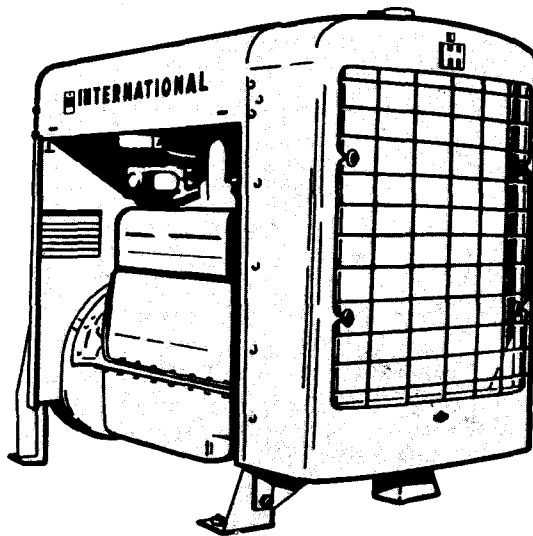


**INTERNATIONAL<sup>®</sup>**  
**UB-220, UB-240**  
**and**  
**UB-264**  
**Power Units**



**operator's manual**



**INTERNATIONAL HARVESTER COMPANY**

180 North Michigan Avenue

Chicago 1, Illinois, U.S.A.

## TO THE OWNER

The purpose of this manual is to assist you in realizing the benefits you anticipated when you purchased this International Harvester product. Many people have contributed to the design and production of this product and its delivery to you. They have an interest in its successful performance and have provided this manual to give you the benefit of the experience they have gained through years of field testing and normal usage of this and similar products.

The way you operate and the care you give this product will have much to do with its successful performance. This manual has been carefully prepared and the information arranged and illustrated to make it as easy as possible for you to find the information you wish. It will pay you to read the entire manual carefully before operating and keep it handy for future reference. Your authorized International Engine Distributor or Dealer will be glad to answer any further questions you may have on the operation or care of this product.

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It is the policy of International Harvester Company to improve its products whenever it is possible and practical to do so. We reserve the right to make changes or add improvements at any time without incurring any obligation to make such changes on products sold previously.

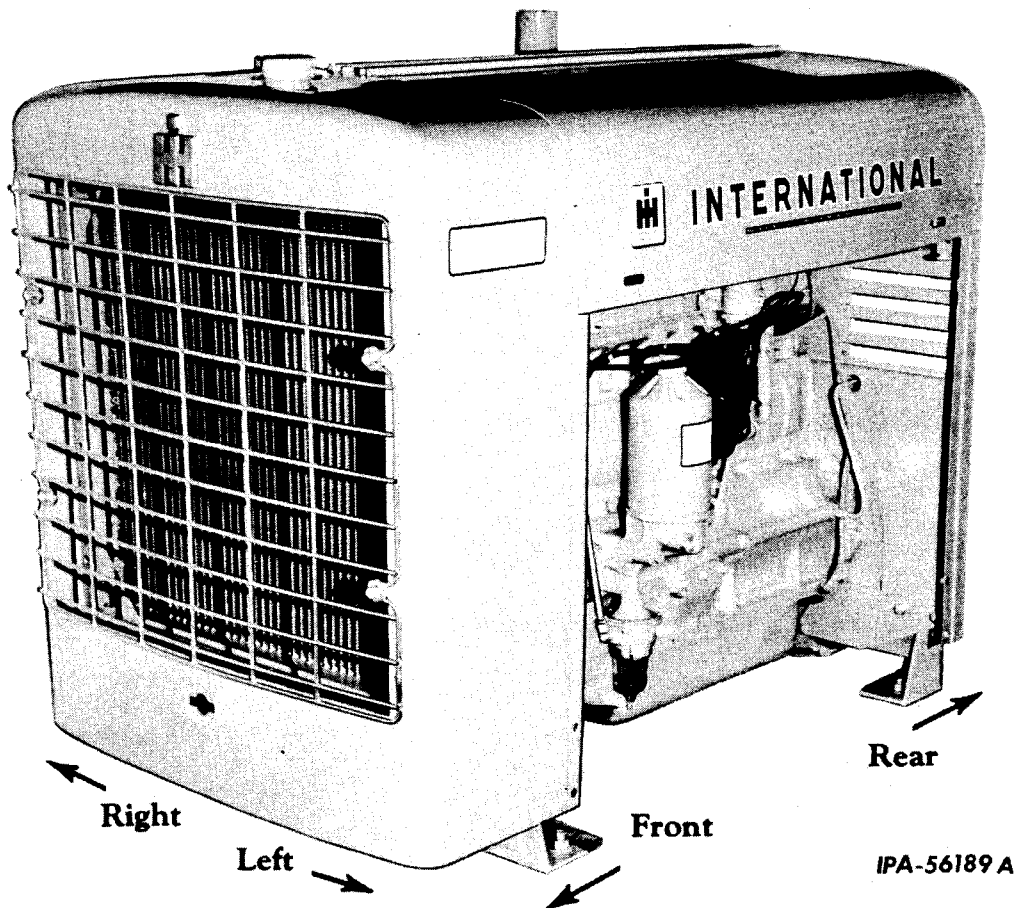
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## INTRODUCTION



Illust. 1

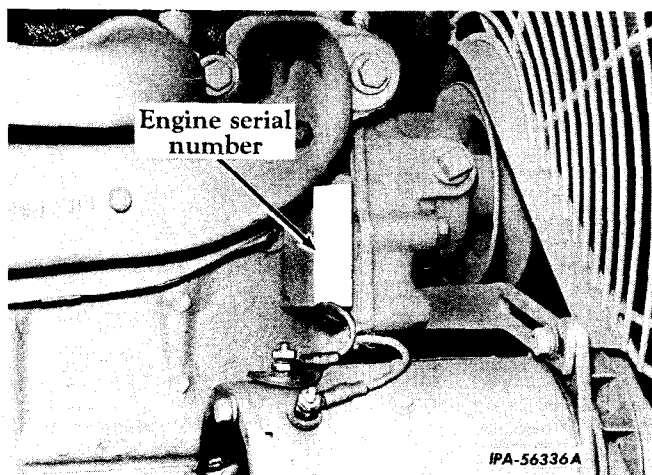
Left front view of the UB-220, UB-240 and UB-264 power units (gasoline) with radiator and connections, radiator grille, hood and dash, front and rear supports, and attachments.

## INTRODUCTION

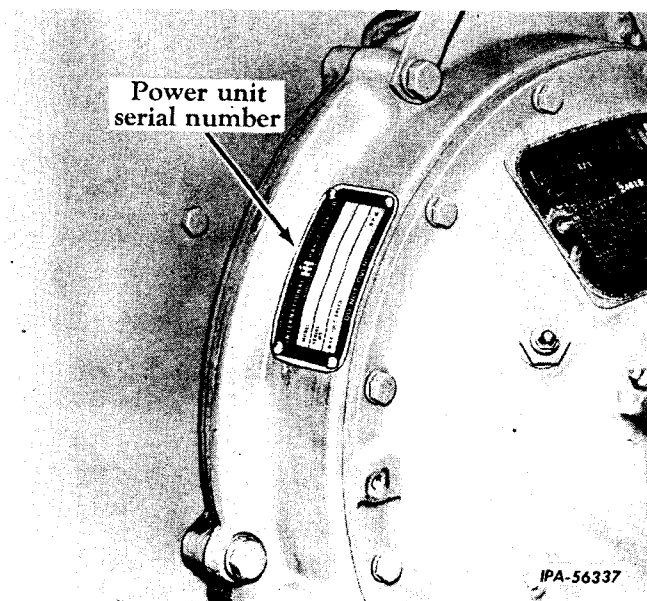
Instructions on operation, lubrication, and maintenance for the standard unit and attachments are covered in this manual. Disregard any instructions on attachments that are not applicable to your unit.

Throughout this manual the use of the terms "left" and "right" and "front" and "rear" must be understood to avoid confusion when following instructions. (Illust. 1.)

When requesting information or ordering parts, always specify the power unit and engine serial number. (Refer to Illust. 2 and 3.) Write these serial numbers in the space provided.



Illust. 2  
Engine serial number.



Illust. 3  
Power unit serial number.

Engine Serial Number:

BD-220 \_\_\_\_\_  
BD-240 \_\_\_\_\_  
BD-264 \_\_\_\_\_

Power Unit Serial Number

UB-220 \_\_\_\_\_  
UB-240 \_\_\_\_\_  
UB-264 \_\_\_\_\_

### VENTILATION FOR POWER UNITS INSTALLED INSIDE OF BUILDINGS

International power units are available with either a radiator or a Flo-matic type cooling system. An adequate supply of fresh air is required when a radiator is used. The air must be sufficiently clean to avoid clogging the radiator core.

Power units installed inside buildings, sheds or cabs must be the open type; that is, with the engine hood and back panel removed to permit free circulation of fresh air around the engine, radiator, etc. Steps must be taken to carry the waste heat to the outside, or to change the air in the engine room rapidly.

Arrange the exhaust pipes to provide the shortest possible length within the engine room. The parts of these exhaust pipes inside the building should be surrounded with a light steel tube large enough to permit a two to four inch air space all around. This space should be ventilated to the outside. Another method of installation is to cover the exhaust pipe completely with at least two inches of air cell asbestos.

Ventilate the engine room thoroughly and install the power unit so that air can flow freely through the radiator. An opening to the outside in front of the radiator is extremely desirable. Openings to the north or to a shaded side of the building are preferred. On some installations, a blower fan attachment is available and also desirable to force the air out of the building.

Where the door or window area is restricted, galvanized ducts, extending from the ceiling above the engine to the top of the building, are recommended to carry off the hot air. Not less than two ducts 24 x 24 inches in cross section, should be installed. At the same time as many openings in the sides of the engine room as possible should be provided to let in cool outside air.

## INTRODUCTION

### SUGGESTED POWER UNIT ARRANGEMENT

1. Anchor your power unit securely to a level solid foundation, preferably concrete.
2. Mount your power unit or driven machine so that the belts may be removed or tightened.
3. Do not support a long exhaust pipe on the exhaust manifold. Instead, use a flexible pipe at the engine, and support the rigid pipe from the ceiling or floor.
4. Use long-sweep elbows in the exhaust pipes.
5. For every 12 feet of exhaust pipe, enlarge the diameter of the pipe one standard pipe size.
6. Install flexible fuel lines between the pipes to the fuel tank and the engine; also install the flexible exhaust piping so that the belting may be adjusted without disconnecting these pipes or lines.

### SPECIFICATIONS AND CAPACITIES

#### Capacities (U.S. Measure)

##### Air cleaner oil cup:

Donaldson . . . . . 2-3/4 pts.  
Fram . . . . . 2 pts.

##### Cooling system:

Flo-matic type (less heat exchanger) . . . . . 64 qts.  
Radiator type . . . . . 21 qts.

Crankcase (including oil filter) . . . . . 9 qts.

##### Transmission (if equipped):

Four speed sliding gear . . . . . 5 pts.  
Four speed synchromesh . . . . . 7 pts.

The capacities which appear throughout this manual are specifically for these engines and their attachments.

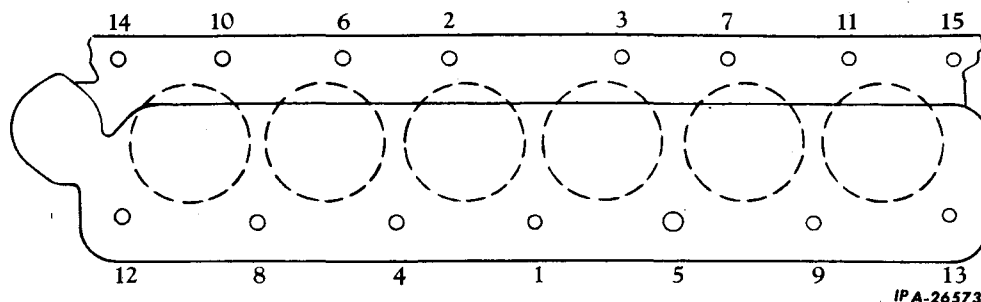
### Specifications

#### Engine

Cylinders . . . . .	6
Bore:	
UB-220 and UB-240 . . . . .	3-9/16 in.
UB-264 . . . . .	3-11/16 in.
Stroke:	
UB-220 . . . . .	3-11/16 in.
UB-240 . . . . .	4-1/64 in.
UB-264 . . . . .	4-1/8 in.
Firing order . . . . .	1, 5, 3, 6, 2, 4
Fan belt tension . . . . .	1/2 to 3/4 in.
Distributor: (Delco-Remy)	
Dwell angle . . . . .	28 to 35 deg.
Point gap:	
New points . . . . .	.019 in.
Reset . . . . .	.016 in.
Spark plug gap:	
Gasoline . . . . .	.028 to .033 in.
LPG or natural gas . . . . .	.015 to .020 in.
Carburetor:	
Gasoline . . . . .	Zenith
LPG or natural gas . . . . .	Ensign.
Valve clearance (engine hot) . . . . .	.025 in.
Torques (foot-pounds) (Threads lightly lubricated with engine oil except as noted):	
Fuel pump bowl retainer screw (dry torque) . . . . .	12-15 inch-pounds
Lubricating oil filter center tube . . . . .	40-50
Spark plugs . . . . .	28-30
Valve cover bolts . . . . .	14-16
Water outlet cap screws . . . . .	8-10
Cylinder head bolts . . . . .	85-95

NOTE: When retorquing cylinder head bolts, the engine must be at operating temperature. Only those bolts below torque should be re-torqued to the proper specifications. Those above torque are to remain as they are (Illust. 4).

(Continued on next page.)



Illust. 4  
Sequence for tightening cylinder head bolts.

## INTRODUCTION

### Engine Speeds

Optional engine speeds are available. The high idle and full load governed speeds, for which an engine is equipped and adjusted are stamped on the power unit serial number plate on the fly-wheel housing.

### Dimensions (Approximate)

Length (without power take-off) . . . 50-1/16 in.  
Height (over-all with air cleaner  
under the hood) . . . . . 40-5/8 in.  
Height (over-all with air cleaner  
mounted on the dash) . . . . . 45-3/4 in.  
Width (over-all) . . . . . 28-5/8 in.

### Fuel (Gasoline)

These engines are shipped with the ignition timing set for maximum power on the average regular grade of gasoline of 89 research octane

number as domestically available in the U.S.A. For fuels of lower research octane number, the timing may require retarding (approximately one degree retard from factory setting for each decrease of one octane number). Overseas fuels may, in many areas, be considerably lower in research octane number than regular grade fuels obtainable in the U.S.A. Clear, unleaded fuels should never be used. Advancing the timing beyond the initial factory setting is not recommended and may only result in adverse effects. There is no particular advantage in using a fuel having a higher anti-knock value than the engine requires.

### Fuel (LPG)

NOTE: It is recommended the LP Gas Fuel Meeting the Natural Gas Processor's Association (NGPA) specification for Propane HD5 be used.

Specifications subject to change without notice.

## DESCRIPTION

### OPERATING CONTROLS AND INSTRUMENTS

The operator should thoroughly familiarize himself with the instruments and controls provided for operation of his power unit. There are important differences between various engines; therefore, regardless of previous experience with other machines, the operator must fully understand what each control is for and how to use it before operating the power unit.

Safety shut-off gauges have been pre-set at the factory. If any of these gauges fail to operate properly, consult your authorized International Engine Distributor or Dealer.

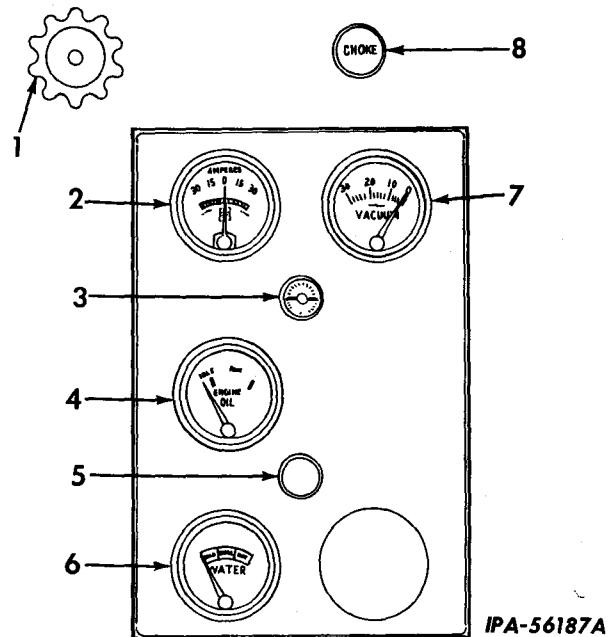
### Instruments

#### Ammeter (Illust. 5 or 6)

The ammeter indicates rate at which the battery is charging or discharging.

#### Engine Oil Pressure Indicator (Illust. 5)

The engine oil pressure indicator shows the pressure of the lubricating oil circulating through the engine. This indicator has an "IDLE" and "RUN" range. When operating at speeds above low idle, the pointer must be in the "RUN" range.



Illust. 5

Instrument panel (regular gauges).

1. KNOB, engine throttle control.
2. AMMETER.
3. SWITCH, ignition.
4. INDICATOR, engine oil pressure.
5. BUTTON, starting switch.
6. INDICATOR, heat.
7. GAUGE, vacuum.
8. BUTTON, choke control.



# Lubrication Points for the Rockford and Twin Disc Clutch

Point of Lubrication	Lubricant	Hours	Hours	Lubricant	Point of Lubrication
----------------------	-----------	-------	-------	-----------	----------------------

Clutch throwout bearing  
Over 10 engagements  
per day.

\*Refer to NOTE.

Less than 10 engage-  
ments per day.  
Apply two or three  
strokes of the lubri-  
cator.

Clutch shaft outer  
bearing . . . . .  
(On some clutches, the  
fitting is located on the  
opposite side.) Apply  
two or three strokes of  
the lubricator.

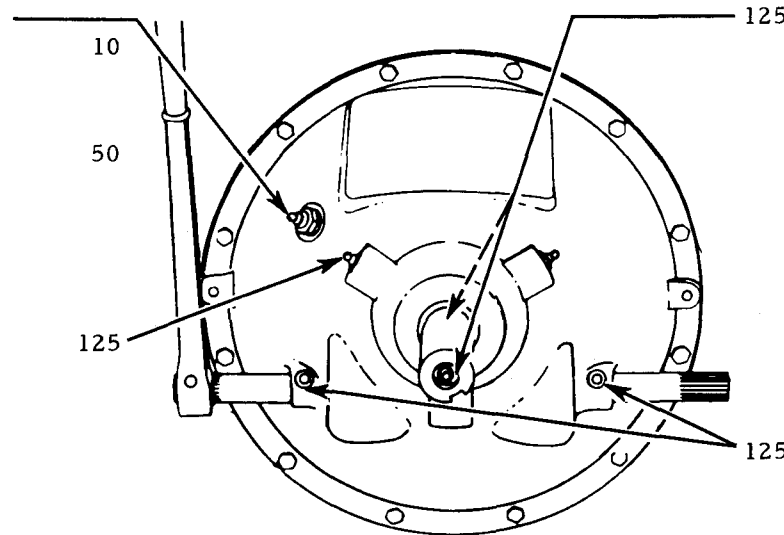
HTG

10

50

HTG

125



125

125

125

HTG

EO

HTG

Clutch pilot bearing.  
Over 10 engagements  
per day.  
Less than 10 engage-  
ments per day.  
Apply two or three  
strokes of the lubri-  
cator.

\*Refer to NOTE.

Clutch lever shaft.  
Apply five or six  
drops of oil in each  
oil cup.

Clutch lever shaft.  
Apply two or three  
strokes of the lubri-  
cator.

\*Refer to NOTE.

SCHEDULED MAINTENANCE

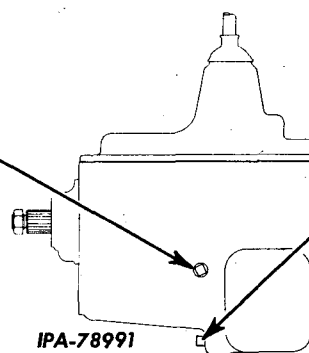
\*NOTE: On applications where the end of the output shaft is covered with a universal joint or flexible coupling, transfer the lubrication fitting from the end of the shaft to the crossed drilled location (indicated by dotted arrow). Use the pipe plug removed from the cross-drilled hole to close the opening in the end of the output shaft. This fitting is the only means of lubricating the clutch pilot bearing.

Points of Lubrication Lubricant Hours

Transmission level . .  
Remove the filler and  
level plug. Check to be  
sure the level is at the  
bottom of the filler  
opening. Install the fil-  
ler and level plug.

MPL

50



IPA-78991

Hours Lubricant Point of Lubrication

250

MPL

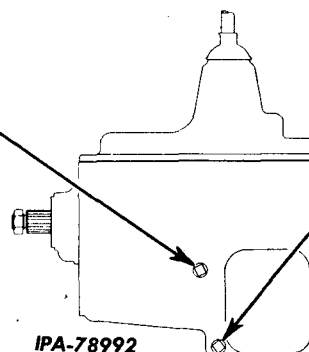
Transmission drain.  
Remove the drain  
plug; also remove the  
filler and level plug  
while the lubricant is  
still warm. Drain and  
flush the transmis-  
sion case. Install the  
drain plug. Fill to the  
bottom of the filler  
opening. Install the  
filler and level plug.

Lubrication Points for the Selective Sliding Gear Transmission

Transmission level . .  
Remove the filler and  
level plug. Check to be  
sure the level is at the  
bottom of the filler  
opening. Install the fil-  
ler and level plug.

MPL

50



IPA-78992

250

MPL

Transmission drain.  
Remove the drain  
plug; also remove the  
filler and level plug  
while the lubricant is  
still warm. Drain and  
flush the transmis-  
sion case. Install the  
drain plug. Fill to the  
bottom of the filler  
opening. Install the  
filler and level plug.

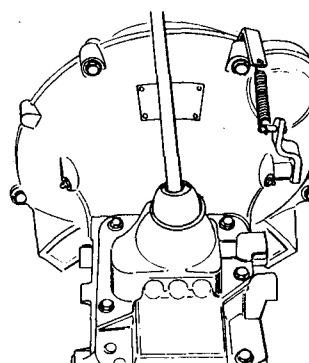
Lubrication Points for the Synchromesh Transmission

125

HTG

Transmission clutch.  
Release shaft lever.

Apply two or three  
strokes of the lubri-  
cator.



IPA-78916

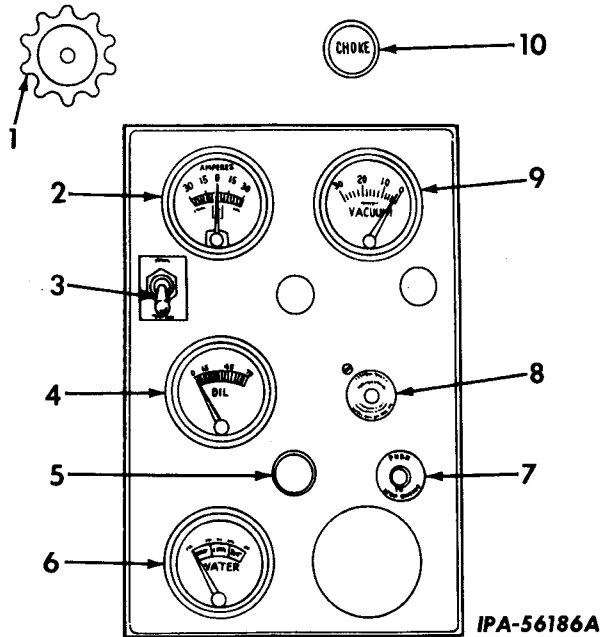
Lubrication Points for the Transmission Clutch

*no*

## DESCRIPTION

### Safety Engine Oil Pressure Indicator (Illust. 6)

This indicator is part of the instrument panel (safety gauges) attachment. The safety engine oil pressure indicator shows the pressure of the lubricating oil circulating through the engine. The engine must maintain a minimum of 20 psi. If the oil pressure drops below this minimum pressure, the engine will automatically stop.



Illust. 6  
Instrument panel (safety gauges).

1. KNOB, engine throttle control.
2. AMMETER
3. SWITCH, vacuum safety toggle.
4. INDICATOR, safety engine oil pressure.
5. BUTTON, starting switch.
6. INDICATOR, safety heat.
7. SWITCH, engine stop.
8. SWITCH, ignition relay.
9. GAUGE, vacuum safety.
10. BUTTON, choke control.

### Heat Indicator (Illust. 5)

The heat indicator shows the temperature of the coolant circulating in the engine.

### Safety Heat Indicator (Illust. 6)

This indicator is part of the instrument panel (safety gauges) attachment. The safety heat indicator registers the temperature of the coolant circulating in the engine. The indicator pointer must be in the "RUN" range. If the en-

gine overheats (indicator in the "HOT" range), the engine will automatically stop.

### Vacuum Gauge (Illust. 5)

This gauge indicates the amount of vacuum that is present in the intake manifold. (Refer to "Instrument Checks" on page 14 for additional information).

### Vacuum Safety Gauge (Illust. 6)

This gauge is part of the vacuum safety shut-off attachment.

The vacuum safety gauge indicates the amount of vacuum that is present in the intake manifold.

If the engine should over-speed due to a drop off in load, engine vacuum increases. The engine will shut off automatically when the vacuum reaches 16 inches.

If the engine lugs down due to an overload, engine vacuum decreases. When the vacuum falls to 4 inches, the engine will shut off automatically.

### Hourmeter

This meter is mounted on a bracket secured to the rear of the crankcase front cover plate on the left hand side of the engine.

This meter indicates the actual hours of engine operation. Its range is from zero to 10,000 hours. When the meter reaches 10,000 hours, it automatically starts again at zero.

### Controls

#### Choke Control Button (Illust. 5 or 6)

The choke control button aids in starting the engine when it is cold. On gasoline engines, the choke control button can be used to put the choke valve in intermediate positions.

On liquefied petroleum gas and natural gas, the choke control button puts the choke valve in only two positions (all the way opened or all the way closed).

### Ignition Switch (Illust. 5)

This is a "push-pull" type switch having two positions, "OFF" and "ON."

### Ignition Relay Switch (Illust. 6)

This switch is part of the instrument panel (safety gauges) attachment. It is a push button

(Continued on next page.)

## DESCRIPTION

type switch. To start the engine, hold the relay and the starting switch button in until the pointer has separated from the contact in the safety engine oil pressure indicator.

### Vacuum Safety Toggle Switch (Illust. 6)

This switch is part of the vacuum safety shut-off attachment. It has a "START" and a "RUN" position. Before starting the engine, move the switch to the "START" position. When the engine has started and after the load is applied, move the switch to the "RUN" position.

### Starting Switch Button (Illust. 5 or 6)

Pressing this button cranks the engine by completing the electrical circuit between the battery and the cranking motor.

### Engine Throttle Control Knob (Illust. 5 or 6)

This knob controls the speed of the engine.

To get a specific engine rpm, depress the button in the center of the knob. Hold the button in and move the knob in or out. As the engine speed nears the desired engine rpm, release the button; the knob will be locked in position. For a finer adjustment, rotate the knob counterclockwise (to increase the engine rpm) or clockwise (to decrease the engine rpm).

### Engine Stop Switch (Illust. 6)

The engine stop switch is part of the instrument panel (safety gauges) attachment. It is a push button type switch. When the button is pushed in, the ignition circuit is broken at the relay, stopping the engine.

### Radiator Shutter Knob (Manually Operated Shutter) (Illust. 7)

The radiator shutter control knob, bracket mounted on the right hand rear surface of the radiator grille, operates the opening and closing of the shutter.

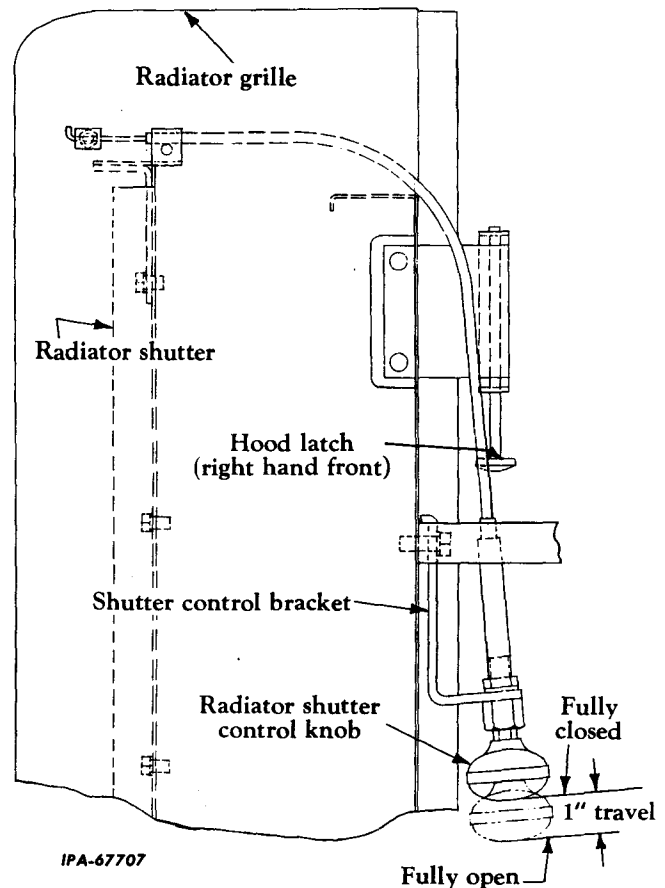
Back-off on the knob to open the shutter; turn-up on the knob to close the shutter.

### Power Take-off Clutch Lever (Illust. 8)

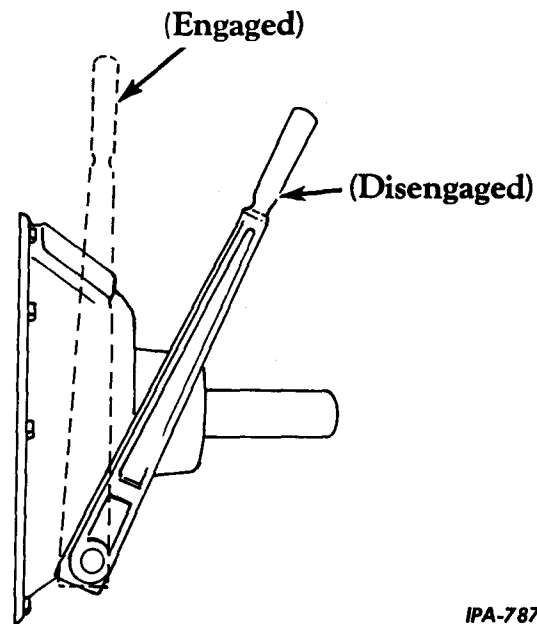
This lever is used to engage or disengage the engine from the load.

### Transmission Gearshift Lever

This lever is used to select one of the various transmission gear ratios.



Illust. 7  
Radiator shutter control knob.



Illust. 8  
Power take-off clutch lever positions  
(left hand lever installation shown).

## MAINTENANCE

The fuel filter element must be changed when it becomes clogged sufficiently to restrict the flow of fuel. A clogged filter element causes a pressure drop within the filter with consequent vaporization of the fuel which may cause freezing at the filter and engine starvation for fuel. Remove the filter as follows:

1. Close the valve on the gas supply line.
2. Remove the filter stud nut and the filter bottom.
3. Remove the filter cartridge and replace cartridge with a new one.
4. When reassembling the filter, be sure the contact surfaces of the bowl gasket and the fiber washer on the filter stud nut are clean. Replace the bowl gasket and the fiber washer if necessary.
5. Install the filter bottom and the filter stud nut.
6. Open the valve on the gas supply line.

### POWER TAKE-OFF CLUTCHES

#### Maintenance

This over-center type clutch is designed to require a minimum of attention. Over-lubrication is as detrimental to the clutch as under-lubrication. It is important, however, to follow lubrication instructions as given in "LUBRICATION GUIDE" on page 21.

#### Adjustment

Adjustment is required when a diminished effort is required to engage the clutch.

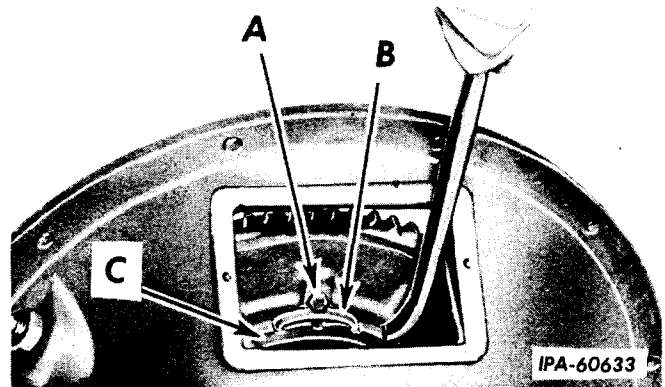
Rapid wear of the clutch facings will result if slippage takes place while the engine is under heavy load.

**NOTE:** New clutch facings have a series of "high spots" or feather edges which must be worn away before the lining is capable of transmitting its full torque capacity. Hence clutch adjustment will be required several times within the first 10 hours of operation. This will avoid rapid clutch facing wear due to slippage and will allow the clutch to handle full engine power.

1. Remove the clutch instruction plate.
2. Be sure the ignition switch is in the "OFF" position. Disengage the clutch and slowly

crank the engine (refer to "Hand Cranking" on page 35) until the adjusting lock appears in the center of the opening (Illust. 40 and 41).

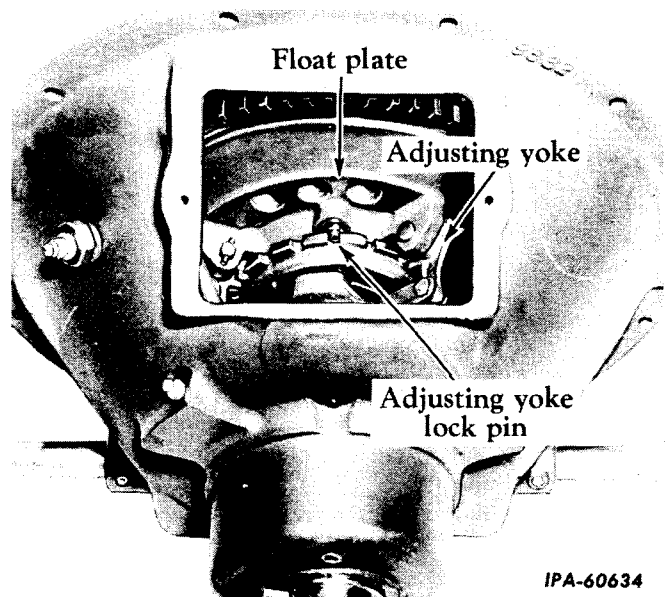
3. **ROCKFORD ONLY:** Loosen the adjusting ring lock screw "A" with an offset screwdriver to free the lock "B." Hold the power take-off shaft to keep the clutch from turning and insert a pry bar into a notch in the adjusting ring "C" for leverage. Turn the ring a notch at a time in a counterclockwise direction (Illust. 40).



Illust. 40  
Adjusting the Rockford clutch.

3. **TWIN-DISC ONLY:** Pull out the adjusting lock pin (on 11-1/2 inch clutch, depress the lock pin). Hold the power take-off shaft to keep the clutch from turning a turn the adjusting yoke clockwise one notch at a time (Illust. 41).

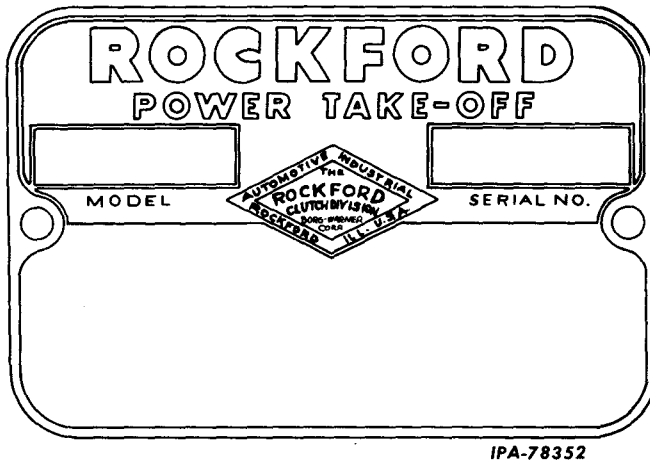
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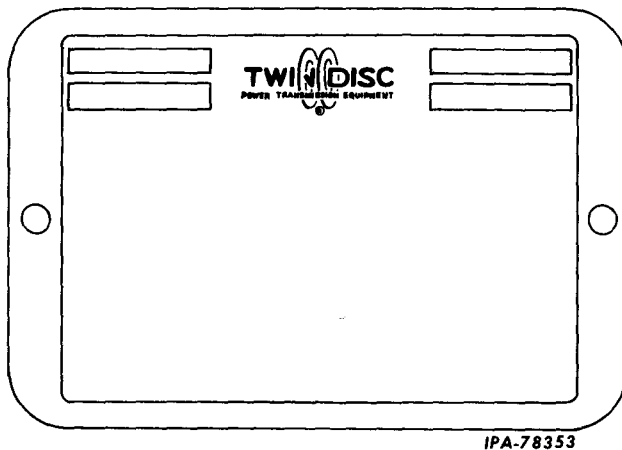
Illust. 41  
Adjusting the Twin-Disc clutch.

## MAINTENANCE

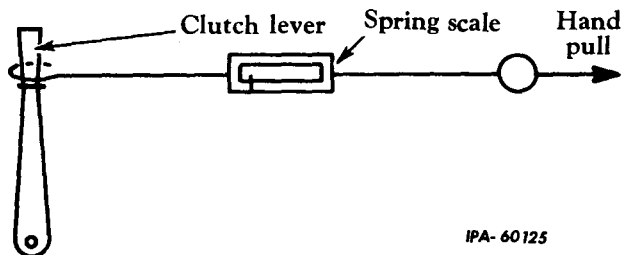
4. Be sure the clutch lever is in the "dis-engaged" position. To determine the correct amount of hand-pull effort for your power unit, refer to Illust. 42 or 43 for the IH power take-off number on your power unit.



Illust. 42  
Rockford instruction plate.



Illust. 43  
Twin-Disc instruction plate.



Illust. 44  
Method of checking clutch adjustment.

5. Engage the spring scale hook on the clutch lever as shown in Illust. 44. Refer to the chart on this page for the correct amount of hand-pull effort.

NOTE: These figures, shown in the chart on this page, are based on the clutch lever originally furnished with the power take-off.

### ROCKFORD

IH Power Take-Off Part Number	Pounds of Effort
319503 R91	70
319512 R91	65
319513 R91	100
319514 R91	65
319515 R91	100
319524 R91	75

### TWIN-DISC

IH Power Take-Off Part Number	Pounds of Effort
321050 R91	85
321053 R91	60-65
321054 R91	60-65
321057 R91	70-80

### Adjustment - Continued

6. ROCKFORD ONLY: Tighten the adjusting ring lock screw.
6. TWIN-DISC ONLY: Secure the adjusting lock pin.
7. Install the clutch instruction plate.

### TRANSMISSION CLUTCH

This clutch is a non-adjustable, dry type and automatically compensates for clutch facing wear.

### STORING THE POWER UNIT

When the power unit is not to be used for some time, it must be stored in a dry and protected place. Leaving the equipment outdoors, exposed to the elements, materially shortens its life.

The following procedure must be followed when the power unit is placed in storage for 30 days

## MAINTENANCE

or more. Completely lubricate the power unit every six months.

We recommend that caution be taken in starting an engine that has been in storage. Refer to "STARTING ENGINES THAT HAVE BEEN IN STORAGE" on pages 47 and 48.

1. Thoroughly wash or clean the power unit.
2. Operate the engine long enough to warm the oil in the crankcase. Drain the crankcase, change the lubricating oil filter element (as outlined on pages 32 and 33) and fill the crankcase with fresh oil. (Refer to the "LUBRICATION GUIDE" on pages 19 to 22 for the correct viscosity of oil used for the prevailing air temperature.)
3. Completely lubricate the rest of the power unit as outlined in the "LUBRICATION GUIDE" on pages 19 to 22.
4. Drain the fuel from the carburetor and clean out the fuel filter. (Refer to "Cleaning the Fuel Filter" on pages 42 and 43.)

NOTE: Present-day grades of gasoline have a tendency to form gum; therefore, it is necessary that the carburetor be completely drained of fuel when the engine is to be out of service for more than two weeks. These gum deposits can be dissolved with a mixture of one part alcohol and one part benzol.

5. Remove the spark plugs and pour one tablespoonful of Grade-50 lubricating oil into each cylinder. Crank the engine two or three times to distribute the oil over the cylinder walls; then reinstall the spark plugs.
6. Remove the valve housing cover and flush the valves, rocker arms and push rods with Grade-50 lubricating oil. (If any evidence of rust is found, remove it before lubricating.) Use a paint brush to coat the inside of the valve housing cover with Grade-50 lubricating oil. Install the valve housing cover.
7. Drain and flush the cooling system (refer to "Cleaning the Cooling System" on page 27). Install a "RADIATOR DRAINED" tag.
8. Remove and clean the crankcase ventilator metering valve. Remove the crankcase breather from the valve housing cover and plug up the opening. (Refer to "CRANKCASE VENTILATION" on pages 33 to 35).
9. To prevent dirt or moisture from entering the engine, plug up the end of the exhaust pipe.
10. DONALDSON AIR CLEANER ONLY:  
Remove the air cleaner intake cap. Cover the pipe on the air cleaner body.
11. Remove the battery and place it on a rack or bench in a cool, dry place above freezing (+32° F). Check the battery at least once a month for the correct water level and specific gravity.

### Liquefied Petroleum and Natural Gas Engines

Follow the same procedure used for preparing the gasoline engines for storage, except as follows:

1. Close the valve on the gas supply line. Run the engine until it stops from lack of fuel.
2. Disconnect the fuel supply source and plug up the opening.
3. Drain the fuel regulator of water.
4. Install a new fuel filter element on liquefied petroleum gas engines (refer to pages 44 and 45).

### STARTING ENGINES THAT HAVE BEEN IN STORAGE

1. Remove the spark plugs and pour a mixture of one-half gasoline and one-half light lubricating oil into each cylinder; one ounce (two tablespoonfuls) per cylinder is enough.
2. Remove the valve housing cover and flush the valve and valve operating mechanism with the same mixture.
3. Crank the engine rapidly until the excess oil has been blown out of the spark plug holes. This operation will loosen any tight piston rings and wash old, gummy oil from valves and pistons.
4. Drain the crankcase and fill with the specified lubricating oil. (Refer to the "LUBRICATION GUIDE" on pages 19 and 20.)
5. Remove the crankcase breather and the exhaust pipe plugs. Install and fill the crankcase breather oil cup with fresh oil. (Refer to the "LUBRICATION GUIDE" on pages 19 and 20 for the correct grade of oil.)
6. Install the spark plugs after cleaning and setting the gaps. (Refer to "Specifications" on page 5 and 6 for the correct gap.)

(Continued on next page.)

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7. DONALDSON AIR CLEANER ONLY: Remove the cover from the air intake opening. Install the air intake cap.

8. Be sure the cooling system drains are closed. Fill the cooling system. (Refer to "Filling the Cooling System" on page 27. Check for leaks and loose connections. Remove the "RADIATOR DRAINED" tag.

9. Install a fully charged battery and be sure the proper connections are made. (Refer to the wiring diagram on pages 40 and 41.)

10. Start the engine and let it run slowly; observe if the valves are sticking. If so, pour a small quantity of kerosene on the valve stems until loose.



CAUTION: Do not run the engine rapidly or operate it at high speed immediately after starting. Keep the doors wide open or move the power unit outside the storage room before starting to avoid danger from exhaust gas.

11. Install the valve housing cover. Tighten the valve cover bolts. (Refer to "Torques" on page 5.)

12. After the engine has been run long enough to clean the excess oil out of the cylinders, the spark plugs should be removed and checked for oil fouling. If fouled, clean and reinstall them in the engine.





# Accidents can be prevented with your help

No accident-prevention program can be successful without the wholehearted co-operation of the person who is directly responsible for the operation of equipment.

To read accident reports from all over the country is to be convinced that a large number of accidents can be prevented only by the operator anticipating the result before the accident is caused and doing something about it. No power-driven equipment, whether it be transportation or processing, whether it be on the highway, in the harvest field or in the

industrial plant, can be safer than the man who is at the controls. If accidents are to be prevented—and they can be prevented—it will be done by the operators who accept a full measure of their responsibility.

It is true that the designer, the manufacturer, the safety engineer can help; and they will help, but their combined efforts can be wiped out by a single careless act of the operator.

It is said that "*the best kind of a safety device is a careful operator.*" We ask you to be that kind of an operator.

As a member of the National Safety Council, we are privileged to use the Green Cross for Safety to designate not only our interest in Safety, but to point out more clearly the safety precautions in this manual.

NATIONAL SAFETY COUNCIL