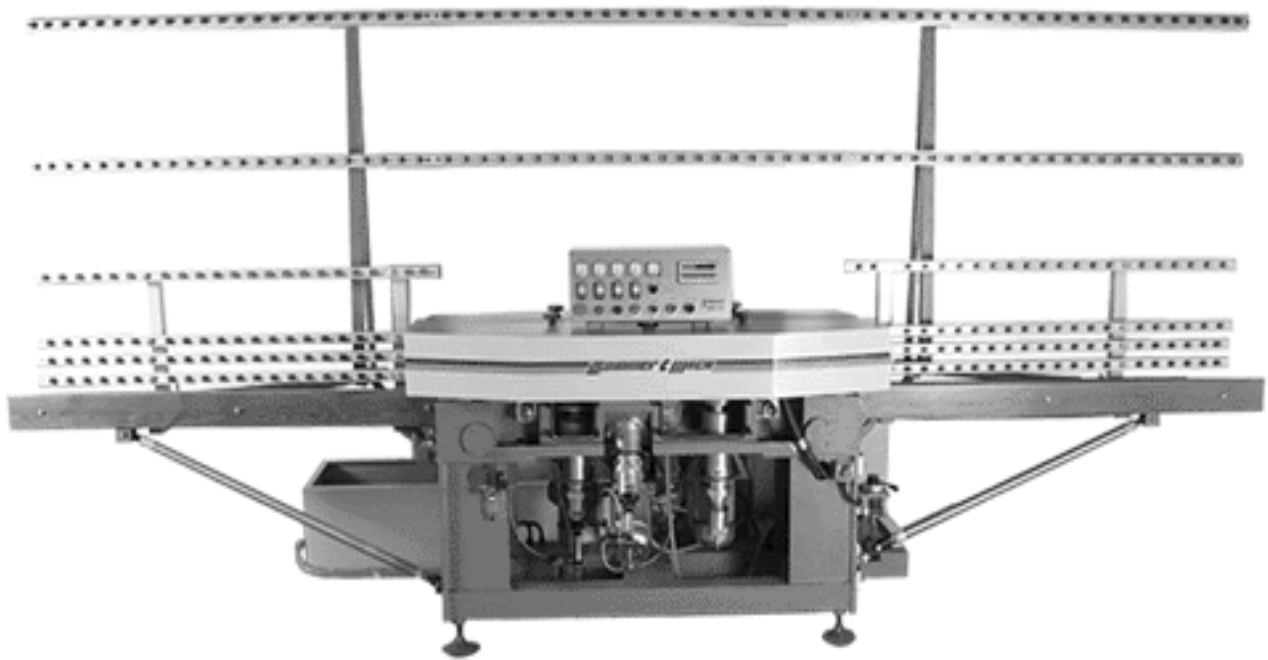


VFE-4 FOUR-CUP FLAT EDGER



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ATLANTA / CICERO / COMMERCE / DALLAS / MOONACHIE/ SANTA CLARA
Sommer & Maca Industries, Inc.

WARRANTY STATEMENT

SOMMER & MACA Industries, Inc. (Seller) warrants products of its manufacture to be free from defects in materials and workmanship in normal use for six months from the date of shipment unless a shorter period is provided elsewhere in this document. Seller's obligation and Buyer's exclusive remedy shall be limited to the repair or replacement at Seller's option, of defective parts within warranty period, provided Buyer gives Seller immediate written notice of such alleged defects, and if requested by Seller, returns the defective parts to Seller's factory for Seller' inspection.

The warranties contained herein are in lieu of any other warranty expressed or implied, including any warranty of MERCHANTABILITY OR FITNESS FOR PURPOSE.

In the case of equipment furnished by Seller but not of Seller's manufacturer, Seller's liability to Buyer hereunder. Adjustment at the manufacturer thereof makes to Seller. Seller shall in no event be liable for consequential damages.

Warranties hereunder shall not apply to any equipment that shall have been damaged by misuse, neglect, failure to perform maintenance or accident after the shipment thereof by Seller. In addition thereto, this warranty shall be null and void if:

1. Machine is used in a manner contrary to instruction or after malfunction is noticed.
2. Buyer does not honor terms of payment.
3. Machine is modified or altered without the agreement of Seller.

PREFIX

We suggest to carefully follow the instructions in this manual and to regularly follow procedures of maintenance, which will allow you to obtain a higher degree of reliability, safety and durability of the product.

- ❖ This manual contains several advises and precautions for safety. We urge you to read them carefully.
In this way you will avoid danger, injuries and eventual damage to the machine.
- ❖ Exclusively trained personnel must do maintenance and repairs.

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1.) **TECHNICAL FEATURES**

1.1) **Machine dimensions**

Length	:	5000 mm (196.5")
Width	:	1300 mm (51")
Total height	:	2400 mm (94.5")
Worktop height	:	850 mm (33.5")
Weight	:	1300 Kg (2866.5 lbs)

1.2) **Electrical and pneumatic requirements**

Voltage	:	3-Phase/230Volts +/- 10%
Frequency	:	60 Hz. +/- 5%
Auxiliary service voltage	:	24Volts/60Hz.
Pneumatic supply	:	6 Bars (87 psi).
Installed power	:	12 kW (16) hp +/- 10%

1.3) **Machine performance description**

Workable thickness	:	3 – 20 mm (1/8" - 3/4")
Working speed	:	0 – 3 m/min (0-9.84 ft/mn)
Adjustable removal	:	0 – 2.5 mm (0 – 0.098")
Coolant system	:	Closed circuit

2.) **SAFETY RULES**

The machine is provided with all devices of protection both mechanical (chain guard, shelters, etc.) and electrical (sensors, stops, etc.) in order to avoid any contact with moving parts by the operator.

It is absolutely prohibited for anyone to alter or remove any safety devices mentioned above with the power on!!

Any kind of verification, control, cleaning, maintenance, change or substitution of parts must be done with the power off and the main disconnect locked out. (see section 9)

The machine is moreover designed in conformity to CE as per the enclosed statement.

The manufacturer declines any and every responsibility for lack of following safety rules and of injury prevention described below. He moreover declines every responsibility of damages caused by an improper use of the equipment or changes made without authorization. It is also necessary for personal safety that no one beside the operator remains in proximity of the equipment when in use.

2.1) General safety rules

When operating electric equipment, it is necessary to adopt the appropriate safety precautions to minimize the risk of electrical shock or injuries. Before operating the machine, read the manual carefully and memorize the following safety rules and save this booklet for future reference:

- ◆ Keep the work area clean and orderly, as unorganized work areas encourage accidents.
- ◆ Before starting, verify the condition of the machine. Check the standard operation and for broken and or damaged parts. Replace all broken or damaged parts by a competent and authorized service person.
- ◆ All repairs performed by unauthorized service personnel will void the warranty and will constitute operating the equipment in an unsafe manner leading to potential danger.
- ◆ It is absolutely prohibited to let children, outsiders, untrained, or people in poor health to touch or use this equipment.
- ◆ Verify that the electrical power source conforms to the electrical specifications before operating this machine.
- ◆ When installing the electrical power source, make sure that the machine is properly grounded.
- ◆ Check the outlet to be appropriate and compatible with the automatic protection switch in the machine.
- ◆ The extension cord if used must have a grounded receptacle, plug and cable as per code.
- ◆ Never stop the machine by disconnecting the power.
- ◆ Check periodically the condition of the cable and replace it should it become cut or frayed. This work is to be performed only by qualified personnel.
- ◆ Do not allow any personnel to come in contact with this cable.
- ◆ Do not ignore these advices. Such an act will constitute an unsafe use of this equipment and will create a potential danger.
- ◆ Personnel authorized by the manufacturer must make repairs.
- ◆ The manufacturer is available for immediate technical assistance to insure optimum performance and the maximum production of the machine.

3.) SHIPPING, MOVEMENT AND STORAGE

Specialized and competent personnel must perform all shipping operations of the machine.

3.1) Machine shipping and crating

The crated machine is easily transportable by a crane or a forklift with a minimum capacity of (3) tons and lifting eyes as shown on the machine assembly drawing in the Annex 0 section of this manual.

In the act of moving be very careful to avoid bumping or dropping the machine or causing excessive vibration to avoid damaging components.

3.2) Packing and unpacking

After unpacking, make sure of the condition of the machine while checking to see if there is any visible damage.

If in doubt, do not use the machine and call the manufacturer's customer's service.

3.3) Storage until installation

It is okay to store the machine in its original container providing that it is not stored in a place of high humidity.

In the case of a long or extended idle period or a period of nonuse after the machine has been used, it is necessary to disconnect the power source and provide protection to the machine with a plastic cover to avoid dust. Grease all parts that can be damaged by oxidation or moisture.

4.) **INSTALLATION AND CONNECTIONS**

4.1) **Environmental working conditions.**

The machine can work at temperatures between 41 and 113 degrees Fahrenheit.

4.2) **Space requirements**

Make sure that the clearance provided around the machine is sufficient to be able to open all doors completely and to perform all operations of maintenance.

4.3) **Machine installation requirements.**

Before placing the machine in its final location, proceed with the following checklist:

- ✓ Check the ability of the floor to support the weight of the machine and its accessories.
- ✓ Check the lighting around the machine. It should be free from shaded areas, inconvenient high beams and or stroboscopic lights that could create dangerous conditions.
- ✓ Check the condition of the machine for damage as a result of transportation.
- ✓ Check to see that all feet of the machine are uniformly positioned on the floor.

After the machine has been placed in its working position, it must be correctly leveled using the adjustable feet.

4.4) **Electrical connection**

Work performed on electrical parts, electrical safety of this equipment is assured only when it is correctly connected and properly grounded as per federal, state, and local codes concerning the same.

It is mandatory to verify these basic safety requirements and when in doubt, ask for a check of the electrical circuit by professionally trained personnel.

The manufacturer is not responsible for damages caused by an improperly connected machine.

WARNING: Interruption capacity of main circuit breaker: < 6 kA

Verify that the short circuit capacity of the supply is compatible
With the main circuit breaker.

4.5) **Pneumatic connection**

Compressed air is required and must be connected to the FRL (filter, regulator and lubricator) on the outside of the machine.

A shut off valve should be placed ahead of the FRL.

After pressurizing the pneumatic circuit, set the air pressure on the pressure gauge of the regulator to 6 bars which is approximately 90-psi minimum. Adjust the knob on the regulator to achieve the above value.

5.) EQUIPMENT DESCRIPTION

There are four spindles equipped with:

- 1st diamond grinding wheel – 150 mm dia. (M1)
- 2nd grinding wheel for rear arris – 100 mm dia. (M2)
- 3rd grinding wheel for front arris – 100 mm dia. (M3)
- 4th polishing wheel for flat edge – 150 mm dia. (M4)

The diamond grinding wheel spindle M1 have a locknut and a knurled knob (see enclosed drawing **MMD** on annex 4). One complete turn of the knob #3 on the drawing **MMD** will raise or lower the grinding wheel by **2 mm** or approximately **.079"**. This knob has 40 grades; each grade is equal to variation of height of **.002"**.

The spindles for the arris edges and the flat polishing wheels work pneumatically, and are controlled electronically to engage and disengage the operation of the electrovalves relative to every wheel.

6.) MAIN ASSEMBLIES

- 1) Lever to regulate glass removal
- 2) Dial indicator for reading of quantity to be removed
- 3) Adjustable feet to level the machine
- 4) Knurled knob for diamond grinding wheel adjustment
- 5) Diamond grinding wheel motor M1
- 6) Rear arris grinding wheel motor M2
- 7) Front arris grinding wheel motor M3
- 8) Polish wheel motor M4
- 9) Pneumatic cylinder
- 10) FRL group (filter, regulator and lubricator)
- 11) Base
- 12) Conveyor motor to advance glass
- 13) Anchors to lift and move the machine
- 14) Support structure
- 15) Control panel (see annex. #1)

7.) OPERATION CYCLE: COMMANDS AND FUNCTIONS

The machine operator is advised to do the following:

Warning: Always make sure the pump is ON, before you run glass. Otherwise a major damage could be caused to the machine.

The switching on of the spindles must be done progressively as follows:

1. Turn motor M1 on (diamond grinding wheel).
Note: The pump will be turned on automatically when you turn on M1
2. Turn motor M2 on (rear arris grinding wheel)
3. Turn motor M3 on (front arris grinding wheel)
4. Turn motor M4 on (regular flat polishing wheel)

FOUR CUP MACHINE WHEELS ARRANGEMENT			
WHEELS	GRIT	TYPE	PART#
M1	140-170 (.025inch DEEP)	FLAT EDGE CUP (DIAMOND)	3-97302-01
M2		AB 280 CUP	3-97301-02
M3		AB 280 CUP	3-97301-02
M4		10S40	3-97300-01

The adjustment of the amount of glass to be removed is located under the infeed glass conveyor side and is changed by operating the lever (0 – 0.4”) as seen on the decimal dial indicator. **NOTE THAT MAXIMUM MATERIAL REMOVAL IS 0.098” (3/32”)**

For optimum machine output, it is recommended to use these settings.

WHEELS #2, #3 & #4 SETTING				
GLASS THICKNESS	mm	4 TO 8	8 TO 12	12 TO 20
	inches	1/8 TO 5/16	5/16 TO 1/2	1/2 TO 3/4
SPINDLE 2 & 3 AIR CYLINDER PRESSURE	bars	2	2	2
	psi	29	29	29
SPINDLE 4 AIR CYLINDER PRESSURE	bars	3.5	3.5 TO 4.5	4.5 TO 5
	psi	51	51 TO 66	66 TO 73
CONVEYOR SPEED	m/mn	1.4 TO 1.8	1.3 TO 1.6	0.5 TO 0.8
	ft/mn	4.6 TO 5.9	4.26 TO 5.25	1.64 TO 2.62
NOTES:				
1- ONLY METRIC CONVEYOR SPEED CAN BE ENTERED INTO CONTROL PANEL				
2-MINIMUM PRESSURE ON ALL CYLINDERS SHOULD BE 2 BARS				
3- LOWER PRESSURE ON M4 WHEN POLISHING SMALL TAIL STOCK				

7.1) Wheel replacement procedure

When replacing grinding or polish wheels, insert spindle-locking wrench over the flats on the spindle hub. Place 30mm box wrench or 8mm Allen wrench on the spindle locking screw, hold firm and rotate the spindle clockwise. This will loosen locking screw. Reverse hub rotation to tighten locking screw.

In the event you must replace the diamond grinding, proceed as follows:

- Lower the diamond-grinding wheel via the knurled knob as far as possible while leaving the locknut in its previous position.
- Remove the old wheel as mentioned above
- Install the new wheel
- Turn water on
- Turn motor M1 on if you working on spindle 1
- Adjust conveyor speed to minimum level
- Load a piece of glass into the machine
- Set the conveyor direction switch to forward
- Press the conveyor start button
- Wait until glass passes the grinding wheel, and set the conveyor direction switch to forward
- Remove glass and measure the amount of glass removed
- Raise the knurled knob until the desired amount of glass is removed and retighten locknut
- Gradually increase the glass conveyor speed to its desired level

In the event of glass breakage, press the emergency stop button

- Decrease speed control setting and remove the glass from the machine by reversing the glass travel direction.
- Correct the problem causing the breakage and resume operation.

7.2) Necessary spacing between glass pieces

- Leave 1 inch in between glass pieces of same thickness, so you can put your fingers between the two glass pieces to remove it from glass conveyor.
- **Leave 8 inches in between glass pieces of different thickness**, because that is the necessary distance for arris and polish spindle to retract and engage.

8.) MACHINE CIRCUITS

8.1) Electric circuit

- ◆ Schematic and components annex #2
- ◆ Control panel annex #1

8.2) Electrical specification

A) **General electrical characteristics**

- Machine voltage : 3 phase/230 volts +/-10%
- Frequency of operation : 60 Hz +/-5%
- Auxiliary service voltage : 24 volts/60 Hz
- Pneumatic service voltage : 24 volts/60 Hz

B) **Motors**

- Motor M1 : 2 pole/380 volts/60 Hz/3 hp
- Motor M2 : 2 pole/380 volts/60 Hz/2 hp
- Motor M3 : 2 pole/380 volts/60 Hz/2 hp
- Motor M4 : 2 pole/380 volts/60 Hz/3 hp
- Pump motor : 2 pole/380 volts/60 Hz/0.5 hp
- Conveyor motor : 4 pole/380 volts/60 Hz/0.5 hp
Complete with 160:1 reducer

8.3) Pneumatic arrangement

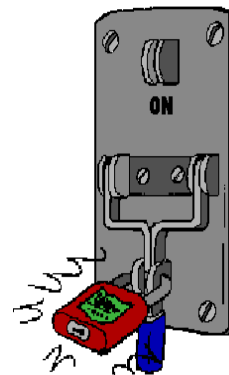
- ◆ Pneumatic circuit outline Annex #3

9.) MAINTENANCE

WARNING!

Any kind of verification, cleaning, maintenance, replacement and substitution of parts must be performed with the power off and the main disconnect locked out. (see section 2)

OSHA 29 CFR 1910.147 standard requires the placement of a lockout on energy stored equipment in a manner that will render them safe to work on and prevent the inadvertent start up of such equipment, in accordance with an established procedure, and ensure that the energy-isolating device and the equipment being controlled cannot be operated, while it is being serviced or maintained, until the lockout device is removed.



9-1.) Preventive maintenance

- When switching the machine on, check the air pressure. It must be at or above 6 bars / 90psi.
- It is necessary to keep the machine clean from glass grindings regularly to prevent premature wear.
- It is also necessary to keep the machine inside of the spindle tub clean from broken glass to prevent damage to the water delivery system.
- It is necessary to continually check the condition of the grinding and polishing wheels and replace them as required.
- Every 40 hours of operation drain the condensation from the FRL group. Replenish oil reservoir with a good grade of Air Tool Oil (Mobil Almo 525 or equivalent). P/N 299-0148-0
- Every 200 hours of operation lubricate all of the ball bearing units with a NLGI #2 wheel bearing grease.

9-2.) Fuse list

Somaca		VFE 4		Vendor	
Part Number	Fuse ID	Description	Vendor	Part Number	Qty
4700302002	4FU1	FUSE 1A 400V 10x38mm 120ka	Shawmut	16011-G	2
4700330102	4FU2	FUSE 6A 500V 10x38mm 120ka	Shawmut	16523-G	1
4700302001	3FU1	FUSE 4A 400V 10x38mm 120ka	Shawmut	16019-G	2
4700330103	1FU1	FUSE 32A 400V 10.3x38mm 100ka	Shawmut	16043-G	3
4700302004	1FUG	FUSE 50A 400V 14x51mm 100ka	Shawmut	17551-G	3

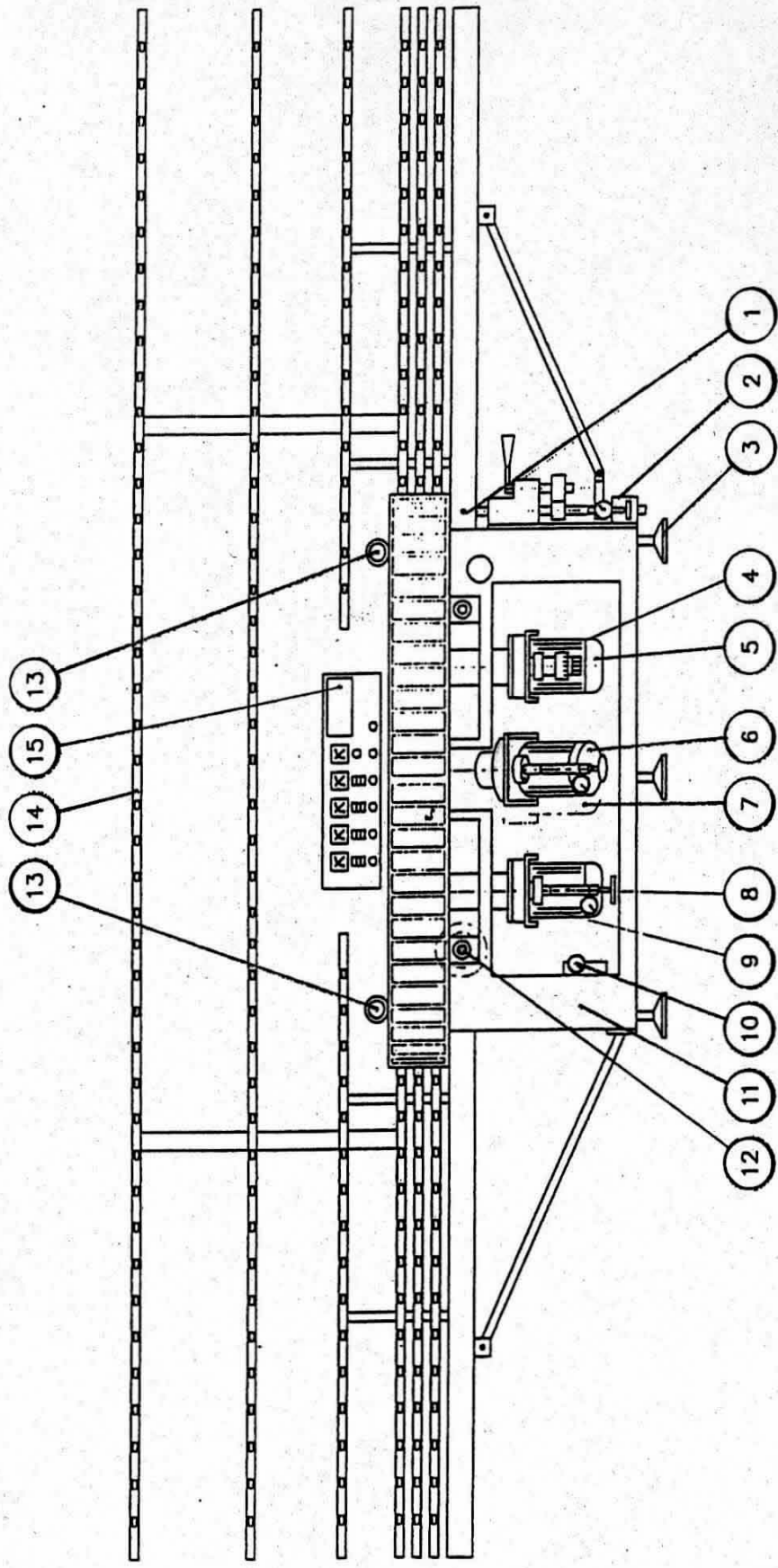
10.) TROUBLE SHOOTING SOLUTIONS

<u>PROBLEM</u>	<u>CAUSE</u>	<u>SOLUTION</u>
Motors do not spin	Burnt fuse Thermal out Electrical interruption	Replace Reset Verify
No pneumatic movement	Not enough air pressure Solenoid valve broken or defective	Verify pressure At 6 bars / 90 psi. Minimum Check and replace
Water pump not working	Burnt fuse Thermal out Electrical interruption	Replace Reset Verify

11.) ANNEXES

- Main Assembly Annex#0
- Control panel Annex #1
- Electrical circuit outline Annex #2
- Pneumatic circuit outline Annex #3
- Assemblies Annex #4
- Programming of “Mini-Job” Controller Annex #5

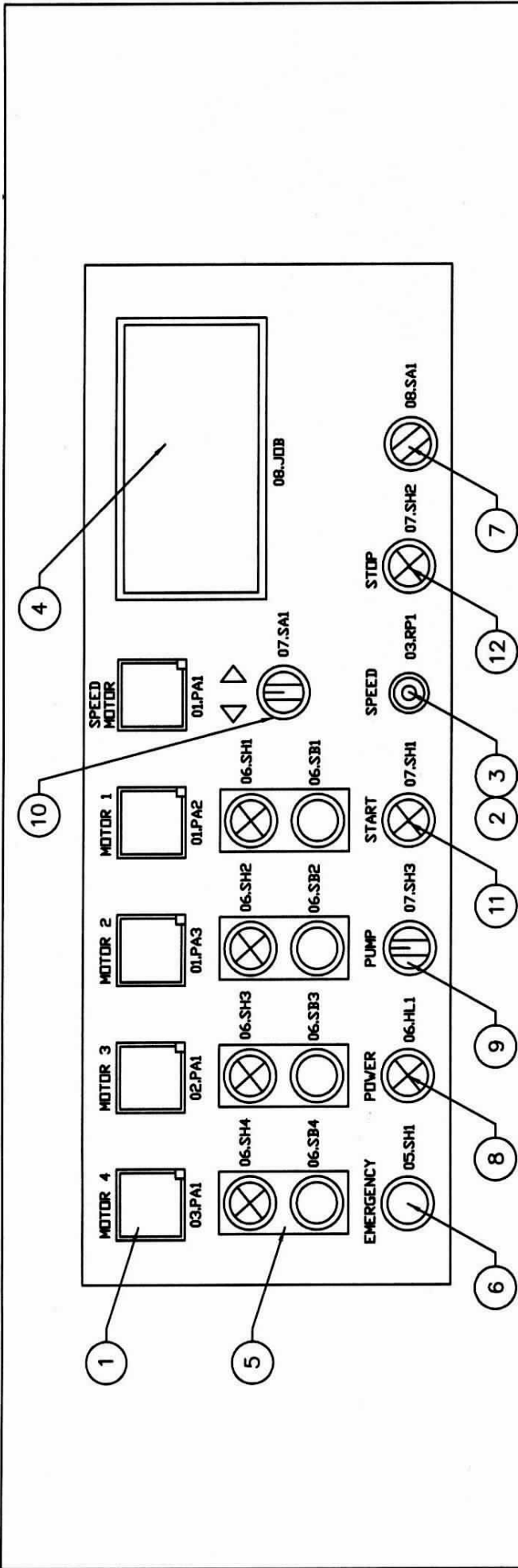
ANNEX #0



REV DATA		DATA DATE	DESCRIZ	DESIGNER	DIS. DIL. DES.	CONTROL. CHECKED	APPR. APPROVED
REV. N°	REV. DATE		MOLA TRICE RETTILINEA				
TITOLO	FILE		MOD. 415				
UNIT :							
DESIGN DRAWN		P.A	REVISIONE / REVISION				
CONTROLL. CHECKED			CONTROLL. BL/REVISED BY/FORMATO				
APPROVA. APPROVED			REVISIONE/OBTAINED FROM/HOME FILE / FILE NAME				
SYMBOLIC ISO			SCALE / SCALA	10000 / 8			

REVISIONE	REVISION	0	1	2	3	4	5	6
DWG		415						

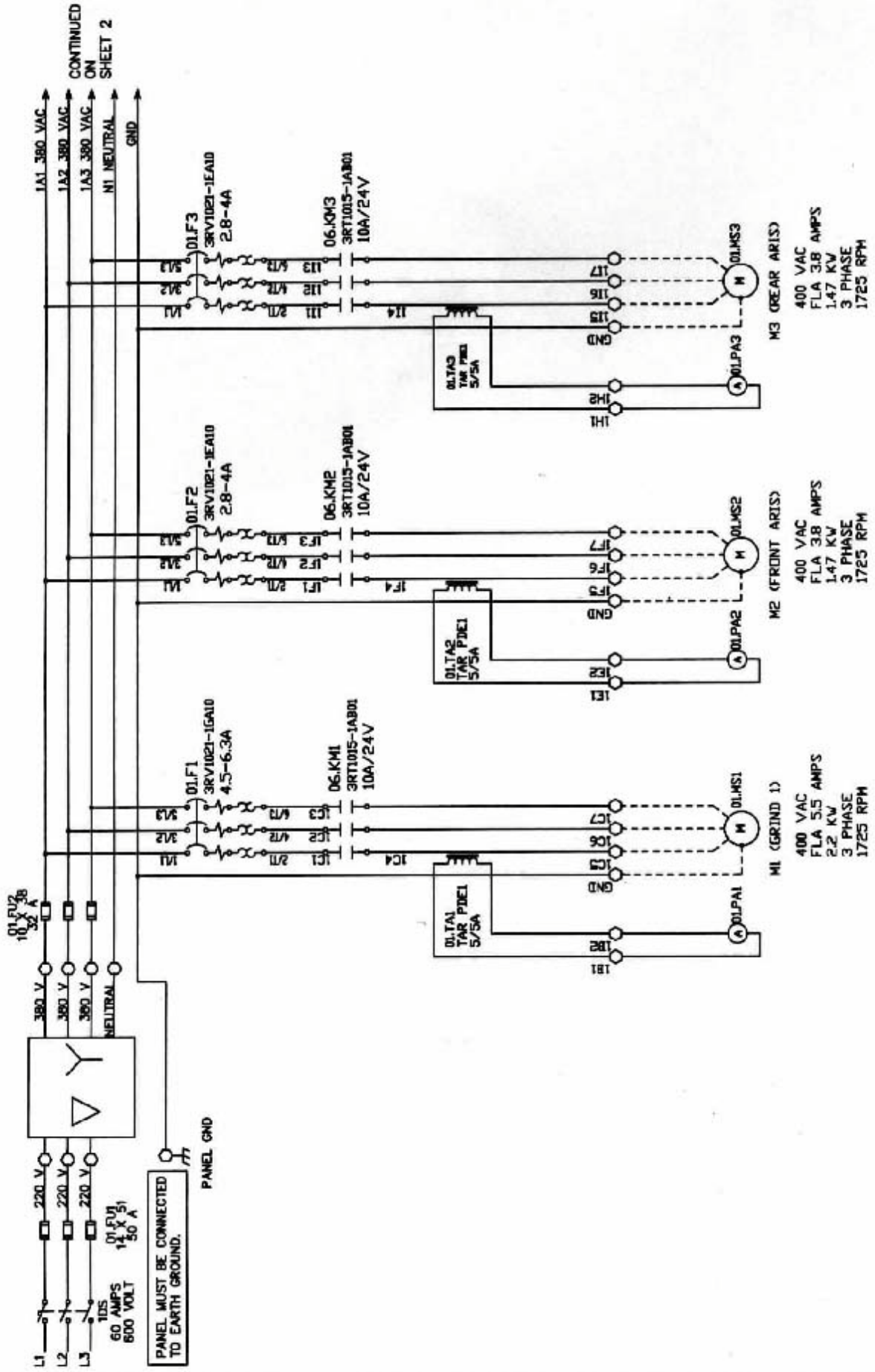
ANNEX #1



470-0394-0-17	17	BLOCK CONTACT 2-NO CONTACTS	-
470-0394-0-16	16	SWITCH CONTACT BLOCK INCANDESCENT LAMP W/O LAMP	-
470-0394-0-15	15	BLOCK CONTACT NC	-
470-0394-0-14	14	BLOCK CONTACT NO	-
	13		
470-0394-0-12	12	SWITCH PUSHBUTTON MOM RED	1
470-0394-0-11	11	SWITCH PUSHBUTTON MOM WHITE	1
470-0394-0-10	10	SWITCH OPER 3 POS MAINT BLACK	1
470-0394-0-09	9	SWITCH OPER 2 POS MAINT WHITE	1
470-0394-0-08	8	LIGHT INDICATOR WHITE	1
470-0302-0-19	7	SWITCH KEY 2 POS SELECTOR	1
470-0302-0-20	6	SWITCH E-STOP W/LIGHT	1
470-0394-0-04	5	SWITCH OPERATOR DUAL PUSHBUTTON	4
470-0302-0-14	4	CONTROLLER PROG GLC JOB1	1
470-0394-0-03	3	DIAL COUNTER 15T .25 DIA SHAFT	1
470-0394-0-02	2	POT 5K 10 TURN	1
470-0302-0-21	1	AMMETER AC 0-5A 1/16DIN	5
PART NUMBER	ITEM	DESCRIPTION	QTY

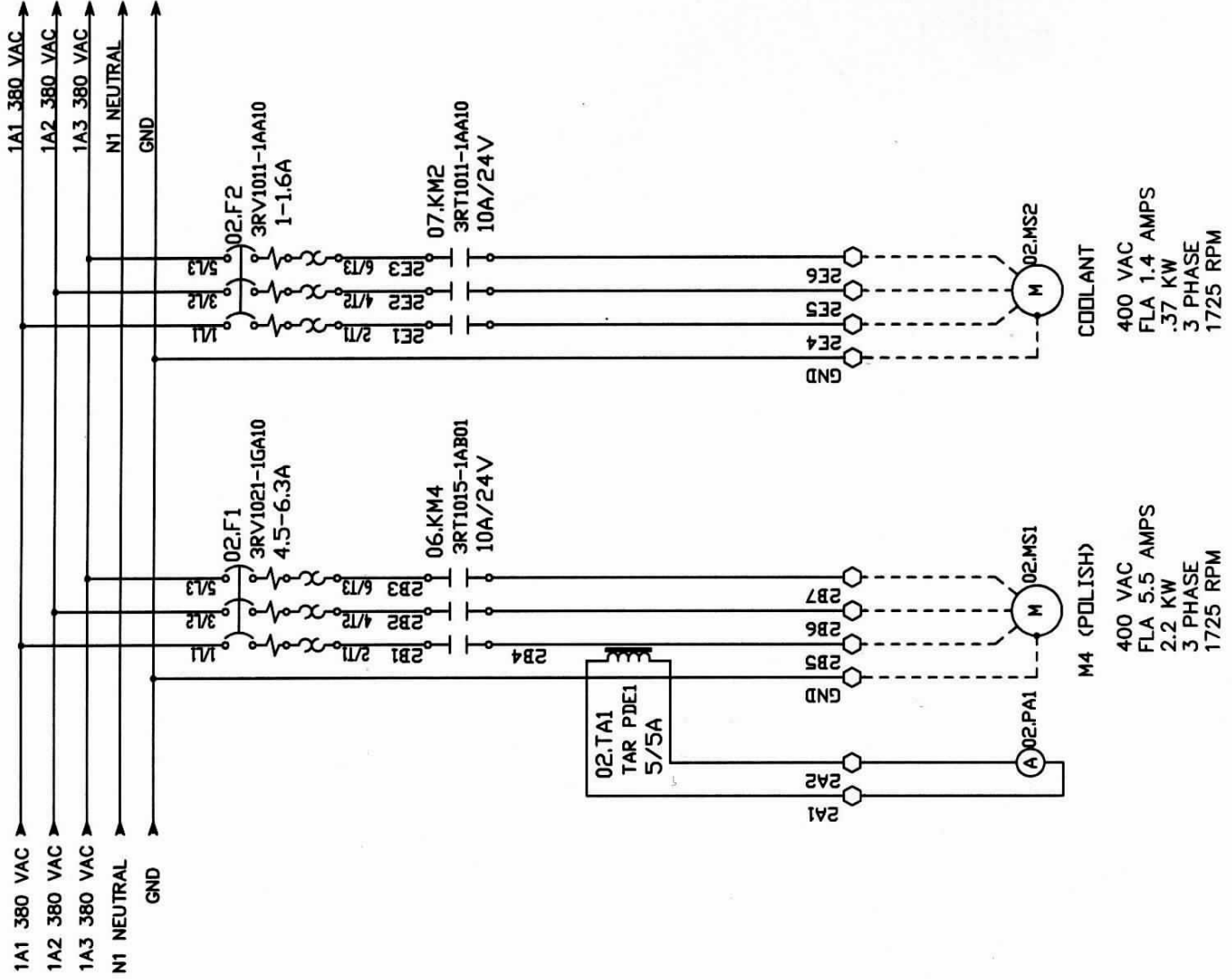
ANNEX #2

TO CUSTOMERS POWER SUPPLY
 3 PH 60 HZ 230 VAC
 SERVICE 60 AMPS
 FLA 44.3 AMPS
 LARGEST MOTOR 3 HP



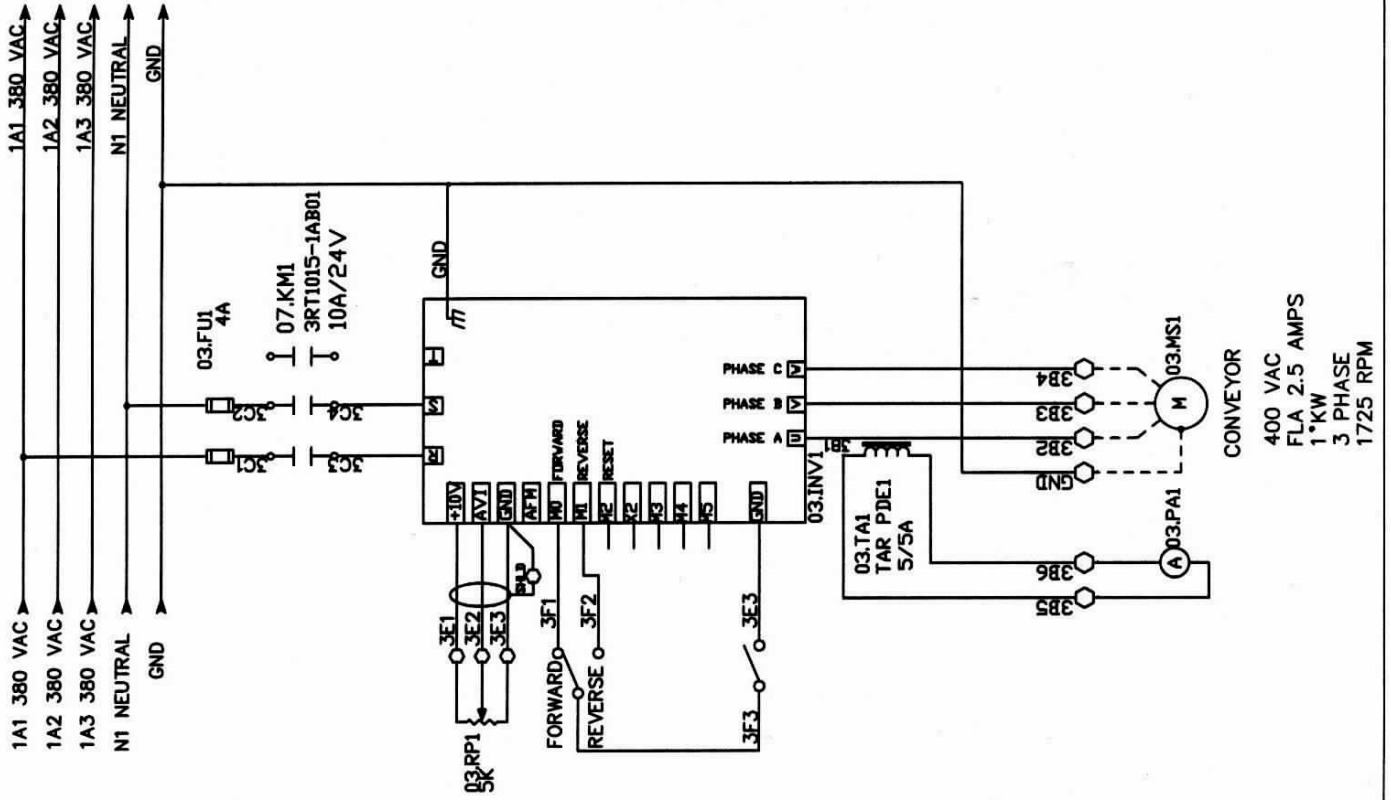
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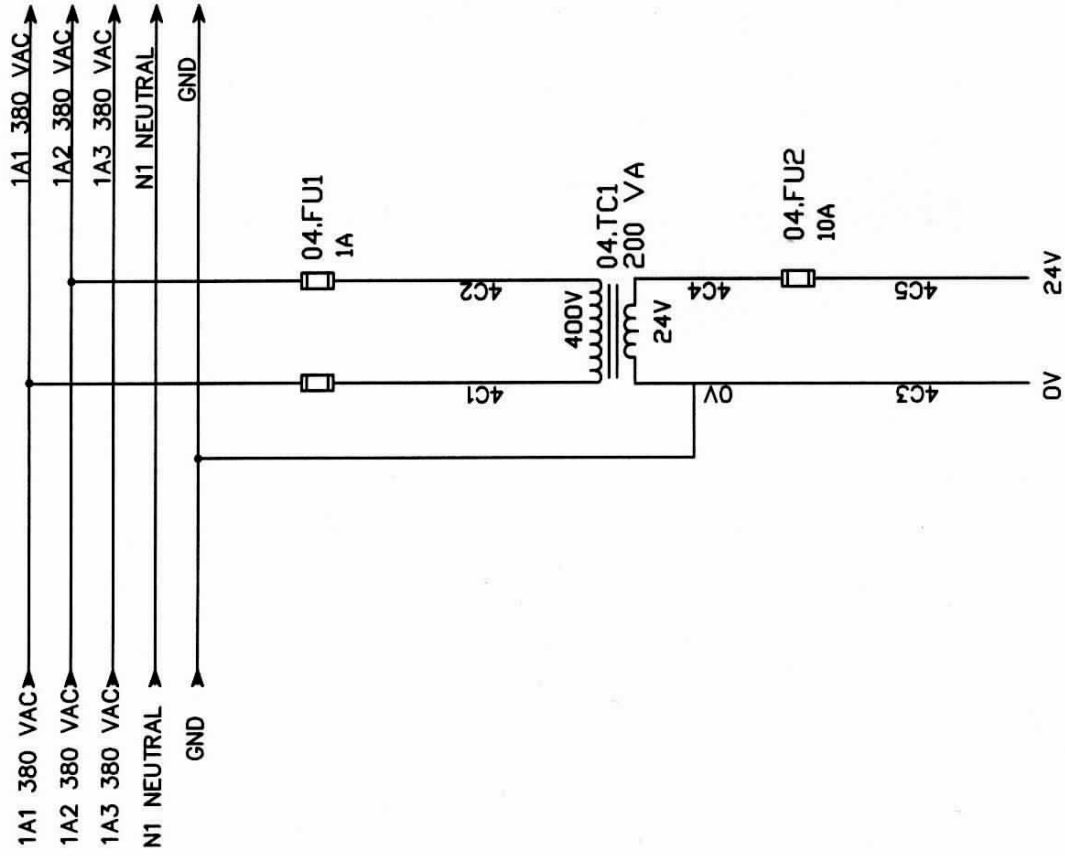
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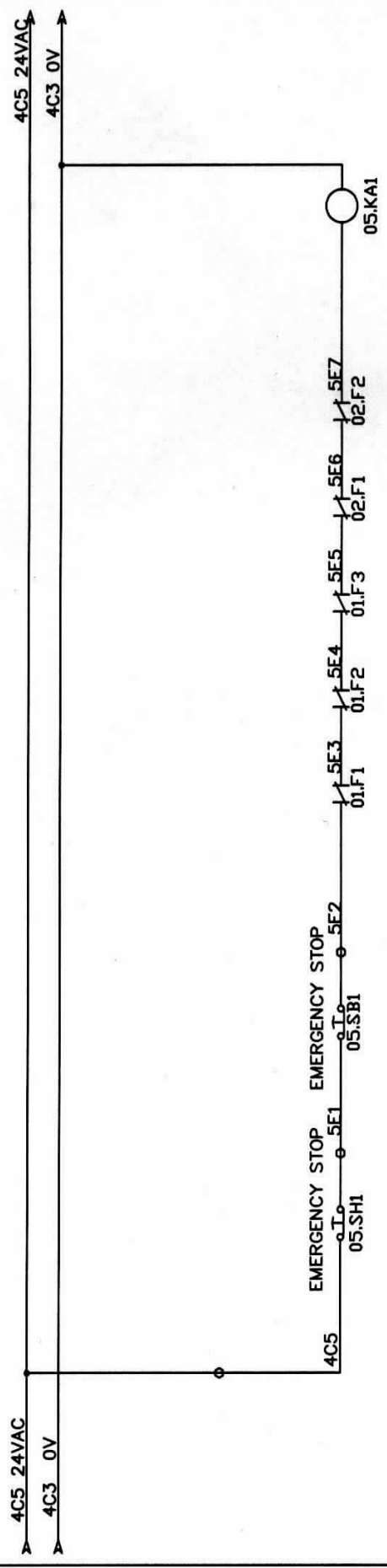


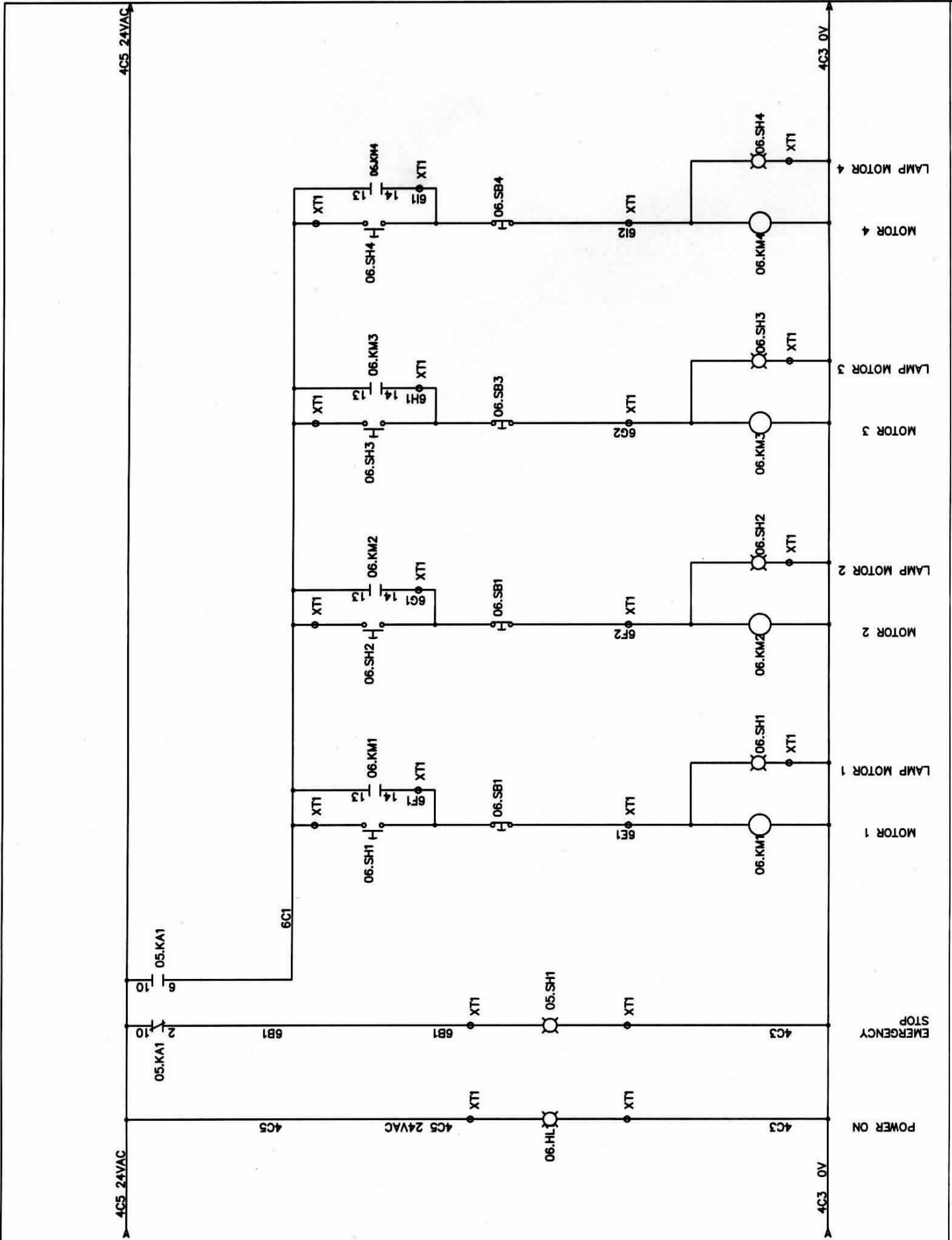
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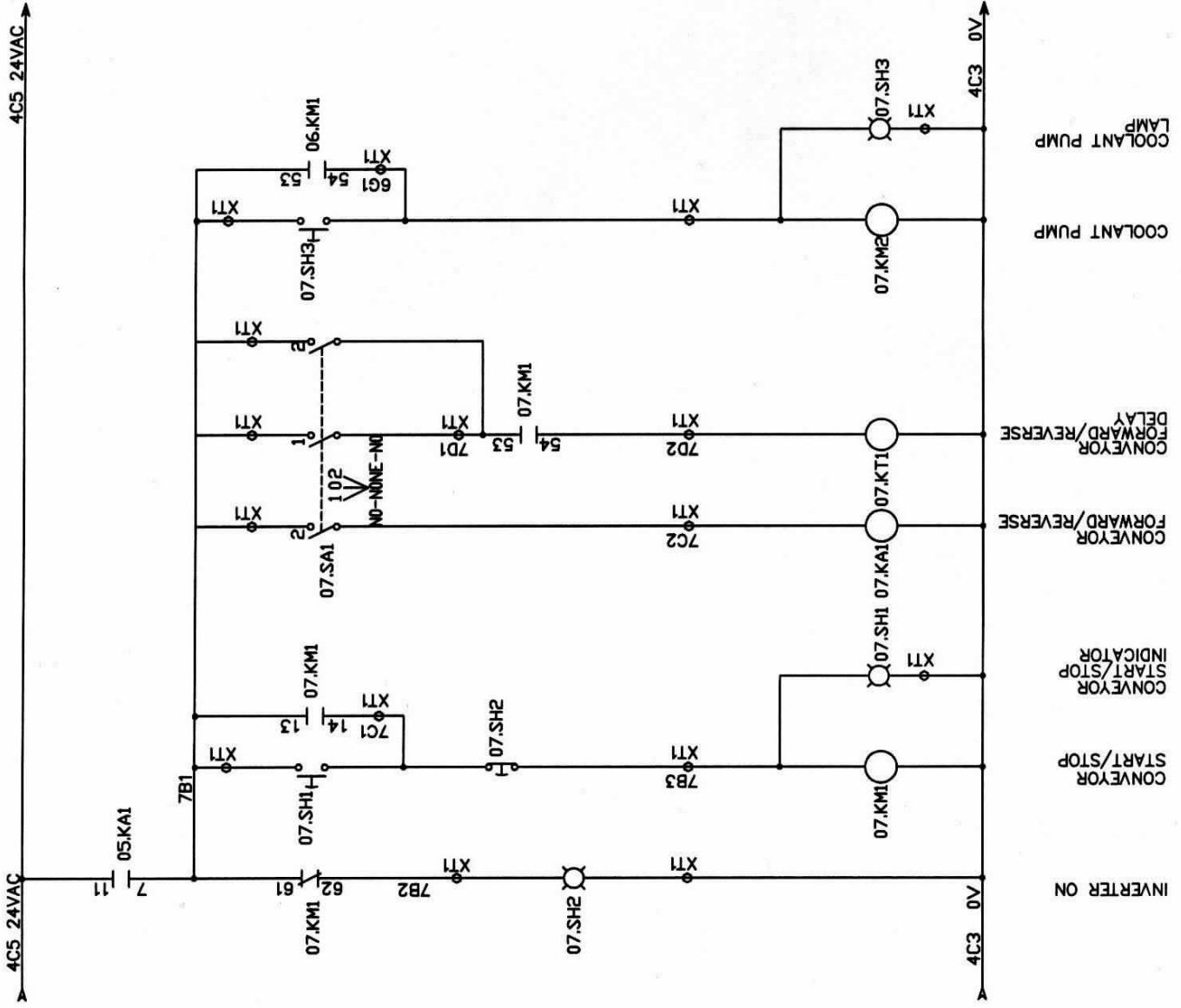
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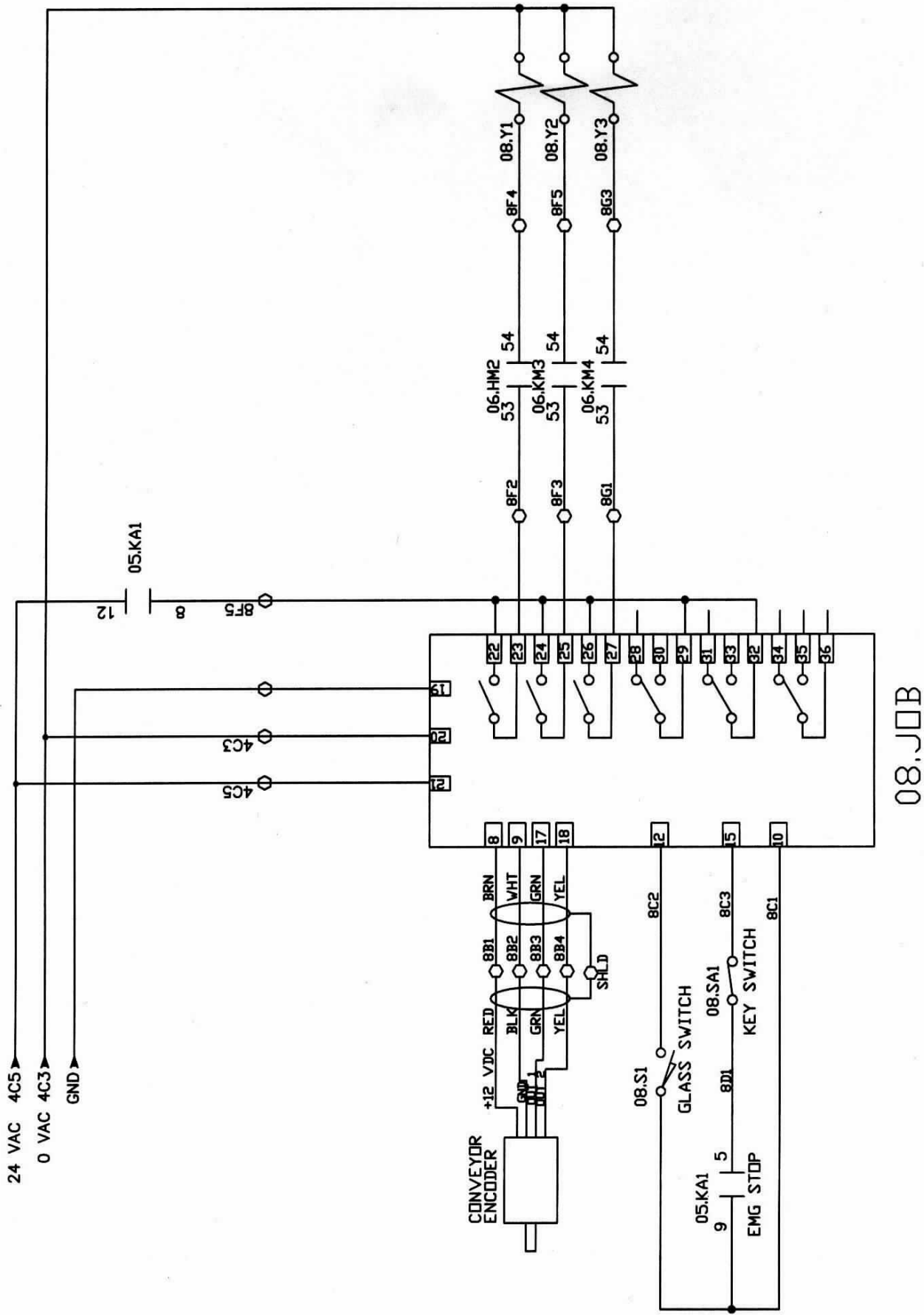


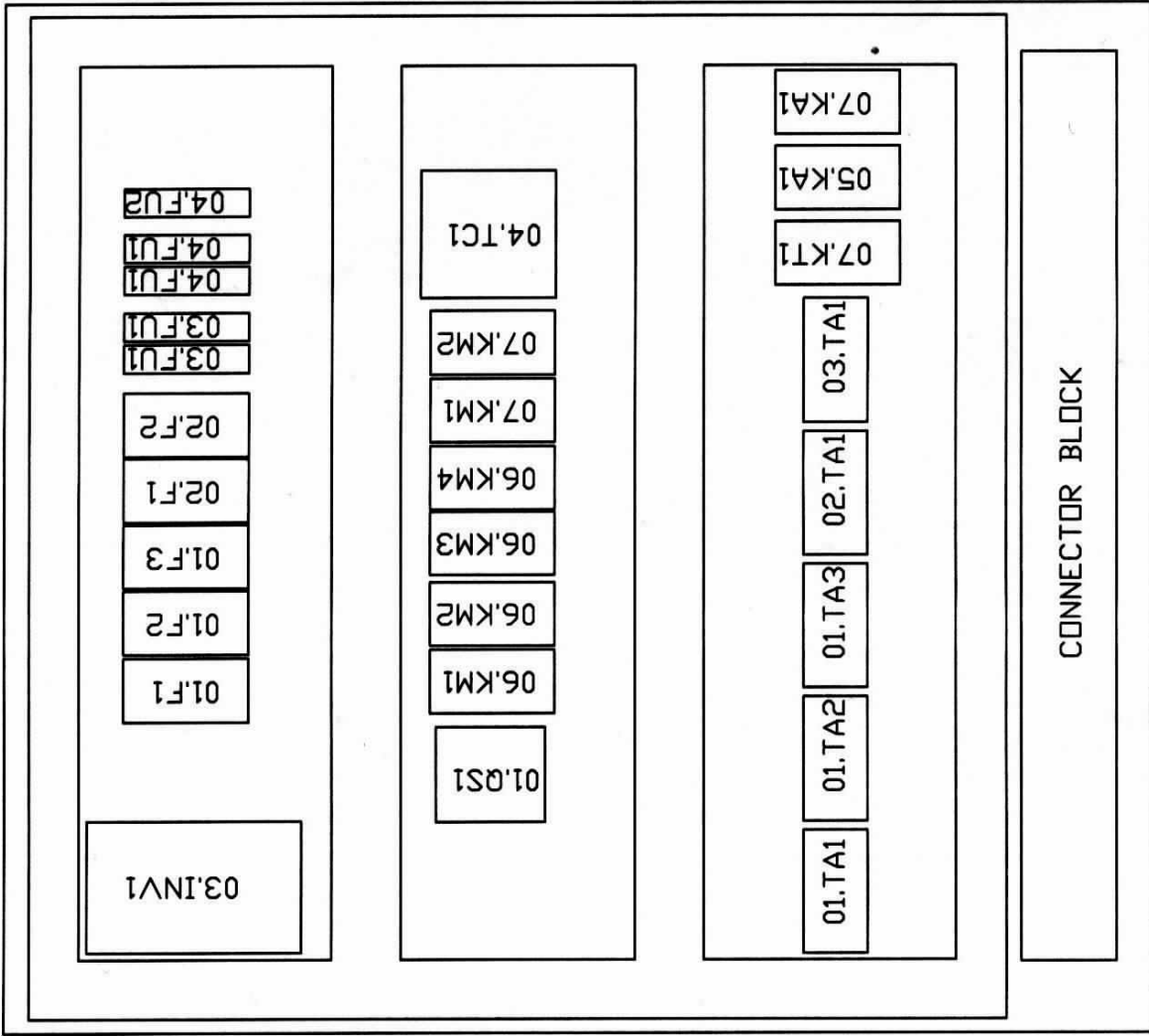
AUXILIARY CIRCUIT SUPPLY 24VAC





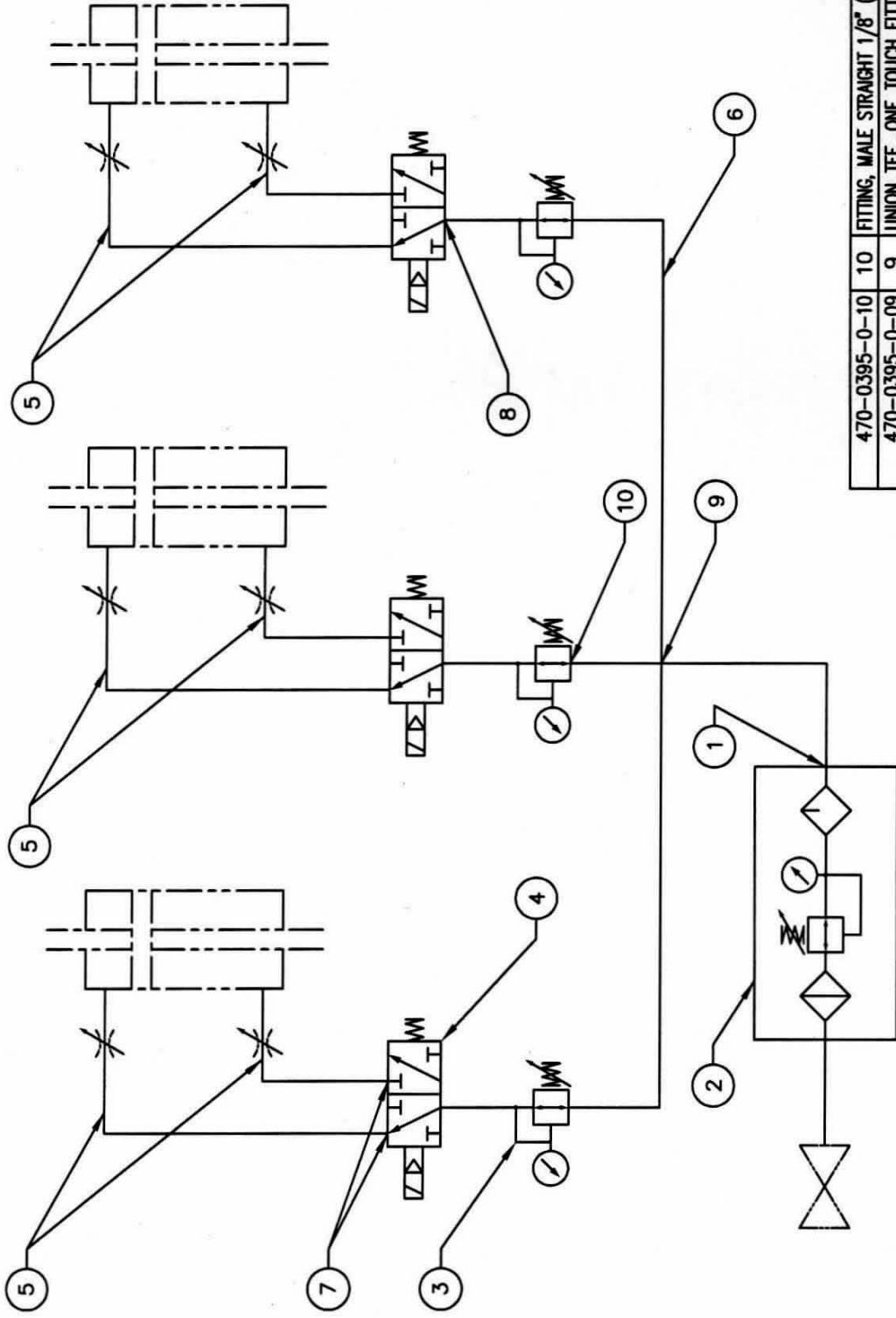






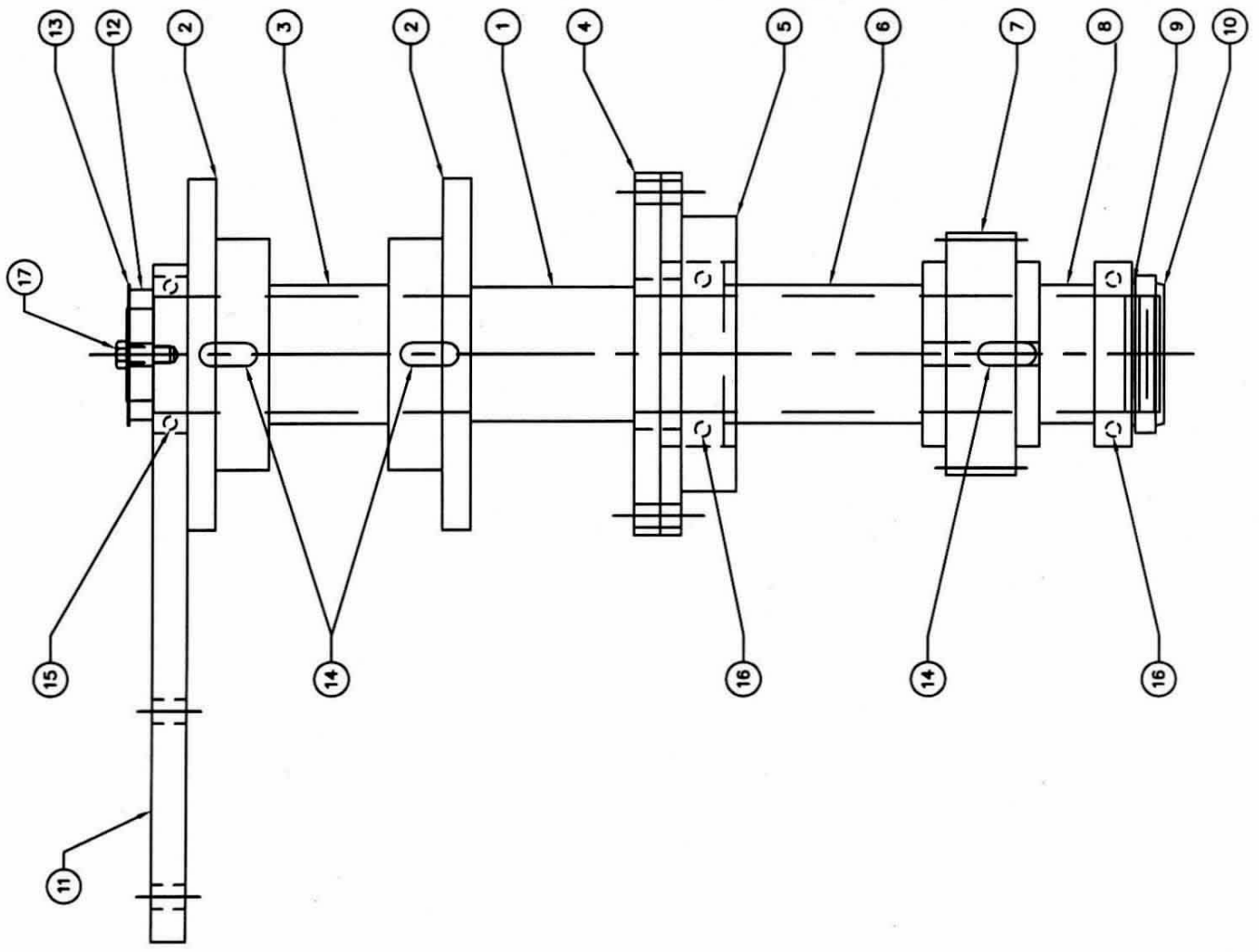
CONTROL ENCLOSURE LAYOUT

ANNEX #3

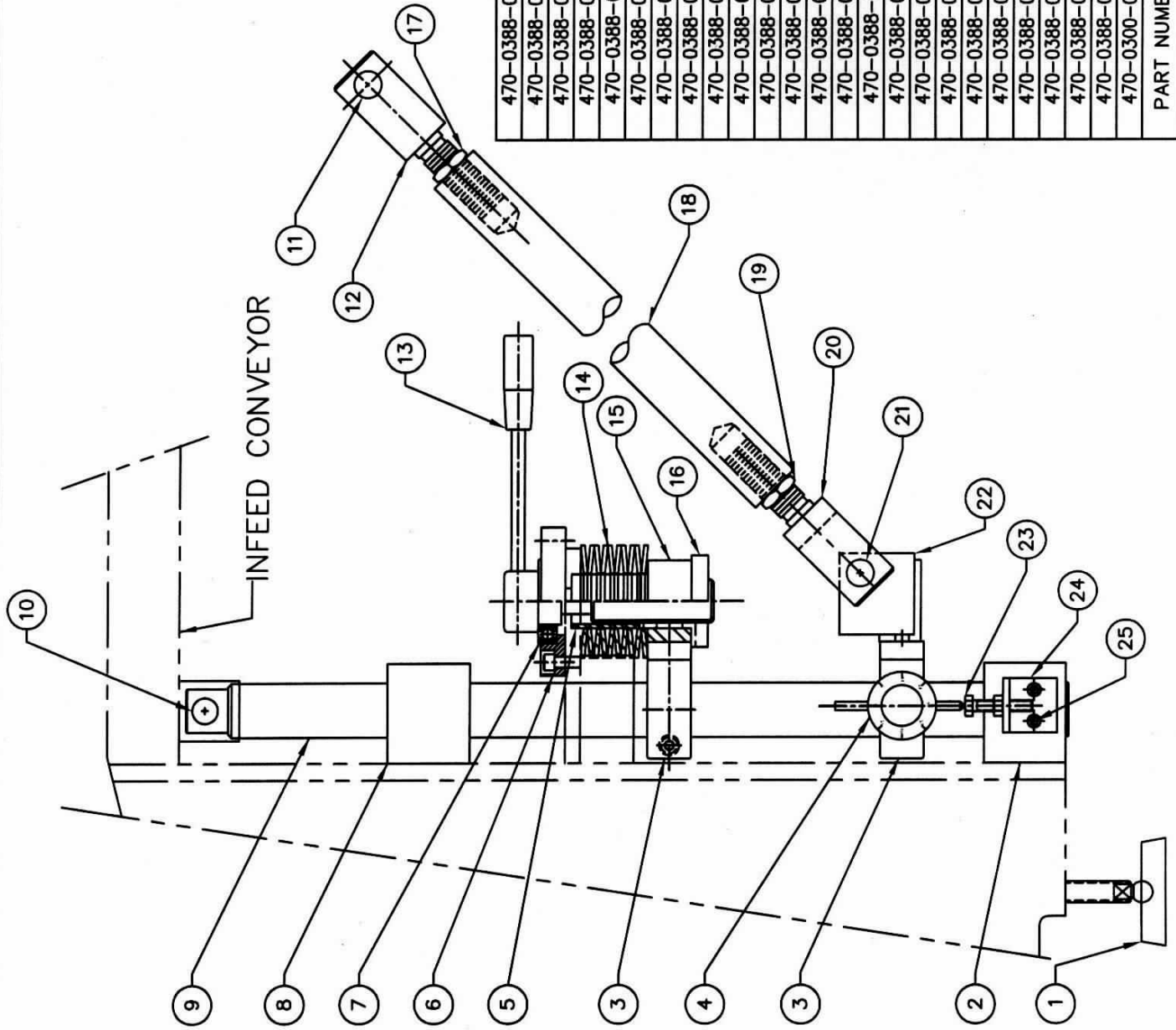


PART NUMBER	ITEM	DESCRIPTION	QTY
470-0395-0-10	10	FITTING, MALE STRAIGHT 1/8" (R)PT 6 mm TUBE	3
470-0395-0-09	9	UNION TEE, ONE TOUCH FITTING 6 mm TUBE	2
470-0395-0-08	8	FITTING, MALE ELBOW 1/8" (R)PT 6 mm TUBE	8
470-0395-0-07	7	FITTING, MALE ELBOW 1/8" (R)PT 4 mm TUBE	6
470-0395-0-08	6	NYLON TUBING 6 mm OD x 4 mm ID	6FT
470-0395-0-07	5	NYLON TUBING 4 mm OD x 2.7 mm ID	4FT
470-0302-1-29	4	SOLENOID VALVE 5/2	3
470-0302-1-16	3	PRESSURE REGULATOR W/DIAL INDICATOR	3
423-1522-5	2	FILTER, REGULATOR, LUBRICATOR	1
470-0395-0-02	1	FITTING, MALE ELBOW 1/4" NPT 6 mm TUBE	1

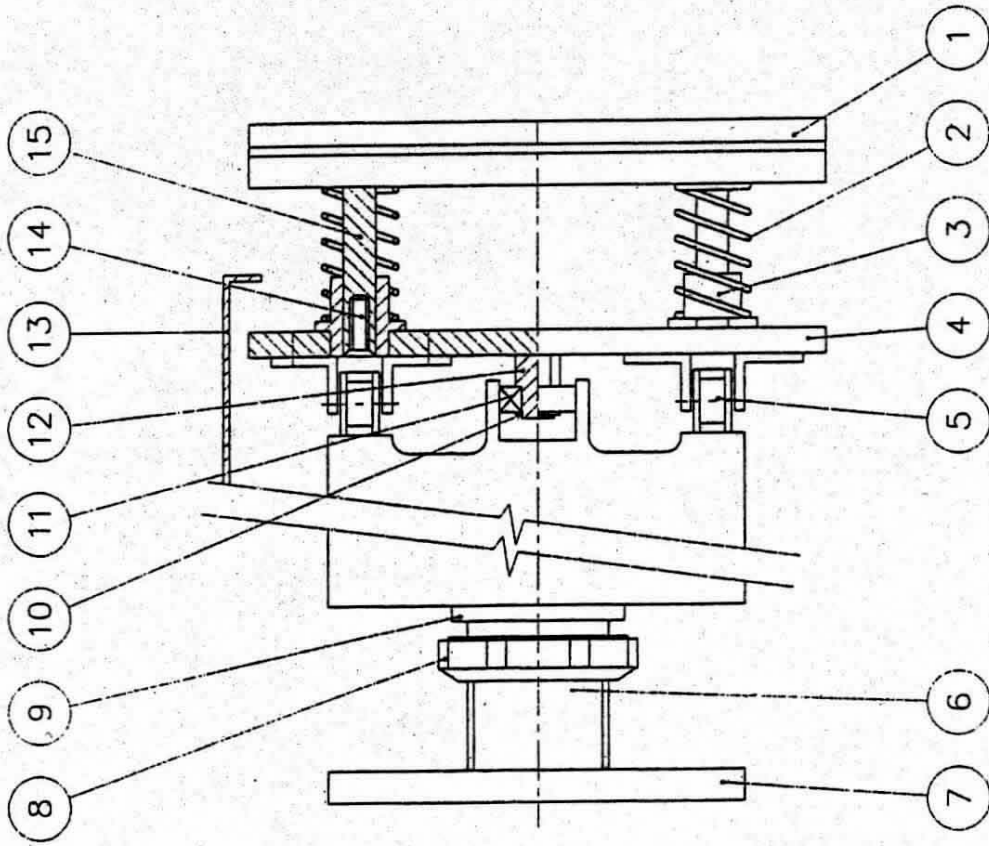
ANNEX #4



PART NUMBER	ITEM	DESCRIPTION	QTY
470-0396-0-17	17	HHCS M8 x 3/4 LG.	1
470-0396-0-16	16	BRG. NTN 6010 LU	2
470-0396-0-15	15	BRG. FAG 6008 SHB (W143)	1
470-0396-0-14	14	KEY, .97 LG x .39 WIDE x .31 THK RD. END	3
470-0396-0-13	13	SHIM, 2.41 O.D. x 1.60 I.D. x .03 THK.	1
470-0396-0-12	12	DISC, 2.22 O.D. x .38 I.D. x .41 THK. UHMW	1
470-0396-0-11	11	STEADY REST	1
470-0396-0-10	10	SHAFT NUT, M50 x 1.5	1
470-0396-0-09	9	SHIM, 2.42 O.D. x 1.97 I.D. x .06 THK.	1
470-0396-0-08	8	SPACER, LOWER	1
470-0396-0-07	7	HELICAL GEAR, PH=6, PT=8, Z=36 R.H.#1.969 BORE	1
470-0396-0-06	6	SPACER, INTERMEDIATE	1
470-0396-0-05	5	BRG. HOUSING - LOWER HALF	1
470-0396-0-04	4	BRG. HOUSING - UPPER HALF	1
470-0396-0-03	3	SPACER, UPPER	1
470-0396-0-02	2	SPROCKET - 2062B12	2
470-0396-0-01	1	DRIVE SHAFT	1

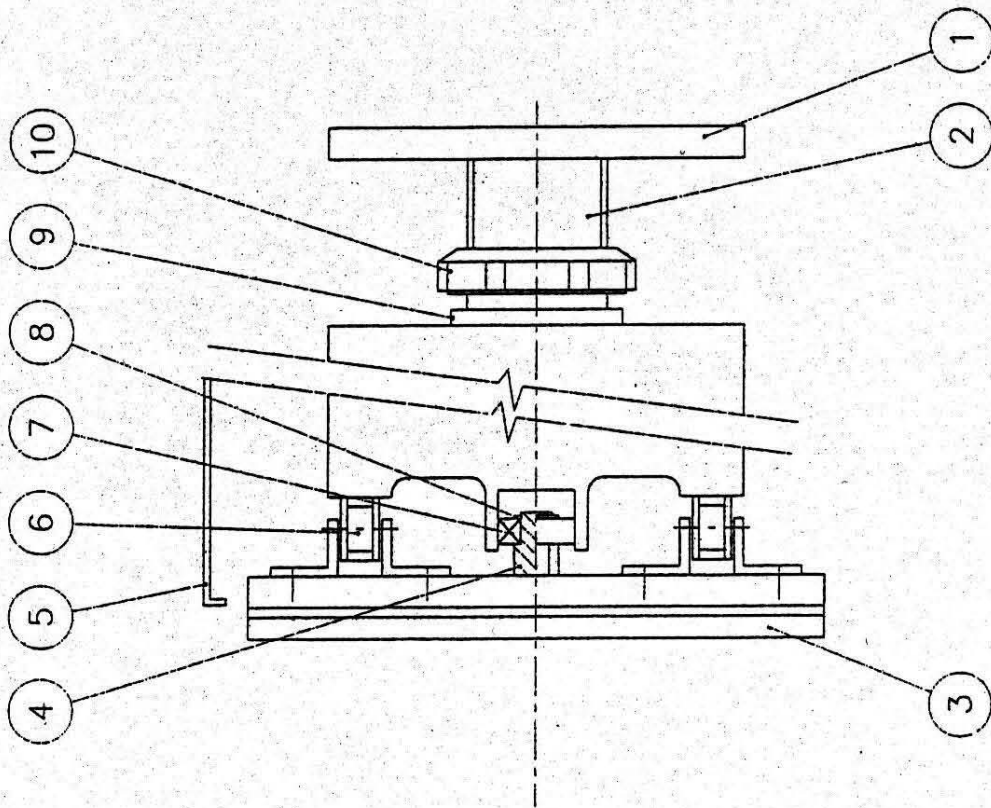


PART NUMBER	ITEM	DESCRIPTION	QTY
470-0388-0-25	25	SOCKET HEAD CAP SCREW, M6x1 5/BLG	1
470-0388-0-24	24	BRACKET	1
470-0388-0-23	23	HEX CAP SCREW, M8 x 1.25 1-3/4 LG	2
470-0388-0-22	22	CLEVIS BRACKET	1
470-0388-0-21	21	PIN, LOWER ROD EYE	1
470-0388-0-20	20	ROD END, GROOVED RIGHT HAND THREAD M24 x 2	1
470-0388-0-19	19	NUT, RIGHT HAND M24 x 2 BRASS	1
470-0388-0-18	18	SHAFT, TAPPED ENDS	1
470-0388-0-17	17	NUT, LEFT HAND M24 x 2 BRASS	1
470-0388-0-16	16	ACME NUT	1
470-0388-0-15	15	MOUNT, ACME NUT	1
470-0388-0-14	14	BELLEVILLE WASHERS	10
470-0388-0-13	13	HANDLE, CONVEYOR HEIGHT ADJUSTMENT	1
470-0388-0-12	12	ROD END, LEFT HAND THREAD M24 x 2	1
470-0388-0-11	11	PIN, CLEVIS	1
470-0388-0-10	10	PIN, SHAFT	1
470-0388-0-09	9	SHAFT	1
470-0388-0-08	8	UPPER BLOCK	1
470-0388-0-07	7	BEARING	1
470-0388-0-06	6	FLANGE	1
470-0388-0-05	5	SPACER	1
470-0388-0-04	4	DIAL INDICATOR	1
470-0388-0-03	3	BLOCK, SHAFT SUPPORT	2
470-0388-0-02	2	LOWER BLOCK	1
470-0300-0-04	1	LEVELER	4



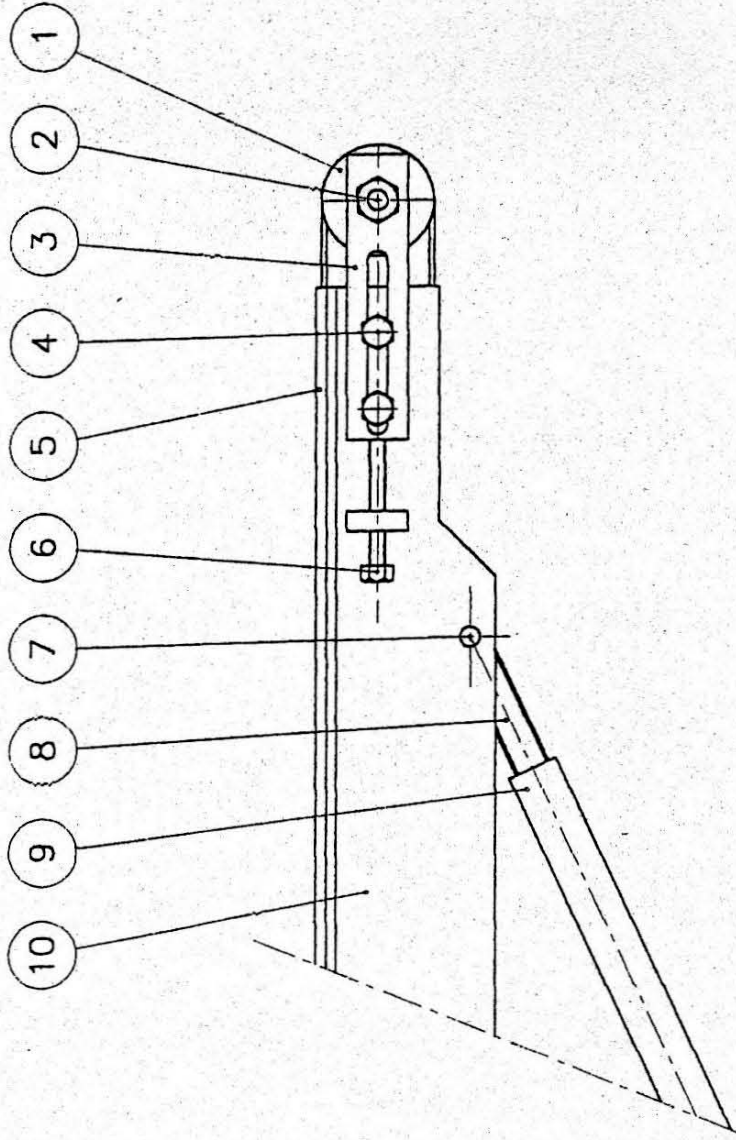
15	Perno pin
14	Vite di bloccaggio
13	Coiler
12	Perno cuscinetto
11	Cuscinetto
10	Seeger
9	Perno tenditore
8	Chiero
7	Piastra tenditore
6	Tubo tenditore
5	Catena
4	Tassello anteriore fisso
3	Supporto
2	Brassa supporti medio
1	Tassello mobile anteriore
POS. POS. DESCRIZIONE DESCRIPTION	

PROJ. DATA	REVISIONE	NO.	REV.	DATE
MACCHINA PER INCISIONI RETILINEE	MOD. LR. 530	GRUPPO CATENA ANTERIORE FRONT CHAIN GROUP		
P.A.		GLC		
SCALE	1:1	2	3	4
1	2	3	4	5
6	7	8	9	10
11	12	13	14	15
DWG	GCA			



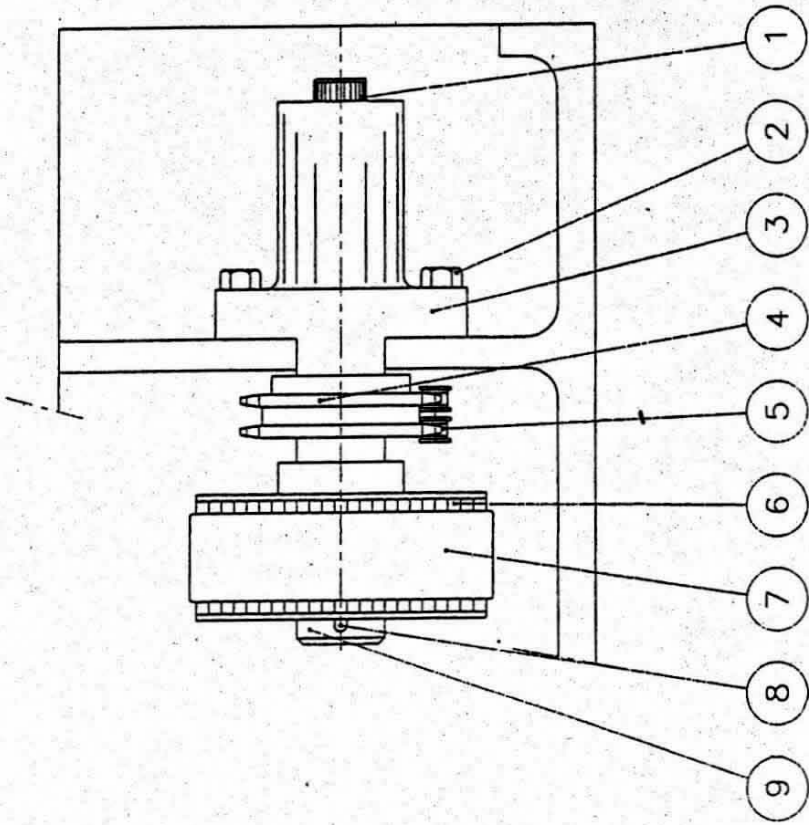
POS.	DESCRIZIONE	DESCRIPTION
10	Cilindro	Cylinder
9	Perno tenditori	Tension pin
8	Stegge	Spring
7	Cuscinetto	Ball bearing
6	Catena	Chain
5	Carter	Cover
4	Perno cuscinetto	Bearing pin
3	Tussole posteriore fuso	Rear guide shoe
2	Tubo tenditori	Tension roller
1	Roller	Roller

REV.	DATA	DESCRIZIONE	STATO
01	10/10/78	MACCHINA PER INCISIONI RETTILINEE	PRODOTTO
P.A.		GRUPPO CATENA POSTERIORE	
P.A.		REAR CHAIN GROUP	
P.A.		G.L.C.	
P.A.		D.W.C.	
P.A.		G.C.P.	



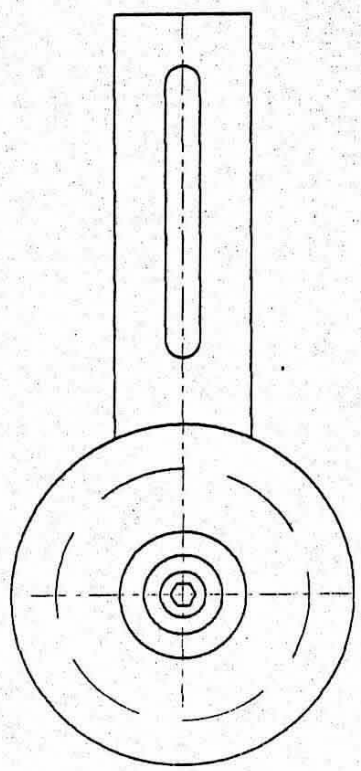
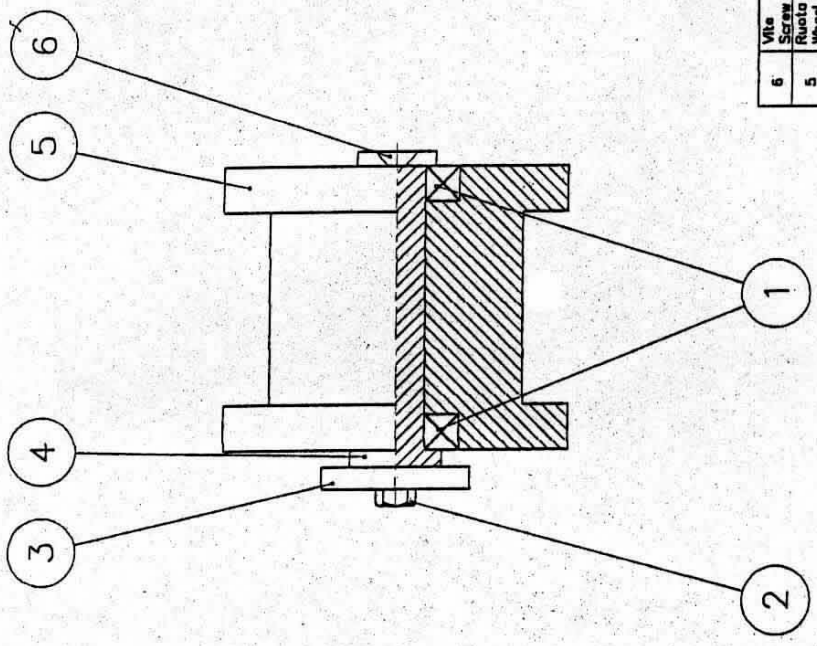
10	Braccio appoggio vetro Glass support
9	Tirante Tie-rod
8	Perno regolazione Adjustment pivot pin
7	Spina Pin
6	Vite tensionatura cinghia Belt turnbuckle
5	Guidacinghia Belt-guide
4	Vite serraggio supporto Screw of support
3	Supporto Support
2	Dado Nut
1	Puleggia Pulley
POS.	DESCRIZIONE
POS.	DESCRIPTION

KEY	DATE	REVISIONE	DESIGNER	DATE	REV.	DATE	REV.
1							
MACCHINA PER INCISIONI RETTILINEE		UNIT: BRACCIO APPOGGIO E TRASORNAMECIMENTO CRISTALLO					
MOD. I.R. 920		G.L.C.					
P.A.		0 1 2 3 4 5 6					
PULLEY		DWG					
BAY /		BATC					



POS.	DESCRIZIONE	DESCRIPTION
9	Albero Shaft	
8	Chiavetta Key	
7	Cinghia dentata Belt	
6	Puleggia dentata Pulley	
5	Catena 1/2" D 1/2" D chain	
4	Pignone dentato Pinion	
3	Supporto Support	
2	Vite bloccaggio supporto Screw of support	
1	Ghiera Ring nut	
POS.	DESCRIZIONE	DESCRIPTION

REV	DATA	DESCRIZIONE	DES.	PROV.
1				
MACCHINA PER INCISIONI RETTILINEE MOD. I.R. 620		UNIT. ALBERO E SUPPORTO CINGHIA TRASFORMAZIONE CRISTALLO		
P.A.		G.L.C.		
STRUTTURA PER INCISIONI RETTILINEE		DWG ASCTC		
0	1	2	3	4
5	6			

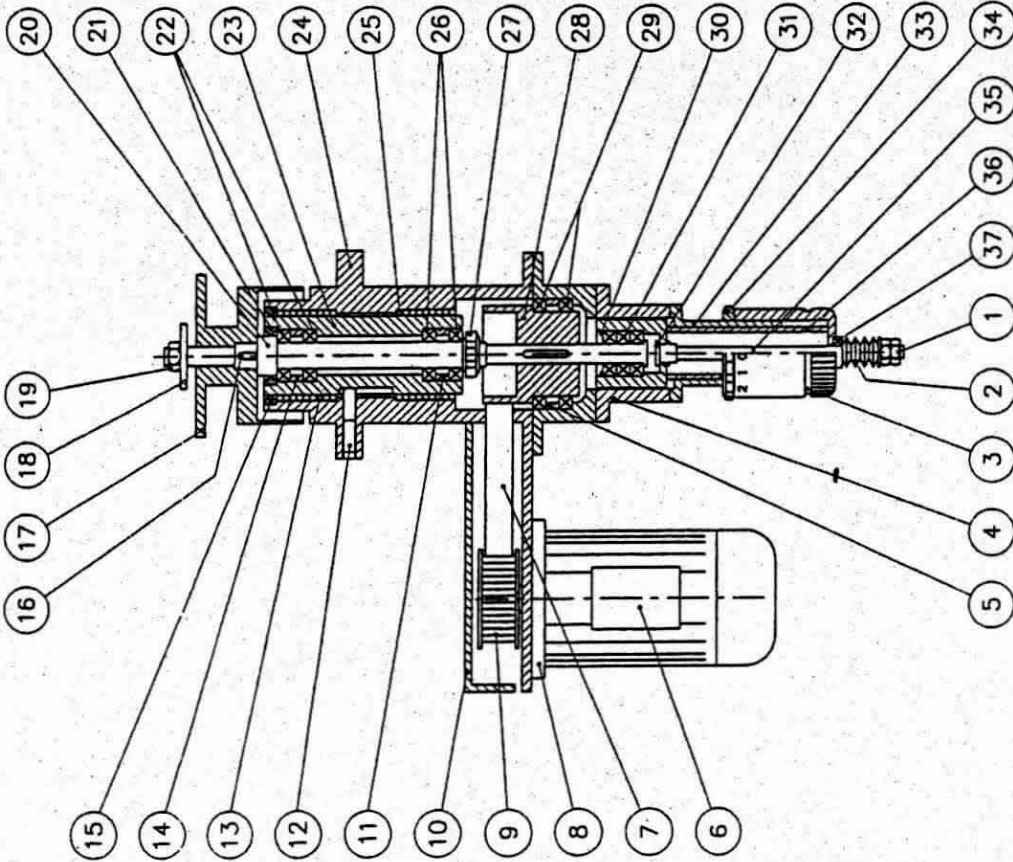


POS.	DESCRIZIONE	PREZZO UNITARIO
POS.	DESCRIPTION	PRICE EACH
6	Vite Screw	
5	Ruota Wheel	
4	Albero Shaft	
3	Staffa Bracket	
2	Vite Screw	
1	Cuscinetto Ball bearing	

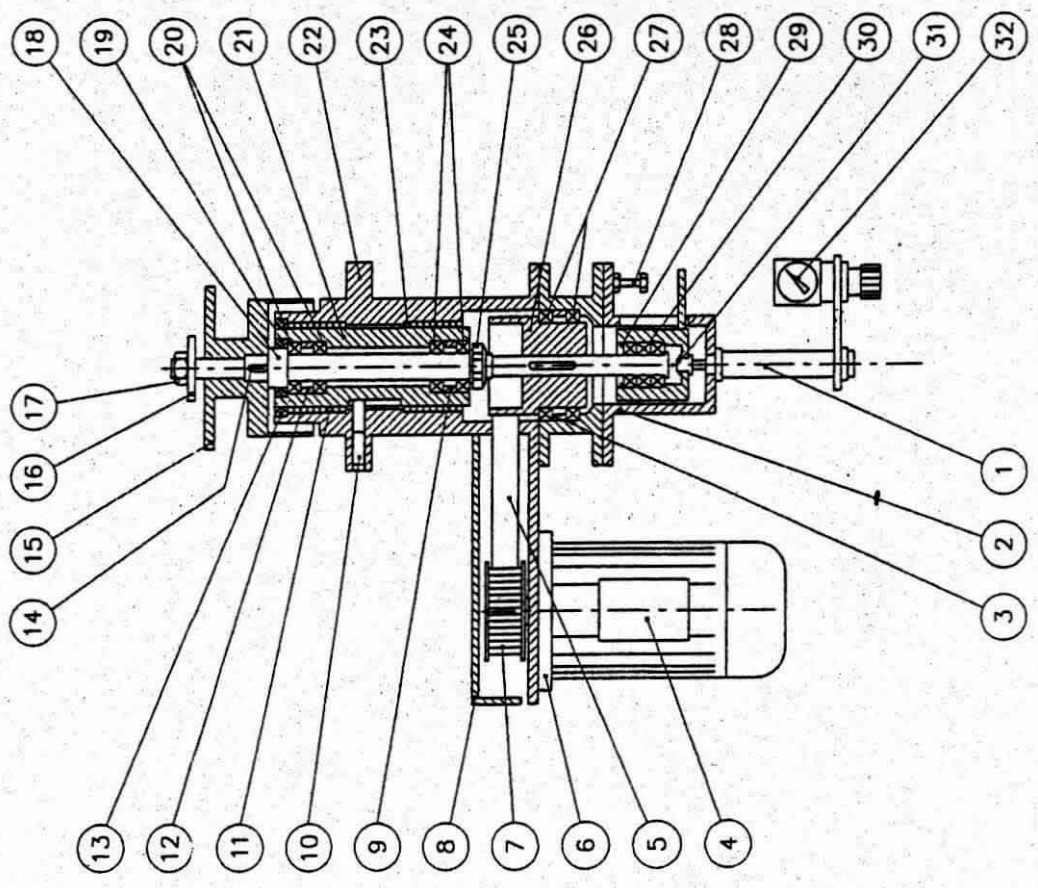
MACCHINA PER INCISIONI RETTILINEE MOD. LR. S/20		UNIT. GRUPPO TENDI CATENA TENSION CHAIN GROUP	
P.A.		G.L.C.	
1	2	3	4
5	6	DWG GTC	

33	Conotto registrazione mola - Sleeve for adjustment
32	Vite ottone + Seeger - Brass screw + "Seeger"
31	Cuschetti - Ball bearing
30	Seeger - "Seeger"
29	Cuschetti - Ball bearings
28	Puleggia - Pulley
27	Chiara - Ring nut
26	Cuschetti - Ball bearings
25	Cuschetto assiale - Axial bearing
24	Corpo mandrino - Spindle body
23	Connotto - Sleeve
22	Cuschetti - Ball bearings
21	Guarnizione - Gasket
20	Albero mandrino - Spindle shaft
19	Dado bloccaggio mola - Nut
18	Rondello bloccaggio mola - Locking washer
17	Piattello porta mola - Diamond wheel support
16	Chilavetta - Key
15	Guarnizione - Gasket
14	Distanziata - Distance ring
13	Cuschetto assiale - Axial bearing
12	Grani antirotazione - Antirotation dowel
11	Distanziata - Distance ring
10	Carta - Protection cover
9	Puleggia - Pulley
8	Slitte tendicinghia - Slide tightening belt
7	Cinghia - Belt
6	Motore - Electric motor
5	Distanziata - Distance ring
4	Campana - Cone
3	Nonio - "Nonio"
2	Molla a tezzo - "Belleville" washer
1	Dado - Nut
POS. / POS.	DESCRIZIONE / DESCRIPTION

MACCHINA PER INCISIONI RETILINEE MODEL. 620	MOT. MANDRINO MOLA DIAMANTATA DIAMOND WHEEL SPINDLE
P.A.	GLC
1 2 3 4 5 6	DWG MMD



37	Cuschetto - Ball bearing
36	Distanziata - Distance ring
35	Vite - Screw
34	Chiara - Ring nut



32	Manometro - Pressure gauge
31	Vite ottone + Seeger - Brass screw + "Seeger"
30	Cuschetti - Ball bearings
29	Seeger - "Seeger"
28	Vite di ferro - Stopped screw
27	Cuschetti - Ball bearings
26	Puleggia - Pulley
25	Chiera - Ring nut
24	Cuschetti - Ball bearing
23	Cuschetto assiale - Axial bearing
22	Corpo mandrino - Spindle body
21	Cannotta - Sleeve
20	Cuschetti - Ball bearings
19	Guarnizioni - Gasket
18	Albero mandrino - Spindle shaft
17	Dado bloccaggio mole - Nut
16	Rondello bloccaggio mole - Locking washer
15	Piattello porta mole - Diamond wheel support
14	Chiavetta - Key
13	Guarnizioni - Gasket
12	Distonziale - Distance ring
11	Cuschetto assiale - Axial bearing
10	Grani antirotazioni - Antirotation dowel
9	Distonziale - Distance ring
8	Carter - Protection cover
7	Puleggia - Pulley
6	Slitto tendicinghia - Slide tightening belt
5	Chiglia - Belt
4	Motore - Electric motor
3	Distonziale - Distance ring
2	Cono - Cone
1	Cilindro pneumatico - Pneumatic cylinder
POS.	DESCRIZIONE

PRODOTTORE	MACCHINA PER	MANDRINO MOLE LUCIDANTE
MODELLO	INCISIONI RETILINEE	POLISH WHEEL SPINDLE
NUMERO	MOD. 10. 979	
DATA	P.A.	
PRODOTTORE	G.L.C.	
NUMERO	0	1
DATA	2	3
PRODOTTORE	4	5
NUMERO	6	7
DATA	8	9
PRODOTTORE	10	11
NUMERO	12	13
DATA	14	15
PRODOTTORE	16	17
NUMERO	18	19
DATA	20	21
PRODOTTORE	22	23
NUMERO	24	25
DATA	26	27
PRODOTTORE	28	29
NUMERO	30	31
DATA	32	
PRODOTTORE	DWG	MML

ANNEX #5

Programming of “Mini-Job” Controller

Caution: Parameters have been factory set. Changes to these settings without consulting supplier may void warranty.

The procedure for making program or parameter changes of the distance settings from the glass micro switch are as follows:

1. Insert the proper key into the keyed switch and turn the key clockwise to switch to programming mode.
2. Press **F** and then **1**. The word **ACCES** will appear at this time.
3. Press **C** and in sequence the numbers **14863**.
4. Press **M** to confirm the parameter settings. The first parameter that will appear on the screen is the **CC**, which is the ratio between the encoder and the shifting of glass; it is always fixed at **2300**.
5. Press **M**, The second parameter is **LO**, which is always set at **60**.
6. Press **M**. **NL** will display.
7. Enter **1** to program **NL1**, which is the set of parameters to program the distance between the first seam wheel (spindle **M2**) and the glass micro switch of entrance.

12. Press **M** to memorize and the display will show **END**
13. Wait for 5-7 seconds. After **NL** will display again, enter **2** to set **NL2** or **3** to set **NL3**.
14. After you entered **NL1**, **NL2** and **NL3**, you need to switch to operating mode. After the waiting period of 5-7 seconds that precedes the display of **END**, enter **F**, enter **6** then switch and turn the key counter-clockwise to switch from programming to operating mode.

VFE-6 PROGRAMMING PARAMETERS				
	SPINDLE	DS	E1	E0
NL1	M3	360	-25	40
NL2	M4	518	-25	40
NL3	M5	760	-15	30

Figure1

Notes: it is possible to program **NL1, 2, 3** or **4** in different modes, in our case all parameters are to be set in **AUT**.

8. Press the **M** key to select **AUT**.
9. Press **M**. The will automatically see **DS**, which is the distance of the grinding wheel to the glass micro switch of entrance, then enter value of (**360**) (see **Figure1 & 2**).
10. Press **M**, you will automatically see **E1**, then enter the pre-insertion value of “-25” (see **Figure1 & 2**).
11. Press **M** and you will automatically see **E0**, then enter the grinding wheel post-release value of “40” (see **Figure1 & 2**).

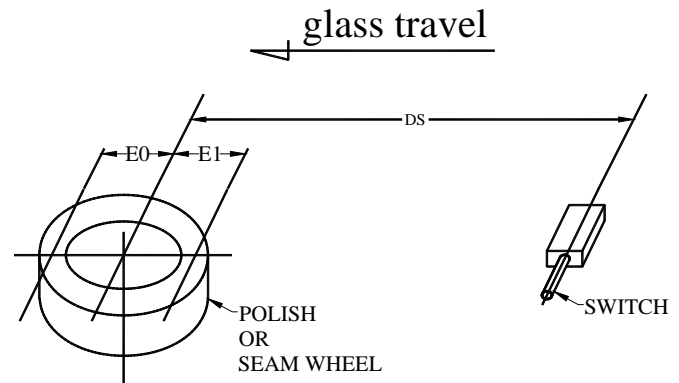


Figure2