SERVICE MANUAL

T4.80F / T4.90F / T4.100F / T4.110F
T4.80LP / T4.90LP / T4.100LP / T4.110LP
Tier 4A (interim)

Tractor

PIN HLRT410FHHLT06645 and above

Part number 51526006
1st edition English
November 2018

NEW HOLLAND AGRICULTURE

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T4.100F With cab [HLRT410FVHLT06687 -]	NA
T4.100LP With cab [HLRT410LJHLT07888 -]	NA
T4.110F With cab [HLRT411FHHLT05607 -]	NA
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T4.80LP With cab [HLRT480LEHLT07889 -]	NA
T4.90F With cab [HLRT490FHHLT07874 -]	NA
T4.90LP With cab [HLRT490LHHLT07864 -]	NA

Type	Component	Connector / Link
ECU	**A-018** - HVAC ECU (ECU)	**X-850** - HVAC ECU [A-018] (47915928)
ECU	**A-019** - Roof HVAC 4 (ECU)	**X-862** - ROOF HVAC 4 [A-019] (84289208)
ECU	**A-020** - ROOF HVAC 3# (ECU)	**X-866** - ROOF HVAC 3# [A-020] (41118303)
Connector	X-850	**X-850** - HVAC ECU [A-018] (47915928)
Connector	X-862	**X-862** - ROOF HVAC 4 [A-019] (84289208)
Connector	X-866	**X-866** - ROOF HVAC 3# [A-020] (41118303)

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Test type	From:	To:	Expected Results
1. Continuity.	**X-941A (Receptacle) pin 19**	**X-939 (Receptacle) pin 25. ,**	Approx. **0 – 0.10 ohms**
2. Continuity.	**X-941A (Receptacle) pin 20. , ,**	**X-939 (Receptacle) pin 55. ,**	Approx. **0 – 0.10 ohms**
3. Continuity.	**X-941A (Receptacle) pin 17. , ,**	**X-939 (Receptacle) pin 10. ,**	Approx. **0 – 0.10 ohms**
4. Continuity.	**X-941A (Receptacle) pin 18**	**X-939 (Receptacle) pin 40. ,**	Approx. **0 – 0.10 ohms**
5. Short circuit	**X-939 (Receptacle) pin 55. , ,**	**X-939 (Receptacle) pin 25. , X-939 (Receptacle) pin 10 , X-939 (Receptacle) pin 40 ,**	Open Circuit
6. Short circuit	**X-939 (Receptacle) pin 25. , ,**	**X-939 (Receptacle) pin 10. , X-939 (Receptacle) pin 40 ,**	Open Circuit
7. Short circuit	**X-939 (Receptacle) pin 40. , ,**	**X-939 (Receptacle) pin 10. ,**	Open Circuit

A. If continuity/shorts test is successful, go to step **5**.

B. If continuity/shorts test is unsuccessful, locate and repair the damaged sections of the wiring harness.

4. Check the boost pressure sensor is working correctly. Turn the ignition key switch to OFF. Disconnect the connector of the boost pressure sensor **X-941A** and **X-941B** and remove the engine intake manifold sensor. Allow the sensor to cool to ambient temperature for several minutes, and then test the sensor resistance across pins pin 20 and 17, using the table of resistance vs. temperature below. Carry out the test at a temperature similar to the ambient temperature. Boost pressure sensor failures are typically at the extreme ends of the table or fully exceed the values in the table. To access the boost pressure sensor contacts (pin 20 and 17), use the test probe labelled "Air Press/Temp Sensor" from the diagnostic repair kit Tier II (NEF) **380040185**.

Temperature argument	Resistance Nominal Value	Average minimum/maximum limits
-40 °C (-40 °F)	**48153 ohms**	**45301 – 51006 ohms**
-35 °C (-31 °F)	**35763 ohms**	**33703 – 37823 ohms**
-30 °C (-22 °F)	**26854 ohms**	**25350 – 28359 ohms**
-25 °C (-13 °F)	**20376 ohms**	**19265 – 21487 ohms**
-20 °C (-4 °F)	**15614 ohms**	**14785 – 16443 ohms**
-15 °C (5 °F)	**12078 ohms**	**11453 – 12702 ohms**
-10 °C (14 °F)	**9426 ohms**	**8951 – 9901 ohms**
-5 °C (23 °F)	**7419 ohms**	**7055 – 7783 ohms**
0 °C (32 °F)	**5887 ohms**	**5605 – 6168 ohms**
5 °C (41 °F)	**4707 ohms**	**4487 – 4926 ohms**
10 °C (50 °F)	**3791 ohms**	**3618 – 3964 ohms**
15 °C (59 °F)	**3075 ohms**	**2939 – 3211 ohms**
20 °C (68 °F)	**2511 ohms**	**2402 – 2619 ohms**
25 °C (77 °F)	**2063 ohms**	**1976 – 2150 ohms**
30 °C (86 °F)	**1715 ohms**	**1645 – 1786 ohms**
35 °C (95 °F)	**1432 ohms**	**1374 – 1490 ohms**
40 °C (104 °F)	**1199 ohms**	**1152 – 1247 ohms**
45 °C (113 °F)	**1009 ohms**	**970 – 1047 ohms**
50 °C (122 °F)	**851 ohms**	**819 – 883 ohms**
55 °C (131 °F)	**721 ohms**	**694 – 747 ohms**
60 °C (140 °F)	**612 ohms**	**590 – 634 ohms**
65 °C (149 °F)	**522 ohms**	**503 – 540 ohms**
70 °C (158 °F)	**446 ohms**	**431 – 462 ohms**
75 °C (167 °F)	**383 ohms**	**370 – 396 ohms**
80 °C (176 °F)	**329 ohms**	**319 – 340 ohms**
85 °C (185 °F)	**284 ohms**	**275 – 293 ohms**
90 °C (194 °F)	**246 ohms**	**238 – 254 ohms**

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3812 (DTC 2CC-00) - Physical Range Check high for ECU temperature sensor

Context:
The engine control unit (ECU) has detected an internal temperature above **130 °C** (**266 °F**). This fault can be caused by a cooling system problem, high environmental temperatures or heavy engine use. If the environmental temperature is not too high and the machine has not been used heavily, let the engine cool down. Then check there is the correct amount of coolant in the cooling system. Make sure the radiator is not clogged or restricted of air flow.
High electrical system voltages can contribute to this fault. Verify that the system voltage is correct and that there is not a problem with the alternator charging system.

Possible failure modes:

1. High engine temperatures
2. High system voltage
3. Faulty engine control unit (ECU)

Solution:

1. Check the error code is still present on the EST.

   (1) Access the error code screen on the electronic service tool (EST) and monitor the error codes.

   (2) Check that there are no fault codes pertaining to high battery voltage to the engine control unit (ECU) or high fluid temperatures.

   The error code 3812 is active with other error codes like FC3051, FC3518 or FC3007. Identify and resolve these error codes before troubleshooting the FC3812code.

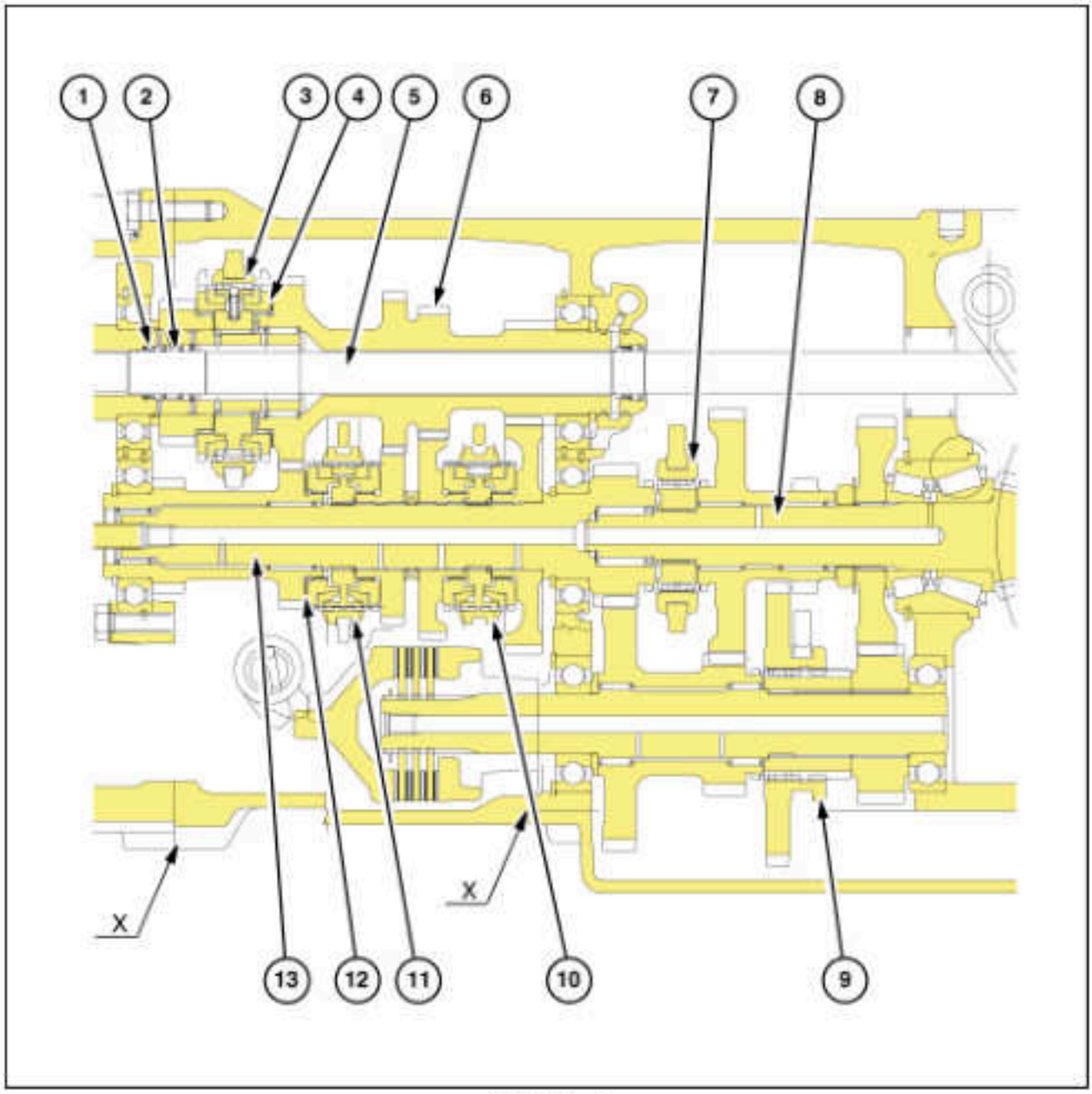
   The error code 3812 is not recorded again. OK to return the machine to service.

   A. If the fault code 3812 is active and recorded again. temporarily replace the engine control unit (ECU) and retest. Return to step **1** to confirm the fault has been eliminated.

Wiring harnesses - Electrical schematic sheet 22 (55.100)
Wiring harnesses - Electrical schematic sheet 23 (55.100)

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Transmission internal parts - Sectional view



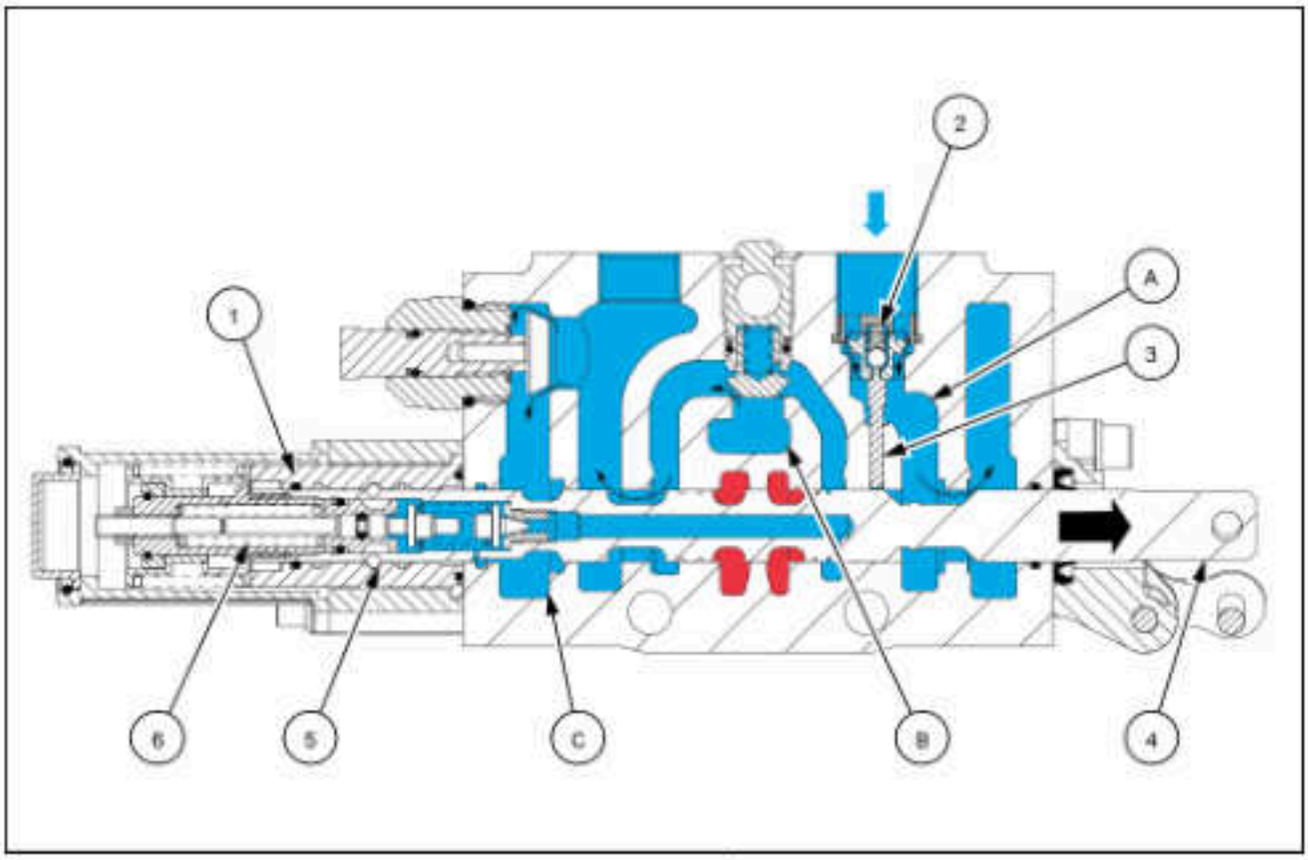
MGL11F995GB 1

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 on* ***Transmission drive housing - Reseal (21.114)****.*

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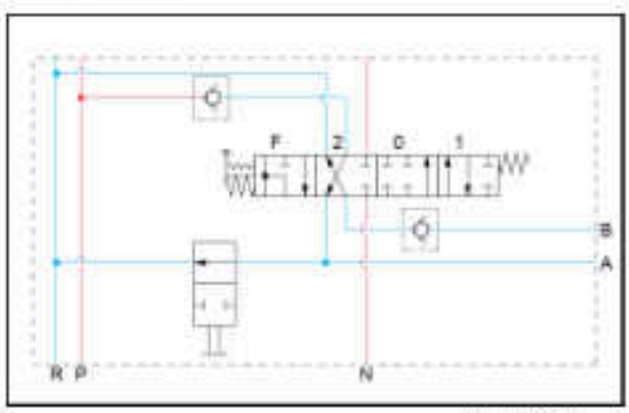
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Control valve phase - Lever in position "2"

Pressurized oil (**190 bar** (**2755 psi**)

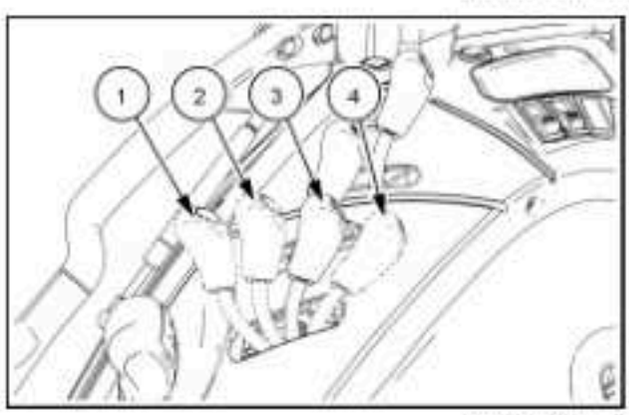
Exhaust oil

Pushing the control lever in the cab the control valve spool **(4)** moves in the direction of the arrow: the locking balls **(5)** enter in the stop point in the support **(1)**, remaining locked by the thrust of the spring **(6)**, and hold the spool. The spool displacement connects the oil supply line **(B)** directly to the exhaust in transmission through the line **(C)**. The pin **(3)**, pressed by the spool **(4)**, keeps the non-return valve **(2)** open, allowing the oil to be exhausted in the transmission through the "+" port and the line **(A)**.
At the end of the operation manually return the spool **(4)** in the neutral position operating on the control lever in the cab.



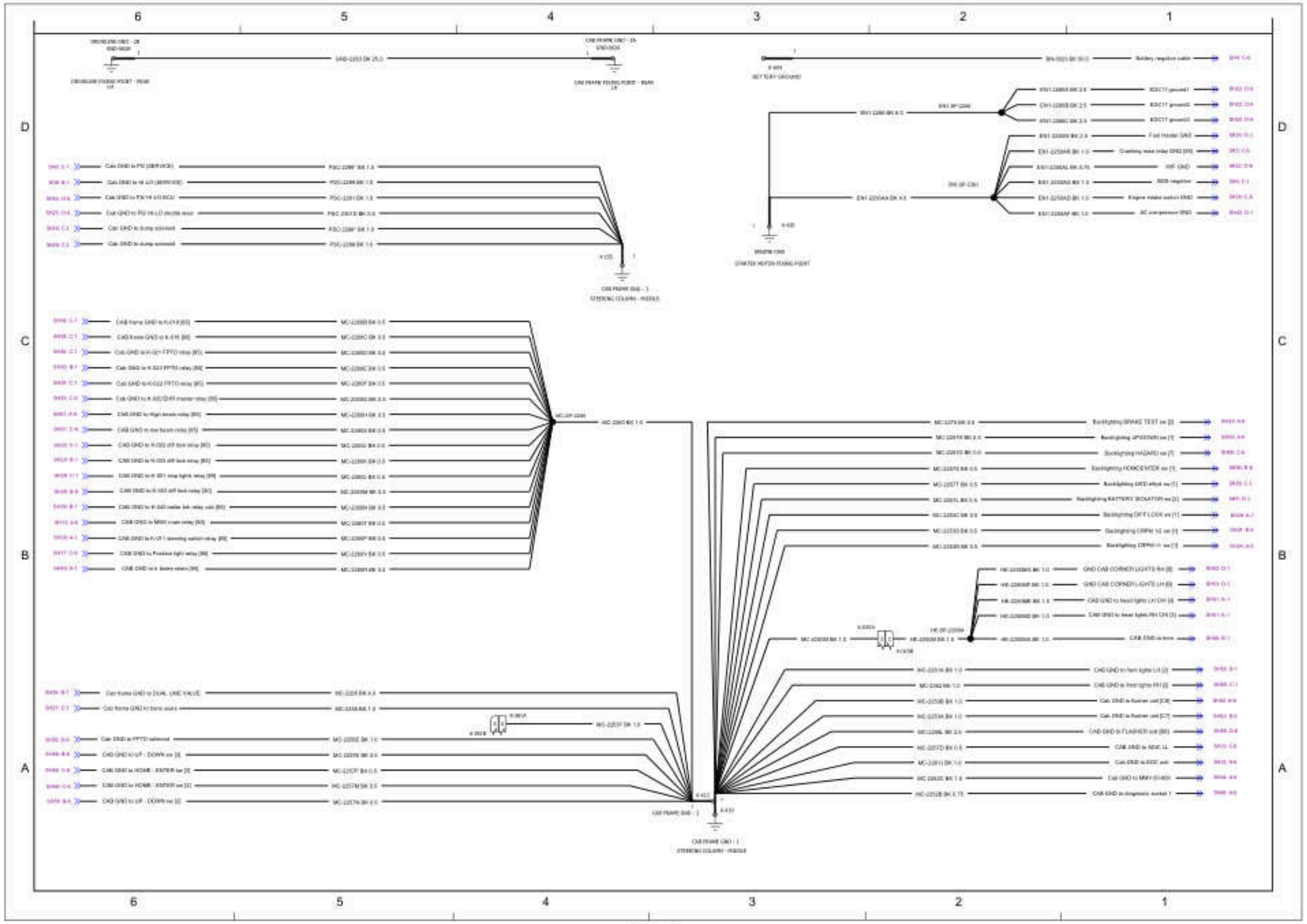
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- Floating position **(1)** (not available with single-acting control valve)
- Lowering or retraction position **(2)**
- Neutral position **(3)**
- Lifting or extension position **(4)**



M01L15TR03058AA 7

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