SERVICE MANUAL

7630 / 8030 TIER 3

Tractor

Part number 47793462
English
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Clutch - General specification

	7630	8030
Disk type	Dry disk – **330 mm**	
Material	Organic, asbestos free	
Pressure plate type	Belleville spring (self-adjustment, maintenance free)	
Thrust bearing type	Mechanical activation.	
Clutch pedal free play setting	**28 – 41 mm (1.102 – 1.614 in)**	

Clutch - Torque

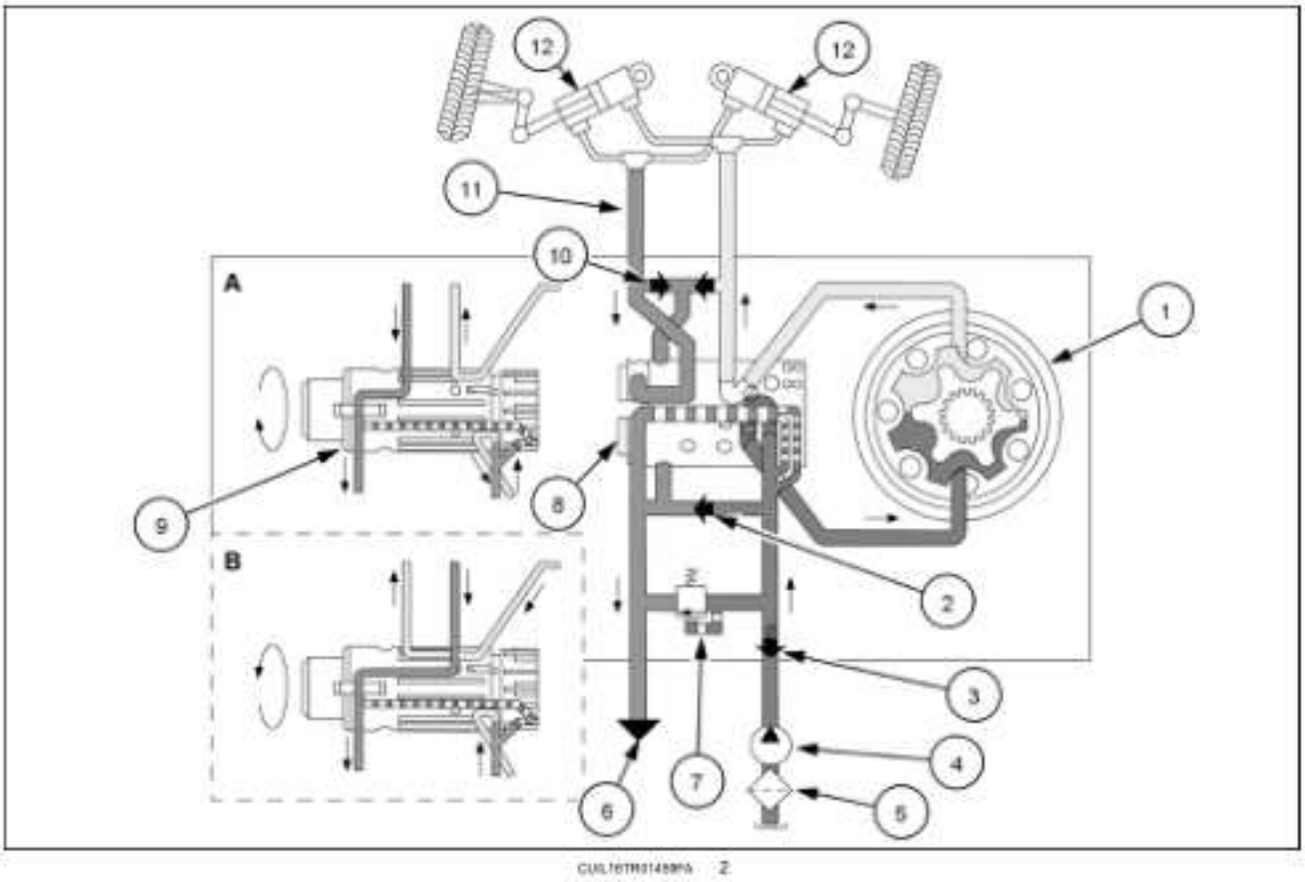
Component	Specification
Screws from clutch cover to flywheel	**35 N·m (26 lb ft)**
Locknut on clutch pedal	**34 N·m (25 lb ft)**
Bolts of the Power Take-Off (PTO) drive disk	**129 N·m (95 lb ft)**
Bearing fork setscrew on crosswise shaft	**47 N·m (35 lb ft)**

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Problem	Possible Cause	Correction
Engine jams or bounces when switching from reduction to direct drive	The piston for the reduction clutch is scratched, damaged or bent.	Replace piston.
	The piston return springs of the reduction clutch are broken or defective.	Replace the springs.
	Reduction clutch discs are bent or defective.	Change clutch discs.
Low pressure of lubrication	Spring of cooler/lubrication valve is broken or loose or the valve is stuck open.	Repair the cooler/lubrication valve.
	Oil cooler is plugged or covered.	Replace oil cooler.
High pressure of lubrication	Spring of lubrication/cooler valve is stuck open.	Repair cooler/lubrication valve.
Noisy transmission box	Low oil level	Correct as required
	Incorrect oil type	Determine the type of oil, drain and top up as needed
	Worn bearings. Check the transmission lubrication pressure. Consult the procedures in **Mechanical transmission - Pressure test (21.114)**.	Incorrect output shaft longitudinal play. Check and replace the bearings as needed, correct the play
Lubricant leak in the lower section	Leak in the engine sump housing gasket and rear retainer	Replace the retainer and gasket on the rear section. Refer to Engine section
	Worn or damaged input shaft sealant, power take off shaft sealant, front transmission plate gasket; reverse gear idler gear bolt sealant leak	Inspect and replace retainers and gaskets as needed
	Hydraulic bearing sealant leak (the tank requires frequent topping up)	Replace the bearing assembly retainers
Difficult or impossible to engage gears	Incorrectly adjusted or worn gearshift selector rods	Adjust the gearshift selector rods replacing worn parts as needed
	Damaged connections	Inspect, repair or replace as needed
	Gear forks damaged or worn	Inspect the worn or damaged forks and gearshift shafts for wear and warping. Replace if necessary
	Worn synchroniser assemblies	Inspect the synchroniser assembly components. Replace if necessary
	Excessive output shaft longitudinal play — worn bearings	Inspect the adjustments and replace as necessary. Adjust the longitudinal play
	Clutch not working correctly	Air in the hydraulic system, damaged clutch cover
Gears jumping out	The shift did not fully engage	Check the gear lever gearshift selector rod adjustment
	The gear cover detents are damaged	Remove the gear covers and inspect the detent balls and springs
	Worn synchroniser	Inspect the synchroniser assembly teeth.
	Excessive longitudinal play on the output shaft (worn bearings)	Check the bearings and adjust the play to specification
The gear will not disengage	Worn coupling sleeve or joint	Inspect and replace as needed
	Jammed gearshift selector rods.	Adjust the gearshift selector rods and replace worn parts as needed
Impossible to shift the inverter	Incorrect adjustment of the first clutch lock mechanism or inoperative assembly.	See the clutch lock assembly cable adjustment. Inspect the cable and lever components

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Schematic diagram of the steering operation - Steering activated:



Suction oil
Supplying the steering motor
Return oil

Pressurised oil (up to **170 bar**)
Measured oil to the steering piston

Turning to the right

Reference	Component	Reference	Component
(1)	Metering Valve	(7)	Pressure retention valve
(2)	Test valve	(8)	Control valve liner
(3)	Check valve	(9)	Control valve coil
(4)	Pump	(10)	Not available
(5)	Filter	(11)	Not available
(6)	Return via cooling and lubrication	(12)	Steering Cylinders

By turning the wheel to the right, the movement of the control valve spool aligns a series of grooves in the sleeve. While turning to the right, the oil flows through the liner along a groove in the valve spool and into a passage in the steering motor housing and led to a measuring unit, as shown in the figure above.

The measuring unit is activated by the rotor drive shaft and sends the oil along another series of passages in the spool and the liner, and into the steering cylinder. The return oil from the other end of the cylinder is sent through the spool and the valve sleeve to a return passage in the housing.

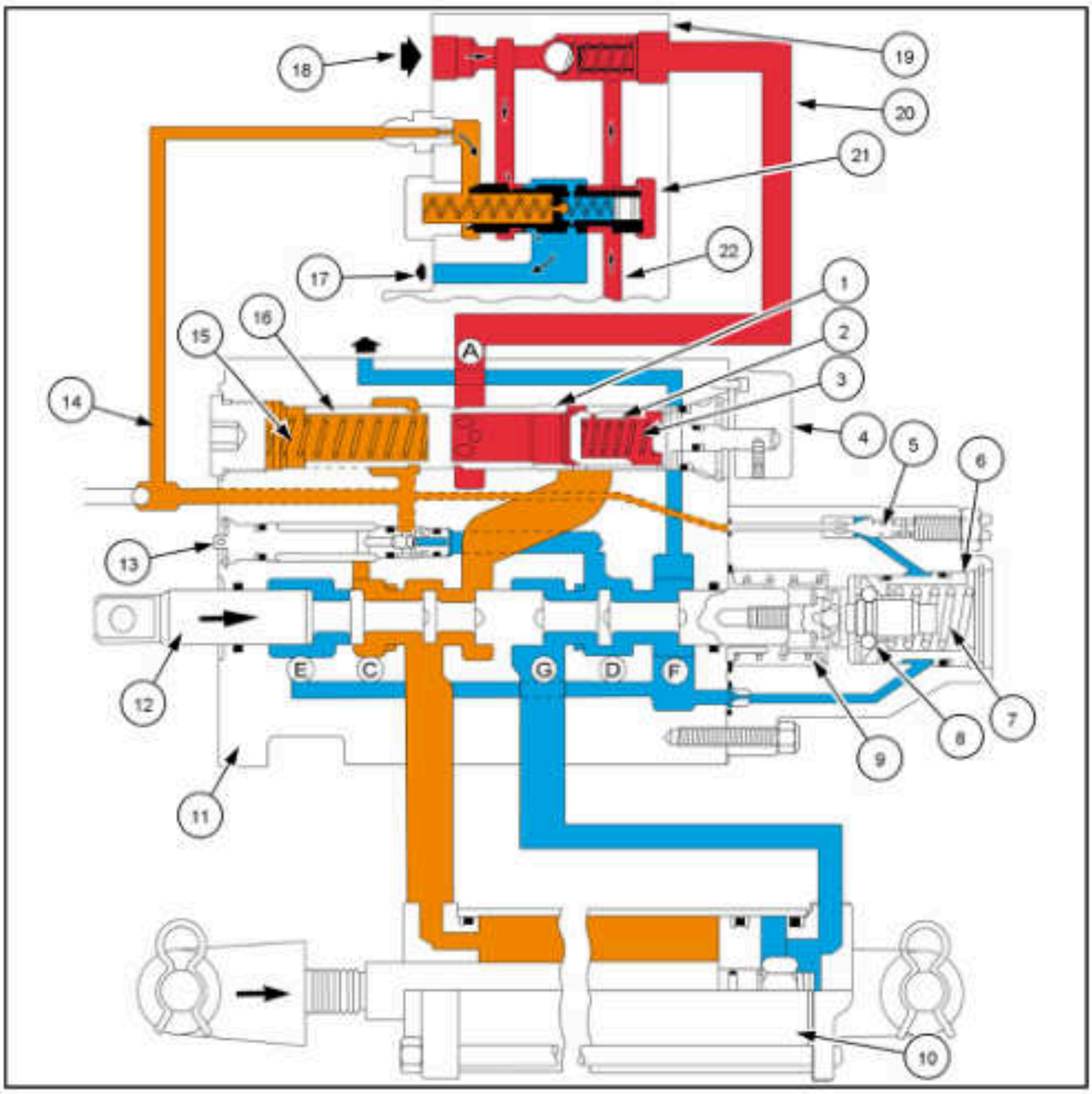
When turning the steering wheel to the left, the oil flows along the sleeve in a manner similar to that described when turning to the right.

Manual Operation

In the event of a failure in the steering pump, or loss of oil pressure, the steering system can be put to work manually. Turning the tractor steering wheel activates the measuring unit which forces the oil into the steering cylinder.

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Single remote valve operation – Lowering with slow flow control setting



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Reference	Component	Reference	Component
	Pump Pressure Oil		Reduced oil flow
	Suction oil/return to deposit		
(1)	Flow control restrictor	(12)	Control Valve Spool
(2)	Charge Check Valve	(13)	Shuttle check valve
(3)	Check valve spring	(14)	Load sense line (pilot line)
(4)	Flow control knob	(15)	Flow control spring
(5)	Detent regulating valve	(16)	Flow control spool
(6)	Detent spool	(17)	Return to deposit
(7)	Detent plunger and spring	(18)	From auxiliary pump (if equipped)
(8)	Detent Balls	(19)	Priority valve group
(9)	Centering Spring	(20)	Supply to remote valve
(10)	External cylinder	(21)	Combining valve
(11)	Valve body	(22)	Main pump supply

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Fixed displacement pump - Hydraulic schema

High pressure hydraulic pump circuit

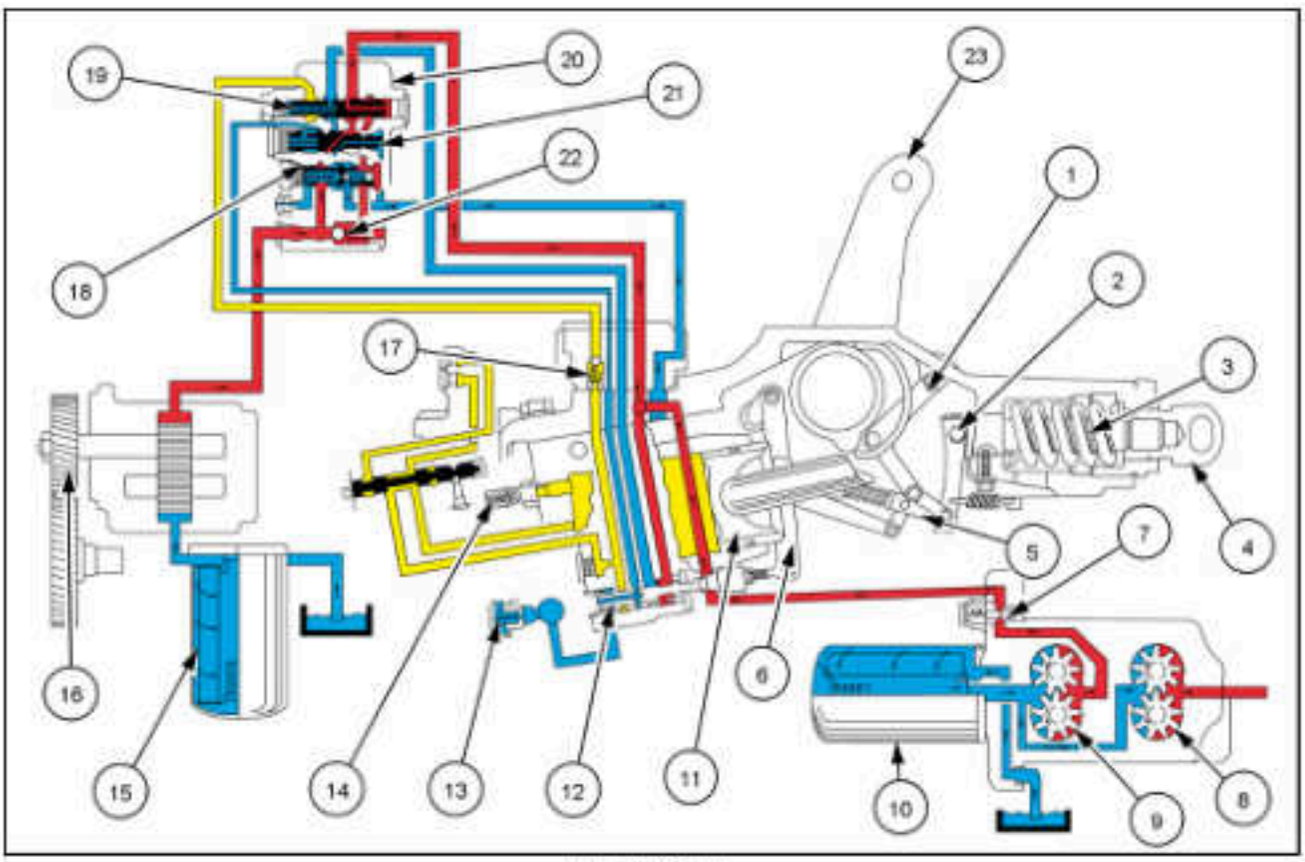
Operating with a maximum pressure of **182 bar** (**2639 psi**), the high-pressure circuit supplies oil for control of the hydraulic lift assembly, remote control valve(s), and auxiliary equipment (where installed).

With more than two remote valves installed on the tractor, it is necessary to supplement the tandem (gear type) transmission mounted pump with an engine mounted auxiliary pump.

The front pump within the tandem pump assembly circulates pressurized hydraulic oil to the priority valve group. A relief valve installed in the pump protects the circuit from overload, with an operating pressure of **176 – 182 bar** (**2552 – 2639 psi**).

The oil supply from the tandem pump flows to the priority valve group through internal galleries within the hydraulic top cover, while the supply from the optional auxiliary pump flows to the priority valve group through external tubing.

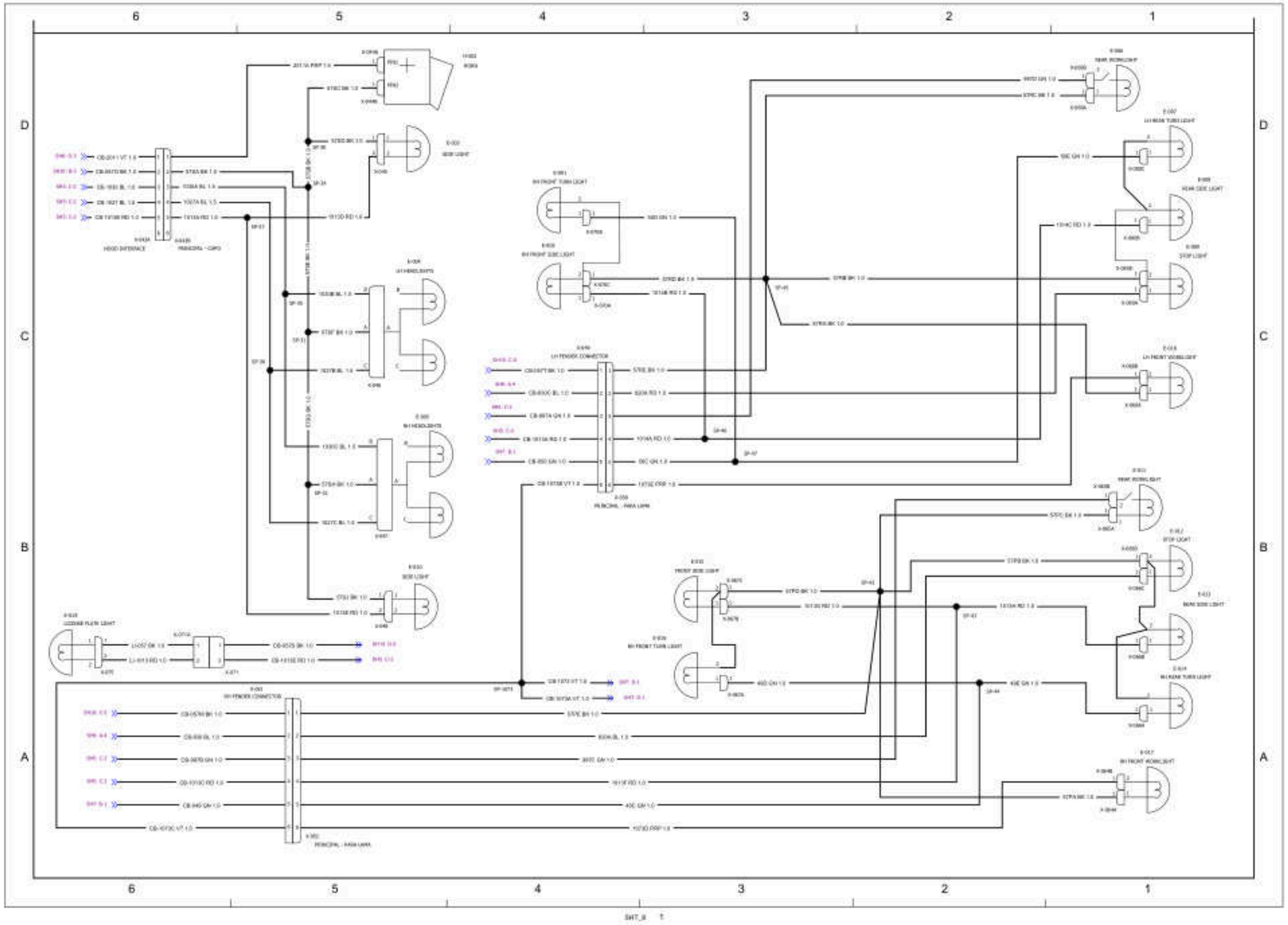
– Pump pressurized oil – Suction oil / return to deposit – Trapped oil



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Reference	Component	Reference	Component
(1)	Position control arm	(13)	Exhaust Valve
(2)	Selector arm	(14)	Lifting cylinder safety valve
(3)	Draft control spring	(15)	Auxiliary pump intake filter (optional)
(4)	Yoke	(16)	Engine-mounted auxiliary hydraulic pump (optional)
(5)	Selector rod and roller assembly	(17)	Check valve
(6)	Actuator link	(18)	Combined valve (sequential)
(7)	Safety Valve	(19)	Flow control valve
(8)	Low pressure steering pump circuit	(20)	Priority valve group
(9)	High pressure hydraulic pump circuit	(21)	Relief valve
(10)	Pump intake filter	(22)	Check valve
(11)	Lifting piston	(23)	Booms

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