



## **SKL 160      SERVICE-MANUAL**

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## Hydrostatic brake

By releasing the accelerator pedal the travel speed is reduced. The hydrostatic transmission hereby acts as wear-resistant auxiliary brake.

### Additional hydrostatic brake only acts in fast travel range (forward)

By actuating the foot brake pedal, from a special brake pressure both switching solenoids (a) and (b) at the travel motor are supplied with current via a brake pressure switch (see Technical Data). This effects that the travel motor is displaced from Q min to Q max.

This effects the following:

Switching solenoid (b) locks the control pressure  $x_1$  to the regulator piston.

This one switches the big control spool surface to the tank.

As the high pressure relationship from A to B becomes inverted when the machine is slowed down (travel motor becomes the pump), the high pressure is transferred from side B to the ring surface of the control spool via the switching solenoid (a). Now the travel motor is in big swash plate angle position (Q max.) So the machine is additionally slowed down.

## 1. Check and replacement of the line relief valves

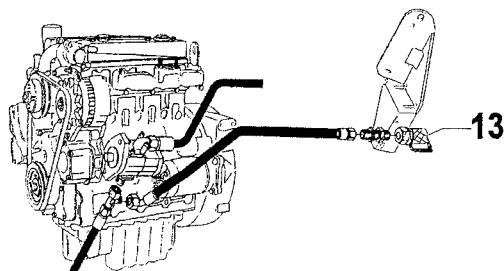
Note: It is checked whether the line relief valves are approx. 30 bar above the main pressure relief valve or whether the line relief valve "dumping out" is adjusted correctly.

- connect 600 bar - gauge to gauge port (13) of the working pump
- increase pressure of main pressure relief valve by approx. 40 bar
- set engine rpms to approx. 1,100 min<sup>-1</sup>
- actuate all functions, one after the other, until mechanical stop



**Charge the pump for a short time only to avoid pump damage**

- watch the gauge: function "dumping out": Desired value: (see Technical Data). If the desired value is not reached or exceeded resp., the line relief valve cartridge has to be replaced.  
with all other functions it is checked whether the corresponding line relief valve is approx. 30 bar above the main pressure relief valve. If a value is too far beyond the tolerance, the corresponding valve cartridge has to be replaced.
- re-adjust main pressure relief valve to the desired value (see Technical Data)

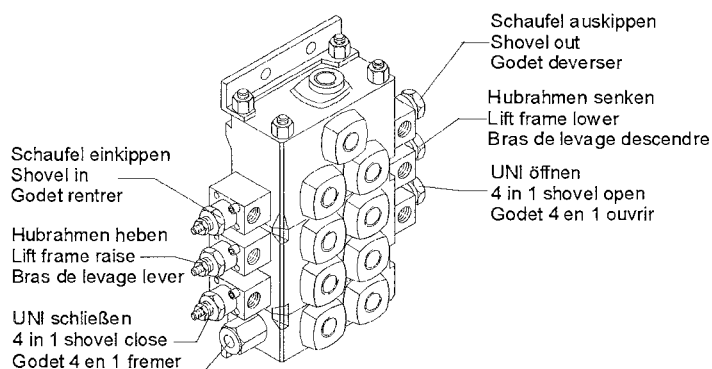


## 2. Check and adjustment of the main pressure relief valve

- connect 600 bar - gauge to gauge port (13) of the working pump
- fully accelerate
- actuate function "lifting frame, lift". Attention: Steering must not be actuated
- read the value on the gauge. Desired value: (main pressure relief valve): see Technical Data
- if the desired value is not reached, turn the setscrew (15) at the main pressure relief valve in or out resp.

Turning in: pressure increase

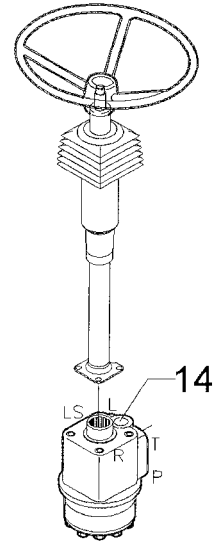
Turning out: pressure decrease



### **3. Check and adjustment of the steering pressure**

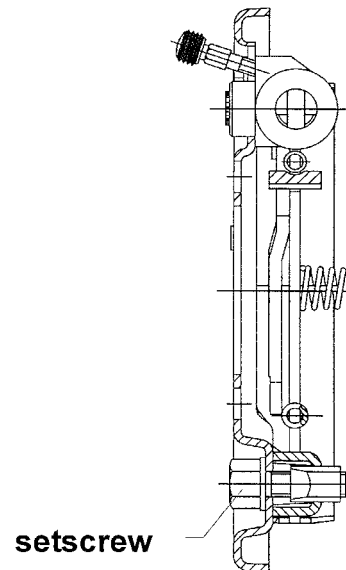
- connect 600 bar - gauge to gauge port (13) of the working pump
- fully accelerate
- actuate steering until stop
- read the value on the gauge. Desired value: see Technical Data
- if the desired value is not reached, adjust as described in the following:
- remove cap at the back of the steering console
- unscrew plug (14)
- screw the setscrew below in or out resp.

Screwing in: steering pressure increase  
Screwing out: steering pressure decrease



### **4. Adjustment of the parking brake and service brake**

- adjustment possibility between front axle and brake anchor plate of the brake drum at the setscrew SW 17
- turn in screw until the brake blocks, then slacken by 1 turn.  
An adjustment at the Bowden cable is not necessary.



## 1. Check and replacement of the line relief valves

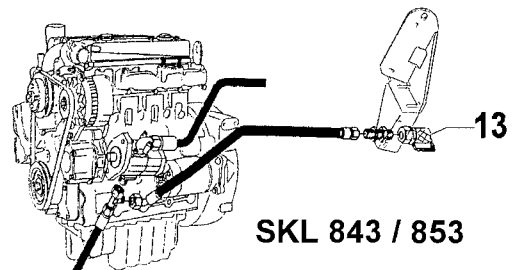
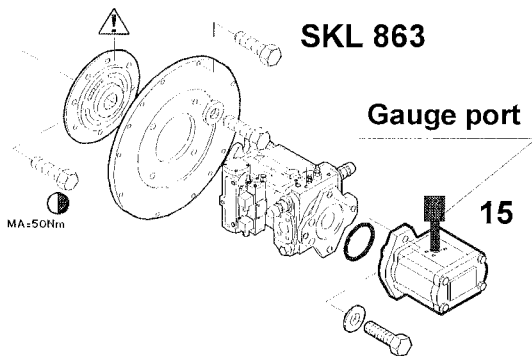
**Note:** It is checked whether the line relief valves are approx. 30 bar above the main pressure relief valve or whether the line relief valve "dumping out" is adjusted correctly.

- connect 600 bar - gauge to gauge port (13) or (15) of the working pump
- increase pressure of main pressure relief valve by approx. 40 bar
- set engine rpms to approx. 1,100 min<sup>-1</sup>
- actuate all functions, one after the other, until mechanical stop



**Charge the pump for a short time only to avoid pump damage**

- watch the gauge: function "dumping out": Desired value: (see Technical Data). If the desired value is not reached or exceeded resp., the line relief valve cartridge has to be replaced.  
With all other functions it is checked whether the corresponding line relief valve is approx. 30 bar above the main pressure relief valve. If a value is too far beyond the tolerance, the corresponding valve cartridge has to be replaced.
- re-adjust main pressure relief valve to the desired value (see Technical Data)

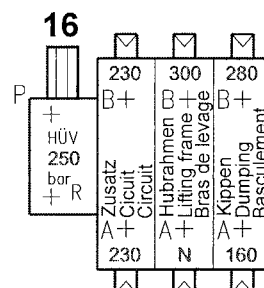


## 2. Check and adjustment of the main pressure relief valve

- connect 600 bar - gauge to gauge port (13) or (15) of the working pump
- fully accelerate
- actuate function "lifting frame, lift". Attention: Steering must not be actuated
- read the value on the gauge. Desired value: (main pressure relief valve): see Technical Data
- if the desired value is not reached, turn the setscrew (16) at the main pressure relief valve in or out resp.

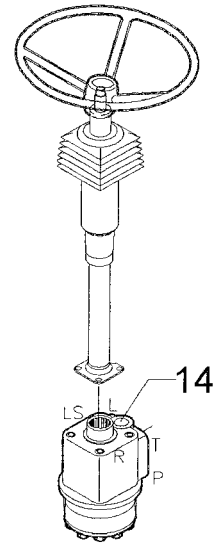
Turning in: pressure increase

Turning out: pressure decrease



### 3. Check and adjustment of the steering pressure

- connect 600 bar - gauge to gauge port (13) or (15) of the working pump
- fully accelerate
- actuate steering until stop
- read the value on the gauge. Desired value: see Technical Data
- if the desired value is not reached, adjust as described in the following:
- remove cap at the back of the steering console
- unscrew plug (14)
- screw the setscrew below in or out resp.



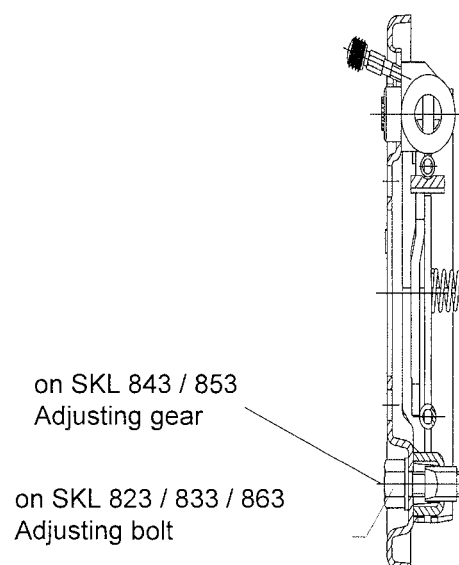
Screwing in: steering pressure increase  
Screwing out: steering pressure decrease

### 4. Adjustment of the parking brake and service brake

- adjustment possibility between front axle and brake anchor plate of the brake drum at the setscrew SW 17
- turn in screw until the brake blocks, then slacken by 1 turn.  
An adjustment at the Bowden cable is not necessary.

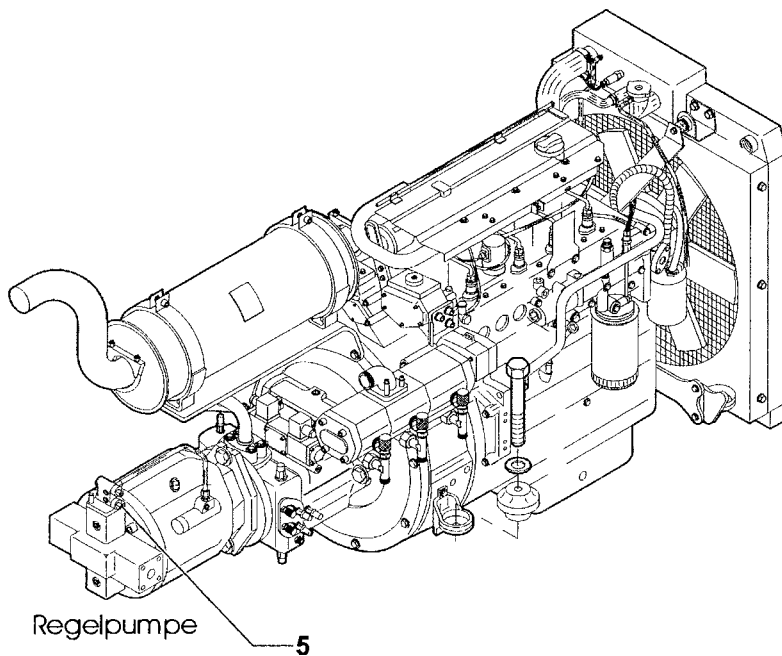
or

- turn adjusting gear by means of a screwdriver until the brake blocks, then release until the brake is free.



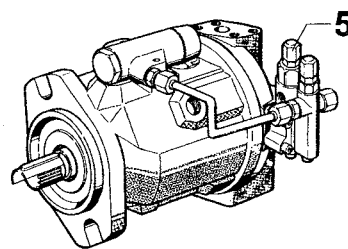
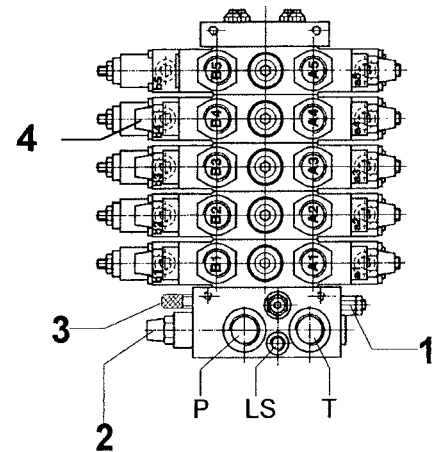
## 1. Check and adjustment of the stand-by pressure at the variable displacement pump

- Open the service ladder and valve bank compartment cover
- Connect 60 bar - gauge to gauge port (3) of the valve bank 1 (SX 18)
- Start the engine, fully accelerate
- Read the value on the gauge. Desired value: 25 bar
- If the desired value is not reached, turn the setscrew at the flow controller (5) of the variable displacement pump (see picture) in or out resp.  
Screwing in: pressure increase  
Screwing out: pressure decrease



Variable displacement pump

Valve bank 1 SX18



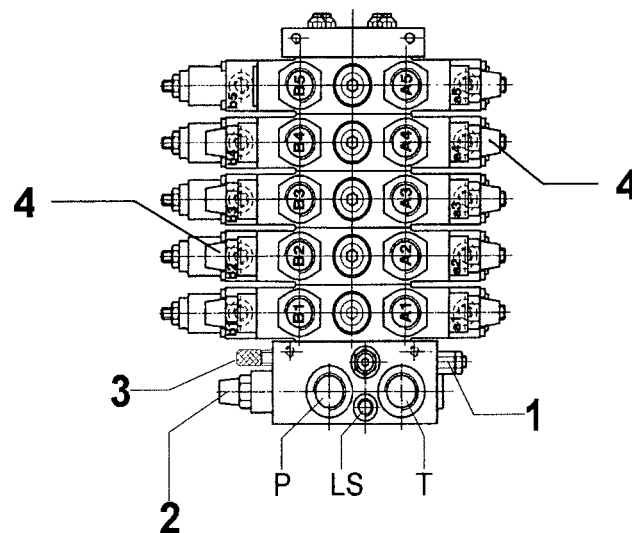
## 2. Check and adjustment of:

- Load-sensing (LS) valve 250 bar. Valve bank 1
- Line relief pressure and anti-cavitation valves (pressure values - see technical data)
- Primary pressure relief valve SV (=safety valve) 280 bar
- LS valve 250 bar (1)
- Open service ladder and valve bank compartment cover
- Connect 600 bar - gauge to gauge port (3) of the valve bank 1 (SX 18), see also hydraulic diagram

– Line relief and anti-cavitation valves of valve bank 1

- Set load-sensing valve (1) and primary pressure relief valve (2) to more than 280 bar
- Adjust increased idle running speed
- Set all valve bank sections (A + B side), one after the other, to max. load
- Read pressure values on the gauge
- Desired values - see Technical Data and / or hydraulic diagram
- If the desired values are not reached, turn setscrews at the line relief valves (4) in or out resp.  
Screwing in: pressure increase  
Screwing out: pressure decrease
- Reset the primary pressure relief valve (2) to 280 bar first, then set the load-sensing valve (1) back to 250 bar

Valve bank 1 SX 18



- Close the service ladder cover (otherwise there is no pilot control)
- Start the engine and fully accelerate
- Bring the hydraulic cylinders, e.g. „bucket“ to end stroke
- Read the value on the gauge. Desired value: 250 bar max.
- If the desired value is not reached, turn the setscrew at the load-sensing valve (1) in or out.  
Screwing in: pressure increase  
Screwing out: pressure decrease

– Primary pressure relief valve (SV = safety valve) 280 bar (2)

- Set load-sensing valve (1) to more than 280 bar (higher load of the Diesel engine)
- Read the value on the gauge. Desired value: max. 280 bar
- If the desired value is not reached, turn the setscrew at the primary relief valve (SV) (2) in or out.
- Then set the load-sensing valve (1) back to 250 bar



**Thank you very much for reading.**

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