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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SECTION 2
OPERATION

CONTROLS AND INSTRUMENTS

SEAT, SEAT BELT, AND ROLLOVER PROTECTIVE STRUCTURE (ROPS)

Adjusting the Tractor Seat

Your Case IH tractor is equipped with an adjustable suspension seat.

To move the seat fore and aft, raise the release lever, 1. Because the seat is on an inclined base, more effort is required to move the seat rearward than forward.

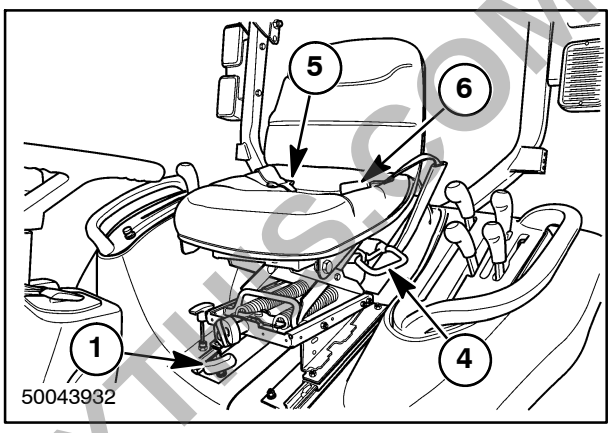
To adjust the flotation of the seat, pull out handle, 2, on knob, 3. Rotate the handle clockwise for a firmer ride or counterclockwise for a softer ride.

To swivel the seat, raise the handle, 4, and swivel in the desired direction. The seat will swivel and lock at 10° or 20° to the right or the left.

NOTE: *Care of vinyl, plastic, and rubber parts to MAXIMIZE life:*

For cleaning of vinyl, plastic, and rubber parts, use “ONLY” a mild car washing soap and water, as described below:

“First remove any loose dirt by rinsing with clean water. Mix a warm, mild liquid CAR WASHING soap solution (1 part soap and 99 parts water). Then using a sponge or soft cloth, apply the soap solution to the part. Allow the solution to soak for a few minutes to loosen the dirt. Finally, rinse the part with clean water to remove the dirt, and any solution residue. If all the dirt does not come off, repeat the procedure.”



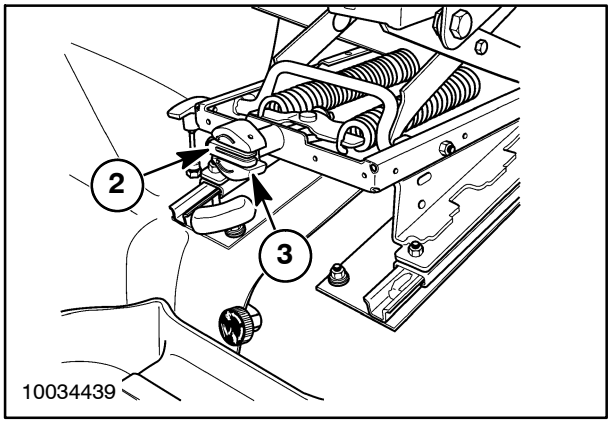
1

Adjusting the Seat Belt

The male end of the seat belt, 5, is part of a retraction mechanism, located on left side of the seat. To extend length of seat belt, pull out on male end until correct length is obtained. To latch seat belt, insert male end into belt latch, 6, located on right side of seat. Make sure belt is securely buckled and belt length is adjusted correctly for size of operator.

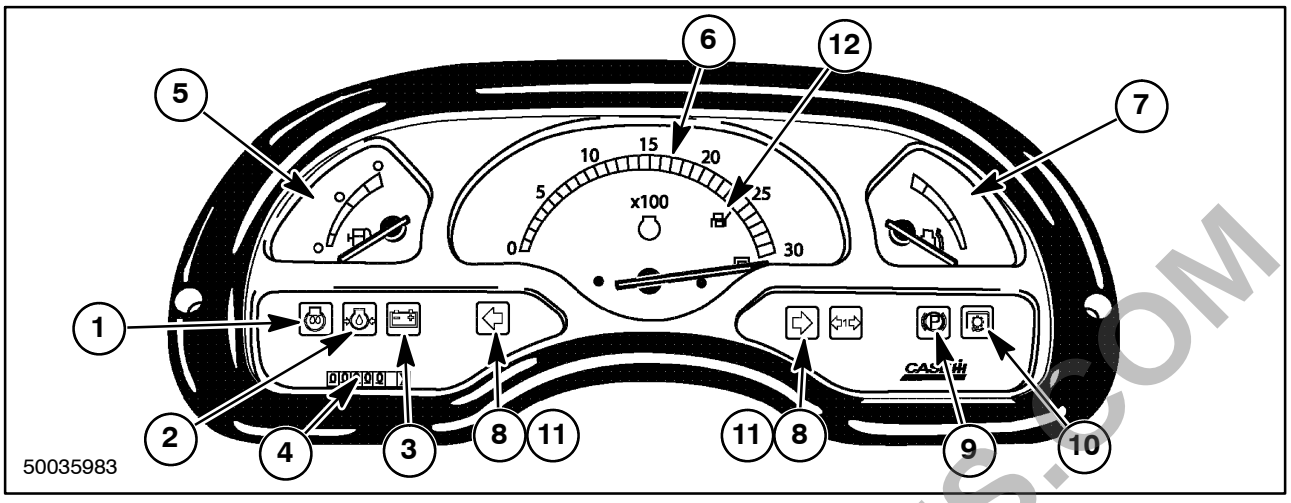
Use soap and water to clean the seat belt if necessary. Do not use carbon tetrachloride, naphtha, etc., as these substances will weaken the webbing. Additionally, do not bleach or redye the webbing, as these products will also weaken the webbing.

Replace the seat belt if it becomes damaged or worn.



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INSTRUMENT PANEL

1. **Cold Starting Indicator Light** – Illuminates when the key switch is first turned to the "ACC/RUN" position. It remains lit for approximately four seconds, during which time the glow plugs are heating the precombustion chambers.
2. **Engine Oil Pressure Warning Light** – Illuminates with the key switch in the "ON" 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 becomes lit during operation, stop the tractor engine immediately and investigate the cause.
3. **Battery Charge Warning Light** – Illuminates when the key switch is in the "ON" position and goes out when the engine is started. If this bulb becomes lit 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 "ON" 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 turned to the "ON" 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 to the red portion of the gauge, this indicates an overheated condition. Stop the tractor engine immediately and investigate the cause.
8. **Flasher Warning Lights** – Operate when the flasher switch is turned on, regardless of the key switch position. Use the flasher warning lights and the SMV emblem when traveling on public roads, day or night.
9. **Parking Brake Light** – Illuminates if the parking brake is engaged when the key switch is turned from the "OFF" position.
10. **PTO On Indicator** – When either the rear or mid PTO is engaged, the indicator will be illuminated amber with the key in the "START" or "ON" positions.
11. **Flasher Turn Lights** – Operate when the turn signal switch is moved upwards for right turns the right arrow will flash and moved downwards for left turns the left arrow will flash. The key switch has to be in the "ACC/RUN" or "START" positions.
12. **PTO Speed Indicator** – Determined by the position of the needle on the tachometer. The tachometer is marked to indicate 540 PTO RPM. If the needle registers above the 540 RPM mark, this indicates a dangerous over speed condition, and the engine RPM should be reduced immediately.

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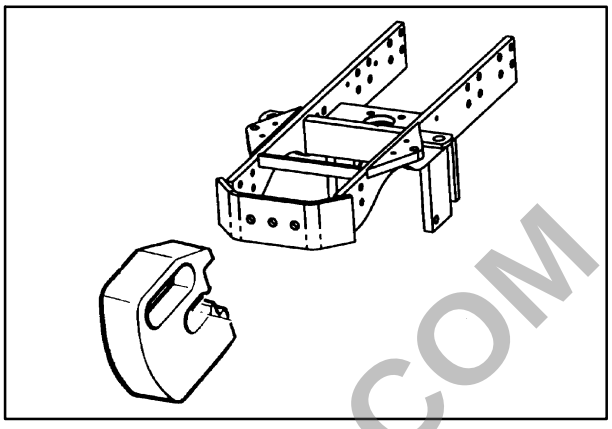
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CAST IRON WEIGHTS (OPTIONAL)

Cast iron weights are available as accessories from your Case IH Dealer. Weights can be mounted on the front end of the tractor and on the rearmost wheels.

Front Weights

Tire Type	Weight(s)
Agricultural, Turf, & Industrial	Maximum of (2) weights per tractor @ 26 kg (57 lb) each – 52 kg (114 lb) total Optional: (2) weights @ 45 kg (100 lb) each – 90 kg (200 lb) total



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Front Weight Carrier Bracket #718233006 (Optional)

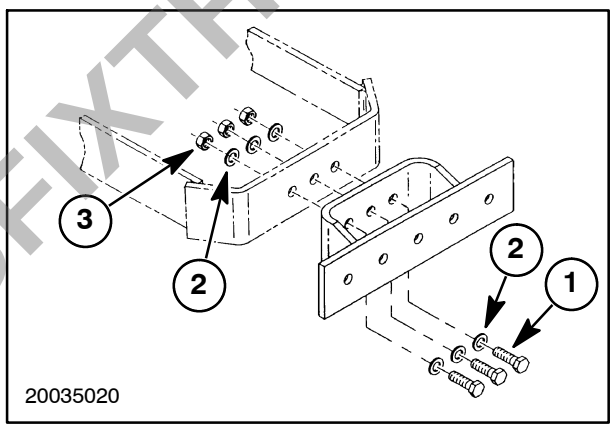
An extension mounting bracket is available, which can be installed on the front of the tractor frame. The extension mounting bracket is used if more than two front end weights are needed for counterbalancing. When the extension bracket is installed, a maximum of (5) front weights can be installed.

Weight options:

(5) 60 lb weights, for a maximum of 300 lb

(5) 100 lb weights, for a maximum of 500 lb

NOTE: *The front extension mounting bracket, is compatible with a front grill guard but not with a LX114 loader installed.*



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Extension Bracket (Mounting Hardware)

Item	Qty.	Description
1	3	5/8 in x 2 hex head bolt
2	6	5/8 in flat washer
3	3	5/8 in nut

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IMPORTANT: *The drawbar is required to provide standard rear PTO drawbar relationship.*

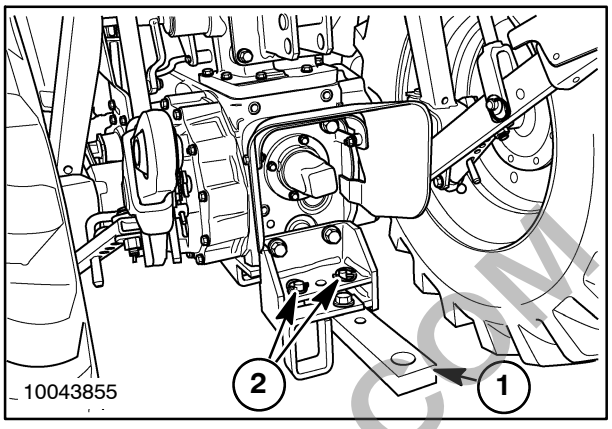
SWINGING DRAWBAR

The swinging drawbar may be fixed or allowed to swing the full width of the hanger.

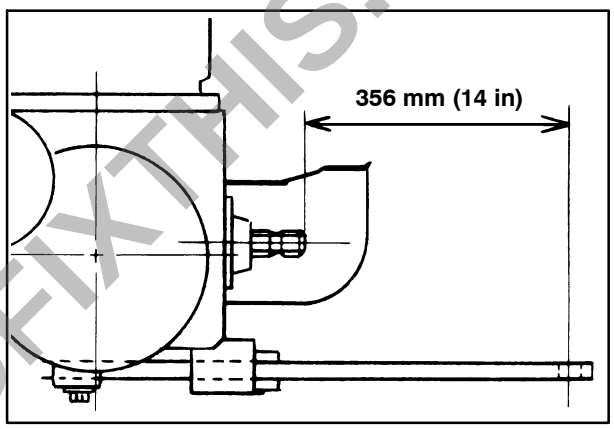
Fasten the drawbar, 1, in position using the swing limiter pins, 2, when pulling equipment which requires accurate positioning or when transporting equipment. Permit the drawbar to swing to allow for easier steering and turning when pulling ground engaging equipment which does not require accurate positioning.

⚠ WARNING ⚠

Always secure the drawbar to prevent swinging when transporting equipment or when operating implements other than ground engaging equipment. Failure to comply could result in death or serious injury.



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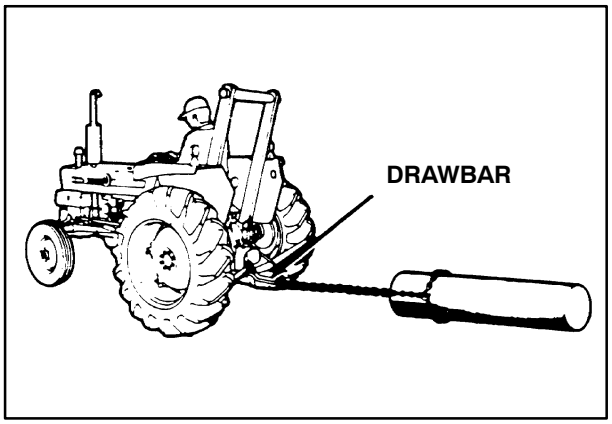


39

IMPORTANT: *When transporting equipment on highways, a safety chain with a tensile strength equal to the gross weight of the implement should be installed between the tractor and implement hitch.*

⚠ WARNING ⚠

Pull only from the drawbar. Always use the drawbar or lower links in the lowered position when performing pull-type work. Failure to comply could result in death or serious injury.



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TOWING THE TRACTOR

Place the transmission gearshift levers in neutral to tow the tractor. Do not exceed 20 kph (12 mph).

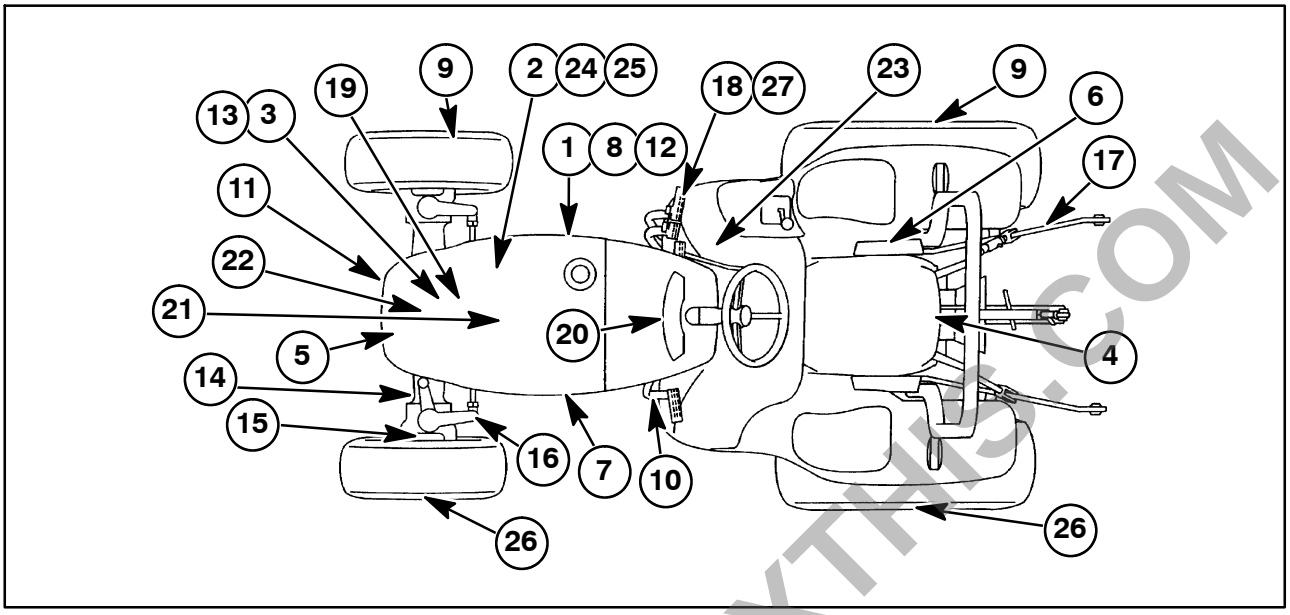
⚠ WARNING ⚠

For safety reasons, never attempt to start the engine by towing. Additionally, towing the tractor on highways is not recommended for safety reasons. Failure to comply could result in death or serious injury.

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LUBRICATION AND MAINTENANCE CHART
CASE IH FARMALL 31, FARMALL 35 — FRONT-WHEEL DRIVE



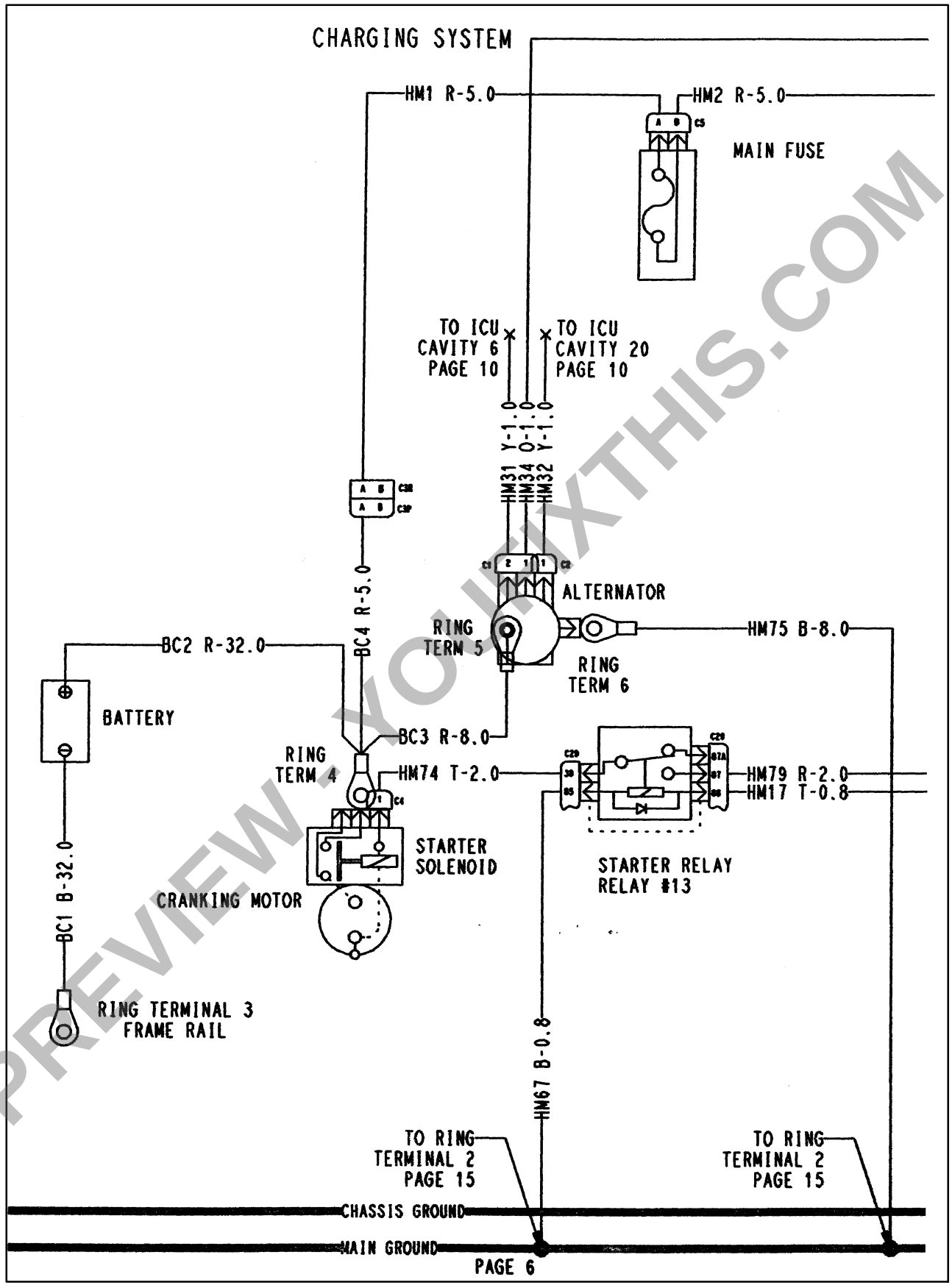
1

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	Radiator Fins		X				
6	Hydraulic Filter				X		First 50 Hours
7	H.S.T. Filter				X		
1, 8	Engine Oil & Filter				X		
9	Tire Pressure	X					
12	Fuel Filter				X		
26	Wheel Bolt Torque	X					
—	All Fluid Levels	X					
27	Brake Pedal Free Play	X					
8	Tires	X					Every 50 Hours
10	Clutch Pedal	X		X		X	
11	Battery	X					
13	Fan Belt	X					
14	Front Axle Oil Level	X					
15	Final Reduction Gear Cases Oil Level	X					
27	Brake Pedal Free Play	X					
	Lubrication Fittings:						
16	Steering Linkage			X			
17	3-Point Linkage			X			
18	Brake Pedal			X			
19	Power Steering Cylinder			X			
20	Pedal Shaft			X			
21	Drive Cover Shaft			X			
22	Pivot Shaft			X			
23	H.S.T. Pedal Pivot			X			

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTERVALS
1, 8	Engine Oil & Filter				X		Every 100 Hours
2	Air Cleaner Element		X				
12	Fuel Filter		X				
27	Brake Pedal Free Play					X	Every 200 Hours
12	Fuel Filter Element				X		
13	Fan Belt					X	
26	Wheel Bolt Torque	X					
4	Transmission Oil				X		Every 300 Hours
6	Hydraulic Filter				X		
7	H.S. T. Filter				X		
15	Front Axle Oil				X		
16	Final Reduction Gear Cases Oil				X		
24	Fuel Injector	X			X	X	Every 600 Hours *Refer to Repair Manual
25	Valve Clearance	X				X	
2	Air Cleaner Element				X		Seasonal
3	Radiator Coolant				X		
2	Safety Air Filter Element				X		Every 3rd Primary Element Change or Every **1000** Hours, Whichever Comes First

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MINIMUM HARDWARE TIGHTENING TORQUES

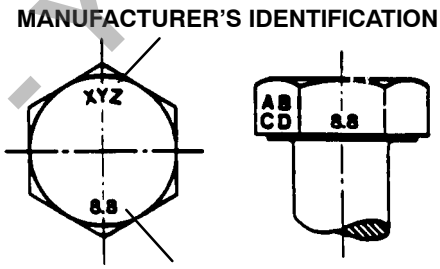
IN NEWTON-METERS (FOOT POUNDS) FOR NORMAL ASSEMBLY APPLICATIONS

METRIC NON-FLANGED HARDWARE AND LOCKNUTS

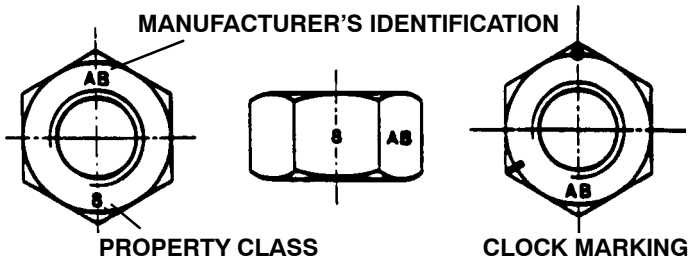
NOMINAL SIZE	CLASS 5.8		CLASS 8.8		CLASS 10.9		LOCKNUT CL.8 W/CL8.8 BOLT
	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	UNPLATED	PLATED W/ZnCr	
M4	1.7 (15)*	2.2 (19)*	2.6 (23)*	3.4 (30)*	3.7 (33)*	4.8 (42)*	2.3 (20)*
M6	5.8 (51)*	7.6 (67)*	8.9 (79)*	12 (102)*	13 (115)*	17 (150)*	7.8 (69)*
M8	14 (124)*	18 (159)*	22 (195)*	28 (248)*	31 (274)*	40 (354)*	19 (169)*
M10	28 (21)	36 (27)	43 (32)	56 (41)	61 (45)	79 (58)	38 (28)
M12	49 (36)	63 (46)	75 (55)	97 (72)	107 (79)	138 (102)	66 (49)
M16	121 (89)	158 (117)	186 (137)	240 (177)	266 (196)	344 (254)	164 (121)
M20	237 (175)	307 (226)	375 (277)	485 (358)	519 (383)	671 (495)	330 (243)
M24	411 (303)	531 (392)	648 (478)	839 (619)	897 (662)	1160 (855)	572 (422)

NOTE: Torque values shown with * are inch pounds.

IDENTIFICATION
HEX CAP SCREW AND CARRIAGE BOLTS
CLASSES 5.6 AND UP



HEX NUTS AND LOCKNUTS
CLASSES 05 AND UP



86529681 REV F 5.1

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SECTION 4
SPECIFICATIONS

	Model Farmall 31—Hydrostatic/Gear	Model Farmall 35—Hydrostatic
ENGINE		
Type	Diesel	Diesel
Engine Gross Horsepower	23.1 kw (31 hp)	26.1 kw (35 hp)
Cylinders	3	3
Bore	84 mm (3.31 in)	84 mm (3.31 in)
Stroke	90 mm (3.54 in)	100 mm (3.94 in)
Displacement	1.50 L (91.3 cu. in.)	1.65 L (101.1 cu. in.)
Compression Ratio	22.2:1	23.3:1
Firing Order	1-2-3	1-2-3
Low Idle Speed	1100 ± 50 rpm	1100 ± 50 rpm
Maximum Speed:		
High Idle	2840 ± 25 rpm	2840 ± 25 rpm
Rated	2600 rpm	2600 rpm
Valve Clearance (Cold):		
Intake	0.20 mm (0.008 in)	0.20 mm (0.008 in)
Exhaust	0.20 mm (0.008 in)	0.20 mm (0.008 in)
CAPACITIES		
Fuel Tank	27.6 liters/ 7.3 U.S. gals	27.6 liters/ 7.3 U.S. gals
Cooling System	5.2 liters/ 5.5 U.S. qts	5.2 liters/ 5.5 U.S. qts
Engine Crankcase:		
With Filter	4.5 liters/ 4.8 U.S. qts	4.5 liters/ 4.8 U.S. qts
Rear Axle & Transmission (Includes Hydraulics)		
Gear	32.5 liters/ 8.6 U.S. gals	
HST	33.3 liters/ 8.8 U.S. gals	33.3 liters/ 8.8 U.S. gals
Front Axle Final Reduction	0.8 liters/ 0.85 U.S. qts	0.8 liters/ 0.85 U.S. qts
Differential Gear Case	1.4 liters/ 1.5 U.S. qts	1.4 liters/ 1.5 U.S. qts

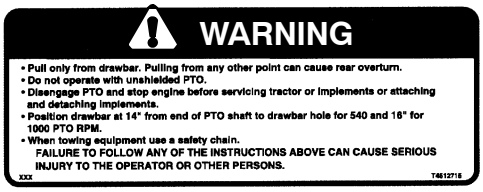
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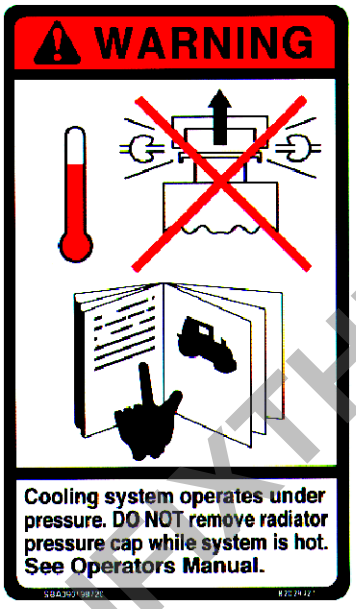
DECALS

If safety or instruction decals become damaged or illegible, new decals should be obtained from your Case IH Dealer and placed at their original positions.

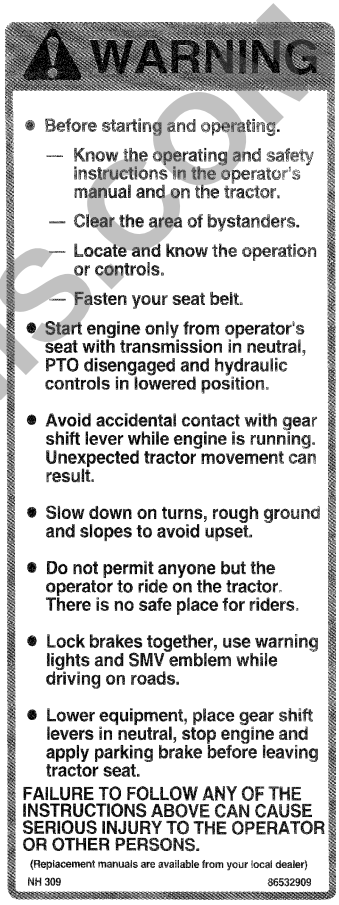
SAFETY DECALS



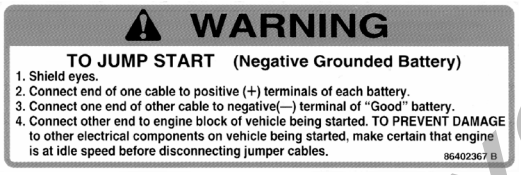
WARNING: Pull Only From Drawbar
PART NO: 86532904
LOCATION: PTO Shield



WARNING: Cooling System Under Pressure
PART NO: 82029421
LOCATION: Hood Support Bracket



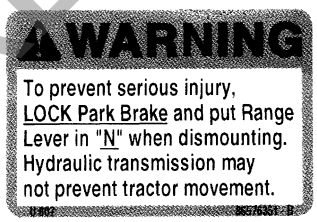
WARNING: Before Starting and Operating
PART NO: 86532909
LOCATION: Inside Left-Hand Fender



WARNING: To Jump Start
PART NO: 86402367
LOCATION: Front Side of Battery Box



WARNING: Rotating Fan and Belts
PART NO: 86532907
LOCATION: Both Sides of Radiator



WARNING: Lock Park Brake
PART NO: 86576391
LOCATION: Dash Panel Below Light Switch

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FEDERAL EMISSIONS WARRANTY

(North America Only)

(California owner's emissions warranty is covered elsewhere)

CNH UK Ltd warrants that your new 1996 and later heavy-duty off-road diesel engine was designed, built, and equipped to conform to applicable U.S. Environmental Protection Agency regulations for a period of use of five years or 3,000 hours of operation, whichever occurs first.

The new model year, class of diesel engine, and emission application determination for your engine are identified on the emission control information label affixed to the engine. The warranty period begins on the date the new equipment is sold to the first retail purchaser.

Any emission control system parts which are proven defective during normal use will be repaired or replaced during the warranty period. The warranty repairs and service will be performed by any authorized CNH dealer at the dealer's place of business, with no charge for parts or labor (including diagnosis).

As the engine owner, you are responsible to perform all the required maintenance listed in your owner's manual. CNH UK Ltd will not deny an emission warranty claim solely because you have no record of maintenance; however, a claim may be denied if your failure to perform maintenance resulted in the failure of a warranted part. Receipts covering regular maintenance should be retained in the event of questions and these receipts should be passed on to each subsequent owner of the engine.

It is recommended replacement parts used for maintenance or repairs be CNH Service Parts to maintain the quality originally designed into your emission certified engine. The use of non-CNH parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

CNH UK Ltd wishes to assure the emission control systems warranty is being properly administered. If you believe you have not received the service entitled to under this warranty, you should contact the nearest CNH Office for assistance. The address and phone number of each Office is in your equipment owner's manual. If additional assistance or information is needed, contact:

Service Department
CNH America, LLC
500 Diller Avenue
New Holland, PA 17557
(717) 355-1121

Please note that the Emission Warranty does not cover:

1. Systems and parts that were not first installed on the new equipment or engine as original equipment by CNH UK Ltd.
2. Part malfunctions caused by abuse, misuse, improper adjustment, modification, alteration, tampering, disconnection, improper or inadequate maintenance, or use of non-recommended fuels and lubricating oils.
3. Accident caused damage, acts of nature, or other events beyond CNH UK Ltd's control.
4. Replacement of expendable items made in connection with scheduled maintenance.
5. Parts requiring replacement, inspection or adjustment maintenance intervals for reasons other than being defective.
6. Parts which are not CNH Service Parts.
7. Loss of time, inconvenience, loss of use of equipment/engine or commercial loss.
8. Equipment with altered or disconnected hourmeter where the hours cannot be determined.
9. Equipment normally operated outside the United States.
10. Non-defective parts replaced by other than CNH dealers.

Coverage

This emission control system warranty applies only to the following emission control parts.

Electronic Control Unit
Fuel Injection Pump
Fuel Injectors
Turbocharger
Intake Manifold
Exhaust Manifold
Boost Pressure Tubing-connection to Aneroid Device ON F.I.P.

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LUBRICATION FITTINGS

NOTE: *After every 50 hours of normal operation, apply a good quality grease to the lubrication points listed below (refer to the Recommended Lubricants chart). When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.*

- Steering Linkage
- Front Axle Pivot
- Front Wheel Spindles (2WD)
- Power Steering Cylinder
- Pedal Shaft—Clutch & Brake Pedals
- 3-Point Linkage

To lubricate these points:

1. Wipe away all old grease and dirt from the lubrication fittings to prevent dirt or foreign material from entering as new grease is applied.
2. Use a high pressure grease gun to force in the new grease. Apply pressure until clean grease oozes from each lubrication point.
3. Wipe away any excess grease.

DIESEL FUEL

- Use clean, quality No. 1-D or No. 2-D fuel (ASTM D975).
- Use No. 1-D fuel if the ambient temperature is expected to be lower than 4°C (40°F) or if the tractor is to be used at an altitude exceeding 1524 m (5000 ft).
- Use No. 1-2 diesel fuel with a pour point of at least –12°C (10°F) below the expected ambient temperature to prevent fuel flow problems in cold weather.
- Keep dirt from entering the fuel tank.
- Sulfur content of the fuel should be no more than 0.5%.
- Sediment and water content should not exceed 0.05%.
- Minimum cetane number is 40. Low temperature or high altitude operation may require use of fuel with a higher cetane number.
- Use properly mixed winter fuel when temperatures are extremely cold. In most areas, diesel fuel is properly blended for summer and winter grades as ambient temperatures change. In winter, use winter grade diesel fuel only. Otherwise, the fuel may cloud and block the fuel system.

Fuel Usage Safety

- UNDER NO CIRCUMSTANCES should gasoline, alcohol, or gasohol be added to diesel fuel. These combinations can create an increased fire or explosive hazard.
- Never remove the fuel cap or refuel the tractor while the engine is running or hot.
- Never smoke while refueling or anywhere near fuel.
- When filling the tank, maintain control of the nozzle.
- Do not fill the fuel tank to capacity. Allow room for expansion.
- Wipe up spills immediately.
- Always tighten the fuel cap securely.
- If the original fuel tank cap is lost, always replace it with a Case IH approved cap. A “will-fit” cap may not be safe.
- Keep equipment properly maintained.
- Do not drive equipment near open fires.
- Never use gasoline for cleaning parts.

Biodiesel Fuel

The use of biodiesel blends meeting Specification Standards ASTM 6751 or EN14214 are approved for your engine up to B5 (5% blend ratio). It is highly recommended to use biodiesel fuel from accredited suppliers to maintain quality and consistency of the fuel.

Biodiesel does not have a long term stability and should not be left in engines or stored for more than four months. If your machine is stored for long term, engine should be flushed, prior to storage, by running for a minimum of 30 minutes with conventional diesel fuel.

Biodiesel fuel has a higher cloud point than conventional diesel fuels and is not recommended in winter months. Consult your fuel dealer for winter fuel requirements for your area.

Biodiesel fuel attracts moisture and may contain a higher content of water. It may be necessary to drain the fuel filter water trap more frequently.

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