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D35, D40, D45 Tractors

Operator's Manual

87300517

CASE IH

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PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements ("**DANGER**", "**WARNING**", and "**CAUTION**") followed by specific instructions. These precautions are intended for the personal safety of you and those working with you. Please take the time to read them.

⚠ DANGER ⚠

This word "DANGER" indicates an immediate hazardous situation that, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

⚠ WARNING ⚠

This word "WARNING" indicates a potentially hazardous situation that, if not avoided, could result in death or serious injury. The color associated with Warning is ORANGE.

⚠ CAUTION ⚠

This word "CAUTION" indicates a potentially hazardous situation that, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices. The color associated with Caution is YELLOW.

FAILURE TO FOLLOW THE "DANGER", "WARNING", AND "CAUTION" INSTRUCTIONS MAY RESULT IN SERIOUS BODILY INJURY OR DEATH.

MACHINE SAFETY

The precautionary statement ("**IMPORTANT**") is followed by specific instructions. This statement is intended for machine safety.

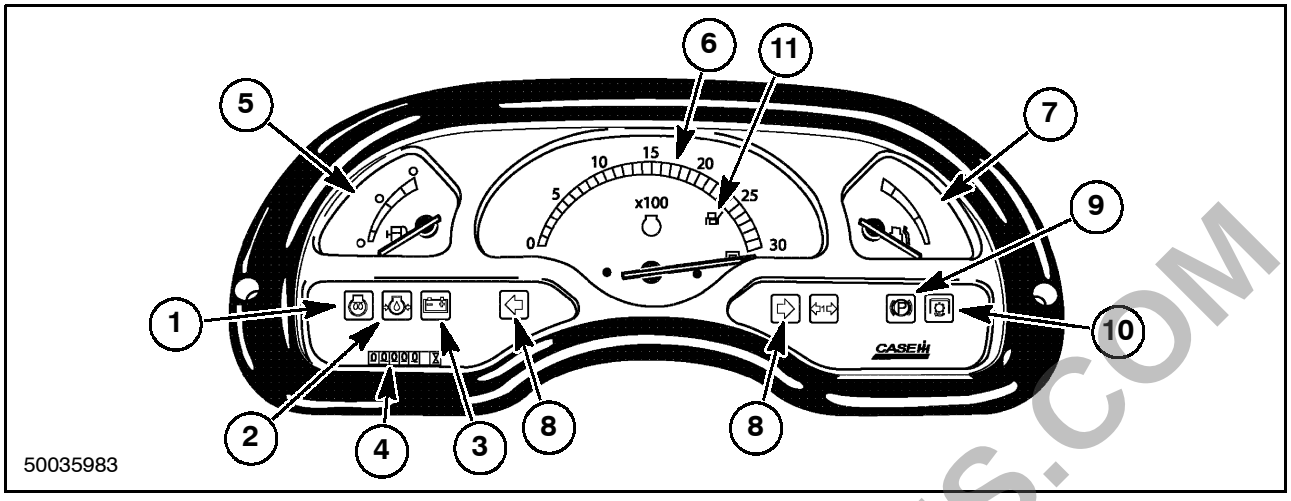
IMPORTANT: *The word "IMPORTANT" is used to inform the reader of something he needs to know to prevent minor machine damage if a certain procedure is not followed.*

INFORMATION

NOTE: *Instructions used to identify and present supplementary information.*

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INSTRUMENT PANEL

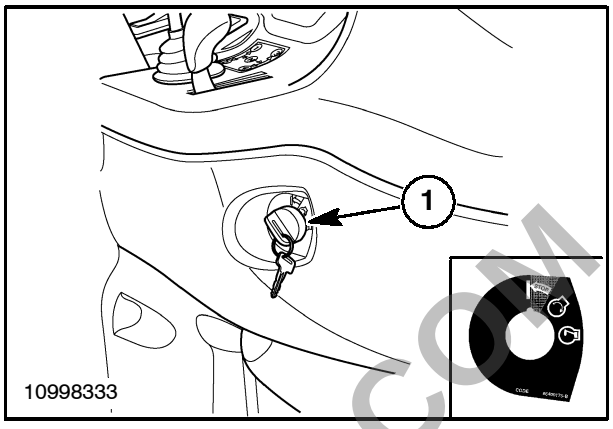
1. **Cold Starting Indicator Light** – Illuminates when the key switch is turned to the “ACC/RUN” position. It remains lit for approximately four seconds when the key is in position, during which time the glow plugs are heating the precombustion chambers of the cylinder head.
2. **Engine Oil Pressure Warning Light** – Illuminates with the key switch in the “ACC/RUN” position and remains lit for a short period of time after the engine is started. The light indicates oil pressure only, and goes out when sufficient oil pressure is present at the oil sender. If the bulb lights during operation, stop the tractor engine immediately and investigate the cause.
3. **Battery Charge Warning Light** – Illuminates when the key switch is in the “ACC/RUN” position and goes out when the engine is started. If this bulb lights during operation, it indicates that the charging system is not operating normally. As the battery can become fully discharged under these conditions, the problem should be investigated as soon as possible.
4. **Proof Meter** – Records the hours and portions of hours that your tractor has been operated, regardless of engine RPM. Use the proof meter as a guide to determine hourly service and maintenance intervals.
5. **Fuel Gauge** – Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the “ACC/RUN” position. It will resister “empty” with the key switch in the “STOP” position.
6. **Tachometer** – Registers engine RPM (Revolutions per Minute). The gauge is marked in increments of 100, and will return to zero when the engine is not running.
7. **Temperature Gauge** – Indicates coolant temperature. It is activated when the key switch is placed in the “ACC/RUN” position. The gauge will register “cold” with the key switch in the “STOP” position. If the needle registers in the green range of the gauge, this indicates a normal operating temperature. If the needle moves into the red portion of the gauge, indicating an overheated condition, stop the tractor engine IMMEDIATELY and investigate the cause.
8. **Flasher Turn/Warning (Hazard) Lights** – Operate when the turn signal switch is pushed forward for a right turn (RH arrow will flash), rearward for a left turn (LH arrow will flash), or when the warning/hazard switch is actuated (both arrows will flash.) For the turn signals to operate, the keyswitch must be in the “ACC/RUN” or “START” position; the warning lights operate regardless of the keyswitch position. Always use the flasher warning lights and display the SMV placard when traveling on public roads, day or night.
9. **Parking Brake Light** – Illuminates if the parking brake is engaged when the key switch is moved from the “OFF” position.
10. **PTO “On” Indicator** – When either of the PTO positions is engaged, and the key switch is in the “ACC/RUN” or “START” position, this (amber) indicator will be illuminated.
11. **PTO Speed Indicator** – Determined by the position of the tachometer needle. The tachometer is marked to indicate 540 PTO RPM. If the needle registers above the 540 RPM mark, this indicates a dangerous overspeed condition, and the engine RPM should be reduced immediately.

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KEY SWITCH

The key switch, 1, is located on the right-hand side of the console just below the hand throttle. Turning the key right to the “ACC/RUN” position activates the warning lights, instruments, and pre-heat system. The engine starts when the key is turned to the extreme right. (The key spring returns to the “ACC/RUN” position when released.)



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PRE-HEATING THE SYSTEM

Your tractor has a diesel engine. Before starting a cold engine, the precombustion chambers must be heated.

NOTE: *The tractor will start without being pre-heated.*

To pre-heat the engine, turn the key switch to the “ACC/RUN” position. The cold start indicator light goes out after approximately 10 seconds. The glow plugs heat the precombustion chambers during this time, and the engine will start.

WARNING

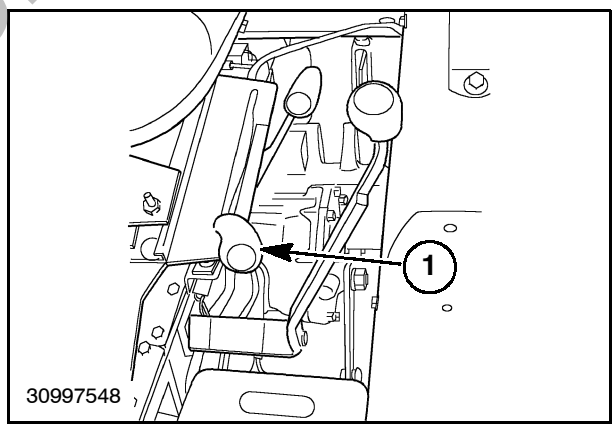
Do not use ether with the glow plug starting aid.

STARTING THE ENGINE

The key switch allows activation of the starter motor and fuel delivery only when:

1. The PTO modulation lever, 1, is in the “OFF” position.
2. The forward/reverse shuttle lever, 2, is in the “NEUTRAL” position.
3. The operator is sitting in the seat OR the parking brake is engaged.

NOTE: *Without an operator in the seat, or with the parking brake disengaged, the starter motor can be activated, but the engine will not start, because the fuel solenoid is not energized, blocking fuel flow to the injection pump.*



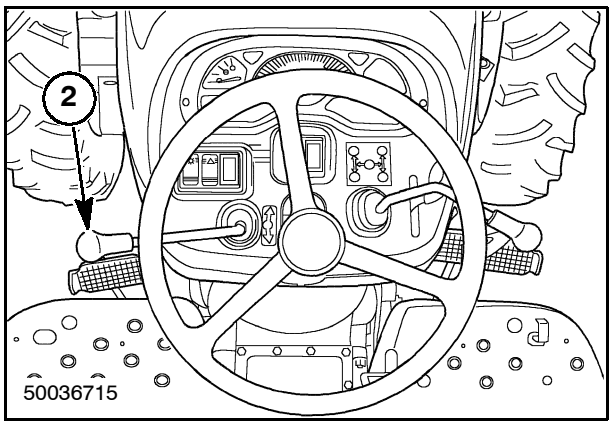
8

Always use safe practices when starting your tractor. Position the hand throttle forward so that it is one-fourth to one-third open. Turn the key to the extreme clockwise position.

WARNING

Always sit in the operator’s seat when starting the tractor. Never attempt to start the engine while standing beside the tractor.

IMPORTANT: *Do not engage the starter motor continuously for more than 30 seconds. Doing so may cause starter motor failure.*



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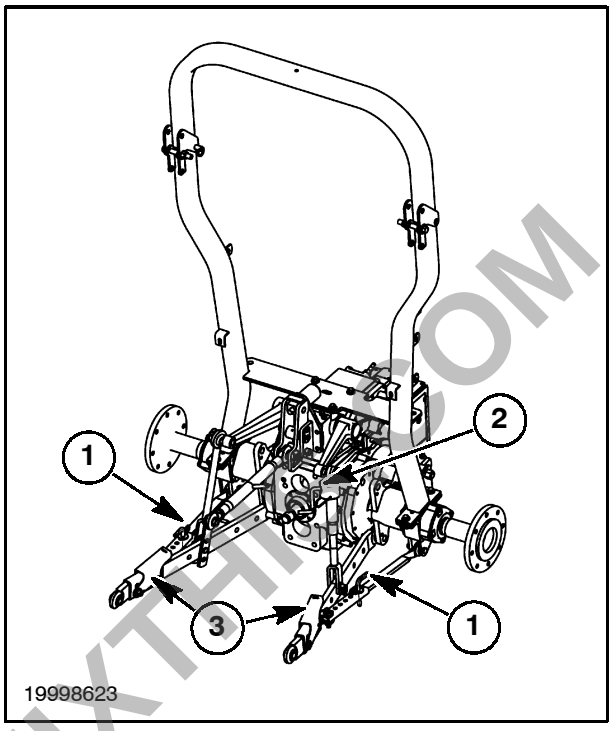
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Deluxe Three-Point Linkage (Optional)
The deluxe three-point linkage allows three-point mounted equipment to be attached to the tractor with ease.

The three-point linkage has easily-adjustable sway bars, 1, which control the lateral movement of the lift arms. The height of the right-hand lift arm and the top link can be adjusted by turning the leveling crank, 2.

The flex ends of the lift arms can be adjusted by pushing down on the clamps, 3, and sliding the ends to the desired position.

NOTE: *Cycle the three point linkage through the entire travel and check for any interference with rear tires. If interference is present, adjust sway bars as needed.*



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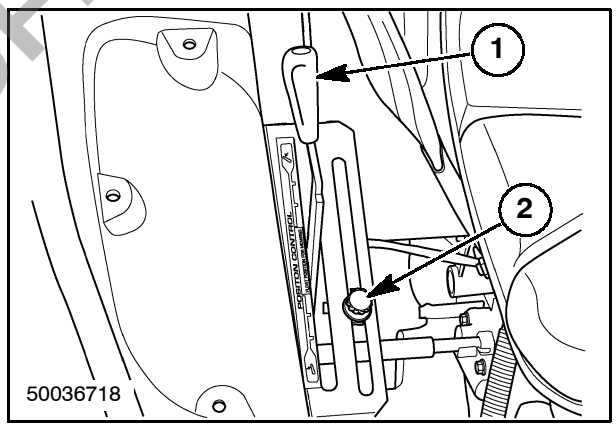
TRACTOR HYDRAULICS

HYDRAULIC POWER LIFT (H.P.L.)
The H.P.L. lever, 1, is located between the seat and the RH fender. The lever controls the position of the two lift arms.

To lower the lift arms, move the H.P.L. lever forward. To raise the lift arms, move the lever rearward. An adjustable stop, 2, is located in this quadrant for returning the lever to a preset position.

The hydraulic lift system provides accurate, smooth, and instant hydraulic power for raising a variety of compatible equipment whenever the engine is running. The system's position control feature maintains the selected height or depth of three-point linkage equipment in relation to the tractor. When the hydraulic lift control lever is moved to a higher or lower setting in the quadrant, the system repositions the equipment to a higher or lower position and maintains the selected position.

The hydraulic lift system may be equipped with an optional draft control.

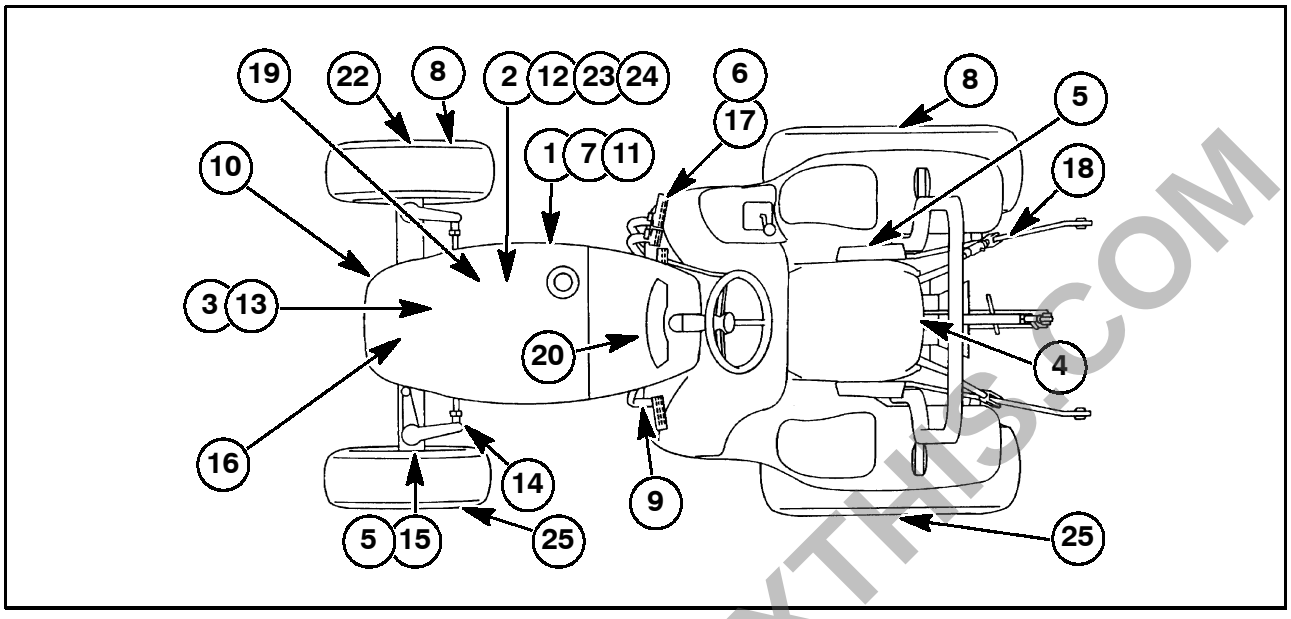


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LUBRICATION AND MAINTENANCE CHART
CASE IH D35, D40, D45 — TWO-WHEEL DRIVE



1

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
1	Engine Oil Level	X					Every 10 Hours or Daily
2	Air Cleaner	X					
3	Radiator Coolant	X					
4	Transmission Oil Level	X					
5	Hydraulic Filter				X		First 50 Hours
1, 7	Engine Oil & Filter				X		
8	Tire Pressure	X					
11	Fuel Filter				X		
25	Wheel Bolt Torque	X					
—	All Fluid Levels	X					
8	Tires	X					Every 50 Hours
9	Clutch Pedal	X		X		X	
10	Battery	X					
12	Power Steering Oil Level	X					
13	Fan Belt	X					
	Lubrication Fittings:						
14	Steering Linkage			X			
15	Front Wheel Spindles (2)			X			
16	Pivot Shaft			X			
17	Brake Pedal			X			
18	3-Point Linkage			X			
19	Power Steering Cylinder			X			
20	Pedal Shaft			X			
1, 7	Engine Oil & Filter				X		Every 100 Hours
2	Air Cleaner Element		X				
11	Fuel Filter		X				

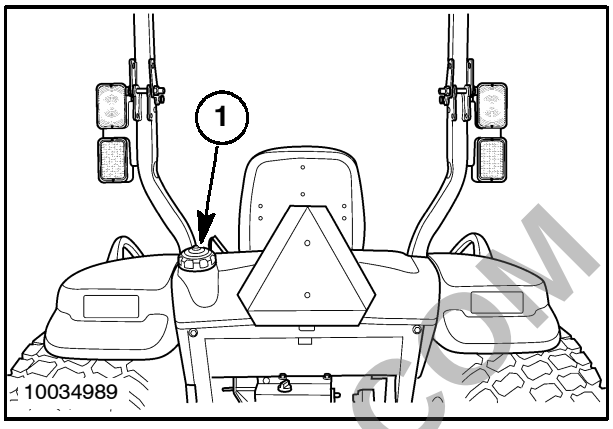
NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
6	Brake Pedal Free Play					X	Every 200 Hours
11	Fuel Filter Element				X		
13	Fan Belt					X	
25	Wheel Bolt Torque	X					
4	Transmission Oil				X		Every 300 Hours
5	Hydraulic Filter				X		
11	Power Steering Oil				X		Every 600 Hours *Refer to Repair Manual
22	Front Wheel Bearings			X			
23*	Fuel Injectors	X					
24*	Valve Clearance	X					
2	Air Cleaner Element				X		Seasonal
3	Radiator Coolant				X		
2	Safety Air Filter Element				X		Every Third Primary Element Change or Every **1000** Hours, Whichever Comes First

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Refueling the Tractor

The fuel filler cap, 1, is located at the rear of the tractor. Before removing the cap, wipe all dust and dirt from around the cap to prevent debris from falling into the tank while filling.



3

Use an approved fuel container and periodically check the inside of the container for cleanliness. Fuel tank capacity is 54.5 L (13 U.S. gals.).

NOTE: *The fuel cap is a vented-type. Use only an approved Case IH replacement cap to prevent fuel system-related problems.*

If there is no filter on the storage tank or fuel container, filter the fuel through a 100-mesh or finer screen when filling the tractor fuel tank. Keep the tractor tank as full as possible (without filling to capacity) to minimize condensation.

NOTE: *It is a good practice to fill the fuel tank at the end of each day, as this will reduce overnight condensation.*

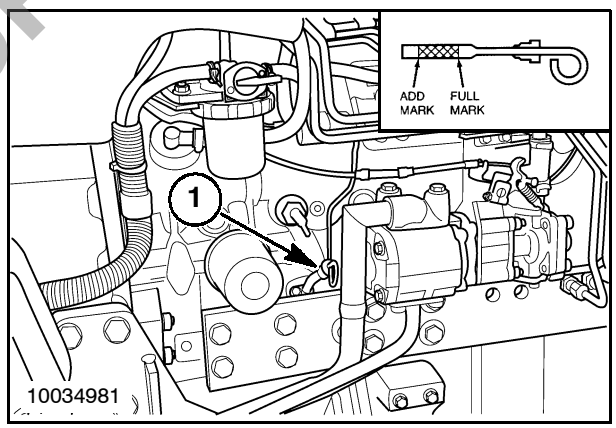
FUEL AND LUBRICANT SERVICE PROCEDURES

ENGINE

Checking the Engine Oil Level

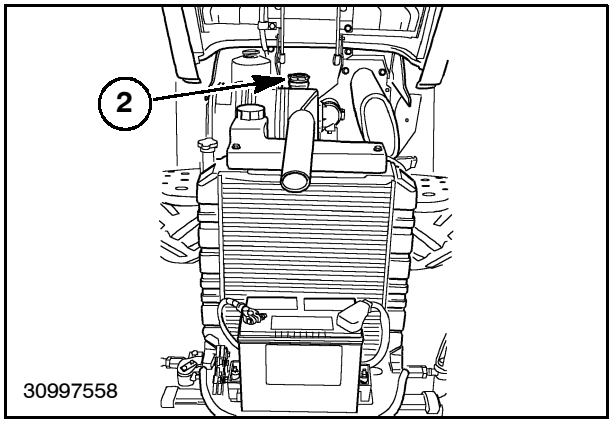
NOTE: *Check the engine oil level daily or after every 10 hours of operation.*

1. After the engine has been stopped for a period of time, and with the tractor standing level, check the oil level using the dipstick, 1.



4

2. If the oil level is low, remove the oil filler cap, 2, and add oil through the filler hole. Add enough oil so that the level resisters between the two marks on the dipstick. Do not overfill.



5

Changing the Engine Oil

NOTE: *Change the engine oil and filter after the first 50 hours of operation, then every 100 hours thereafter. If the tractor is operated for extended periods of time at maximum rated power and speeds, or under other types of continuous, severe operating conditions, the engine oil and filter should be changed at 70-hour intervals following the initial oil change.*

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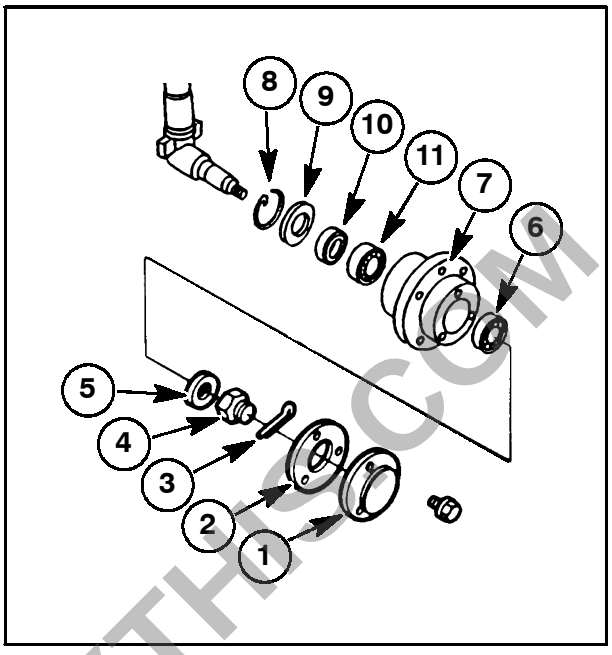
FRONT WHEEL BEARINGS (TWO-WHEEL DRIVE)

NOTE: *Front wheel bearings should be repacked after every 600 hours of operation.*

The front wheels are carried on the wheel spindles by inner and outer tapered roller bearings. A grease retainer is provided at the inner end of the spindle, and a cover at the outer end, to retain lubricant and keep dirt and other foreign material out.

To repack the front wheel bearings:

1. Apply the parking brake to hold the tractor securely.
2. Jack up one of the front wheels and remove the wheel. Remove the cover, 1, gasket, 2, cotter pin, 3, nut, 4, thrust washer, 5, outer bearing, 6, and then the hub, 7.
3. Remove retainer clip, 8, spacer, 9, oil seal, 10, and bearing, 11, from the inner end of the hub.
4. Thoroughly clean all parts in a suitable solvent and allow to dry naturally. Do not use compressed air.
5. Inspect the bearing cone and roller assemblies for excessive discoloration or wear of the rollers. Check the bearing cups also.
6. Repack the cone and roller assembly with clean grease (see the Recommended Lubricants chart at the beginning of the Lubrication and Maintenance section). Pack approximately 1/4″ (6.35 mm) of grease in the space between the bearing cups in the hub. Do not pack the hub completely. Apply a film of grease to the surface of the spindle.
7. Reinstall the inner bearing, 11, and install the oil seal, 10, spacer, 9, and retainer clip, 8, in the rear of the hub.
8. Place the wheel assembly on the spindle and install the outer bearing, 6, thrust washer, 5, and castellated nut, 4.
9. Tighten the nut, 4, while at the same time turning the wheel, until a slight drag is felt. Back off the nut until the nearest slot in the nut lines up with the hole in the spindle. Install a new cotter pin, 3, then the cover, 1, with a new gasket, 2.



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MINIMUM HARDWARE TIGHTENING TORQUES

IN FOOT POUNDS (NEWTON-METERS) FOR NORMAL ASSEMBLY APPLICATIONS

INCH HARDWARE AND LOCKNUTS

NOMINAL SIZE	SAE GRADE 2		SAE GRADE 5		SAE GRADE 8		LOCKNUTS		NOMINAL SIZE
	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	UNPLATED or PLATED SILVER	PLATED W/ZnCr GOLD	GR.B w/GR5 BOLT	GR.C w/GR8 BOLT	
1/4	55* (6.2)	72* (8.1)	86* (9.7)	112* (13)	121* (14)	157* (18)	61* (6.9)	86* (9.8)	1/4
5/16	115* (13)	149* (17)	178* (20)	229* (26)	250* (28)	324* (37)	125* (14)	176* (20)	5/16
3/8	17 (23)	22 (30)	26 (35)	34 (46)	37 (50)	48 (65)	19 (26)	26 (35)	3/8
7/16	27 (37)	35 (47)	42 (57)	54 (73)	59 (80)	77 (104)	30 (41)	42 (57)	7/16
1/2	42 (57)	54 (73)	64 (87)	83 (113)	91 (123)	117 (159)	45 (61)	64 (88)	1/2
9/16	60 (81)	77 (104)	92 (125)	120 (163)	130 (176)	169 (229)	65 (88)	92 (125)	9/16
5/8	83 (112)	107 (145)	128 (174)	165 (224)	180 (244)	233 (316)	90 (122)	127 (172)	5/8
3/4	146 (198)	189 (256)	226 (306)	293 (397)	319 (432)	413 (560)	160 (217)	226 (306)	3/4
7/8	142 (193)	183 (248)	365 (495)	473 (641)	515 (698)	667 (904)	258 (350)	364 (494)	7/8
1	213 (289)	275 (373)	547 (742)	708 (960)	773 (1048)	1000 (1356)	386 (523)	545 (739)	1

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
CAP SCREWS AND CARRIAGE BOLTS



SAE GRADE 2 | SAE GRADE 5 | SAE GRADE 8

REGULAR NUTS | SAE GRADE 5 HEX NUTS | SAE GRADE 8 HEX NUTS

LOCKNUTS



GRADE IDENTIFICATION
GRADE A NO NOTCHES
GRADE B ONE CIRCUMFERENTIAL NOTCH
GRADE C TWO CIRCUMFERENTIAL NOTCHES



GRADE IDENTIFICATION
GRADE A NO MARKS
GRADE B THREE MARKS
GRADE C SIX MARKS
MARKS NEED NOT BE LOCATED AT CORNERS

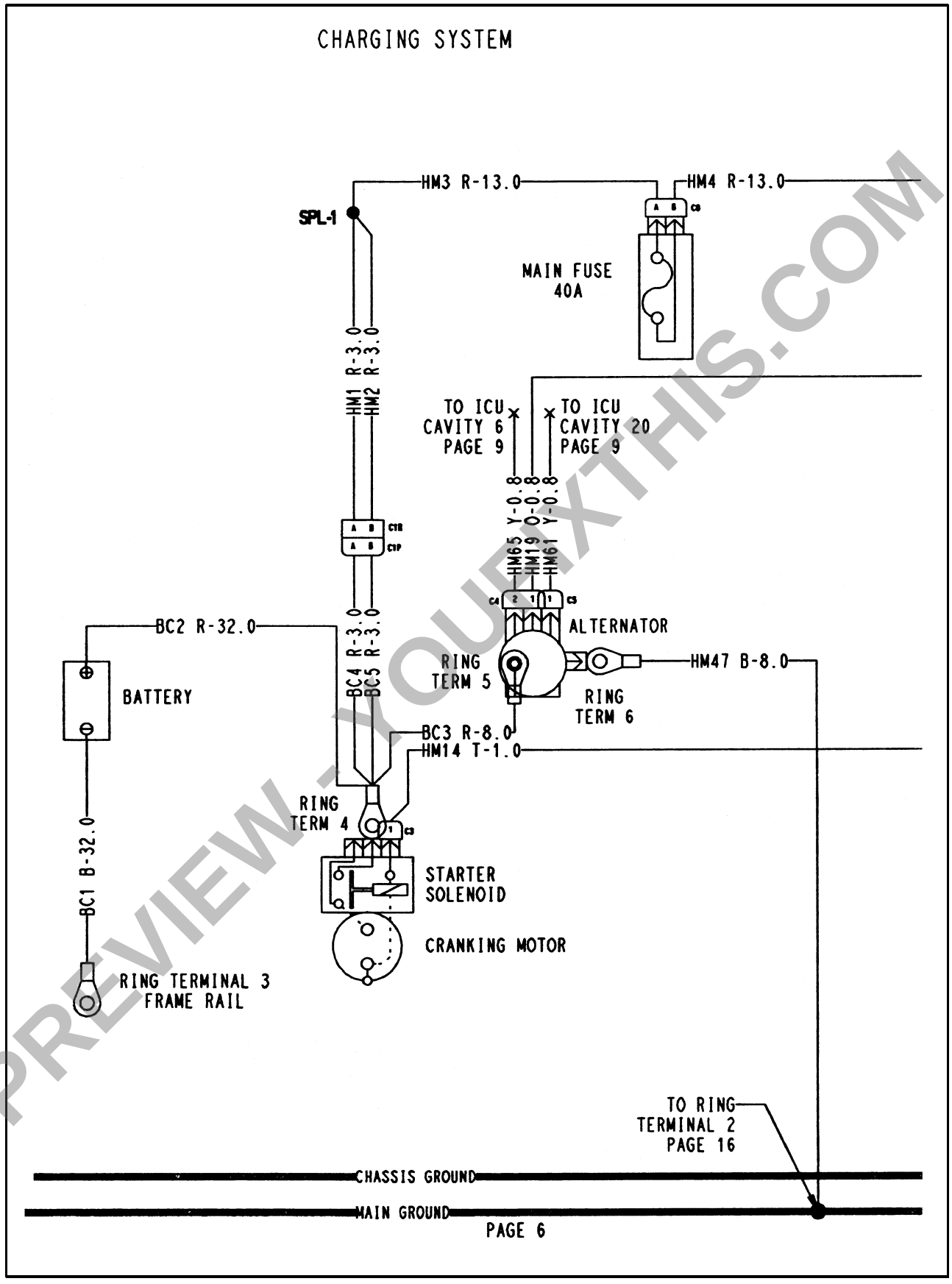


GRADE A NO MARK
GRADE B LETTER B
GRADE C LETTER C

GRADE IDENTIFICATION

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SECTION 4
SPECIFICATIONS

	Model D35	Model D40	Model D45
ENGINE			
Type/Model	Diesel/N843L	Diesel/N844	Diesel/N844L
Engine Gross Horsepower	26.1 kw (35.0)	29.8 kw (40.0)	33.6 kw (45)
Cylinders	3	4	4
Bore	84 mm (3.31″)	84 mm (3.31″)	84 mm (3.31″)
Stroke	100 mm (3.94″)	90 mm (3.54″)	100 mm (3.94″)
Displacement	1.65 L (101.1 cu. in.)	2.0 L (121.7 cu. in.)	2.2 L (135.2 cu. in.)
Compression Ratio	22.5:1	22.5:1	22.5:1
Firing Order	1-2-3	1-3-4-2	1-3-4-2
Low Idle Speed	1025 ±50 RPM	1025 ±50 RPM	1025 ±50 RPM
Maximum Speed:			
High Idle	2855 RPM	2855 RPM	2855 RPM
Rated	2600 RPM	2600 RPM	2600 RPM
CAPACITIES			
Fuel Tank	54.5 liters/ 13 U.S. gals.	54.5 liters/ 13 U.S. gals.	54.5 liters/ 13 U.S. gals.
Cooling System	7.4 liters/ 7.8 U.S. qts.	7.9 liters/ 8.3 U.S. qts.	8.0 liters/ 8.4 U.S. qts.
Engine Crankcase:			
With Filter	5.8 liters/ 6.1 U.S. qts.	6.0 liters/ 6.3 U.S. qts.	6.0 liters/ 6.3 U.S. qts.
Rear Axle & Transmission (Includes Hydraulics)	36 liters/ 9.2 U.S. gals.	36 liters/ 9.2 U.S. gals.	36 liters/ 9.2 U.S. gals.
Power Steering	1.4 liters/ 1.5 U.S. qts.	1.4 liters/ 1.5 U.S. qts.	1.4 liters/ 1.5 U.S. qts.
Front Axle Final Reduction /Differential Gear Case	5.3 liters/ 5.6 U.S. qts.	5.3 liters/ 5.6 U.S. qts.	5.3 liters/ 5.6 U.S. qts.

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