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SPECIFICATIONS

McCORMICK INTERNATIONAL B-250 (DIESEL)

1. Four cylinder, four cycle, Diesel.
2. Indirect Injection.
3. Valve-in-head.
4. Whirl type pre-combustion chamber.
5. C.A.V. injection pump.
6. Positive fuel flow through primary pump with fuel filter to injection pump.
7. Injection nozzles.
8. Stop/start control.
9. Oil cup air cleaner.
10. Gear-type oil pump for pressure - feed lubrication.
11. Full flow lubricating oil filter with paper element.
12. Oil pressure indicator.
13. Cooling system with fin and tube radiator.
14. Heat control by thermostat.
15. 12-volt electrical system.
16. Generator.
17. Starting motor.
18. Glow plugs for starting the engine.

TECHNICAL DATA (ENGINE CHASSIS)

(5-SPEED TRANSMISSION)

PERMANENT OUTPUT 30 h.p. at 1750 r.p.m. (under load)

FIRING ORDER 1 - 3 - 4 - 2

Belt pulley diameter	9.5"
Belt pulley face	6.375"
Clutch 10" single dry plate, spring loaded	-
Brakes (foot) 5-5/8" disc type	-
Cylinder bore	3-3/8"
Cylinder stroke	4"
Valve clearance	.020"
Oil consumption in 10 hours	1 pint

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Engine speed (governed) with the equivalent belt pulley and power take-off speeds:-

Engine speed minimum	540 to 600 r.p.m.
Pulley speed. Low idle (no load)	386 to 429 r.p.m.
Power take-off. Low idle (no load)	163 to 182 r.p.m.
Engine speed maximum. Idle (no load)	1925 to 2000 r.p.m.
Pulley speed. Fast Idle (no load)	1431 r.p.m.
Power take-off speed. Fast idle (no load)	607 r.p.m.
Engine speed maximum (full load)	1750 to 1800 r.p.m.
Pulley speed maximum (full load)	1251.6 to 1288 r.p.m.
Power take-off speed maximum (full load)	531.25 to 546 r.p.m.
Belt speed (with 9.5" pulley) at full load engine speed - ft. per minute	3112.4 to 3201.3

Capacities (Imp. Measure - Approximate)

(A) Cooling system	2-1/4 gallons
(B) Fuel tank	8-1/2 gallons
(C) Engine crankcase	9 pints
MACHINES up to B-250/20101	1-5/16 gallons
(D) Transmission case	4 gallons
(E) Hydraulic system	2-1/2 gallons

Transmission (5-speed) speed (1750 r.p.m. under load) based on pneumatic tyres:-

Gear	Size 10 x 28 m.p.h.	11 x 28 m.p.h.
1st	1.7	1.8
2nd	2.5	2.6
3rd	3.9	4.0
4th	5.2	5.4
5th	11.4	11.9
Reverse	3.3	3.4

Wheels and Tread:-		Optional
Front wheels, pneumatic tyre size	4.00 x 19	5.50 x 16
Rear wheels, pneumatic tyre size	10 x 28	11.00 x 28

Tread widths (adjustable):-

Front	48" to 76"
Rear	48" to 76"

GENERAL DIMENSIONS

Wheel base	74-1/8"
Length overall	112"

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SAFETY RULES

1. Caution is the most effective safeguard against accidents.

2. To operate a tractor you must be a good driver. When driving on the highway, be sure you know the highway code.

3. The tractor operator is responsible for the safety of any person operating a pull-behind implement or riding on a trailer hitched to the tractor.

4. When the tractor is pulling power-equipment, make sure that all power line shielding is in place and is in good order.

5. Never mount or dismount from a tractor when it is in motion.

6. Never refuel the tractor whilst the engine is running or extremely hot. Do not smoke or use an open flame when working around inflammable fuels.

7. Be sure the gear shifter lever is in neutral before starting the engine.

8. Allow the engine to cool off before removing the cap to fill the radiator.

9. Never use the brakes for making turns on the highway and at high speeds. Always latch the brake pedals when the tractor is used on the highway.

10. Be extra careful when applying the brakes on slippery roads. Drive slowly.

11. Shift into a low gear before going down steep hills.

12. Always see that brakes and lighting are in good working order.

13. Trailers having two or more axles must be equipped with brakes.

CARELESS USE OF THE TRACTOR AND OTHER FARM MACHINERY IS THE CAUSE OF MOST FARM ACCIDENTS.

DON'T BE CARELESS - BE CAREFUL

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1. **COOLANT.** Fill the radiator with clean water, preferably rain water, up to a level approximately 2" below the filler neck. Check the water level daily under severe working conditions and in hot temperatures even more frequently.

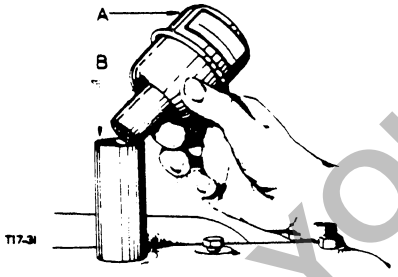
In temperatures below freezing point the radiator should be filled with hot water.

2. **FUEL.** Always use clean diesel fuel.

NOTE: Always use a funnel when filling the fuel tank.

3. **ENGINE LUBRICANT.** To pour oil into the engine, remove the breather "A" from the oil filler stack pipe "B" on the valve housing *(see illust.1)*.

NOTE: Clean the breather in paraffin or diesel fuel and dip in oil every 120 hours.



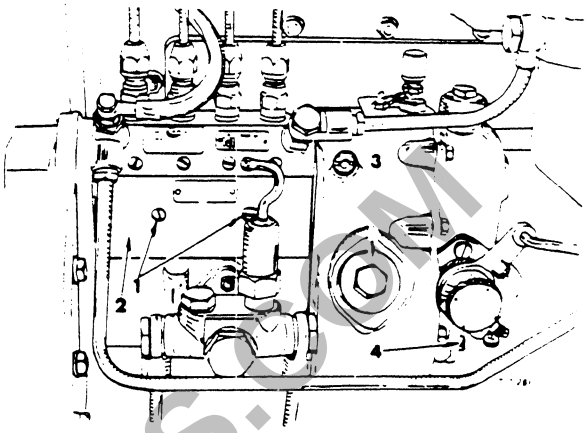
Illust.1 - Engine lubricant filler pipe

The oil level in the engine crankcase can be read from the dipstick provided on the right hand side of the engine. *(See illust.36 page 30)*. The oil level is correct when indicated between the minimum and maximum marks on the dipstick.

On machines up to serial number B-250/930 the governor and injection pump must be filled with oil. On machines from serial number B-250/931 to B-250/27486 the injection pump must be filled with oil.

To fill the governor remove the level plug *(4 illust.1A)* and if oil is not up to the level of the hole remove the filler plug *(3 illust.1A)* and pour in engine oil until it runs out of the level hole. Replace both plugs.

To check the level in the pump, remove the two screws *(1 illust.1A)* and remove the plate. The well inside should be filled with engine oil. Replace the cover plate and gasket.



Illust.1A Fuel Injection Pump

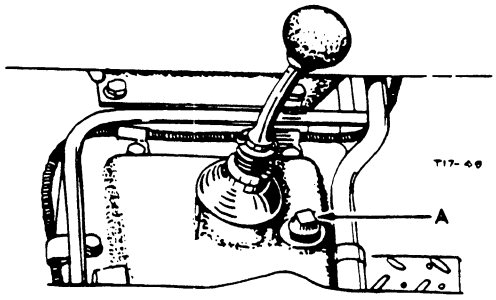
On machines after serial number B-250/27486 the injection pump is of the rotary type and is self lubricating.

5. **AIR CLEANER.** Fill the air cleaner cup to the oil level mark with the same new oil as used in the crankcase.

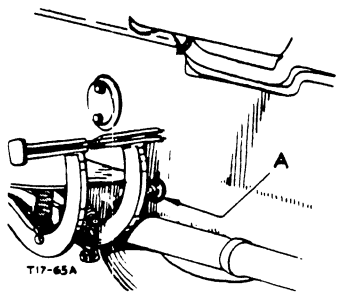
NOTE: Never allow dirt to build up in the cup more than 1/2" deep.

6. **TRANSMISSION.** The transmission case must be filled with transmission oil. To fill the case, remove the filler plug and fill the transmission case up to the level of the level plug *(see illust.2 and 3)*.

NOTE: The front and rear transmission drain plugs are shown in illust.4 and 5.



Illust.2 - Transmission case filler plug (A)

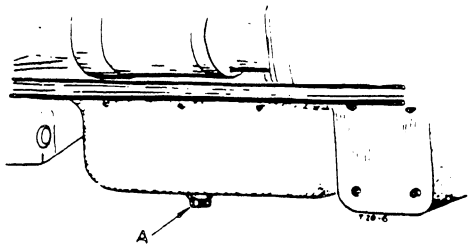


Illust.3 - Transmission case oil level plug (A)

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When changing the engine oil, remove plug *(See illust.35)* and drain all oil from crankcase while the engine is warm. Change the oil filter element every time the crankcase oil is changed.

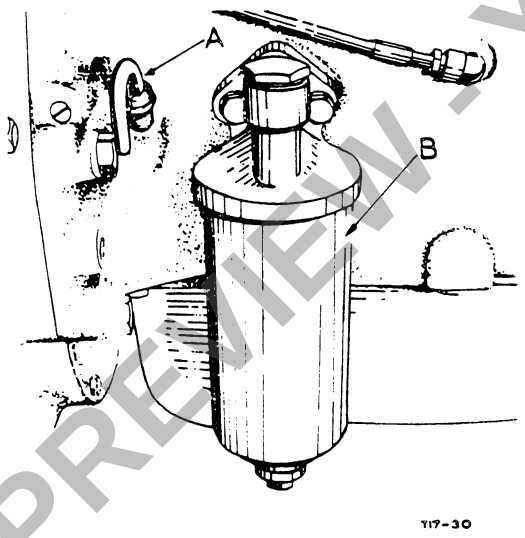


Illust.35 - Crankcase Drain Plug (A)

NOTE: When checking the oil level be sure that the tractor stands horizontally.

OIL FILTER

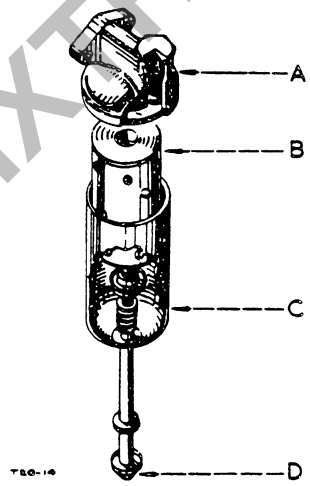
The life of your engine depends upon clean oil being circulated to all bearings. In the normal course of engine operation the lubricating oil undergoes changes which produce harmful by-products.



Illust.36 - Oil Level Gauge (A) and Lubricating Oil Filter (B)

The purpose of the oil filter is to separate and remove the dirt and other foreign substances from the oil to prevent these injurious materials from being circulated to the engine. This filter will keep the circulating oil free of harmful materials for 120 hours of operation. By following the simple commonsense procedure for keeping dirt and oil impurities away from precision-made engine parts you will safeguard your tractor engine against undue wear, and the operating troubles and upkeep expense which are a natural result of that condition. The oil filter element should be replaced after every 120 hours of operation or before, if the engine oil is changed.

NOTE: To avoid delays, we recommend that you carry extra filter elements on hand so that replacements can be made at the correct time. (FILTER is located on the right-hand side of the crankcase. *(See illust.36).*



Illust.37 - Changing Lubricating Oil Filter Element

CHANGING THE LUBRICATING OIL FILTER ELEMENT

1. Stop the engine.

2. Clean off all dirt from the oil filter base "A" and case "C".

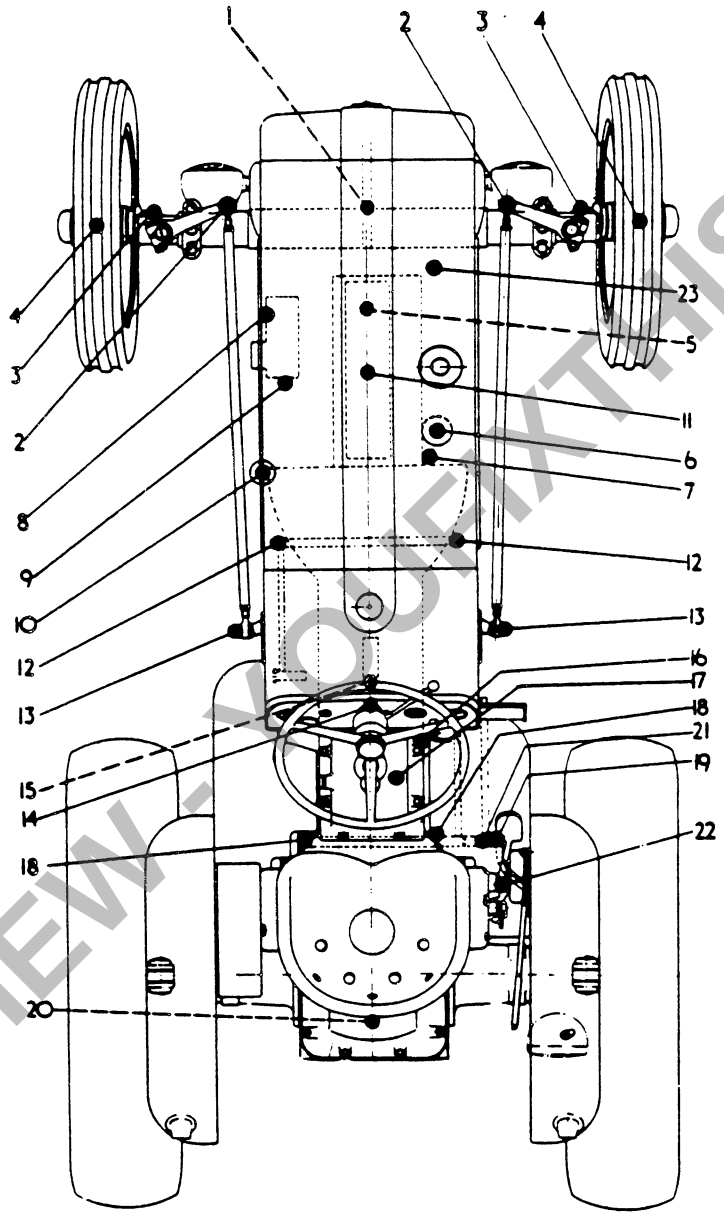
3. Unscrew the retaining bolt "D" until it is possible to withdraw the bolt and the case "C" away from base "A".

4. Remove the element "B".

5. Clean the inside of base "A" and case "C" with a cloth dampened with paraffin or diesel fuel.

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LUBRICATION GUIDE



Illust.39 Lubrication Chart Machines up to B-250/20101

NOTE: Points indicated by dotted arrows are underneath.

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KEY TO LUBRICATION GUIDE MACHINES UP TO B-250/20101

GUIDE REFERENCE No.	APPLICATION	LUBRICANT	DAILY EVERY 10hrs	WEEKLY EVERY 50hrs	MONTHLY EVERY 200hrs	YEARLY EVERY 1000hrs
1	Front axle pivot shaft	CL	X			
2	Drag link front end	CL	X			
3	Steering knuckle pest	CL	X			
4	Front wheel hubs	CL		See page 31		X
5	Crankcase oil drain plug	EO		EVERY 120 HOURS		
6	Oil Filter (change element)	EO		EVERY 120 HOURS		
7	Crankcase dipstick	EO	X			
8*	Injection pump	EO			X	
9**	Mechanical Governor	EO			X	
10	Air cleaner (change oil in cup)	EO	X			
11	Crankcase filler (top up)	EO	X			
	Change oil	EO		EVERY 120 HOURS		
12	Clutch pedal shaft	CL		X		
13	Drag link rear end	CL	X			
14	Steering gear housing (change oil)	GL				X
15	Transmission drain plug front	GL				X
16	Transmission case level plug	GL			X	
17	Transmission filler plug (top up)	GL			X	
	Change oil					X
18	Brake pedal shaft	CL		X		
19	Hand brake	CL		X		
20	Transmission drain plug rear	GL				X
21	Foot brake pedal	CL		X		
22	Differential lock pedal	CL	X			
23	Generator (commutator felt pad lubricator)	EO		EVERY 480 HOURS		

* Machines up to B-250/27486 only

** Machines up to B-250/930 only

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