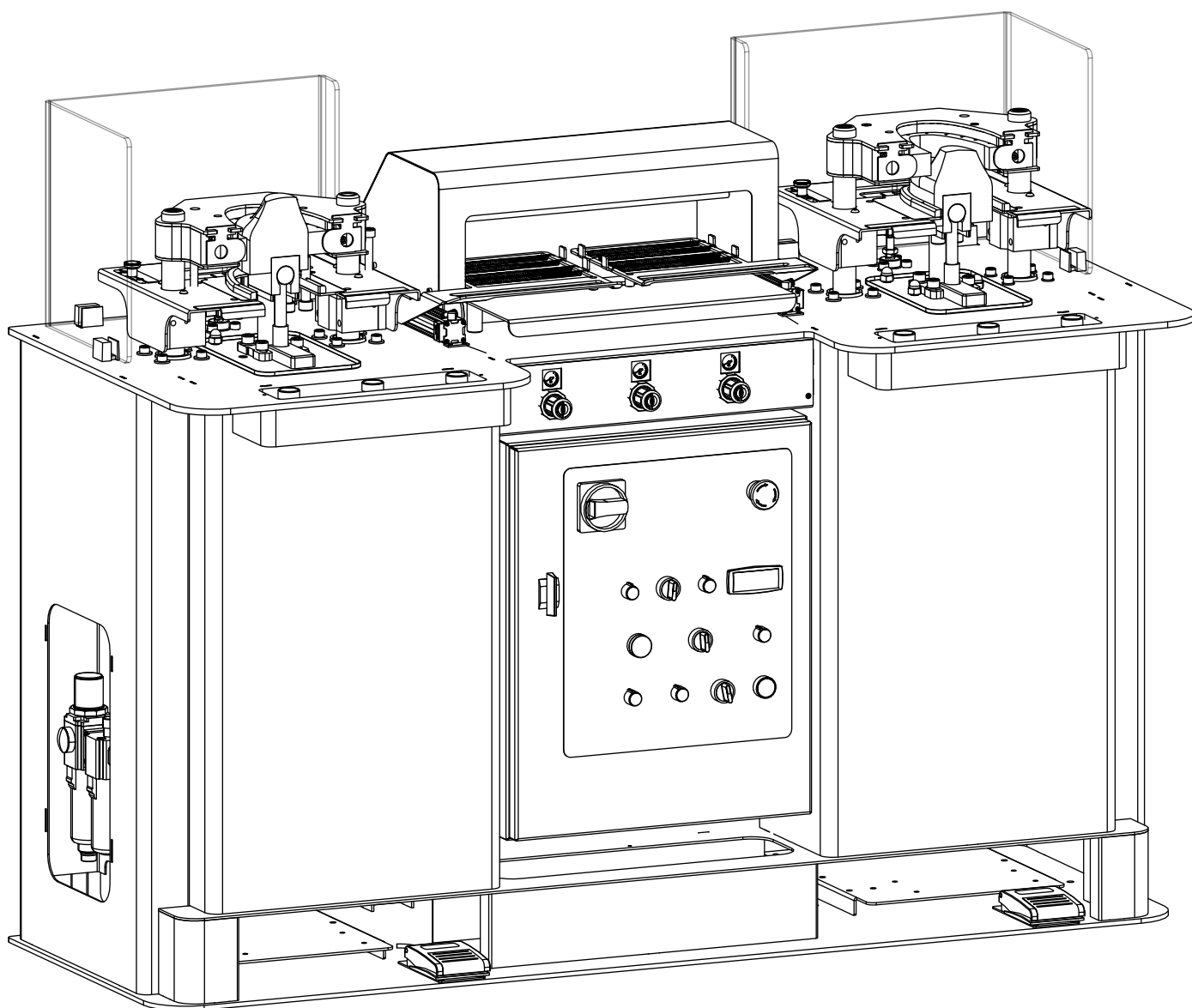


OPERATOR'S MANUAL



TM-17

VER. ASM-01026

TM-17ST with sliding tables

VER. ASM-01237

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Introduction

The purpose of this manual is to inform the owner of this machine for its operation, its maintenance and for all the safety regulations.

Please read carefully all the instructions and follow them in order to use the machine properly in the production and avoid any case of injuries.

Our company does not have any responsibility for any changes happened on the machine by the owner, or actions which are different to what this manual refers.

SAFETY REGULATIONS

This machine is intended for professional use only.



WARNING!

Only one operator may work on the machine at a time.



WARNING!

Read and follow carefully all the relative instructions to avoid serious injury.

Only qualified and authorized personnel must use the machine.

- Operators are expressly forbidden to use the machine under the influence of alcohol or drugs capable of affecting physical and mental capacity.
- Keep unauthorized persons away from the work area.
- Make sure that the machine has been installed in compliance with the established legislation and standards.
- Always keep this user manual in a place where it can be readily consulted when working on the machine. Consult it whenever you are in need of information or explanation.
- Do not remove or deface the safety, danger, warning or instruction signs. Replace any missing or illegible Danger, Warning or instructions signs.
- Never use the machine if you notice any damaged electric wires.
- Never install the machine outdoors or in any place with a lot of moisture.



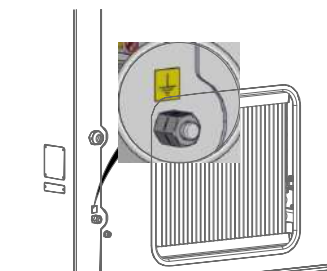
WARNING

Use only original spare parts, which can be supplied by the manufacturer or the local agent. Otherwise, your machine will not be a CE product.



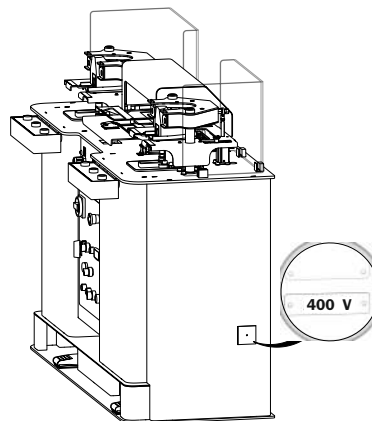
WARNING

The machine frame must be earthed using the outside connection point marked according to the CE norms.



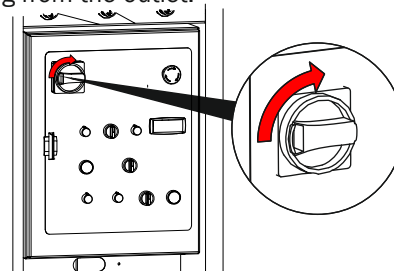
Electric and pneumatic connections

1. Connect the machine (THREE PHASE 220V - 50/60Hz).
2. Before plugging in the machine, check that the main supply voltage is the same as that indicated on the label situated on the back side of the machine.

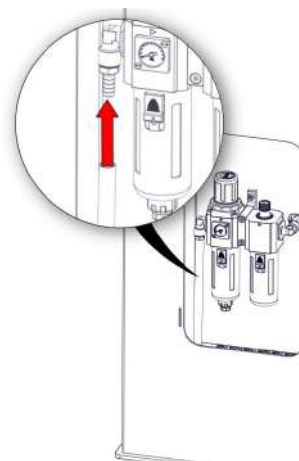


3. Check if the plug and socket have the same technical type. If not, use the suitable adapter after having consulted a certified electrician.

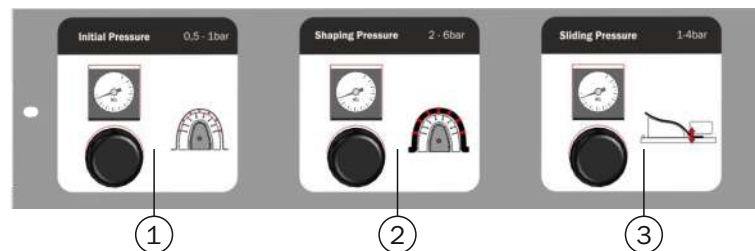
4. To disconnect the machine, turn the main switch off and remove the plug from the outlet.



5. Connect the machine to air pressure 6 - 8bar.
6. Connect the proper pneumatic hose. Set the main pressure regulator, which is found, on the back part of the machine to 6 Bar.



Panel Adjustments



1. Initial Pressure (0,5 - 1 bar)

This is the initial pressure applied on the toe band from beginning to the 1st clamping point.

2. Shaping Pressure (2 - 6 bar)

This is the pressure applied on the toe band from the 1st clamping point until the full programmed stroke.

3. Sliding Pressure (1 - 4 bar)

This is the sliding pressure inside the clamping mechanism.



4. Reactivating Temperature

Adjusts the activation temperature inside the heating chamber.

5. Steam

Turns Steam Flow ON/OFF.

6. Steam Quantity

Adjusts the quantity of the steam.

7. Emergency

Shuts down electrically all the machine supplies.

8a. Steam Temperature

Sets the temperature inside the steam generator. Normal setting 190°C. Set the temperature according the material you use.

8b. Thermoregulator adjustment

To adjust thermoregulator press the DOWN arrow. When the digits start blinking use the UP and DOWN arrows to adjust the temperature. Then you press instantly the **P** button.

9. Water Low Level

Turns on and buzzes when the water level is low.

10. Cooling Unit

Turns Cooling Units ON/OFF.

11. Activation Timer

The insertion time of the table in the activator.

12. Timer

This is the overall cycle time of the machine.

13. Pressure Delay

This is the delay between the 1st clamping point and the application of the high pressure on the toe band (in mm).

14. Setup Selector

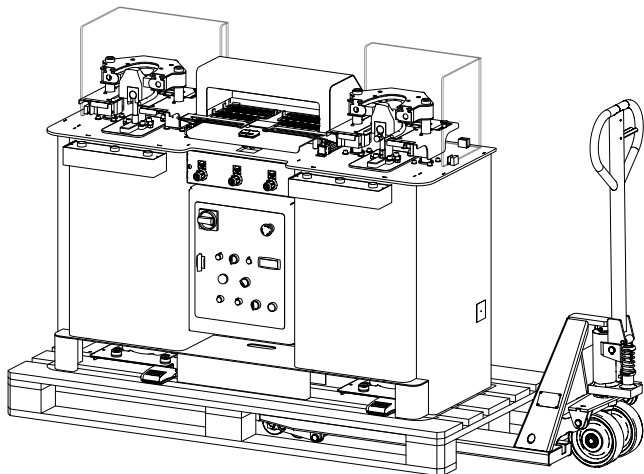
Select Normal for machine normal operation, or Program to setup new molds.

15. Save Position

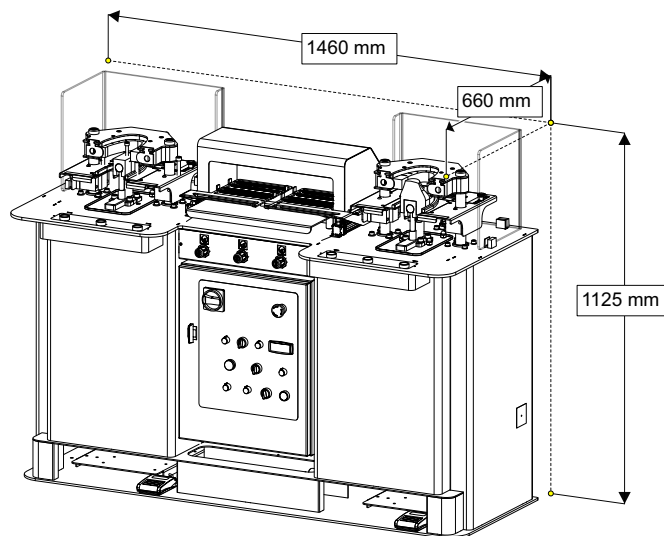
Stores the points in the memory during programming.

Holding - Transportation

Pass the trans-pallet's forks under the pallet as shown in the Figure below.



Technical data & Dimensioning



Maintenance of cooling unit

Clean the condenser (radiator) of the cooling unit once per month by using air pressure.

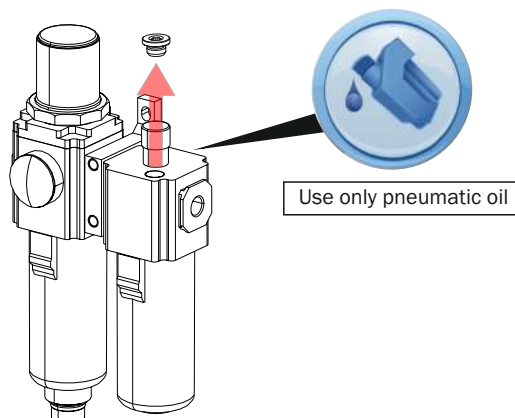


Technical Data

OPERATION	Electric-Pneumatic
PRESSURE	6 Bar
CAPACITY (8 hours)	1000 pairs
VOLTAGE	400VAC three phase 50Hz
POWER	5000 W
DIMENSIONS (mm)	1400 X 659 X 1100
WEIGHT	400Kgs

Lubrication

Keep the FRL (air-filter-regulator & lubricator) always filled with oil. We note that with 8 hours of work per day, the lubricator oil is consumed within 20-25 days approximately. If this does not occur, adjust the oil flow using the adjuster on upper part of lubricator. We recommend the use of pneumatic oil. Once per week lubricate all moving parts of the machine.



COOLING UNIT SPECIFICATIONS

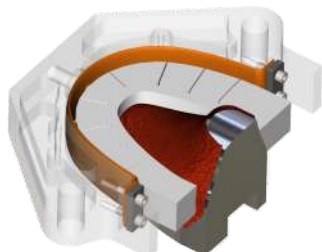
Cooling gas type	R404A
Cooling gas qty	250gr
Compressor Power	3/8 Hp

Pressure Delay

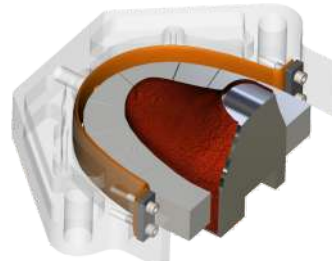


This function controls the delay of tubular high pressure on the end stroke position

First Stroke



End Stroke



Programming new molds in the machine

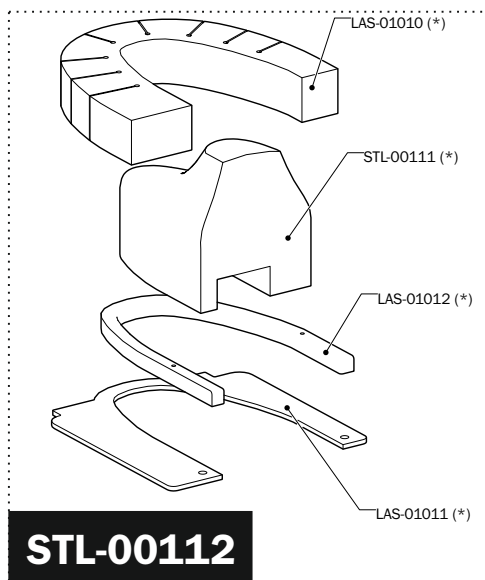
After you have placed new molds in the machine, you must program it, to get the optimum results.

Attention: The program can only occur at the right station. There is no need to program the left station (it is automatically programmed).

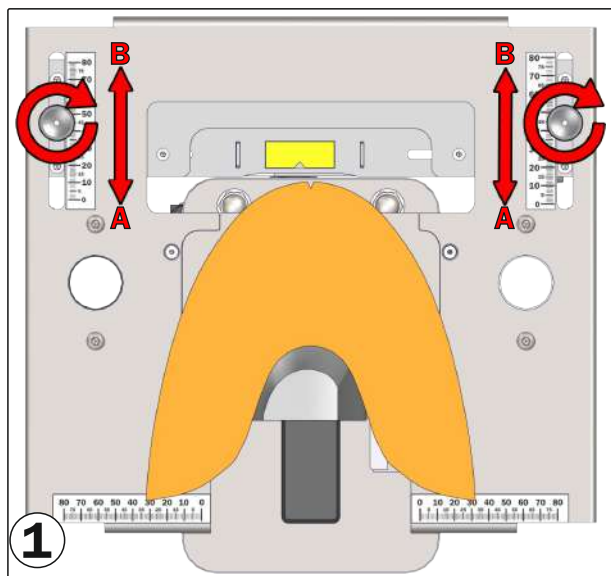
1. Turn **Switch Normal/Program (13)** to the Program position.
2. Load an upper in the machine as you would in normal operation.
3. Start by pressing continuously the foot switch (the tray will lift and lock in place), then use the two start buttons and press in small repeated steps until you achieve the initial touching of the male mold.
4. At that point, if you overpass, by pressing the Release button, (in small repeated steps) you can go up and down until you find the desirable position i.e. the pedal + buttons moves the Head down, the Release button moves the Head up (don't press all at the same time).
5. When you have reached the desired 1st point press the **Save Position (14) ONCE**
6. Continue pressing the pedal+ buttons in increments until
 - a. all the leather is pulled through the clamp and press on the toe band for normal Strobel uppers
 - b. the desired folding margin remains for stitch-down uppers
7. After you have reached the desired point press once again the **Save Position (14)**. The machine at this point saves the program. When you set the **Switch Normal/Program (13)** to the Normal position, the machine returns to the Normal function.

Order Instructions

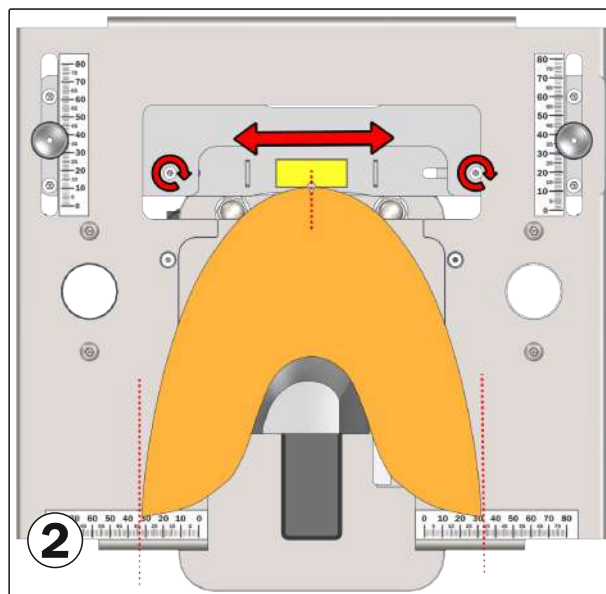
In order to achieve the toe molding best result, you should provide us with the desired 3D last model (physical or digital) in order to design and manufacture the set of components required for your last respectively.



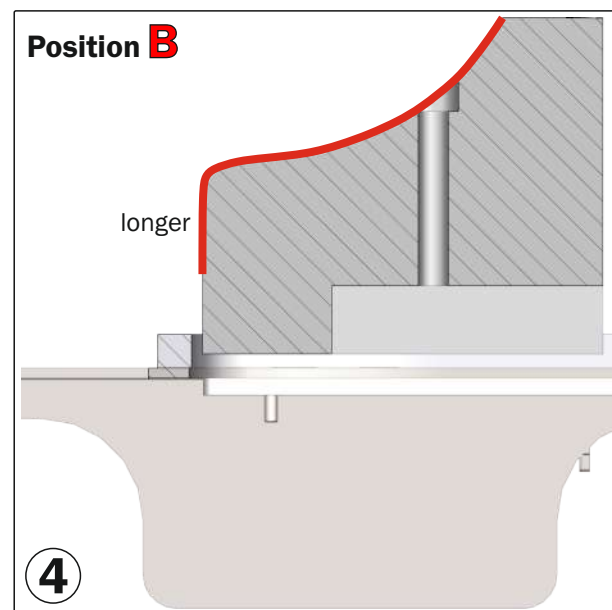
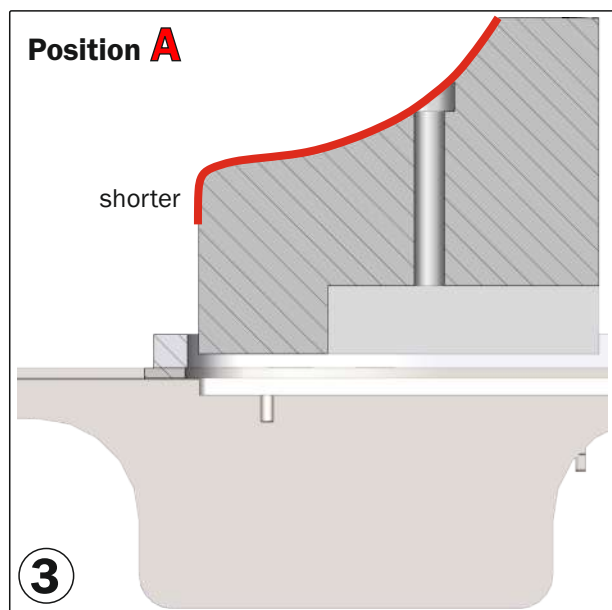
Vamp guidance settings



1. Adjust the guide backward (pos. A) and forward (pos. B) according to the desired moulding length (see Fig. 3,4), by unscrewing the holders and move as shown. The plastic light diffuser is used also for stopper of the vamp.



2. Adjust the mark on the vamp with the mark on the light diffuser by unscrewing the two screws and move the guide system accordingly.



3, 4. The closer the guide to the last, the shorter the moulding length (see Fig.3). The farthest the guide from the last, the longer the moulding length (see Fig.4).

Operation

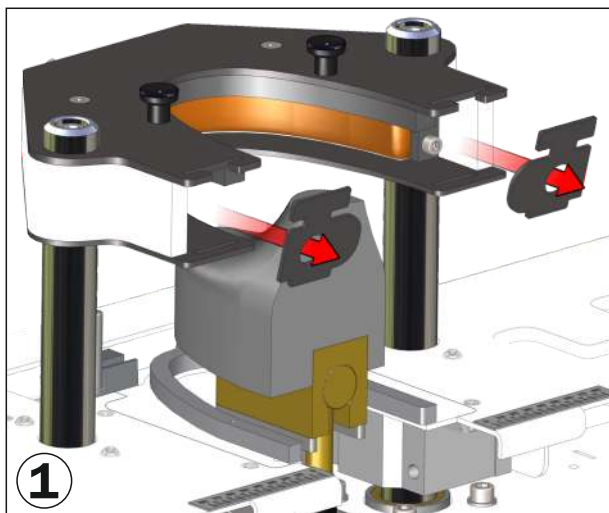


1. After humidifying the upper, place the upper in the last, according to the guidance settings you've chosen.

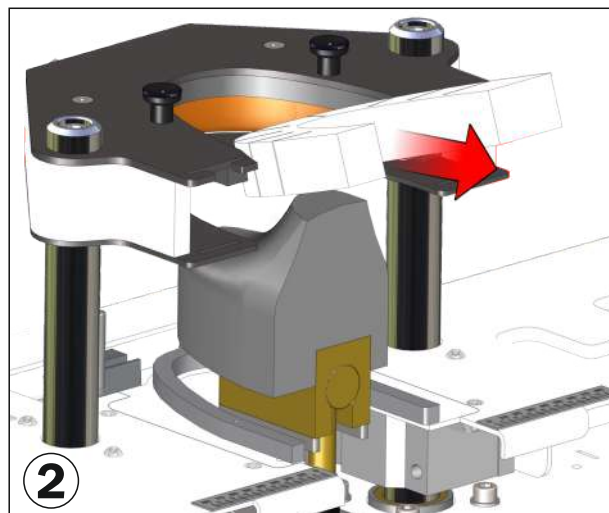


2. Press the pedal and keep pressing. The tray will lift up and pinch the material. Press simultaneously the two start buttons (the forming head will travel to the first set point). Release the pedal. Press the pedal again for full stroke and dwell time and wait for the upper to be released.

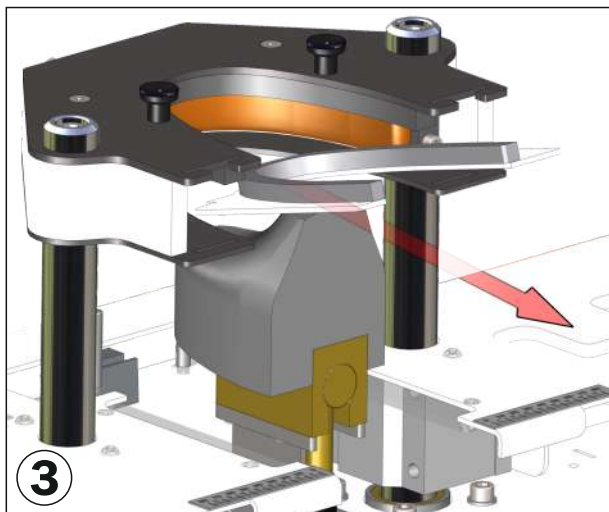
Mould Replacement Instructions



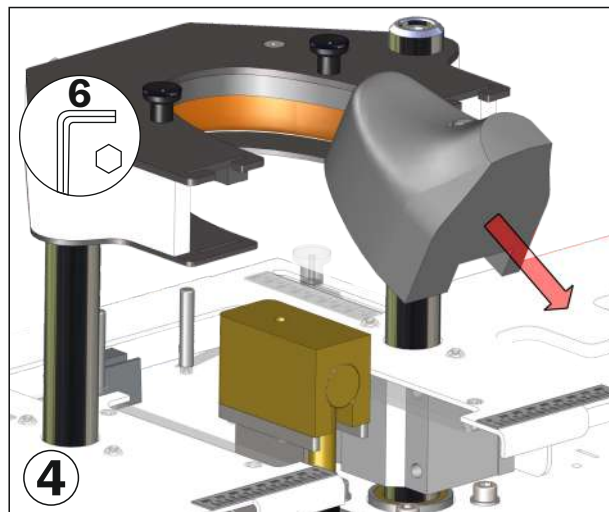
1. Remove the protective plates



2. Remove the Teflon mould



3. Remove the plate with the clamp



4. Unscrew the last from its position and remove it from its base

ASSEMBLING TM-17ST

TM-17ST Head (page 10)

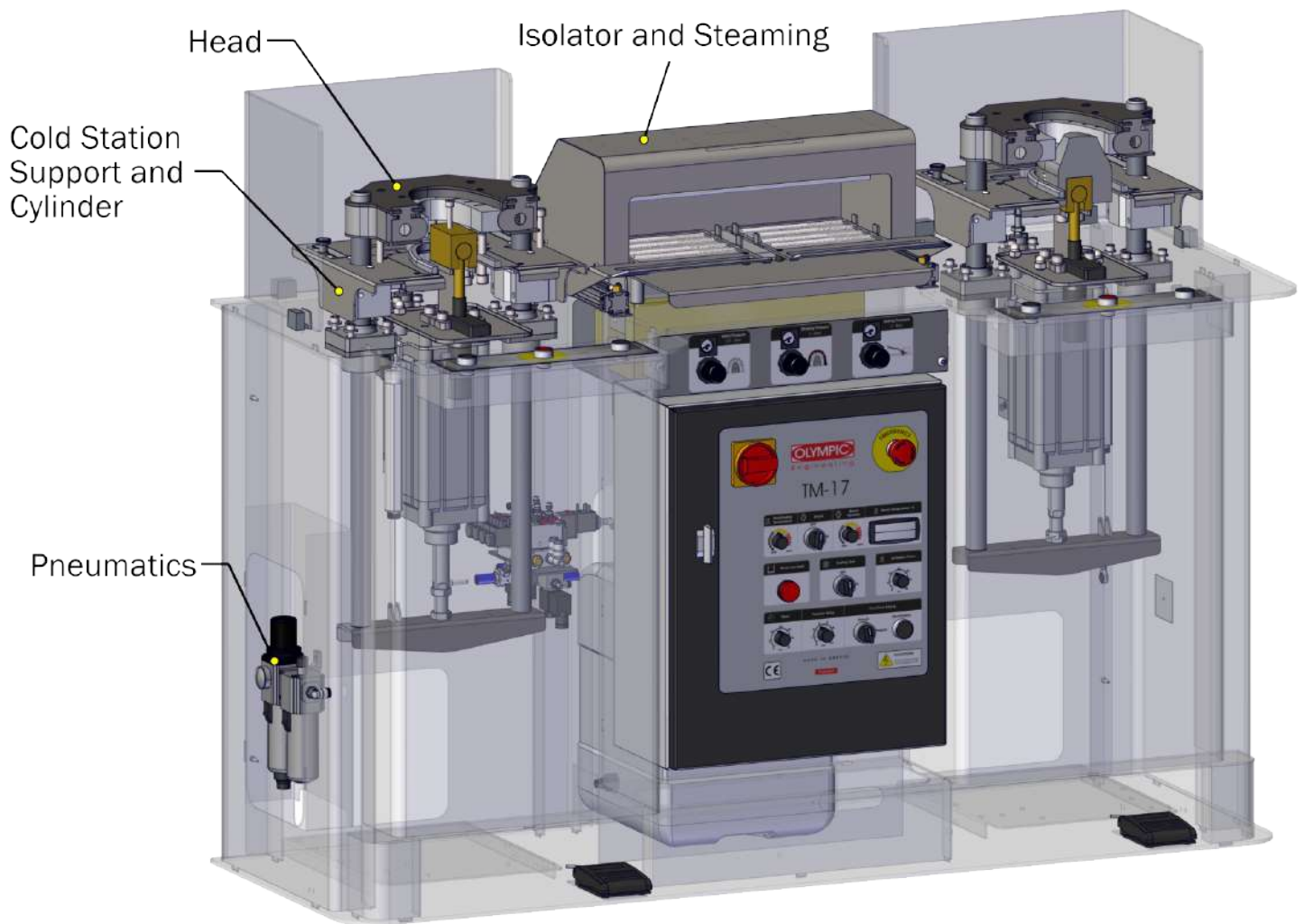
TM-17ST Cold Station Support and Cylinders (page 11)

TM-17ST Isolator and Steaming (page 12)

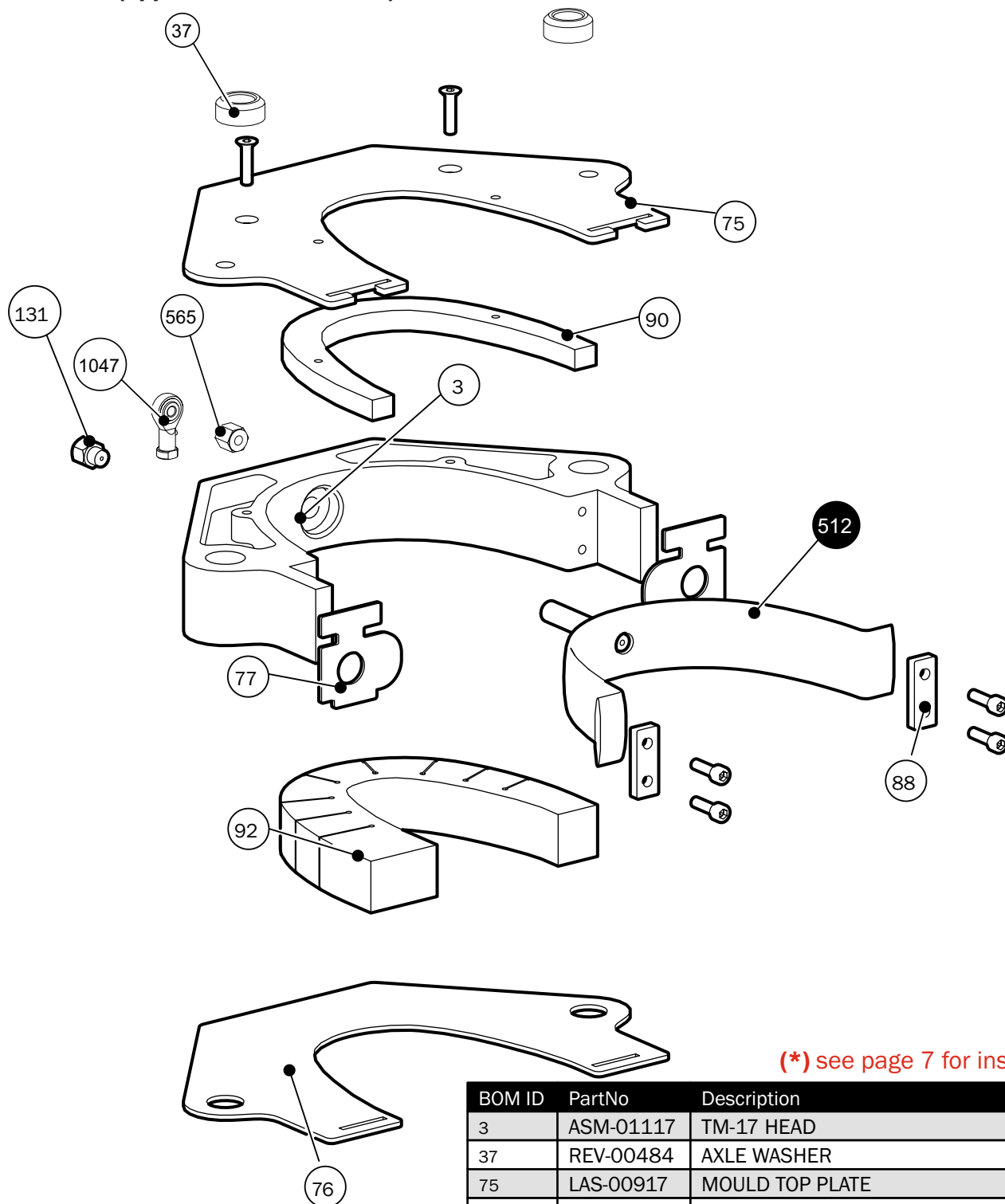
Valves Assembly (page 14)

Pressure Adjustments (page 14)

FRL with fittings (page 14)



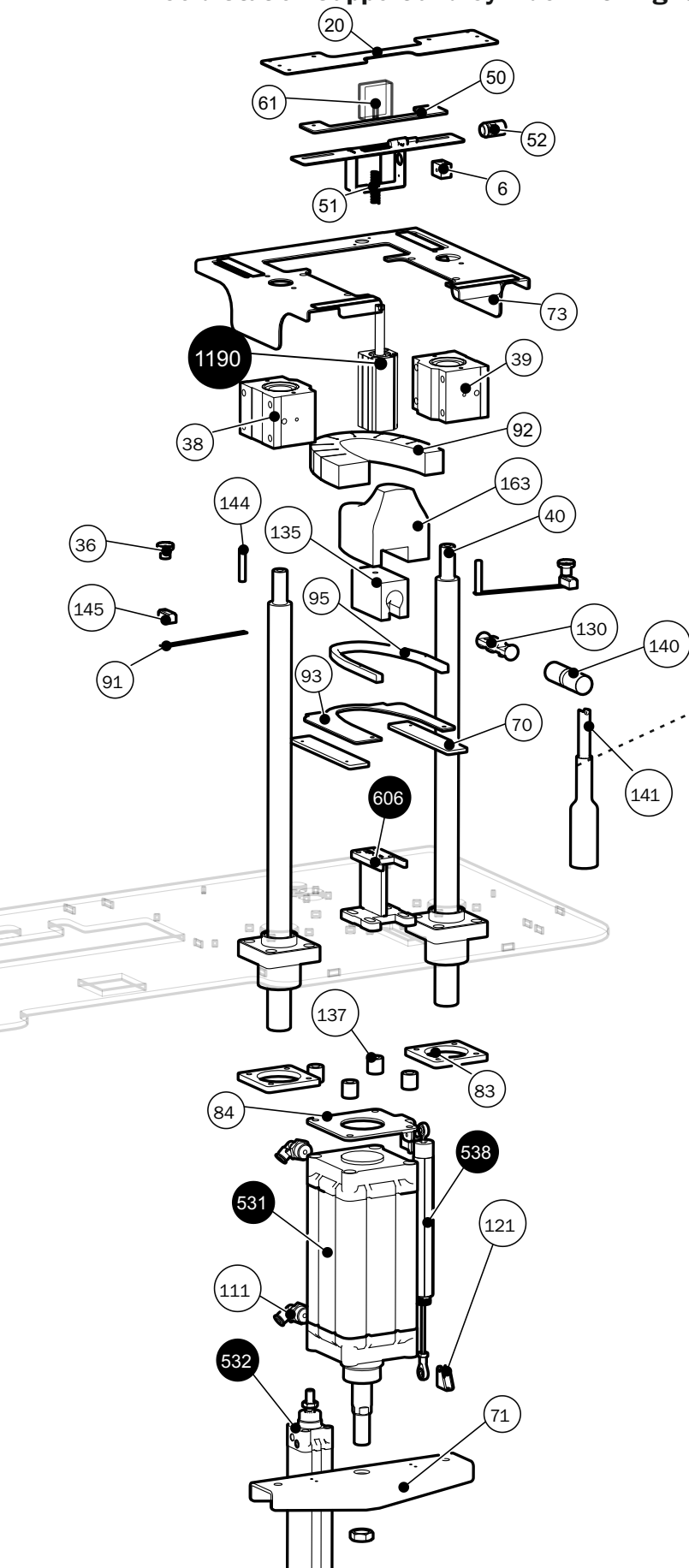
TM-17 Head (applies to both stations)



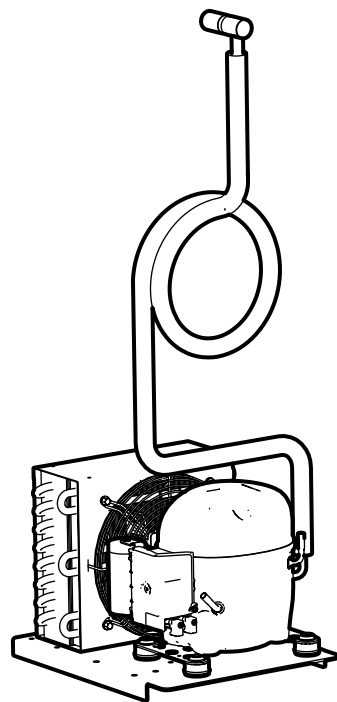
(*) see page 7 for instructions

BOM ID	PartNo	Description	Qty
3	ASM-01117	TM-17 HEAD	1
37	REV-00484	AXLE WASHER	2
75	LAS-00917	MOULD TOP PLATE	1
76	LAS-00918	MOULD BOTTOM PLATE	1
77	LAS-00920	SECURING PLATE	2
88	LAS-00994	TUBOLAR HOLDING PLATE	2
90	LAS-01004	MOULD INTERNAT SPACER	1
92	LAS-01010	TM-17 PLASTIC TOE BAND, 30mm (*)	1
131	REV-00298	FLOW REDUCTOR 1/8(M) - 1/4(F)	1
512	ASM-01119	TM-17 TUBULAR	1
565	REV-00565	TM-17ST SPACER	1
1047	PNE-01047	FISH EYE - UNIVERSAL JOINT, M6	1

TM-17 Cold Station Support and Cylinder with Light Guide (applies to both stations)



TM-17 Cooling Unit (ASM-01029)



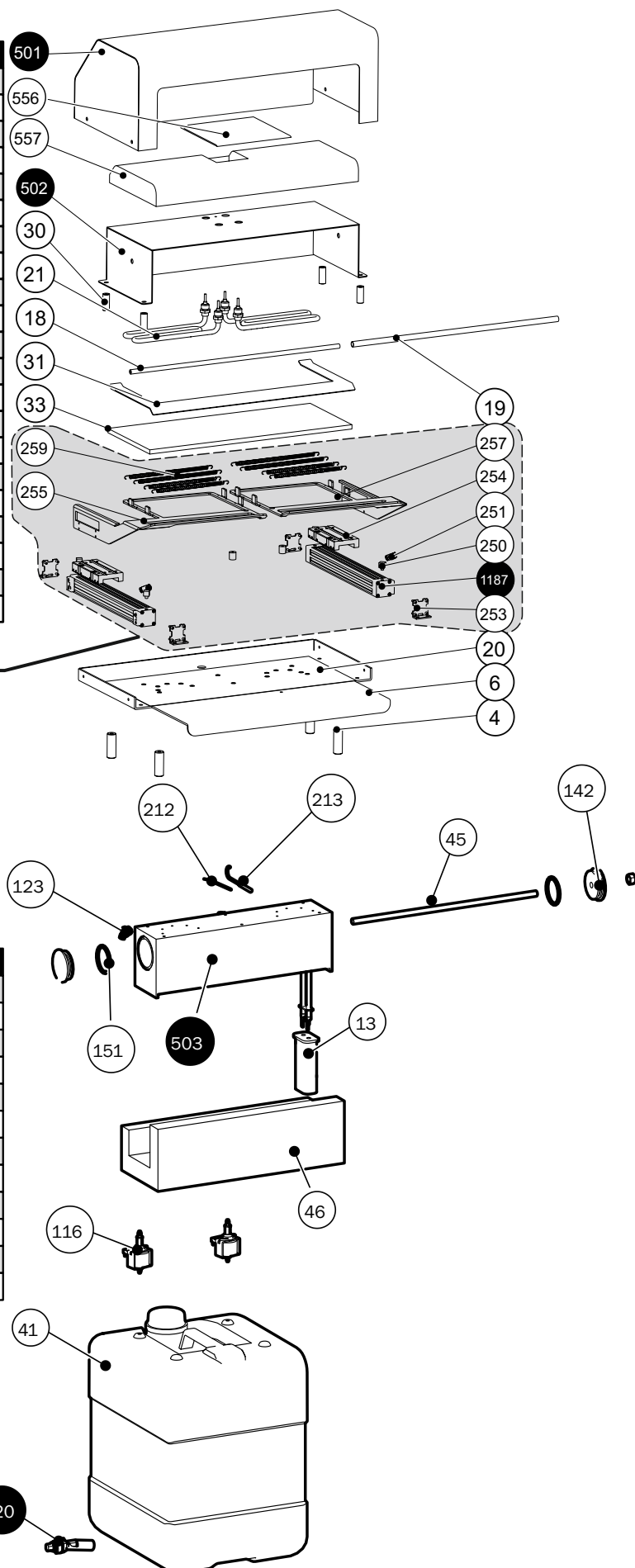
(*) see page 7 for instructions

BOM ID	PartNo	Description	Qty
6	ELE-00054	CONNECTOR	1
20	LAS-01026	GUIDE PLATE	1
36	GEN-00393	KNURLED KNOB M4	2
38	GEN-00438	BUSHING Ø30 LEFT	1
39	GEN-00438	BUSHING Ø30 RIGHT	1
40	GEN-00441	CYLINDER AXLE	2
50	LAS-01030	MOUNTING PLATE	1
51	ASM-01122-B	HOLDING ASSEMBLY	3
52	RUB-00144	TM-17 CABLE RUBBER	1
61	LAS-01029	LIGHT POINTER	1
70	LAS-00886	HOLDING PLATE	2
71	LAS-00887	MOUNTING BASE	1
73	LAS-00905	GUIDES HOUSING PLATE	1
83	LAS-00975	BUSHING FLANGE	2
84	LAS-00977	POTENTIOMETER FLANGE	1
91	LAS-01008	POINTER	2
92	LAS-01010	TM-17 PLASTIC TOE BAND, 30mm (*)	1
93	LAS-01011	TM-17 TOP CUSTOM PLATE (*)	1
95	LAS-01012	TM-17, BOTTOM CUSTOM PLATE (*)	1
111	PNE-00141	FITTING, ANGLE, Ø8 - 1/2	2
121	PNE-01126	JOINT FEMALE FOR Ø12/Ø16	1
130	REV-00140	MULTIFORM'S EVAPORATOR INSERT	1
135	REV-00445	HOUSING FOR COOLING INSERT	1
137	REV-00447	CYLINDER SPACER	4
140	REV-00451	COOLING UNIT PIPE COVER , TM-17	1
141	REV-00473	COOLING UNIT PIPE TUBE, TM-17	1
144	REV-00480	POINTER PIN	2
145	REV-00481	POINTER BASE	2
163	STL-00111	TM-17 LAST (*)	1
531	PNE-01115	CYLINDER 100x120	1
532	PNE-01116	CYLINDER Ø32x150	1
538	ELE-00575	LINEAR POTENTIOMETER TM-17	1
606	ASM-01106	COOLING INSERT BASE	1
1190	PNE-01190	TM-17ST CYLINDER Ø20x50	1

TM-17 Isolator and Steaming

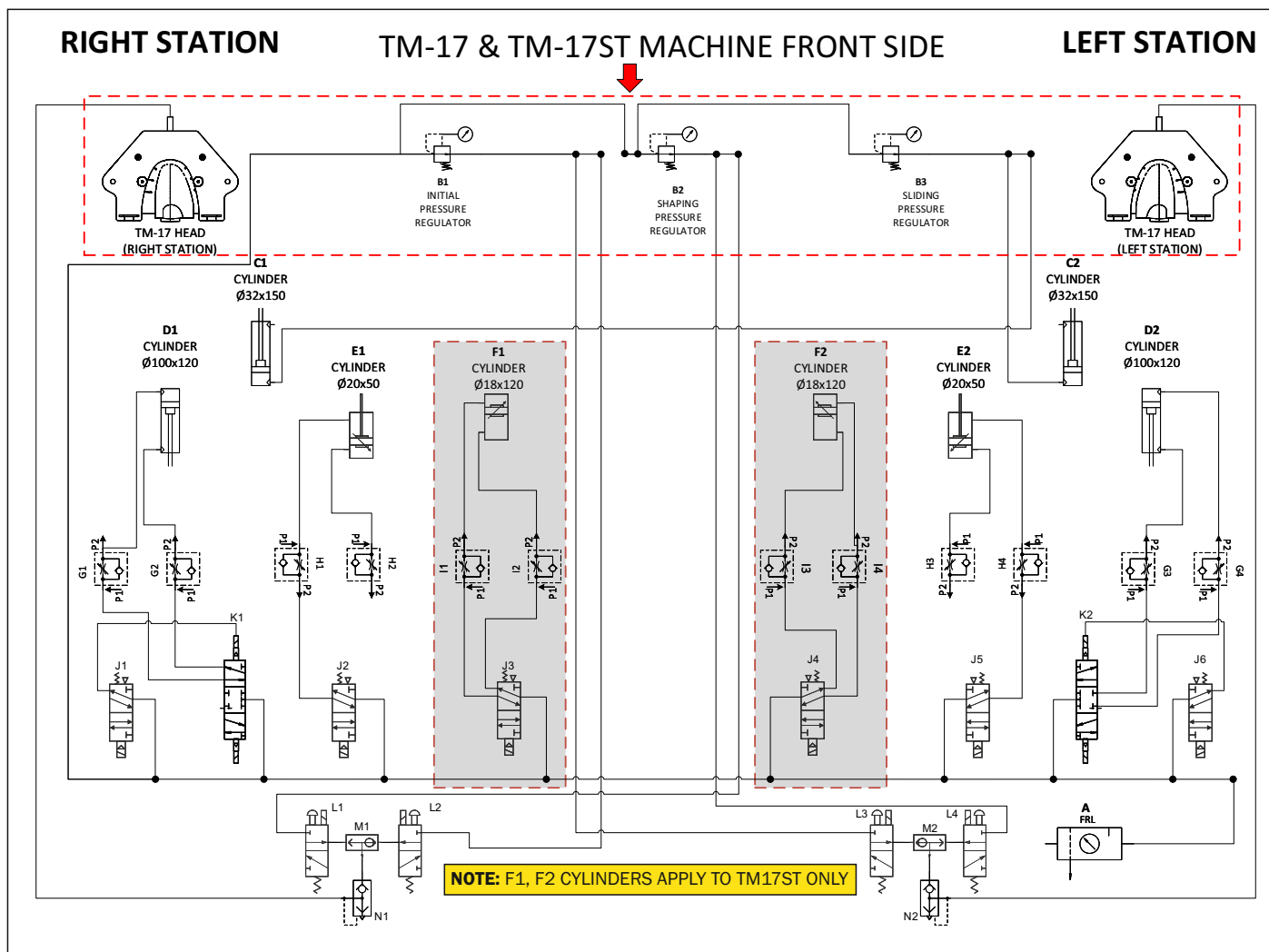
BOM ID	PartNo	Description	QTY.
4	REV-00446	STEAMER SPACER	4
6	LAS-00881	PLATE	1
18	REV-00482	STOP CYLINDER	1
19	GEN-00459	TEFLON COVER	1
20	GEN-00463	STICKY TEFLON	1
21	ELE-00600	HEATING ELEMENT, TM-17	2
30	REV-00556	SPACER	4
31	LAS-01136	TM-17 FELTER HOLDER INOX	1
33	GEN-00490	TM-17 REACTIVATOR FELTER	1
250	REV-00426	FITTING	4
251	PNE-09922	ELBOW MALE ADAPTOR 4-M5	3
253	PNE-01189	CYLINDER MOUNTING BRACKET	2
254	PNE-01188	Φ18 CYLINDER CARRIAGE	2
255	LAS-01144	TM-17ST UPPER CARRIAGE, LEFT	1
257	LAS-01145	TM-17ST UPPER CARRIAGE, RIGHT	1
259	SPR-00035	TM-17 INOX SPRING	4
501	ASM-01022	STEAMER EXTERNAL HOUSING	1
502	ASM-01119	STEAMER INTERNAL HOUSING	1
556	GEN-00470	SILICON ISOLATION	1
557	GEN-00469	INTERNAL ISOLATION	1
1187	PNE-01187	RODLESS CYLINDER Φ18 ZS-18	2

Available only
with TM-17ST



BOM ID	PartNo	Description	Qty
13	ELE-00016	ELECTRIC ELEMENT ISOLATOR	1
41	GEN-00446	TM-17 WATER TANK	1
45	GEN-00460	THREADED ROD M10	1
46	GEN-00462	ISOLATOR	1
116	PNE-00247	WATER PUMP	2
123	PNE-00691	STRAIGHT MALE ADAPTOR 6-1/8	2
142	REV-00478	STEAMER CAP, DRILLED	1
151	RUB-00141	ORING, NBR, Φ42x4	2
212	ELE-00604	TEMP. SENSOR 5k TM-17	1
213	ELE-00618	TM-17 HEAT. SENSOR 6x40, 1,3m	1
503	ASM-01033	TM-17 CASTED STEAMER	1
620	ELE-00616	TM-17 MINIFLOATER	1

TM-17 Pneumatic Diagram



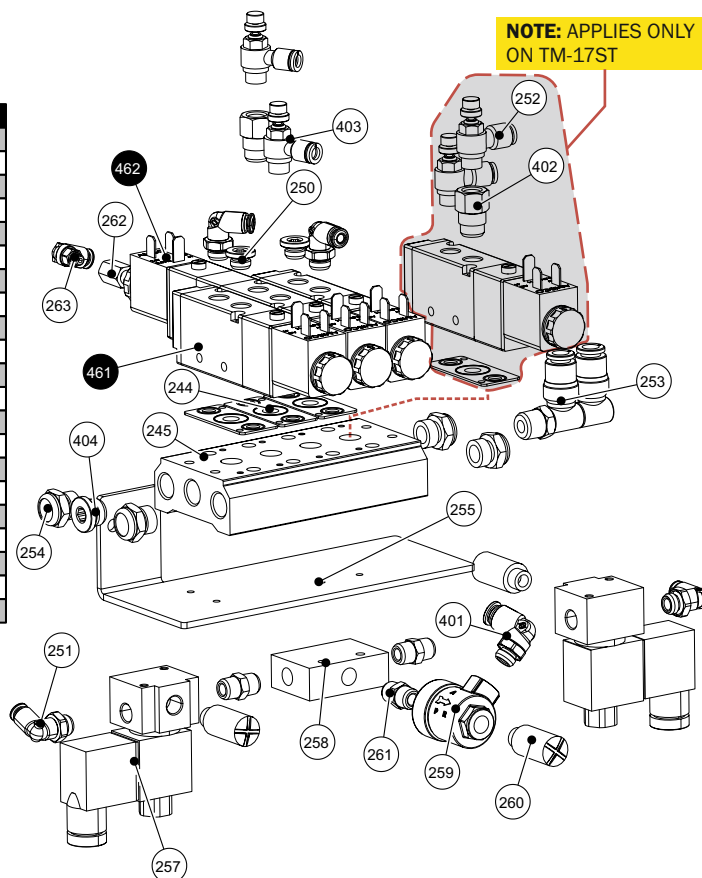
TM-17 Pneumatic Diagram Components List

SYMBOL	P/N	DESCRIPTION
A	PNE-00001	FRL G1/4 SIZE 300
B1, B2, B3	ASM-00893	PRESSURE REGULATOR
C1, C2	PNE-01116	CYLINDER Ø32x150
D1, D2	PNE-01115	CYLINDER Ø100x120
E1, E2	PNE-01198	CYLINDER Ø20x50
F1, F2	PNE-01187	CYLINDER Ø18x120
G1 - G4	PNE-00131	VALVE FLOW REGULATOR-FITTING Ø6-1/8
H1 - H4	PNE-00682	VALVE FLOW REGULATOR-FITTING Ø4-M5
I1 - I4	PNE-00789	VALVE FLOW REGULATOR-FITTING Ø4-1/8
J1 - J5	ASM-00461	VALVE ELECTRIC PILOT 5/2 G1/8, 24V COIL
K1, K2	ASM-00462	VALVE ELECTRIC PILOT 5/2 G1/8, DOUBLE 24V COIL
L1 - L4	PNE-01207	SOLENOID VALVE 3/2 1/8 NC AC24V
M1, M2	PNE-00928	SHUTTLE VALVE 1/8
N1, N2	PNE-00098	QUICK EXHAUST VALVE, 1/8

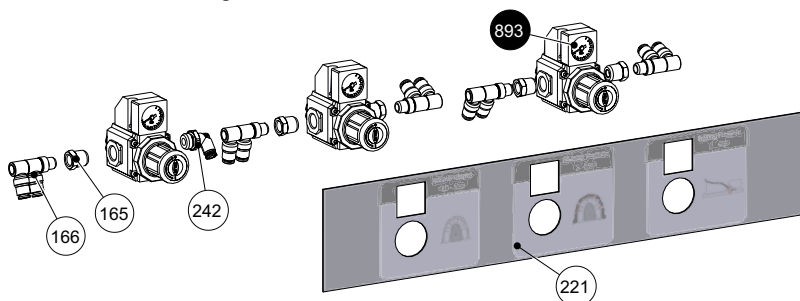
TM-17 Valves Assembly*

*Valves assemblies are both in Right and Left Station of the machine. The shown exploded view, displays the valves assembly for the left station.

BOM ID	PartNo	Description	QTY.
244	GEN-00093	CAP	4
245	PNE-00082	MANIFOLD, 1/4, 4 STATION	1
250	PNE-00072	PLUG, MALE, PARALLEL, 1/8	2
251	PNE-09916	ELBOW MALE ADAPTOR 4-1/8"	4
252	PNE-00789	VALVE FLOW REGULATOR-FITTING Φ 4-1/8	2
253	PNE-00973	FITTING, ELBOW, 2-TAPERED SWIVEL, 1/4 - Φ 8	1
254	PNE-00896	SILENCER 1/4	4
255	LAS-01248	VALVE BASE HOLDING PLATE, LEFT	1
257	PNE-01207	SOLENOID VALVE 3/2 1/8 NC AC24V	2
258	PNE-00928	SHUTTLE VALVE 1/8	1
259	PNE-00098	QUICK EXHAUST VALVE, 1/8	1
260	PNE-00018	SILENCER, 1/8, PLASTIC, BLUE	3
261	PNE-00073	NIPPLE, TAPER, 1/8 (M) - 1/8 (M)	3
262	REV-00083	CUSTOM ADAPTOR FOR M5 FITTING	1
263	PNE-09922	ELBOW MALE ADAPTOR 4-M5	1
401	PNE-01098	ELBOW MALE ADAPTOR 6-1/8"	1
402	PNE-00190	EXTENSION 1/8-1/8-L22	2
403	PNE-00131	FLOW REGULATOR WTN5C-G0601 Φ 6-1/8	2
404	PNE-00213	CAP ALLEN, +OR 1/4	1
461	ASM-00461	VALVE ELECTRIC PILOT 5/2 G1/8, 24V	3
462	ASM-00462	VALVE ELECTRIC PILOT 5/2 G1/8, DOUBLE 24V COIL	1

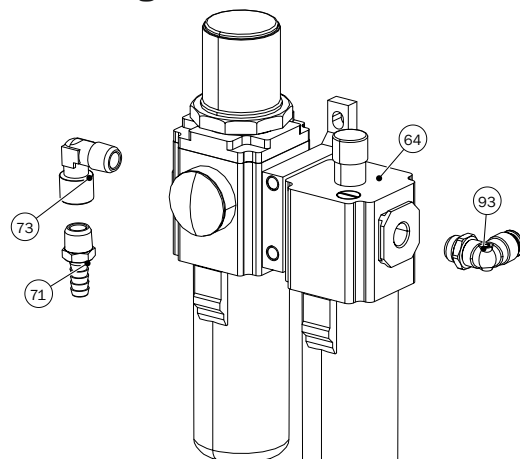


Pressure Adjustments



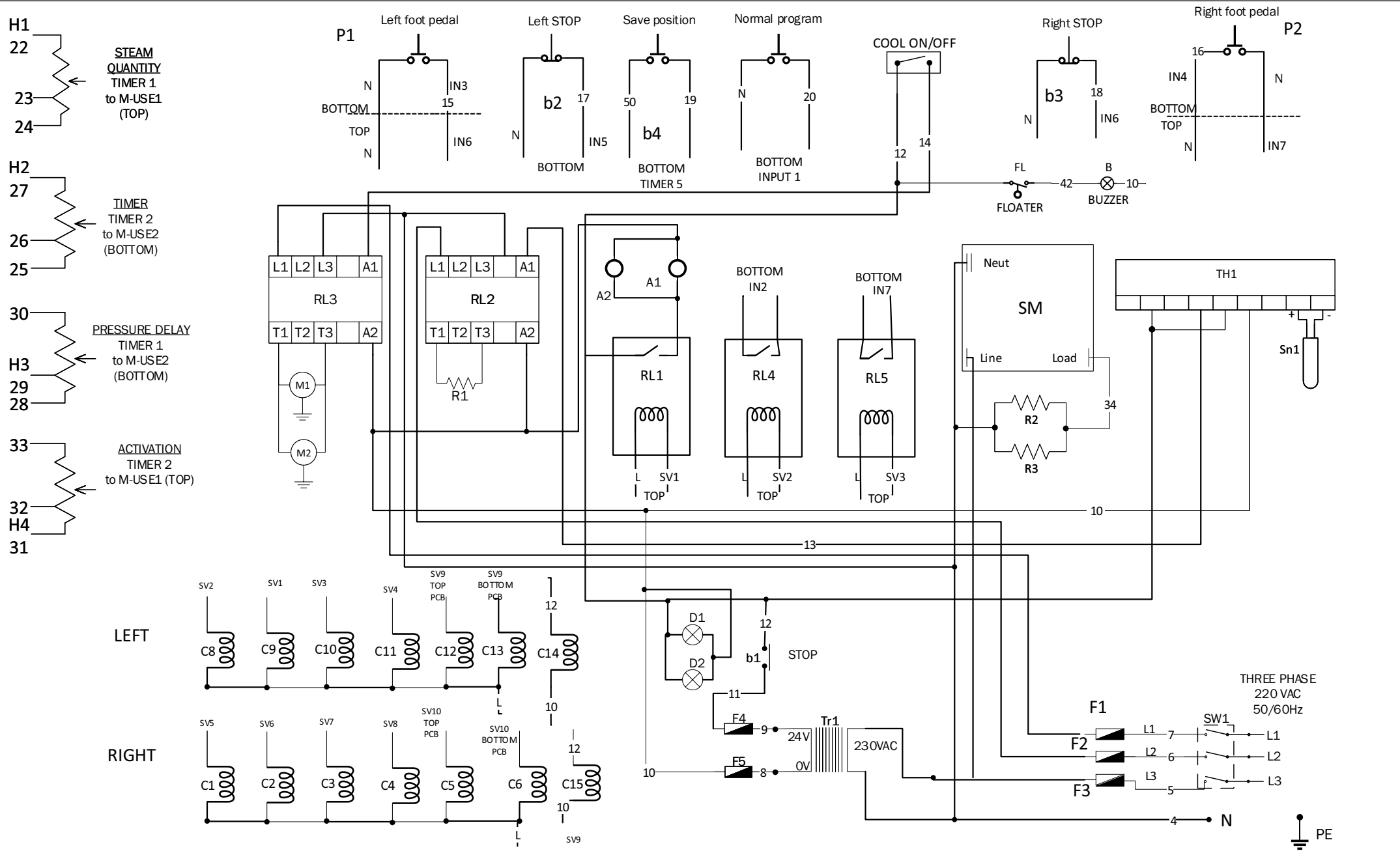
BOM ID	PartNo	DESCRIPTION	QTY.
165	PNE-00083	REDUCER, 1/4(M) - 1/8(F)	5
166	PNE-00273	FITTING, ELBOW, 2-TAPERED SWIVEL, 1/8 - Φ 4	5
221	STK-00149	STICKER, TM-17 ADJUSTMENT PANEL	1
242	PNE-09923	ELBOW MALE ADAPTOR 4-1/4"	1
893	ASM-00893	REGULATOR WITH BASE AND GAUGE	3

FRL with fittings



BOM ID	PartNo	DESCRIPTION	QTY.
64	PNE-00001	FRL G1/4 SIZE 300	1
71	PNE-00020	HOSE ADAPTER, RG, MALE, 1/4 - Φ 8	1
73	PNE-00023	MALE-FEMALE ELBOW 1/4	1
93	PNE-09925	ELBOW MALE ADAPTOR 8-1/4"	1

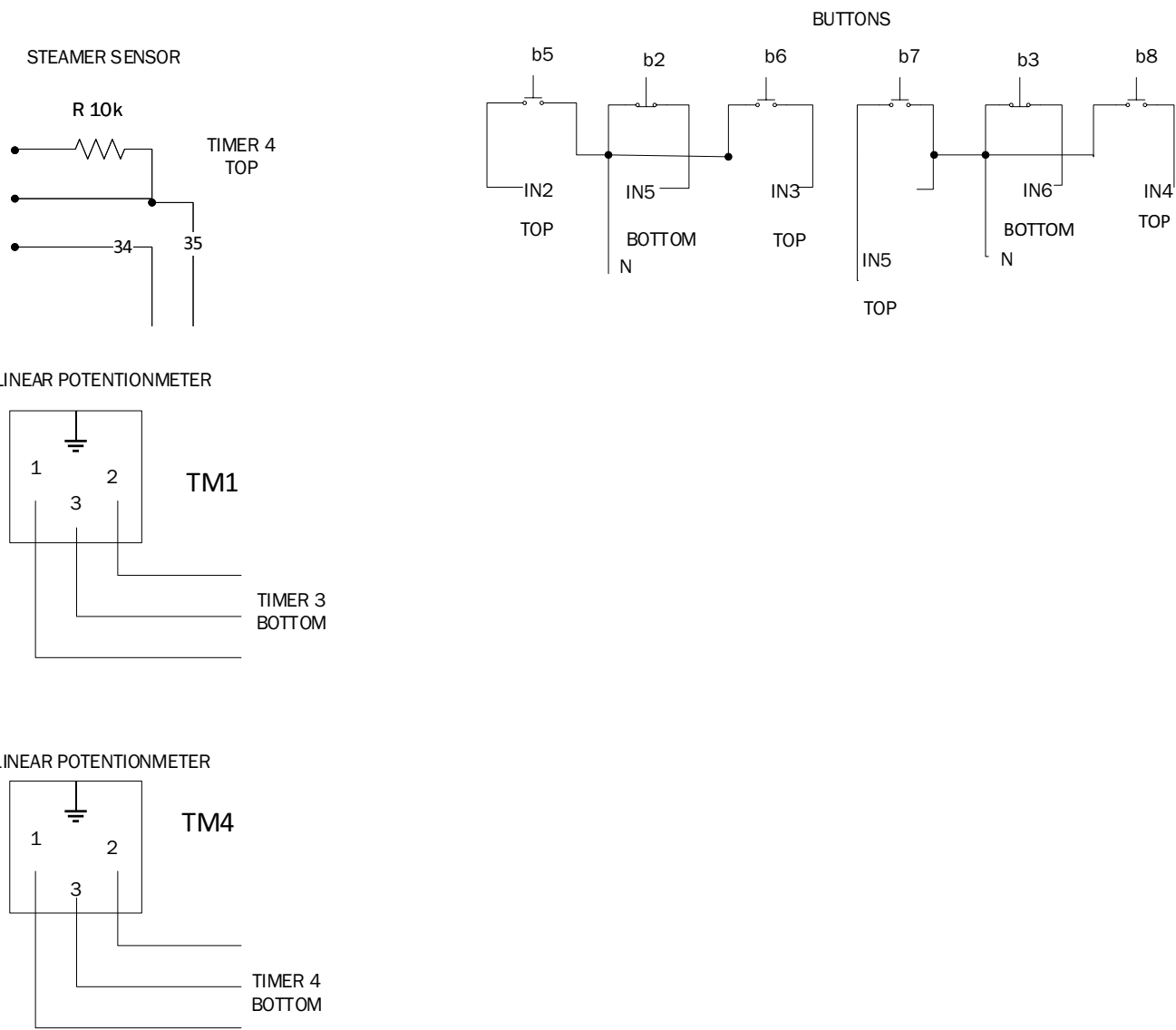
TM-17 & TM-17ST ELECTRICAL DIAGRAM



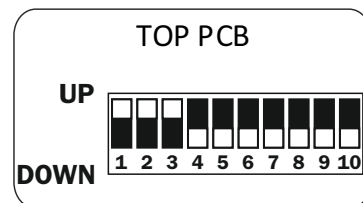
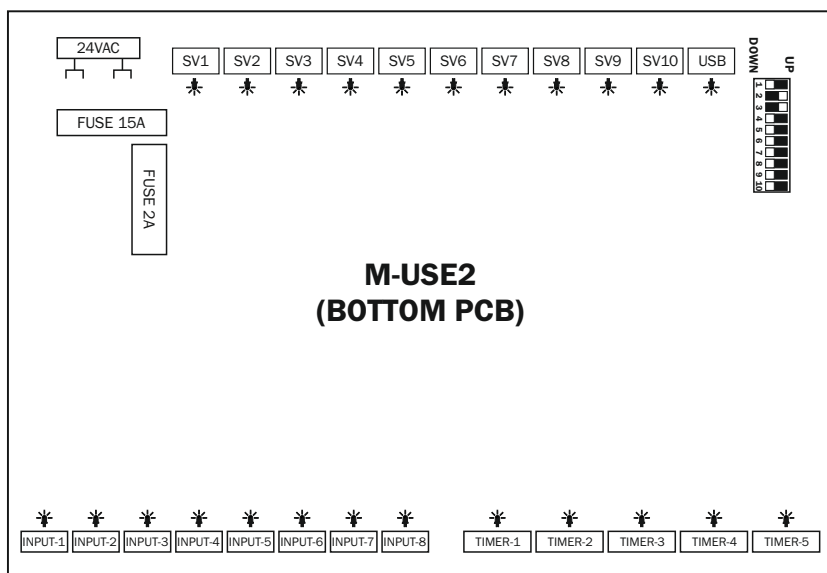
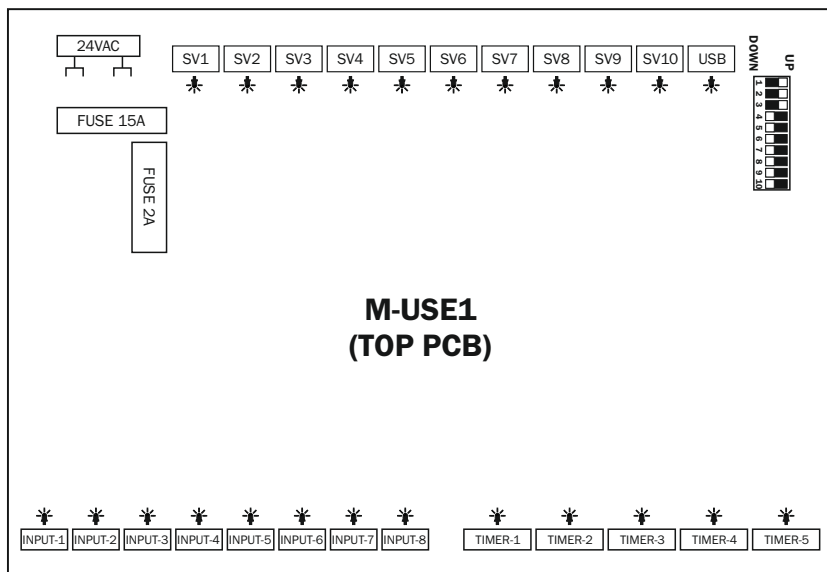
Electrical Components

SYMBOL	PART No	DESCRIPTION
SW1	ASM-00807	GENERAL SWITCH
F1,F2,F3	ELE-00544	FUSE DISCON. CHINT RT18-32 16A 3P
F4,F5	ELE-00378	FUSE 6A 5X20
Tr1	ELE-00021	TRANSFORMER, 230V, 24V, 130VA
b1	ELE-00002	STOP BUTTON, Φ 40, RED, WITH MOUNT
b2,b3	ELE-00602	TM-17 LAST RELEASE BUTTON
P1,P2	ELE-00003	ELECTRIC FOOT SWITCH
SW1,SW2,SW3	ELE-00489	SELECTOR SWITCH 0-1 Φ 22 NP2-BD22
RL2,RL3	ELE-00028	RELAY, MINI, CHINT NC6-0901
RL1,RL4,RL5	ELE-00650	INDUSTRIAL RELAY 24VAC
TM1-TM4	ELE-00575	LINEAR POTENTIONMETER TM-17
b4	ELE-00001	START BUTTON, Φ 22, BLACK
R2,R3	ELE-00600	HEATING ELEMENT, FURNACE TM-17
R1	ELE-00601	STEAMER ELEMENT TM-17, 2KW
Sn1	ELE-00618	HEATING SENSOR 6X40(L=1300mm)
Sn2	ELE-00604	TEMPERATURE SENSOR 5k TM-17
SM	OLD-00004	THERMOSTAT SIMMERSTAT YJ6202
MUSE	PCB-00007	M-USE MACHINES MAIN BOARD PCB
B	ELE-00614	BUZZER WITH INDICATOR LIGHT Φ 22
FL	ELE-00616	TM-17 MICROFLOATER
TH1	ELE-00264	THERMOREGULATOR R38S
A1,A2	PNE-00247	MICROPUMP 16W 20CC/MIN
M1,M2	ASM-01029	TM-17 COOLING UNIT
C1-C15	PNE-00017	COIL Φ 9/24V AC 5W
R	ELE-00076	RESISTANCE 10k
b2,b3	ELE-00506	STOP BUTTON, Φ 22, RED
b5,b6,b7,b8	ELE-00001	START BUTTON, Φ 22, BLACK
H1-H4	ELE-00076	POTENTIONMETER 10k

TM-17 Wiring Diagram



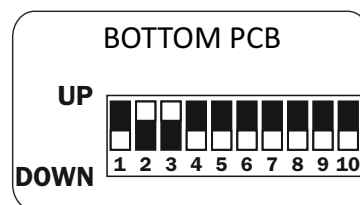
TM-17 & TM-17ST PCB Diagram



IMPORTANT:

THE SWITCHES MUST BE STRICTLY SET AS SHOWN (DIP1, DIP2, DIP3 UP).

INPUTS	
INPUT-1	STEAM ON/OFF
TIMER-1	STEAM QUANTITY
TIMER-2	ACTIVATION TIMER
TIMER-4	STEAMER SENSOR
INPUT-6	BRIDGE WITH INPUT-3 PCB BUTTON
INPUT-7	BRIDGE WITH INPUT-4 PCB BUTTON



IMPORTANT:

THE SWITCHES MUST BE STRICTLY SET AS SHOWN (DIP2, DIP3 UP).

OUTPUTS	
SV1	CYL Ø100 DOWN - LEFT STATION
SV2	CYL Ø100 UP - LEFT STATION
SV3	TO SHAPING PRESSURE - LEFT STATION
SV4	TO INITIAL PRESSURE - LEFT STATION
SV5	CYL Ø100 DOWN - RIGHT STATION
SV6	CYL Ø100 UP - RIGHT STATION
SV7	TO SHAPING PRESSURE - RIGHT STATION
SV8	TO INITIAL PRESSURE - RIGHT STATION
SV9	CYL Ø20x50 - LEFT STATION
SV10	CYL Ø20x50 - RIGHT STATION
INPUTS	
INPUT-1	PROGRAM/NORMAL
INPUT-2	FROM RL4
INPUT-3	LEFT FOOT PEDAL
INPUT-4	RIGHT FOOT PEDAL
INPUT-5	LEFT STOP
INPUT-6	RIGHT STOP
INPUT-7	FROM RL5
TIMER-1	PRESSURE DELAY
TIMER-2	TIMER
TIMER-3	LEFT LINEAR POTENTIOMETER
TIMER-4	RIGHT LINEAR POTENTIOMETER
TIMER-5	SAVE BUTTON

