International Harvester

Service Manual

V800 Diesel Engine

Service ® Manual

IH-S-ENG V800

INTERNATIONAL HARVESTER

SERVICE MANUAL

V800 ENGINE

SECTION INDEX

This manual is divided into major sections covering various components of the V-800 Diesel Engine.

These sections are also indexed by title with thumb index tabs as shown below and to the right.

To use this manual, grasp the right-hand side of book between thumb and fingers. Bend book back and find the pages containing the corresponding section index tab.

Section identification is also contained in the upper corner of each page.

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6. Measure the OD of the valve stems (Fig. 18) at various locations along the guide bearing area, and at each location take several readings around the circumference. If the readings are below the minimum permissible stem diameter dimension shown in "SPECIFICATIONS" in Section 1, discard the valve.

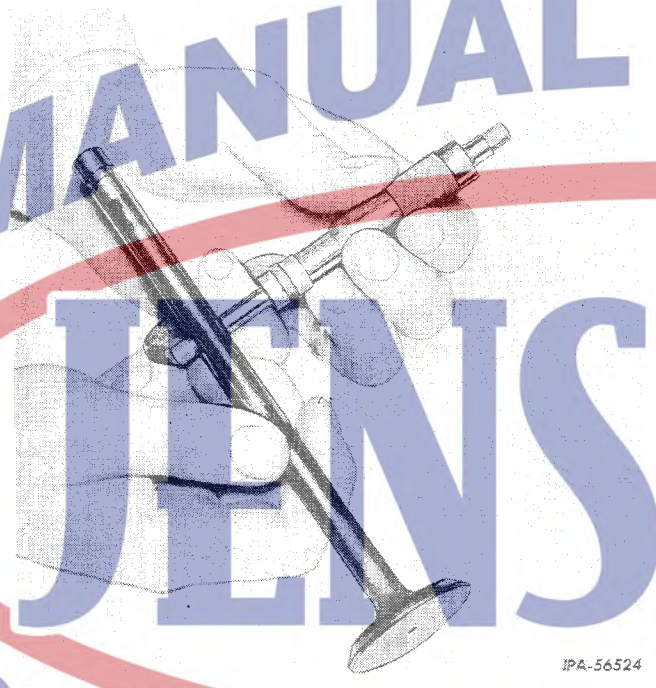

Fig. 18. Checking Valve Stem OD

Fig. 19. Checking Valve Stem Straightness and Face Runout

7. Check valve stem straightness (Fig. 19). If the stem "runout" is more than .025 mm (.001 inch), discard the valve.

8. Set the valve refacing machine to grind the correct valve face angle (Fig. 20). (Refer to "SPECIFICATIONS," in Section 1.) Dress the grinding stone.

9. Insert a valve in the chuck. When it is precisely centerd, take a light cut across its face. This is a check to determine whether or not the valve can be reconditioned to service standards with a correct amount of margin maintained. Warpage that may not be apparent in the visual inspection will be clearly definable (Fig. 21).

Fig. 20. Locating Valve and Grinding Stone to the Specified Angle

CYLINDER SLEEVES

8. DESCRIPTION

The cylinder sleeves are the wet type. The bottom of the sleeve is sealed in the crankcase by three "O" rings (Fig. 16). A flange at the top of each sleeve fits into a counterbore in the top of the crankcase and serves to position the sleeve correctly. Shims may be used between the sleeve flange and crankcase counterbore to provide the correct cylinder sleeve protrusion. The wet type sleeve is water cooled over its entire length. Matched or fitted sleeves and pistons are available for service.

Fig. 17. Removing Piston Cooling Tube (Crankshaft Removed for Clarity)

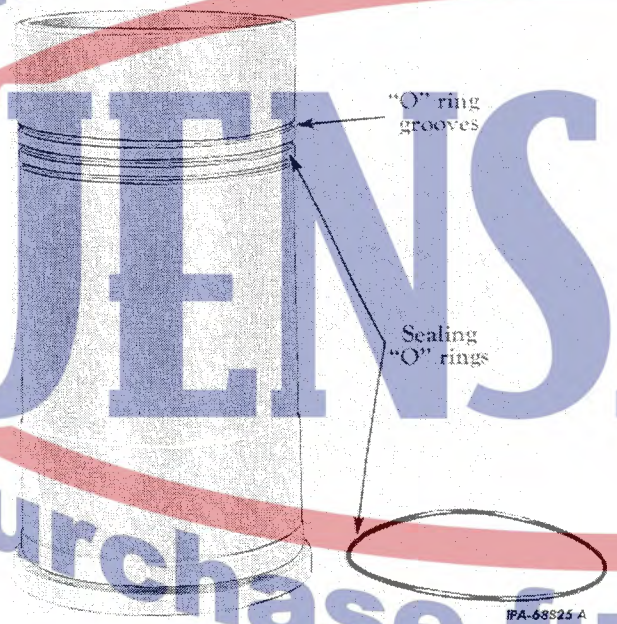

Fig. 16. Cylinder Sleeve

9. REMOVAL

1. Remove the cylinder heads. (Refer to Section 2, "MANIFOLDS, CYLINDER HEADS AND VALVES.")

2. Remove the connecting rods and pistons. (Refer to Par. 2 in this section.)

NOTE: *It is advisable to wrap an oil-soaked cloth around the crankshaft connecting rod bearing journals to keep them as clean as possible. Wrap the piston and connecting rod assemblies in clean cloth also to protect them until installation.*

3. Remove the piston cooling tubes and rubber seals (Fig. 17). Keep them in order so they may be installed in the same bore as removed from.

4. Remove the cylinder sleeves using the universal wet sleeve puller No. PLT-502 (1, Fig. 18).

Fig. 18. Universal Wet Sleeve Puller

1. Universal Wet Sleeve Puller

Fig. 6. Removing Water Pump Shaft Seal

Fig. 7. Removing Seal Seat and Bushing

Fig. 8. Removing Bearing from Water Pump Shaft

11. Using a chisel and hammer, remove the wear sleeve (11) from pulley adapter (18).

NOTE: *Be careful not to damage the hub surface when performing the chiseling operation.*

12. Support the water pump shaft (7) with bearings in a press and remove the front bearing (Fig. 8).

13. Turn water pump shaft end for end in the press and remove rear bearing in the same manner.

4. INSPECTION AND REPAIR

1. Wash all metal parts thoroughly in solvent and dry with compressed air. Check the drain cock and be sure it is clean and operative.

2. Check the pump housing and bearing housing for cracks and be sure any loose scale or rust is removed.

3. Inspect all hoses and water passages. Discard hoses that show any signs of wear or deterioration.

4. Discard all seals and procure new ones for reassembly.

5. Inspect the impeller vanes, remove any nicks, burrs and roughness especially from around the edges.

6. Inspect the front and rear ball bearings. If there is any question as to serviceability, obtain new ones for reassembly. Any signs of roughness, rust or pitting indicate early bearing failure and future problems.

7. Inspect the pump shaft for damage or excessive wear, especially at the bearing surfaces. Hone out any scratches or nicks especially in the area occupied by the impeller.

8. Check the "tell-tale" hole in the pump body for evidence of water or oil leakage. Presence of water indicates a water seal leak; presence of oil indicates the oil seal is leaking. Replace the defective seal.

NOTE: *In freezing weather, when draining the radiator and engine block, drain the water pump body also by removing the drain plug. This will protect the impeller blades from freezing in and later being damaged when the engine is started.*