

SERVICE INSTRUCTIONS INDEX

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MANUAL PREVIEW

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H100 - H200 - H200C SERVICE MANUAL

DAILY SERVICE

- Check and tighten all mounting points.
- Check all pins for loss of cotter pins and washers.
- Check and tighten cable clamp cap screws.
- Check cylinders for packing leaks.
- Check swing cable for wear and broken strands.
- Check hoses for wear and damage.
- Lubricate complete Backhoe. (Refer to Lubrication Chart.)
- Check hydraulic oil supply. If necessary to add oil, use oil recommendations of The Frank G. Hough Company.
- Complete daily service on the "PAYLOADER". Refer to service recommendations of The Frank G. Hough Company.
- For adjustments, refer to Installation Section.

PERIODIC SERVICE --- every 500 hours.

- Complete all items under daily service.
- Drain, flush, and refill hydraulic system. Follow same recommendations as given by The Frank G. Hough Company.
- Inspect all welds for cracks.
- Inspect all pins for wear.
- Inspect all bushings for wear.
- Inspect complete unit for damage to structural members, hydraulic cylinders, hoses, swing cable, swing sheaves, and controls.
- Check Backhoe hydraulic pressure. (See instruction sheet on control valve, if necessary to reset.)

NOTE: For repairs to structural members, see overhaul and repair procedure.

For replacement of components not covered in Service Section, refer to Installation Section of manual.

FLOW CONTROL VALVE

This valve is located at the control valve in the rod end of the crowd cylinder circuit.

As this valve consists only of a ball check with drilled orifices for return oil, no service or repair is recommended. Replace defective valves.

PRESSURE RELIEF VALVE

Two of these small relief valves are located at the control valve in both sides of the crowd cylinder circuit. These are simple spring and ball type valves with an adjusting screw to increase or decrease the pressure setting. The pressure is preset in these valves at the factory and should not be changed. The factory setting is 2000 p.s.i. on the rod side of the circuit and 2000 p.s.i. on the piston side.

Other than pressure setting, service or repair of this valve is not recommended. Replace defective valves.

HYDRAULIC PUMP

As the hydraulic pump is a standard "PAYLOADER" part, all service or repair should be in accord with recommendations set forth in the "PAYLOADER" service manuals.

HYDRAULIC OIL HOSES

There is no recommended service on hoses. Any that have been damaged, worn, or found defective must be replaced.

PIPING AND FITTINGS.

Repairs to these items are not feasible. Replace damaged or defective parts.

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HYDRAULIC CYLINDER REPLACEMENT

NOTE: Position Backhoe to prevent collapse when cylinder is removed.

1. Relieve pressure to cylinder involved by actuating control in both directions.
2. Remove hoses.
3. Plug hoses and cylinder.
4. Remove cylinder.

NOTE: For additional details, refer to Installation Section of this manual.

MAIN SELECTOR VALVE REPLACEMENT

1. Drain oil from "PAYLOADER" hydraulic oil tank.
2. Remove Hough valve and Wain-Roy selector valve assembly.

NOTE: Details of this operation can be found in Installation Section of this manual.

HYDRAULIC HOSE REPLACEMENT

1. If necessary, support the cylinder so that it will not collapse when hoses are removed.
2. Relieve pressure to cylinder involved by actuating control in both directions.
3. Remove hose.

NOTE: If new hose is not to be installed at once, insert plugs in cylinder oil outlets.

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CONTROL VALVE REPLACEMENT

The 4-way control valve may be changed with the Backhoe mounted on the tractor. However, under some circumstances, it is advisable to disassemble the Backhoe and remove the main frame from the "PAYLOADER". An example of this would be if the unit was disabled in the field and moving it into a shop was not considered practical.

To replace this valve without removing the Backhoe, complete the following steps:

1. Position "PAYLOADER" with Backhoe boom under a hoist.
2. Extend Backhoe out approximately $3/4$ of its reach with shovel back resting on floor and dipper stick about vertical. Lower stabilizers until they are resting on floor.
3. Attach hoist sling under outer end of boom and apply slight pressure.
4. Shift selector control from Backhoe to "PAYLOADER" position.
5. Close gate valve in return oil line.
6. Relieve pressure in all Backhoe cylinders by actuating controls in both directions.
7. Remove clevis pins from valve plunger eyes.

NOTE: It is suggested that each hose going to the control valve be marked with a numbered tag and a tag with the same number be attached to fitting on control valve.

8. Uncouple all hoses where they attach to the control valve fittings.
9. Install plastic plugs in hoses.
10. Remove control valve attaching cap screws.
11. Remove valve.
12. Transfer valve attachments (fittings, etc.) from old valve to new one, using old valve as a guide.
13. Complete installation by reversing removal steps.

CAUTION: Be sure to open gate valve before starting "PAYLOADER" engine.

14. After operating Backhoe for a few minutes, check hydraulic oil supply and refill as required.

SWING CABLE REPLACEMENT AND ADJUSTMENT

1. Position Backhoe with shovel teeth resting on floor or ground with unit extended out approximately $3/4$ of its reach.
2. Relieve pressure in swing cylinders by actuating control in both directions.
3. Loosen swing cylinder packing gland nuts and oil hoses.
4. Extend swing cylinder piston rods (by hand) until cable is slack and ends of piston rods are accessible.
5. Unscrew cable ends from piston rods. (This can usually be done by holding cable end with wrench and turning piston rod by hand.)
6. Remove double hose clamps from sheave pin heads.
7. Remove sheave pins.
8. Move sheaves inboard.
9. Remove outer half of cable clamp.
10. Remove cable.
11. Install new cable with center (marked with paint spot) in center of cable clamp.
12. Reverse above steps to complete installation.
13. Start "PAYLOADER" engine and actuate swing control until both swing cylinders are full of oil.
14. Position Backhoe as in Step 1, but be sure boom is in dead center.
15. Measure extended length of each swing cylinder piston rod. This dimension should be equal.

NOTE: If these dimensions are not equal, the cable must be repositioned.

1. Loosen cable clamp cap screws.
2. Apply down pressure on shovel teeth and carefully actuate swing control in proper direction, which will pull swing cable through clamp without swinging boom.
3. Check swing cylinder piston rods for equal extended length.
4. Repeat Step 2, if necessary.

NOTE: It is very important that the swing cable be kept centered. If the cable is installed out of center or allowed to slip out of place by a loose cable clamp, one swing cylinder piston can bottom against stuffing box and possibly damage or break piston, stuffing box, or cable.