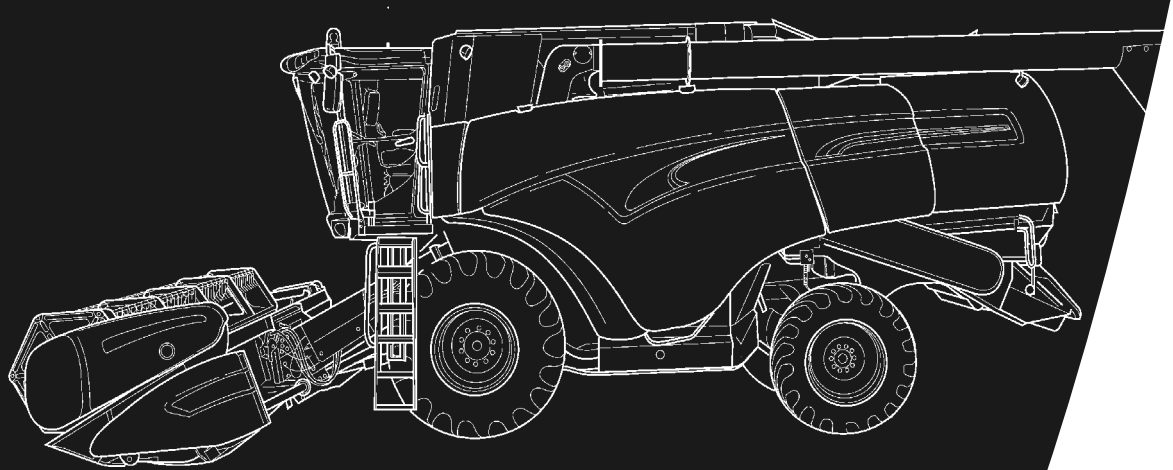
REPAIR MANUAL

NEW HOLLAND

CX720
CX740
CX760
CX780
CX820
CX840
CX860
CX880



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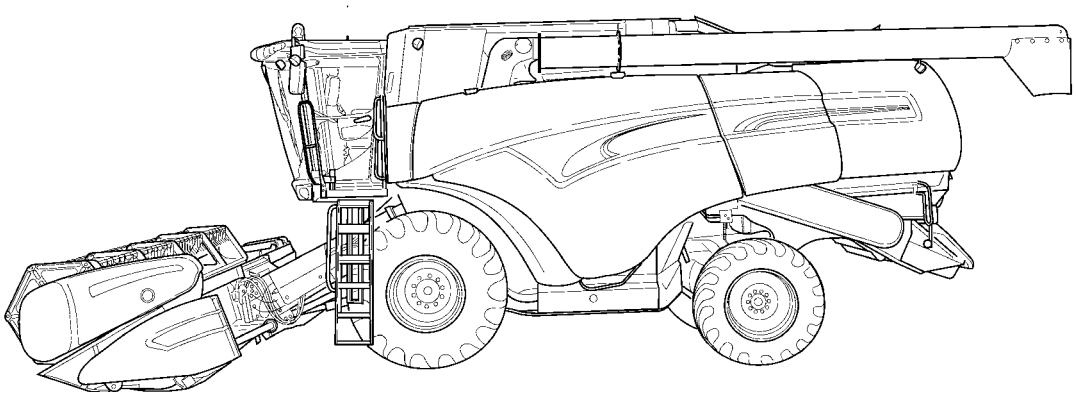

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Contents

INTRODUCTION

Foreword (- A.10.A.40)

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.

Basic instructions (- A.90.A.05)

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 jeopardise 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 combine or on any header attached to the combine.
   - 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 combine.
   - 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 combine with a battery charger.

IMPORTANT: *If welding must be performed on the unit, either the combine or the header (if it is attached), the battery ground cable must be disconnected from the combine 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. 84-110

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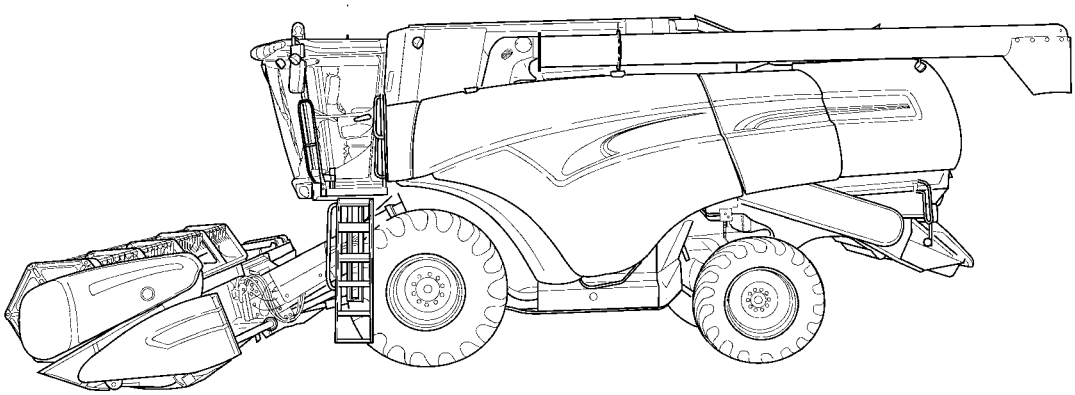
DISTRIBUTION SYSTEMS



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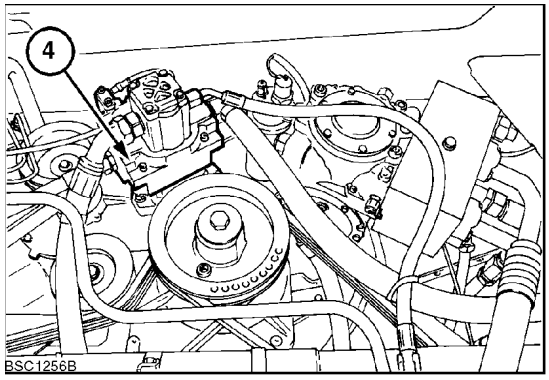
PRIMARY HYDRAULIC POWER SYSTEM - Static description (A.10.A - C.30.A.20)

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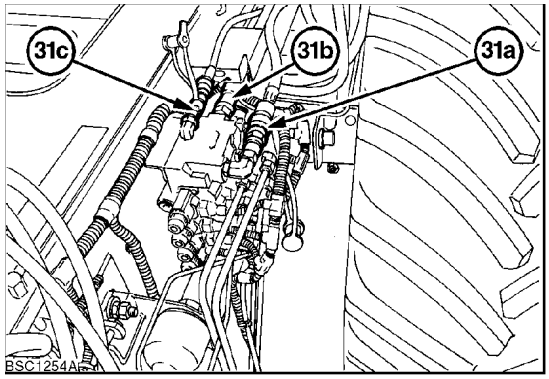
The straw elevator and header reverser, lateral flotation control, reel vertical and horizontal adjustment and reel speed control are served by the straw elevator stack valve. The straw elevator stack valve is an extension of the main frame stack valve and is connected with pressure **(31a)**, return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



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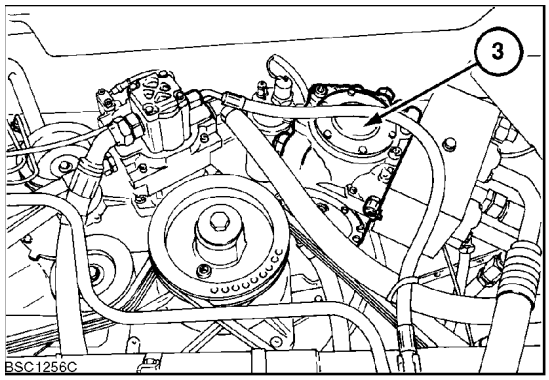
The last section of the straw elevator stack valve is a flush valve. This valve allows a very small oil flow through the stack valves, when no services are being operated, allowing warm oil to bring the stack valve assembly gradually up to temperature.
The circuit return oil flows through to the return 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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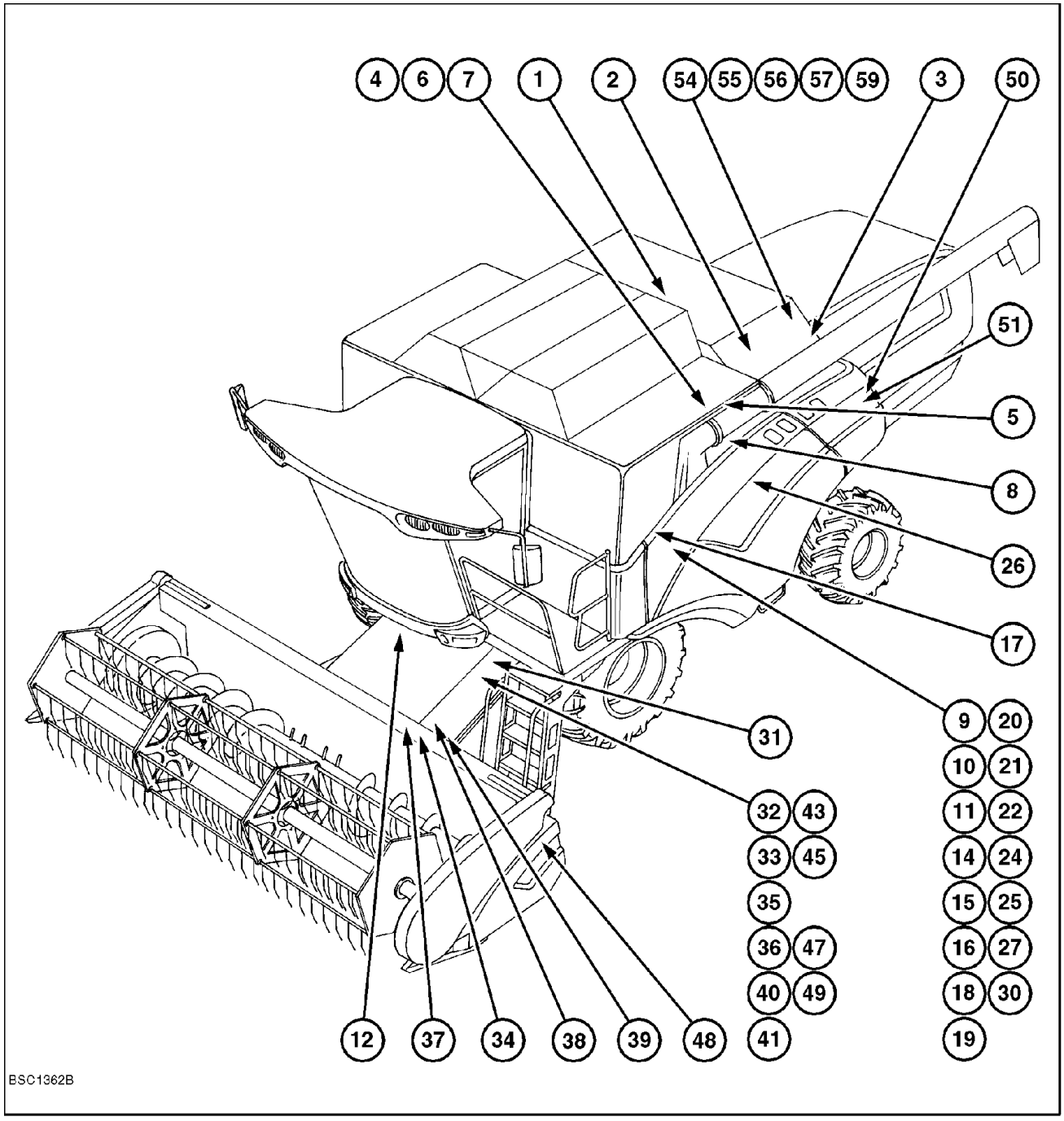
The CCLS pump uses the return oil from the hydrostatic system as its charge pressure oil and therefore does not incorporate a charge pump. The hydrostatic return oil comes into the pump via the oil cooler at the rate of **60 l/min** (**63 qts/min**). Only when working in high demand conditions does the CCLS pump create an under pressure in the suction line.

PRIMARY HYDRAULIC POWER SYSTEM - Overview (A.10.A - C.40.B.10)

HIGH PRESSURE SYSTEM - COMPONENT LOCATION

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



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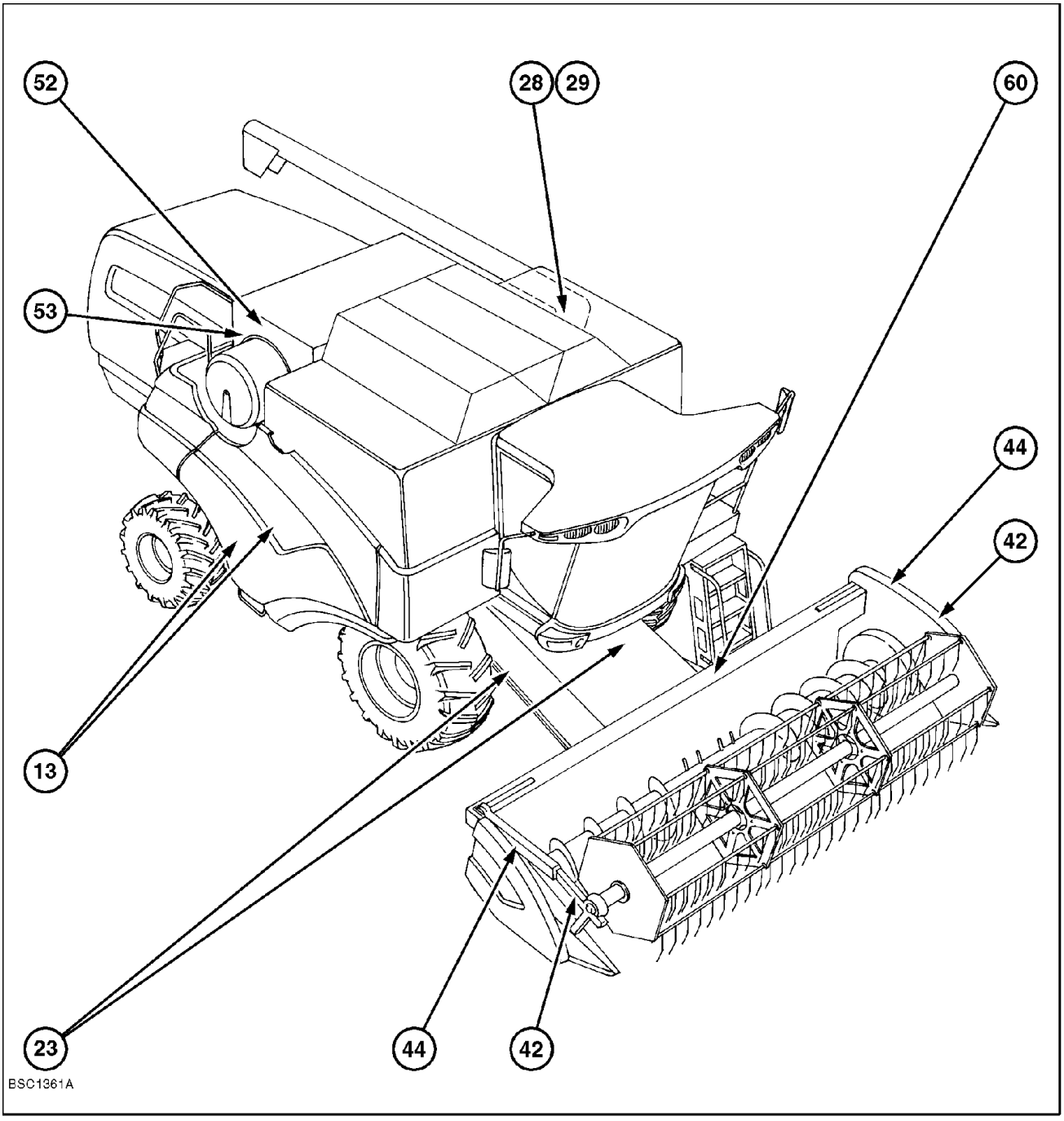
HIGH PRESSURE SYSTEM - COMPONENT LOCATION



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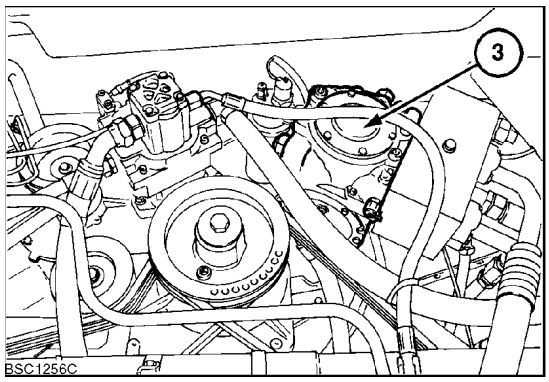
HIGH PRESSURE SYSTEM - COMPONENT LOCATION

PRIMARY HYDRAULIC POWER SYSTEM - Component localisation (A.10.A - C.40.B.20)

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-C.20.B.20)****.*

(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.



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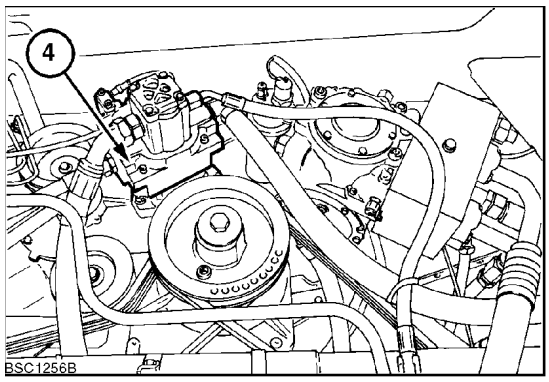
(4) Closed Centre Load Sensing (CCLS) Pump
Provides the oil for the high pressure system. Will supply the pressure as demanded by the services in use due to its load sensing and variable displacement capability. Has the advantage over a fixed pump in that it reduces the engine power absorbed when maximum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



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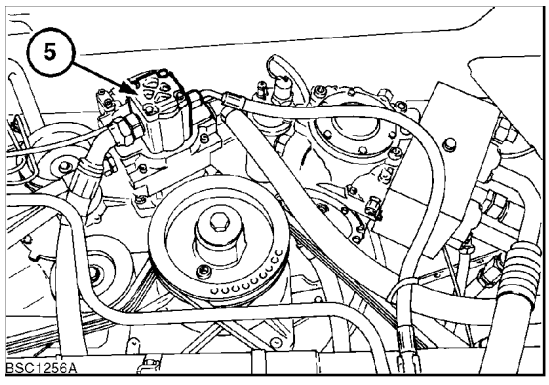
(5) Low Pressure Gear Pump
Totally separate from the high pressure system. Mounted on the CCLS pump from where it takes its drive.



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(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**

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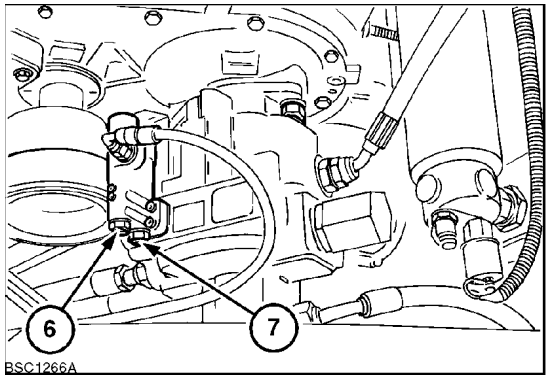
bar (**2857 psi**) the high pressure relief valve over rides the load sensing valve and adjusts the swash plate angle to limit maximum system pressure.



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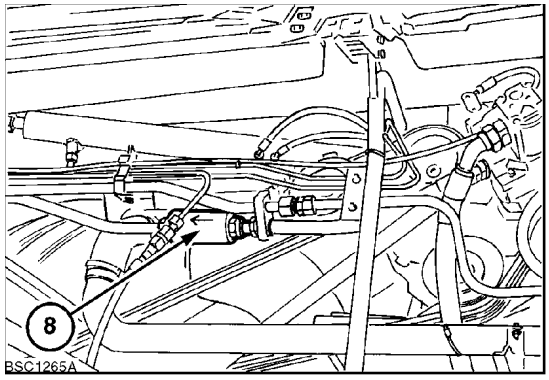
(8) In Line High Pressure Filter
A replaceable filter located between the CCLS pump output and the high pressure system priority valve.



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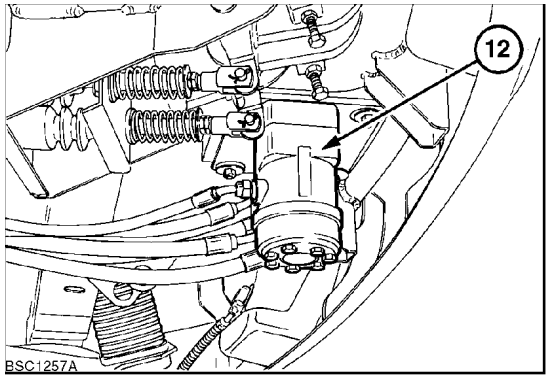
(12) Steering Motor
Supplied oil via the priority valve in the main frame stack. The steering motor directs and controls oil to the steering cylinders, based on input via movement of the steering wheel.
There are 2 different motors available. An OSPF **315 cc** load sensing fixed capacity unit for North America only and an OSPQ **160/320 cc** load sensing variable capacity unit for all other locations.



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(13) Steering Cylinders