Service Manual

PC3000-6

HYDRAULIC MINING SHOVEL

SERIAL NUMBER 06208 and up
46151 and up

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Legend for illustration (Z 24026):

A	View from machine back side
B	View from machine left side
C	Top view

1	Counter weight (welded box design)
2	Lifting eye (fix mounted)
3	Lifting eye (mounted only for transport)
Sx	Point of gravity, 2215 mm
Sy	Point of gravity, 1200 mm
W	Minimum rope angel = 40°,
L	Rope length single 2,5 - 3 m, min. 20 ton
A	View from machine back side
B	View from machine left side
C	Top view

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7.7.8 Table of fault messages and adjustments

Abbreviations	Description
MM	Multi Monitor
EPC	Electronic Pump Controller
P1....P6	Pump 1.....Pump 6
SOL	Solenoid
RPM	Rounds Per Minute
Qmin / Qmax	Minimum / Maximum pump displacement

The following tables show all possible pump controller generated fault messages with additional information about:

- fault message description - refer to "Fault message description" on page 233
- controller in- and output condition to generate the respective fault message - refer to "Failure code and detection logic" on page 234
- main pump situation and controller action at the time of failure occurrence - refer to "Situation and reaction after fault" on page 235
- Required condition or action to reset the pump regulation system after fault eliminating - refer to "Trouble shooting and fault message reset" on page 236
- Trouble shooting guide - refer to "Trouble shooting and fault message reset" on page 236

For all possible items of menu 04 "Adjustment" refer to "Controller Adjustment table" on page 240

Fault message description

Failure message (display)	Description
P1 EPC SOL Short circuit	Electrical connection of solenoid valve from Electronic Pump Controller shorted to ground
P1 EPC SOL Disconnection	Electrical connection of solenoid valve from Electronic Pump Controller disconnected
P1_2 Pump pressure sensor abnormality	Wrong electrical signal from pressure transducer of pump X_Y
Sensor power supply abnormality	Wrong power supply tension of pressure transducer from the main pumps
Engine speed sensor abnormality	Wrong tension signal of engine speed sensor (pick up at flywheel)

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Reading of the circuit diagram

Item	Coordinates	Description
3	F 7, page 02	Terminal, designated by a letter and number code. X2 23-24 = Terminal is located in the X2 box, terminal number 23 and 24, both terminals bridged together with a jumper
4	D 1 to F 3 page 11	The component have a letter and a number prefix, these are explained below in rows A (english) and B (german). K43 = Adjustable temperature relay, here used for Gear box oil temperature monitoring via temperature sensor B49.
a	E 2	Terminals, connection between the sensor and the temperature module inside of the X2 box
b	D 3	Plug connector close to the temperature sensor. 1 and 2 are the pin numbers
c	E 1, E 3	Power supply for the contact, V1 is a circuit controlled by time and engine condition. Power line is coming from page 10 column 1 and continued on page 13 column 7.

Function

As soon as there is 24V_{DC} at terminal 1 of module K43 and negative (GND) on 2 the contact 6 activates and close the contact to terminal 5. Assumed the gear oil temperature is less as the adjusted temperature done by the scale drum at the model K43.

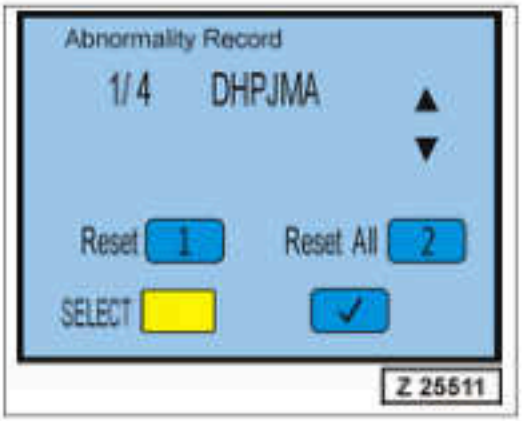
The actual temperature is monitored by the temperature probe B49 (PT100). Its resistance between the terminal 3 + 4 varies with the temperature.

As soon as the temperature reaches the pre-adjusted value, the relay in K43 de-energize and its contact 6 changes to 7 thus the ETM monitoring system gets a 24 volt signal to terminal 18 of the input module E34 so the internal electronic send a code to the display which create a message on the text monitor. The operator gets informed that the gear oil temperature is too high.

After the temperature de-creases the relay in K43 gets energized and interrupts the connection 6 to 7 and the warning text on the ETM - Display disappears.

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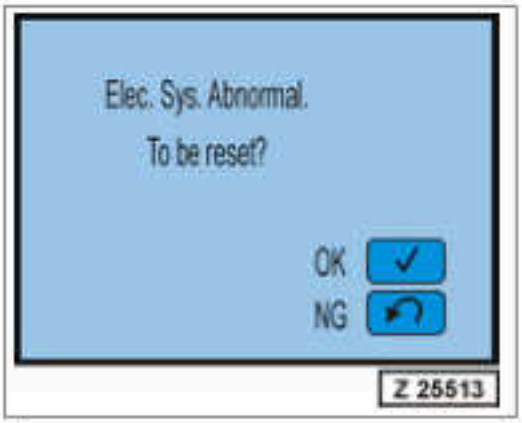
The reset menu appears, illustration Z 25511. Select the fault message you like to delete with the up ▲ or down ▼ key and press the button 1 A or delete all messages by pressing the button 2 ●. Confirm your choice with the enter key ✓.



If only one fault message was selected (Reset, 1) the confirmation screen illustration Z 25512 appears. Confirm your choice again with the enter key ✓ or return to the previous screen with the return key ↶.



If the whole faulty messages was selected (Reset All, 2) the confirmation screen illustration Z25513 appears. Confirm your choice again with the enter key ✓ or return to the previous screen with the return key ↶.

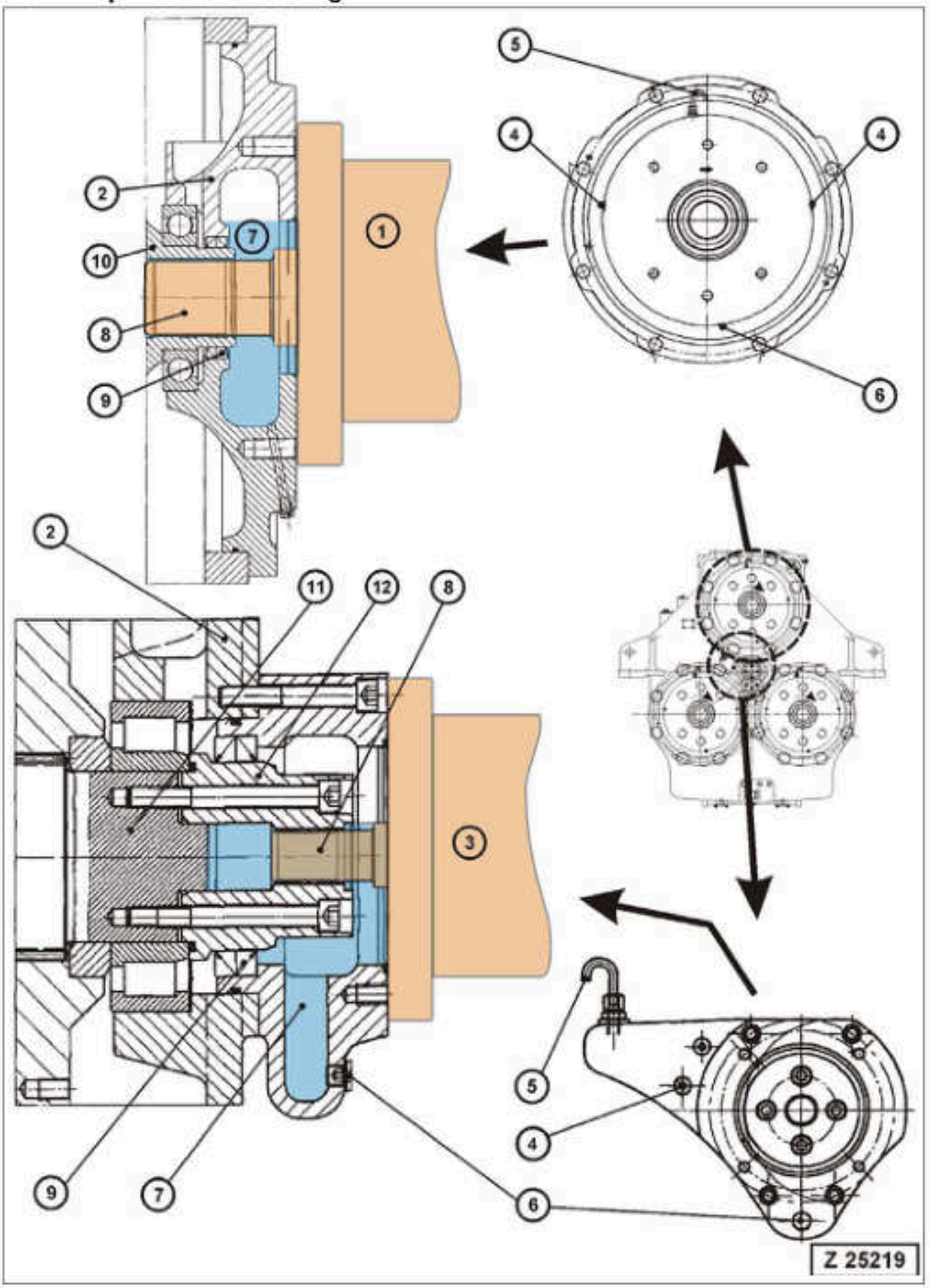


For a few second the screen illustration Z25513 appears. Then the screen illustration Z 25138 with empty messages appears except if there is still a active fault. A active fault can't be deleted.



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2.5.1 Spline shaft housing



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