



Hough
Operator's Manual

HM Payloader
S/n 90,000 & Up

JENSALES.COM
or Call 800-443-0625



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HO-O-HM

Operator's Manual

OPERATING MANUAL

MODEL HM PAYLOADER®

BEGINNING WITH SERIAL NUMBER 90001

FORM HM-3A



JENSALES.COM

or Call 800-443-0625

MANUFACTURED BY

THE FRANK G. HOUGH CO.

LIBERTYVILLE, ILLINOIS

LITHO. IN U. S. A.

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AVOID ACCIDENTS

Most accidents, whether they occur in industry, on the farm, at home or on the highway are caused by failure of some individual to follow simple and fundamental safety rules or precautions. For this reason most accidents can be prevented by recognizing the real cause and doing something about it before the accident occurs.

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that can not be completely safe guarded against without interfering with reasonable accessibility and efficient operation.

A CAREFUL OPERATOR IS THE BEST INSURANCE AGAINST AN ACCIDENT.

THE COMPLETE OBSERVANCE OF ONE SIMPLE RULE WOULD PREVENT MANY THOUSAND SERIOUS INJURIES EACH YEAR. THAT RULE IS:

"Never attempt to clean, oil or adjust a machine while it is in motion!"

"National Safety Council"

CONDENSED SPECIFICATIONS AND SERVICE DATA

ENGINE:

	<u>Gasoline</u>	<u>Diesel</u>
Hercules Model No.	JXD	DJXH
No. of Cylinders	6	6
Bore	4.0	3.75
Stroke	4.25	4.5
Displacement	320	298
Speed (Governed)	2000 R.P.M.	2000 R.P.M.
Horsepower - Max. Stripped	87	86

TRANSMISSION:

Four speed forward and four speed reverse.

FINAL DRIVE:

Heavy duty double reduction drive axle completely equipped with anti-friction bearings.

CLUTCH:

Spring loaded dry disc.

BRAKES:

Internal expanding, two shoe type hydraulic brakes on drive wheels.

STEERING GEAR:

Heavy duty recirculating ball type steering mechanism coupled with a hydraulic steering booster.

BATTERY:

Gasoline - 2 Batteries
XQ 17 6 Volt Exide

Diesel - 4 Batteries
XQ 23 6 Volt Exide - Ser. No's up to 91274
XQ 17 6 Volt Exide - Ser. No's 91275 up.

TIRES:

Front & Rear: Grader Type 14:00 x 24 - 8 ply. Air pressure 45-50 pounds.

PAYLOADER DIMENSIONS: Bucket in Carry Position

Over all Height - At steering wheel	6' - 8"
Overall Width - At rear tires	8' - 10"
Overall Length	18' - 10"
Turning Radius - To Tip of Bucket	20' - 4"
Floor Clearance	1' - 3"
Wheelbase	7' - 2-1/4"
Service Weight - Bucket empty:	
Model HM Gas 17000#	Model HMD Diesel 17500#

CAPACITIES:

Cooling System	31 quarts
Fuel Tank	37 gallons
Crankcase Oil - with oil filter	9 quarts
Transmission Oil SAE - 140 Summer - SAE 90 Winter	22 pounds
Final Drive Oil - SAE 140 Summer - SAE 90 Winter - Front Axle	26 pounds
Final Drive Oil - SAE 140 Summer - SAE 90 Winter - Rear Axle	26 pounds
Hydraulic System Oil - SAE #10 Motor Oil	20 gallons

The **PARKING BRAKE** is located on the left side of the floorboard opposite the steering column. It operates independently of the foot brake pedal. Pull backward on this lever to apply brake pressure when parking the "PAYLOADER" especially on slopes. It is good practice to set the parking brake whenever the operator leaves the machine. Always be sure to release the parking brake whenever the "PAYLOADER" is about to be put to use. Press the handle button and push the lever forward to release the parking brake.

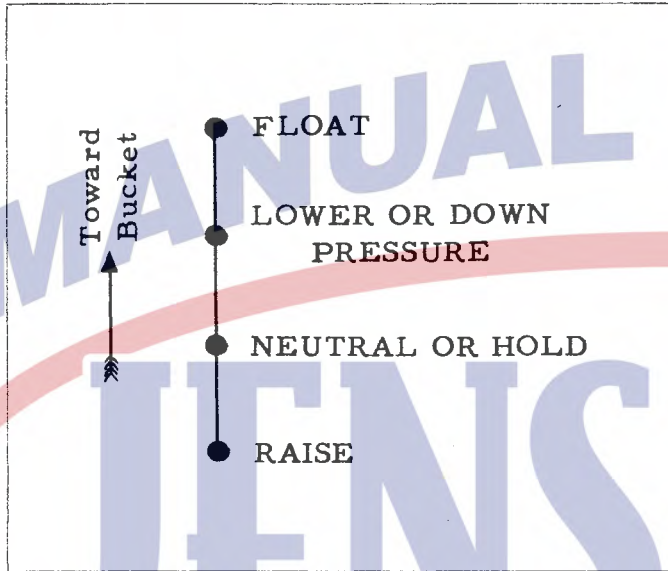


Fig. 3
BOOM LEVER POSITIONS

The **BOOM CONTROL LEVER** is the longer outer lever on the right hand side of the seat. This lever has four positions which can be felt distinctly by the operator when the poppet falls into position as the lever is moved.

Pull the boom lever backward, toward the operator, to the last poppet to raise the boom and bucket. The bucket will raise in direct proportions to the engine speed.

Push the lever forward, one notch ahead of raise position, to "HOLD" position. Placing the boom lever in the "HOLD" position will stop and hold the bucket at any height of its travel.

The "LOWER" position is the next poppet felt ahead of the hold notch and is used to exert down pressure on the bucket or backfiller blades for easier penetration in hard soil.

The extreme forward poppet is the "FLOAT" position and is commonly used to lower the bucket. It allows the bucket or backfiller blade to move freely following variations in grade level when bulldozing or leveling.

Always return the boom lever to neutral or hold position before shutting off or starting the engine. This lever will lower the boom and bucket even though the engine has been shut off.

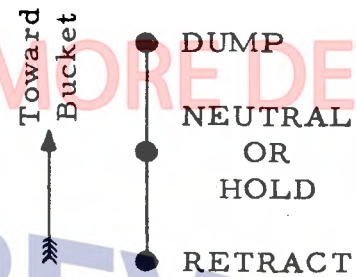


Fig. 4
BUCKET LEVER POSITIONS

The **BUCKET CONTROL LEVER** is the shorter, inner, lever on the right hand side of the seat. This lever controls the "dumping", "holding", and "retracting" action of the bucket. There are no poppet positions in this lever since it is connected to the spring loaded plunger of the valve. It always returns to its centralized or neutral position when released.

Push the bucket lever forward, away from the operator to "DUMP" or open the bucket. Release the lever and it will automatically return to the neutral position allowing the bucket to remain dumped.

Pull the bucket lever backward, toward the operator, to retract or "close" the bucket. Just release the lever and it will return to neutral position holding the bucket "retracted" or closed.

The bucket may be stopped and held in any position of its dumping arc by returning the bucket lever to its neutral position.

STARTING THE ENGINE:

With the "PAYLOADER" properly inspected and checked as explained in the preceding pages, the engine may be started. Be sure the engine crank-case oil is up to the "full" mark on the oil dipstick and the cooling system is full of cooling fluid. Be sure the hydraulic reservoir contains the correct amount of oil. Be sure the fuel tank contains a sufficient supply of fuel.

Be sure to place the speed range lever and the valve control levers in neutral position before attempting to start the engine. Since the hydraulic pump is coupled directly to the engine the hydraulic hoist may be operated as soon as the engine is started. To start the engine proceed as follows.

MAINTENANCE SECTION

Regardless of the care used in the design and construction of any type of equipment, there are many conditions that cannot be completely safeguarded against without interfering with reasonable accessibility and efficient operation. The complete observance of one simple rule would prevent many serious injuries each year. That rule is - -

NEVER ATTEMPT TO CLEAN, OIL OR ADJUST A MACHINE WHILE IT IS IN MOTION.

- - National Safety Council - -

NEVER WORK UNDER OR BETWEEN THE BOOMS OR UNDER THE BUCKET UNLESS THEY ARE BLOCKED AND CANNOT BE LOWERED ACCIDENTALLY.

Refer your problems to THE FRANK G. HOUGH CO. dealer for major repairs requiring the services of a trained mechanic. The following paragraphs are not intended to cover all repair problems that may confront the operator. They are merely intended to assist the operator in routine adjustment and maintenance which may be done in the field for efficient operation on the machine.

HYDRAULIC SYSTEM:

The hydraulic system consists of an oil reservoir, a gear type pump, a control valve, two boom hoist cylinders, a bucket dump control hoist cylinder a hydraulic steering booster, and connecting hoses and fittings.

Low Oil Level in the hydraulic reservoir will cause the hoist cylinders to operate in a slow, jerky manner and the pump and valve will be noisy. Incorrect valve pressure relief will cause poor performance of the unit.

Excessive air being sucked into the hydraulic system through a faulty connection or hose will cause the oil to foam, retard circulation and the hoist cylinders will operate slowly in a jerky manner and will chatter. The pump may be noisy and howl. A faulty connection may allow air to be sucked into the system although oil may not leak out.

Excessive water drawn into the hydraulic system will cause damage to the pump and to the hoist cylinders, and must be removed by draining the system. Small amounts of water, through condensation, will evaporate when the "PAYLOADER" has been worked for a time and the oil becomes warm.

Use a good clean grade of white lead, aviation Permatex, or insoluble plastic lead seal on the male threads only, when reconnecting a joint. Do not allow the thread sealer to enter the pump or valve.

DRAINING THE SYSTEM:

1. Always drain the system after working the "PAY-LOADER" and while the oil is still warm. Warm oil flows more freely and carries more dirt and sludge with it.
2. To thoroughly drain the hoist cylinders and hoses raise the boom and bucket to nearly full height with the bucket dumped. Securely block or chain the booms and bucket in the raised position. Then shut off the engine.
3. Remove the clean-out cover and breather from the top of the reservoir. Clean the breather to permit passage of air.
4. Place a large container under the reservoir and using a funnel and hose drain the reservoir. The drain plug is a magnetic type and must be cleaned. Remove the drain plug and clean out thoroughly.
5. Disconnect the hoist cylinder hoses at the lowest points to drain the cylinders.
6. Break the suction line and pressure lines at the adapter unions to drain the valve and pump. Operate the valve control levers to thoroughly drain the valve.
7. Clean all dirt and sludge from the bottom of the reservoir being careful not to force dirt into the lines and valve.
8. After the oil has stopped draining and the dirt and sludge removed, reconnect all hoses and unions. Replace the drain plugs.
9. Refill the reservoir nearly to the top with a good grade of S.A.E. #10 Motor Oil.
10. Be sure all control levers are in neutral position. Then start the engine and let it run at idle speed for a few minutes.
11. Place the boom lever in raise position to pump oil in the boom hoists. Then remove the blocks or chains holding the boom and bucket up. DO NOT STAND OR WORK UNDER THE BOOMS OR BUCKET AFTER REMOVING THE BLOCK OR CHAINS.
12. Operate the unit by raising, lowering, dumping and closing the bucket until all the oil ceases to foam. This will "bleed" the system forcing trapped air to escape through the reservoir breather.
13. After the oil has ceased to foam add oil in the reservoir to bring the oil level up to the petcock. This is necessary to replace oil drawn into the hoist and hoses.
14. Check all connections for leaks and make tight. Be sure the reservoir breather cap is in place.

CLICK ANYWHERE FOR MORE DETAILS

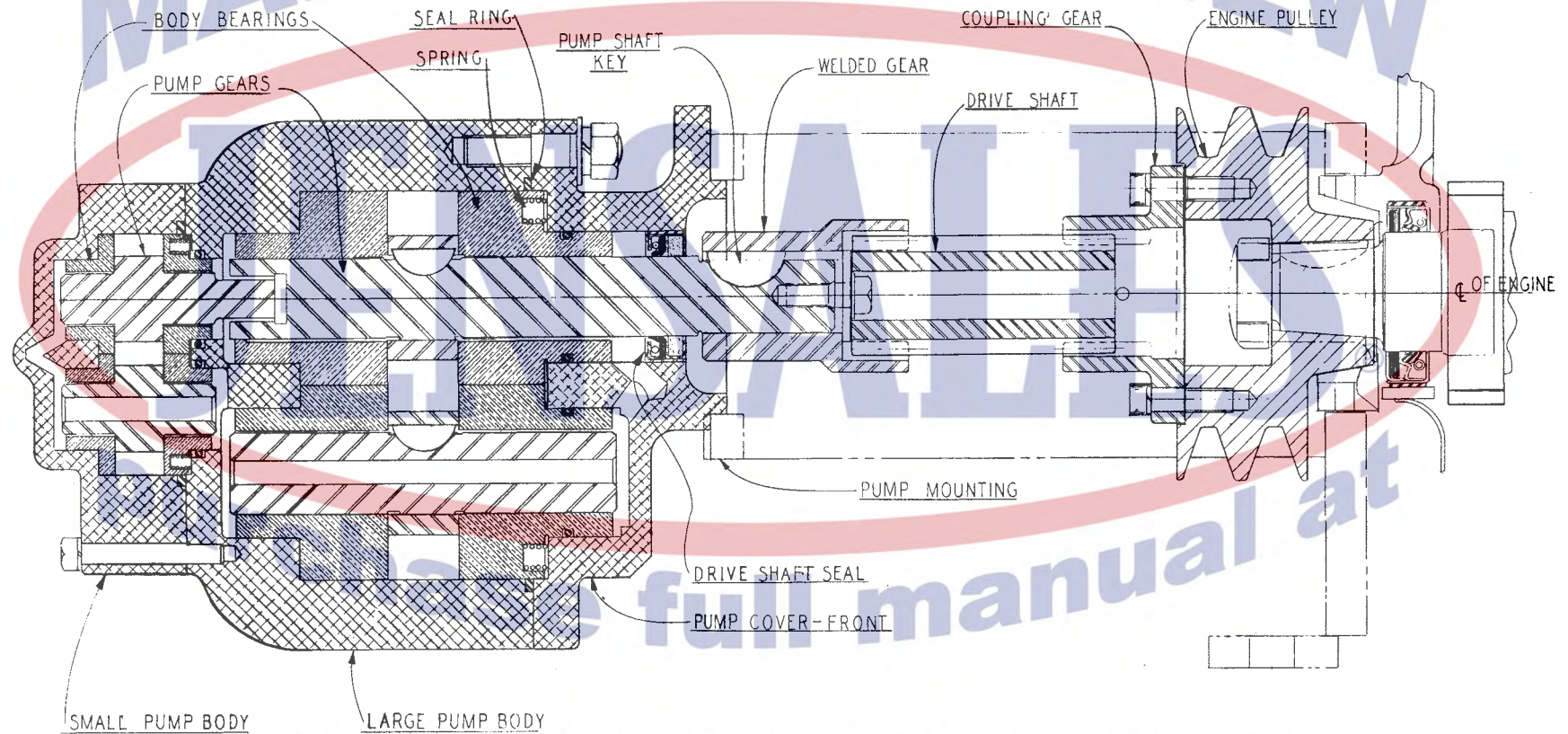


Fig. 6
PUMP AND POWER TAKE-OFF

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