Operator's Manual

McCORMICK
INTERNATIONAL
434
TRACTOR
DIESEL AND PETROL MODELS

INTERNATIONAL HARVESTER COMPANY OF GREAT BRITAIN LIMITED
259, CITY ROAD, LONDON, E.C.1.

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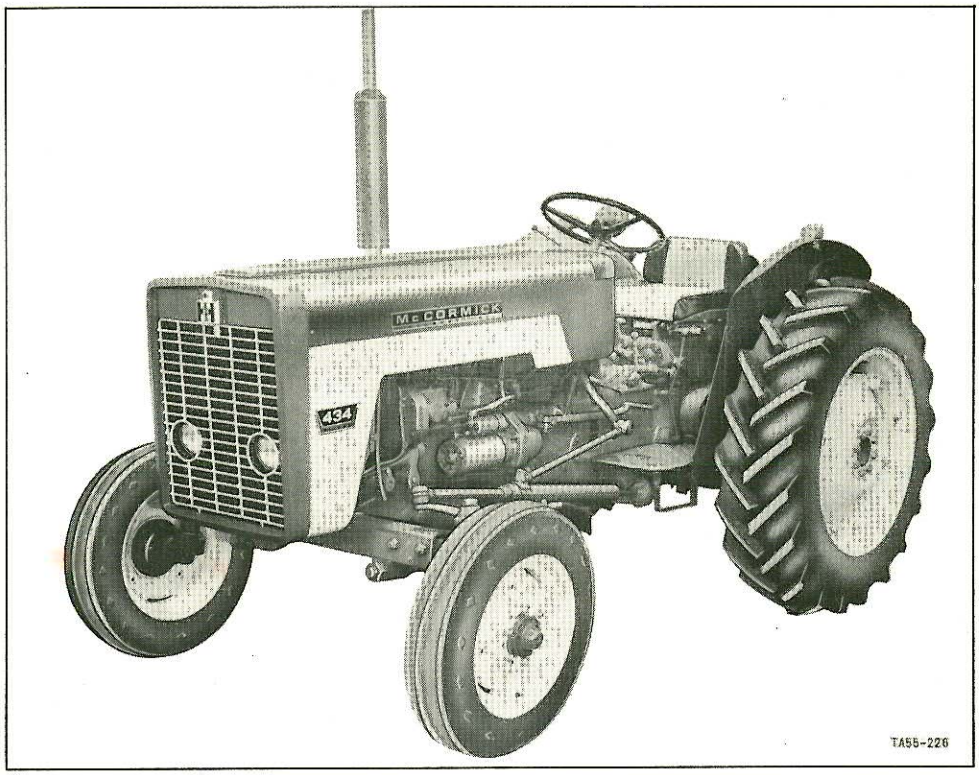
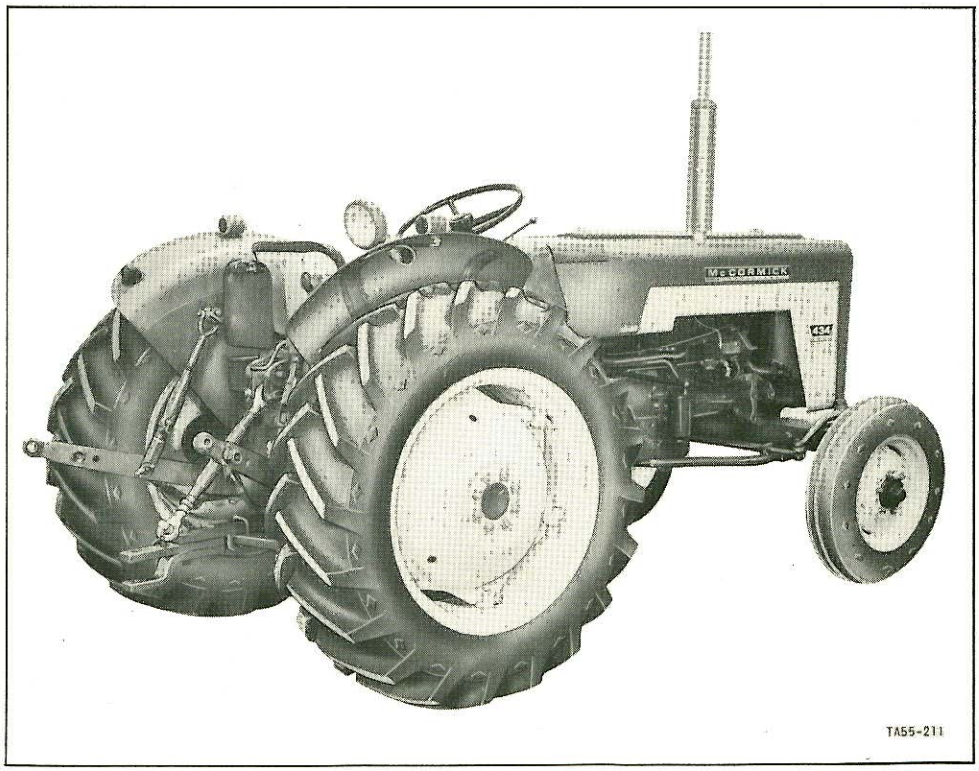
DESCRIPTION

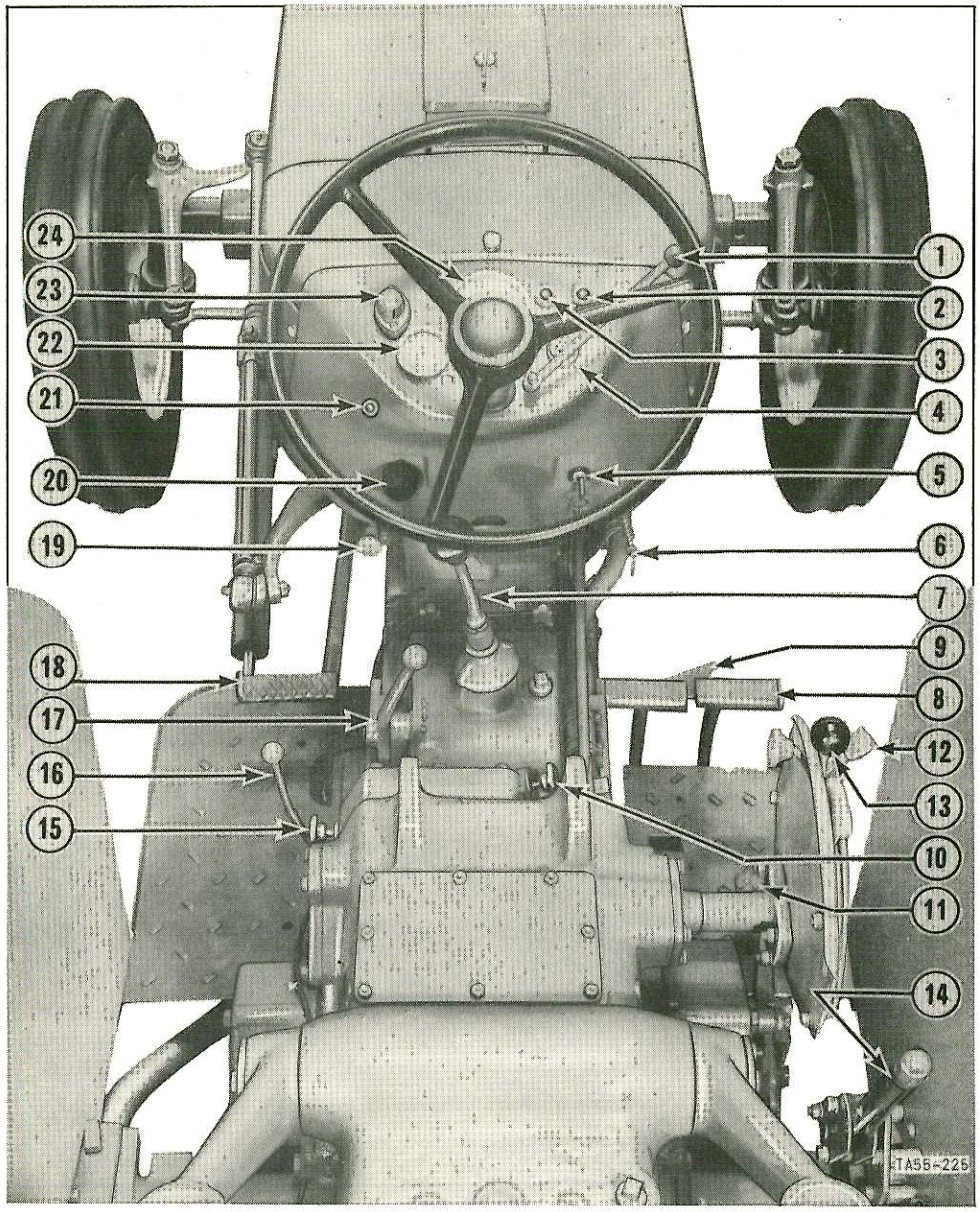


Illust. 1 Left Hand View of the 434 Tractor



Illust. 2 Right Hand View of the 434 Tractor

INSTRUMENTS & CONTROLS



1. Governor control lever
2. Generator warning light
3. Engine oil pressure warning light
4. Glowplug indicator
5. Keyswitch
6. Radiator shutter control
7. Gear shift lever
8. Brake pedals
9. Brake pedal latch
10. Isolating valve
11. Differential lock pedal
12. Draft control lever
13. Position control lever
14. Hand brake lever
15. Response control
16. Rear P.T.O. lever
17. Hi-low shift lever
18. Engine clutch pedal
19. Engine stop control
20. Light switch
21. Horn button
22. Engine heat indicator
23. Panel light
24. Tractormeter

Illust. 5 Instruments & Controls

Service Manual

McCORMICK

INTERNATIONAL

434

TRACTOR

CHASSIS

INTERNATIONAL HARVESTER COMPANY OF GREAT BRITAIN LIMITED

259 CITY ROAD, LONDON, E.C.1

SM-25
SERVICE MANUAL
INTERNATIONAL
434 TRACTOR

The black tabs shown on the right side of this page line up with the corresponding tabs in the catalogue.

NOTE

Refer to the SUPPLEMENT AND CHANGE INDEX for a list of supplements, and to the end of the appropriate group for the latest instructions, before carrying out work on this equipment.

INTERNATIONAL HARVESTER COMPANY
OF GREAT BRITAIN LIMITED

259 CITY ROAD, LONDON, E.C.1

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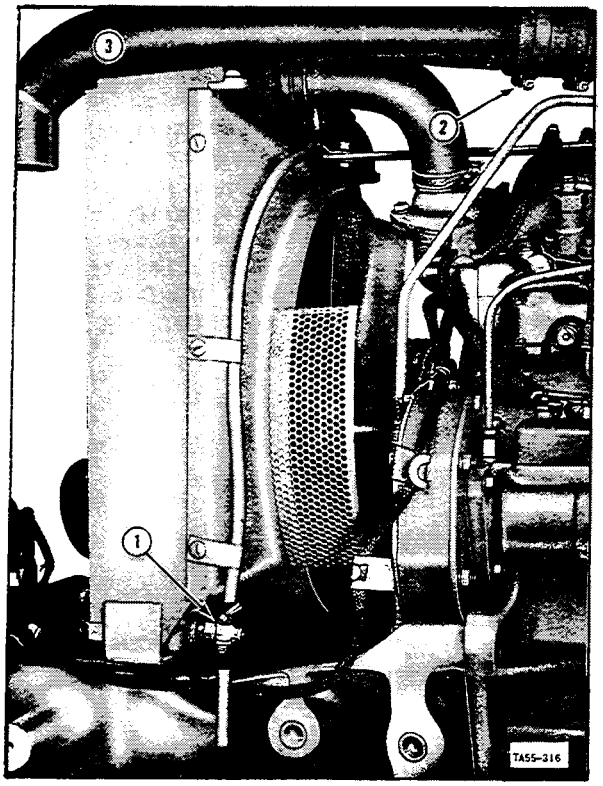


FIG. 4

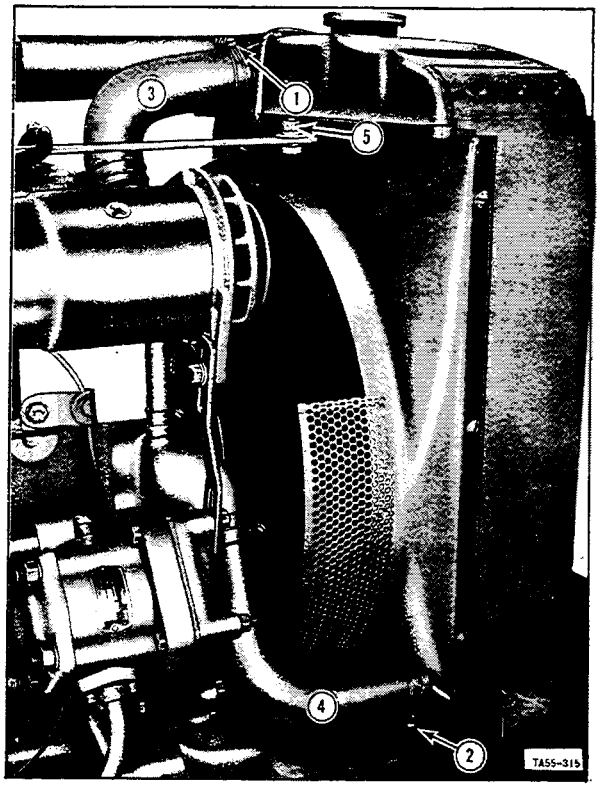


FIG. 5

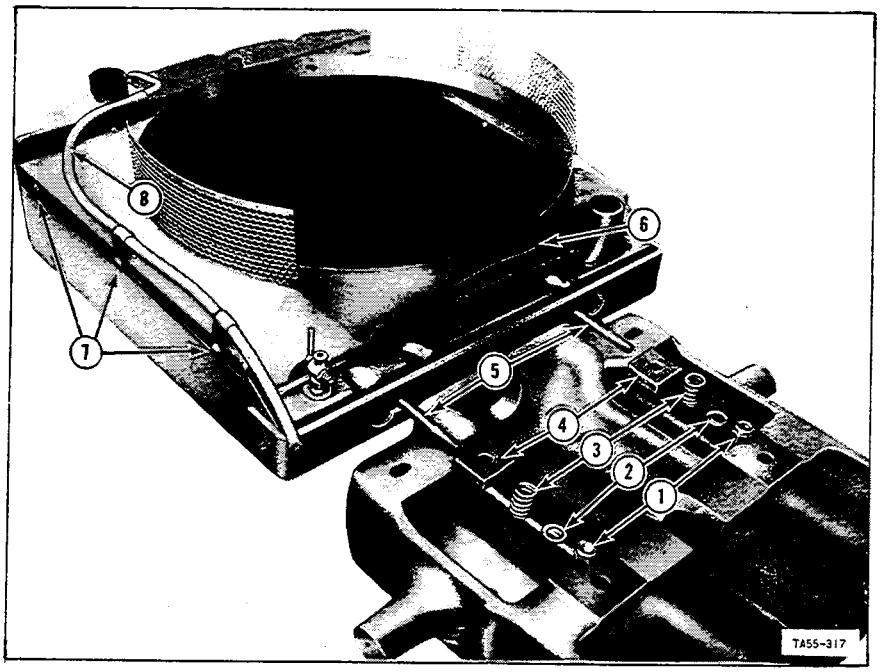


FIG. 6

3. THE RADIATOR

3a. REMOVAL

1. Remove exhaust muffler (2-3) and hoodsheet as detailed below.

2. Remove grille (2-1) and grille mesh (3-1) by turning the quick release screw (1-1) anti-clockwise.

3. Remove capscrew (1-2) and electrical lead (2-2) from horn and securing clips.

NOTE: Disconnect battery earth leads before disconnecting any part of the electrical system.

4. Slacken hose clips (3-2) and remove aircleaner hose (4-2) from the aircleaner pipe (3-4).

5. Remove capscrews (1-3) from both sides of the hoodsheet, tilt forward and, lift clear of the tractor.

6. Slacken the hose clip (2-4) and remove the pipe (3-4).

7. Open the radiator drain tap (1-4) then slacken the hose clips (1 & 2-5) and remove top and bottom hoses (3 & 4-5) from the radiator connections.

8. Disconnect radiator shutter control (if fitted).

9. Remove the two radiator securing nuts (1-6) flat wahsers (2-6) and springs (3-6).

NOTE: Access holes for radiator securing nuts are located on the underside of the front axle support.

10. Remove radiator brace securing nut, lockwasher and bolt (5-5).

NOTE: Set the fan blades vertical to allow the fan blade to pass through the cut-out (6-6) provided in the fan housing.

11. Remove the radiator assembly and rubber pads (4-6).

12. Store the radiator in a vertical position to prevent accumulated sediment from the bottom of the tank, passing into the tubes.

3b. DISMANTLING

1. Remove radiator curtain attachment (if fitted).

2. Remove the screws, nuts and lockwashers (7-6) securing the fan housing to radiator.

3. Remove the overflow pipe (8-6) and lift the housing (6-6) clear of the radiator.

3c. CLEANING, INSPECTION & REPAIR

1. Flush out the inside of the radiator core and clean any dirt from between the radiator fins with a water hose under pressure. Use steam cleaning if the radiator core is greasy.

2. Inspect the upper and lower tanks for cracks and the cooling fins and tubes for damage.

3. If there is no visible evidence of leaks, replace the radiator cap. Blank off either the inlet or outlet side and connect an air line, with suitable fittings; including a pressure gauge to the other side.

4. Submerge the unit into a tank of water, or fill the radiator with water and apply air pressure NOT EXCEEDING 7 lb/in^2. Check for air bubbles if the unit is submerged or water leakage if the radiator is filled.

NOTE: Air will escape from the overflow pipe when air pressure reaches the blow-off pressure of the radiator filler cap.

5. Replace or repair the radiator core as necessary.

6. Replace any hoses which show signs of rupture or perishing.

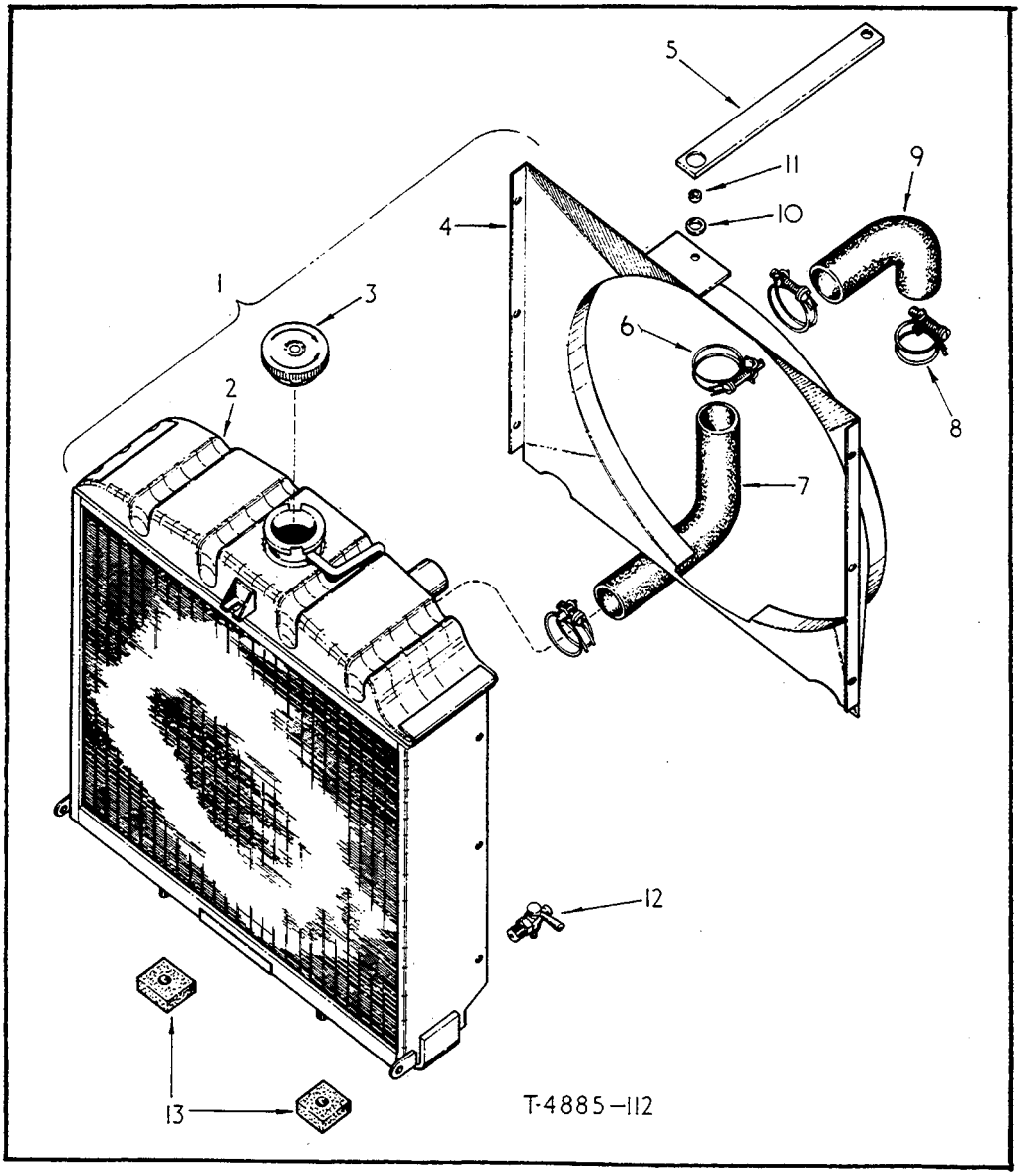
3d. ASSEMBLY

1. Assembly is the reversal of the "DISMANTLING" procedure.

3e. INSTALLATION

1. Reverse the "REMOVAL" procedure.

2. Refill the radiator and check for leaks.



1. Radiator and fan housing
2. Radiator
3. Filler cap
4. Fan housing
5. Brace
6. Clamp
7. Outlet hose
8. Clamp
9. Inlet hose
10. Ring
11. Brace bush
12. Drain cock
13. Pad

FIG. 7 EXPLODED VIEW OF THE RADIATOR ASSEMBLY

Blue Ribbon Service

BC144, BD144A and BD154 Engine

GSS-1354

INTERNATIONAL HARVESTER COMPANY
180 NORTH MICHIGAN AVE. CHICAGO 1, ILLINOIS

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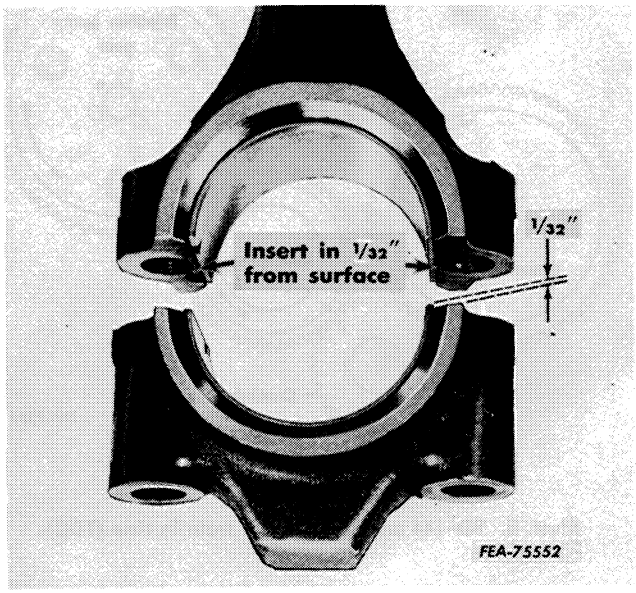
Connecting Rod Bearing Installation



Illust. 4. Correct connecting rod bearing installation.

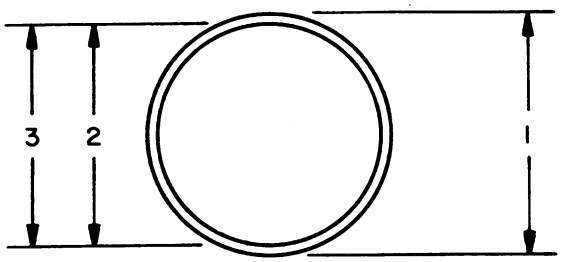
When correctly positioned, the connecting rod cap bearing half will stand out 1/32 inch on both sides above the cap surface and engage inside the rod half bore. See Illust. 4.

Install connecting rod assemblies in the engine so that the nibs on the connecting rod bearings face the camshaft, regardless of where the connecting rod number is stamped.

Camshaft Bearing Installation

When installing the front and rear bearings ensure that the edges marked 'FRONT' are to the front of the engine and that the holes in the bearings line up with the oil passages in the crankcase. The holes in the center bearing are equal distance from either edge. There is no front marking, but the oil holes must line up with the oil passages.

Press the center bearing into position first, then the other bearings. The rear bearing must be pressed in flush with the front of the bore in the crankcase.



	BEARING DIMENSIONS		REAR	CENTER	FRONT
1	O.D.		1.634-1.637	1.712-1.715	1.947-1.950
2	I.D.	SEMI-FINISH	1.490-1.493	1.568-1.571	1.803-1.806
3	I.D.	LINE REAMED AFTER ASSEMBLY	1.5015-1.5025	1.5795-1.5805	1.8135-1.8145

FEA-75553

Illust. 5. Dimensions of camshaft bearing.

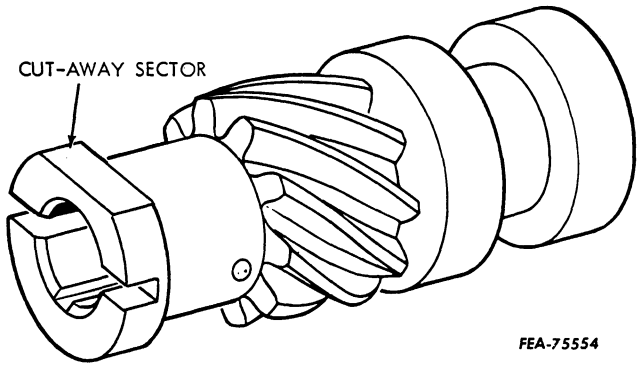
Bearings supplied for service are semi-finished and are to be line-reamed after installation. See Illust. 5.

NOTE: For specified bearing clearances refer to "Specifications."

After reaming, thoroughly blow-out the casting and oil passages to ensure that there are no metal deposits present. Install the rear bearing expansion plug. Use a sealing compound on the plug and seat.

Lubricating Oil Pump Removal

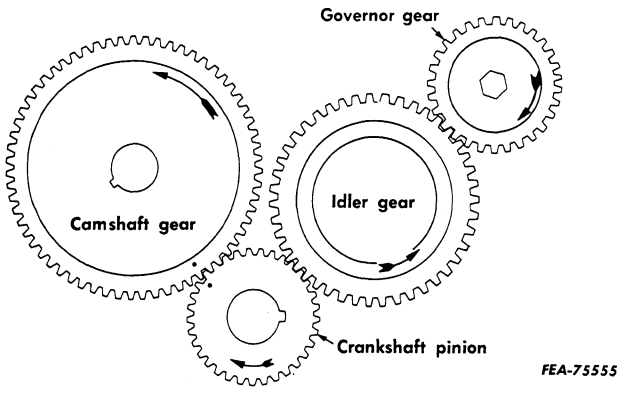
(Engine Model BC-144 Only)



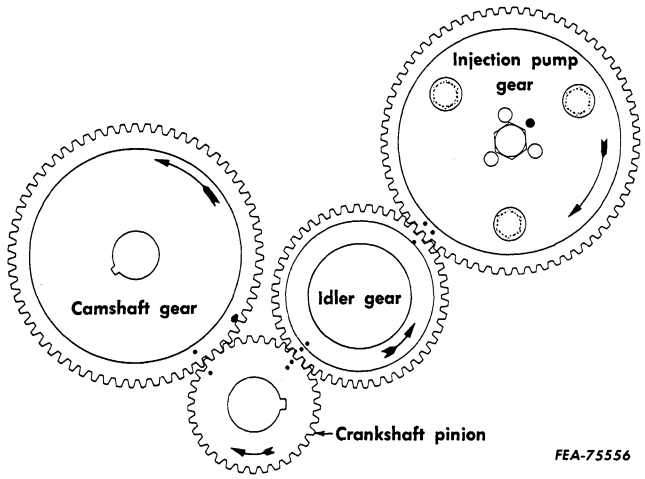
Illust. 6. Oil pump drive pinion.

On the BC-144 series engine the oil pump can only be removed and installed when No. 4 piston is at top dead center of the compression stroke. This is due to the flange of the distributor drive having to pass the teeth of the oil pump drive gear on the camshaft. The distributor drive flange has a sector cut away to allow it to pass the gear. See Illust. 6.

Gear Train Timing



Illust. 7. BC-144 gear train in time (TDC).



Illust. 8. BD-144 and BD-154 gear train in time (TDC).

Break-In Procedure of Rebuilt Diesel Engines

1. The cylinder head bolts should be properly torqued and valve levers adjusted to proper clearance.

2. The engine crankcase should be filled to the proper level with "Mil" SAE 20 lubricating oil. These oils are Mil-L-2104A or MS classification. Series 3 should not be used for break-in since this oil does not contain adequate "break-in" qualities. Use of Series 3 for break-in can result in improper "wear-in" of piston rings and excessive oil consumption. Supplementary oil additives are not to be used during the break-in period.

3. Start the engine and run at 1/4 throttle with no load until normal operating temperature is reached. Cover radiator if necessary to bring engine up to temperature.