234 & 234-Hydro Tractors

Operators Manual

1258522C3

Reprinted

CASE

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WORK SAFELY—FOLLOW THESE RULES

Instructions given with this symbol are for personal safety. Be sure you and your workers follow them.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT



MM-1006

Before handling ANY equipment, READ the OPERATORS MANUAL.

SERVICING AND BEFORE STARTING

Make sure that everyone is clear of machinery before starting the engine or operation.

Carefully supervise inexperienced operators.

Misuse or modification of this machine can cause:

— mechanical breakdown,
— property damage,
— injury or death.

Always use proper safety precautions. Tell your workers how to work safely.

Shut off the engine before working on equipment.

When fueling a tractor, keep any type of open flame away. Do not smoke. Stop the engine and wait for it to cool before removing the fuel cap or refueling.

Check coolant and engine oil levels, and perform any other necessary services, before starting the engine.

Turn the radiator cap slowly counter-clockwise to the pressure release point to allow the pressure or any steam to escape; then press down on the cap and continue to turn until the cap is free to be removed.

Check brake and clutch pedals for correct operation.

Reduce tipping hazards by spreading wheels as far as your work permits.

Be sure muffler and exhaust pipe are in place so exhaust gases are discharged above the operator.

Use only metric tools on metric fastners. Refer to the "Inch-Metric Hardware" section.

Always keep the operator's compartment clean. Keep dirt, trash, and grease from the pedals, steps, mounting handles, steering wheel, and controls.

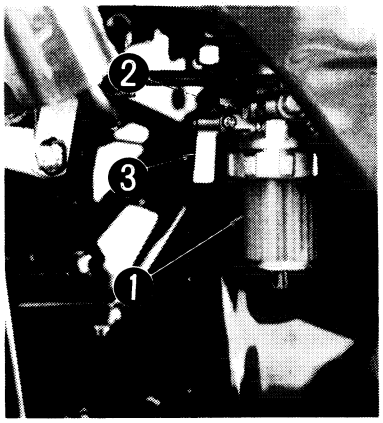
Always carry a "Charged" fire extinguisher and a first aid kit.

Avoid loose-fitting clothing, which would catch on moving parts.

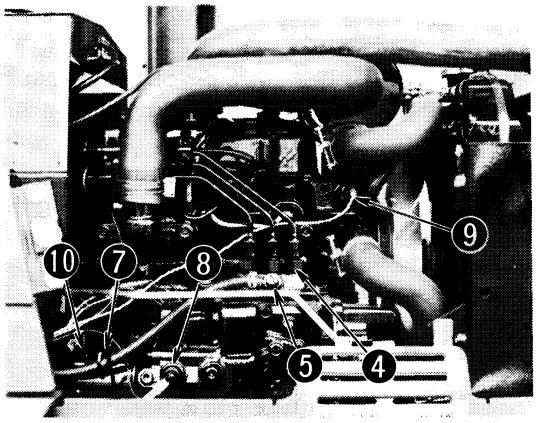
Mounting assist handles and steps are provided for your safety. Use them when getting on or off the tractor.

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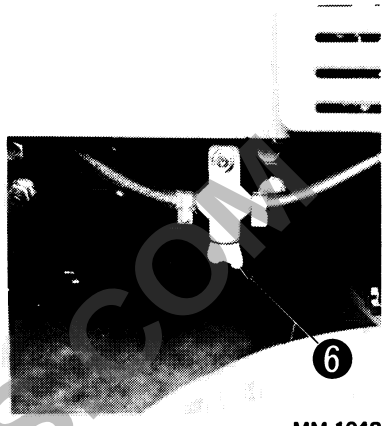
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MM-1040



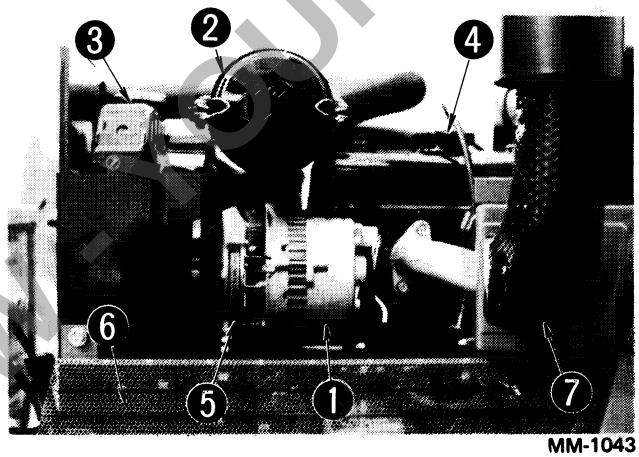
MM-1041



MM-1042

1 - Fuel filter
2 - Vent screw (Fuel filter)
3 - Fuel shut-off valve
4 - Fuel injection pump
5 - Vent screw (Injection pump)
6 - Coolant drain plug (Crankcase and Radiator)
7 - Oil filter
8 - Oil pressure switch
9 - Coolant temperature switch
10 - Crankcase oil level dipstick

Right side of K3B engine



MM-1043

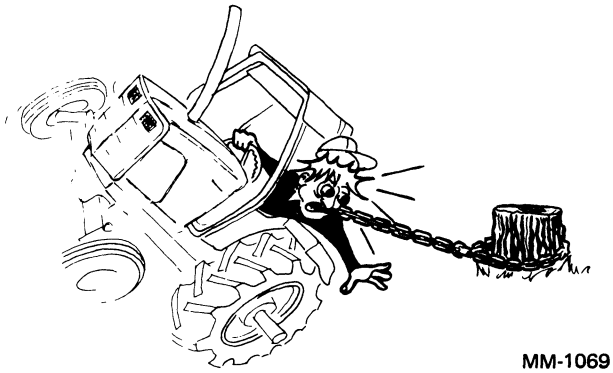
1 - Alternator-generator
2 - Air cleaner
3 - Radiator
4 - Oil filler cap
5 - Fan belt
6 - Oil cooler (Hydrostatic drive)
7 - Muffler

Left side of K3B engine

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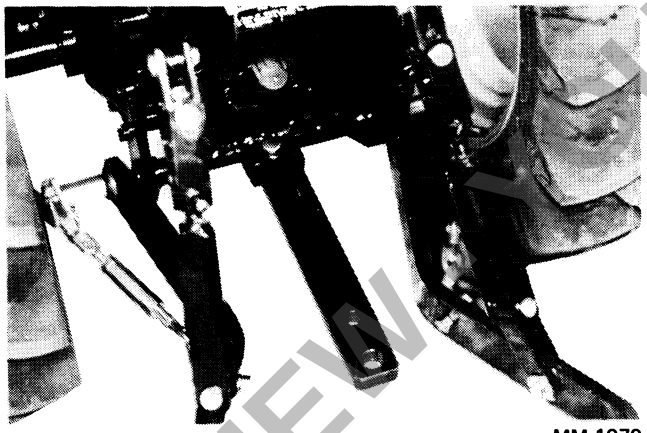
When using a long chain or cable to hitch the tractor to the load, drive the tractor forward slowly until all slack is taken out.



MM-1069

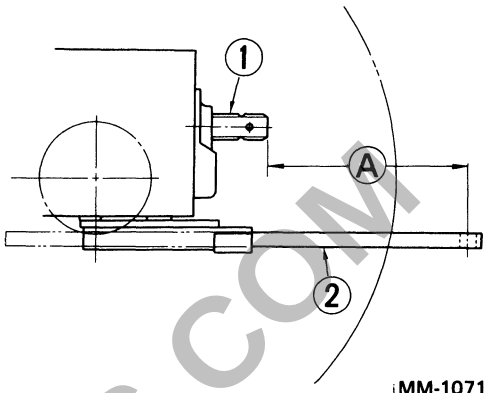
CAUTION! Reduce rear tipping by hitching only to the drawbar – NEVER HIGHER. USE SEAT BELTS with ROPS and safety enclosures.

MA-19431



MM-1070

The drawbar provides the standard hitch distance from the end of the power take-off shaft to the center line of the rear hole in the drawbar. This is necessary for safe power take-off operation of trailing type equipment.



MM-1071

1 - Power take-off shaft
2 - Drawbar

PTO R.P.M.	PTO SHAFT DIA.	A	TRACTOR
540	1-3/8 in. (35mm)	14 in. (356mm)	234 and Hydro 234

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WARRANTY NOTICE

The International Harvester warranty on these engines and/or power train components shall not apply to any failure that results from an unauthorized adjustment of the fuel injection system.

Any attempt to increase the engine horsepower by increasing engine r.p.m. above its rated maximum, or by other means, not only affects traveling speeds but affects the life of matching parts and voids the company responsibility as outlined in the warranty.

FUEL SYSTEM

Grade 2-D diesel fuel conforming to ASTM D-975 specification must be used for proper operation of these tractors. Grade 1-D diesel fuel may be used at temperatures below +10° F (–12.2° C) or for operations entailing considerable idling. Use only winter grade fuel for ease of starting. Winter grade diesel fuel must have a cloud point of at least 10° F (6° C) below the lowest anticipated temperature to avoid plugging of the fuel circulation system, especially the fuel filters.



CAUTION! Do not add gasoline or alcohol to diesel fuel. This creates a vapor which is extremely explosive.



CAUTION! NEVER SMOKE while refueling. Shut off engine and electrical equipment.



CAUTION! Never remove the fuel tank cap or fill the fuel tank near an open flame. Do not smoke when working around inflammable fuel.

Fill the fuel tank at the end of each days run to reduce condensation.

NOTE: Do not fill the tank to its full capacity. Space is required for vapor expansion in the event of a temperature change. A tank filled to capacity may overflow if exposed to a rise in temperature or direct sunlight.

Be sure that the filler cap is tightened securely before starting the engine.

Removing Water from the Filter Cup

Before starting each day's work, check for water or sediment in the filter cup.

If Water or sediment is present, remove filter cup, clean and reinstall.

Venting the Fuel System

All air must be eliminated from the fuel lines before the engine will start and operate properly. All plugs and fuel line connections must be tight to prevent leakage and to prevent air from entering the fuel system.

The system must be vented under the following circumstances:

Before starting an engine which has not been operated for an extended period of time.

When the fuel filter has been replaced or when filter cup has been cleaned.

When an engine, in operation, runs out of fuel.

When any connections between the injection pump and fuel tank have been loosened or broken for any reason.

To vent the fuel system proceed as follows:

Open the fuel tank shut-off valve. Loosen the vent screws on the fuel filter, until the fuel flowing from the fuel filter is free of air bubbles and tighten the screws, left screw first. Loosen the vent screw on the injection pump until the fuel flowing from the pump is free of air bubbles. Tighten the vent screw.

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	TRACTOR MODEL	
	234	234-Hydro
***CAPACITIES,** Approx Cooling system	5.3 qts. (5.0L)	
Crankcase pan with filter	3.2 qts. (3.0L)	
Differential housing (all-wheel drive)	2.6 qts. (2.5L)	
Fuel tank	4.7 gals. (18L)	
Transmission, differential & rear axle carrier	12.7 qts. (12L)	14.8 qts. (14L)
ENGINE		
Make and model	MITSUBISHI K3B–13R	
Cylinders	3	
Bore	2.68-inches (68 mm)	
Stroke	3.07-inches (78 mm)	
Displacement	51.8 cu.in. (.849L)	
Engine speeds R.P.M. Rated full load	2700	
High idle	2900 $^{+0}_{-75}$	
Low idle	925 ±25	
Standard PTO (540RPM)	2400	
POWER TAKE-OFF SHAFT SPEEDS 540 R.P.M. PTO:		
At rated engine speed (2700 RPM)	607	
At high idle (2900 RPM)	652	
At low idle (925 RPM)	208	
At 2400 Engine RPM	540	

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PREVENTIVE MAINTENANCE GUIDE

To keep your tractor performing efficiently, it is advisable to systematically inspect the following points at intervals as outlined below

Before Operating the Tractor

Before operating a new tractor for the first time, be sure to follow the instructions given under "Work Safely – Follow These Rules", "Operating the Tractor". Also see "Lubrication", "Lubrication Table", and "Lubrication Guide".

Daily or After Every 10 Tachometer Hours of Operation

Water pump, fan and alternator-generator belt	Check tension. Refer to "Water Pump, Alternator-generator and Fan Belt Tension".
Rear wheel retaining hardware	Check and tighten to proper torque. Refer to "Rear Wheels".
Cooling system	Check level of Coolant in radiator. Refer to "Cooling System".
Fuel filter	Drain off water and sediment. Refer to "Fuel System".
Lubrication points	See "Lubrication Guide".
Air cleaner	Check the element and remove the dust from dust pan.

After the First 50 Tachometer Hours of Operation

Flexible rubber connections between air cleaner and manifold	Inspect for loose fit or leakage. Refer to "Air Cleaning System".
Rear wheel retaining hardware	Check and tighten to proper torque. Refer to "Rear Wheels".
Tires	Check pressure. Refer to "Tires".
Radiator core	Inspect, clean if necessary. Refer to "Cooling System".
Water pump, fan and alternator-generator belt	Check tension, replace when necessary. Refer to "Water Pump, Alternator-Generator and Fan Belt Tension".
Engine crankcase	Drain and change oil. Refer to "Lubrication".
Hydraulic fluid filter screen	Remove and clean screen. Refer to "Hydraulic Fluid Filter" and "Lubrication Guide".
Drive housing hydraulic fluid filter (Hydro 234)	Replace element. Refer to "Hydrostatic Drive Housing Hydraulic Fluid Filter" and "Lubrication Guide".

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