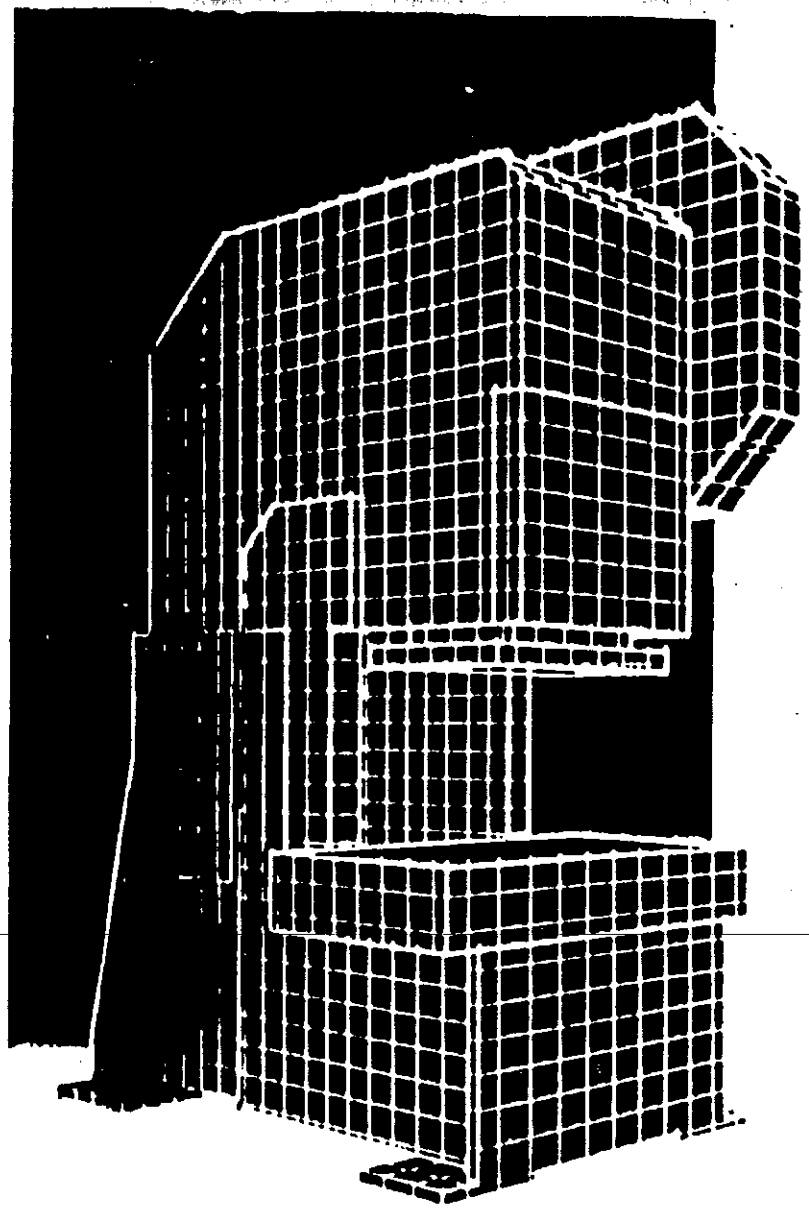

ECCENTRIC PRESSES

INSTRUCTION BOOK

P 80-RE

IMS

INDUSTRIA MASETTO SCHIO s.r.l.

"CE" certificate of conformity

The undersigned company

IMS Industria Masetto Schio
via Campania 9 - Z.I.
36015 Schio (Vi)

C.F. and P.IVA N° 02125370243

declares under its exclusive responsability that the machine:

Rear pillar mechanical press
P 80 - RE (Serial N° 1178)

is in conformity with EEC Machines Directive 89/392 and further modification following EEC Directives 91/368, 93/44 and 93/68 as well as Directives..... and that it is identical to the machine subjected to EC examination: 897 n° CE 0208 AT 036
issued by: ANCCP S.r.l.
via Bronzino 3
20133 Milano

which is notified by the Italian Ministry of Industry and by the EEC with number 0302

Schio (VI) 12-03-96

Managing Director
Renzo Nardi

Eccentric presses

"IMS" presses are provided with all necessary safety devices to prevent accidents and injuries to the operator. Before the delivery of the machines the manufacturer issues a "test and performance" certificate, where such safety devices are pointed out, which is part of this handbook.
The user, therefore, will see:

1) not to modify the initial technical features of the machine shown on the special identification plate fixed to the machine and in the instruction handbook;

2) not to vary the initial safety devices also by means of modification in the electric circuit;

3) to add to the initial safety devices other devices that are made necessary by country regulations or by changes in the sort of work made by the press;

4) on request the company can supply any type of protection or safety device which should be imposed by particular working requirements;

5) to impose to the machine operators the knowledge, use and respect of safety devices.

In order to keep the machine quality unchanged, it is necessary to follow carefully the standards later shown for the installation, use and maintenance.

INDUSTRIA MASETTO SCHIO S.R.L.
Via Campania, 9 - Z.I.
36015 SCHIO (VI) Italy

Machine type : Rear pillar mechanical press
Model or series : P 80 - RE

- SCHACHERMAYER G. - Sachachermayerstrasse,2 - 4021 LINZ
  AUSTRIA - tel.0043/7326/5990
- WELDA B.V. - Antwerpsestesmweg,949 - 9041 GENT
  BELGIUM - tel.0032/93/557426
- HOLMQUIST MASKINER - Rynkevangen,1 - 4400 KALUNDBORG
  DANMARK - tel.0045/59561150
- AMOT sarl-54,Av.de Verdum - 91550 PARAY
  FRANCE - tel.0033/1/60482144 V/POSTE
- PEBOSCQ - 13, Rue H.Balzac - 33320 EYSINES
  FRANCE - tel.0033/56282997
- ERICH KLAES - Hochpfortenbuchel 12 - 5001 KOLN
  GERMANY - tel.0049/221/234403
- HANS WESTEKEMPER - Dalmlerweg, 32 - 4400 MÜNSTER
  GERMANY - tel.0049/251/717097
- WEBER ING.-BÜRO-Lindenstrasse,8 - 8909 WALTENHAUSEN
  GERMANY - tel.0049/8263/342
- CHAR.TARNIKAS LTD. - 30,Tantalou Street - 538413 THESSALONIKI
  GREECE - tel.0030/31/538413
- VENEMA B.V. - Coenecoop 111-113 - 8741 PH WADDINXVEEN
  HOLLAND - tel.0031/1828/13122
- TUWI B.V. - Koningsweg,52 - 7102 WINTERSWIJK
  HOLLAND - tel.05430/20888
- AR&C INTERNACIONAL LDA.- Rua T.Valadim 744 - 4100 PORTO
  PORTUGAL - tel.351/2/6003530
- JOSEPH RHODES LTD. - Belle Vue Wakefield - Yorkshire WFISEQ
  U.K. - tel.0044/924/371161
- MASAK MASKINER AB- Egebygatan, 20 - 59521 MIOLBY
  SWEDEN - tel.0046/142/15130
- SOLDINI ENGINEERING - Zona Industriale 4 - 6850 MENDRISIO
  SWISS - tel.0041/91/465444
- TOSAG ENGINEERING - Postfach 15 - 4852 ROTHRIST
  SWISS - tel.0041/62/443828

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01 Machine manufacturer identification pag. 02
02 After-sale service and maintenance pag. 03
03 Technical features pag. 05
04 Machine use pag. 06
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06 Performance certificate pag. 08
07 Accessories equipped with the machine pag. 09
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11 Safety guards pag. 14+14 d
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14 Machine release - air cushion pag. 17
15 Maintenance pag. 18-19
16 Technical documentation pag. 20
(diagrams, figures, tables,etc.)

MODEL : PRESS P 80-RE

Maximum pressure in proximity to bottom dead center	t	80
Width between pillars	mm	400
Distance between connection axis and pillars (inc.)	mm	280
Ram dimensions : width x depth	mm	560x376
Bed dimension : width x depth	mm	850x550
Min.distance between bed and ram down, adjusted up	mm	360
Ram adjustment	mm	80
Ram adjustable stroke	mm	0÷110
Spigot hole diameter x width	mm	50H7x80
N° of blows per min.	ca.	60
Drive motor power	kw	5,5
Approximate mass	kw	ca. 5400
Mains voltage + neutral	V	380/220
Frequency	Hz	50
Dimensions (length x width x heigth)	mm	1635x945x2640
Power of lubrication pump motor	kw	0,090
Max. adjustable pressure of blankholder cushion	t	1÷5
Max. adjustable stroke of blankholder cushion	mm	55

SERIAL N°.....1179.....PRODUCTION YEAR .....1996.....

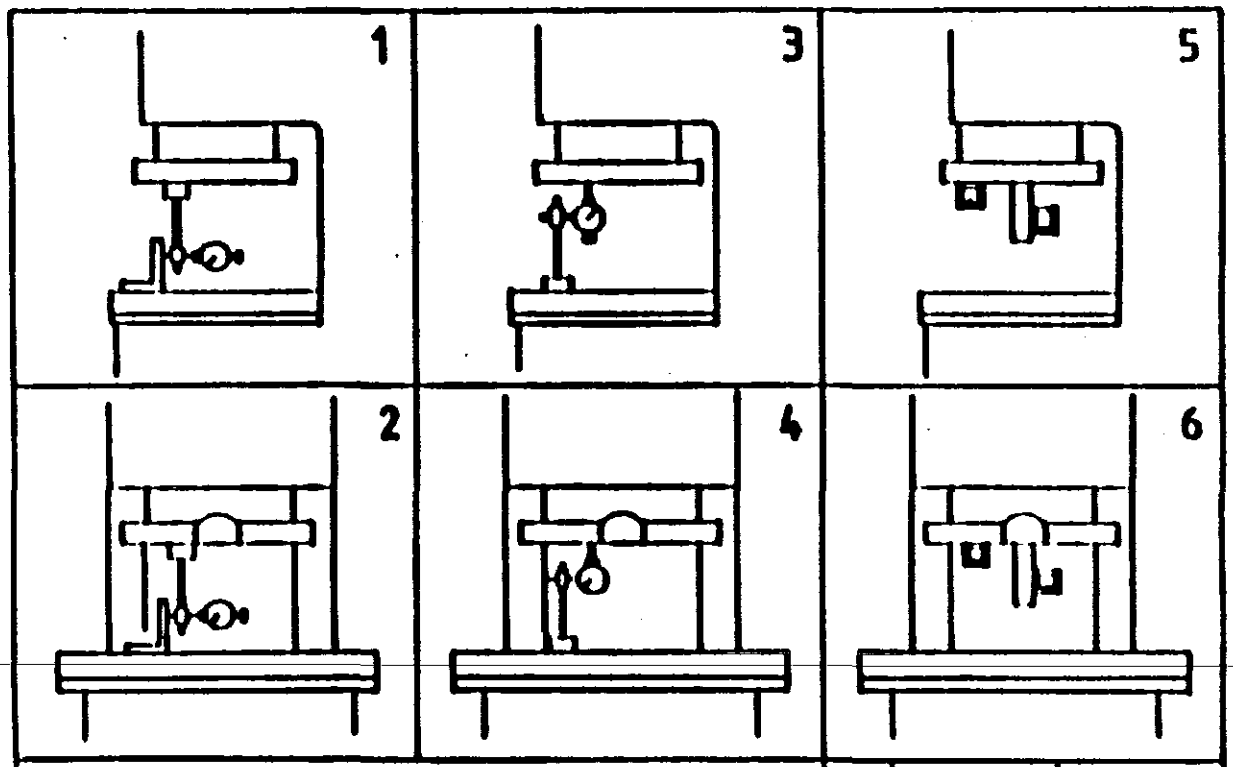
The mechanical press is a machine conceived for the working of punching, drawing, coining and hot-pressing on: manufactures in Fe, carbon steel or alloy steel provided that it hasn't undergone a total or surface hardening treatment, copper alloy (brass), alluminium and its alloys compatible with the above-stated workings.

It can also be used for operations of punching or forming on soft materials such as PVC, rubber, "plastic" materials generally speaking, on wood, leather, cardboard, etc., and for all those workings which the user, on specific request to the manufacturer, considers it convenient to carry out.

The user, however, will have to secure himself that the operation of drawing, hot-pressing and coining does not require a power superior to the rated one of the machine.

The use of the machine is forbidden for workings different from the ones above-mentioned or, anyway, to people not qualified for the use of the machine itself.

To complete what is above-stated, for workings of drawing or cold-bending on flat cold-rolled products of low-carbon steel, for the procurement, keep to regulation EN 10130 ed. 1991.



OBJECT OF MEASUREMENT	Fig	Accepted error	Noted error
Verticality of ram movement with reference to the bed plane	1	from 0 to mm on 300mm	0,02
As above	2	from 0 to mm on 300mm	0,02
Parallelism of ram lower plane with reference to the bed plane	3	from 0 to mm on 300mm	0,02
As above	4	from 0 to mm on 300mm	0,01
Verticality of the die spigot seat with the ram lower plane	5	from 0 to mm on 300mm	0,01
As above	6	from 0 to mm on 300mm	0,01

AIR RECEIVER

N° ...1..... liters .....15.....tested at 16,5 atm. N° of test 110646
N°...1.....liters....15.....tested at.....16,5.....atm. N°of test.110653
N°.....liters.....tested at.....atm. N°of test....

Machine type	Serial N°	Date	Tester
P80-RE	1179	12-03-96	

Drg. No. 0850	Date 02-02-95

PERFORMANCE CERTIFICATE

Type of machine: Press P 80-RE

Serial number: 1179

Production year: 1996

N° of blows per minute: 60

Braking angle: /

The above-stated machine is equipped with the following protection and safety devices for the operator:

1°) pneumatic brake-clutch group with automatic insertion of the brake by means of springs in case of lack of air;

2°) double-body clutch control solenoid valve, with flows in parallel;

3°) two-hand push-button control panel (or pulpit) with electric contemporaneity device;

4°) cycle selector with extractable key;

5°) control selector with extractable key;

6°) n°1 pin for safety barriers application;

7°) electric circuit executed so that the cycle "CONTINUOUS" does not work if the control micro of the barriers do not signal that these are closed;

8°) control selector "SAFETY LOCK" which, selected on "0" position, prevents any down stroke of the ram;

9°) emergency push-button on the push-button panel (or pulpit);

10°) braking angle control device;

11°) elctric board access door lock;

12°) fixed and interlocked safety guards;

On request, an electrosensitive safety system using an active opto-electric device can be supplied.

Date 12-03-96

Common accessories equipped with the machine

- Pin wrench _____
- Fixed wrench AC 22 - 24 - 30 (60 only with air cushion)
- Wrench for slot-screws AC 6 - 8 - 10 - 17
- Special wrench _____

- Electric motor as at type 132S4 shape B3
  with a power of 7.5 HP - revolutions 1400
  voltage 220-380 Volt - connection _____
  Volts frequency 50 cycles
  N° /

- Air receiver 15-liter Cmbb
  tested at 16.5 atmospheres
  Manufactury number 110646
  Serial number ANCCP (0302) n°0101AT 001

- Air receiver 15-liter Cmbb
  tested at 16.5 atmospheres
  Manufactury number 110653
  Serial number ANCCP (0302) n°0101AT 001

- Air receiver 15-liter Cmbb)
  tested at 16.5 atmospheres) only with
  Manufactury number /) air cushion
  Serial number ANCCP (0302) n°0101AT 001)

- Brake-clutch group n° 96/0131
  manufacturer OMPI s.r.l.
  type KB 0200 CC
  date 12-03-96

- This instruction handbook

- Mechanical safety guards

TRANSPORT

The press must be lifted by means of the hook placed on the upper part of the machine itself (see detail W1 of fig. n°0851 pag. 21).

INSTALLATION (see fig. n°0852 pag. 22)
For a perfect stability of the machine it is advisable to fix it on the floor by means of tierods passing through the holes situated on the press base.
Before pouring plain concrete in the holes made in the floor, it is better to level the machine, so that the press table is levelled both lengthwise and transversely. As an alternative, good quality vibration-damping plugs can be applied.

ELECTRICAL CONNECTION
Check that the voltage available on the mains corresponds to the one marked on the plate with a tolerance of -+ 5%; connect, therefore, the machine to the mains, connecting the wires to the terminals, which are placed in the control board.
The wires must have a minimum cross-section of 6 mmq paying attention that the ground wire must have the same cross-section.

PNEUMATIC CONNECTION

At the rear of the machine (see detail F of fig. 0853/CP pag. 24) there is a male connector suitable for a 20 mm-diameter rubber hose, by which is obtained the connection to the air source available in the place of use.
The source capacity is recommended to be not inferior to 100 liters of air freed per minute. Every receiver with more than 15-liter capacity is regularly tested at 16,5 atm. by the appointed Italian State Bureau (ANCCP), numbered and provided with a special certificate. The ownership of the appliance must be declared within fifteen days from the receipt of the machine, to the competent territorial division of the above-stated (ANCCP).
The receivers act exclusively as plenum chamber of the machine and cannot, therefore, be used in a different way.
For the pneumatic system diagram, see figure n° 0853 pag. 23.

P.S. The machine electrical connection must be carried out with fire fighting wire type N1VV-K IEMMEQU according to CEI 20-20, CEI 20-22 II, CEI 20-37 standards.

LUBRICATION

For transport reasons, the machine is normally supplied without oil; therefore, before the machine operating it will be necessary to see to the exact filling of the various receivers contained in the machine itself, and precisely:

a) gear box - (Detail X of figure n°0851 pag. 21)
MOBIL MOBILGEAR 632 oil or equivalent in the quantity of about _____ Kg.
Oil has to reach the center line of the oil control window.

b) lubrication pump (see fig.n°0862 pag.33) - (Detail Y of figure n°0851 pag. 21)
MOBIL VACTRA OIL n°2 or equivalent in the quantity of about 2 Kg.
Oil has never to lower below the center line of the oil window.

c) oil mist lubrication for air system - (Detail B of figure n°0853/CP pag.24)
MOBIL VELOCITE OIL E or equivalent in the quantity of about 0,100 Kg.
Check that the can always has a certain quantity of oil.

WARNING !

Before the machine starting, remove the protective grease, cleaning with accuracy.

NB : the lubrication pump (detail Y fig.n°0851 pag. 21) is already adjusted by the manufacturer. The customer can reduce the operating times for lubrication at his own risk.

DESCRIPTION AND OPERATION

The electric pumps of CMV series are supplied for centralized lubrication systems with oil provided with dosing valves ILCOMATIC type or indirect response distributors of SMM-DM series.
The motor pump assembly is composed by a magnet operating a piston pum. The cyclic attraction of the magnet having the same frequency of the current determines an alternative movement of the same piston so to produce a flow rate of c.c./min. 120.
This unit is located on a steel plate acting as a cover for lubricant tank. The same steel plate is provided with an electrical level indicator/filler cap and a set of priming and by-pass valves.
Above this motor/pump assembly an operating electronic equipment is located which carries out the below indicated operations.
The electric pump can also be equipped with a pressure switch which signals any fault in the system.

TECHNICAL FEATURES OF ELECTRIC PUMP

Magnet actuated by a halfwave 50/60 HZ - Power: 90 Watt
Operating pressure: max. 15 bar.
Flow rate: c.c./min. 120.
2 or 3 liter tanks of semitransparent plastic material.
Lubricant: not aggressive mineral oils max. 15 Engler degrees.
Electric level indicator: 1A 150 V D.C. - 220V A.C.
Voltage: 24V - 110V - 220V.

TECHNICAL FEATURES OF ELECTRONIC EQUIPMENT

Selector of pause time	*= adjustable from 2,5 min. to 157 min.*
Selector of operation time	*= adjustable from 2,5 sec. to 37,5 sec.*
Green led	*= power "ON"*
Yellow led	*= operation*
Red led	*= warning: lack of oil*
Voltage	*= 24 V - 110 V - 220 V*
Push button	*= extra-cycle lubrication*

The selectors of time of pause and time of operation are positioned inside the protection box of the electronic equipment.

SELECTION OF PAUSE AND OPERATION TIME:

1 = 2.5 min.
2 = 5 min.
3 = 10 min.
4 = 20 min.
5 = 40 min.
6 = 80 min.

SELECTOR FOR PAUSE TIME

To select the desired time of pause move the selector rod on "ON" position.
If two or more rods are positioned on "ON", it is possible to add nominal times of selector one to each other.

1 = 2.5 sec.
2 = 5 sec.
3 = 10 sec.
4 = 20 sec.

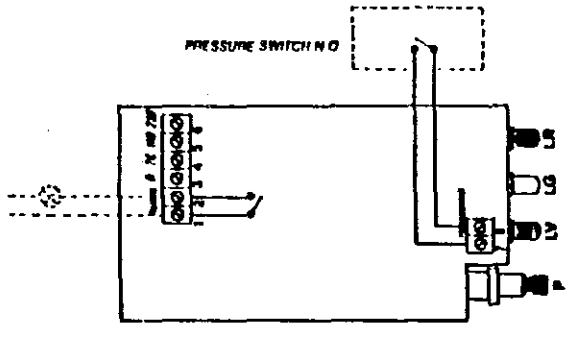
SELECTOR FOR OPERATION TIME

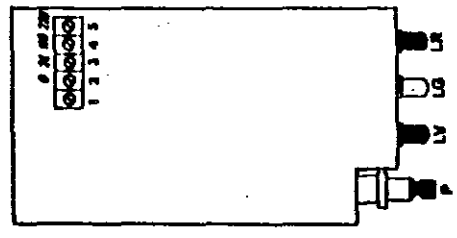
To select the desired time of operation move the selector rod on "ON" position.
If two or more rods are positioned on "ON", it is possible to add nominal times of selector one to each other.

Example: 52,5 min. = selector 1 + 3 + 5

Example: 17,5 sec = selector 1 + 2 + 3

Should the control panel be already planned for time control it is possible to utilize the electric pump CMV with outside controls.
In the type with electronic control unit only the time of pause can be set since the time of operation is determined by the pressure switch which interrupts the operation of the pump once the max. operating pressure has been achieved.
The longest operation time before alarming of pressure switch is of 60 sec.





Equipment with electrical control and connections

1-2	N.O. clean contact clamps for outside alarm signaling
3-4 5-6	Feed line clamps
7-8	Inlet clamps of N.O. pressure switch signal
P	Push-button
LV	Green light: power on
LG	Yellow light: lubrification on
LR	Red light: alarm = lack of oil

Equipment without control and electrical connections

1	No-load
2-3 4-5	Feed line clamps
P	Push-button
LV	Green light: power on
LG	Yellow light: lubrification on
LR	Red light: alarm = lack of oil

RAM STARTING AND STOPPING MEMBERS

Pneumatic brake-clutch group (see fig. n.0854 pag. 25)
The single-plate brake-clutch group is made up by two covers (3) and (4) opportunely connected by means of screws (12) and splined to the shaft. Between these, a third body (5) slides in an axial way on the pins (6) and perfectly airtight.
With lack of air, the springs (7) push the body (5) against the ring (2) which, being integral to the machine frame (9), prevents through friction any rotation (braking action). By feeding in compressed air through the hole (13), the body (5), overcoming the action of the springs (7), is pushed against the clutch ring (1) which, rotated by the flywheel (pins 8), starts and transmits the movement.

Clutch control solenoid valve (see detail 9 fig.n°0853 pag.23)
It is double-body with flows in parallel; it does not allow the clutch insertion if both valve bodies do not perfectly work.

RAM STARTING AND STOPPING (see fig. n. 0855 pag. 26)
The ram starting or stopping signal is given by the operator, by pushing the buttons (detail 9 fig.n.0855) of the two-hand control board called push-button panel (or pulpit). The push-button panel (or pulpit) consists of:
1°) Two black "start" buttons, placed so that the operator, when controlling, is obliged to use his hands. These are provided with an electric simultaneity device which obliges the operator to press the two push-buttons with about a 0,3 seconds contemporaneity;
2°) One red "stop" push-button (detail 10 fig.n.0855) to stop the ram motion:
3°) One red "EMERGENCY" push-button (detail 11 fig.n.0855); if pressed, it provides for the immediate stop of the machine, cutting off the power from the control circuit and the motors.

CONTROL SELECTOR (inside the control board)
This device allows the operator to choose between the following two controls:
- Manual
- Pedal

It is a selector with extractable key; it allows, in other words, removing the key after selecting the command.

CYCLE SELECTOR
It allows the operator to choose one of the three following cycles:
- intermittent
- continuous
- single

It is a device with extractable key; it allows, in other words, removing the key after selecting the cycle.

CYCLE AND BRAKING ANGLE CONTROL DEVICE (see fig.n°0856 pag.28)

It is made up by a group of cams (Z - Z1 - X - X1 - Y) operating five micros MC1 - MC2 - MC2.1 - MC3 - MC3.1 and part of the control board (see electric diagram SE 005 and nomenclature NS 005).
- Cams Z - Z1 - X - X1: they are used to bring back automatically the ram to the top dead center (T.D.C.) after it has overcome the bottom dead center (B.D.C.) with cycle selector on "SINGLE" and "CONTINUOUS".
- Cam Y: delimits the end of the braking angle. It stops the ram when this tends to go out from the T.D.C. because of braking defect or because the cams Z - Z1 have not given the stop signal and the machine is working at single blow.
If this happens, the operator is informed because:
1) the warning light pos. 6 fig. n.0855 page 26 of the control board turns on.
2) he is informed acustically by a buzzer.
3) at next cycle the machine does not start again (it will be able to restart only with "Intermittent" cycle).

ELECTRIC CIRCUIT: it receives the pulses from the cams, the push-buttons and the selectors and it processes them allowing the execution of the cycle.

In short: the control for the ram stop at the T.D.C. is normally given by cams Z - Z1; in case of lack of braking capacity, cam Y intervenes.

FREQUENCY CONVERTER

In case the press is equipped with frequency converter (INVERTER) for speed adjustment, it would be better not fixing it to the machine frame but on a wall with a maximum distance of 3 meters (aerial connection).

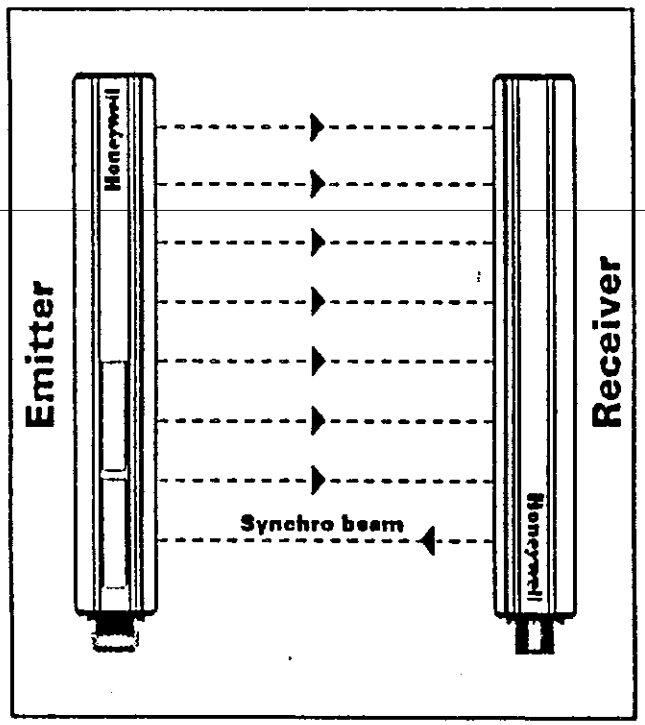
CONTROL BOARD ACCESS: it is prevented by a general line remote control switch, with mechanical lock of the access door.

VOLTAGE: the voltage used is: 1) on request for power circuit; 2) 110 volt for secondary circuit.

Mechanical barriers

Operating zone safety guard (Mechanical barriers) fig.n. 0857 dated 29-12-94 pag. 29. This safety guard consists of:
- fixed guards pos. 1-2-5
- fixed guard pos. 6, fixed by two screws pos. 6.1, it is vertically adjustable of 12 (twelve) millimeters, so as to allow the passage, without interfering with the stakes, of the sheet to be worked according to die height.
- movable guard made up by two small gates anchored to the fixed part by means of hinges and kept closed by two magnets pos. 8. The electric interlock of this guard includes two key-position-switches pos. 9, operated simultaneously since the two small gates pos. 3 are obliged to a simultaneous opening or closing, due to the presence of the sheet pos. 10.

Photoelectric barriers



Principle of operation

The beams of the barriers are successively scanned at a high frequency.

Infrared light is emitted from the transmitter side and received by the corresponding device in the receiver array. Synchronization between transmitter and receiver is achieved optically, which avoids any electrical link between the two elements.

The synchro beam is active and takes part in the definition of the protected zone.

Electronic system

The FF-SB14 functions with positive self-checking safety. This means that a faulty component in the system will make the barrier safe - whatever the problem: stopping the movement of dangerous machine parts.

General

The **FF-SB14** is a multibeam photoelectric barrier with separate emitter and receiver.

The beams are modulated infrared light, which makes operation almost completely independent of ambient light conditions.

Interrupting one or more beams causes the output contacts to open, which then causes further circuitry to de-activate the machine.

The stability of the response time of the barrier - an important factor for safety - is assured by circuits controlled by a quartz time base.

Powering up

Please check that after having made the electrical connection and before applying power, the supply voltage corresponds to that of the device.

See rating plate on:

- emitter
- receiver

• Power up the devices after you have wired them.

• If installation has been correctly performed, the photoelectric barrier will operate after a few tenths of milliseconds (after pressing a push button if necessary).

- The yellow indicator E1 on the emitter lights.

- The red indicator R2 on the receiver extinguishes, whereas the green indicator R3 lights.

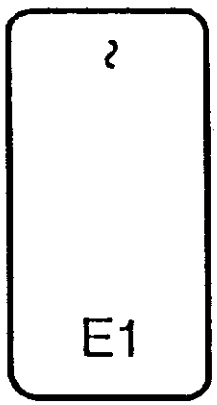
If not, check whether the photoelectric barrier is free of obstruction and properly aligned.

Setting up

Front panel indicators

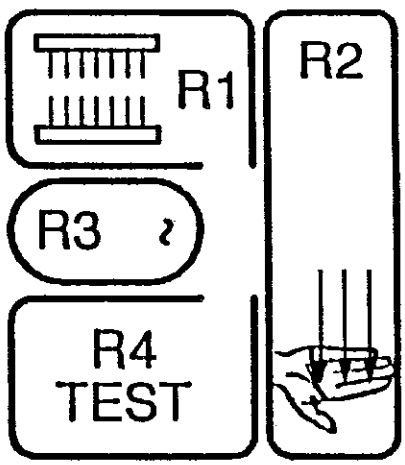
• Emitter

E1: yellow indicator
Power on indicator



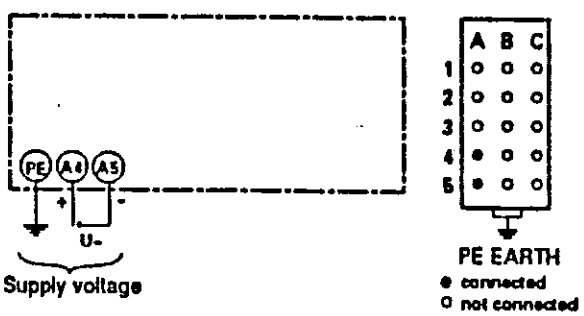
• Receiver

R1: red indicator. Normally OFF. Flickers when reception level is too low. Lights on during test or beam occultation.
R2: red indicator. Broken beam alarm.
R3: green indicator. Barrier free. (R2 and R3 are complementary).
R4: yellow indicator. Normally OFF.
Test input implementation. Lits during test and flickers if the system needs to be reset.



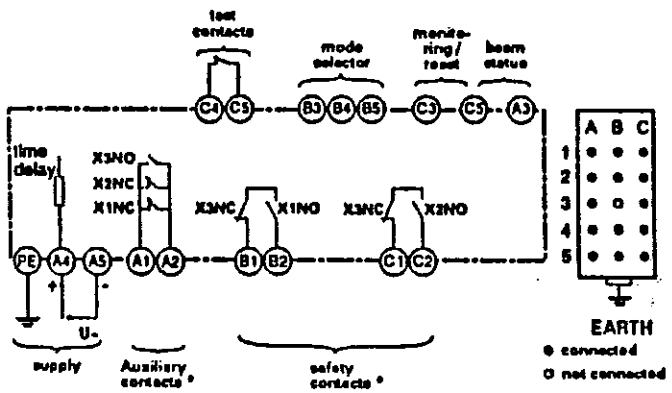
Emitter supply plug (FF-SB14E□□□-S2□)

Connection drawing



Receiver supply and signal plug (FF-SB14R□□□-S2□)

Connection drawing



- **Beam and output LED status**

LED status (Red / Red / Green)	Detection field	Machine stop contacts	Machine operation	Signal margin	Actions
○ ○ ☼	CLEAR	ON	ENABLED	sufficient	Normal operation: no action is required
☼ ○ ☼	CLEAR	ON	ENABLED	close to the limit	Slight misalignment or dust accumulation: readjust optical alignment or clean front plates before the barrier goes to the off-state
☼ ☼ ●	BREAK	OFF	DISABLED	too weak	The barrier went to the off-state because of heavy misalignment or dust accumulation: readjust optical alignment or clean front plates
☼ ☼ ●	BREAK	OFF	DISABLED	no signal at all	The system is either in test mode, or occulted or over range: remove from test mode or make the beam free or reduce scanning range according specifications

○ light off ☼ light on ☼ flickering light

- **Test and restart LED status**

LED status (Yellow / Red / Red / Green)	Detection field	Machine stop contacts	Machine operation	Actions
○ ○ ○ ☼	CLEAR	ON	ENABLED	Normal operation: no action is required
☼ ☼ ☼ ●	BREAK *	OFF	DISABLED	The barrier is in test mode: check the connection between terminals ③ - Earth or C4 - C5
☼ ☼ ☼ ●	BREAK *	OFF	DISABLED	The start / restart interlock mode has been selected: press push button connected between terminals C3 and C5 to restart the system, and go back to normal operation status

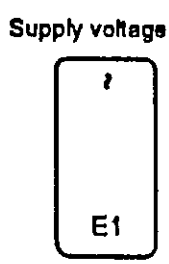
○ light off ☼ light on ☼ flickering light

* although no object stands in the detection field

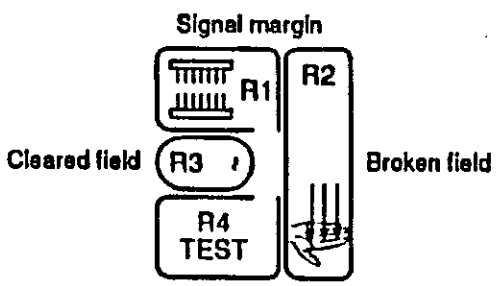
Trouble shooting

Symptom	Cause	Action
No indicator lights on	Barrier not powered up	Check: - supply voltage specified on the plate - mains supply - wiring of the supply plugs - the fuses (See § 8.3)
E1 lights on **R2 lights on** **R1 lights on** **R4 lights on**	Barrier under test	Check: - connection ⏚ - EARTH or C4-C5 in receiver supply plug
E1 lights on **R2 lights on** R4 flickers	Barrier in start/restart mode	Check: - connections on the monitoring loop C3-C5 - wiring of the selected Reset mode (B3-B4-B5) - press the start and restart push button
E1 lights R3 lights **R1 flickers**	Barrier in functions Reception signal margin is weak (Barrier dirty or misaligned)	Check : - cleanliness of the light paths (see § 8.2) - mechanical alignment (see § 5.2)
Barrier functions all right with random erratic detection: **E1 lights on** **R2 lights on** **R1 lights on**	Unacceptable high voltage line transients (over the IEC 801-4 norm)	Check: - presence of RC elements on inductive loads - quality of the power supply - presence of electric connections on the earth - quality of connections on C3-C5 and B3-B4-B5: make it as short as possible - switch the power off and on
Barrier functions all right with random erratic detection	Unacceptable light interference (over the product allowance).	Use a special optical filter (refer to § 9.3).

- **Emitter**



- **Receiver**

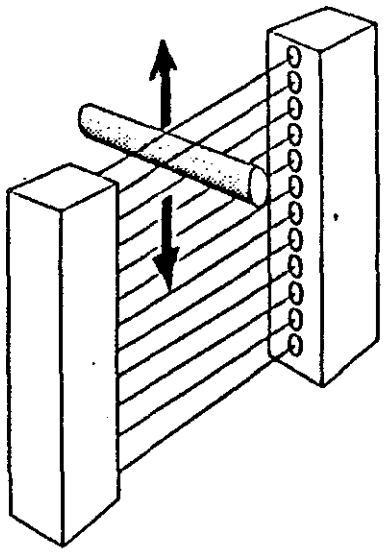


Inspection and maintenance

Inspection

Check	Method	Frequency
Detection and machine stop	Insert a 35 mm diameter object into the curtain Check that the machine stops	Daily, at each power up
General operation of the SB14	Operation Test function generated by the machine	Each time the machine is to be used or as part of each cycle
Output relay	By counting machine cycles Evaluate the number of operations	1.000.000 operations (1.5 A/220 Vac, 0.5 A/24 Vdc) or every 3 years If protective RC elements are mounted
Cleaning	Alignement indicator flicker see § 8.2 cleaning	According to the cleanliness of the environment

Checking correct detection



Cleaning

Clean the emitter and receiver

Wipe without rubbing

(rubbing causes streaks and static electricity which attracts dust).

Use a **clean** and **soft** cloth

- dry for dust removal
- with soapy water if there are greasy marks

Products designed for cleaning windows may be used.

Never use solvents like petrol, white spirit, trichloroethane or trichloroetylene, acetone, etc.

STARTING

Before starting the machine, make sure that the air supply tube is connected to the source and that the clutch manometer is adjusted at the pressure of 5.5 atmospheres (detail C fig. n°0853/CP pag. 24).

Make also sure that, after the motor starting, the flywheel turns in the direction shown by the arrow: in the opposite case, invert the two wires of the input terminals.

Place the key on "INTERMITTENT" position and, acting on the push-buttons by jogs, check that the brake-clutch group works properly.

MACHINE RUNNING

WITH CYCLE SELECTOR ON "INTERMITTENT" 

The ram starting is obtained by pressing both the two-hand control push-buttons. The ram stops in any position when the push-buttons are released.

WITH CYCLE SELECTOR ON "CONTINUOUS" 

The cycle works only when the micro, charged with the barriers control, signal that these are closed. With this sort of cycle the ram starting is obtained by pressing the two-hand control push-buttons, which can be released without interrupting the motion. The machine stop can be obtained in two ways:
1°) pressing the "STOP" push-button (fig. n°0855 pos.10 pag.26);
2°) pressing the "EMERGENCY" push-button (fig. n°0855 pos.11).

When it is stopped, in the two cases there can be two situations:
a) if the ram is in down stroke (between TDC and BDC) at the signal it immediately stops;
b) if the ram is in upstroke (between BDC and TDC) at the signal the ram continues to move till reaching the top dead center, where it stops.

If the ram is stopped by the "EMERGENCY" push-button, it immediately stops.

WITH CYCLE SELECTOR ON ISINGLEI 

The machine running is obtained by keeping the control push-buttons pressed at least till the B.D.C. The following situations can occur:
- if even one of the "start" buttons is released before the ram reaches the B.D.C., it immediately stops;
- if the push-buttons are released when the ram goes up, it continues automatically till the T.D.C., where it stops;
- even if the push-buttons are kept pressed after reaching the T.D.C. the ram stops;
- to repeat the blow the push-buttons must go back to the initial position and be pressed again.

STROKE ADJUSTMENT (to carry out with motor and flywheel stopped)
fig. n. 0859 dated 02-02-95 pag. 31

Stroke adjustment system with frontal coupling and rapid execution:

- loosen nut A and unscrew for about 10 mm by wrench B the grub screw which fixes the toothed flange;
- move the toothed flange till complete disengagement of teeth;
- insert pin P supplied, in the holes of the connection holder eccentric and turn the latter making coincide the O with the number corresponding to the whished stroke;
- insert again the toothed flange;
- screw the grub screw (less ½ turn for complete closing) and lock with the nut.

Every time the stroke is changed it is necessary to adjust cam C following the table pag. 34, so that the ram at cycle end always stops at the top dead center (T.D.C.).
For this operation, pull outwards the cam, make it turn till finding the exact position referred to the index and release it positioned.

NB: cam dial is divided in 90 positions, each position corresponds to 4°.

END STROKE ADJUSTMENT (to carry out with motor and flywheel stopped) fig. n° 0856 dated 27-01-95 pag. 28

Every time the stroke adjustment is carried out, it is convenient to adjust also the cam (detail Z1, Z, X1, X, Y) so that the ram always stops at the top dead center (T.D.C.). For this operation, pull the cam outwards, make it turn till finding the exact position referred to the index and release it positioned. For the position, see cam adjustment table pag. 34.

RAM ADJUSTMENT (fig. n° 0860 dated 01-02-95 pag. 32)

To adjust the ram, loosen screw (detail A), then insert the pin wrench into the hole (detail B) and move forward and back, paying attention to the arrow which shows the knob position (detail C) and bearing in mind that when the knob is with the arrow forward right, the ram goes up and when the arrow forward left, the ram goes down.
To adjust the knob forward right or left, pull it forward external part and turn it to the wished position. The ram position with reference to its stroke is shown on a graduated plate. When you have executed the operation, close well the screw (detail A)with a couple of 20 DaN(Kgm). This operation is needed for the tool adjustment.

HYDRAULIC RELEASE

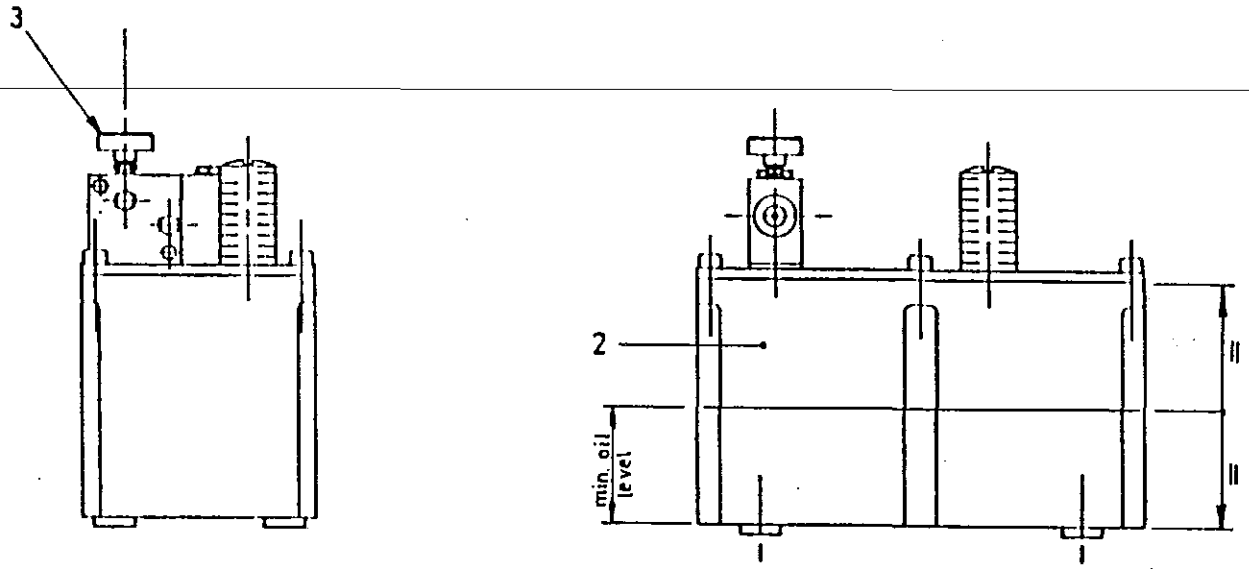
In case the machine stops because of wrong tool adjustment before reaching bottom dead center (B.D.C.), the operation of release is executed by the simple actionning of a push button, by which the oil cushion inside the press ram is discharged.

HOW TO RELEASE:
A) push "3" button
B) let the press function up to the overcoming of B.D.C.
C) release "3" button

The pressure re-establishment of precharge in the cushion is automatic and starts as soon as you release the button of cushion discharge.

Oil suggested: mCASTROL AWS 68 or corresponding.

Check by sight the oil level: it must never go down half tank (2).



AIR CUSHION (see fig. n° 0853/CP dated 28-01-95 pag. 24)

The air cushion, which is supplied on request, can be used either as knockout or as blankholder. Pressure adjustment is performed by means of a pressure reducer (detail D) and is shown on the manometer.

Maximum air pressure = 7 bar
Every bar of air corresponds to a 0,55 t.-load of the air cushion.
Therefore, the maximum load is 7 x 0,55 = 3,85 t.

To release pressure in the cushion and isolate the stem from the pneumatic system, a three-way valve (detail E) has been provided.

RAM GUIDES ADJUSTMENT (fig. n° 0860 pag. 32)

In order to take away the eventual gap between ram and prismatical guides or gibs, loosen a bit the screws (detail P and R), unscrew the dowels nuts (detail Q) and screw the same dowels, having care to screw all them with the same force, in order to get the gibs near the ram. At the end of this operation fix well screws (detail P and R) and close the dowels.

ELECTRIC CIRCUIT

It does not need particular maintenance. In case of short circuit, the protection relays unhook or the fuses inside the control board blow out. To restore the relays and replace the fuses, see electric diagram.
It is highly recommended, after possible repairs or replacements, to execute some trial cycles before resuming the production.

DOUBLE-BODY SOLENOID VALVE

It is a good rule, every day before starting the production, to remove the condensate and add oil in the special filter- lubricant group at the input of the compressed air line in the machine. In this way, two troubles are avoided:

1) the damaging of the solenoid valve, due to operation with too wet or dry air;
2) stoppage of the air exhaust silencer.

CYCLE AND BRAKING ANGLE CONTROL DEVICE

In case of irregularities in the cycle, stop immediately the production. In all probability, the irregularity can be due to two elements:
1) irregularity in the operation of the micro controlled by the cams;
2) fault in the replaceble electric meters, inside the control board.
The problem can be solved by replacing the defective micro or the electric meters.

BRAKE-CLUTCH GROUP (fig. n. 0854 dated 13-12-94 pag. 25)

Friction linings (brake linings) replacement

Brake-clutch plates (pos. 1-2) can be:
a) with screwed linings
b) with stuck linings
When the plates have screwed linings, to replace the linings do as follows:
Clutch ring: unscrew screws pos. 15, remove linings pos. 14 and replace them with new ones.
Be careful not to let fall inside the brake-clutch group the screws or the respective nuts.

Brake ring: let in compressed air so as to disengage the brake and proceed as above.

If the linings are stuck to the plates pos. 1-2, apply to the machine manufacturing firm.

16.1	Fig. N. 0851	Concerning: Lifting and transport	pag. 21
16.2	Fig. N. 0852	Concerning: Footing	pag. 22
16.3	Fig. N. 0853	Concerning: Pneumatic diagram	pag. 23
16.4	Fig. N. 0853/CP	Concerning: Pneumatic circuit	pag. 24
16.4a	Fig. N. S2094a	Concerning: Hydraulic diagram (optional)	pag. 24a
16.4b	Fig. N. S2094d	Concerning: Hydraulic security diagram (optional)	pag. 24b
16.5	Fig. N. 0854	Concerning: Brake-clutch group	pag. 25
16.6	Fig. N. 0855	Concerning: Controls	pag. 26
16.6a		Concerning: Controls nomenclature	pag. 27
16.7	Fig. N. 0856	Concerning: Braking angle control device	pag. 28
16.8	Fig. N. 0857	Concerning: Mech. safety guards	pag. 29
16.9	Fig. N. 0858	Concerning: Electr. safety guards	pag. 30
16.10	Fig. N. 0859	Concerning: Stroke adjustment	pag. 31
16.11	Fig. N. 0860	Concerning: Ram adjustment	pag. 32
16.12	Fig. N. 0862	Concerning: Lubrication system	pag. 33
16.13		Concerning: Cam adjustment table	pag. 34
16.14	Fig. N. 80.01.00	Concerning: Body assembly	pag. 35
16.15	Fig. N. 80.02.00	Concerning: Eccentr. shaft assembly	pag. 36
16.16	Fig. N. 80.03.00	Concerning: Ram/connection assembly	pag. 37
16.17	Fig. N. 80.04.00	Concerning: Motor assembly	pag. 38
16.18	Fig. N. 80.08.00	Concerning: Brake/clutch shaft assembly	pag. 39
16.19	Fig. N. 80.09.00	Concerning: Air cushion assembly	pag. 40
16.20	Fig. N. 80.12.00	Concerning: Mech. safety guards	pag. 41
16.21	Fig. N. 80.13.00	Concerning: Electr. safety guards	pag. 42

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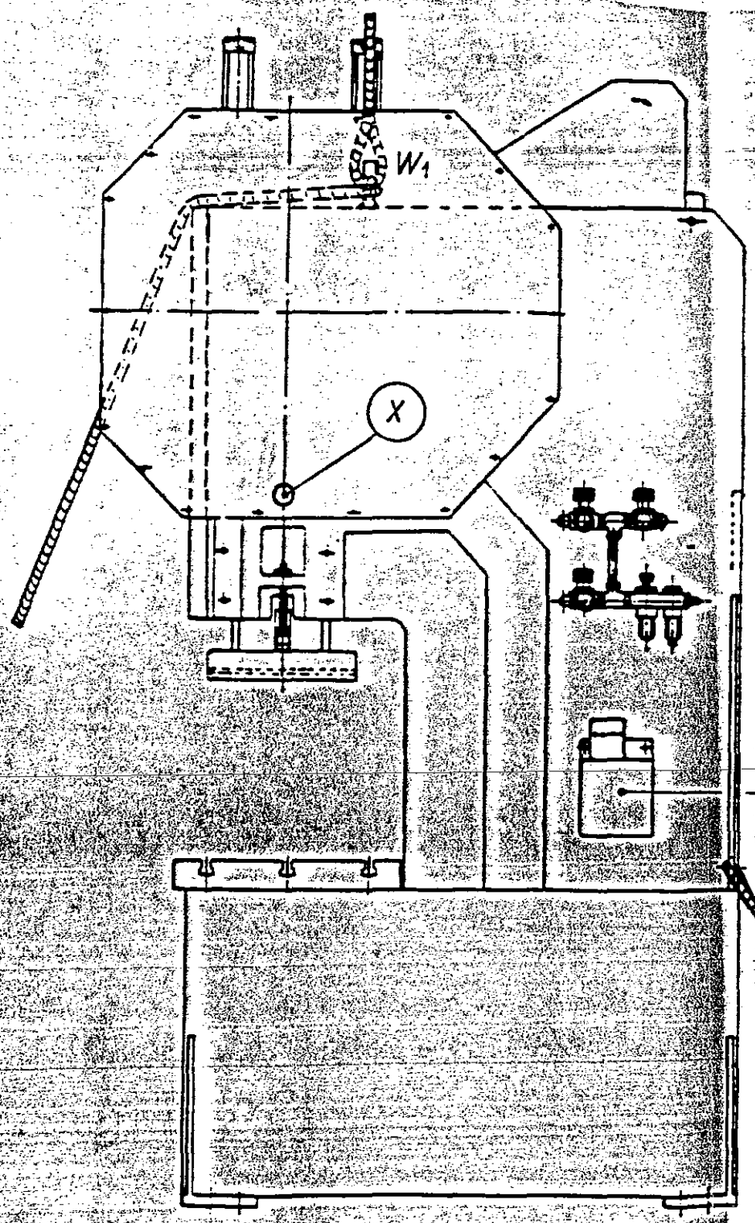
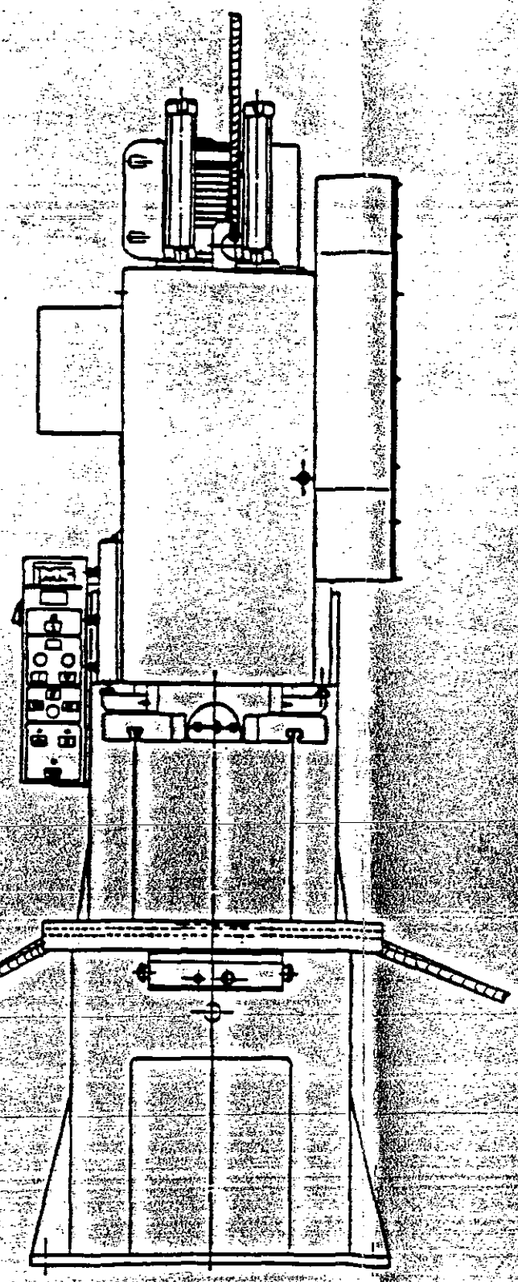
NB Electric diagram and electric diagram nomenclature inside the control board

Approx. press weight P 80-RE kg 5400

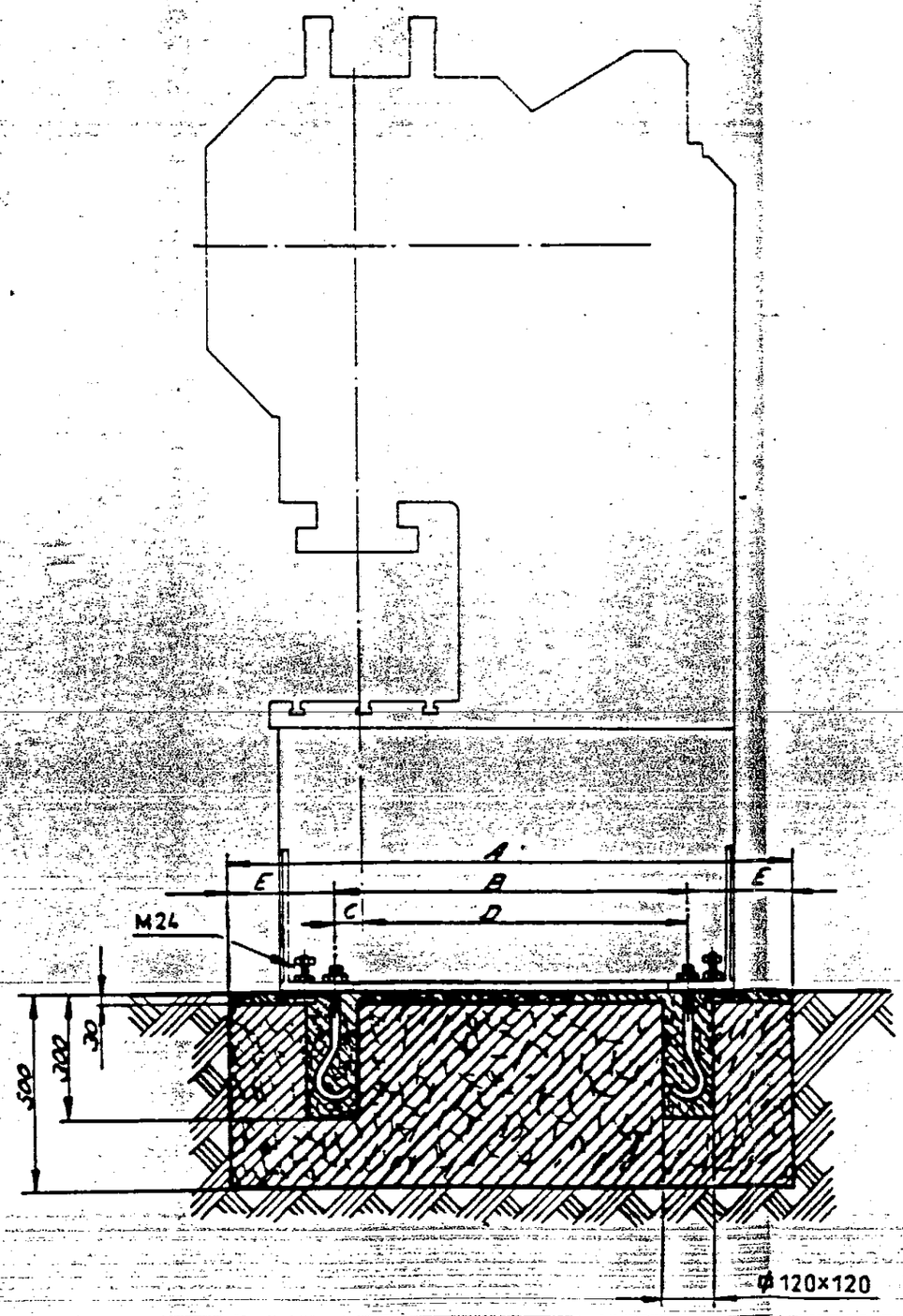




W_1 - Lifting point for installation and transport

W_1 - a - Anchoring points for transport

Drg. No. 0851 | Date 26-01-95

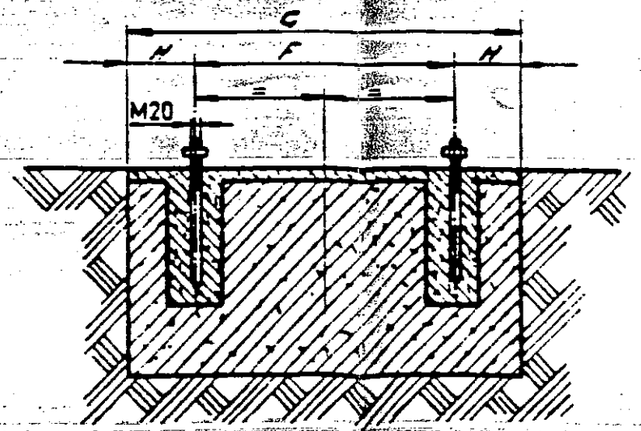


Model	A	B	C	D	E	F	G	N
P 80-RE	1450	1070	105	965	190	820	1000	90
P 100-RE	1650	1150	95	1055	250	910	1100	95

Floor must stand a pressure of:

0,48 kg/cm² P 80-RE

0,49 kg/cm² P 100-RE



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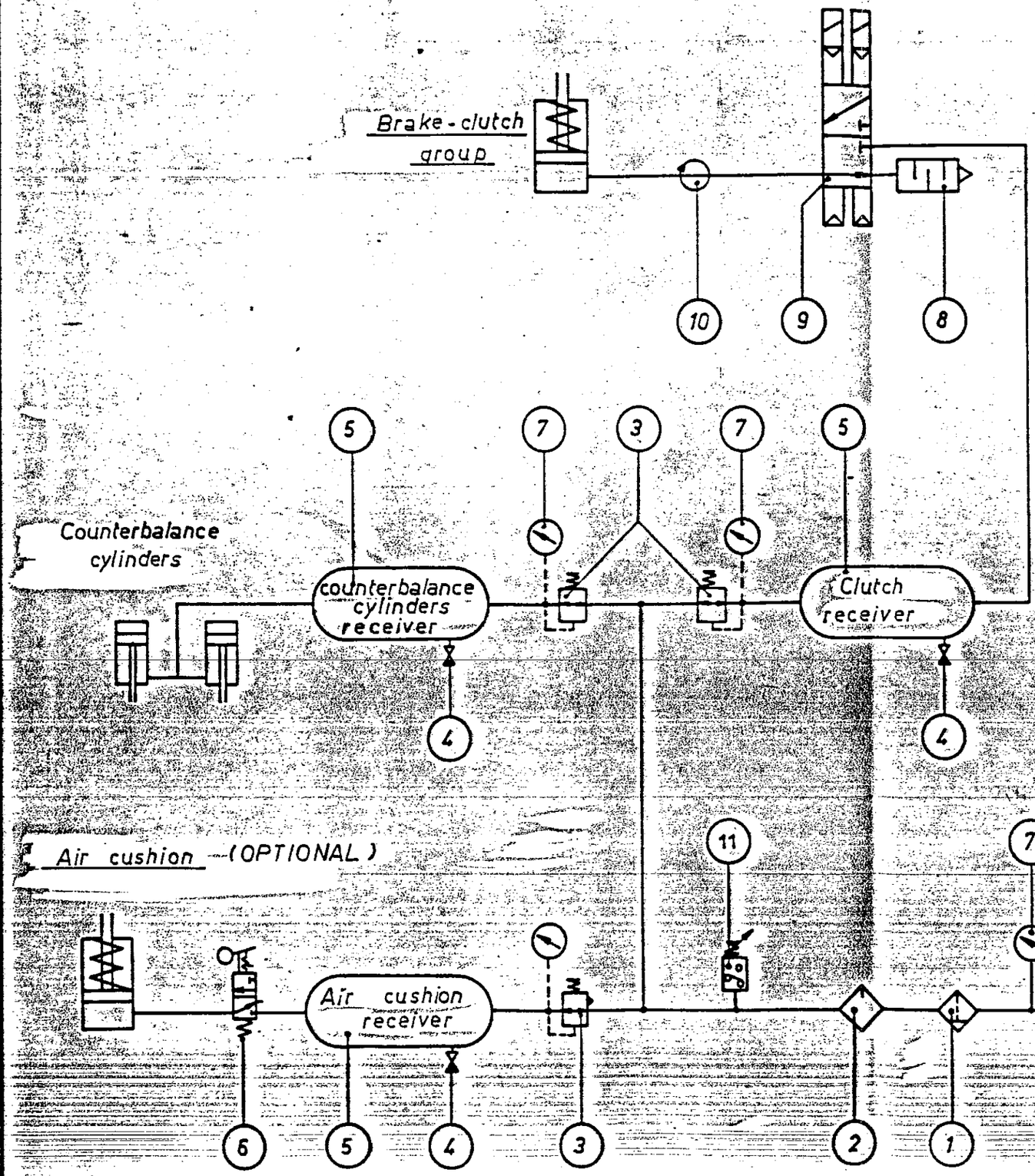
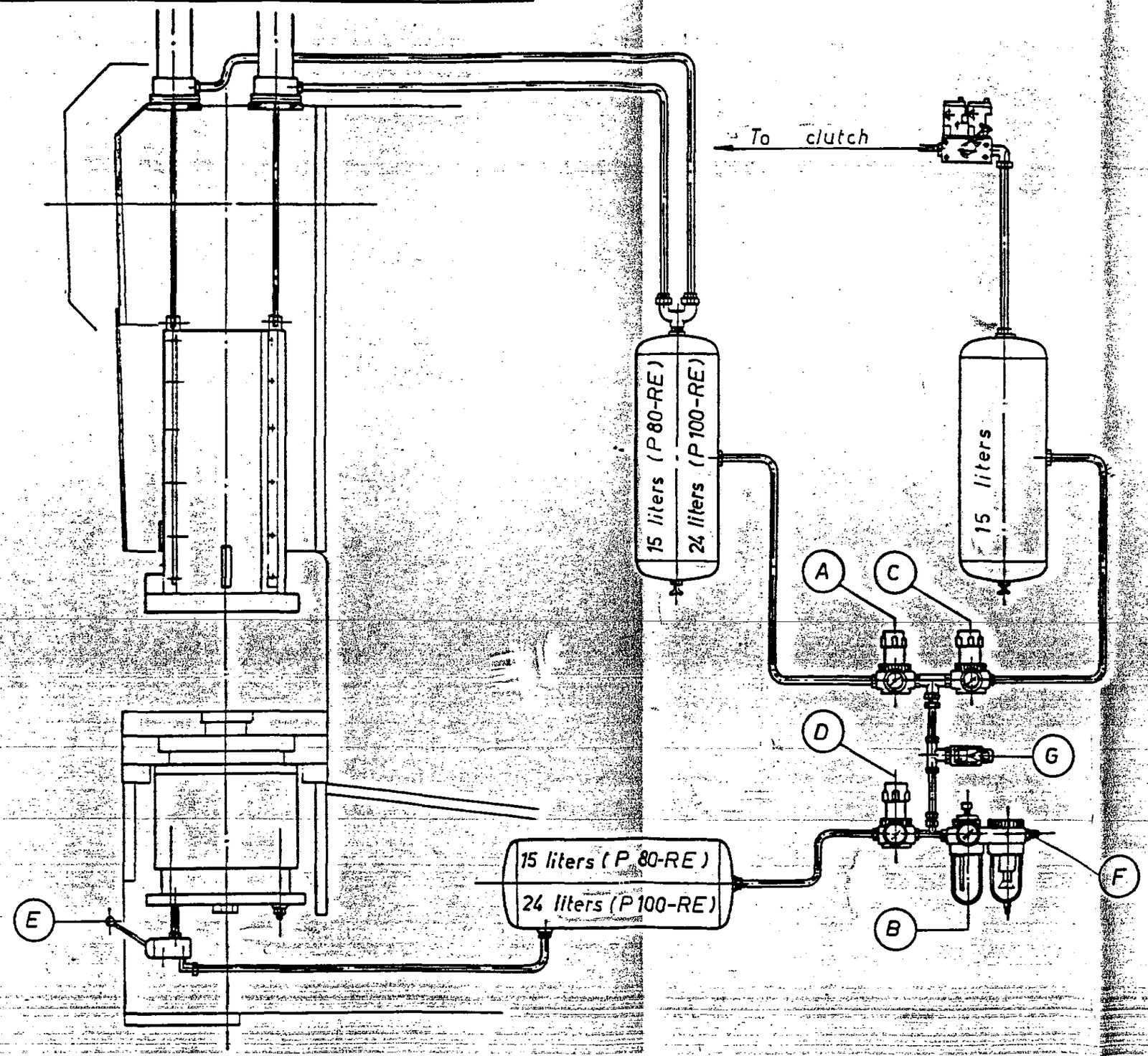
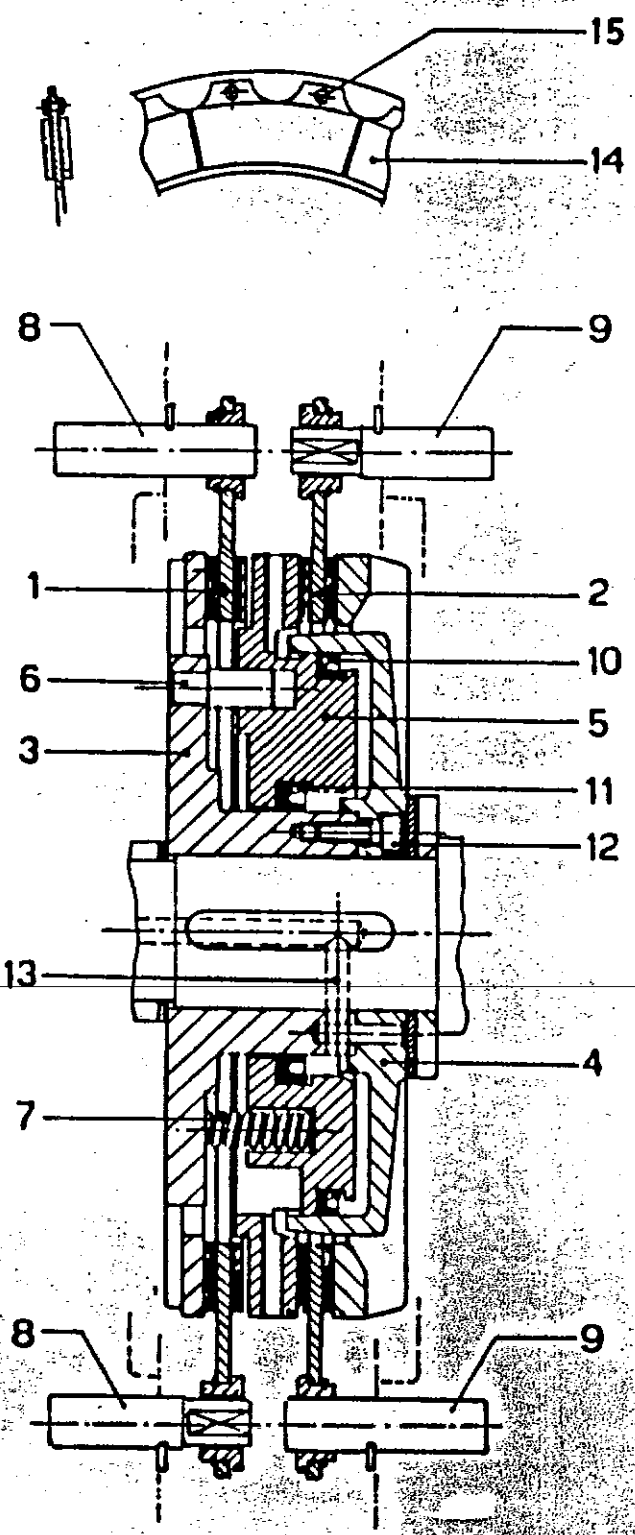


1. Filter
2. Lubricant
3. Regulator
4. Exhaust valve
5. Receiver
6. Three-way valve
7. Manometer
8. Silencer
9. Double-body solenoid valve
10. Rotating joint
11. Pressure switch



Drg. No. 0853/CP | Date 28-01-95


15
14
8
9
1
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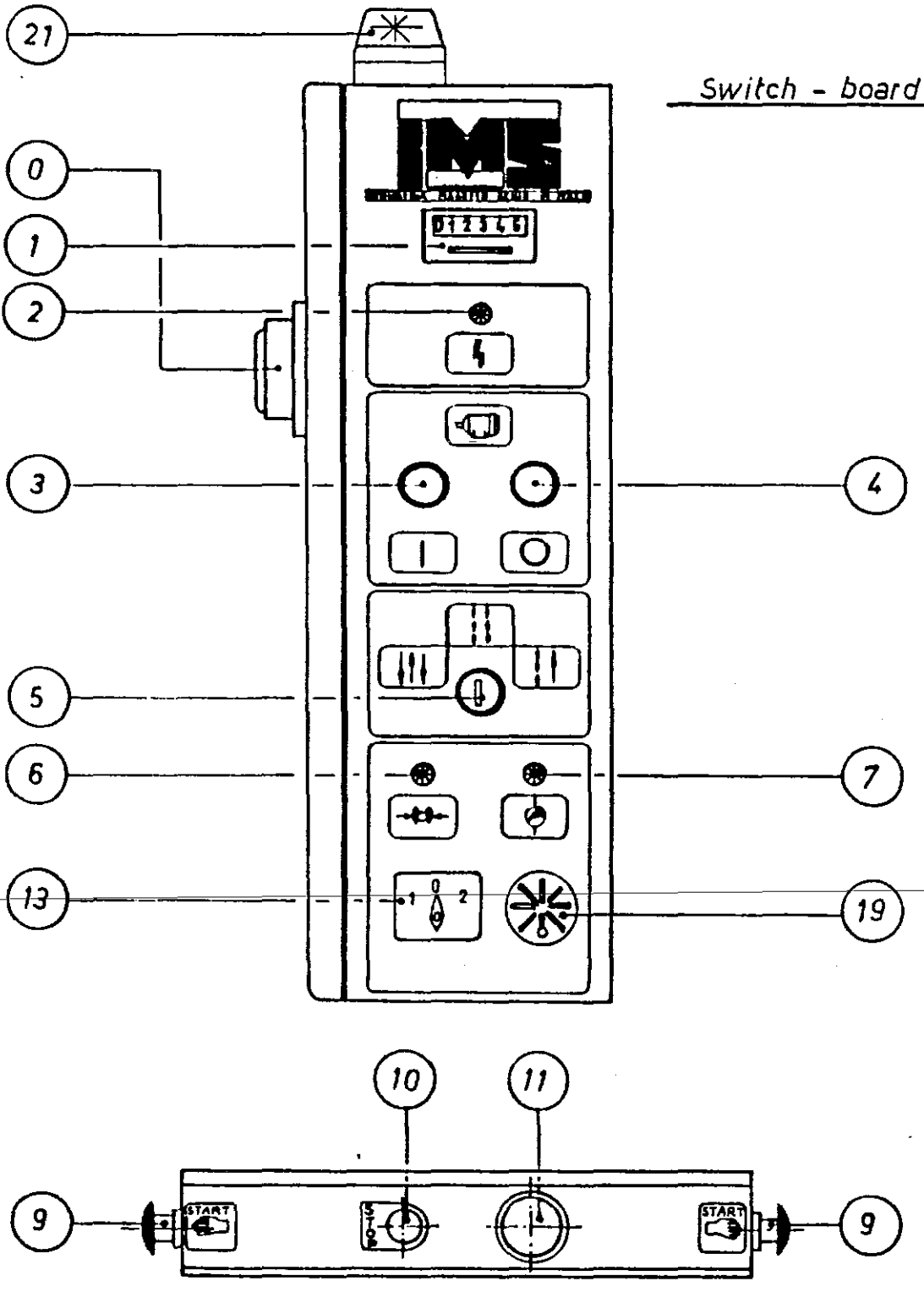


Switch - board

Push - button panel

Drg. No. 0855	Date 13-11-95

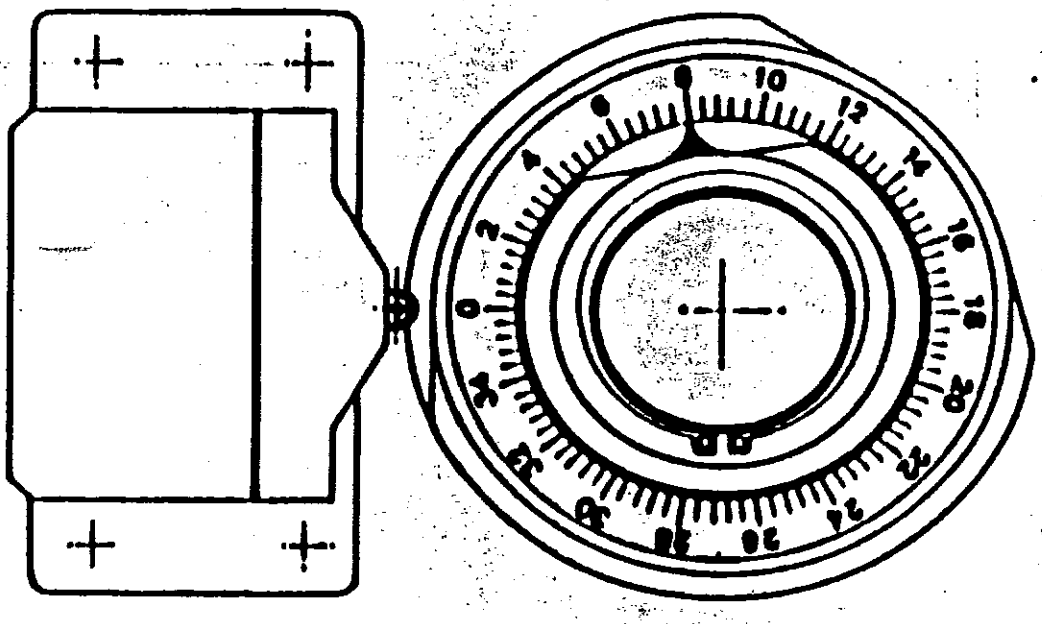
CONTROL PANEL

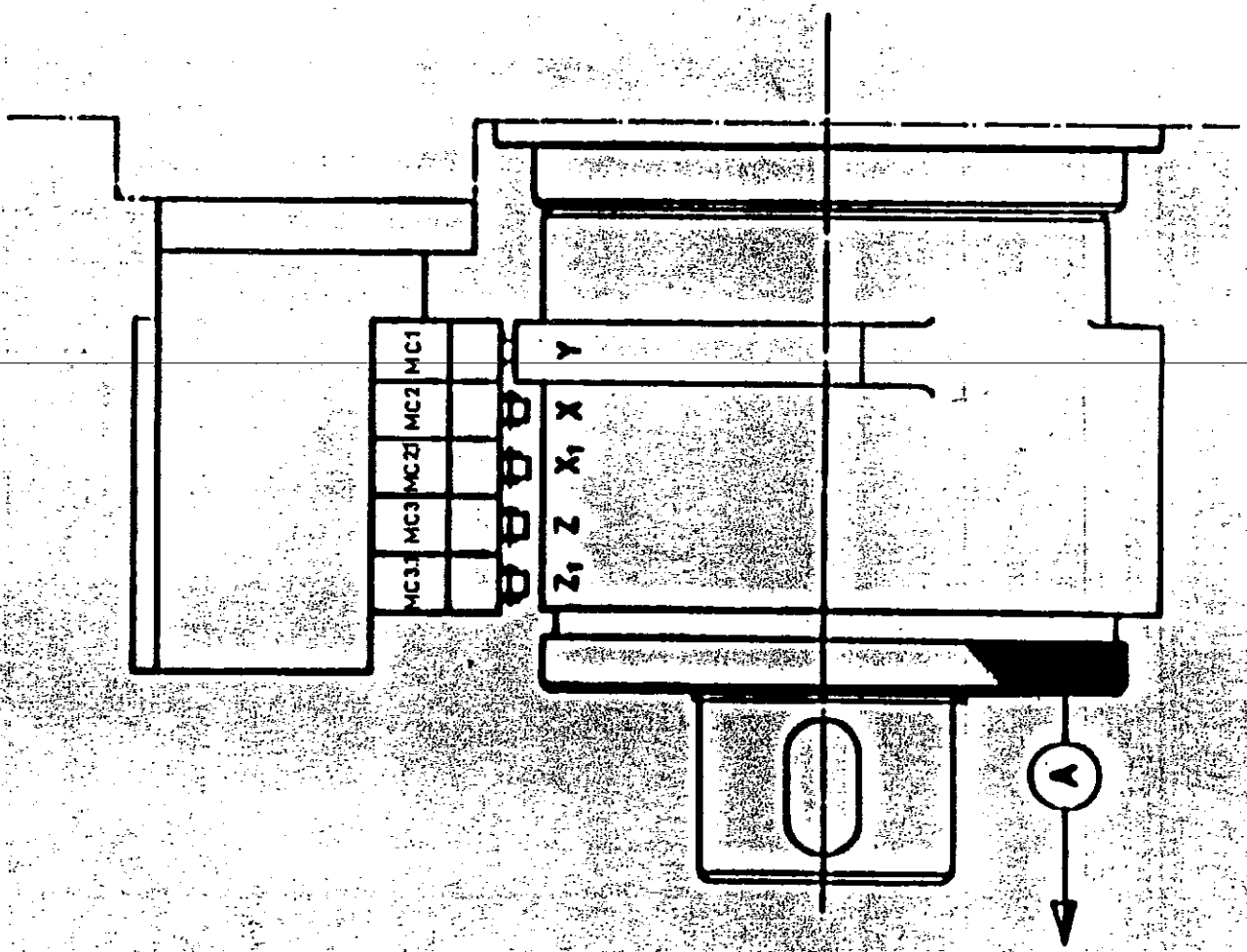
0 Main switch – rotation sense Inverter
1 Stroke counter
2 Warning light for current connection
3 Start
4 Stop
5 Cycles selector : continuous, intermittent, single (key selector)
6 Warning light for angle braking control
7 Warning light for oil shortage in the automatic lubrication pump
13 Speed selector (OPTIONAL)
19 Buzzer
21 Barriers lamp open doors

PUSH-BUTTON PANEL

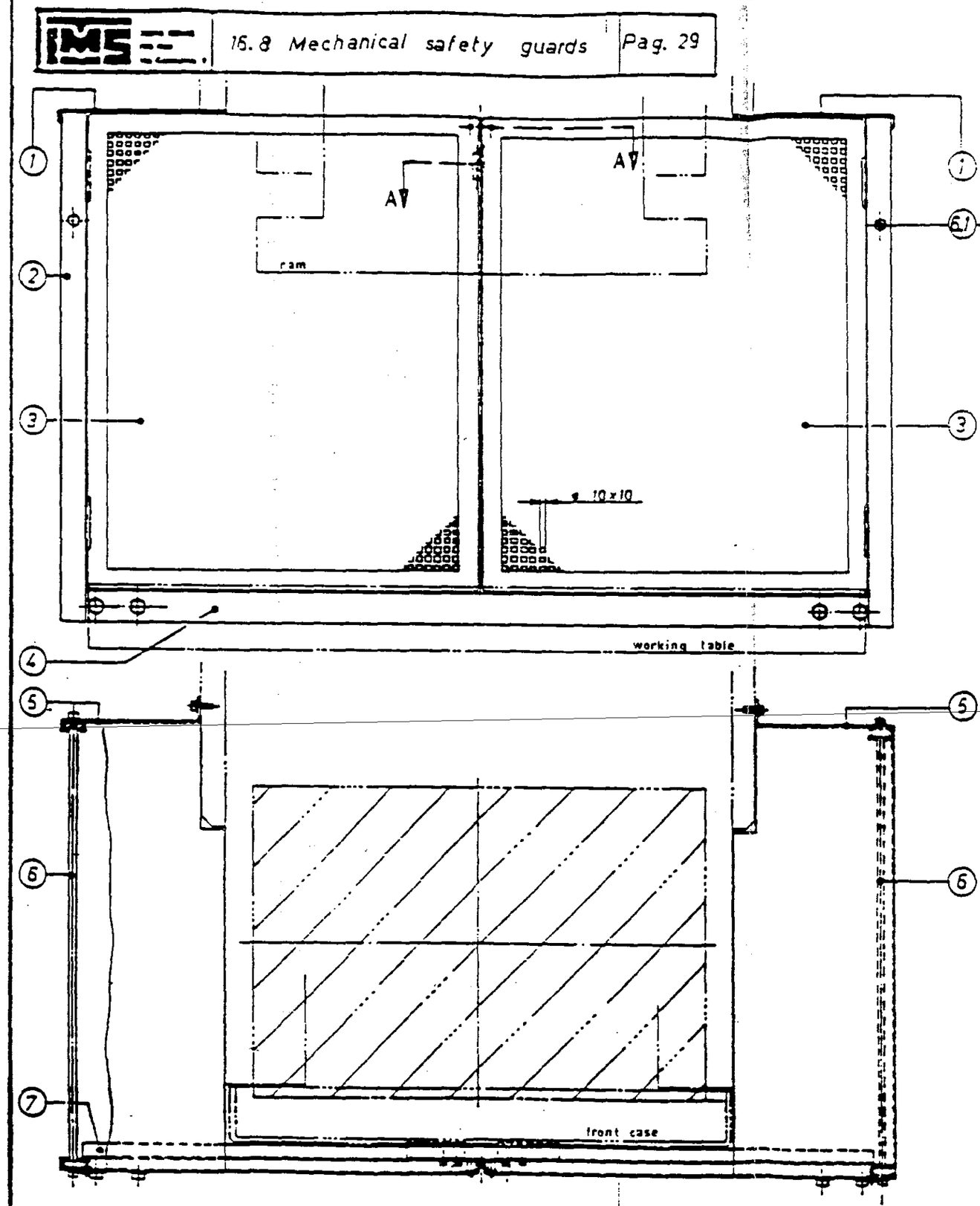
9 Simultaneousness START push-buttons
10 STOP push-button
11 EMERGENCY push-button

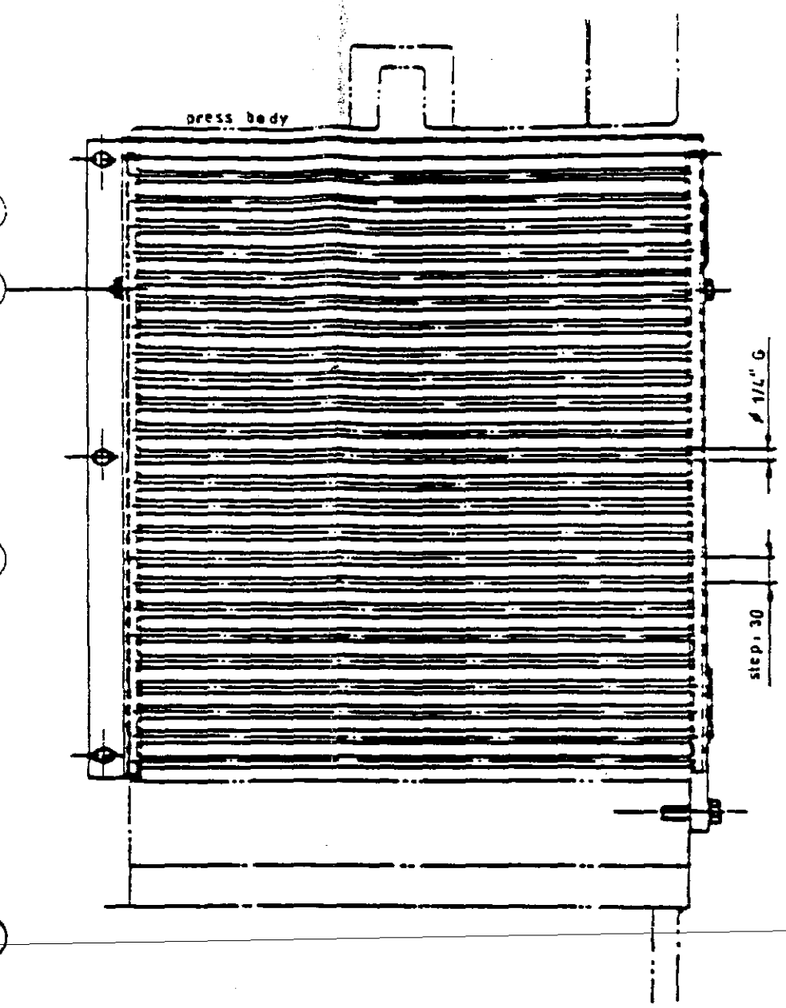
Date 13-11-95

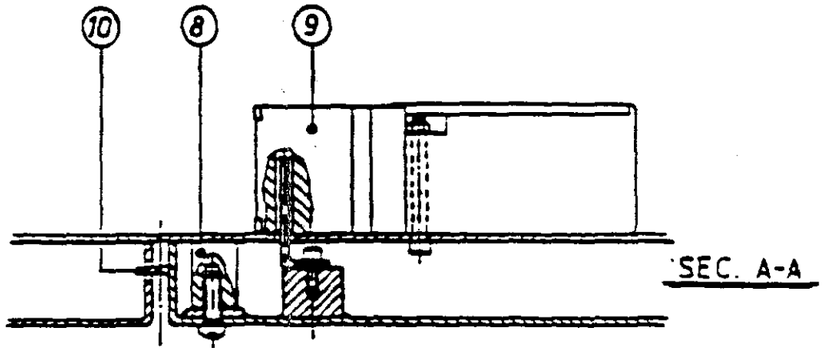




Drg. No. 0856 | Date 27-01-95







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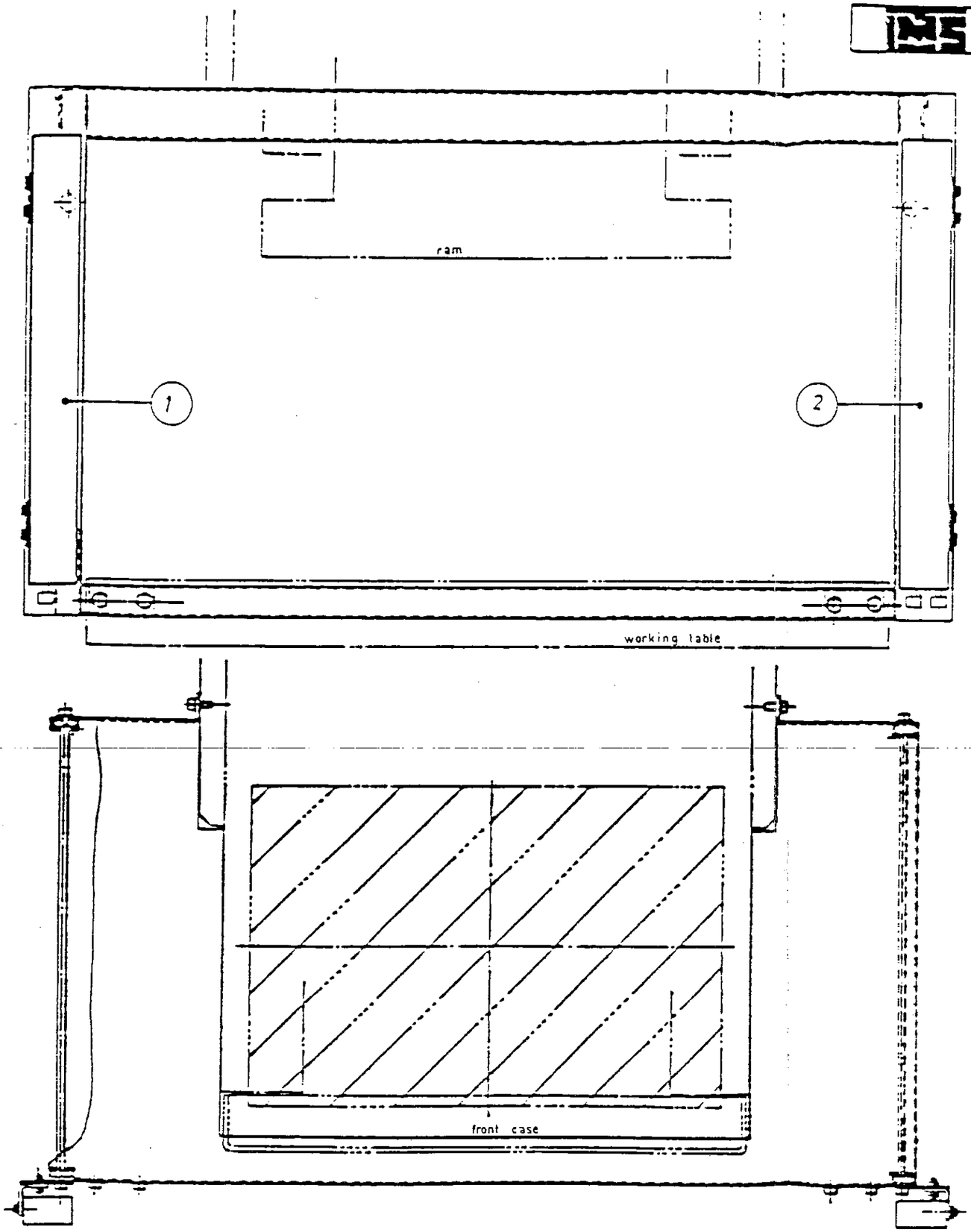
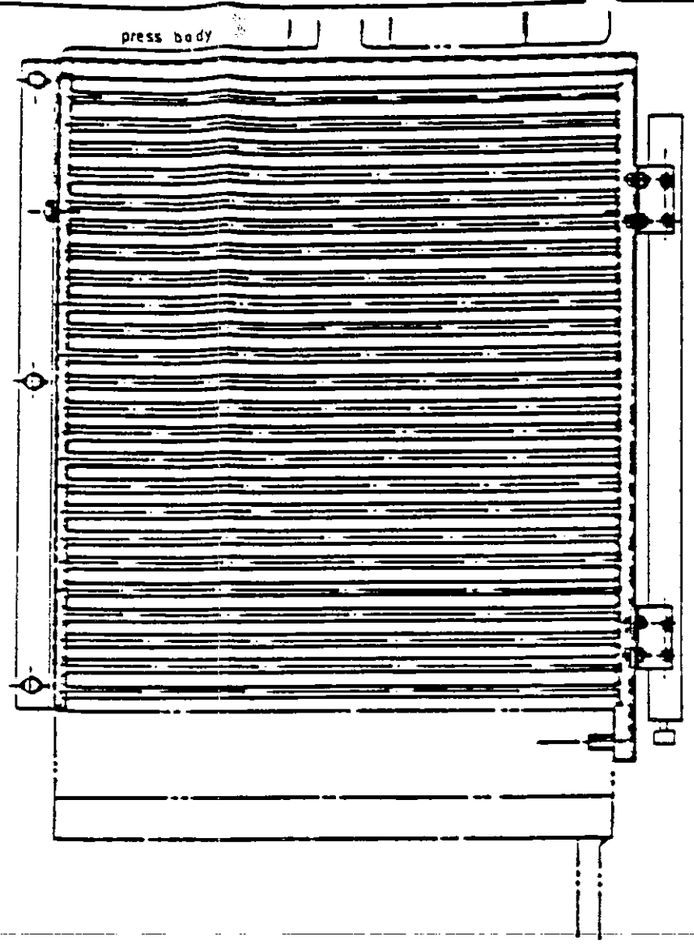
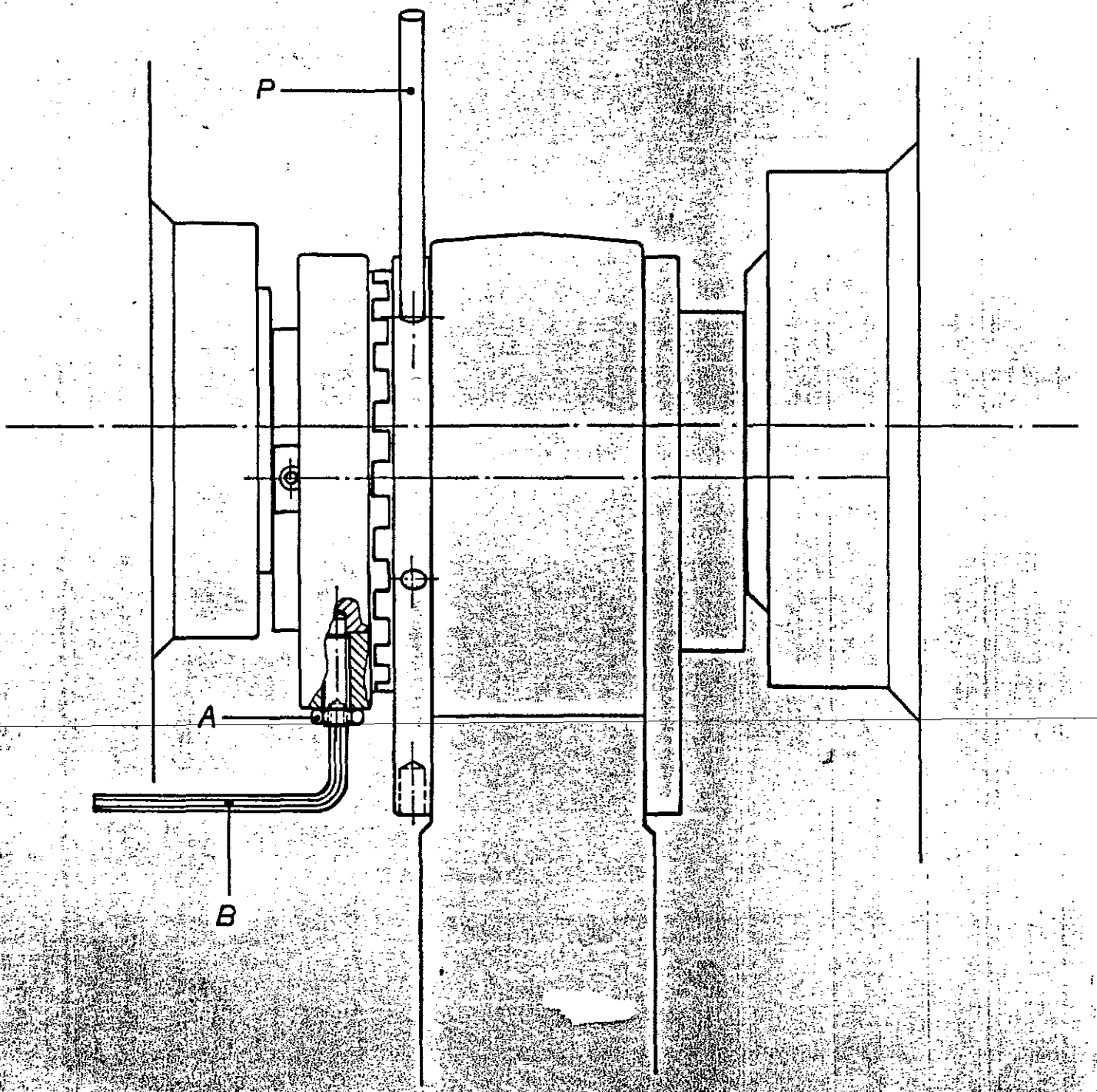
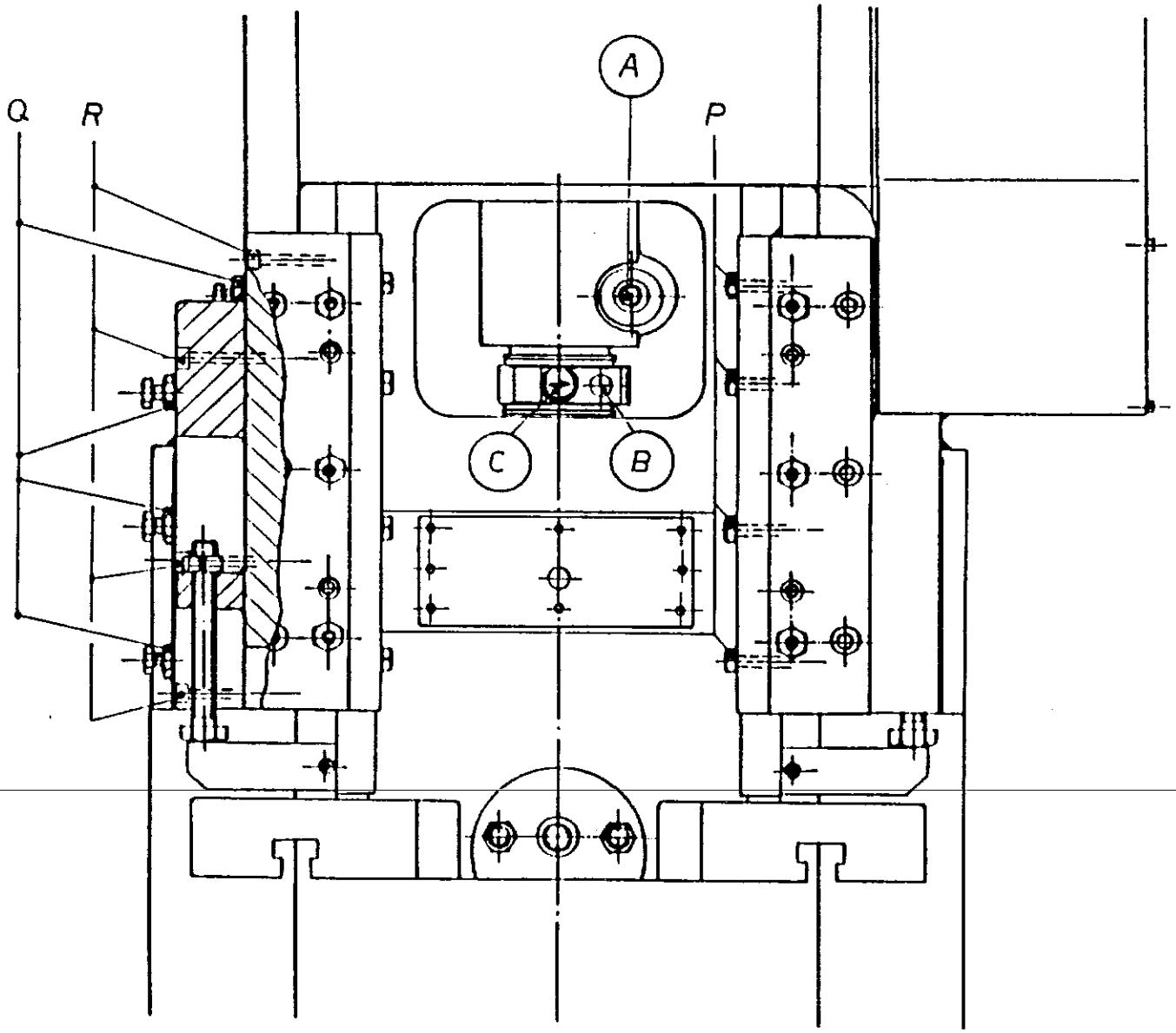

ram
1
2
working table
front case


press body



Drg. No. 0859	Date 02-02-95



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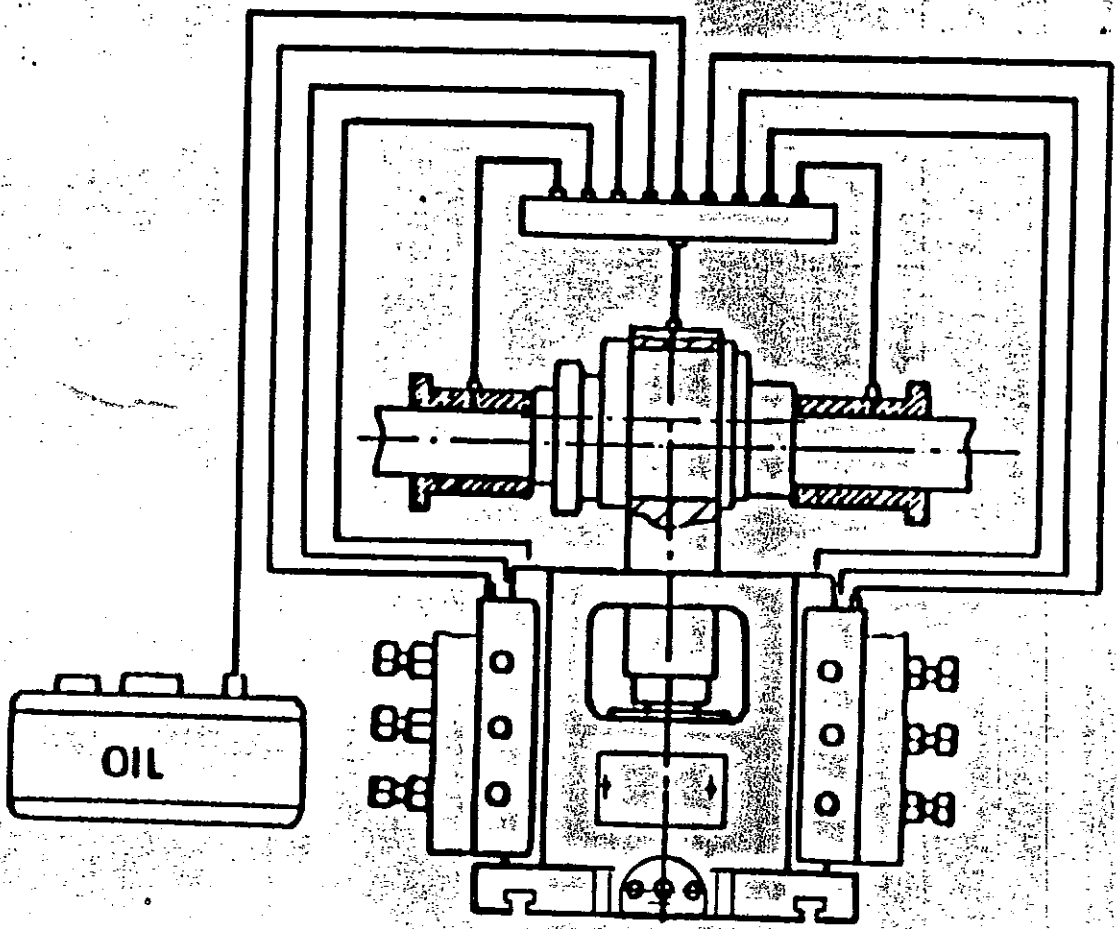
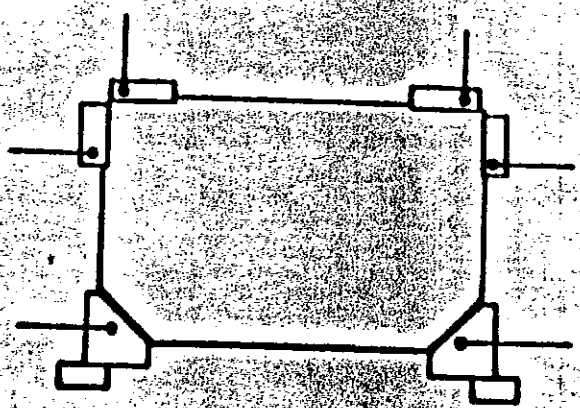

OIL



P 80-RE press at 60 strokes per 1'

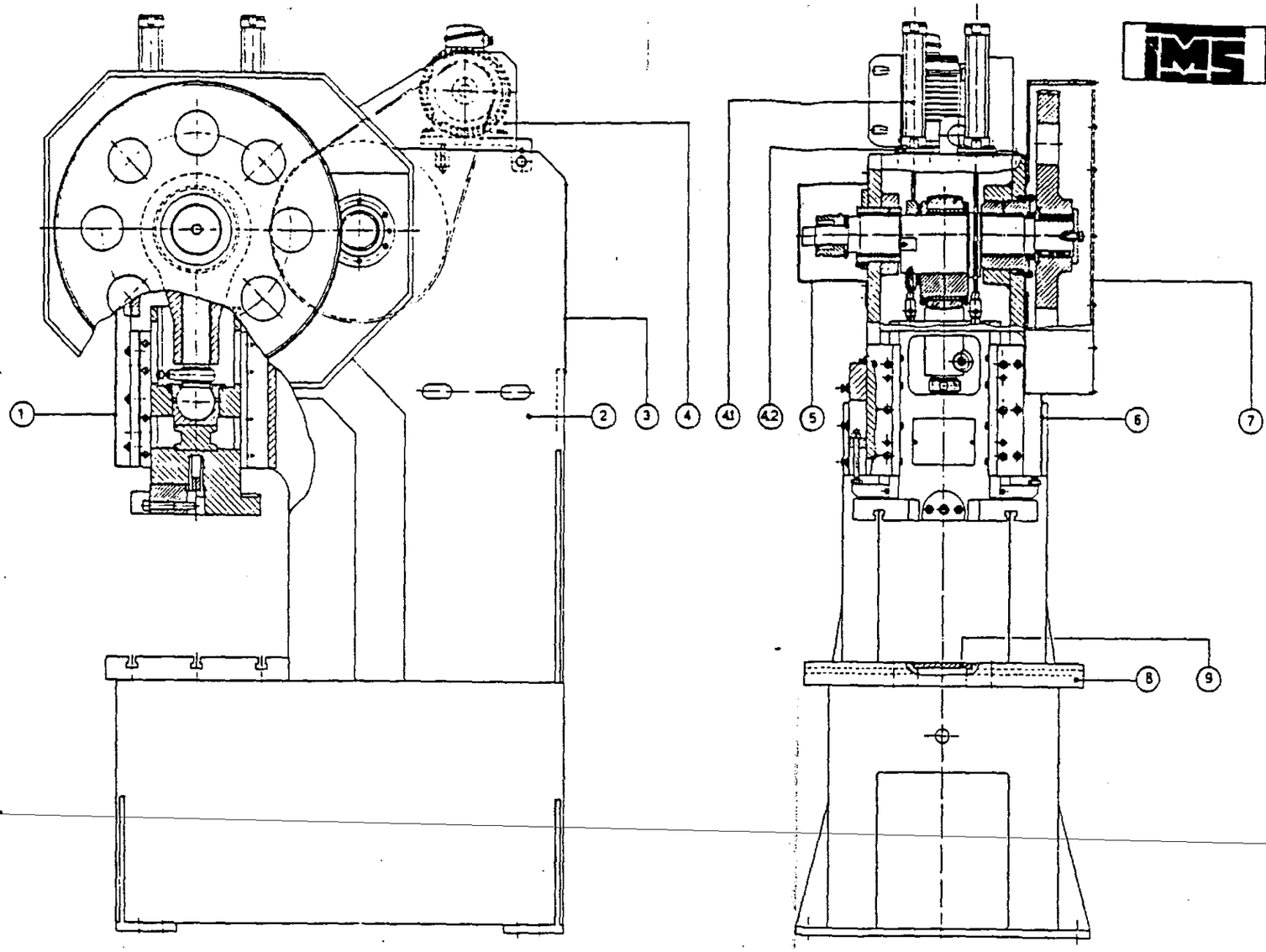
Stroke	Degrees
0	0
18	8
37	20
55	40
70	54
82	60
94	68
108	80
109	84
110	100

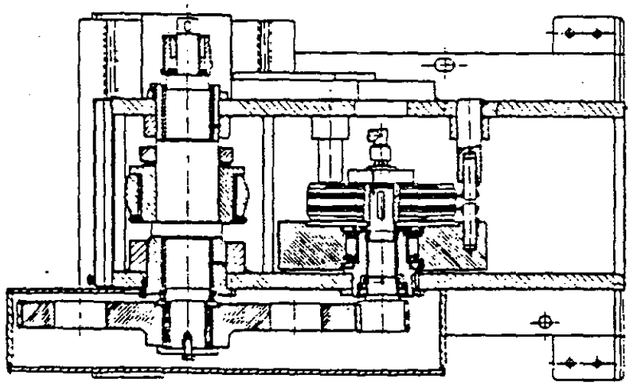
NOTE: As soon as you work with a speed (stroke number) different from the standard one, you have to change the cam placement referred to each stroke, so that the machine can grant the ram placement always at its Bottom Dead Center (B.D.C.) at the end of working cycle.

IMS

16.14 Body assembly

Pag. 35





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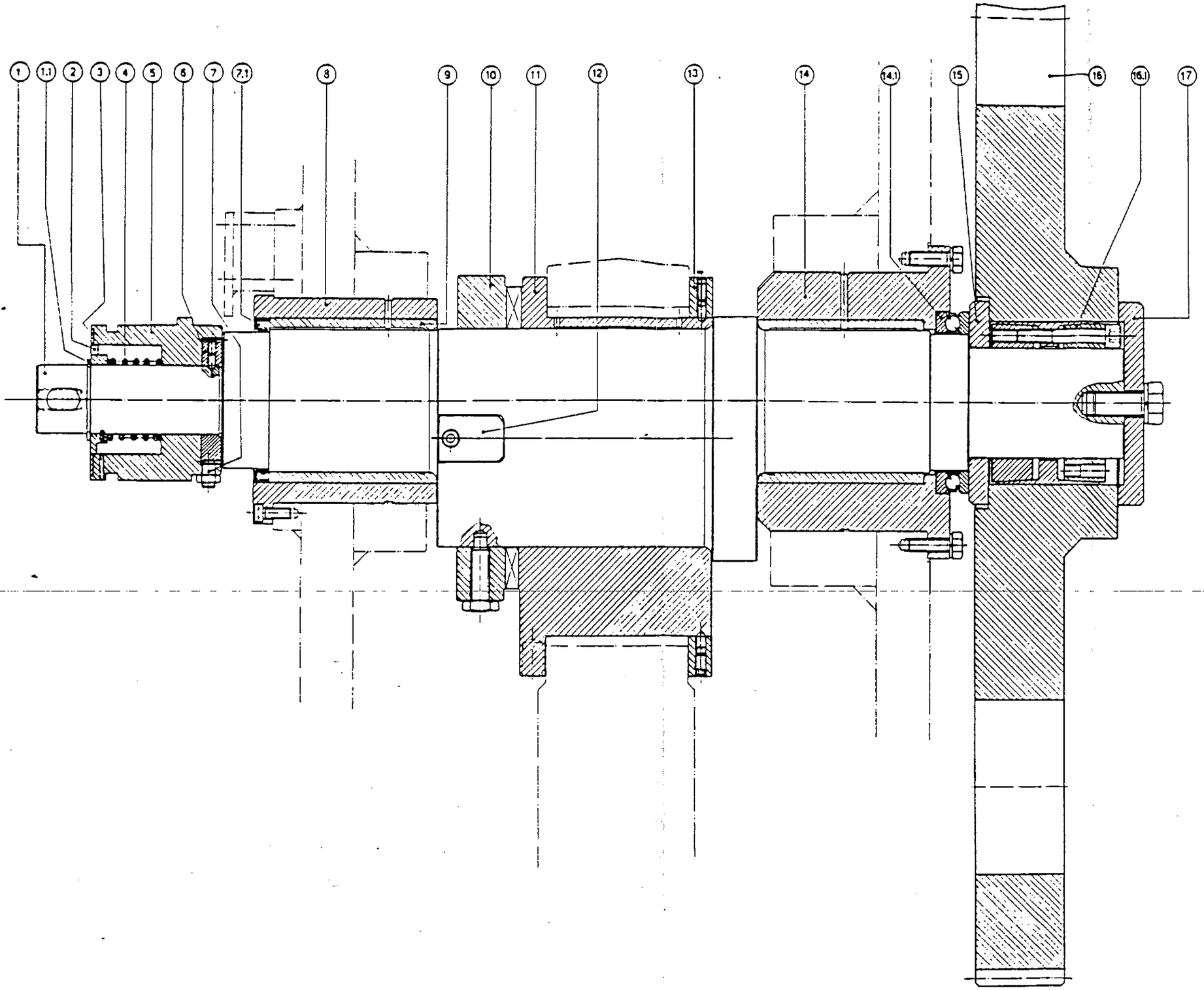

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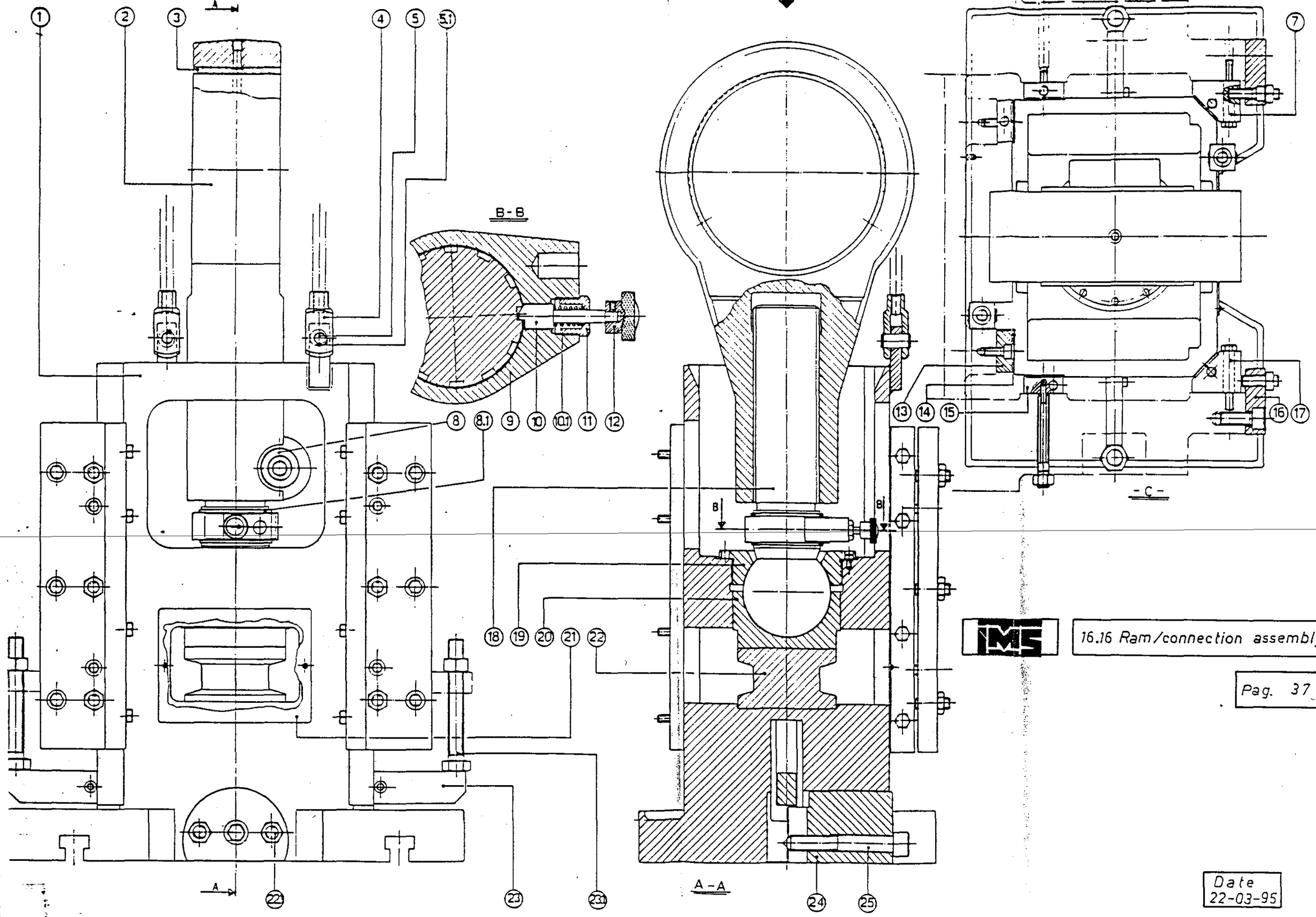
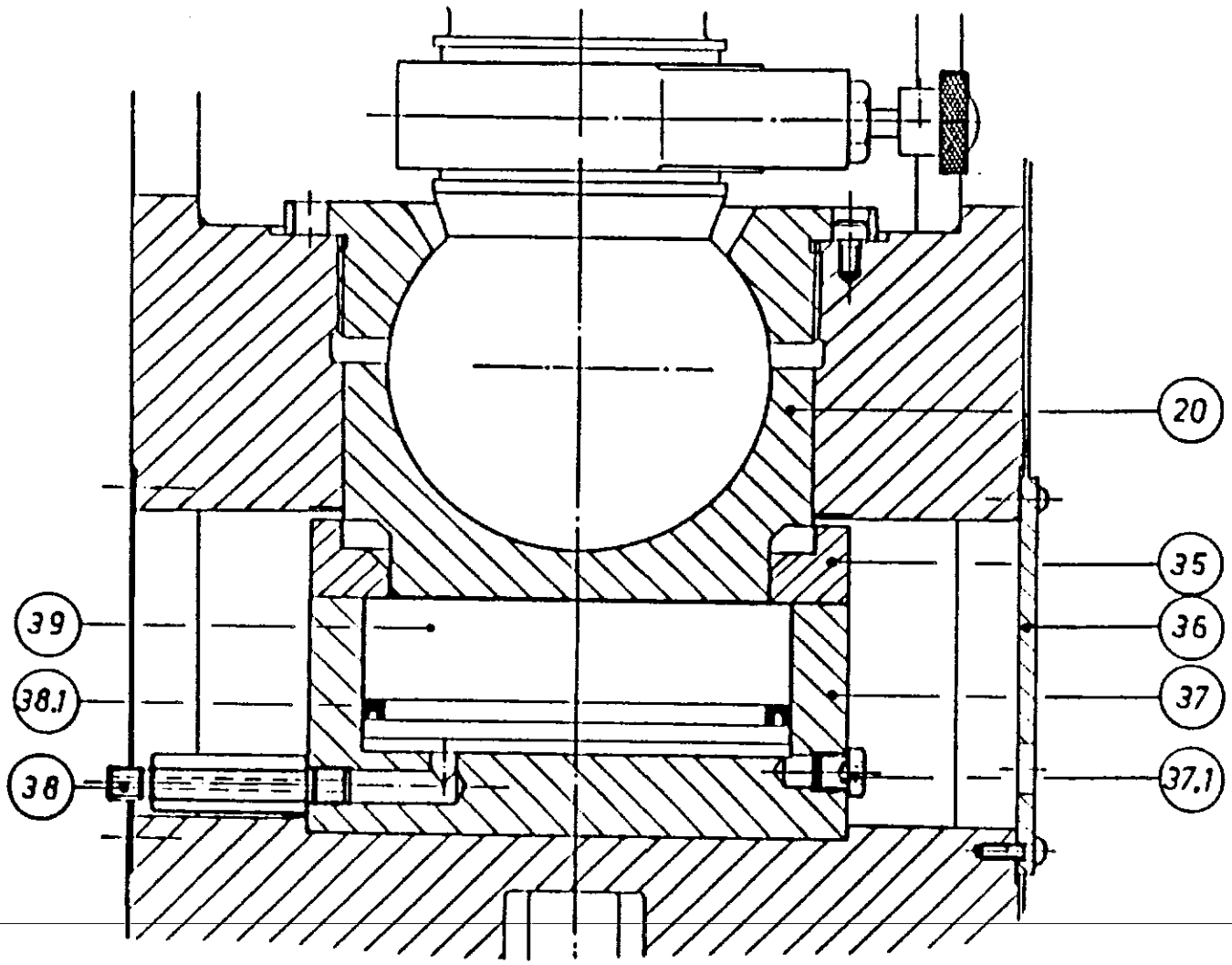


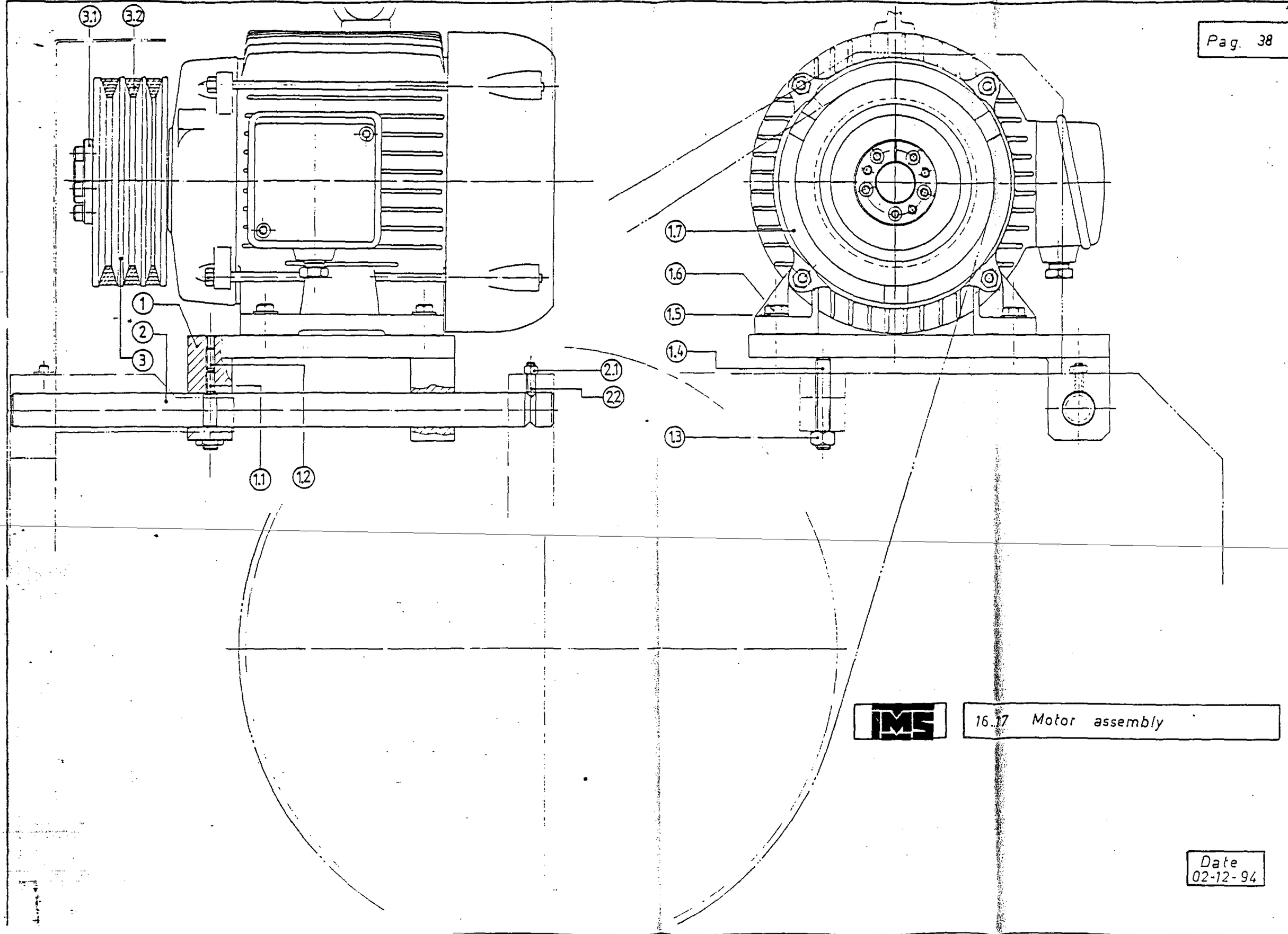
IMS

16.16 Ram/connection assembly

Date
22-03-95

P 80 - RE

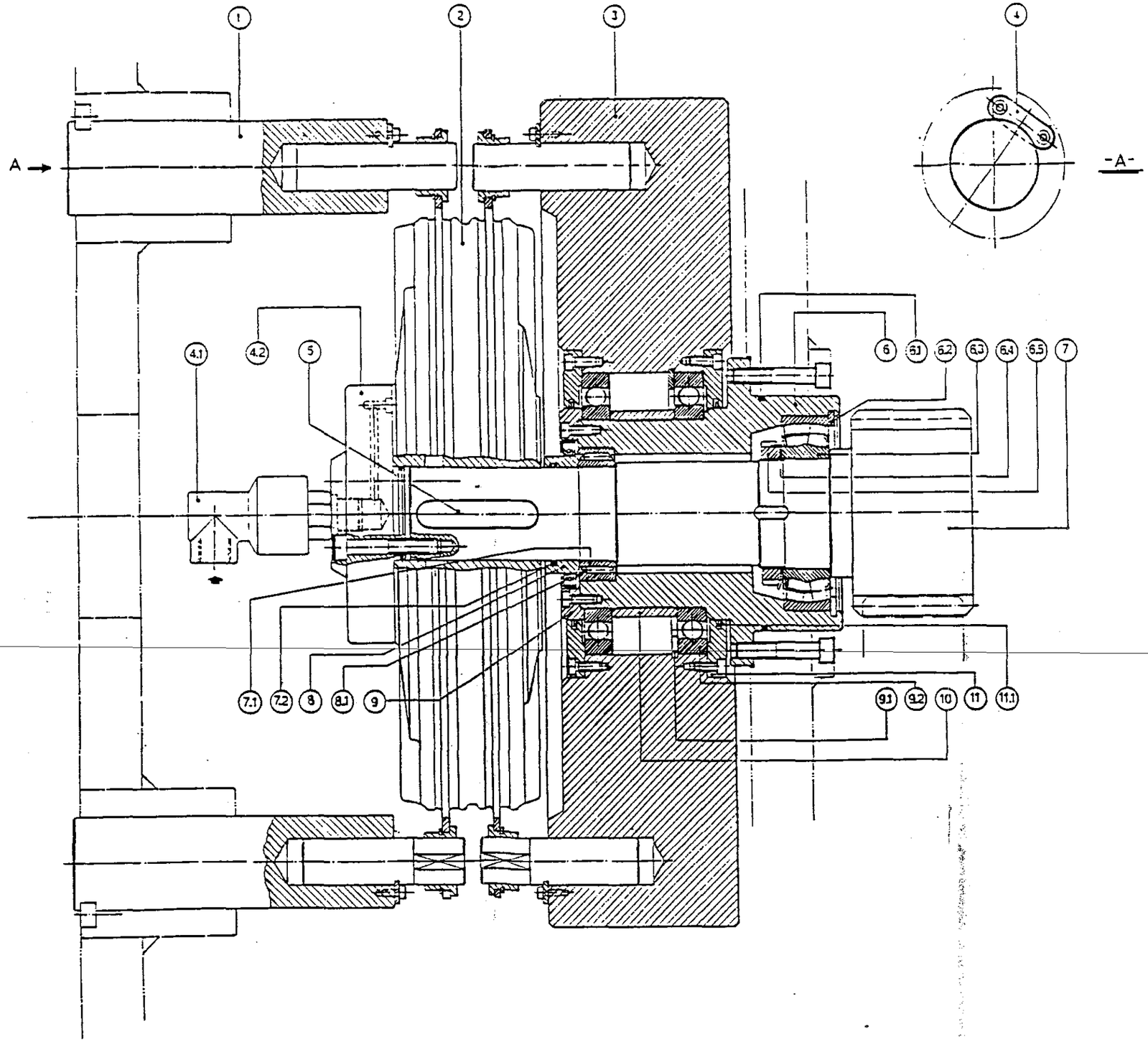




IMS

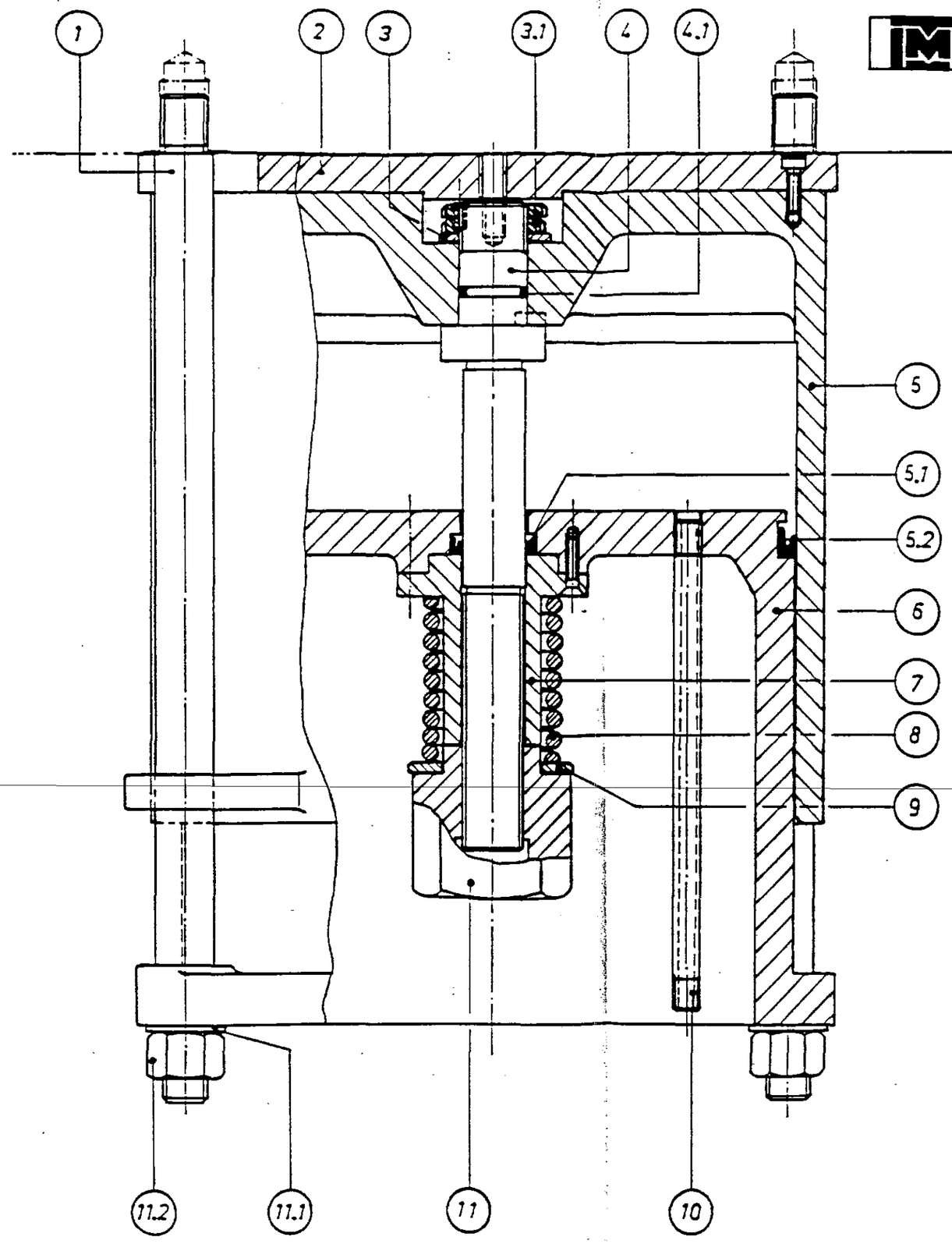
16..17 Motor assembly

Date
02-12-94



Date
02-01-95

16.19 Air cushion assembly



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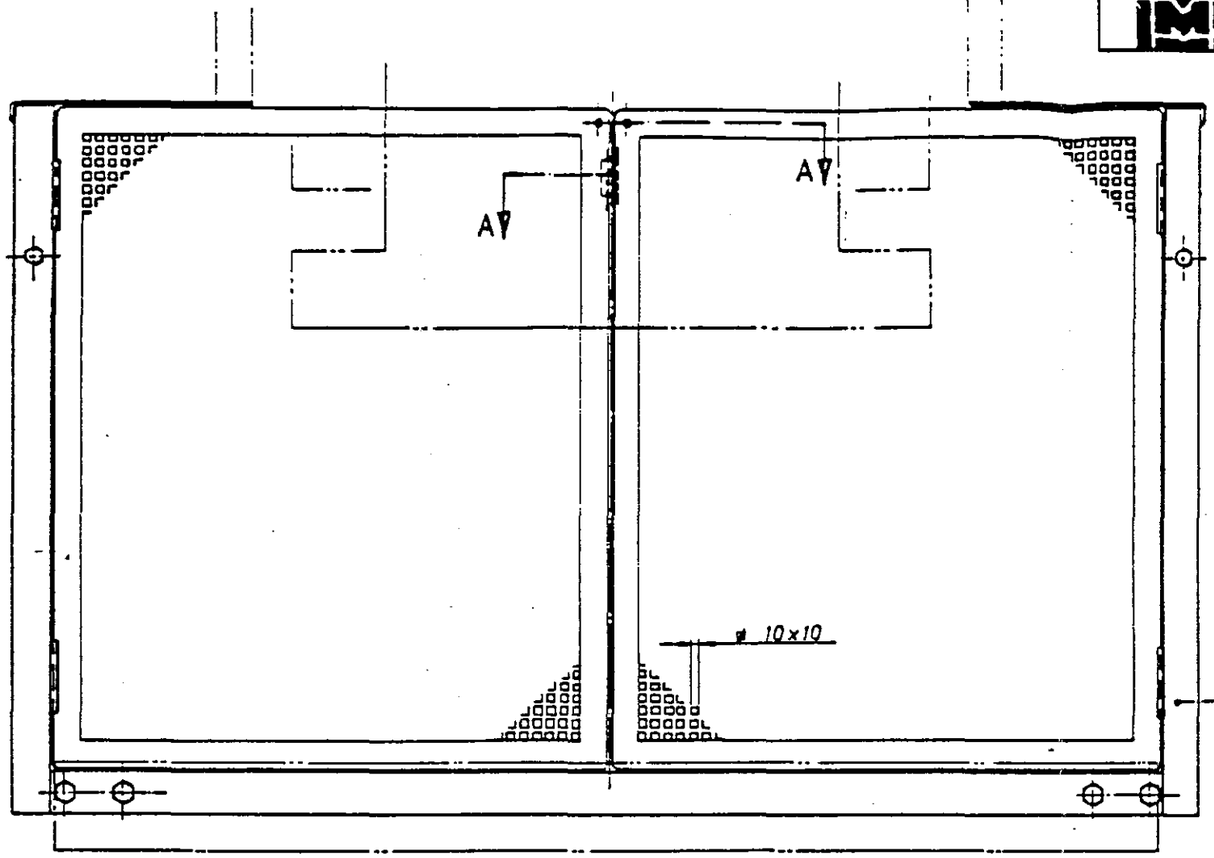
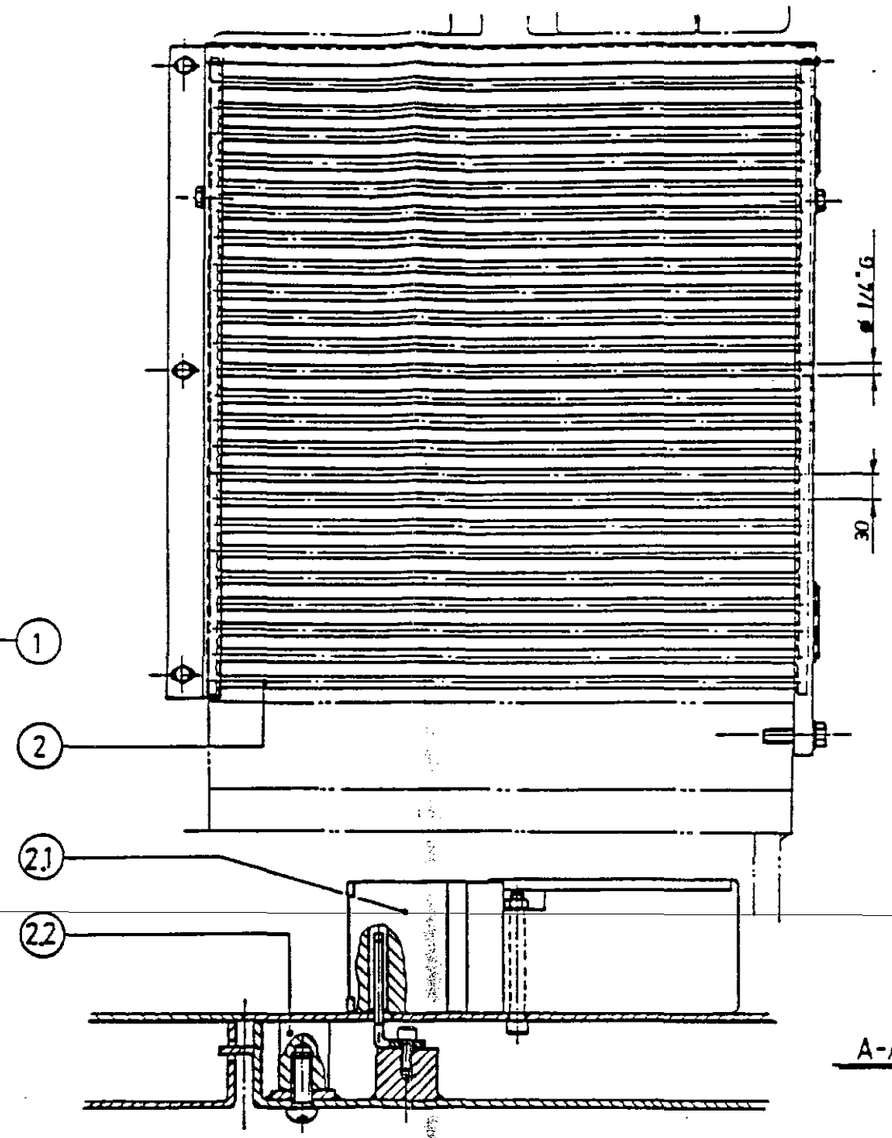
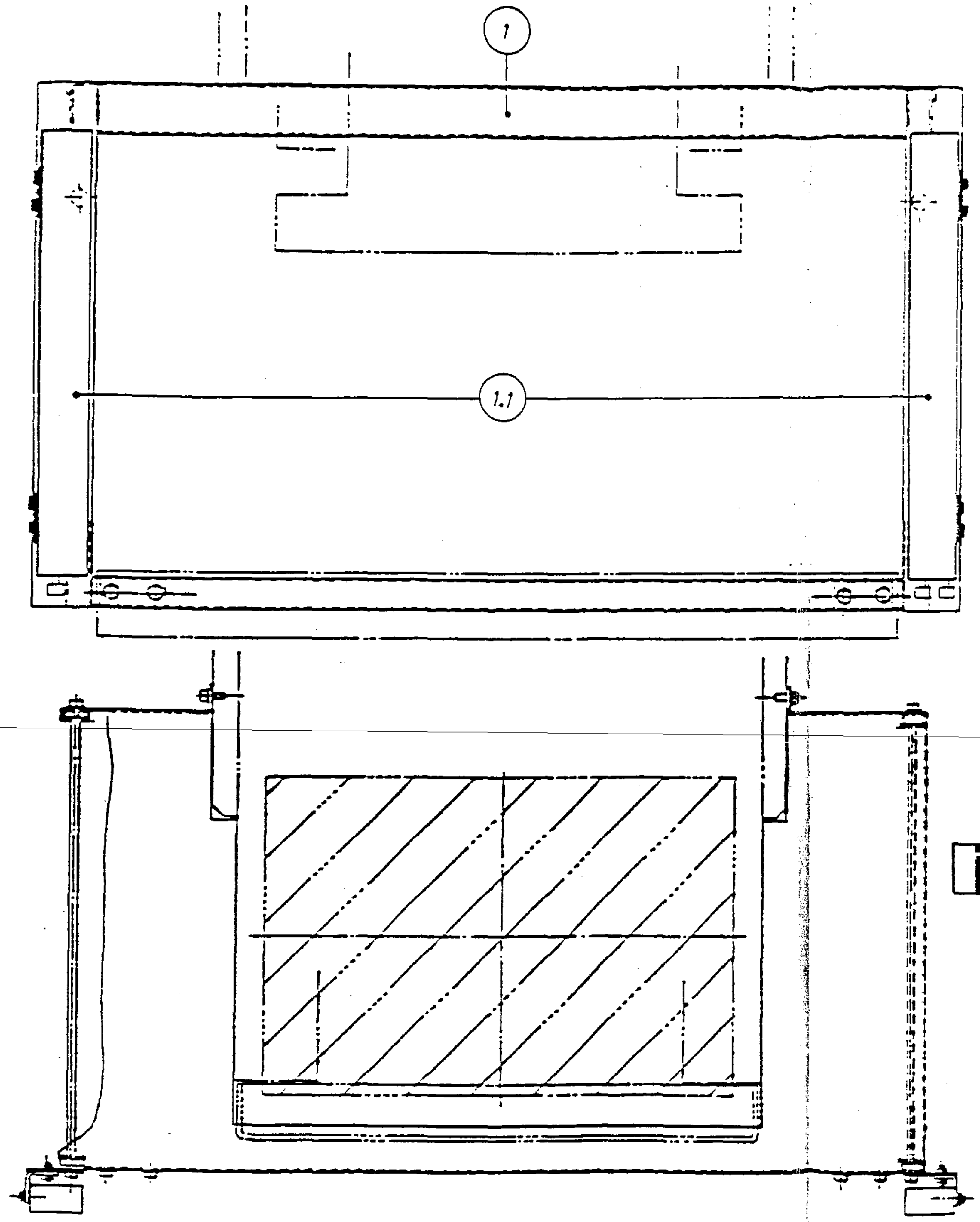
02-02-95

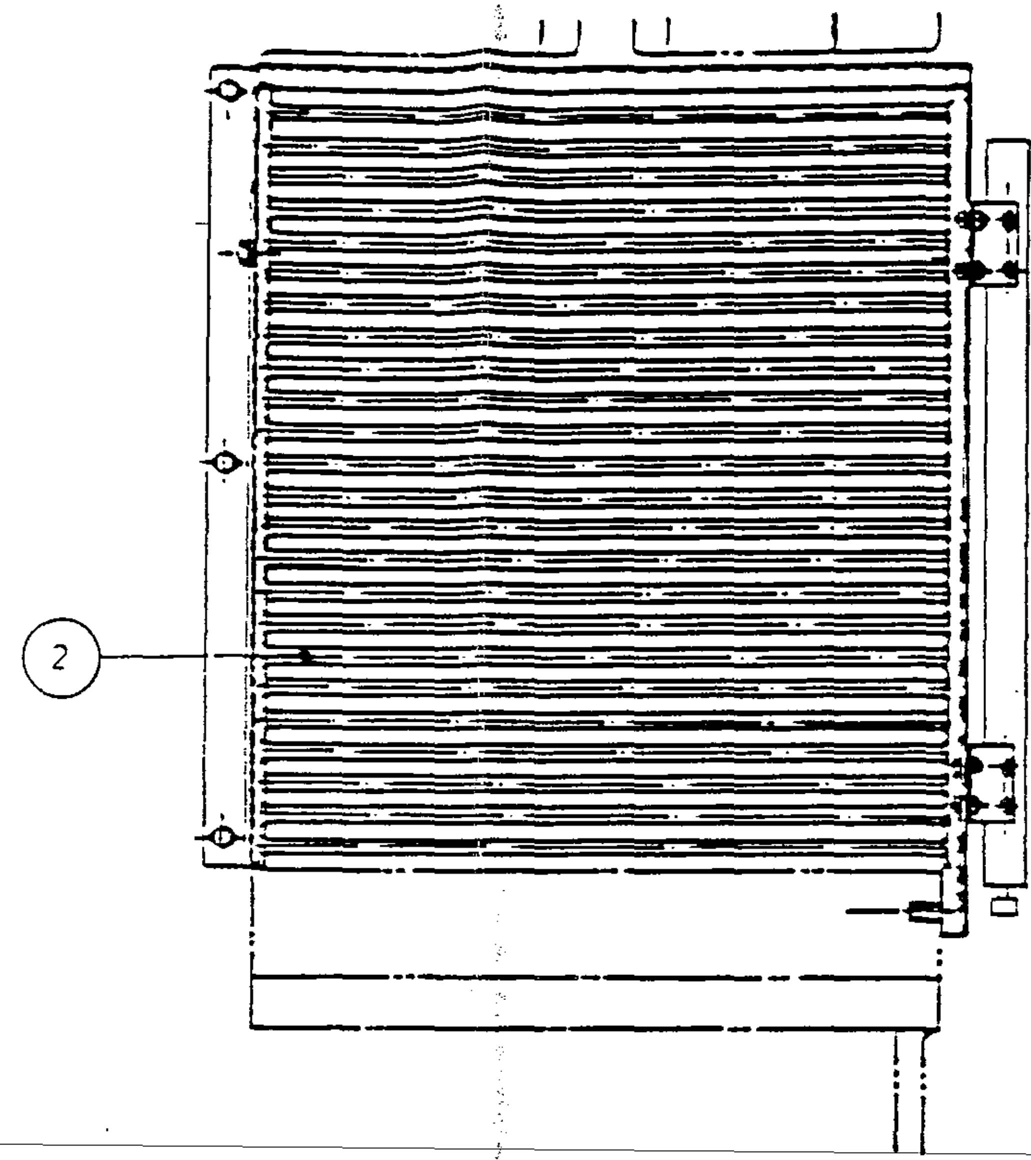




A-A

Date
09-01-95





IMS

16.21 Electr. safety guards

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Pos.	Denominazione	Q.tà	N° dis.	Codice
	Type FF-SB14E/R04K-S			
1.1	Guards Honeywell	1	h=400mm	5410000143
2	Side cover	2	80.13.02	2110001461
1	Electr. guards cover	1	80.13.03	2110001391

av. gen.

N. Codice grezzo

N. Codice anno: 0410002160

TOLLERANZE GENERALI DI LAVORAZIONE UNI 5307

Gruppo dimensioni

MACCHINA	Press P 80-R E
DENOMINAZ.	
MATERIALE	scala /
MODELLO o stato	data 18-01-96
TRATTAMENTI	dis.

80.13.00