SMPC30006225

Shop Manual

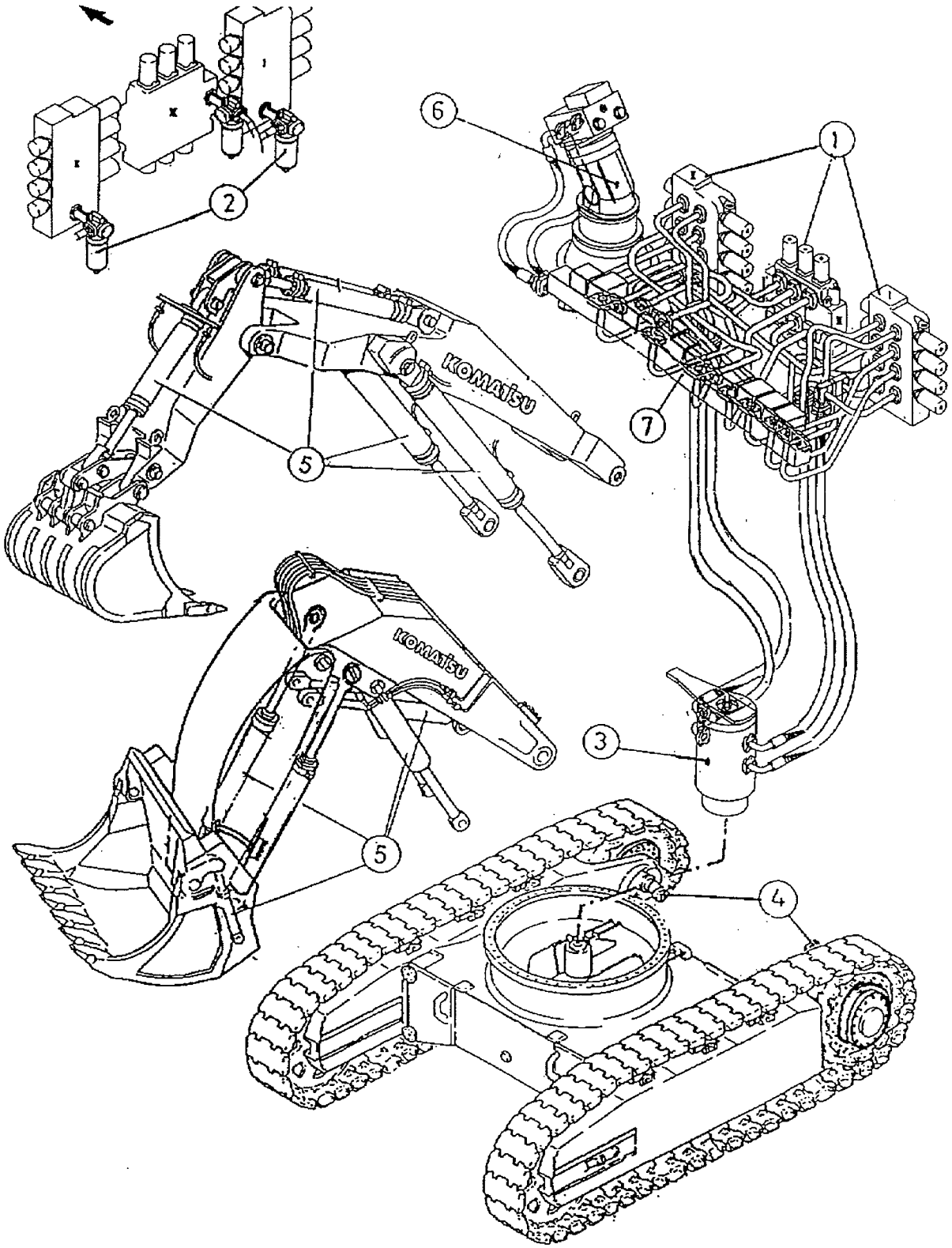
PC3000-1

HYDRAULIC MINING SHOVEL

SERIAL NUMBERS PC3000-1 6225

December 2006

Z 22177		KOMATSU MINING GERMANY



Engine Mounts

Z 22181

The flexible mounts are installed to take the vibrations and the torsional forces and they carry the total weight of the engine, the pump distributor gear with all hydraulic pumps.
For this reason all connections must be checked when above parts mounted to the engine.
As the life increases the engine mounts loose their stiffness (signs of fatigue) and the gap "A" decreases. ("**A**" = 100 mm see note below)

- **Because a fatigue limit is difficult to determine therefore all mounts must be checked regularly for no contacts are made between metal surfaces while engine under load.**

In the case of fatigue or damage of a metal rubber guide (1), **all** metal rubber guides and their fastening bolts (2) with nuts must be replaced.

Inspect also the metal-rubber-bar (6) for fatigue or damage and replace if necessary.
The bolt (3) must have **no** axial play.
If necessary re-tight the nut (7) until rubber squeeze slightly out of rubber bar (6).

Torque supports:

- **They are normally used only with CUMMINS engines.**

Check regularly the cup springs (5) of both supports for fatigue or damage and replace them if necessary. Turn the bolt(4) down until it pre-stress slightly the cup spring and secure with the check nut.
(Distance between torsional support and bolt head "**B**" = 29 mm)

- **The lock nuts can be re-used 3 to 4 times. Assumed the bolt thread is accurate cleaned before turning the nut on or off, otherwise the locking part of the nut will be damaged and the locking is not ensured.**

Spline - Lubrication

Drive shaft housings.

Legend: Fig. Z 22185

(M) Configuration, main pump drives
(A) Configuration, auxiliary pump drives
(1) Pipe to compensation reservoir
(2) Overflow pipe

All drive shaft housings are filled with the gear oil, the same as it is used in the pump distributor gear.

This is done for two reasons:

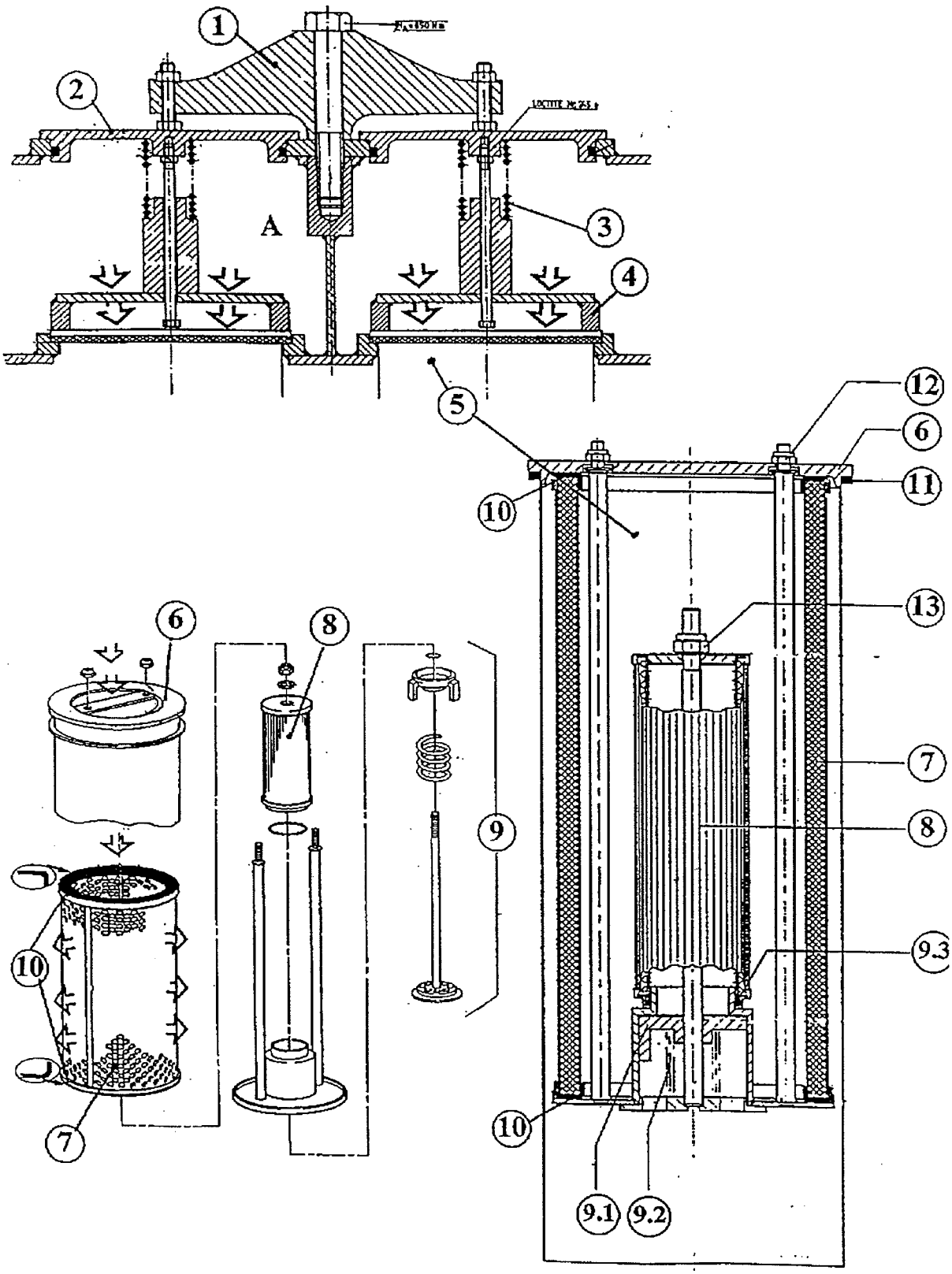
1. To lubricate the multi-spline connections, to prevent wear and corrosion.
2. It makes it easier to determine a leaking seal ring at one of the drive shaft connections.

Function:

M If the oil level increases the oil drops out of the overflow pipe (2).
If this oil is gear oil it indicates a possible leak at the gearbox side.
If the oil is a mixture of gear oil and hydraulic oil it shows a possible leak at the pump side.
If at an oil level check a loss of oil is found it may be due to worn or defective radial seal ring of the pump. The oil will be sucked away from the pump.

Function:

A The oil is filled in via the compensation reservoir (item 7 of the PTO).
All auxiliary drive shaft housings are connected by the pipes (1) with the reservoir. The reservoir is filled approx. one half with oil.
If the oil level in the reservoir increases due to leakage the oil drops out from the overflow pipe on top of the reservoir (item 7 of the PTO).
Now a check has to be done to find out which one of the drive shafts seals is damaged.
It can be done by disconnecting temporary the pipe (1) to the reservoir.
Disconnect the pipe at the drive shaft housing, plug the pipe and leave the union open.
If now at operation the oil still comes out of the union, this drive shaft seal is gone.
Otherwise check sequential all auxiliary drives.


1
2
A
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12
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11
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9.3
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10
7
9.1
9.2

Hydraulic Oil Cooling Circuit

Legend: Z 22195a

(16.1+16.2)	Hydraulic oil cooler
(15)	Collector tube
(25)	Back pressure valve
(51)	Hydraulic tank
(86.1-86.2)	Restrictors 20 mm ∅
(C)	Lines to tank (cold oil)
(H)	Lines to cooler (hot oil)
(119)	Pulsation damper
(Y101)	Solenoid valve (4/2-directional control valve)

Function:

The returning oil from the system flows via hoses into the collector tube (15). Before the return oil can enter the hydraulic oil tank is the Back Pressure Valve (25) installed.

The back pressure valve (25) causes a back pressure which forces most of the relative hot oil through the lines (H) to the cooler (16.1 + 16.2).

On its flow through the cooler the hydraulic oil gets cooled and flows than through the restrictors (86.1 – 86.2) and the lines (C) into the filter chamber of the main oil reservoir.

The restrictors are acting like shock absorbers to prevent cooler cracking at pressure peaks.

Besides the back pressure valve acts as an oil flow control valve as far as the oil temperature has not reached its steady temperature.

During the warm up period the back pressure valve (25) is wide open, because solenoid valve Y101 is energized, which results in less oil flows through the cooler which causes that the oil gets quicker its optimum operating temperature.

With increasing oil temperature the oil gets also thinner. The solenoid valve Y101 will be de-energized, so that the valve piston will be more closed by the force of the spring thus that more oil passes the cooler.

The solenoid valve Y101 will be switched by the temperature sensor B75 located at the hydraulic oil tank.

Axial Piston Pump

Fixed Displacement Pump, with variable setting

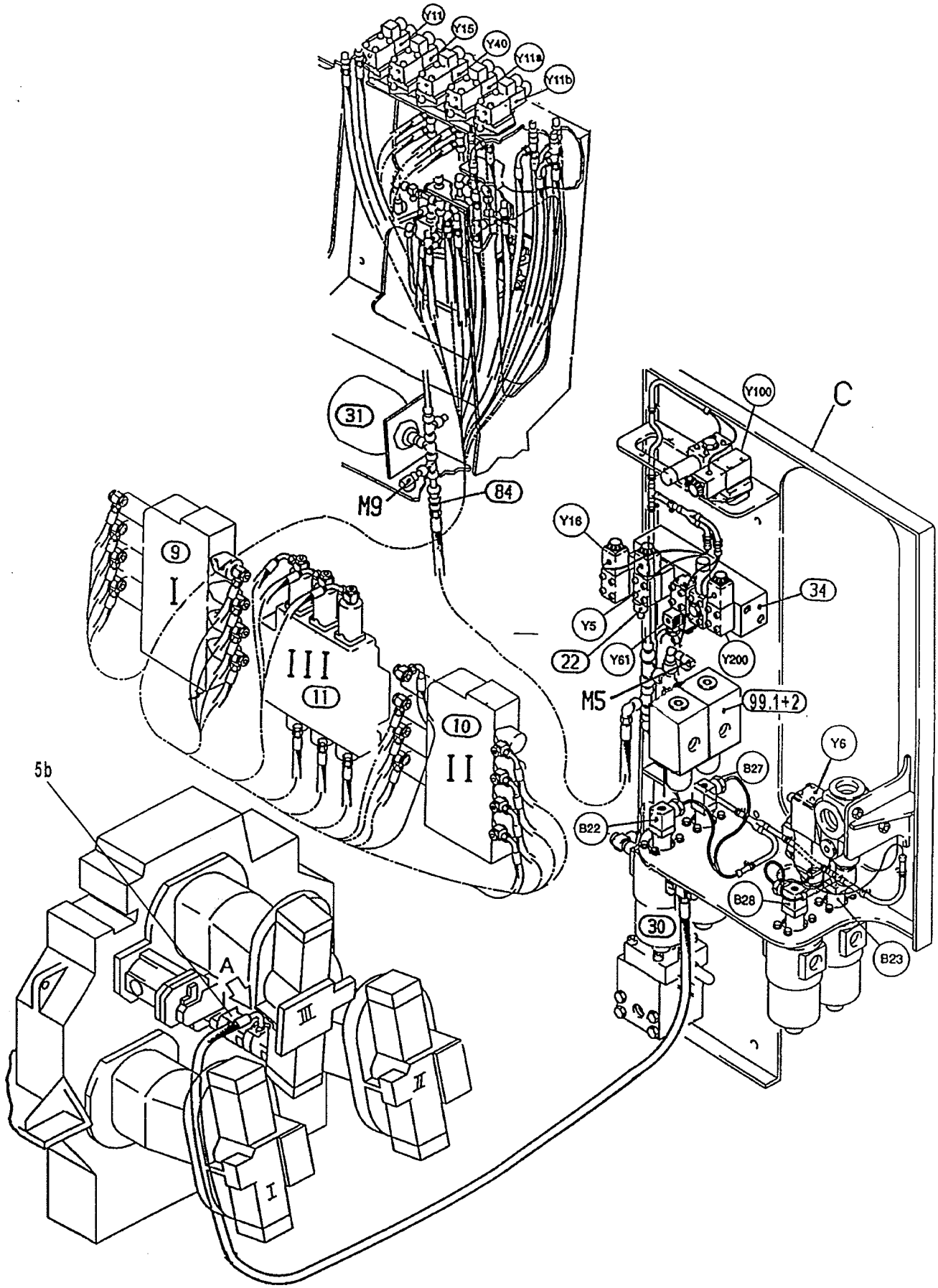
Legend: Z 21852

(1) Drive shaft
(2) Bearings
(3) Cylinder with pistons
(4) Center pin
(5) Control lens
(6) Q-min adjustment bolt
(7) Q-max adjustment bolt
(8) Pressure port
(9) Suction port

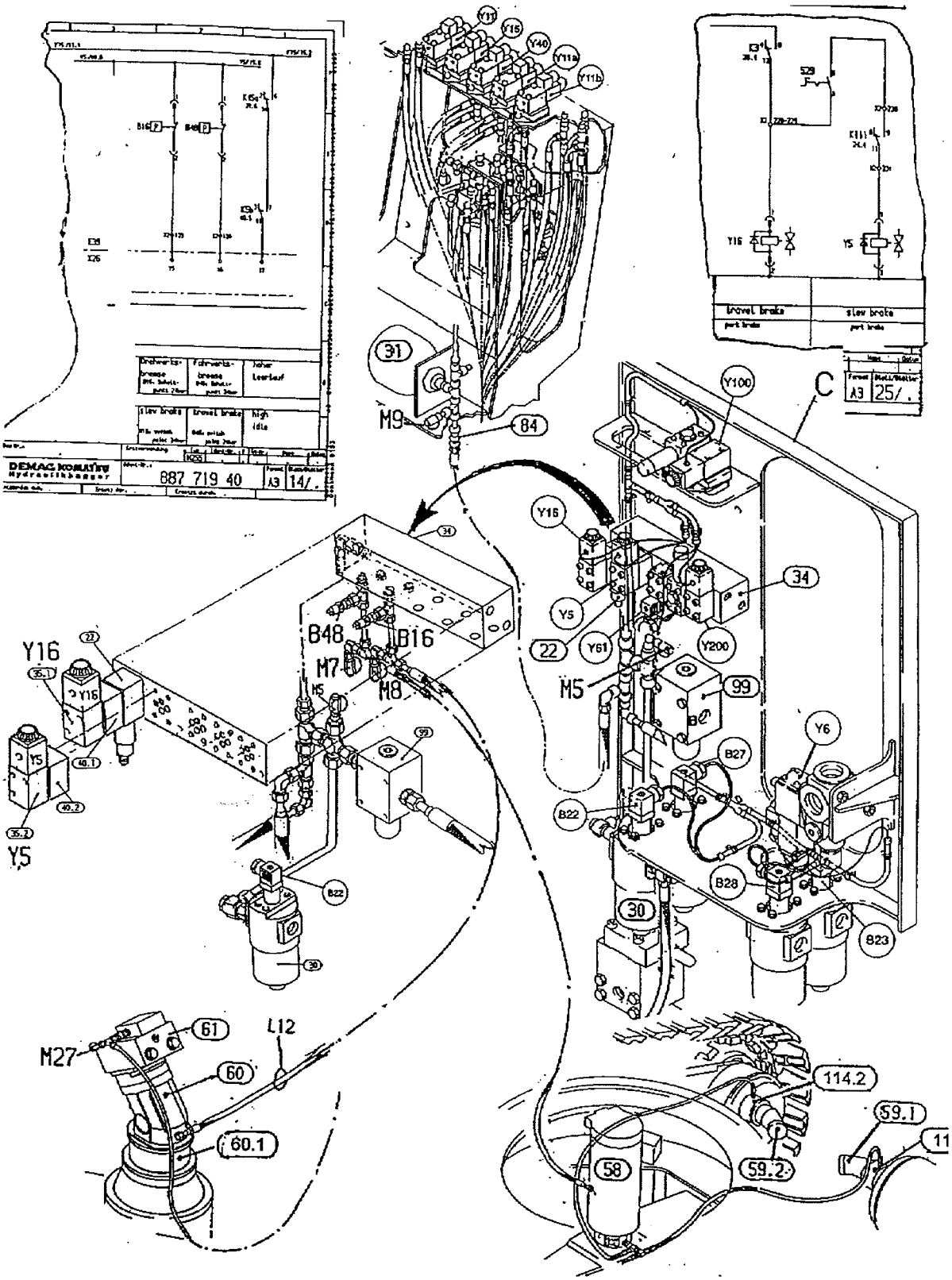
Description.

Pump type A7F0 is a variable displacement pump, designed to operate in open circuits. It has an internal case drain return. The rotary group is a robust self aspirating unit. External forces may be applied to the drive shaft.
Changing the swivel angle of the rotary group is achieved by sliding the control lens along a cylindrical formed track by means of an adjusting screw.
-With an increase in the swivel angel, the pump output increase together with necessary drive torque.
-With an decrease in the swivel angel, the pump output decreases together with the necessary drive torque.

- **When increasing the maximum swivel angle, there is a danger of cavitation and over-speeding the hydraulic motor!**


Y11
Y15
Y40
Y11a
Y11b
31
M9
84
9
I
III
11
10
II
5b
A
III
II
I
Y100
C
Y16
34
Y5
22
Y61
Y200
M5
99.1+2
Y6
B27
B22
B28
30
B23

Z 22205		KOMATSU MINING GERMANY



DISTRIBUTOR MANIFOLD (Back Hoe Attachment)
Location of restrictor blocks and anti cavitation valves

Legend: **Z 22209**

(57) Distributor manifold

(SL) Synchronization (Equalization) lines

(64.1) ACV Block Section **A**, Boom cylinder rod side

(63.1) Restrictor block Section **B**, Boom cylinder piston side with SRV and pressure check point M16

(63.2) Restrictor block Section **C**, Bucket cylinder piston side with SRV and pressure check point M17.2 and
(65.1) Check valve block with SRV and pressure check point M17.1

(65.2) Check valve block Section **D**, Boom cylinder piston side with SRV and pressure check point M18.1

(63.3) Restrictor block Section **E**, Stick cylinder rod side with SRV and pressure check point M18

(64.3) ACV Block Section **F**, Stick cylinder piston side

(63.4) Restrictor block Section **G**, Bucket cylinder rod side with SRV and pressure check point M19

(64.4) ACV Block Section **H**, Stick cylinder piston side

(63.5 + .6) Restrictor block Section **J**, Stick cylinder rod side with SRV and pressure check point M20.1 + 20.2

(64.6) ACV Block Section **L**, Bucket cylinder rod side and
(63.7) Restrictor block, Bucket cylinder piston side with SRV and pressure check point M21

(64.7) ACV Block Section **M**, Bucket cylinder piston side and
(63.8) Restrictor block with SRV and pressure check point M21

(63.9) Restrictor block Section **N**, Boom cylinder piston side with SRV and pressure check point M22

Pressure Filter

- **In case of a broken pump, this filters prevents that pump parts enter the hydraulic system.**

Legend: Z 22214

(1) Filter head
(2) Filter housing
(3) O- ring
(4) Back up ring
(5) Spring
(6) Filter element
(7) Differential press. switch
(8) O-ring
(9) O-ring
P1 Higher static pressure
P2 Lower static pressure
a Electrical connection
b REED contact
c Permanent magnet piston
d Spring
e Plug screw

Function:

There is one filter in each pump line installed.
The hydraulic oil flows in direction of the arrows through the filter element.
The metal filter element (6) can be cleaned and used again if it is not damaged.
The filter element is monitored by the differential pressure switch (7). When the flow resistance increases by contamination up to 8.5 bar, an electric contact operates a warning text will be displayed on the ETM - monitor in the operator's cab and the engine adjusted to low idle automatically.

Load Holding Valve

Legend: Z 22219

(1) Valve cone guide
(2) Valve spring
(3) Valve cone
(4) Valve block housing
(5) Passage from pump (P)
(6) Passage to control block spool A/B

The load holding valves are fitted into separate spaces of the control block housing, one valve for each spool.

They have three tasks:

1. When circuit pressure due to attachment weight is higher than pump pressure these valves prevent dropping of the attachment, within their sensitive (fine controlling) range.
2. Due suddenly pressure peaks in the service lines the valves also protect the pump.
3. When two pumps flows are used for one user they ensure that at least the flow of one pump reaches the user in case one MRV is defect or not more correct adjusted.

That means: Up to the max. Pressure of the defective valve both load holding valves are open allowing the flow of both pumps to the user, then one valve will be closed by the higher pressure and the flow of one pump only flows to the user.

Function:

The system pressure forces onto the front area of the valve cone (1). This force moves the valve cone against the spring (2) and allows the oil to flow from the pump to the spool.

In neutral position of the spool no further flow is possible. (see circuit diagram)

If the spool is not more in neutral the flow continues to the user.

If due to an external force the pressure directed to the pump overcomes the pump line pressure, this pressure forces the valve onto its seat (closed position)

Auxiliary Pumps (Fan Drive)

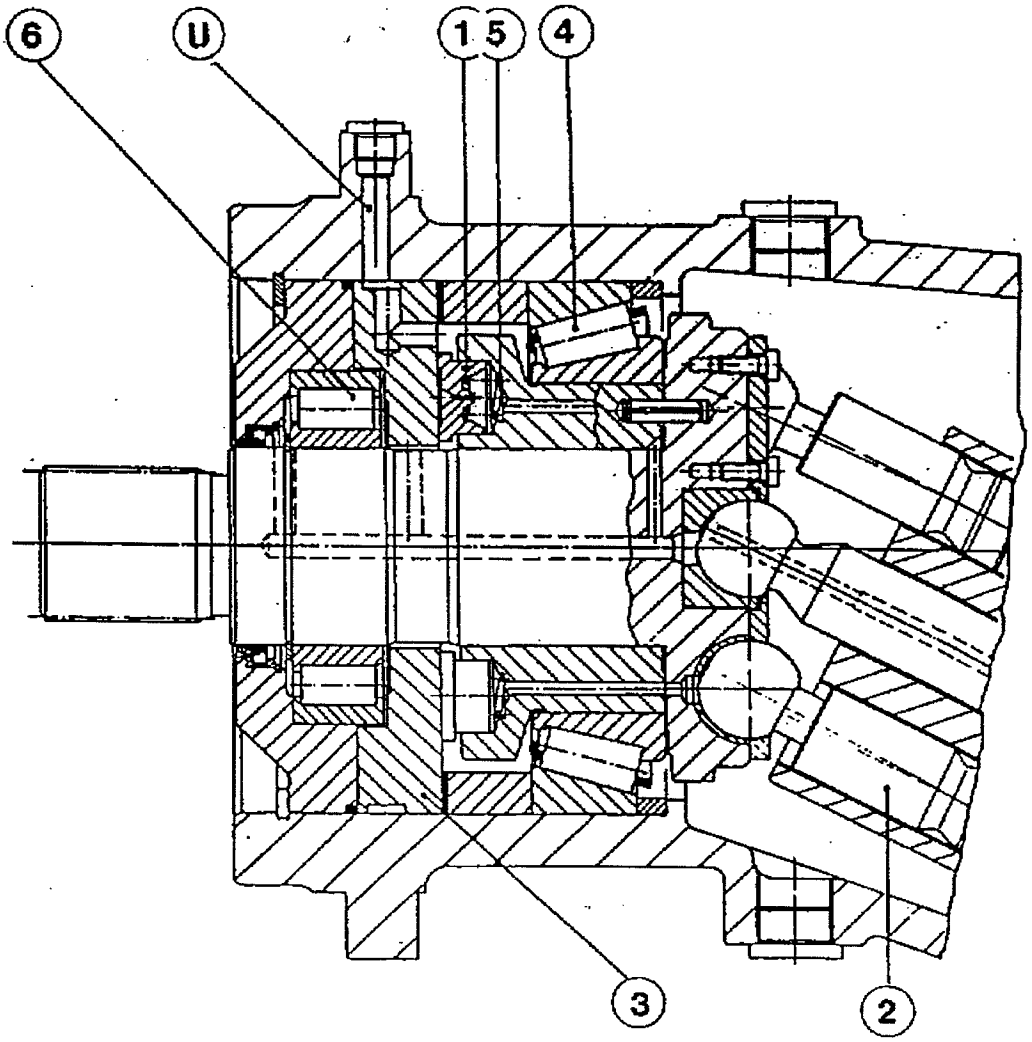
Fixed Displacement axial piston Pump, with variable setting, bend axis design
(These pumps are used for the hydraulic oil cooler fan drive)

Legend: Z 21852

(1) Drive shaft
(2) Bearings
(3) Cylinder with pistons
(4) Center pin
(5) Control lens
(6) Q-min adjustment bolt
(7) Q-max. adjustment bolt
(8) Pressure port
(9) Tank port

Description:

The pump type **A7F0** is a variable displacement pump, designed to operate in open circuits. It has an internal case drain return. The rotary group is a robust self aspirating unit. External forces may be applied to the drive shaft.
Changing the swivel angle of the rotary group is achieved by sliding the control lens (5) along a cylindrical formed track by means of the adjusting bolts (6 + 7).
With an increase of the swivel angel, the pump output increases together with necessary drive torque.
With an decrease of the swivel angel, the pump output decreases together with the necessary drive torque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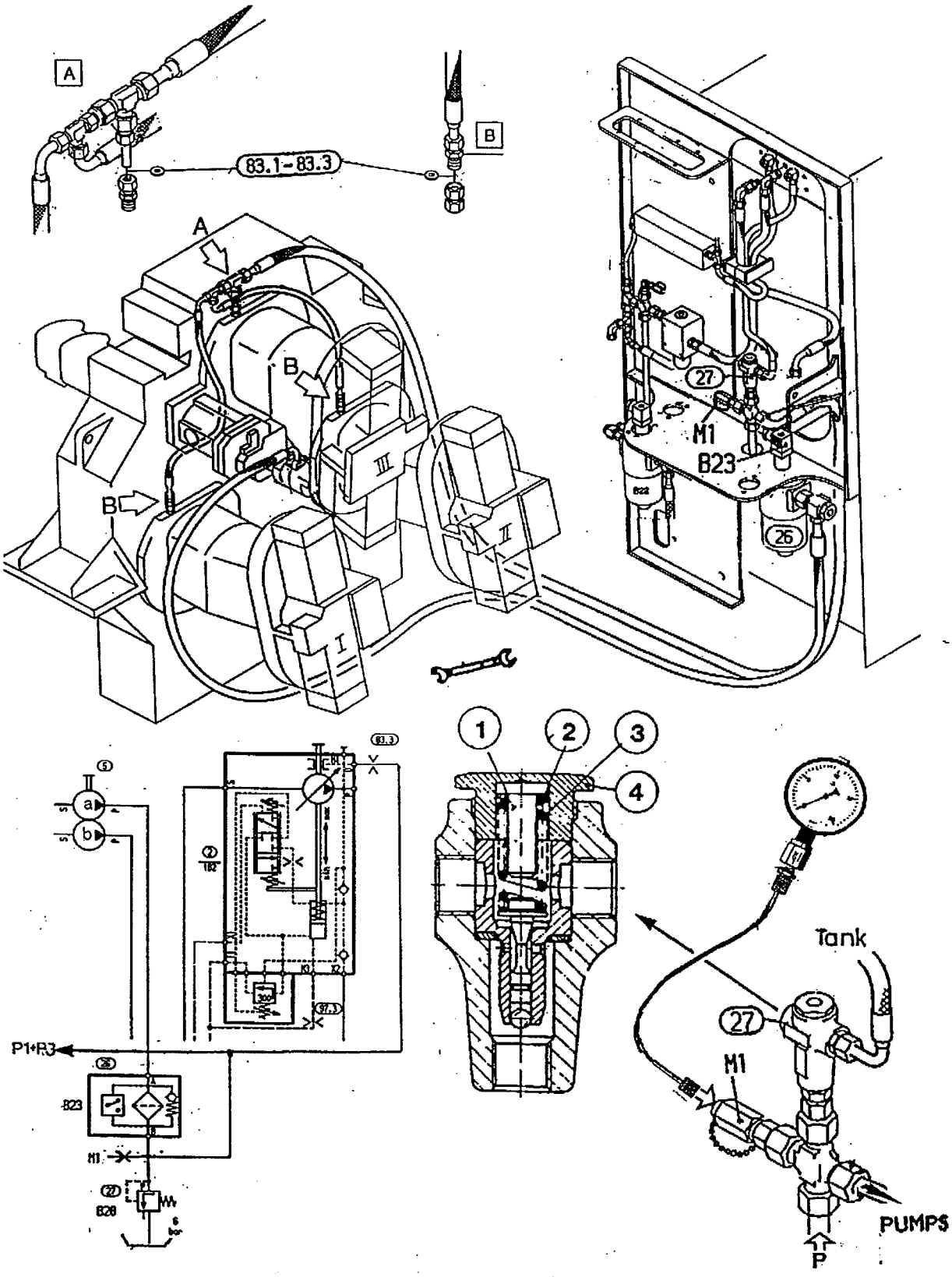
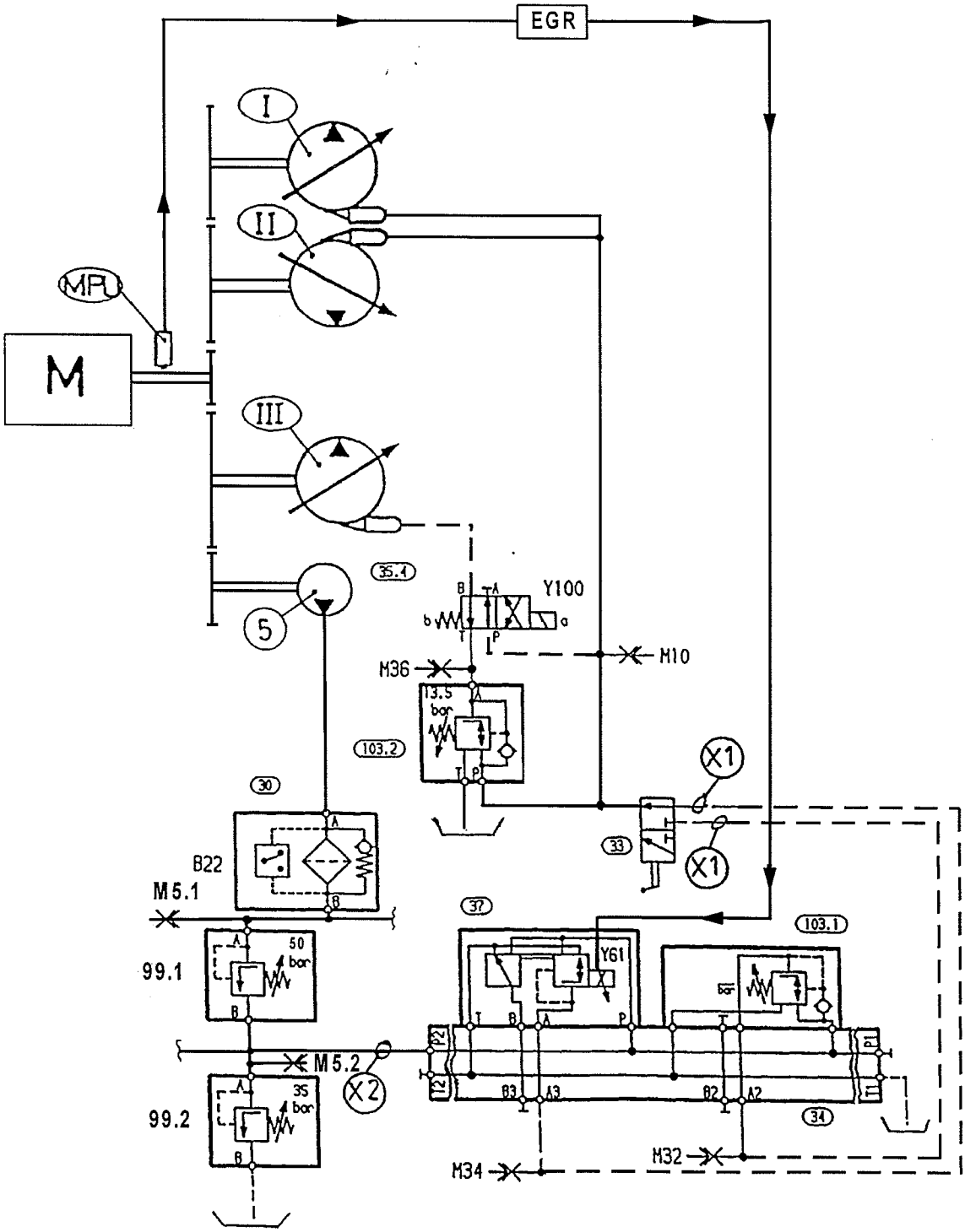
Z 22231		KOMATSU MINING GERMANY




EGR
I
II
III
MPU
M
5
35.4
Y100
M36
M10
13.5 bar
103.2
30
B22
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35 bar
M5.2
X2
37
Y61
103.1
X1
33
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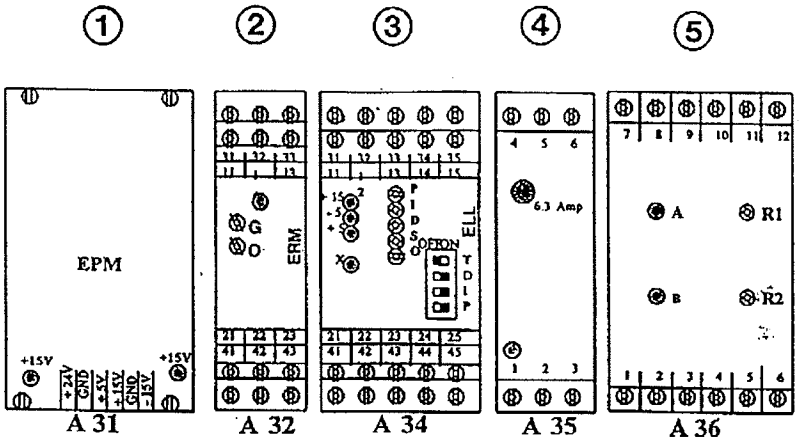
M32
M34


①
②
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⑤
EPM
+15V
+24V
GND
+5V
+15V
GND
-15V
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A 31
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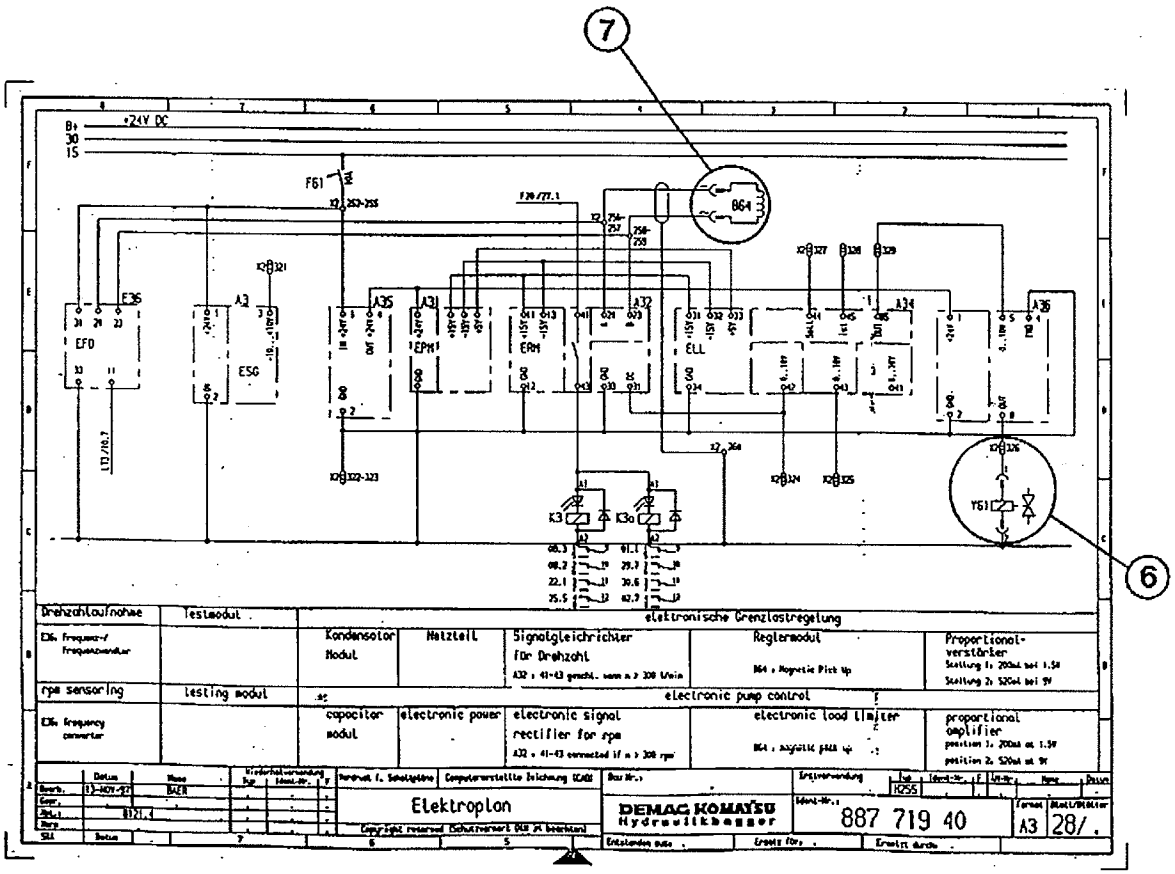
A 34
6.3 Amp
A 35
A
R1
B
R2
A 36


7
6
+24V DC
B+
30
15
F61
B64
A35
A31
A32
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A36
EFO
ESG
EPM
ERM
ELL
K3
K3a
Y61
Drehzahlaufnahme
Testmodul
elektronische Grenzlastregelung
Kondensator Modul
Netzteil
Signalgleichrichter für Drehzahl
Reglermodul
Proportional-verstärker
rpm sensoring
testing modul
electronic pump control
capacitor modul
electronic power
electronic signal rectifier for rpm
electronic load limiter
proportional amplifier
Elektroplan
DEMAG KOMATSU Hydraulikbagger
887 719 40
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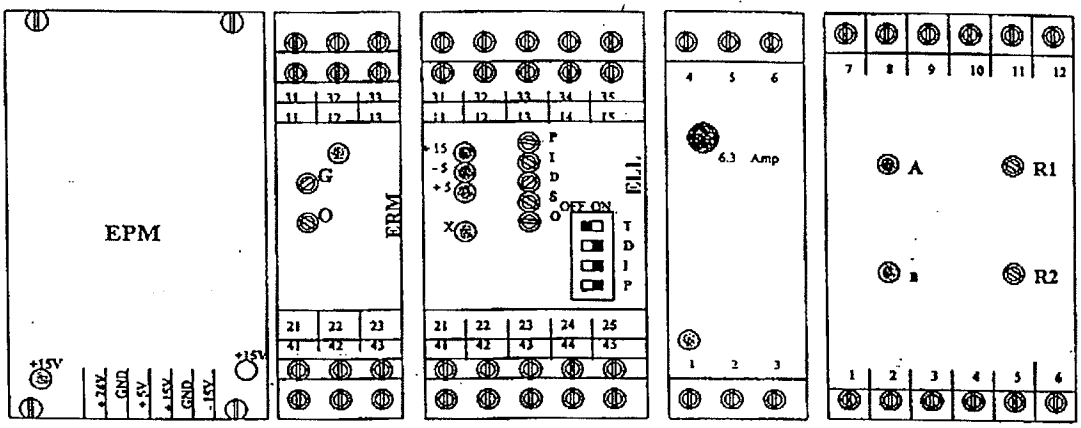
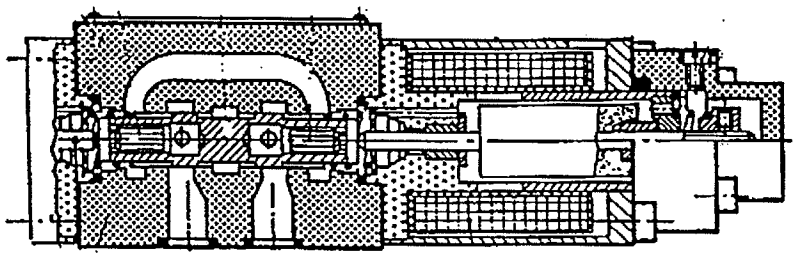
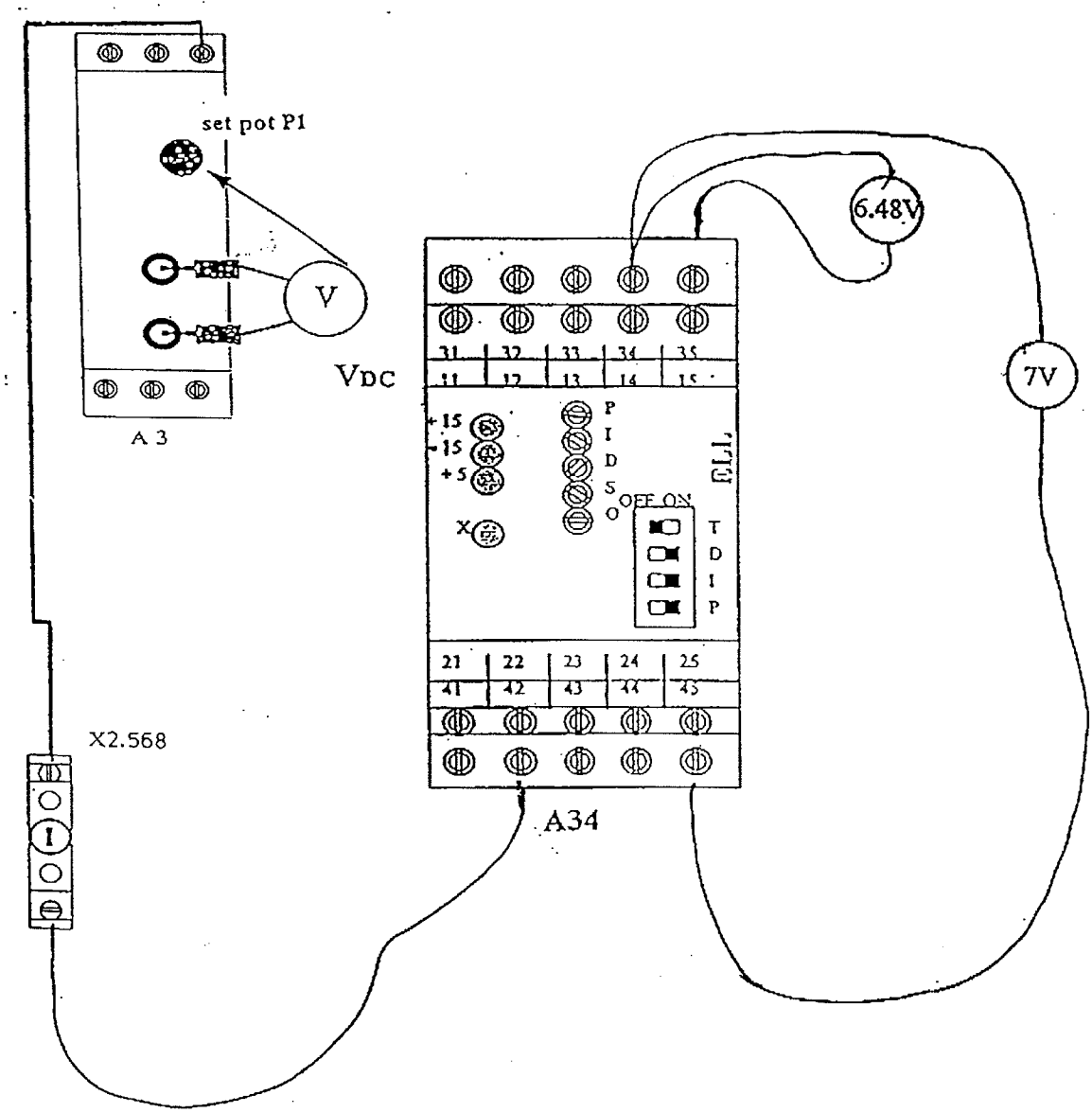


Proportional Valve




set pot P1
V
VDC
A 3
6.48V
7V
31 32 33 34 35
11 12 13 14 15
+15
-15
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T
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21 22 23 24 25
41 42 43 44 45
X2.568
A34

Hydraulic for Attachment Cylinder

Legend: Z 22250

(1) Main control blocks
(2) High pressure filter
(3) Rotary joint
(4) Travel motors
(5) Attachment cylinders
(6) Swing motor
(7) Distributor manifold

General information, study together with the circuit diagram

The control blocks (I - III / 9 - 11), the piping to the distributor manifold (7) and the connecting hoses to the attachment are the same for the Back Hoe Attachment (BHA) and the Loader Bucket Attachment (LBA) with the exception that with a BHA some of the secondary relief valves have to be changed or re- positioned. To get an analogous stick and bucket movement according to the control lever movement the connection of the control hoses to the joystick are vice versa between BHA and LBA.

Function:

A combined flow of the main pumps is used to feed the main control blocks (I - III / 9 - 11).
This results in three main circuits.
On its way to the control block the oil must flow through the high pressure filter (2 /12.1 - 12.3).
The high pressure filters ensure that in case of a pump failure no parts of the pump can get into the circuits.
The filter elements conditions are monitored by a differential pressure switch (B5 - B7, switch point 8.5 bar).
At too much restricted element a fault message like "High pressure filter (1) restricted") is displayed at the operator's dash board and the engine is shifted automatically to low idle.

continued

Cont.: **Z 22254**

Service Line Relief Valves, bucket cylinder LBA.

Bucket "Filling":

Valve	Press. check point	Location
65.1	M11 or M17.1	Manifold (57) section C
63.2	M13 0r M17.2	Manifold (57) section C
63.8	M12 or M21	Manifold (57) section M
66.7	M12	Control block II / 10
MRV	High pressure filter	One of each on the control blocks

Bucket "Emptying"

Valve	Press. check point	Location
66.5	M12	Control block II / 10
66.2	M13	Control block III / 11
MRV	High pressure filter	One in each on the control blocks

1. Connect the gauge to the required check point.
2. Start engine and let it run with max. speed.
3. Extend cylinder to full or retract to minimum for the valve being tested until the hydraulic system stalls.
4. Increase slowly the MRV-pressure while observing the pressure gauge. Gauge value must remain at 350 bar ± 5 bar.
   If the gauge shows a smaller or greater value the SRV must be adjusted.

How to alter a valve adjustment:

a. Remove protective cap (1).
b. Loosen lock nut (2).
c. Turn set screw (3) -**clockwise** to increase pressure,
   -**counter clockwise** to decrease pressure.
d. Tighten lock nut (2) and replace cap (1).

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

- **Because the piston and the rod side of the bucket cylinders are protected by more than one valve, the pressure gauge shows the pressure of the valve with the lowest setting.**

Even when the gauge shows the required pressure it is possible that one valve has a higher setting.

Therefore lower the pressure on one valve below the required pressure and then increase up to required pressure.

Proceed with next valve in the same manner.

- **If the pressure for bucket "Filling" can not be obtained it may be due to the faulty anti cavitation valve 64.7, at the manifold section M.**
- **If the pressure for bucket "Emptying" can not be obtained it may be due to the faulty anti cavitation valve 64.2, at the manifold section D, 64.6 at the manifold section L.**

continued

Z 22458

Maximum permissible lowering speed:

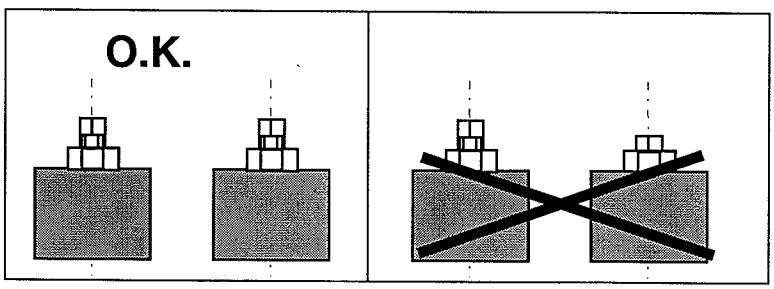
B. Float position	Cylinder retracting time/meter (s /m)	Total time (s)
Boom	2,95	5,9
Stick	1.5	3.4

B. Float position deactivated:

Check the lowering speed and adjust the **throttle valves at the manifold**

1. Raise the fully extended attachment with empty bucket to the maximum height position.
2. **Press the respective push button (S95 for Stick and S95.1 for Boom) and keep it depressed** while lowering the attachment with fully depressed lever and at max. engine speed and measure the cylinder running time.
3. If it is impossible to move the cylinder over the whole way, mark a distance of one meter with permanent pen P/N 621 566 40 on the piston rod and measure the time for only one meter movement.
4. If the lowering speed is to high, i.e. the measured time is less than the permissible time, the speed must be reduced by **altering the throttle valves at the manifold**
   Adjust as follows:
   To decrease the lowering speed loosen the lock nut (3) and turn the bolt (4) cw. To increase the lowering speed loosen the lock nut (3) and turn the bolt (4) ccw.

   Since there are two throttle valves throttling the oil flow of the boom and stick cylinder the valves must be set synchronously. The adjusting screws have to be turned in by the same amount of revolutions.



5. Check speed again and repeat as long as necessary.
6. If the adjustment is correct tighten lock nut.

Swing Gear and Swing Parking Brake

Z 22260b

Legend for illustration (Z 22438):

(1) Drive housing
(2) Drive shaft
(3) Sun gear shaft
(4) House brake (Multi disk brake)
(5) Breather filter Drive shaft housing
(6) Oil level gauge (dipstick) Drive shaft housing
(7) Disk brake housing
(8) Cylindrical roller bearing
(9) Internal ring gear
(10) Cylindrical roller bearing
(11) Bearing ring
(12) Cartridge
(13) Spherical roller bearing
(14) Oil drain plug, gear box
(15) Cylindrical roller bearing
(16) Oil level gauge (dipstick) Gear box
(17) First planetary stage
(18) Drive shaft to second stage
(19) Second planetary stage
(20) Radial seal ring
(21) Drive pinion
(22) GreaseGrease line port

The swing gear is of compact design with a two stage planetary gear including a multi disk house brake.
The gear is bolted to the superstructure and fits firmly due to the machined diameter (A) and the bolt torque.
The torque loaded on the hydraulic motor is transmitted by drive shafts (2) and sun gear shaft (3) to the first planetary stage (17).
The sun shaft (17) of the first planetary stage transmits the torque into the second planetary stage (19). By the planetary gears the output drive shaft is rotated and transmits the torque to the pinion (21).
The drive housing, and the gearbox are filled with gear oil.
Aeration is done by breather filters.
To lubricate the pinion bearing port (22) is connected to the central lubrication system.

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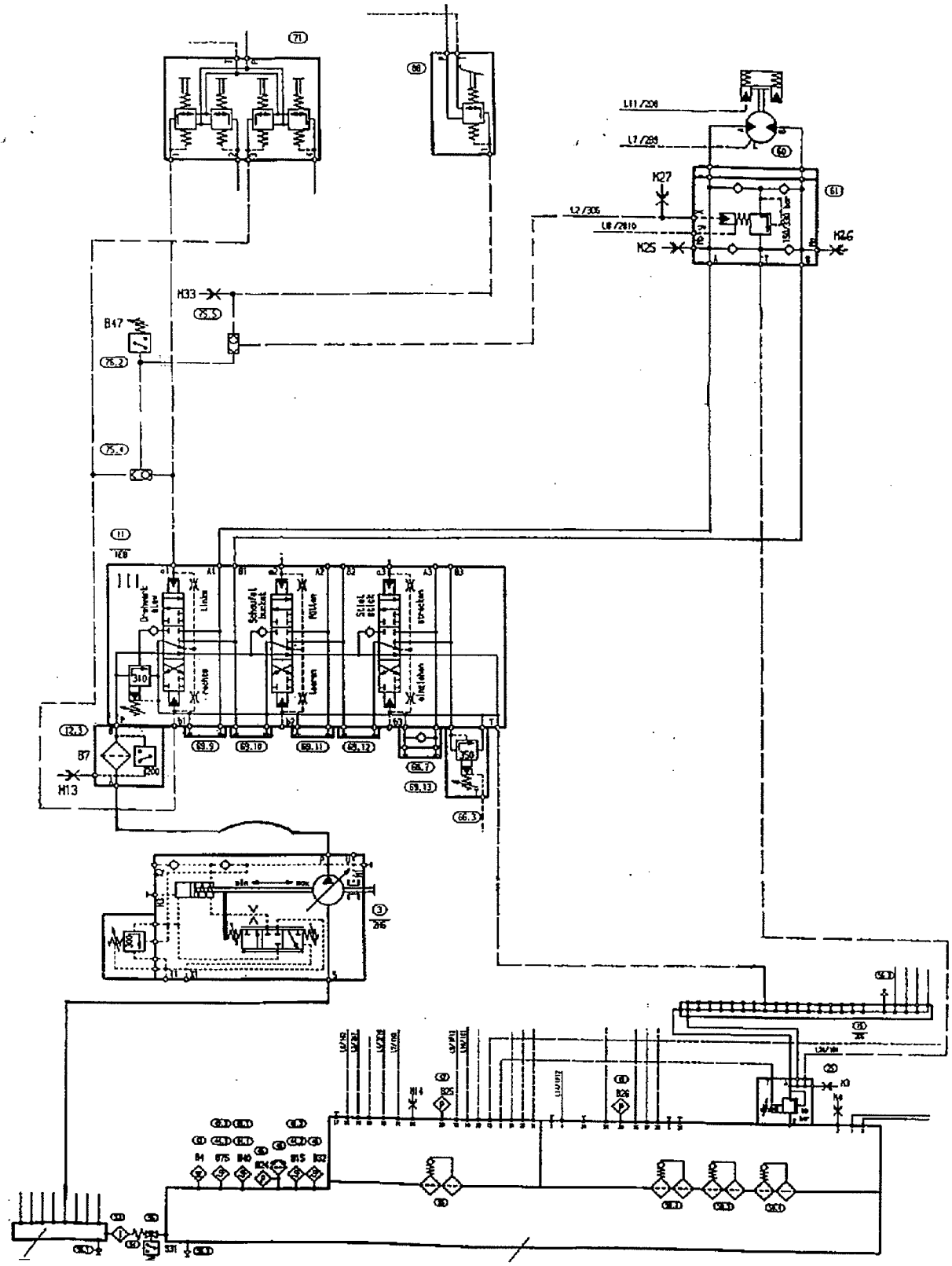

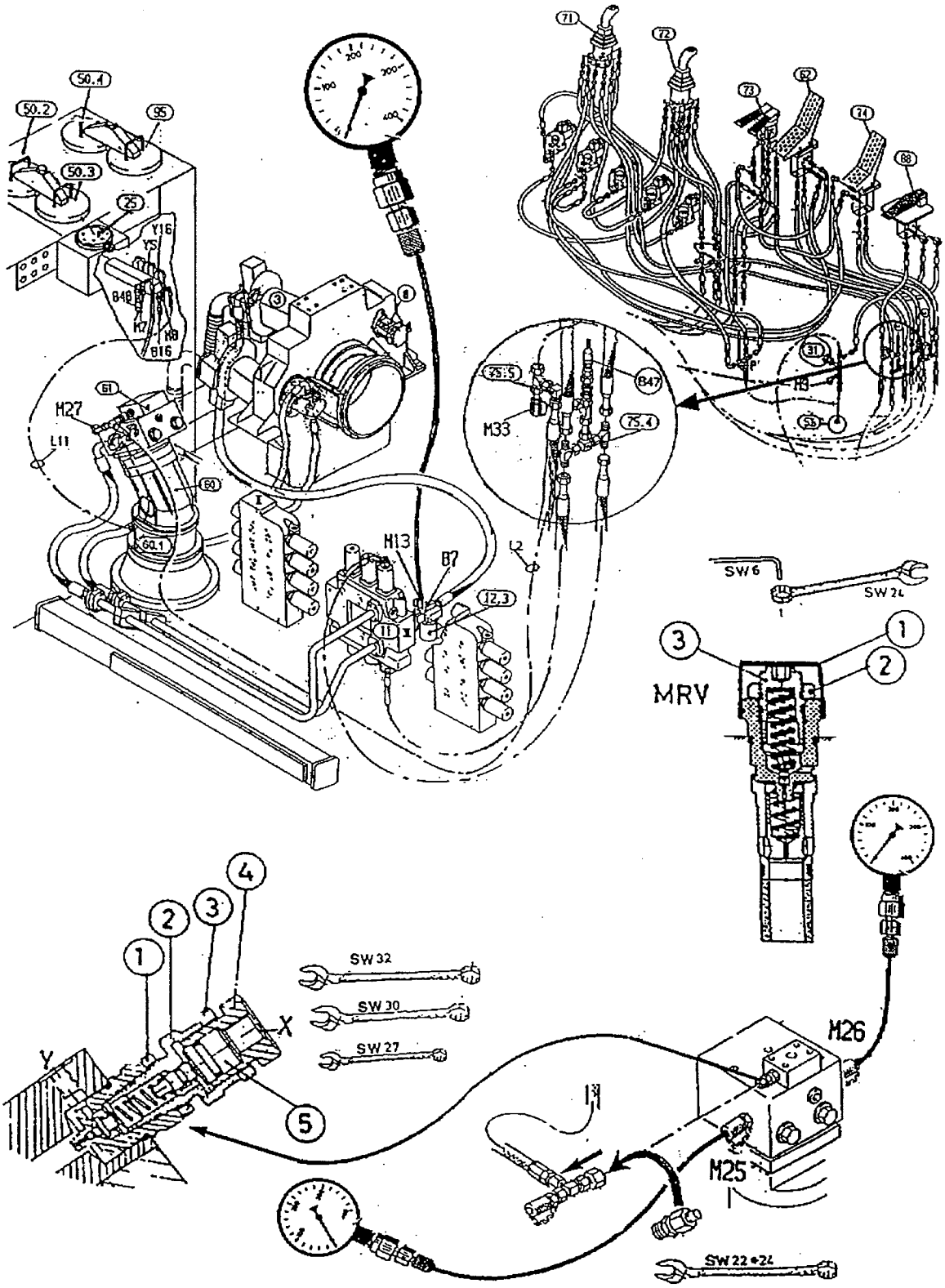
50.4
50.2
95
50.3
25
Y16
Y5
B48
M7
M9
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M27
61
L11
60
60.1
M13
B7
12.3
L2
35.5
B47
M33
75.4
71
72
73
82
74
88
31
M8
53
SW 6
SW 24
3
1
2
MRV
4
SW 32
SW 30
SW 27
X
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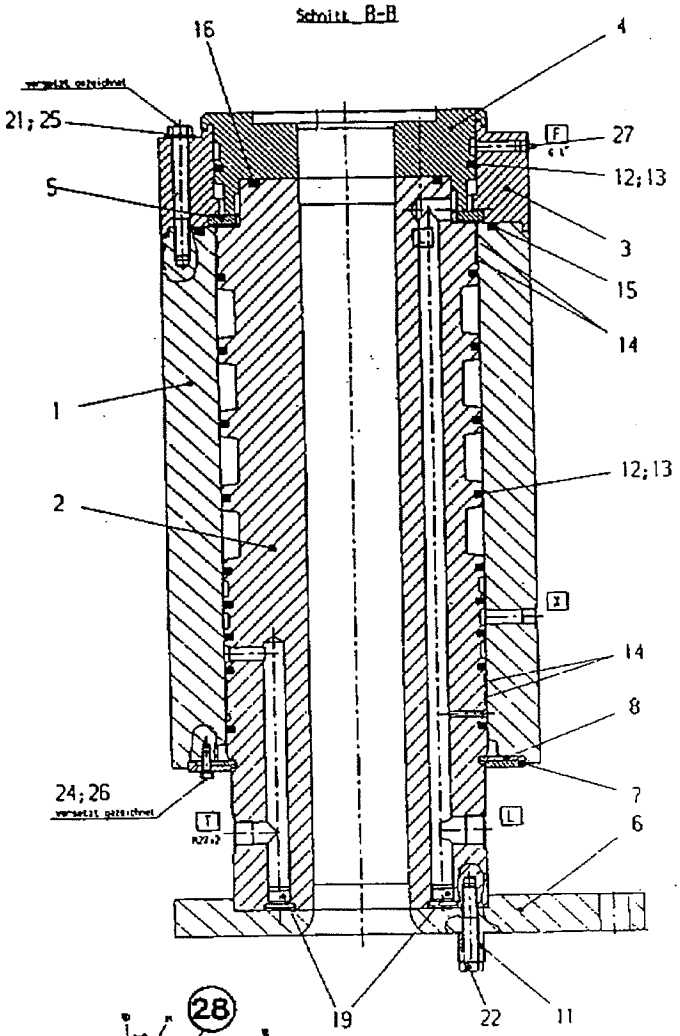
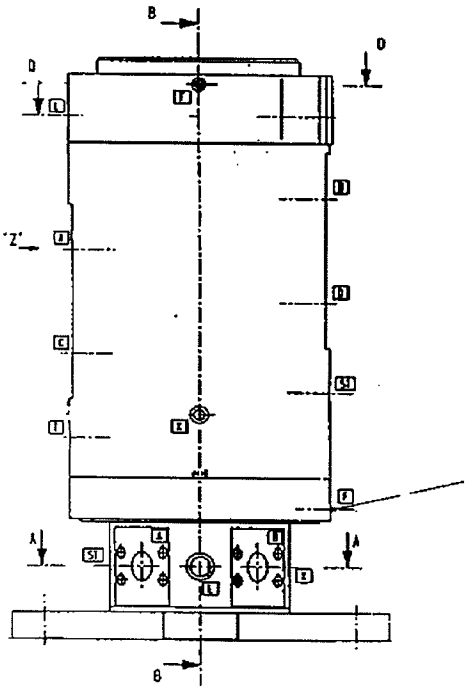
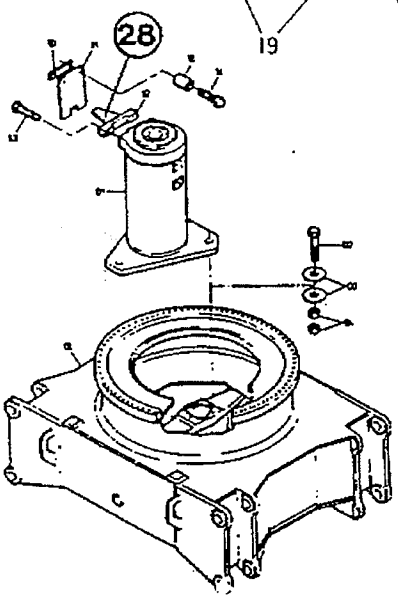
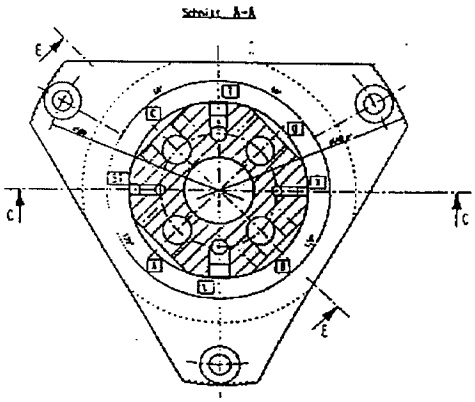
M25
SW 22 +24

Z 22271		KOMATSU MINING GERMANY

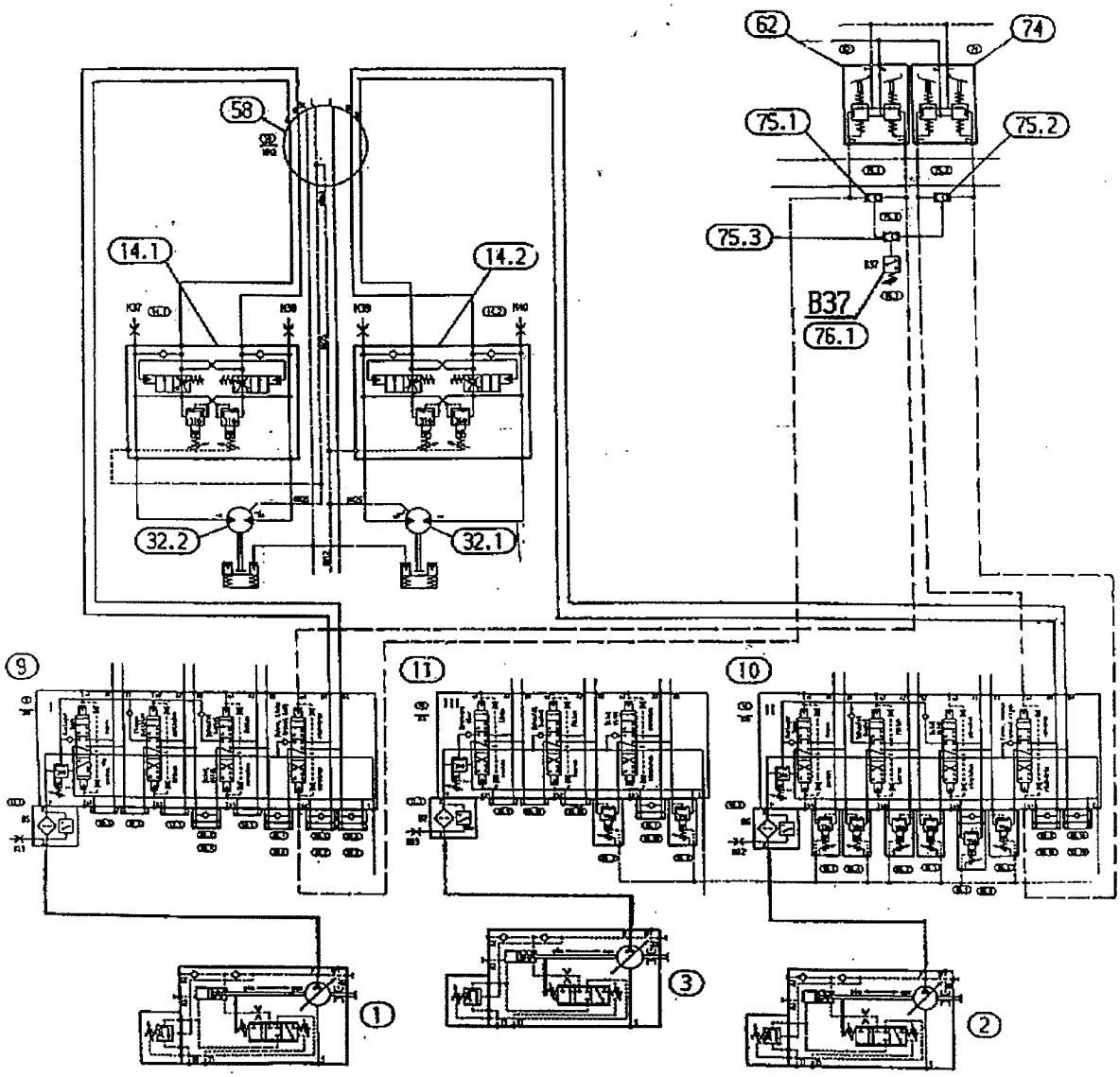




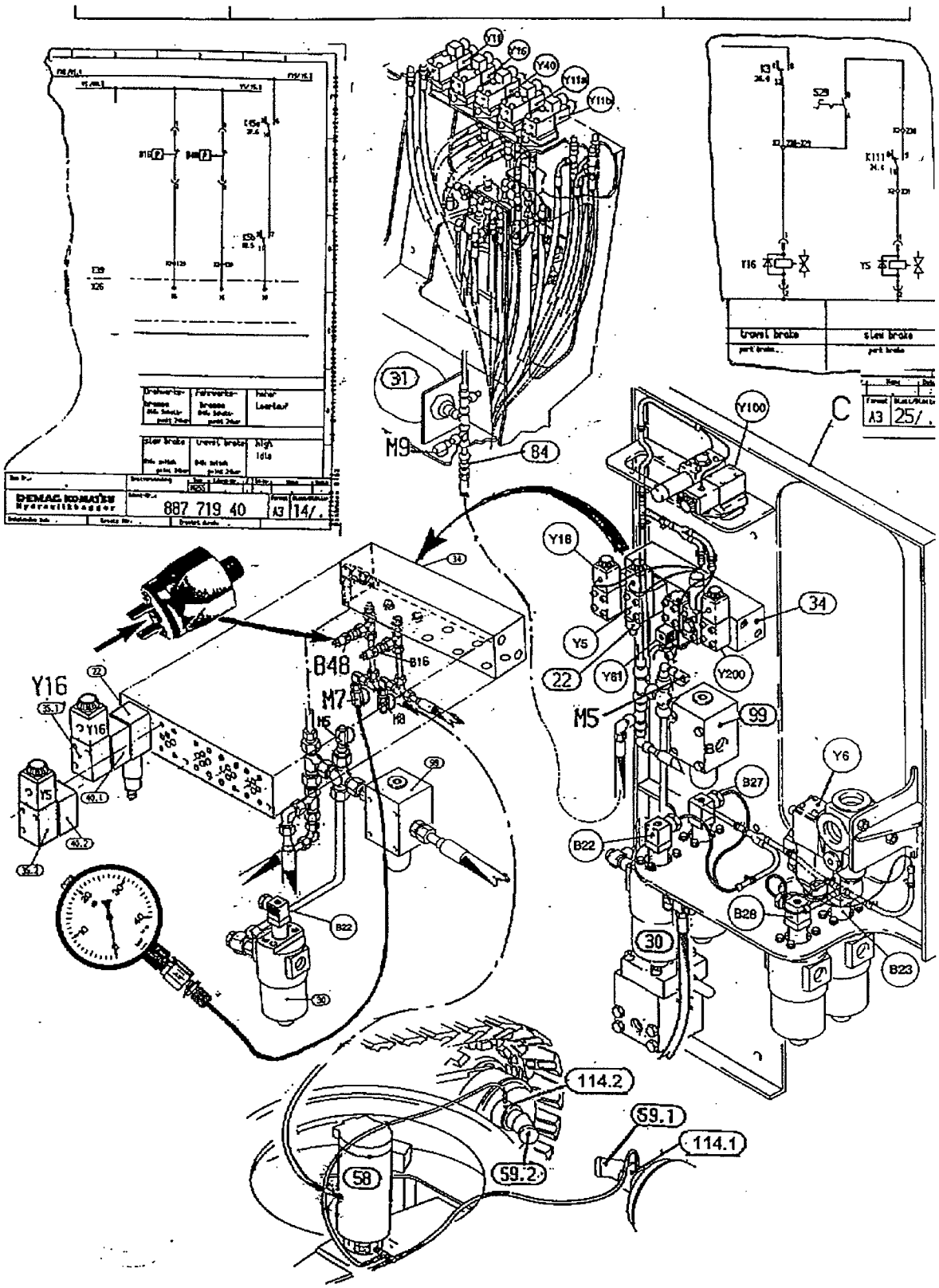




Z 22274		KOMATSU MINING GERMANY



Z 22278		KOMATSU MINING GERMANY



Pressure Increasing Valve Type: MO 7010.

- **The pressure increasing valve is a remote controlled pressure relief valve, actuated by hydraulic pressure. The individual pressure is in such a way determined by the pilot pressure.**

Design: Z 22282

(1)	Pilot valve with valve seat
(2)	Valve poppet
(3)	Compression spring
(4)	Main valve with sleeve
(5)	Main piston
(6)	Closing spring
(7+8)	Set screws
(9)	Piston
(10)	Pin
(11+12)	Jet bore
(13+14)	Lock nut
(15)	O-ring with back-up rings
(16, 17+19)	O-ring

Function:

The valve poppet (2) is connected via the jet bores (11) and (12) with the P port.

If static pressure increase above the set pressure value, the valve poppet (2) opens and allows oil to flow freely to tank (T1). This oil generates a pressure drop in the spring chamber of the main spool, the closing force of the spring (6) is cancelled, and the main piston (5) opens to allow the pump flow to flow to tank (T2).

Damped opening and closing is obtained by the throttled volumetric change.

By applying external pressure of Pst max = 35 bar to the main spool (9) via port X, the pre-tensioning of the pressure spring (3) is increased by the amount of the piston stroke "S" and system pressure is increased correspondingly.

The possible pressure increase p is 440 bar max. or 440 bar minus the basic setting.

The setting is fixed by means of the setting screw (7) and lock nut (13); 1 turn of the screw = 150 bar.

Cont.::

Z 22286

Function check:

a) After all adjustments are finished:
b) Start engine and let it run with max. speed.
c) Travel approx. 10 m with the shovel. Do not stop the engine.
d) Connect pressure gauge to check point (31.2).
e) Unplug the solenoid valve Y16.
f) The pressure must drop to 35 bar.

Remains the pressure at a higher or lower pressure*, are-check for the low pressure adjustment at the pressure increasing valve (87) is necessary.
Exception: The solenoid Y16 has a mechanical fault

g) Re-plug Y16 and remove gauge.

- **The pressure may drop to a lower pressure than 35 bar after a longer time, this is o.k. because of internal leakage**

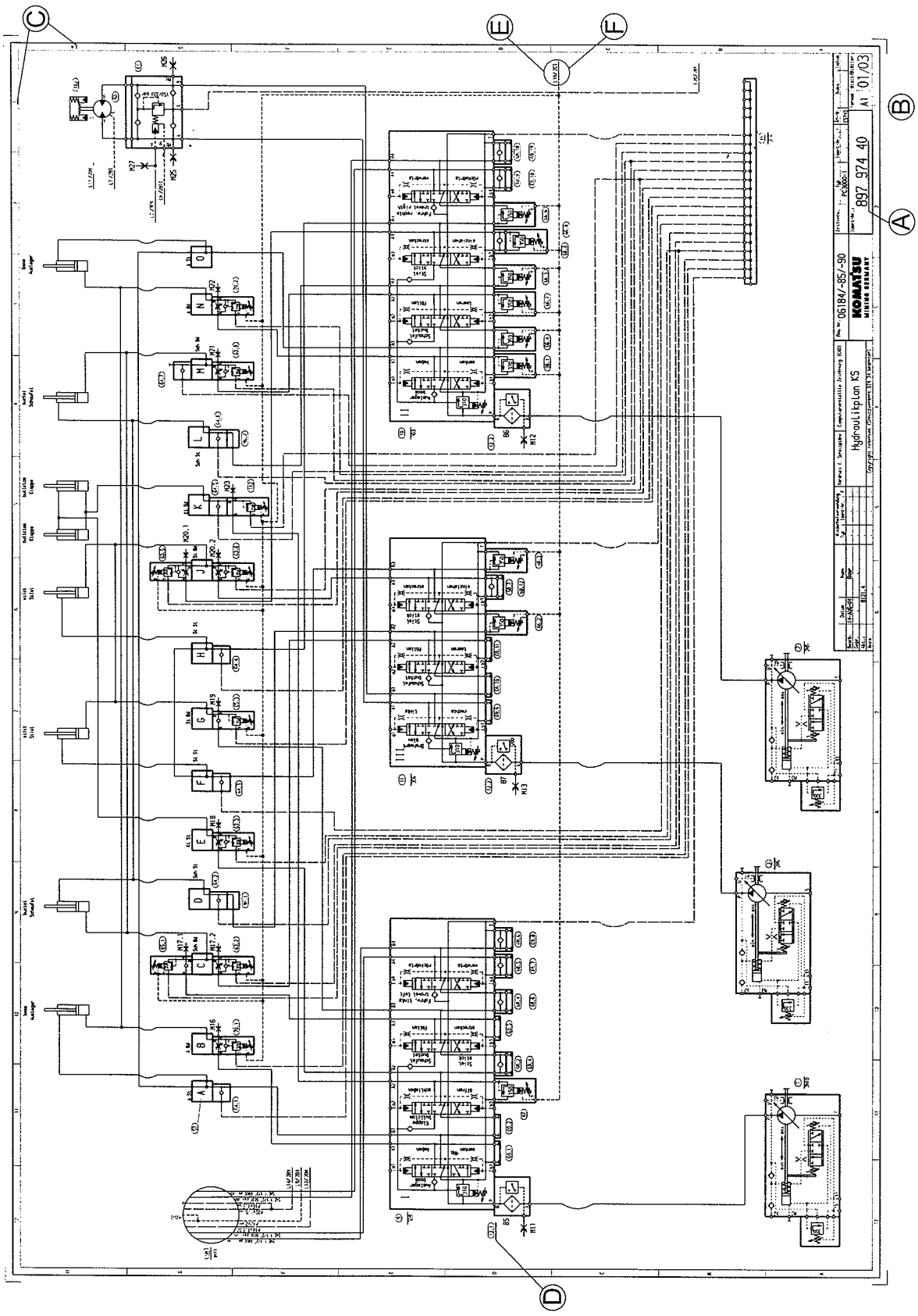
Legend for illust. Z 21664

(1) Enabling switch for hydraulic service arm operation
(2) Actuating chain for lowering and lifting of hydraulic service arm
(3) Service arm, hydraulically operated
(4) Monitoring and control box
(5) Receiver panel
(6) Actuating chains for Operator Warning System or Emergency Shutdown of the engine

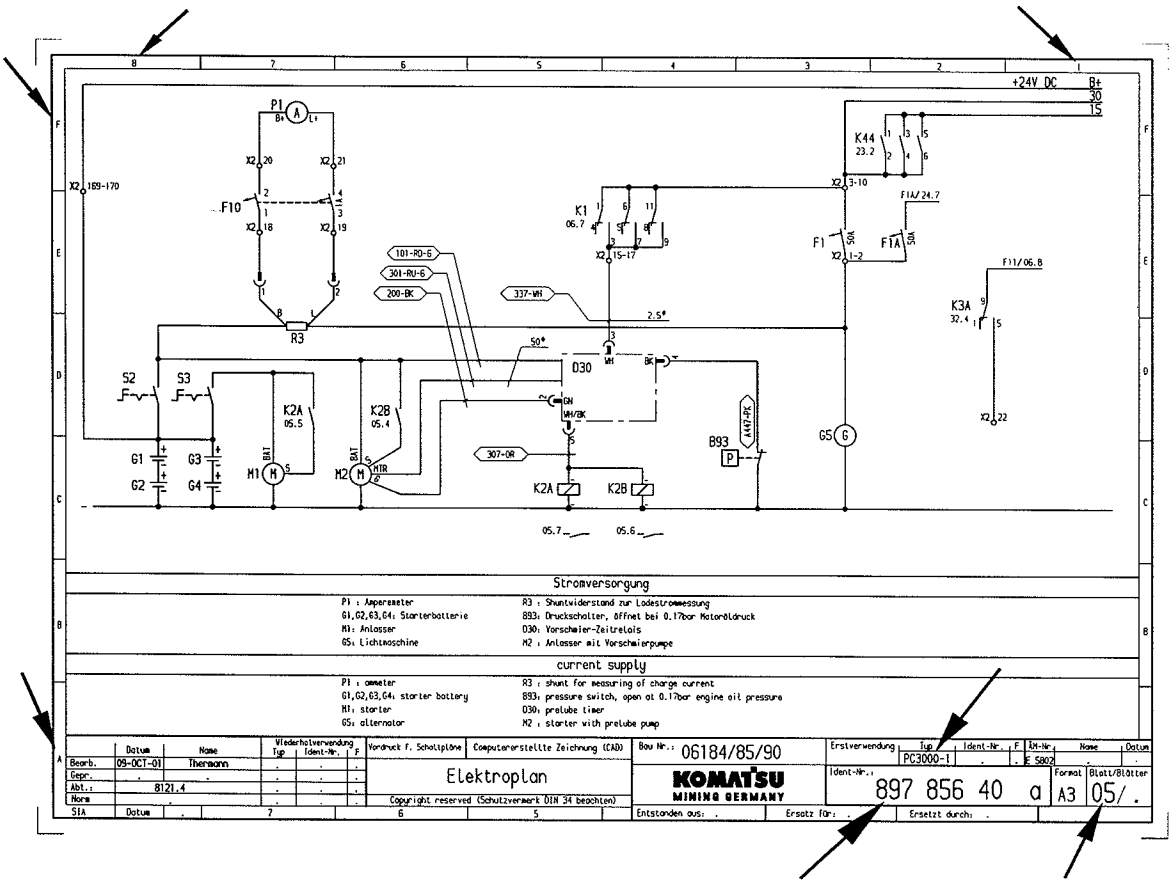
2. The Diesel engine is off

The service arm can only be lowered. Turn the main key switch to ON position and the enabling switch (1) to position "1". For lowering the service arm (3) pull down chain (2).
The solenoids Y124b and Y124c are energized. There is no pilot pressure. The arm can now go down because own weight. The return oil flows via Y124c, Y 124b and the orifice (116) back to the tank. The rod end site of the cylinder can be filled via anticavitation valve (40.3).

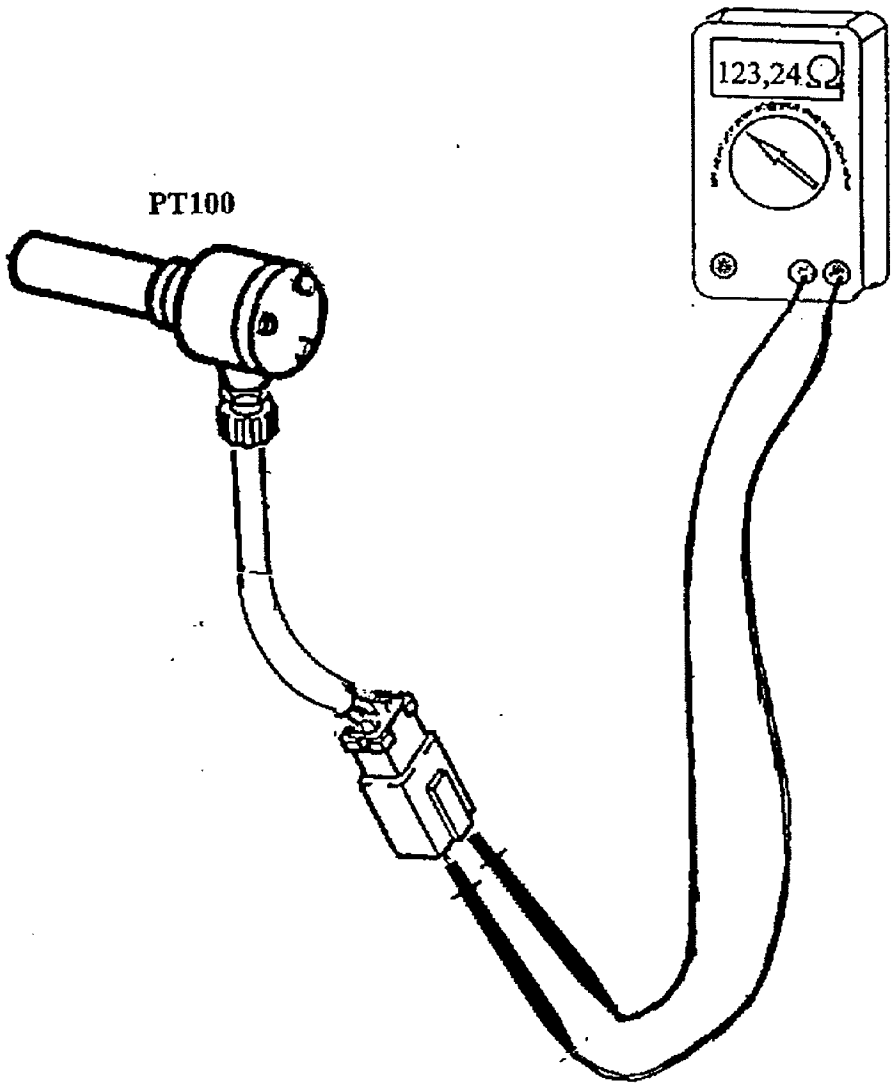
Z 22369		KOMATSU MINING GERMANY

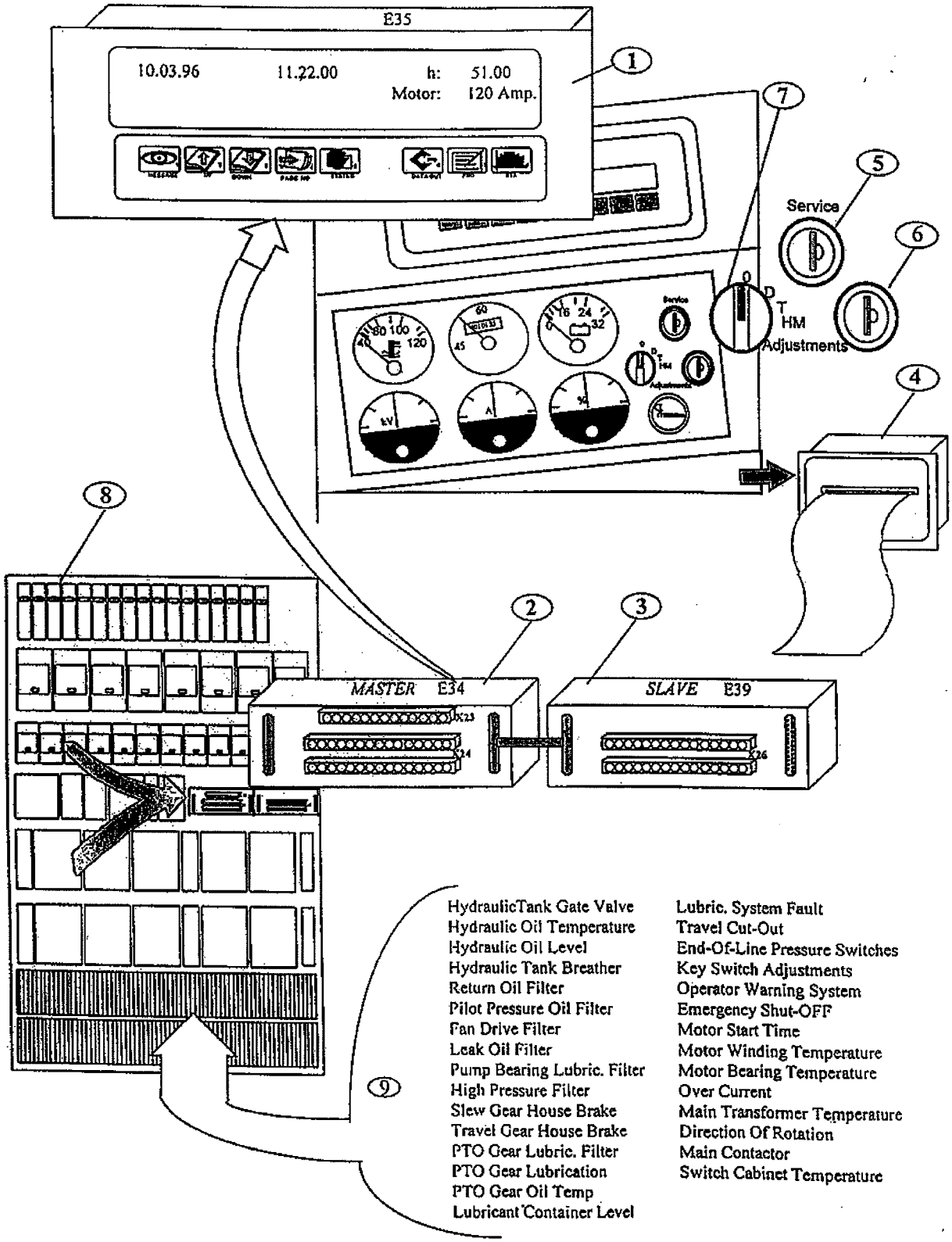


Z 22374		KOMATSU MINING GERMANY



X2 10 K44.2 X2 10 K44.2

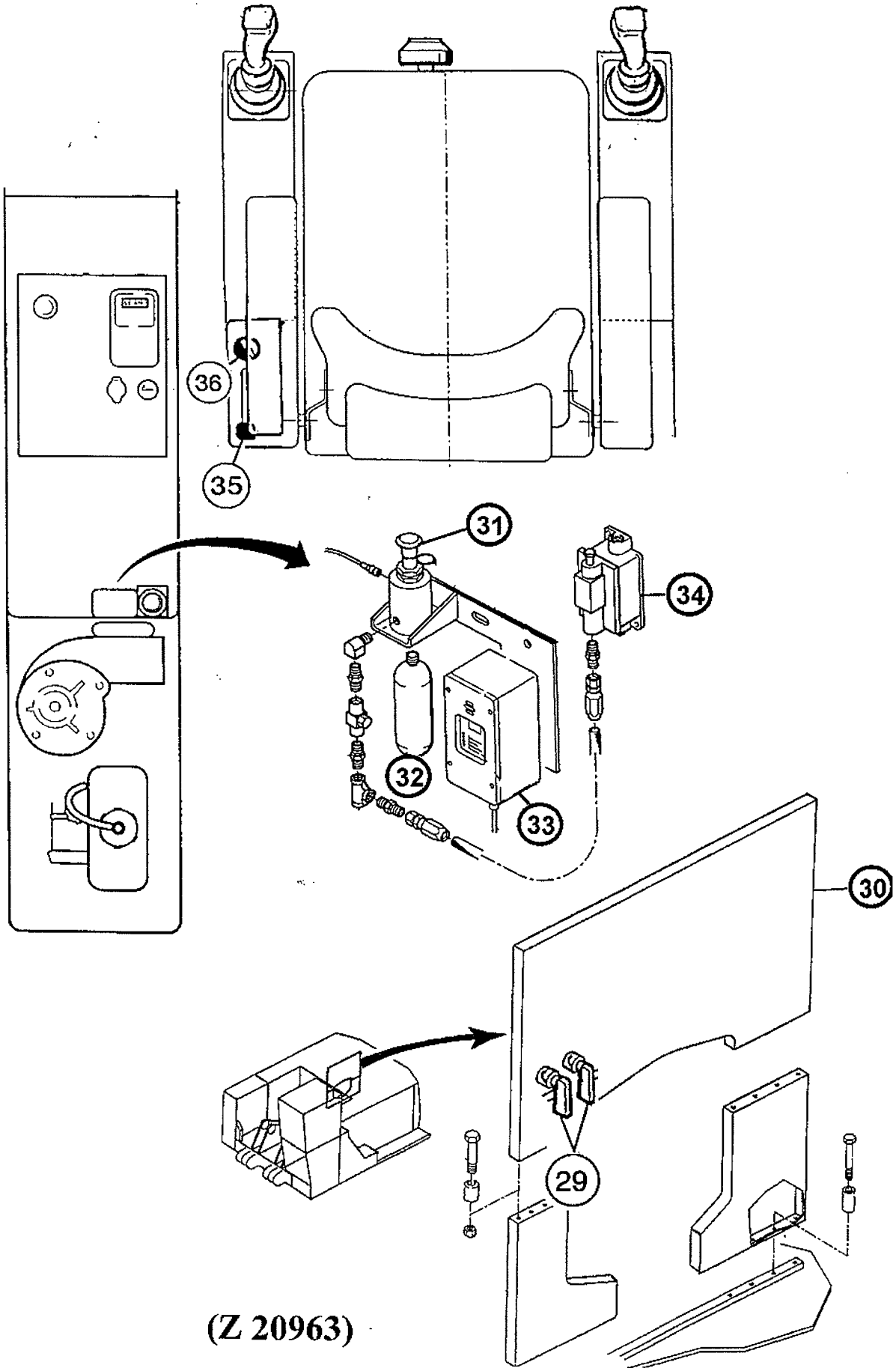

123,24Ω
PT100



HydraulicTank Gate Valve
Hydraulic Oil Temperature
Hydraulic Oil Level
Hydraulic Tank Breather
Return Oil Filter
Pilot Pressure Oil Filter
Fan Drive Filter
Leak Oil Filter
Pump Bearing Lubric. Filter
High Pressure Filter
Slew Gear House Brake
Travel Gear House Brake
PTO Gear Lubric. Filter
PTO Gear Lubrication
PTO Gear Oil Temp
Lubricant Container Level

Lubric. System Fault
Travel Cut-Out
End-Of-Line Pressure Switches
Key Switch Adjustments
Operator Warning System
Emergency Shut-OFF
Motor Start Time
Motor Winding Temperature
Motor Bearing Temperature
Over Current
Main Transformer Temperature
Direction Of Rotation
Main Contactor
Switch Cabinet Temperature

Z 20963		KOMATSU MINING GERMANY



(Z 20963)

FUNCTIONS OF THE ETM SYSTEM AND THEIR UTILIZATION, ILLUST. (Z 20282)

After switching on the excavator's key operated switch, the name of the manufacturer will be displayed for a period of 5 seconds.

- **If during this period a key is being actuated, the manufacturers name remains on the screen for further 20 seconds.**

Thereafter the basic ETM display, as shown in the illustration, normally automatically appears on the screen. This display is for general information during operation.

If a fault or an information condition occurs during operation, the basic display is automatically replaced by a message in text. If a further condition occurs, the message will be displayed if it is more important than the present message on the screen, so that the operator is always shown the latest, most important message. A flashing number on the screen shows the total number of the current messages. The message text provides the operator with an explanation of the condition in standard texts as listed in the annexes "Message Texts". When a fault message is displayed the number of operating hours is displayed at the same time.

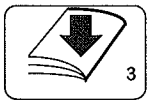
Information conditions are held as long as they occur, but are not stored.

BASIC DISPLAY (MESSAGE PAGE NO. 0):

DATE: TIME OF DAY: OPERATING HOURS (h):
ENGINE RPM (1/min):

TRUCK COUNTER:

Change-over from English to German Language

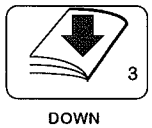


Six text lines are provided for each message.
Use key 3 for changing the message text.

Example

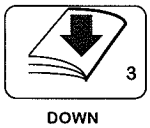
Line 1: English
Line 2: English

Gear lubrication failure
h: 1350:40



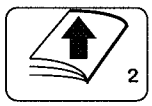
Line 3: German
Line 4: German

Getriebschmierung ausgefallen



Line 5: Not used
Line 6:

Change-over from German to English Language

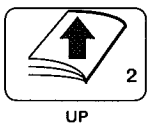


Six text lines are provided for each message.
Use key 2 for changing the message text.

Example:

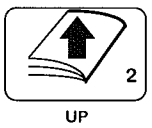
Line 1: English
Line 2: English

Gear lubrication failure
h: 1350:40



Line 3: German
Line 4: German

Getriebeschmierung ausgefallen



Line 5: Not used
Line 6:

TABLE OF MESSAGES

Message Pages Number 12 to 18.

Page No.:

12: $h: Low idle speed: High pressure filter #2 restricted
Niedriger Leerlauf: Hochdruckfilter 2 verschmutzt

13: $h: Low idle speed: High pressure filter #3 restricted
Niedriger Leerlauf: Hochdruckfilter 3 verschmutzt

14: $h: Hydraulic oil level too low!
Stop the engine!
Hydraulikoelstand zu niedrig!
Motor abstellen!

15: # Caution, slew gear house brake ON
Achtung, Drehwerkbremse geschlossen

16: # Caution, travel gear house brake ON
Achtung, Fahrwerkbremse geschlossen

17: # No clearance for starting:
p shift engine to low idle
Keine Startfreigabe: Motor auf niedrigen Leerlauf schalten

18: $h: Central lubrication system fault
Zentralschmieranlage gestoert

4th Priority Group:

Information messages

Page number

15: # Caution, slew gear brake ON

16: # Caution, travel gear brake ON

17: # No clearance for starting, shift engine to low idle

20: # Pressure lubrication system ON

23: # Automatic engine after-running

26: # Intake air preheating

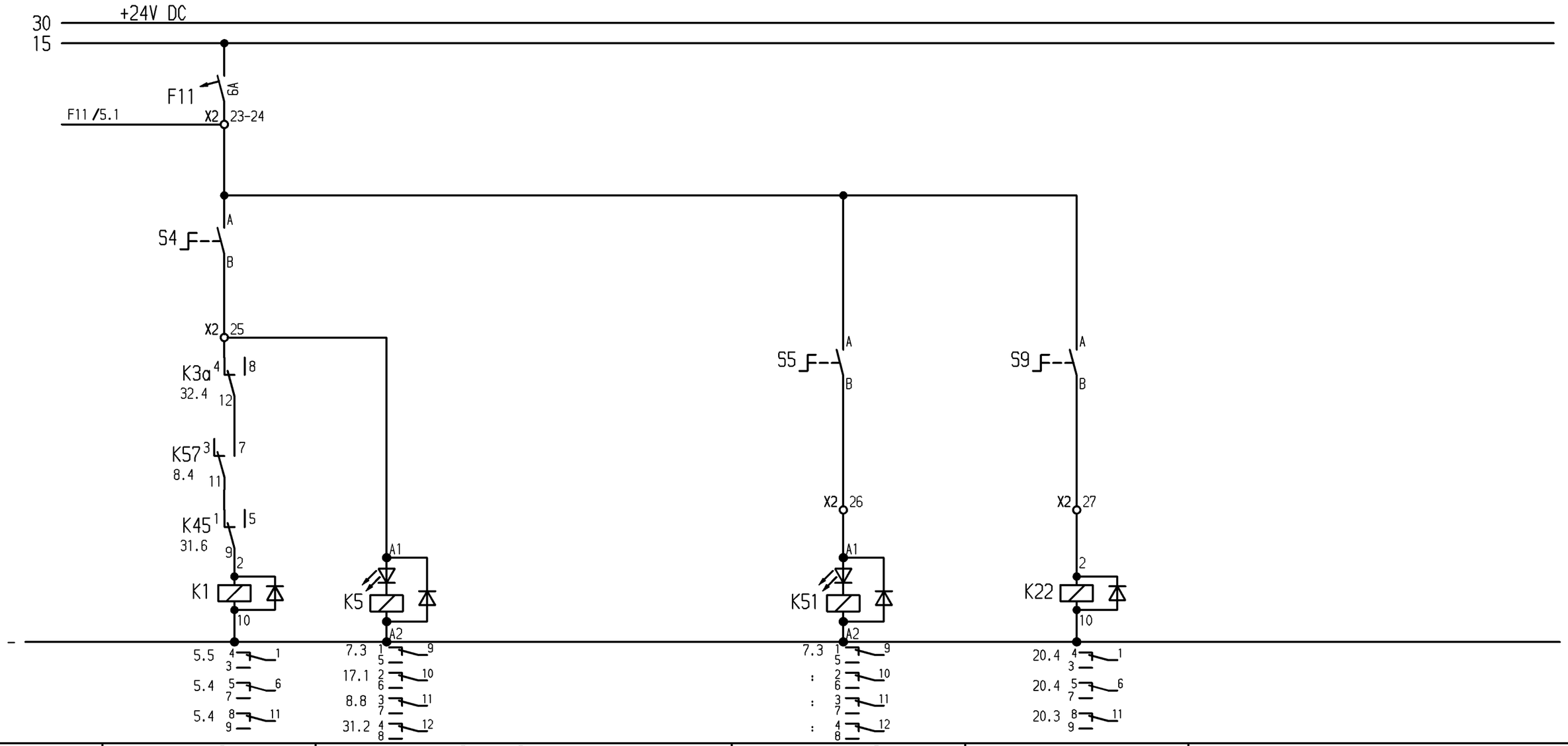
50: # Caution, pull switch from ground man actuated

53: # Pressure switch for central lubrication system actuated

54: # Pressure switch for slew ring gear lubrication system actuated

REFERENZLISTE FUER LEITUNGS - MESSSTELLEN - POSITIONSNUMMERNKOORDINATEN
UNTERSUCHTER HYDRAULIKPLAN 943 208 40 BN: 06225

POS/LEI/MS	BLATT 01	BLATT 02	BLATT 03	BLATT 04
1	A11	H10		
2	A 6	H 5		
3	A 9	H 7		
4		G11		
5		H 5		
6		G 3		
9	E12		D 9	
10	E 4		D 3	
11	E 8		C 6	
12. 1	D12			
12. 2	D 4			
12. 3	D 8			
14. 1			F12	
14. 2			F10	
15	A 1	C 6		
16. 1		B 5		
16. 2		B 5		
17. 1		B 4		
17. 2		B 4		
18. 1		B 4		
18. 2		B 4		
19		B 3		
20		E 2		
21		E 2		
22		E 9		
23		D 2		
24		A 3		
25		B 6		
26		F 3		
27		E 3		
28		E 3		
29		E 3		
30		F 4		
31			H11	
33		E 7		
34		D 6		
35. 1		E 9		
35. 2		E 8		
35. 4		E10		
35. 6			H 9	
35. 8			H10	
35.11		E 4		
35.12		B 7		
36. 3			D 6	
37		E 7		
38. 1		E10		
38. 2		E10		
38. 4			H 9	
38. 6			E 3	
38. 7			E 2	
38.10		E 4		
38.11			E 7	
38.12			H10	
38.13			D 4	
38.14		E 4		
38.15		D 6		
38.17		B 7		



Motor-Start	Reset Relais	Motor-Stop	Kaltstart	
engine-start	reset relay	engine-stop	cold start aid	

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	24.04.06	Hoevelmann	.	.	.
Gepr.	_	_	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

SIA | Datum | . | 7 | 6 | 5

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

ELektroplan

Bau Nr.: 06225

KOMATSU MINING GERMANY

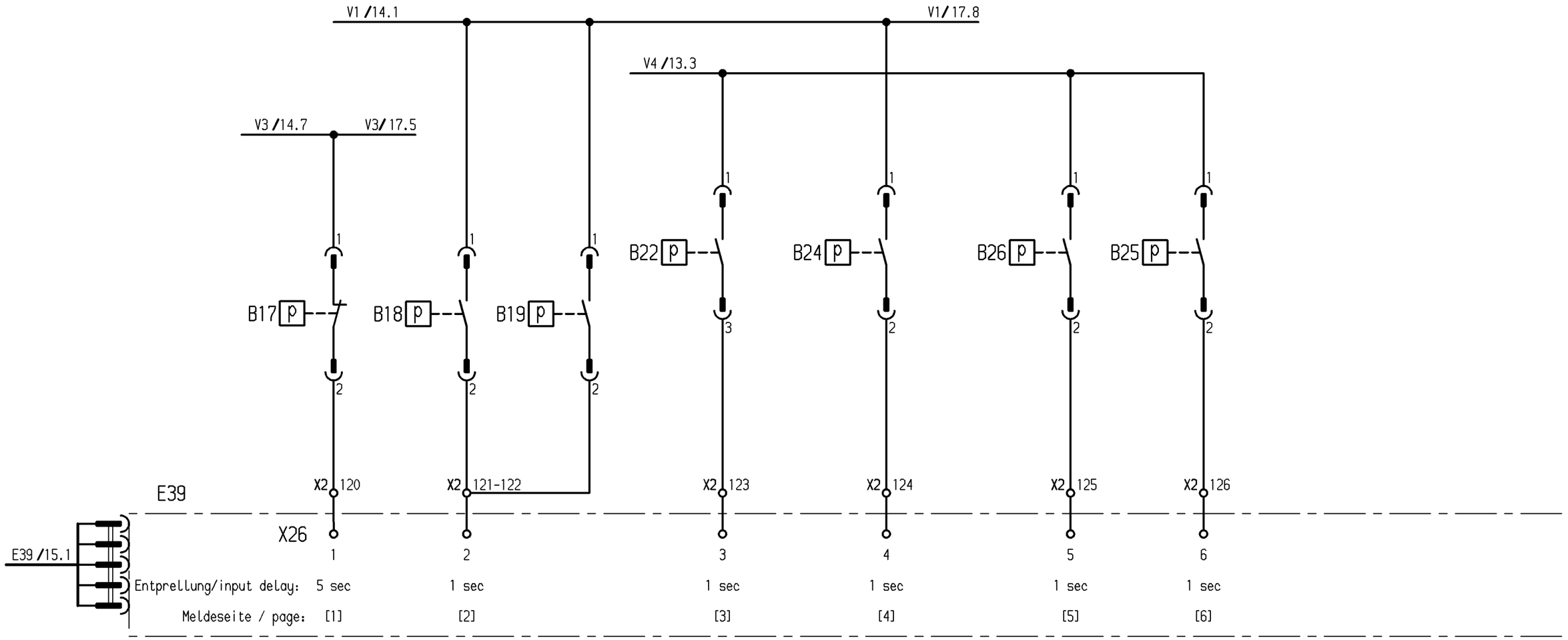
Erstverwendung | Typ PC3000-1 | Ident-Nr. . | F .

ÄM-Nr. E7795 | Name . | Datum .

Ident-Nr.: 943 207 40 _

Format A3 | Blatt/Blätter 6 /36

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



Eingangsmeldemodul (Slave)

Getriebeschmierung	Motor Luftfilter	Ölfilter Steueröl	Luftfilter Hydr. Öl	Rücklauffilter	Leckölfilter
B17 : Schaltpunkt 0.5bar	B18,19 : Schaltpunkt 0.05bar (Unterdruck)	B22 : Diff.-dr.-schalter Schaltpunkt 5bar	B24 : Schaltpunkt 0.08bar (Unterdruck)	B26 : Schaltpunkt 2bar	B25: Schaltpunkt 0.5bar

pickup module unit (slave)

pump distributor gear lubrication	engine aircleaner	hydr. oil filter control oil	hydr. oil tank breather filter	return filter (hydr. tank)	leak oil filter (case drain)
B17: switch. point 0.5bar	B18,19 : switch. point 0.05bar (neg. pressure)	B22 : diff. pressure switch switching point 5bar	B24 : switching point 0.08bar (neg. pressure)	B26: switch. point 2bar	B25: switch. point 0.5bar

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	24.04.06	Hoevelmann	.	.	.
Gepr.	_	_	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

SIA | Datum . | 7 | 6 | 5

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

ELektroplan

Bau Nr.: 06225

KOMATSU MINING GERMANY

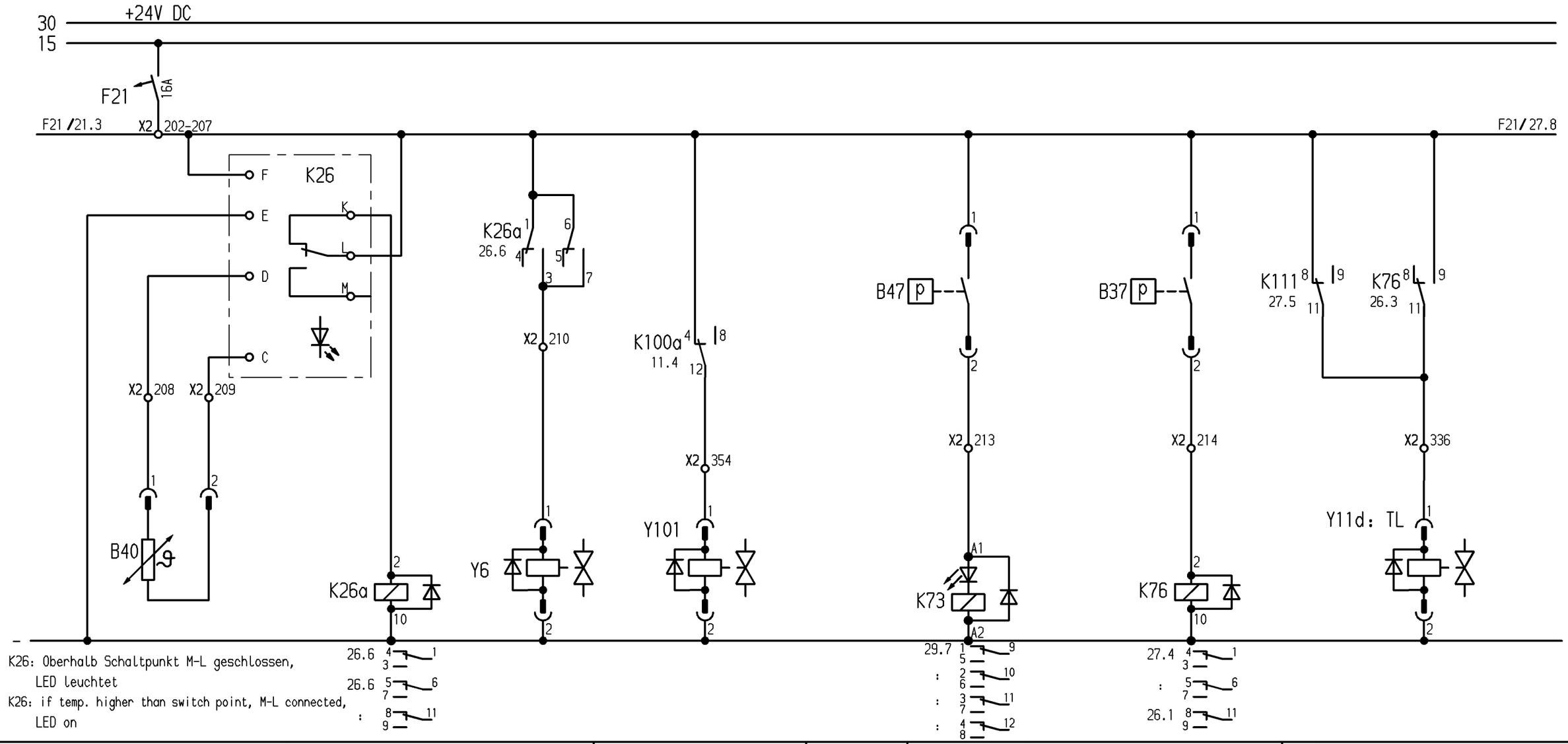
Entstanden aus: . | Ersatz für: . | Ersetzt durch: .

Erstverwendung	Typ	Ident-Nr.	F
	PC3000-1	.	.

ÄM-Nr.	Name	Datum
E7795	.	.

Ident-Nr.: 943 207 40 _

Format A3 | Blatt/Blätter 16/36



K26: Oberhalb Schaltpunkt M-L geschlossen, LED leuchtet

K26: if temp. higher than switch point, M-L connected, LED on

Kühlerstufenschaltung

Ölsorte nach ISO	VG22	VG32	VG46	VG68	VG100	Tellus Artic Oil 32
Schaltpunkt	32°C	41°C	50°C	58°C	67°C	38°C

Ölkühler Vorspanndruck

Y101 erregt = Vorspanndruck reduziert

Bewegungserkennung

Drehen: B47 : Schaltpunkt 5 bar

Fahren: B37 : Schaltpunkt 5 bar

Entlastung Vorsteuerleitung

Y11d: nur bei Tieflöffeleinrichtung

cooler fan rpm reg.

oil grade acc. to ISO	VG22	VG32	VG46	VG68	VG100	Tellus Artic Oil 32
switching point	32°C	41°C	50°C	58°C	67°C	38°C

oilcooler preload pressure

Y101 active = preload pressure reduced

motion detection

slew: B47 : Schaltpunkt 5 bar

travel: B37 : Schaltpunkt 5 bar

pre-control tube release

Y11d: only backhoe attachment

	Datum	Name	Wiederholverwendung Typ	Ident-Nr.	F
Bearb.	24.04.06	Hoevelmann	.	.	.
Gepr.	_	_	.	.	.
Abt.:	8125		.	.	.
Norm	.		.	.	.

Vordruck f. Schaltpläne | Computererstellte Zeichnung (CAD)

ELektroplan

Bau Nr.: 06225

KOMATSU MINING GERMANY

Erstverwendung	Typ	Ident-Nr.	F
	PC3000-1	.	.

ÄM-Nr.	Name	Datum
E7795	.	.

Ident-Nr.: 943 207 40 _

Format: A3

Blatt/Blätter: 26/36

Entstanden aus: .

Ersatz für: .

Ersetzt durch: .

SIA | Datum . | 7 | 6 | 5