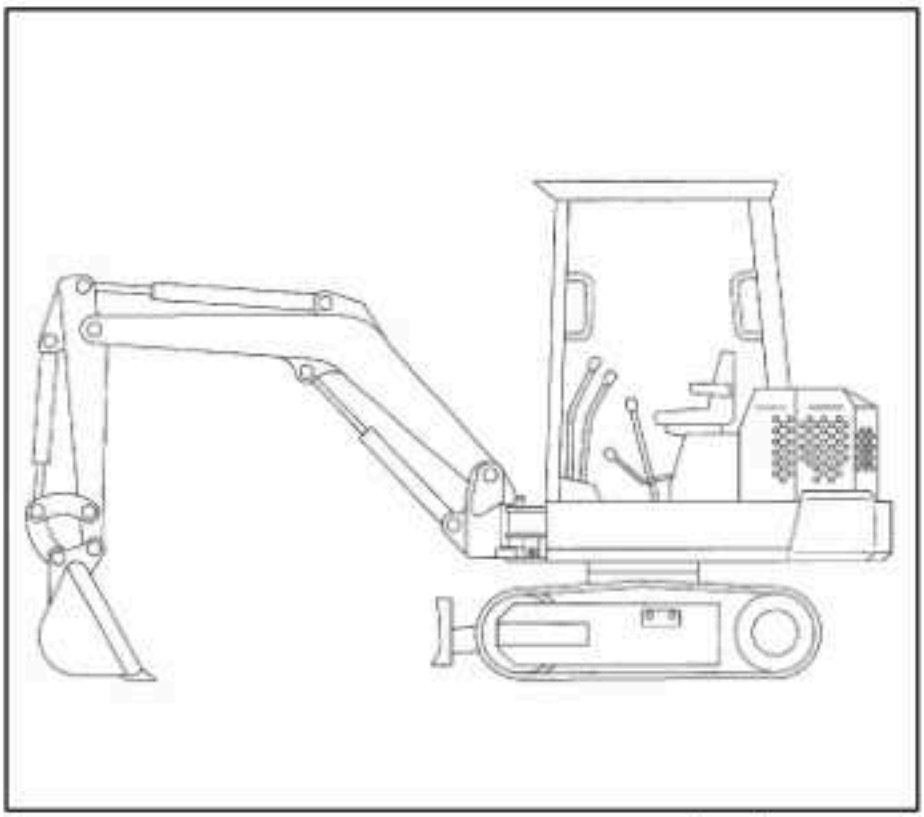
X 225

Excavator

Service Manual

(S/N 508311001–508311999)



MELROE
INGERSOLL-RAND

6720347 (11–89)

Printed in U.S.A.

bobcat

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CONTENTS

SAFETY INSTRUCTIONS i
SERIAL NUMBER LOCATIONS ii
DELIVERY REPORT ii
HYDRAULIC EXCAVATOR IDENTIFICATION iii
PREVENTIVE MAINTENANCE 1–1
HYDRAULIC SYSTEM 2–1
DRIVE SYSTEM 3–1
UPPER WORKS & SWING SECTION 4–1
MAIN FRAME & TRACKS 5–1
ELECTRICAL SYSTEM 6–1
ENGINE SERVICE 7–1
TECHNICAL DATA 8–1

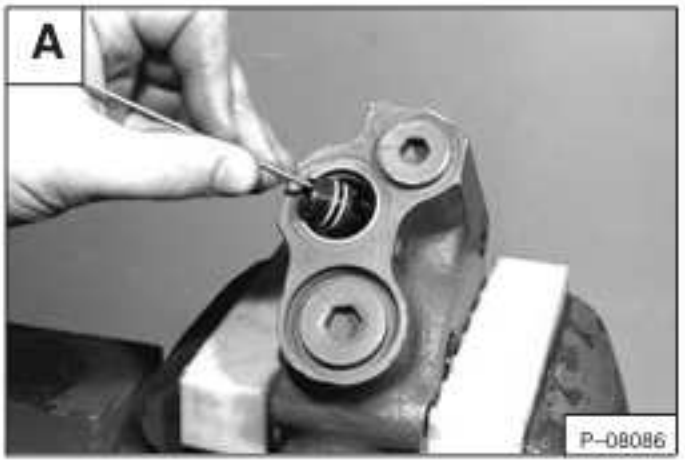
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Brake Valve (Cont'd)

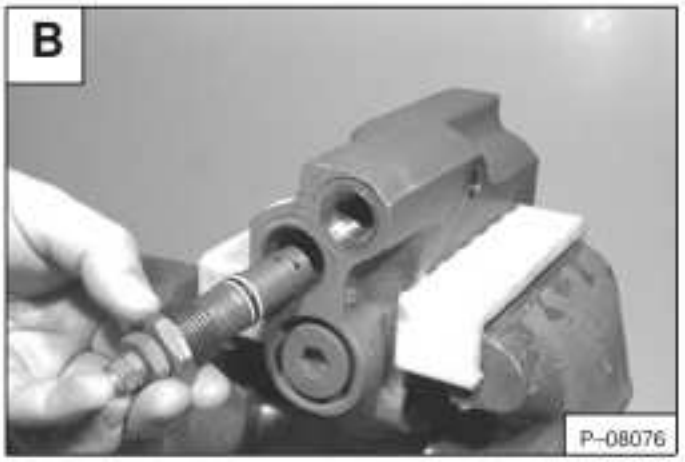
Assembly (Cont'd)

Install the poppet seat assembly into the valve using a piece of wire **[A]**.



Install the relief valve assembly in both sides of the valve **[B]**.

Tighten the relief valves to 58–65 ft. lbs. (78–88 Nm) torque.



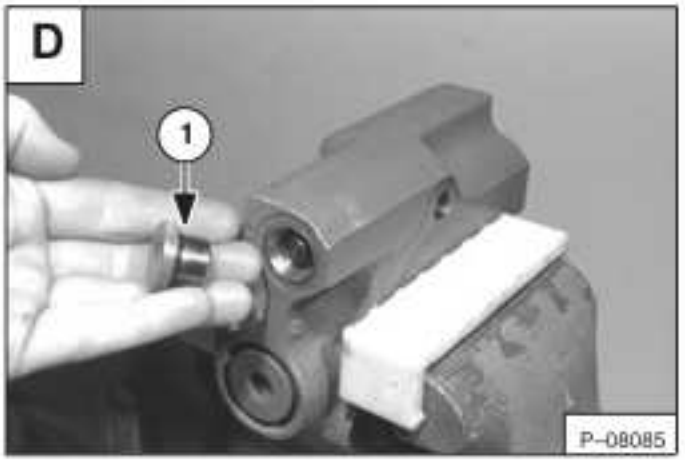
Install the spring into the piston. Apply oil to the piston and install in both sides of the valve **[C]**.

NOTE: Do not use force when installing the piston in to the valve. Check for smooth movement of the piston.



Install the O–ring (Item 1) **[D]** on the plug and install in both sides of the valve **[D]**.

Tighten the plugs to 58–65 ft. lbs. (78–88 Nm) torque.



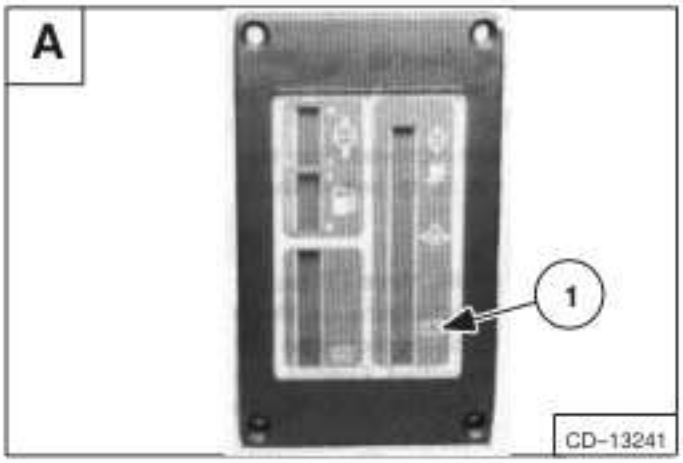
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DISPLAY MODULE (Cont'd)

Battery Charge Circuit Test (display module installed)

If the battery light (Item 1) **[A]** continually blinks on and off, with the engine running, this indicates a low voltage condition (less than 9 volts).



Install a DC voltmeter between the alternator battery B terminal and the engine ground **[B]**.

Start the engine.

The voltage at engine idle should be approximately 14 volts. Stop the engine. If the voltage is incorrect, repair or replace the alternator.

If the alternator voltage is correct, check the engine harness to display harness.

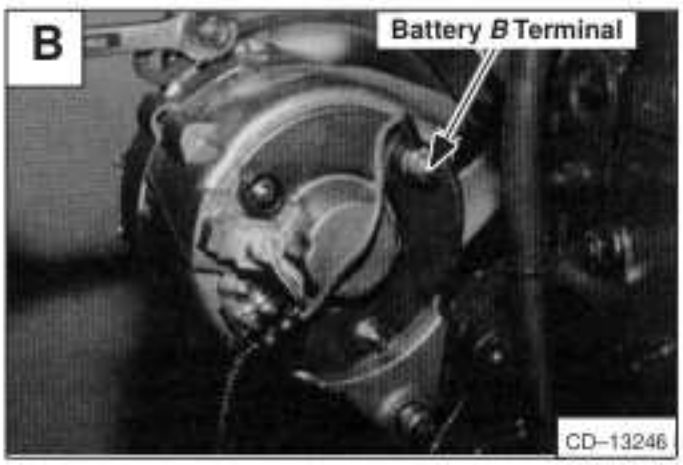
Disconnect the CN1 connector from the back of the display module.

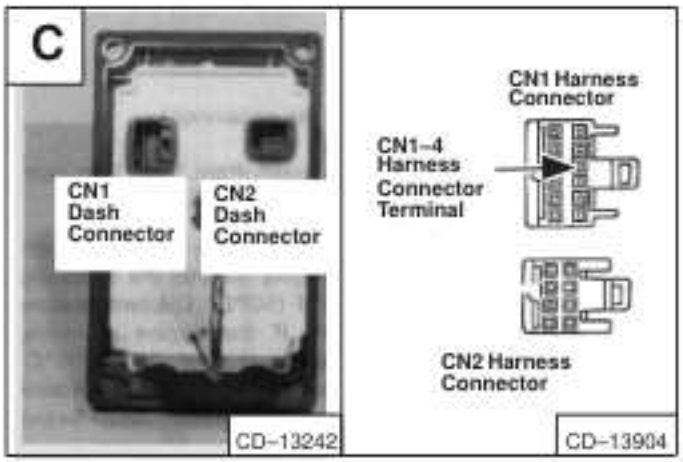
Connect a DC voltmeter to the display module harness connector pin CN1–4 **[C]**. Connect the other lead to ground. Start the excavator.

The voltage should be approximately 14 volts at engine idle. Stop the engine.

If no voltage is measured, check the wire harness for broken or damaged wires. Repair or replace the harness.

If voltage at the display module harness (connector pin CN1–4) is correct, the display module is defective. Replace the display module.





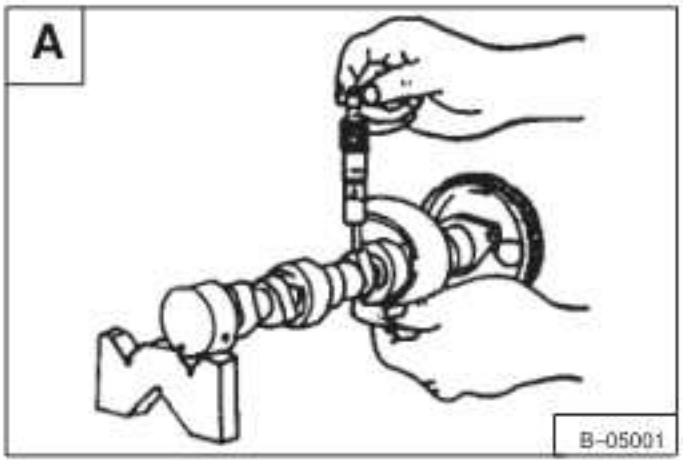
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Removal And Installation (Cont'd)

Measure the highest point on each camshaft lobe **[A]**.

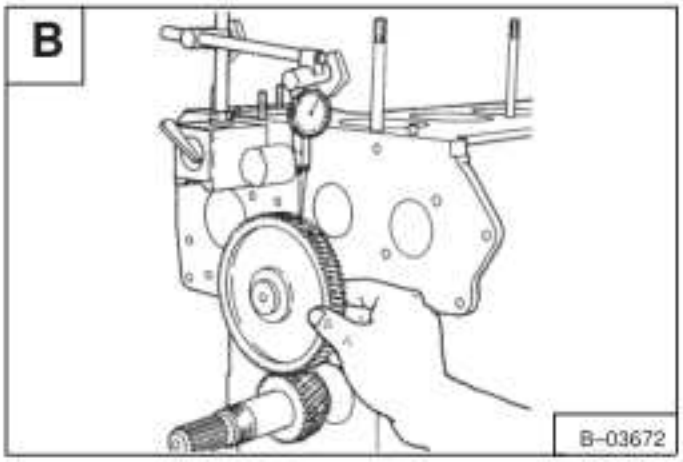
The specification is 1.3134 inch (33,36 mm).

The wear limit is 1.3114 inch (31,31 mm).



Installation: After the crankshaft is installed, check the clearance for the camshaft gear. Mount a dial indicator **[B]**.

Hold one gear while turning the other gear. The specification is 0.007–0.0045 inch (0.043–0,114 mm). The wear limit is 0.0079 inch (0,2 mm).



CRANKSHAFT AND PISTONS

Removal And Installation

The tools listed will be needed to do the following procedure:

MEL1063 – Ring Compressor
MEL1064 – Piston Ring Expander

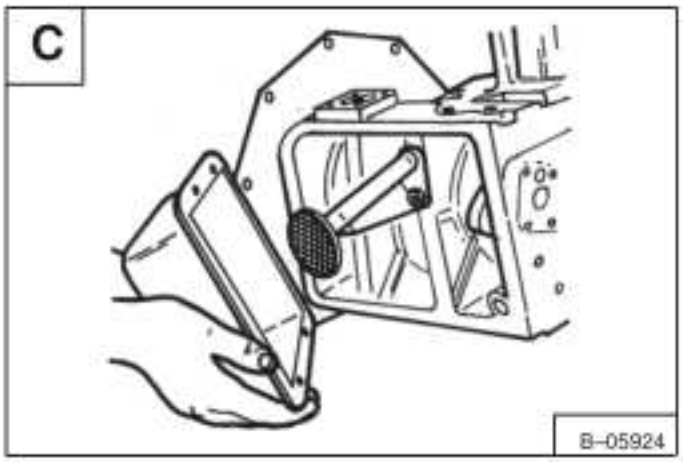
Remove the cylinder head. (See Page 7–20.)

Remove the gear case cover. (See Page 7–26.)

Remove the timing gears. (See Page 7–28.)

Remove the flywheel.

Remove the oil pan **[C]**.



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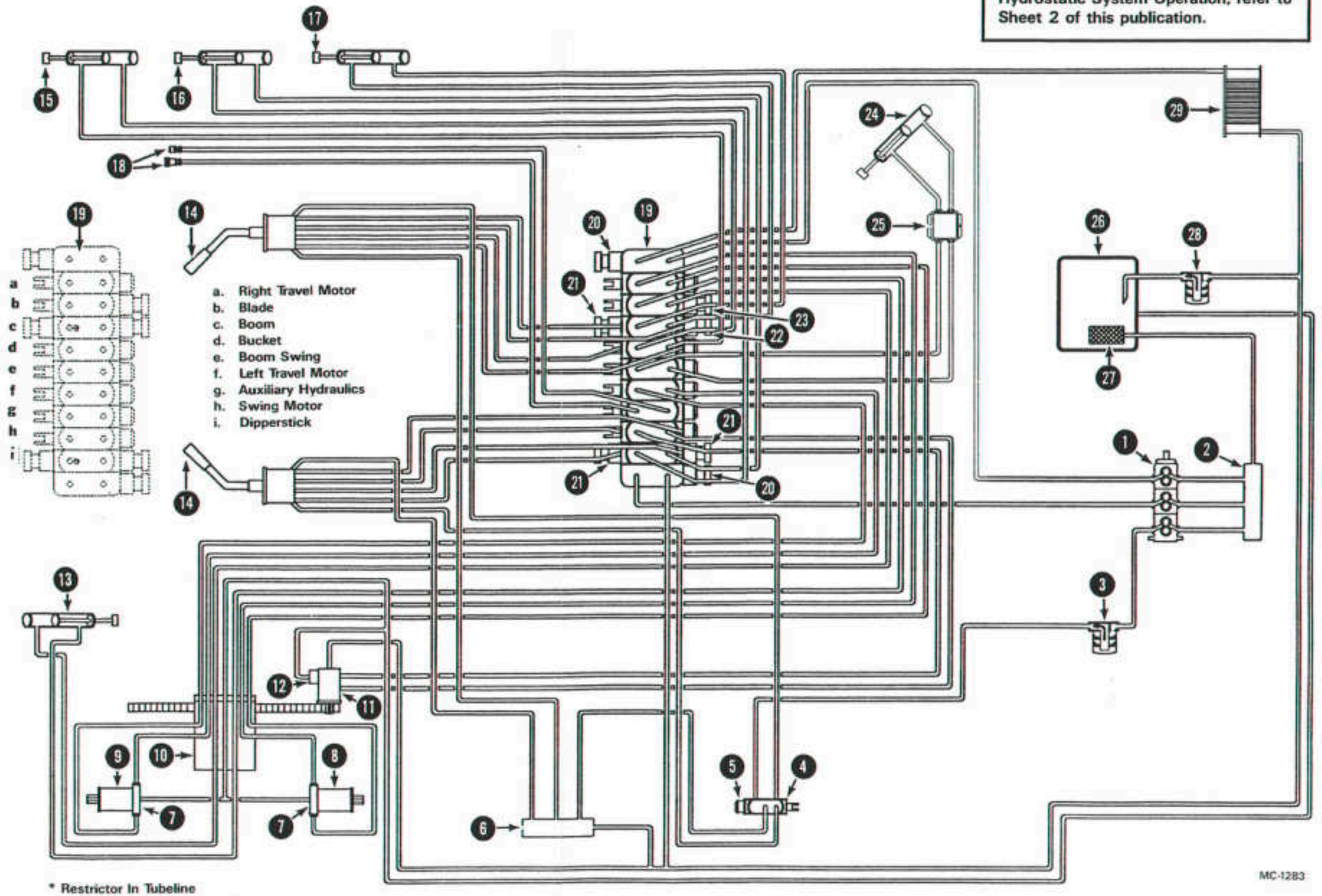
HYDRAULIC FLOW CHART

For Model

225 EXCAVATOR (I.S.O.)

Chart #6720523 (Printed July 1991)
(Without Hi-Flow)

NOTE
Chart shows oil flow in Forward Drive Position and with Hydraulic Cylinders Partially Extended. For Hydraulic/ Hydrostatic System Operation, refer to Sheet 2 of this publication.



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