

Replace the defective needle valve

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
IN THE NACELLE:

Ensure that the needle valve is closed. With the pump running, listen for a whistling sound coming from the area of the valve. If needle valves are over tightened, it is possible that the valve will be damaged and a proper seal cannot be achieved.

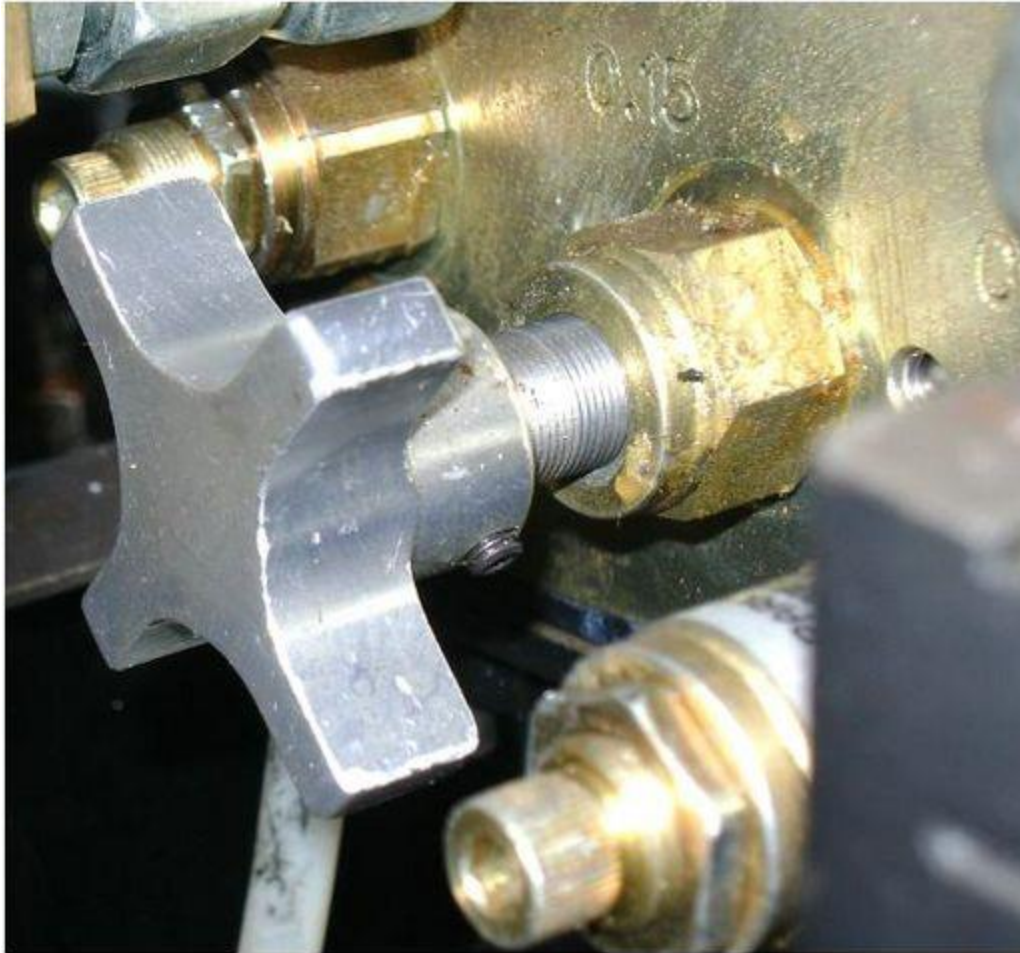
Valve position number:

Combined hydraulic unit: **POS 15**.

Parker hydraulic unit: **POS 0.16**

Replace the needle valve if it is found to be defective.

Relevant spare parts	
Description	Item No.
Combined hydraulic unit: Needle Valve TOGNELLA FT 267/1	60065410
Parker hydraulic unit: Needle valve NVH-2201	60104032



Recharge or replace the accumulators

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

- **Explanation**
IN THE NACELLE:

Check pre-charge of accumulator.



Reference the following service instructions depending on which type the turbine is equipped with:

Relevant documentation	
Description	DMS No.
Charging of Nitrogen	941918
Combi Hydraulics	1001076
HSS Brake Hydraulics	1001384

Item number for Shaft brake Accumulators:

Relevant spare parts - PARKER UNIT	
Description	Item No.
ACCUMULATOR ADE050-21R9A002	60108210
ACCUMULATOR ADE100-21R9A003	60108204

Relevant spare parts - COMBI UNIT	
Description	Item No.
ACCUMUTATOR INTE. D1.0-200 (45 bar)	60097871
ACCUMUTATOR INTE. D1.0-200 (90 bar)	60097868

Replace the defective solenoid valves

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
IN THE NACELLE:

Parker system:

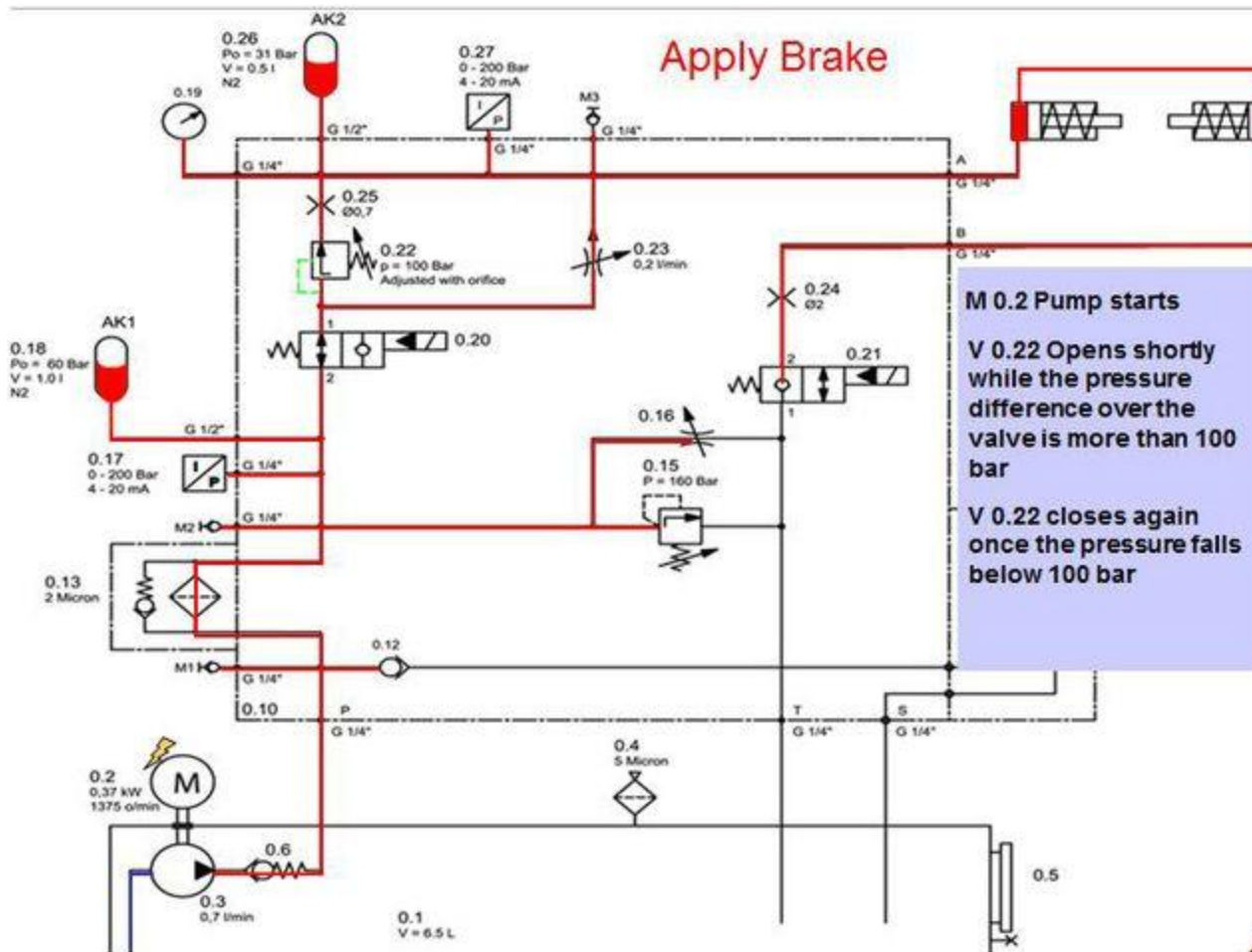
Check the condition of the solenoid valve **POS 0.20(NO), 0.21(NC)**

If found solenoid valve is defect, replace it.

Relevant spare parts	
Description	Item No.
DIRECT VALVE N.C. 2/2 DSL-08-1	60104031
VLV DIRECT NO 2/2 DSL-08-1-CR	60104034



Parker system pressurized status:



Combi (AVN) System:

Check the solenoid valve **POS 16, 07(NO), 08,14,02(NC)**

If found solenoid valve is defect replace it.

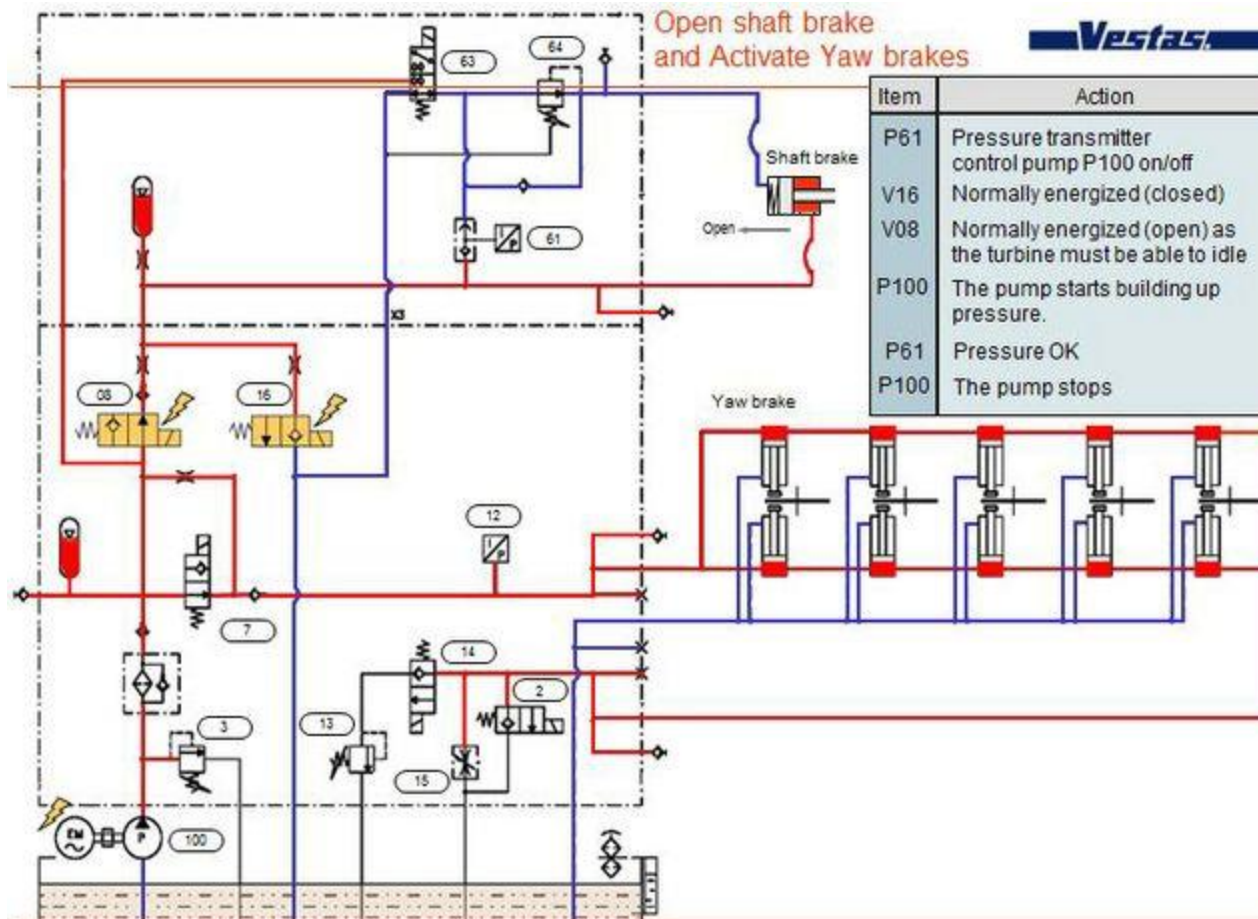
Relevant spare parts	
Description	Item No.
SOLENOID VAL NC OD150118310005	60095079

VALVE SOLENOID NO OD1502181ISO

[60095081](#)



AVN system pressurized status:



Repair leak / top off oil

Does this solve the problem?

- 1] Yes
- 2] No
- 3] I don't know

- **Explanation**
IN THE NACELLE:

Check for any external oil leaks around the hydraulic system and brake unit.

Check hose connections and hoses.

Repair any leaks that are found.

Relevant documentation	
Description	DMS No.
Service Instruction Brembo Active Disc Brake	1001363

Check the oil level (With the system pressurized and brake applied oil should be visible in the oil window).



Internal oil leakage in the hand pump also will cause this issue.

Check the O-ring for any damage and replace



Relevant spare parts	
Description	Item No.
HAND PUMP 0012001777	60108203

Replace the defective shuttle valve

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
Combi (AVN) System:

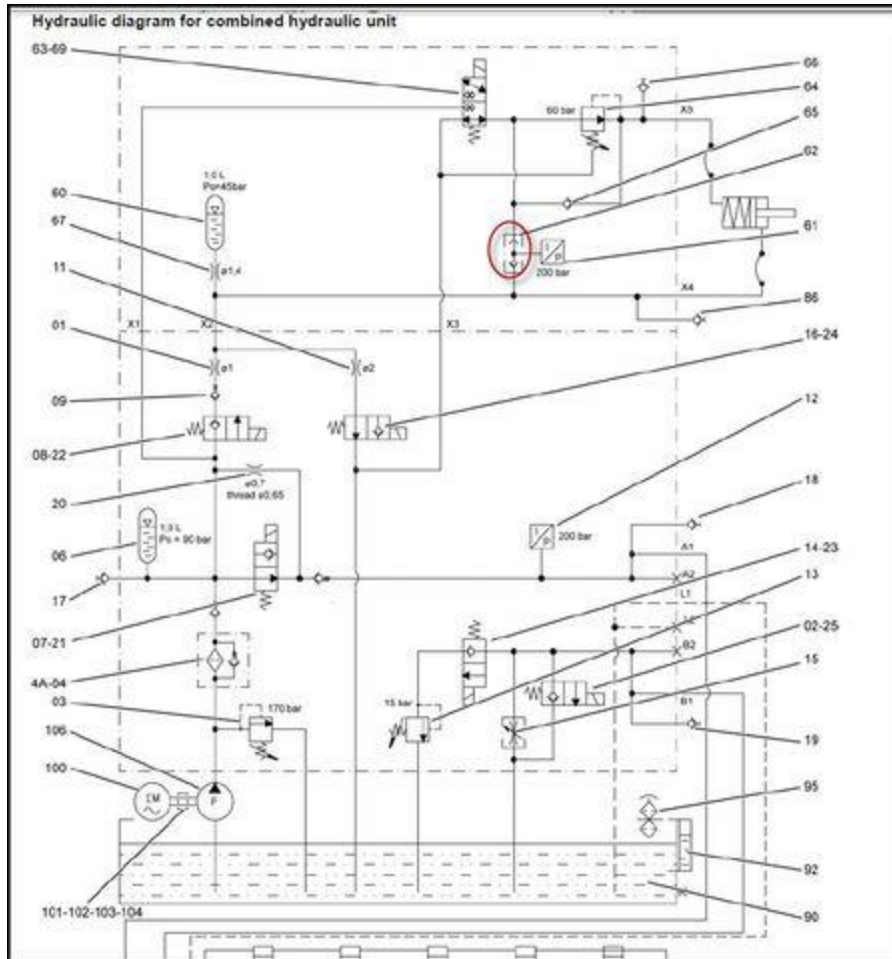
Check the shuttle valve **POS 62**,

Test the Shuttle Valve function:

Turn on pressure and release brake, check pressure on test nipple pos. 86 and in TAC. If pressure level is the same, approx. 120 bar, then shuttle valve pos. 62 and pressure transmitter pos. 61 functions correctly.

If the pressure continuously drops at pos. 86 and TAC, mount another manometer on test nipple pos. 17 and remove plug from valve pos. 08. If the pressure stable at pos.17, and continuous pressure drop evenly at pos.86 and shaft brake pressure reading at TAC, confirms that valve pos. 62 is defect.

Hydraulic diagram



01 Orifice	11 Orifice	19 Test connector	65 Check valve	101 Bell housing	102 Spider rubber
02-25 Valve + coil	12 Press. transmitter	20 Orifice	66 Test connector	103 Coupling pump	104 Coupling motor
03 Pressure valve	13 Relief valve	60 Accumulator (A2)	67 Test connector	106 Pump	
4A-04 Filter unit	14 Valve + coil	61 Press. transmitter	86 Test connector		
06 Accumulator (A1)	15 Needle valve	62 Shuttle valve	90 Tank		
07-21 Valve + coil	16-24 Valve	63-69 Valve + coil	92 Sight glass		
08-22 Valve + coil	17 Test connector	64 Pressure red. Valve	95 Filler cap / breather		
09 Check valve	18 Test connector		100 Motor		

Relevant spare parts

Description	Item No.
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SHUTTLE VALVE 04.94.03.00.14.0

[60097651](#)

Replace the defective pump and coils

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Check that the system pressure builds up within the time limit.

If the pump is not building pressure within the time limit, it may be that the internal bushings are worn.

Relevant spare parts

Description	Item No.
COMBI (AVN) - PUMP 1 SPA 0.9 D 10 GG	60097654
PARKER - GEAR PUMP P1 AAn 0050 FL 20-B0	60103470



Check the coils that are installed, if the coils are the older 14w type, replace with the newer 19w coils.

Relevant spare parts	
Description	Item No.
COIL F/GS02 CCP024 D 24VDC W/C	60065454

Replace the defective relief valve

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
IN THE NACELLE:

Check that the relief valve settings are correct in accordance with the I&S Data for the applicable brake unit.

If relief valve is not operational, replace it.

The brake service manual contains test instructions for relief valves:

Relevant documentation	
Description	DMS No.
SWI (Parker):	1001384
SWI (Combi):	1001076

Relevant spare parts	
Description	Item No.
Parker Relief valve (POS 0.15)	60104030
Combi Relief valve (POS 3)	60061370

Replace the defective cable

Does this solve the problem?

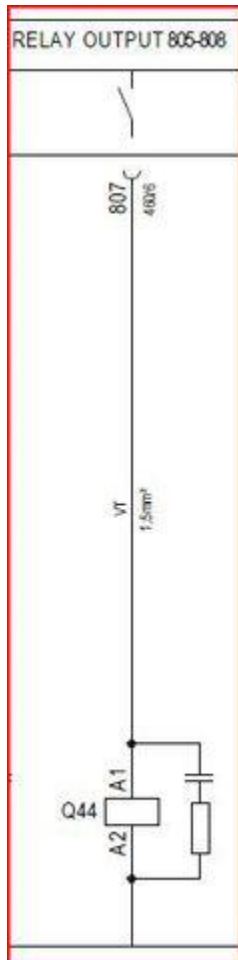
1] Yes

2] No

3] I don't know

- **Explanation**

Check the Output from tower TOI 807



Check (MCB F44 - Contactor Q44 50Hz) (MCB F15 - Contactor K06 60Hz) for correct operation and proper terminations.

Check the incoming cable from the control panel (+AT2) to moto box (+AN4) Connection Terminal 25,26,27.

+AN4



Check the cable connection from the motor box (+AN4) to the shaft brake terminal box (+AN12 Connection terminal X01 - 07, 08, 09).

+AN12



Check the motor terminal box connections.