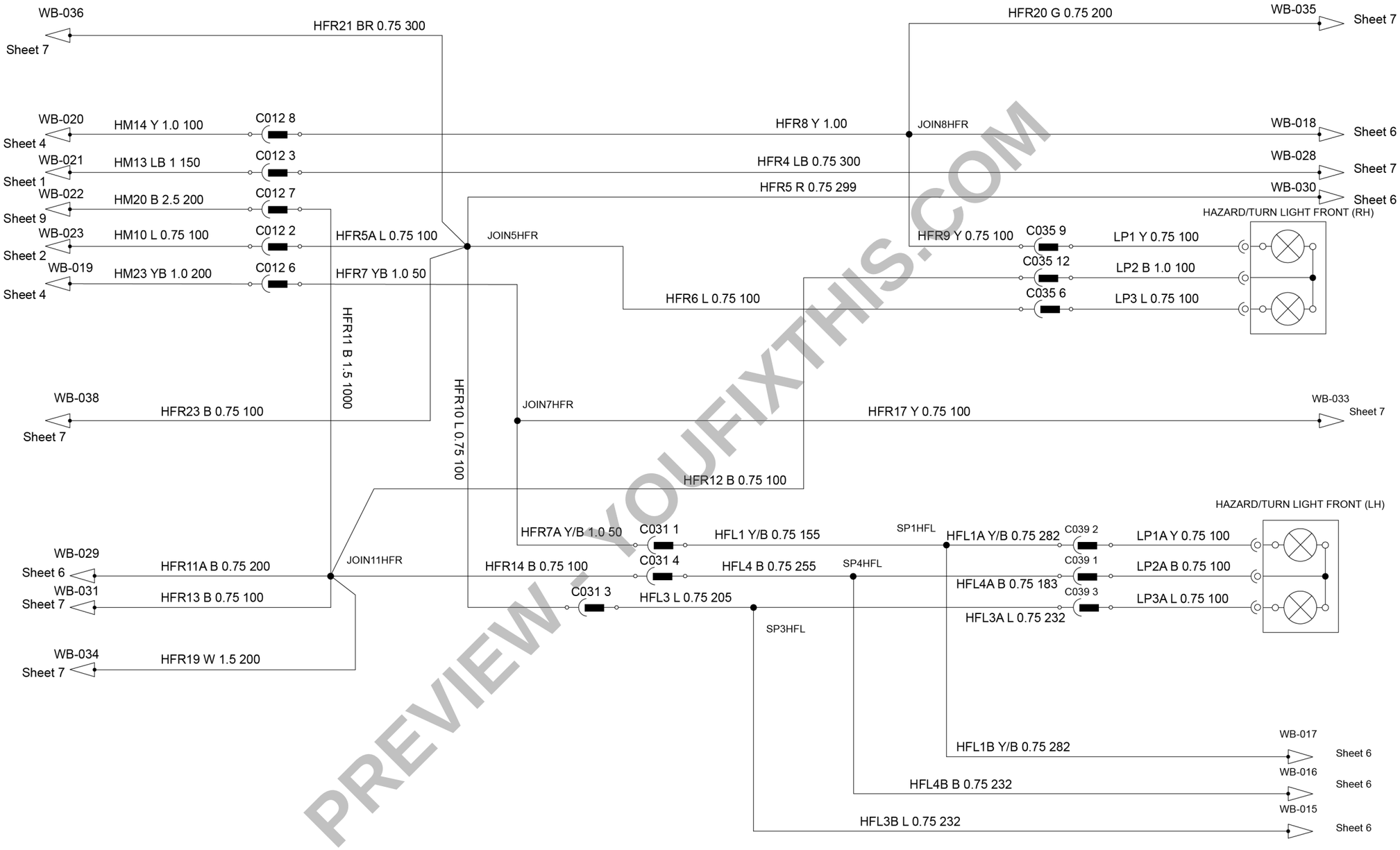
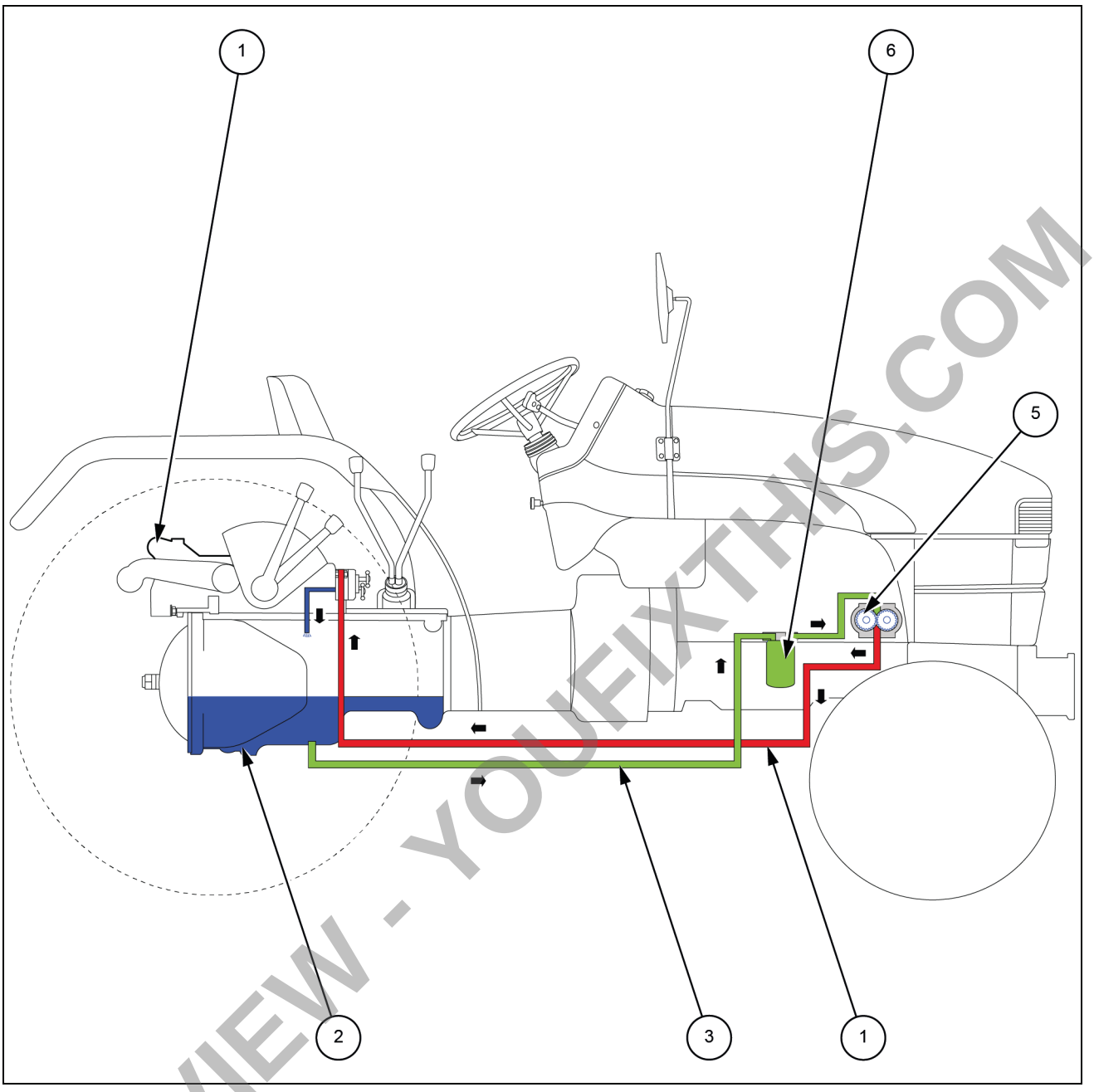


Fender Lamp Front

GNIL14TR05481JB 1

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GNIL14TR05494GB 1

1. Mechanical lift
2. Oil sump (transmission housing)
3. Suction line
4. Delivery line
5. Pump
6. Filter

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Aspiration	Naturally aspirated
Combustion	Direct injection
Bore (nominal diameter)	**95.00 mm** (**3.74 in**)
Stroke	**127.00 mm** (**5.00 in**)
Cubic capacity	**2.70 L** (**0.71 US gal**)
Compression ratio	18.3 : 1
Rotation	Anti-clock wise from the flywheel end
Firing order	1, 2, 3
Valve tip clearance	**0.30 mm** (**0.01 in**) inlet and exhaust
Atomiser setting pressure	**250 - 258 bar** (**3625 - 3741 psi**)
Inlet valve closes	**26.8 °** before top dead centre
Exhaust valve closes	**25.3 °** after top dead centre
Total inlet open period	**250.6 °**
Total exhaust open period	**266.6 °**
Fuel injection pump	MICO VE type fuel injection pump mechanical governor
Injection timing	**0.80 mm** (**0.03 in**) plunger lift when number 1 piston at TDC
Fuel feed pump	Plunger type pump located on cam tunnel driven by engine camshaft
Application	Tractor
Rating	
Maximum gross rating before top dead centre	**49.5 kW** (**67.3 Hp**) **@ 2250 RPM**
Maximum gross torque	**180 N·m** (**133 lb ft**) **@ 1200 - 1400 RPM**
Rating standard	ISO 14396
De-rating for altitude	
Where engines are called upon to operate in very high atmospheres occasioned by attitude, such engines should be derated.	
Approximate engine weights	
Basic weight (with alternator but without starter motor flywheel and flywheel housing)	**204 kg** (**450 lb**)
Typical installed weight (with starter motor flywheel and flywheel housing)	**290 kg** (**639 lb**)
Engine dimension	
Height	**770.00 mm** (**30.31 in**)
Length	**730.00 mm** (**28.74 in**)
Width	**500.00 mm** (**19.69 in**)

Engine - Torque

3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

4510 / 4010 / 3510 models

Description	Thread size	Torque	
		4510 / 4010	3510
Cylinder head nuts and setscrews (non retorque type)	7/16 - 20 UNF	**10.8 kgf** (**23.8 lbf**)	**10.8 kgf** (**23.8 lbf**)
Connecting rod nuts (cadmium plated)	7/16 - 20 UNF	**6.1 kgf** (**13.4 lbf**)	**6.1 kgf** (**13.4 lbf**)
Connecting rod nuts (phosphated)	7/16 - 20 UNF	**8.3 kgf** (**18.3 lbf**)	**8.1 kgf** (**17.9 lbf**)
Main bearing setscrews	M14 x 2	**15.9 kgf** (**35.1 lbf**)	**15.6 kgf** (**34.4 lbf**)

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Engine - Remove

3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

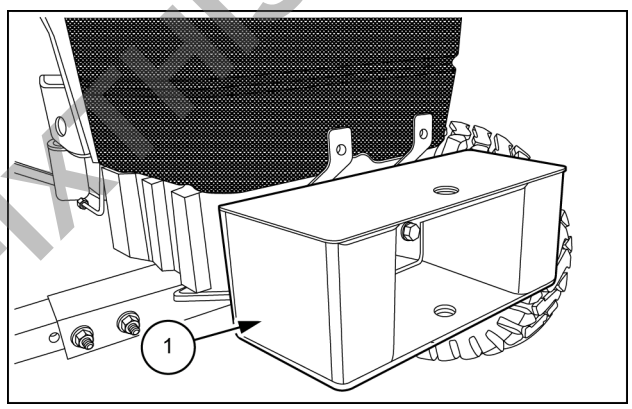
⚠ WARNING

Avoid injury!
Handle all parts carefully. Do not place your hands or fingers between parts. Use Personal Protective Equipment (PPE) as indicated in this manual, including protective goggles, gloves, and safety footwear.
Failure to comply could result in death or serious injury.

W0208A

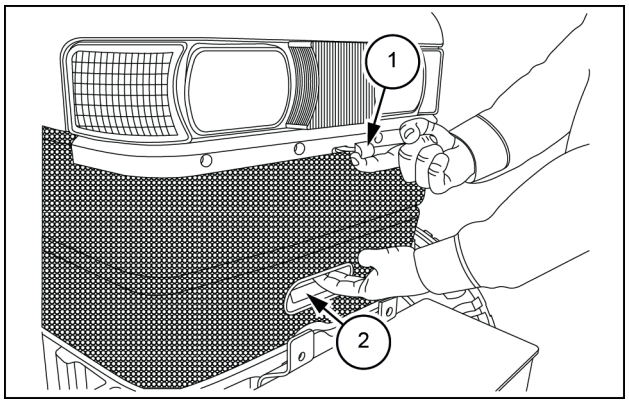
Separating engine from centre housing

1. Remove the front weight carrier **(1)**.



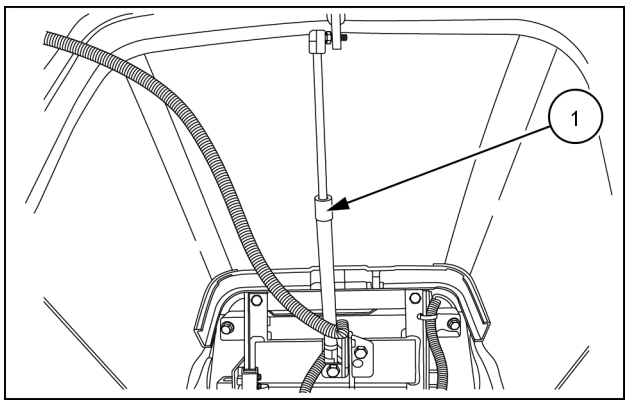
GNIL14TR04757AB 1

2. Slide the lock **(1)** to right, hold and lift the handle **(2)** to raise hood.



GNIL14TR04758AB 2

3. To maintain the hood in raised position a gas strut **(1)** is provided underside hood.



GNIL14TR04759AA 3

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Engine - Troubleshooting

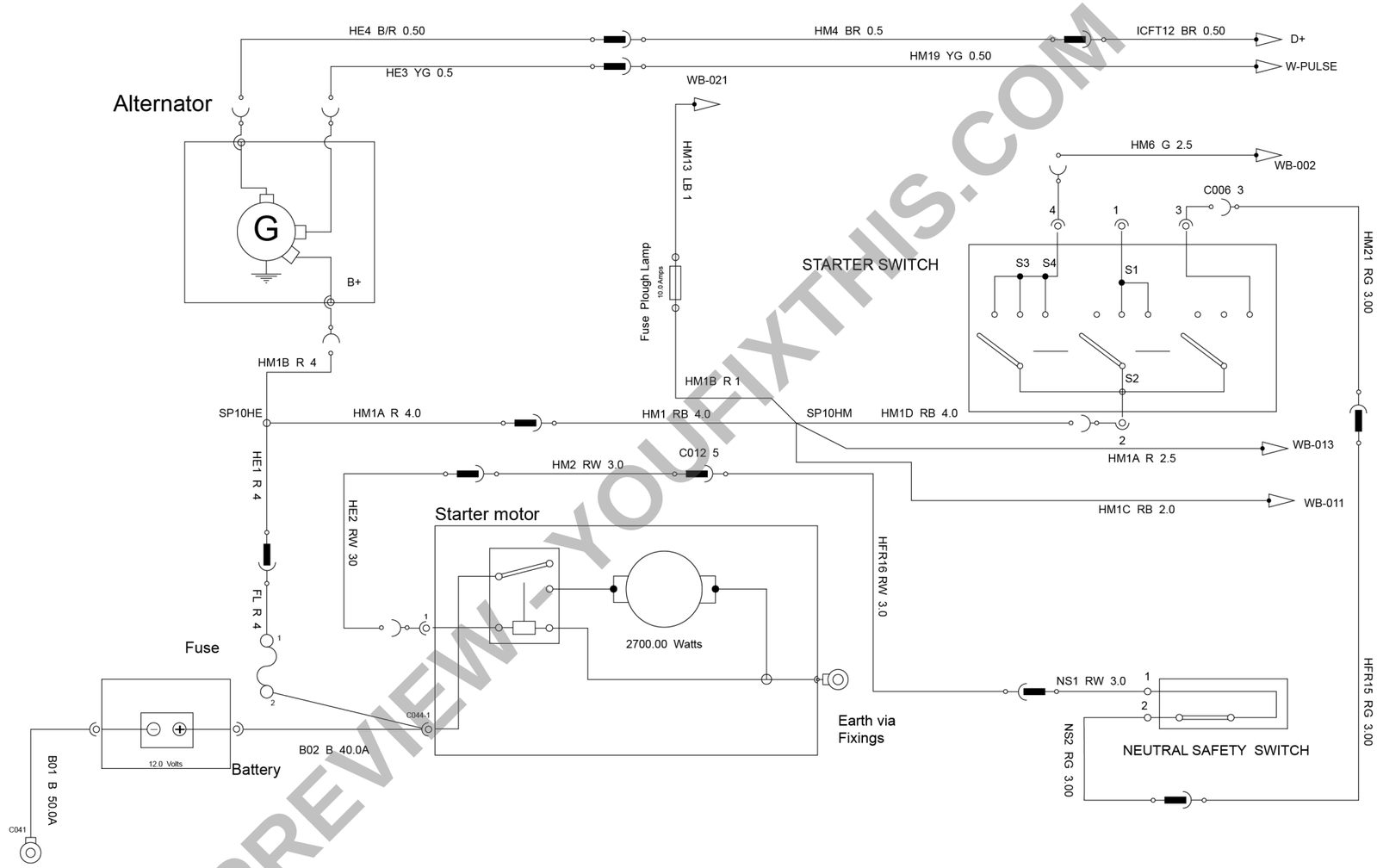
3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

NOTE: *When attending a repair the cause of the problem must also be investigated and corrected to avoid repeat failures.*

Problem	Possible Cause	Correction
Low cranking speed	Battery capacity low	Charge or renew the battery
	Bad electrical connections	Check the connections or renew electricals
	Faulty starter motor	Overhaul starter motor
	Lubricating oil of incorrect grade	Drain and refill with specified grade of oil
Engine does not start	Low cranking speed	See problem - Low cranking speed
	Fuel tank empty	Fill the tank with fuel
	Faulty stop control operation	Check the stop control cable movement and setting
	Blocked fuel feed pipe	Clean the pipe
	Faulty fuel feed pump	Overhaul fuel feed pump
	Choked fuel filters	Renew filter elements
	Air in fuel system	Remove air lock
	Faulty injectors	Overhaul injectors
	Faulty fuel injection pump	Overhaul injection pump
	Broken fuel injection pump drive	Fit new drive
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Incorrect type or grade of fuel	Drain and refill with correct type or grade of fuel
	Worn cylinder bores	Re-bore / re-sleeve block and fit new pistons
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
Difficult starting	Low cranking speed	See problem - Low Cranking Speed
	Faulty stop control operation	Check the stop control cable movement and setting
	Blocked fuel feed pipe	Clean
	Faulty fuel feed pump	Overhaul fuel feed pump
	Choked fuel filters	Renew filter elements
	Restriction in air cleaner or induction system	Check and clean or remove the restriction
	Air in fuel system	Remove air lock
	Faulty fuel injection pump	Overhaul injection pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Blocked fuel tank vent	Clean
	Incorrect type or grade of fuel	Drain the fuel and refill with correct grade of fuel
	Exhaust pipe restriction	Check and clean or remove the restrictions
	Sticking valves	Replace valve with new standard or oversize, and or machine the valve guide bores
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons

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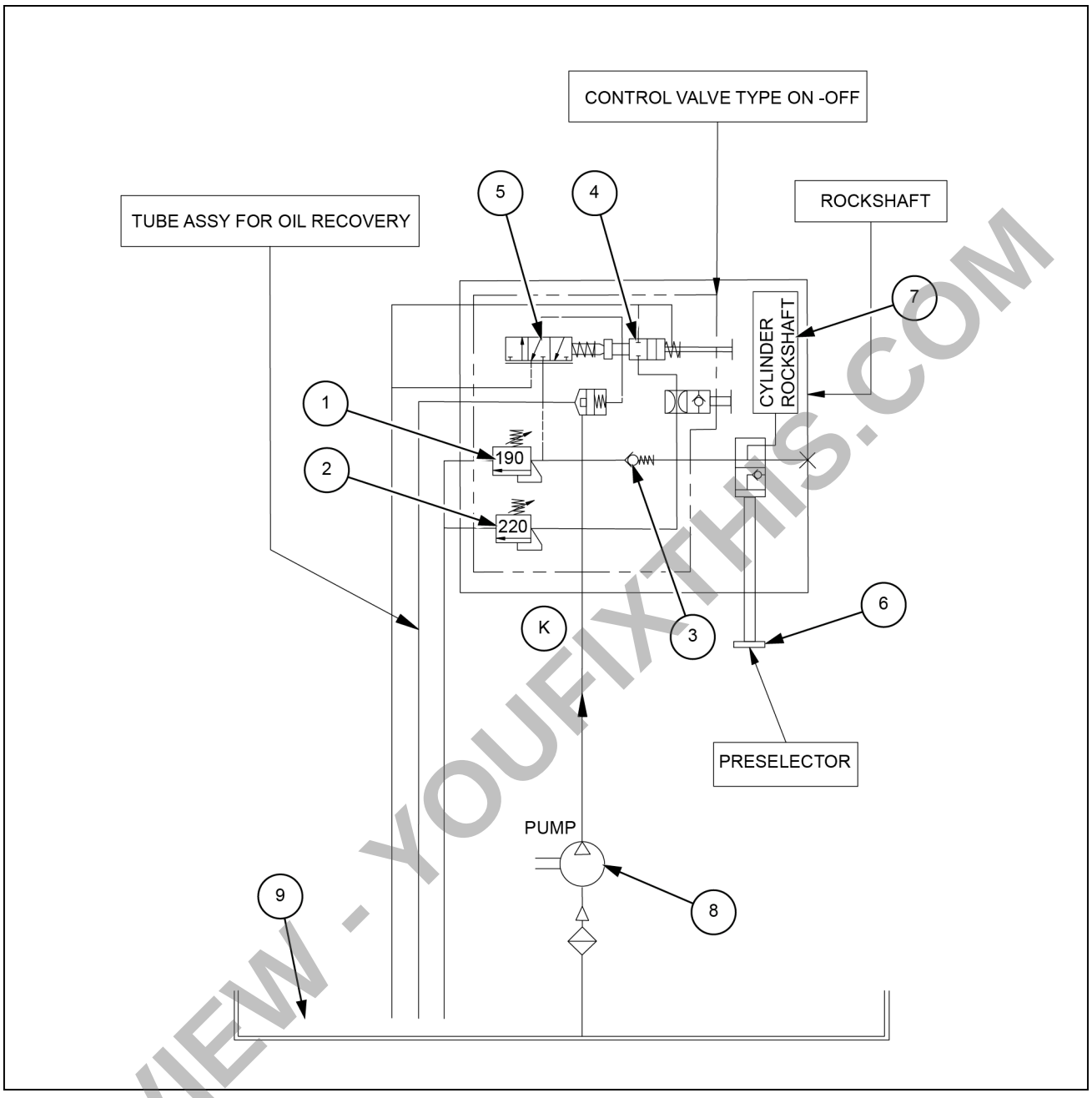


Starting circuit

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GNIL14TR04570GB 2

Hydraulic circuit diagram

1. System safety relief valve
2. Cylinder safety valve
3. Check valve
4. Discharge valve
5. Control valve
6. Diverter valve
7. Cylinder rockshaft
8. Pump
9. Sump

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Description	Thread size	Torque	
		4510 / 4010	3510
Balance weight setscrews	7/16 - 20 UNF	**7.6 kgf (16.8 lbf)**	**7.5 kgf (16.5 lbf)**
Idler gear retaining setscrew	M12 x 1.5	**6.9 kgf (15.2 lbf)**	**6.8 kgf (15.0 lbf)**
Camshaft gear retaining setscrews	M8 x 1.25	**2.9 kgf (6.4 lbf)**	**2.9 kgf (6.4 lbf)**
Fuel Injection Pump (FIP) gear to adapter setscrew	M8 x 1.25	**2.9 kgf (6.4 lbf)**	**2.9 kgf (6.4 lbf)**
Flywheel setscrew	M12 x 1.25	**11.1 kgf (24.5 lbf)**	**10.8 kgf (23.8 lbf)**
Crankshaft pulley retaining setscrew	M22 x 2.5	**15.2 kgf (33.5 lbf)**	**14.9 kgf (32.8 lbf)**
Injector securing nuts	M8 x 1.00	**1.7 kgf (3.7 lbf)**	**1.6 kgf (3.5 lbf)**
Engine to front support buckle up bolts	M16 x 2	**22.0 kgf (48.5 lbf)**	**22.0 kgf (48.5 lbf)**
Engine to clutch housing buckle up bolts	M12 x 1.5	**9.0 kgf (19.8 lbf)**	**9.0 kgf (19.8 lbf)**
Support radiator to engine setscrew	M10 x 1.25	**4.5 kgf (9.9 lbf)**	**4.5 kgf (9.9 lbf)**
Fuel tank support bolt	M12 x 1.25	**8.0 kgf (17.6 lbf)**	**8.0 kgf (17.6 lbf)**
Fuel tank support bolt	M8 x 1	**3.2 kgf (7.1 lbf)**	**3.2 kgf (7.1 lbf)**
Fan assembly bolt	M8 x 1	**2.6 kgf (5.7 lbf)**	**2.6 kgf (5.7 lbf)**
Hydraulic pump to coupler setscrew	M8 x 1	**3.0 kgf (6.6 lbf)**	**3.0 kgf (6.6 lbf)**
Hydraulic pump assembly bolt	Hex. 3/8"	**2.5 kgf (5.5 lbf)**	**2.5 kgf (5.5 lbf)**
Radiator assembly bolt	M10 x 1.5	**3.0 kgf (6.6 lbf)**	**3.0 kgf (6.6 lbf)**
Air cleaner to bracket set screw	M10 x 1.5	**5.0 kgf (11.0 lbf)**	**5.0 kgf (11.0 lbf)**
Air cleaner bracket to shell nut	M10 x 1.5	**3.2 kgf (7.1 lbf)**	**3.2 kgf (7.1 lbf)**
Starter motor mounting bolts	M10 x 1.5	**7.4 kgf (16.3 lbf)**	**7.4 kgf (16.3 lbf)**
Alternator mounting bracket nuts	M10 x 1.25	**4.0 kgf (8.8 lbf)**	**4.0 kgf (8.8 lbf)**
Alternator hinge bolt	M10 x 1.5	**8.0 kgf (17.6 lbf)**	**8.0 kgf (17.6 lbf)**
Fan belt tension adjusting bolt	M8 x 1.25	**2.4 kgf (5.3 lbf)**	**2.4 kgf (5.3 lbf)**

Engine - Torque

3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

4710 model

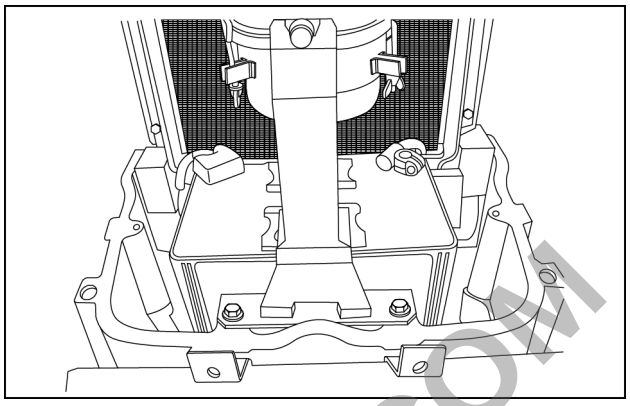
Description	Thread size	Torque
Cylinder head setscrew (camshaft tunnel side)	M10 x 1.0	**65.0 N·m (47.9 lb ft)**
Cylinder head setscrew	M12 x 1.5	*
Connecting rod nuts (phosphated)	7/16" - 20 UNF	**80.0 N·m (59.0 lb ft)**
Main bearing setscrews	M14 x 2	**155.0 N·m (114.3 lb ft)**
Balance weight setscrews	7/16"- 20 UNF	**75.0 N·m (55.3 lb ft)**
Idler gear hub nut (lower and upper)	M10 x 1.25	**28.0 N·m (20.7 lb ft)**
Camshaft gear retaining setscrews	M12 x 1.75	**75.0 N·m (55.3 lb ft)**
Fuel injection pump adaptor to fuel injection pump camshaft nut	M12	**45.0 N·m (33.2 lb ft)**
Fuel injection pump gear to adaptor setscrew	M8 x 1.25	**21.0 N·m (15.5 lb ft)**
Flywheel setscrews	M12 x 1.25	**110.0 N·m (81.1 lb ft)**
Crankshaft pulley retaining setscrew	M22 X 2.5	**150.0 N·m (110.6 lb ft)**
Thermostat	7/8” - 14 UNF	**13.6 N·m (10.0 lb ft)**
High pressure fuel pipe nuts	–	**20.0 N·m (14.8 lb ft)**
Atomiser	M24 x 1.5	**60.0 N·m (44.3 lb ft)**

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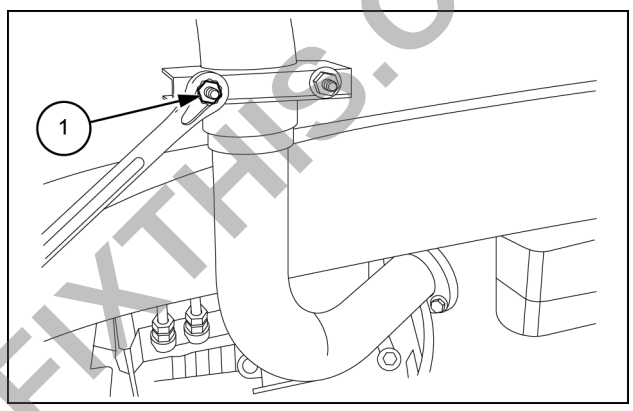
4. Disconnect battery terminals.

NOTE: *Always disconnect the negative cable **(1)** first.*



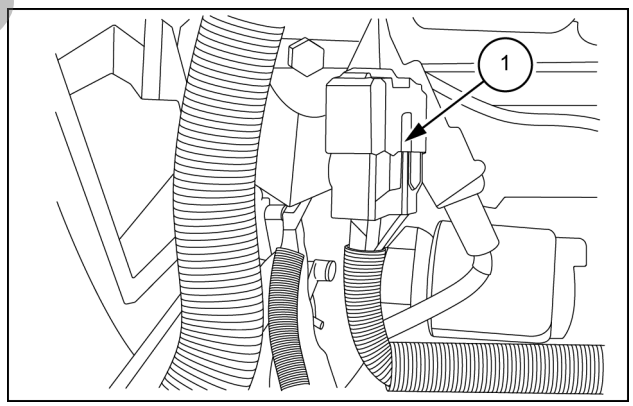
GNIL14TR04760AA 4

5. Loosen the silencer mounting clamp bolts **(1)** and remove the silencer assembly.



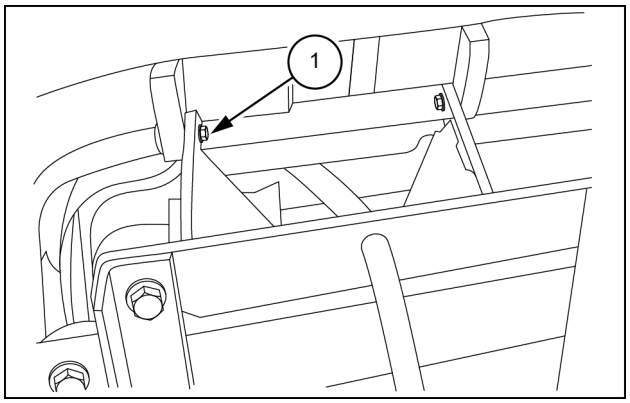
GNIL14TR04761AB 5

6. Remove the electrical couplers **(1)** for rear lamps, flasher unit, fuse box etc.
7. Remove fuse box.



GNIL14TR04762AB 6

8. Unscrew hood mounting bracket bolts from engine frame.
9. Unscrew gas strut bolts and remove the front hood.



GNIL14TR04763AB 7

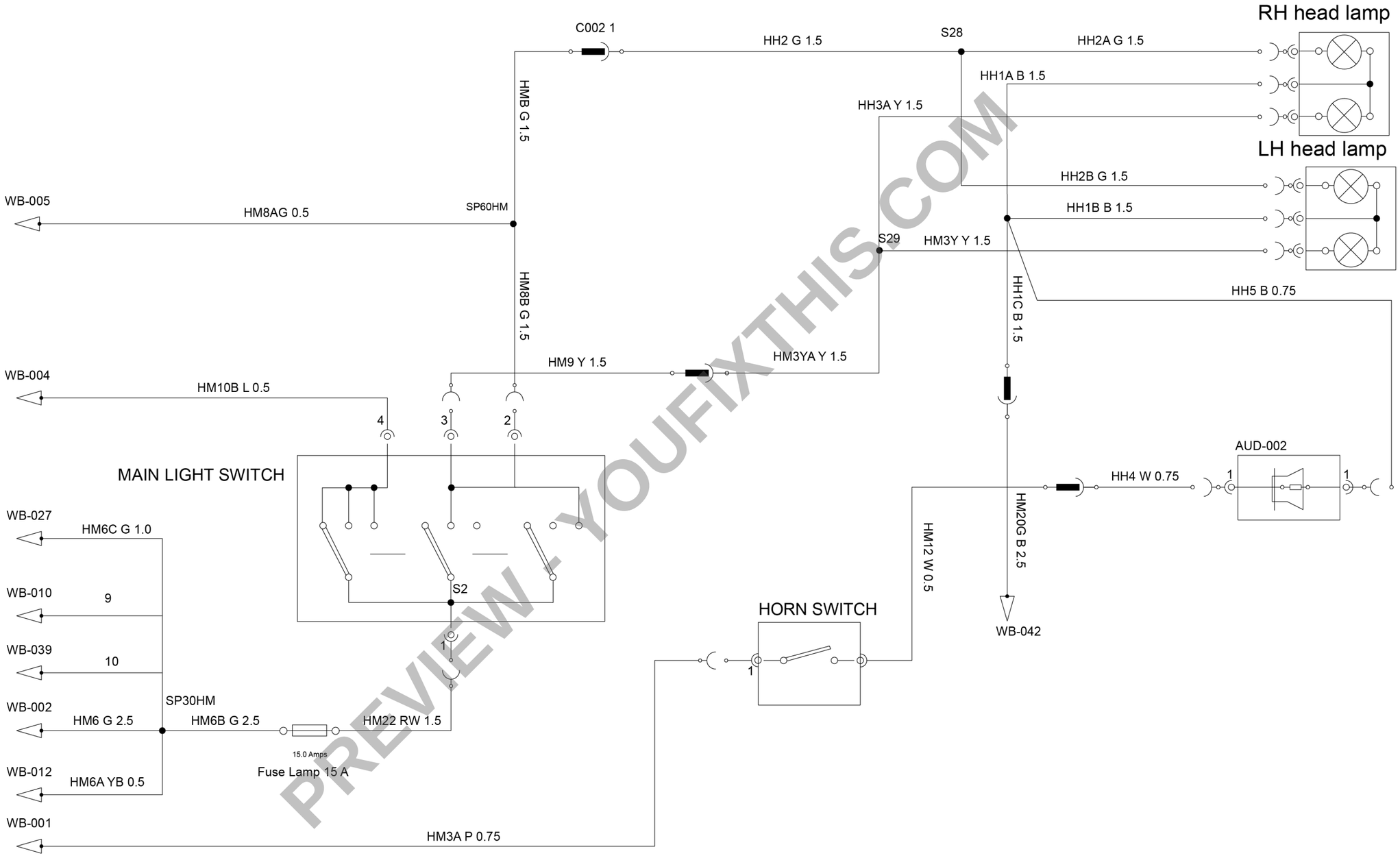
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Problem	Possible Cause	Correction
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
Lack of power	Blocked fuel feed pipe	Clean the pipe
	Faulty fuel feed pump	Overhaul fuel feed pump
	Choked fuel filters	Remove filter components
	Restriction in air cleaner or induction system	Check and clean or remove the restriction
	Air in fuel system	Remove air lock
	Faulty fuel injection pump	Overhaul injection pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Blocked fuel tank vent	Clean
	Incorrect type or grade of fuel	Drain the fuel and refill with correct grade of fuel
	Sticking throttle or restricted movement	Check, clean, lubricate and adjust settings
	Exhaust pipe restriction	Check and clean or remove the restrictions
	Cylinder head gasket leaking	Check the cylinder head bolts torque or renew the gasket
	Overheating	See problem - Overheating
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
Misfiring	Blocked fuel feed pipe	Clean pipe
	Faulty fuel feed pump	Overhaul fuel feed pump
	Choked fuel filters	Remove filter elements
	Air in fuel system	Remove air lock
	Faulty fuel injection pump	Overhaul injection pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Cylinder head gasket leaking	Check the cylinder head bolts torque or renew the gasket
	Overheating	See problem - Overheating
	Incorrect tappet adjustment	Check and reset the adjustment
	Sticking valves	Replace valve with new standard or oversize, and or machine the valve guide bores
	Incorrect high pressure pipes	Renew the pipes of correct specification
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
Excessive fuel consumption	Restriction in air cleaner or induction system	Check and clean or remove the restriction
	Faulty fuel injection pump	Overhaul injection pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Incorrect type or grade of fuel	Drain the fuel and refill with correct grade of fuel
	Sticking throttle or restricted movement	Check, clean, lubricate and adjust settings
	Exhaust pipe restriction	Check and clean/remove the restrictions
	Cylinder head gasket leaking	Check the cylinder head bolts torque or renew the gasket

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Main Light Switch

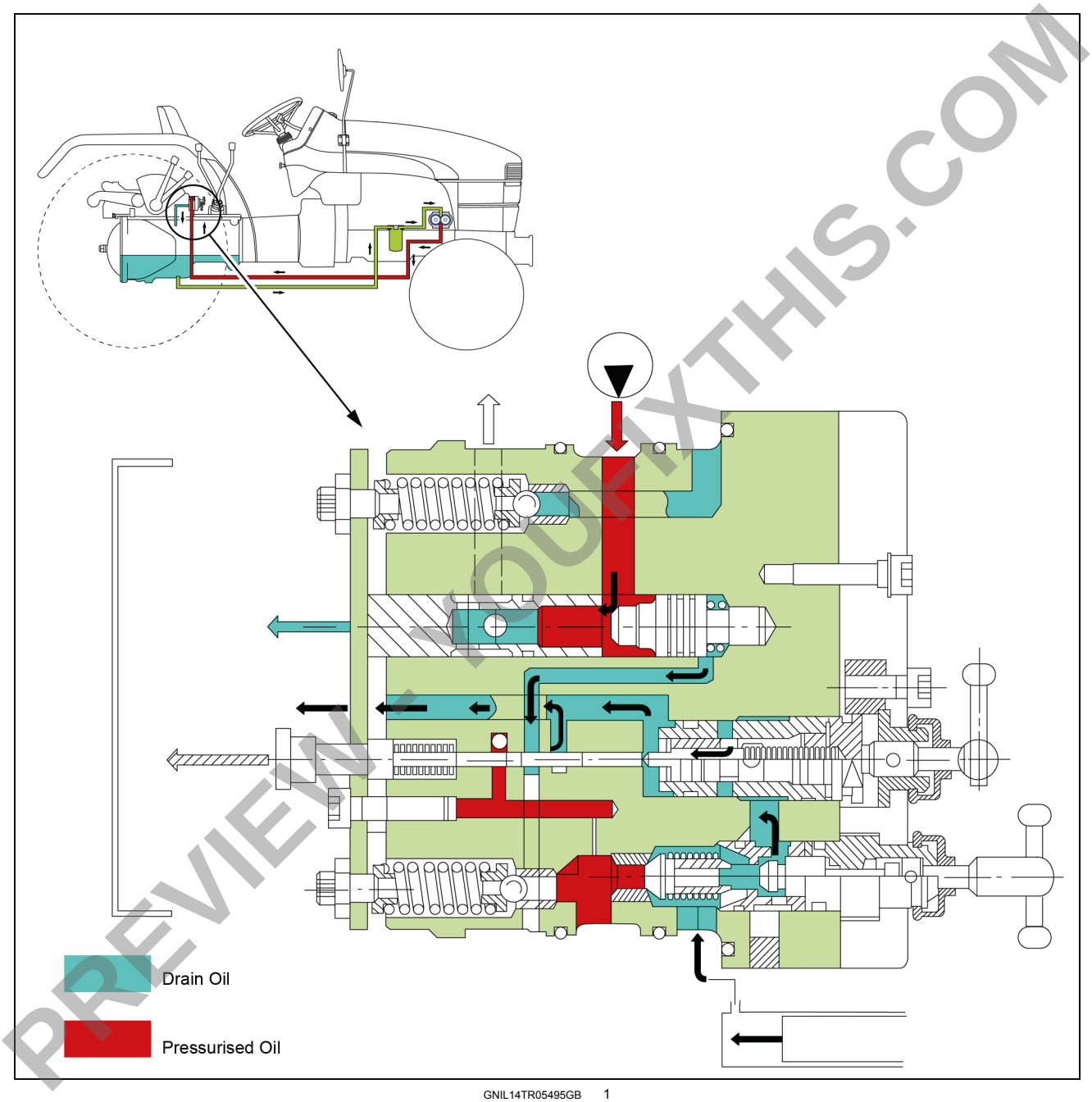
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Hydraulic systems - Sectional view

3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC



GNIL14TR05495GB 1

Sectional view - hydraulic oil distributor

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Clutch and components - General specification

3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Type	Dry plate torsion springs
Control	Mechanical pedal control
Release mechanism	Diaphragm type
Plate material	Cerametalic
Plate thickness	**7.50 - 8.10 mm** (**0.30 - 0.32 in**)
Plate with pressure springs	Tangential springs

Clutch and components - Torque

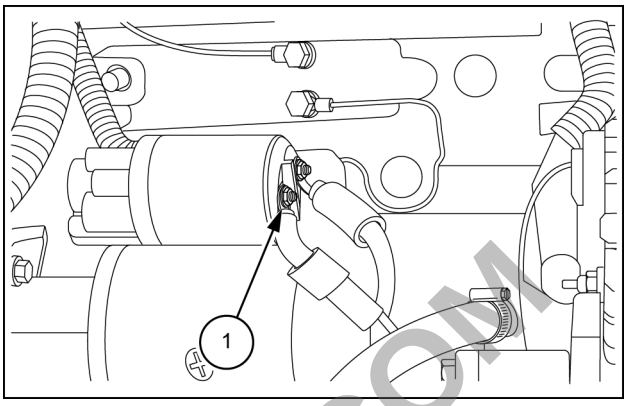
3510 Standard tractor	APAC
4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Description	Thread size	Torque
Transmission housing to fly-wheel housing buckle up bolts **(C1)**	M12 x 1.25	**7.00 kgf** (**15.43 lbf**)
Clutch assembly mounting bolts **(C2)**	M8 x 1	**2.60 kgf** (**5.73 lbf**)
Bolts release fork **(C3)**	M16 x 1.5	**16.00 kgf** (**35.27 lbf**)

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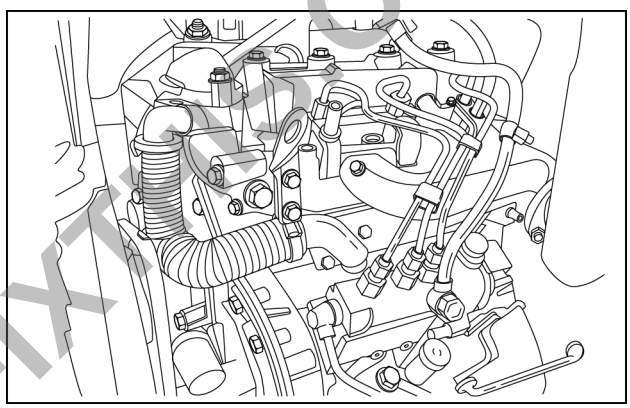
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10. Disconnect electric connections **(1)** to starter motor.



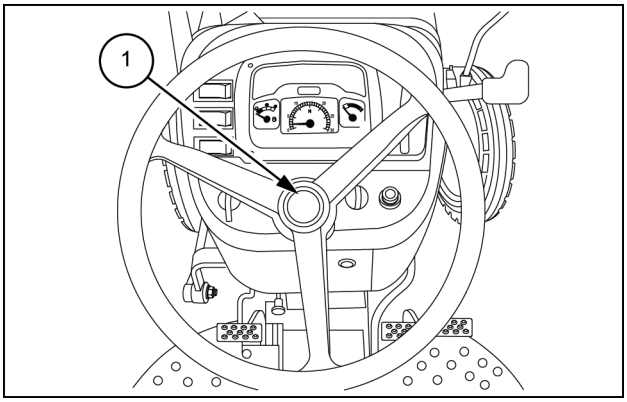
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11. Disconnect hand throttle cable fuel shut-off cable fuel line and overflow lines and remove fuel tap bracket bolts.



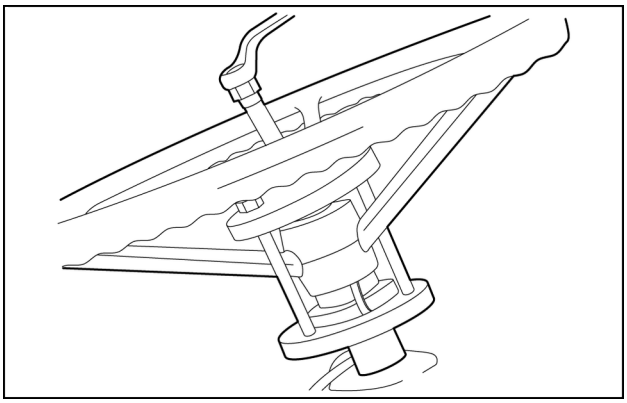
GNIL14TR04765AA 9

12. Remove the steering wheel cover.



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13. Loosen the steering wheel securing nut and remove the steering wheel using tool number 82834312 and 9971375.



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Problem	Possible Cause	Correction
	Incorrect tappet adjustment	Check and reset the adjustment
	Sticking valves	Replace valve with new standard or oversize, and or machine the valve guide bores
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
Black smoke	Restriction in air cleaner or induction system	Check and clean or remove the restriction
	Faulty fuel injection pump	Overhaul injection pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor Compression
	Incorrect type or grade of fuel	Drain the fuel and refill with correct grade of fuel
	Exhaust pipe restriction	Check and clean or remove the restrictions
	Cylinder head gasket leaking	Check the cylinder head bolts torque or renew the gasket
	Incorrect tappet adjustment	Check and reset the adjustment
	Sticking valves	Replace valve with new standard or oversize, and or machine the valve guide bores
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons
	Pitted valves and seats	Replace valve with new standard or oversize, and or machine the valve guide bores
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
Blue or white smoke	Incorrect grade of lubricating oil	Drain and refill with specified grade of oil
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Poor compression	See problem - Poor compression
	Cylinder head gasket leaking	Check the cylinder head bolts torque or renew the gasket
	Incorrect tappet adjustment	Check and reset the adjustment
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage
	Worn valve stems and guides	Renew valves and guides
	Piston seized	Replace piston assembly and check the bore for damage
	Overfilled air cleaner oil or use of incorrect grade of oil	Check the oil level and remove as necessary or refill with correct grade oil
Engine knocks	Faulty fuel feed pump	Overhaul fuel feed pump
	Faulty injectors	Overhaul injectors
	Incorrect fuel pump timing	Check and reset
	Incorrect valve timing	Check and reset
	Incorrect type or grade of fuel	Drain and refill with correct grade of fuel
	Overheating	See problem - Overheating
	Incorrect tappet adjustment	Check and reset the adjustment
	Sticking valves	Replace valve with new standard or oversize, and or machine the valve guide bores
	Worn cylinder bores	Re-bore or re-sleeve block and fit new pistons
	Broken, worn or sticking piston rings	Fit new rings, check bore and pistons for damage

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Valve drive and gears - General specification

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4010 For India domestic market only	APAC
4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

4510 / 4010 / 3510 models JX35T/JX40T models

Camshaft	
Type	Polydine
Number 1 journal diameter	**47.470 - 47.500 mm** (**1.869 - 1.870 in**)
Running clearance	**0.100 - 0.200 mm** (**0.004 - 0.008 in**)
Number 2 journal diameter	**47.220 - 47.240 mm** (**1.859 - 1.860 in**)
Running clearance	**0.100 - 0.200 mm** (**0.004 - 0.008 in**)
Number3 journal diameter	**46.710 - 46.740 mm** (**1.839 - 1.840 in**)
Running clearance	**0.100 - 0.200 mm** (**0.004 - 0.008 in**)
Cam lift	**7.900 - 7.980 mm** (**0.311 - 0.314 in**)
Gear-spigot diameter	**50.760 - 50.790 mm** (**1.998 - 2.000 in**)
Oil ways for rocker shaft lubrication	No.2 cam journal
Cylinder head	
Depth	**75.820 - 76.580 mm** (**2.985 - 3.015 in**)
Leak test pressure	2.11
Valve seat angle	36°
Tappet bore in cylinder head	**15.860 - 15.895 mm** (**0.624 - 0.626 in**)
Valve guide bore in cylinder head	**12.690 - 12.710 mm** (**0.500 - 0.500 in**)
Permissible cylinder head bow-transverse	**0.076 mm** (**0.003 in**) (max)
Longitudinal	**0.152 mm** (**0.006 in**) (max)
Skimming allowance on head face	**0.300 mm** (**0.012 in**) (max)
Valve layout	Provided nozzle protrusion does not exceed **4.670 mm** (**0.184 in**) after skimming I, EE, II, E
Valve guides	
Inside diameter	**7.990 - 8.020 mm** (**0.315 - 0.316 in**)
Outside diameter	**12.730 - 12.750 mm** (**0.501 - 0.502 in**)
Overall length	**56.360 mm** (**2.219 in**)
Guide protrusion above spring seating face	**9.190 - 9.550 mm** (**0.362 - 0.376 in**)
Interference fit of guide in head	**0.040 - 0.080 mm** (**0.002 - 0.003 in**)
Inlet valve	
Valve stem diameter	**7.900 - 7.920 mm** (**0.311 - 0.312 in**)
Clearance fit of valve in guide	**0.071 - 0.120 mm** (**0.003 - 0.005 in**)
Valve face angle	35°
Valve head depth below cylinder head face	**1.270 - 1.570 mm** (**0.050 - 0.062 in**) Not to exceed **1.830 mm** (**0.072 in**) after regrinding
Exhaust valve	
Valve stem diameter	**7.900 - 7.920 mm** (**0.311 - 0.312 in**)
Clearance fit of valve in guide	**0.071 - 0.120 mm** (**0.003 - 0.005 in**)
Valve face angle	35°
Valve head depth below cylinder head face	**1.540 - 1.880 mm** (**0.061 - 0.074 in**) Not to exceed **2.110 mm** (**0.083 in**) after regrinding.

NOTE: *Valve stem seal (with metal insert) is fitted in both inlet and exhaust valves.*

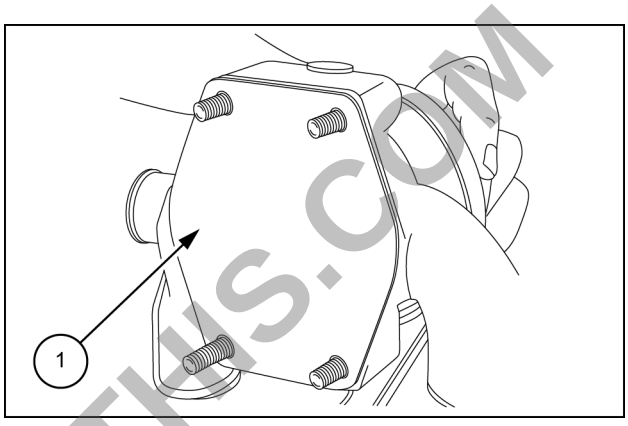
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Water pump - Disassemble

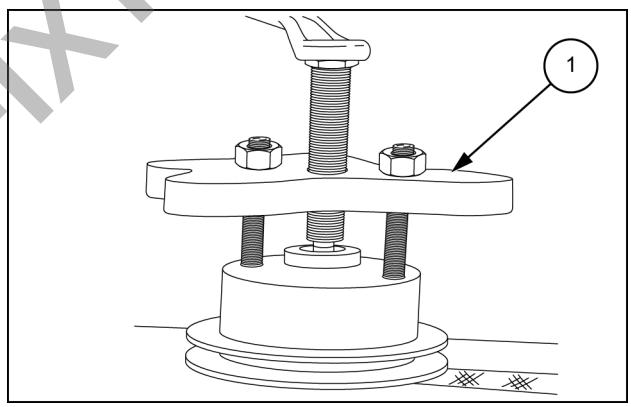
3510 Standard tractor	APAC
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4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

1. Remove the back plate **(1)**.



GNIL14TR04877AB 1

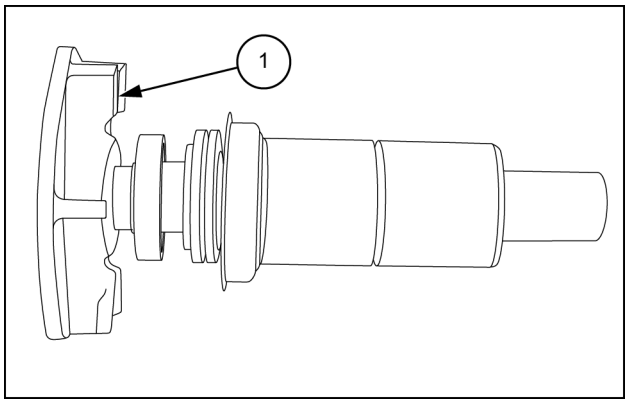
2. Remove the pulley using tool **(1)**.



GNIL14TR04878AB 2

3. Remove the impeller with bearing assembly.
4. Removes the impeller from bearing assembly.

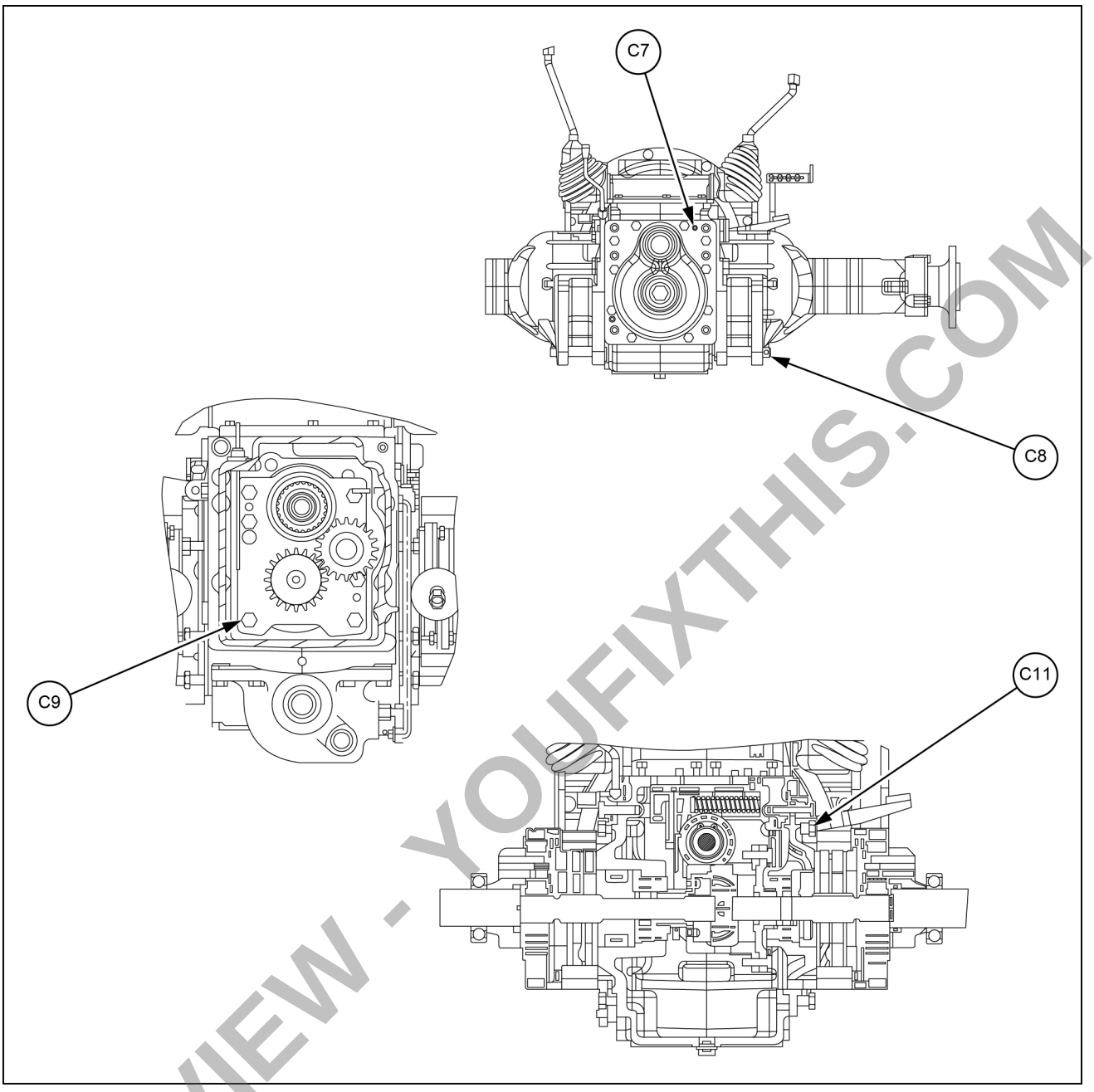
NOTE: *The shaft and bearings are manufactured as one component and cannot be serviced separately.*



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GNIL14TR04101GB 2

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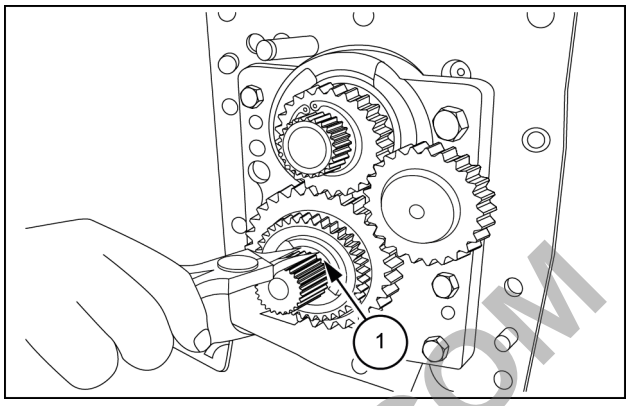
Power shuttle transmission - Special tools

3510 Standard tractor	APAC
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4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Tool description	Tool number
Socket pinion check nut	380002982
Pinion locking tool	380002985
Mandrel with extension	380002986
Special snap ring remover	Procure locally
Nut un-staking tool	380000660

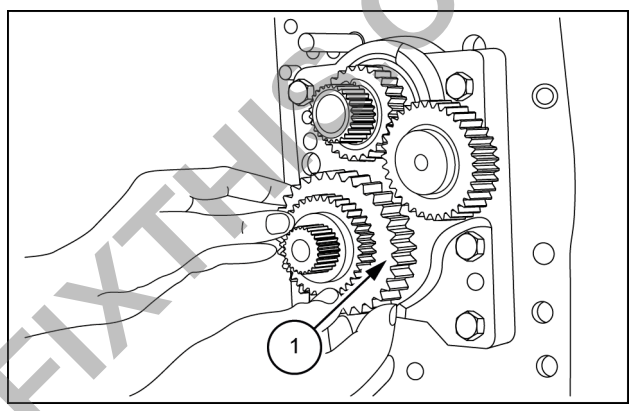
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7. Remove circlip lock **(1)** of reverse gear.



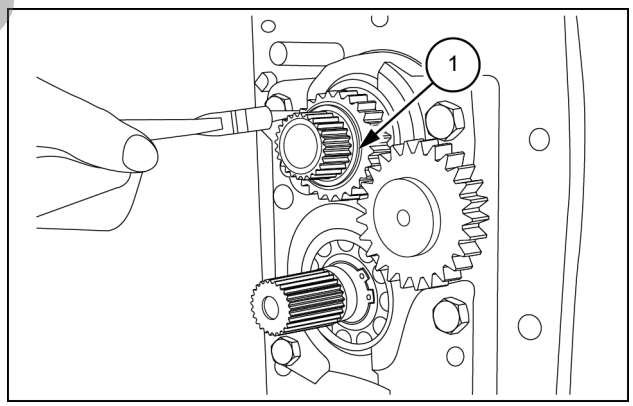
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8. Remove reverse gear **(1)**.



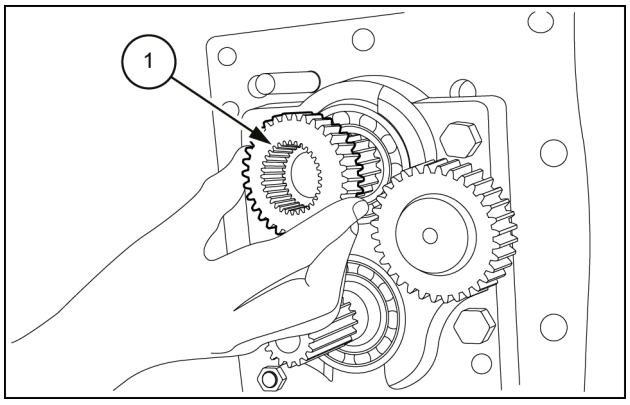
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9. Remove circlip lock **(1)** of reverse drive gear.



GNIL14TR04039AB 9

10. Remove reverse drive gear **(1)** from drive shaft.



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Rear bevel gear set and differential - General specification

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4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Pinion to crown wheel and differential

Pinion and crown wheel ratio	
Pinion to crown wheel backlash	**0.180 mm** (**0.007 in**) - **0.230 mm** (**0.009 in**)
Differential	4 pin
Differential lock control type	Mechanical operated with foot pedal
Differential lock free spring length	**106.000 mm** (**4.170 in**)
Compressed spring length, under a load of 36.5 kg/mm2	**82.000 mm** (**3.230 in**)
Side gear to differential gear backlash	**0.100 mm** (**0.004 in**) - **0.250 mm** (**0.010 in**)
Differential gear pin diameter	**21.960 mm** (**0.865 in**) - **21.939 mm** (**0.864 in**)
Bore diameter on differential gears for pin	**22.098 mm** (**0.870 in**) - **22.065 mm** (**0.869 in**)
Bore diameter on differential case for pin	**22.020 mm** (**0.867 in**) - **22.000 mm** (**0.866 in**)
Pin to differential gear clearance	**0.159 mm** (**0.006 in**) - **0.040 mm** (**0.002 in**)
Pin to differential case clearance	**0.082 mm** (**0.003 in**) - **0.040 mm** (**0.002 in**)

Rear bevel gear set and differential - Torque

3510 Standard tractor	APAC
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4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Description	Thread size	Torque
Rear axle to transmission housing attaching bolts **(C1)**	M12 x 1.25	**10 kgf** (**22 lbf**)
Power Take-Off (PTO) cover bolts **(C2)**	M12	**10 kgf** (**22 lbf**)
Ring gear bolts **(C3)***	M10	**6 kgf** (**13 lbf**)
Drain plug **(C4)**	M22	**4.5 kgf** (**10 lbf**)

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Mechanical service brakes - Troubleshooting

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4010 Only for Sri Lanka export	APAC
4510 2WD tractor	APAC
4510 4WD tractor	APAC
4710 2WD Tractor	APAC
4710 4WD Tractor	APAC

Problem	Possible Cause	Correction
Brake actuate only when pedal is depressed fully	1. In correct pedal adjustment	Check and adjust
Tractor pulls to one side when brakes applied	1. Brakes not equally adjusted	Adjust
	2. Wrong tire pressure	Inflate tires to correct pressure
	3. Wrong liners on one side	Replace discs
Brakes noisy	1. Oil contamination	Check and change with recommended oil
	2. Wrong brake disc	Replace brake discs.
Brakes remain applied when pedals are released	1. Seized brake actuating linkages	Clean and lubricate linkages
Pedals are hard to operate	1. Seized brake actuating linkages	Clean and lubricate linkages

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