

Document Title: Steering description	Function Group: 600	Information Type: Service Information	Date: 2014/3/31
Profile: MEW, MW500 [GB]			

Steering description

The machine has a fully hydraulic steering system. The oil is pumped to the steering unit by the second stage of a double gear pump on power takeoff C (top PTO outside). When the steering wheel is turned, pressurized oil flows to a steering cylinder through the steering unit on the piston or rod side. The cylinder extends or retracts and the machine is steered to the left or right by the steering geometry.

The steering unit is designed as an "open-center non-reaction":

- Open-center means that in the neutral position – steering wheel not actuated – the pump and tank lines are connected with one another.
- Non-reaction means that lines L and R are closed. Therefore, external forces such as driving against a curve have no effect on the steering wheel. Steering jolts are suppressed.

The check valve in line P prevents the oil from flowing back from the steering cylinder into the hydraulic system when the cylinder pressure is higher than the system pressure due to the travelling resistance. In addition, the check valve prevents air feeding via line P during emergency control.

A pressure limitation valve limits the system pressure when steering. This reduces the load on the components. Two additional shock valves limiting maximum external forces on the steering cylinders, thereby protecting the steering unit. They react directly and are therefore extremely fast.

Moreover, the steering system is under initial tension. A check valve is located on the tank for this purpose.

In the emergency mode, upon failure of the oil supply, oil is sucked out of the propulsion pump housing which is connected to the hydraulic tank over connection T when the steering wheel is turned. A replenishment valve is located between P and T. This valve is designed as a check valve which opens from T to P in the emergency mode. The feeder valve is not illustrated in the hydraulic plan .

The steering angle of the front axle is sensed by a sensor. The information is processed in the machine control for the anti-slip control (ASC).

[910 Hydraulic diagram 1.](#)

[370 Wiring diagram 3.](#)

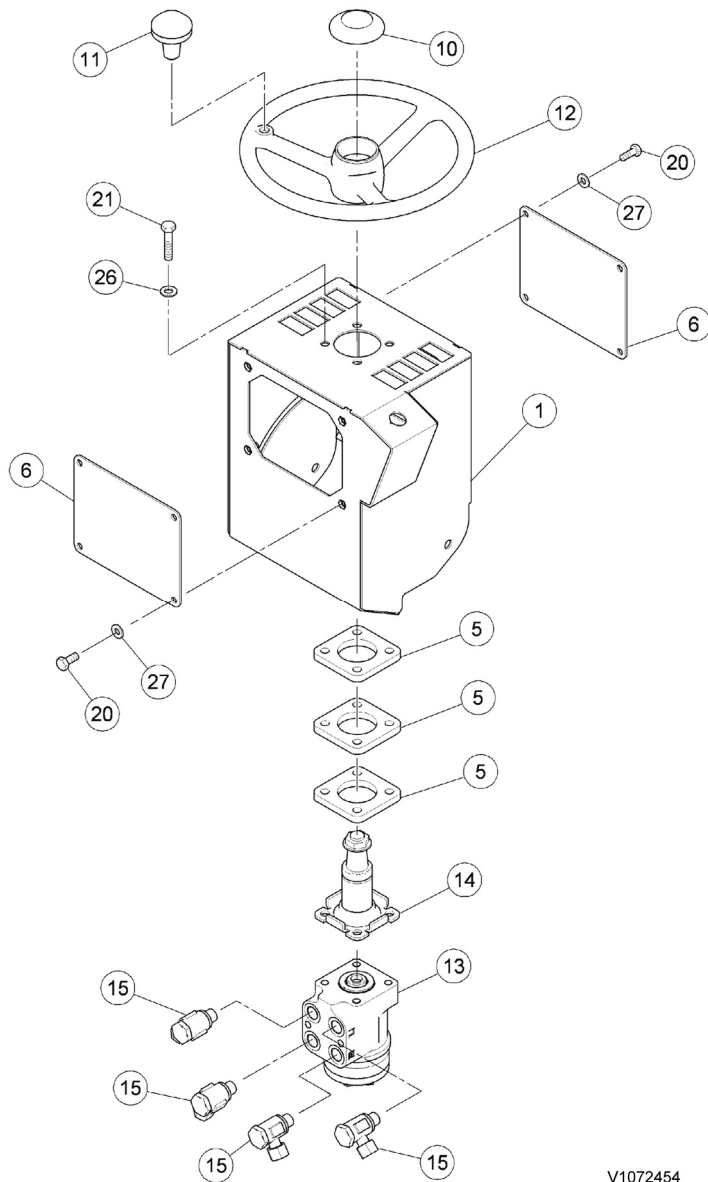
Document Title: Steering control unit, removing	Function Group: 645	Information Type: Service Information	Date: 2014/3/31
Profile: MEW, MW500 [GB]			

Steering control unit, removing

Steering and control unit, dismantling

Op nbr 645-031

1. Move machine to maintenance position 4. See [173 Service positions](#).
2. Dismounting of 2 access doors (6).
3. Mark 4 hydraulic hoses dismount and plug.
4. Dismount 4 hexagon screws (21) and remove the steering unit (13).
5. Remove the 4 swivel couplings (15) from the steering unit.



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Figure 1
Steering

Position	Designation
1	control panel
5	Four-hole piece
6	Maintenance cover
10	Cap
11	Turning handle
12	Steering wheel
13	Steering unit
14	Steering column
15	Swivel coupling
20	Hex. head bolt
21	Hex. head bolt
26	Lock washer
27	Lock washer

Document Title: Steering control unit, installing	Function Group: 645	Information Type: Service Information	Date: 2014/3/31
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Steering control unit, installing

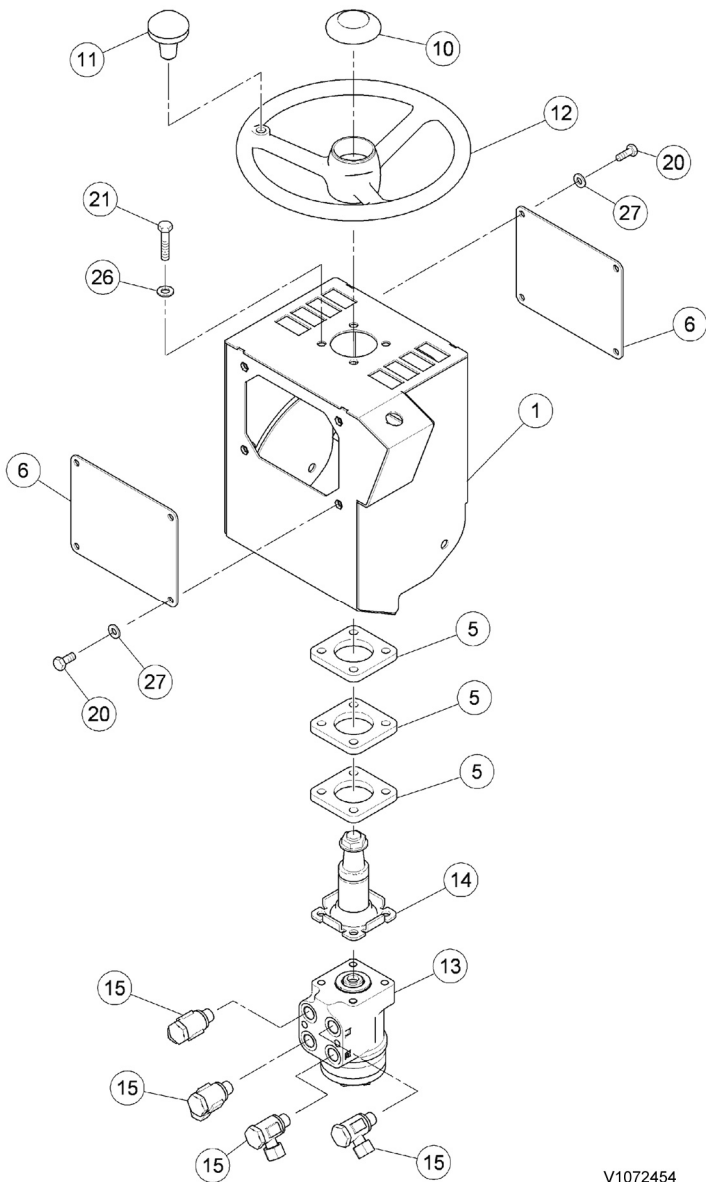
Steering and control unit, mounting

Op nbr 645-035

1. Mount 4 swivel couplings (15) on the steering unit (13).
2. Mount the steering unit (13) into the housing and fasten with 4 hexagon screws (21).
3. Connect the 4 hydraulic hoses.

Functional test/bleeding

4. Start the motor, move the drive lever from the centre to the left or the right side: The brake is released. Move the steering several times completely to the left and the right until the system is bled.
5. Check hydraulic oil level, add if required.
6. Mount the 2 access doors (6).



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