SERVICE MANUAL

T3.50F / T3.55F / T3.65F / T3.75F

Tractor

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Part number 47977155
English
February 2016

NEW HOLLAND AGRICULTURE

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General specification

T3.F	WE

General specification	3 cylinder
Engine type :	–
T 3.50F model turbocharged – 8035.25A.313T-(BOSCHpompa)	BOSCH 1068-1 T
T 3.55F model turbocharged – 8035.25B.313T (BOSCHpompa)	BOSCH 1068-1
T 3.65F model turbocharged - 8035.25C.313T (BOSCHpompa)	BOSCH 1068-2
T 3.75F model turbocharged - 8035.25D.313T (BOSCHpompa)	BOSCH 1089
Type:	
Fuel injection	Diesel 4 stroke
Number of cylinders in line	Direct 3
Piston diameter	
T 3.50 F model	**104 mm**
T 3.55 F model	**104 mm**
T 3.65 F model	**104 mm**
T 3.75 F model	**104 mm**
Piston stroke	**115 mm**
Total displacement :	
T 3.50 F model	**2930 cm³**
T 3.55 F model	**2930 cm³**
T 3.65 F model	**2930 cm³**
T 3.75 F model	**2930 cm³**
Compression ratio	18:1
Maximum power	
T 3.50 F model	**36.8 kW** (**50 Hp**)
T 3.55 F model	**40.4 kW** (**55 Hp**)
T 3.65 F model	**47.8 kW** (**65 Hp**)
T 3.75 F model	**53.0 kW** (**72 Hp**)
Maximum torque	
Maximum torque (Nm) at 1400 d/dak: T 3.50 F model	**201 N·m**
Maximum torque (Nm) at 1400 d/dak: T 3.55 F model	**220 N·m**
Maximum torque (Nm) at 1400 d/dak: T 3.65 F model	**261 N·m**
Maximum torque (Nm) at 1400 d/dak: T 3.75 F model	**295 N·m**
Number of main bearings	4
Sump	Structural cast iron
Lubrication	Forced, with gear pump
Pump drive	From camshaft
Engine speed / oil pump speed ratio	2:1
Oil cleaning	Mesh filter on oil intake and cartridge filter on delivery line
Normal oil pressure, with engine hot and at fast idling speed:	**2.9 - 3.9 bar** (**42.0 - 56.6 psi**)
All models	
Lube pressure relief valve	Built into pump housing
Valve opening pressure	**3.5 bar** (**50.8 psi**)
For further lubrication data	See page 19
Cooling system	Coolant circulation
Radiator on T 3.50 F and T 3.55 F models	3 row vertical pipes with copper fins
Radiator on T 3.65 F and T 3.75 F models	4 row vertical pipes with copper fins
Fan, attached to coolant pump pulley T 3.50 F, T 3.55 F, T 3.65F, T 3.75 F models	10 blade steel exhauster fan
Coolant pump	Centrifugal vane-type

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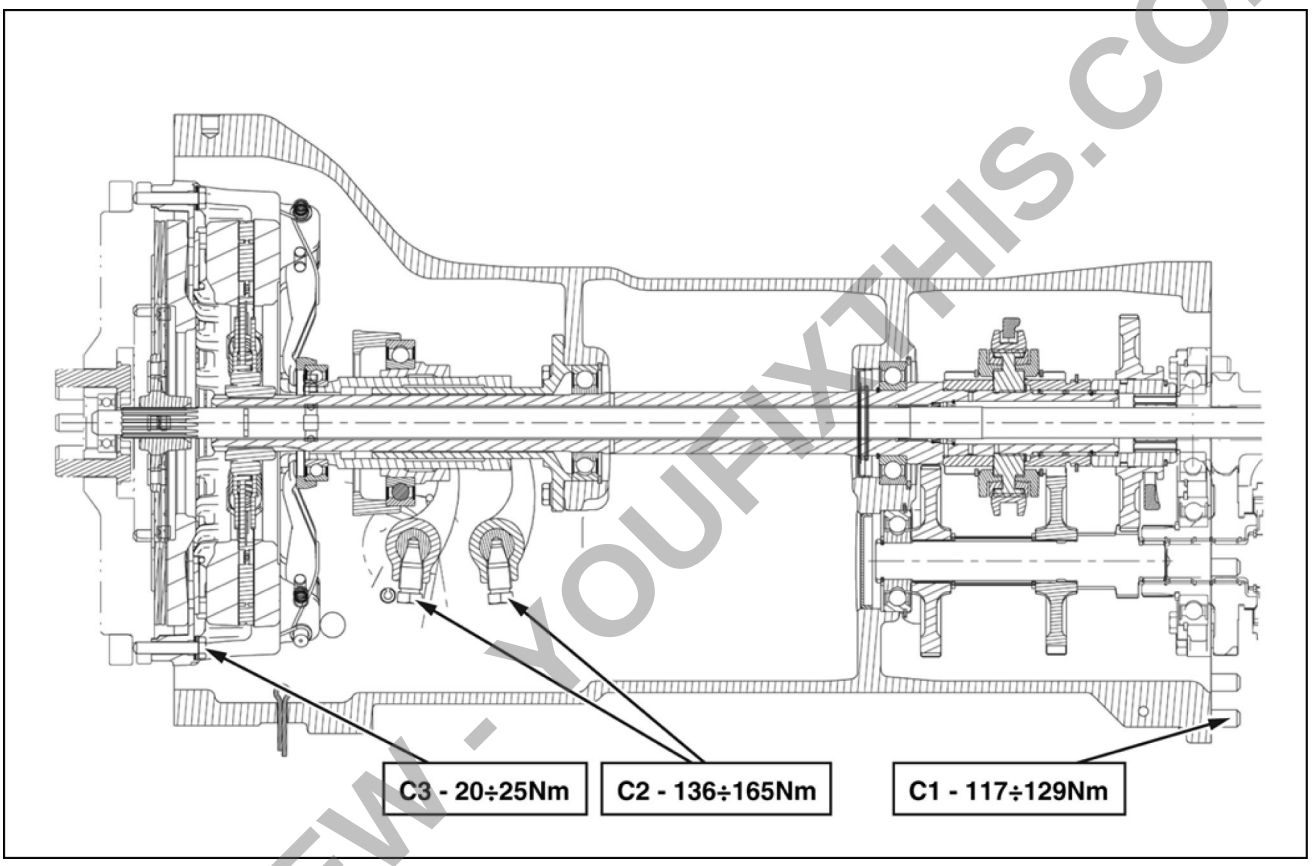
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Clutch - Torque

T3.F	WE

Torque specifications

Parts to be tightened	Thread	Tightening torque	
Clutch casing/engine retaining bolts	M 12 x 1.25	**117 - 129 N·m**	**11.9 - 13.1 kgm**
Screws (C1) fixing clutch box to the rear transmission box	M 12 x 1.25	**117 - 129 N·m**	**11.9 - 13.1 kgm**
Screw (C2) securing levers to release command fork (7, Fig. **1**)	M 16 x 1.5	**136 - 165 N·m**	**13.9 - 16.9 kgm**
11 in/**11 in** clutch/flywheel retaining bolts (C3)	M 8 x 1.25	**20 - 25 N·m**	**2 - 2.5 kgm**



ANIL15TR00236FB 1

Clutch - Special tools

T3.F	WE

⚠ WARNING: The operations described in this section can only be carried out with ESSENTIAL tools indicated by an (X).
To work safely and efficiently and obtain the best results, it is also necessary to use the recommended specific tools listed below and certain other tools, which are to be made according to the drawings included in this manual.

List of specific tools required for the various operations described in this section

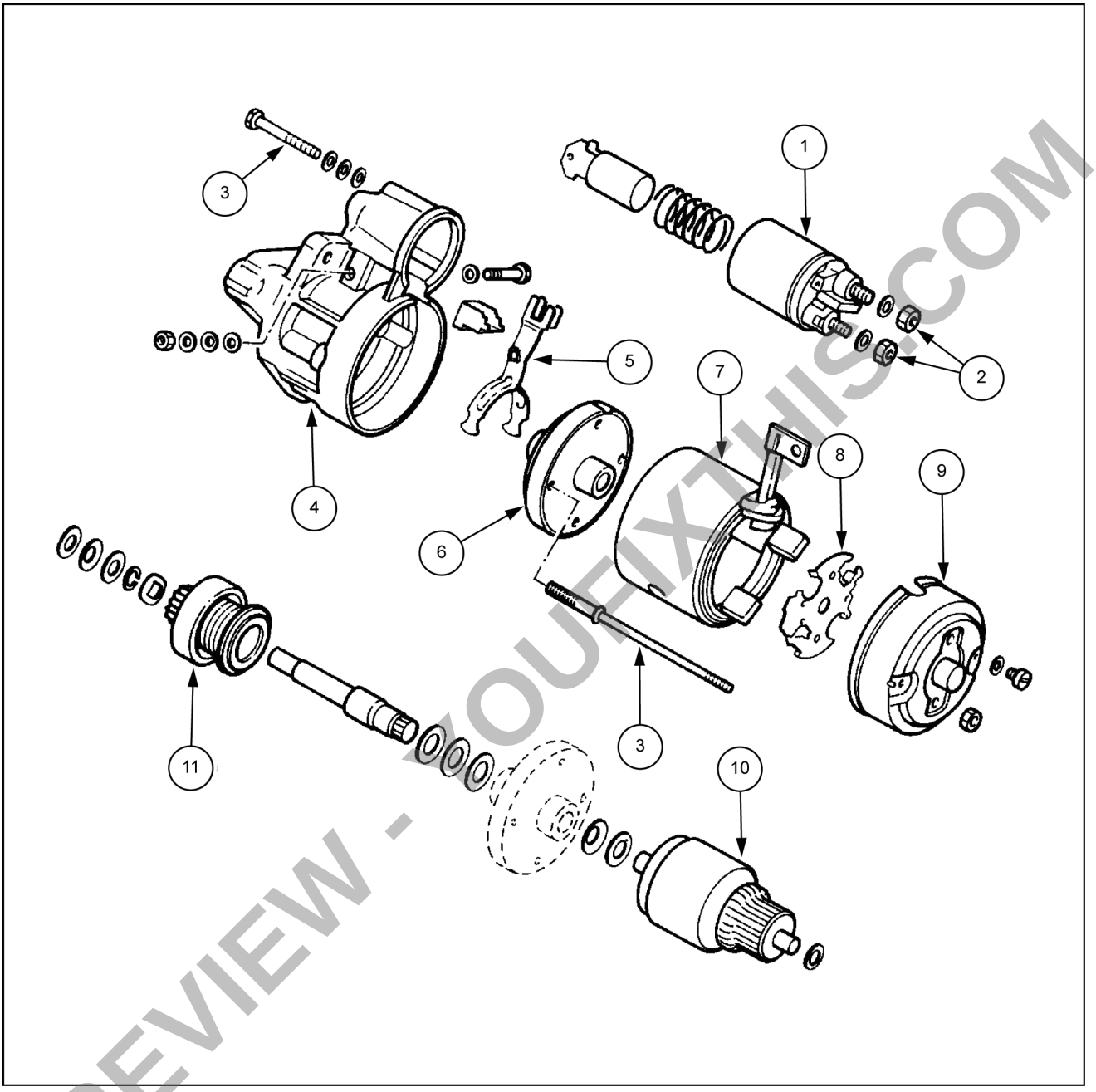
X	380001612	Pin for centering and adjustment of **11 in**/ **11 in** clutches.
X	380000293	Clutch adjustment gauge (with 380001612).
	380000256	Set of wrenches for adjustment of levers in **11 in**/ **11 in** LUK clutches.

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Engine starting system - External view - Starter motor

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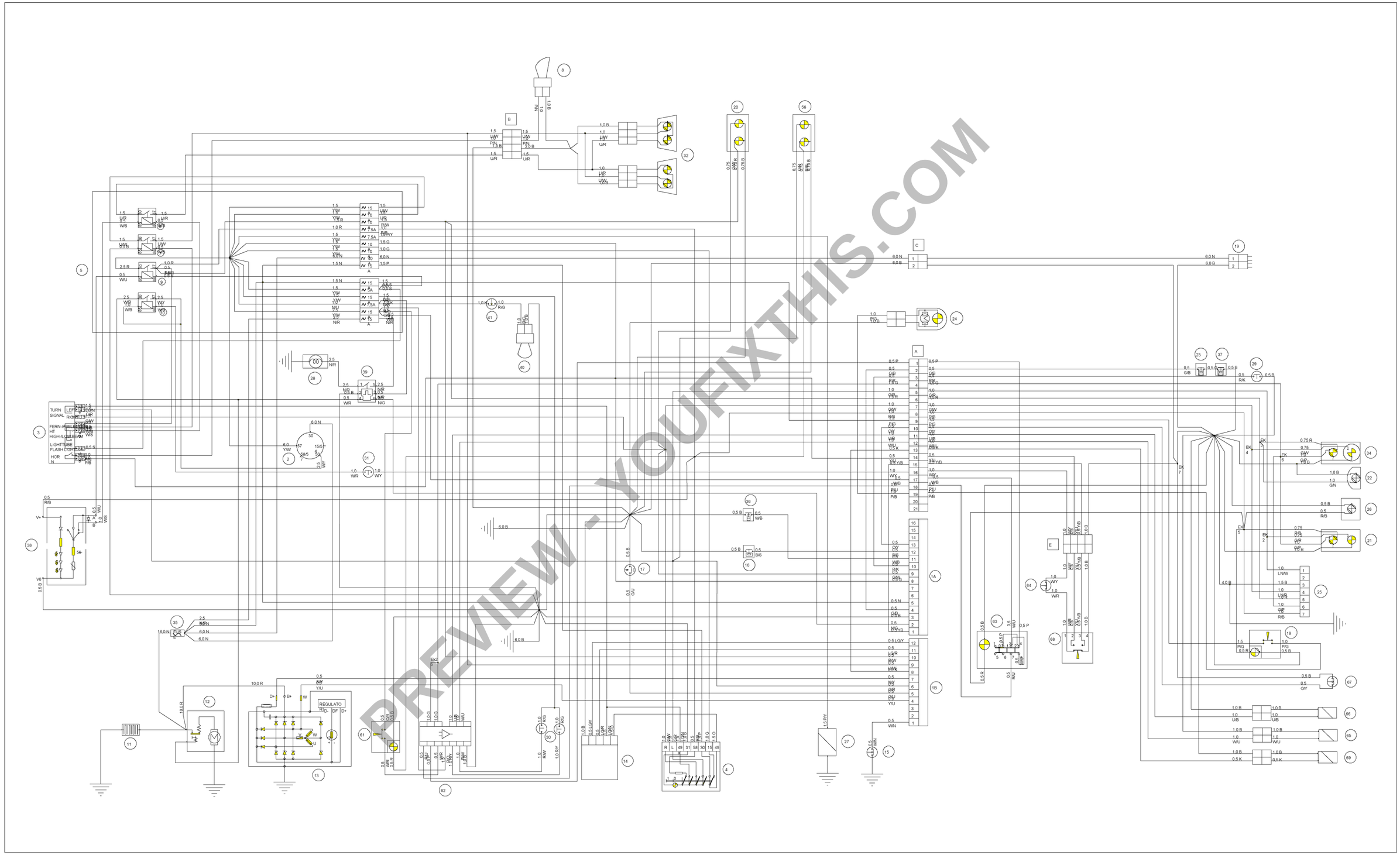


ANIL15TR00709GB 1

1. Solenoid
2. Solenoid bolts
3. Bolt and stud group
4. Control side support
5. Lever
6. Reducer
7. Field windings and casing
8. Brush holder
9. Brush plate
10. Armature
11. Clutch

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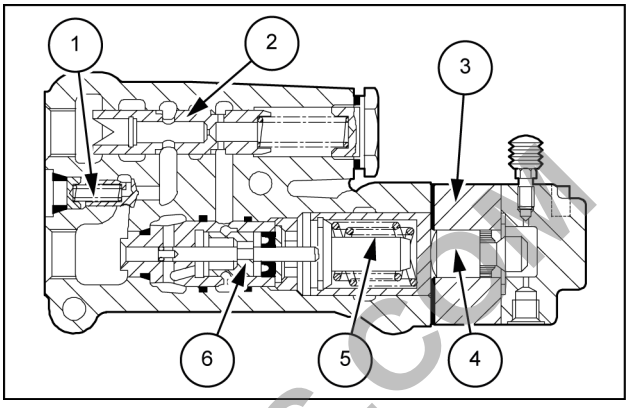
ANIL15TR0696JA 1

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Trailer brake hydraulic control - Sectional view

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1. Check valve
2. Pilot valve housing
3. Flow control valve
4. Pilot valve piston
5. Relief valve
6. Piston



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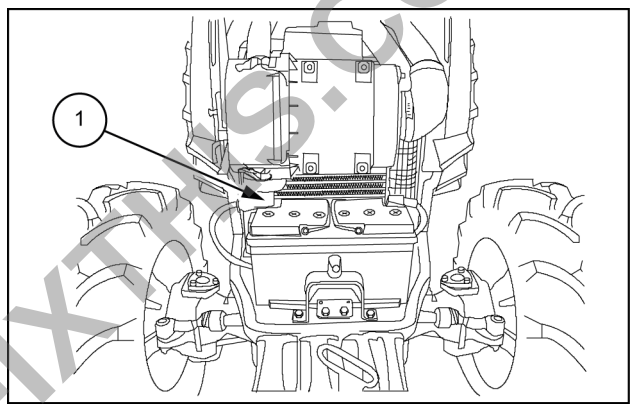
Engine - Remove

T3.F	WE

⚠ DANGER: Lift and handle all heavy parts using suitable lifting equipment.
Make sure that assemblies or parts are supported by means of suitable slings and hooks.
Check that no one is in the vicinity of the load to be lifted.

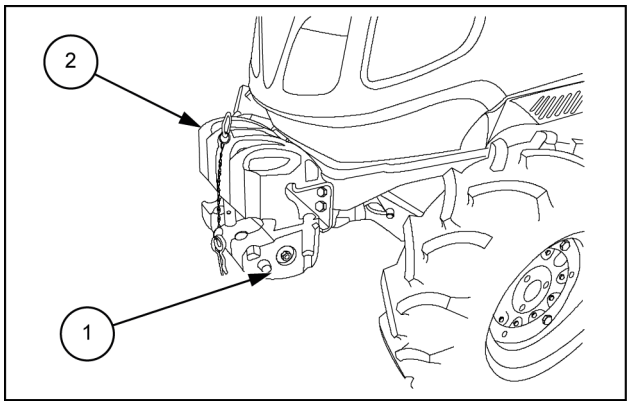
⚠ WARNING: Always use suitable tools to align holes in parts.
NEVER USE FINGERS OR HANDS.

1. Disconnect the battery's negative cable **(1)**.
2. Drain oil from the transmission/gearbox.



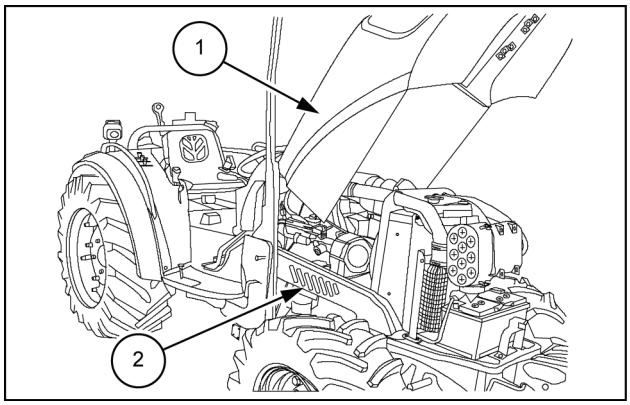
ANIL15TR00007AB 1

3. Unscrew the nut **(1)** from the weight retaining pin. Remove the weights **(2)** from the front support.



ANIL15TR00008AB 2

4. Detach the gas struts from the bonnet **(1)**. Disconnect the electrical connection of bonnet **(1)**.
5. Remove the guards **(2)** on the right and left hand side of the engine.



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Engine - Troubleshooting

T3.F	WE

Problem	Possible Cause	Correction
Engine does not start	Batteries partially discharged	Check and recharge battery. Replace if necessary
	Battery terminal connections corroded or loose	Clean, inspect and tighten terminal nuts. Replace terminals and nuts if excessively corroded
	Incorrect injection pump timing	Adjust injection pump timing
	Impurities or water in fuel lines	Disconnect fuel lines from injection pump and clean thoroughly. If necessary clean and dry the fuel tank
	No fuel in tank	Fill tank
	Fuel supply pump malfunction	Check and replace pump if necessary
	Air in fuel system	Check fuel lines, unions, supply pump, filters and injection pump for air, then bleed system
	Starter motor faulty	Repair or replace starter motor
	Faulty thermostart	Check and replace thermostart, if necessary
Engine stalls	Idle speed too low	Adjust idle speed
	Irregular delivery from injection pump	Check injection pump delivery on test bench
	Impurities or water in fuel lines	Disconnect fuel lines from injection pump and clean thoroughly. If necessary clean and dry the fuel tank
	Fuel filters clogged	Renew filter cartridges
	Incorrect valve clearances	Adjust valve clearance
	Burnt or cracked valves	Replace the valves
	Air in fuel system	Check fuel lines, unions, supply pump, filters and injection pump for air, then bleed system
	Injection pump drive mechanism damaged	Replace damaged parts
Engine overheats	Coolant pump malfunction	Overhaul or replace pump
	Faulty thermostat	Replace the thermostat
	Radiator inefficient	Remove internal deposits by flushing. Check for leaks and rectify
	Deposits in cylinder head and crankcase coolant passages	Flush cooling system
	Coolant pump and fan drive belt slack	Check and adjust belt tension
	Coolant level low	Top up expansion tank with specified coolant mixture
	Incorrect timing	Check and adjust
	Injection pump calibration incorrect - delivering too much or too little fuel	Calibrate pump on test bench to values specified in calibration tables
	Air cleaner restricted	Clean filter unit and replace filter element if necessary
Engine lacks power and runs unevenly	Incorrect injection pump timing	Adjust pump timing
	Auto advance regulator in injection pump damaged	Overhaul injection pump and adjust on test bench to the values specified in calibration table
	Control valve journal worn	Overhaul injection pump and adjust on test bench to the values specified in calibration table
	Irregular delivery from injection pump	Overhaul injection pump and adjust on test bench to the values specified in calibration table

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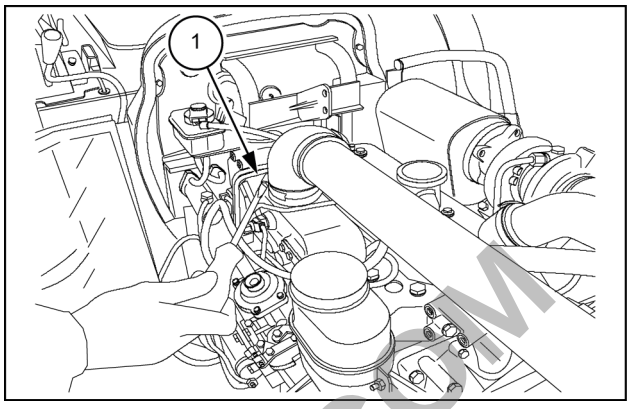
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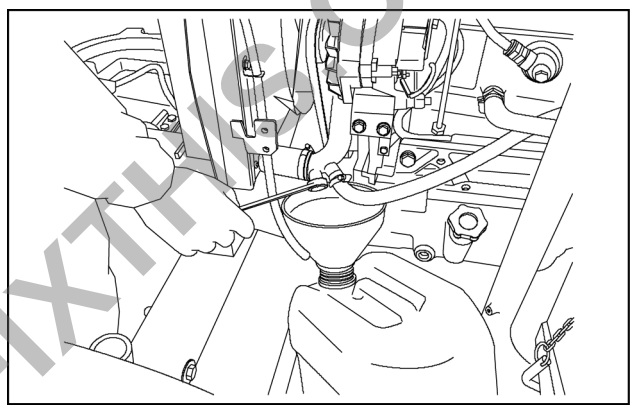
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27. Slacken the hose clamp and detach hose **(1)** from the intercooler.



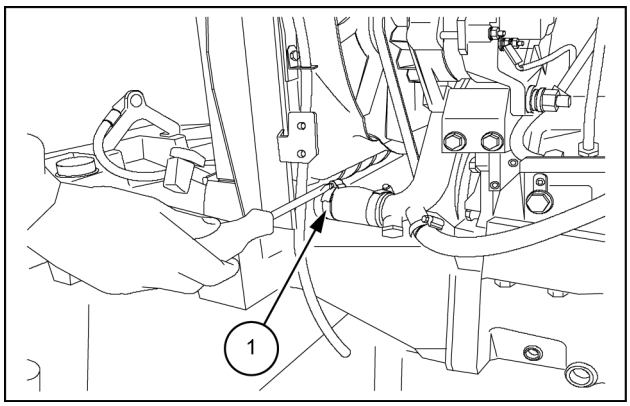
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28. Drain the coolant.



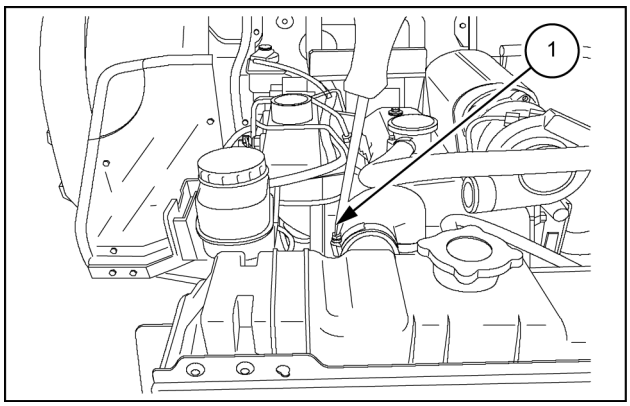
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29. Slacken the hose clamp **(1)** from the cooler.



ANIL15TR00032AB 26

30. Slacken the hose clamp and detach hose **(1)** from the radiator.



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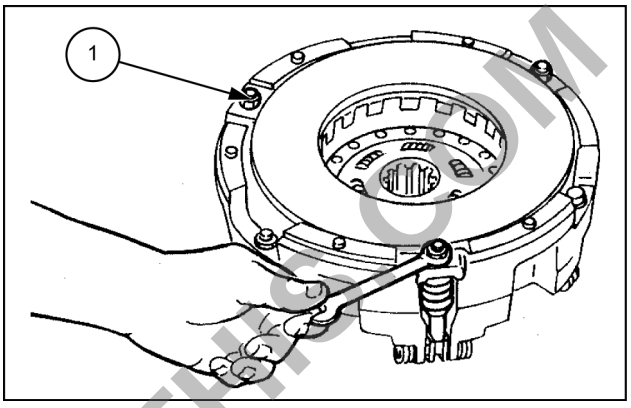
Clutch - Disassemble

T3.F	WE

Test bench overhaul

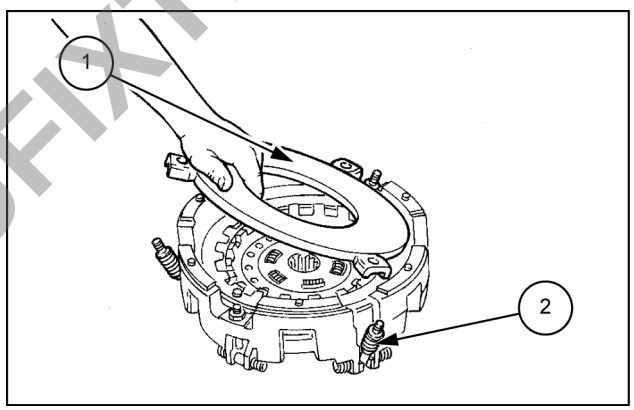
ATTENTION: *Use suitable tools to align the holes. NEVER USE FINGERS OR HANDS.*

1. Unscrew the three PTO clutch lever adjustment nuts **(1)**.



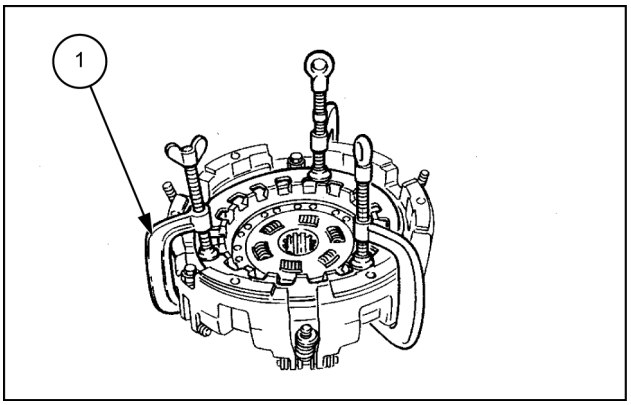
ANIL15TR00239AB 1

2. Recover the pressure plate **(1)** with the three coil springs **(2)** and the three washers.



ANIL15TR00240AB 2

3. Position three clamps **(1)** at intervals of 120 degree on the clutch body and gradually and carefully squeeze the belleville spring disk.



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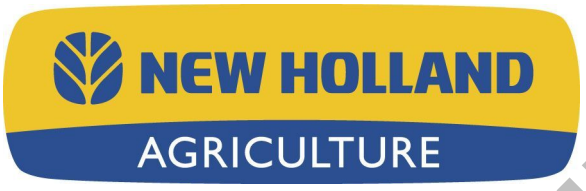
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Diagram showing the installation of the tools and equipment required for the control valve stem leakage test

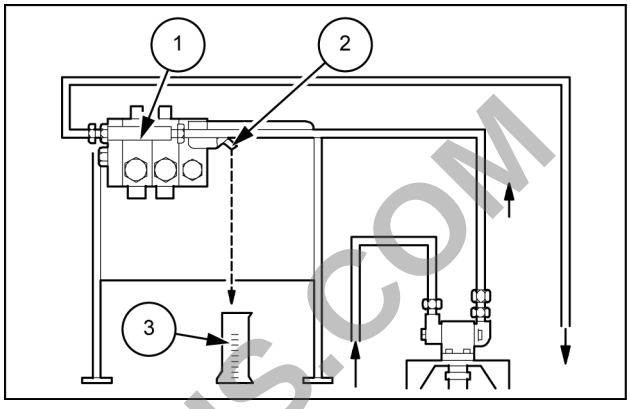
Valve leakage test

Install the auxiliary control valve stack and the test equipment as indicated in the diagram (Fig. **3**) bearing in mind that the three-way union **(1)** must be secured on the single-and double-acting control valves with suitable reducers.

After having made the connections indicated in the diagram, carry out the test as follows:

- Start the hydraulic pump and gradually increase the pressure by turning the hand wheel on the test equipment until a pressure of **147 bar** (**2131.5 psi**) is shown on the pressure gauge.
- Collect the leaked oil flowing from the union **(2)**, in the burette provided **(3)** for a period of exactly one minute. Check that the quantity of oil collected does not exceed **25 cm³**/minute in the case of a new control valve, or **60 cm³**/minute for a used valve.

Repeat the test on each control valve, checking alternately the two supply lines to the related user cylinder.



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Steering

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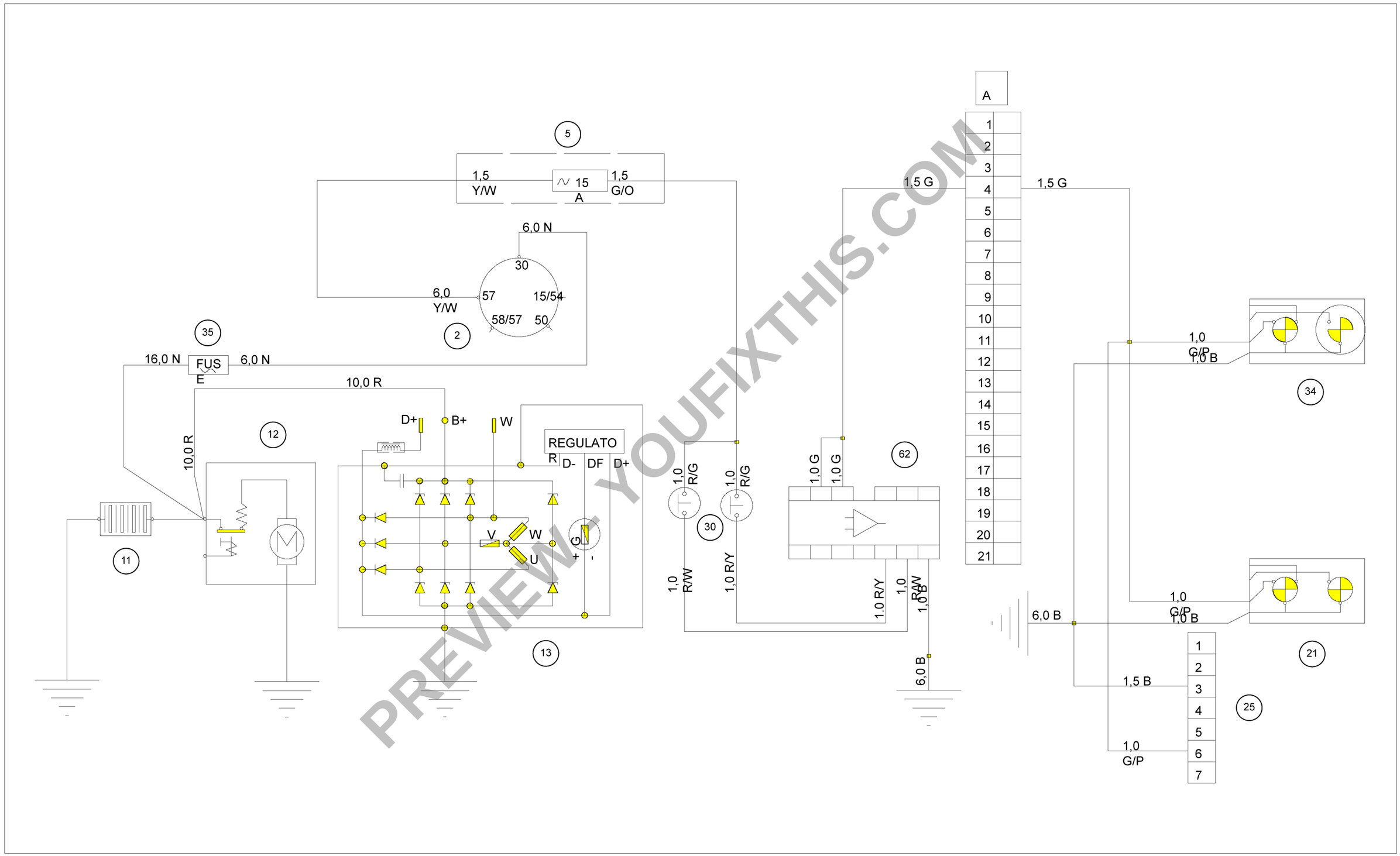
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