Replaced shorted component

Does this solve the problem?

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

- **Explanation**

If all of the temperature readings in the hub are elevated i.e. Pitch Oil Temp, Hub Panel Temp, Accumulator Temp, then the issue is likely caused by a short in the system.

Check power supply to the hub computer for 24 VDC.

Unplug Hub computer outputs one at a time while checking for temperature movement or rise in power supply voltage - the short has been found on a circuit when a change occurs.

No corrective action necessary

Does this solve the problem?

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

- **Explanation**

Check nacelle and ambient temperature. If both are very high then pitch oil temperature may naturally high.

This can be confirmed by comparing temperatures to nearby turbines.
Check that nacelle fan is running.

Replace the faulty sensor cable

Does this solve the problem?

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

- **Explanation**

Replace the pitch oil temperature sensor cable if defect.

Remove the cable W930 wires from AK4 panel KO1 (hub computer) terminal 73 /74 and PT 100.
Check the continuity across the cable. If continuity fails replace the cable.

Relevant spare parts	
Description	**Item No.**
CABLE W930 B470 HYDR OLIE	60021533

Replace PT100

Does this solve the problem?

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

- **Explanation**

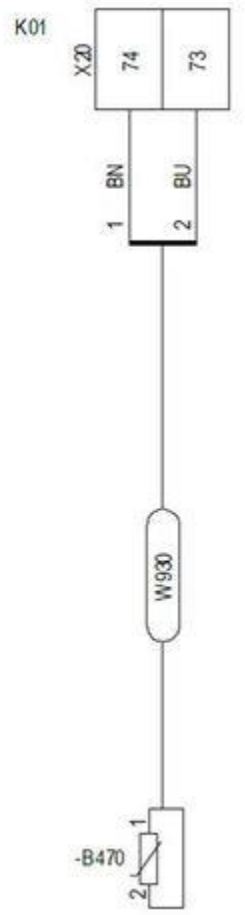
Check that the PT100 measurement is accurate.

1. If the sensor is suspected to be reading inaccurately, check the resistance of the PT100.
    1. Disconnect the wires of the Pt100 sensor from terminals 73 &74 in AK4.
    2. Measure the resistance of the PT100 across the leads.

3. Using the PT100 Ohm-Temp chart, determine if the sensor is operating within range.

Relevant documentation	
Description	**DMS No.**
PT100 Resistance/Temperature chart	0039-6203

Relevant spare parts	
Description	**Item No.**
TEMP SENSOR PT100 MBT5250 0	60096502



Refill pitch oil tank

Does this solve the problem?

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

- **Explanation**

Check the pitch oil tank level. Even if the level is above the alarm set point a low level can contribute to a rise in pitch oil temperature, especially on days when the turbine is pitching blades very often.

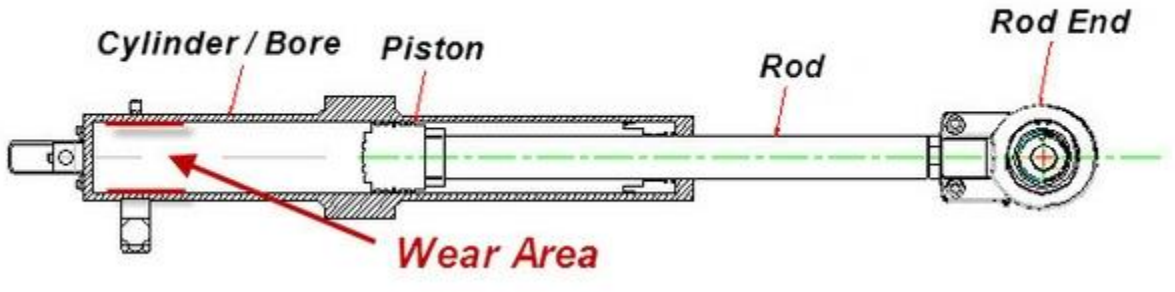
Relevant spare parts	
Description	**Item No.**
Hydraulic oil, Mobil SHC524	60096947
Hydraulic oil, Mobil Aero HF	60049423

Perform a visual inspection of the back of the pitch cylinder bore.

Does this solve the problem?

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

- **Explanation**



The back 250 mm of the pitch cylinder bore may be susceptible to excessive wear. This area of the cylinder is where the piston operates during production. When excessive wear occurs in the cylinder barrel, the piston seals are also subjected to accelerated wear, and internal leakage will occur in both run and stop positions. The effect of this leakage is excessive pump run time during operation as well as during stop which can lead to increased pitch oil temperature. In the event of a pump failure, grid outage or certain turbine faults, pressure within the accumulators will bleed off, and blades may be at risk of being pushed into the run position under high wind conditions. Check the back of the bore for abnormal wear.

Actions:

Refer to DMS doc 0059-1574 for inspection instructions and criteria for running the turbine if wear is found.

Relevant documentation	
Description	**DMS No.**
V-82 Pitch Ram Bore inspections	0059-1574
V82 Rexroth pitch ram installation on a Parker pitch system	0059-7339

Relevant CIM case		
CIM case	**Task list**	**Service Message**

3699	23210	0059-3323 Evo2 Pitch Cylinder Wear

http://dkrdsdezide01/internal/start.jsp?guide=V82%2FTroubleshooting%2F150+-+Pitch+Oil+Temp+High+-+NM72%2CNM82%2CV82.net&section=17

Replace the damaged actuator end seal

Does this solve the problem?

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

- **Explanation**

IN THE HUB:

Check for oil bleeding from the test connector in the return line during pitch in time (Actuator Internal oil leakage, **only for PARKER System**)

If there are any leaks found, replace with new seal kit.

Replace Hub Computer

Does this solve the problem?

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

- **Explanation**

Check X20 connector for any damage and loose connection. Replace if the connector is found loose/damage

Relevant spare parts	
Description	**Item No.**
CONN BLZ F 4 LEADED	60001930
CONN MVSTBW 10 LEADED	60001890

1. Remove wires from K01 (Hub Computer) terminal 73 & 74 and switch them with another temperature input (e.g. 71 & 72).
2. Observe temperature with the wires in the new input. If it is the same as it was with the wires in 73 & 74 then the K01 is likely working.
3. If temperature is different, K01 is defective.

Relevant spare parts	
Description	**Item No.**
SIF HUB COMPUTER CABINET EVOII	51701801

Close or replace valve
Does this solve the problem?

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

- **Explanation**

Check that valves 222 A, B and C are all completely closed.

Relevant spare parts (Parker)	
Description	**Item No.**
VALVE NEEDLE NVH-2201	60104032

Relevant spare parts (Bosch Rexroth)	
Description	**Item No.**
THROTTLE VALVE: NFBC-KCN A3031	60096478

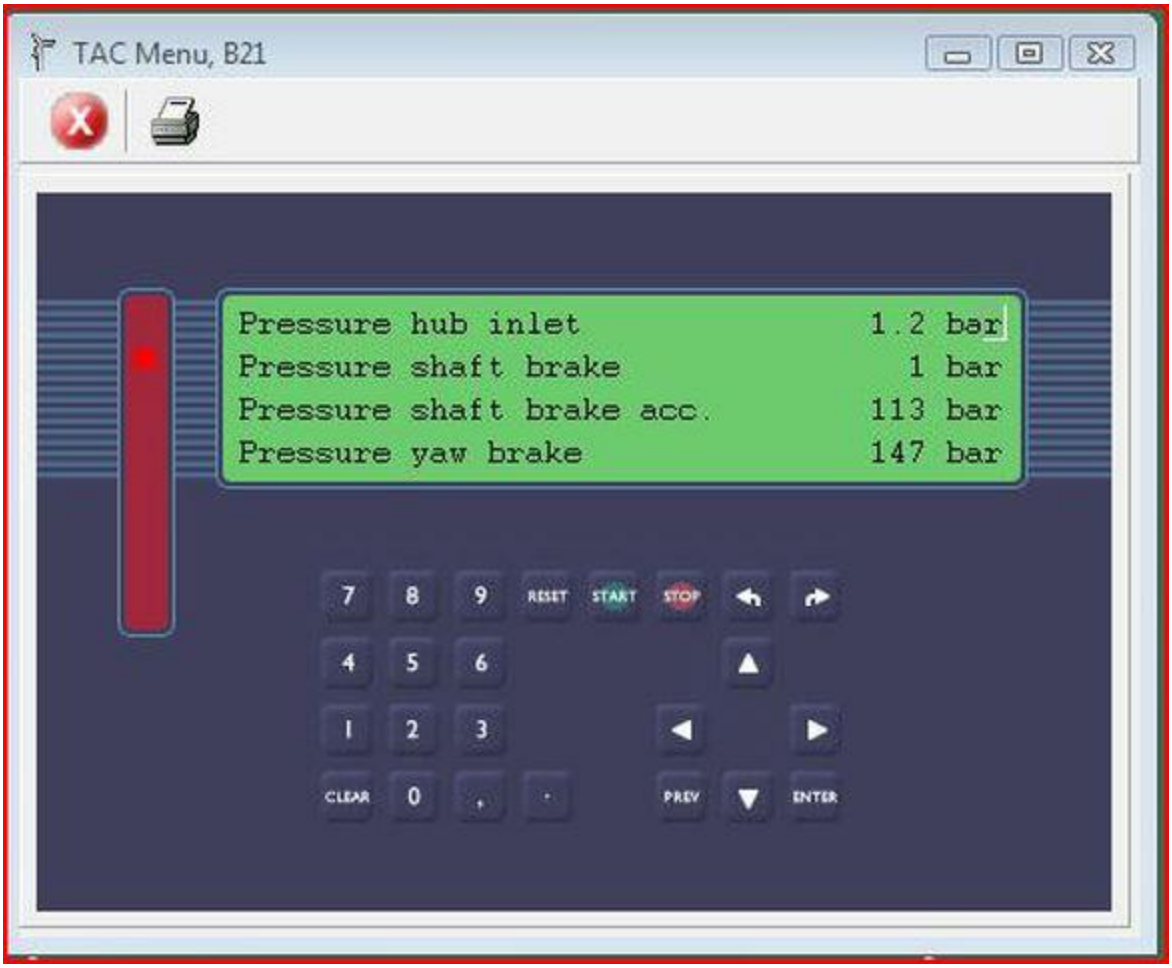
It is possible that if the valve has been seated too tightly then the valve stem can bent and the valve can leak. This can also be accompanied by pitch pressure alarms.

Check that valve 440 is completely open. This can be done by physically inspecting the valve for debris and proper operation.

Also, if 440 is stuck almost closed then hub inlet pressure will be higher than normal.

Relevant spare parts (Parker)	
Description	**Item No.**
SOL. VALVE NO, DS201 NR	60112645

This can be seen in the Pressure menu in VOB.



If VTM monitor 2095 (T4010 Pitch oil temp MinPod) appears it can be related to internal leaks on valve 220 and 226, where o-rings can be damaged :

Relevant spare parts (Parker)	
Description	**Item No.**
RELIEF VALVE, 248 BAR	60096477

Relevant spare parts	
Description	**Item No.**
CHECK VALVE CVH103P20	60112628

Replace faulty Balluf sensor

Does this solve the problem?

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

- **Explanation**

If multiple pitch/hub temperature high alarms or readings are present, it is possible that there is a defective Balluf sensor. Check for a faulty Balluf sensor by removing the plugs from the sensors one at a time. Monitor the temperature readings at the same time. If the temperatures return to normal when a specific plug is removed, it is likely that that Balluf sensor is faulty and should be replaced.

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