SERVICE MANUAL

T4.75F / T4.85F / T4.95F / T4.105F

Tractor

Part number 47888361
English
July 2016

NEW HOLLAND AGRICULTURE

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Rear three-point hitch - General specification

Rear hydraulic lift data

Type	With position/draft control and mixed control
Operation	By means of two independent levers
Setting speed of lift reaction	Automatic, by means of hydraulic device integral to control valve
Lift-O-Matic	Allows fast lifting/lowering operations using push buttons, without using the draft control position levers
Single-acting cylinder	
Rated diameter and stroke	**95 - 128 mm (3.740 - 5.039 in)**
Capacity	**907 cm³ (55.349 in³)**
Pressure relief valve setting	**190 - 195 bar (2755 - 2828 psi)**
Cylinder safety valve setting	**210 - 215 bar (3045 - 3118 psi)**
Lift piston diameter	**94.98 - 95.000 mm (3.739 - 3.740 in)**
Internal diameter of cylinder liner	**95.036 - 95.071 mm (3.742 - 3.743 in)**
Clearance between piston and liner	**0.036 - 0.091 mm (0.001 - 0.004 in)**
Diameter of arm lifting shaft **(5) Rear three-point hitch - Sectional view (35.724) Figure 1** in relation to bushings	
Right-hand side	**54.97 - 55.000 mm (2.164 - 2.165 in)**
Left-hand side	**47.975 - 48.000 mm (1.889 - 1.890 in)**
Internal diameter of bushings fitted on lift body:	
Right-hand side **(4) Rear three-point hitch - Sectional view (35.724) Figure 1**	**55.1 - 55.184 mm (2.169 - 2.173 in)**(1)
Left-hand side **(6)**	**48.1 - 48.184 mm (1.894 - 1.897 in)**(1)
Clearance between lifting arm shaft and relative right-hand side bushings	**0.1 - 0.214 mm (0.004 - 0.008 in)**
Clearance between lifting arm shaft and relative left-hand side bushings	**0.1 - 0.209 mm (0.004 - 0.008 in)**
Interference between bushings and relative seats	**0.065 - 0.161 mm (0.003 - 0.006 in)**
End float of shaft complete with lift arms	**0.2 - 1.4 mm (0.008 - 0.055 in)**
External diameter of draft control idler shaft	**21.967 - 22.000 mm (0.865 - 0.866 in)**
Internal diameter of seats in support	**22.020 - 22.072 mm (0.867 - 0.869 in)**
Clearance between idler shaft and its seat	**0.020 - 0.105 mm (0.001 - 0.004 in)**
Diameter of position control idler shaft	**13.973 - 14.000 mm (0.550 - 0.551 in)**
Internal diameter of position control idler shaft	**14.016 - 14.059 mm (0.552 - 0.554 in)**
Clearance between draft control idler shaft and position control idler shaft	**0.016 - 0.086 mm (0.001 - 0.003 in)**
Clearance between control valve block pin **(7) Hitch control valve - Sectional view (35.100) Figure 1** and the relative seat on the control valve block body	**0.008 - 0.012 mm (0.0003 - 0.0005 in)**(2)
Clearance between lift control valve **(9)** and the relative seat on the control valve block body	**0.008 - 0.014 mm (0.0003 - 0.0006 in)**(2)
Check valve return spring **(3) Hitch control valve - Sectional view (35.100) Figure 1**	
Spring free length	**25.5 mm (1.004 in)**
Spring length under load of **52 - 56 N (11.69 - 12.59 lb)**	**17.5 mm (0.689 in)**
Control valve block pin return spring **(5) Hitch control valve - Sectional view (35.100) Figure 1**	
Spring free length	**50.5 mm (1.988 in)**

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Wiring harnesses - Electrical schematic sheet 05 - Circuit for power take-off, adjustment of control valves and safety devices

T4.105F Without cab [ZDJD11911 -]	ANZ 2WD — ANZ Differential lock - Mechanical — APAC 2WD — APAC Differential lock - Mechanical — LA 2WD — LA Differential lock - Mechanical
T4.75F Without cab [ZDJD10836 -]	ANZ 2WD — ANZ Differential lock - Mechanical — APAC 2WD — APAC Differential lock - Mechanical — LA 2WD — LA Differential lock - Mechanical
T4.85F Without cab [ZDJD11022 -]	ANZ 2WD — ANZ Differential lock - Mechanical — APAC 2WD — APAC Differential lock - Mechanical — LA 2WD — LA Differential lock - Mechanical
T4.95F Without cab [ZDJD10215 -]	ANZ 2WD — ANZ Differential lock - Mechanical — APAC 2WD — APAC Differential lock - Mechanical — LA 2WD — LA Differential lock - Mechanical

Component	Description
C-6-A	Transmission system connection (24 PIN)
GND–7	Dashboard ground
C–15	Gearbox neutral connection
GND-38	Rear ground
SW-111	Rear P.T.O. switch
SEN–112	Power steering indicator light pressure switch
SW-114	Gearbox neutral switch
SW-115	Splitter switch
SW–217	Third control valve adjustment and control button
SW–218	Second control valve adjustment and control button
SW-222-A **SW-222-B**	Hydraulic circuit motor switch
*	Standard version
**	Splitter version

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4753-Spool Y-Axis moves in the opposite way respect to joystick activation (spool rise while joystick low)

T4.105F With cab [ZDJD11527 -]	ANZ — APAC — LA
T4.75F With cab [ZDJD10166 -]	ANZ — APAC — LA
T4.85F With cab [ZDJD11099 -]	ANZ — APAC — LA
T4.95F With cab [ZDJD10640 -]	ANZ — APAC — LA

Control Module : Mid mount control unit

NOTE: *When the cause of the error code has been rectified, clear the error code and test the system for normal operation.*

Cause:
The mid mount control unit has detected the joystick **SW−4003** signal, while in the lower position is less than **2.28 V** at **MOD−4007** pin 17and the Y-Axis spool **SOL−016** signal, while in the raised position is less than **2.18 V** at **MOD−4007** pin 37.

Possible failure modes:

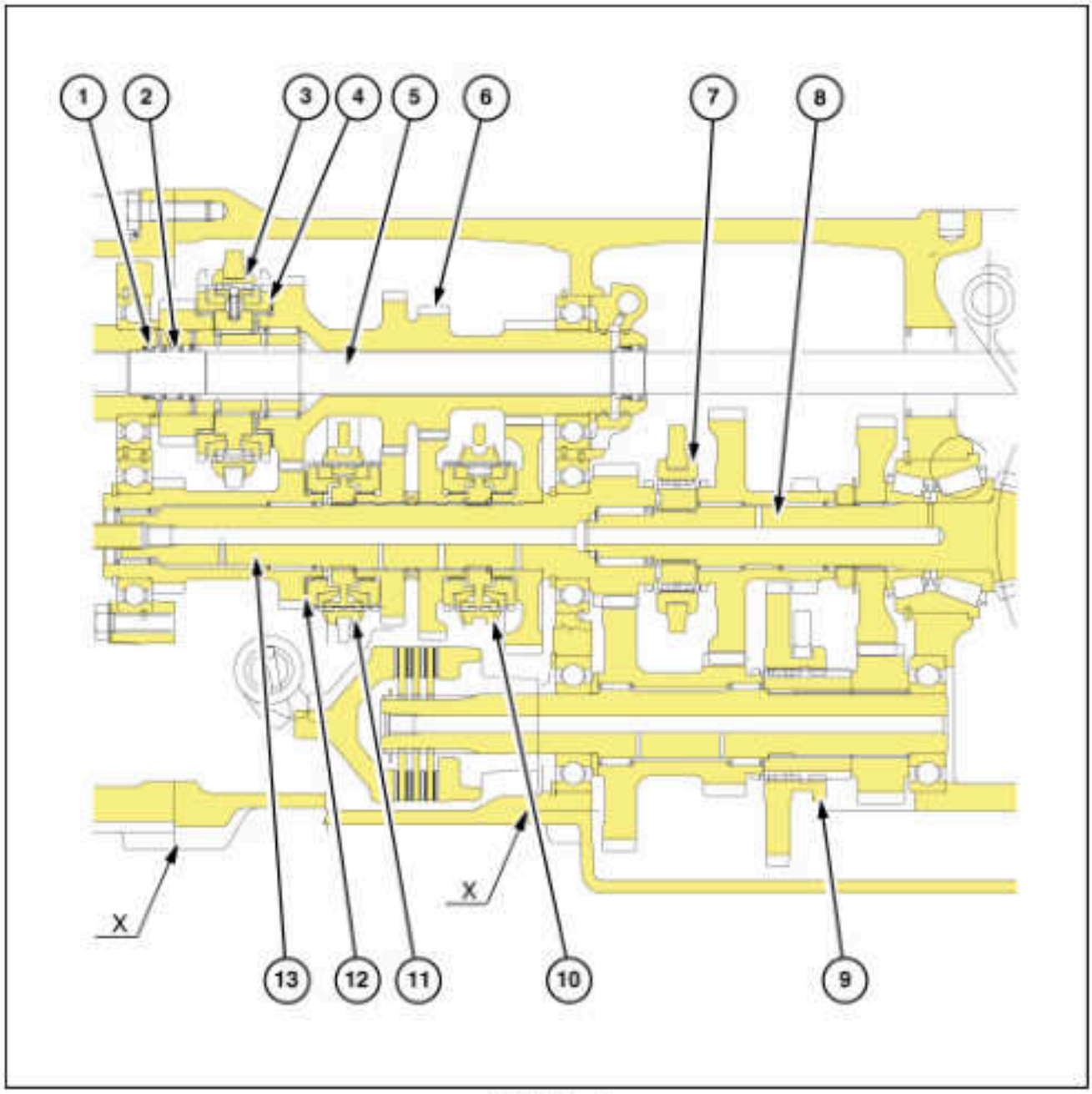
1. MMY-A and MMY-B solenoid connectors swapped

Solution:

1. Before proceeding clear the error code. Run the machine under normal conditions and retest.
   A. If the error code is not indicated, check that the system is operating correctly.
   B. If the error code is indicated, continue to step **2**
2. Check the mid mount valves MMY-A solenoid valve **SOL−05** and the mid mount valves MMY-B solenoid valve **SOL−06**.
   A. Ensure the connectors are connected, not damaged, the pins are in the correct position and that the fit is tight. Repair or replace as required.
   B. If the connectors are okay, continue to step **3**
3. Check the MMY-A solenoid valve **SOL−05** and the MMY-B solenoid valve **SOL−06** are connected to the correct connector for that solenoid and are not swapped.
   A. Check the connectors:
   SOL−05 with pin 1 (CL) and pin 2 (CN) is connected to the MMY-A rise solenoid
   SOL−06 with pin 1 (CZ) and pin 2 (CN) is connected to the MMY-B lower solenoid
   If the connectors are incorrect, swap the connectors as required, clear the error code and check that the system is operating correctly.
   B. If the connectors are okay, check for other error codes relating to the MMY-A solenoid valve, the MMY-B solenoid valve, joystick, mid mount valves SPSL1 solenoid valve or mid mount valves SPSL2 solenoid valve. Follow any diagnostic routines for those errors.

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Transmission internal parts - Sectional view



Longitudinal cross-sectional view of gearbox and gear range

1. Seal
2. Power take-off shaft support roller bearings
3. Reverser control synchroniser
4. Gearbox driving gear clearance adjusting thickness
5. Power take-off shaft
6. Gearbox driving gear
7. Selector sleeve for high or medium-low speeds
8. Bevel pinion shaft
9. Selector sleeve for low or medium-high speeds
10. Synchroniser for 1st and 2nd speed
11. Synchroniser for 3rd and 4th speed
12. Gearbox driven shaft gear clearance adjusting thickness
13. Gearbox driven shaft

NOTE: *On assembly apply a bead of sealing compound to the surfaces X as indicated on* ***Transmission drive housing - Reseal (21.114)****.*

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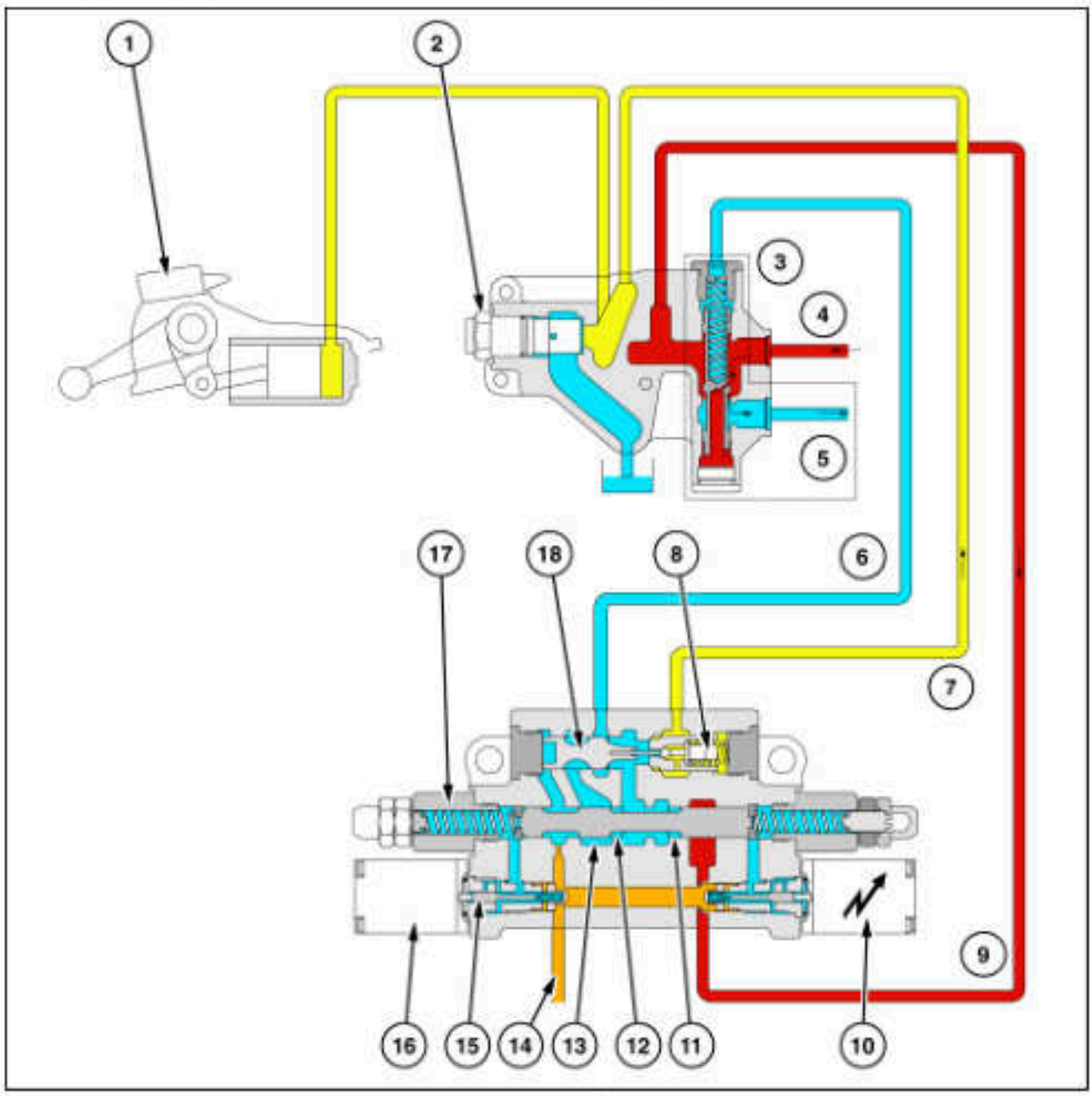
Main lift system - Dynamic description

Neutral phase

When in neutral, the electronically controlled hydraulic lift microprocessor does not send lifting or lowering signals to the control solenoid valves, and the elastic force applied, by each spring **(17)** to each end of the control valve block pin, maintains the pin in the central neutral position, preventing the oil from the pump from arriving at the hydraulic lift.

When the control valve block pin is in the neutral position, the right-hand end of the lift valve **(16)** and the pipe (**(14)**, low pressure circuit) are in communication with the rear transmission casing discharge. Under these conditions, the hydraulic lift non-return valve **(8)** remains closed and the oil in the hydraulic lift cylinder **(1)** is stopped, thereby maintaining the lift arms in a stationary position.

When the hydraulic lift is in the neutral position, the oil delivery flow from the pump flows through the hole on the load maintaining valve **(3)**, overcoming the spring resistance and moving the valve so as to allow communication between the pump delivery oil compartment **(4)** and the discharge **(5)** in the rear transmission casing. Under these conditions, the entire hydraulic pump flow returns to the rear transmission casing.



Electronic draft control functional diagram. Neutral phase.

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Wiring harnesses - Electrical schematic sheet 31 - Electronic control unit input/output wiring diagram Power-Shuttle/Dual Command (2 speed Powershift) 32+16 / 44+16 (SB)

T4.105F With cab [ZDJD11527 -]	ANZ Differential lock - Electro-hydraulic — ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Differential lock - Electro-hydraulic — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — LA Differential lock - Electro-hydraulic — LA Four-Wheel Drive (4WD) - Automatic engagement — LA Rear lifter - Electronic control
T4.75F With cab [ZDJD10166 -]	ANZ Differential lock - Electro-hydraulic — ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Differential lock - Electro-hydraulic — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — LA Differential lock - Electro-hydraulic — LA Four-Wheel Drive (4WD) - Automatic engagement — LA Rear lifter - Electronic control
T4.85F With cab [ZDJD11099 -]	ANZ Differential lock - Electro-hydraulic — ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Differential lock - Electro-hydraulic — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — LA Differential lock - Electro-hydraulic — LA Four-Wheel Drive (4WD) - Automatic engagement — LA Rear lifter - Electronic control
T4.95F With cab [ZDJD10640 -]	ANZ Differential lock - Electro-hydraulic — ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Differential lock - Electro-hydraulic — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — LA Differential lock - Electro-hydraulic — LA Four-Wheel Drive (4WD) - Automatic engagement — LA Rear lifter - Electronic control

Position	Description
(1)	Battery (**BAT−83−A**)
(2)	Ignition switch (SW−19)
(3)	Starter relay (RLY−13)
(4)	Starter motor (**M−85**)
(5)	Clutch pedal potentiometer (SEN−153)
(6)	Shuttle lever (**SW−152**), composed of three switches:
(A)	Common switch - neutral position (starting), forward/reverse position 12VD supply to the two clutches A and B.
(B)	Switch with forward gear diagnostics.
(C)	Switch with reverse gear diagnostics.
(7)	Clutch pedal switch (**SW−151**), view in starting position (pedal pressed and shuttle level on neutral), with pedal released and shuttle lever engaged (not on neutral) it supplies current to the control unit (12VD) that will supply the forward and reverse clutches.
(8)	Supply line to the sensors and potentiometers of **5 V** that the control unit provides directly
(9)	Control unit supply: 12 VD - from clutch pedal switch. 12 VF and 12 VP - directly from the fuses.
(10)	Forward gear clutch A solenoid (**SOL−146**)
(11)	Reverse gear clutch B solenoid (**SOL−147**)
(12)	Synchronizer movement solenoid in dual command (2 Speed Powershift) mode (**SOL−139**)
(13)	Synchronizer movement solenoid in shuttle mode (**SOL−139**)
(14)	Discharge solenoid (**SOL−140**).
(15)	Gear lever (**SW−183**) with buttons:
(A)	HI used to select fast speed.
(B)	LO used to select slow speed.
(C)	DUMP used to change gears, within the same range, without pressing the clutch pedal.
(16)	Control unit ground type
(17)	Ground that the control unit supplies to the various sensors (observe the triangular end, on all the sensors where at a pin and marked with this symbol they receive ground straight from the control unit).
(18)	CAN BUS line wires input, inside the control unit there is the terminator (resistance **120 Ω**).
(19)	Parking lock switch (**SW−1200**)
(20)	Transmission temperature sensor (**SEN−148**)
(21)	Shuttle synchronizer position potentiometer / dual command (2 Speed Powershift) (**SEN−203**). In the starting phase the control unit moves the synchro (dual command (2-Speed Powershift) / Power-Shuttle) to the opposite side from where it is at starting. From the movement of the synchronizer, controlled by the potentiometer. This sends a signal to the control unit that understands the power steering pump that supplies the clutch pack oil works properly.
(22)	Range lever position switch (**SW−141**)
(23)	Gear lever position switch (**SW−142**)
(24)	Creeper unit position switch (**SW−143**)

NOTE: *A) The numbers in brackets are the correspondence with the sensors, switches, of the diagram.*
*B) On the control unit the connectors are identified with CN1b and corresponds to connector **MOD−150**.*

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