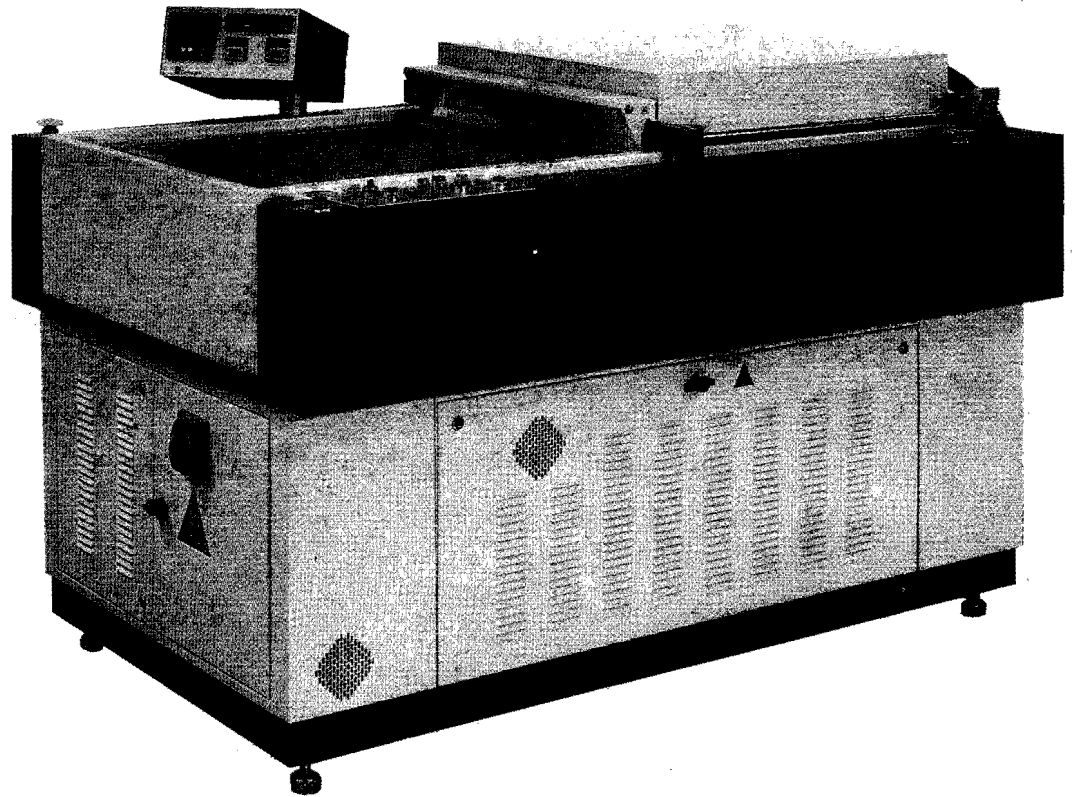


MIGUEL

VACUUM APPLICATOR MOD. 724

S/N 01502247



OPERATING AND SERVICE MANUAL



Dynachem

NOTICE

PRIOR TO INSTALLING, OPERATING OR PERFORMING MAINTENANCE ON THE VACUUM APPLICATOR MOD. 724 THIS INSTRUCTION MANUAL SHOULD BE READ CAREFULLY.

"TO THE BEST OF OUR KNOWLEDGE THE INFORMATION CONTAINED HEREIN IS CORRECT, HOWEVER, DYNACHEM DOES NOT GUARANTEE THE COMPLETENESS OR ACCURACY OF THE INFORMATION. USER IS RESPONSIBLE FOR THE SAFE INSTALLATION AND OPERATION OF THE VACUUM APPLICATOR MOD. 724".

**GENERAL
 SPECIFICATIONS**

1) Over-all dimensions:		
- width	1185 mm	46.5 inches
- length	1805 mm	71.0 inches
- height min.	1250 mm	49.0 inches
- height max.	1346 mm	53.0 inches
2) Working height:		
- min.	940 mm	37.0 inches
- max.	1015 mm	40.0 inches
3) Weight:		
- total net	810 kg	1785 Lb
- gross	1014 kg	2235 Lb
4) Minimum work space:		
- operator	800 mm	32.0 inches
- maintenance:	1000 mm	39.0 inches
5) Power supply:		
- U.S.		480V, 3 Ph, 60 Hz neutral ground, 9,5 Amps FLC
- European standard	380V, 3 Ph, 50 Hz neutral earth, 12 Amps FLC	
- Transformer supplied for other voltages.		
6) Compressed air required:		
- pressure	6 kg/cm ²	85 PSI
- consumption	28 NL/min	1 CFM

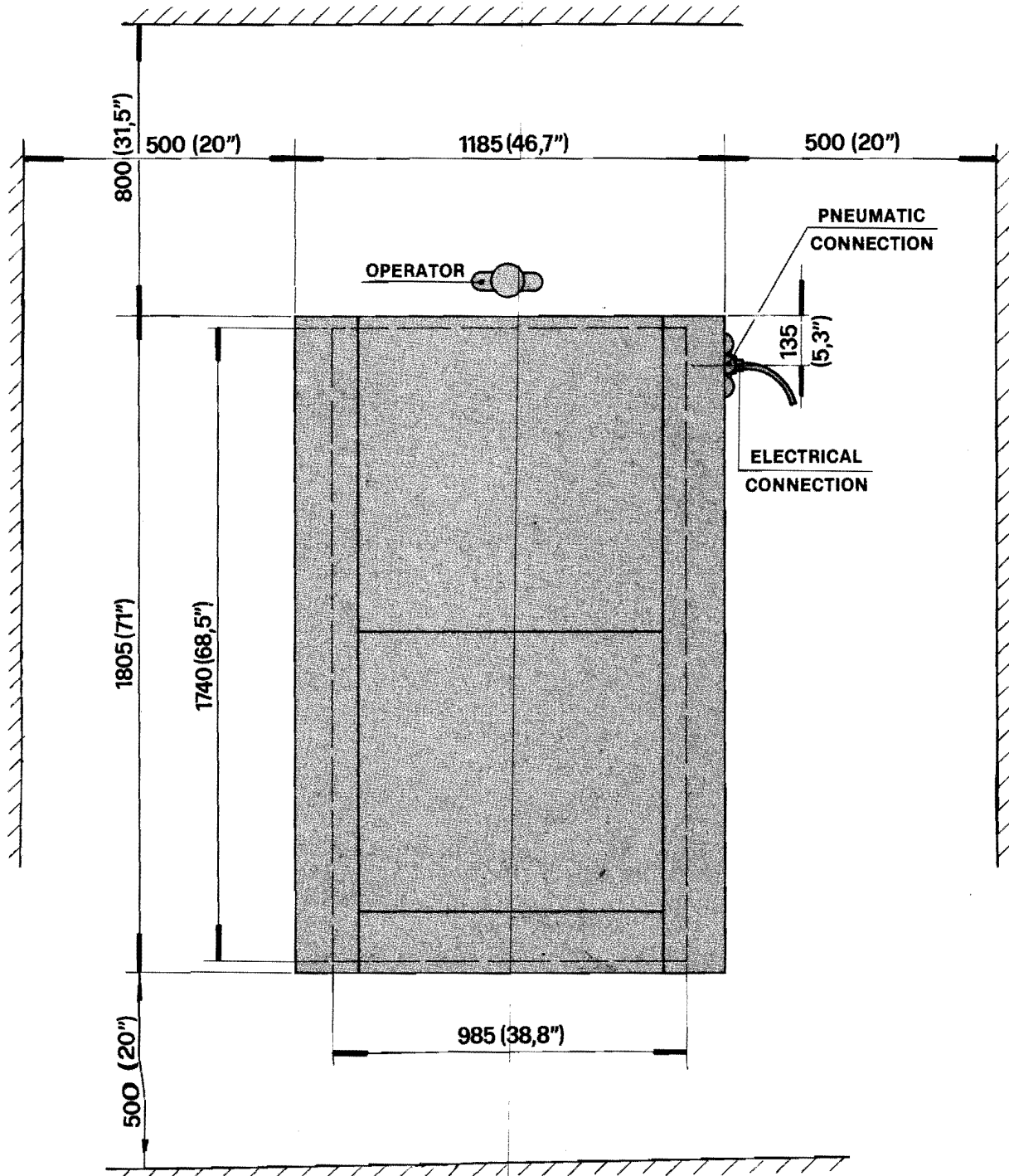
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**WORKING
CHARACTERISTICS**

- | | | |
|---------------------------------------|---------------------------------|--------------|
| 1) Dimensions of the chamber: | 650 × 650 mm 25.5 × 25.5 inches | |
| 2) Suggested dimensions of the panel: | | |
| - width max. | 610 mm | 24 inches |
| - length max. | 610 mm | 24 inches |
| - thickness min. | 0.4 mm | 0.016 inches |
| - thickness max. | 3.4 mm | 0.134 inches |

FLOOR PLAN



WARRANTY

The Vacuum applicator mod. 724 is warranted by Morton Thiokol Inc. Dynachem Division against defects in material and workmanship for a period of 90 days, from date of receipt by the customer, during which time Dynachem will be responsible for the replacement or repair, at its option, of any defective parts and for any labor charges connected with the repair of the Vacuum applicator mod. 724.

Dynachem, for an additional 90 days period, warrants that it will replace or repair, at its option, any part that proves to be defective; however, the customer will be responsible for all labor charges during this additional 90 days period.

Dynachem should be notified in writing of any defect in material or workmanship of the Vacuum applicator mod. 724 and if so instructed by Dynachem, the Vacuum applicator mod. 724 or any part thereof, will be shipped, freight paid by Dynachem, to Dynachem for repair.

Neither the Vacuum applicator mod. 724 nor any part thereof should be returned to Dynachem without written authorization from Dynachem.

This warranty is effective only under the condition that the Vacuum applicator mod. 724 is installed in accordance with Dynachem specifications.

Additionally the warranty is null and void if the Vacuum applicator mod. 724 is abused or operated contrary to the instructions or if alterations or repairs are made by other than authorized Dynachem representatives or by written permission from Dynachem.

The warranty for the Vacuum applicator mod. 724 does not cover the SILICONE RUBBER BLANKETS - top & bottom except for original manufacturing defects reported during the warranty period.

Notwithstanding the above and regardless of the circumstances Dynachem's total liability for any and all claims, losses or damages arising out of any cause whatsoever, shall not exceed the purchase price of the Vacuum applicator mod. 724. In no event shall Dynachem be liable for any incidental or consequential damages, whether arising from contract, negligence, strict liability or warranty.

THIS WARRANTY IS EXPRESSLY IN LIEU OF ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, INCLUDING THE WARRANTY OF MERCHANTABILITY OF FITNESS FOR A PARTICULAR PURPOSE.

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VACUUM APPLICATOR MOD. 724 DESCRIPTION

The Vacuum applicator mod. 724 is a semi-automatic machine designed to ensure complete elimination of air from the surfaces of a printed circuit board that has been laminated with dry film solder mask.

Complete encapsulation of the circuit conductors and intimate contact of the solder mask film to the surfaces is achieved by using vacuum technology, heat and mechanical pressure.

The Vacuum applicator mod. 724 machine consists of two heavy aluminium platens that are situated vertically above one another during the vacuum cycle (diagram 1). The lower platen is movable for loading with circuit boards that have solder mask film applied.

The upper platen has a blanket of reinforced silicon rubber stretched across the lower surface forming a ceiling for the vacuum chamber.

This blanket forms a diaphragm which provides the mechanical pressure at the end of the vacuum cycle.

The lower platen consists of a «well» which is the working area.

A silicon rubber gasket around the circumference of the platen forms the vacuum seal when the platens are closed. Air is evacuated through channels around the perimeter of the «well».

Both platens contain temperature controlled heaters.

To accommodate the wide variety of panel thicknesses the Vacuum applicator mod. 724 is supplied with shim inserts to adjust the panel to the correct height in the «well» of the bottom platen.

The Vacuum applicator mod. 724 has been designed for easy operation and maintenance. The electrical components and microprocessor that control the system are housed in an enclosure that is easily accessible.

Two side panels are removable to provide access to the vacuum pump system. The control panel contains all the commands and adjustments required for operation of the machine.

SAFETY

Emergency stops are located on each corner of the machine for easy access by the operator. A folding type guard is fixed to the bottom platen for operator safety and to prevent objects from falling into the machine area.

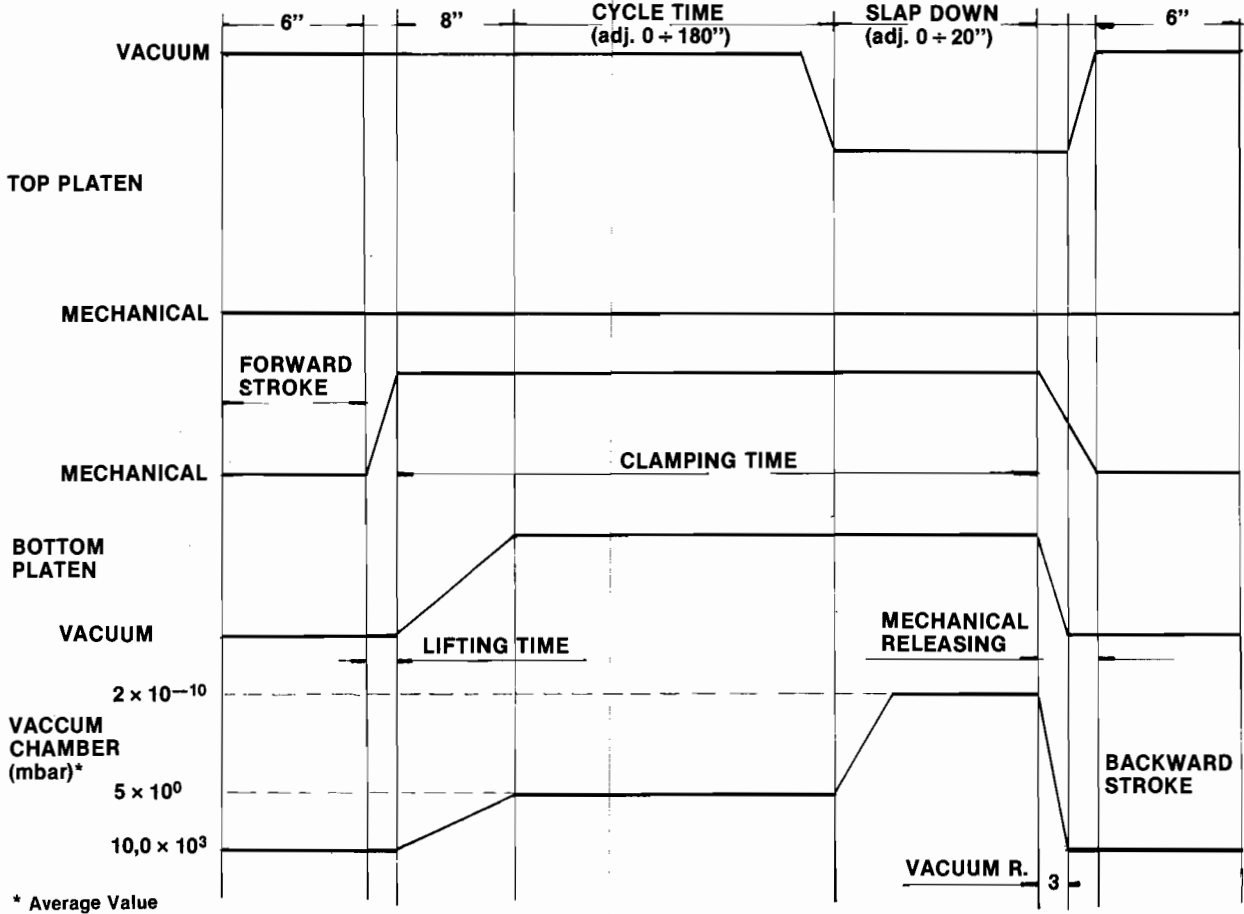
The Vacuum applicator mod. 724 is available in 24 inch (610 mm) and 30 inch (762 mm) platen sizes.

VACUUM APPLICATION PROCESS CYCLE

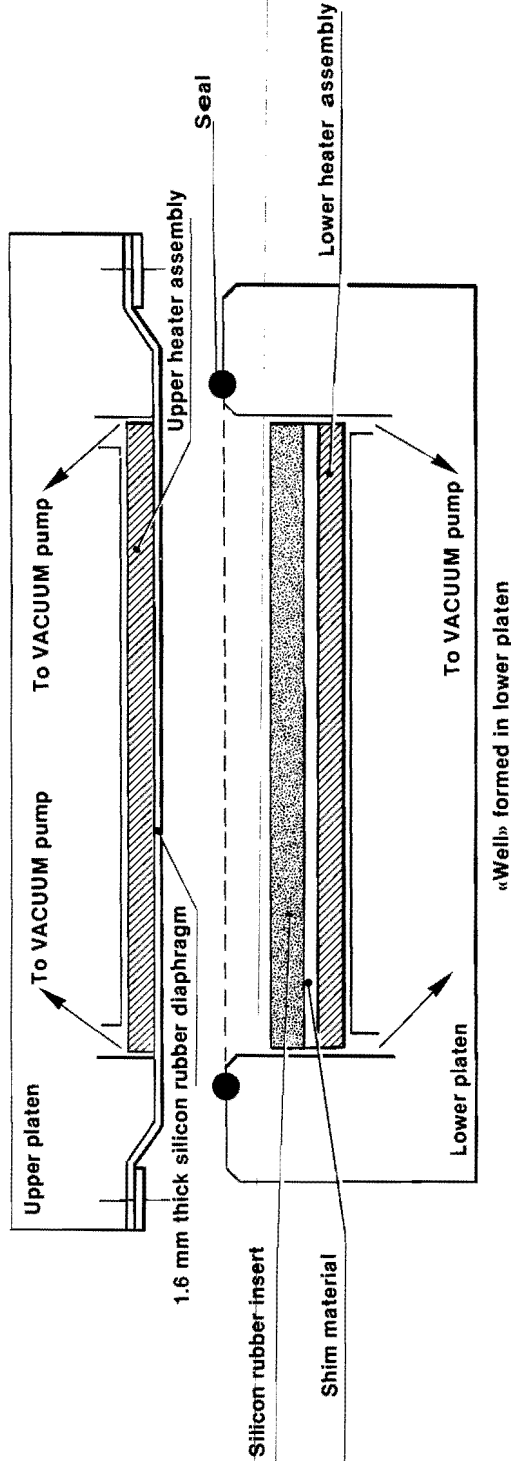
Printed circuit boards that have dry film solder mask applied to one or both sides are vacuum processed in the following sequence.

- The panel(s) is placed on the lower heated platen (diagram 2).
- The lower platen is driven beneath the top heated platen and is moved upward to seal the chamber and start the vacuum process cycle (diagram 3).
- At the end of the first stage of vacuum there is a second stage or «slap down» of the top blanket to apply mechanical pressure on the circuit board to force the solder mask film to conform around the circuit conductors (diagram 4).
- When the cycle is complete the vacuum is released and the lower platen returns to the start position to be unloaded and loaded for the next cycle.

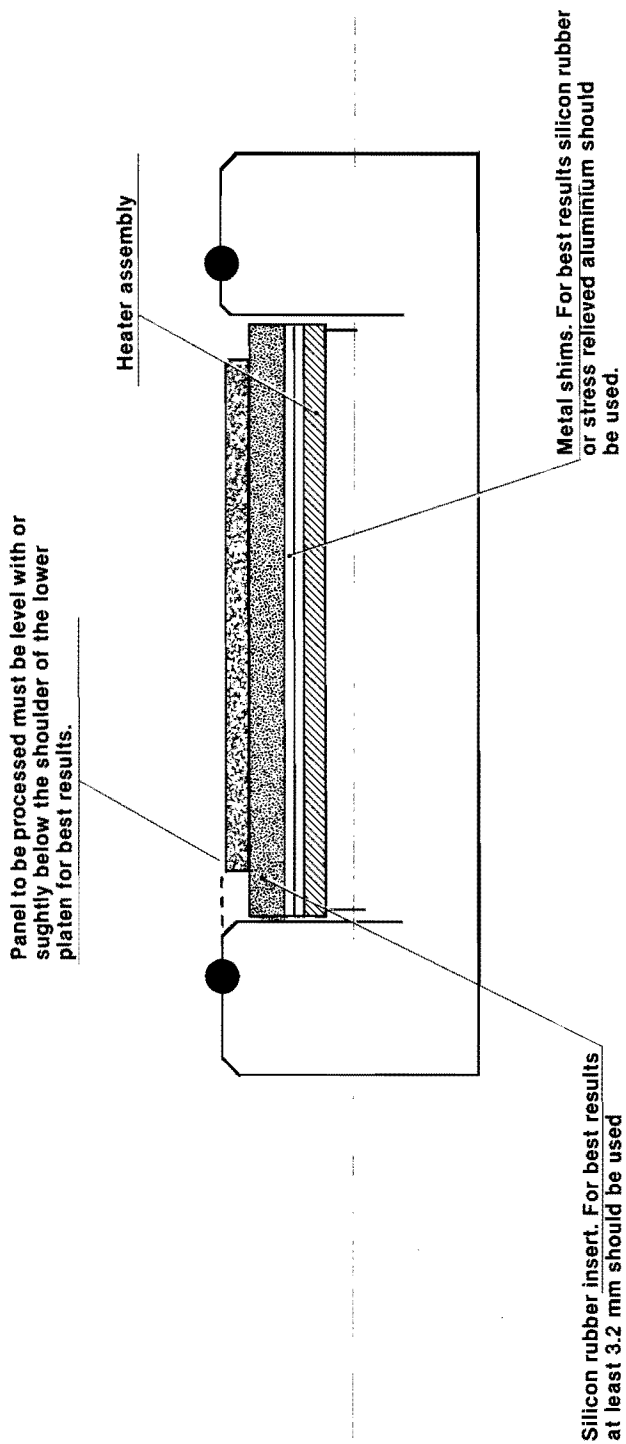
PROCESS SEQUENCE OPERATIONS



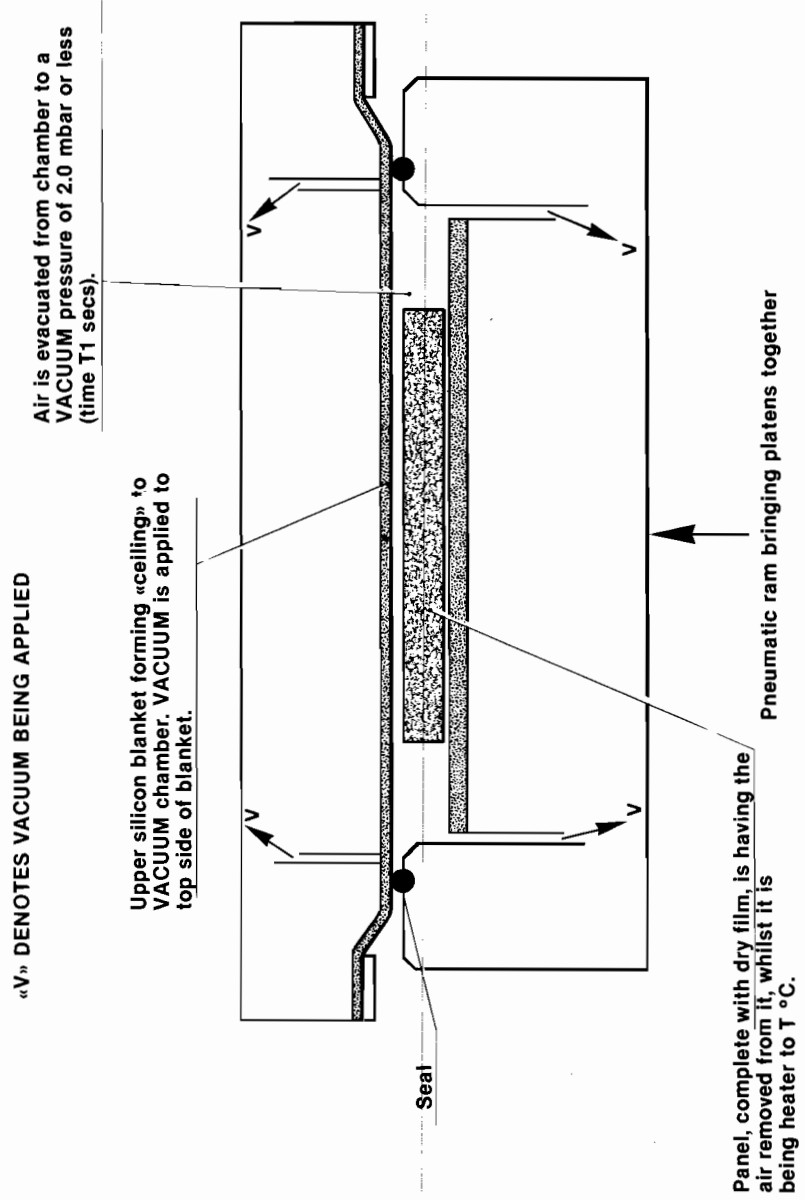
SCHEMATIC SHOWING COMPONENTS OF THE UPPER & LOWER VACUUM APPLICATOR MOD. 724 PLATENS



SCHEMATIC SHOWING SHIMMING DETAILS FOR LOWER PLATEN



STATUS OF VARIOUS COMPONENTS DURING THE FIRST PART OF VACUUM CYCLE

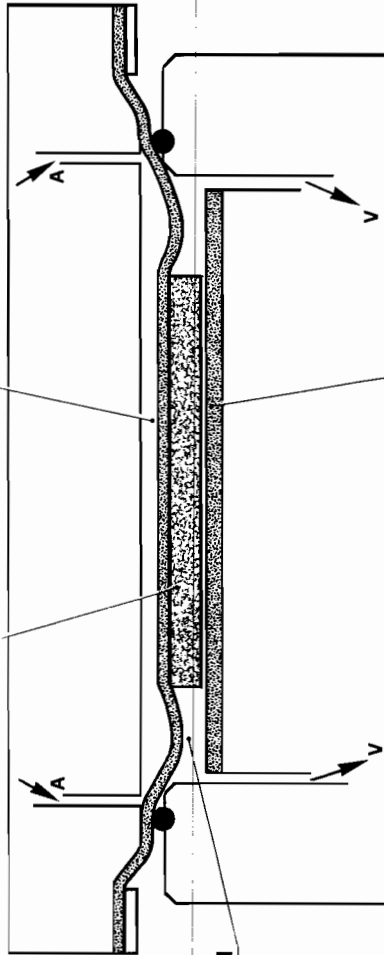


STATUS OF VARIOUS COMPONENTS DURING THE «SLAP-DOWN» PART OF VACUUM CYCLE

«V» DENOTES VACUUM BEING APPLIED
«A» DENOTES ATMOSPHERIC PRESSURE

The area above the upper blanket is opened to atmosphere. This gives rise to a pressure differential across the blanket forcing it downwards onto the panel.

Dry film solder mask has been heated to temperature T °C, and is soft at this stage



VACUUM still applied to chamber

The mechanical pressure exerted by both pieces of silicon rubber, forces the softened dry film to adhere and conform to the circuitry on the panel.

INSTALLATION

VISUAL INSPECTION

- 1) Remove the Vacuum applicator mod. 724 from the shipping crate as soon as possible after receipt and check for any damage that may have occurred during transport.
- 2) In case of any damage, notify the Dynachem office or forwarding agent responsible for shipment, **no later than 8 days after receipt.**
- 3) The following items required for installation of the Vacuum applicator mod. 724 have been included with the shipment.
 - Manual.
 - Key to access panels.
 - Plastic box tools.
 - Vacuum controller fuses.
 - Shim inserts-shipped in lower platen.

SETTING-UP

- 1) Place the Vacuum applicator mod. 724 in its designated work area taking into account the overall dimensions and the recommended space for operation and maintenance. (See floor plan)
- 2) Remove the blocks used to secure the bottom platen during shipment. Pull the lower platen out to the loading position.

Replace the hex head machine bolts used to secure the shipping blocks with the original allen key bolts that are attached to the machine.
- 3) The Vacuum applicator mod. 724 must be level for proper operation. Check the Vacuum applicator mod. 724 level using a machinest level placed on the frame of the bottom platen.

Make the necessary adjustments using the threaded leveling feet.

ELECTRICAL CONNECTIONS

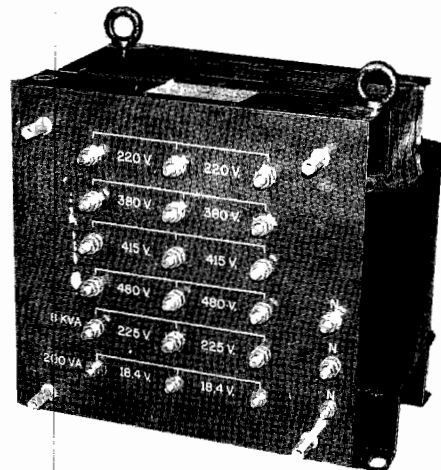
Caution:

Before making any electrical connections check the identification label on the Vacuum applicator mod. 724 for the correct power requirements.

With the purpose of easing the setting up and the use of the machine by an operator who have no knowledge of such use, on the system an alphanumeric visualizer is provided which, when required, could guide step by step the operator, so making very easy his/her task.

The machine has been designed for voltages of 220V - 380V - 415V - 480V - three-phase + ground, all of which are selectable, depending from the Country where installed, on the transformer located into the base, which also acts as line separator so offering better insulation warranty.

The machine installation employs only two voltages: 220V three-phase for the power section and about 24V DC for the microP. Landis & Gyr and for all auxiliary devices.



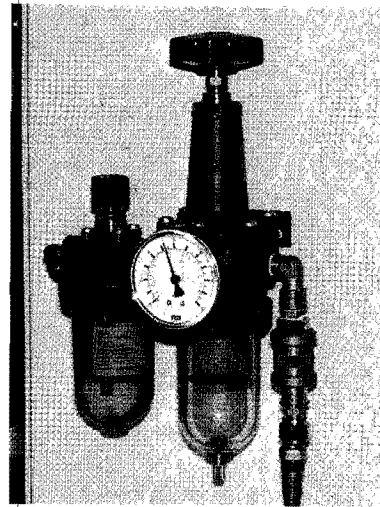
Warning

High voltages exist within the unit when the power is on. All appropriate safety precautions for the servicing and operating of electronic equipment must be observed. Whenever the unit cover is to be removed switch off and disconnect the power supply.

PNEUMATIC CONNECTIONS

The compressed air supply (shop) to the Vacuum applicator mod. 724 should be a minimum of 85 PSI (6 bars).

Connect an air line to the air supply fitting and adjust the pressure regulator to 58 PSI (4 bars).



Check the oil level in the air filter assembly and check to sight glass to see that the air lubrication is adjusted to 1 to 2 drops of oil every 10 cycles. Use one of the following when additional oil is needed:

ESSO
BP
SHELL
MOBIL OIL
TEXACO
GULF

AROX EP15
ENERGOL RD505
TORCULA OIL 32
MOBIL MISLUB 27
ROCK DRIL LUBE X5W
GULFSTONE 15

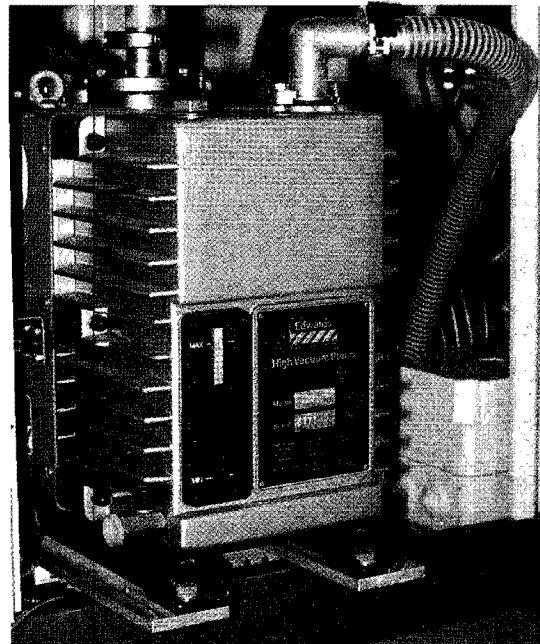
PRELIMINARY CHECK OF VACUUM APPLICATOR MOD. 724 FUNCTIONS

Caution:

Check the oil level sight glass on the vacuum pump to make sure that the oil in the pump is above the minimum level line

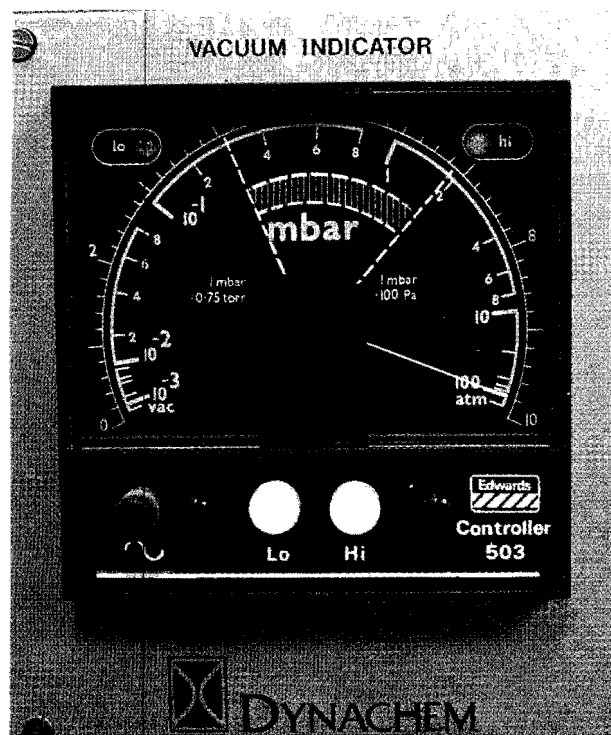
Use only special vacuum pump oil (Edwards high vacuum oil grade 15 or equivalent).

Maximum tank capacity is 5.3 quarts (5 liters).



Adjust the air pressure to 58 PSI (4 bars).

Check to see the vacuum controller 503 ON/OFF power switch is in the «ON» position.



The controller must display a pressure in mbar close to atmospheric value (1.1×10^3 mbar).

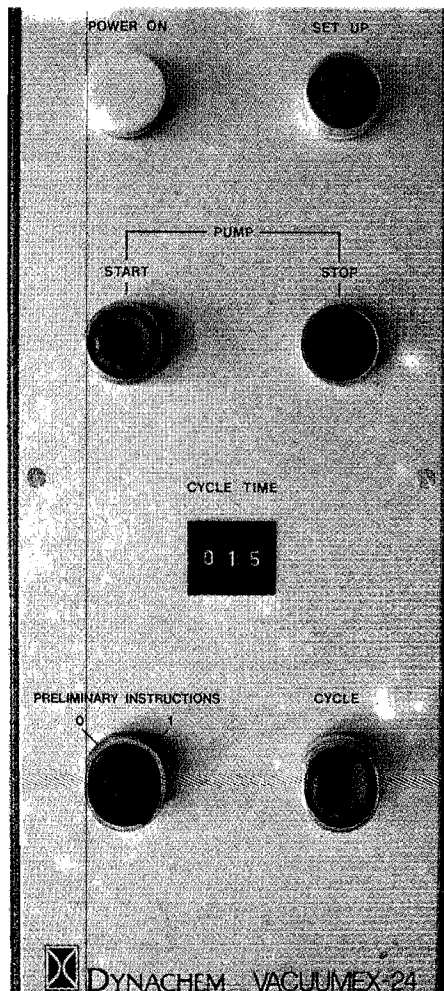
If the display is other than atmospheric value, turn off the «main switch» of the Vacuum applicator mod. 724 and back to «ON» again. The display should now be 1.1×10^3 mbar.

Note: The controller 503 has already been calibrated to atmospheric value. For any further calibration or display information refer to the manufacturer's instructions included in the maintenance section of this manual.

PRELIMINARY START-UP PROCEDURES

When the machine is put on by means of its yellow breaker, the machine will signal this condition through the lighting of the POWER ON pilot lamp. The alphanumeric visualizer will signal the date and time for about 3 seconds, and after it will visualize the texts n. 1 and 4. When no irregularities are detected, the visualizer will scan OK's for any component checked during the check-list control. When, however, one or more drawbacks should be already present when the machine is put on (f.i. lacking of compressed air, open protections, etc.) these will be visualized one at the time, i.e. sequentially (after removal of first, the second will show...) until they could be entirely eliminated.

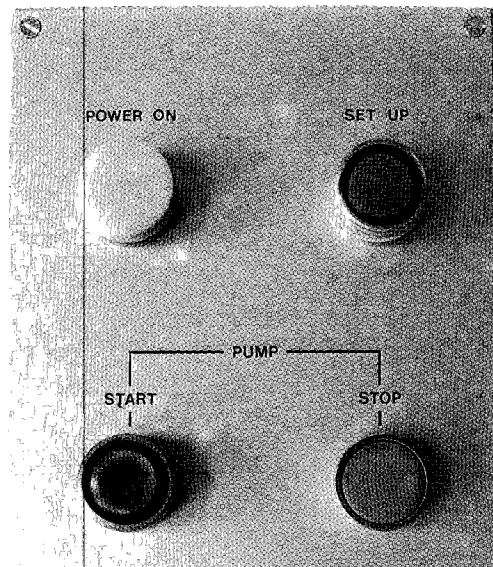
On the visualizer some command to be carried out will be shown and, when necessary, it will be possible select the operator's guide through the selector PRELIMINARY INSTRUCTIONS. When this selector should not be activated, the visualizer, after the initial messages, will show only the date and the time, but it will remain ready for emitting any alarm and diagnostic message.



For starting up the machine, or for restoring the machine operation after an emergency occurred, it will be only necessary to press the SET UP pushbutton; then, provided that the machine is not on the end-of-cycle step, the set-point will be effected and the stored alarms will be erased.

By actuating the SET-UP pushbutton the thermoregulator «temperature control UPPER PLATE and LOWER PLATE» displays will light and it will be than necessary to set again up the working temperature.

When the preset temperature of tables is reached, the vacuum pump could be activated through the START PUMP pushbutton.



It should be to note that the pushbutton STOP PUMP, which is to use for stopping the pump, is enabled only when the movable table (the lower one) is on «fully out» position, i.e. when the machine is at the end of cycle.

Through the three numeric selectors CYCLE TIME, on the control panel, it is possible to preset the time in seconds, that is the length of time during which both the plate and D.F.S.M. are submitted to air evacuation.



Inside the panel there are another two numeric selectors which select, in seconds, the SLAP DOWN TIME, that is the length of time during which the machine exerts a pressure on film and plate; these could be selected only by an authorized engineer.

By pressing the CYCLE pushbutton, after the PCB and the respective film are put on the movable table, this table travel to the other end of the machine and then is raised and goes fitting to the upper table.

The scanning of the cycle time begins, and after will follow the slap-down, the subsequent lowering of the table and its return to the original position with the operated plate.

During the whole cycle, including all movements, all the components (electro-valves, sensors, protection, etc.) are constantly watched and, should any irregularity occur, the machine is stopped and the respective alarm is visualized as per the enclosed list.

Therefore, if, for instance, after starting through the pushbutton CYCLE the movable table does not move, after a few seconds are elapsed, the machine is emergency stopped and on the alphanumeric visualizer the message «HORIZONTAL TRANSLATION IS FAILED» will appear.

In the same way, if the lower table raises but does not act on the end-of-stroke upper sensor Fc4, or acts on it but this does not move, the machine is emergency stopped and on the alphanumeric visualizer the message «SEN. Fc4 DAMAGED» will appear.

Special care has been devoted to the members which are charged of safety and accident prevention. Actually a movable guard prevents any access to the upper table and could emergency stops the machine.

If the upper table should be raised, it is first necessary unscrew the stop screws and with such a condition the machine cannot be operated.

Only when the voltage is off it is possible to access to the control panel; all external components put under tension are fully protected by proper guards and are grounded.

In any moment of the cycle, by pressing one of mushroom-head pushbutton the machine will be immediately stopped and all electric component external to the control board, will be put off, but the alphanumeric visualizer and the vacuum device.

The machine can be reactivated, so automatically effecting the set-point, when the SET UP pushbutton will be pressed another time.

The illuminated pushbutton CYCLE is also used of confirming to the microP that the order it put out (as presetting the table temperatures, ecc.) has been carried out.

This is only valid when operating under the «guided mode», i.e. when having operated the selector «PRELIMINARY INSTRUCTIONS».

The thermoregulating systems of the upper and lower table are entirely electronic ones and they do not require any maintenance; anyway it should be suitable to periodically control the correct operation of forced ventilation systems, both on the control panel and of the vacuum pump.

The electrovalves are equipped with DC solenoids and therefore are not related to the frequency, while the solenoid switches can operate both with 50 and 60 Hz.

For all component related to the fully machine operation have been selected those with a very long life, but anyway the lubricant levels of the vacuum pump should be periodically checked.

Although all solutions for diagnosing the machine alarms have been studied, it is however possible to obtain more informations, in case of failure, by consulting the enclosed electric diagrams.

Caution:

THE ALARMS REMAIN STORED EVEN IF THEY HAVE A VERY SHORT DURATION, FOR PREVENTING OF HAVING THE MACHINE EMERGENCY STOPPED WITHOUT KNOWING THE REASON OF FAILURE. IN ANY CASE THE ALARMS WILL BE ERASED, WHEN NO LONGER EXISTING, THROUGH THE SET-UP PUSHBUTTON.

Note:

Prior to committing the Vacuum applicator mod. 724 to production it is recommended to run the machine for 10 to 24 continuous hours with the heat and vacuum «ON» and the platens in the closed, sealed position.

This «conditioning» will help assure good vacuum application of the solder mask film by removing any moisture and dust from the chamber as well as equilibrate the heavy aluminium mass of the platens.

To put the machine into a continuous running mode it is necessary set at zero the «cycle time» thumb wheels.

Warning

Disconnect the main power supply before servicing the Vacuum applicator mod. 724.

A mechanical lockout is recommended to prevent accidental powering up to the machine.

OPERATION

SAFETY

- 1) Operation of the Vacuum applicator mod. 724 requires attention to safety with respect to both the mechanical functions of the machine and the chemical properties of the dry film.
- 2) Refer to the Dynachem technical data included in this manual «A Guide to the safe handling and use of laminar products».
- 3) Avoid contact with the aluminium platen frames when they are heated to operating temperatures. The surface temperatures are in the range of 150 to 180 °F (66 to 82 °C).

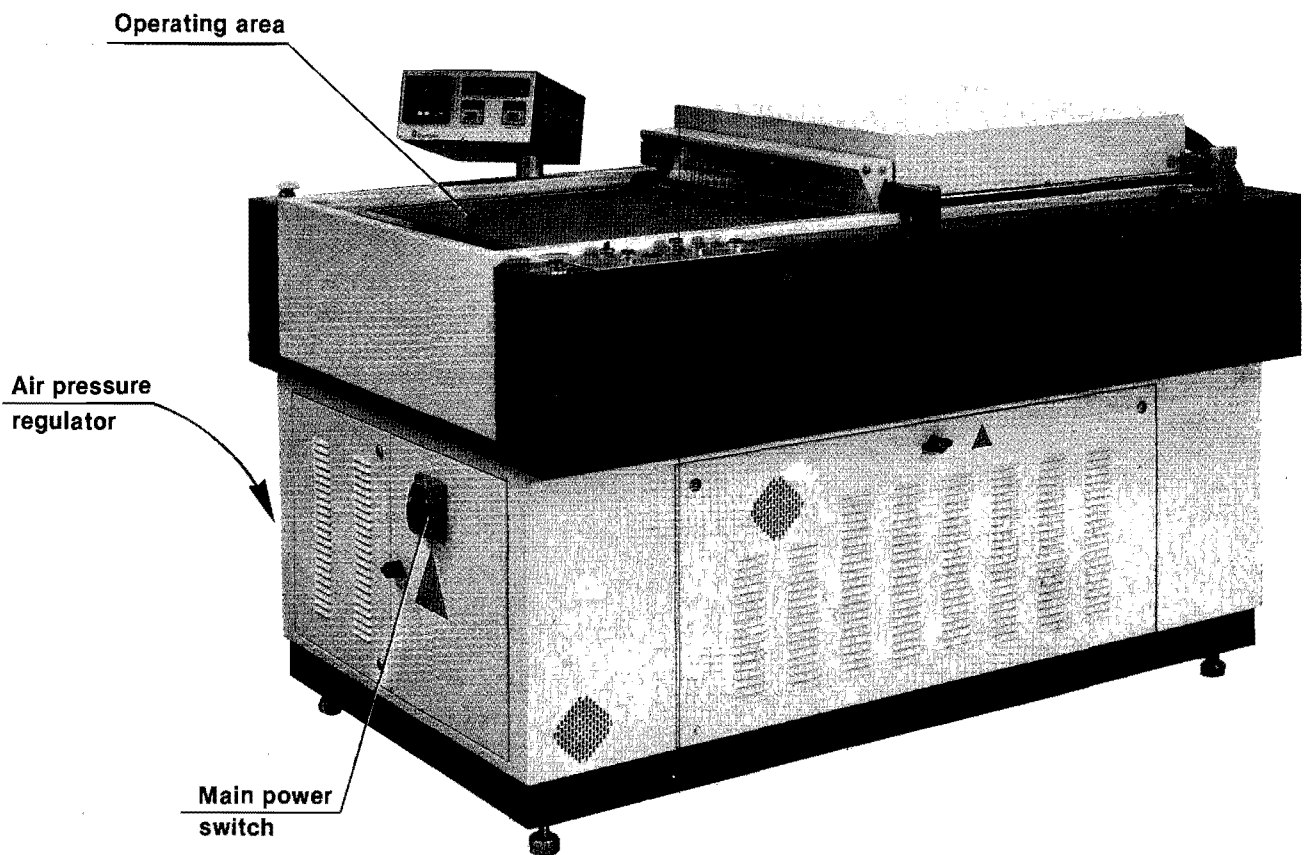
WARNING!

Warning

- 4) **Disconnect and lockout the main power supply before opening the access panel doors to make adjustments or servicing the Vacuum applicator mod. 724. A mechanical lockout is recommended to prevent accidental powering up of the machine.**

START UP SEQUENCE

- 1) Switch «ON» the main power
 - 2) Turn the air pressure on
- Check:



Picture 1

- The white light «main light» is ON.
- 3) Push «set up» button
 - 4) Push the green light «pump ON» button to start the vacuum pump and platen heaters.
 - 5) Select and place the appropriate shim and silicon rubber blanket in the «well» of the bottom platen.

Note:

The top of the panels to be processed should be approximately the same level as the shoulder of the bottom platen (Illustration I) it is recommended to have the panel height slightly lower than the shoulder rather than above it.

- 6) Set the top and bottom temperature controls to the values recommended for the dry film solder mask being used.



For laminar DM dry film solder mask the typical platen temperatures would be 170-200°F (77-93°C) for the top and 150-180°F (66-82°C) for the bottom platen.

Note:

Typically there is a variation of approximately 15°C (60°F) between the control setting and the surface temperature of the silicon rubber inserts. This differential is due to the heat transfer loss through the silicon rubber.

The temperature controls should be set to allow for this variation, in order to attain the panel surface temperature recommended for

the solder mask film being processed.

The use of Dynachem «thermolabel» temperature strips is recommended (set 2 140 to 180°F - 60 to 80°C). The strips should be placed on both sides of a test panel which is then run through a normal vacuum cycle. For laminar DM, the typical panel temperature should be in the range of 150-170°F (66-77°C).

- 7) Set the cycle timer to the required time for the solder mask film and type of PC panel being processed. Normal cycle time is approximately 50 to 60 seconds.
- 8) Allow 10 to 15 minutes for the platens and rubber inserts to reach operating temperature.

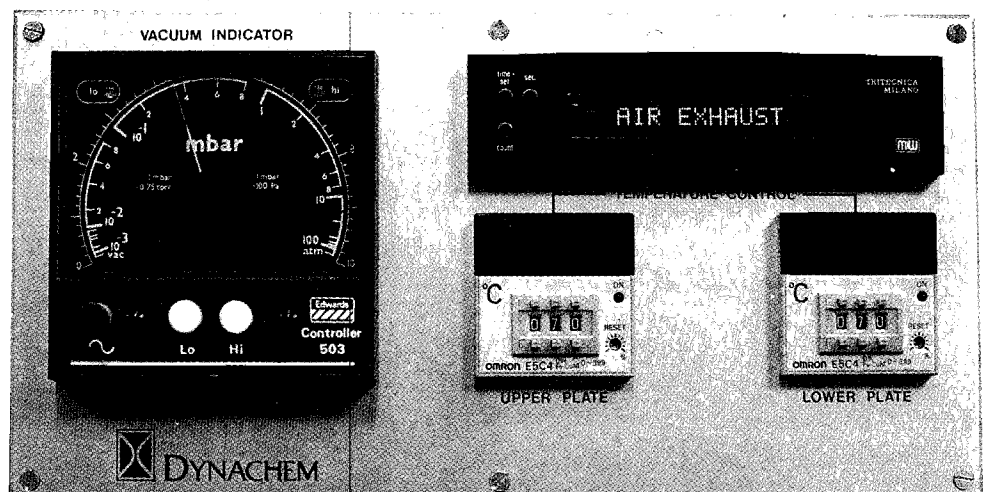
Note: The time for the platens to reach temperature and equilibrium can be reduced by turning the cycle timer to maximum and push the «cycle start» button.

This can be repeated until the controllers indicate the preset temperature has been reached.

Reset the times as noted in Step 7.

Note: Before proceeding to process production panels in the Vacuum applicator mod. 724 refer to the section on Solder Mask Lamination and Vacuum Application. This section describes the various lamination equipment and the proper lamination technique to assure successful vacuum application of the dry film solder mask to the surface of the printed circuit panel.

- 9) Place one panels in the operating area of the lower platen (Picture 1).
- 10) Push the «cycle start» button (Picture 1).
The bottom platen will move into position under the top platen and they will close to form a sealed vacuum chamber and start the heat and vacuum cycle.
- 11) As vacuum is being drawn the digital readout of the vacuum controller 503 will reflect the atmospheric conditions in the vacuum chamber. When the correct vacuum is reached the controller should display approximately 2.0 mbars.



- 12) At the end of the first stage of vacuum the chamber is opened to atmosphere causing the top rubber diaphragm to move downwards and «slap down» on to the panel. This mechanical pressure causes the solder mask resist to conform around the circuit traces.

Note:

The «slap down time is adjustable» (see trouble shooting figure) and will vary from 2 to 10 seconds depending on the size of the air emittance valve used, the type of soldermask dry film and the configuration of the printed circuit panel.

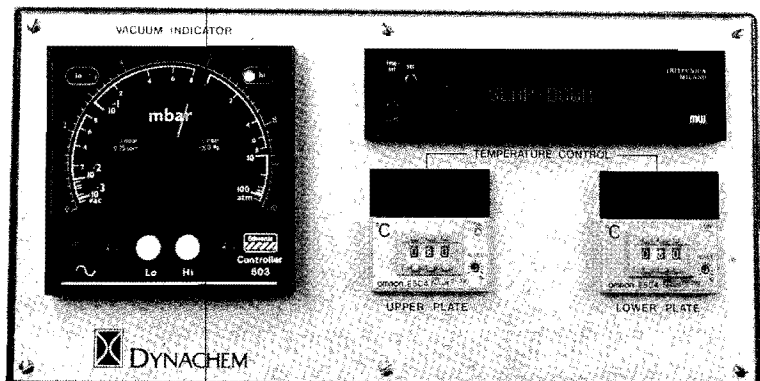
- 13) When the total cycle is complete the platens will open and the bottom platen will return to the loading position ready for the next cycle.

Caution:

The platen and processed panel are hot. Handle with care to avoid burns.

Note:

If the processed panel has any defects such as «resist wrinkles» or «air entrapment» around the circuit traces refer to the trouble shooting section.



Minimum vacuum required for slap down action

TROUBLE SHOOTING GUIDE

PROBLEM THE VACUUM APPLICATOR MOD. 724 DO NOT SWITCH ON.

1) PROBABLE CAUSE	F1 or F2 fuses burn out.
SOLUTION	Replace it.

2) PROBABLE CAUSE	Emergency push button defective.
SOLUTION	Replace it.

PROBLEM THE PUMP DO NOT ROTATE.

1) PROBABLE CAUSE	Thermaloverload is off.
SOLUTION	Reset it and check power consumption.

2) PROBABLE CAUSE	Thermaloverload defective.
SOLUTION	Replace it.

3) PROBABLE CAUSE	Motor pump burnt out.
SOLUTION	Replace it.

PROBLEM NO VACUUM APPLICATOR MOD. 724 ON THE APPLICATION CHAMBER.

1) PROBABLE CAUSE	F5 or F6 fuses burn out.
SOLUTION	Replace it.

2) PROBABLE CAUSE	EV6 or EV8 not functioning.
SOLUTION	Replace fuse inside at the electrovalve.

PROBLEM «SLAP DOWN» CYCLE NOT ACTIVATE.

1) PROBABLE CAUSE	The top rubber blanket is torn.
SOLUTION	Replace it.

2) PROBABLE CAUSE	Preselection slap down time is zero.
SOLUTION	Set approximately 8 ÷ 12 seconds.

3) PROBABLE CAUSE	EV7 not functioning.
SOLUTION	Check fuse if necessary replace it.

PROBLEM HEATERS ELEMENT NOT FUNCTIONING.

1) PROBABLE CAUSE	F3 or F4 fuses burn out.
SOLUTION	Replace it.

2) PROBABLE CAUSE	Temperature regulator defective.
SOLUTION	Replace it.

3) PROBABLE CAUSE	Mil spec connector defective.
SOLUTION	Check wires connection.

4) PROBABLE CAUSE	Heater element burnt out.
SOLUTION	Replace it.

PROBLEM WRONG PROCESS APPLICATION.

1) PROBABLE CAUSE	Wrinkles on surface.
SOLUTION	Pay attention at the prelamination. Must be cold and without pressure facilitating air exhaust from the sandwich in the vacuum application.

2) PROBABLE CAUSE	Spot in the surface without solder mask.
SOLUTION	The temperature is too much high; please decrease in accordance at the film specifications.

3) PROBABLE CAUSE	Air entrapment.
SOLUTION	Prelamination not properly carry out. Not sufficient «SLAP DOWN» time. Temperature less than require film specification.

4) PROBABLE CAUSE	Solder mask not covering islands and traces because is split out.
SOLUTION	«CYCLE TIME» and «SLAP DOWN» time longer than we suggested: 50 ÷ 60 seconds cycle time - 8 ÷ 12 seconds slap down time.

STARTING MESSAGES

- 1 - Vacuum applicator mod. 724 for DFSM application by Dynachem
- 4 - If you need, activate «Preliminary instructions»
- 7 - When starting push «Set Up» button, please
- 10 - PLS, confirm my questions by «Cycle» pushbutton
- 13 - Set cycle time & temp. - 100 C max. - Did you do this?
- 16 - Are plates in selected temp.?
- 19 - Start pump
- 21 - Put board and push «Cycle» button
- 24 - Cycle started
- 25 - Lower plate IN
- 27 - Lower plate UP
- 29 - Air exhaust
- 30 - Slap-down
- 31 - Vacuum release
- 32 - Lower plate down
- 34 - Plate move back
- 36 - Cycle-ended
- 38 - No slap down

**DIAGNOSTIC AND
CHECK MESSAGES
WHEN «ALARM»
IS «ON»**

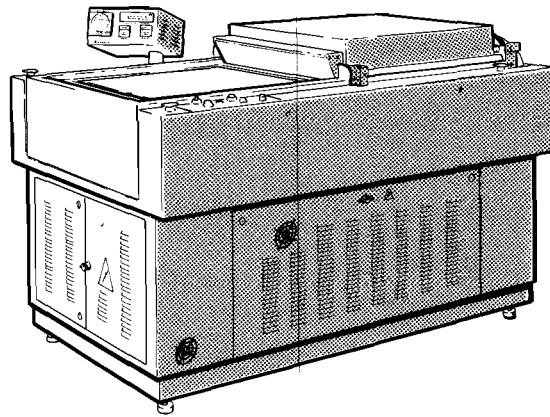
- 40 - Check-control
- 42 - Emergency
- 43 - Pump overload
- 44 - Top plate opened
- 46 - Vacuum not reached
- 48 - Safety guard off
- 51 - Air pressure low
- 53 - Cycle microswitches malfunction
- 56 - Emergency OK
- 57 - Vacuum pump OK
- 58 - Top plate closed
- 59 - Vacuum alarm OK
- 60 - Safety guard OK
- 62 - Set-point
- 63 - Sens. FC3 damaged
- 65 - Horizontal translation is failed
- 67 - Sens. FC4 damaged
- 69 - Vertical translation is failed
- 71 - Sens. FC5 damaged
- 73 - Sens. FC2 damaged

**BEFORE PROCEEDING ANY FURTHER MAINTENANCE OPERATION
SWITCH OFF THE MACHINE AND WAIT FOR ALL PARTS IN TEMPERATURE
TO BE COMPLETELY COLD**

VACUUM APPLICATOR 724	PERIODIC MAINTENANCE RECOMMENDED EVERY:			
	DAY	WEEK	MONTH	YEAR
CLEANING OF SILICONE RUBBER SHIMS	●			
CHECK UP ON LUBRICATING LEVEL OF PNEUMATIC CIRCUIT		●		
CHECK UP ON OIL LEVEL OF VACUUM PUMP		●		
REMOVE ANY LAMINATION FUMES CONDENSATE FROM THE PROPER BOX		●		
GENERAL COMPLETE CLEANING		●		
CHECK UP ON OIL LEVEL OF GEAR — UPPER PLATEN (730)			●	
LUBRICATION OF ROLLER GUIDES — LOWER PLATEN			●	
LUBRICATION OF LATERAL GUIDES FOR FOLDING GUARD			●	
CHECK UP ON WEAR CONTACTORS ELECTRICAL PANEL				●

VACUUM APPLICATOR MOD.

724



REALIZZAZIONE TIPOTOGRAFIA TIBILETTI - AZZATE (VA)



DYNACHEM

HOW TO ORDER SPARE PARTS

HOW TO ORDER SPARE PARTS

To avoid wastage of time and mistakes in delivery, it is strongly recommended that SPARE PARTS should be ordered in accordance with the example given below. Write the following details clearly and correctly:

- | | |
|---------------------|--------------------|
| -Serial Number | -Denomination |
| -Manufacturing Year | -Quantity |
| -Figure Number | -Exact address |
| -Position Number | -Means of dispatch |
| -Code Number | |

MORTON INTERNATIONAL S.p.A.
DYNACHEM ELECTRONIC MATERIALS - ITALY
VIALE LOMBARDIA, 52
21040 CASTRONNO (VARESE) ITALY
TEL. (0332) 893190
TELEX 351268
FAX (0332) 892153

ABBREVIATIONS USED IN THE SPARE PARTS CATALOGUE

- | | |
|-----------------|-------------------------|
| L.H.—Left hand | POST—Back |
| R.H.—Right hand | CR—Quantity as required |
| INF—Lower | NF—Not supplied |
| SUP—Upper | RIF—Reference only |
| ANT—Front | |

NOTE

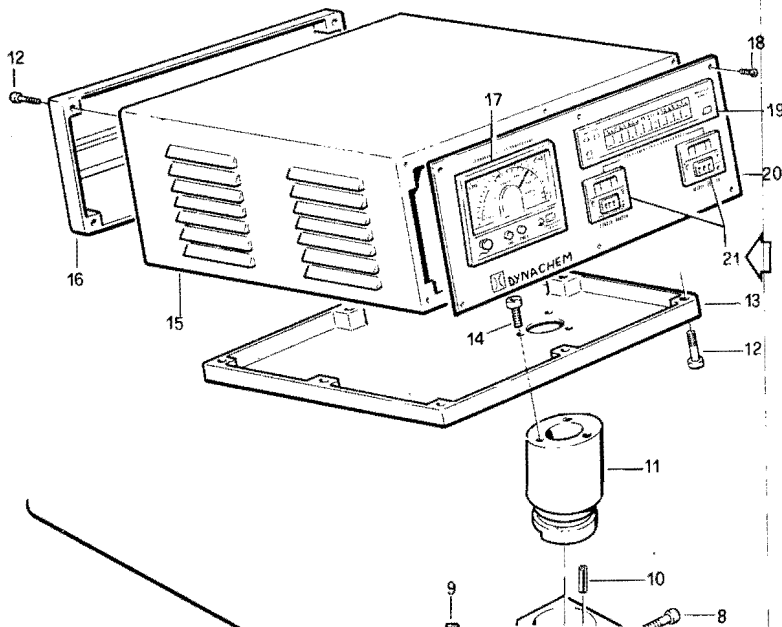
DATA CONTAINED IN THIS PUBLICATION ARE NOT BINDING, WE RESERVE THE RIGHT TO MAKE ANY MODIFICATIONS DEEMED NECESSARY WITHOUT PRIOR NOTICE

INSTRUMENT PANEL AND CONTROLS

REF.	PART NUMBER	DESCRIPTION
1	015-20-104-00	PILOT LAMP ASSY
2	015-00-022-00	PUSH-BUTTON ASSY (SPECIFY COLOR)
3	015-20-107-00	STOP PUMP PUSH-BUTTON ASSY
4	015-20-101-00	THUMB WHEEL 3 DIGIT T56 ASSY
5	015-20-105-00	SELECTOR SWITCH ASSY
6	015-00-023-00	EMERGENCY STOP BUTTON ASSY
7	015-22-427-00	LOWER SUPPORT FOR MEASURES INSTR. 15133
8	015-22-399-00	SCREW TCEI M5 x 10
9	015-22-427-01	KNOB M5 x 20
10	015-22-427-02	PIN d. 5 x 10
11	015-22-428-00	UPPPER SUPPORT FOR MEASURE INSTR. 15134
12	015-22-412-00	SCREW TCEI M4 x 20
13	015-22-454-00	LOWER BOX COVER 15142
14	015-22-424-00	SCREW TCEI M5 x 12
15	015-22-432-00	BOX FOR MEASURE INSTRUMENTS 15140
16	015-22-433-00	REAR BOX COVER 15141
17	015-20-100-10	CONTROLLER MOD. 503 EDWARDS
18	015 22-452-00	SCREW TSTC M3 x 10
19	015-20-120-00	ALPHANUMERIC DISPLAY DAA 144 F3
20	015-22-453-00	ALUMINIUM ANODIZED PANEL
21	015-20-102-00	TEMPERATURE REGULATOR E5C4-Q40-J-DIN

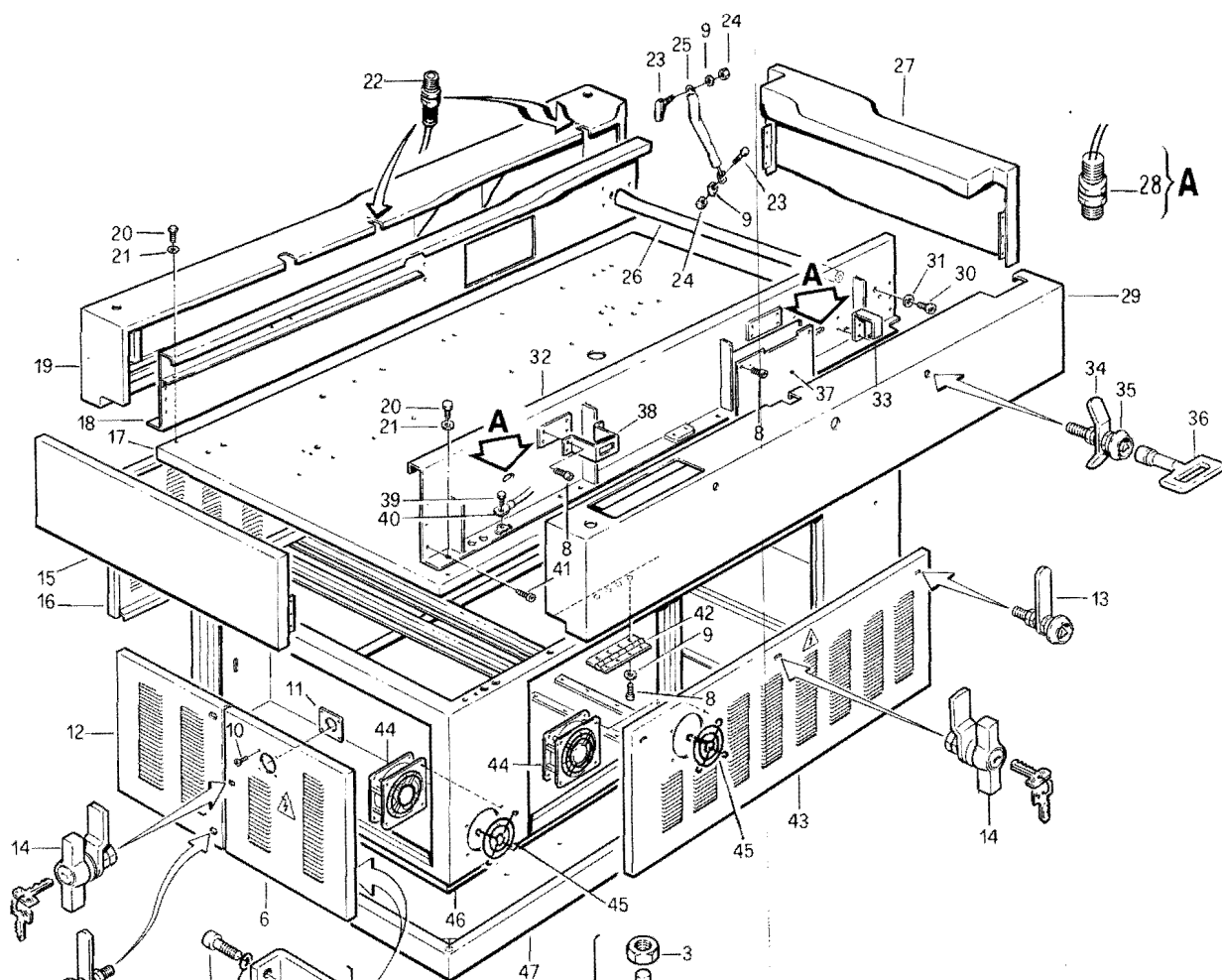


INSTRUMENT PANEL AND CONTROLS



INDEX

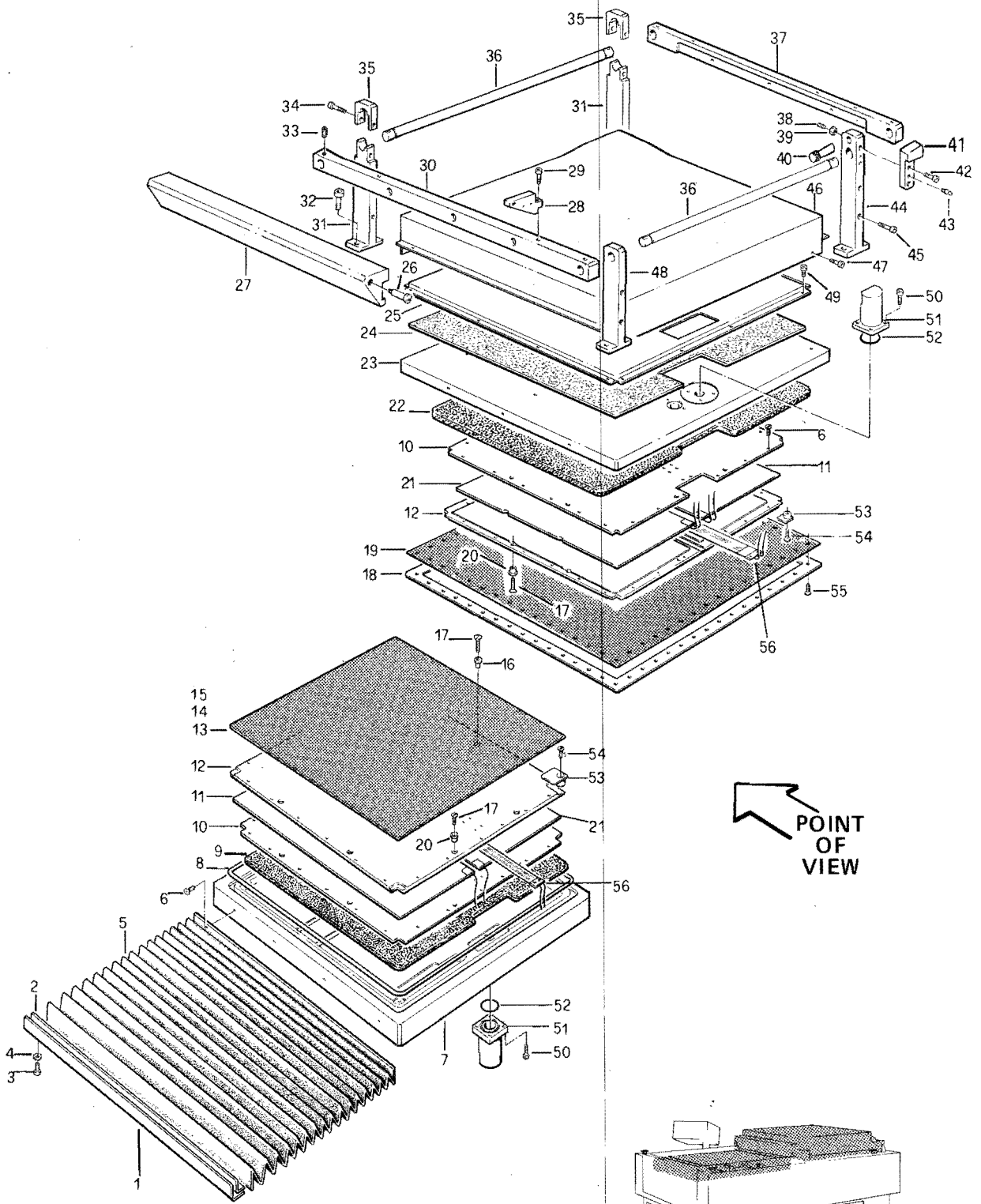
TAB. 1	BASE UNIT
TAB. 2	PLATENS
TAB. 3	LOWER PLATEN SUPPORT
TAB. 4	VACUUM SYSTEM
TAB. 5	AIR SYSTEM
TAB. 6	INSTRUMENT PANEL AND CONTROLS



BASE UNIT

REF.	PART NUMBER	DESCRIPTION
1	015-02-054-00	LEVELING FEET ASSY 15096
2	015-02-054-01	LEVELING FEET 15095
3	015-02-054-02	NUT M16
4	015-02-054-03	CIRCLIP d. 16
5	015-02-054-04	THREADED ROD M16 x 150
6	015-22-331-00	RIGHT DOOR SASH FRAME 0138.00.006
7	015-22-331-01	HINGED CONNECTION
8	015-22-331-02	SCREW TCEI M6 x 10
9	015-22-390-00	WASHER d. 6,4-12,5
10	015-22-331-03	SCREW TSTC M5 x 20
11	015-22-332-00	PLATE FOR BREAKER FIXING 15127
12	015-22-333-00	LEFT DOOR SASH FRAME 0138.00.005
13	015-22-385-00	LEFT LOCK 440
14	015-22-386-00	RIGHT LOCK
15	015-22-309-00	TOP END FRONT PLATE 15119
16	015-22-334-00	LEFT LOWER COVERING DOOR 0138.00.003
17	015-22-335-00	BASIC PLATE SUPPORT 0138.00.007
18	015-22-336-00	LEFT SHOULDER 0138.00.010
19	015-22-337-00	UPPER LEFT CRANKCASE 0138.00.008
20	015-22-387-00	SCREW TE M12 x 30
21	015-22-455-00	WASHER d. 13-24
22	015-20-109-00	PROXIMITY SWITCH 3RG-4012-OAB00 (Ø 12 mm)
23	015-22-389-00	SCREW TE M6 x 15
24	015-22-391-00	NUT M6
25	015-22-392-00	CHAIN (GENOVESE)
26	015-22-338-00	TIE-ROD 15038
27	015-22-308-00	TOP END PLATE REAR 15152
28	015-20-108-01	PROXIMITY SWITCH 3RG-4013-OAB00 (Ø 18 mm)
29	015-22-340-00	UPPER RIGHT CRANKCASE 0138.00.009
30	015-22-438-00	SCREW TCEI M8 x 20
31	015-22-394-00	WASHER d. 8,4 x 17
32	015-22-341-00	RIGHT SHOULDER 0138.00.011
33	015-22-342-00	TRANSPORT BLOCKING DEVICE 15120
34	015-22-343-00	THROTTLE LOCK 15124
35	015-22-395-00	LOCK
36	015-22-396-00	KEY
37	015-22-344-00	COVERING PLATE 15156
38	015-22-355-00	LATERAL BRACKET FOR LOCK 15125
39	015-22-435-00	SCREW TE M5 x 10
40	015-20-124-00	GROUNDING CABLE
41	015-22-399-00	SCREW TCEI M5 x 10
42	015-22-356-00	HINGE 0138.00.012
43	015-22-357-00	RIGHT LOWER COVERING DOOR 0138.00.004
44	015-00-071-01	EXHAUST FAN W25 107-AA01-40
45	015-00-071-02	SAFETY FINGERS GRATE
46	015-22-358-00	BASIC FOOT 0138.00.001
47	015-22-330-00	FRAME 0138.00.002

PLATENS



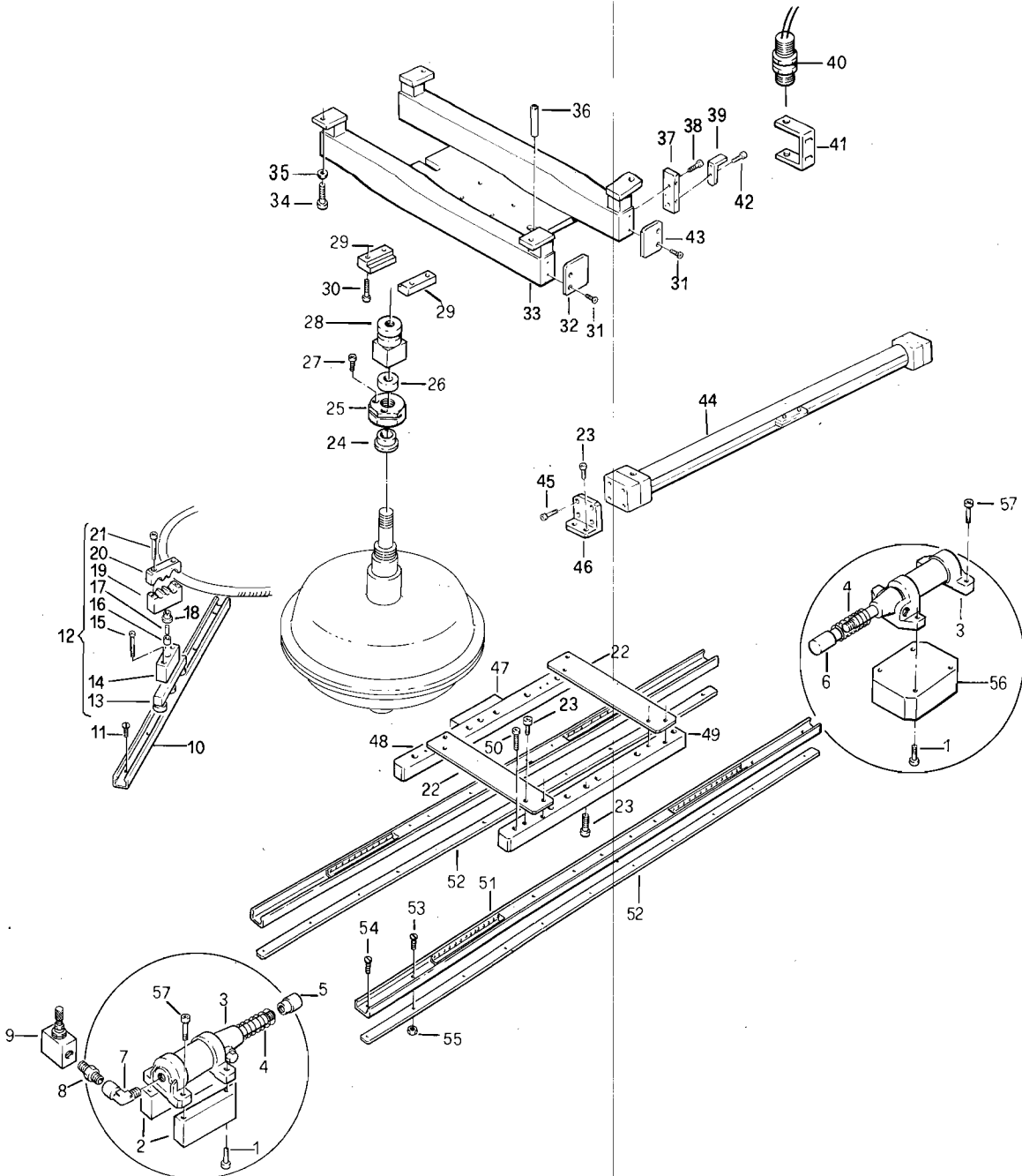
PLATENS

REF.	PART NUMBER	DESCRIPTION
1	015-22-312-00	BRACKET FOR FOLDING GUARD FIXING 15139
2	015-22-313-00	BRACKET FOR FOLDING GUARD FIXING 15138
3	015-22-424-00	SCREW TCEI M5 x 12
4	015-22-436-00	FLAT WASHER d. 5,3-10
5	015-02-081-00	FOLDING GUARD LOWER PLATEN 15153
6	015-22-403-00	SCREW TSPC M4 x 10
7	015-22-317-00	LOWER ALUMINIUM PLATE 38044
8	015-02-011-00	SEALING GASKET 15057
9	015-22-318-00	LOWER GRAPHITE SPACING
10	015-02-076-00	HEATER RETAINING PLATE 8 mm (0.315") 15050/A
11	015-00-012-01	HEATER 1000 W LEFT 15111
12	015-02-077-00	HEATER RETAINING PLATE 3 mm (0.118") 15051/A
13	015-02-009-00	RUBBER SHIM BLANKET BOTT. 1,6 mm (0.63")
14	015-02-082-00	RUBBER SHIM BLANKET 660x660x3 mm
15	015-02-078-00	RUBBER SHIM BLANKET 660x660x4 mm
16	015-22-319-00	ALUMINIUM BUSH FOR SCREWS 15151
17	015-22-398-00	SCREW TSTC M4 x 20
18	015-02-062-00	RUBBER BLANKET FRAME - TOP 15032
19	015-02-079-00	RUBBER BLANKET TOP-REINFORCED 1.6 mm (0.63")
20	015-22-320-00	ALUMINIUM BUSH FOR SCREWS 15150
21	015-00-012-00	HEATER 1000 W RT 15110
22	015-22-321-00	UPPER GRAPHITE SPACING
23	015-22-322-00	UPPER ALUMINIUM PLATE 15090
24	015-22-323-00	HEAT INSULATING PLATE
25	015-22-307-01	TOP PLATEN SUB. COVER 15144
26	015-22-324-00	THREADED PIN 15137
27	015-22-325-00	SAFETY GUARD 15135
28	015-22-326-00	BRACKET FOR GUARD FIXING 15136
29	015-22-450-00	SCREW TCEI M6 x 20
30	015-22-310-00	LATERAL LEFT MOUNTING TOP PLATE
31	015-22-327-00	RIGHT PLATE SUPPORT 15014
32	015-22-456-00	SCREW TCEI M10 x 45
33	015-22-437-00	SET SCREW M8 x 15
34	015-02-060-01	SECURING BLOCK BOLT CE M12 x 50
35	015-02-060-00	TOP PLATEN SECUR. BLOCK ASSY 15005
36	015-22-306-00	SHAFT FOR UPPER PLATE ROTATION 15004
37	015-22-311-00	LATERAL RT. MOUNTING TOP PLATE 15094
38	015-22-400-00	SET SCREW M8 x 30
39	015-22-401-00	NUT M8
40	015-22-305-01	SAFETY PIN FOR OPENING TOP PLATE 15010
41	015-22-305-02	SAFETY BRACKET FOR OPENING TOP PLATE 15075
42	015-22-416-00	SCREW TCEI M8 x 30
43	015-22-402-00	LUBRICATING NUT M6
44	015-22-328-00	LEFT BACK PLATE SUPPORT 15012
45	015-22-393-00	SCREW TCEI M10 x 50
46	015-22-307-00	TOP PLATTEN COVER 15145
47	015-22-331-02	SCREW TCEI M6 x 10
48	015-22-329-00	LEFT FRONT PLATE SUPPORT 15013
49	015-22-399-00	SCREW TCEI M5 x 10
50	015-22-439-00	SCREW TCEI M5 x 20
51	015-22-304-00	MANIFOLD FOR MILSPEC CONNECT. 15143
52	015-21-203-00	'O' RING 3200
53	015-02-063-00	ANCHOR FOR PLATENS 15046/A
54	015-22-404-00	SCREW TSTC M5 x 20
55	015-22-405-00	SCREW TSTC M6 x 20
56	015-00-019-00	THERMOCOUPLE TT 260 J

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02

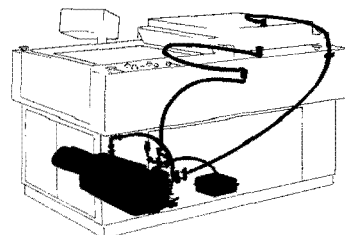
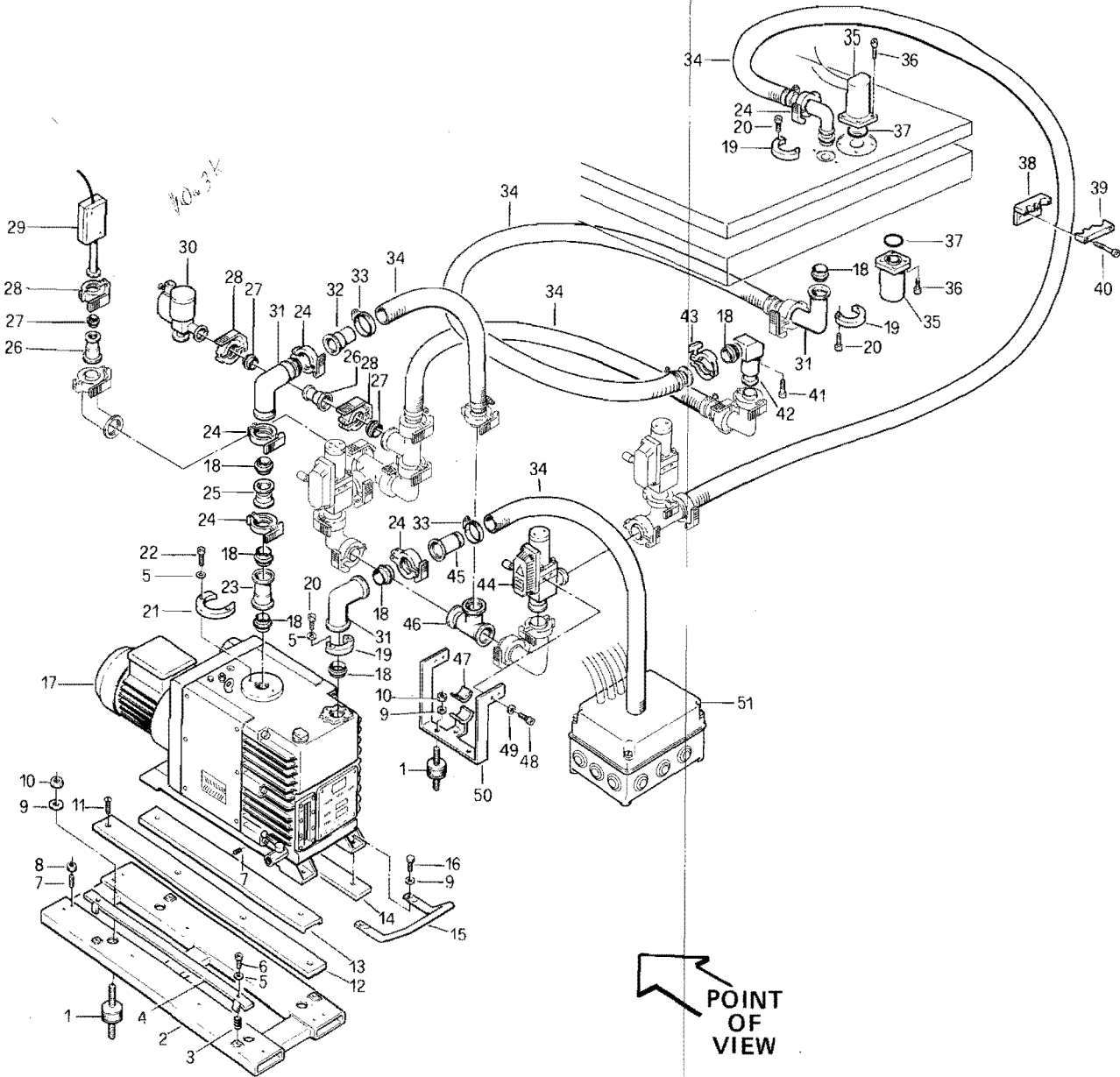
LOWER PLATE SUPPORT

Dynachem
VACUUM APPLICATOR
MOD. 724
TAB. 3



LOWER PLATE SUPPORT

REF.	PART NUMBER	DESCRIPTION	DESCRIZIONE
1	015-22-399-00	SCREW TCEI M5 x 10	
2	015-22-406-00	SPACING SUPPORT FOR SHOCK ABSORBER 15077	
3	015-01-039-00	SHOCK ABSORBER 35 x 40 DPB	
4	015-01-039-01	SPRING	
5	015-01-039-02	HEAD FOR SHOCK ABSORBER 15099	
6	015-01-039-03	HEAD FOR SHOCK ABSORBER 15062	
7	015-21-217-00	ELBOW M/F 1/8 A 10	
8	015-21-226-00	NIPPLE 1/8"—1/8"	
9	015-01-038-00	AIR FLOW REGULATOR URG 8/2	
10	015-02-070-01	ROLLER BEARING GUIDE—VACUUM HOSE	
11	015-22-407-00	SCREW TSTC M8 x 20	
12	015-22-359-00	SUPPORT ASSEMBLY	
13	015-22-359-01	BEARING ROLLON	
14	015-22-359-02	SUPPORT 15080	
15	015-22-359-03	SCREW TCEI M8 x 55	
16	015-22-359-04	BUSHING	
17	015-22-359-05	PIN	
18	015-22-301-00	COLLAR BUSHING 12,1 x 16 x 18	
19	015-22-359-06	LOWER HOSE BLOCKING 15154	
20	015-22-359-07	UPPER HOSE BLOCKING 15155	
21	015-22-431-00	SCREW TCEI M5 x 35	
22	015-22-360-00	PLATE 15085	
23	015-22-438-00	SCREW TCEI M8 x 20	
24	015-22-361-00	COLLAR BUSHING 15068/A	
25	015-22-362-00	NUT FOR FIX. THE CYLINDER 1519/C	
26	015-22-363-00	SPACING COLLAR 15052/B	
27	015-22-408-00	SCREW TCEI M6 x 25	
28	015-22-364-00	HEAD FOR CYLINDER 15034/A	
29	015-02-068-00	GUIDE BRACKET - BOT PLATEN 15033	
30	015-22-451-00	SCREW TCEI M10 x 35	
31	015-22-409-00	SCREW TSPC M4 x 15	
32	015-22-365-00	READ. PLATE FOR PROXIMITY (LEFT) 15113/A	
33	015-22-366-00	TROLLEY LOWER PLATE SUPPORTING 15018/A	
34	015-22-410-00	SCREW TCEI M12 x 30	
35	015-22-457-00	WASHER d. 13-20	
36	015-22-367-00	PIN FOR PLATE CENTERING 15157	
37	015-22-368-00	DOWN STROKE CAM 15023/A	
38	015-22-411-00	SCREW TCEI M4 x 15	
39	015-22-369-00	UP STROKE CAM 15087	
40	015-20-108-01	PROXIMITY SWITCH 3RG-4013-OAB00 (ø18 mm)	
41	015-22-370-00	PROXIMITY SUPPORT 15088	
42	015-22-412-00	SCREW TCEI M4 x 20	
43	015-22-430-00	READ. PLATE FOR PROXIMITY (RIGHT) 15112/A	
44	015-01-014-00	ORIGA CYLINDER 120 S20S 40 x 800	
45	015-22-450-00	SCREW TCEI M6 x 20	
46	015-22-371-00	STOP CYLINDER BRACKET 15078	
47	015-22-372-00	TOWING BRACKET 15084	
48	015-22-373-00	LEFT SPACING PLATE 15092	
49	015-22-374-00	RIGHT SPACING PLATE 15067	
50	015-22-414-00	SCREW TCEI M8 x 45	
51	015-02-070-00	ROLLER BEARING GUIDE-LOWER PLATEN	
52	015-22-375-00	ROLLER BEARING SUPPORT 15065	
53	015-22-415-00	SCREW TSTC M8 x 30	
54	015-02-070-02	LOCKING SCREW	
55	015-22-401-00	NUT M8	
56	015-22-376-00	SPACING SUPPORT FOR SHOCK ABSORBER 15082	
57	015-22-439-00	SCREW TCEI M5 x 20	



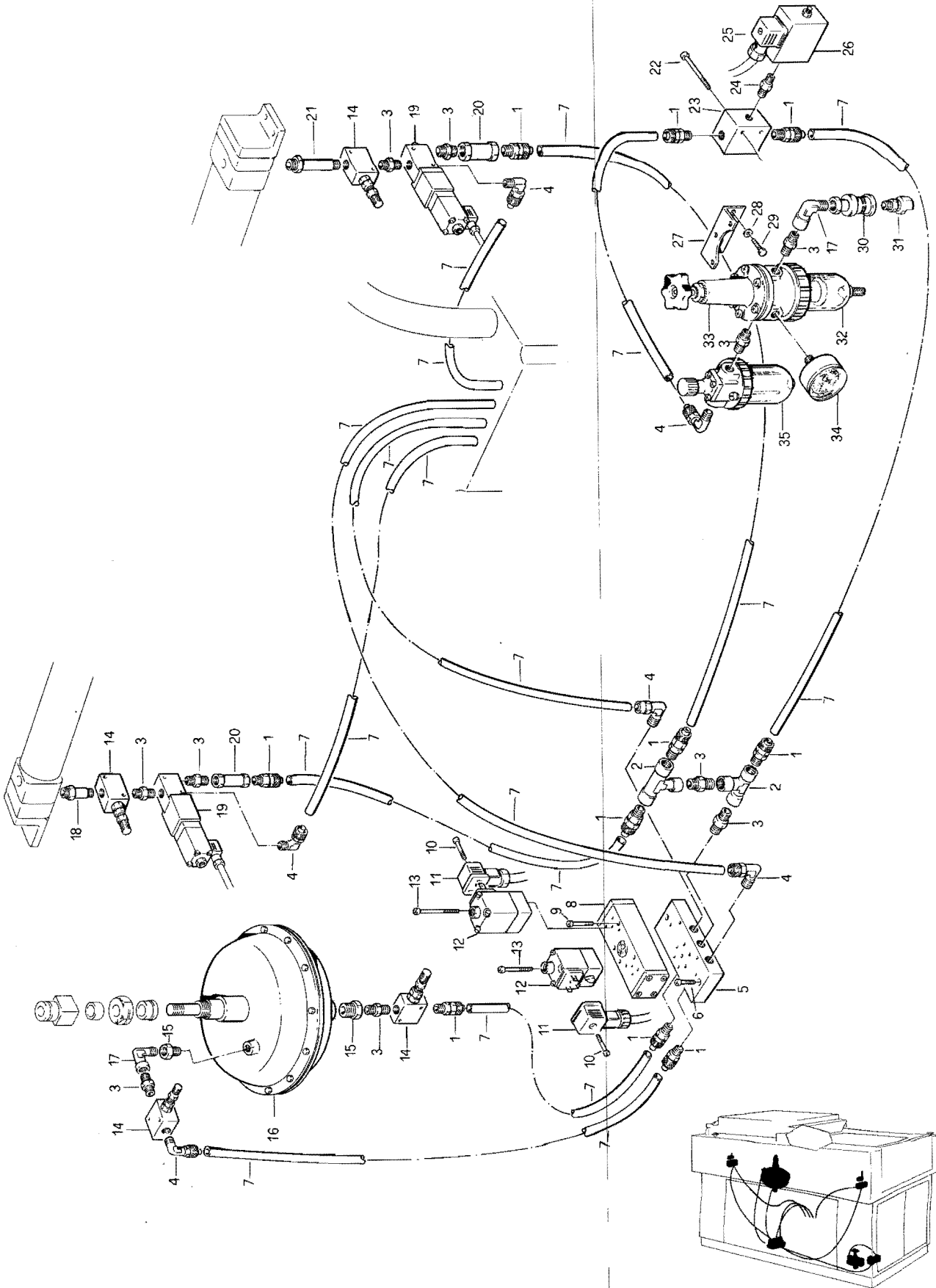
VACUUM SYSTEM

REF.	PART NUMBER	DESCRIPTION
1	015-22-303-00	VIBRATION FEET ABSORBER M10x50 Thick 20
2	015-22-377-00	SLIDE SUPPORT FOR PUMP 0130.00.001
3	015-22-378-00	SPRING
4	015-22-379-00	PUMP BLOCKING BRACKET 0130.00.005
5	015-22-394-00	WASHER d. 8,4-17
6	015-22-416-00	SCREW TCEI M8 x 30
7	015-22-417-00	SET SCREW M6 x 25
8	015-22-391-00	NUT M6
9	015-22-418-00	WASHER d. 10,5-21
10	015-22-419-00	NUT M10
11	015-22-405-00	SCREW TSTC M6 x 20
12	015-22-380-00	SLIDING PLATE 0130.00.002
13	015-22-381-00	LEFT SLIDING GUIDE 0130.00.004
14	015-22-382-00	RIGHT SLIDING GUIDE 0130.00.003
15	015-22-383-00	HANDLE DEVICE
16	015-22-420-00	SCREW TE M10 x 20
17	015-00-001-00	PUMP EDWARDS E2 M40
18	015-21-201-00	CENTERING SPACING COLLAR 105.14.396
19	015-01-055-00	COUPLING FLANGE 110-04-440
20	015-22-438-00	SCREW TCEI M8 x 20
21	015-21-227-00	COUPLING FLANGE
22	015-22-422-00	SCREW TCEI M8 x 25
23	015-21-228-00	REDUCING UNION
24	015-01-047-01	QUICK ADAPTER CLAMPS 105-14-402
25	015-01-073-00	HOSE ADAPTER KF 40/25 105-14-439
26	015-01-074-00	HOSE ADAPTER KF 25/10 105-14-436
27	015-21-202-00	CENTERING SPACING COLLAR 105-11-396
28	015-01-061-00	VAC. HOSE CLAMP QUICK REL. C105-12-402
29	015-01-033-00	PIRANI GAUGE HEAD PRH 10K
30	015-00-005-00	ELECTROVALVE PVA 10EK
31	015-01-056-00	ELBOW 105-14-410
32	015-21-229-00	HOSE CONNECTION 15026
33	015-21-204-00	HOSE CLAMPS SERFLEX 25-45
34	015-21-220-00	YELLOW VACUUM HOSE d. 28
35	015-22-304-00	MANIFOLD FOR MILSPEC CONNECT. 15143
36	015-22-439-00	SCREW TCEI M5 x 20
37	015-21-203-00	'O' RING 3200
38	015-21-223-00	BACK HOSE BLOCKING 15123 DEVICE
39	015-21-223-01	FRONT HOSE BLOCKING 15122 DEVICE
40	015-22-423-00	SCREW TCEI M4 x 30
41	015-22-424-00	SCREW TCEI M5 x 12
42	015-21-224-00	SPECIAL ELBOW 15101
43	015-01-047-00	QUICK ADAPTER CLAMPS 105-14-401
44	015-00-004-00	ELECTROVALVE PV 25 EK
45	015-21-230-00	HOSE CONNECTION
46	015-21-200-00	TEE PIECE UNION 105-14-411
47	015-21-225-00	RUBBER SPACING
48	015-22-425-00	SCREW TCEI M4 x 12
49	015-22-426-00	WASHER d. 4,3x9
50	015-22-384-00	ELECTROVALVE SUPPORT DEVICE 15103/3
51	015-22-302-00	PVC BOX

AIR SYSTEM

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VACUUM APPLICATOR
MOD. 724
TAB. 5

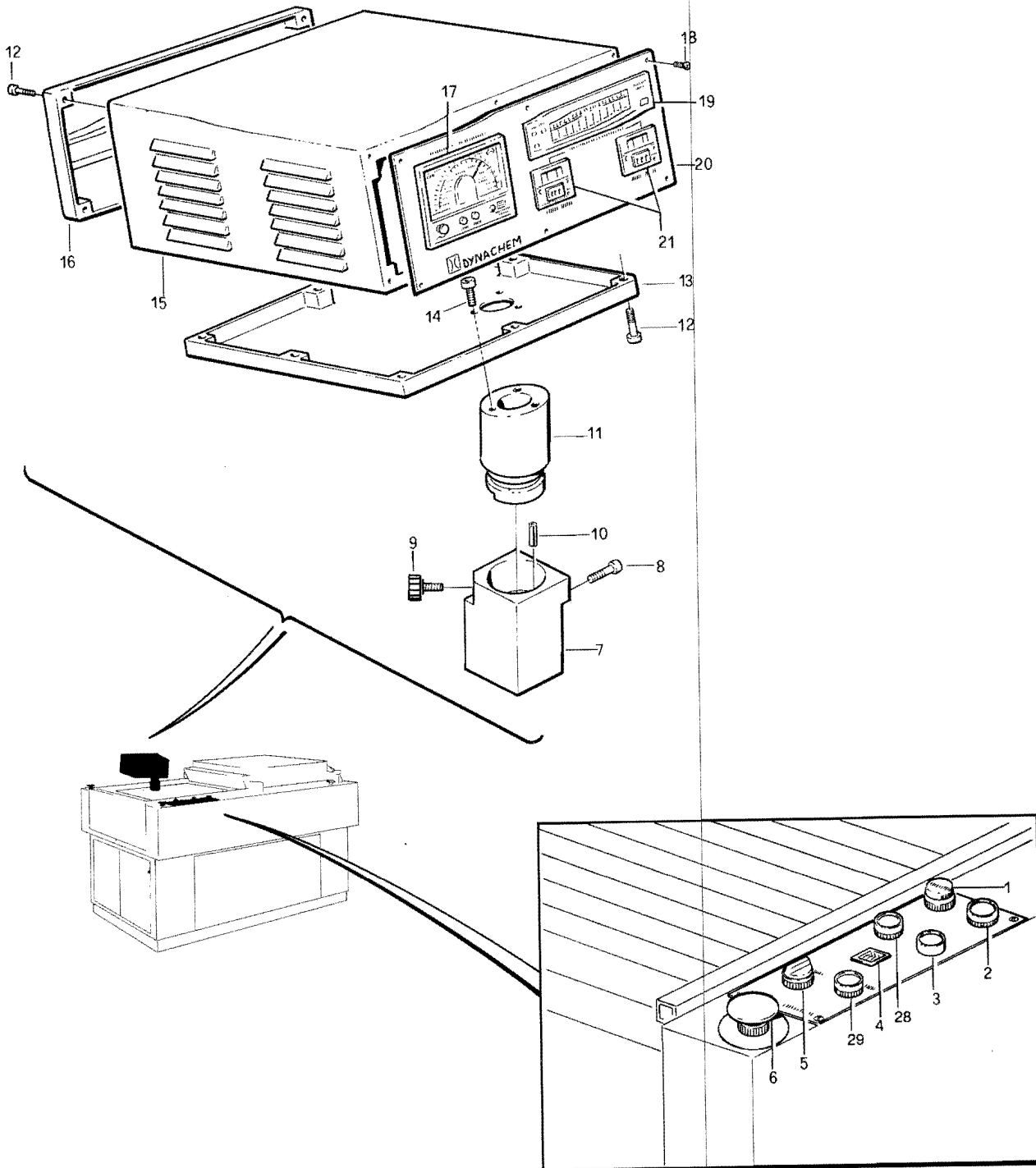


REALIZZAZIONE TIPOLOGRAFICA TIBILETTI - AZZATE (VA)

AIR SYSTEM

REF.	PART NUMBER	DESCRIPTION
1	015-21-211-00	TAPER CONNECTION 1/4" - 10/8 C1
2	015-21-216-00	TEE PIECE UNION F/F 1/4" A11
3	015-21-214-00	TAPER CONNECTION 1/4" A2
4	015-21-212-00	ELBOW 1/4" - 10/8 C5
5	015-21-207-01	MANIFOLD UDP 4S
6	015-22-450-00	SCREW TCEI M6 x 20
7	015-21-219-00	BLUE HOSE 10/8
8	015-21-206-00	VALVE UDS 12 KUC/KUC
9	015-22-440-00	SCREW TCEI M5 x 40
10	015-00-040-01	SCREW TCTC M3 x 30
11	015-00-040-00	CONNECTOR PLUG ELECTROVALVE ULR-1
12	015-00-008-01	SOLENOID 24V D.C.
13	015-22-442-00	SCREW TCEI M4 x 65
14	015-01-003-00	AIR FLOW REGULATOR URG 4/10
15	015-21-213-00	NIPPLE ADAPTER 1/2"---1/4"---A4
16	P 015-01-015-00	AIR PISTON COD. 1200, 200 x 50
17	015-21-215-00	ELBOW M/F 1/4 A10
18	015-21-231-00	SPECIAL NIPPLE 15097
19	015-21-205-00	VALVE UKA 4/32/U 1/4"
20	015-21-221-00	SINGLE WAY VALVE U4
21	015-21-232-00	SPECIAL NIPPLE 15159
22	015-22-431-00	SCREW TCEI M5 x 35
23	015-21-233-00	MANIFOLD FOR PRESS. DETECTOR 15121
24	015-21-226-00	NIPPLE 1/8"---1/8"
25	015-00-040-02	CONNECTOR PLUG FOR PRESSURE DETECTOR
26	015-21-222-00	PRESSURE DETECTOR ES 2000
27	015-01-031-05	SUPPORT FOR LUBRICATOR SRW4
28	015-22-390-00	WASHER d. 6,4 x 12,5
29	015-22-389-00	SCREW TE M6 x 15
30	015-21-208-00	RAPID DISCHARGE VALVE 650.07.013
31	015-21-208-01	AIR LOCKING NUT
32	015-01-031-02	AIR FILTER UZR RM4 F20 1/4
33	015-01-031-01	REDUCER FRR 48
34	015-01-031-03	PRESSURE GAUGE M 012
35	015-01-031-04	LUBRICATOR L4 UZLAM 1/4

\$ 788,48



INSTRUMENT PANEL AND CONTROLS

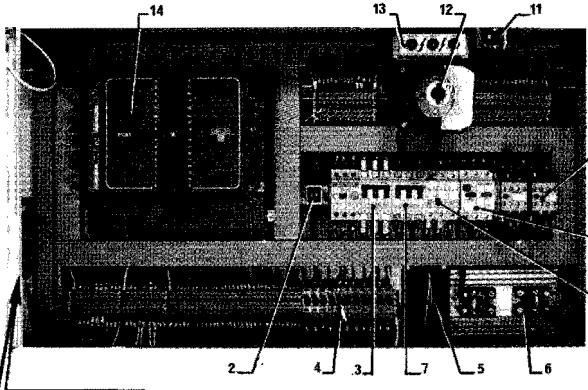
REF.	PART NUMBER	DESCRIPTION
1	015-20-096-00	RED PILOT LAMP "MAIN POWER ON" 080 LSRD
2	015-20-097-00	GREEN PUSH-BUTTON "SET UP ON" 080 PLVG
3	015-20-094-00	BLACK PUSH-BUTTON "OFF VACUUM PUMP" 080 PNG
4	015-20-101-00	THUMB WHEEL 3 DIGIT T56 ASSY
5	015-20-105-01	YELLOW SELECTOR SWITCH "PRELIMINARY INSTRUCTION" 080 SMLDG
6	015-00-023-00	EMERGENCY STOP BUTTON ASSY
7	015-22-427-00	LOWER SUPPORT FOR MEASURES INSTR. 15133
8	015-22-399-00	SCREW TCEI M5 x 10
9	015-22-427-01	KNOB M5 x 20
10	015-22-427-02	PIN d. 5 x 10
11	015-22-428-00	UPPER SUPPORT FOR MEASURE INSTR. 15134
12	015-22-412-00	SCREW TCEI M4 x 20
13	015-22-454-00	LOWER BOX COVER 15142
14	015-22-424-00	SCREW TCEI M5 x 12
15	015-22-432-00	BOX FOR MEASURE INSTRUMENTS 15140
16	015-22-433-00	REAR BOX COVER 15141
17	015-20-100-10	CONTROLLER MOD. 503 EDWARDS
18	015-22-452-00	SCREW TSTC M3 x 10
19	015-20-120-00	ALPHANUMERIC DISPLAY DAA 144 F3
20	015-22-453-00	ALUMINIUM ANODIZED PANEL
21	015-30-001-00	TEMPERATURE REGULATOR E5CS-Q1KJX-522
22	015-20-107-01	RED PUSH-BUTTON "SET UP OFF" 080 PRG
23	015-20-104-02	LAMP HOLDER 080 ADV
24	015-00-022-03	CONTACTS (1NO+1NC) 080 B11V
25	015-00-049-00	INDICATOR LAMP 30V - 2W
26	015-00-091-00	BLACK COMMANDS PANEL 0191.00.003
27	015-00-092-00	BLACK MESSAGES PANEL 0191.00.004
28	015-20-099-00	ORANGE PUSH-BUTTON "ON VACUUM PUMP" 080 PLAG
29	015-00-022-01	YELLOW PUSH-BUTTON "CYCLE START" 080 PLGG

SPARE PARTS ORDERS

To avoid errors when ordering parts, we suggest that the following information be included with the order:

Dynachem
VACUUM APPLICATOR MOD. 724

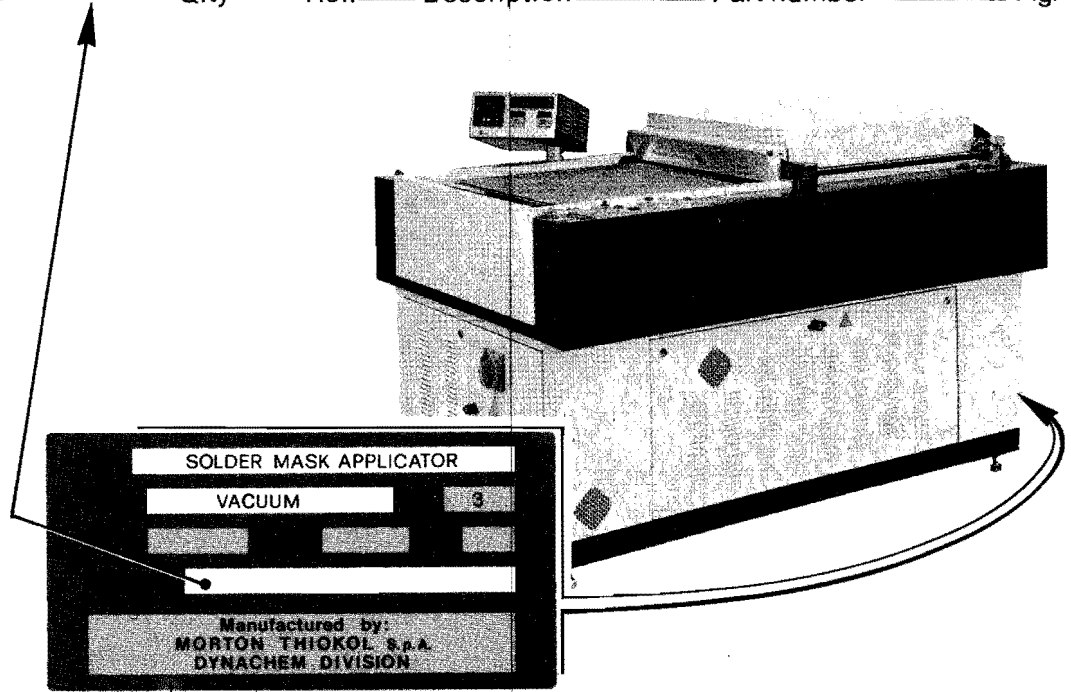
FIG. 4



REF.	DESCRIPTION	PART NUMBER
1	Pressure detector	015-21-222-00
2	Thumb wheel 2 digit T56 assy.	015-20-101-00
3	Magnetic switch safety transformer	015-20-114-00
4	Terminal block connection fuses holder	015-20-117-00
5	3 Phases rectifier SKD25/04	015-20-121-00
6	Solid state relay D24-40	015-20-116-00
7	Magnetic switch 17V 3PH Safety line	015-20-112-00
Fuse holder L501/01127		015-00-041-00
9	Thermal overload motor 1 Safety 3VE	015-20-113-00
10	Main contactor motor pump 3TB42-17-	011-00-028-00
11	3 Phases microswitch 114-FT03	015-20-115-00
12	Main switch 3-03-110P Breter	015-20-103-00
13	3 Phases OK light indicator 105-DSR	015-20-116-00
14	Landis & Gyr microprocessor assy.	015-20-106-00

Kindly supply the machine:

Serial number _____ Q.ty _____ Ref. _____ Description _____ Part number _____ Fig. _____



Exact shipping address _____

Shipping method _____

Orders should be placed with your local Dynachem office or distributor.

STANDARD ABBREVIATIONS USED FOR PARTS DESCRIPTIONS

A	Amps
ASSY	Assembly
BOT	Bottom
CIR	Circuit
CYLN	Cylinder
COMPL	Complete
CONN	Connector
CTR	Centering
CU	Centering unit
D	Diameter
DIMEN	Dimension
EV	Electrovalve
FED	Feed
HR	Hot roll
IND	Indicator
JOG	Jogging
LAM	Lamination
LAT CUT	Lateral cutting
LEN	Length
LFT	Left
LUBE	Lubricating
OV	Old Version
PH	Phase
PN	Part Number
PNEUM	Pneumatic
REL	Release
REG	Regulator
RT	Right
SECT	Section
SH	Shore
SPROCK	Sprocket
SUPP	Support
SW	Switch
TEMP	Temperature
TRNS	Transport
V	Volts
VERT	Vertical

**MASTER LIST
ELECTRIC**

PART NUMBER	DESCRIPTION
015-20-111-00	3PH Magnetothermal switch (I = 40A) Siemens 5SN3-340-1B
015-20-114-01	3PH Magnetothermal switch (I = 20-25A) Telemecanique GV1-M22
015-20-114-00	3PH Magnetothermal switch (I = 16-20A) Telemecanique GV1-M21
015-20-111-00	3PH Magnetothermal switch (I = 40A) Siemens 5SN3-340-1B
015-20-112-00	3PH Magnetothermal switch (I = 6A) Siemens 5SN3-306-1B
015-20-113-01	3PH Magnetothermal switch (I = 6,3—10A) Siemens 3VE1-010-2L
015-20-117-00	Fuse holder clamp Weidmuller SAK S1
015-20-118-00	Static relay Crydon D2440
015-20-119-00	Heat dissipator for static relay 107x175 mm
015-00-041-00	Fuse holder Hager 4501
015-00-028-00	3PH Contactor Siemens 3TB42-17 OA N1
015-20-121-00	3PH Diode rectifier Semikron SKD 25/04
015-20-122-00	Heat dissipator for diode rectifier S40/75
015-20-101-00	2 digit preselector (assy) Cherry T56
015-00-041-01	Fuse 10,3x38 mm (I = 16A F.F.)
015-00-041-02	Fuse 10,3x38 mm (I = 6,3A F.F.)
015-20-117-01	Fuse 5x20 mm (I = 1A F.)
015-20-117-02	Fuse 5x20 mm (I = 0,8A M.)
015-20-106-00	PLC Saia (assy for Vacuumex 724)
015-20-106-01	Main board PLC Saia PCA1.M51-M4
015-20-106-02	I/O board for PLC Saia PCA1.B90
015-20-106-03	Output board for PLC Saia PCA1.A21
015-20-098-01	Diode 1N4148
015-20-106-05	Programs PLC Eprom Texas JL25 (2764)
015-20-120-01	Messages display Eprom SGS IFI (2716)
015-20-098-00	Diode 1N4002
015-20-103-00	3PH Main switch Breter 3.03.11 - OP
015-20-116-00	3PH OK light indicator CGE-Cema 105 DTL 500
015-20-115-00	3PH Microswitch CGE-Cema 114-FCT03
015-20-110-00	Transformer 8,2 KVA 50/60 Hz
015-30-001-00	Temperature regulator Omron E5CS-Q1KJX-522
015-00-058-01	Mil spec connector Bendix MS3102-R18-10P (male)
015-00-058-02	Mil spec connector Bendix MS3106-R18-10S (female)
015-20-120-00	Alphanumeric display Mueller-Weigert DAA144-F3
015-20-108-01	Proximity switch Siemens 3RG 4013-OAB00 (ø 18)
015-20-109-00	Proximity switch Siemens 3RG 4012-OAB00 (ø 12)
015-20-013-00	Microswitch Omron Z15 GW22
015-20-095-00	3 digit preselector (assy) Cherry T56
015-20-102-02	Connector for preselector BCD

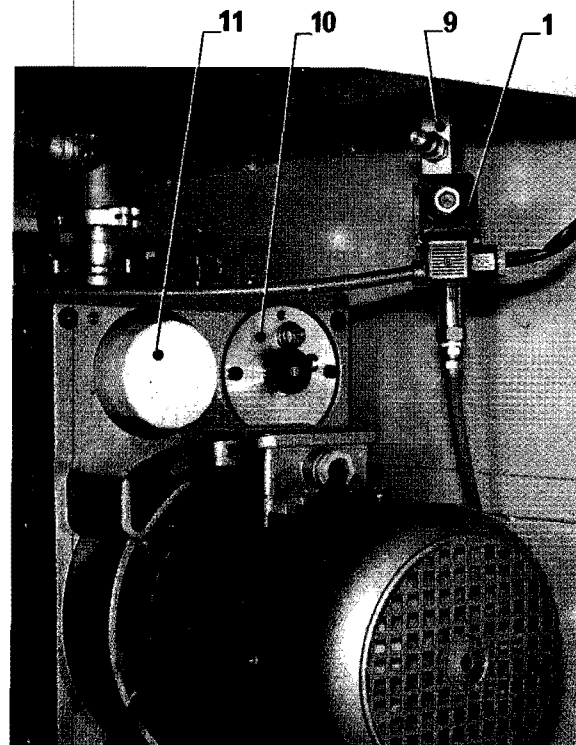
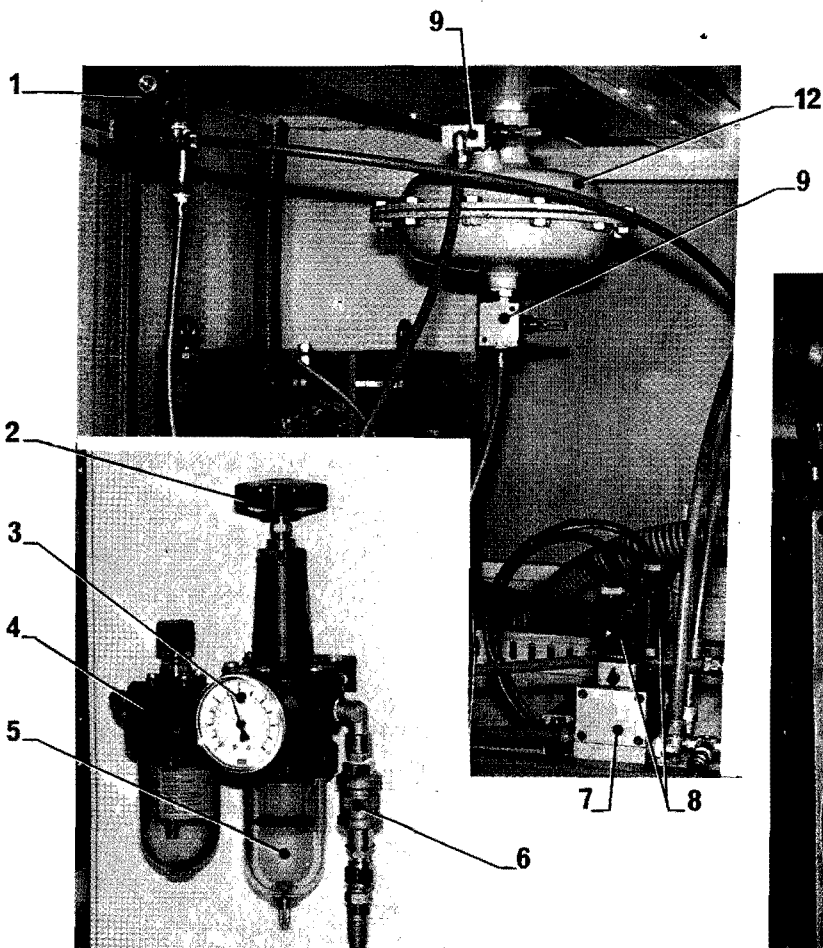
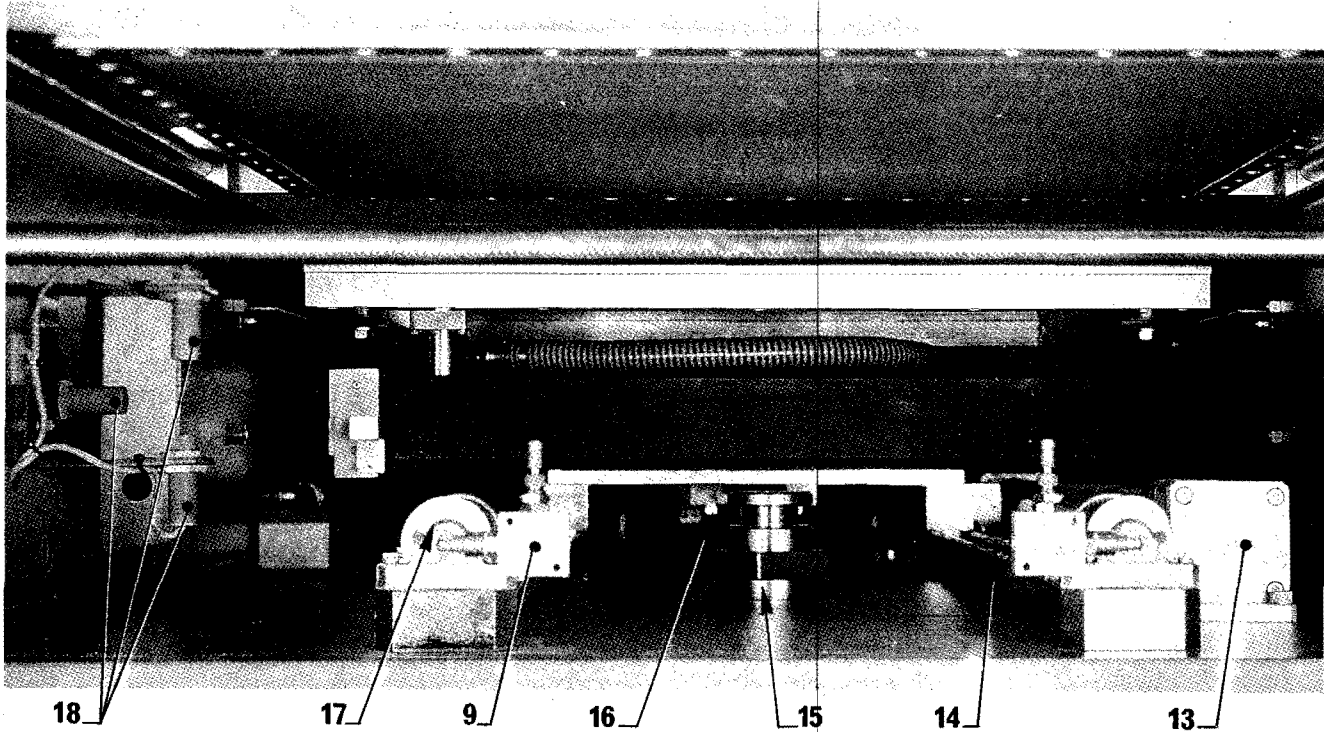
PART NUMBER	DESCRIPTION
015-20-096-00	Red pilot lamp "MAIN POWER ON" CGE-Cema 080 LSRD
015-20-104-02	Lamp holder CGE-Cema 080 ADV
015-00-049-00	Indicator lamp 30V - 2W
015-20-097-00	Green push button "SET UP ON" CGE-Cema 080 PLVG
015-20-104-02	Lamp holder CGE-Cema 080 ADV
015-00-022-03	Contacts (1NO + 1NC) CGE-Cema 080 B11V
015-00-049-00	Indicator lamp 30V - 2W
015-20-107-01	Red push button "SET UP OFF" CGE-Cema 080 PRG
015-00-023-02	Contacts (1NO + 1NC) CGE-Cema 080 BF11V
015-20-099-00	Orange push button "START PUMP" CGE-Cema 080 PLAG
015-20-104-02	Lamp holder CGE-Cema 080 ADV
015-00-022-03	Contacts (1NO + 1NC) CGE-Cema 080 B11V
015-00-049-00	Indicator lamp 30V - 2W
015-20-094-00	Black push button "STOP PUMP" CGE-Cema 080 PNG
015-00-023-02	Contacts (1NO + 1NC) CGE-Cema 080 BF11V
015-00-022-01	Yellow push button "CYCLE" CGE-Cema 080 PLGG
015-20-104-02	Lamp holder CGE-Cema 080 ADV
015-00-022-03	Contacts (1NO + 1NC) CGE-Cema 080 B11V
015-00-049-00	Indicator lamp 30V - 2W
015-20-105-01	Yellow selector switch "PRELIMINARY INSTRUCTION" CGE-Cema 080 SMLDG
015-20-104-02	Lamp holder CGE-Cema 080 ADV
015-00-022-03	Contacts (1NO + 1NC) CGE-Cema 080 B11V
015-00-049-00	Indicator lamp 30V - 2W
015-00-023-01	Emergency push button CGE-Cema 077 EER
015-00-023-04	Contact (1NO) CGE-Cema 077 E01
015-00-091-00	Black commands panel 0191.00.003
015-00-092-00	Black messages panel 0191.00.004
015-00-093-00	Muffin fan connector (assy)
015-00-093-01	Muffin fan connector (free)
015-00-093-02	Muffin fan connector (whole)
015-00-093-03	Muffin fan connector (female)
015-00-093-04	Muffin fan connector (male)
015-00-093-05	Muffin fan connector (cable holder)
015-20-120-02	Resistor 22 K Ω 1/2 W
015-20-120-03	Resistor 1.5 K Ω 1/2 W
015-00-023-03	Yellow aluminium disk 0158.00.082
015-00-094-00	Connector 10 poles ILME CNE 10 IVO

**MASTER LIST
 PNEUMATIC**

PART NUMBER	DESCRIPTION
015-01-003-00	Air flow regulator URG 4/10
015-01-014-00	Air cylinder Origa-40 x 800
015-01-015-00	Air cylinder Fineco-1200
015-01-031-00	Air filter regulator assy.
015-01-031-01	. Reducer FRR48
015-01-031-02	. Filter
015-01-031-03	. Pressure gauge M012
015-01-031-04	. Lubricator L4
015-01-031-05	. Support for lubricating sys. SRW4
015-01-033-00	Pirani gauge PRM10K
015-01-038-00	Air flow regoulator URG8/2
015-01-039-00	Air cylinder 35 x 40 DP
015-01-047-00	Quick adapter clamps 105-14-401
015-01-047-01	. Quick adapter clamps 105-114-402
015-01-055-00	Coupling flange 110-04-440
015-01-056-00	Elbow 105-14-410
015-01-057-00	O-ring type 3100
015-01-073-00	Hose adapter KF40/25 105-16-439
015-01-074-00	Hose adapter KF25/10 105-14-436
015-21-200-00	Tee piece union 105-14-411
015-21-201-00	Centering spacing collar 105-14-396
015-21-202-00	Centering spacing collar 105-11-396
015-21-203-00	O-ring type 3200
015-21-204-00	Hose clamps Serflex 25-45
015-21-205-00	Valve UKA 4/32/U 1/4"
015-21-206-00	Valve UDS 12 KUC/KUC
015-21-207-00	Manifold
015-21-208-00	Rapid discharge valve
015-21-209-00	Male nipple 1/4" - 10/8" L-C5
015-21-210-00	Air quick disconnect 615
015-21-211-00	Taper connection 1/4" - 10/8" C1
015-21-212-00	Elbow 1/4" - 10/8" C5
015-21-213-00	Nipple adapter 1/2 - 1/4 A4
015-21-214-00	Taper connection 1/4 A2
015-21-215-00	Elbow M/F 1/4 A10
015-21-216-00	Tee piece union F/F 1/4 A11
015-21-217-00	Elbow M/F 1/8 A10
015-21-218-00	Taper connection 1/8 A2
015-21-219-00	Blue hose 10/8
015-21-220-00	Yellow vacuum hose
015-21-221-00	Single way valve U4
015-21-222-00	Pressure detector

**MASTER LIST
MECHANIC**

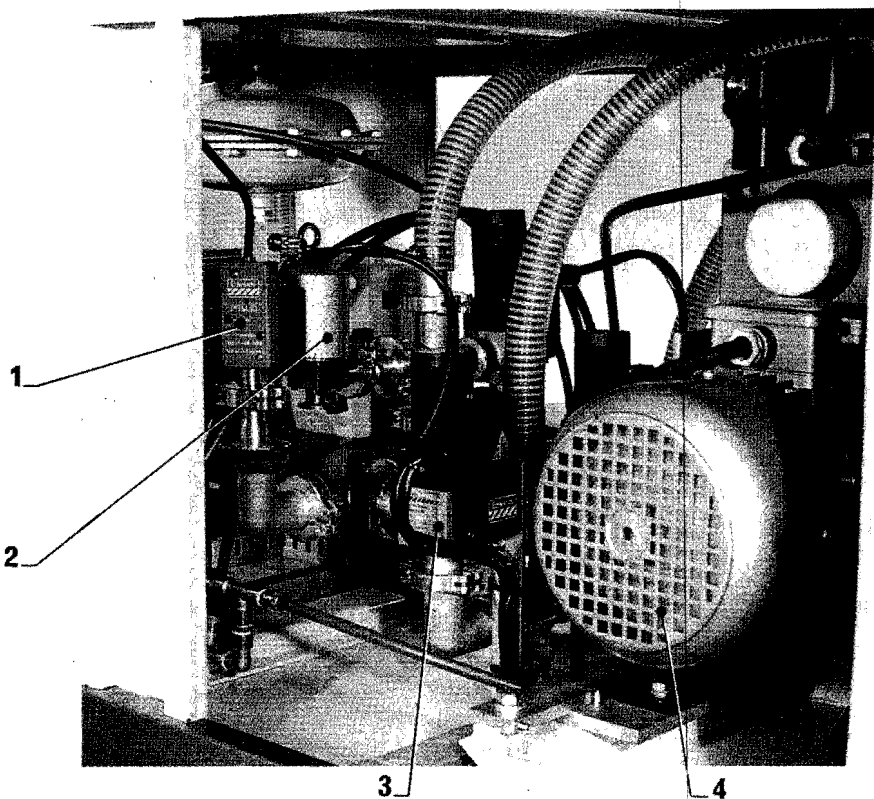
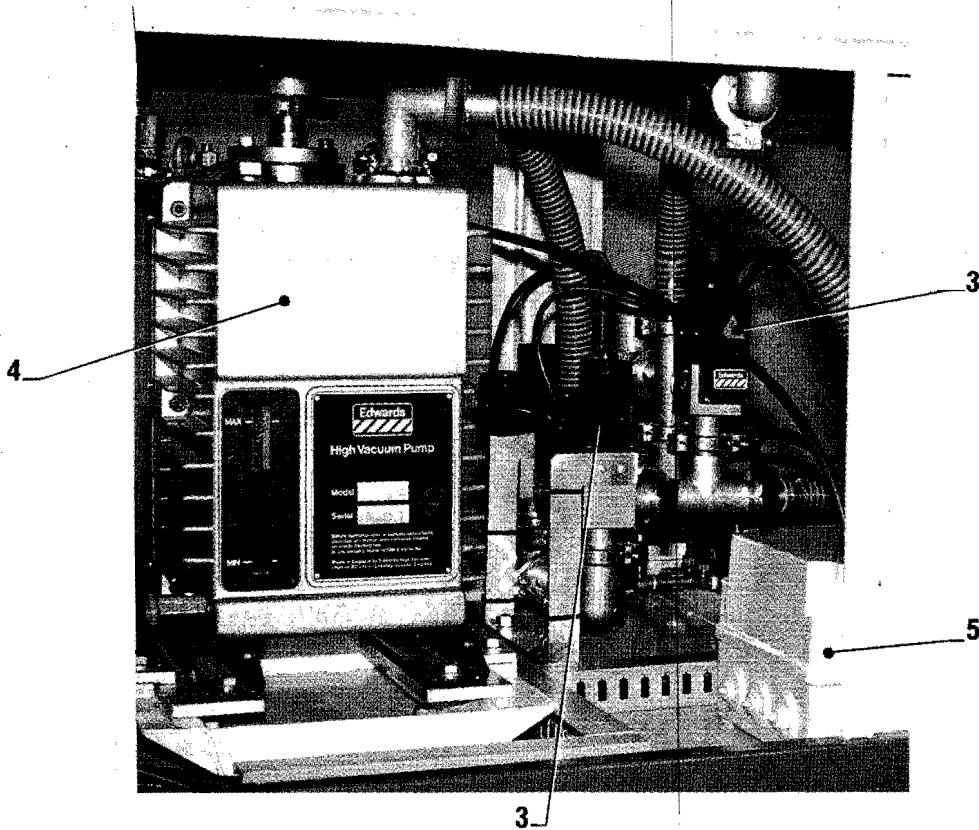
PART NUMBER	DESCRIPTION
015-02-009-00	Rubber shim blanket bot 1.6 mm
015-02-010-00	Rubber blanket top 1.6 mm OV
015-02-011-00	Sealing gasket 15057
015-02-054-00	Leveling feet assy.
015-02-060-00	Top platen secur block assy. - 15005
015-02-060-01	. Securing block bolt CEM12 x 60
015-02-062-00	Rubber blanket frame top 15032
015-02-063-00	Anchor for platens 15046/A
015-02-068-00	Guide braket - bot platen 15033
015-02-069-00	Ext. Air piston, bot platen 15034/A
015-02-070-00	Roller bearing guide bot platen
015-02-076-00	Heater retaining plate 8 mm (.315")
015-02-077-00	Heater retaining plate 3 mm (.118")
015-02-078-00	Rubber shim blanket bot 4 mm
015-02-079-00	Rubber blanket top reinforced 1.6 mm
015-02-081-00	Folding guard - lower platen
015-02-082-00	Rubber shim blanket bot 3 mm
015-22-300-00	Loking key RT
015-22-300-01	. Loking key LFT
015-22-301-00	Coller bushing 12,1 x 16 x 18
015-22-302-00	Box in PVC
015-22-303-00	Vibration feet absorber
015-22-304-00	Manifold for milspec connector
015-22-305-00	Top platen opening holder assy.
015-22-305-01	. Top platen opening pin
015-22-305-02	. Top platen opening braket



NOTE

ISSUED 1.1086
 REV. 1

REF.	DESCRIPTION	PART NUMBER
1	Valve UKA 4/32/U 1/4"	015-21-205-00
2	. Reducer FRR48	015-01-031-01
3	. Pressure gauge M012	015-01-031-03
4	. Lubricator L4	015-01-031-04
5	. Filter	015-01-031-02
6	Rapid discharge valve	015-21-208-00
7	Manifold	015-21-207-00
8	Valve UDS 12 KUC/KUC	015-21-206-00
9	Air flow regulator URG8/2	015-01-038-00
10		
11		
12	Air cylinder Fineco-1200	015-01-015-00
13	Air cylinder Origa-40 x 800	015-01-014-00
14	Roller bearing guide bolt platen	015-02-070-00
15	Ext. air piston, bot platen 15034/A	015-02-069-00
16	Guide braket - bot platen 15033	015-02-068-00
17	Air cylinder 35 x 40 DP	015-01-039-00
18	Proximity switch Siemens 3RG 4013-OAB00 (ø18)	015-20-108-01

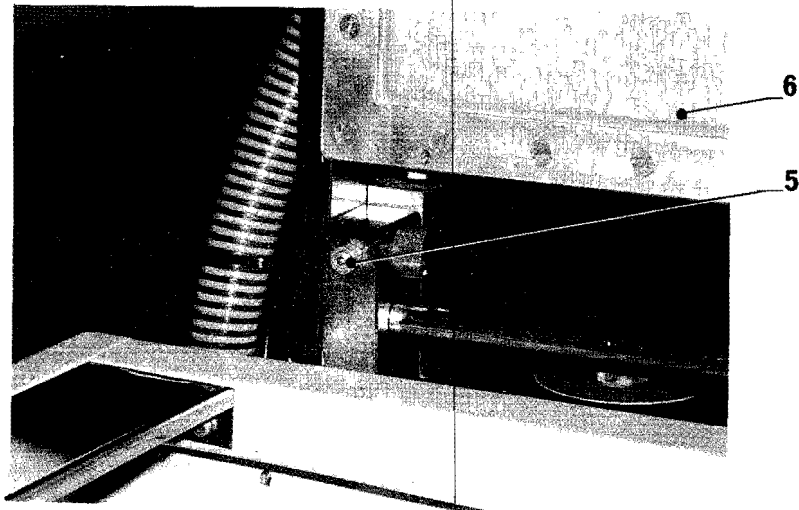
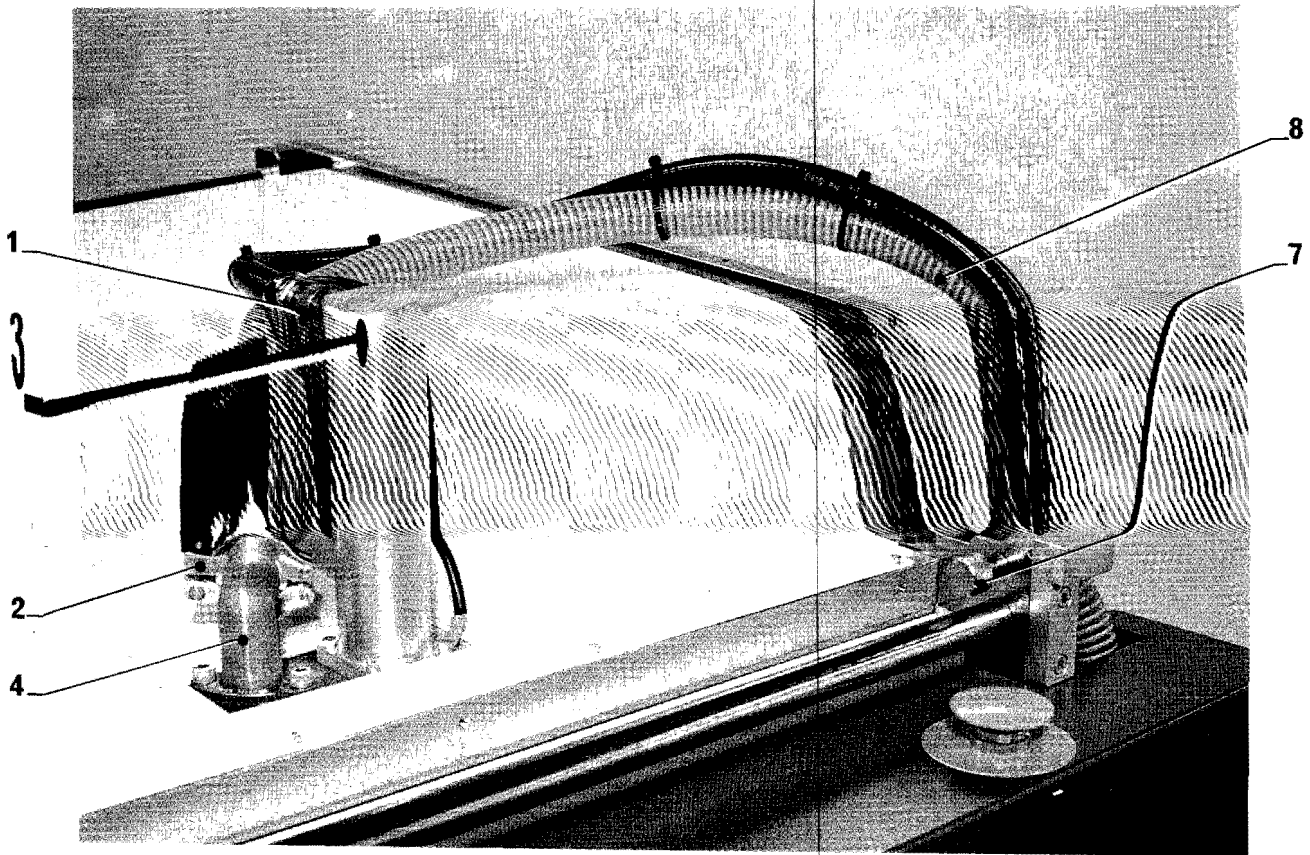
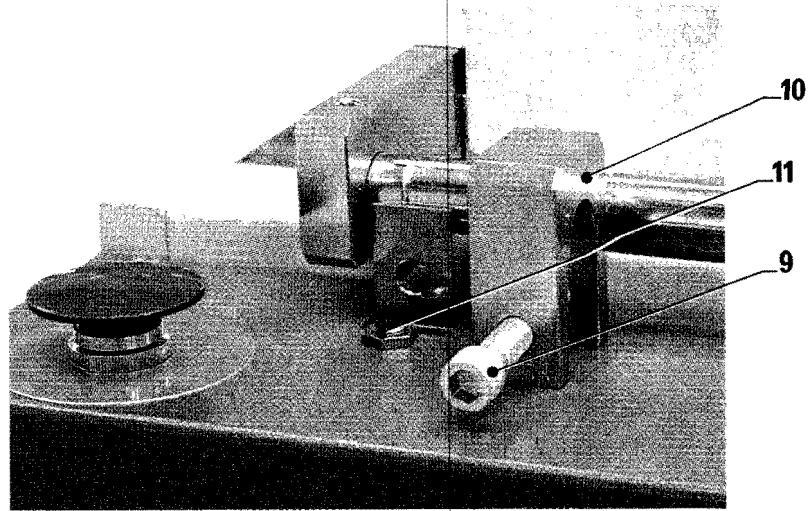


NOTE

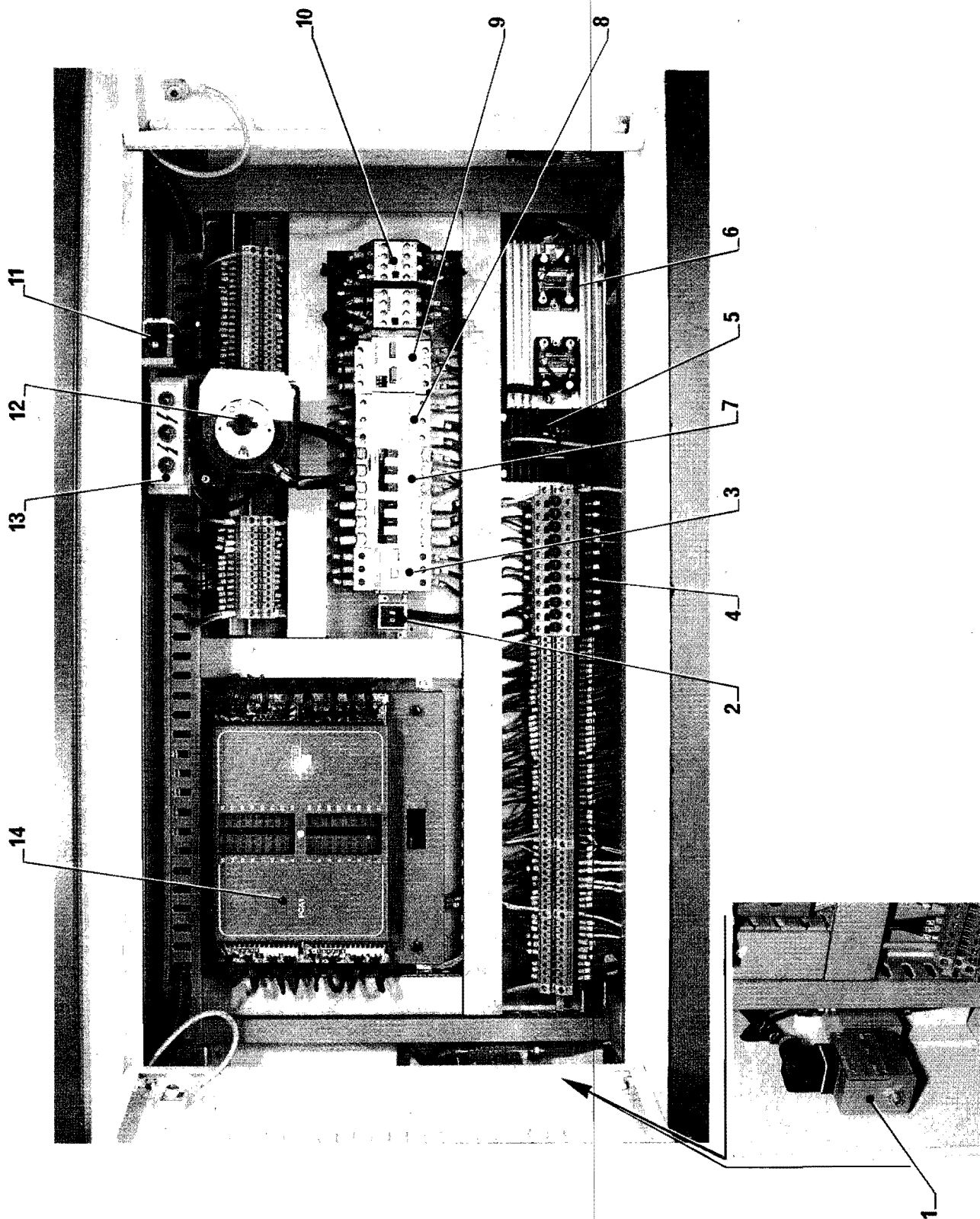
ISSUED 1.1086
REV. 1

5

REF.	DESCRIPTION	PART NUMBER
1	Pirani gauge PRM10K	015-01-033-00
2	Electrovalve PV 10EK	015-00-005-00
3	Electrovalve PV 25EK	015-00-004-00
4	Pump Edwards E2M40	015-00-001-00
5	Box in PVC	015-22-302-00



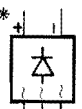




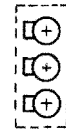







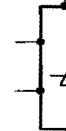



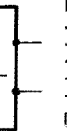



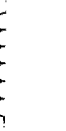



















REF.	DESCRIPTION	PART NUMBER
1	Mil spec connector 3102/18-10P	015-00-058-00
2	. Quick adapter clamps 105-21-043	015-01-047-01
3	Manifold for milspec connector	015-22-304-00
4	Elbow 105-14-410	015-01-056-00
5	Top platen opening holder assy.	015-22-305-00
6	Rubber blanket top 1.6 mm OV	015-02-009-00
7	Top platen opening holder assy.	015-22-305-00
8	Yellow vacuum hose	015-21-220-00
9	. Securing block bolt CEM 12 x 60	015-02-060-01
10	Top platen secur block assy. - 1500	015-02-060-00
11	Proximity switch Siemens 3RG 4012-OAB00 (ø12)	015-20-109-00



NOTE

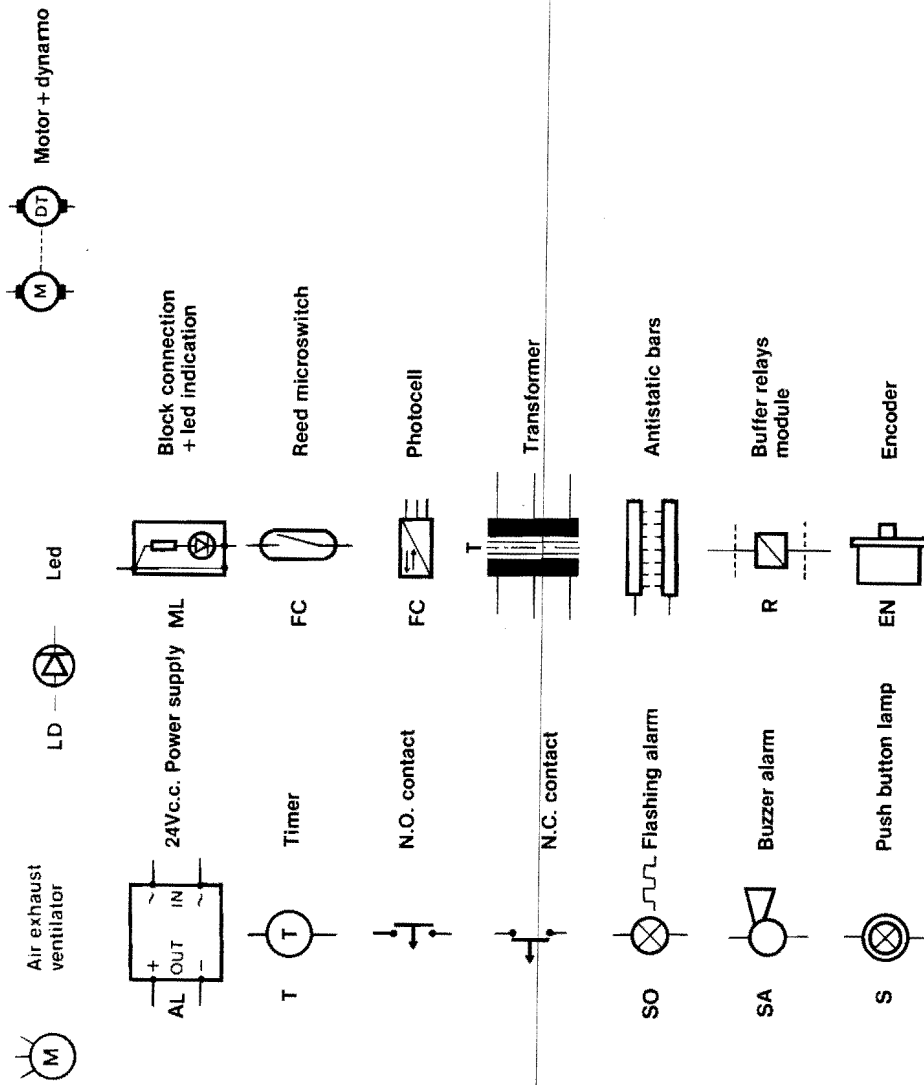
REF.	DESCRIPTION	PART NUMBER
1	Pressure detector	015-21-222-00
2	Two digit preselector (assy) Cherry T56	015-20-101-00
3	3PH magnetothermal switch safety transformer	015-20-114-00
4	Fuse holder clamp Weidmuller SAK S1	015-20-117-00
5	3PH diode rectifier Semikron SKD 25/04	015-20-121-00
6	Static relay Crydom D2440	015-20-118-00
7	3PH magnetothermal switch	015-20-112-00
8	Fuse holder Hager L501	015-00-041-00
9	3PH magnetothermal switch safety motor pump Siemens 3VE1-010-2L	015-20-113-01
10	3PH contactor Siemens 3TB42-170A-N1	015-00-028-00
11	3PH microswitch CGE-Cema 114-FCT03	015-20-115-00
12	3PH main switch Breter 3.03.11-OP	015-20-103-00
13	3PH ok light indicator CGE-Cema 105DTL500	015-20-116-00
14	PLC Saia (assy for vacuumex 724)	015-20-106-00

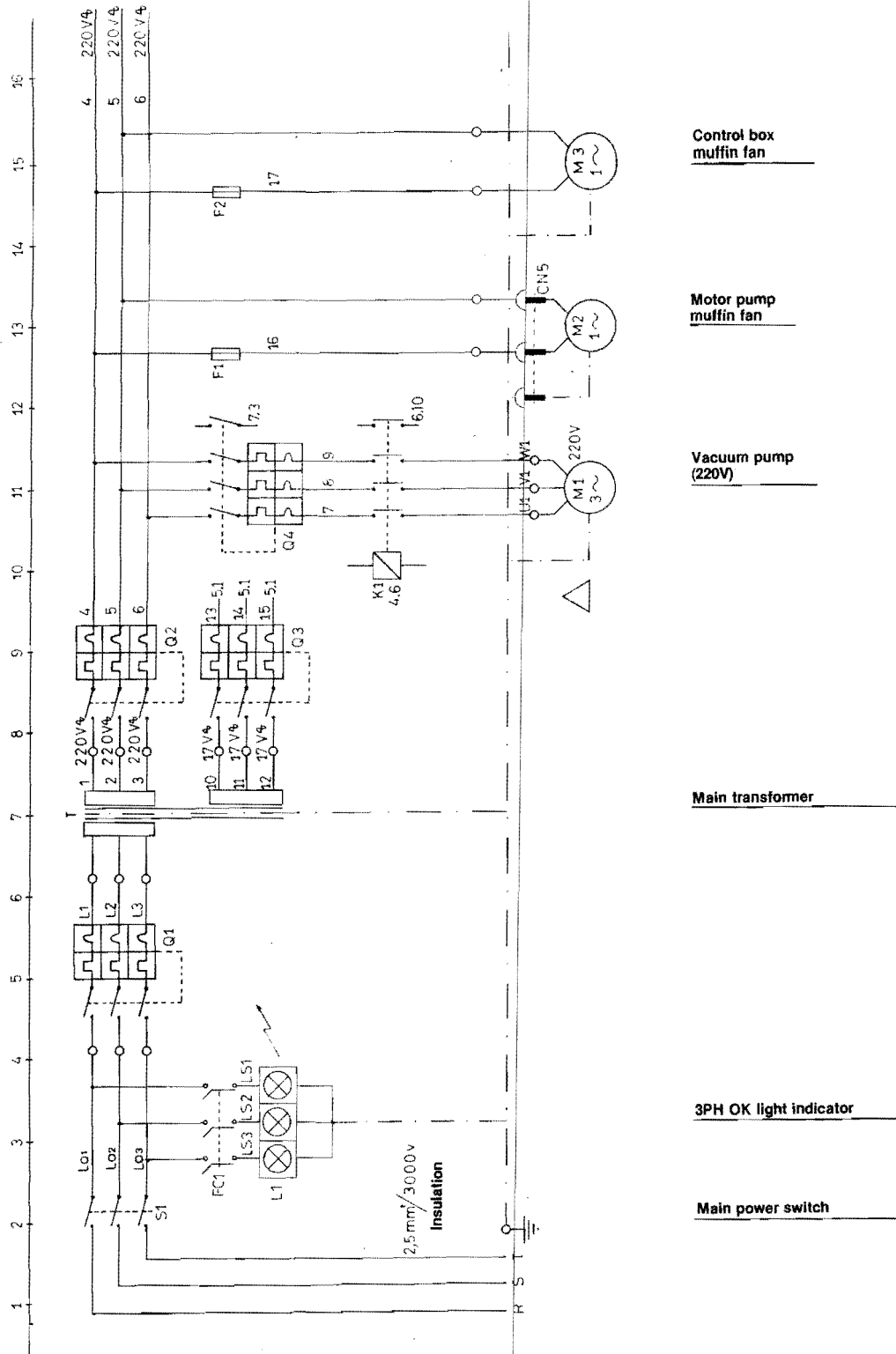
	Block connection		Coil of relay		3PH rectifier + cooling system		Air pressure gauge
	Male-female connector		Contact N.O.		Diode		Contact brush + connector ring
	Push button N.O.		Contact N.C.		Gear motor + field coil		Thermocouple
	Push button N.C.		Contact N.O. + N.C.		Potentiometre		Temperature regulator
	Microswitch N.O.		Condenser		BCD commutator		Reactance
	Microswitch N.C.		Fuse holder		Driver		Inductance
	Proximity switch ind.		Block connection fuse holder		Heat element		RC-ARC voltage filter
	Proximity switch cap.		Pilot lamp		3PH OK light indicator		Coil of remote control switch
	Electrovalve		Switch		Automatic switch OFF		Contact N.O.
	Electrovalve		Rectifier + cooling system		Solid state relay + cooling system		Contact N.C.
	Resistor						

R1
4.6

Column where command is positioned

Page where command is positioned





Control box
muffin fan

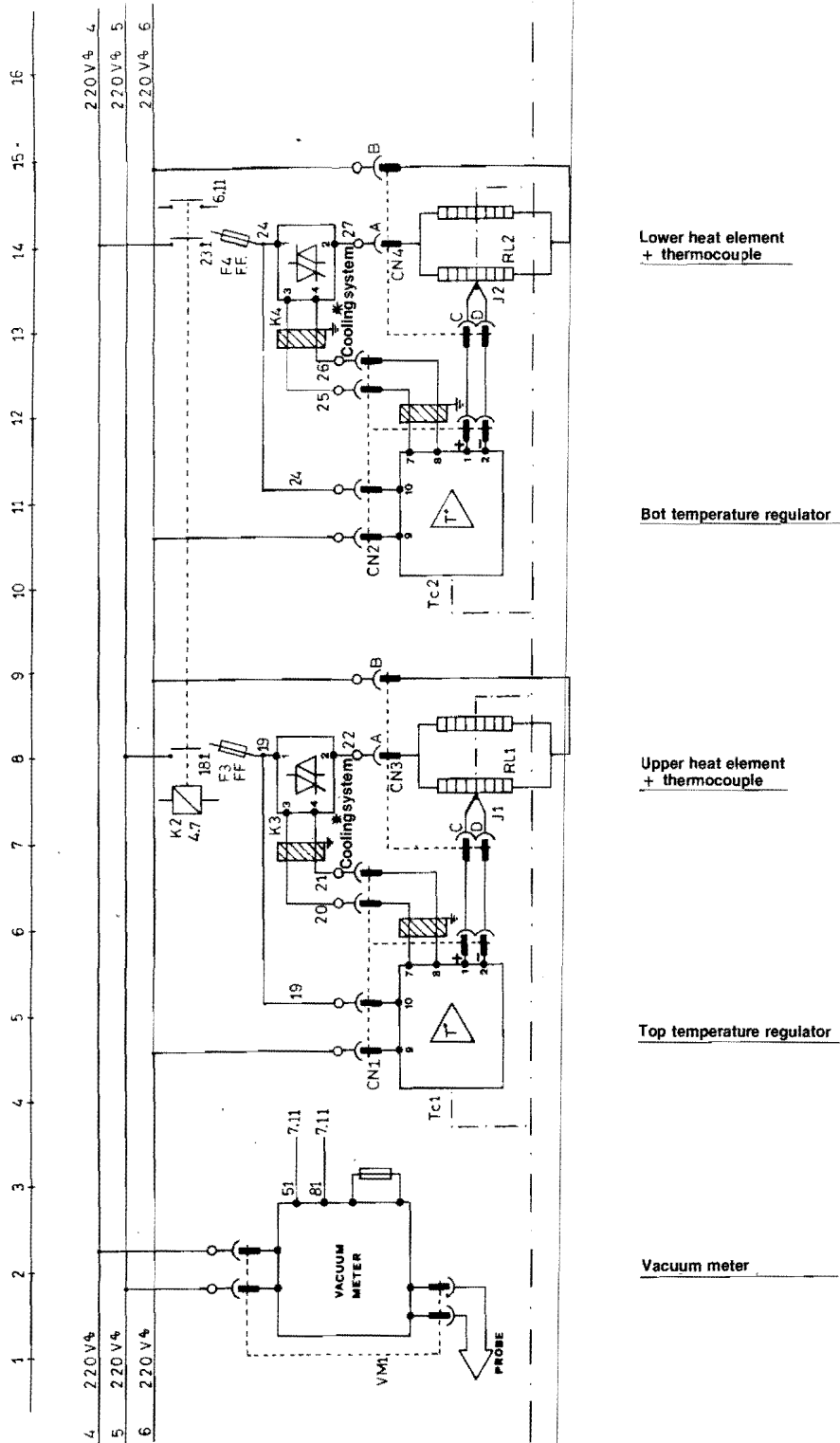
Motor pump
muffin fan

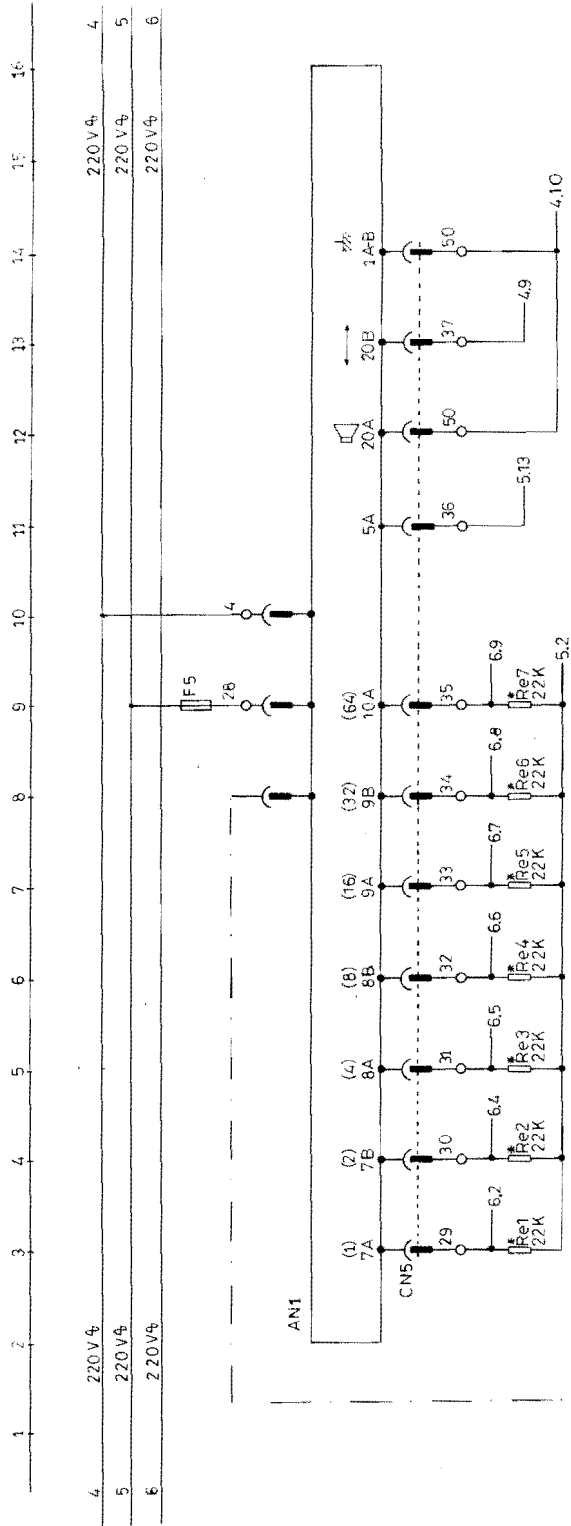
Vacuum pump
(220V)

Main transformer

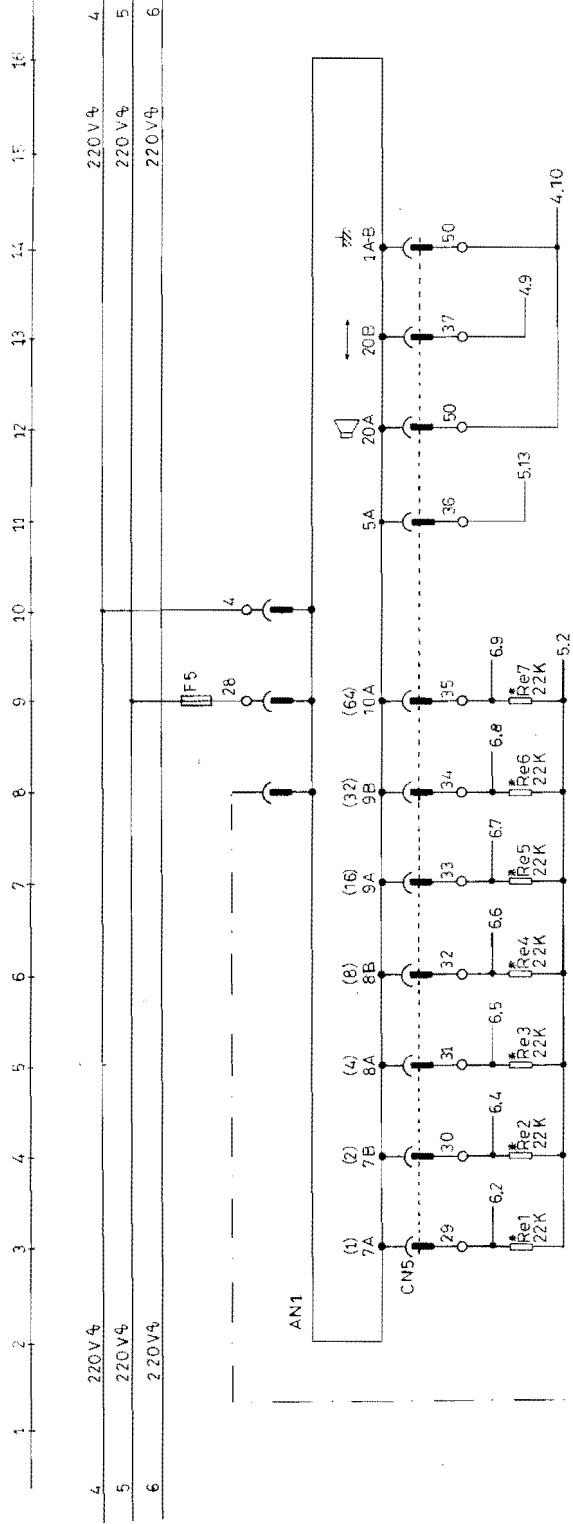
3PH OK light indicator

Main power switch

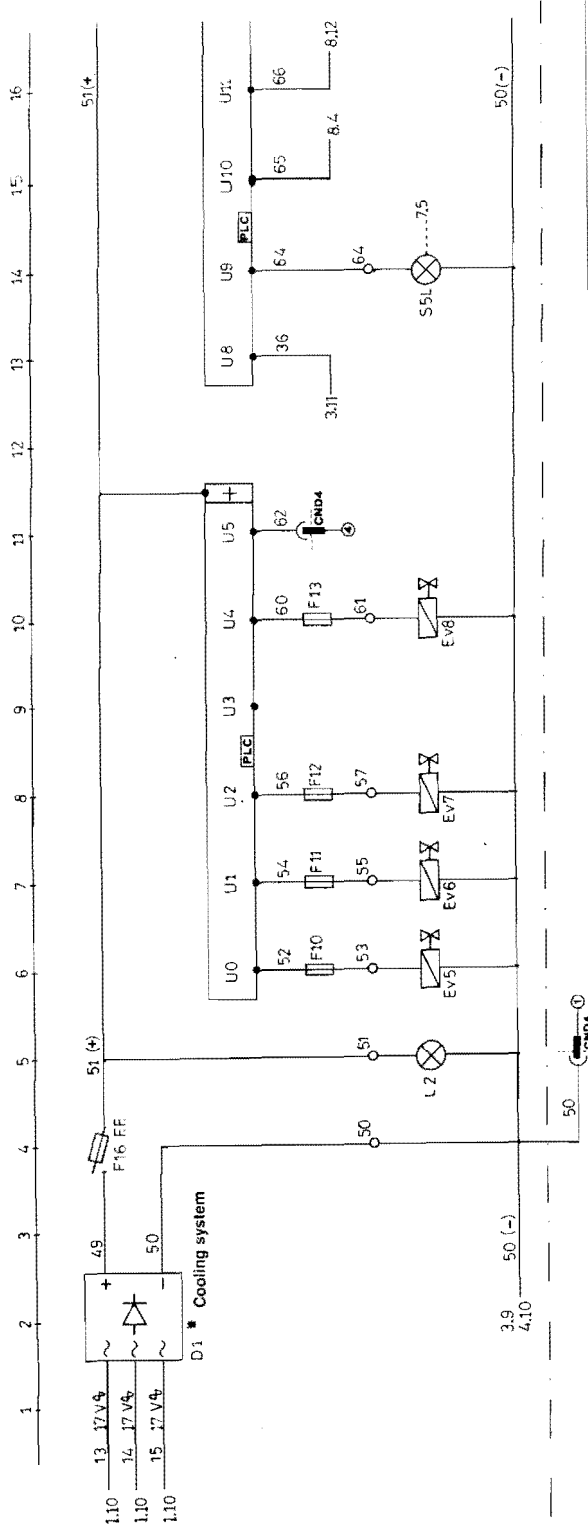




Alphanumeric display block connection



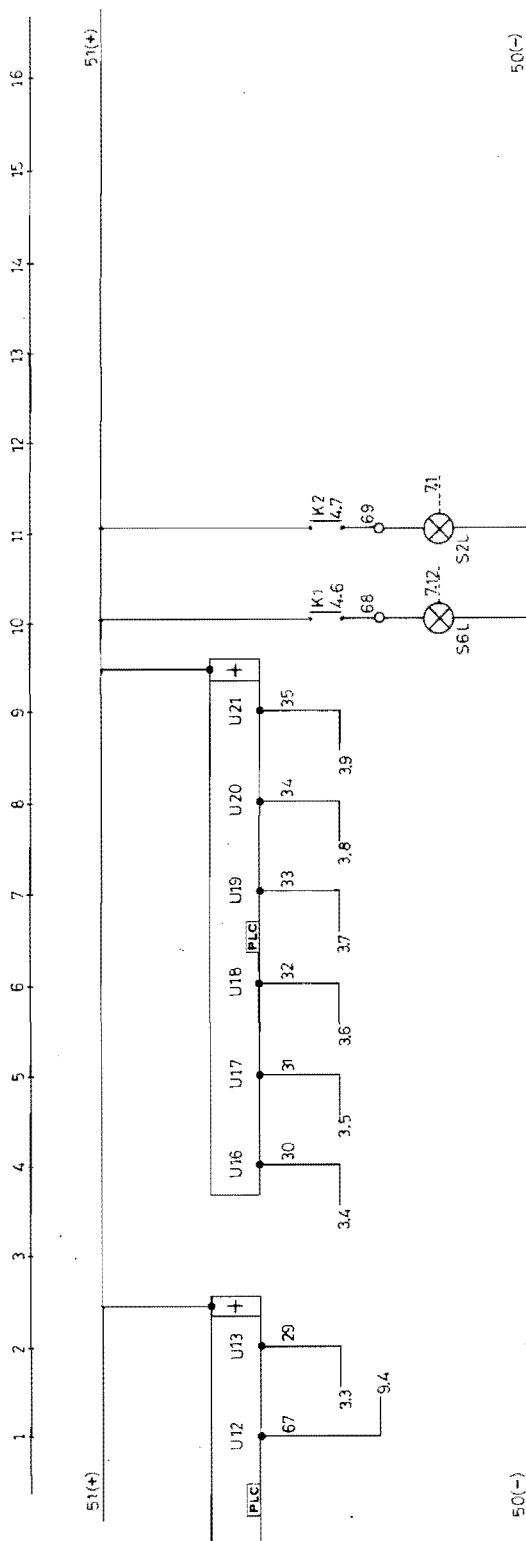
Alphanumeric display block connection



- Out per multiplex (1)
- Out per multiplex (100 - 10)
- Start pilot lamp
- Alphanumeric ready to transmit
- OK to MHU load/unload
- E.V. bot platen backward
- E.V. bot platen forward
- E.V. bot platen down (N.C.)
- E.V. bot platen up (N.C.)
- Auxiliary pilot lamp
- Common signal zero volts between all machines

Output PLC

3PH rectifier



Set-up

Pump ON

Weight 64 alphanumeric

Weight 32 alphanumeric

Weight 16 alphanumeric

Weight 8 alphanumeric

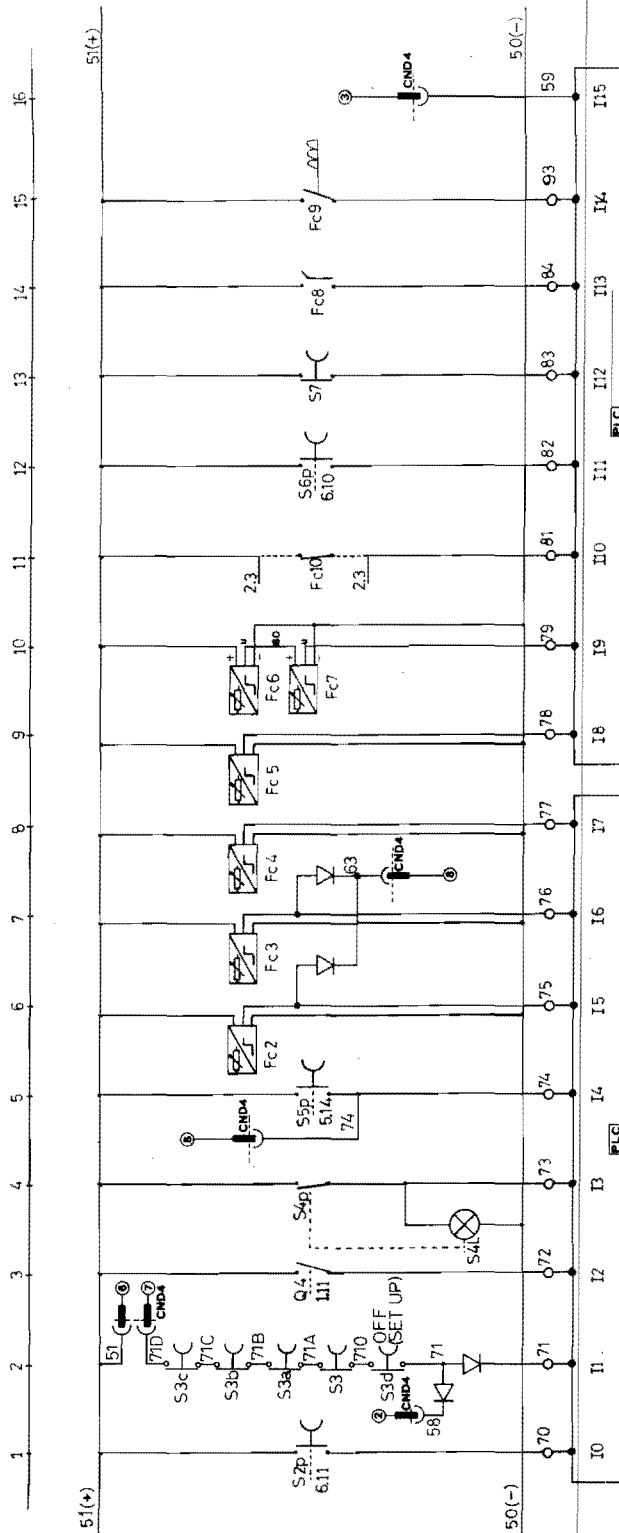
Weight 4 alphanumeric

Weight 2 alphanumeric

Weight 1 alphanumeric

Out per multiplex «slap down»

Output PLC



Start signal from MHU

Air pressure detector.

Safe guard microswitch

Stop pump push button

Pump on push button

Vacuum alarm

Top platen closed microswitch

Platen down microswitch

Platen up microswitch

Signal to MHU that the lower plate is not moving

Platen forward microswitch

Platen backward microswitch

Push button start

Start signal from MHU

Preliminary instructions

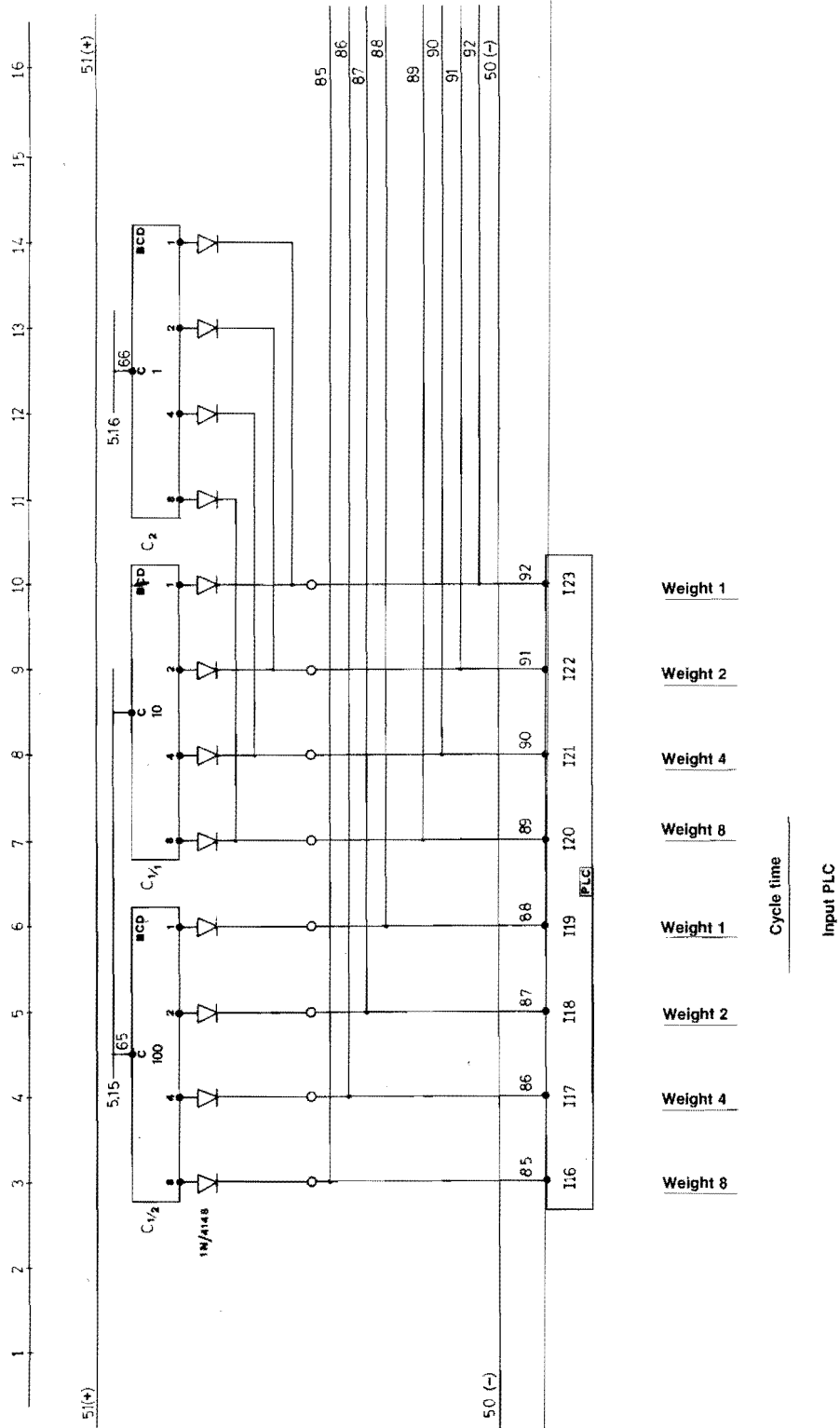
Motor thermal remote control

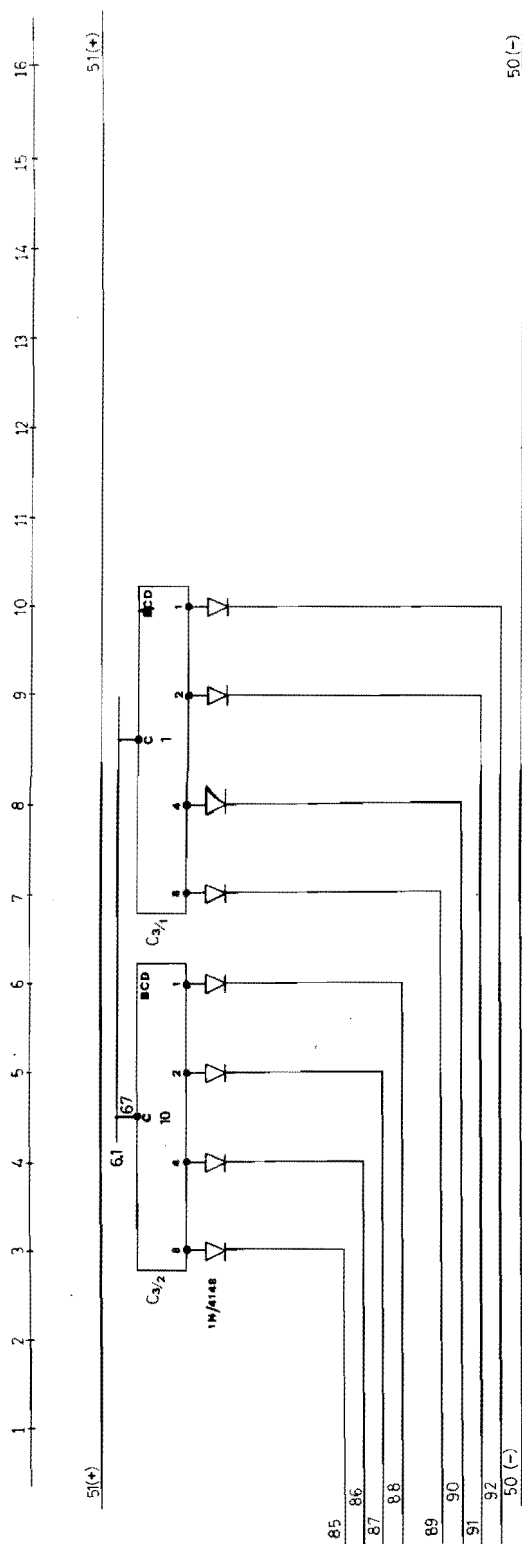
Emergency common line

Emergency

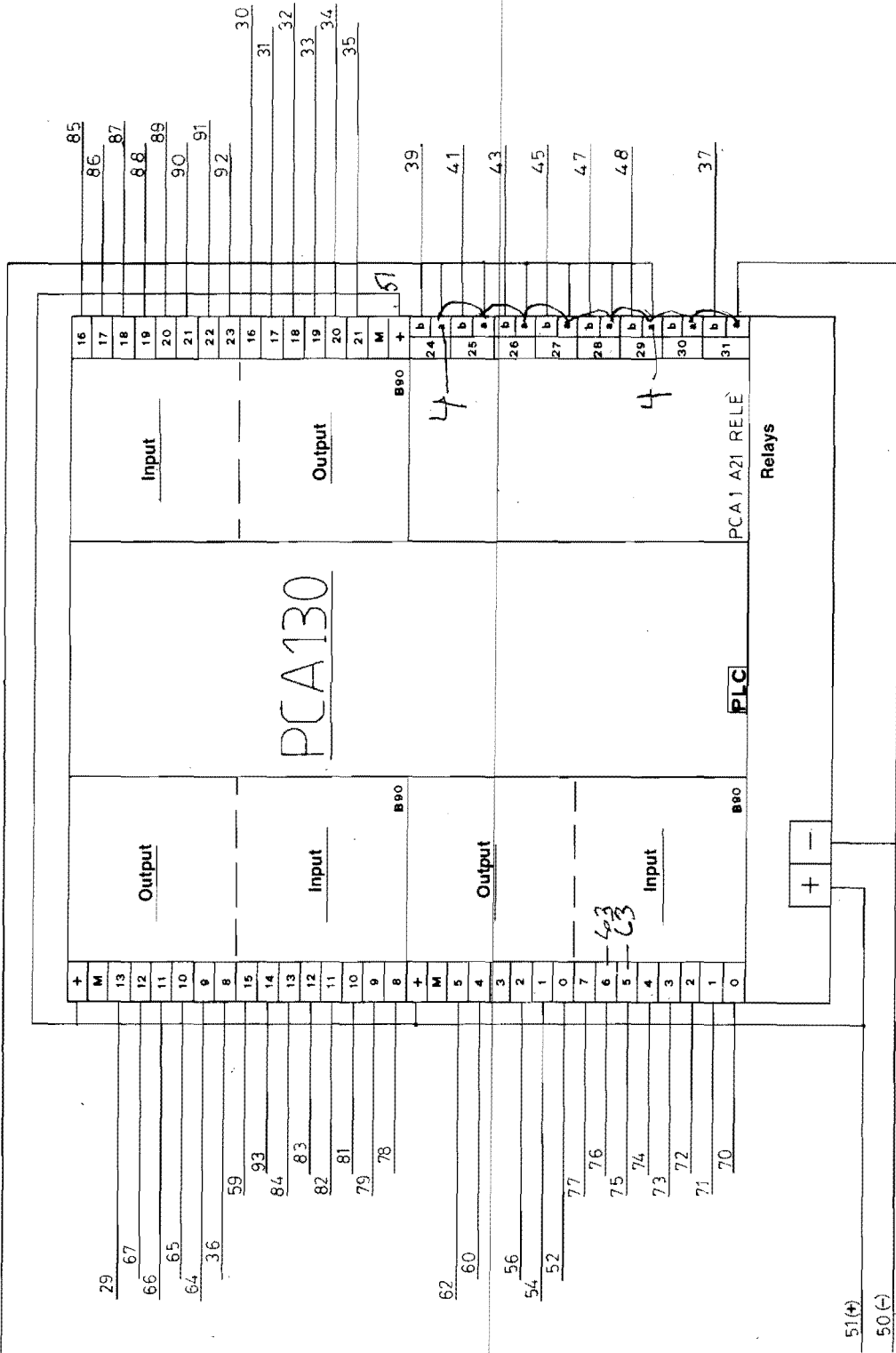
Push button set-up

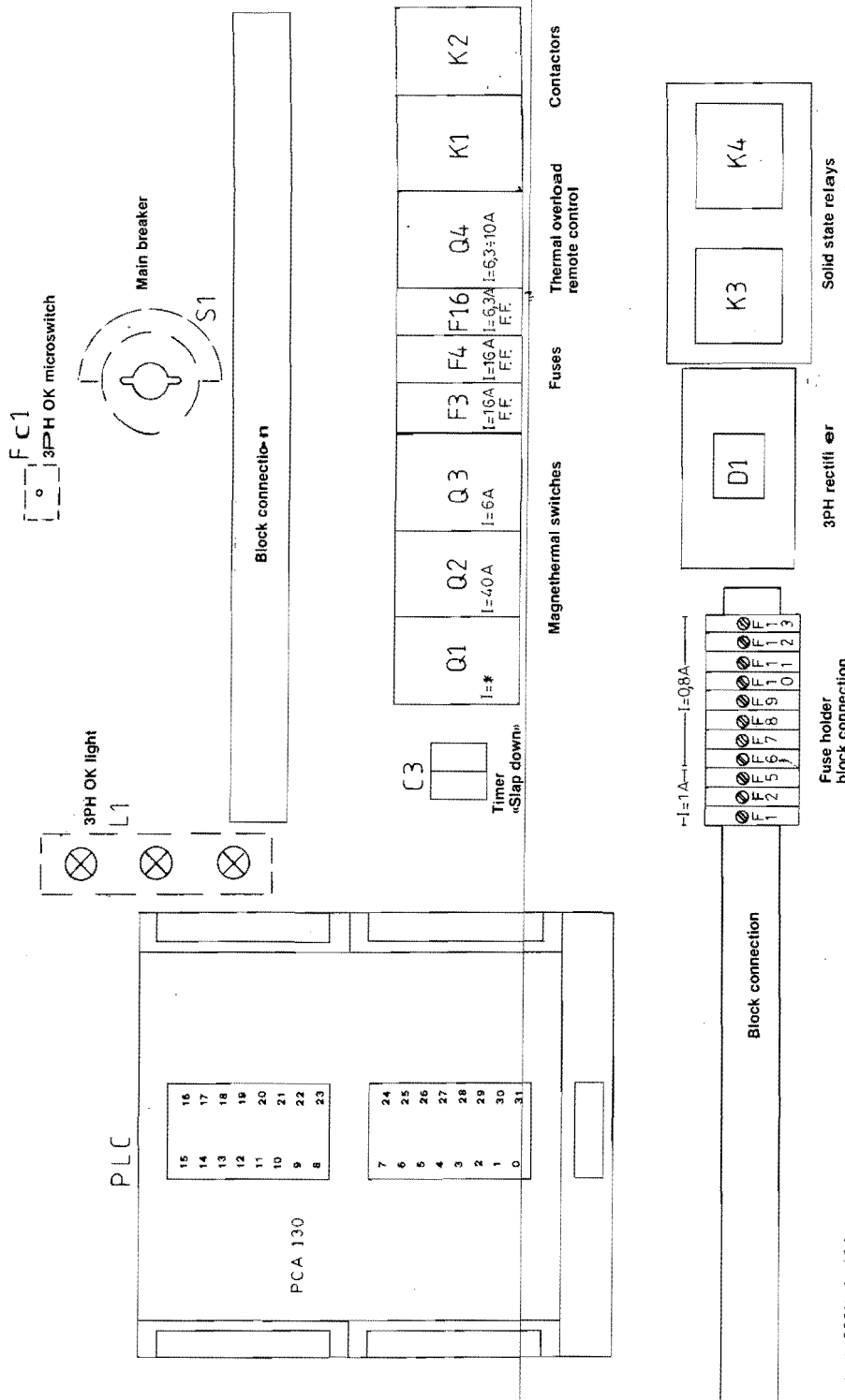
Input PLC





Slap down time





- 220V I=40A
- 380V I=20÷25A
- 415V I=20÷25A
- 480V I=16÷20A

