SERVICE MANUAL

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

Tractor

T4.80F with cab PIN ZGLH01657 and above; T4.80F without cab PIN ZGLH01068 and above;
T4.80V with cab PIN ZFLJ01935 and above; T4.80V without cab PIN ZFLJ02353 and above;
T4.90F with cab PIN ZGLH01601 and above; T4.90F without cab PIN ZGLH00695 and above;
T4.90V with cab PIN ZGLJ03134 and above; T4.90V without cab PIN ZGLJ02059 and above;
T4.100F with cab PIN ZGLH00384 and above; T4.100F without cab PIN ZGLH00644 and above;
T4.100V with cab PIN ZGLJ02249 and above; T4.100V without cab PIN ZGLJ02246 and above;
T4.110F with cab PIN ZFLH00040 and above; T4.110F without cab PIN ZFLH02101 and above;
T4.110V with cab PIN ZGLJ01295 and above; T4.110V without cab PIN ZFLJ00805 and above

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NEW HOLLAND AGRICULTURE

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Differential - General specification

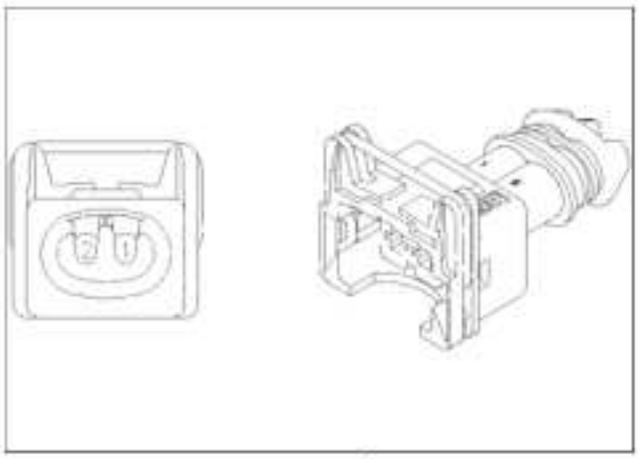
Bevel drive and differential data

Bevel drive gear ratio:		
All models	9/38 = 1:4.2(1)	11/39 = 1:3.54(2)
All models supplied with **20 in** rear wheels	11/36 = 1:3.27(1)	11/32 = 1:2.90(2)
Clearance between sides of bevel gear pair teeth	**0.18 – 0.23 mm (0.0070 – 0.0090 in)**	
Type of differential	With two side pinions	
Mechanically controlled differential lock	By means of pedal	
Electrohydraulically controlled differential lock	Controlled by switch located on control panel	
Side pinion internal seat diameter **(5) Mechanical transmission - Sectional view (21.114)**	**24.039 – 24.059 mm (0.9464 – 0.9472 in)**	
Side pinion pin diameter **(19) Mechanical transmission - Sectional view (21.114)**	**23.939 – 23.960 mm (0.94 – 0.94 in)**	
Clearance between planet pinions and pin	**2.03 – 3.10 mm (0.080 – 0.122 in)**	
Diameter of crown wheel pinion hub seats on differential housing **(3) Mechanical transmission - Sectional view (21.114)**	**44.079 – 44.117 mm (1.7354 – 1.7369 in)**	
Diameter of crown wheel pinion hubs **(17) Mechanical transmission - Sectional view (21.114)**	**43.960 – 43.998 mm (1.7307 – 1.7322 in)**	
Clearance between crown wheel pinion hubs and seats	**0.079 – 0.157 mm (0.0031 – 0.0062 in)**	
Bevel gear bearing adjustment and bevel pinion clearance	See **Differential - Adjust (27.106)**	
Thickness of bevel gear bearing adjuster rings and bevel gear coupling clearance **(21) Mechanical transmission - Sectional view (21.114)**	**0.15 mm (0.0059 in) – 0.20 mm (0.0078 in) – 0.50 mm (0.0196 in)**	
Clearance between sides of sun and planet pinion teeth	**0.15 mm (0.0059 in)**	
Thickness of differential crown wheel shim adjustment rings **(16) Mechanical transmission - Sectional view (21.114)**	**1.4 mm (0.0551 in) – 1.5 mm (0.0590 in) – 1.6 mm (0.0629 in) – 1.7 mm (0.0669 in) – 1.8 mm (0.0708 in) – 1.9 mm (0.0748 in) – 2.0 mm (0.0787 in)**	
Thickness of differential side pinion shim adjustment rings **(4) Mechanical transmission - Sectional view (21.114)**	**1.47 – 1.53 mm (0.0578 – 0.0602 in)**	
Adjustment of clearance between the sun and planet pinion teeth	See **Differential - Adjust (27.106)**	
Adjustment of differential lock	See **Differential lock - Adjust (27.106)**	
Thickness of differential lock control fork adjuster	**0.5 mm (0.0196 in)**	
Differential lock control fork spring (mechanical control):		
Spring free length	**220 mm (8.6614 in)**	
Spring length under load of **18.1 – 19.9 kg (40 – 44 lb)**	**157.5 mm (6.2007 in)**	
Differential lock control fork spring (electrohydraulic control):		
Spring free length	**237 mm (9.3306 in)**	
Spring length under load of **31.0 – 34.2 kg (68 – 75 lb)**	**159.5 mm (6.2795 in)**	

(1) **30 km/h (18.64 mph)** model – (2) **40 km/h (24.85 mph)** model

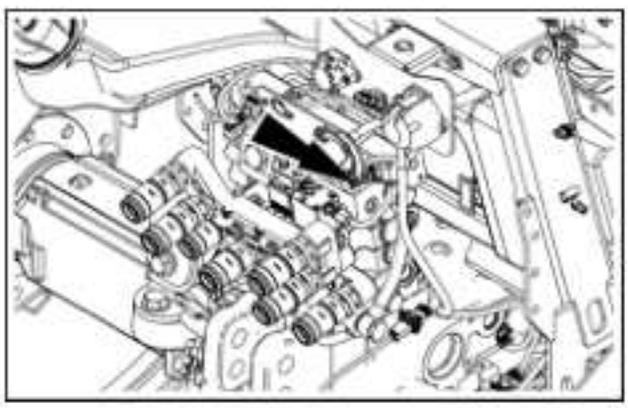
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X-334 - EDC raise solenoid [Y-015] (87694651) (Receptacle)



87694651 13

87694651



MD6L16TREE170AA 14

Pin	From	Wire	Description	Color-Size	Frame
1	**X-040D (Receptacle) pin 6** Transmission-cab EHR harness	RHE-0755Z	EDC raise solenoid	WH - 1.0	**SHEET 31**
1	**X-040B (Plug) pin 6** Transmission-cab EDC harness	RHE-0755	EDC raise solenoid	WH - 1.0	
2	**X-040B (Plug) pin 8** Transmission-cab EDC harness	RHE-0756	EDC raise solenoid	GY - 1.0	
2	**X-040D (Receptacle) pin 8** Transmission-cab EHR harness	RHE-0756Z	EDC raise solenoid	GY - 1.0	

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3693 - Glow plug control module - short circuit to battery at power stage

Control Module: ECU

Context:
The glow plug checking unit has detected a short circuit error to battery.

Cause:
Short circuit to battery error on the power stage for glow plug low voltage system. Pre-glow and post-glow functions may be disabled while this code is active. There may be starting issues such as black smoke and hard starts while this code is active and the engine is cold.

Possible failure modes:

1. Faulty wiring
2. Defective glow plug
3. Defective glow plug checking unit

Solution:

1. Verify that the fault code is still active.
   Prior to clearing fault codes write down all fault codes, number of occurrences, and engine hours at last occurrence.

   (1) Use the electronic service tool (EST) to clear all fault codes.

   (2) To check for fault code: Start and operate machine.

   A. A glow plug fault code is not recorded again. OK to return the vehicle to service.

   B. A fault code pertaining to the glow plugs is active. Go to step **2**.
2. Verify that the wiring and connectors are free of damage.

   (1) Inspect the ECU connector **X-937**, the glow plug control unit connector **A-027 X-938**, the intermediate engine control unit - engine components connector **X-941** and the glow plug terminals: 1, 2, 3, and 4.
   All connections should be secure, tight, free of corrosion, abrasion and damage.

   (2) Inspect the wiring from the glow plug control unit **A-027 X-938** to the glow plugs.
   Check that the wiring is free of damage, corrosion, abrasion and incorrect attachment.

   A. If the connectors are secure and the wiring is free of damage. Go to step **3**.

   B. If the connectors or the wiring has damage. Repair or replace the wiring or the connectors as required.
   Return the step **1** to confirm the elimination of the fault.
3. Measure the resistance in the glow plug wire.

   (1) Turn the key switch OFF.

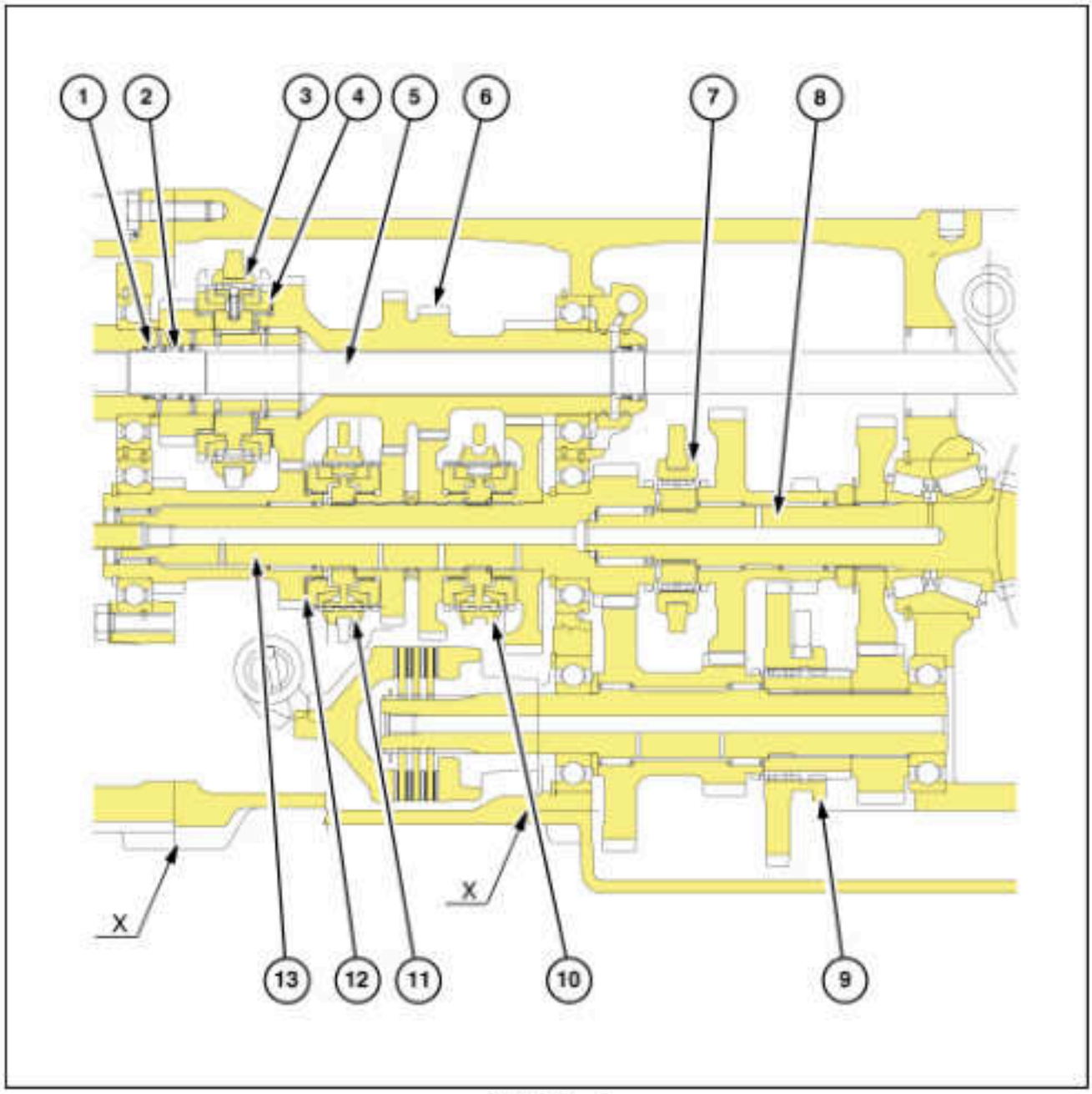
   (2) Disconnect the glow plug control unit **A-027 X-938** connector. Measure the resistance between the pin 2, 7, 1 and 6 on the connector **X-938** and the chassis ground. The chassis ground connection must be clean and free of paint, oil , and dirt. The resistance should be approximately **1 Ω**. Wiggle the wiring during the measurement to reveal an intermittent condition.

   A. The resistance is approximately **1 Ω**. Provisionally replace the glow plug control unit **A-027** and retest.
   Go to step **1** to confirm the elimination of the fault.

   B. The resistance is less than **0.5 Ω** There is a short circuit in the wiring or glow plug.
   Go to step **4**.
4. Measure the resistance in the glow plug.

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Transmission internal parts - Sectional view

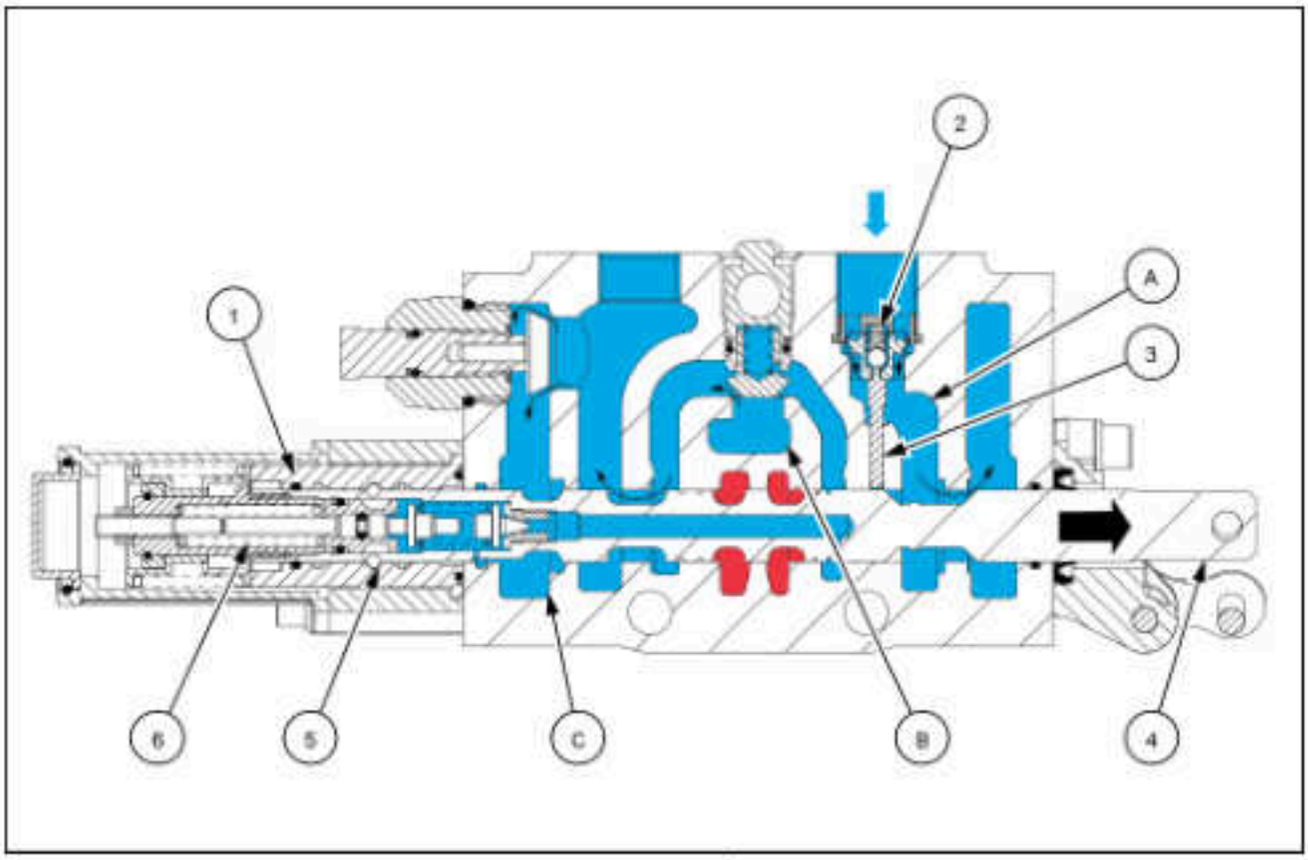


Longitudinal cross-sectional view of gearbox and gear range

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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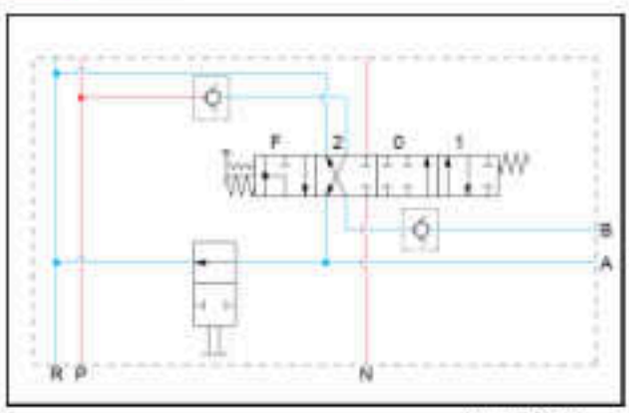
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Control valve phase - Lever in position "2"

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

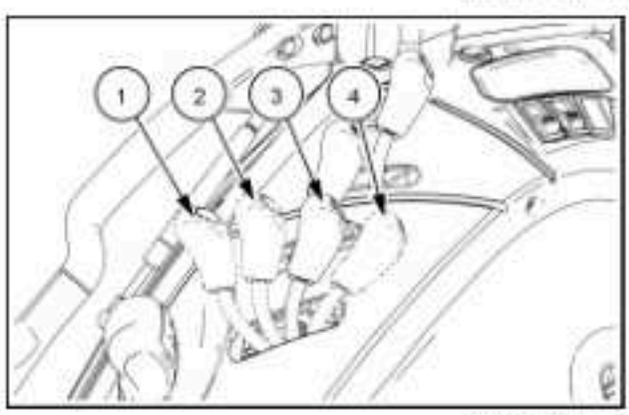
Exhaust oil

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.



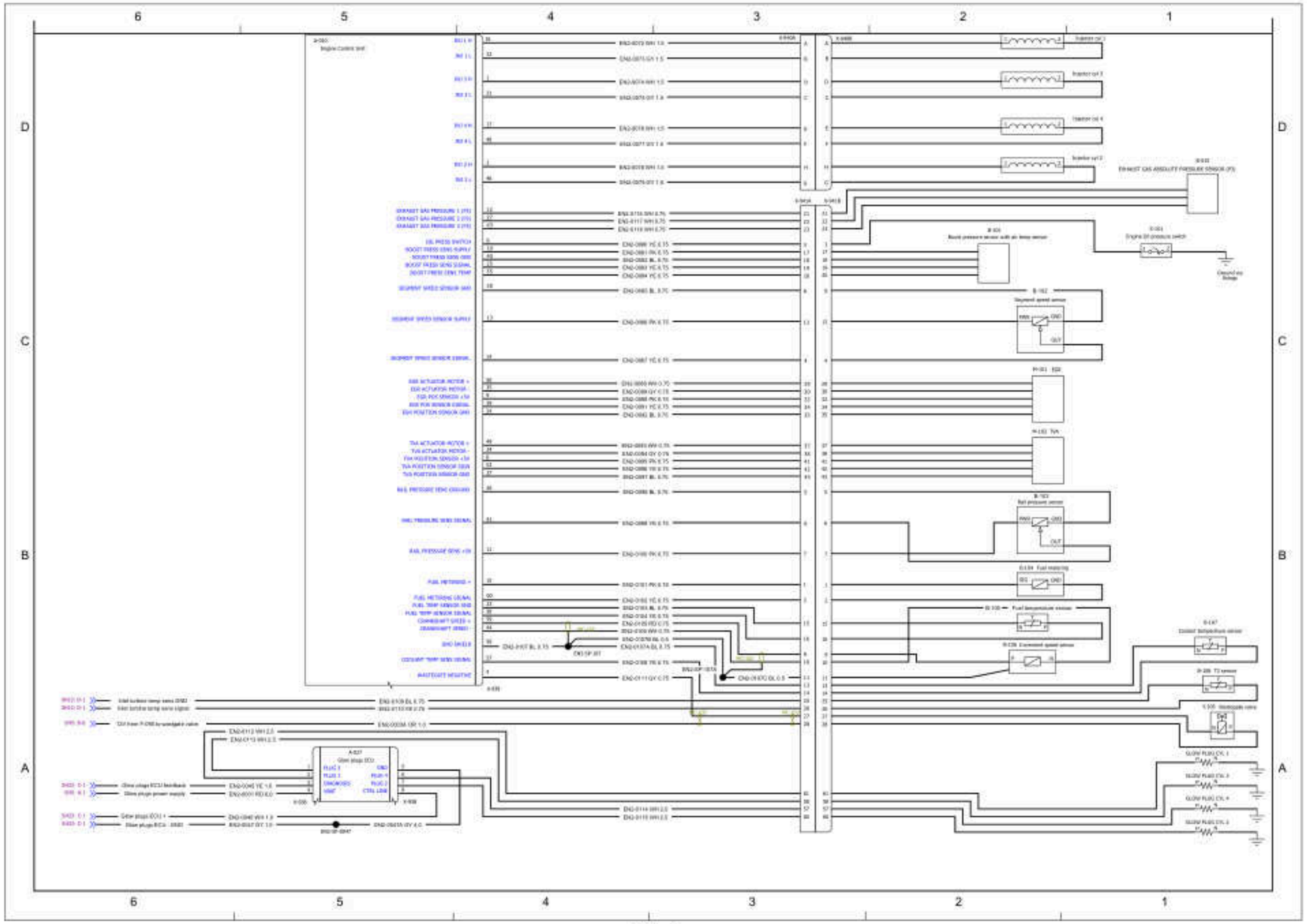
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- Floating position **(1)** (not available with single-acting control valve)
- Lowering or retraction position **(2)**
- Neutral position **(3)**
- Lifting or extension position **(4)**



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