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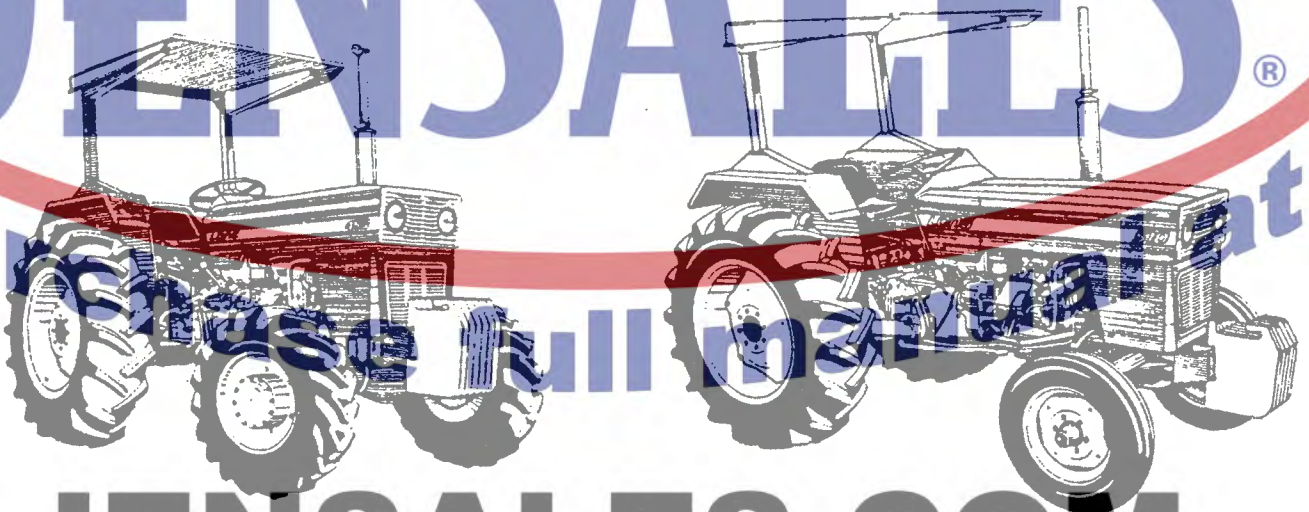


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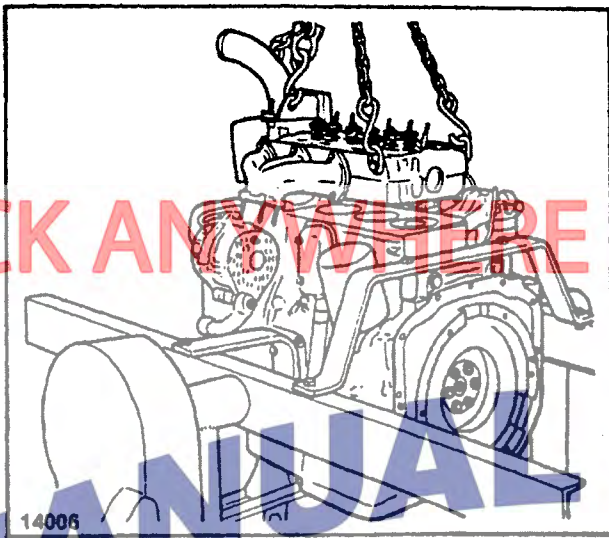


FIG. A.I/4 REMOVING CYLINDER HEAD FROM ENGINE INSTALLED ON ENGINE STAND

The instructions for removing the cylinder head from an engine removed from the tractor are similar to the ones given previously for the tractor installed engine, provided of course that in the former case the engine unit will have to be installed on the shop turnover stand. (See Fig. A.I/4).

CHECKING THE CYLINDER HEAD

For complete inspection and checking of the cylinder head, it is best to remove valves, valve springs and nozzles and to clean the mating surface, valve seat and passages.

Check the cylinder head mating plane by moving it over a surface plate smeared with lampblack or blue. If high spots show up, reface it.

If valve seats are to be re-cut, the cylinder head mating plane can be ground to a depth not exceeding 0.020 in. (0.5 mm.).

In case of grinding, we suggest that a copper washer of suitable thickness be placed inside the nozzle seat so to maintain the nozzle projection above the cylinder head at the same value as before; also, make sure the valve recessing from the cylinder head plane does not exceed 0.03-0.04 in. (0.7 - 1.1 mm.) (Fig. A.I/5). The height of a new cylinder head is 3.662 in. (92 mm.). Check the expansion cups and threaded plug for coolant and oil tightness and replace them if necessary.

Following checks, inspections, grinding, wash cylinder head in solvent to remove even the slightest trace of abrasive matter.

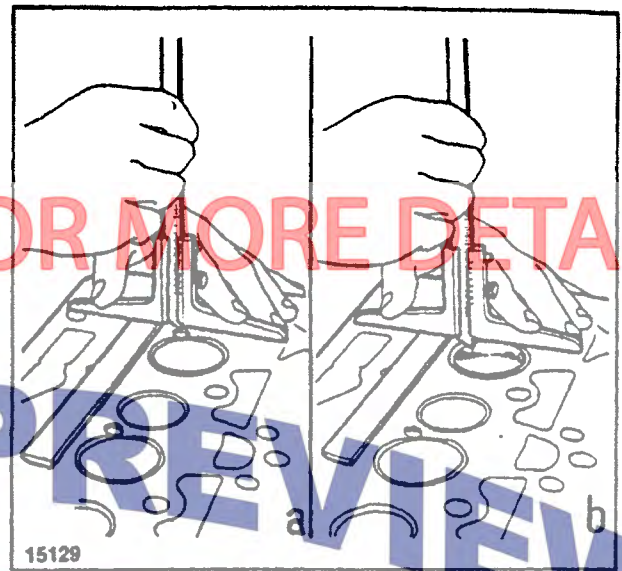


FIG. A.I/5 MEASURING NOZZLE PROJECTION ABOVE CYLINDER HEAD PLANE (a) AND VALVE RECESSING (b)

Nozzle projection: 0.08 - 0.10 in. (2 - 2.5 mm.)
Valve recessing: 0.03 - 0.04 in. (0.7 - 1.1 mm.)

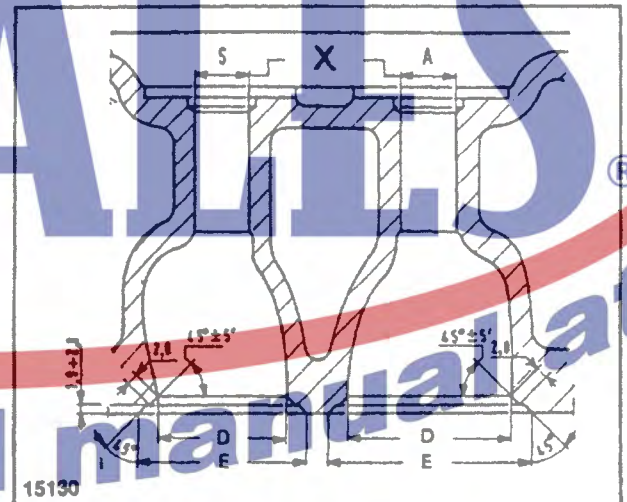


FIG. A.I/6 DIMENSIONS OF INTAKE AND EXHAUST VALVE SEATS AND OF VALVE GUIDES IN CYLINDER HEAD

X = 13.966 mm. - .549 in.
13.983 mm. - .550 in.

Valves	(A) Intake		(s) Exhaust	
	mm.	in.	mm.	in.
Dia. D	40	1.575	33	1.299
Dia. E	48.6	1.913	41.6	1.638

ENGINE OIL SCHEDULE AND CAPACITIES

Level Check.....	8-10 hrs.
Change Interval.....	Filter and Oil First 60 hrs. Filter and Oil Every 120 hrs.
Type of Oil.....	CD, SAE 15 W-40
Quantity:	
Without Filter.....	6.4 Qts. (6 litres)
With Filter.....	7.4 Qts. (7 litres)

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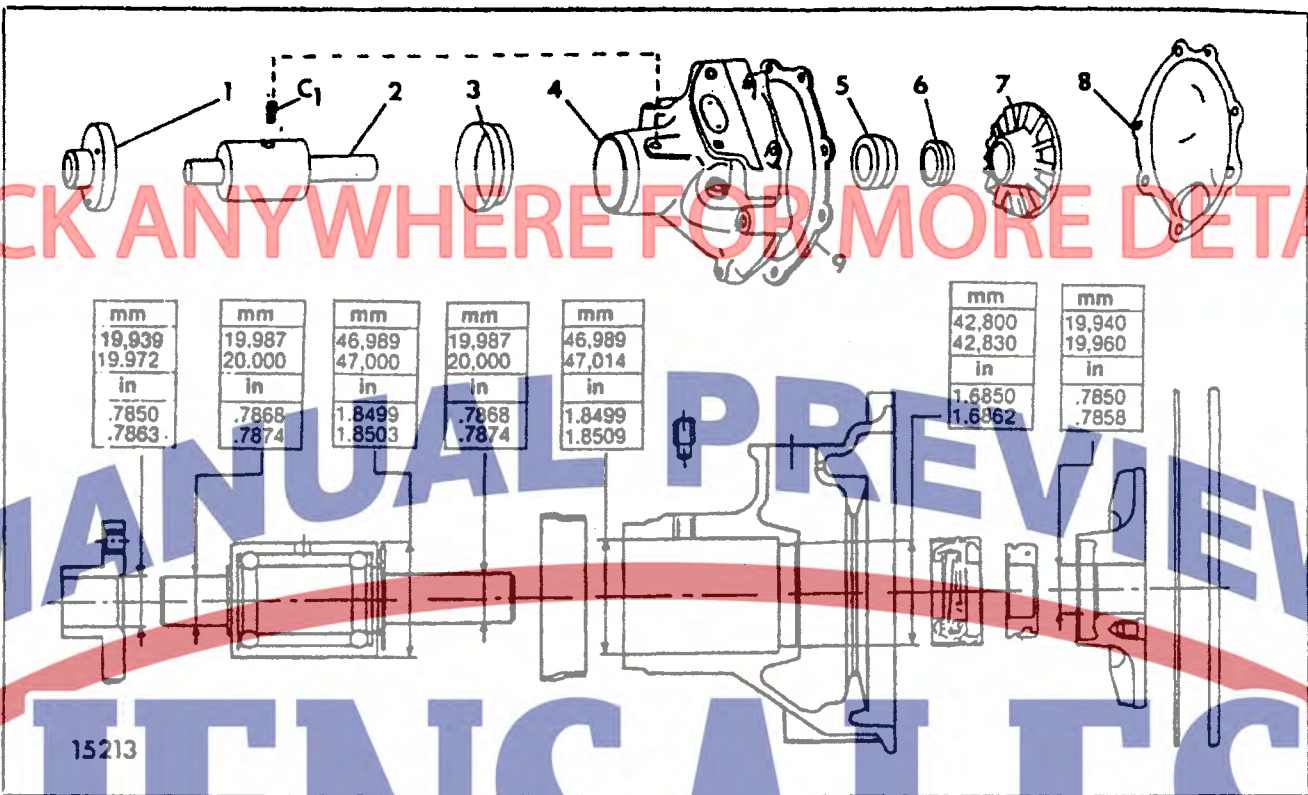


FIG. A.VI/2 WATER PUMP PARTS AND ASSEMBLY DATA

C1. Pump bearing setscrew; 1. Fan hub; 2. Pump bearing and shaft; 3. Pump bearing shield; 4. Pump body; 5. Shaft seal; 6. Front sealing bushing; 7. Impeller; 8. Pump Cover; 9. Gasket, Pump Cover.

WATER PUMP

The water pump is a cast iron body with a double-row ball bearing and shaft and a protective centrifuge disc (Fig. A.VI/2 and A.O/9A).

When the engine is installed on tractor, remove the pump as follows:

Remove the capscrews securing the pump to its support, then the pump body with fan and pulley. The operation is facilitated by removing the fan first, the the pulley and finally the pump.

Dismantle the pump as follows (Fig. A.VI/2):

1. Remove the cover (Item 8) screws and cover.
2. Remove the impeller (Item 7) by taking advantage of the two threaded holes to fit a puller and two short screws (8 x 1.25 mm.).
3. Remove the setscrew (Item C1).
4. Drive out the shaft with bearing and fan hub (Item 1) as an assembly from the inside of the pump using a suitable bar.

5. Remove the bearing protective cap (Item 3) and fan hub (Item 1) from the shaft.

Do not remove the shaft seal (Item 5, Fig. A.VI/2) if not for replacement. Replace it when the graphite surface contacting the pump shaft is no longer smooth and endangers front sealing tightness.

Check pump body and cover gaskets (Items 4 and 7) for wear, and fit new ones of the same type, if necessary.

Reassemble the pump by reversing the sequence of disassembly and considering the points outlined below:

1. The bearing (Item 2) is sealed and does not require any lubrication.
2. Impellor (Item 7) must be pressed flush with the end of the shaft. Also, on completion of reassembly check the clearance between impellor and pump body. The correct clearance is 0.04 to 0.05 in. (1 to 1.25 mm.).
3. Torque the mounting screws to the values specified in the table of data.

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- withdraw the driven shaft (40, Fig. B.II/28) and ball bearing (41) rearwards as an assembly acting on the front end as illustrated;
- recover the gears and the synchromesh device from the housing;
- remove, at the press if necessary, the rear roller bearing (41) from the shaft and the front ball bearing (43, Fig. B.II/30) from the housing, the latter with the aid of a drive bar.

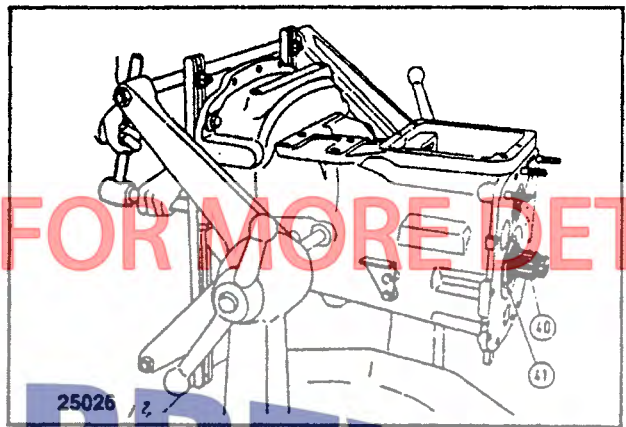


FIG. B.II/28 REMOVING THE DRIVEN SHAFT (40)
41. Rear roller bearing.

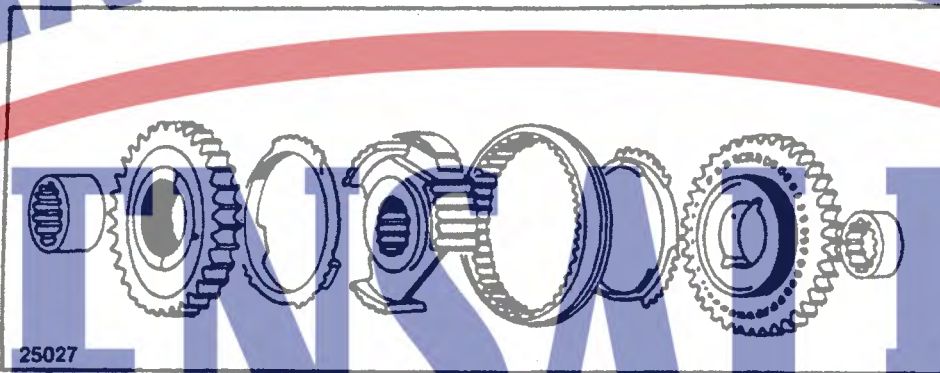


FIG. B.II/29 EXPLODED VIEW OF SYNCHROMESH UNIT
58. Synchromesh tapered rings; 59. Fixed collar; 60. Flat spring; 61. Spring (60) holder; 62. Sliding ring; 64. Driven gear inner rings; 65. 4th speed driven gear; 66. 3rd speed driven gear

INSPECTION

Examine the chamfers on the reverse and 3rd speed driving gear hubs, reverse driven and transfer gear hubs, and on the engagement splines of the 1st-2nd speed gear, synchromesh and planetary gear units; eliminate seizure marks or nicks, if any.

Thoroughly examine the condition of the following mating surfaces:

- of the synchromesh rings (58, Fig. II/29) and their mating surface on driven gears of the 3rd speed (66) and 4th one (65);
- of inside rings (64) and of their locations on the driven gears of all four speeds.

Check the condition of the synchromesh flat springs (60, Fig. II/29): a force of 1.40-1.55 kg (3-3.4 lb.) applied at spring center should produce an arc of 1.5 mm (0.060 in).

Check the spring holders (61, Fig. B.II/32) for deep scoring or nicks, particularly on the central relief (R).

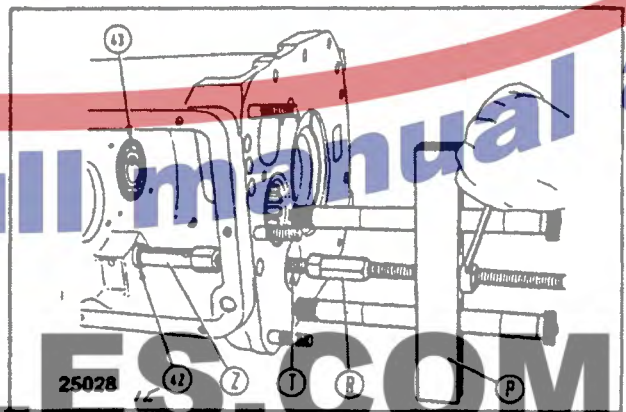


FIG. B.II/30 REMOVING THE REVERSE GEAR AXLE NEEDLE RING (42)
P. Bridge; R. Extension; T. Threaded rod; Z. Collar; 43. Driven gear shaft front ball bearing

Make sure that the teeth (d, Fig. B.II/33) on the three splined sections of the synchromesh fixed collar and on the outside spline of the 1st-2nd speed gear fixed engagement collar (44, Fig. B.II/31) have sharp edges. On new parts, these teeth should project 0.19-0.25 mm (0.08-0.010 in.).

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