ORIGINAL INSTRUCTIONS

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FARMALL® 40B CVT
FARMALL® 45B CVT
FARMALL® 50B CVT
Compact Tractor

OPERATOR'S MANUAL

Part number 48028211
4th edition English
October 2017
Replaces part number 47711720

CASE IH AGRICULTURE

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2 - SAFETY INFORMATION

Safety alert symbol and signal word definition

Personal safety



This is the safety alert symbol. It is used to alert you to potential personal injury hazards. Obey all safety messages that follow this symbol to avoid possible death or injury.

Throughout this manual you will find the signal words DANGER, WARNING, and CAUTION followed by special instructions. These precautions are intended for the personal safety of you and those working with you.

Read and understand all the safety messages in this manual before you operate or service the machine.

DANGER indicates a hazardous situation that, if not avoided, will result in death or serious injury.

WARNING indicates a hazardous situation that, if not avoided, could result in death or serious injury.

CAUTION indicates a hazardous situation that, if not avoided, could result in minor or moderate injury.

FAILURE TO FOLLOW DANGER, WARNING, AND CAUTION MESSAGES COULD RESULT IN DEATH OR SERIOUS INJURY.

Machine safety

NOTICE: *Notice indicates a situation that, if not avoided, could result in machine or property damage.*

Throughout this manual you will find the signal word Notice followed by special instructions to prevent machine or property damage. The word Notice is used to address practices not related to personal safety.

Information

NOTE: *Note indicates additional information that clarifies steps, procedures, or other information in this manual.*

Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

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ADIC fault codes - Transmission related

Below is list of fault codes that will appear on the ADIC (Analog Digital Instrument Cluster) when one or more of the tractors operating systems is not functioning properly. During engine start-up, any fault codes currently being experienced by the tractor will appear on the ADIC screen for three to five seconds. These fault codes will continue to appear until removed by a Case IH Dealer.

Error Code Display	Description
2024	Forward and Reverse clutches not calibrated
2026	Engine speed too High
2027	Engine speed too Low
2035	Dump valve **12 V** circuit
2036	Dump valve open circuit
2051	Oil temperature sender open circuit
2052	Oil temperature sender short circuit
2053	Excessive voltage on **5 V** circuit
2054	Low voltage on **5 V** circuit
2059	Forward and Reverse signal both active
2070	Forward switch input, excessive voltage
2071	Forward switch input short circuit to ground
2072	Reverse switch input, excessive voltage
2073	Reverse switch short circuit to ground
2173	Excessive supply voltage to controller
2342	Forward clutch valve open circuit or shorted to ground
2343	Reverse clutch valve open circuit or shorted to ground
2352	Forward clutch valve **12 V** circuit error
2353	Reverse clutch valve **12 V** circuit error
2362	Forward clutch not calibrated
2363	Reverse clutch not calibrated
2429	Transmission oil pressure switch error
2430	Pulley 1 pressure sensor open circuit or short to ground
2431	Pulley 1 pressure sensor **5 V** or **12 V**circuit error
2432	Pulley 2 pressure sensor open circuit or short to ground
2433	Pulley 2 pressure sensor **5 V** or **12 V** circuit error
2440	Speed range switch disagreement
2460	Cruise and Preset signals both activated
2480	Cruise Set and Resume signals are both activated
2600	Variator valve open circuit or shorted to ground
2601	Variator valve **12 V** circuit error
2603	ARON (PIV) valve stuck
2605	Transmission speed pedal potentiometer shorted to ground or open circuit
2606	Transmission speed pedal **5 V** or **12 V** circuit error
2607	Transmission speed pedal neutral switch error
2615	Torque pressure sensor error
2616	Torque pressure sensor shorted to **5 V** or **12 V**
2620	Input pulley speed sensor shorted to **12 V** or open circuit
2621	Input pulley speed sensor shorted to ground
2630	Output pulley speed sensor shorted to **12 V** or open circuit
2631	Output pulley speed sensor shorted to ground
2640	Standstill solenoid open circuit or shorted to ground
2641	Standstill solenoid shorted to **12 V**
2700	Engine speed sensor shorted to **12 V** or open circuit
2701	Engine speed sensor shorted to ground
5070	PTO clutch solenoid excessive voltage
5080	PTO clutch solenoid open circuit or shorted to ground
14021	Cranking line shorted to **12 V**
14022	Cranking line shorted to ground

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Status and warning icons

Non numerical display codes

The following non numerical codes may be displayed on the ADIC (Analog Digital Instrument Cluster) signaling an operation is not correct.

	ADIC DISPLAYS	
Symbol	**Reason**	**Action Required**
RP	• Speed control pedal is depressed before selecting either Forward or Reverse direction of the shuttle shift control. • Speed control pedal is depressed after the transmission releases hydraulic pressure due to excessive drive line torque load. Debris build-up on the mechanical stop under the heel of the speed control pedal. • Faulty speed control pedal. • Faulty ground connection.	• Speed control pedal needs to be released and return to the “HOME” position. • Check all grounds.
N	• Engine speed falls below **800 RPM**, with transmission engaged. • Excessive torque load sensed by transmission and defaults to neutral mode. • When variator control valve is stuck due to oil contamination, an error code will be displayed, if the control system cannot “unstuck” the valve after several attempts.	• Shift the Forward/Reverse shuttle control to the “NEUTRAL” position.
	• The transmission oil temperature is below **10 °C** (**50 °F**) and the operator tries to exceed the limited maximum speed. • The maximum speed is limited in order to prevent oscillation of tractor speed, that could appear at high speed operation. • The maximum allowable speed depends on the current transmission oil temperature.	• Let tractor run to warm oil to an acceptable operating temperature.
	• Park brake engage during transmission engagement.	• Release park brake.
	• Park brake not engaged when operator leaves the seat (Amber light).	• Engage park brake.
	• Rear PTO engaged (Amber light).	• No action required.
	• Low battery voltage, below **9 V** (Amber light).	• Check battery and charging system. (Contact your CASE IH dealer.)
	• Engine coolant temperature too high, above **112 °C** (**234 °F**).	• Check engine cooling system. (Contact your CASE IH dealer.)
	• Engine oil pressure too low. Below **41 kPa** (**6 psi**).	• Shut off engine. • Check engine lubrication system. (Contact your CASE IH dealer.)

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Torque - Minimum tightening torques for normal assembly

NOTE: *Metric M4 through M8 hardware torque specifications are shown as pound-inches (* ***# lb in*** *).*
Metric M10 through M24 hardware torque specifications are shown as pound-feet (***# lb ft*** *).*

Metric non-flanged hardware

Nominal size	Class (CL) 8.8 bolt and Class (CL) 8 nut		Class (CL) 10.9 bolt and Class (CL) 10 nut		Locknut CL 8 w/CL 8.8 bolt	Locknut CL 10 w/CL 10.9 bolt
	Unplated	Plated w/ZnCr	Unplated	Plated wW/ZnCr		
	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)
M4	2.2 (19)	2.9 (26)	3.2 (28)	4.2 (37)	2 (18)	2.9 (26)
M5	4.5 (40)	5.9 (52)	6.4 (57)	8.5 (75)	4 (36)	5.8 (51)
M6	7.5 (66)	10 (89)	11 (96)	15 (128)	6.8 (60)	10 (89)
M8	18 (163)	25 (217)	26 (234)	35 (311)	17 (151)	24 (212)
	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)
M10	37 (27)	49 (36)	52 (38)	70 (51)	33 (25)	48 (35)
M12	64 (47)	85 (63)	91 (67)	121 (90)	58 (43)	83 (61)
M16	158 (116)	210 (155)	225 (166)	301 (222)	143 (106)	205 (151)
M20	319 (235)	425 (313)	440 (325)	587 (433)	290 (214)	400 (295)
M24	551 (410)	735 (500)	762 (560)	1016 (750)	501 (370)	693 (510)

Metric flanged hardware

Nominal size	Class (CL) 8.8 bolt and Class (CL) 8 nut		Class (CL) 10.9 bolt and Class (CL) 10 nut		Locknut CL 8 w/CL 8.8 bolt	Locknut CL 10 w/CL 10.9 bolt
	Unplated	Plated w/ZnCr	Unplated	Plated w/ZnCr		
	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)	N·m (lb in)
M4	2.4 (21)	3.2 (28)	3.5 (31	4.6 (41)	2.2 (19)	3.1 (27)
M5	409 (43)	6.5 (58)	7.0 (62)	9.4 (83)	4.4 (39)	6.4 (57)
M6	8.3 (73)	11 (96)	12 (105)	16 (141)	7.5 (66)	11 (96)
M8	20 (179)	27 (240)	29 (257)	39 (343	18 (163)	27 (240)
	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)	N·m (lb ft)
M10	40 (30)	54 (40)	57 (42)	77 (56)	37 (27)	53 (39)
M12	70 (52)	93 (69)	100 (74)H	134 (98)	63 (47)	91 (67)
M16	174 (128)	231 (171)	248 (183)	331 (244)	158 116)	226 (127)
M20	350 (259)	467 (345)	484 (357)	645 (476)	318 (235)	440 (325)
M24	607 (447)	809 (597)	838 (618)	1118 (824)	552 (407)	

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MAINTENANCE CHART

Maintenance chart

Maintenance action	Check	Change fluid	Replace	Tighten	Lubricate	Bleed	Filling	Drain fluid	Cleaning	Adjust	Page no.
Every 10 hours or daily											
Engine lubrication system - Check	x										**7-13**
After first 50 hours											
Front wheels - Tighten				x							**7-30**
Every 50 hours											
Transmission - Check	x										**7-31**
Belt - Check	x										**7-25**
Air conditioning - Adjust										x	**7-35**
Wheels - Check	x										**7-29**
Every 100 hours											
Air cleaner - Cleaning									x		**7-37**
Air filter - Check	x										**7-38**
Fuel injection system - Drain fluid								x			**7-36**
Every 300 hours											
Every 600 hours											
Transmission oil filter - Cleaning									x		**7-54**
Transmission - Change fluid		x									**7-45**
Every 1000 hours											
Air cleaner - Replace			x								**7-55**
Air filter - Replace			x								**7-56**
General maintenance											
Seat restraints - Check	x										**7-60**
Fuse and relay box - Replace			x								**7-66**
Headlight - Replace			x								**7-70**
Brake light - Replace			x								**7-71**
Turn signal and/or hazard lights - Replace			x								**7-72**
External lighting - Replace			x								**7-74**
Parking brake or parking lock - Adjust										x	**7-78**
Cab climate control - Filling								x			**7-15**
Alternator - Check	x										**7-58**
Cab frame - Check	x										**7-59**
Fuel injection system - Bleed						x					**7-63**

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After first 50 hours

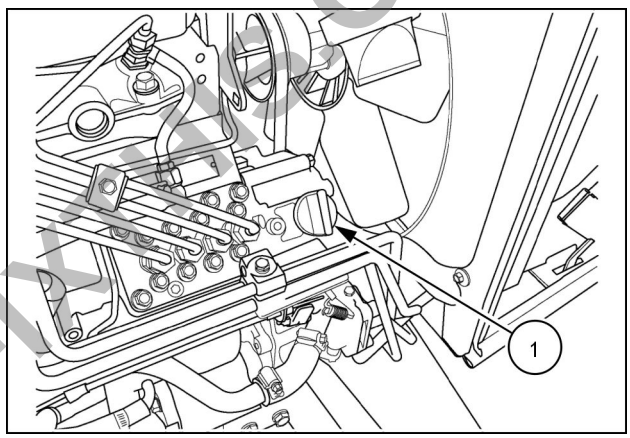
Change engine oil

Changing the engine oil

NOTE: *Change the engine oil and filter after the first 50 hours of operation, then every 200 hours thereafter. If the tractor is operated for extended periods of time at maximum rated power and speeds, or under other types of continuous, sever operating conditions, the engine oil and filter should be changed at 100 hour intervals following the initial oil change.*

To change the engine oil:

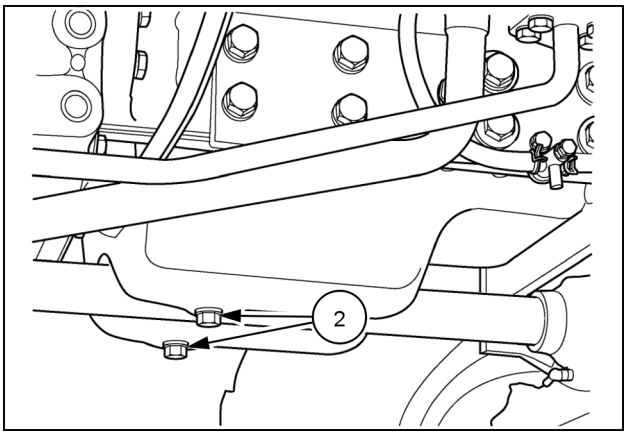
1. Remove the filler cap **(1)**.



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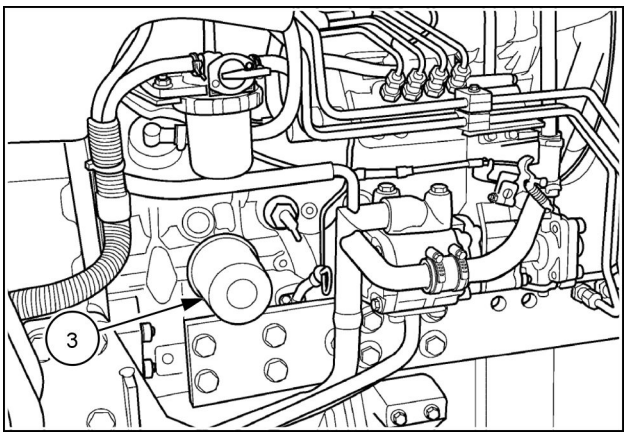
2. Place a suitable container beneath the drain openings to catch the used oil. With the tractor engine off, but at normal operating temperature, remove the drain plugs **(2)**. Reinstall the plugs after all of the oil has been drained.

NOTE: *The combined capacity of the engine crankcase and oil filter is **6.0 l** (**6.3 US qt**) (All Models).*



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3. Next, place a container below the oil filter **(3)** to catch the used oil and unscrew the oil filter. Properly dispose of the used oil and filter.
4. Coat the gasket on the new filter with a thin film of clean oil. Screw the filter into place until the gasket contacts its mating surface, then turn the filter approximately three-quarters of a turn by hand. Do not overtighten.
5. Add the proper type and level of new oil (see chart below), then replace the filler cap.
6. Start the engine and check the filter for leaks.



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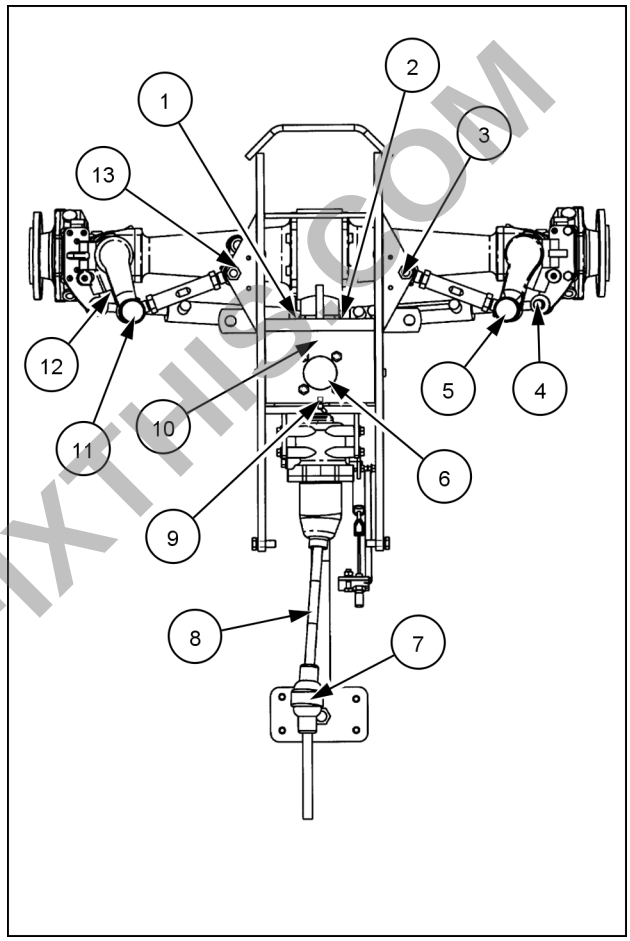
Every 50 hours

50 hours grease zerks

Front wheel drive SuperSteer™

Every 50 hours

1. Left Steering Cylinder Inner Bushing
2. Right Steering Cylinder Inner Bushing
3. Right Tie Rod Inner Ball Joint
4. Right Steering Cylinder Outer Bushing
5. Right Tie Rod Outer Ball Joint
6. Stabilizer Front Ball Joint
7. Stabilizer Rear Ball Joint
8. Rear Drive Shaft
9. Pivot Bearing
10. Front Drive Shaft
11. Left Tie Rod Outer Ball Joint
12. Left Steering Cylinder Outer Bushing
13. Left Tie Rod Inner Ball Joint



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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 Lubricant chart). When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.*

- Steering linkage
- Front axle pivot
- 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.

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Consumables

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	**CASE IH AKCELA ENGINE OIL 10W-30**	9613313	**0.946 l** (**1 US qt**)
		86641052	**3.785 l** (**1 US gal**)
		9613314	**18.93 l** (**5 US gal**)
	CASE IH AKCELA ENGINE OIL 15W-40	86641081	**0.946 l** (**1 US qt**)
		86641084	**3.785 l** (**1 US gal**)
		86641083	**18.93 l** (**5 US gal**)
Transmission/Hydraulic Oil	**CASE IH AKCELA NEXPLORE™ FLUID**	9624451	**18.93 l** (**5 US gal**)
	CASE IH F200A HYDRAULIC FLUID	86523625DS	**18.93 l** (**5 US gal**)
Front Axle/Gear Oil	**CASE IH AKCELA GEAR 135 H EP 80W-90**	9613295	**0.946 l** (**1 US qt**)
		9613294	**9.46 l** (**2.5 US gal**)
Grease	**CASE IH AKCELA 251H EP MULTI-PURPOSE GREASE**	9613310	Tube **14 oz**
Coolant	Ethylene Glycol Coolant Concentrate		

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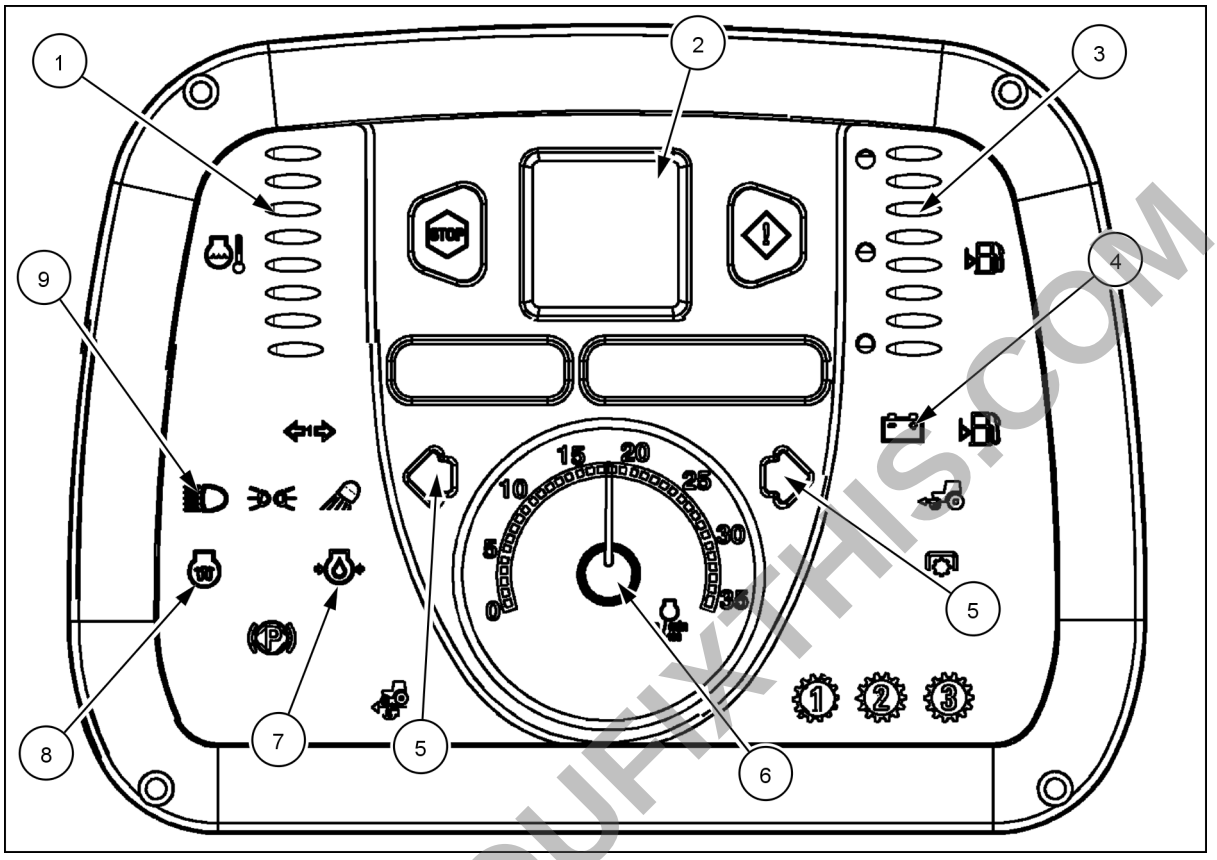
Engine - General specification

	Model Farmall 40B	Model Farmall 45B	Model Farmall 50B
Engine			
Type	Diesel	Diesel	Diesel
Model	N844	N844L	N844L
Engine gross horsepower	**29.8 kW (40 Hp)**	**33.6 kW (45 Hp)**	**37.3 kW (50 Hp)**
Cylinders	4	4	4
Bore	**84 mm (3.31 in)**	**84 mm (3.31 in)**	**84 mm (3.31 in)**
Stroke	**90 mm (3.54 in)**	**100 mm (3.94 in)**	**100 mm (3.94 in)**
Displacement	**2.0 l (121.7 in³)**	**2.2 l (135.2 in³)**	**2.2 l (135.2 in³)**
Compression ratio	22.5:1	22.5:1	22.5:1
Firing order	1-3-4-2	1-3-4-2	1-3-4-2
Low idle speed	**1025 RPM**	**1025 RPM**	**1050 RPM**
Maximum speed:			
High idle	**2850 RPM**	**2850 RPM**	**3050 RPM**
Rated	**2600 RPM**	**2600 RPM**	**2800 RPM**
Capacities			
Fuel tank	**49.2 l (13 US gal)**	**49.2 l (13 US gal)**	**49.2 l (137 US gal)**
Cooling system	**9.0 l (9.6 US qt)**	**9.0 l (9.6 US qt)**	**9.0 l (9.6 US qt)**
Engine crankcase:			
With filter	**6.0 l (6.3 US qt)**	**6.0 l (6.3 US qt)**	**6.0 l (6.3 US qt)**
Rear axle & transmission (Includes Hydraulics)	**35.2 l (9.3 US gal)**	**35.2 l (9.3 US gal)**	**35.2 l (9.3 US gal)**
Front axle differential/final reduction gear case (Early tractor production)	**5.3 l (5.6 US qt)**	**5.3 l (5.6 US qt)**	**5.3 l (5.6 US qt)**
Front axle differential/final reduction gear case (Later tractor production)	**8 L (2 US gal)**	**8 L (2 US gal)**	**8 L (2 US gal)**
Air conditioning system			
Compressor make/model	SANDEN/SD5H11	SANDEN/SD5H11	SANDEN/SD5H11
Bore	**35 mm (1.4 in)**	**35 mm (1.4 in)**	**35 mm (1.4 in)**
Stroke	**22.6 mm (0.9 in)**	**22.6 mm (0.9 in)**	**22.6 mm (0.9 in)**
Number of cylinders	5	5	5
Refrigerant	R-134a	R-134a	R-134a
Capacity	**1.1 kg (2.4 lb)**	**1.1 kg (2.4 lb)**	**1.1 kg (2.4 lb)**
Oil	SP-20 (or equivalent)	SP-20 (or equivalent)	SP-20 (or equivalent)
Capacity	**135 ml (4.56 US fl oz)**	**135 ml (4.56 US fl oz)**	**135 ml (4.56 US fl oz)**
Rotation	Clockwise	Clockwise	Clockwise
Blower motor	3 Speed-Electric	3 Speed-Electric	3 Speed-Electric
Number of interior vents	8	8	8

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Instrument panel



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1. TEMPERATURE GAUGE - (Light Bar) - Indicates coolant temperature. It is activated when the key switch is turned to the "ACC/RUN" position. The gauge will register "cold", blue lights, for low operating temperatures. If the gauge registers in the green lights range of the gauge, this indicates a normal operating temperature. If the needle moves to the red light portion of the gauge, indicating an overheated condition, stop the tractor engine IMMEDIATELY and investigate the cause.
2. 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.
3. FUEL GAUGE - (Light Bar) Indicates the amount of diesel fuel remaining in the tank. The gauge is activated when the key switch is in the "ACC/RUN" position. The increasing amount of green lights indicate a higher fuel level. Yellow lights indicate a low fuel level.
4. 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.
5. FLASHER WARNING HAZARD LIGHTS - Operate when the flasher switch is turned on, regardless of the key switch position. Use the flasher warning lights and the SMV placard when traveling on public roads, day or night.
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. 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.
8. 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.
9. HIGH BEAM ROAD LIGHT INDICATOR - The light symbol will illuminate "Blue" when the light switch is placed in the (High Beam) position.

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