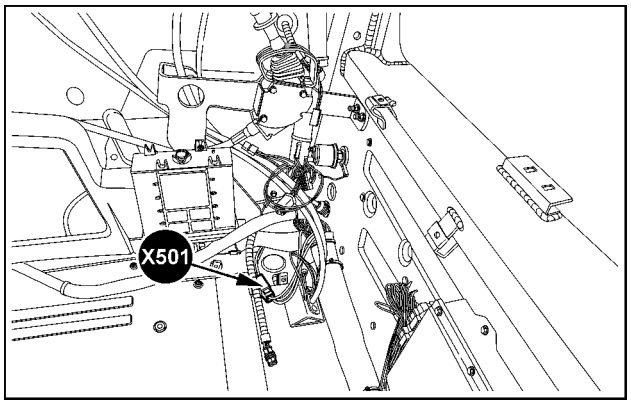
Behind instrument cluster



87710588 17

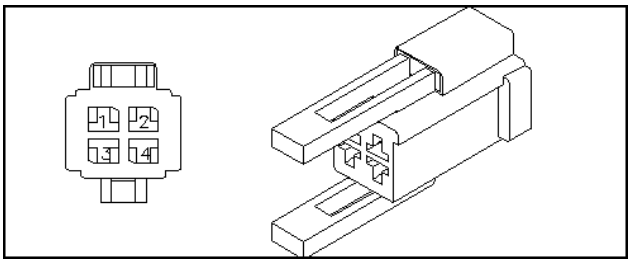
CONNECTOR X-501 - Power socket 40 A – Cab outside

CONNECTOR X-501 - Power socket 40 A – Cab outside			
PIN NUMBER	**WIRE NUMBER**	**CIRCUIT REFERENCE**	**ELECTRICAL SCHEMATIC FRAME**
1	CM-010N (GN) IS-010N (GN)	X-501 Power socket 40 A – Cab outside X-130 Fuse block (F-001 to F-032) X-501 Power socket 40 A – Cab outside X-505 Implement Socket Rear	**Wiring harnesses - Electrical schematic sheet 23 (55.100)**
2	CM-151M (GN) IS-151M (GN)	X-501 Power socket 40 A – Cab outside X-130 Fuse block (F-001 to F-032) X-501 Power socket 40 A – Cab outside X-505 Implement Socket Rear	
4	CM-057DG (BK) IS-057DG (BK)	SP-057D CAB GND X-501 Power socket 40 A – Cab outside X-501 Power socket 40 A – Cab outside X-505 Implement Socket Rear	



SVIL13TR00772AF 3

Right-hand bottom rear tractor cab

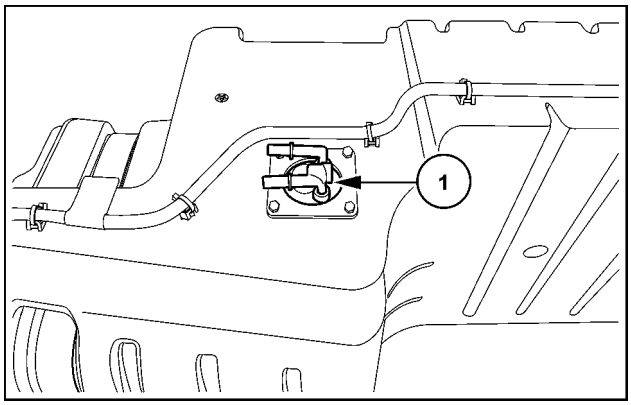


87714267 4

Fuel level sensor - Overview

Fuel level sensor (B-024)

The fuel level sensor **(1)** is located in the fuel tank.



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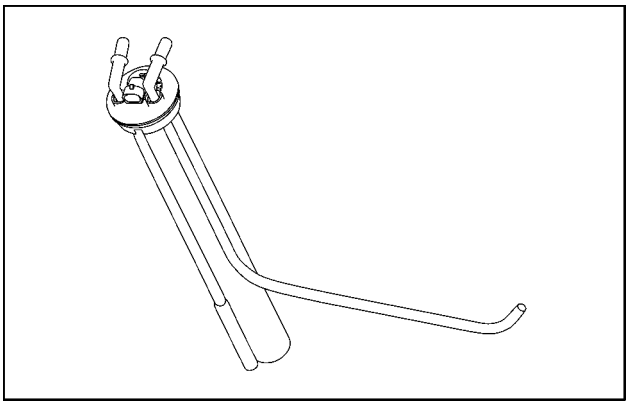

SS13K026 2

Specifications	
Pin 1	Ground
Pin 2	Signal
Maximum current	**70 mA**

Resistance test values	
full fuel tank	**20.5 Ω +/- 2**
half-full fuel tank	**160 Ω +/- 4**
empty fuel tank	**276 Ω +/- 5**