Check the power supply unit input and out put

Does this solve the problem?

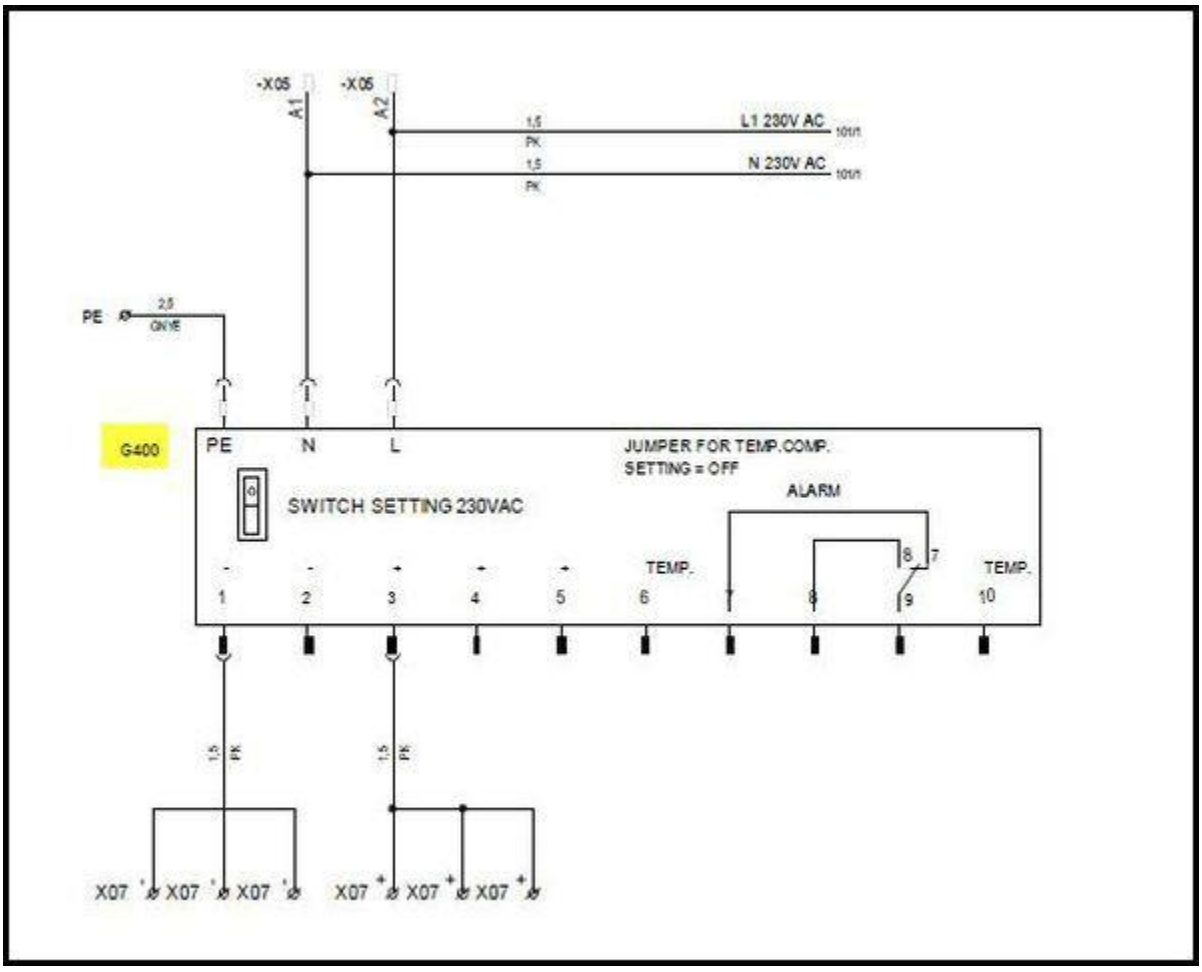
1] Yes

2] No

3] I don't know

- **Explanation**
  At Hub

+AK4 hub panel check the LED glowing or not and check the Input and output supply voltage at G400 Power net. There is no LED glow and output change the power supply unit



Relevant spare parts	
Description	**Item Number**
PS ADC 5483R-3 10A-27,4 NM PIN	188453

Test/replace accumulators

Does this solve the problem?

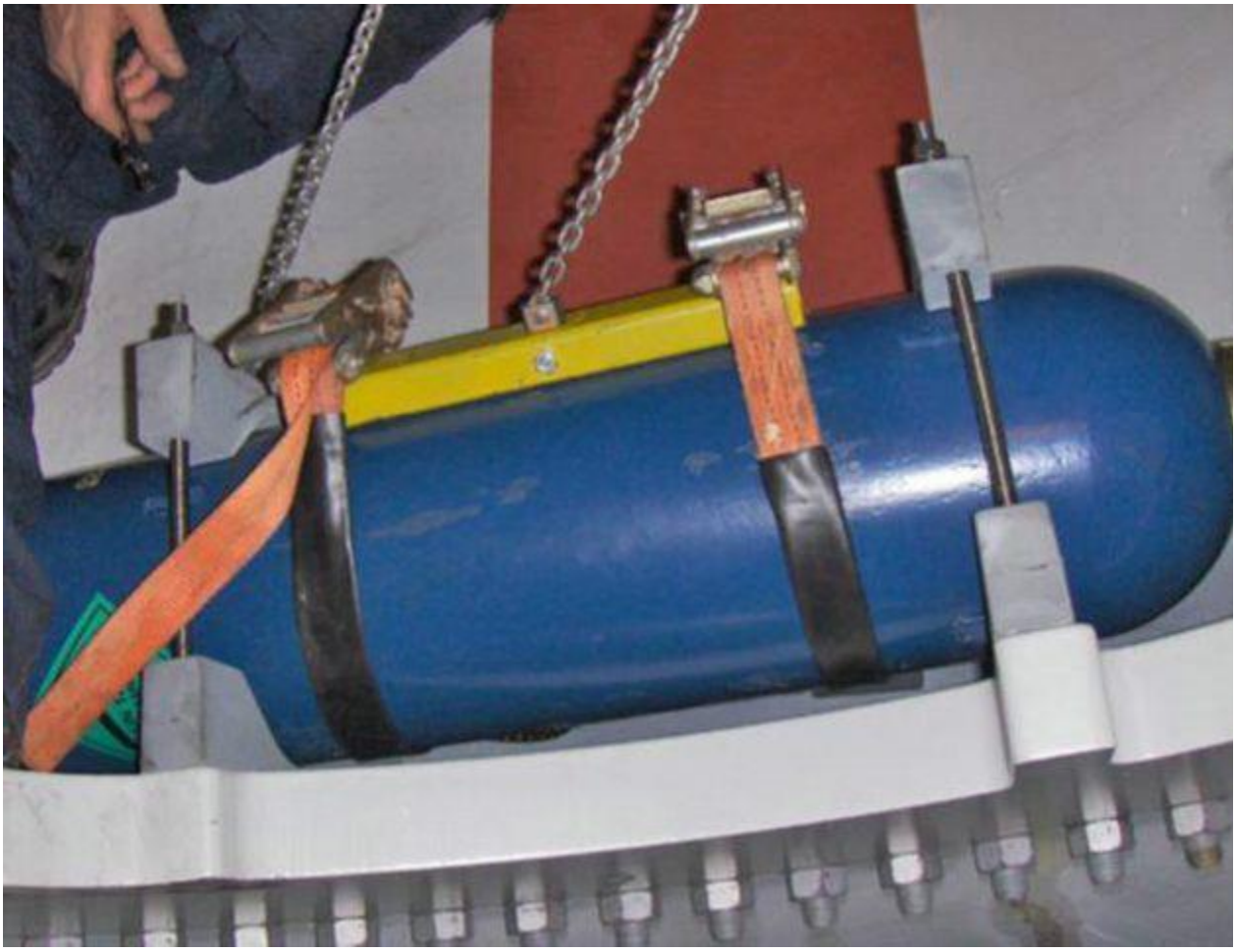
1] Yes

2] No

3] I don't know

- **Explanation**
  Test accumulators in accordance with DMS941918 - Recharging of Nitrogen Accumulators. Replace or repair (if approved) any failed accumulators.

Relevant documentation	
Description	**DMS No.**
Charging of Nitrogen Accumulators	941918



V82 accumulator charge kit 222826:

Check the Hub Computer Connectors

Does this solve the problem?

1] Yes

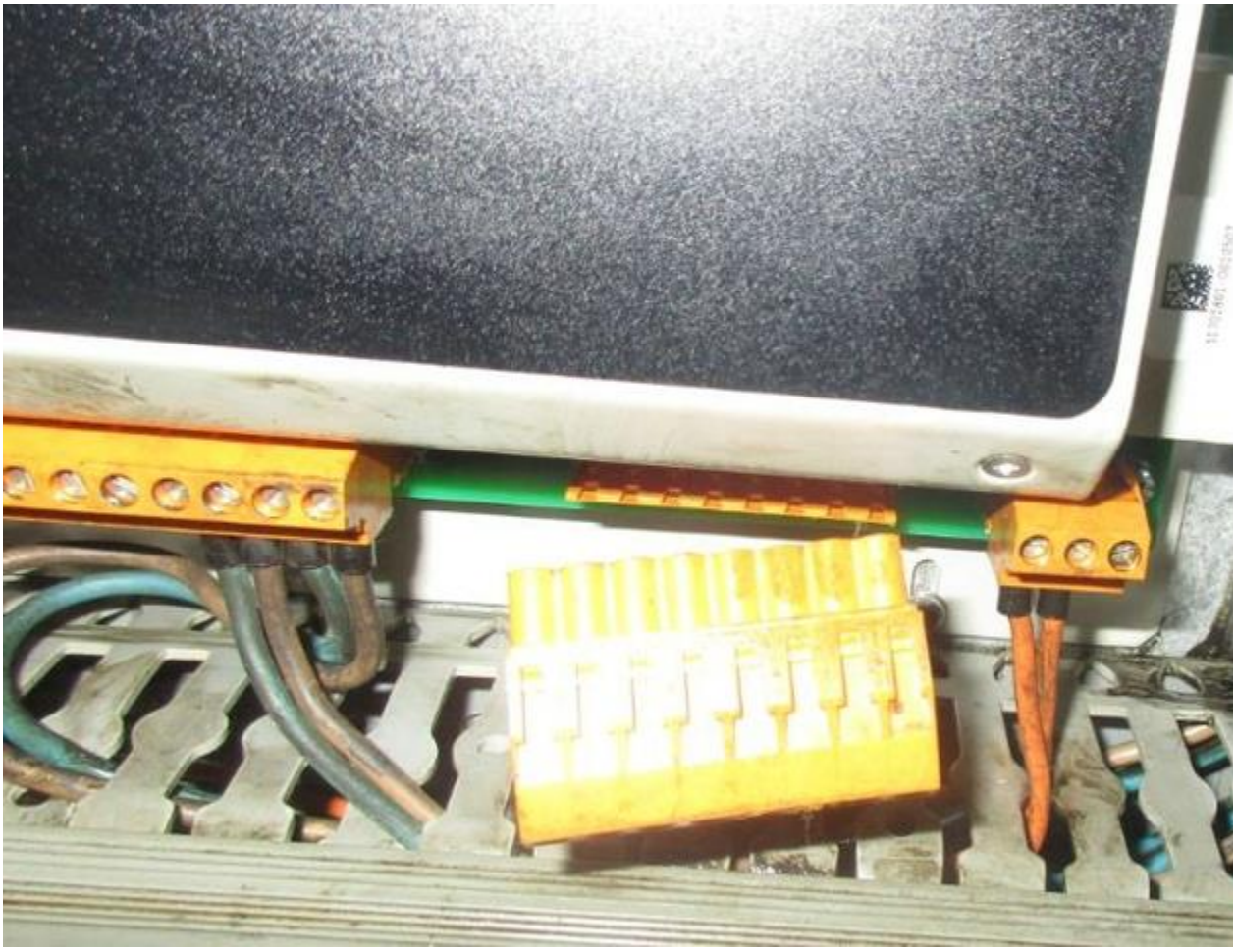
2] No

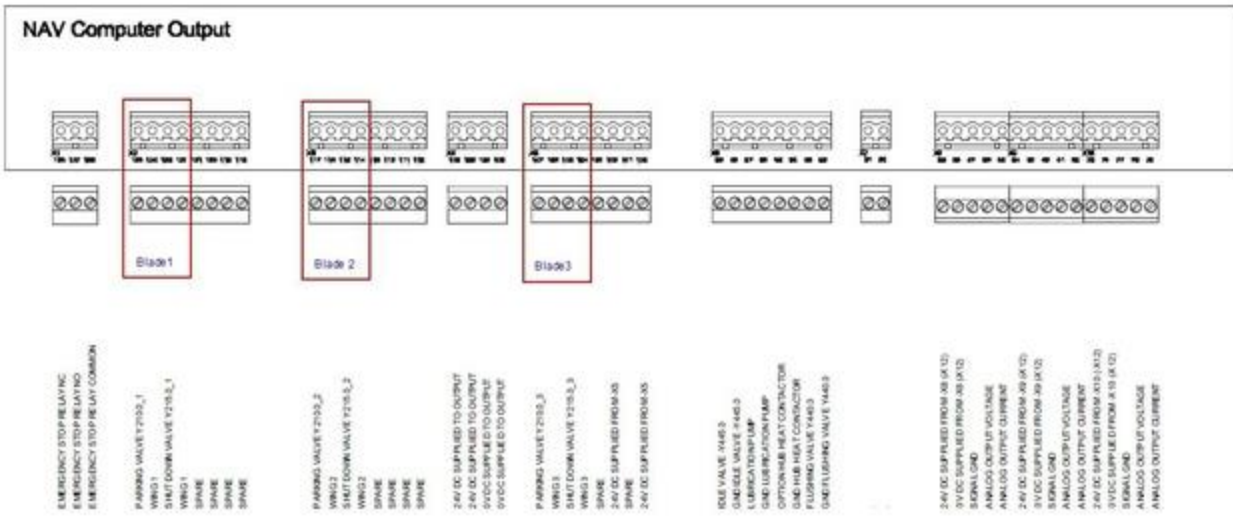
3] I don't know

- **Explanation**

Loose Connection in the connectors or loose connectors in the Hub Computers will cause this error. Check and

tighten the connectors.





Troubleshoot/Replace valve

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Testing valve 215:

If a whistling sound can be heard from valve 215, valve 215 is not fully activated or deactivated.

If valve 215 is somewhere between activated and deactivated, it is leaking.

Measure pressure in Mx1 while valve 215 is deactivated - pressure is to be 0 bar.

Measure pressure in Mx1 while valve 215 activated pressure is to be equal to the acc. pressure.

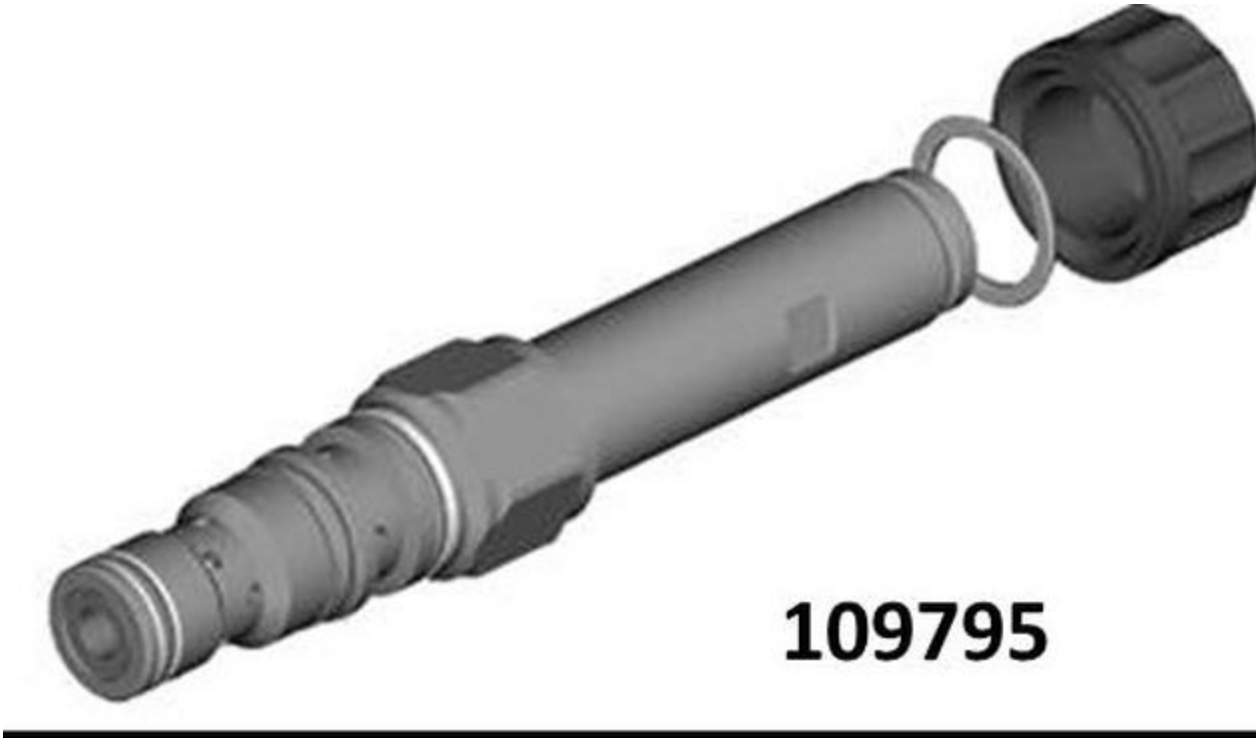
If either of these values are not as specified the valve is defect and must be replaced.

The part No.60096475 is phased out and henceforth replaced by 109795 & 60106201.

(Rexroth) Valve/Solenoid- 215

Relevant spare parts		
Description	**Item No.**	**Status**
SOL VAL KSDEU1CA/HCG24N0K4M	60096475	Phased out
ELECTRIC SEAT VALVE	109795	Available
COIL GZ37-4 24VDC 19W	60106201	Available


60106201



Parker) 3/2 DIRECTIONAL VALVE- 60111617

Relevant spare parts	
Description	**Item No.**
3/2 DIRECTIONAL VALVE	60111617

Troubleshoot pitch valve cables and connectors-repair or replace as necessary.

Does this solve the problem?

1] Yes

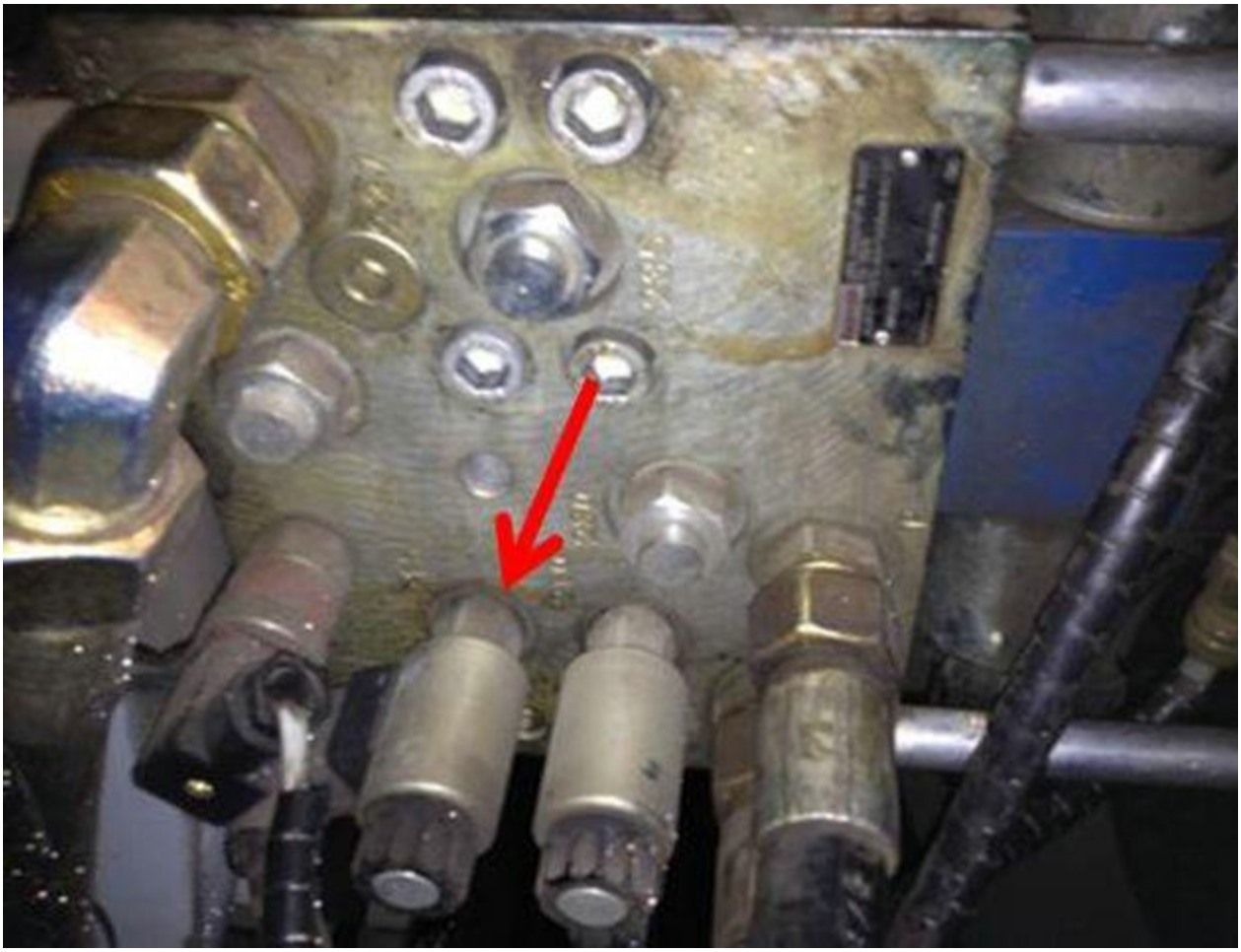
2] No

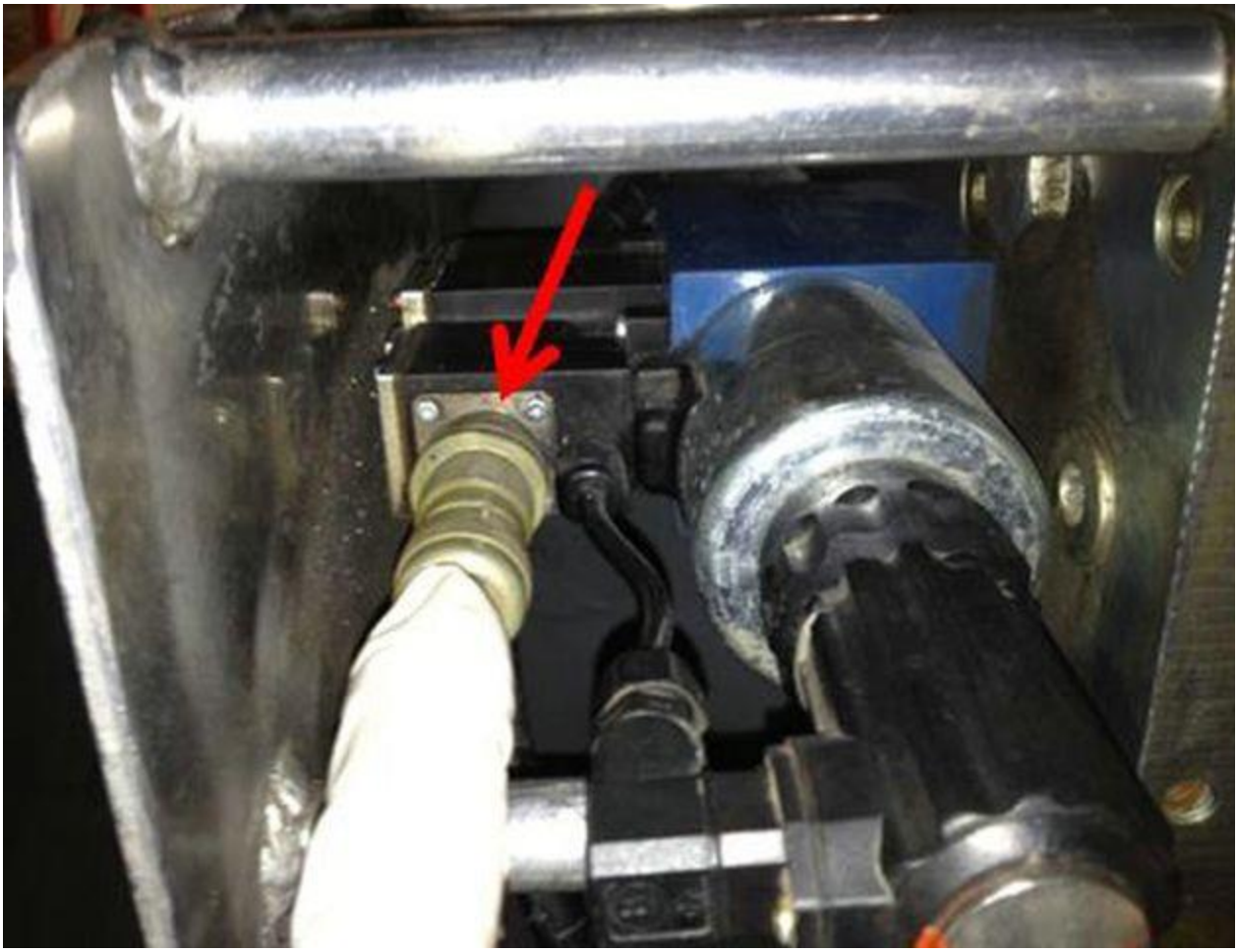
3] I don't know

- **Explanation**

Damage to cables for proportional valves and solenoid valves can cause this alarm.

The wires in the cable to the shutdown valve (pos. 215) tend to break inside the insulation directly beneath the strain-relief near the connector.





Flex the cable at this point on the cable while pitching to detect if a wire within the cable is broken.

During operation the offending blade will “flutter” a bit as the wire flexes in the hub. If it is broken badly enough you will hear the blade “hammer” as power to the valve is interrupted.

If a data logger is armed you will see the blade position flutter.

If you are watching real time on the TAC it is usually in perfect unison with rotor revolution (1 flutter per revolution).

Cable, Parking valve-Pos.210

Relevant spare parts	
Description	**Item No.**
CABLE W940 PARKINK VALVE (Blade1)	60021534

CABLE W944 PARKINK VALVE (Blade2)	60021536
CABLE W948 PARKINK VALVE (Blade3)	60021538

Cable, Shutdown valve-Pos.215

Relevant spare parts	
Description	**Item No.**
CABLE W941 SHOT DOWN VALVE	60021535
CABLE W945 SHOT DOWN VALVE	60021537
CABLE W949 SHOT DOWN VALVE	60021539

Cable, Proportional valve-Pos.205

Relevant spare parts	
Description	**Item No.**
CABLE W956 PRO VALVE	60021544
CABLE W957 PRO VALVE	60021545
CABLE W958 PRO VALVE	60021546

Troubleshoot/replace valve (pos. 205)

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

  Test the proportional valve for the affected blade:
  Park the actuator.

  Measure feedback from proportional valve on X08 (pin 1 and. 2 for blade 1)

  When cylinder is parked the mA should be between 1 1,6 and 1 1,9 mA

  When cylinder is pitched towards run, the mA should be below 11 mA

  When cylinder is pitched towards stop, the mA should be above 12,5 mA

Parker Proportional Valve

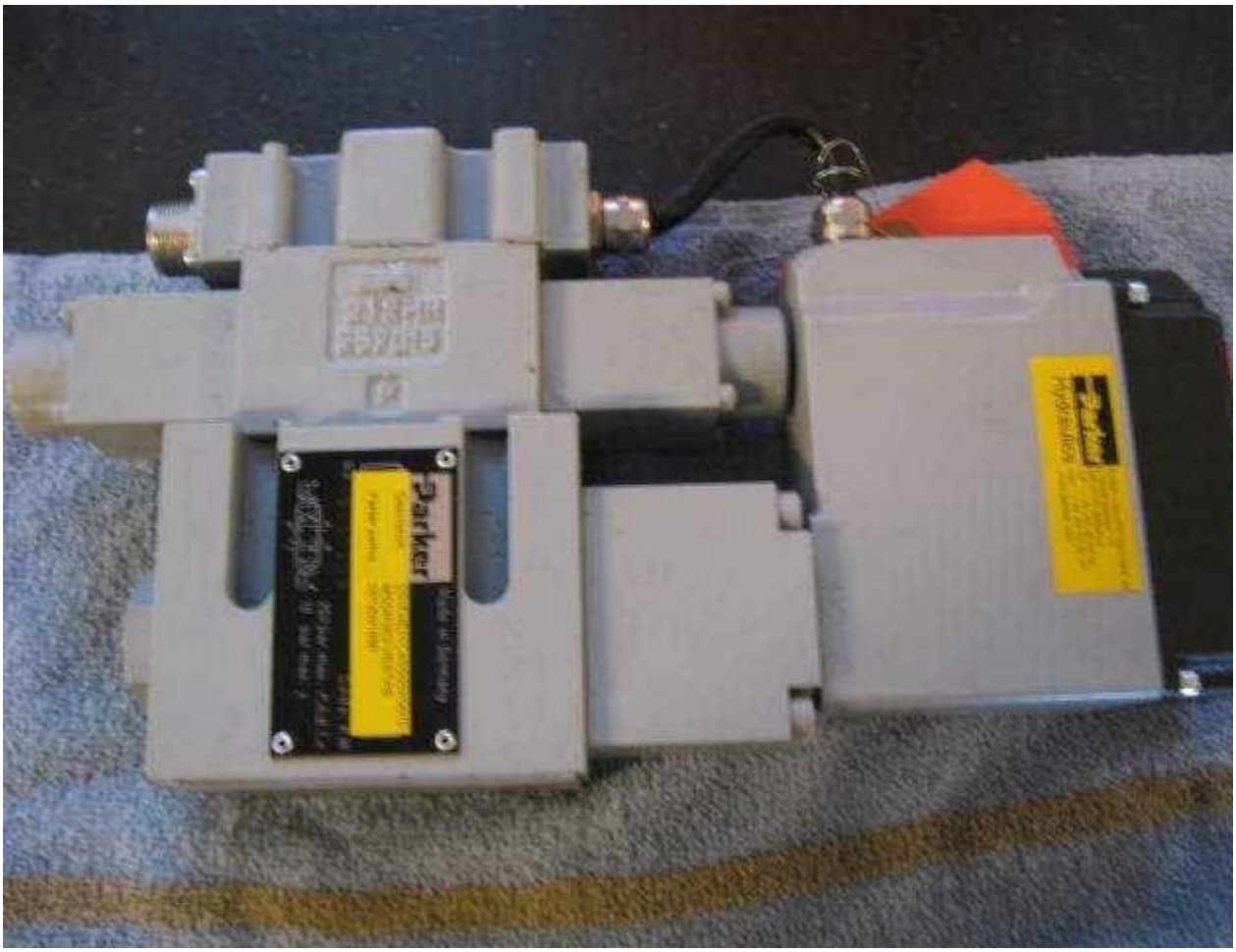
Relevant spare parts	
Description	**Item No.**
PROP. VALVE D31FHE01C	60112621

Relevant CIM case		
CIM case	**Task list**	**SWI**
2303	14333	

Rexroth Proportional Valve

Relevant spare parts	
Description	**Item No.**
PROP VAL 4WREE 10R75-2X/G24K31	60078979

Relevant CIM case		
CIM case	**Task list**	**SWI**
1914	14334	



Rexroth Proportional Valve-

Inspect bearing/ manually lubricate

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**
  Manually pitch the suspect blade locally in the hub.

Listen for any abnormal noise from the bearing.

If abnormal noise can be heard from the bearing manually grease the bearing in accordance with document DMS0024-9719 - V82 Blade Bearing Manual Grease Procedure.

Relevant documentation	
Description	**DMS No.**
V82 Blade Bearing Manual Grease Procedure	0024-9719

If the noise continues combined with multiple blade errors for that blade the blade bearing could be close to failing and should be further diagnosed.

Manually run the grease pump in the hub to verify operation.

Ensure that grease is reaching all 6 lubrication points on each of the blade bearings.

If grease is failing to reach any of the lubrication points, inspect the grease lines and distributor blocks in each of the blades.

If grease is not reaching any of the 18 lubrication points, there is likely a problem with the pump or the main distribution block in the hub.

Test/replace linear transducer

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

  Remove the blade position transducer (Balluff sensor) from the affected blade actuator and swap with another blade. If the pitch position anomaly follows the transducer to the other blade- it is defective and must be replaced.

Relevant spare parts	
Description	**Item No.**
SERVICEMODUL, BTL5 - E10	60102394

Troubleshoot/Repair cylinder

Does this solve the problem?

1] Yes

2] No

3] I don't know

- **Explanation**

Test the pitch cylinder for internal leakage.

CAUTION: Oil under pressure

Oil in the hydraulic system is under high pressure.

If the pressure is not relieved prior to opening 86.3/4T3, oil splashes or oil vapor will occur.

W **Do not** open with pressure on.

u It is important to start by screwing one end of a measuring hose onto test nipple 86.2/4T2 which is the one without pressure.

u Screw the other end onto 86.3/4T3.

Cylinder Internal Leakage at Stop Position:

The pitch cylinder is tested at Stop position by bypassing valve 240. This is done by test hoses.

1. Fully extend (Stop) pitch cylinder.
2. Discharge accumulators by opening valve 222.

   Close it when oil stops flowing.
3. MSP and MA are connected by test hose – **connect test hose to MSP before connecting it to MA.**

4. Activate valve 215.

5. Activate valve 210.

6. Connect MB to bucket / measuring glass.

7. Charge accumulators above 200 bar.

8. Record leakage at MB.

NOTE: The pitch cylinder has internal leakage if oil is constantly leaking from MB (if the pitch cylinder is tight at the next test it is also possible that leakage is from valve 226).

Cylinder Internal Leakage at Run Position:

The pitch cylinder is tested at the most frequent run position (-0.5° = ~5 mm from fully retracted) by connecting B-side to accumulators and isolating A-side.

1. Fully extend (Stop) Pitch cylinder.

2. Discharge accumulators by opening valve 222. Close the valve when oil stops flowing.

3. Pitch cylinder is positioned at pitch angle -0.5°

4. Activate valve 215.

5. Deactivate valve 210 by removing connector.

6. Start pump by commanding pitch towards run.

7. Observe cylinder.

If the pitch cylinder is drifting to run then valve 230 is leaking. If the pitch cylinder is drifting to stop then the cylinder is leaking.

If the pitch cylinder is found to be leaking internally, inspect/replace the piston/piston seals in accordance with document: 0023-2047- Pitch Actuator Piston Rod Replacement, NM72/82, V82.

Relevant spare parts

Description	Item No.
Pre-assembled piston rod (Bosch Rexroth).	60110963
Actuator seal kit (STD + Arctic Bosh Rexroth).	60110956
HYDR CYL ROD-PISTON 125/90 (Parker).	60114035
Hydr Cyl Piston Seal Kit Ø 125 (Parker).	60114089