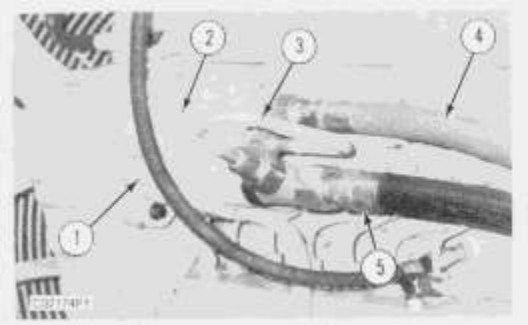
Systems Operation

SMCS - 7566

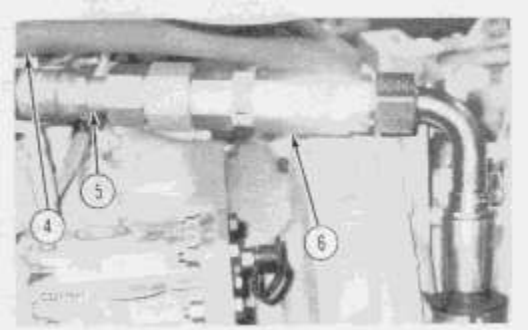
Pump Drive Oil Cooler System

Introduction

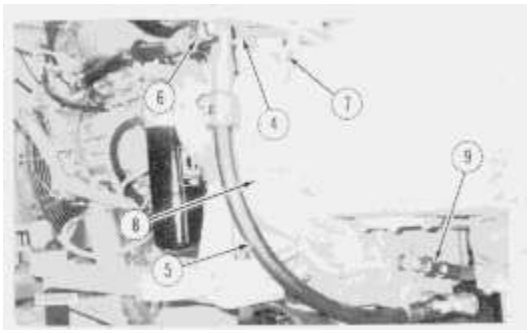
The 245B Series II Excavator has been updated to include a separate pump drive oil cooler system. The pump drive oil cooler system was added to lower the pump drive operating temperature for an increase in operating life. The circuit is made up of five major components. These components are recirculating pump (1) with internal relief valve (2), in-line screen filter (6), oil cooler (10) and hoses (4) and (5). Recirculating pump (1) is driven thru a pump mounting group attached to the rear of the front cover on the right side of the engine. Any change in the engine rpm will cause a respective change in the rpm of recirculating pump (1).



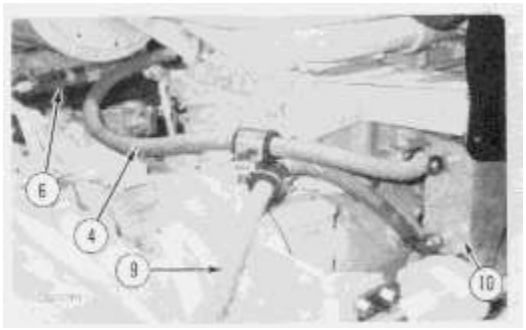
Right Front Side View Of Engine
(1) Recirculating pump. (2) Internal relief valve. (3) Relief valve bypass line to inlet side of pump. (4) Line to oil cooler. (5) Line from pump drive oil sump.



Right Side View Of Engine
(4) Line to oil cooler. (5) Line from pump drive oil sump. (6) In line screen filter.



Right Rear Side View Of Engine
(4) Line to oil cooler. (5) Line from pump drive oil sump. (6) In line screen filter. (7) Pump drive breather. (8) Pump drive. (9) Line from oil cooler.



Left Rear Side View Of Engine
(4) Line to oil cooler. (6) In line screen filter. (9) Line from oil cooler. (10) Oil cooler.

System Components And Oil Flow

Recirculating pump (1) pulls oil from the bottom of pump drive (8) through line (5) and in-line screen filter (6) to the inlet side of recirculating pump (1). Internal relief valve (2) limits system pressure to 350 ± 70 kPa (50 ± 10 psi). If system pressure exceeds the set limit of 350 ± 70 kPa (50 ± 10 psi), internal relief valve (2) will open. This allows the excess oil to return to the inlet side of recirculating pump (1) through relief valve bypass line (3).

NOTE: Internal relief valve (2) is preset and does not require any adjustments.

Oil is pumped to oil cooler (10) by recirculating pump (1) through line (4). From oil cooler (10), oil is then pumped to bottom of pump drive (8) through line (9).

Pump drive (8) is vented through breather (7) to eliminate a build up of internal pressure due to heating and cooling of oil and pump pressures.

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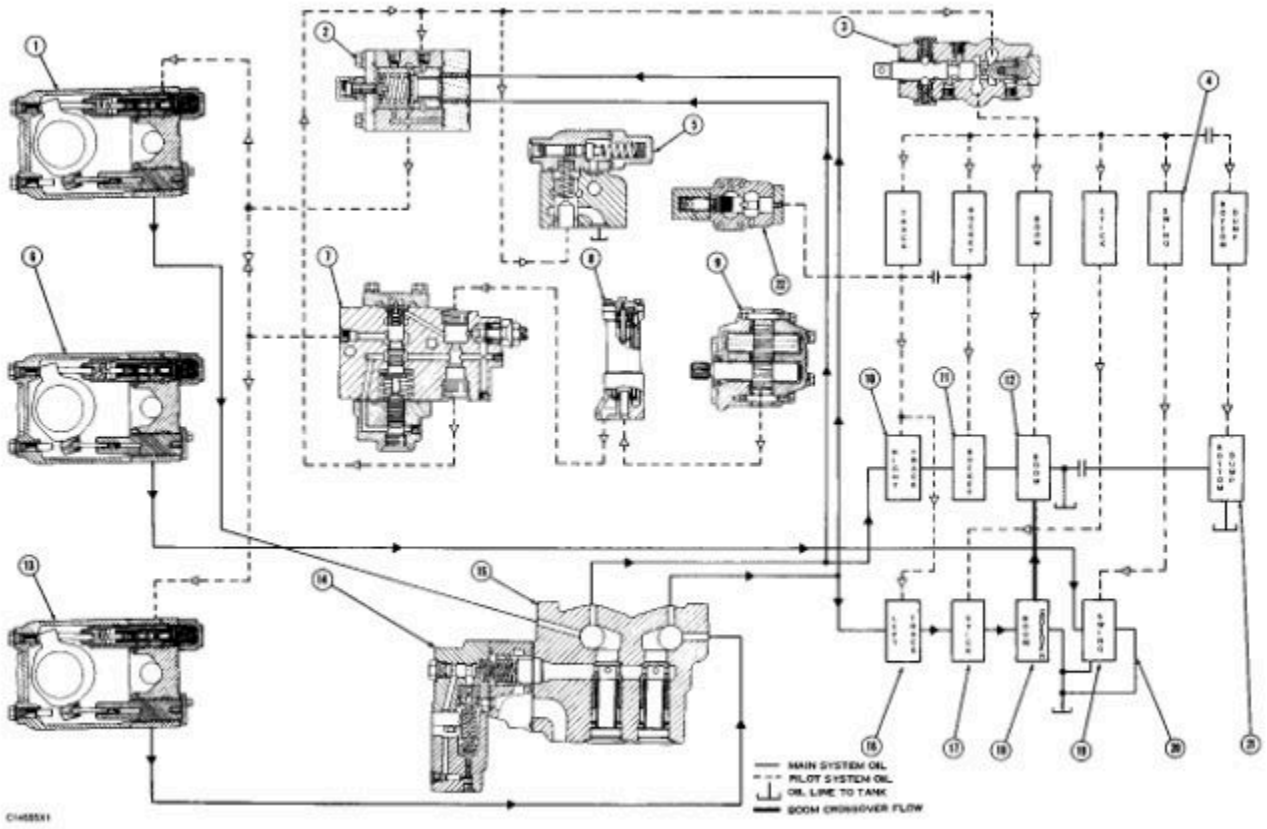
Introduction

Reference: For Specifications with illustrations, make reference to the Specifications For 245B and 245B Series II Excavators and Front Shovel Hydraulic System, Form No. SENR3892. If the Specifications given in Form SENR3892 are not the same as given in the Systems Operatin and the Testing and Adjusting, look at the printing date on the back cover of each book. Use the Specifications given in the book with the latest date.

Schematic For Pump Flow And Pressure Control



(1) Axial Piston Pump (Front). This is a variable displacement pump. It supplies the main oil flow to operate the right track motor, the bucket cylinder, the boom cylinders and the bottom dump cylinders when the machine is equipped with a bottom dump bucket (front shovel).