MAXXFARM 60

Preliminary Service Manual

May 2009

47673551

NB For Maxxfarm 60 refer to the U60 model listed in this manual

CASE IH AGRICULTURE

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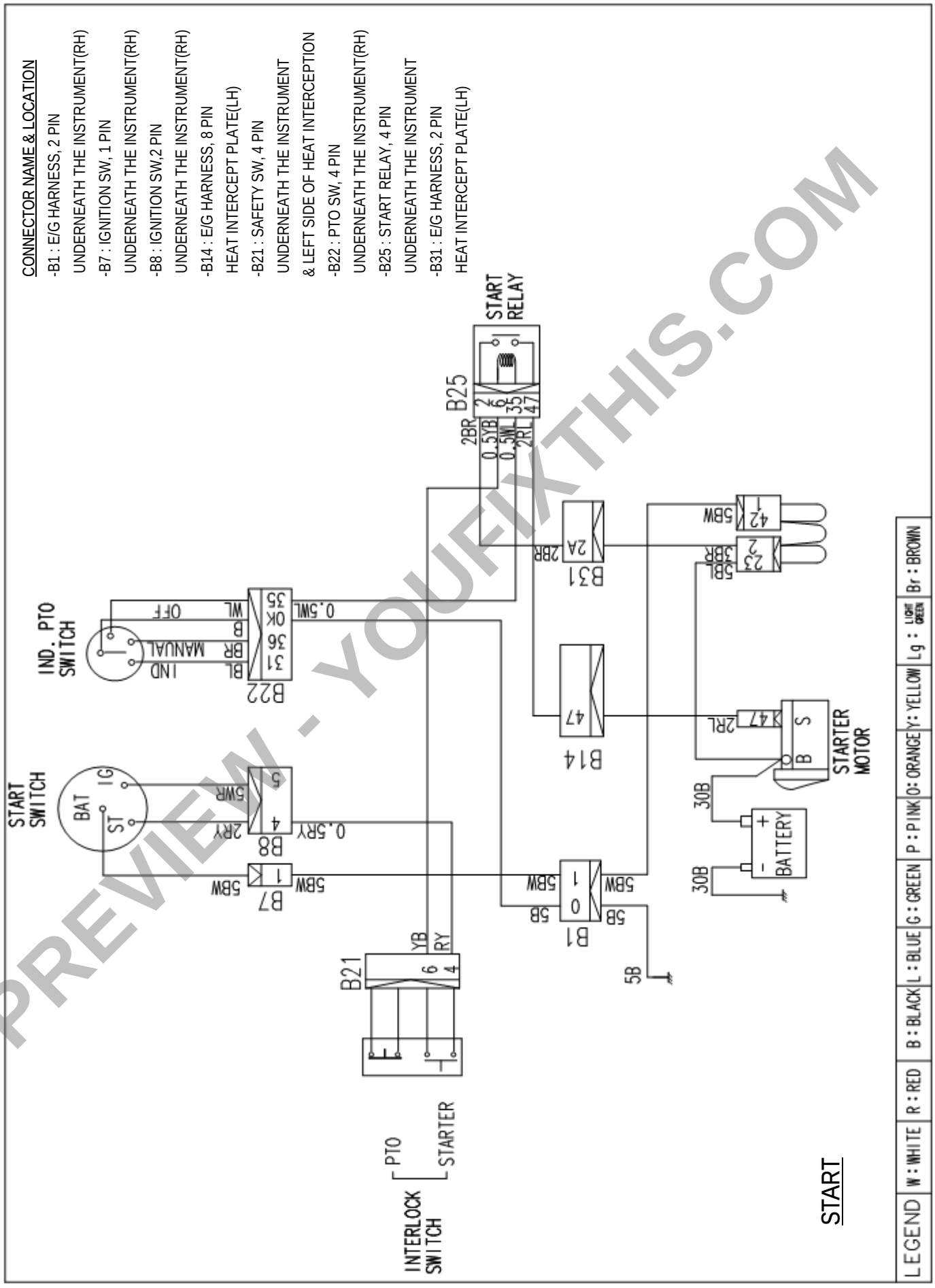
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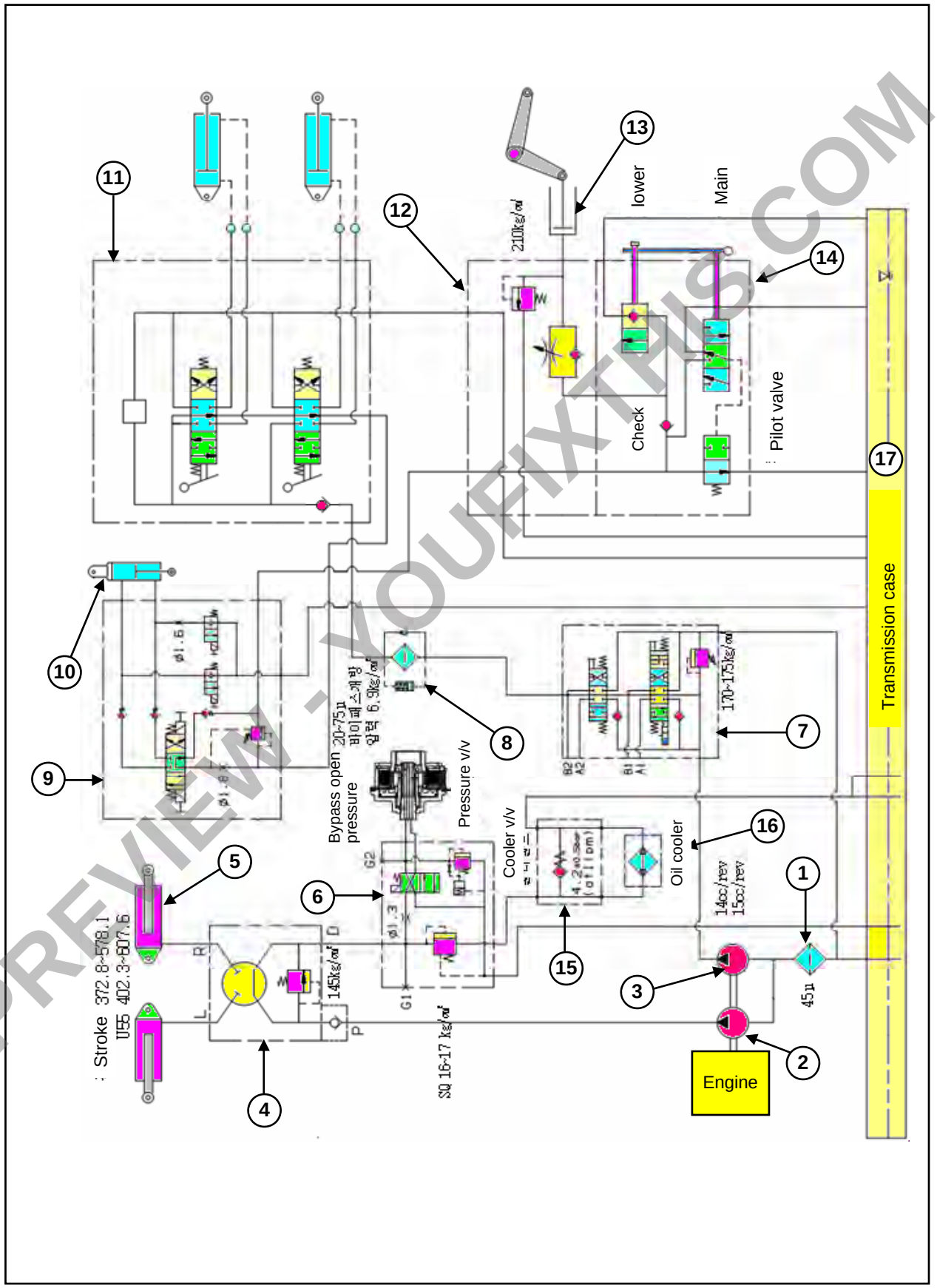
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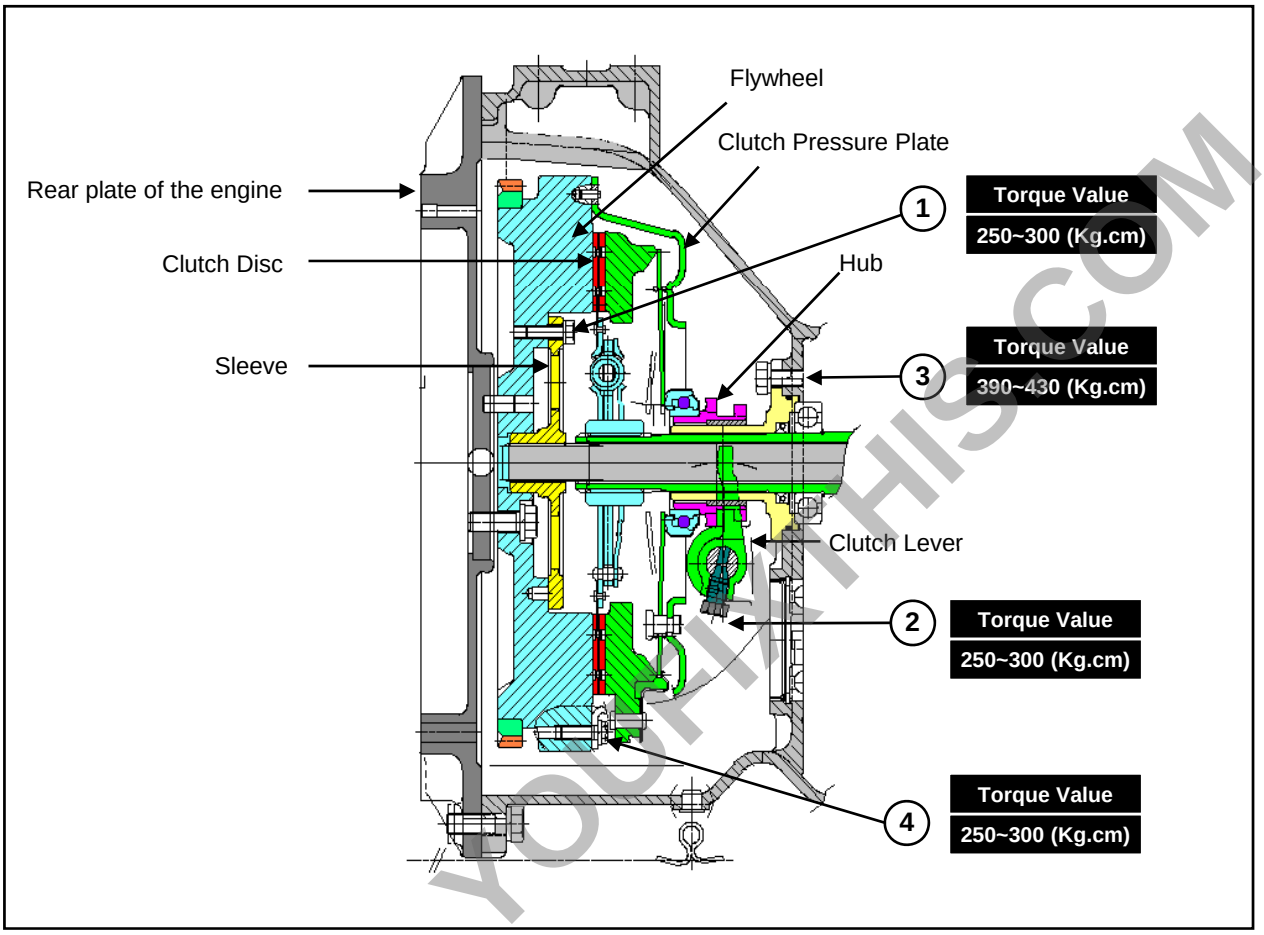
Hydraulic System Schematic Diagrams



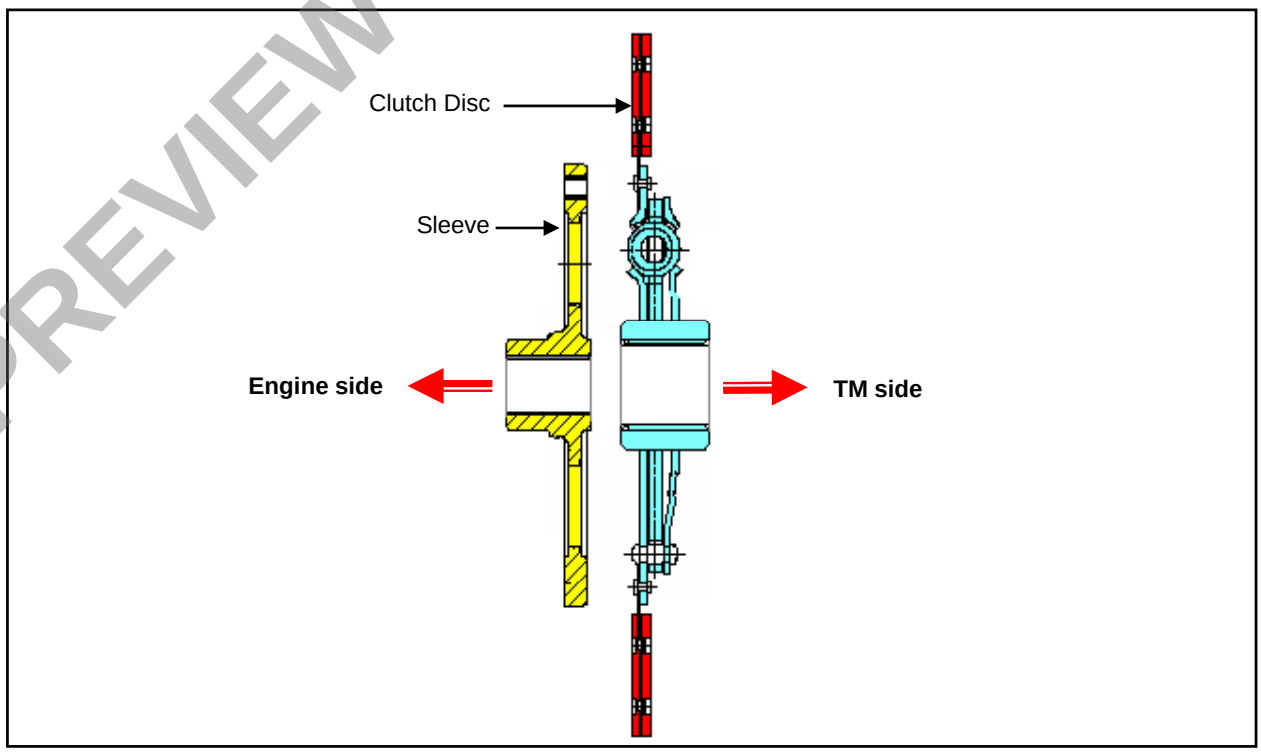
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Clutch cross-sectional view



Clutch Disc and Sleeve Assembly

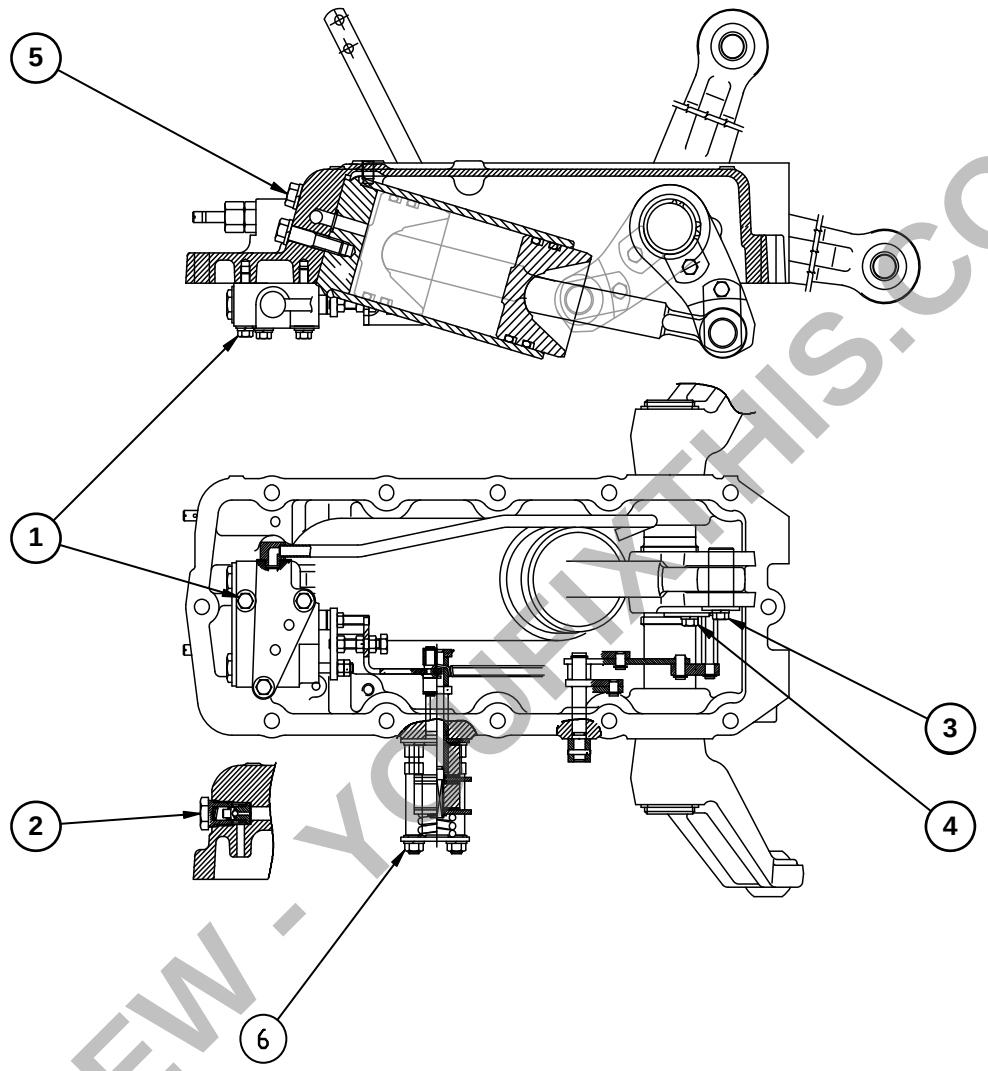


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Tightening Torque value on hydraulic housing



Hydraulic housing	Thread (quantities)	Tightening Torque (kg-cm)
Hydraulic housing retaining bolts ……	M12X1.25X45(4 pcs) M12X1.25X95(4 pcs) M12X1.25X60(3 pcs)	850~950 850~950 850~950
Top link support bracket retaining bots ……	M14X2X40(6 pcs)	1500~1700
Quick coupler ……	1/2”	560
Union bolt ……	PF 1/2(1 pc) PF 3/8(4 pcs)	850 780
Control valve retaining bolt (1) ……	M8X1.25X50(3 pcs)	
Hydraulic cylinder retaining bolts (5) ……	M10X1.25X50(3 pcs)	550~660
Safety valve (2) ……	M26	110
Descent speed control valve ……		
Single-Double acting cylinder selection valve ……		
Remote control valve retaining bolts ……	M8X1.25X60(3 pcs)	250~300

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Troubleshooting

PROBLEM	POSSIBLE CAUSES	CORRECTION
Tractor does not drive in any gear	Mechanical failure in the transmission.	Inspect clutches for seizure, broken synchronizers or broken gears. Replace part(s) as necessary.
Transmission is noisy in operation	Low driveline oil level	Refill with the specified oil to the correct level. Locate oil leakage.
	Incorrect driveline oil specification.	Drain and refill with the specified oil to the correct level.
	Mechanical failure in the transmission.	Inspect the bearings and for worn or damaged parts. Replace parts if necessary.
Oil leak from the split pin located in the bottom of the transmission case	Engine crankshaft rear main oil seal leakage.	Replace oil seal.
	Worn or damaged input shaft oil seal, PTO drive shaft oil seal, transmission front plate seal or reverse idler retaining bolt oil seal leakage.	Replace oil seal(s) or re-apply liquid gasket as necessary.
Difficult or failure to engage gears	Incorrect selector cable(s) adjustment.	Adjust selector cable(s)
	Damaged or worn shift forks.	Inspect, repair or replace as necessary.
	Worn synchronizers.	Inspect synchronizer ring rubbing surfaces. Replace as necessary if worn.
	Incorrect clutch operation...	Faulty clutch pressure plate.
Noisy final drives when the tractor is moving and also with transmission in neutral	Wheel axle shaft bearing incorrectly adjusted	Remove final drive case and adjust bearings
	Faulty or defective internal component.	Remove final drive case and replace damaged parts.
	Excess wheel axle shaft to final drive spline backlash	Remove final drive case and replace damaged parts.

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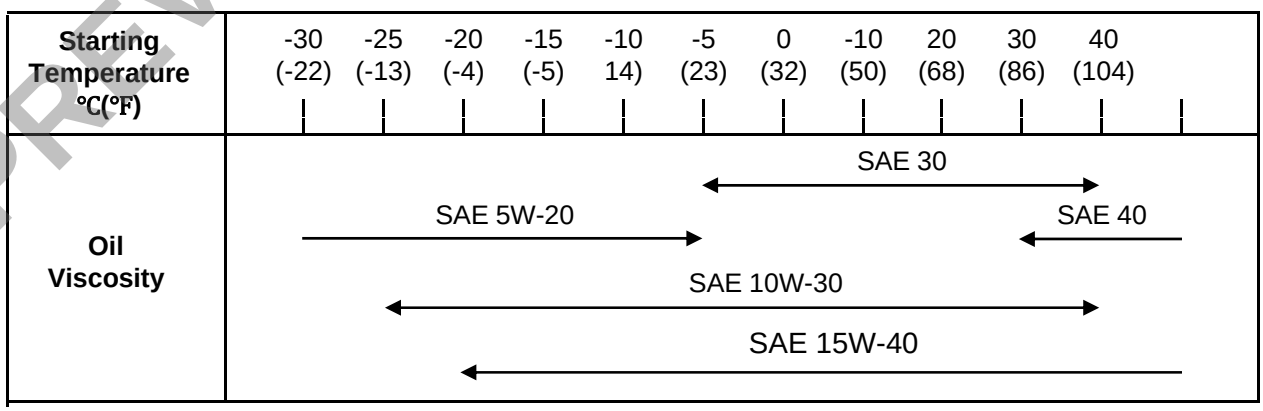
Lubrication Table

COMPONENT TO BE FILLED OR TOPPED UP	QUANTITY (Liter)		HOURS OF WORK					RECOMMENDED SPECIFICATION
	U43/47/52	U55	Every 10 Hrs	First 50 Hrs	Every 200 Hrs	Every 400 Hrs	Every 800 Hrs	
Cooling System	9.0	10.8	○				●	Coolant
Fuel Tank	60					●		Diesel (ASTM No. 2-D)
Engine Sump	7.0	9.5	○	●	●			Engine oil (SAE 10W-30)
Front Axle	10.0			●	○	●		Front axle gear oil (SAE 80)
Transmission	47.0		○			●		LS TM & HYD oil (SAE 80)
Final Drive (each side)	7.0			●	○	●		LS TM & HYD oil (SAE 80)
Grease Fitting -Front axle support -Steering Cylinder -Lift Rod -Clutch Pedal -Brake Pedal								Multipurpose grease

○ : CHECK & REFILL ● : DRAIN & REFILL

Recommended oil viscosities

Two important considerations related to satisfactory engine operation under ambient temperature conditions - (1) the ability to crank the engine fast enough to assure starting, and (2) adequate lubrication of internal wearing surfaces during starting and warm-up. These considerations can be adequately met through proper grade selection. Recommended oil viscosity are shown in the chart below :



☞ **LS recommends all season type engine oil of SAE 10W-30**

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04.2 MAINTENANCE AND FAULT FINDING

Maintenance Table

HOURS OF WORK	COMPONENT	DESCRIPTION	LUBRICANT
Occasional	Clutch	Clutch pedal play adjustment (20~30mm)	
	Brake	Brake pedal play adjustment (40~50mm)	
	Fan belt	Tension of the fan belt adjustment (10~12mm)	
	Clutch housing	Water draining, if necessary	
	Air cleaner	Clean out dust, if necessary	
	Cooling fan and radiator screen	Clean out dust	
	Lights	Check lights are functioning properly	
Everyday	Engine Oil sump	Check oil level	Engine oil
	Transmission / hydraulic system	Check oil level	Transmission oil
	Radiator sub tank	Check coolant level	Coolant
	Battery	Check level of electrolyte	Clean water
First 50 hours	Engine Oil sump	Drain and refill	Engine oil
	Engine oil filter	Replace filter elements	
	Front axle housing	Drain and refill	Front axle oil
	Transmission / hydraulic oil filter	Replace filter elements	
	Final drive	Drain and refill	Final drive oil
Every 50 hours	Front axle support	Lubricate	Multipurpose grease
	Steering cylinders	Lubricate	
	King pin cover	Lubricate	
	Lift linkage	Lubricate	
	Clutch pedal	Lubricate	
	Brake pedal	Lubricate	
	Range gear	Lubricate	
Every 200 hours	Air cleaner	Replace filter elements	
	Engine oil sump	Drain and refill	Engine oil
	Engine oil filter	Replace filter elements	
	Front axle housing	Check oil level	Front axle oil
	Final drive	Check oil level	Final drive oil
	Fuel filter	Replace filter elements	

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Specification - Hydraulic System Schematic Diagrams

No.	Components (Part no.)	Specification		Remark
1	**Main filter**	1) Filtration size 2) Filtration capacity 3) Dimension	45μ 0.3㎡ D108XL200 X1- M40X2.0	Replace every 200 hours operating
2	**Steering pump**	1) Type 2) Operating Flow 3) Relief pressure	JP20SR-7.2(Gear type) (18.7L/MIN) 145kg-f/㎠(210 kg-f/㎠)	
3	**Main pump**	1) Type 2) Operating Flow	JP20R-14-U43~47 14.0cc/rev(36.4L/MIN) 145kg-f/㎠(210 kg-f/㎠)	JP20R-15-U55 15.0cc/rev(37.5L/MIN)
4	**Steering unit**	1) Type 2) Capacity 3) Relief valve pressure	UYS145CB16ASD 80 cc/rev 145 kg-f/㎠ (@16 L/min)	ORBITROL type
5	**Steering cylinder**	1) Dimension 2) Stroke	D50X43X206.3X2EA 372.8 ~ 578.1 402.3 ~ 607.6	
6	**Independent PTO valve**	1) SQ valve 2) DR valve 3) Orifice 4)Pressure valve	16~17 kg-f/㎠(16L/MIN) 12V D:1.3(3.2~3.6L/MIN) T1:0.3~0.5S T2:0.8~1S	G1 ,G2 = Pressure check
7	**Loader valve**	1) Capacity 2) Relief valve pressure	45 LPM 170~175 kg-f/㎠	
8	**Inlet filter (for Auto-leveler)**	1) Filtration capacity 2) By-pass valve pressure	20μ / 75LPM 6.9 kg-f/㎠	Optional
9	**Implement horizontal control valve**	1) Capacity 6LPM 2) Orifice	6±10%LPM Φ1.8 Φ1.6- > Φ0.9	Optional
10	**Implement horizontal cylinder**	1) Dimension	D:50XD22 . 4Xstroke130	
11	**Remote control valve**	1)Directional Valve	3 position-4 ways -Self-return type	4 WAY-3 POSITION -RETURN

* This specifications may be changed to add improvements without notice.

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02.1 SEPARATING ENGINE AND CLUTCH HOUSING

***DANGER** : Lift and handle all heavy components by using lifting equipment of appropriate lifting capacity. Ensure that units or parts are supported by suitable slings or hooks. Ensure that no-one is in the vicinity of the load to be lifted.*

1. Disconnect the negative (-) battery cable (1).

***WARNING** : Always disconnect the negative (-) battery cable before disconnecting the positive (+) battery cable*

2. Disconnect the positive (+) battery cable (2).
3. Disconnect all the headlamp electrical connectors before separating the hood.

***ATTENTION** : Check that all necessary hoses tubes and electrical connectors have been disconnected. It may be necessary to disconnect additional items due to other optional systems that has been installed on the tractor*

4. Remove the gas cylinder retaining pin (2).

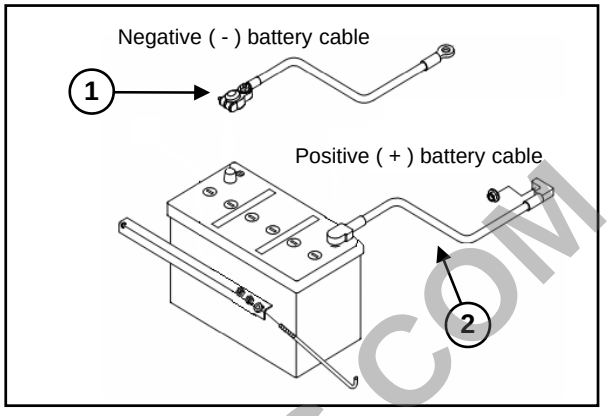
***NOTE** : The pressure of gas spring is 75kgf*

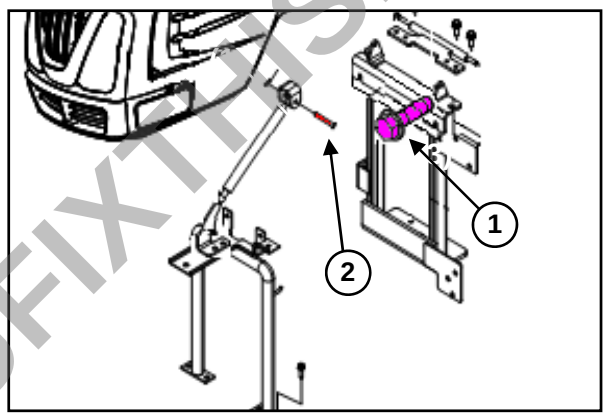
5. Remove the bolt (1) and separate the hood slowly.

6. Disconnect the left-hand side electrical connector (1) and disconnect the right-hand side electrical connector (2).
7. Disconnect the fuel supply hose.

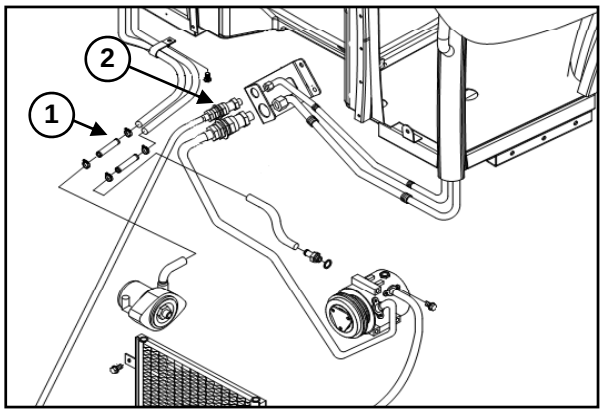
8. Loosen the clamp (1) and disconnect the hose.
9. Drain the cooling water into a clean container if it is to be re-used.
10. Disconnect the air-conditioning high and low pressure pipes (2).

***ATTENTION** : Perform the disconnecting the air-conditioning pipes quickly to avoid any leak of refrigerant.*









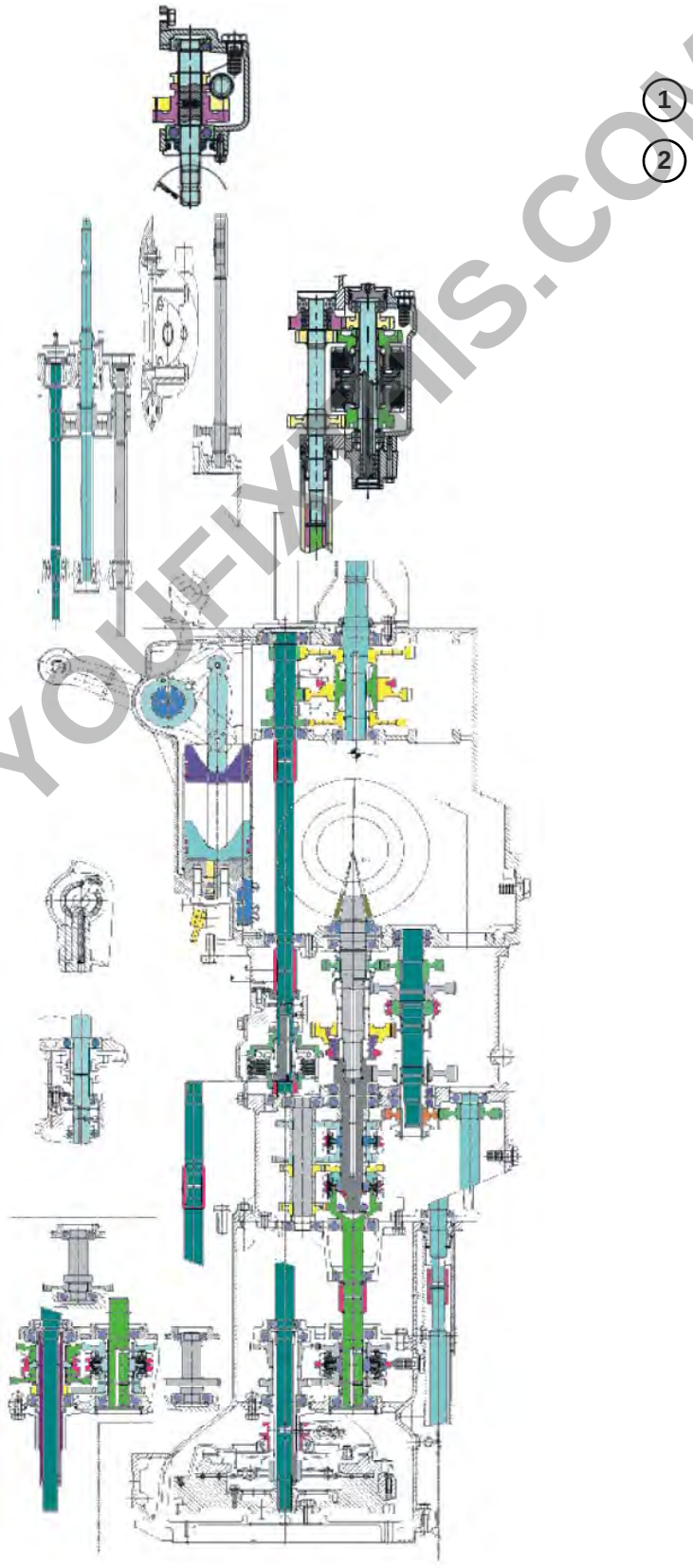
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Transmission sectional view

The transmission can be split into three sections as clutch housing, center case and rear axle case.

- Main gear
- Range gear
- Creeper gear
- Forward / Reverse gear
- PTO clutch
- Rear differential unit



Optional system

- Creeper unit
- F/R Power shuttle system
- GSP PTO
- M-PTO
- Differential system
- EHD

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