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Farmall 40B
Farmall 50B
Compact Tractor

OPERATOR'S MANUAL

Part number 84370270
1st edition English
August 2011

CASE IH AGRICULTURE

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2 - SAFETY INFORMATION

Precautionary statements and signal word definitions

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 and on machine decals, 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 ⚠

DANGER indicates a hazardous situation which, if not avoided, will result in death or serious injury. The color associated with Danger is RED.

M1169A

⚠ WARNING ⚠

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

M1170A

⚠ CAUTION ⚠

CAUTION, used with the safety alert symbol, indicates a hazardous situation which, if not avoided, could result in minor or moderate injury. The color associated with Caution is YELLOW.

M1171A

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

Machine safety

NOTICE: *Notice indicates a situation which, if not avoided, could result in machine or property damage. The color associated with Notice is BLUE.*

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 which clarifies steps, procedures, or other information in this manual.*

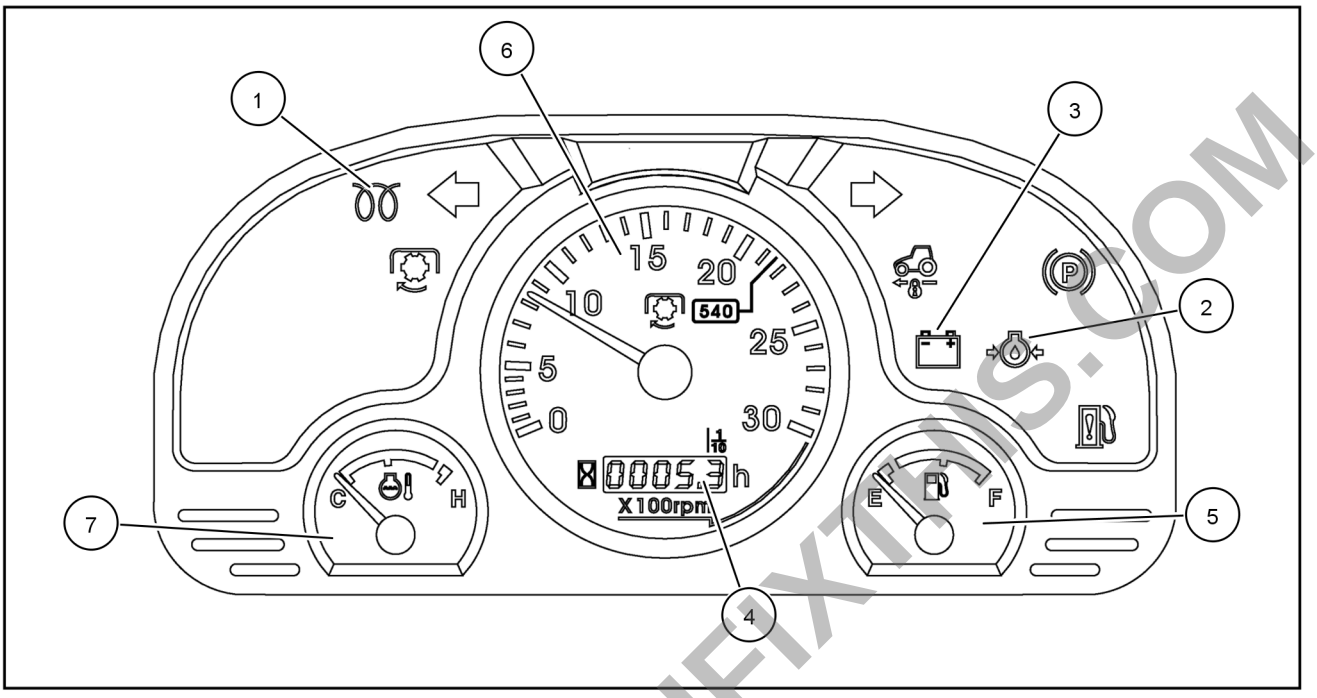
Throughout this manual you will find the word Note followed by additional information about a step, procedure, or other information in the manual. The word Note is not intended to address personal safety or property damage.

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FORWARD CONTROLS

Instrument panel - Identification



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1. Cold Starting Indicator Light - Illuminates when the key switch is first turned to the "ON" position. It remains lit for approximately eight seconds, during which time the glow plugs are heating the engine 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.
4. Hour Meter - Records the hours and portions of hours that your tractor has been operated regardless of engine RPM. Use the hour 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 register "empty" with the key switch in the "OFF" 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 "OFF" position. If the needle registers in the white 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.

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4 - OPERATING INSTRUCTIONS

COMMISSIONING THE UNIT

Engine break-in procedure

Your CASE IH AGRICULTURE tractor will provide long and dependable service if given proper care during the first 50-hour break-in period. During the first 50 hours of operation:

1. Avoid "lugging" the engine. Operating in too high a gear under heavy load may cause engine lugging, which is indicated when the engine will not respond to a throttle increase.
2. Use the lower gear ratios when pulling heavy loads and avoid continuous operation at constant engine speeds. You will save fuel and minimize engine wear by selecting the correct gear ratio for a particular operation. Operating the tractor in low gear with a light load and high engine speed wastes fuel.
3. Avoid prolonged operation at either high or low engine speeds without a load on the engine.
4. Check the instruments frequently and keep the radiator and oil reservoirs filled to recommended levels. Daily checks include the engine oil level, radiator coolant, and air cleaner.
5. After the first 50 hours of use, be sure to perform the maintenance items listed in the maintenance schedule.

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MAINTENANCE CHART

Maintenance Chart

Overview

⚠ WARNING

Improper operation or service of this machine can result in an accident.
Read and understand the SAFETY INFORMATION Section before you perform any maintenance, service, or repairs. Read and understand the specific service procedures for the components you plan to work with before you start servicing the machine.
Failure to comply could result in death or serious injury.

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This section details the necessary requirements to keep your machine working at its maximum efficiency. A lubrication and maintenance chart facilitates a quick query of the requirements. If you have questions regarding any lubrication or service issue, contact your Case IH Dealer.

Service Interval	Service Requirements	Check	Clean	Lube	Change	Adjust	Page No.
Every 10 hours or Daily	Engine Oil Level	x					
	Transmission/Rear Axle Oil Level	x					
	Radiator Screen, Oil Cooler	x	x				
	Engine Cooling Fluid Level	x					
	Engine Air Filter	x					
	Wheel and Tires	x					
First 50 Hours	Engine oil and filter				x		
	Hydraulic Filter				x		
	H.S.T. Filter				x		
	Fuel Filter				x		
	Wheel Bolt Torque	x				x	
	Tire Air Pressure	x				x	
	ROPS Attaching Hardware	x				x	
	All Fluid Levels	x				x	
	Brake Pedal Free Play	x				x	
	Clutch Pedal Free Play	x				x	
Every 50 Hours	Front Axle Oil Level (4WD)	x					
	All Grease Fittings			x			
	Battery	x					
	Fuel Filter Sediment Bowel		x				
	Clutch Pedal Free Play	x				x	
	Brake Pedal Free Play	x				x	
	Park Brake	x				x	
	HST Pedal Return to Neutral	x				x	
	All Hardware for Tightness	x				x	
	Wheel and Tires	x					
	Turn signals, Front Lights Instrument Panel Indicator Lights, Horn	x					

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8 - TROUBLESHOOTING

SYMPTOM(S)

ENGINE - Troubleshooting

Problem	Possible Cause	Correction
The start motor does not rotate with the key switch in the (START) position.	Low battery charge	Charge or replace
	Loose battery or starter cable terminals	Tighten the terminal
	Key switch faulty	Repair or replace switch
	Safety start switch not completing circuit	Depress clutch pedal fully
	PTO safety switch is not in "OFF" position	Place PTO switch in "OFF" position
	Starter motor faulty	Repair or replace starter motor
The start motor rotates but the engine does not start	Low battery charge	Charge or replace battery
	Air in fuel system	Bleed out the air
	Fuel filter clogged	Clean or replace the filter
	Fuel shutoff valve on fuel filter in closed position	Open the valve
	Fuel shutoff solenoid on fuel injection pump stuck in off position	Check solenoid for proper operation, repair as needed
Engine speed is irregular	Air in fuel system	Bleed the fuel system
	Fuel filter clogged	Clean or replace the filter
	Injection nozzle clogged	Repair or replace nozzle
	Fuel leakage	Repair fuel system
	Irregular fuel injection	Repair or replace fuel injection pump
Engine speed is more than maximum rated high idle speed	Governor malfunction	Repair injection pump as needed
Engine stops suddenly during operation	Fuel shortage	Add fuel and bleed air from fuel system
	Faulty fuel injector	Repair or replace injector
	Faulty fuel injection pump	Repair or replace injection pump
	Internal parts of engine seized due to lack of lubrication	Repair engine as needed
Engine stops at low speed	Faulty injection pump	Repair or replace injection pump as needed
	Engine valve gap is not correct	Adjust the gap
	Low fuel injector pressure	Repair fuel injector as needed
Engine overheating	Lack of coolant	Add coolant as needed
	Fan belt slipping or belt is broken	Adjust belt tension or replace belt
	Dirt attached to the radiator or prescreen	Clean radiator fins or screen as needed
The color of exhaust smoke is white	Low engine operating temperature	Allow engine to obtain higher operating temperature
	Engine burning engine oil	Repair engine as needed
	Engine coolant entering engine exhaust	Repair engine as needed
The color of exhaust gas is black.	Air filter clogged	Clean or replace engine air filter
	Excessive fuel supply	Repair fuel injection pump as needed
	Faulty fuel injector	Repair or replace fuel injector
Low engine power	Fuel injector nozzle clogged	Repair injector as needed
	Carbon accumulation on valve seat	Repair valve and seats as needed
	Incorrect valve gap adjustment	Adjust valve gap to correct amount
	Incorrect fuel injection timing	Check and adjust fuel injection timing as needed
	Lack of fuel supply	Check fuel system for restriction
	Air filter clogged	Clean or replace air filter

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ENGINE AND PTO IN - General specification

	Model Farmall 40B - Hydrostatic/ Gear	Model Farmall 50B- Hydrostatic/Gear
ENGINE		
Type	Diesel	Diesel
Model	S4QL	S4QL
Engine Gross Horsepower	**30.2 kW** (**40.4 Hp**)	**34.6 kW** (**46.4 Hp**)
Cylinders	4	4
Bore	**88 mm** (**3.46 in**)	**88 mm** (**3.46 in**)
Stroke	**103 mm** (**4.05 in**)	**103 mm** (**4.05 in**)
Displacement	**2.50 l** (**152.56 in³**)	**2.50 l** (**152.56 in³**)
Compression Ratio	22.0:1	20.0:1
Firing Order	1-3-4-2	1-3-4-2
Low Idle Speed	**830±20 RPM**	**830±20 RPM**
Maximum Speed:		
High Idle	**2780±30 RPM**	**2780±30 RPM**
Rated	**2600 RPM**	**2600 RPM**
Valve Clearance (Cold)		
Intake	**0.25 mm** (**0.010 in**)	**0.25 mm** (**0.010 in**)
Exhaust	**0.25 mm** (**0.010 in**)	**0.25 mm** (**0.010 in**)
CAPACITIES		
Fuel Tank	**36.0 l** (**9.5 US gal**)	**36.0 l** (**9.5 US gal**)
Cooling System	**6.0 l** (**6.3 US qt**)	**6.0 l** (**6.3 US qt**)
Engine Crankcase:		
With Filter	**6.6 l** (**7.0 US qt**)	**6.6 l** (**7.0 US qt**)
Rear Axle & Transmission (Includes Hydraulics)		
Gear	**43.0 l** (**11.4 US gal**)	**43.0 l** (**11.4 US gal**)
HST	**43.0 l** (**11.4 US gal**)	**43.0 l** (**11.4 US gal**)
Front Axle	**8.0 l** (**8.4 US qt**)	**8.0 l** (**8.4 US qt**)
COOLING SYSTEM		
Type	Pressurized Liquid with Recirculating Bypass	Pressurized Liquid with Recirculating Bypass
Water Pump:		
Type	Centrifugal	Centrifugal
Drive	V-Belt	V-Belt

	Model Farmall 40B - Hydrostatic/ Gear	Model Farmall 50B- Hydrostatic/Gear
Belt Deflection	**10 - 13 mm** (**0.4 - 0.5 in**) when **10 kg** (**22 lb**) pressure is applied midway between belt pulleys	**10 - 13 mm** (**0.4 - 0.5 in**) when **10 kg** (**22 lb**) pressure is applied midway between belt pulleys
Fan Diameter	**380 mm** (**15.0 in**)	**380 mm** (**15.0 in**)
Thermostat:		
Start to Open	**76.5 °C** (**170 °F**)	**76.5 °C** (**170 °F**)
Fully Open	**90 °C** (**194 °F**)	**90 °C** (**194 °F**)
Radiator Cap	**90 kPa** (**13 psi**)	**90 kPa** (**13 psi**)
ELECTRICAL SYSTEM		
Alternator	**12 V**, Heavy Duty, **50 A**	**12 V**, Heavy Duty, **50 A**
Battery	**12 V**, w/ negative ground, 660 cca BCI Group 34	**12 V**, w/ negative ground, 660 cca BCI Group 34
Starting Motor	Solenoid Pre-Engaged Reduction	Solenoid Pre-Engaged Reduction
FUEL SYSTEM		
Fuel Type	Diesel	Diesel
Type of Fuel to Use if Above **4 °C** (**40 °F**)	No. 2-Diesel, Cetane Rating: Minimum 40	No. 2-Diesel, Cetane Rating: Minimum 40
Type of Fuel to Use if Below **4 °C** (**40 °F**)	No. 1-Diesel, Cetane Rating: Minimum 40	No. 1-Diesel, Cetane Rating: Minimum 40
Injection Pump:		
Type	In-Line	In-Line
CLUTCH		
Type	**275 mm** (**10.8 in**) - Gear Transmission	**275 mm** (**10.8 in**) - Gear Transmission
Pedal Free-Travel	**19 - 30 mm** (**0.75 - 1.2 in**)	**19 - 30 mm** (**0.75 - 1.2 in**)
BRAKES		
Type	Wet Disc	Wet Disc
2 Disc per Side	**223 mm** (**8.78 in**) x **174 mm** (**6.85 in**)	**223 mm** (**8.78 in**) x **174 mm** (**6.85 in**)

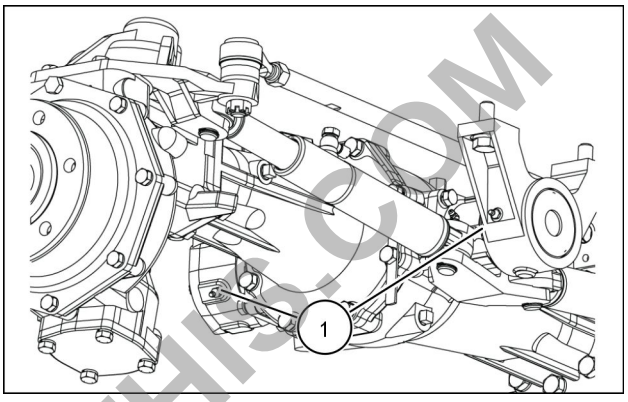
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Grease fittings

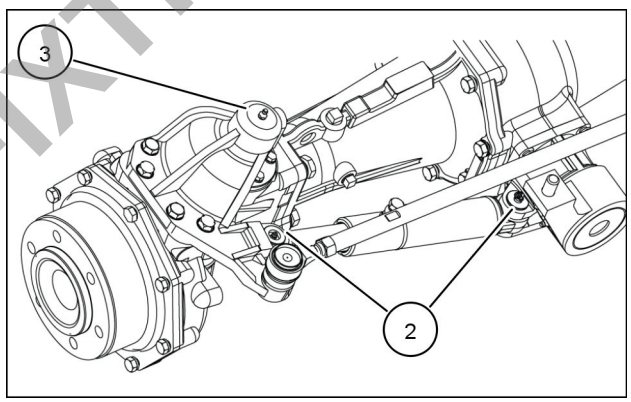
NOTE: *After every 50 hours of normal operation, apply a good quality grease to the lubrication points listed below (refer to the Recommended Lubricants chart). When operating under extremely dirty conditions, lubricate more frequently than every 50 hours.*

- Front Axle Pivots **(1)**



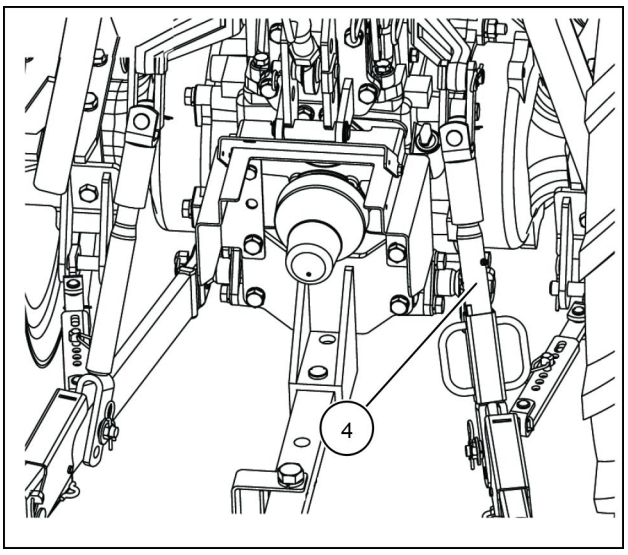
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- Power Steering Cylinder **(2)** and steering arms **(3)** (left and right)



93100921 2

- Pedal Shaft - Clutch & Brake Pedals
- 3-Point Linkage **(4)**



20100906 3

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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LUBRICATION SYSTEM

Recommended lubricants and coolants

Lubricant	Type and Description	Part Number	Container Size
Engine Oil	**CASE IH AKCELA ENGINE OIL 10W-30**	**104104A1**	**0.946 l** (**1 US qt**)
		139033A1	**3.785 l** (**1 US gal**)
		104106A1	**18.93 l** (**5 US gal**)
	CASE IH AKCELA ENGINE OIL 15W-40	**407410R2**	**0.946 l** (**1 US qt**)
		139034A1	**3.785 l** (**1 US gal**)
		407414R2	**18.93 l** (**5 US gal**)
Transmission/Hydraulic Oil	**CASE IH AKCELA NEXPLORE™ FLUID**	**404787A1**	**18.93 l** (**5 US gal**)
	CASE IH F200A HYD FLUID	**B17805**	**18.93 l** (**5 US gal**)
Front Axle/Gear Oil	**CASE IH AKCELA GEAR 135 H EP 80W-90**	**87299775**	**0.946 l** (**1 US qt**)
		87299136	**18.93 l** (**5 US gal**)
Grease	**CASE IH AKCELA MULTI-PURPOSE GREASE 251H EP**	**132096A1**	Tube **14 oz**
Coolant	Ethylene Glycol Coolant Concentrate		

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	Model Farmall 40B - Hydrostatic/ Gear	Model Farmall 50B- Hydrostatic/Gear
Range 3, 4th gear	**10.46 km/h** (**6.50 mph**)	**10.46 km/h** (**6.50 mph**)
Range 4, 1st gear	**14.05 km/h** (**9.01 mph**)	**14.05 km/h** (**9.01 mph**)
Range 4, 2nd gear	**17.19 km/h** (**10.68 mph**)	**17.19 km/h** (**10.68 mph**)
Range 4, 3rdgear	**20.20 km/h** (**12.55 mph**)	**20.20 km/h** (**12.55 mph**)
Range 4, 4th gear	**27.06 km/h** (**16.82 mph**)	**27.06 km/h** (**16.82 mph**)
Gear Position: Reverse		
Range 1, 1st gear	**1.02 km/h** (**0.63 mph**)	**1.02 km/h** (**0.63 mph**)
Range 1, 2nd gear	**1.21 km/h** (**0.75 mph**)	**1.21 km/h** (**0.75 mph**)
Range 1, 3rd gear	**1.42 km/h** (**0.88 mph**)	**1.42 km/h** (**0.88 mph**)
Range 1, 4th gear	**1.90 km/h** (**1.18 mph**)	**1.90 km/h** (**1.18 mph**)
Range 2, 1st gear	**2.30 km/h** (**1.43 mph**)	**2.30 km/h** (**1.43 mph**)
Range 2, 2nd gear	**2.73 km/h** (**1.69 mph**)	**2.73 km/h** (**1.69 mph**)
Range 2, 3rd gear	**3.20 km/h** (**1.99 mph**)	**3.20 km/h** (**1.99 mph**)
Range 2, 4th gear	**4.29 km/h** (**2.67 mph**)	**4.29 km/h** (**2.67 mph**)
Range 3, 1st gear	**5.08 km/h** (**3.16 mph**)	**5.08 km/h** (**3.16 mph**)
Range 3, 2nd gear	**6.03 km/h** (**3.75 mph**)	**6.03 km/h** (**3.75 mph**)
Range 3, 3rd gear	**7.08 km/h** (**4.40 mph**)	**7.08 km/h** (**4.40 mph**)
Range 3, 4th gear	**9.49 km/h** (**5.90 mph**)	**9.49 km/h** (**5.90 mph**)
Range 4, 1st gear	**13.16 km/h** (**8.18 mph**)	**13.16 km/h** (**8.18 mph**)
Range 4, 2nd gear	**15.60 km/h** (**9.70 mph**)	**15.60 km/h** (**9.70 mph**)
Range 4, 3rd gear	**18.34 km/h** (**11.39 mph**)	**18.34 km/h** (**11.39 mph**)
Range 4, 4th gear	**24.56 km/h** (**15.26 mph**)	**24.56 km/h** (**15.26 mph**)

	Model Farmall 40B - Hydrostatic/ Gear	Model Farmall 50B- Hydrostatic/Gear
CAST IRON WEIGHTS		
Front End:		
With weight extension bracket installed	(5) weights @ **26 kg** (**60 lb**) each	(5) weights @ **26 kg** (**60 lb**) each
With weight extension bracket installed	(3) weights @ **45 kg** (**100 lb**) each	(3) weights @ **45 kg** (**100 lb**) each
Rear Wheel:		
R-4 Tires	(4) weights (2) per wheel @ **34 kg** (**75 lb**) each	(4) weights (2) per wheel @ **34 kg** (**75 lb**) each
Turf Tires	NA	NA
Ag. Tires	(4) weights (2) per wheel @ **48 kg** (**106 lb**) each	(4) weights (2) per wheel @ **48 kg** (**106 lb**) each
DRAWBARS		
	Extendible	Extendible
TIRES		
FRONT:		
Agricultural:	9.5-16, 4PR, R1	9.5-16, 4PR, R1
Turf:	29-12.5-15, 4PR, R3	29-12.5-15, 4PR, R3
Industrial:	10-16.5, 6PR, R4	10-16.5, 6PR, R4
REAR:		
Agricultural	13.6-24, 4PR, R1	13.6-24, 4PR, R1
Turf	41 x 14.00-20, 4PR, R3	41 x 14.00-20, 4PR, R3
Industrial	420/70-24	420/70-24
WHEEL BOLT TORQUES		
Front Wheel --- Disc-to-Hub:		
FWD	**176 - 196 N·m** (**130 - 145 lb ft**)	**176 - 196 N·m** (**130 - 145 lb ft**)
Rear Wheel --- Disc-to Axle	**176 - 196 N·m** (**130 - 145 lb ft**)	**176 - 196 N·m** (**130 - 145 lb ft**)
ROPS ATTACHING BOLT TORQUES		
ROPS to Rear Axle	**147 N·m** (**108 lb ft**)	**147 N·m** (**108 lb ft**)
Seat Belt	**49 - 54 N·m** (**36 - 40 lb ft**)	**49 - 54 N·m** (**36 - 40 lb ft**)

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