PRECAUTIONARY STATEMENTS

PERSONAL SAFETY

Throughout this manual and on machine decals, you will find precautionary statements (“CAUTION”, “WARNING”, and “DANGER”) 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.



CAUTION: THE WORD “CAUTION” IS USED WHERE A SAFE BEHAVIORAL PRACTICE ACCORDING TO OPERATING AND MAINTENANCE INSTRUCTIONS AND COMMON SAFETY PRACTICES WILL PROTECT THE OPERATOR AND OTHERS FROM ACCIDENT INVOLVEMENT.



WARNING: THE WORD “WARNING” DENOTES A POTENTIAL OR HIDDEN HAZARD WHICH HAS A POTENTIAL FOR SERIOUS INJURY. IT IS USED TO WARN OPERATORS AND OTHERS TO EXERCISE EVERY APPROPRIATE MEANS TO AVOID A SURPRISE INVOLVEMENT WITH MACHINERY.



DANGER: THE WORD “DANGER” DENOTES A FORBIDDEN PRACTICE IN CONNECTION WITH A SERIOUS HAZARD.

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

MACHINE SAFETY

Additional precautionary statements (“ATTENTION” and “IMPORTANT”) are followed by specific instructions. These statements are intended for machine safety.

ATTENTION: The word “ATTENTION” is used to warn the operator of potential machine damage if a certain procedure is not followed.

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.

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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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LUBRICATION AND MAINTENANCE CHART
CASE IH D25, D29, D33 — TWO-WHEEL DRIVE

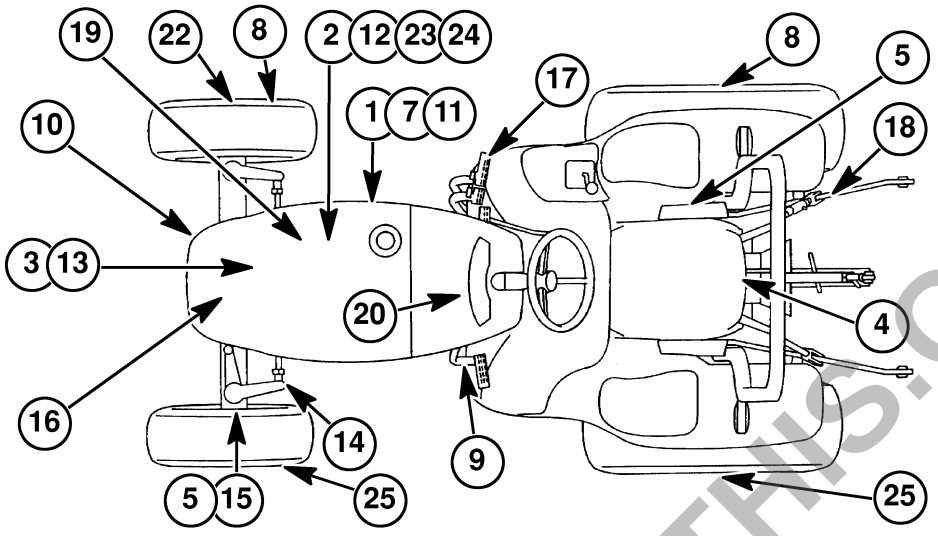


Figure 3-1

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTER-VALS
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			

NO.	LUBRICATION & MAINTENANCE ITEMS	CHECK	CLEAN	LUBE	CHANGE	ADJUST	SERVICE INTER-VALS
1, 7	Engine Oil & Filter				X		Every 100 Hours
2	Air Cleaner Element		X				
11	Fuel Filter		X				
8	Brake					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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SECTION 4
SPECIFICATIONS

	Model D25—Gear	Model D29—Gear	Model D33—Gear
ENGINE			
Type	Diesel	Diesel	Diesel
Engine Gross Horsepower	18.7 kw (25)	21.6 kw (29)	24.6 kw (33)
Cylinders	3	3	3
Bore	84 mm (3.31″)	84 mm (3.31″)	84 mm (3.31″)
Stroke	80 mm (3.15″)	80 mm (3.15″)	90 mm (3.54″)
Displacement	1.33 L (81.2 cu. in.)	1.33 L (81.2 cu. in.)	1.496 L (91.3 cu. in.)
Compression Ratio	22.7:1	22.7:1	22.2:1
Firing Order	1-2-3	1-2-3	1-2-3
Low Idle Speed	1000 RPM	1000 RPM	1000 RPM
Maximum Speed:			
High Idle	2840 RPM	3040 RPM	3040 RPM
Rated	2600 RPM	2800 RPM	2800 RPM
Valve Clearance (Cold):			
Intake	0.20 mm (0.008″)	0.20 mm (0.008″)	0.20 mm (0.008″)
Exhaust	0.20 mm (0.008″)	0.20 mm (0.008″)	0.20 mm (0.008″)
CAPACITIES			
Fuel Tank	27.6 liters/ 7.3 U.S. gals.	27.6 liters/ 7.3 U.S. gals.	27.6 liters/ 7.3 U.S. gals.
Cooling System	4.0 liters/ 4.2 U.S. qts	4.0 liters/ 4.2 U.S. qts	4.0 liters/ 4.2 U.S. qts
Engine Crankcase:			
With Filter	4.0 liters/ 4.2 U.S. qts	4.0 liters/ 4.2 U.S. qts	4.0 liters/ 4.2 U.S. qts
Rear Axle & Transmission (Includes Hydraulics)	32.6 liters/ 8.6 U.S. gals.	32.6 liters/ 8.6 U.S. gals.	32.6 liters/ 8.6 U.S. gals.
Power Steering	1.6 liters/ 1.7 U.S. qts.	1.6 liters/ 1.7 U.S. qts.	1.6 liters/ 1.7 U.S. qts.
Front Axle Final Reduction	0.8 liters/ 0.85 U.S. qts.	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.	1.4 liters/ 1.5 U.S. qts.

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SECTION 2

OPERATION

CONTROLS AND INSTRUMENTS

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

Adjusting the Tractor Seat

Your tractor is equipped with an adjustable suspension seat. The seat can be placed in one of several positions.

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

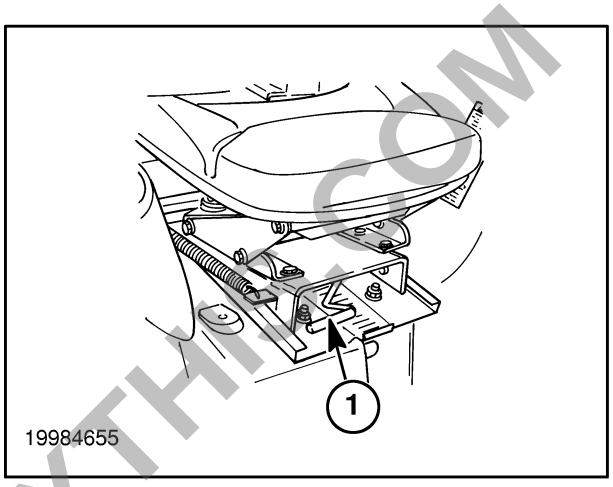


Figure 2-1

Adjusting the Seat Belt

To lengthen the seat belt, tip the buckle end down and pull on the buckle until the ends can be joined. To shorten the belt, buckle it, then pull on the loose end until the belt is snug.

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.

Rollover Protective Structure (ROPS)

A Rollover Protective Structure (ROPS) and seat belts are standard equipment on this tractor at the time of factory assembly. If the ROPS has been removed, it is recommended that you equip your tractor with a ROPS and seat belts.

ROPS are effective in reducing injuries in the event of tractor overturn. Overturning a tractor without a ROPS installed can result in serious injury or death. The Rollover Protective Structure and seat belts are available from your Dealer.

Additionally, the safety offered by the ROPS and seat belt is minimized if your seat belt is not buckled. Always use your seat belt: it can save your life.

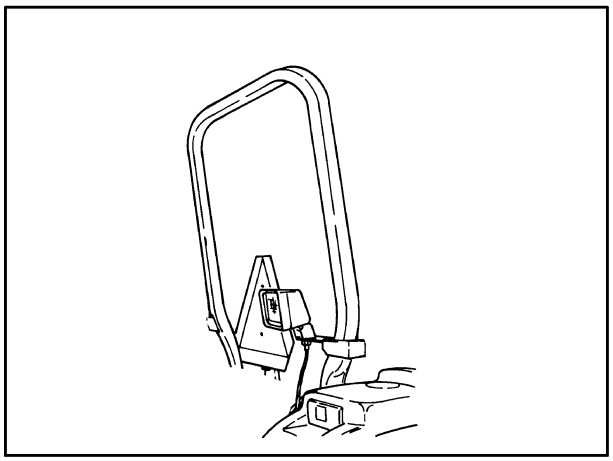


Figure 2-2

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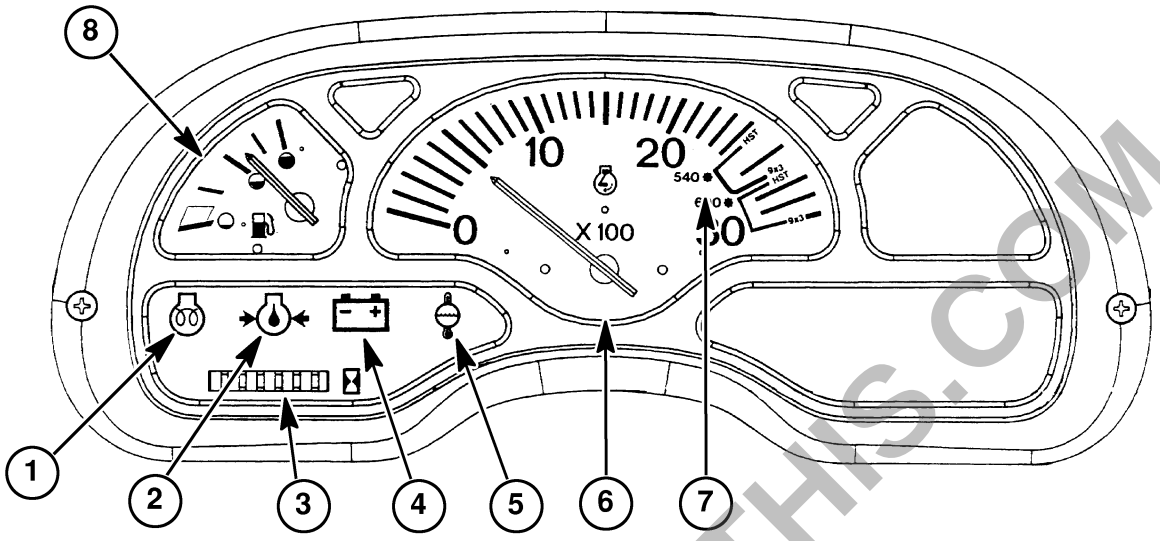


Figure 2-5

INSTRUMENT PANEL

1. **Cold Starting Indicator Light**— Illuminates when the key switch is turned to the “HEAT” position. It remains lit when the key is held in position, 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” or “HEAT” positions 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. **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.
4. **Battery Charge Warning Light**—Illuminates when the key switch is in the “ON” or “HEAT” positions 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.
5. **Temperature Light**—Indicates coolant temperature. This light illuminates when engine coolant temperature rises above normal operating temperature to a level which could cause damage and the key switch is in the “ON” position. Stop the tractor engine immediately and investigate the cause.
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. **Rear/ Optional Mid PTO Speed**–Determined by the position of the needle on the tachometer. The tachometer is marked to indicate 540 PTO RPM and 600 PTO RPM. If the needle registers at the 600 mark, this indicates a dangerous overspeed condition, and engine RPM should be reduced immediately.
8. **Fuel Gauge**—Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the “ON” or “HEAT” positions. It will register empty with the key switch in the “STOP” position.

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THREE-POINT LINKAGE

The tractor's three-point linkage is used to attach three-point mounted equipment which is usually PTO operated, such as rotary mowers, tillers, flail mowers, snowblowers, etc. The three linkage points are the two lower lift arms and the top link.

The standard three-point linkage has easy to adjust sway bars to control lateral movement of the lift arms. The height of the right-hand lift arm and the top link can be adjusted by loosening the jam nut and turning the level crank pin.

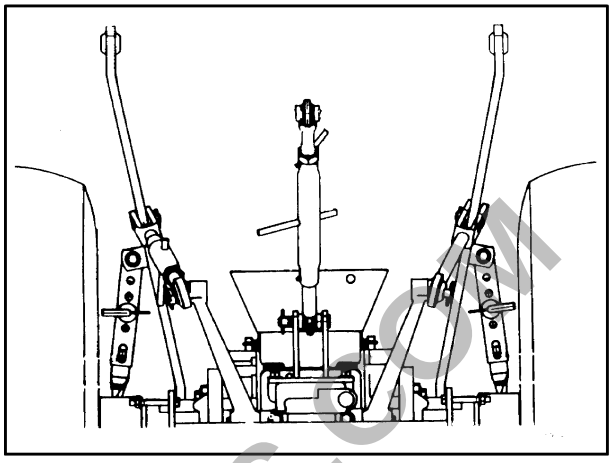


Figure 2-28

Deluxe Three-Point Linkage (Optional)

The deluxe three-point linkage allows three-point mounted equipment to be attached to the tractor with ease.

The right-hand lift arm can be adjusted by turning the leveling crank, 1. The flex ends of the lift arms can be adjusted by pushing down on the clamp, 2, and placing the ends in the desired position.

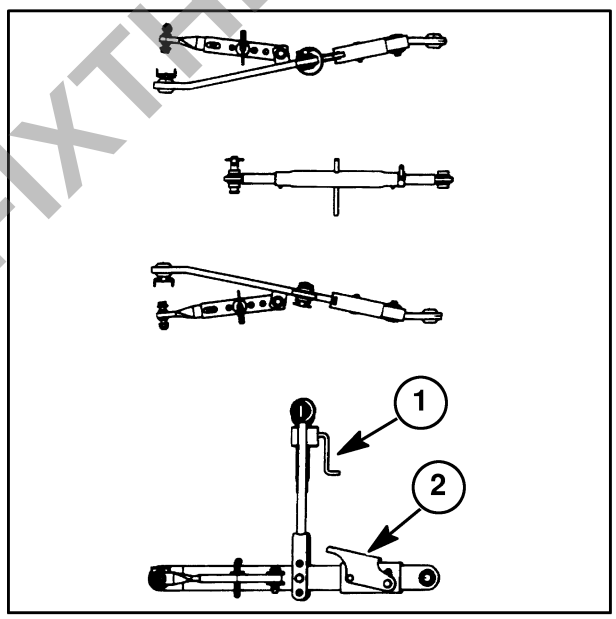


Figure 2-29

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FEDERAL EMISSIONS WARRANTY

Case IH 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 top of your engine's rocker arm cover. 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 Case IH 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. Case IH 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 Case IH Service Parts to maintain the quality originally designed into your emission certified engine. The use of non-Case IH parts does not invalidate the warranty on other components unless the use of such parts causes damage to warranted parts.

Case IH 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 Case IH regional Office for assistance. If additional assistance or information is needed, contact:

Case Corporation
700 W State St.
Racine, WI 53404

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 Case IH.
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 Case IH'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 Case IH 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 Case IH dealers.

Coverage

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

Fuel Injection Pump
Fuel Injectors
Intake Manifold
Exhaust Manifold

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