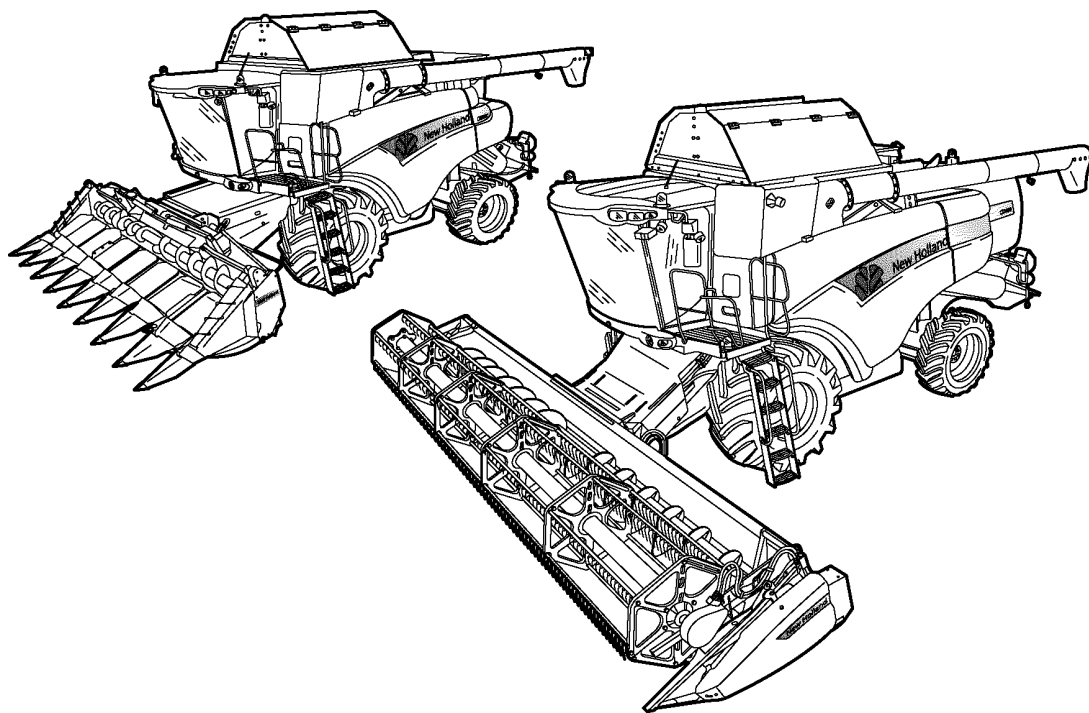




SERVICE MANUAL



**CR9060 Elevation , CR9060 , CR9070 Elevation , CR9080 Elevation , CR9080 ,
CR9090 Elevation , CX8030 , CX8040 , CX8050 , CX8060 , CX8070 , CX8080 ,
CX8090**

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INTRODUCTION

Foreword

IMPORTANT INFORMATION

All repair and maintenance works listed in this manual must be carried out only by staff belonging to the NEW HOLLAND Service network, strictly complying with the instructions given and using, whenever required, the special tools.

Anyone who carries out the above operations without complying with the prescriptions shall be responsible for the subsequent damages.

The manufacturer and all the organizations of its distribution chain, including - without limitation - national, regional or local dealers, reject any responsibility for damages due to the anomalous behavior of parts and/or components not approved by the manufacturer himself, including those used for the servicing or repair of the product manufactured or marketed by the Manufacturer. In any case, no warranty is given or attributed on the product manufactured or marketed by the Manufacturer in case of damages due to an anomalous behavior of parts and/or components not approved by the Manufacturer.

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Basic instructions

SHIMMING

For each adjustment operation, select adjusting shims and measure individually using a micrometer, then add up the recorded values. Do not rely on measuring the entire shimming set, which may be incorrect, or the rated value indicated on each shim.

ROTATING SHAFT SEALS

For correct rotating shaft seal installation, proceed as follows:

- before assembly, allow the seal to soak in the oil it will be sealing for at least thirty minutes
- thoroughly clean the shaft and check that the working surface on the shaft is not damaged
- position the sealing lip facing the fluid; with hydrodynamic lips, take into consideration the shaft rotation direction and position the grooves so that they will deviate the fluid towards the inner side of the seal
- coat the sealing lip with a thin layer of lubricant (use oil rather than grease) and fill the gap between the sealing lip and the dust lip on double lip seals with grease
- insert the seal in its seat and press down using a flat punch, do not tap the seal with a hammer or mallet
- whilst inserting the seal, check that it is perpendicular to the seat; once settled, make sure that it makes contact with the thrust element, if required
- to prevent damaging the seal lip on the shaft, position a protective guard during installation operations

O-RING SEALS

Lubricate the O-RING seals before inserting them in the seats, this will prevent them from overturning and twisting, which would jeopardize sealing efficiency.

SEALING COMPOUNDS

Apply one of the following sealing compounds on the mating surfaces marked with an X: RTV SILMATE, RHODORSIL CAF 1 or LOCTITE™ PLASTIC GASKET. Before applying the sealing compound, prepare the surfaces as follows:

- remove any incrustations using a metal brush;
- thoroughly de-grease the surfaces using one of the following cleaning agents: trichlorethylene, petrol or a water and soda solution.

COTTER PINS

When fitting split cotter pins, ensure that the pin notch is positioned in the direction of the force required to stress the pin. Spiral cotter pins do not require special positioning.

PROTECTING THE ELECTRONIC/ ELECTRICAL SYSTEMS DURING CHARGING OR WELDING

To avoid damage to the electronic/electrical systems, always observe the following:

1. Never make or break any of the charging circuit connections, including the battery connections, when the engine is running.
2. Never short any of the charging components to ground.
3. Always disconnect the ground cable from the battery before arc welding on the unit or on any header attached to the unit.
 - Position the welder ground clamp as close to the welding area as possible.
 - If welding in close proximity to a computer module, then the module should be removed from the unit.
 - Never allow welding cables to lay on, near or across any electrical wiring or electronic component while welding is in progress.
4. Always disconnect the negative cable from the battery when charging the battery in the unit with a battery charger.

NOTICE: *If welding must be performed on the unit, either the unit or the header (if it is attached), the battery ground cable must be disconnected from the unit battery. The electronic monitoring system and charging system will be damaged if this is not done.*

Remove the battery ground cable. Reconnect the cable when welding is completed.

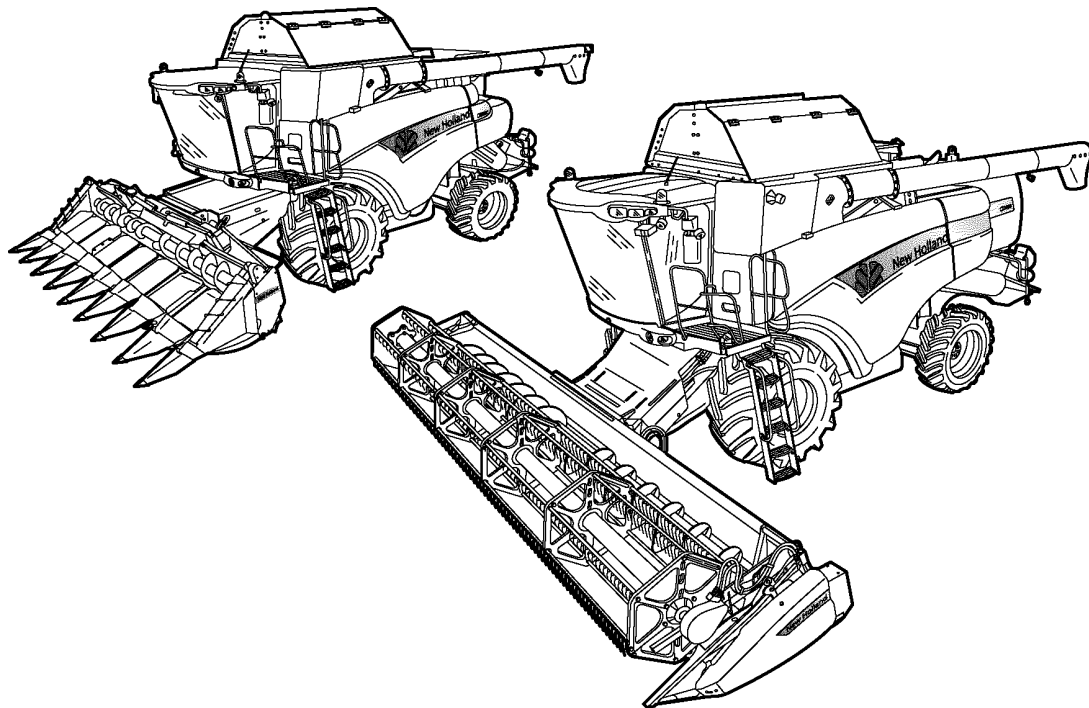
 **WARNING** 

Battery acid causes severe burns. Batteries contain sulfuric acid. Avoid contact with skin, eyes or clothing. Antidote - EXTERNAL: flush with water. INTERNAL: drink large quantities of water or milk. Follow with milk of magnesia, beaten egg or vegetables oil. Call physician immediately. EYES: flush with water for 15 minutes and get prompt medical attention.



SERVICE MANUAL

DISTRIBUTION SYSTEMS



**CR9060 Elevation , CR9060 , CR9070 Elevation , CR9080 Elevation , CR9080 ,
CR9090 Elevation , CX8030 , CX8040 , CX8050 , CX8060 , CX8070 , CX8080 ,
CX8090**

PRIMARY HYDRAULIC POWER SYSTEM - Special tools

DESCRIPTION	NEW HOLLAND PART NUMBER (All Markets Except North America)
Blanking Cap 11/16 ORFS	297671
Pressure Gauge 0 - 10 bar (0 - 150 psi)	293241#
Pressure Gauge 0 - 40 bar (0 - 600 psi)	293242#
Pressure Gauge 0 - 250 bar (0 - 5000 psi)	293244#
Remote valve coupling	5101741 or 293449
Quick release adaptor (Female)	291924
Pressure gauge hose	292246#
1/8 NPT fitting to attach hose 292246 to gauge	291927#
Adaptor M10 x 1.0p x 7/16 JIC male (enables use of gauges with 7/16 JIC hoses if used)	297417
MiniMess (M16x2) Quick attach fitting (procure locally)	
Flow Meter 120 ltr/min (0-50 gal/min) minimum (procure locally)	
# Part of hydraulic pressure test kit 292870	
O-RING FACE SEAL TUBE ADAPTORS	PARKER HANNIFIN PART NUMBER
Tee Piece (M12x1.5 with 9/16 UNF) - CCLS Pump Load sensing	4M12R870MLOS
Tee Piece (13/16 UNF fittings) - Steering	8R6MLOS
Elbow (13/16 UNF fittings) - Steering	8ELOS
Quick Release Fitting (9/16 UNF Male) - CCLS Pump Load Sensing	PD34BTL
Quick Release Fitting (13/16 UNF Male) - Steering	PD38BTL

Hydraulic pump - General specification

MAIN HYDRAULIC PUMP

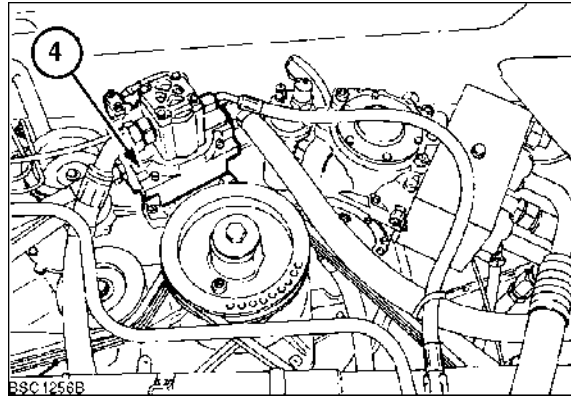
Type	Variable Flow Closed Centre Load Sensing Piston Pump
Minimum Output @ engine rated speed	114 Ltr/min 30 US gal/min
Standby Pressure	21 bar (305 psi)
Maximum System Pressure	207 bar (3000 psi)
Flow to Steering Motor	36 Ltr/min 9.5 US gal/min
Steering Pressure	186 bar (2700 psi)

PRIMARY HYDRAULIC POWER SYSTEM - Static description

The high pressure circuit operates all of the work hydraulics and steering. The circuit is fed by a closed centre load sensing variable displacement pump (4). Oil is drawn by the pump, from the main reservoir, shared with the hydrostatic system, through the inline pressure filter to the mainframe valve block.

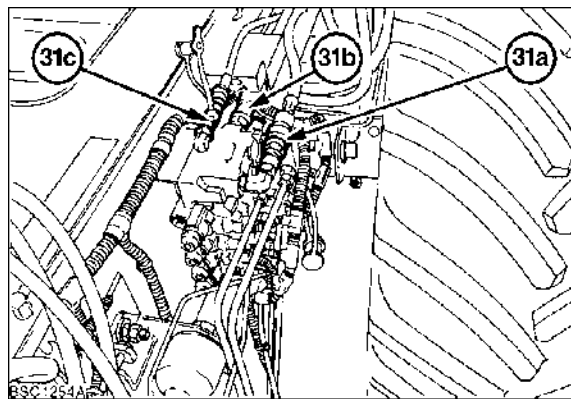
The oil enters the main frame valve block at the priority valve slice and there the oil is split, dependant on demand, to the steering valve, which has priority, or to the other hydraulic functions.

The unloading tube control, drum variator control and header height control are served by the main frame stack.



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The straw elevator and header reverser, lateral flotation control, reel vertical and horizontal adjustment and reel speed control are served by the straw elevator stack valve. The straw elevator stack valve is an extension of the main frame stack valve and is connected with pressure (31a), return (31b), and load sensing lines (31c), via quick release couplings.

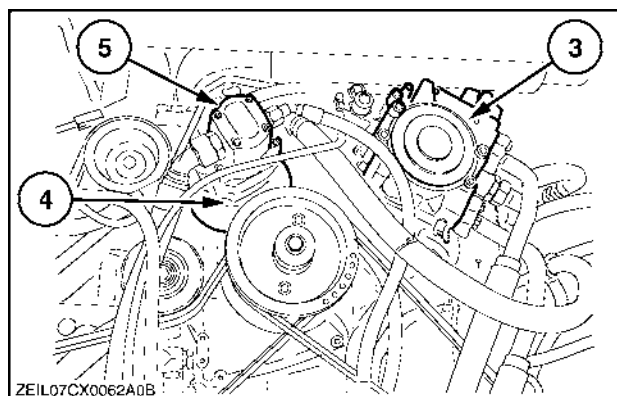


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The last section of the straw elevator stack valve is a flush valve. This valve allows a very small oil flow through the stack valves, when no services are being operated, allowing warm oil to bring the stack valve assembly gradually up to temperature.

The circuit return oil flows through to the return side filter back to the pump or to the reservoir.

The high pressure circuit is linked with the hydrostatic circuit. The hydrostatic pump (3) feeds the hydrostatic circuit. The charge return and case drain oil flows through to the thermostat and cooler back to the reservoir or high pressure circuit.

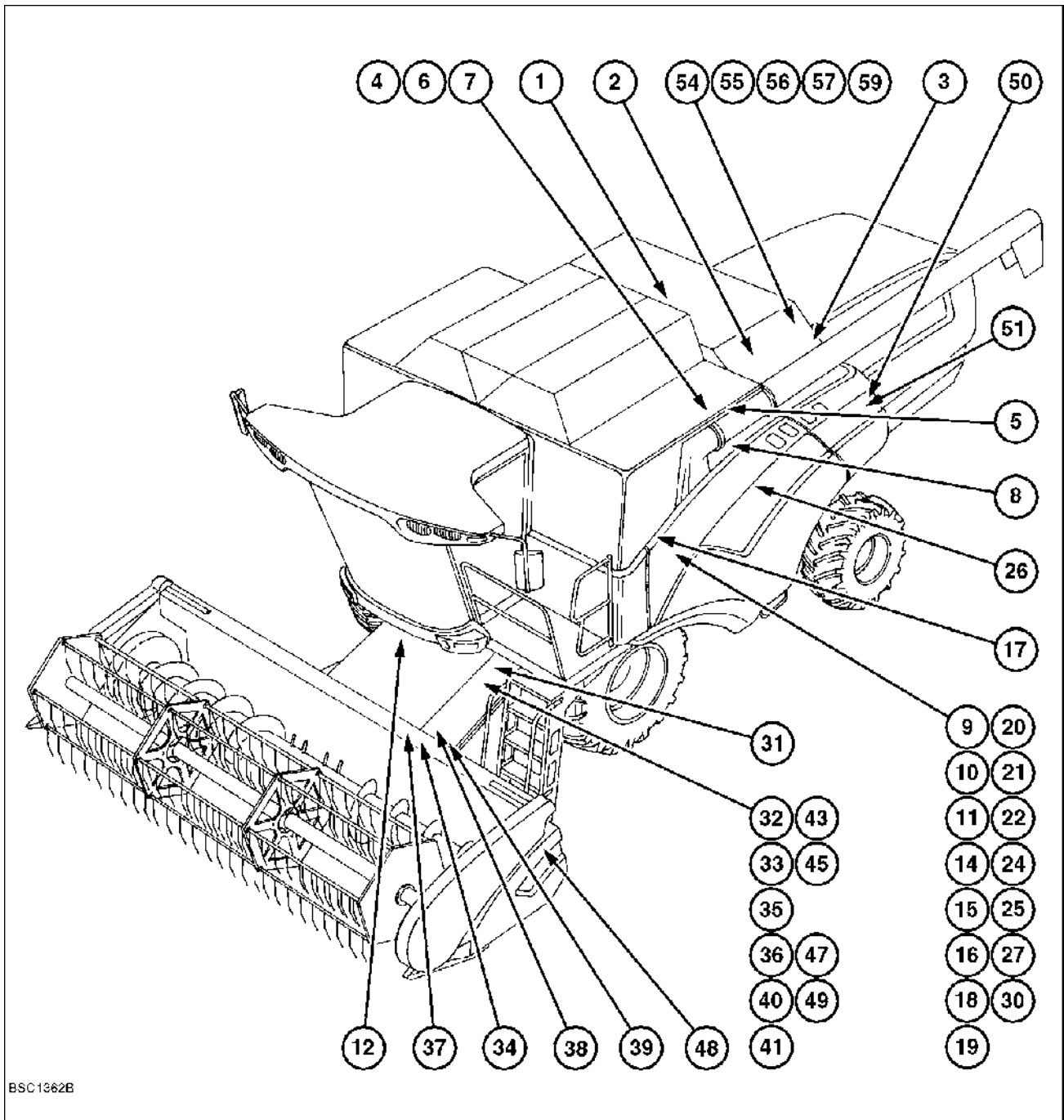


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The CCLS pump uses the return oil from the hydrostatic system as its charge pressure oil and therefore does not incorporate a charge pump. The hydrostatic return oil comes into the pump via the oil cooler at the rate of **60 l/min** (**63 qts/min**). Only when working in high demand conditions does the CCLS pump create an under pressure in the suction line.

PRIMARY HYDRAULIC POWER SYSTEM - Overview

1	Engine	33	Straw elevator and header reversing valve
2	Gearbox	34	Straw elevator and header reversing motor
3	Hydrostatic pump	35	Lateral flotation control valve
4	CCLS pump	36	Lateral float pressure compensation valve
5	Low pressure gear pump	37	Lateral flotation cylinder
6	Load sensing valve	38	Lateral float accumulator (80 bar [1160 psi] , 0.5 L [17 oz])
7	High pressure relief valve (197 bar (2856 psi))	39	Lateral float accumulator (100 bar [1450 psi] , 0.5 L [17 oz])
8	In-line high pressure filter	40	Lateral float minimum pressure valve
9	Priority valve	41	Reel horizontal adjustment valve
10	Steering relief valve	42	Reel horizontal adjustment cylinders
11	Load sensing shuttle valve	43	Reel vertical adjustment valve, reel up
12	Steering motor	44	Reel vertical adjustment cylinders
13	Steering cylinders	45	Reel drive / speed adjustment valve
14	Header height pressure valve	46	Reel vertical adjustment valve, reel down
15	High pressure relief valve 220 bar (3190 psi)	47	Reel pressure compensation valve
16	Accumulator lock out valve	48	Reel drive motor
17	Header suspension accumulator (70 bar [1015 psi] , 0.5 L [17 oz])	49	Reel reverser
18	Pressure sensor	50	Return filter with by-pass
19	Header height control valve	51	Blocked filter indicator switch
20	Header raise valve	52	Thermostat valve
21	Header lower valve	53	Cooler
22	Header pressure compensation valve	54	Suction filter
23	Header lift cylinders	55	Filler cap with breather
24	Electronic control unit	56	Hydraulic oil, minimum level indicator
25	Drum variator valve, variator speed up	57	Reservoir
25a	Drum variator valve, variator speed down	58	Drain hose
26	Drum variator adjustment plunger	59	Temperature sensor
27	Unloading tube control valve	60	Multi-line quick coupler
28	Unloading tube cylinder lock out	61	Jammer valve
29	Unloading tube cylinder	62	Drum variator accumulator
30	Not used	63	Varifeed™ hydraulic valve
31	Quick attach couplers	64	Varifeed™ knife cylinders
32	Not used		



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HIGH PRESSURE SYSTEM - COMPONENT LOCATION



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PRIMARY HYDRAULIC POWER SYSTEM - Component Localisation

NOTE: The reference numbers used in the illustrations and text relate to the identification numbers used on the High Pressure Circuit Diagram, **PRIMARY HYDRAULIC POWER SYSTEM - Hydraulic schema (A.10.A)**.

(3) Hydrostatic Pump

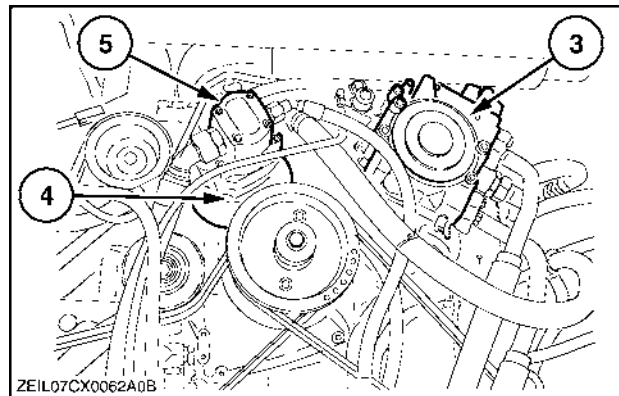
Although not part of the high pressure system, the return oil from the hydrostatic motors is used as charge pressure oil for the high pressure CCLS pump.

(4) Closed Centre Load Sensing (CCLS) Pump

Provides the oil for the high pressure system. Will supply the pressure as demanded by the services in use due to its load sensing and variable displacement capability. Has the advantage over a fixed pump in that it reduces the engine power absorbed when maximum pump flow is not required.

(5) Low Pressure Gear Pump

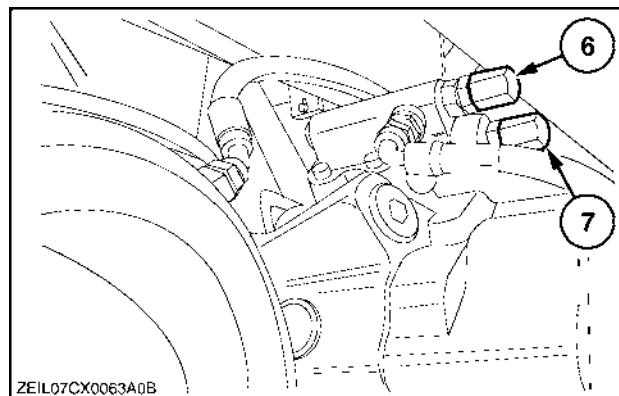
Totally separate from the high pressure system. Mounted on the CCLS pump from where it takes its drive.



(6) Load Sensing Valve (mounted on CCLS pump)

(7) High Pressure Relief Valve (mounted on CCLS pump)

Output from the CCLS pump is determined by adjusting the angle of the swash plate. The load sensing valve senses the circuit operating pressure and adjusts the swash plate angle to control pump output. If pump output rises to **197 bar (2857 psi)** the high pressure relief valve overrides the load sensing valve and adjusts the swash plate angle to limit maximum system pressure.



(8) In Line High Pressure Filter

A replaceable filter located between the CCLS pump output and the high pressure system priority valve.

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