SMPC550015011

Shop Manual

PC5500-6

HYDRAULIC MINING SHOVEL

SERIAL NUMBERS PC5500-6 15011

It is our policy to improve our products whenever it is possible and practical to do so. We reserve the right to make changes or improvements at any time without incurring any obligation to install such changes on products sold previously.

Due to this continuous program of research and development, revisions may be made to this publication. It is recommended that customers contact their distributor for information on the latest revision.

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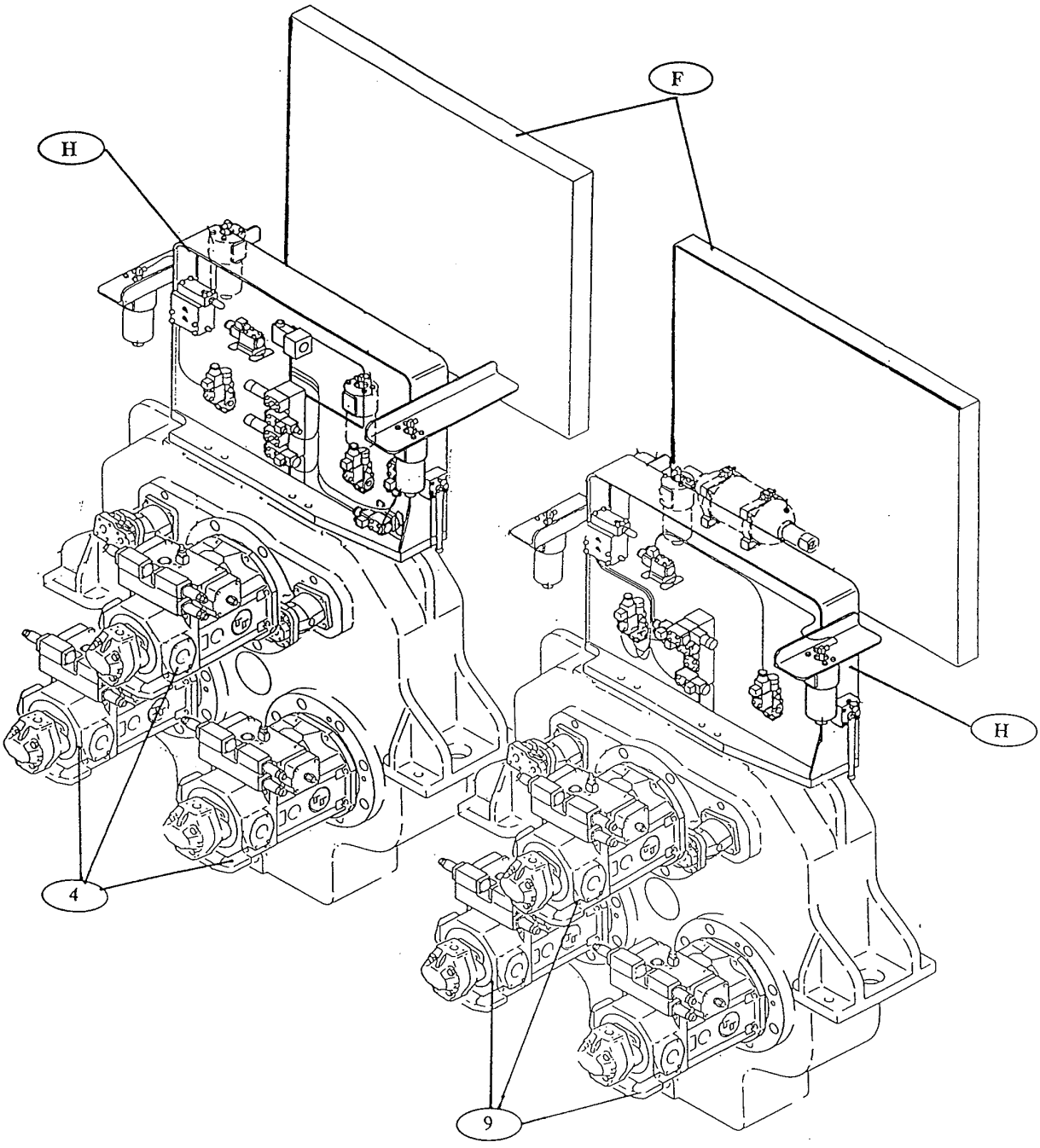

F
H
H
4
9

PRIME DRIVE ASSEMBLY

Each drive unit, which consists of the PTO gear and the engine, is bolted to the prime drive subframe (1).

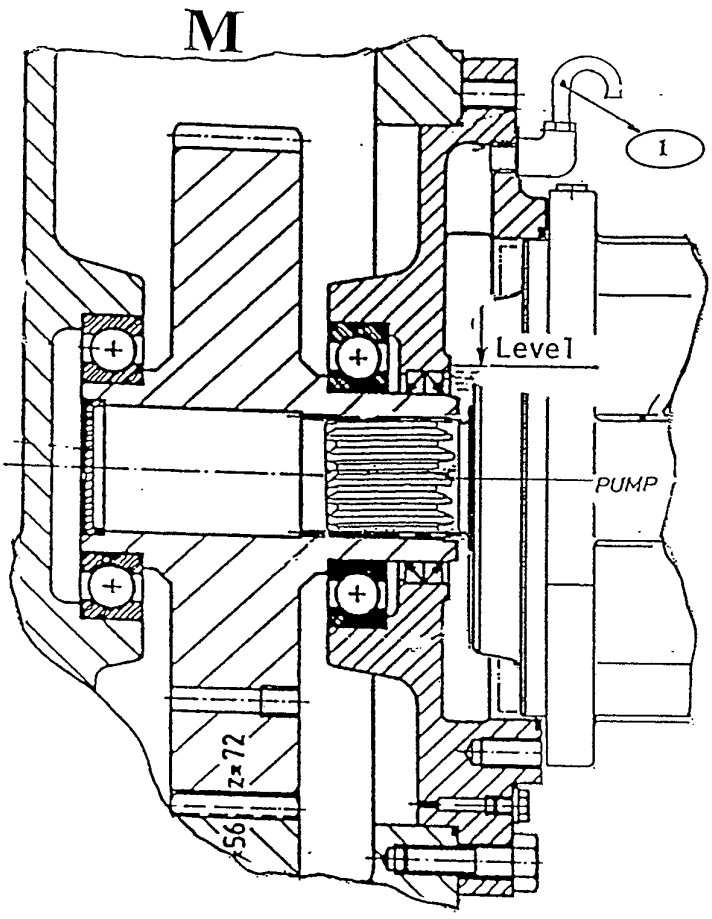
The connecting link between engine and PTO gear is a flexible coupling.

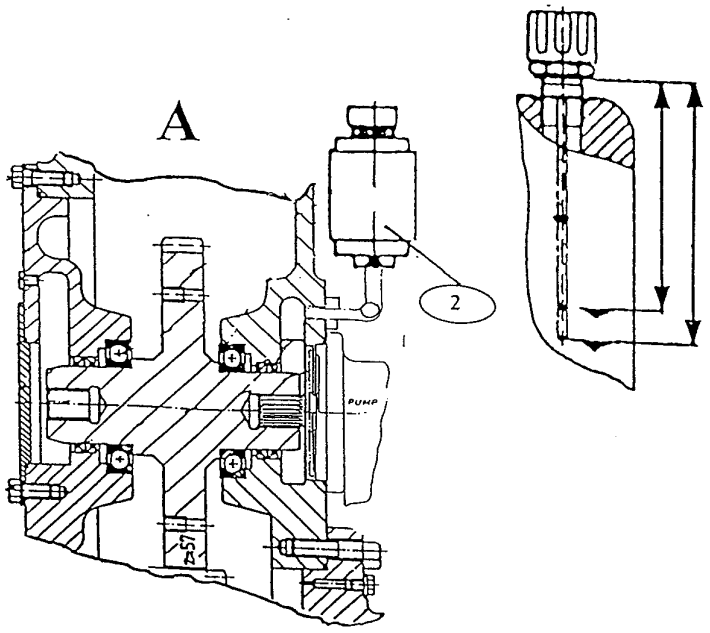
FAN DRIVE

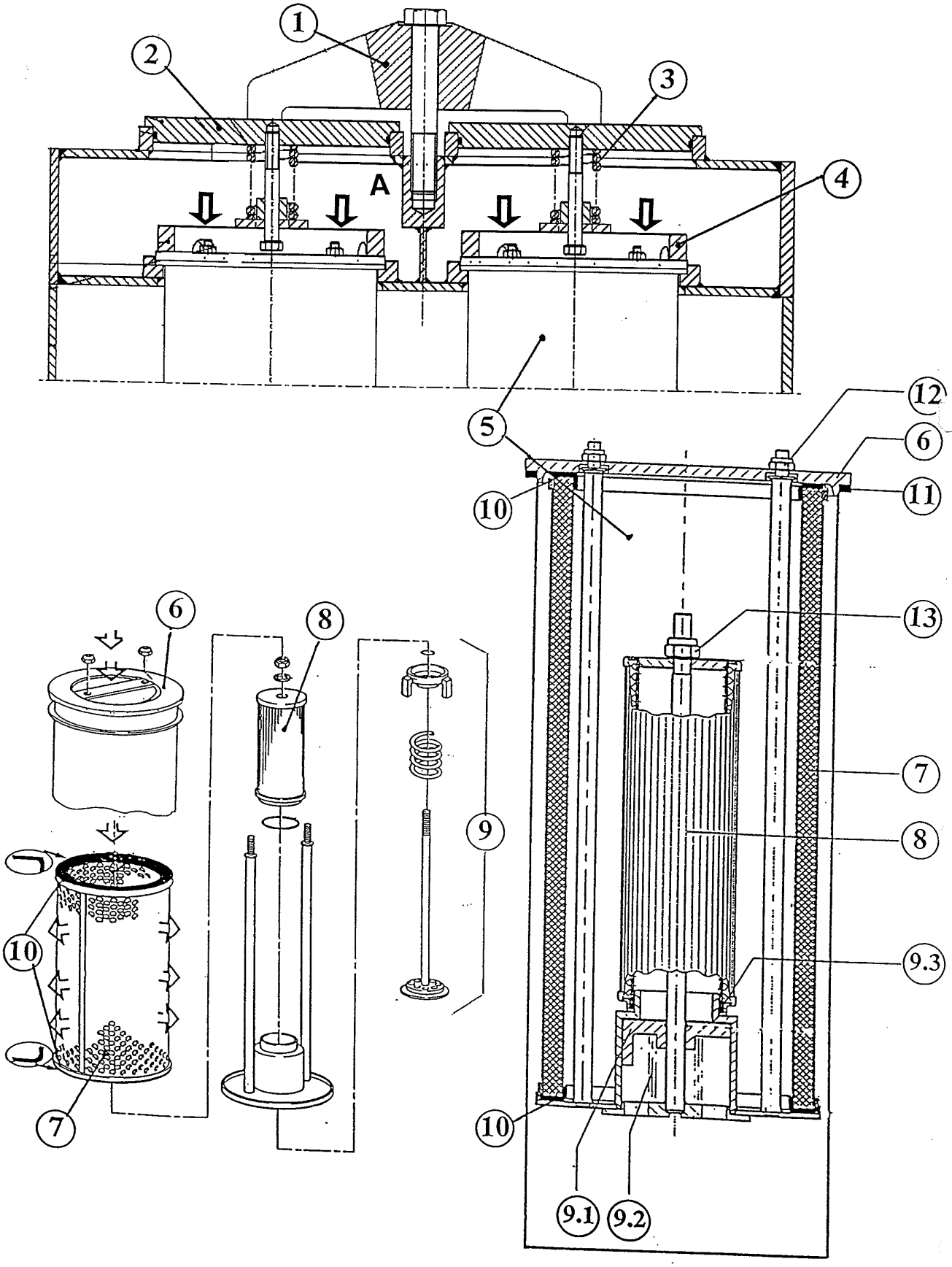
(10.1)	Axial piston pump (with variable displ.)
(68.3)	Filter
(B21-1)	Safety switch
(M19.1)	Pressure check point
(168.3)	Pilot controlled pressure relief valve
(23.1)	Axial piston motor
(103.3)	Anticavitation valve
Y14a-1	Solenoid valve (for low speed of the fan drive)
Y14b-1	Solenoid valve (for middle speed of the fan drive)
(168.3)	Pressure relief valve

Function: (Description for one Engine, same function for the other one)
From the pump (10.1) flows the oil through the filter (68.3) to the fan motor (23.1) and than back to the tank.
The check valve (103.3) act as an anti cavitation valve. This must be because the motors -*driven by the momentum of mass*- are running for a short period after the engine has been switched off.
The hydraulic circuit "Fan drive" is secured by the pilot controlled pressure relief valve (168.3). This valve works together with a directional spool valve with two solenoids. The solenoids operate hydraulic oil temperature depended. The controlling is done by the PLC system.
There are 3 levels of fan speed possible:

1. With de-energized solenoids the pressure relieve valve is functioning (max. pressure 230 bar) and the fan is running with the max. set- speed.
2. With energized solenoid Y14a-1 the pressure relieve valve is not functioning and the fans are running with a very low speed caused by the flow resistance only.
3. With energized solenoid Y14b-1 the fan is running with the speed adjusted at the pressure relief valve (168.3).


M
1
Level
PUMP
z=72
S6


A
2
PUMP
z=51


1
2
3
4
A
5
12
6
11
10
13
7
8
9.3
9
10
9.1
9.2
6
8
10
7

MEASURING / SETTING THE BACK PRESSURE VALVE

- **Only at normal operating temperature of the hydraulic oil and hydraulic pumps in max. flow position, if necessary eliminate "Idle Time" control.!**

1. Connect pressure gauge to check point (M10).
2. Start engine and let it run with max. speed
3. Read pressure, required = 8 bar.

If adjustment is required:

4. Take off protective cap (12).
5. Loosen lock nut (5).
6. Alter the pressure with the set screw (6).
7. Tighten lock nut (5) and refit protective cap (12).

(1) Control oil port
(2) "Y"- port (external return to tank)
(3) Poppet
(4) Valve spring
(5) Lock nut
(6) Set screw
(7) Jet bore, 5mm dia.
(8) Valve spring
(9) Valve piston
(10) Jet bore, 2,6mm dia.
(11) Plug screw
(12) Protective cap
(Z) Pressure oil to valve
(A) Return to tank (Filter chamber)

Be careful not to get caught in the fan or other rotating parts!

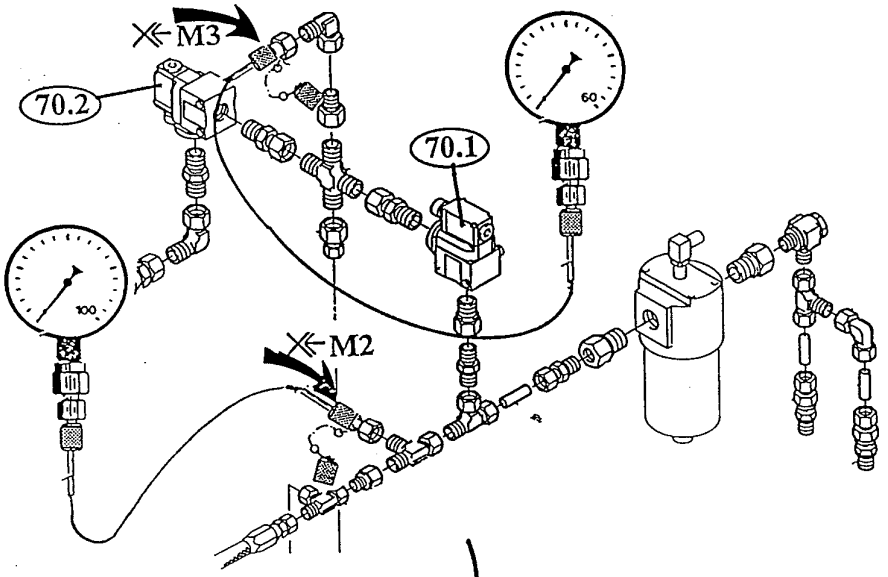
- **Both fans have to be checked. A difference of approx. 50 rpm is normal due to the higher resistance for the air stream for the lower fan. If the difference among the both fans is much more there may be one hydraulic motor worn or the bearing is not more OK.**

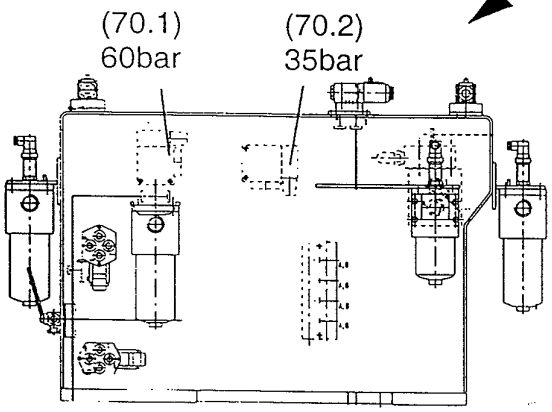
II. Later on speed checks only

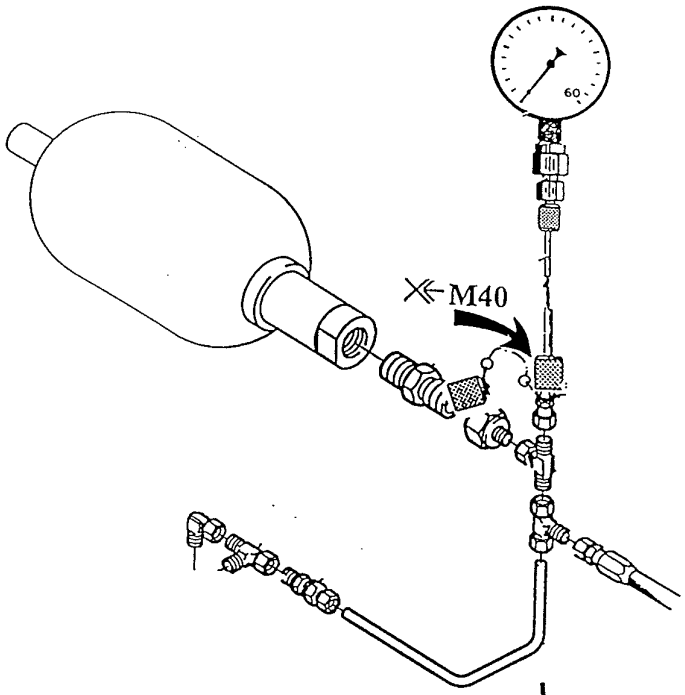
1. Unplug solenoid Y6.1a+b, it ensures max. fan speed.
2. Connect pressure gauge to check point (M5.1).
3. Start engine and let it run with max. speed.
4. Check fan speed with phototach

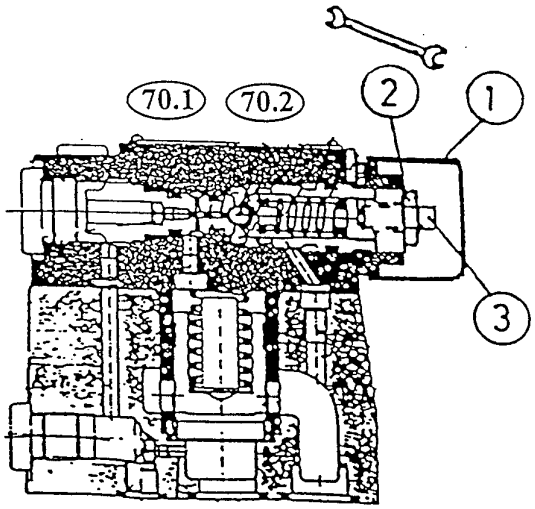
The fan speed must be: **1300**rpm

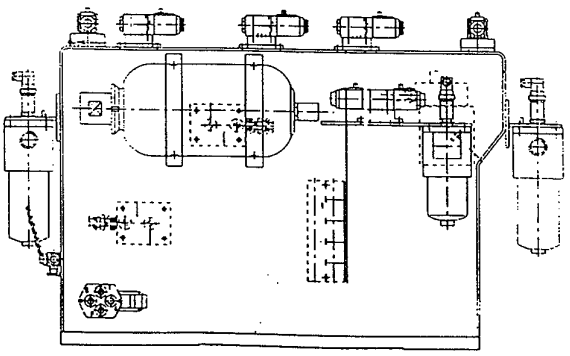
5. If the fan speed is not correct try to increase the speed by increasing the relief valve setting first. If not possible the pump swivel angle must be increased as well.
6. Re-install plug to the solenoid valve and secure with its bolt.

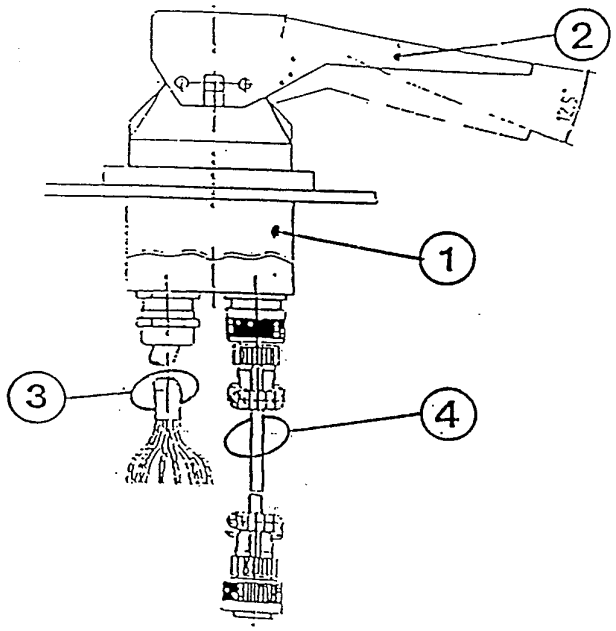

M3
70.2
70.1
M2

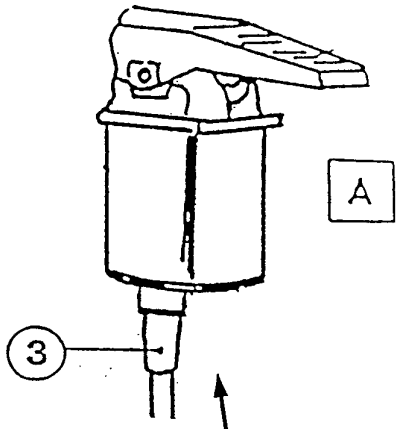

(70.1)
60bar
(70.2)
35bar

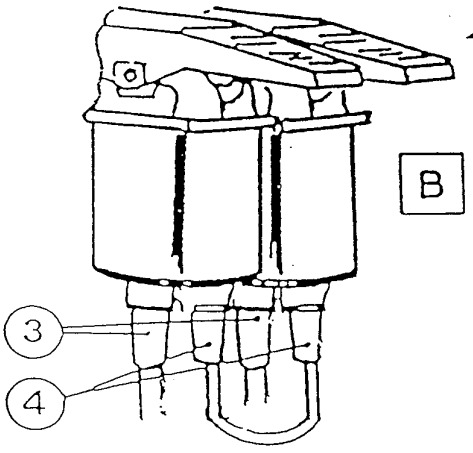

M40

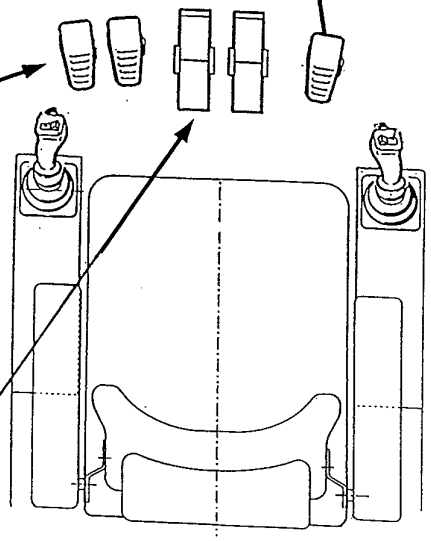

70.1
70.2
2
1
3

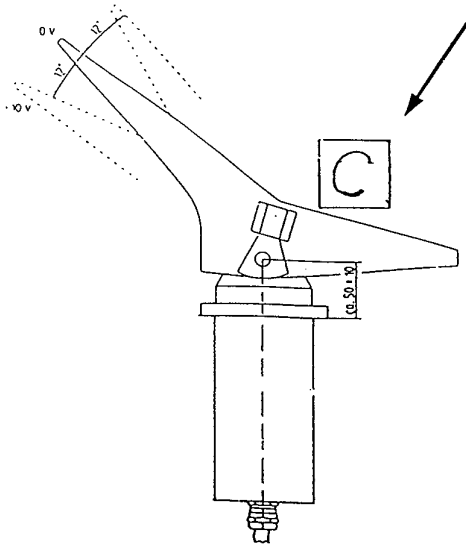






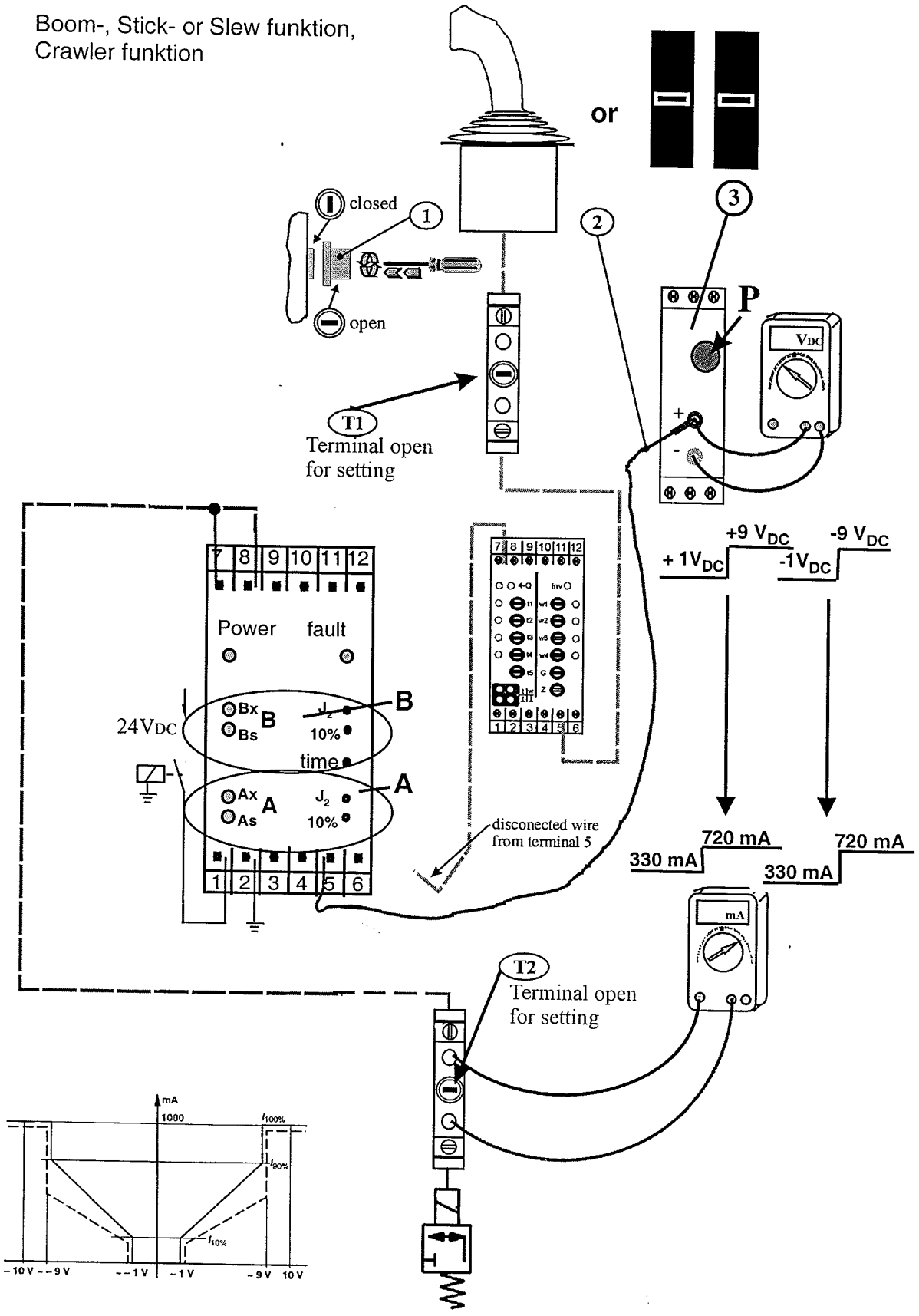




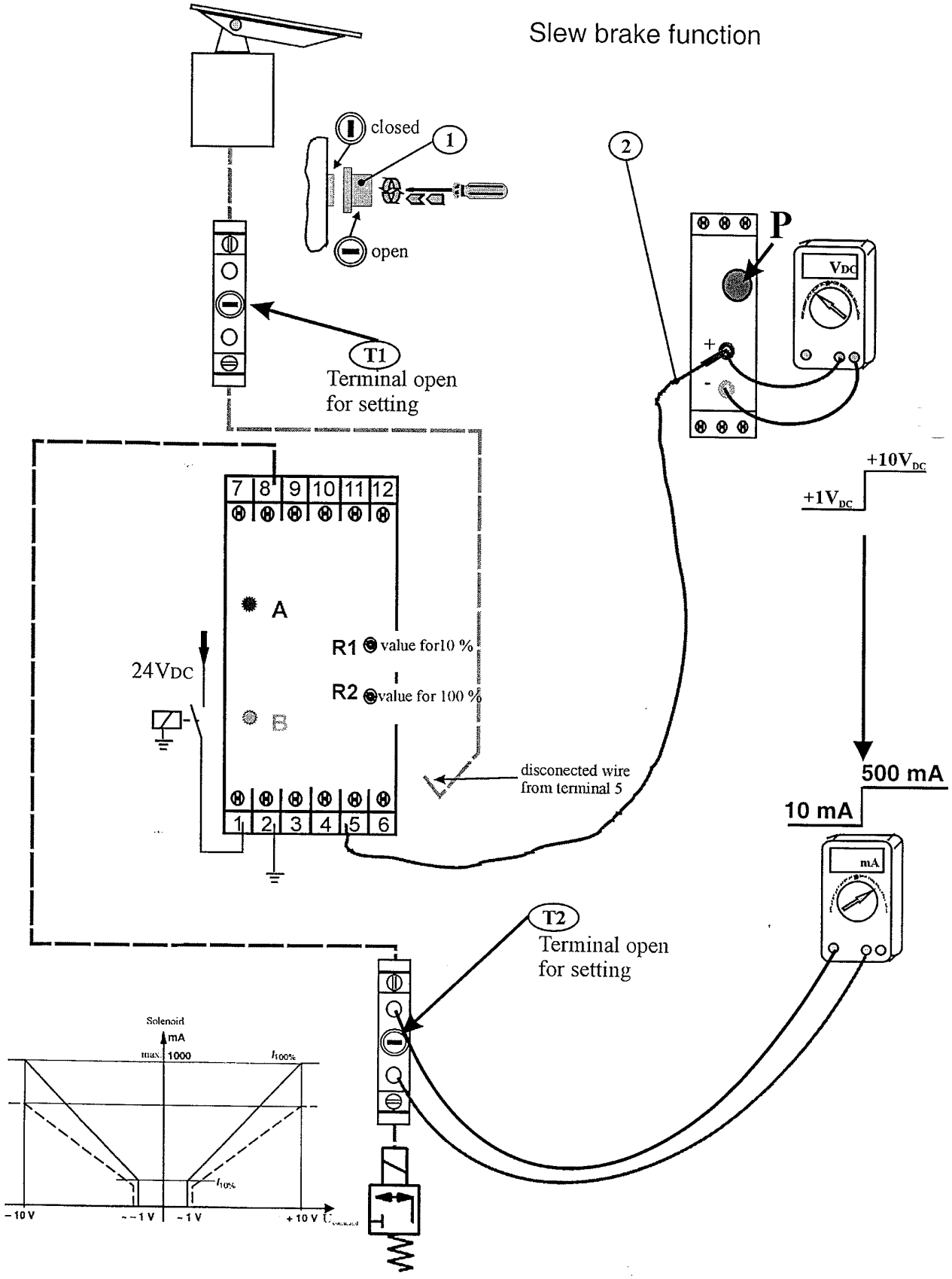


	Farbe / colour	Funktion / function
Versorgungsleitungen power supply	rot / red blau / blue	+24V M0 (Meßnull / zero)
Signalleitungen signal lines	weiß / white rosa / pink braun / brown	M0 (Meßnull / zero) X-Achse / X-direc. +/-10V XA-Achse / XA-direc. + 10V
Zuleitung Kontakte supply idle ident.	grau / grey	
Nullstellungskontakte idle identification	grün / green gelb / yellow	Nr. 1 Nr. 2

Boom-, Stick- or Slew funktion,
Crawler funktion



Slew brake function



MAIN CONTROL BLOCKS AND HIGH PRESSURE FILTER

Pump circuit No.1

(14/I)	L.H. Control block (L.H. Travel, Stick, Bucket, Boom,)
(46.1)	High pressure filter with differential pressure switches B6-1 and B6-2
(31.1 + 31.2)	SRV Travel motors
(32.1 + 32.2)	ACV Travel motors
(33.1)	SRV Stick cylinder rod end
(32.3)	ACV Stick cylinder rod end
(33.2)	SRV Bucket cylinder rod end
(32.5)	ACV Bucket cylinder rod end
(32.6)	ACV Bucket cylinder

Pump circuit No.2

(15/II)	Middle. Control block (Clam, Boom, Stick, Bucket)
(44.2)	High pressure filter with differential pressure switch B5-2
(32.7)	ACV Clam cylinder rod end
(33.3)	SRV Clam cylinder
(32.8)	ACV Clam cylinder
(33.4)	SRV Boom cylinder
(32.9)	ACV Stick cylinder rod end
(33.6)	SRV Bucket cylinder rod end
(32.11)	ACV Bucket cylinder rod end
(32.12)	ACV Bucket cylinder

Pump circuit No.3

(16/III)	R.H.. Control block (R. H. Travel, Boom, Bucket, Stick)
(46.2)	High pressure filter with differential pressure switch B5-1 + B7-2)
(31.3 + 31.4)	SRV Travel motors
(32.13+32.14)	ACV Travel motors
(32.15)	ACV Bucket cylinders

Pump circuit No.4

(13)	Single spool. Control block (Swing)
(44.1)	High pressure filter with differential pressure switch B7-1

- **There is one MRV in each control block.**

REMOTE CONTROL VALVES

Remote control manifolds are used for the electrically-hydraulically control of the control block spools. Because they are close to the control blocks mounted very short hydraulic lines are installed.

(1 - 6) Pilot pressure lines to the control block
(7) Pilot pressure supply port
(8) Return to tank port
(9) Manifold block
(10) Double directional solenoid valve
(11) Single proportional solenoid valve

Function:

Pilot pressure reaches the unit at port P (7).

If the operator selects a motion two electrical signals are sent to the unit:

One to the proportional solenoid (11) and one to the directional solenoid vale (10 a or b). With the directional solenoid valve the direction of the spool is selected, either up or down.

By the proportional solenoid a pilot pressure, proportional to the electrical signal, is created and sent to the main control block spool.

CONTROL BLOCKS

(It is a principle drawing only, in detail it may vary with the built in control block)

(1) Long cap ("B" side)
(2) Centering springs
(3) Control block housing
(4) "B" side service line ports
(5) Return oil cavity
(6) "A" side service line ports
(7) Solid spool (75mm dia.)
(8) Short cap ("A" side)
(9) Load check valves
(10) Pressure (pump) oil cavity
(11) Travel brake valve (Details see next page)
(12) Control block relief valve (MRV)

It is a control block with "**Open Center and Closed Ports**".

See hydraulic circuit diagram for spool details. The spool travel is 13mm

Each spool is provided with "Fine Controlling Grooves" and ring grooves for hydraulically centering of the spool centre

The **Travel Brake Valves** are installed only into the control blocks used for travelling. The other blocks sare fitted instead of the brake valve with a solid sleeve.

The **Load Holding Valves** are installed beneath a cover from the service port side of the control block.

The **MRV** is a pilot operated pressure relief valve.

HYDRAULIC CYLINDER

Type "A" : Stick and boom cylinder

(1) Covering (steel)
(2) Cover (steel)
(3) Wiping seal
(4) Support ring
(5) Shims (steel) 6 x 0,8 mm
(6) Supporting disk
(7) Back-up ring
(8) Chevrons
(9) Header ring

Type "B": Bucket and clam cylinder

(10) Compact seal ring
(11) Support ring
(12) Wiping seal
(13) Covering (steel)

- **The bucket cylinder only has an hollow rod. Via the rod boring the piston side gets supplied with oil. So that not an extra (often damaged pipe) is found at the cylinder.**

Explanation of the cylinder markings:

(14) Cylinder data markings

280 x 160 x 1900 Piston diameter x Rod diameter x Stroke.

290790 40 Cylinder drawing number (identical with part No.).

0 09 DB 55

Assembling crew personal number

Last digit of the assembling year

Assembling month

MAIN HYDRAULIC PUMPS

Function description with the symbol:

Q-min position: (*remember Q means volume*)

Conditions:

- Engine running
- X3 = Minimum (remote control pressure); Y17 de-energised
- X4 = 60bar (pump support pressure)
- Pump support pressure present at valve no.7, the slipper pad piston no.14 and the small area side of the positioning piston no.13

This causes:

Valve no.7 in position "b" because of the return oil flow through valve no.6 in position "a" to tank.

Pump support pressure passes valve no.7 position "b" and flows via power control valve no.9 position "a" to the large area of the positioning piston no.13

Because of the difference in the areas the 60bar keeps the pump in Q-min position.

The pump remains in Q-min position

MAIN HYDRAULIC PUMPS CHECKS / ADJUSTMENTS

Location of adjustments

(1) Remote control valve
(2) Q-min. stop bolt (Vg min)
(3) Pressure balance valve
(4) Start of destroking
(5) Power curve correction
(6) Pressure cut-off valve
(7) Q-max. stop bolt (Vg max)
(8) Angle indicator

The **average length** of the measurements "L" are:

set screws (bolts location	length (mm)
1	13.4
2	21.9
3	8.3
4	8.1
5	----
6	6.3
7	27.6

- **The measurement "L" is an orientation only if the adjustment is totally out of requirements. They must not be used for final adjustments.**
  The detail for no.5 shows the position of the housing edge and the edge of the eccentric set bolt. The example shows them in parallel position which is mostly not the case. The adjustment should never be altered. Further information see next pages.

MAIN HYDRAULIC PUMPS

Pump Regulation System Lay Out (hydraulic circuits only)

(1 - 6)	Main pumps
(8.3 + 8.6)	Pilot pressure pumps
(Y17)	Solenoid valve: "*Idle time control*"
(Y17a)	Solenoid valve: "*Remote control pressure*"
(Y61.1+Y61.2)	Pump control pressure X1 at "*Electronic Regulation*"
(70.1)	60bar pressure relief valve
(70.2)	35bar pressure relief valve
(79.1+79.2)	Change over valves: " *Electronic / Hydraulic regul.*"
(81.1)	Pressure reducing valve: "Remote control pressure" for the warming-up period
(81.2)	Pres. reducing valve: "*X1 pressure at* "*Hydr. Reg*ul. " (Emergency operation)
Y102-1	Shut off pump support pressure (n < 300rpm - engine 1)
Y102-2	Shut off pump support pressure (n < 300rpm - engine 2)

Function:

Solenoid valve Y17:

If de-energised the pumps no.1-6 are in Q-min position. It gets energised as soon as one of the control levers/pedals has been touched and de-energised when ever the controls for more than 20 sec. in. neutral.position.

Solenoid valve Y17a:

The solenoid is de-energised up to the hydr. oil temperature „T2".

Limit Value	ISO					
(Viscosity)	VG22	VG32	VG46	VG68	VG100	Tellus arctic oil 32
T2 / (100 cST)	8 °C	16 °C	25 °C	32 °C	39 °C	- 1°C

T2 = Temperature range

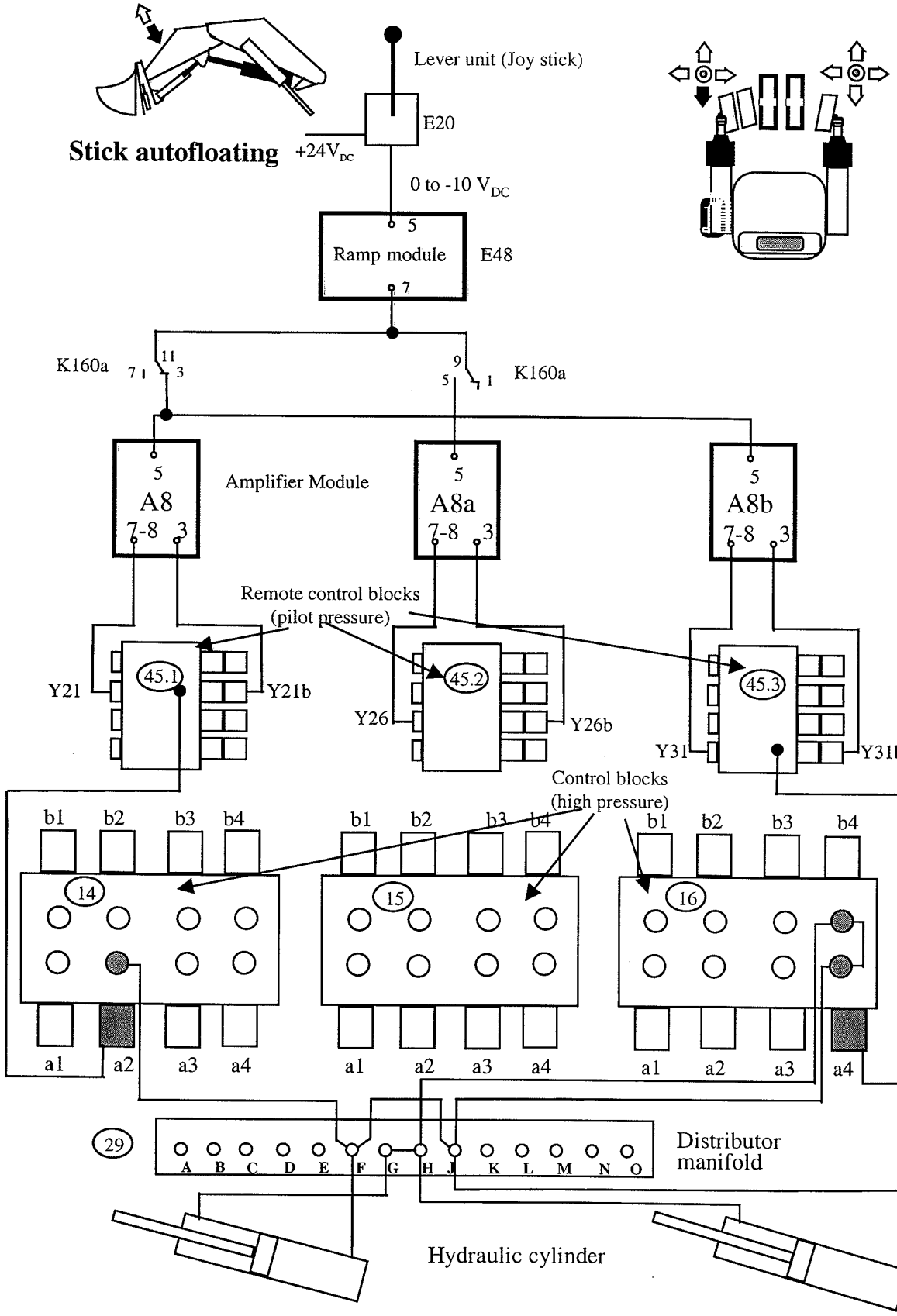
Proportional Solenoid valves Y61-1 and Y61-2:

By the function of these valves is an engine speed dependent X1 pressure created.

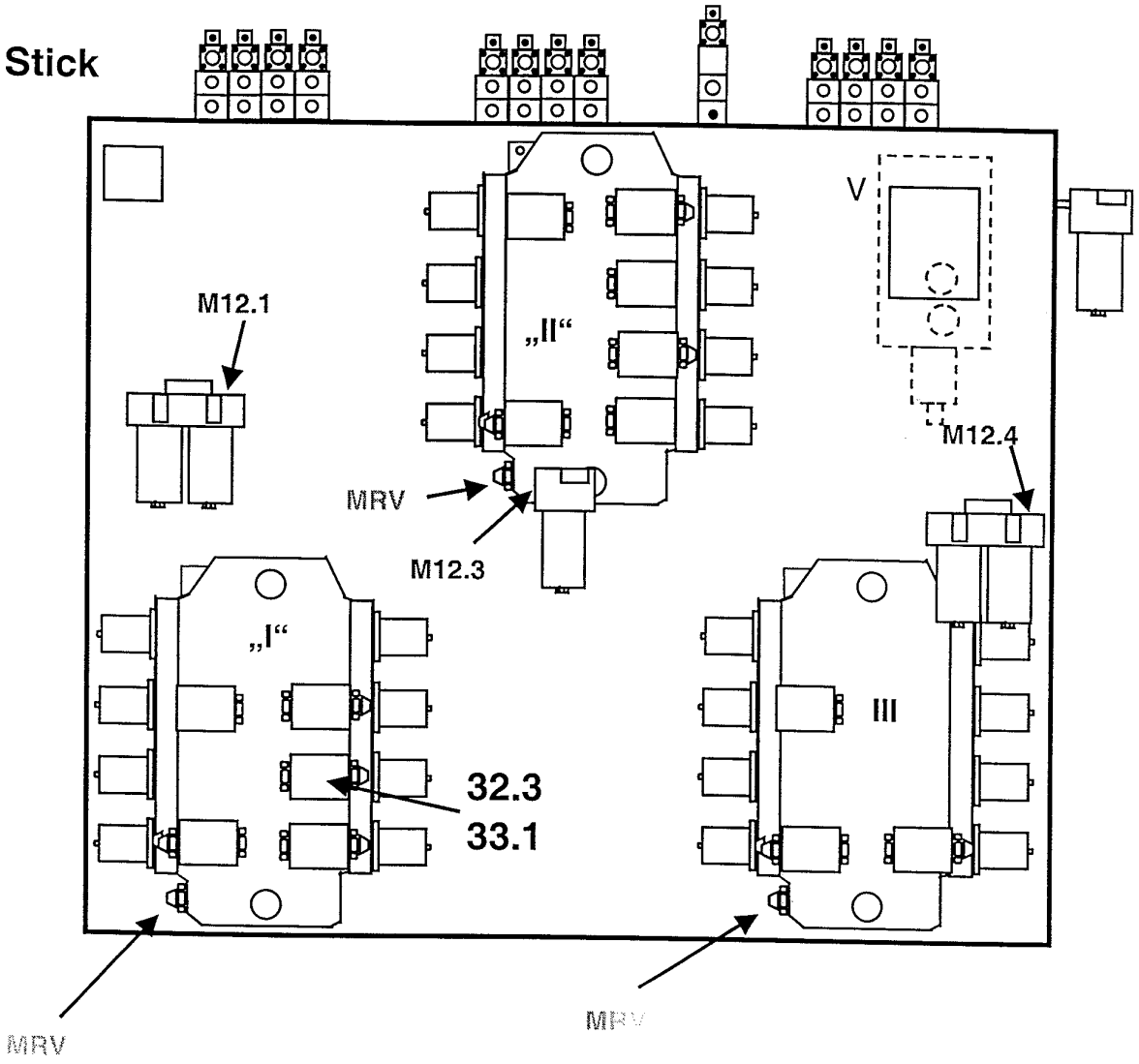
Thus that due to the adjustment the pumps starts destroking at the rated speed of the engine.

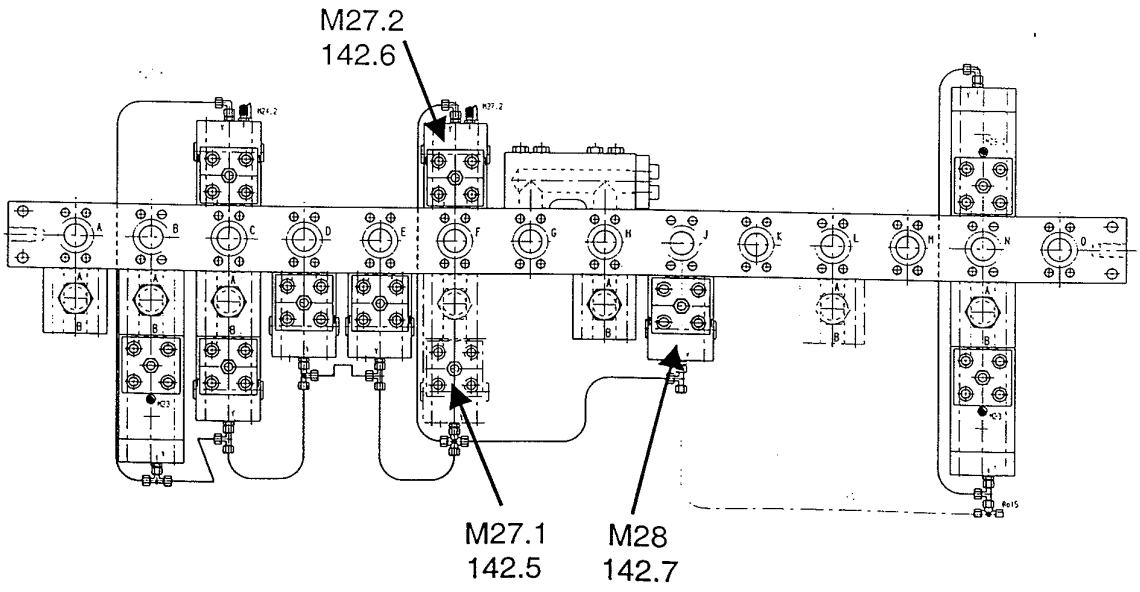
Solenoid valves Y102-1 and Y102-2

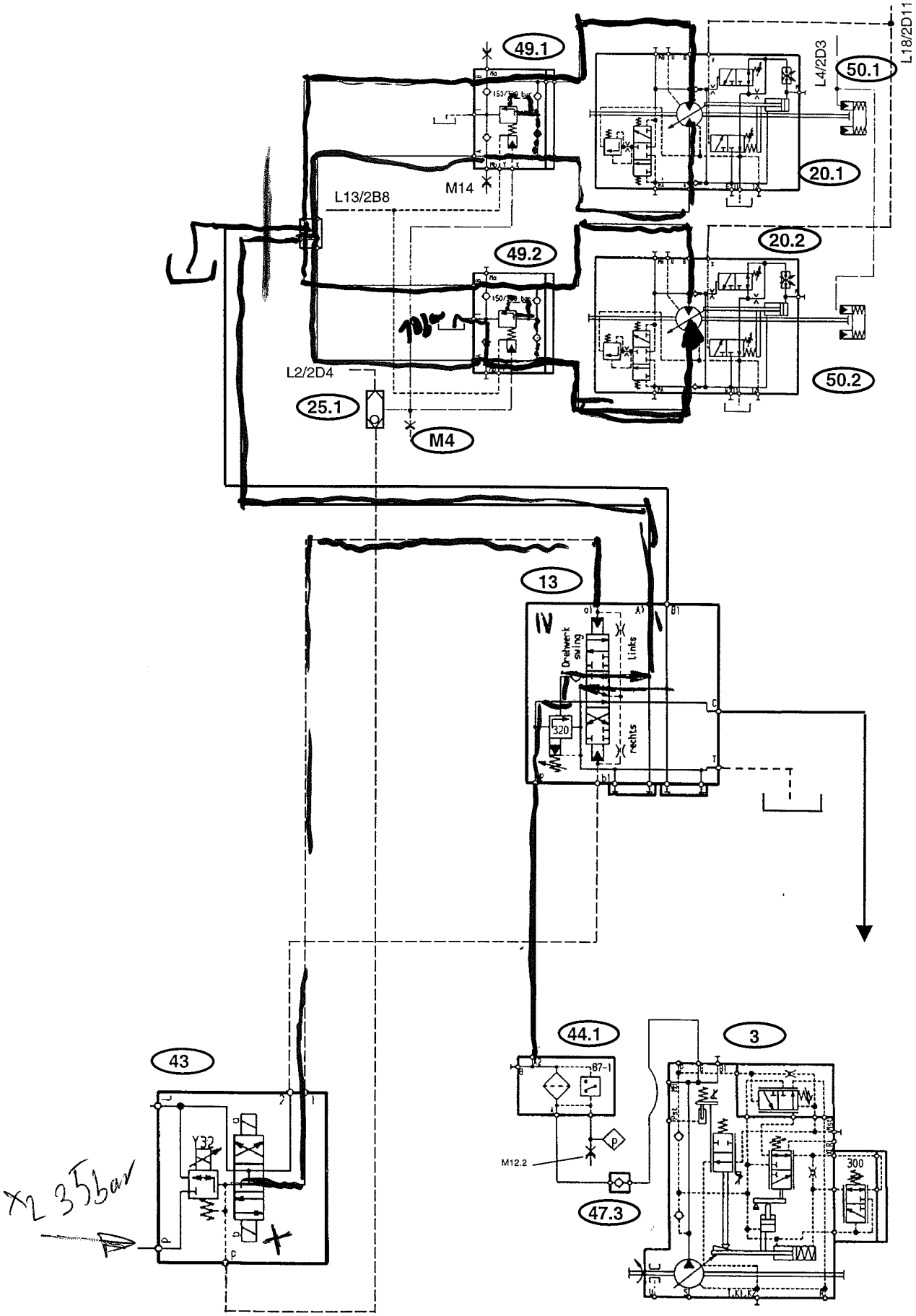
If the number of revolutions of the relevant diesel engine is less than 300 rpm the pump support pressure will be shut off and the pumps swivel in the Q_{min} position.

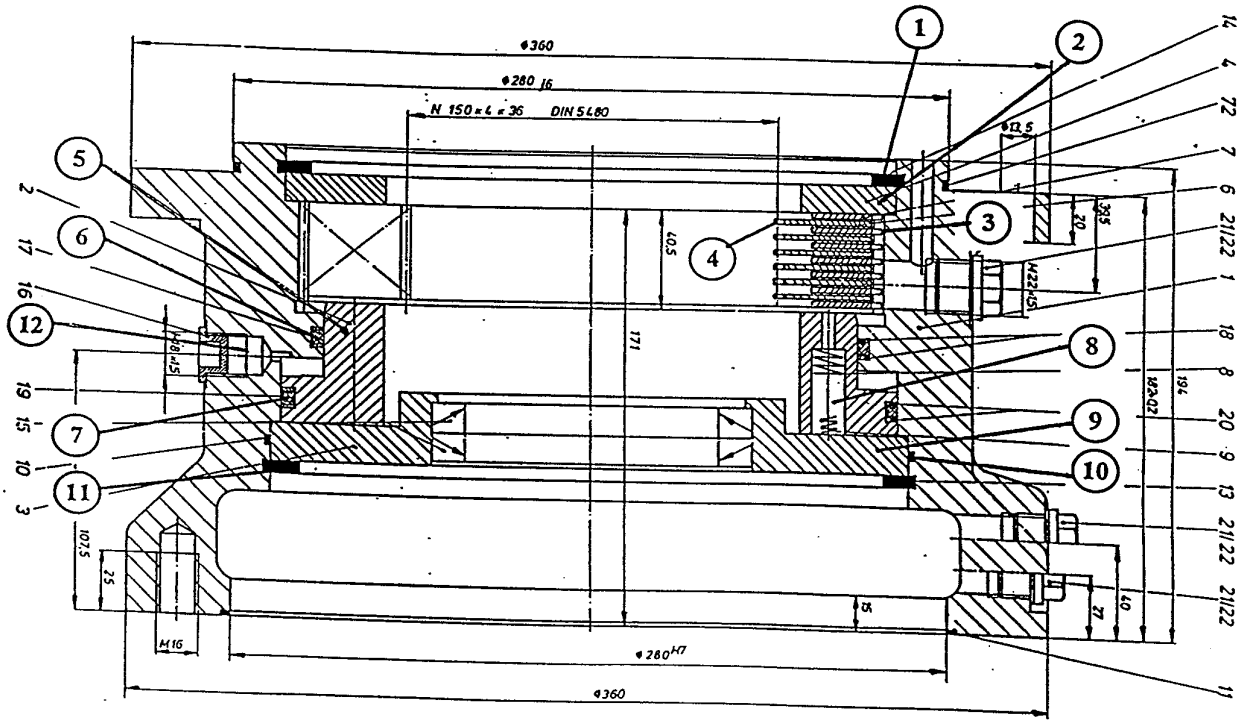

Lever unit (Joy stick)
E20
Stick autofloating
+24V DC
0 to -10 V DC
5
Ramp module
E48
7
K160a
7
11
3
9
5
1
K160a
5
A8
7-8 3
Amplifier Module
5
A8a
7-8 3
5
A8b
7-8 3
Remote control blocks
(pilot pressure)
Y21
45.1
Y21b
Y26
45.2
Y26b
Y31
45.3
Y31b
Control blocks
(high pressure)
b1 b2 b3 b4
14
15
16
a1 a2 a3 a4
29
A B C D E F G H J K L M N O
Distributor
manifold
Hydraulic cylinder

Stick

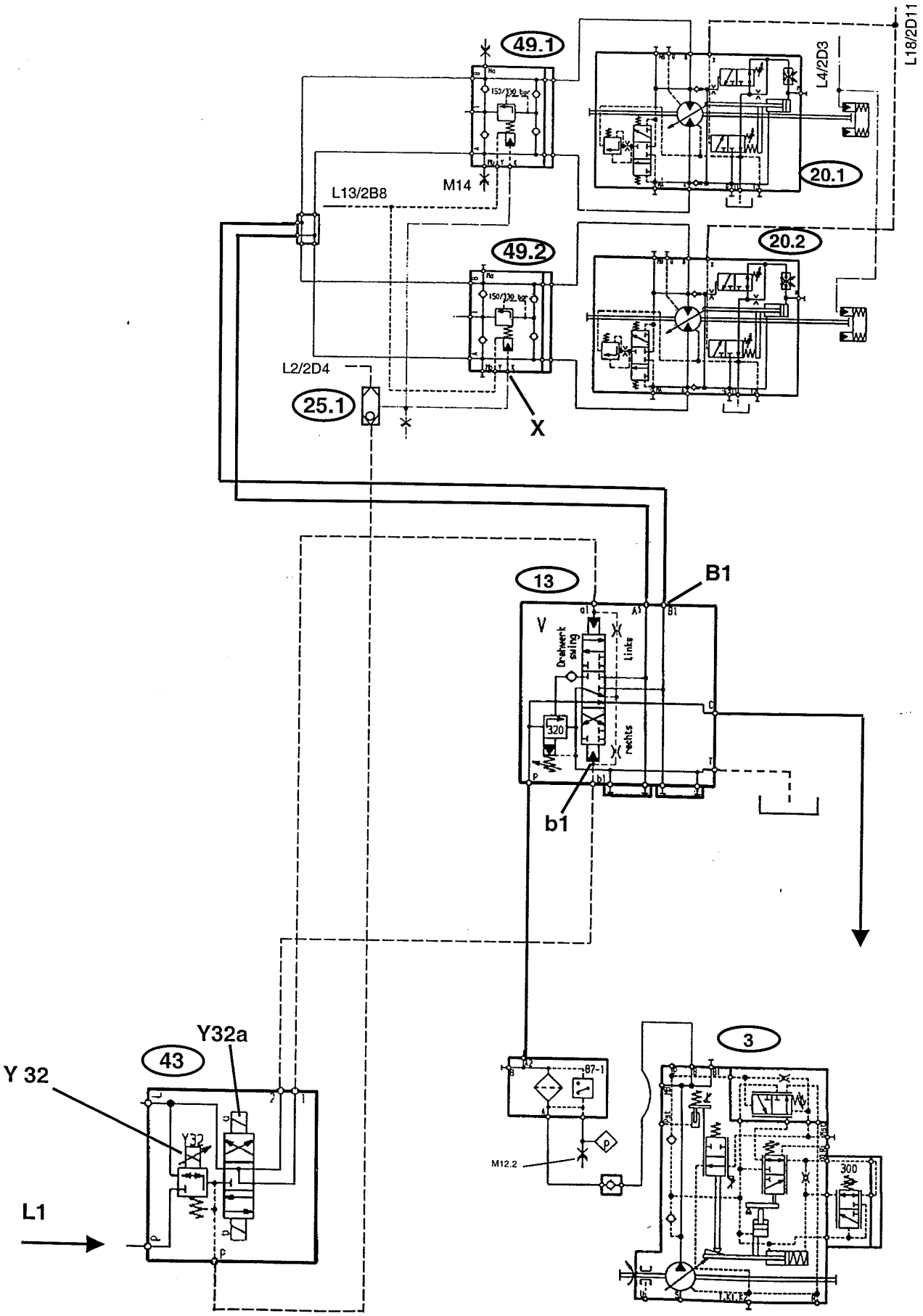

M12.1
„II“
V
M12.4
MRV
M12.3
„I“
III
32.3
33.1
MRV
MRV

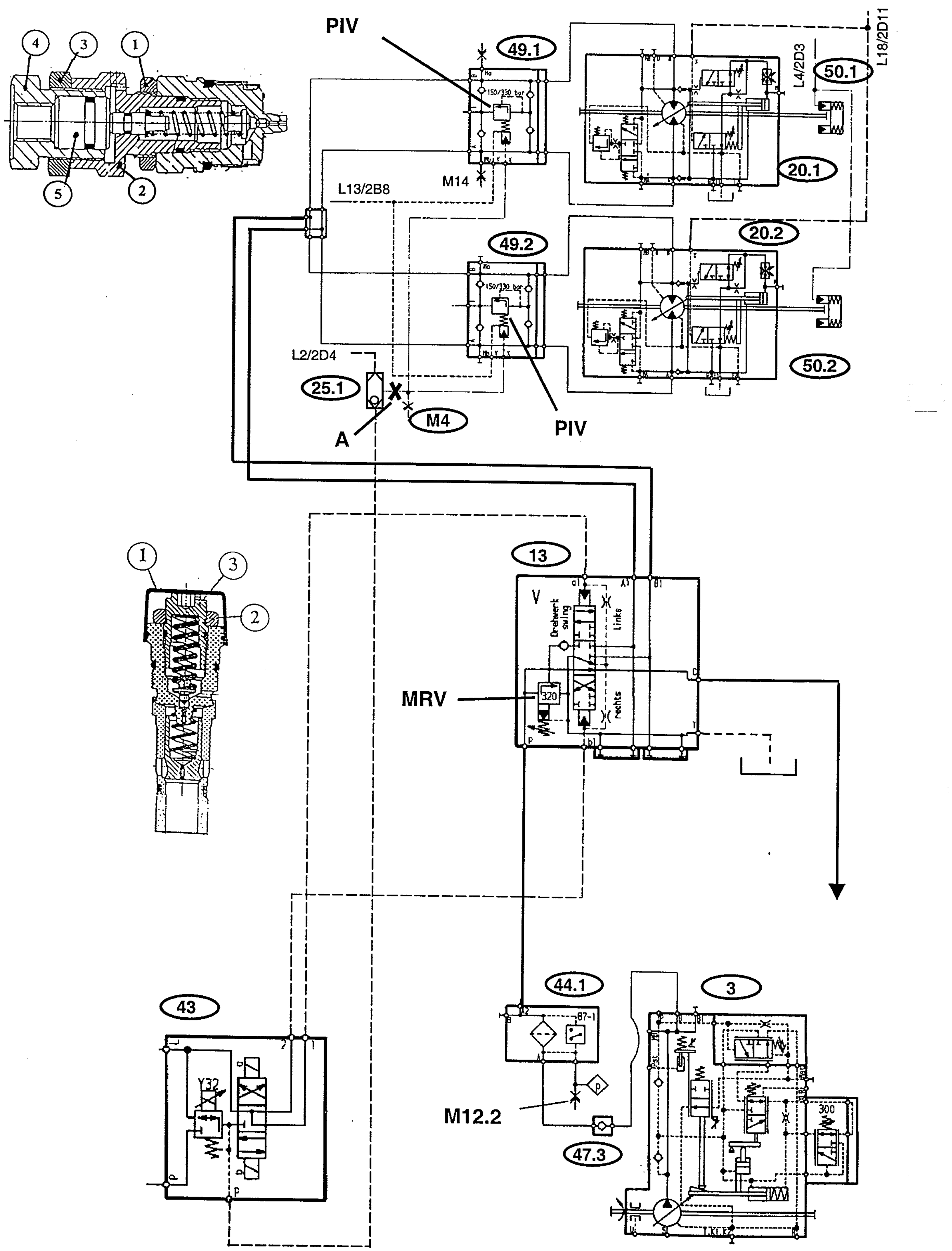

M27.2
142.6
M27.1
142.5
M28
142.7

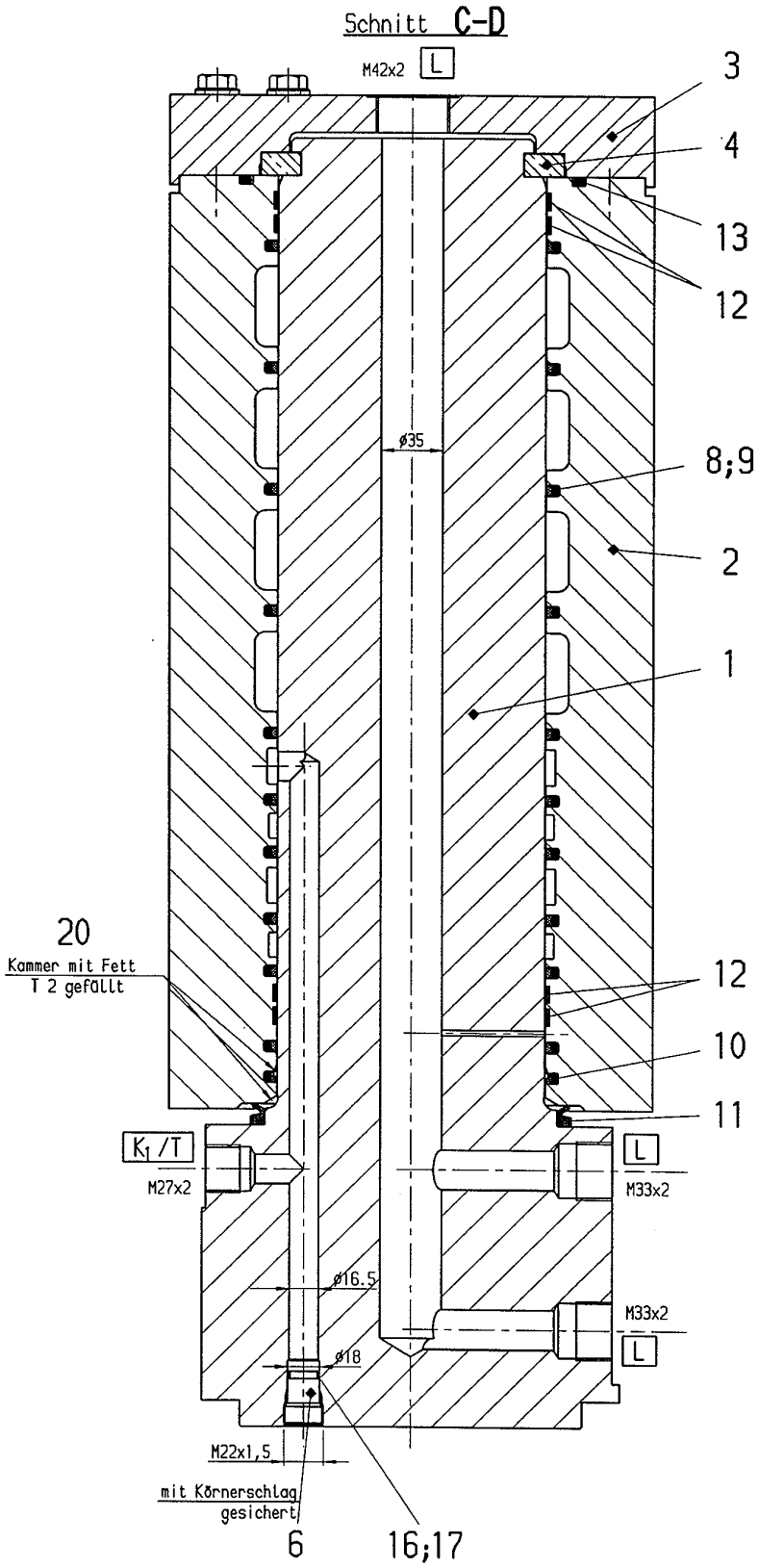

49.1
L18/2D11
L4/2D3
50.1
20.1
M14
L13/2B8
49.2
20.2
L2/2D4
50.2
25.1
M4
13
Drehwerk
swing
Links
rechts
320
44.1
3
43
87-1
M12.2
47.3
Y32
300

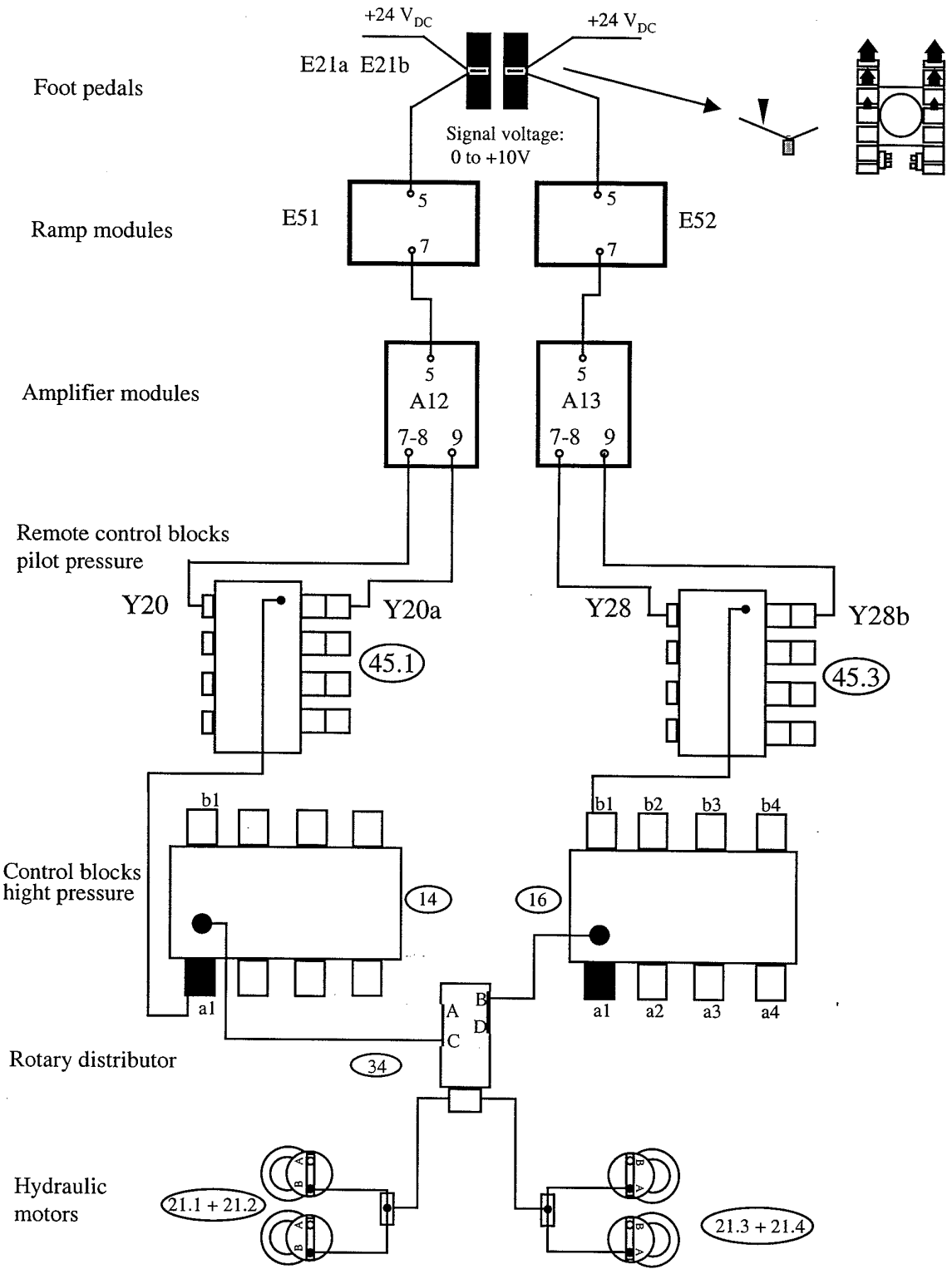

ø360
ø280 J6
N 150×4×36 DIN 5480
ø13,5
405
171
M16
ø280H7
ø360

KOMATSU
MINING GERMANY




PIV
49.1
150/330 bar
M14
L13/2B8
L18/2D11
L4/2D3
50.1
20.1
20.2
49.2
150/330 bar
L2/2D4
25.1
M4
A
PIV
50.2
13
Drehwerk
swing
links
rechts
MRV
320
43
Y32
44.1
87-1
3
300
M12.2
47.3


Schnitt C-D
M42x2 L
3
4
13
12
ø35
8;9
2
1
20
Kammer mit Fett
T 2 gefüllt
12
10
11
K1 /T
M27x2
L
M33x2
ø16.5
M33x2
L
ø18
M22x1,5
mit Körnerschlag
gesichert
6
16;17


+24 V DC
+24 V DC
E21a E21b
Foot pedals
Signal voltage:
0 to +10V
Ramp modules
E51
E52
5
7
Amplifier modules
A12
A13
7-8 9
Remote control blocks
pilot pressure
Y20
Y20a
Y28
Y28b
45.1
45.3
Control blocks
hight pressure
14
16
b1
b2
b3
b4
a1
a2
a3
a4
Rotary distributor
34
A
B
C
D
Hydraulic
motors
21.1 + 21.2
21.3 + 21.4

- **Normal operating position:**
  Cock 54.1 + 54.4closed,
  cocks 54.2 + 54.3 open.

The pilot pressure (X4) flows via Y128 and Y129, the cock (151) and the orifice, the two non return valves (57.1 + 57.2) and the cocks (54.2 + 54.3) into the tensioning cylinder (62.1 - 62.4).
The resulting force moves the guide wheels toward the front, until the correct track tension is obtained.
Simultaneously the system is connected to the pressure increasing valve (55.1 + 55.2).
External forces acting upon the guide wheels are absorbed by the pressure accumulators (60.1 + 60.2) and (59.1 + 59.2).
By the pressure increasing valve (55.1 + 55.2) the system is protected against overpressure.

Reason for the pressure increasing valve
Following system function results because of the pressure increasing valve function (description see page 5):
With stopped engine and switched off ignition is no pilot pressure (X4) at the pressure increasing valve (55.1 + 55.2) and only the lowest adjusted pressure of 35bar remains in the system. By this function is at any time when the excavator is parked the system pressure discharged to 35bar.
As soon as the engine has been started is the pilot pressure (X4) of 60 bar present at the pressure increasing valve and the system is with the max. adjusted pressure of 310 bar protected.

Setting procedure (Valve 55.1)

a) Loosen lock nut (2).

b) Adjust pressure with set sleeve (3).

c) Secure adjustment by tightening lock nut (2).

d) Re-check pressure setting.

e) Re-set MRV to 310 + 5 bar after the check / adjustment is finished.

10. The low pressure setting of the pressure increasing valve must now be reset (with still disconnected hose (S)) by following procedure:
    Stall the clam cylinder and:
    a) loosen lock nut (4) and turn set sleeve (5) ccw until gauge at check-point M15.1 shows 60 bar.
    b) Tighten lock nut (4).
    c) Recheck pressure setting.
11. Re-connect the pilot pressure line (S).
12. Switch OFF the engine and open cock (54.1) to allow pressure relieve.
13. Remove the hose (M).
14. Replace special check union by the original one (M31.1).
15. Close the cock (54.1).

- **Pay attention that always the pressure supply from the high pressure filter is connected to the same side the pressure is being checked.**

CENTRAL REFILLING SYSTEM

(8.3+8.6)	Pumps
(84.1+84.2)	Check valves
(68.1)	Filter
(70.1)	Pressure relieve valve (60bar)
(70.2)	Pressure relieve valve (35bar)
(162.1+162.2	Check valves
(163)	Refilling arm cylinder
(161)	Orifice
Y124c	Solenoid valve: release of the Central Refilling System
Y124a+b	Solenoid valve: Refilling arm up or dawn

Function:

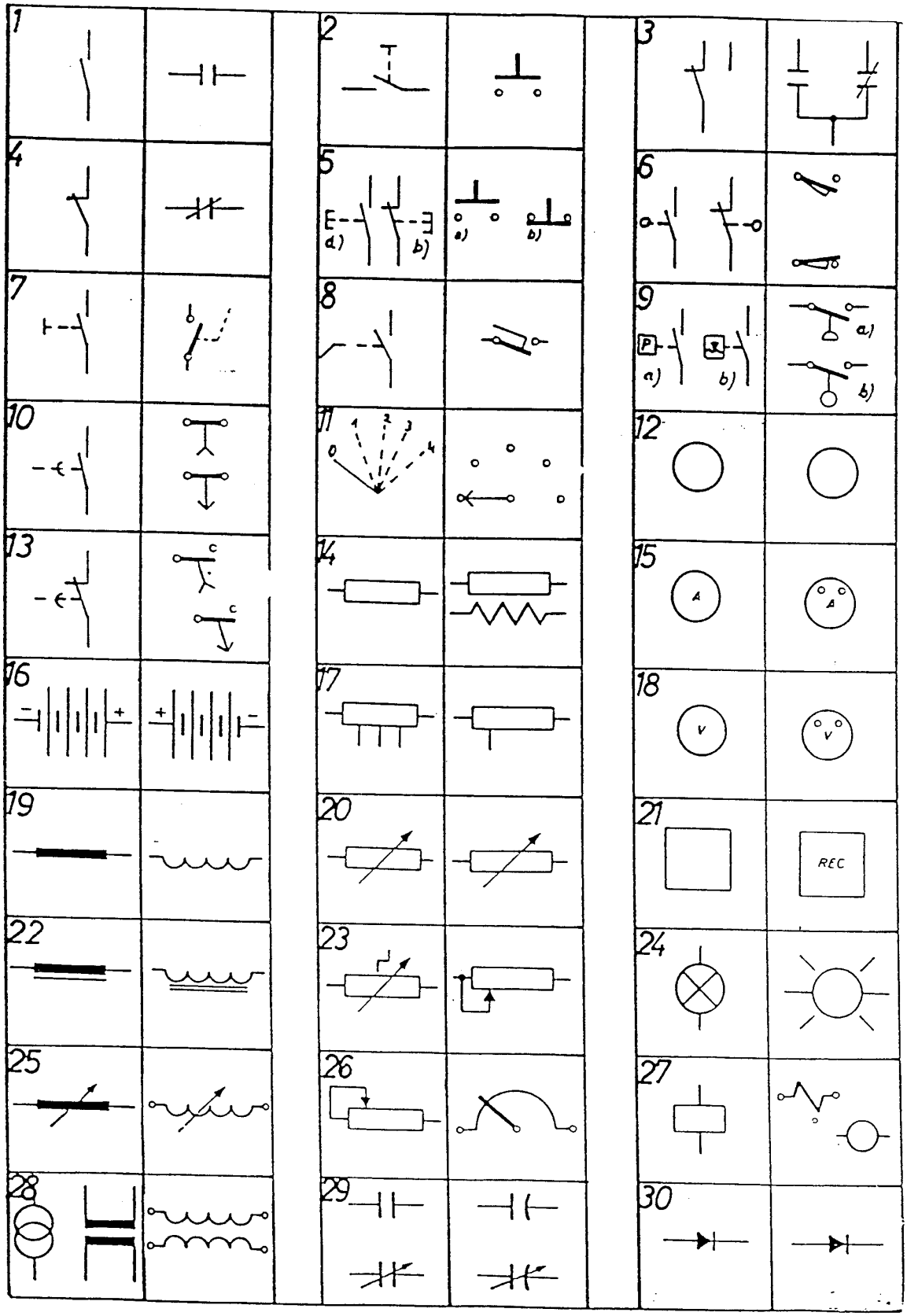
1. The engine is running

The pumps (8.3) and (8.6) are delivering the oil through the filter (68.1) to port P of the solenoid valve Y124a/b and the pressure relief valve (70.1) port A. The pressure relief valve (70.1) maintains the adjusted pressure of maximum 60 bar.

If the solenoid valve Y124 a or b is energised the solenoid valve Y124c is also energised. The oil flows to the arm cylinder and the arm will go up or down.

The return oil flows directly to the solenoid valve Y124a/b and further through the orifice 161 to the tank.

If the arm is in one of the end positions both solenoid valves are closed. The upper position is controlled by a sensor (S23). If the arm is fully up the sensor contacts are closed. This is one of the preconditions for the pilot pressure.


1
2
3
4
5
a)
b)
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7
8
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P
a)
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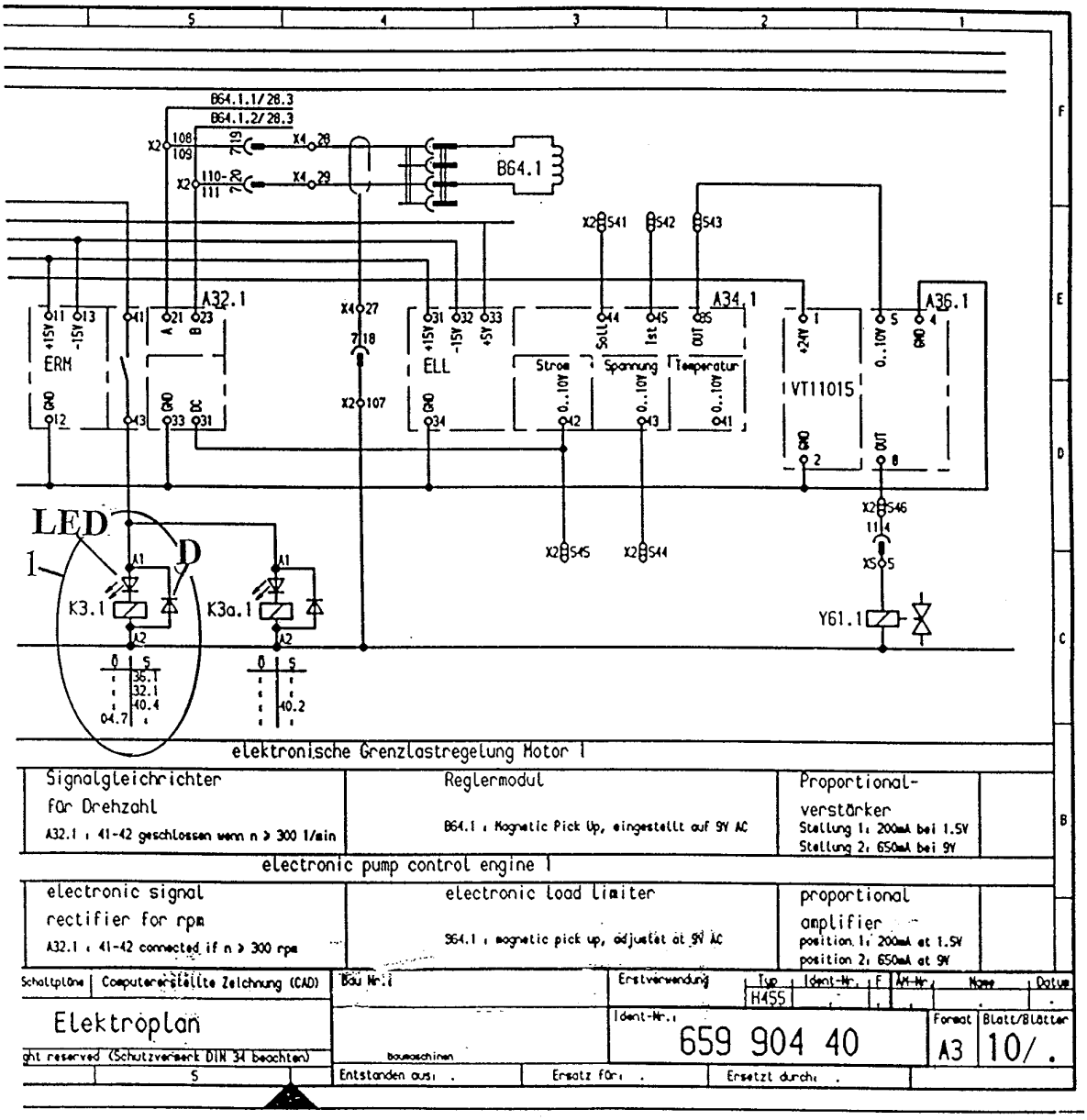

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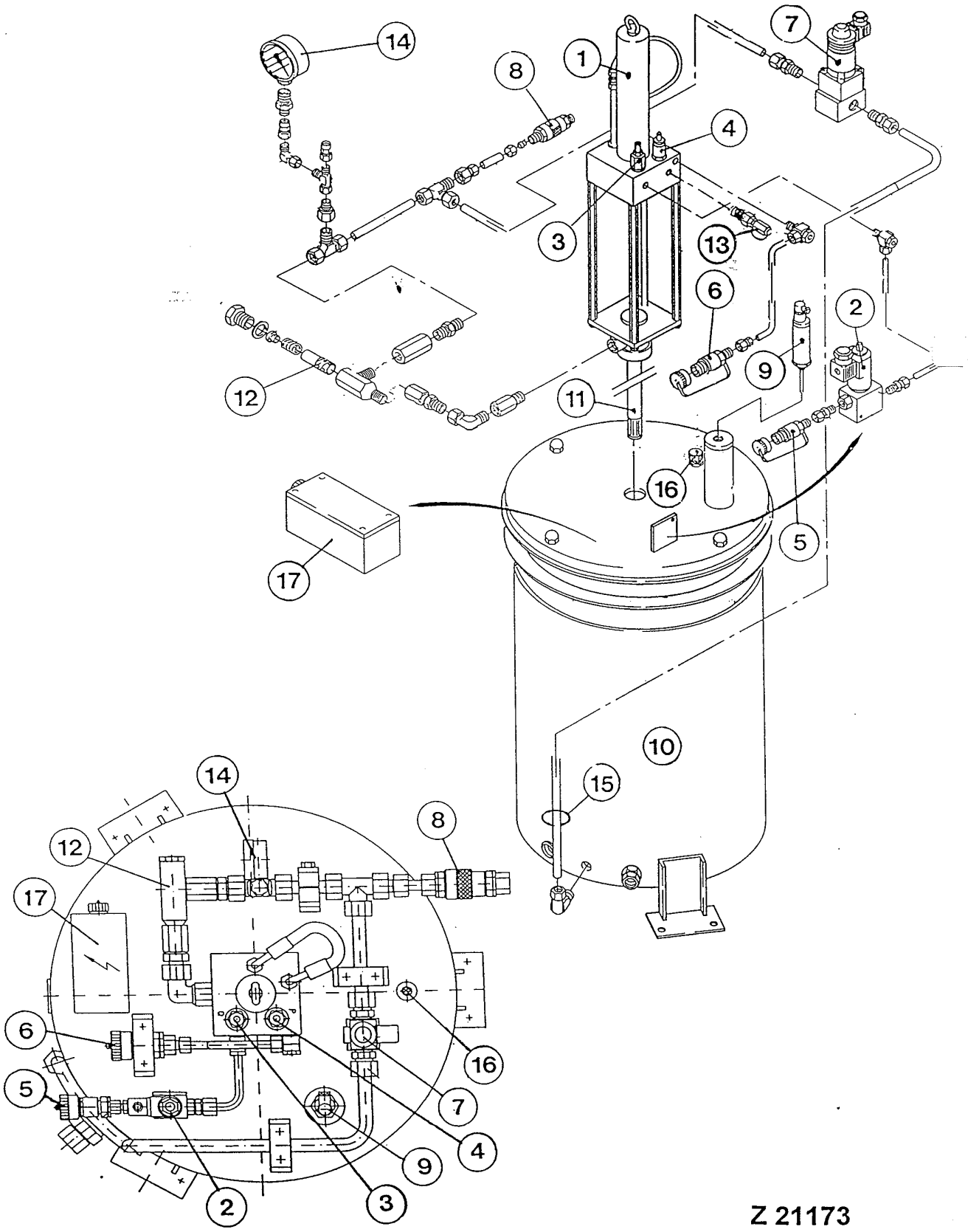

Z 21173

Cont'd.

Illustr. Z 21176

When all injector pistons have reached their final position no more lubricant is accepted from the supply line which causes a pressure increase in the supply line (8).

As soon as the pressure reaches the value adjusted at the **end-of-line switch** 16 the solenoid valves (2 + 7) get **de-energized** and the lubricant pump will be switched **Off**.

The **de-energized** solenoid valve (7) causes the port to the vent line (15) (return line to the lubricant container) is opened to the barrel, thus the main line being discharged.

With the diminishing pressure in the main line the pistons of the injectors (18) are forced by spring force in their initial position and the discharge chambers are filled with grease for the following lubrication cycle.

The system is prepared for the following lubrication cycle. The operation is re-initiated after the next "**Pause Time**" is elapsed.

The proper build-up of the pressure in the supply line 8 is monitored by the **end-of-line switch** (16).

If the pressure adjusted at the end-of-line switch is not reached within the adjusted "**Monitoring Time**" the fault message **"Central lubrication system fault"** is shown on the text display and the pump is switched off

- **If the message "Pressure switch for the central lubrication system actuated" is shown it refers to a faulty or not functioning switch or to an in closed position sticking vent valve (7).**

- **Grease qualities to be used:**
  According to NLGI classes 000, 00, 0 and 1 according to the lowest ambient temperature in the operation area

1. **The content of molybdenum must not exceed 5 %.**
2. **Only synthetic graphite allowed in graphite contained lubricants**

Cont'd:

Injectors, illustr. Z 21181

Series SL-1 injector:
Lubricant output adjustable from .13 up to 1.3 ccm per cycle. Hydraulic type fitting with screw type cover cap is provided for initial filling of feeder line, and may also be used for visual check of injector operation.
Series SL-1 injectors incorporate a stainless steel visual indicator.

Series SL-11 injector:
Lubricant output adjustable from .82 up to 8.2 ccm per cycle.
Designed for systems where a high amount of lubricant is required.
Principle of operation similar to series SL-1.

Adjusting the lubricant output:

1. Loosen lock nut (C).
2. Turn adjusting screw (A) counterclockwise (OUT) for more lubricant output or clockwise (IN) for less lubricant output.
3. Tighten lock nut (C).

- **The max. lubricant output is adjusted if the indicator stem (B) moves not more further outwards**

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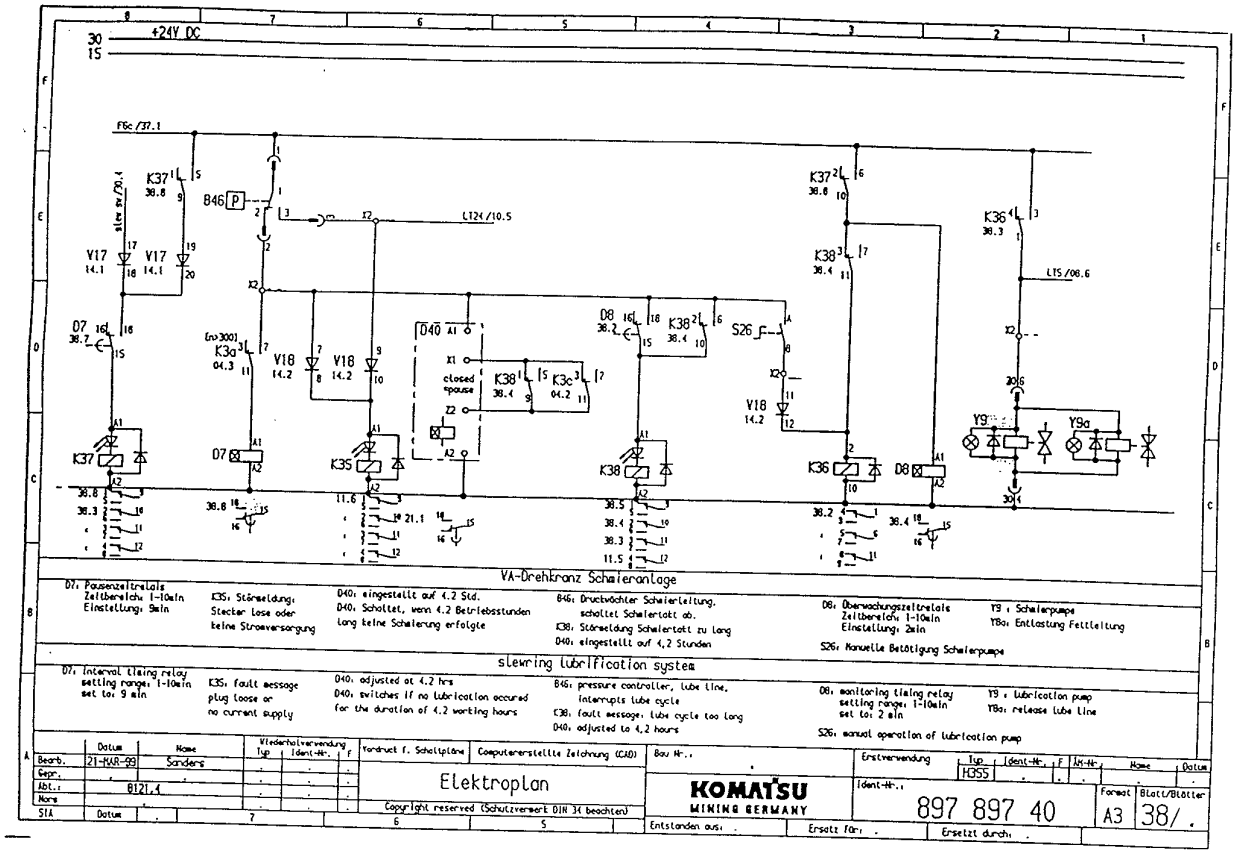

VA-Drehkranz Schaieranlage

D7: Pausenzeitrelais
Zeitbereich: 1-10min
Einstellung: 9min

K35: Störmeldung:
Stecker lose oder
keine Stromversorgung

D40: eingestellt auf 4.2 Std.
D40: Schaltet, wenn 4.2 Betriebsstunden
lang keine Schalerung erfolgte

B46: Druckwächter Schmierleitung,
schaltet Schalerzeit ab.
K38: Störmeldung Schalerzeit zu Lang
D40: eingestellt auf 4,2 Stunden

D8: Überwachungszeitrelais
Zeitbereich: 1-10min
Einstellung: 2min

S26: Manuelle Betätigung Schalerpumpe

Y9 : Schalerpumpe
Y8: Entlastung Fettleitung

slewing lubrification system

D7: Interval timing relay
setting range: 1-10min
set to: 9 min

K35: fault message
plug loose or
no current supply

D40: adjusted at 4.2 hrs
D40: switches if no lubrication occured
for the duration of 4.2 working hours

B46: pressure controller, lube line,
interrupts lube cycle
K38: fault message, lube cycle too long
D40: adjusted to 4,2 hours

D8: monitoring timing relay
setting range: 1-10min
set to: 2 min

S26: manual operation of lubrication pump

Y9 : lubrication pump
Y8: release lube line

	Datum	Name
Bearb.	21-MAR-99	Sanders
Gepr.		
Abt.:	B121.1	
Norm		
SIA	Datum	

Wiederholverwendung Typ | Ident-Nr. | F

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

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Bau Nr.:

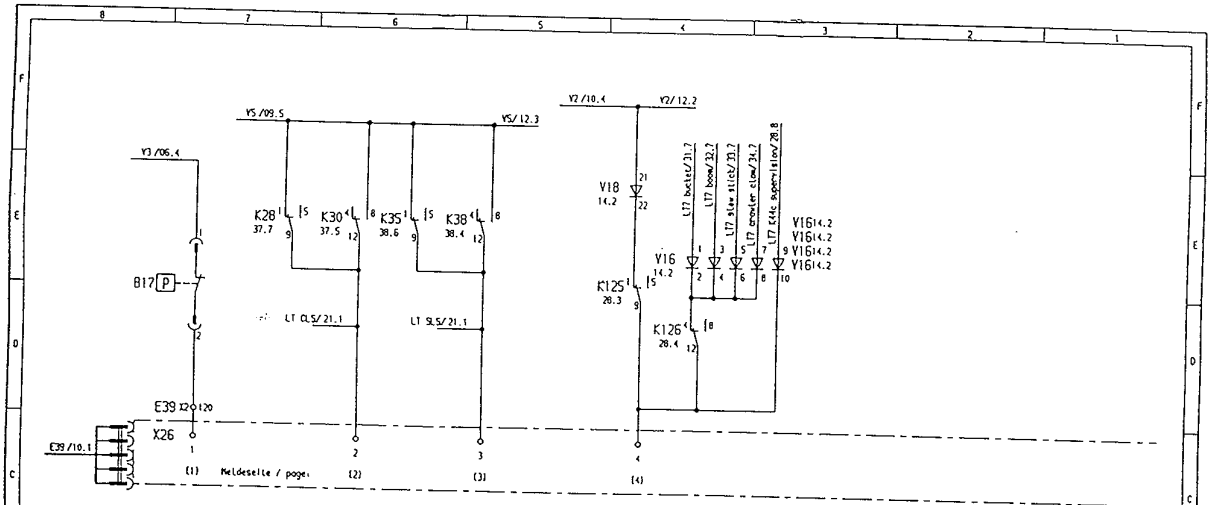
KOMATSU
MINING GERMANY

Ersatz für: | Ersetzt durch:

Erstverwendung | Typ | Ident-Nr. | F | Zu-Nr. | Name | Datum
HD55

Ident-Nr.: 897 897 40

Format A3 | Blatt/Blätter 38/.



Eingangsmeldemodul (Slave)

Getriebeschmierung	Störung Schmieranlage		Vor-
B17 : Schaltpunkt 0.5bar	Zentralanlage	Drehkranz	steuerung

pickup module unit (slave)

pump distributor gear lubrication	Fault lubrification system		pro-
B17: switch. point 0.5bar	central system	slew ring	portional controll.

	Datum	Name
Bearb.	21-MAR-99	Sanders
Gepr.		
Abt.:	B121.1	
Norm		
SIA	Datum	

Wiederholverwendung Typ | Ident-Nr. | F

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

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Bau Nr.:

KOMATSU
MINING GERMANY

Ersatz für: | Ersetzt durch:

Erstverwendung | Typ | Ident-Nr. | F | Zu-Nr. | Name | Datum
HD55

Ident-Nr.: 897 897 40

Format A3 | Blatt/Blätter 11/.

Z 21184

Hydraulically driven "Power Master III" lube pump, illustr. Z 21186

Legend: (more detailed see parts list page 991-0266)

(P) Hydraulic oil supply
(T) Hydraulic oil return
(Pr) Pressure reducing valve
(Q) Flow regulator valve
(1) Hydr. actuator piston
(2) Oscillator control block
(3) Pump tube
(4) Breather port
(5) Grease outlet port
(6) Piston rod
(7) Breather plug
(8) Ball, outlet check valve
(9) Ball and seat, check valve
(10) Main piston and plunger
(11) Piston rot set
(12) Inlet valve
(13) Scoop piston
(14) Grease inlet

HINT:

Loss of pressure, volume or to long operation of pump when not in normal use indicates:

A Foreign material lodged under inlet valve (13) or between upper and lower inlet checks (8 + 9).
To correct this problem the upper and lower inlet checks (8 + 9) and inlet valve (13) should be removed and cleaned thoroughly.
If sealing surfaces of the seats on the upper and lower inlet checks (8 + 9) are rough or pitted, replace or resurface if damages are slight.

B Rod Packing (15) worn or damaged. Before installing new packing, inspect surface of Rod and replace if rough or pitted.
Do not grip with player when disassembling Scoop piston (13) and lower pump tube assembly.

continued

End-of-line switch

Task:

The pressure control unit is monitoring and controlling the centralized lube system.

Design: illustr. Z 21190

(1) Piston
(2) Disk
(3) Switch contact
(4) Spring
(5) Pressure switch
(6) Adjustment sleeve
(7) Connection to pressure circuit
(8) Electrical connection

Function:

One pressure control unit is installed in each greasing circuit. The grease pressure, produced by the pneumatic barrel pump, is with his force also at the piston (1)

If the grease pressure reaches the tension of the spring (4), the piston (1) is forced against the disk (2), thus that the contacts of the switch (5) are operated and a electric impulse is given to the electronic control unit of the greasing equipment.

Adjusting has to be done with the sleeve (6). Clockwise - higher switch point, counterclockwise - lower switch point.

74.02		E 2		
78.01		E11		
78.02		E11		
78.03		E 4		
78.04		E 3		
78.05		E10		
78.06		E 4		
78.07		D 1		
78.08		B 6		
78.11		E 6		
78.12		E10		
78.14		D 8		
78.15		D 1		
79.01		E11		
79.02		E 4		
80.01		E10		
80.02		E 4		
81.01		E11		
81.02		E10		
82.01		E 5		
82.02		E 3		
83		E 5		
84.01		F 9		
84.02		F 8		
85		E 5		
89.01		E 8		
89.02		E 1		
90.01		D 5		
90.02		D 4		
90.03		E10		
90.04		E 4		
91		E 5		
92.01		H11		
92.02		H10		
92.03		H 8		
92.04		H 5		
92.05		H 4		
92.06		H 2		
C1	F 3	A 5		
C2	F 2	A 5		
L1	C11	D 5		
L2	G 3	D 4		
L3	F 1	D 5		
L4	H 1	D 3		
L5	C11	B 7		
L6	F 4	A 5		
L7	F 4	A 5		
100.01		C 9		
100.02		C 2		
101.01		C 9		
101.02		B 2		
101.03		B 9		
103.01		B 3		
103.02		A 3		
103.03		C10		
103.04		C 2		
105.01		B 4		
105.02		B 4		
105.03		A 4		
105.04		A 4		
106.01		B 4		
106.02		B 4		
106.03		A 4		
106.04		A 4		
107.01		B 4		
107.02		B 3		
107.03		A 4		
107.04		A 3		

D: Häufig gestellte Fragen:

-- 1. Wie werden Relais dargestellt?
(Bild a): Relais werden getrennt als Spule und Kontakt(e) dargestellt. Zu dem Symbol "Spule" (a1) gehört der Name (a2) "K6" und die Klemmenbezeichnung (a3): "A1" und "A2". Unter der Spule wird gezeigt, welche Kontakte (a4) "1", "5", "9" geschaltet werden und auf welchem Blatt diese verwendet werden (a5) "04.4", also auf Blatt "04" in Spalte "4". Dort werden die Kontakte eingesetzt (a6), ebenfalls mit dem Namen (a7) "K6" und dem Hinweis, auf welchem Blatt die Spule zu finden ist (a8) "04.5": Blatt 4 in der Spalte 5.
-- 2. Was bedeutet die Skizze unter den Zeitrelais?
(Bild b): Sie zeigt, wie die unterschiedlichen Zeitrelais (b1, b2, b3) reagieren. Oben ist das Eingangssignal dargestellt (b4) (wann das Zeitrelais mit (+) verbunden ist), unten das Ausgangssignal (b5) (wann die Kontakte schalten). Beispiel in Bild b: 20 Sekunden (b6) "20s" nachdem das Relais aktiviert wurde (b7) schaltet das Relais seinen Kontakt (b8). Werden die "20s" nicht erreicht (b9), wird der Kontakt nicht geschaltet (b10).
-- 3. Was sind Potenzialverweise?
(Bild c): Wenn Verbindungen über mehrere Blätter verteilt verlaufen, erhalten Sie einen Potenzialverweis. Das Potenzial mit Namen "lamp" (c1, c2) wird auf Seite 11 (c3) und auf Seite 18 (c4) verwendet. (c5) zeigt: Das Potenzial wird auf Blatt "18.2" weitergeführt. (c6) zeigt: Das Potenzial kommt von Blatt "11.3".
-- 4. Was sind Dioden?
(Bild d): Dioden (d1) lassen Strom nur in einer Richtung passieren: Nur wenn das Dreieck (d2) an Plus und der Strich (d3) an Minus ist. (d4) zeigt den Namen der Diode und (d5) gibt an, daß diese Diode zu einem Bauteil (Diodengatter) gehört, das auf Blatt "17.2" gezeigt wird. Mit zwei Pfeilen (d6) wird eine Leuchtdiode (LED) markiert.
-- 5. Bauteile auf mehreren Blättern?
(Bild e): Geräte können verteilt auf mehrere Blätter dargestellt werden. Das Gerät "E24" ist zum Teil auf Blatt "34" dargestellt, ein anderer Teil ist auf Blatt "39" zu finden. Verweise (e1) "39.8" und (e2) "34.1" zeigen jeweils die zugehörigen anderen Blätter.
-- 6. Kabelquerschnitte und Aufdruck?
(Bild f): Der Querschnitt für ein Kabel (f1) wird bei (f2) angegeben. Eine Kabelbedruckung wird bei (f3) gezeigt: "K73.2". Der Querschnitt gilt für alle nachfolgenden Kabel bis Masse.
-- 7. Farbbezeichnungen:
(Bild e): be: beige, bl: blau, br: braun; ge: gelb, gn: grün, gr: grau, or: orange, rs: rosa, rt: rot, sw: schwarz, vio: violett, ws: weiß.
-- 8. Bezeichnung der Bauteile:
A: Steuergerät, B: Sensor, C: Kondensator, D: Zeitrelais, E: Elektronisches Gerät, F: Sicherung, G: Batterie, Generator, H: Lampen, Hupe, K: Relais, M: Motor, P: Meßgerät, R: Widerstand, S: Schalter, T: Transformator, V: Dioden, X: Klemme, Stecker, Y: Ventil.
-- 8. Bezeichnung der Klemmen:
X1: in der Kabine, X2: im Kabinenuntersatz, X2A: Not-Aus, X2B: Batterie, X2C: Kabine, X2D: Hochdruckfilter / Pumpen, , X2E: Zahnkranz / Leiter, X2F: Fernsteuerplatten, X2H: Hydrauliktank, X2K: Betankung, X2L: Beleuchtung / Fahralarm / Fahrerwarnanlage / Temperatur, X2M: Motor-1 / Motoröltank-1, X2N: Motor-2 / Motoröltank-2, X2R: Ritzelschmieranlage, X2S: Steuer+Filterplatte-1, X2T: Steuer+Filterplatte-2, X2V: (Varianten) Feuerlöschanlage, X2Y: Ventile, X2Z: Zentralschmieranlage.
-- 9. Mathematische Zeichen
">" bedeutet "größer als", z. B. "rpm > 300". "<" bedeutet "kleiner als".
.
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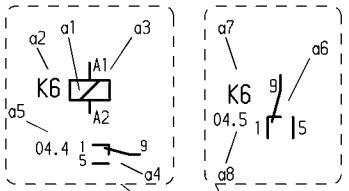

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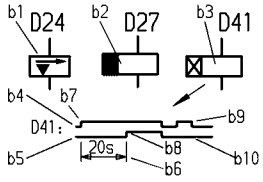


Bild / figure b

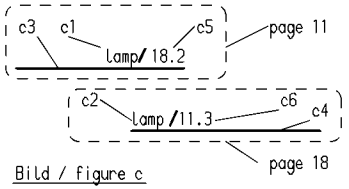


Bild / figure c

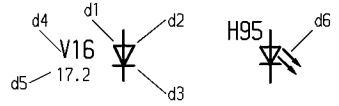


Bild / figure d

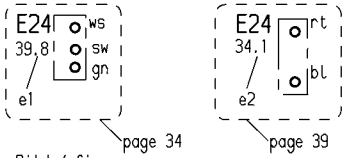


Bild / figure e

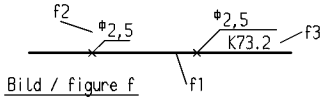


Bild / figure f

E: FAQ: Frequently asked questions

-- 1. How are relays represented ?
(see illust. a): A relay is shown divided in coil and contact(s). To the symbol coil (a1) belongs the name (a2) "K6" and the terminal designation (a3): "A1" and "A2". Below the coil is shown which contacts (a4) "1", "5", "9" are operated and on which page they are used (a5): "04.4". That means on page "04" in column "4". At that page, the contacts are shown again (a6) with the name (a7) "K6" and a note on which page the coil can be found: (a8) "04.5": Page 4 in column 5.
-- 2. What is the meaning of the sketch below the time relay ?
(see illust. b): It shows how the different time relays react. On top a input signal is shown (b4), below the output signal (b5). Example in illust. b: 20 seconds (b6) "20s" after activation of the relay (b7) the relay switches its contact (b8). If the "20s" will not be obtained (b9), the contact will not be switched (b10).
-- 3. What are references ?
(see illust. c): If connections are shown divided on several pages then they have a reference mark. The potential with the name "lamp" (c1, c2) is used on page 11 (c3) and on page 18 (c4). (c5) shows: The potential will be continued on page "18.2". (c6) shows: The potential comes from page "11.3".
-- 4. What are diodes ?
(see illust. d): Diodes (d1) let the current flow only in one direction: Only if the triangle (d2) is connected to "Plus" and the line (d3) to "Minus". (d4) indicates the name of the diode and (d5) informs that this diode belongs to a diode array shown on page "17.2". A LED is marked with two arrows (d6).
-- 5. Parts shown on several pages.
(see illust. e) Electrical devices can be represented distributed on several pages. The device "E24" is partially represented on page "34" another part of it you find on page "39". The references (e1) "39.8" and (e2) "34.1" indicate respectively the other pages belonging to.
-- 6. Cable cross section and cable imprints.
(see illust. f) The cross section for a cable (f1) is shown at (f2).
A cable imprint is shown at (f3): "K73.2". The cross section applies for all following cables up to ground.
-- 7. Colour code
(see illust. e): be : beige, bl : blue, br : brown, ge : yellow, gn : green, gr : grey, or : orange, rs : punk, rt : red, vio : violet, ws : white
-- 8. Designation of electrical devices
A: Control units, B: sensors, pressure switches, C: capacitor, D: time relays, E: various devices, heating devices, air condition, lights, F: fuses, circuit breaker, G: batteries, alternators, generators, H: indicator lights, alarm, horn, K: Relay, M: motor, P: measuring instrument , R: resistor, S: switch, T: transformer, V: diodes, X: terminal, plug, Y: valve
-- 9. Designation of clips:
X1: inside cab, X2: inside cab-base, X2A: emergency shut-off, X2B: battery, X2C: cab, X2D: high pressure filter / pumps, X2E: rim / ladder, X2F: control plate assy-1., X2H: hydraulic oil tank, X2K: fuel filling, X2L: lighting / movement signal / driver warning / ambient temperature, X2M: engine-1 / engine oil tank-1, X2N: engine-2 / engine oil tank-2, X2R: slew lubrication system, X2S: hydraulic control panel-1, X2T: hydraulic control panel-2, X2V: (options) fire extinguish system, X2Y: valves, X2Z: central lubrication system.
-- 10. Mathematical symbols
">" means "more than", e.g. "rpm > 300", "<" means "less than"
.
(00-03-27_1.doc)

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.
SIA	Datum	.	7	6	5

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

FAQ: Häufig gestellte Fragen
FAQ: frequently asked questions

Bau Nr.: 15011

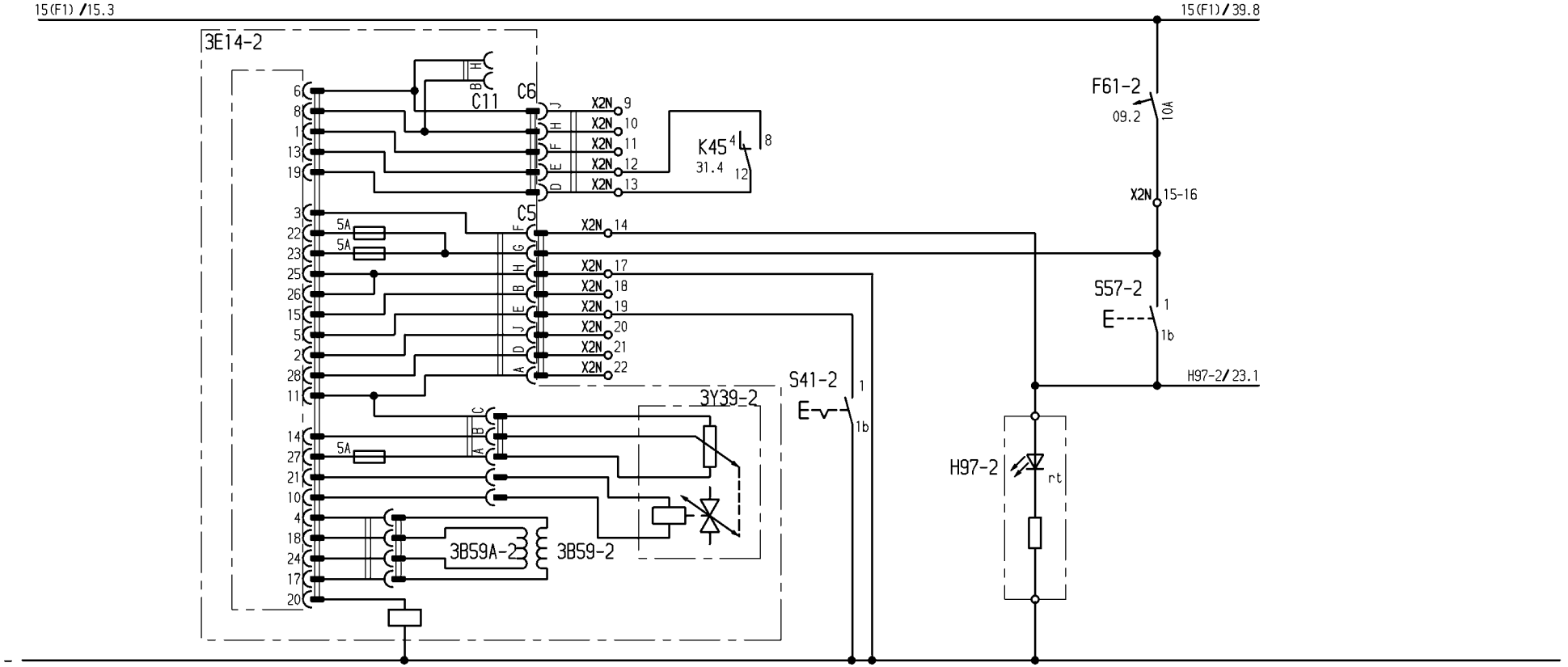
KOMATSU MINING GERMANY

Erstverw.	Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
	PC5500-1	.	.	E6422	.	.

Ident-Nr.: 897 861 40 f

Format: A3 | Blatt/Blätter: 06/ .

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .



Motor #2:Motorregler CENTRY

Regler	elektr. Rauchgas-begrenzer	Drehzahl-sensor	Kraftstoff-regelventil	Testdrehzahl 1800 1/min	Warnung und Diagnose S57-2: Taster löst Diagnoseausgabe aus	

engine #2:rpm control system CENTRY

controller	step timing control	rpm sensor	fuel control actuator	testing rpm 1800 1/min	warning and diagnostic S57-2: switch actuates diagnostic output	

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Bau Nr.: 15011

KOMATSU MINING GERMANY

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

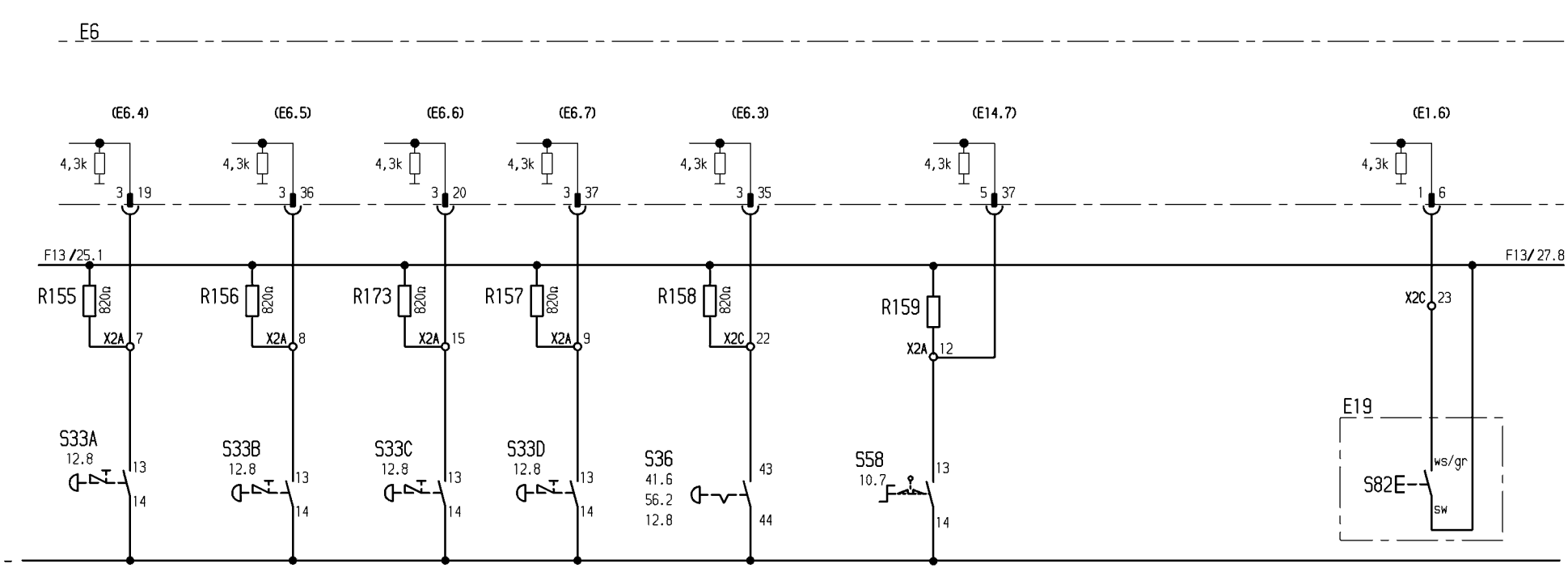
Erstverwendung	Typ	Ident-Nr.	F
	PC5500-1	.	.

ÄM-Nr.	Name	Datum
E6422	.	.

Ident-Nr.: 897 861 40 f

Format A3 | Blatt/Blätter 16/ .

SIA | Datum . | 7 | 6 | 5



SPS: Eingang Digital: Not-Aus				
Not-Aus Schalter				
Aufstieg (Wasserkühler)	Steuerblock	Pumpenraum	Maschinenhaus/ Gegengewicht	Kabine

SPS: Eingang Digital: Diverse Funktionen		
Sicherheitsschalter		Dumperzähler
S58: Sicherheitsschalter Eingang Masch.haus		S82: Taster im rechten Handhebel

PLC: input digital: emergency shut-off				
emergency shut-off switch				
ladder (water cooler)	valve block	pump room	engine house/ counterweight	cabin

PLC: input digital: several functions		
lock out switch		dumper counter
S58: lock out switch at entry mach.house		S82: switch in the right control lever

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Bau Nr.:	Erstverw.	Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
15011		PC5500-1	.	.	E6422	.	.

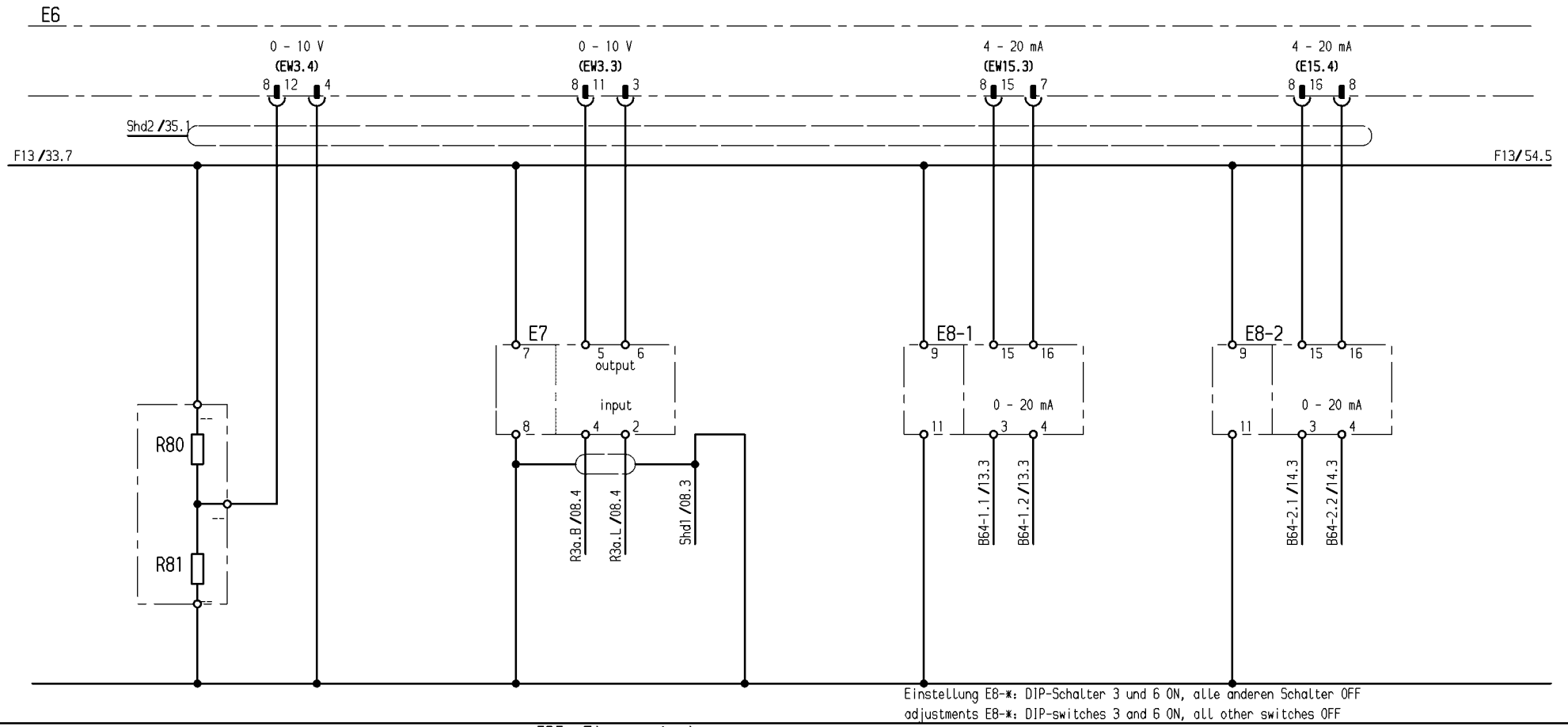
KOMATSU MINING GERMANY

Ident-Nr.: 897 861 40 f

Format A3 | Blatt/Blätter 26/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

SIA | Datum . | 7 | 6 | 5



SPS: Eingang Analog

Batteriespannung

R80 : 30.1kΩ
R81 : 10.0kΩ

Lade- / Entladestrom

E7:

Eingang	mV	-150	0	+150
Ausgang	V	2	6	10

Drehzahl

Motor 1
E8-1: wandelt Drehzahlimpulse in Normsignal 0...20mA um

Motor 2
E8-2: wandelt Drehzahlimpulse in Normsignal 0...20mA um

PLC: input analog

battery voltage

R80 : 30.1kΩ
R81 : 10.0kΩ

charge / discharge current

E7:

Input	mV	-150	0	+150
Output	V	0	6	10

rpm signal

engine 1
E8-1: converts rpm-pulses into norm signal 0...20mA

engine 2
E8-2: converts rpm-pulses into norm signal 0...20mA

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Bau Nr.: 15011

KOMATSU MINING GERMANY

Erstverw.	Typ	Ident-Nr.	F
	PC5500-1	.	.

ÄM-Nr.	Name	Datum
E6422	.	.

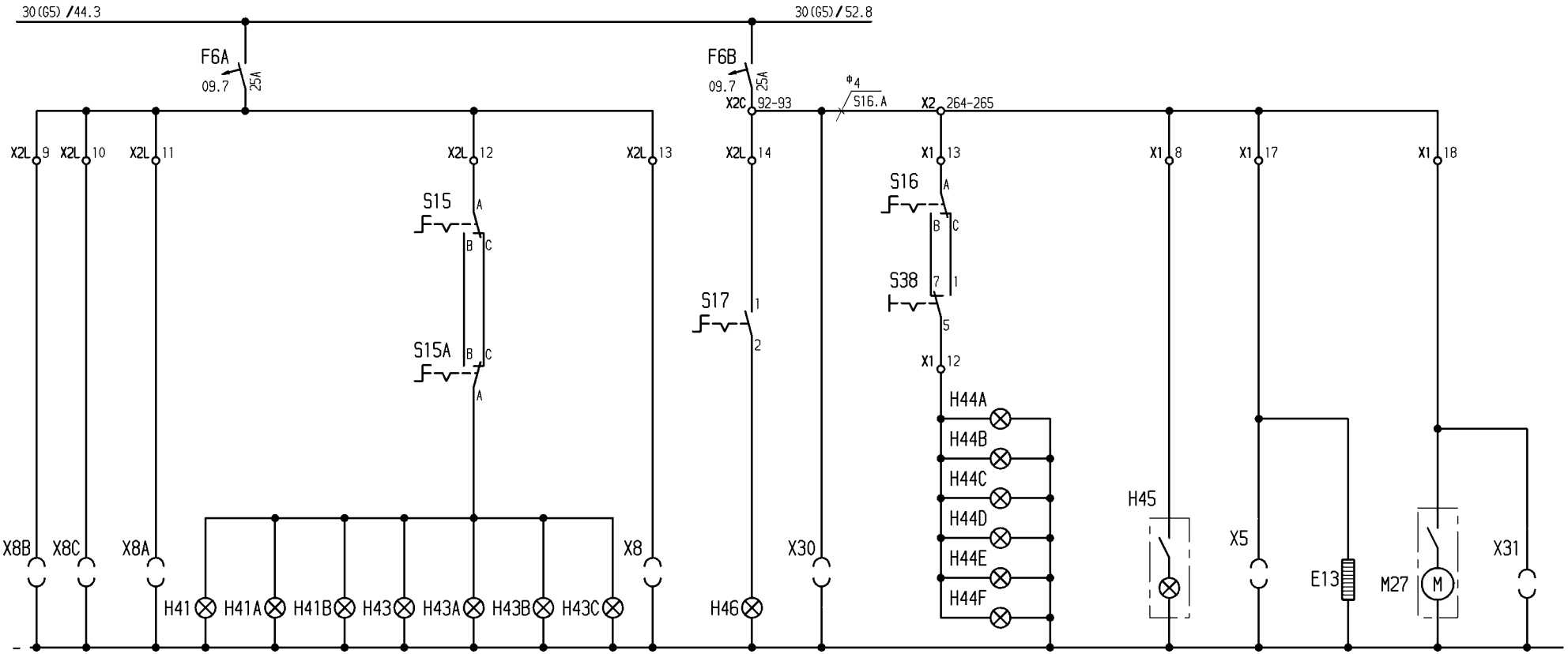
Ident-Nr.: 897 861 40 f

Format: A3

Blatt/Blätter: 36/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

SIA | Datum | . | 7 | 6 | 5



Beleuchtung: Innenbeleuchtung

Steckdosen	Pumpenraum	Motorraum	Kabinenuntersatz	Kabine Innenbeleuchtung	Kabine
X8B: PV-Getriebe X8C: Gegengewicht	H41...: Beleuchtung (je 70W) X8A: Steckdose 24V	H43...: Beleuchtung (je 70W) X8 : Steckdose 24V	H46: Beleuchtung (je 70W) X30: Steckdose 24V	S38: Schalter Kabinentür S16: Schalter Steuerpult H44...: Deckenbeleuchtung (je 20W) H45: Pantry	X5: Steckdose 24V E13: Zigarettenanzünder M27: Waschbecken, 2A, Wasserpumpe X31: Steckdose 24V Kabine außen

light: inside lights

sockets	pump chamber	engine chamber	cab support room	cab light inside	cab
X8B: pump distr. gear X8C: counterweight	H41...: Light (each 70W) X8A: socket 24V	H43...: Light (each 70W) X8 : socket 24V	H46: Light (each 70W) X30: socket 24V	S38: switch cab door S16: switch dashboard H44...: light (each 20W) H45: Pantry	X5: socket 24V E13: cigarette lighter M27: sink, waterpump X31: socket 24V outside cab

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Bau Nr.: 15011

KOMATSU MINING GERMANY

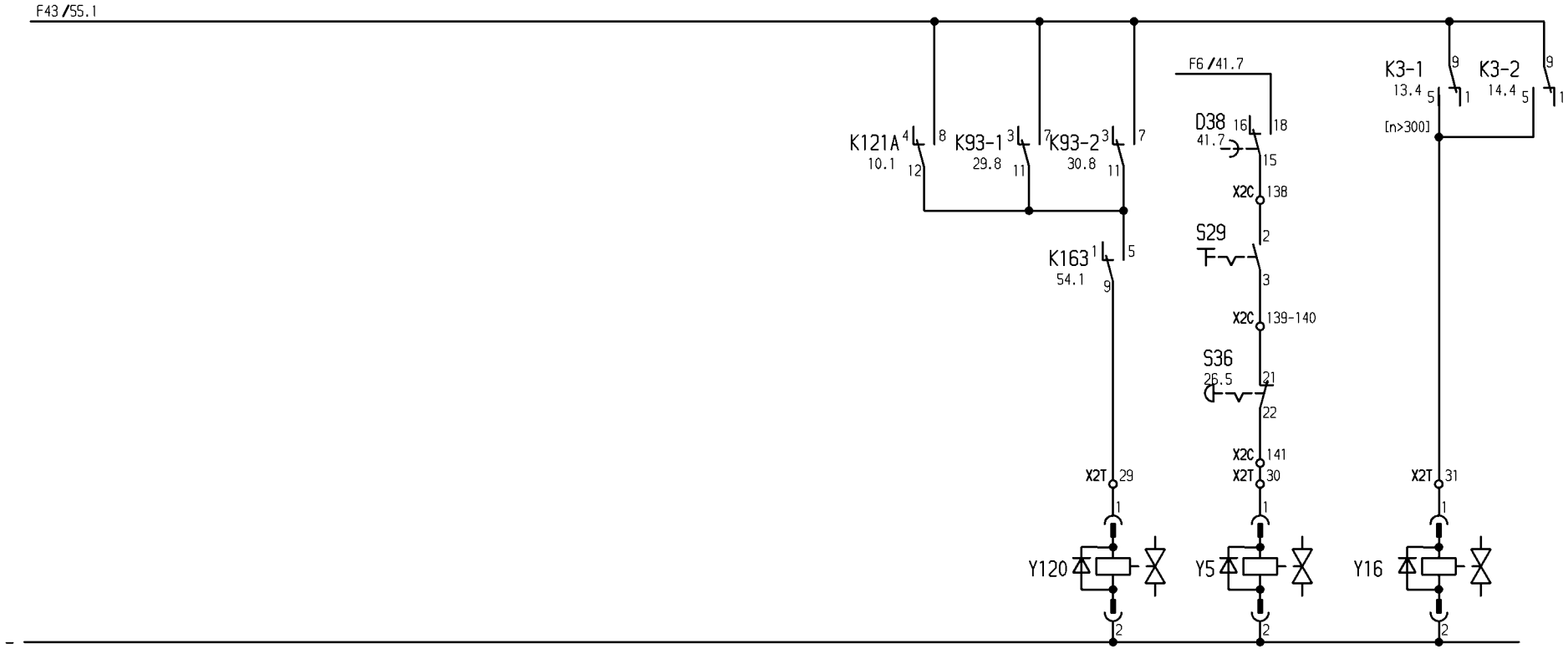
Erstverw.	Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
	PC5500-1	.	.	E6422	.	.

Ident-Nr.: 897 861 40 f

Format A3 | Blatt/Blätter 46/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

SIA | Datum . | 7 | 6 | 5



Vorsteuerung: Bremse - Drehwerk		Vorsteuerung: Bremse-Fahrwerk
Hydraulische Bremse stromlos = verspannt (bzw. bremst)	Parkbremse S29: Nasenloch zum Fahrer bohren stromlos = bremst	Parkbremse stromlos = bremst
pilot control: brake - slew		**pilot control: brake-travel**
hydraulic brake no current = brake	parking brake no current = brake	park brake no current = brake

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Bau Nr.: 15011

KOMATSU MINING GERMANY

Erstverw.	Typ	Ident-Nr.	F
	PC5500-1	.	.

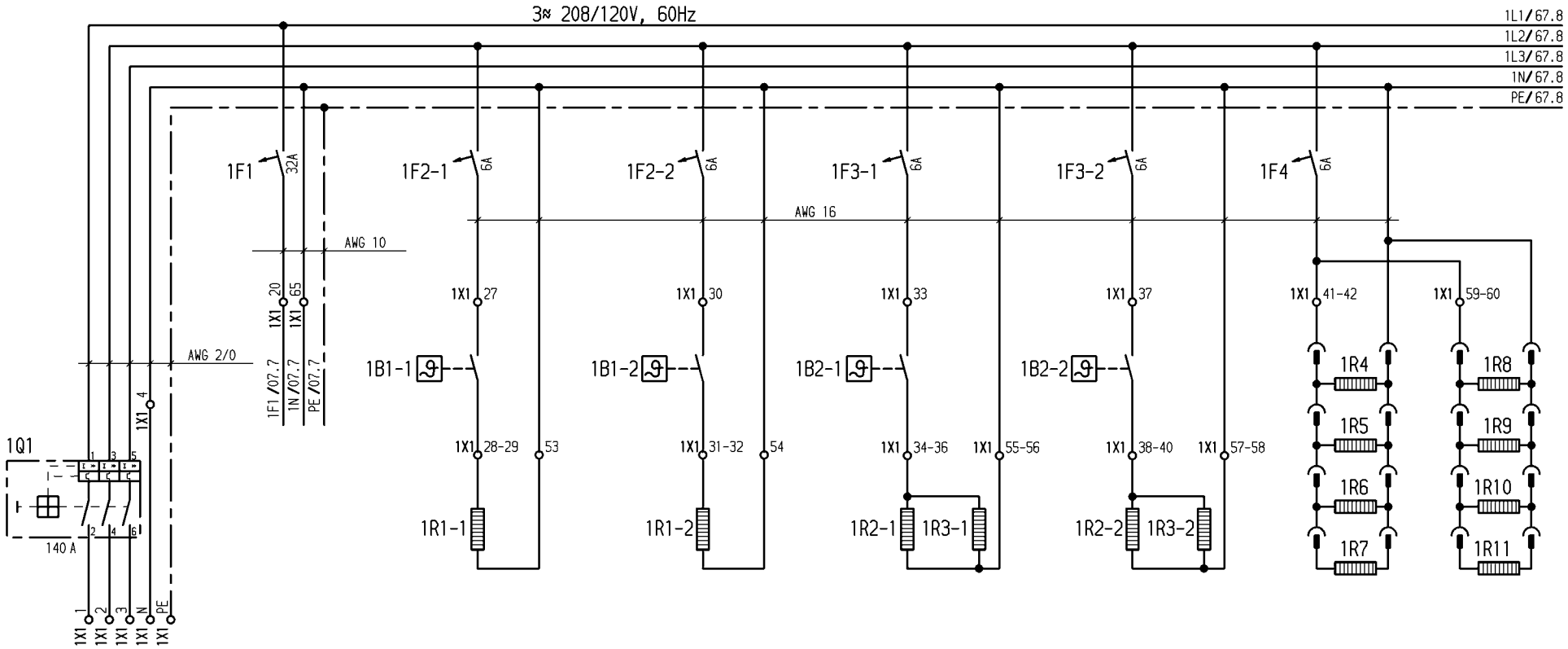
ÄM-Nr.	Name	Datum
E6422	.	.

Ident-Nr.: 897 861 40 f

Format A3 | Blatt/Blätter 56/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

SIA | Datum . | 8 | 7 | 6 | 5



Vorwärmung

Stromversorgung	Batterieladegerät	Motoröl		Pumpenverteilergetriebe		Batterie-Heizung
3≈ 208/120V, 60Hz, 100...160A		Motor 1 500W 1B1-1: schaltet bei 15°C ein, bei 26°C aus	Motor 2 500W 1B1-2: schaltet bei 15°C ein, bei 26°C aus	Motor 1 2 x 300W 1B2-1: schaltet bei 15°C ein, bei 26°C aus	Motor 2 2 x 300W 1B2-2: schaltet bei 15°C ein, bei 26°C aus	2 x 4 x 75W

pre heating

current supply	battery charger	engine oil		pump distributor gear		battery heater
3≈ 208/120V, 60Hz, 100...160A		engine 1 500W 1B1-1: connect at 15°C, disconnect at 26°C	engine 2 500W 1B1-2: connect at 15°C, disconnect at 26°C	engine 1 2 x 300W 1B2-1: connect at 15°C, disconnect at 26°C	engine 2 2 x 300W 1B2-2: connect at 15°C, disconnect at 26°C	2 x 4 x 75W

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.
SIA	Datum	.			

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Elektroplan

Bau Nr.: 15011

KOMATSU MINING GERMANY

Erstverw.	Typ	Ident-Nr.	F
	PC5500-1	.	.

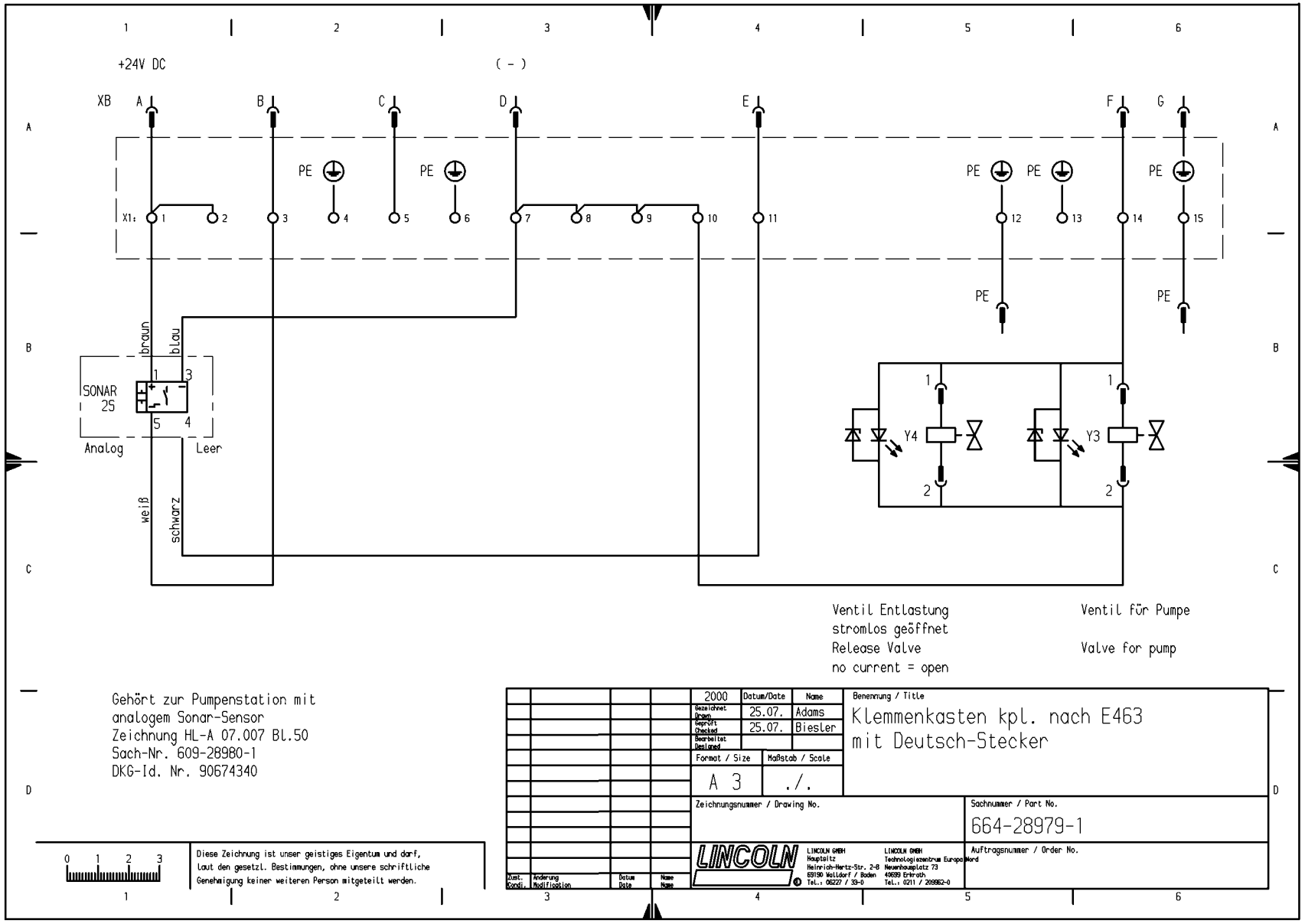
ÄM-Nr.	Name	Datum
E6422	.	.

Ident-Nr.: 897 861 40 f

Format A3

Blatt/Blätter 66/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .



Gehört zur Pumpenstation mit
analogem Sonar-Sensor
Zeichnung HL-A 07.007 Bl.50
Sach-Nr. 609-28980-1
DKG-Id. Nr. 90674340

	Datum/Date	Name
Bezeichnet Drawn	25.07.	Adams
Geprüft Checked	25.07.	Biesler
Bearbeitet Designed		

Format / Size: A 3 — Maßstab / Scale: ./.

Benennung / Title: Klemmenkasten kpl. nach E463 mit Deutsch-Stecker

Zeichnungsnummer / Drawing No.:

Sachnummer / Part No.: 664-28979-1

Auftragsnummer / Order No.:

LINCOLN GMBH Hauptsitz Heinrich-Hertz-Str. 2-8 69190 Walldorf / Baden Tel.: 06227 / 33-0

LINCOLN GMBH Technologiezentrum Europa-Nord Neuenhausplatz 73 40699 Erkrath Tel.: 0211 / 209852-0

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	29-AUG-03	Abel/Baer	.	.	.
Gepr.	.	.	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

Elektroplan

Info: Schmieranlage intern
info: lubrication system

Bau Nr.: 15011

KOMATSU MINING GERMANY

Erstverwendung | Typ: PC5500-1 | Ident-Nr.: . | F: .

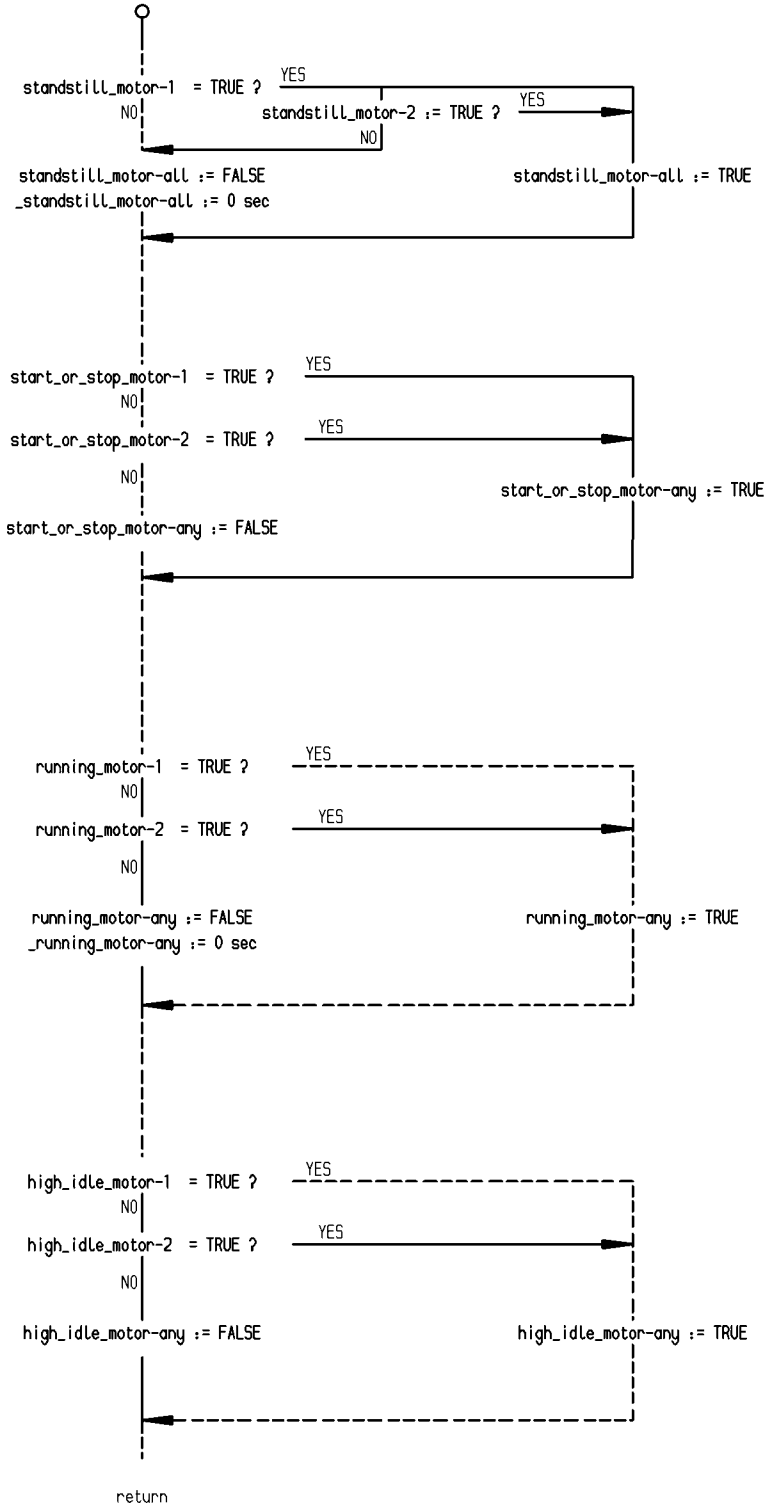
ÄM-Nr.: E6422 | Name: . | Datum: .

Ident-Nr.: 897 861 40 f

Format: A3 | Blatt/Blätter: 76/.

Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

SIA | Datum: . | 7 | 6 | 5



D: Stehen gerade alle Motoren? Startet oder stoppt mindestens ein Motor? Läuft mindestens ein Motor?
E: All motors at standstill? At least one motor is starting or stopping? At east one motor is running?

Verknüpfungen (Logik)
Linking (logic)

	Datum	Name
Bearb.	20-APR-01	Thermann
Gepr.	.	.
Abt.:	8121.4	

Computererstellte Zeichnung (CAD)

Ablaufdiagramm
Flowchart

Bau Nr.: 15011

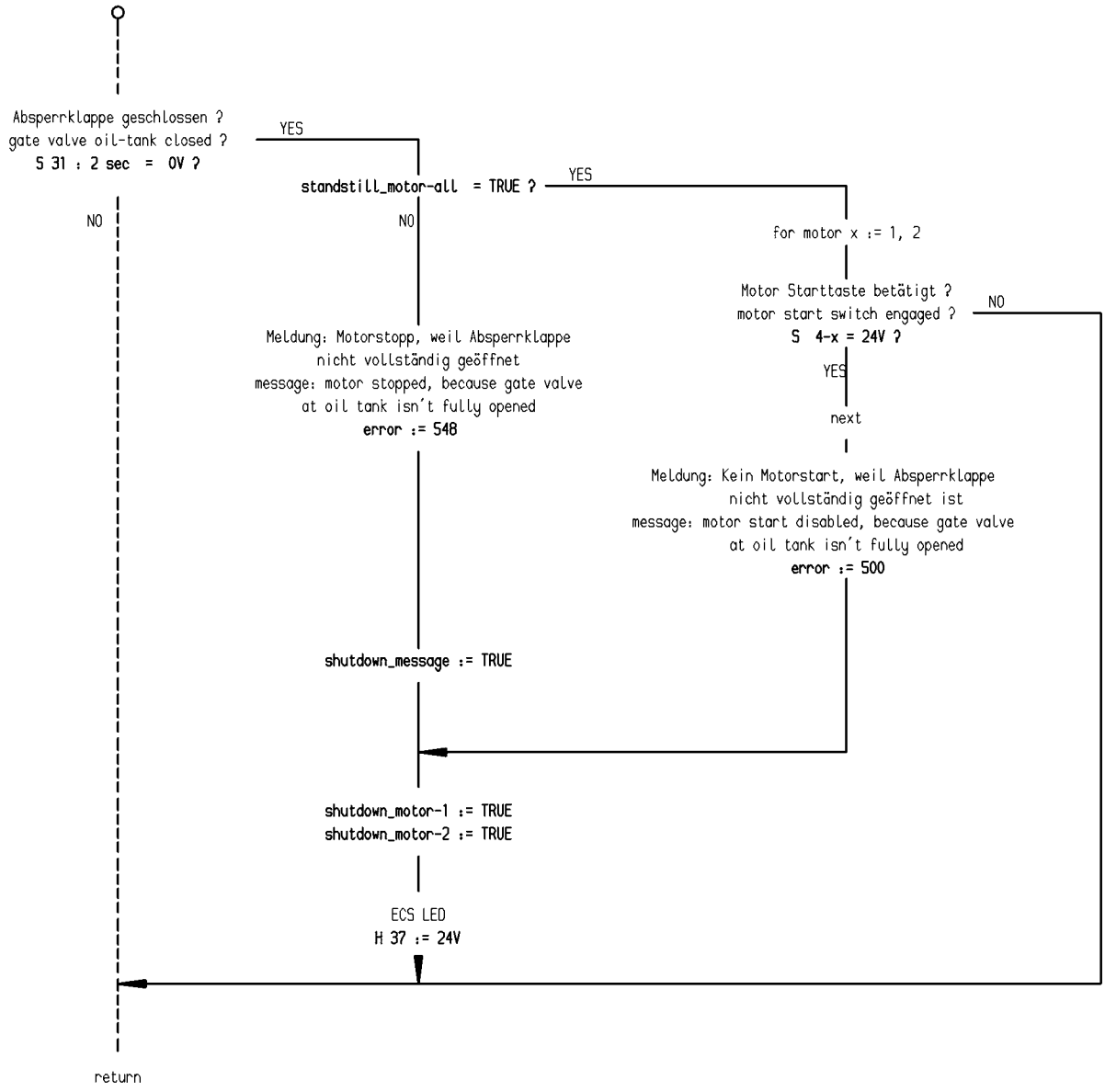
KOMATSU MINING GERMANY

Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
PC5500-1	.	.	E5611	.	.

Ident-Nr.: 915 202 40 b

Format A3

Blatt/Blätter 10 / .



D: Überwachung Absperrklappe zwischen Hydrauliktank und Ansaugölbehälter. Motor-Lauf wird unterbunden, wenn die Klappe nicht vollständig geöffnet ist.
E: Monitoring the gate valve between hydraulic tank and suction tank. Motor run is disabled if the valve isn't completely opened.

Absperrklappe Ölbehälter
gate valve oil tank

	Datum	Name
Bearb.	20-APR-01	Thermann
Gepr.	.	.
Abt.:	8121.4	

Computererstellte Zeichnung (CAD)

Ablaufdiagramm
Flowchart

Bau Nr.: 15011

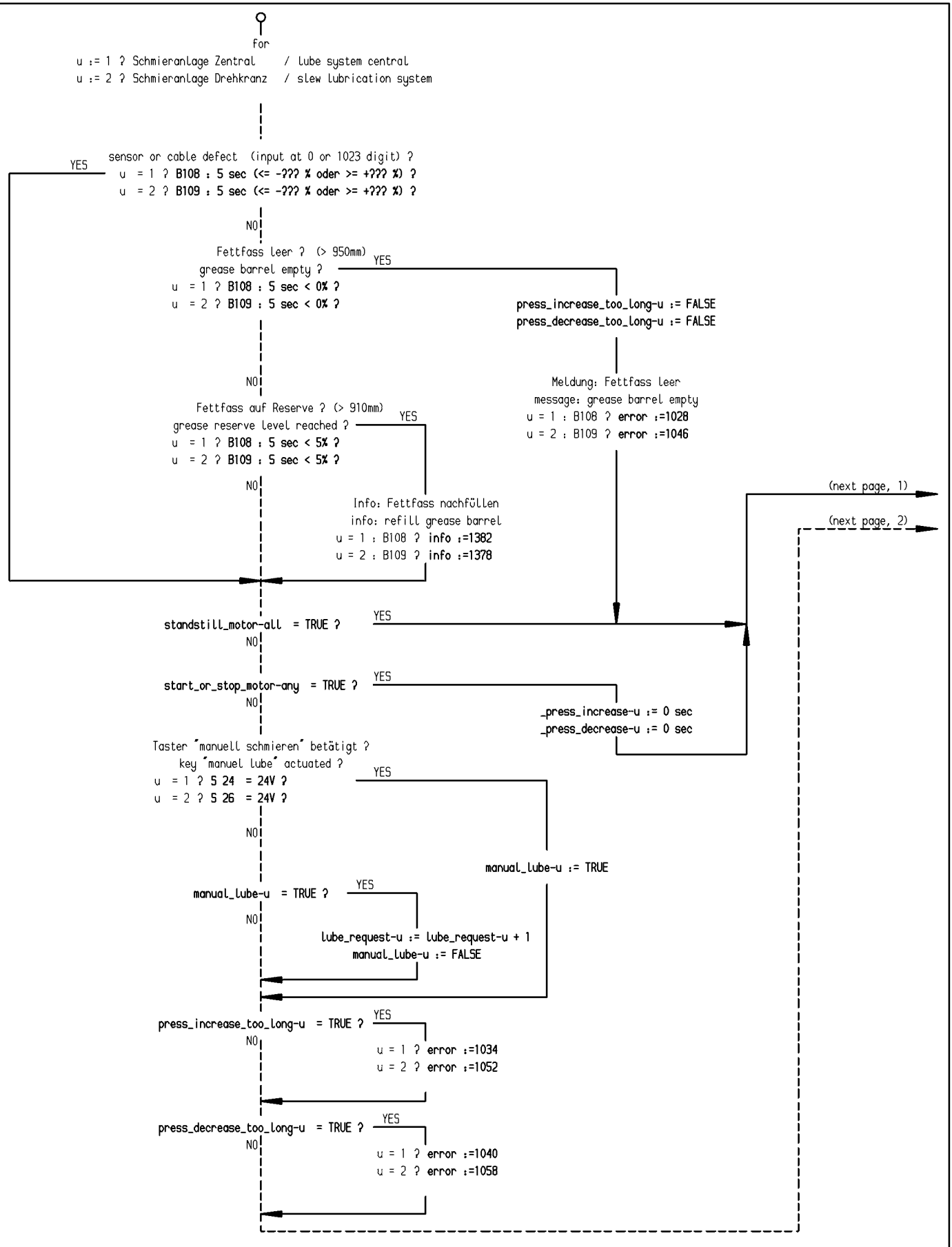
KOMATSU MINING GERMANY

Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
PC5500-1	.	.	E5611	.	.

Ident-Nr.: 915 202 40 b

Format A3

Blatt/Blätter 20 / .



D: Schmieranlage: Erklärung siehe übernächste Seite
E: Lubrication system: Explanation see page after next.

Power-Master Schmieranlage
Power-Master lube system

	Datum	Name
Bearb.	20-APR-01	Thermann
Gepr.	.	.
Abt.:	8121.4	

Computererstellte Zeichnung (CAD)

Ablaufdiagramm
Flowchart

Bau Nr.: 15011

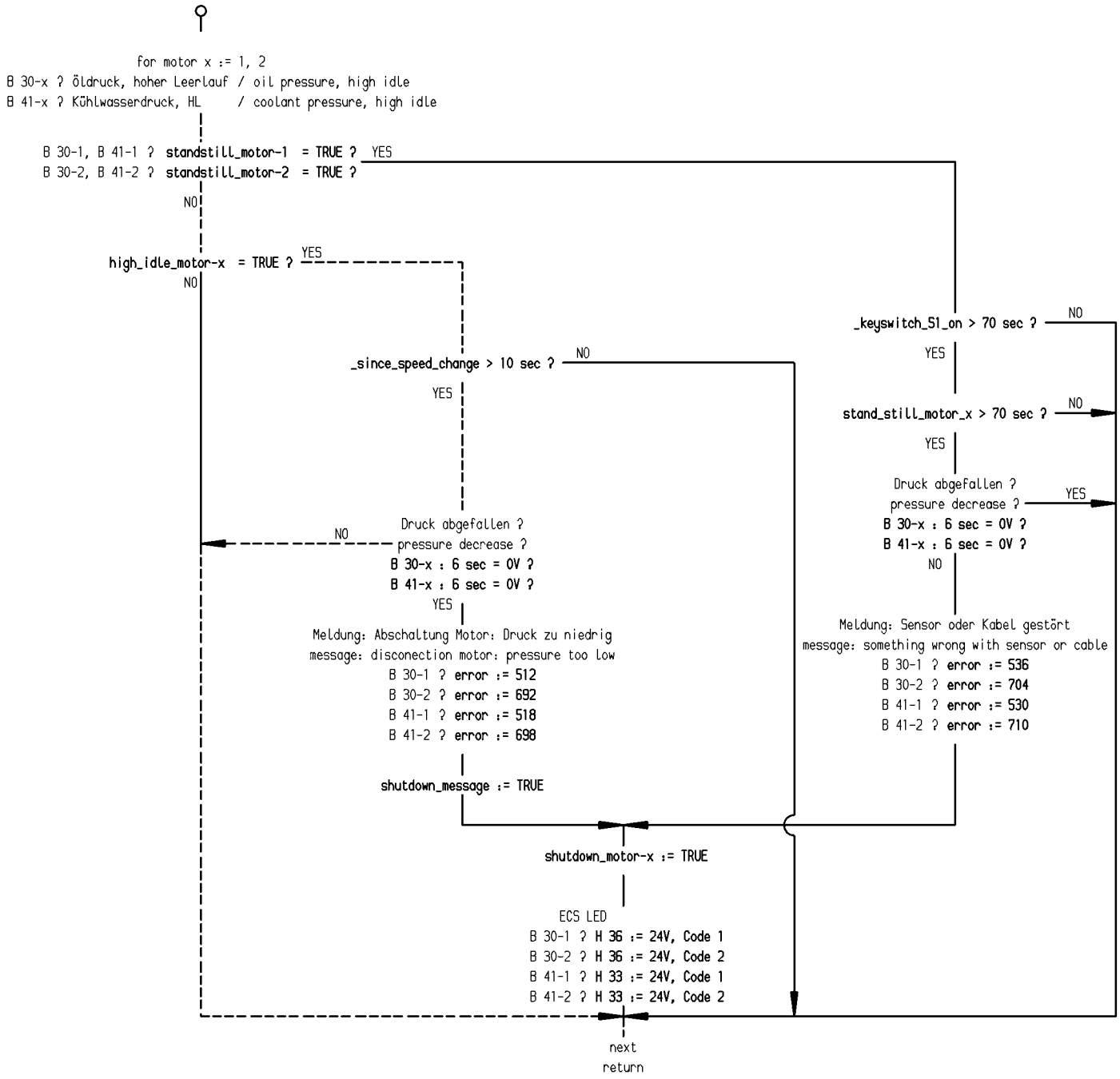
KOMATSU MINING GERMANY

Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
PC5500-1	.	.	E5611	.	.

Ident-Nr.: 915 202 40 b

Format A3

Blatt/Blätter 30 / .



D: Überwachung öl- und Kühlwasserdruck: Ist der öl- oder Kühlwasserdruck im hohen Leerlauf zu niedrig, werden die Motoren abgeschaltet und es erfolgt eine Meldung. Bei einem Defekt von Sensor oder Zuleitung wird ebenfalls eine Meldung ausgegeben.

E: Monitoring oil- and coolant pressure: If oil- or coolant pressure is too low in high idle, a message will be displayed and motors will be switched off. If sensor or cable have a malfunction, also a message will be displayed.

öl- und Kühlwasserdruck, hoher Leerlauf
oil- and coolant pressure, high idle

	Datum	Name
Bearb.	20-APR-01	Thermann
Gepr.	.	.
Abt.:	8121.4	

Computererstellte Zeichnung (CAD)

Ablaufdiagramm
Flowchart

Bau Nr.: 15011

KOMATSU MINING GERMANY

Typ	Ident-Nr.	F	ÄM-Nr.	Name	Datum
PC5500-1	.	.	E5611	.	.

Ident-Nr.: 915 202 40 b

Format: A3

Blatt/Blätter: 40 / .