



MODEL 1020

OPERATION AND MAINTENANCE MANUAL

Safety Summary



WARNING

In case of power cord damage, do not attempt to repair or replace the power cord. Contact the manufacturer or the local distributor.



WARNING

This machine uses two fuses to protect against fire and electric shock. Use the same type replacement fuse rated at 3A, 250V as specified on the label next to the fuse.



WARNING

Hot Surface. Avoid contact.



CAUTION

To reduce the risk of electric shock and injury, turn the machine off and disconnect the machine from the power supply before servicing and/or cleaning.



CAUTION

The recommended air pressure shall not exceed 85 psi (5.8 Bar). The operating pressure is from 75 – 85 psi.



CAUTION

In case of emergency, use the Emergency Stop switches to stop machine movement.



CAUTION

During normal operation, the machine should have at least 40 inches of clearance on all sides.

International Symbols



Power Off



Power On



Hot Surface



Risk of Electrical Shock



Protective Earth Terminal



Ground



Start Action



Caution - Warning

Congratulations!

Your selection of the Insta heat seal machine is a sound business decision. Insta equipment is the result of the highest quality engineering and time-tested design. Your new machine combined with Insta's reputation of innovation in the heat-sealing field, ensures the continuing capability of delivering the best decorated substrates possible.

This manual describes installation, operation, and maintenance procedures for your 1020 machine, as well as easy to use instructions for preventive and routine maintenance.

Your machine will have a long trouble-free life. Read this manual and keep it with your machine. It's your key to proper operation and lasting service. Check the Insta website www.instagramh.com for the current version of user manual.

General Description

The 1020 is a large format machine capable of pressing multiple and large articles all in one cycle across a 47.2" x 39.4" platen. It is capable of generating and evenly distributing large pressure throughout its platens. It features dual stations that consist of two alternating trays operating in either manual or automatic mode for mass production. The heat platen features cast-in tubular heating elements to deliver rapid heat recovery and uniform temperatures.

Please fill out the following for future use:

MODEL NO:

SERIAL NO:

MANUFACTURE DATE:

PURCHASE DATE:

PURCHASE VENDOR:

Installation


WARNING:

This machine must be installed by a licensed electrician. DO NOT attempt to install this machine by unqualified personnel.


IMPORTANT

This machine does not come with a plug and must be wired into a proper receptacle per local electrical codes.


Air Compressor

A minimum of 3HP air compressor with a rating of 20 gallons or 9 CFM is required to operate this machine. Shop air is recommended.


Electrical Wiring

Minimum AWG #12 UL rated electrical wires shall be used for external power connection.

Specifications

Voltage	208~230 Volts AC, 3 Phases (+Ground)	60 Hertz
Model 1020	9000-10000 Watts	44~48 Amps *
Weight	1874 lbs	(850 kg)

**The specifications above were determined by a third party certifying agency.*

For installation purposes Insta recommends the following:

Voltage Requirement **3 Phase 208~230 VAC @ 60 Hz**
Fuse per Phase **Rated 30 Amps**

Degree of Protection

IP (Ingress Protection) rating according to IEC 60529.

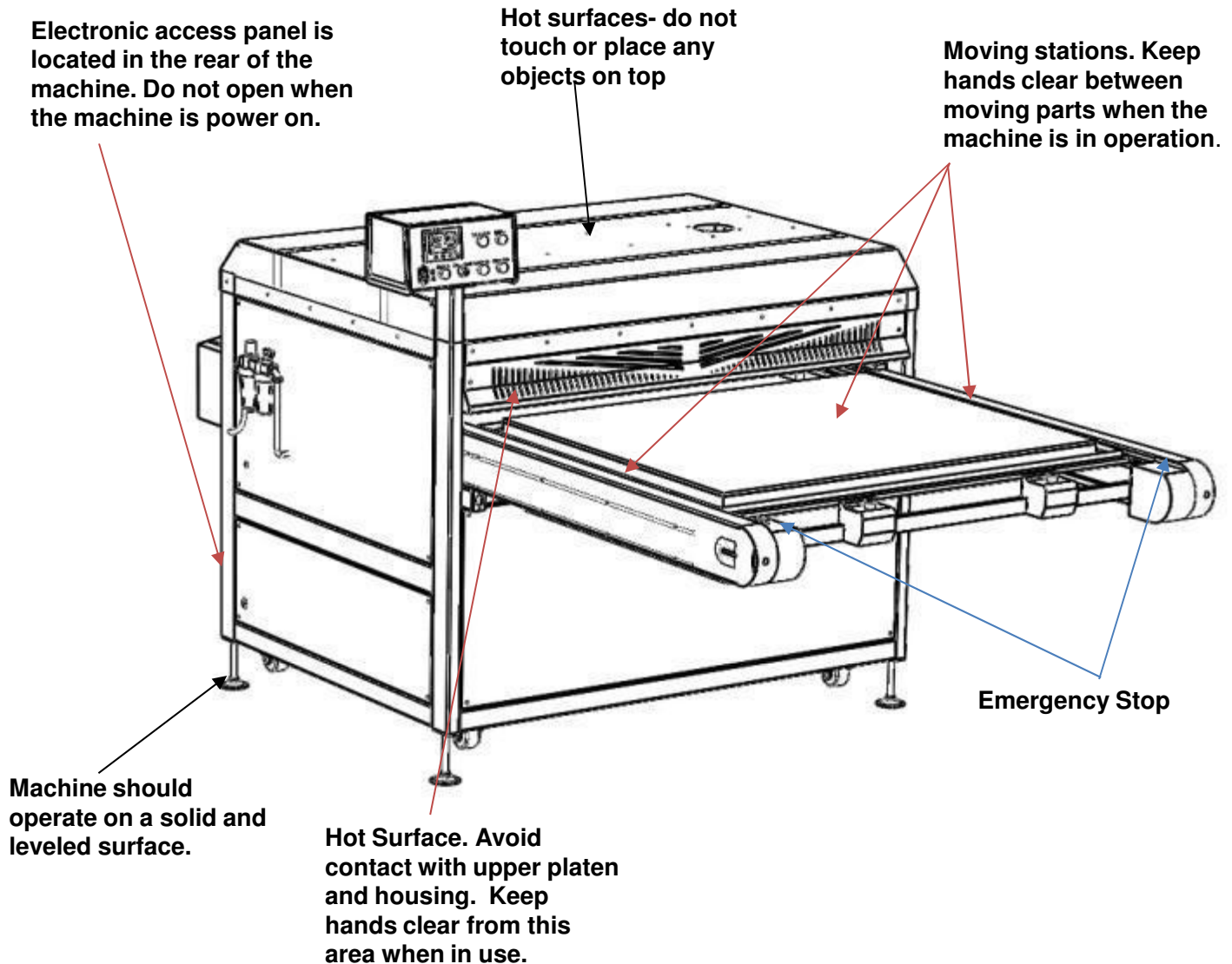
NOTE

*IEC 60529 does not specify sealing effectiveness against the following:
 mechanical damage of the equipment;
 the risk of explosion; certain types of liquid conditions, e.g. those that are produced by condensation; corrosive vapours; fungus; vermin*

IP21 = IP
 1st Digit 2
 2nd Digit 1

1 st Digit	Protection from solid objects	2 nd Digit	Protection from moisture
0	Not protected	0	Not protected
1	Objects greater than 50 mm	1	Dripping water
2	Objects greater than 12 mm	2	Dripping water when tilted up to 15°
3	Objects greater than 2.5 mm	3	Spraying water
4	Objects greater than 1 mm	4	Splashing water
5	Dust protected	5	Water jets
6	Dust tight	6	Heavy seas
--	---	7	0.15 m – 1 m immersion
--	---	8	+1 m submersion

Safety and Danger Zone Diagram



Operating Environment

To maximize user safety, ensure that the following operating conditions are met:

1. The machine is placed on a flat, even, and non-flammable surface.
2. The machine shall be located in a dry working environment.
3. The machine has enough clearance, at least 40 inches on all sides and 60 inches between machines.
4. The workspace does not restrict access to the main power switch or power cord.
5. The workspace is free of any forms of liquid.
6. The power cord is not over-extended. Taking these steps is crucial in maximizing user safety and ensuring a long, trouble-free life for your machine!

Machine Installation Instructions

Machine installation requires at least two (2) persons. Do not attempt to install machine alone. Installation requires a Phillips head screwdriver and a set of metric Allen wrenches.

To move machine with casters, the stand legs must be retracted. Use a forklift to raise machine 6 inches off the floor, use a wrench to retract all four stands. Then lower the forklift so the machine is sitting on all four (4) casters. (Use caster lock to keep machines stay in place).

For electrical connections it must be installed by a licensed electrician. DO NOT attempt to install this machine by unqualified personnel.

Factory Electrical Requirements	
Voltage Requirement	3 Phase 208~230 VAC @60 Hz
Wiring Requirement	Minimum AWG #12 Gauge
Fuse or Breaker per Phase	Minimum 25 Amp Rating
Wiring Declaration	
Blue/Red/Black	Phase Line (Live)
Green	Ground Line

Air Source Connection

Connect air source hose to the inlet port of the pressure regulator. The machine comes with standard industrial 1/4" quick connection male coupling.



Machine Safety Features

Emergency Stop Buttons

There are two (2) **Emergency Stop** buttons. They are located at each end of the front console. In case of emergency, buttons stop all machine movement and release air pressure inside the cylinders. When the emergency stop button is pressed;

1. Manual, Auto, and Start buttons are disabled.
2. Motor stops and so does all shuttle movement.
3. Air directional valve is disabled. Air pressure will bleed off from the two air cylinders. The lower and upper platens gradually return to the full open positions.



Note

The emergency stop switches do not cutoff the electrical power to the control panel and heaters.

4. To cutoff all electrical power, turn off the power switch located in the front control panel or turn off the main power disconnect from the factory.

To disengage the emergency mode:

1. To prevent accidental movement of the machine, it is important that the machine control is configured to the manual mode before the emergency stop is released.
2. Switch **Manual/ Auto** to **Manual**.
Auto Start is up for "**Once**".



Note

Auto Start "Repeat" mode enables machine to resume the last incomplete cycle when the emergency stop button is unlocked.

3. Press and turn the emergency stop button clockwise until the button is completely released from the lock position. Use either **Up Platen** or **Bottom Platen** button to move the platens back to ready position.



Hi Temperature Shut Off

The MS1020 is protected from the platen overheating to temperature above 482° F (250° C). Beyond this safety temperature, the machine will automatically cutoff all electrical power to the heaters and the **Heat** button on the control panel will no longer light up.

When this happens, turn the power switch to the **Off** position, and allow the machine to cool down below 200° C.

Then turn the power switch back to the **On** position and press the **Heat** button. This should reset the overheat protection switch and the heating function resumes.

If the overheat issue continues, stop the machine and contact Insta Service Department for assistance.



Machine Setting

Pressure Setting

1. Locate the air regulator assembly on the left side of the machine.
2. Pull the air regulator knob up.
3. Turn the air regulator knob clockwise to increase pressure, or counterclockwise to decrease pressure.
4. The pressure setting is displayed on the pressure gauge.
5. When the operating pressure is set, push the air regulator knob down until it locks.

NOTE

The suggested operating pressure ranges between 75 – 85 psi.



Low pressure setting may result poor printing and longer cycle time.

Do not operate the machine at more than 100 psi.

Motor Speed Setting

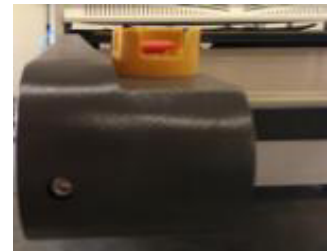
The motor speed control panel is located at the rear of the machine. Use the **On/Off** switch to turn on the motor.

1. Use the speed control **knob** to adjust the motor speed. An increase motor speed means a faster platen travel.



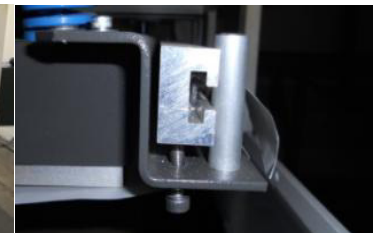
Belt Tension

1. Locate the two bolts on the front and the side of each rail enclosure. These bolts control the belt tension.
2. To adjust belt tension, first slightly loose nthe side bolt until it is free to move. Do not take the bolt out of its seat.
3. Next, turn the front bolt using an Allen wrench to adjust the belt tension.
4. Turn clockwise to tighten the belt and counterclockwise to relax.
5. Once adjustment is made, tighten the side bolt.



Upper Platen Teflon Sheet

1. Remove both side panels.
2. Locate the four (4) screws that are used to increase or decrease the slack of the upper platen Teflon cover.
3. Turning clockwise makes the sheet tighter and vice versa.



Machine Control Setting

Controller Readout

- **OK:** Main button to scroll through 3 control settings.
Temperature Scale ► Temperature Setting ► Timer ► Confirm
- **▲ and ▼:** Increase or decrease number.
- **Reset:** Reset cycle counter to zero.
- **PV:** Present Value
- **SV:** Set Value
- **COUNTER:** Number of press cycles since last reset.

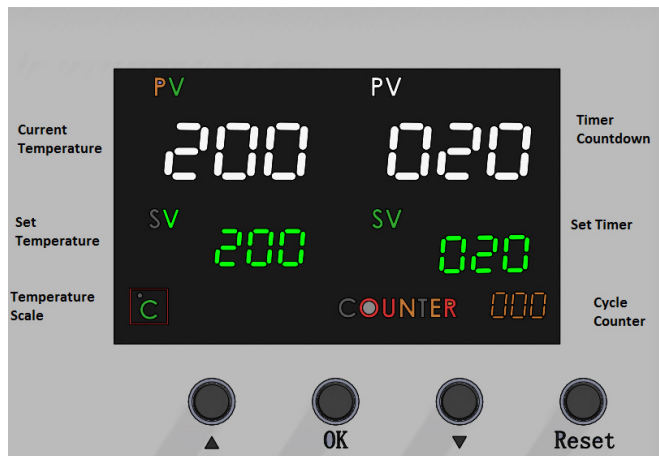
Controller Setting

- **Temperature Scale**
 - a) Press the **OK** button, either the “°C” or “°F” icon starts blinking.
 - b) Press **▲** or **▼** to change to “°C” or “°F”.
- **Temperature Setting**
 - c) Press **OK** again to set the transfer temperature. Press **▲** or **▼** to increase or decrease the temperature. Hold **▲** or **▼** for faster change.
- **Timer**
 - d) After setting the temperature, press **OK** to set the transfer time. Press **▲** or **▼** to increase or reduce time.



NOTE:

The cycle time shall be added an additional 5 seconds to compensate the time required to raise the platen upward before the substrate seeing any temperature and pressure.



This controller has five (5) control features:

1. Temperature Scale

- User can choose to read temperature in °C or °F

2. Temperature Setting

- User can set heater temperature up to 225°C or 437°F.

3. Timer

- User can set cycle time from 001 to 999 seconds.

4. Cycle Counter

- Cycle counter can count up to 999 cycles. To reset, press and hold the Reset button for 10 seconds.

5. Optional Offset Setting

- There are two levels of temperature offset settings. Both settings are pre-calibrated in factory. Do not alter these settings unless otherwise directed by the manufacturer service personnel.

Machine Setting

Optional Temperature Offset Adjustment

1. To adjust the temperature offset, press and hold the **OK** button for 2 seconds until the screen displays P-1 and the current temperature. The bottom row displays the current offset setting in green color.



1. If the display temperature is lower than the measured temperature, increase the offset by the same amount. This is done by pressing the ▲ to increase the display temperature.
2. If the display temperature is greater than the measured temperature, decrease the offset. This is done by pressing the ▼ to decrease the display temperature.

Optional Temperature Control Adjustment

1. Press the **OK** button and scroll to the next P-2 screen. The default setting of P-2 is 003. This setting allows factory personnel to fine tune the heater temperature accuracy pending on user's heating requirements. *Do not attempt to alter the default setting without consulting with Insta Service Department personnel.*



Machine Operation Mode



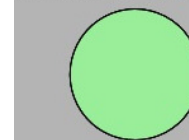
Make sure the machine is properly installed before use. The machine will not operate without air pressure and correct power source (3 Phase + Ground). Make sure the electric motor is turned on.

Manual Mode Operation

1. Turn **ON/OFF** switch to **ON** position.
2. Turn the **Auto/Manual** switch to **Manual**. When in **Manual** mode, the two green start buttons in the front console are de-activated.
6. Press the **Manual Start** button to activate the pistons and raise the work station. The timer then starts its countdown and beeps 3 seconds before completion.



Manual Start



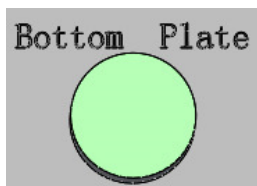
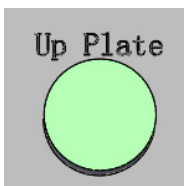
3. Allow the machine to warm up to the set temperature. A buzzer will sound when the temperature reaches to the set temperature. The buzzer will continue until a press cycle is initiated.

NOTE:



Heating may take anywhere from 45 – 60 minutes depending on the set temperature. Do not leave the machine unattended at anytime.

4. Place the substrate on working station and smooth out all wrinkles.
5. Press either the **Up Plate** or the **Bottom Plate** button to feed the external work station into the heat press chamber. Press and hold the button until the moving work station has completely stopped.



CAUTION

Keep hands clear of gaps when the machine is in operation. See Pg. 4 for Machine Safety.

7. After the press is complete, the work station is automatically lowered. Press/hold either **Up Plate** or **Bottom Plate** button to retrieve the work station in ready position.

Note:



During the press cycle, you may hear sounds of springs compressing. This is normal since the upper platen is attached with springs that produce a squeaking sound when they are compressed.

Machine Operation Mode

Auto Start Mode Operations

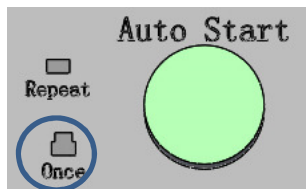
NOTE

The shuttle trays must fully retracted before Auto Mode can be activate. If the trays is not fully retracted put the machine back to Manual mode. Then fully feed either the top or bottom tray into position. Restart Auto Start Process.



Auto Start- Once (Semi Auto Mode, one cycle at a time)

1. Turn **ON/OFF** switch to **ON** position.
2. Select the **Auto Start** button to **Once**. The button shall be in the up position.

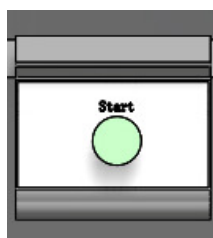
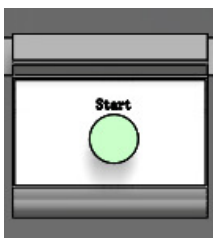


3. Turn the **Auto/Manual** switch to **Auto**. The two **Start** buttons at the front console are now activated.



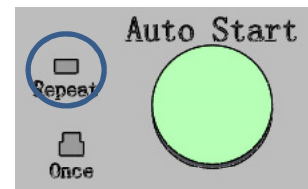
4. Press the two (2) **Start** buttons on the console to start one (1) press cycle. The external work station will shuttle into the chamber while the other station is coming out simultaneously. The heat press then starts automatically. When the press cycle is complete, the work station is lowered and stays inside the chamber.

Press the two **Start** buttons again to repeat the press cycle.



Auto Start- Repeat (Fully Auto Mode, continuous cycle)

1. If the machine is at the **Manual** mode, make sure both work stations are in their full stop positions on both ends. Use **Up Plate** or **Bottom Plate** button to move them to their full stop positions if needed.
2. Select **Auto Start** button to **Once**. The button shall be in the up position.
3. Turn the **Auto/Manual** switch to **Auto**.
4. Select the **Auto Start** button to **Repeat**. The button shall be in the down position. The auto cycle starts immediately.



5. If the machine is at the **Semi Auto** mode, select the **Auto Start** button to **Repeat**. The auto cycle starts immediately.
6. To come out of the Auto Start- Repeat Mode, do any of the followings:
 - a. Turn Auto/Manual to **Manual**
 - b. Select Auto Start to **Once**
 - c. Use Emergency Stop buttons



CAUTION

Keep hands clear of gaps when the machine is in operation. See Pg. 4 for Machine Safety.



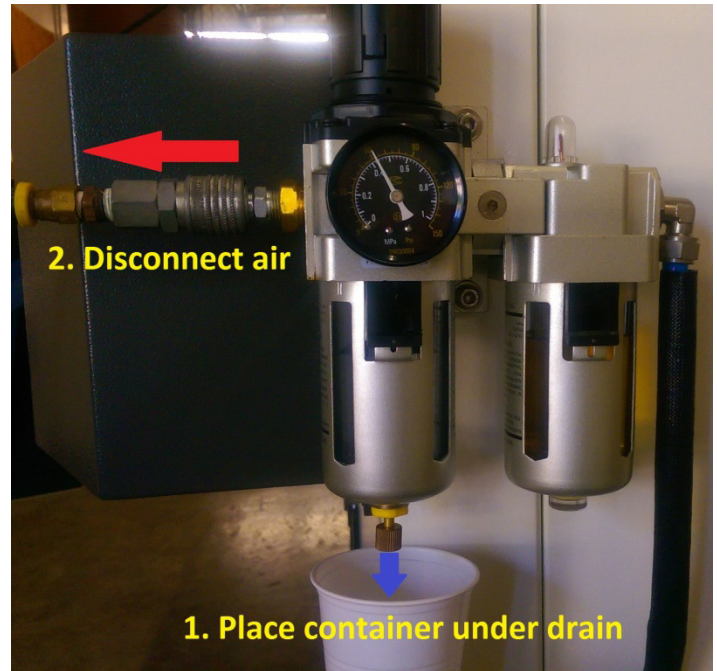
NOTE

In the situation of an emergency, press the Emergency Stop buttons on the front console of the machine.

Machine Maintenance

Preventive Maintenance

1. To prevent the substrates from becoming soiled, periodically wipe the entire exterior of the machine, including the platens, with a clean rag. If necessary, use mineral spirits for cleaning a cooled down machine. Since mineral spirits are flammable, do not clean with mineral spirits while the machine is hot.
2. Avoid pressing items such as buttons, pins, snaps, or zippers that tend to cut the pad or scratch the heat platen and Teflon cover.
3. Periodically lubricate the transmission, joints, bearings, and air regulator with a high-temperature, non-melting grease (MPPL023).
4. Periodically check the level of the air pressure regulator lubricant. If there is an insufficient level, add more. This will help lubricate the piston and solenoid. Oil rated ISO-VG68 or ISO-VG32 is recommended.
5. Air pressure regulator: Avoid area with direct sunlight; impact blow or temperature outside of the rated range.
6. Do not expose or clean filter bowls with detergents, chlorinated hydro-carbons, ketones, esters, or certain alcohols.
7. Do not expose the bowls or air pressure regulator in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.
8. Remove excessive dirt, grime, and clutter from work area.
9. Periodically check for leaks from the pistons, air regulators, and hoses.
10. Periodically check the tension of the synchronous belt.
11. Turn off air pressure when machine is not being used.
12. Once a week check the air regulator for moisture and drain if needed. To drain the water, first place container under the bowl and disconnect the air as indicated in the picture. Make sure to have the container in place before disconnecting air; the water will drain as soon as air is disconnected.
Make sure water does not get onto electrical wires/connectors.



General Maintenance

It is recommended that you have the following items available:

- a) Regular screw driver
- b) Phillips head screw driver
- c) Small adjustable wrench
- d) Needle nose pliers with insulated handle
- e) Set of metric Allen wrenches
- f) Grease gun
- g) Special high temperature grease MPPL023



NOTE

Wipe off any excess oil or grease.



WARNING:

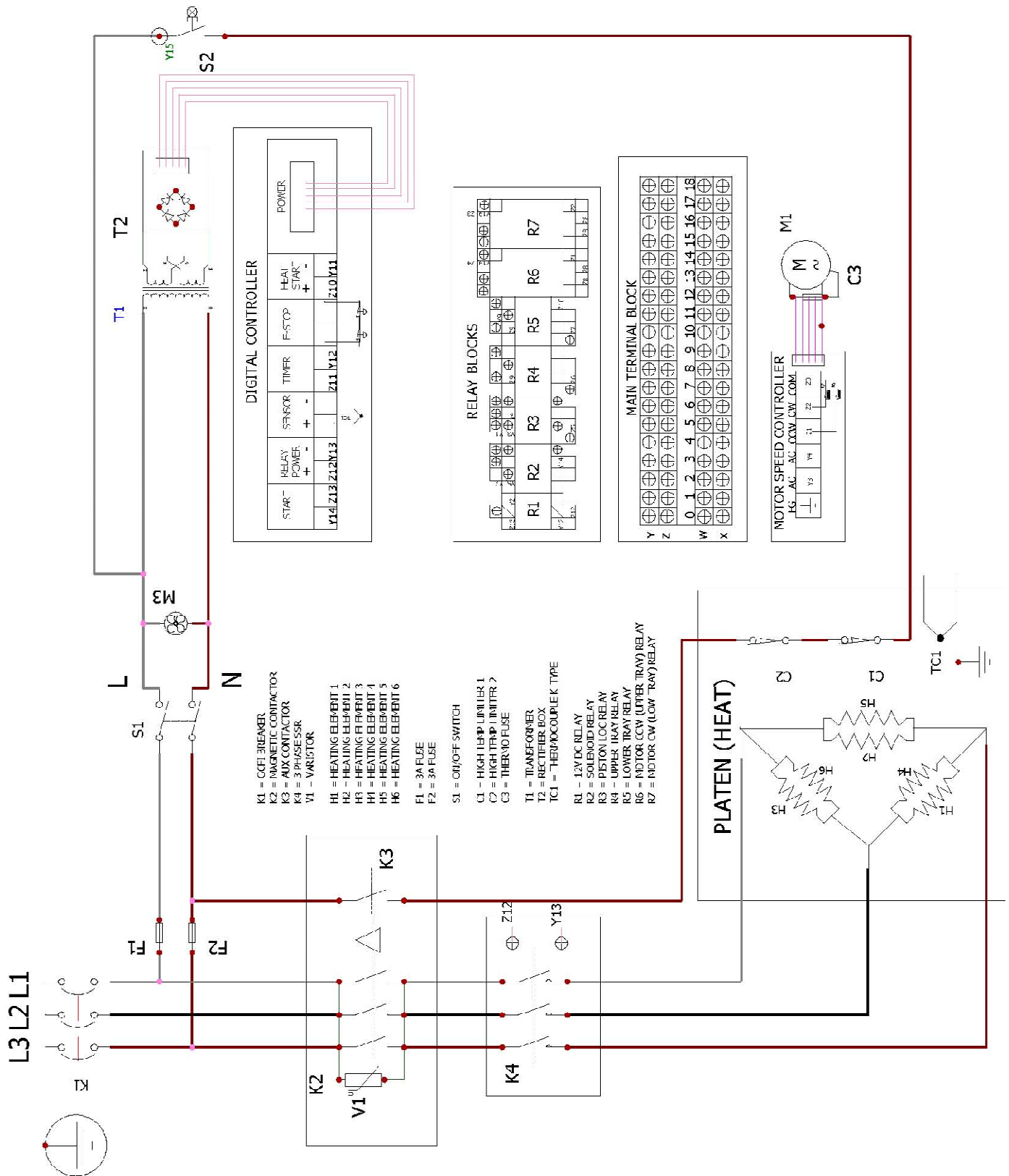
Do not attempt to remove the upper platen without proper equipment.



WARNING:

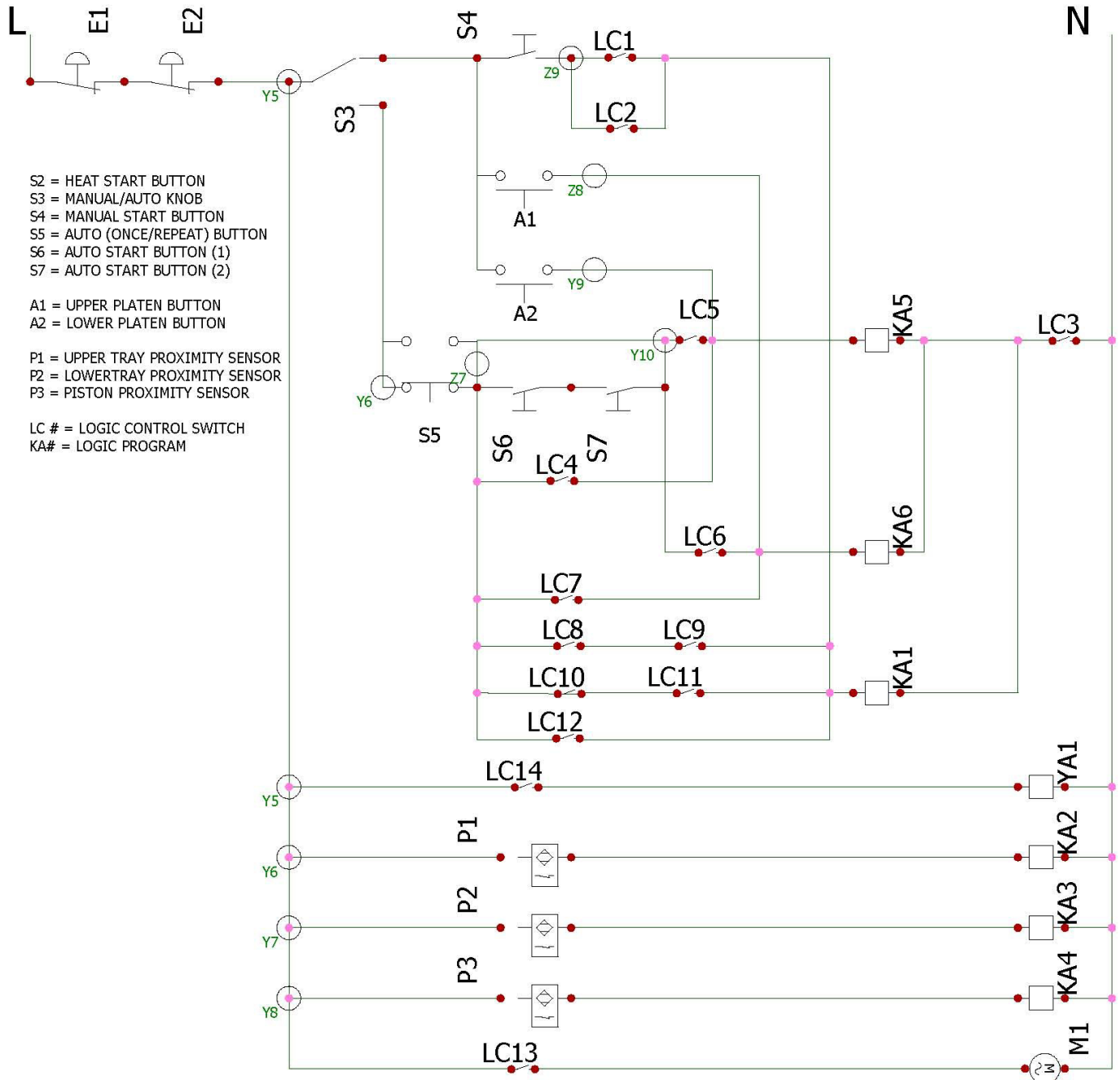
Do not attempt to service or repair machine while it is still hot and powered.

1020 Wiring Diagram

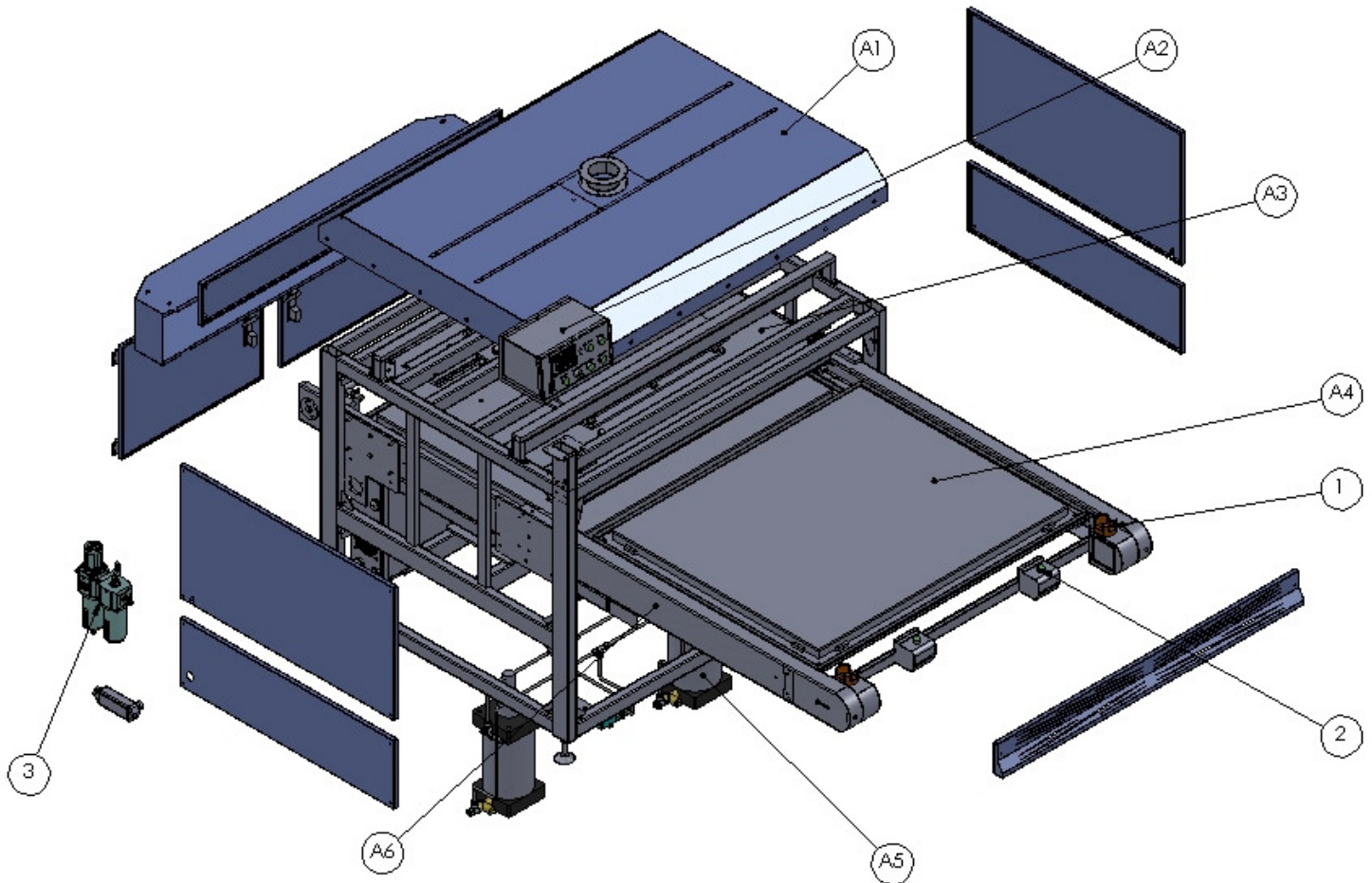


1020 Wiring Diagram

CONTORL LOGIC

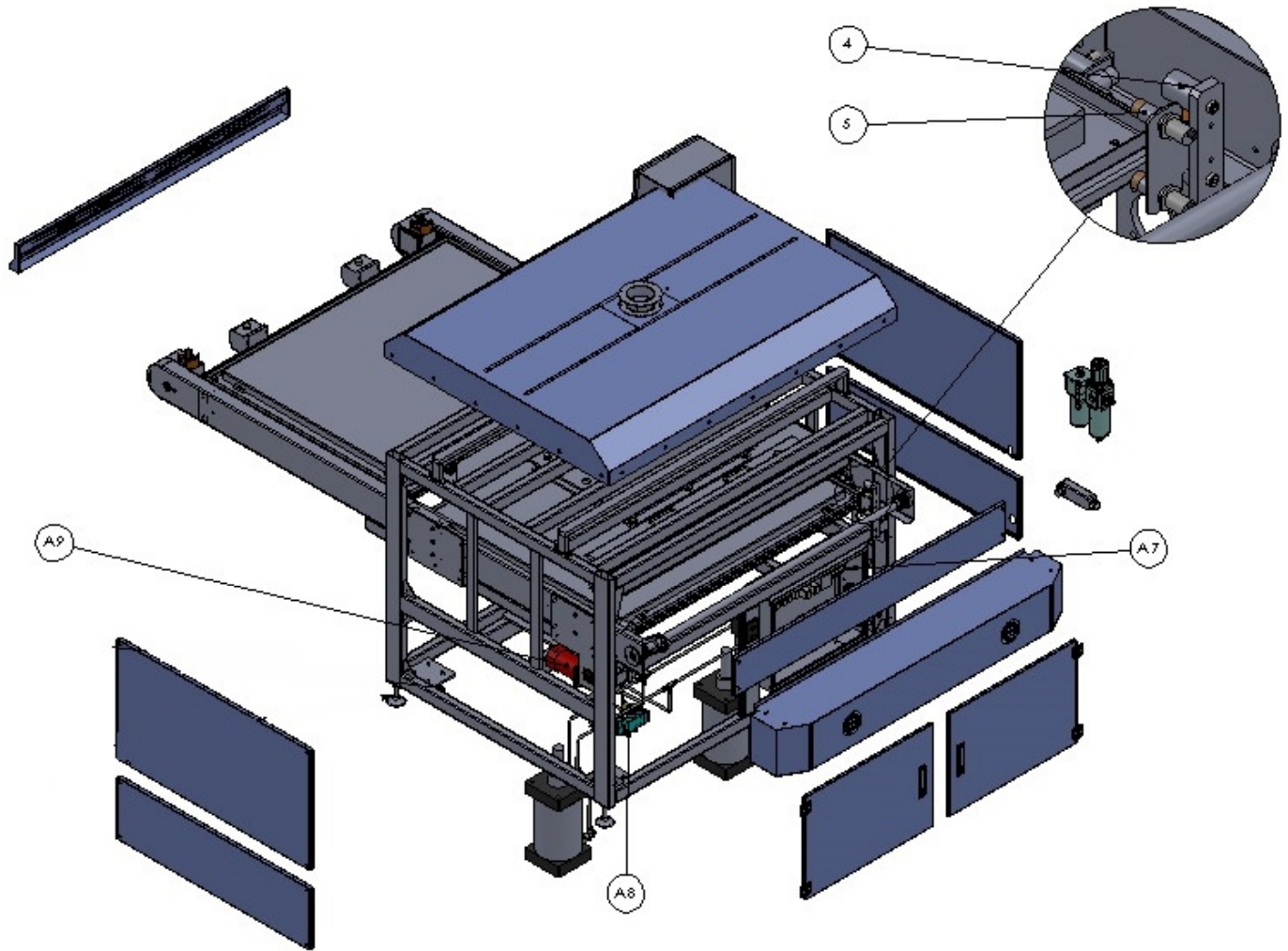


1020 Explosion View



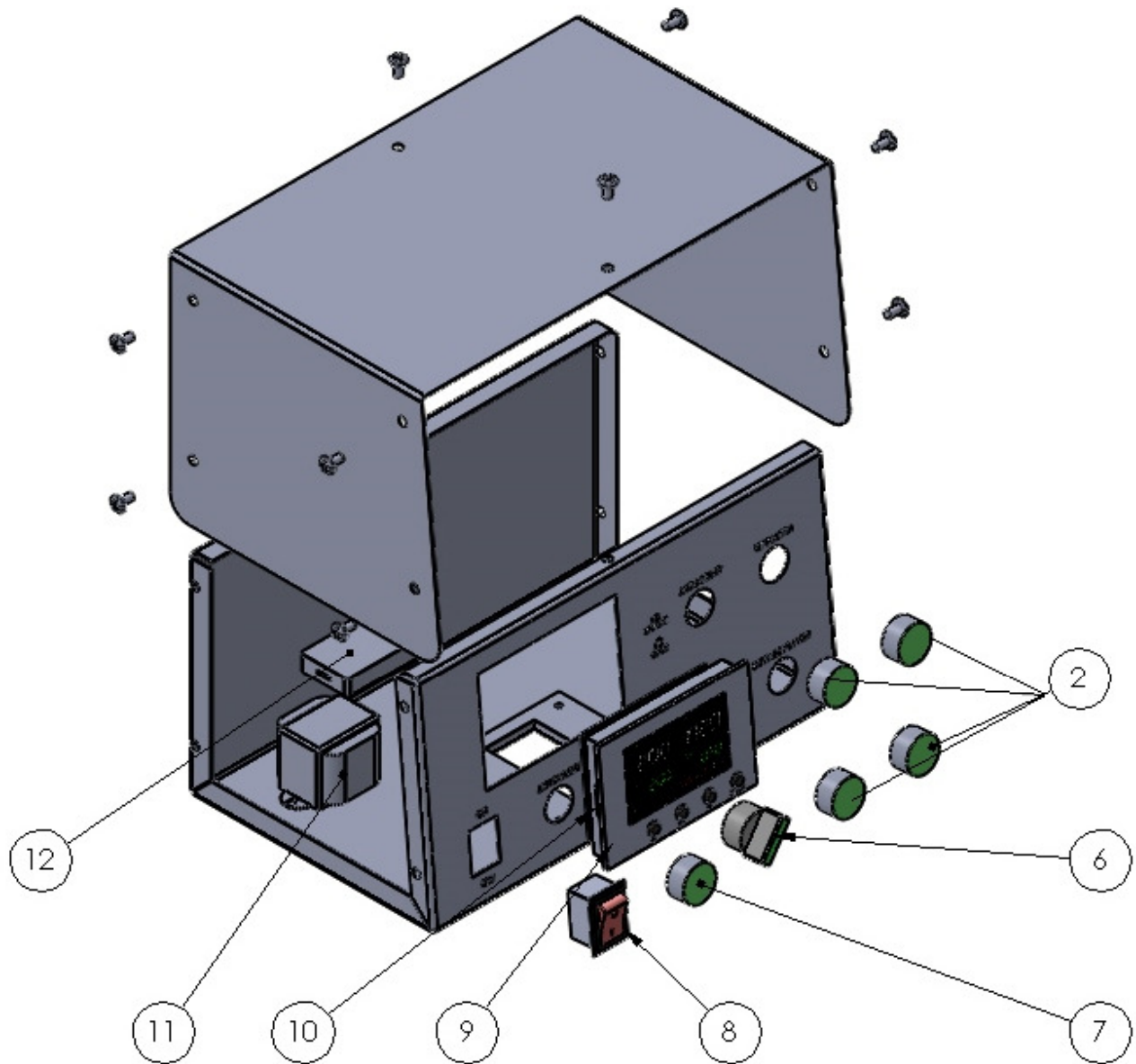
ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
A1		MACHINE COVER ASSEMBLY	1
A2		CONTROLLER BOX ASSEMBLY	1
A3		UPPER PLATEN ASSEMBLY	1
A4		SHUTTLE TRAY ASSEMBLY	2
A5		PISTON ASSEMBLY	2
A6		SHUTTLE ARM ASSEMBLY	2
1	MH004-008	EMERGENCY BUTTON	2
2	MH004-009	MOMENTARILY BUTTON	6
3	MP1020-002	AIR REGULATOR ASSY	1

1020 Explosion View



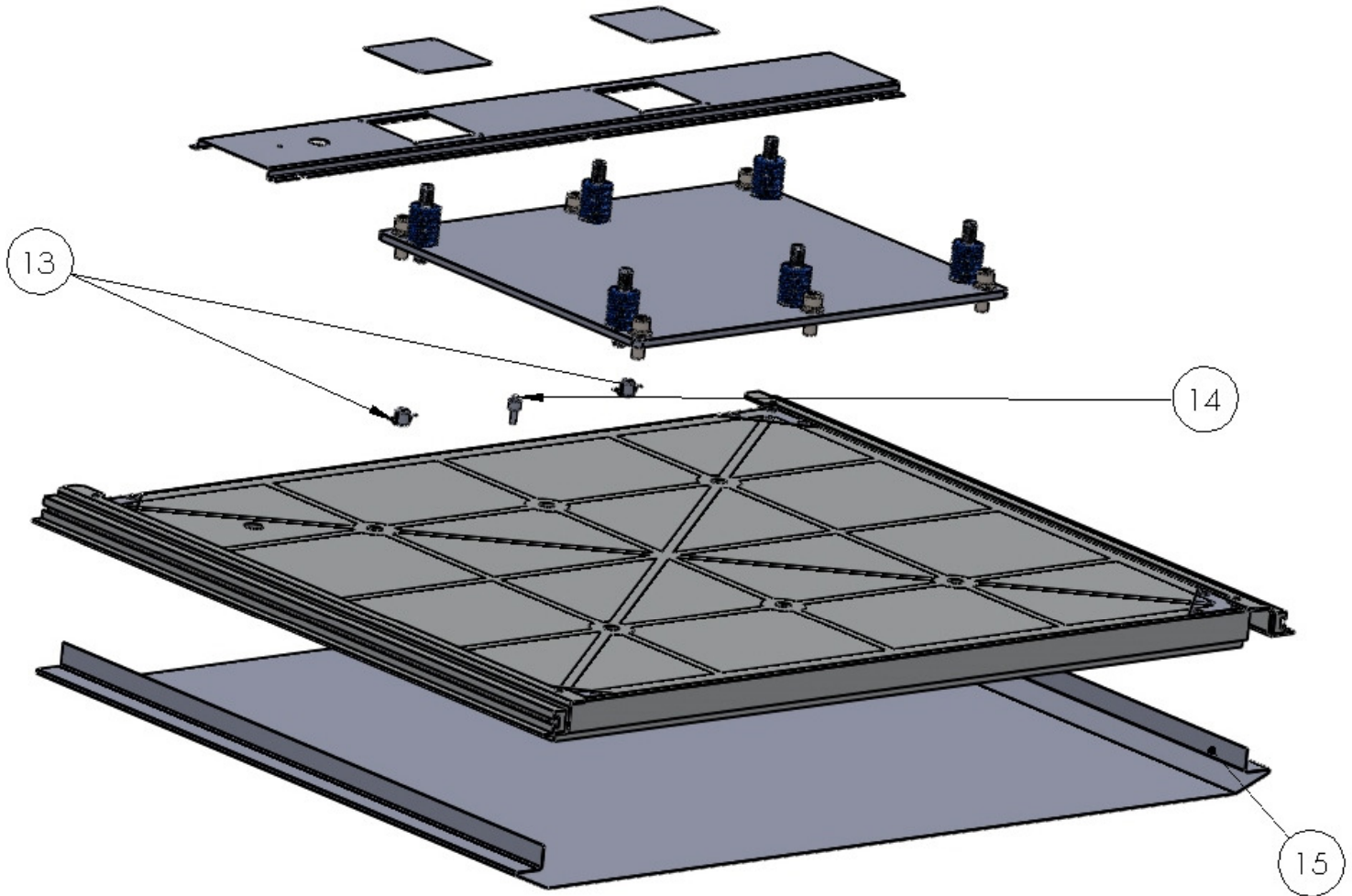
ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
A7		ELECTRICAL BOX ASSEMBLY	1
A8	MH007-035	AUTOMATIC SOLENOID ASSEMBLY	1
A9	MB1020-001	MOTOR ASSEMBLY	1
4		TRAY BUMPER	4
5	MH009-004	PROXIMITY SWITCH	3

A2 – Controller Box Assembly



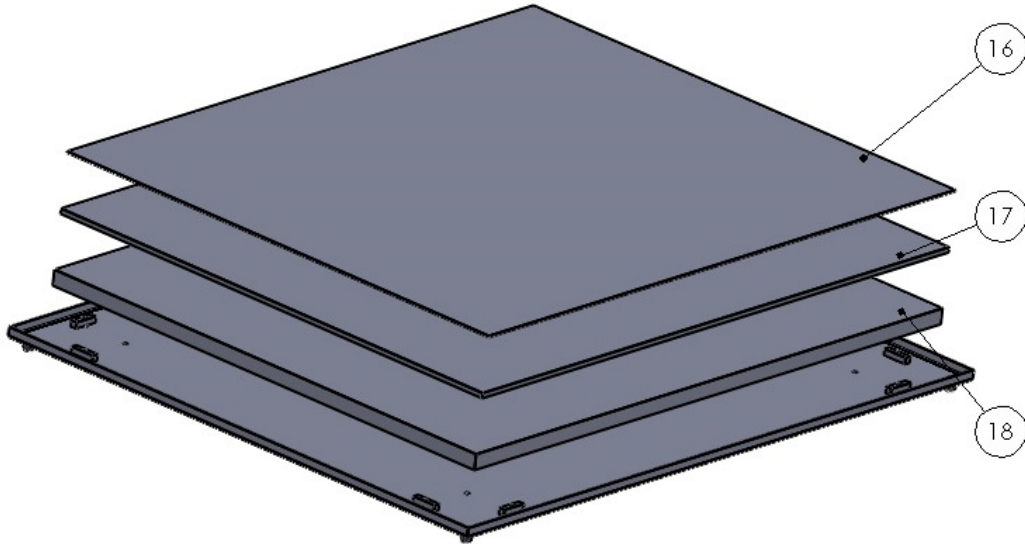
ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
6	MH004-010	AUTO/MANUAL KNOB	1
7	MH004-011	HEAT START BUTTON	1
8	MH004-019	ON/OFF SWITCH ,240V	1
9	MP1020-001	DIGITAL CONTROL OVERLAY	1
10	MH006-005	DIGITAL CONTROLLER	1
11	MH008-003	TRANSFORMER	1
12	MH008-002	CONTROLLER POWER ADPATER	1

A3 – UPPER PLATEN Assembly

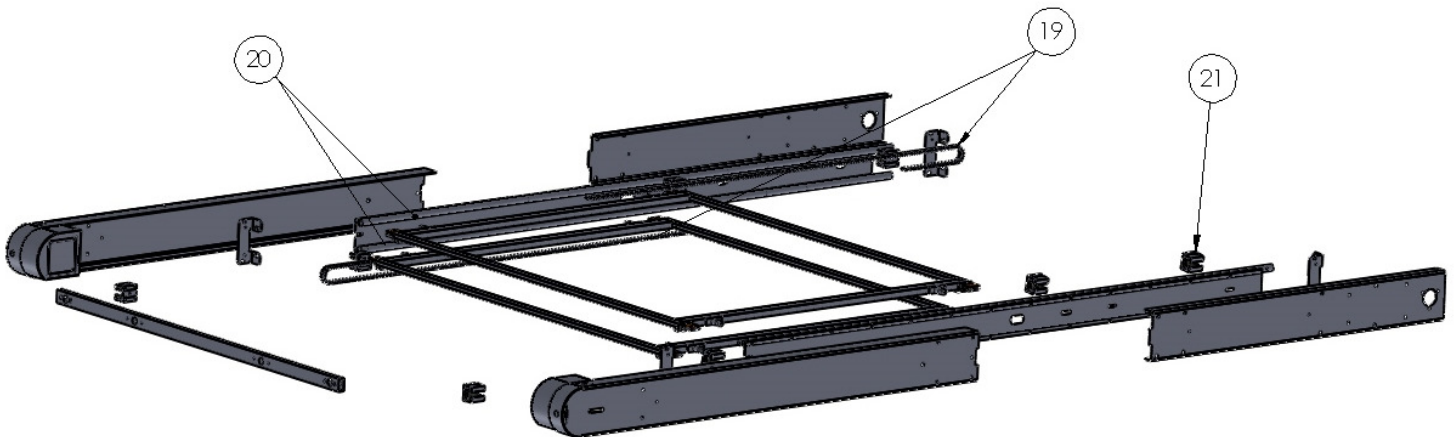


ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
13	MTTP046	HIGH TEMP LIMITER	2
14	MH009-005	THERMOCOUPLE, TYPE-K	1
15	MAPT1020U	TELFON SHEET, UPPER PLATEN	1

A4 – Shuttle Tray Assembly



A6 – Shuttle Arm Assembly

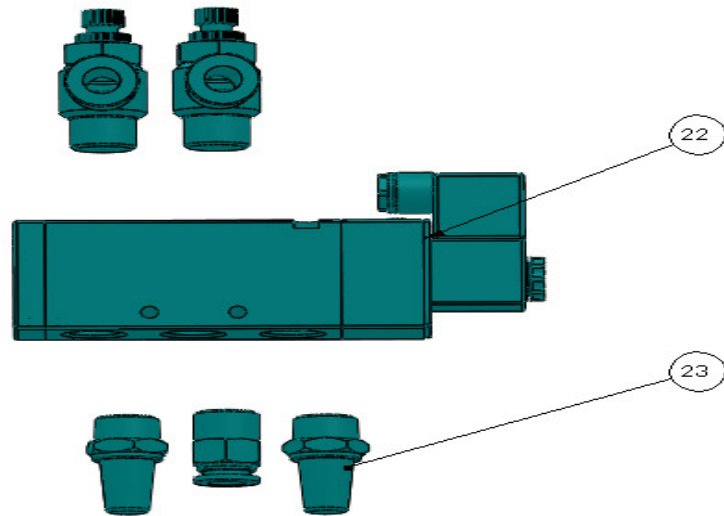


ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
16	MPT1020-008*	48 X 40 TELFON COVER	2
17	MP1020-006	47 X 38, SILICONE TOP PAD	2
18	MP1020-004**	47 X 38, 1" COTTON BASE PAD	2
19	MH007-039	TIMING BELT	2
20	MH007-041	SLIDER ROD	4
21	MH007-040	BALL BEARING ASSY	8

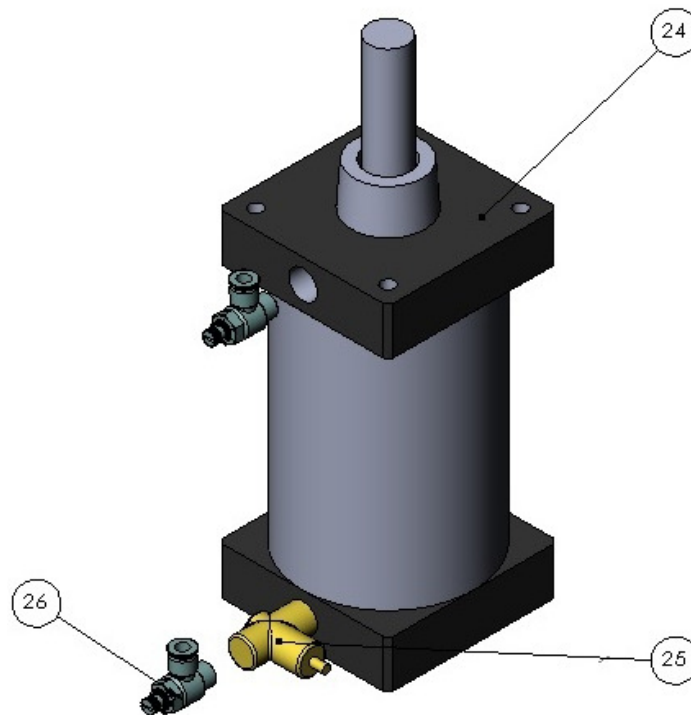
* Optional – Order separately

**Consumable – Not covered by warranty

A8 – Automatic Solenoid Assembly

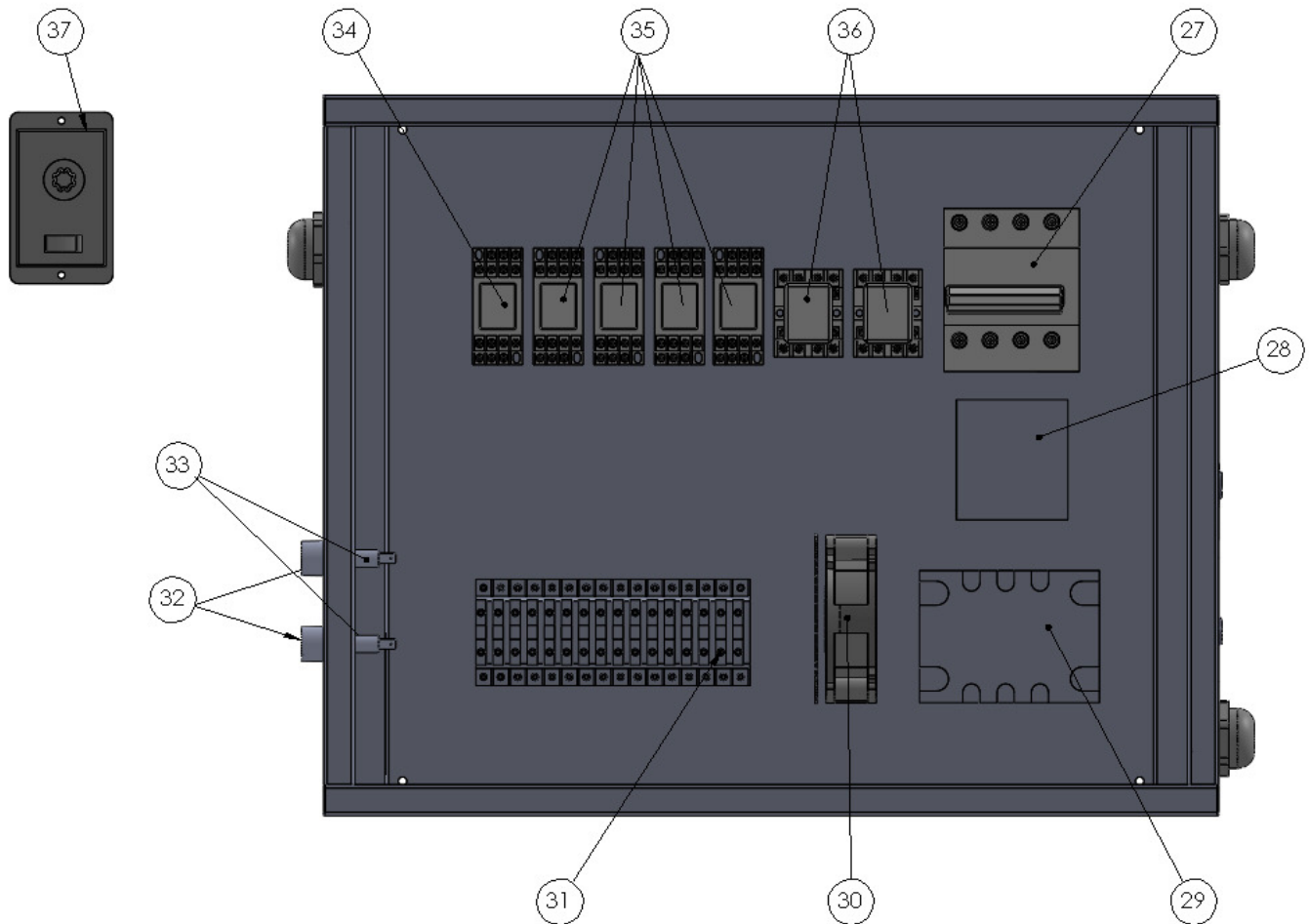


A5 – Piston Assembly



ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
22	MH007-035	5/2 AIR SOLENOID ASSY	1
23	MH007-042	½" COPPER MUFFLER	2
24		PISTON	2
25	MH007-036	½" SAFETLY RELIEF VALVE	2
26	MH007-046	RIGHT ANGLE ½" HOSE FITTING	4

A7 – ELECTRICAL BOX



ITEM NO.	PART/ASSY. NO.	DESCRIPTION	QTY.
27	MH004-012	THREE PHASE GFCI	1
28	MP1020-007	MAGNETIC CONTACTOR ASSY	1
29	MH005-004	THREE PHASE SSR	1
30	MH004-013	SSR COOLING FAN	1
31	MH004-014	LINE CONTACT BANK	1
32	MH007-034	FUSE HOLDER	2
33	MH004-015	FUSE	2
34	MH005-005	INTERMITTATE RELAY 12V	1
35	MH005-006	INTERMITTATE RELAY 220V-240V	4
36	MH005-007	INTERMITTATE RELAY RR2P-U 220V	2
37	MP1020-004-001	MOTOR SPEED CONTROLLER	1

FOR USE BY QUALIFIED PERSONNEL ONLY



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