SERVICE MANUAL

TD60 STRADDLE / TD70 STRADDLE
TD80 STRADDLE / TD90 STRADDLE
TD95 STRADDLE

Tractor

Part number 48047633
English
July 2016

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Powered rear axle - General specification

Table 1

Main specification of bevel gear pair and differential

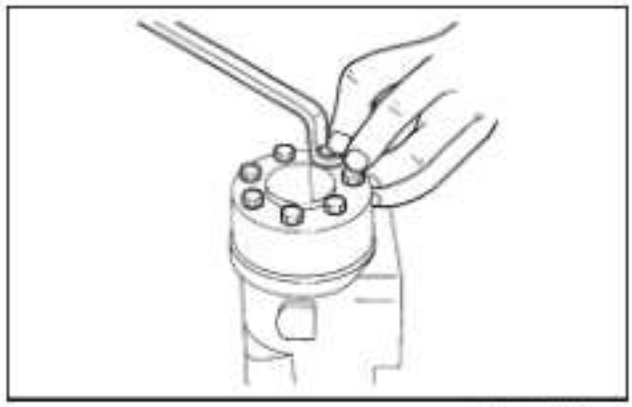
	TD60 - TD70	TD80 - TD90 - TD95
Bevel gear pair gear ratio	9/43 = 1:4.8 (**30 km/h (18.6 mph)**)	
Bevel gear pair tooth clearance	**0.18 - 0.23 mm (0.0071 - 0.0091 in)**	
Type of differential	With two planet gears	
Mechanical differential lock control	By means of pedal	
Differential release control for mechanical command	Hydraulic, pedal-controlled, service brakes	
Electrohydraulically controlled differential lock	Controlled by switch located on control panel	
Release for mechanically controlled differential lock	Controlled by foot brake pedals	
Differential pinion internal seat diameter	**24.040 - 24.061 mm (0.9465 - 0.9473 in)**	**25.040 - 25.061 mm (0.9858 - 0.9867 in)** (for TD80 - TD90) **28.040 - 28.061 mm (1.1039 - 1.1048 in)** (for TD95)
Differential pinion pin diameter	**23.939 - 23.960 mm (0.9425 - 0.9433 in)**	**24.939 - 24.960 mm (0.9819 - 0.9827 in)** (for TD80 - TD90) **27.939 - 27.960 mm (1.1000 - 1.1008 in)** (for TD95)
Clearance between differential pinions and their pins	**0.080 - 0.122 mm (0.0031 - 0.0048 in)**	**0.080 - 0.122 mm (0.0031 - 0.0048 in)**
Diameter of side gear hub seats on differential box	**44.080 - 44.119 mm (1.7354 - 1.7370 in)**	**51.100 - 51.146 mm (2.0118 - 2.0136 in)**
Diameter of side gear hubs	**43.961 - 44.000 mm (1.7307 - 1.7323 in)**	**50.954 - 51.000 mm (2.0061 - 2.0079 in)**
Clearance between side gears and their seats	**0.080 - 0.158 mm (0.0031 - 0.0062 in)**	**0.100 - 0.192 mm (0.0039 - 0.0076 in)**
Bevel pinion positioning adjustment	See **Bevel gear - Adjust (27.106)**	
Adjuster shims for bevel pinion positioning	**1.85 mm (0.0728 in) - 1.90 mm (0.0748 in) - 1.95 mm (0.0768 in) - 2.00 mm (0.0787 in) - 2.05 mm (0.0807 in) - 2.10 mm (0.0827 in) - 2.15 mm (0.0846 in) - 2.20 mm (0.0866 in) - 2.40 mm (0.0945 in) - 2.45 mm (0.0965 in) - 2.50 mm (0.0984 in) - 2.55 mm (0.1004 in) - 2.60 mm (0.1024 in) - 2.65 mm (0.1043 in) - 2.70 mm (0.1063 in)**	
Adjusting ring bevel gear bearings and bevel gear pair coupling clearance	See **Relief valve - Replace - Lift pressure (35.350)**	
Differential pinion and side gear backlash	**0.15 mm (0.0059 in)**	**0.18 mm (0.0071 in)**
Thickness of differential side gear clearance adjustment shims	**1.5 - 1.6 mm (0.0591 - 0.0630 in)**	
Thickness of differential pinion thrust bearings	**1.47 - 1.53 mm (0.0579 - 0.0602 in)**	
Adjusting clearance between pinion and side gear teeth	See **Hydraulic systems - Disassemble (35.000)**	
Adjusting differential lock	See **Hydraulic systems - Adjust - Rear hydraulic lift (35.000)**	
Differential lock control fork adjuster shim	**0.5 mm (0.0197 in)**	
Spring for differential lock control fork:		
Free spring length	**220 mm (8.6614 in)**	
Length of spring under load of **177 - 195 N (39.7912 - 43.8377 lb)**	**157.5 mm (6.2008 in)**	
Differential lock control fork spring (electrohydraulic control):		
Spring free length	**237 mm (9.33 in)**	
Spring length under a load of **304 - 335 N (68.3 - 75.3 lb)**	**159.5 mm (6.28 in)**	

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Steering control - Disassemble - Hydrostatic steering control valve

To disassemble the hydrostatic steering control valve, proceed as follows:

1. Remove the control valve cover retaining bolts.



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2. Remove the cover by sliding to one side.



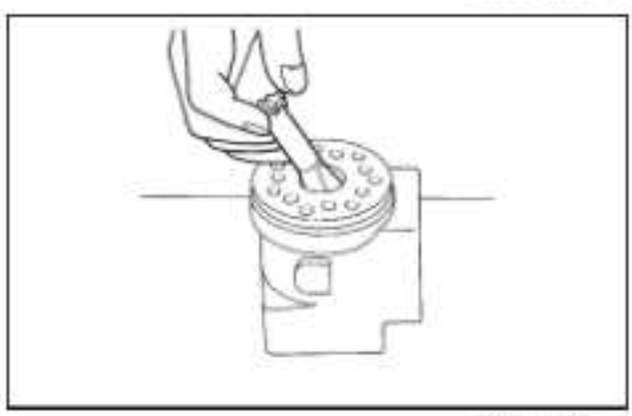
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3. Remove the rotor fixed ring, the rotor and the inner spacer.
4. Remove the two O-ring seals on the rotor fixed ring.



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5. Extract the rotor drive shaft.

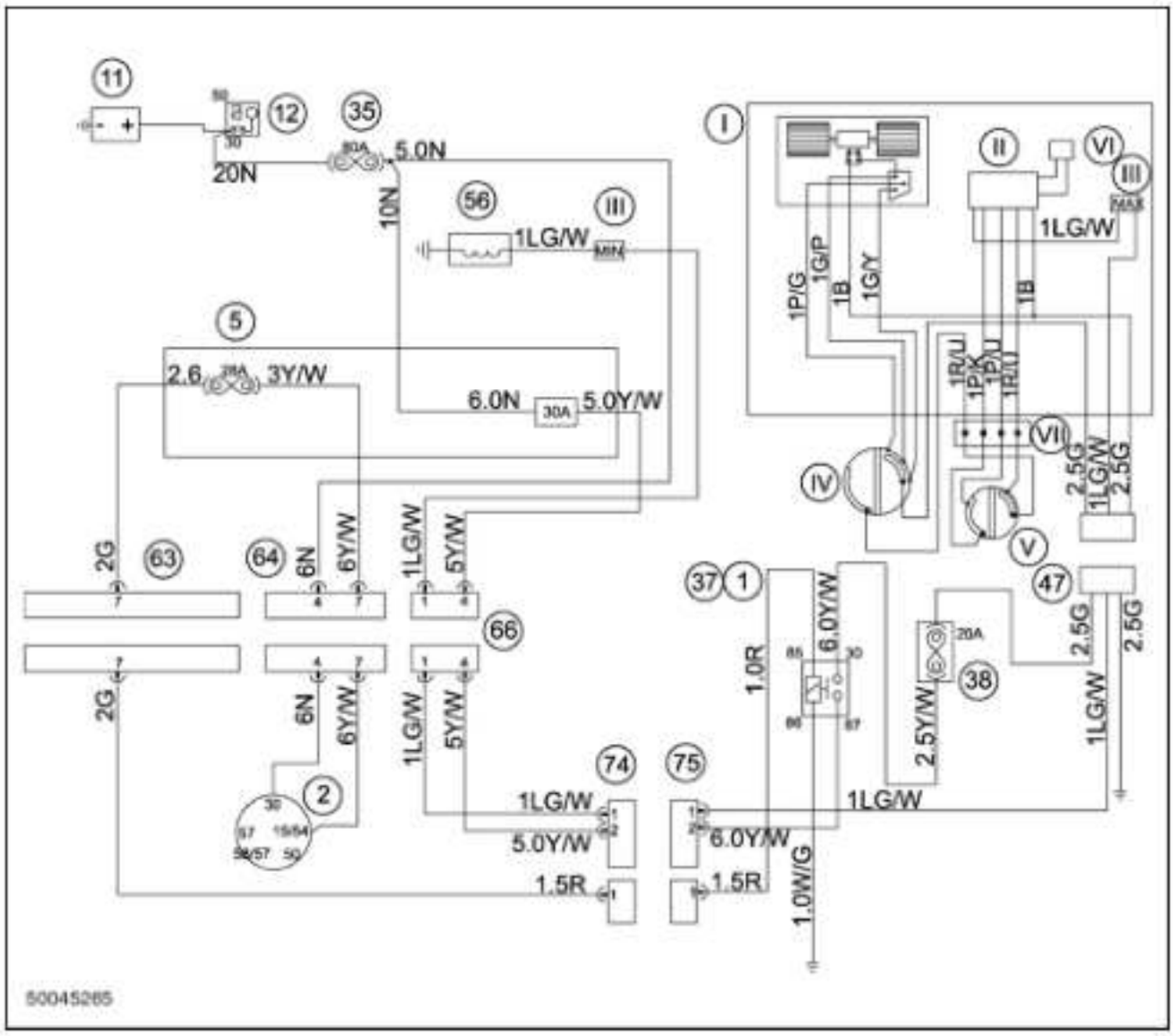


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Heating and Air-Conditioning System Circuit



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2 – Starter switch

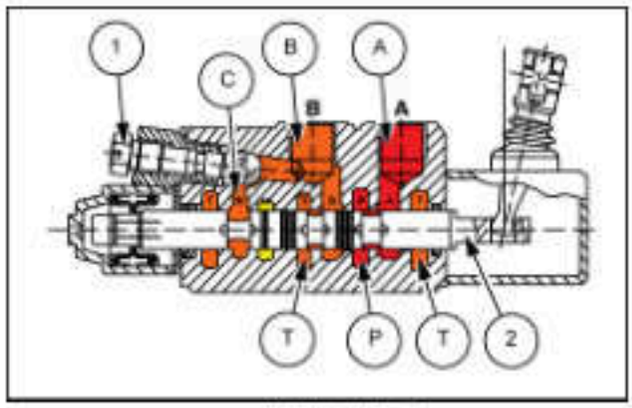
5 – Fuse box

11 – Battery

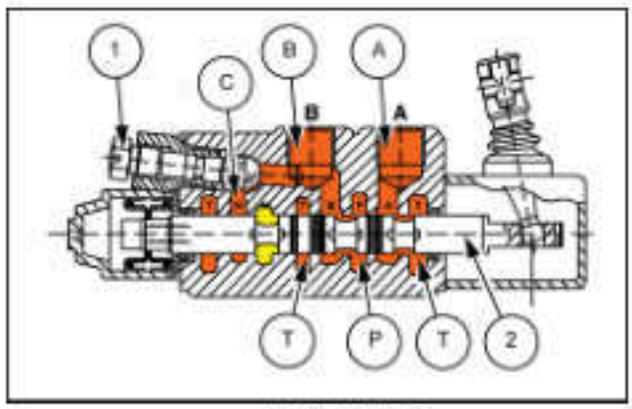
12 – Starter
35 – Main fuse
37 – Relay box
38 – Fuse box
47 – Heater
56 – Compressor
63 – Main harness – Switches harness connection connectors, 15 ways black
64 – Main harness – Switches harness connection connectors, 8 ways
66 – Main harness – Switches harness connection connectors, 4 ways
74 – Main harness – Driver cab harness connection connectors, 4 ways
3 – Main harness – Driver cab harness connection connectors, 2 ways
I – Electrical fans
II – Air-conditioning – thermostat
III – Air-conditioning pressure switch
IV – Electric fan control switch
V – Air-conditioning control switch
VI – Heating control
VII – Air-conditioning control switch connection

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4. LOWERING - On pushing the control lever forward, the spool **(2)** will move to the position indicated in Fig. 7. The oil contained in the cylinder, pressurised by the weight of the lifted implement, will flow to the exhaust **(T)** by way of line **(A)**, while the entire flow from the pump is also conveyed to the exhaust **(T)** through the line **(B)**.



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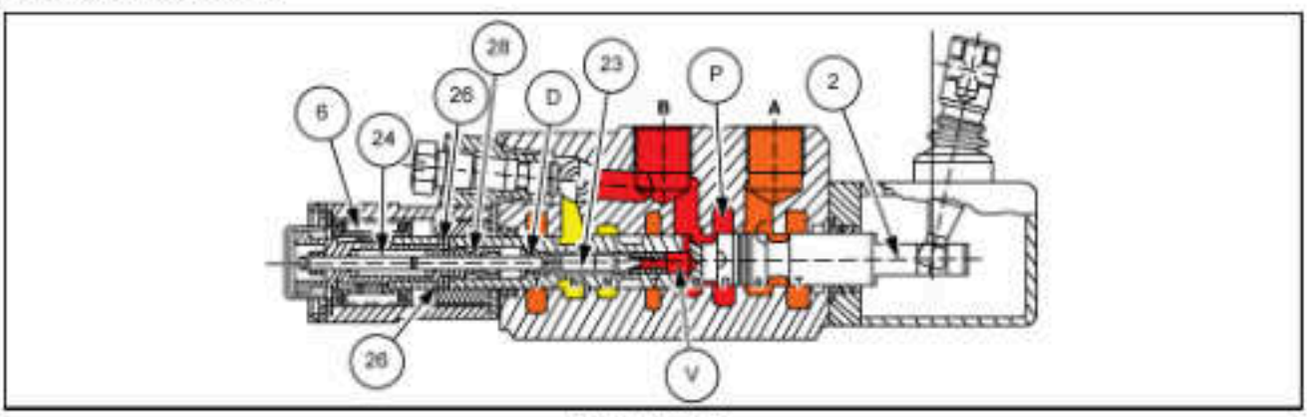
Pressurised oil

Suction, delivery or exhaust oil

Static oil

NOTE: *To operate a double-acting cylinder, tighten screw **(1)** fully home. To operate a single-acting cylinder, fully undo screw **(1)**.*

Operating stages of auxiliary control valve operating a double-acting cylinder with automatic detent release



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Pressurised oil

Suction, delivery or exhaust oil

Static oil

Lifting

On pulling back the control lever, the spool **(2)** moves and the detent balls **(26)** engage the groove, where they are held in place by the support **(28)** and spring **(24)**. The movement of the spool **(2)** connects: The pressure line **(P)** with the line **(B)**, and also the upper cylinder chamber with the exhaust line **(T)** by way of line **(A)**, intercepting the supply of oil to the hydraulic lift control valve.

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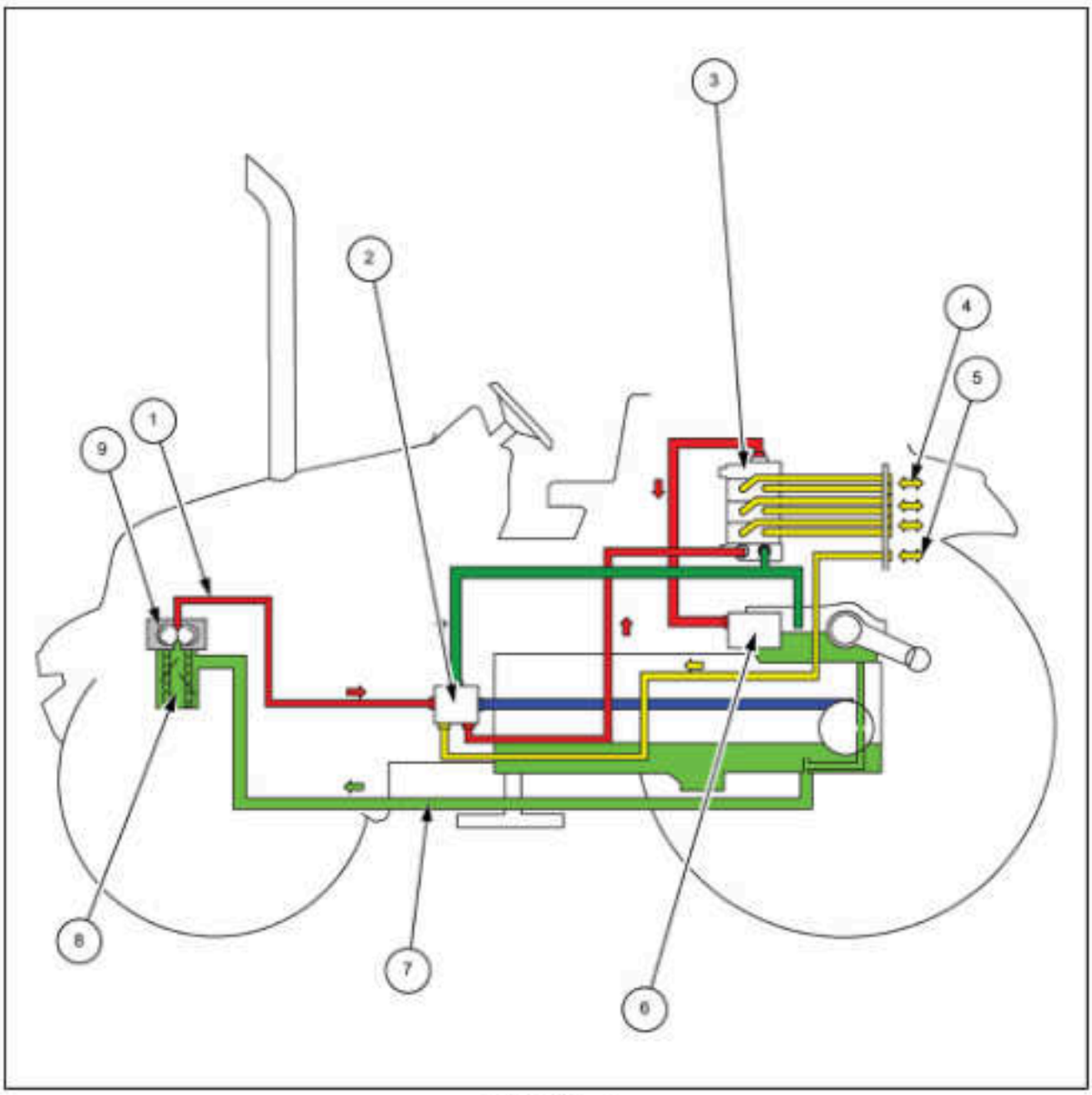
Main lift system - Dynamic description

Hydraulic lift circuit

The mechanical lift can operate with controlled position or draft control and with a combination of the two. The lift is controlled by two levers located on the operator's right. It also features the Lift-O-Matic device which raises and lowers the implement without the need to use the position and draft control levers.

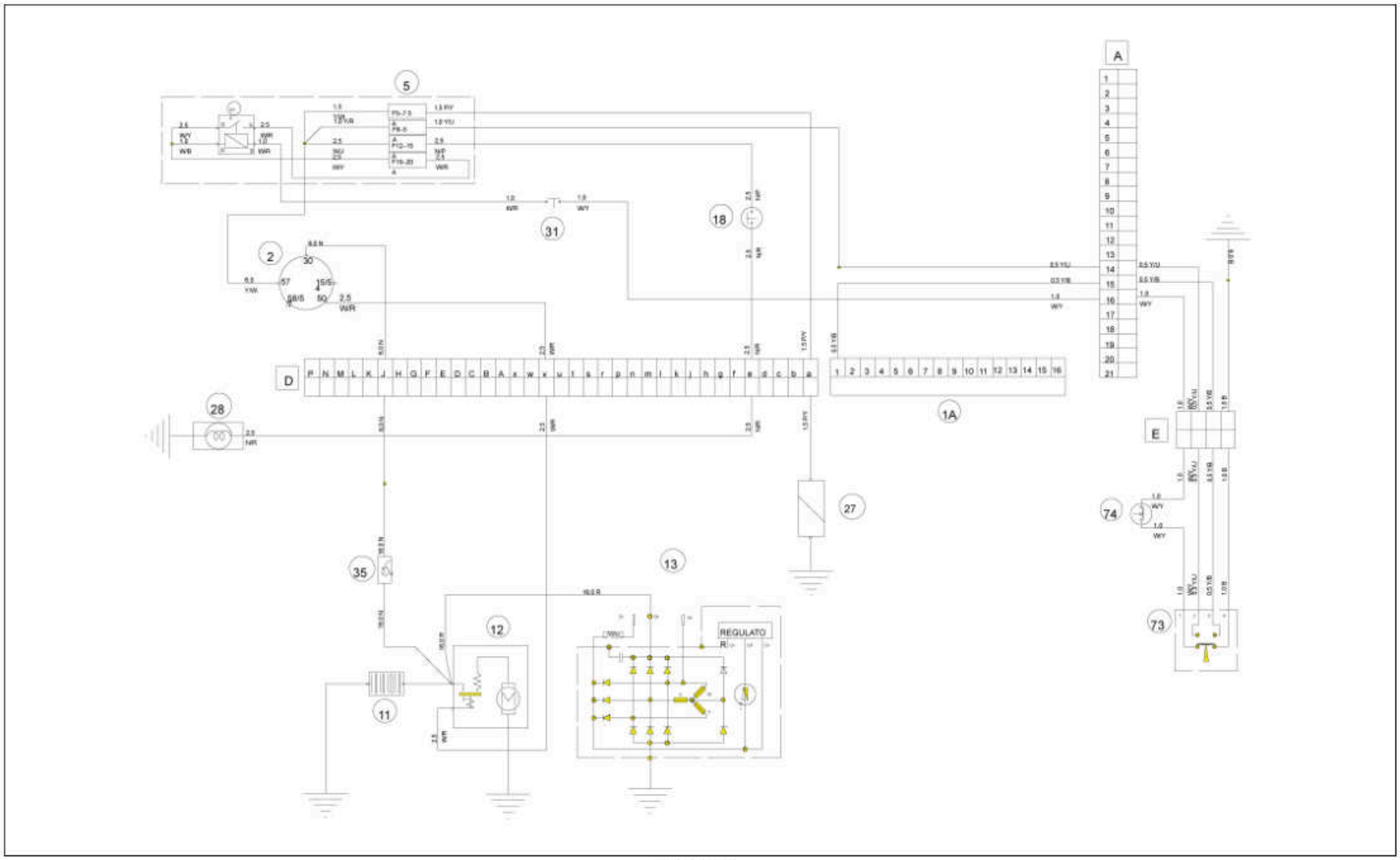
Draft control is actuated by the flex bar positioned in the special box mounted under the rear transmission.

The lower lift arms and corresponding control rods are connected to the flex bar.



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