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JX55T
JX75T
Tractor

SERVICE MANUAL

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CASE IH AGRICULTURE

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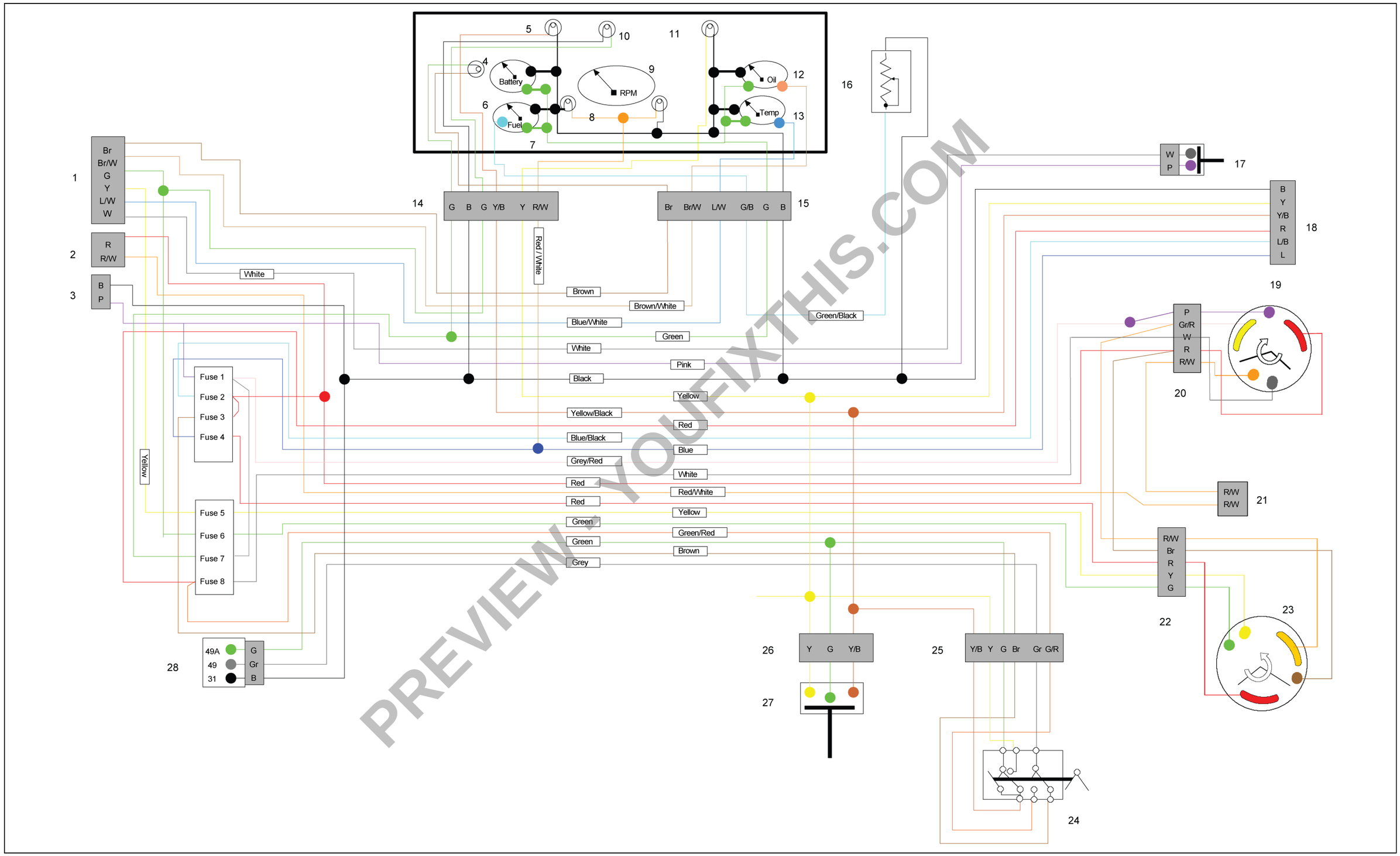
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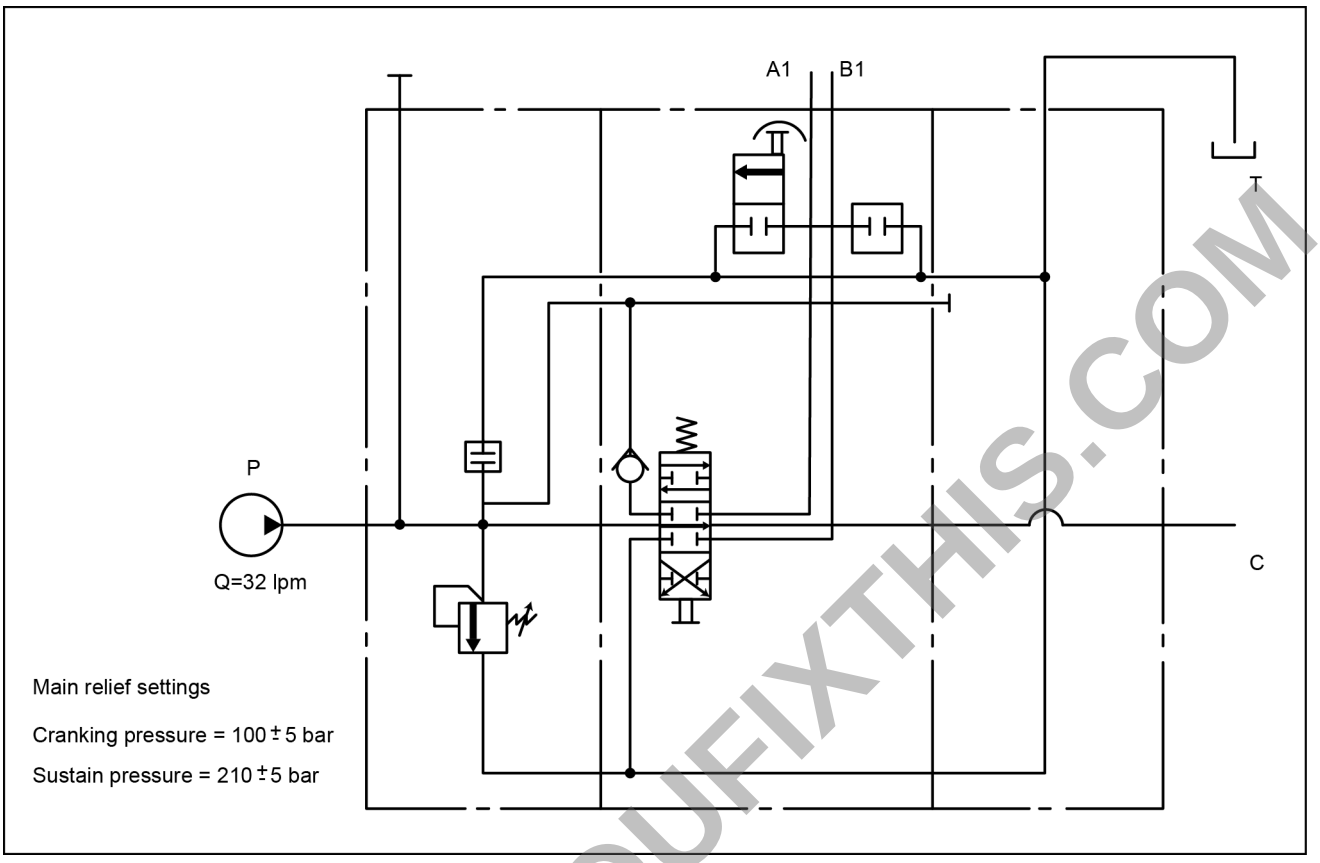


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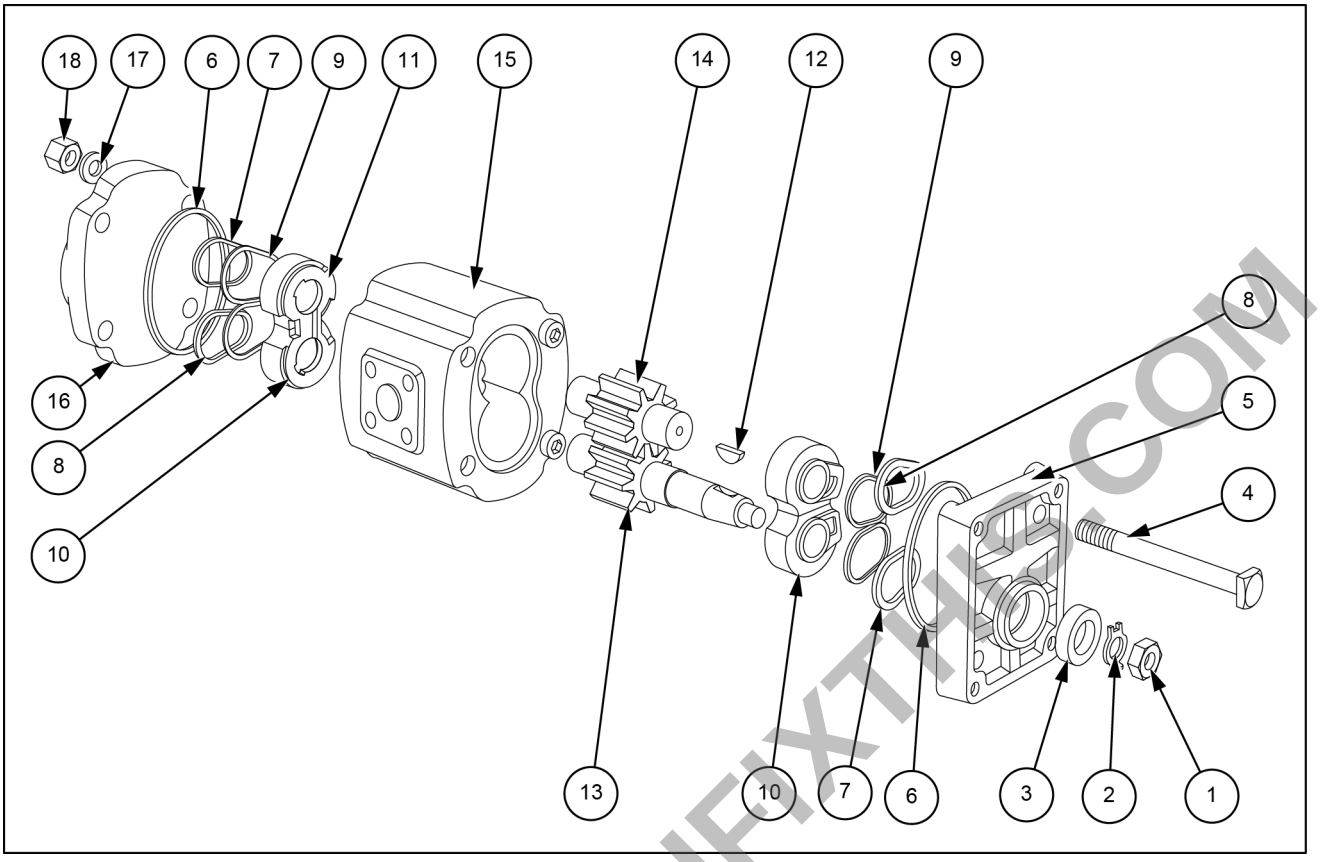
Hydraulic systems - Hydraulic schema



NDIL14TR00907FB 1

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1. Coupling gear nut
2. Tab washer
3. Shaft oil seal
4. Bolt
5. Mounting flange
6. Body seal O-ring
7. Backing washer
8. Backing washer
9. Lobe seal
10. Composite bush
11. Composite bush
12. Woodruff key
13. Drive shaft and gear - taper
14. Driven gear
15. Body
16. End cover
17. Spring washer
18. Nut

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Face angle	60° 30'±7'
Stem to guide clearance (worm or cold)	**0.300 mm** (**0.012 in**)
Cam lift	**5.250 mm** (**0.207 in**)
Valve lift	**9.310 mm** (**0.367 in**)

Valve springs	
Number per valve	1
Free length	**44.600 mm** (**1.756 in**)
Length loaded at **26.1 – 28.9 kg** (**57.5 – 63.7 lb**)	**34.000 mm** (**1.339 in**)
Length loaded at **51.2 – 56.5 kg** (**112.9 – 124.6 lb**)	**23.800 mm** (**0.937 in**)

Valve timing	
Intake opening (before top dead centre)	12°
Intake closing (after bottom dead centre)	31°
Exhaust opening (before bottom dead centre)	50°
Exhaust closing (after top dead centre)	16°

Valve inserts	
Valve guide O.D	**13.933 – 14.016 mm** (**0.549 – 0.552 in**)
Valve guide oversize	**0.200 mm** (**0.008 in**)
Valve guide interference fit in housing cylinder head	**0.0050 – 0.0500 mm** (**0.0002 – 0.0020 in**)
Valve guide fitted I.D after reaming	**8.023 – 8.043 mm** (**0.316 – 0.317 in**)
Valve stem clearance in guide	**0.0230 – 0.0580 mm** (**0.0009 – 0.0023 in**)
Maximum wear clearance	**0.130 mm** (**0.005 in**)
Maximum valve stem eccentricity over one revolution with stylus on sealing face	**0.030 mm** (**0.001 in**)

Engine - Torque

Description	Thread size	Torque	Angle
Bolt, cylinder head **(C1)**	**M12 x 1.25**	**40 N·m** (**354 lb in**)	(**125 – 135°**) + (**135 – 145°**)
Bolt, main bearing caps **(C2)**	**M14 x 1.25**	**80 N·m** (**708 lb in**)	**90°**
Bolt, timing cover and case **(C3)**	**M12 x 1.25**	**40 N·m** (**354 lb in**)	–
Bolt, connecting rod caps **(C4)**	**M11 x 1.25**	**40 N·m** (**354 lb in**)	**60°**
Bolt, flywheel **(C5)**	**M12 x 1.25**	**40 N·m** (**354 lb in**)	**60°**
Bolt, rocker shaft bracket **(C6)**	**M8 x 1.25**	**25 N·m** (**221 lb in**)	–
Nut, crankshaft pulley hub **(C7)**	**M30 x 1.5**	**300 N·m** (**2655 lb in**)	–
Bolt, fan and alternator drive pulley **(C8)**	**M12 x 1.25**	**49 N·m** (**434 lb in**)	–
Nut, injection pump shaft gear **(C9)**	**M12 x 1.25**	**64 N·m** (**566 lb in**)	–
Nuts, injection pump to support **(C10)**	**M12 x 1.25**	**23 N·m** (**204 lb in**)	–
Retaining screws, additional weights **(C11)**	**M12 x 1.25**	**110 N·m** (**974 lb in**)	–

Engine - Sealing

Operation description	Sealant specification
Adopter for oil filter **(S1)**	**LOCTITE® 270**
Adopter for tachometer cable **(S2)**	**LOCTITE® 243™**
Flywheel housing to engine block **(S3)**	**LOCTITE® 510™**
Timing gear case studs **(S4)**	**LOCTITE® 270**
Timing gear cover dowel pin **(S5)**	**LOCTITE® 270**
Starter motor to flywheel housing **(S6)**	**LOCTITE® 510™**
Allen plug in cylinder head thermostat housing **(S7)**	**LOCTITE® 243™**
Cylinder head exhaust manifold studs **(S8)**	**LOCTITE® 270**
Oil sump to engine block **(S9)**	Loctite® 5699

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Engine - Troubleshooting

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

Problem	Possible Cause	Correction
Engine does not develop full power	Clogged air cleaner	Clean or renew element
	Fuel line obstructed	Clean
	Faulty injectors	Clean and reset
	Incorrect valve clearance adjustment	Check and reset
	Burnt, worn or sticking valves	Replace valves with new or oversize, and or machine the valve guide bores
	Blown head gasket	Check head flatness and fit new gasket
	Incorrect fuel delivery	Check injectors and pump
	Low cylinder compression	Renew piston rings or re-bore/re-sleeve as necessary
Oil pressure warning light fails to operate	Bulb burnt out	Renew bulb
	Warning Light pressure switch faulty	Renew pressure switch
	Warning light circuit faulty	Check and renew wiring
Excessive exhaust smoke	Exhaust leak on exhaust manifold	Fit new gasket
	Air cleaner dirty or restricted	Clean
	Excessive fuel delivery	Overall injection pump and injectors
Engine knocks	Diluted or thin oil	Check crankshaft bearings for damage, change as required. Drain and refill with specified oil and renew filter. Ascertain cause of dilution
	Insufficient oil supply	Check oil level and top up as necessary Overhaul or renew pump as necessary Check oil filter is not clogged
	Low oil pressure	Overhaul pump or relief valve as necessary
	Excessive crankshaft end play	Install new thrust bearing liner
	Flywheel or ring gear run-out excessive	Skim flywheel or fit new ring gear
	Excessive connecting rod or main	Install new bearing inserts and or bearing clearance re-grind crankshaft
	Bent or twisted connecting rods	Renew connecting rods
	Crankshaft journals out-of-round	Re-grind crankshaft and fit undersize bearing inserts
	Excessive piston-to- cylinder	Re-bore/re-sleeve block and fit i bore clearance new pistons
	Excessive piston ring clearance	Fit new pistons and rings
	Broken rings	Fit new rings, check bore and pistons for damage
	Excessive piston pin clearance	Fit new piston or pin
	Piston pin retainer loose or missing	Install new retainer, and check bore/pistons for damage
	Excessive camshaft play	Install new thrust plate
	Imperfections on timing gear teeth	Renew timing gear
	Excessive timing gear backlash	Check and adjust backlash /renew, timing gear
Engine overheats	Hose connection leaking or collapsed	Tighten hose connection, renew hose if damaged
	Radiator cap defective or not sealing	Renew radiator cap
	Radiator leakage	Repair/renew radiator
	Improper fan belt adjustment	Re-adjust fan belt
	Radiator fins restricted	Clean with compressed air
	Faulty thermostat	Renew thermostat
	Internal engine leakage	Check for source of leakage, renew gasket or defective parts
	Water pump faulty	Overhaul water pump

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Engine - General specification

General specifications	JX75T	JX55T
Make	IVECO	
Type	4 stroke, diesel, naturally aspirated, direct injection, water cooled	
Power	**75 Hp**	**55 Hp**
Number of cylinders	4	3
Bore	**104.000 mm** (**4.094 in**)	**104.000 mm** (**4.094 in**)
Stroke	**115.000 mm** (**4.528 in**)	**115.000 mm** (**4.528 in**)
Cubic capacity	**3908 cm³** (**238 in³**)	**2931 cm³** (**179 in³**)
Compression ratio	18:1	18:1
Firing order	1-3-4-2	1-2-3
Idle speed	**650 RPM**	**650 RPM**
Maximum no load speed	**2770 RPM**	**2770 RPM**
Rated speed	**2500 RPM**	**2500 RPM**

Engine block	
Cylinder liner seat diameter in engine block	**106.850 – 106.900 mm** (**4.207 – 4.209 in**)
Cylinder sleeve O.D	**107.020 – 107.050 mm** (**4.213 – 4.215 in**)
Interference between liners and seats in block	**0.120 – 0.200 mm** (**0.005 – 0.008 in**)
Liner O.D oversize	**0.200 mm** (**0.008 in**)
Cylinder liner inner diameter	**104.00 – 104.024 mm** (**4.09 – 4.095 in**)
Maximum ovality and taper due to wear	**0.120 mm** (**0.005 in**)
Liner inner diameter oversize	**0.400 – 0.800 mm** (**0.016 – 0.031 in**)

Camshaft bush seat diameters	
• Front	**54.780 – 54.805 mm** (**2.157 – 2.158 in**)
• Intermediate	**54.280 – 54.305 mm** (**2.137 – 2.138 in**)
• Rear	**53.780 – 53.805 mm** (**2.117 – 2.118 in**)
Tappet seat bore diameter	**15.000 – 15.018 mm** (**0.591 – 0.591 in**)
Tappet oversize	**0.100 mm** (**0.004 in**) – **0.200 mm** (**0.008 in**) – **0.300 mm** (**0.012 in**)
Main bearing seat bore diameter	**84.200 – 84.230 mm** (**3.315 – 3.316 in**)

Cylinder head	
Valve guide seat bore diameter in head	**13.950 – 13.983 mm** (**0.549 – 0.551 in**)
Valve guide oversize	**0.200 mm** (**0.008 in**)
Valve stand-in	**0.700 – 1.000 mm** (**0.028 – 0.039 in**)
• Maximum stand-in permitted	**1.300 mm** (**0.051 in**)
Injector standout	**0.050 – 0.700 mm** (**0.002 – 0.028 in**)
• Maximum stand-out permitted	**1.000 mm** (**0.039 in**)
Original cylinder head height	**92 mm** (**4 in**)
Maximum head dressing allowed	**0.500 mm** (**0.020 in**)

Exhaust valves	
Valve head diameter	**37.500 – 37.750 mm** (**1.476 – 1.486 in**)
Valve stem diameter	**7.985 – 8.000 mm** (**0.314 – 0.315 in**)
Face angle	45° 30’±7’
Stem to guide clearance (worm or cold)	**0.300 mm** (**0.012 in**)
Cam lift	**5.677 mm** (**0.224 in**)
Valve lift	**10.060 mm** (**0.396 in**)

Intake valves	
Valve head diameter	**43.300 – 45.500 mm** (**1.705 – 1.791 in**)
Valve stem diameter	**7.985 – 8.000 mm** (**0.314 – 0.315 in**)

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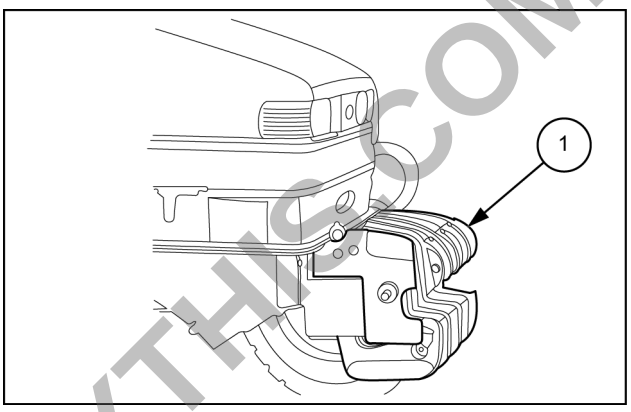
Engine - Remove

⚠ 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.

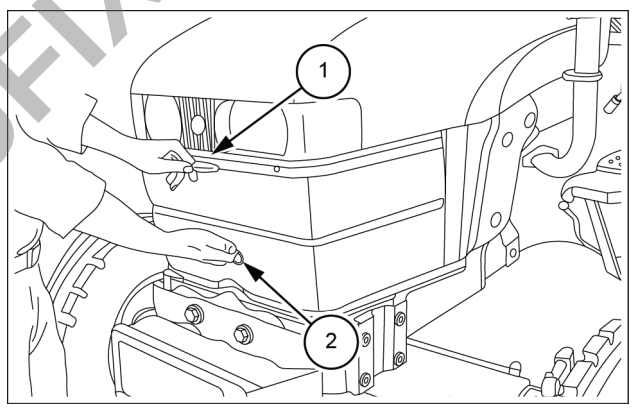
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1. Remove front ballast weights if fitted.



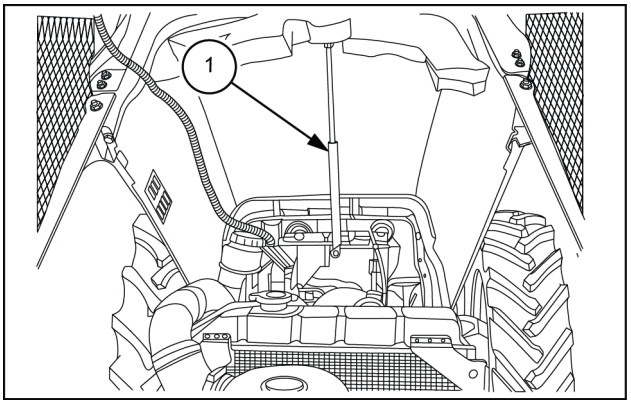
NDIL14TR00006AB 1

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



NDIL14TR00007AB 2

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



NDIL14TR00008AB 3

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Safety rules

 This warning symbol points out important messages involving personal safety. Carefully read the safety rules contained herein and follow advised precautions to avoid potential hazards and safeguarded your safety.

In this manual you will find this symbol together with the following keywords.

WARNING: It gives warning about improper repair operations and potential consequences affecting the service technician's personal safety.
DANGER: It gives specific warning about potential dangers for personal safety of the operator or other persons directly or indirectly involved in the operation.

To prevent accidents

Most accidents and personal injuries taking place in workshops are due from non-observance of some essential rules and safety precautions.

The possibility that an accident might occur with any type of machines should not be disregarded, no matter how well the machine in question was designed and built.

A wise and careful service technician is the best precautions against accidents.
Careful observance of this only basic precaution would be enough to avoid many severe accidents.

 DANGER
Never carry out any cleaning, lubrication or maintenance operations when the engine is running.

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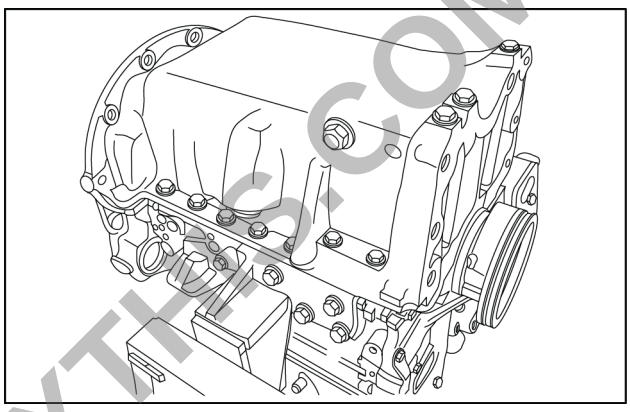
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Engine oil pan - Remove

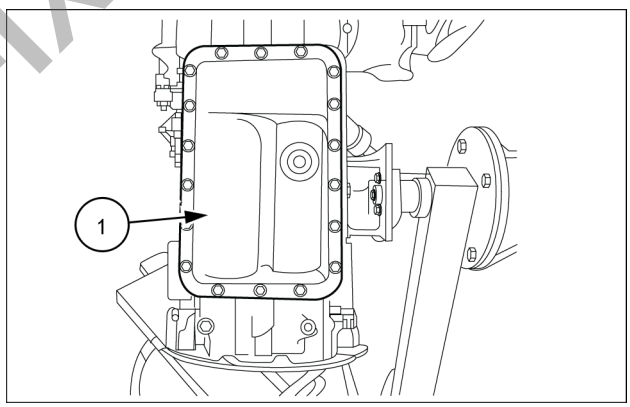
WARNING
Due to the weight of the oil sump, it is recommended that a hydraulic jack is used to support and lower the oil sump to the ground.

NOTE: *It is necessary to move the front support forward a couple of inches to allow removal of the oil sump. Refer to engine removal at beginning of this section.*

1. Drain engine oil through oil sump plug and remove oil level indicator.
2. Remove oil sump bolts including those through the timing cover and lower to ground.



NDIL14TR00117AA 1



NDIL14TR00916AB 2

NOTICE: *In JX75T model before removing oil sump lubricating oil pump strainer have to be removed. To remove, first open oil sump bottom plate* ***(1)*** *and then remove the strainer.*

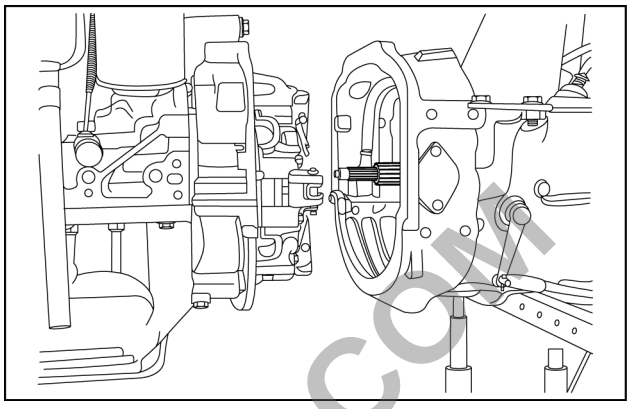
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Crankshaft and flywheel - Service instruction – Main bearing

To remove the flywheel, the engine requires to be split from the transmission housing.
The crankshaft itself can only be serviced after removal from the engine for which engine has to be separated from the tractor totally.

NOTE: *Replaceable bearings are installed in production. Ensure correct crankshaft journal to bearing clearance is maintained in service. To renew main bearings, crankshaft has to be removed.*



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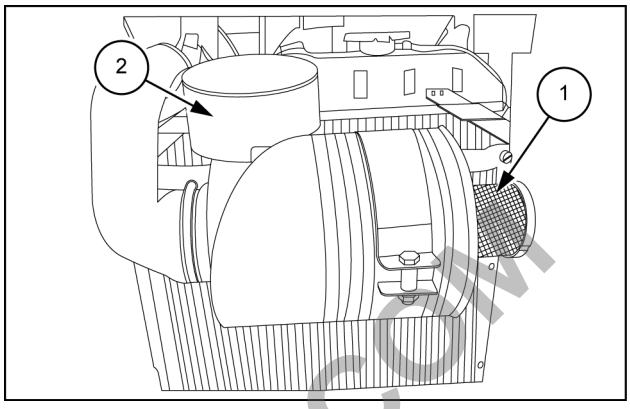
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Method A

Lightly tap the end of the element against the palm on the hand till accumulated dust not comes out completely see figure **5**.

NOTICE: *Do not tap the element against a hard surface as this will damage the element.*

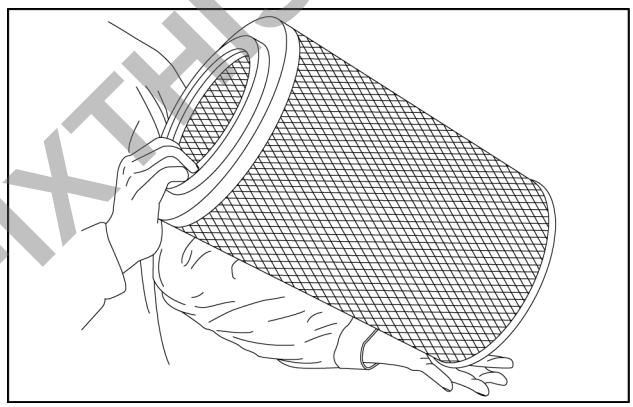


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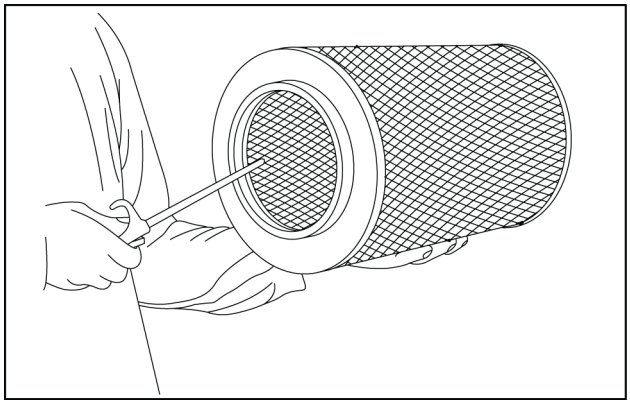
Method B

Use compressed air, not exceeding **1.3 bar** (**18.8 psi**). Insert the air line nozzle inside the element. Hold the nozzle at a safe distance from the element and blow the dust from the inside through the element to the outside. See figure **6**. Never blow air from outside to inside as this will cause dust to enter inside the element.

WARNING
Wear eye protection and a face mask when carrying out this operation.



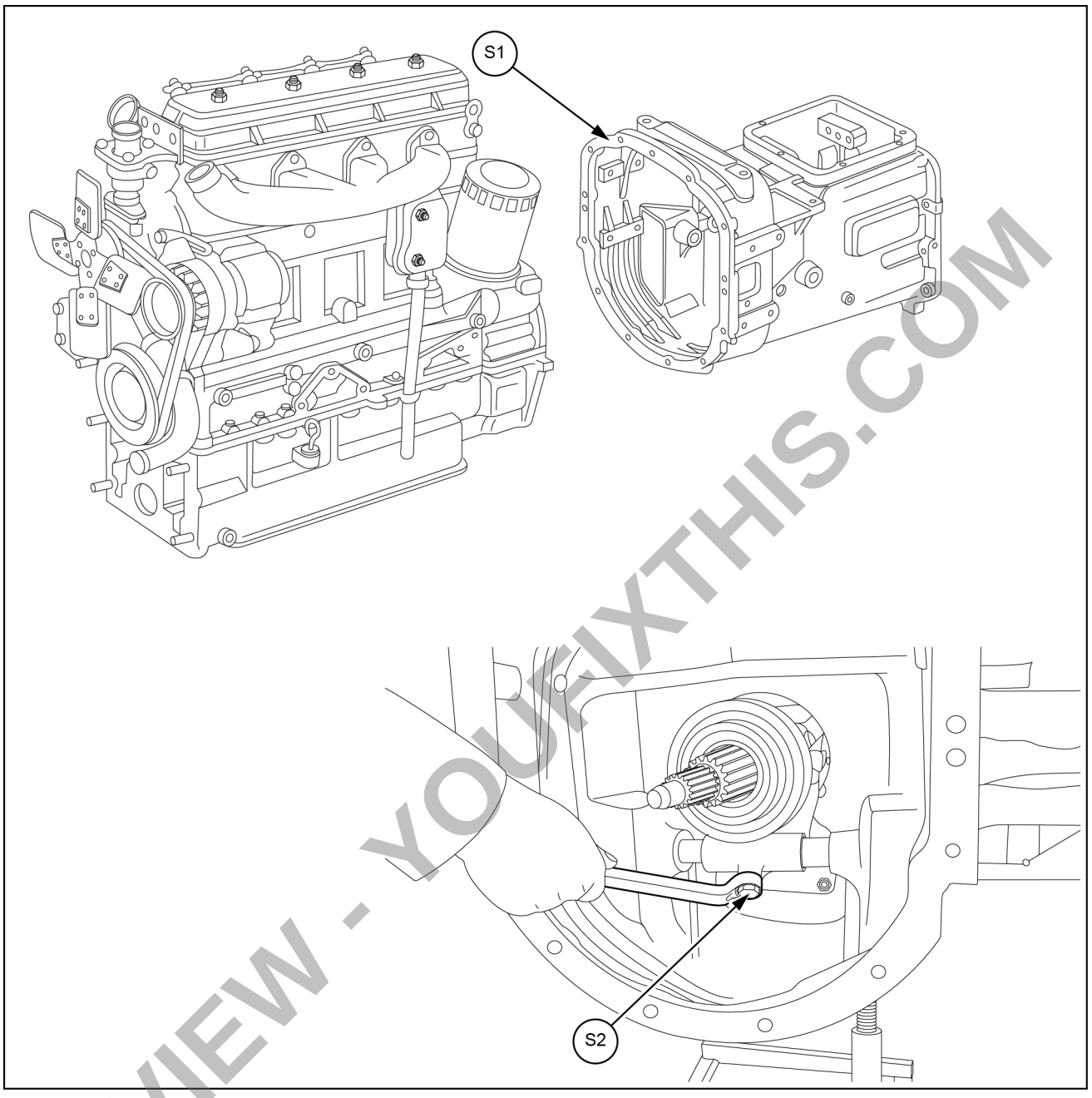
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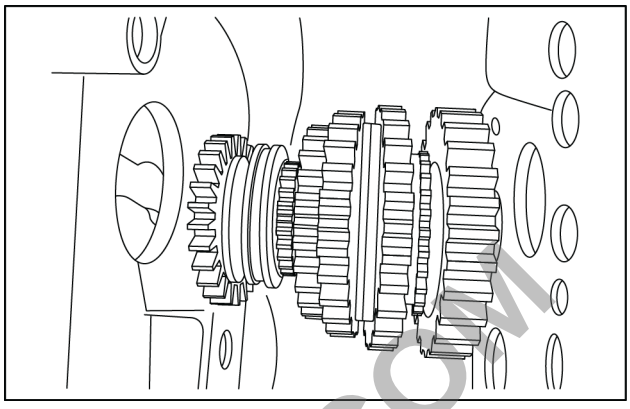


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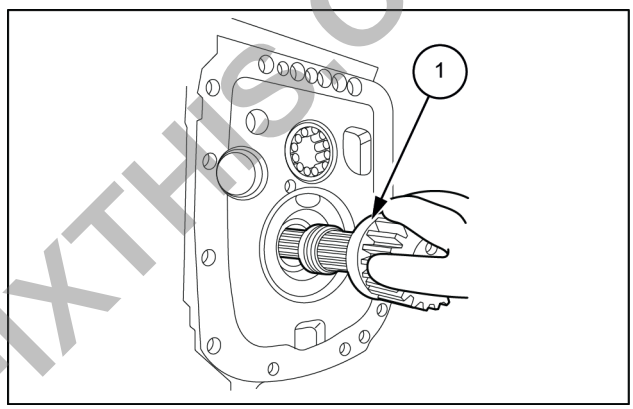
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4. Fit 1st/2nd gears as shown.



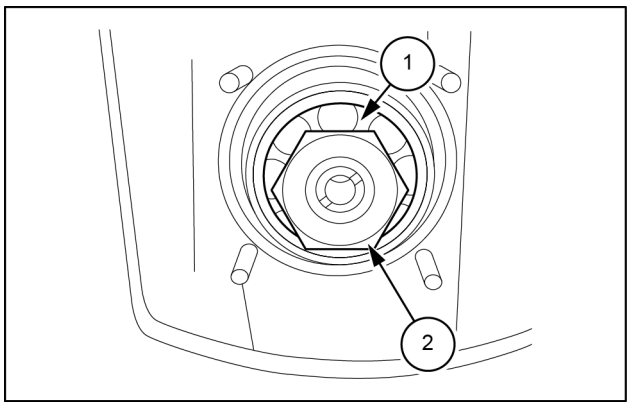
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5. Fit output shaft **(1)** in the gear box housing.



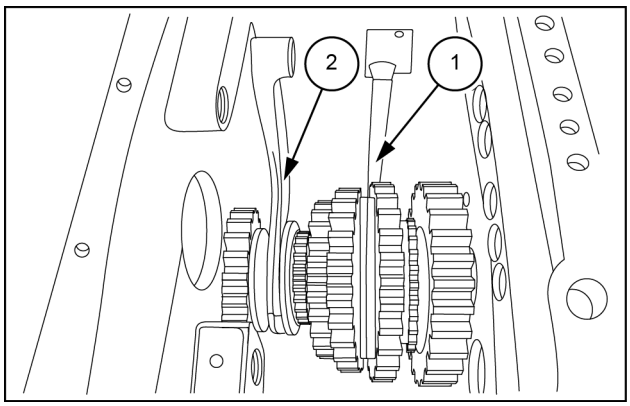
NDIL14TR00902AB 5

6. Fit bearing **(1)** and check nut **(2)** of output shaft.
   Tight the check nut at **30 kgm** (**217 ftlbs.**).



NDIL14TR00884AB 6

7. Fit forks **(1)** and **(2)** for 1st/2nd and 3rd/4th gear.



NDIL14TR00883AB 7

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Front axle system - 25

Non-powered front axle - 400

JX55T TIER 1 engine, 2WD tractor
JX55T TIER 1 engine, 4WD tractor
JX75T TIER 1 engine, 2WD tractor
JX75T TIER 1 engine, 4WD tractor

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Wheel hub - Remove – 2WD

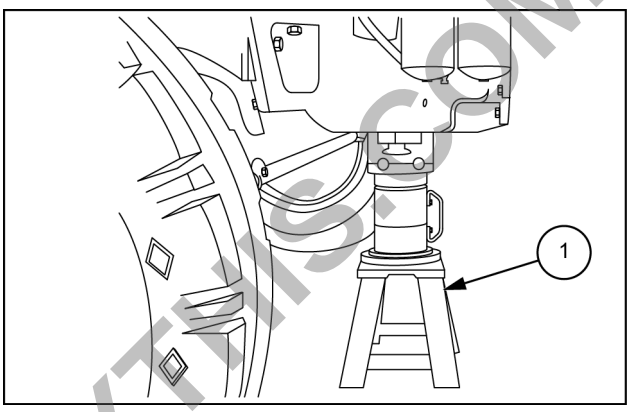
⚠ WARNING

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.

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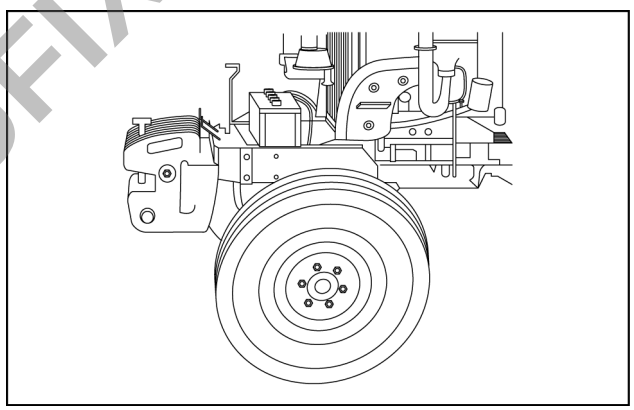
Wheel hubs can be removed with the front axle on the tractor. Proceed as follows for each hub.

1. Safely block rear wheels.
2. Jack up front tractor and place a stationary stand **(1)** under the sump.



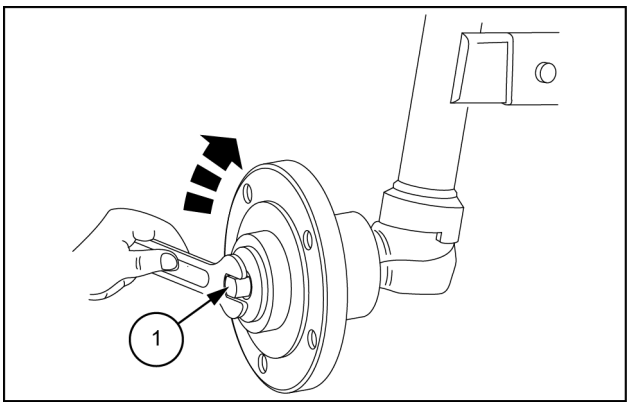
NDIL14TR00802AB 1

3. Loosen retaining bolts and remove front wheels.



NDIL14TR00803AA 2

4. Remove wheel hub bearing grease cup **(1)**.



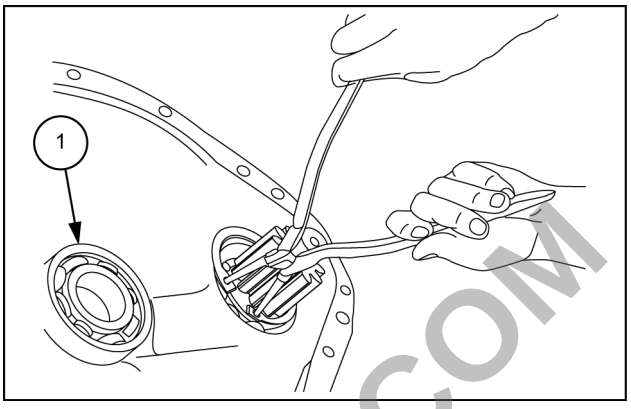
NDIL14TR00804AB 3

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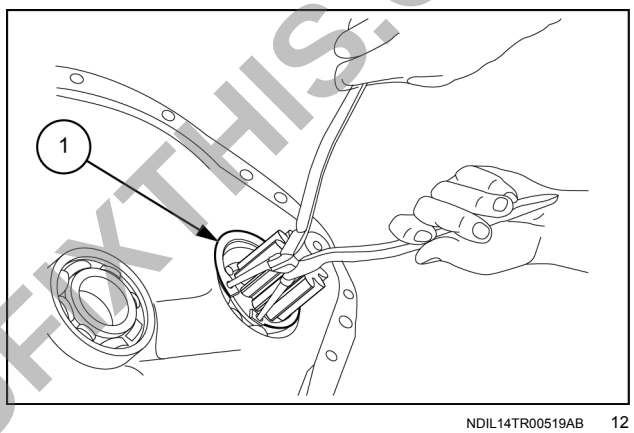
Rear axle housing - disassembly

10. Remove the bearing **(1)** from the housing using a suitable puller.



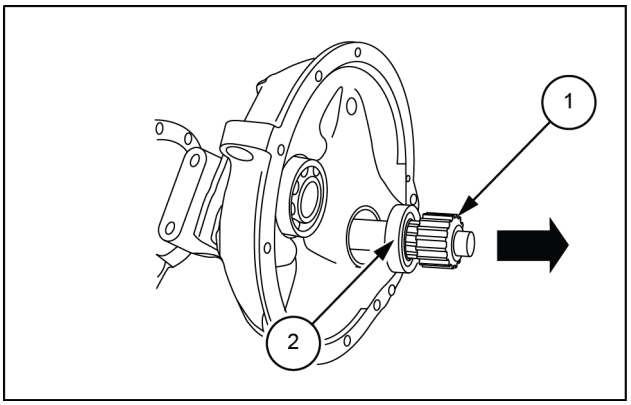
NDIL14TR00518AB 11

11. Remove circlip **(1)**.



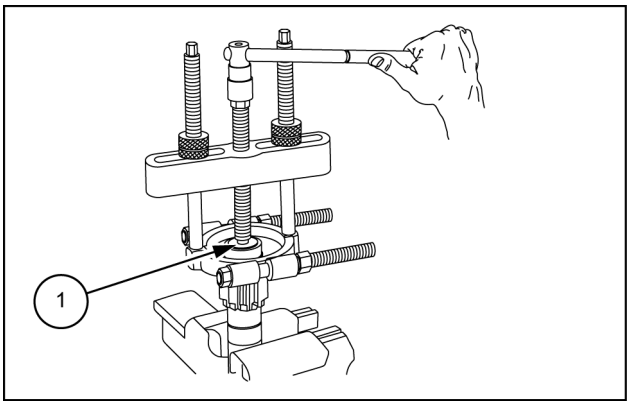
NDIL14TR00519AB 12

12. Withdraw axle shaft **(1)** together with bearing in the direction shown by the arrow.
13. Remove ball bearing **(2)** from axle shaft using suitable puller.



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14. Remove roller bearing **(1)** internal ring from the axle shaft, using puller - separator (special tool no. 292911).



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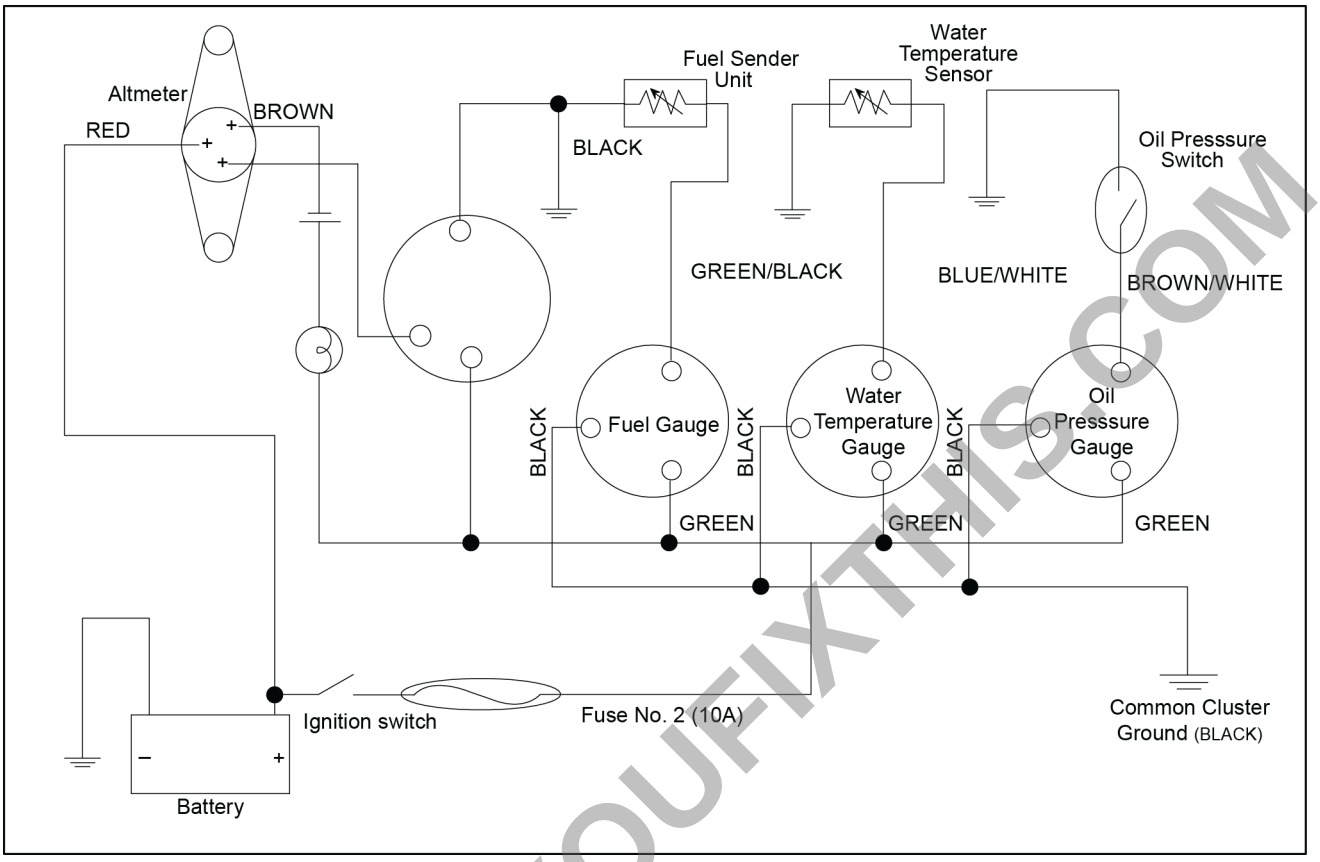
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Problem	Possible Cause	Correction
Too little steering force (possibly to one side only)	Pump pressure too low	Correct pump pressure
	Too little steering cylinder	Fit a larger cylinder
	Piston rod area of the differential cylinder too large compared with piston diameter	Fit cylinder with thinner piston rod or 2 differential cylinders
Leakage at either input shaft, end cover, gear-wheel set, housing or top part	Shaft defective	Replace shaft seal
	Screws loose	Tighten screws Torque 3-3, t daNm or steering unit (2, 5-3 daNm)
	Washers or O-rings defective	Replace washers and O-rings

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Wiring harnesses - Electrical schematic sheet 04 – Instrument cluster circuit



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