SERVICE MANUAL

T4030N / T4040N / T4050N
T4060N / T4020V / T4030V
T4040V / T4050V / T4060V

Tractor

Part number 47888351
English
July 2016

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Front loader bucket hydraulic system - General specification

Rear hydraulic lift data

Type	With position/draft control and mixed control
Control	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	**180 bar (2610.000 psi)**
Cylinder safety valve setting	**210 - 215 bar (3045.000 - 3117.500 psi)**
Lift piston diameter:	**94.98 - 95 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) Loader bucket self-leveling controls - Sectional view (35.724) Figure 1** in relation to bushings:	
Right-hand side	**54.97 - 55 mm (2.164 - 2.165 in)**
left-hand side	**47.975 - 48 mm (1.889 - 1.890 in)**
Internal diameter of bushings fitted on lift body:	
Right-hand side **(4) Loader bucket self-leveling controls - 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 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 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 **(8) Rear three-point hitch - Sectional view (37.110) Figure 1** and the relative seat on the control valve block body	**0.008 - 0.012 mm (0.000 - 0.000 in)**(2)
Clearance between lift control valve **(9)** and the relative seat on the control valve block body	**0.008 - 0.014 mm (0.000 - 0.001 in)**(2)
Check valve return spring **(3) Rear three-point hitch - Sectional view (37.110) 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) Rear three-point hitch - Sectional view (37.110) Figure 1**:	

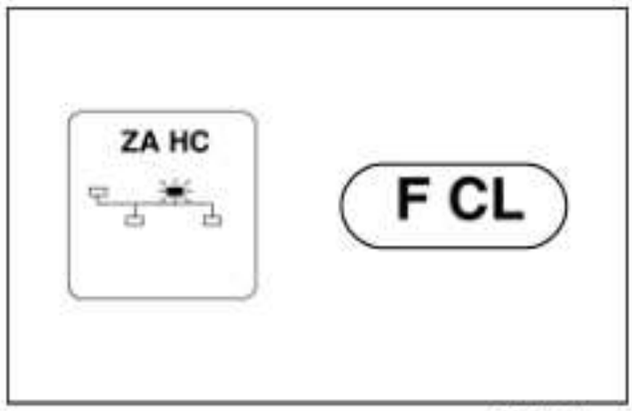
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Electronic modules - HC - Clear all stored fault codes

HC - Deleting all the saved error codes (ZA - SD - SC - SB - SA - MV)

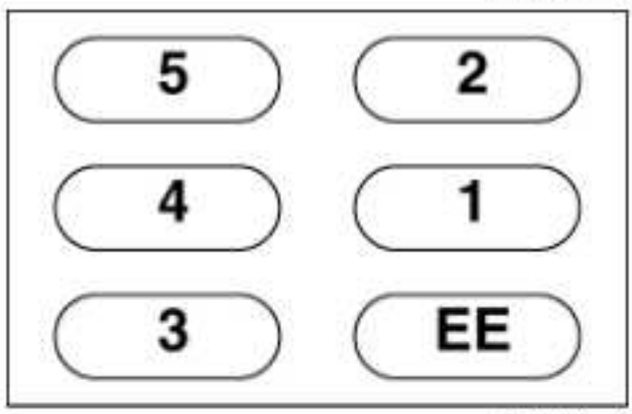
Deletes all the stored error codes (ZA)

Select the module (ZA) and access the HC menu proceeding as described on **Electronic modules - Configure (55.640)**.
Press the switch **(1) Electronic modules - HB - Display stored fault codes (55.640)** to access the HC menu; the display will show "F CL".
Press and hold down side "B" of the switch **(2) Electronic modules - HB - Display stored fault codes (55.640)**, the display will show in sequence: 5 - 4 - 3 - 2 - 1 - EE.



ITL11T46839ADA 1

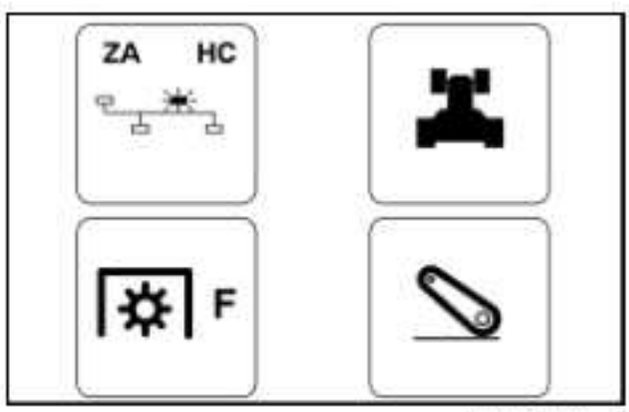
Where: The numbers indicate the countdown and "EE" means that deletion has been performed correctly.
Set the key start switch in the off position **(A) Electronic modules - H5 - Switch operation test (55.640) Figure 1** to exit or access another menu.



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Deleting all saved error codes (SD)

Select the module (SD) and access the HC menu proceeding as described on **Electronic modules - Configure (55.640)**.
Using the switch (**(1)** , img1 in **Electronic modules - HB - Display stored fault codes (55.640)**) access the HC MENU and select the relevant group, the display will show "F CL".



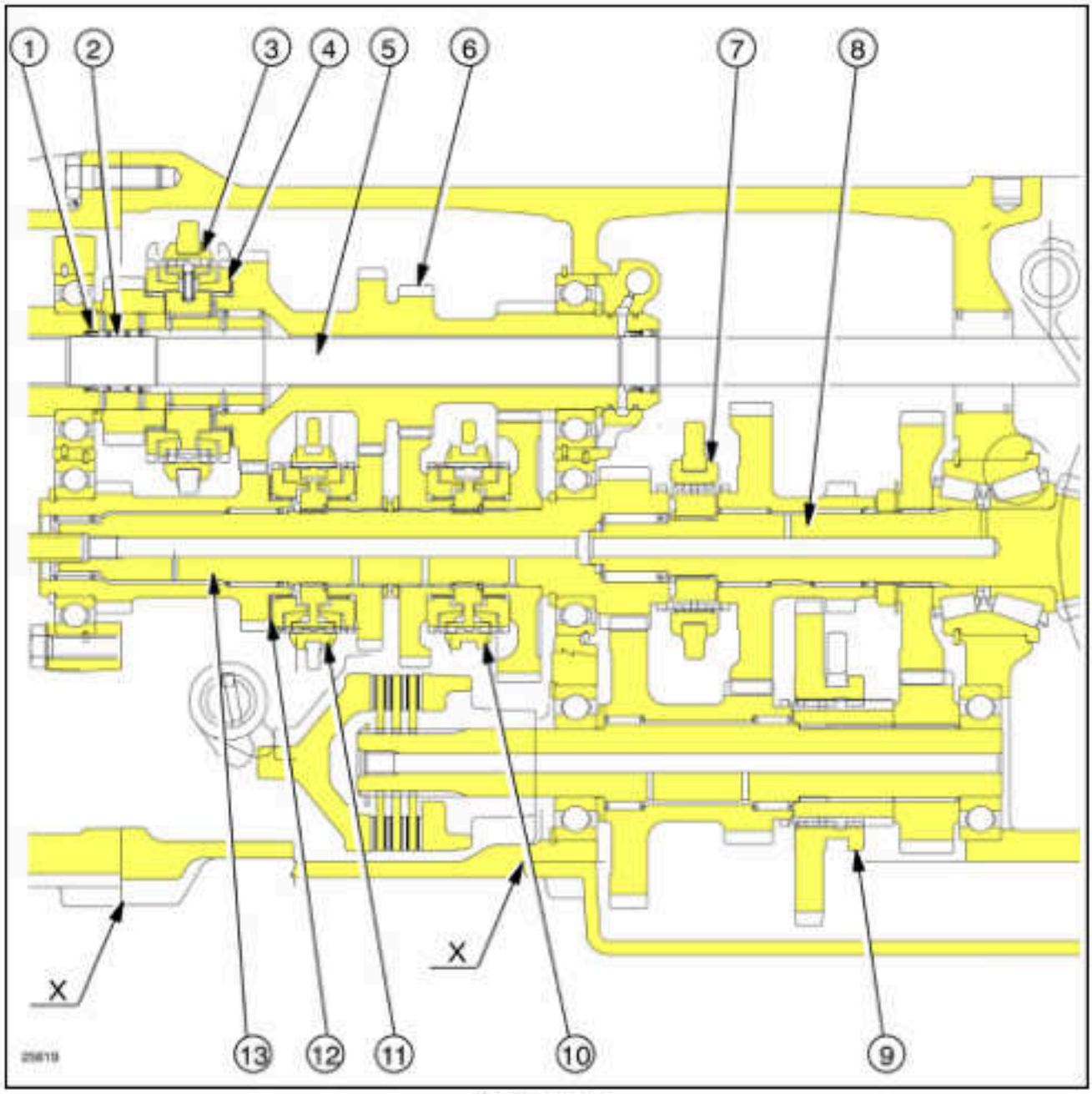
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Wiring harnesses - Electrical schematic sheet 25 - Power-shuttle (Hi-Lo) 32+16 or 44+16 circuit (dashboard side) (55.100.DP-C.20.E.25)
Wiring harnesses - Electrical schematic sheet 26 - Power-shuttle (Hi-Lo) 32+16 or 44+16 circuit (transmission side) (55.100.DP-C.20.E.26)

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Gears, shaft, and bearings - Sectional view Gearbox and gear range



WLSPVN521C1-08G 1

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 in* ***Transmission housing - Reseal (21.114)****.*

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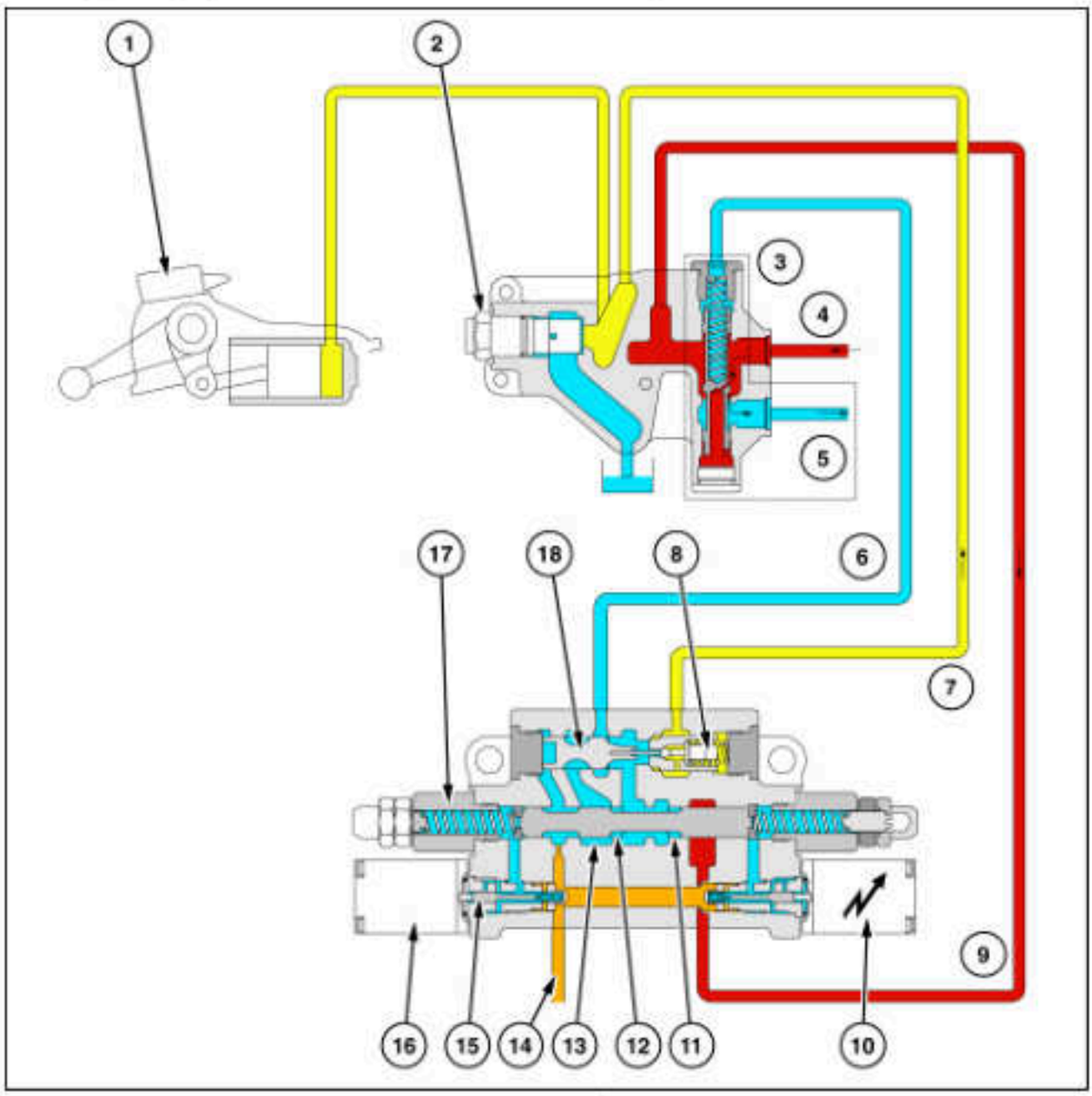
Main lift system - Dynamic description

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 32 - Electronic control unit input/output wiring diagram Power-Shuttle/dual command (2 speed Powershift) 32+16 / 44+16 (SB)

T4020V With cab - Model Year 2012 [ZCJE06109 - ZDJE10384]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4030N With cab - Model Year 2012 [ZCJE06854 - ZDJE10061]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4030V With cab - Model Year 2012 [ZCJE01906 - ZDJE09775]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4040N With cab - Model Year 2012 [ZCJE08352 - ZDJE09934]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4040V With cab - Model Year 2012 [ZCJE05523 - ZDJE09978]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4050N With cab - Model Year 2012 [ZCJE03562 - ZDJE10074]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4050V With cab - Model Year 2012 [ZCJE02892 - ZDJE10111]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4060N With Cab [ZCJE05677 - ZDJE08122]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control
T4060V With cab [ZCJE12826 - ZDJE06199]	ANZ Four-Wheel Drive (4WD) - Automatic engagement — ANZ Rear lifter - Electronic control — APAC Four-Wheel Drive (4WD) - Automatic engagement — APAC Rear lifter - Electronic control — MEA Four-Wheel Drive (4WD) - Automatic engagement — MEA Rear lifter - Electronic control — WE Four-Wheel Drive (4WD) - Automatic engagement — WE Rear lifter - Electronic control

Position	Description
(1)	Battery (**BAT−83−A**, **BAT−83−B** and **BAT−83−E**).
(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: 12VD-from clutch pedal switch. 12VF and 12VP-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 power shift) mode (**SOL−138**).
(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 power shift) (**SEN−203**). In the starting phase the control unit moves the synchro (dual command (2-speed power shift)/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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