



Elevation
Packaging & Equipment

EAS-1000

• SINGLE ZONE

• HOT AIR SEALER

OPERATIONS AND OWNERS MANUAL

EAS1000.VER1-01/2024

1. MACHINE OVERVIEW
2. INSTALLATION AND START UP
3. ELECTRICAL CONTROLS
4. OPERATION
5. HEAT AND COOL MANIFOLDS
6. COMPRESSION ROLLERS
7. CARRIER BELTS
8. TROUBLESHOOTING
9. LUBRICATION
10. RECOMMENDED SPARE PARTS
11. ASSEMBLY DRAWINGS

Component manuals are available by each manufacturer:

Motor: <http://www.baldor.com>

Gearbox: <http://www.grovegear.com> or [Products - Vortex Speed Reducers \(vortexreducer.com\)](http://Products-Vortex-Speed-Reducers(vortexreducer.com))

Watlow 935 <http://www.watlow.com>

Tempco TEC-220 <http://www.tempco.com>

FOR TECHNICAL QUESTIONS OR PARTS CONTACT

info@elevationpkg.com

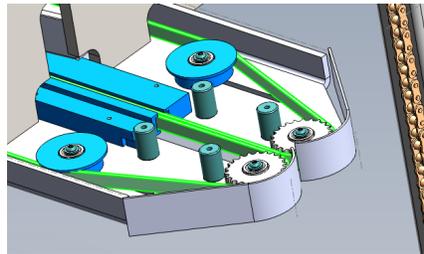
support@elevationpkg.com

(402) 999-0827

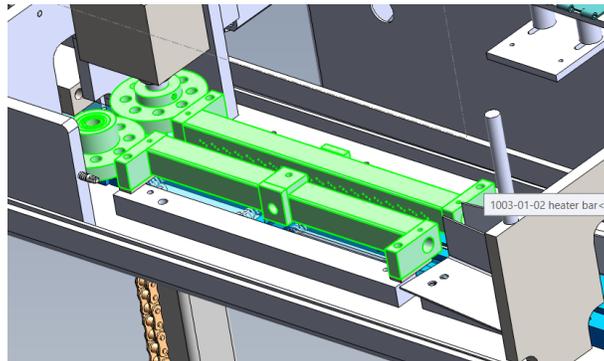
1. MACHINE OVERVIEW

The EAS-1000 Hot Air Sealer is designed for manual or automatic production lines to seal a tube style bag. Bag sizes may range from 2.5 mil to 9 mil thickness.

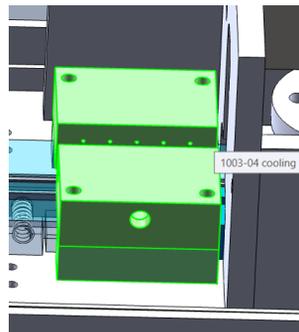
Bags are fed into the infeed of the machine and carried through the entire machine via paired carrier belts.



The bag top travels between two forced air heat manifolds followed by compression rollers, giving an approx seal of ¼ inch at the top of the bag.

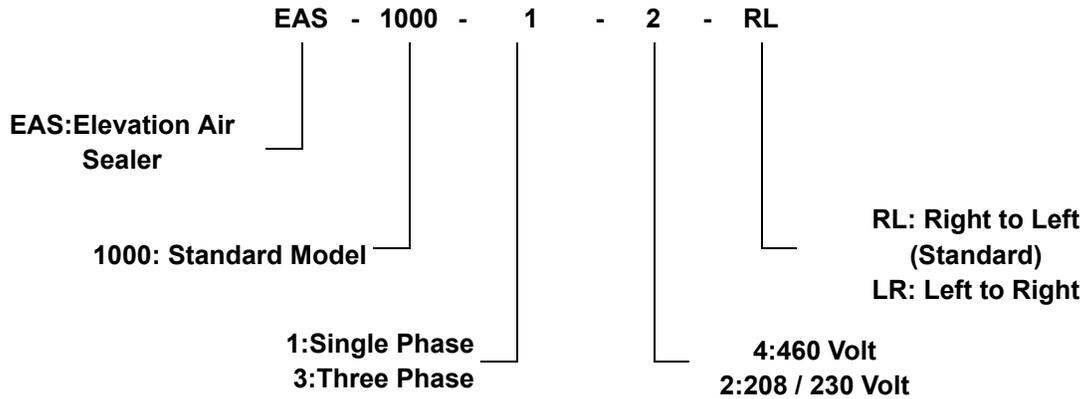


The bag top then travels between 2 forced air cooling bars which help solidify the seal of the bag before exiting the machine.

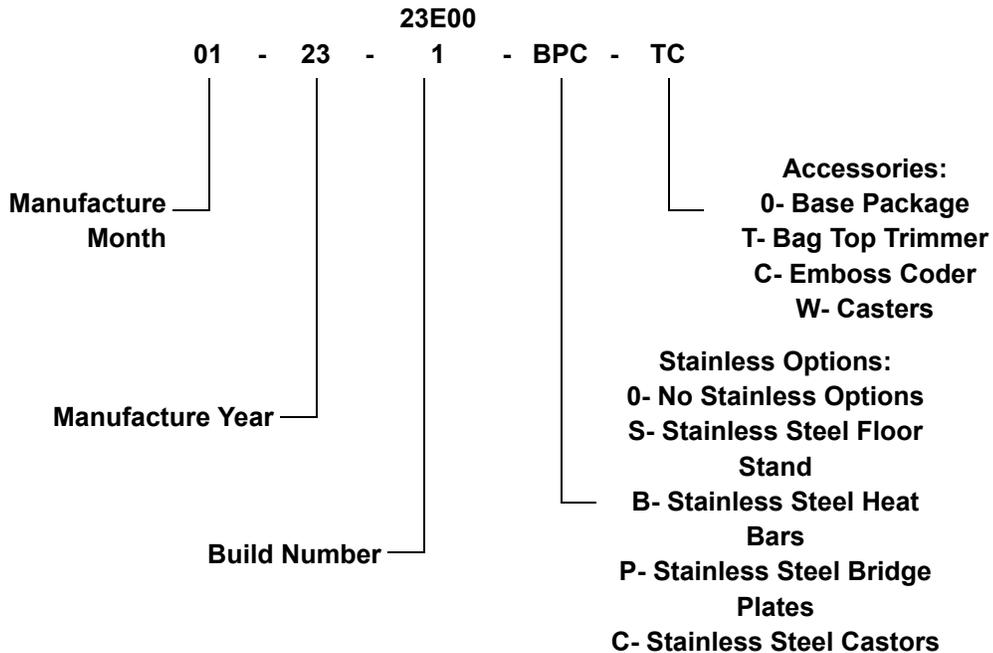


1. MACHINE OVERVIEW (cont)

Model Number



Serial Numbers



2. INSTALLATION AND START UP

Once the machine arrives, uncrate the machine and check for any damage. If any damage has occurred, contact the freight carrier at once.

The machine should be ready to operate after inspecting the interior and exterior of the machine.

Standard electrical service is accomplished by a corded outlet. If the machine is to be wired to permanent power, consult your electrical contractor.

Once the height is adjusted and set in place over the conveyor, the unit is ready to start running test bags.

All operators should be trained on equipment operation before use.

!! DANGER - READ BEFORE SERVICING!! Only personnel trained to identify hazards and proceed safely should attempt to service the equipment. Failure to follow these guidelines could result in personal injury, damage to equipment or death. Servicing, lifting, or troubleshooting this equipment may subject the user to hazards such as but not limited to the following.

- Electrical hazards, shock / arc flash
- Tipping hazards
- Pinch points / mechanical hazards
- Burns from heat bars
- Sharp edges

3. ELECTRICAL CONTROLS



A 10 turn potentiometer precisely controls carrier belt speed to a fixed setpoint. The operator must adjust to match the conveyor speed.



Main power switch starts the entire sealer



Heat control switch enables or disables the heat bars



The Watlow 935 or Tempco 220 heat controller precisely controls the air temperature of the heat manifolds. To change the setpoint, press the set button along with the up and down arrows.



Emergency Stop switch located on the side of the electrical box



Inverter VFD - Press the Octagon to scroll through

- Frequency
- Motor Speed
- AMPS
- FPM (c)
- Output Power

The drive will display any faults that occur

Refer to the appropriate Inverter Manual For troubleshooting

4. OPERATION

1. To start the machine, make sure air is hooked up and flowing. Regulator PSI should be approximately 10-30 PSI. Failure to do this will cause heat elements to fail prematurely. Use the power switch to start the drive. Use the heat switch to start heating the manifolds.
2. Set the temperature controller to proper setting. For example a good starting point for a 4 mil bag with a melting point of 220 degrees F is 275 degrees F @ 35 FPM and 10 PSI
3. Using the 10 turn speed potentiometer, adjust the speed of the conveyor and sealer so that they match exactly. Not doing so may cause a poor seal.
4. Once the red led light on the heat controller goes out, the machine will be ready to seal. Please note: while the sealer is running this light will go on and off to maintain temperature.
5. Run several sample bags to find the correct sealing temperature.

5. HEAT AND COOL MANIFOLDS

1. Heating and cooling manifolds (see drawing 1003-00) should be evenly spaced. Spacing is set at the factory, no adjustments should be needed.

**** DANGER****

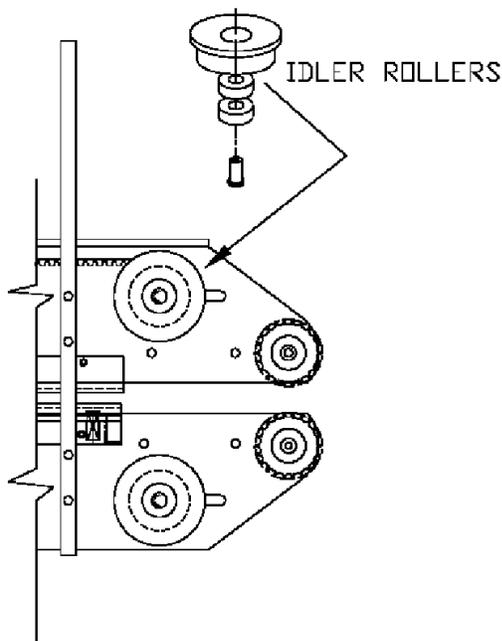
**HEAT MANIFOLDS WILL BECOME VERY HOT!
DO NOT TOUCH!
SERIOUS BURNS COULD OCCUR!**

6. COMPRESSION ROLLERS

1. The rear or stationary roller (see drawing 1003-00) is set at the factory by running a straight piece of sheet metal between the compression rollers to ensure that the rear roller is exactly in the center of the machine. This should not need adjustment at start-up.
2. The front or hinged roller applies pressure via a compression spring. The bag is compressed between the two rollers leading to a positive seal. Note: Both rollers must be running level.

7. CARRIER BELTS

1. Two continuous ½” wide carrier belts are used to carry the
2. bag through the entire machine.
3. Tension is set at the factory and should require no adjustment at start up. Periodic tightening may be necessary.
4. Changing tension of belts
 - Disconnect power to the machine. Unplug or Lock out equipment.
 - Remove the in-feed guards.
 - Increase belt tension by sliding the idler rollers on the “outside” edges of both base plates.
 - Loosen the button head cap screw holding the idler roller in place and either slide towards the in-feed to increase tension on belts or slide towards the discharge section to decrease tension



8. TROUBLESHOOTING

General concepts of operation

- There are several principles to consider when operating to get a consistent seal-
 - Hot air degrees above melting point (bag changes require testing of new material)
 - Radiant heat of heaters (cold machine or recent setpoint changes require stabilization)
 - Time exposed to heat (FPM)
 - Amount of compression and temperature of compression roller (cold machine?)
 - Thickness of bags
 - Contamination - product changes require testing

1. Poor seals:

- a. **Check the temperature controller heat setpoint.** Overheating will cause melt through. Too little heat will not melt the bag enough to seal.
- b. **Check the compression rollers for alignment.** Misaligned rollers will provide a thinner seal due to reduced contact area of the compression rollers
- c. **Check the speed of the conveyor and the speed of the sealer.** Mismatched speeds can be seen observing the bag and watching the top and bottom of the bag. The faster (top / bottom) will slightly lead the slower component. Mismatched speeds can cause the seal to tear as well as cause an uneven seal path across the top of the bag.
 - Tear at front of bag - conveyor running slower than sealer.
 - Tear at rear of bag - conveyor running faster than sealer.
- d. **Check air pressure against testing start up report** - if no report was given, contact Elevation packaging with good starting values for the bag specifications you have - air pressure ranges are from 10-30 psi and drastically affect the bag seal - air pressure should be minimized for energy efficiency. Air pressure should be increased only if a good seal cannot be attained by first raising temperature or slowing conveyor speed - for example @ 30FPM a 4 mil bag may seal well at 10 PSI, so 25PSI is just a waste of electricity, where @ 50FPM, 10PSI may not produce enough volume of heat to seal consistently through varying levels of contamination -

2. Unit will not maintain selected heat setpoint

- a. **Faulty thermocouple** - The thermocouple can be checked against standard type J thermocouple millivolt reference tables.
- b. **SSR Issue**- check for. Voltage drops over the SSR line contacts
- c. **Heat elements burnt out** - verify voltage is present at the heat element and measure the current of the heat element. If there is voltage present and no current at the heat element, the heat element is faulty.
- d. **Controller issue** - The Watlow 935 and Tempco 220 user manuals contain fault codes and troubleshooting information specific to the controller and are both available online.

9. LUBRICATION

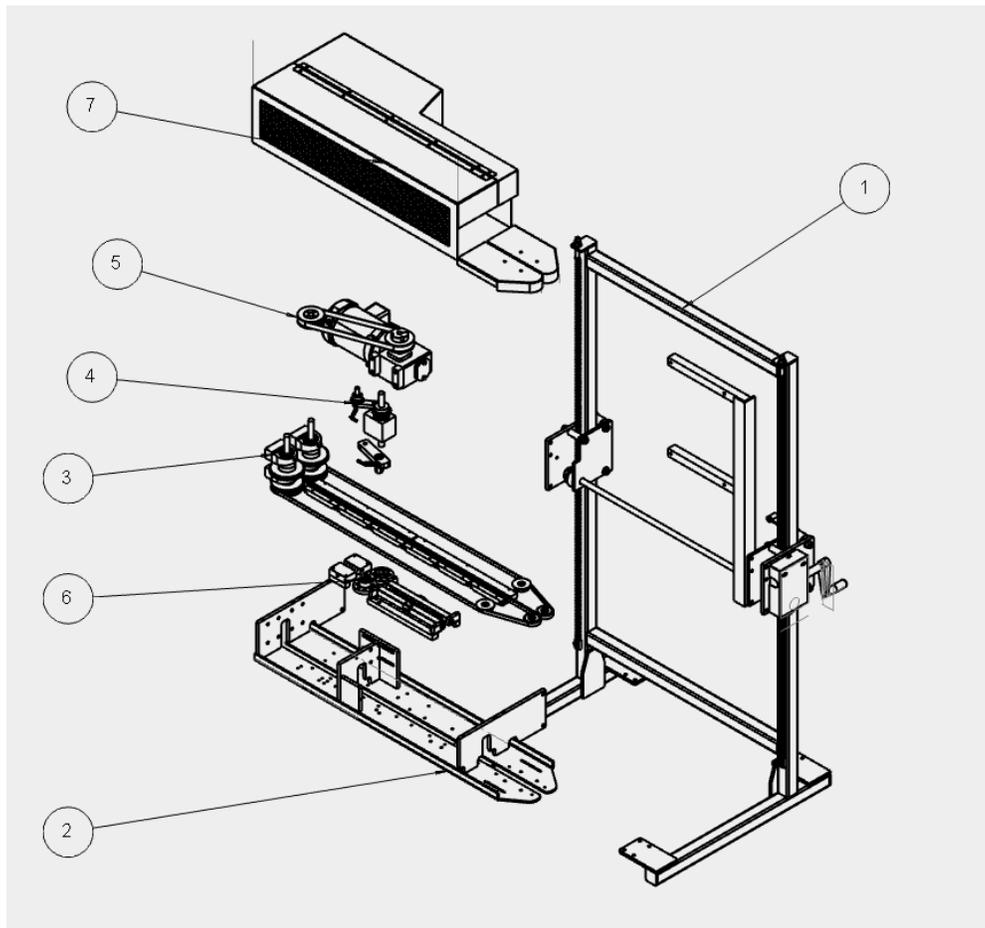
1. The Gear box reducer oil level should be periodically checked. See reducer manual @ <http://www.grovegear.com> -
 - 1.1. Grove Gearbox - When using standard PAG Synthetic oil, oil changes are not needed unless repairs are being made. If your unit shipped with non-standard oil, or a non standard gear box, oil changes may be necessary. Consult the gearbox manual.
 - 1.2. Vortex gearbox - gearbox should be lubricated every 2500 hours
2. Gears, sprockets and chain should have a light coat of heavy duty lithium grease smeared on the contact points. Dry or heavily soiled components will require cleaning and regreasing.

10. RECOMMENDED SPARE PARTS

PART	DESCRIPTION	QUANTITY
1003-14	Heat Element .500 x 12.00	2
1003-15	Thermocouple	1
1003-16	Solid State Relay	1
1003-17	Tempco Heat controller	1
1002-01	Carrier Belt pair	1
900-056	Drive Belt	1

11.ASSEMBLY DRAWINGS LIST

1.	2022-00	ASSY FLOOR STAND
2.	2022-01	ASSY FRAME
3.	2022-02	ASSY CARRIER BELTS
4.	2022-03	ASSY COMPRESSION DRIVE
5.	2022-04	ASSY HOT AIR DRIVE
6.	2022-05	ASSY STANDARD SINGLE SEAL
7.	2022-07	ASSY GUARDS HOT AIR



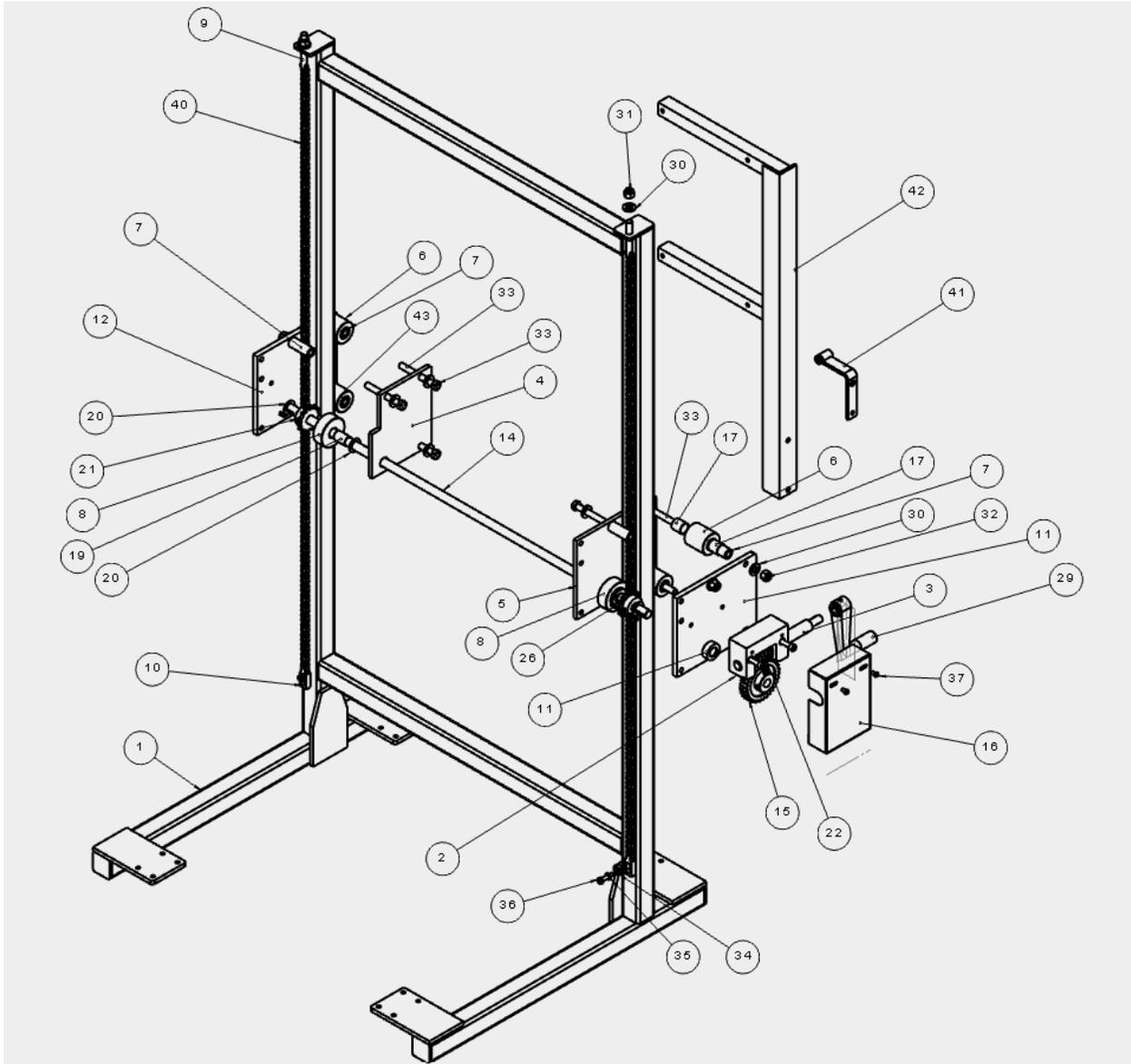
2022-00

ASSY FLOOR STAND

ITEM	PART NUMBER	DESCRIPTION	QTY
1	106-110	WELDMENT FLOOR STAND	1
2	106-01	WORM PLATE	1
3	106-02	CRANKSHAFT	1
4	106-03	PLATE INSIDE	1
5	1006-04	SIDE PLATE	1
6	106-06	ROLLER	2
7	106-05	AXEL ROLLER	6
8	106-07	ROLLER CHAIN	2
9	106-08	ADJUSTER CHAIN	2
10	106-09	HANGER CHAIN	2
11	106-11	WELDMENT CRANK PLATE	1
12	106-12	WELDMENT IDLER PLATE	1
13	106-13	SPACER WORM	1
14	106-200	SHAFT CROSS 1H1C	1
15	900-010	REWORK WORM GEAR	1
16	106-14	COVER WORM GEAR	1
17	900-146	BRG SLEEVE .88 X 1.00 X 1.00	8
18	900-148	BRG SLEEVE .75 X .88 X 1.00	3
19	900-149	BRG SLEEVE .75 X .88 X 1.25	2
20	900-206	BRG THRUST .06 X .75 X 1.25	7
21	900-037	SPROCKET 40B14 .75 BORE	2
22	900-208	WORM	1
23	900-147	BRG SLEEVE 1.00 X 1.12 X 1.50	1
24	900-047	LINK CONNECTOR #40	4
25	900-104	PIN SPRING 0.19 X 1.25	1
26	900-130	KEY .188 SQ X .75 ROUNDED ENDS	2
27	900-140	KEY .19 SQ X 1.00	2
28	900-141	KEY .19 SQ X 1.50	1
29	204-100	REWORK CRANK HANDLE	1
30	900-063	WASHER FLAT SAE 1/2	14
31	900-129	NUT HEX FLEX TOP LOCKING	2
32	900-134	NUT HEX LOCK NYLON 1/2-13	6
33	900-069	SCR HEX HD 1/2-13 X 4.0	6
34	900-061	WASHER FLAT SAE 5/16	2
35	900-083	WASHER LOCK 5/16 SST	2
36	900-111	SCR HEX HD 5/16-18 X 1.25	2
37	900-124	SCR BUTTON HD 1/4-20 X .50 SST	2
38	900-064	SCR SOC HD 3/8-16 X 2.0	2
39	900-103	SCR SET 5/16-18 X .38 SST	2
40	900-009	CHAIN #40 ROLLER X 60.5 LG	2
41	1000100	WELDMENT AIR REG MOUNT	1
42	10001412	ELECT BOX MOUNT	1
43	106-206	ROLLER LOWER	2

2022-00

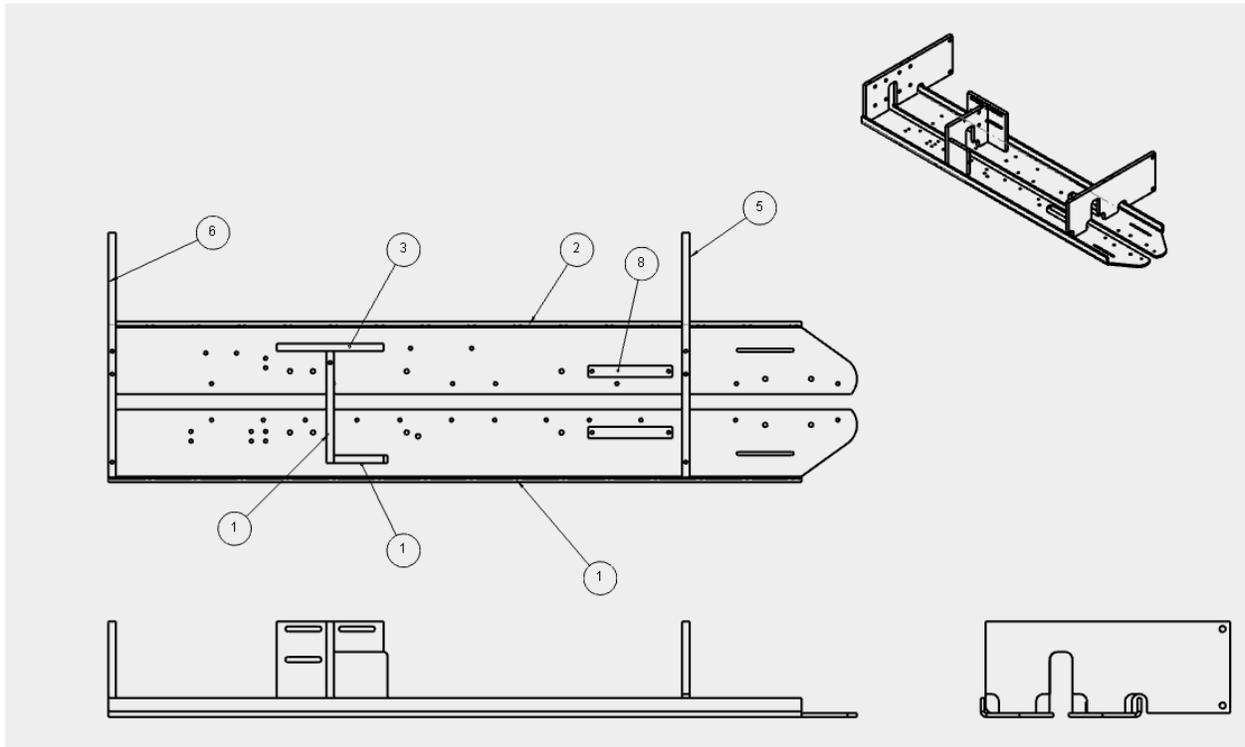
ASSY FLOOR STAND (cont)



2022-01

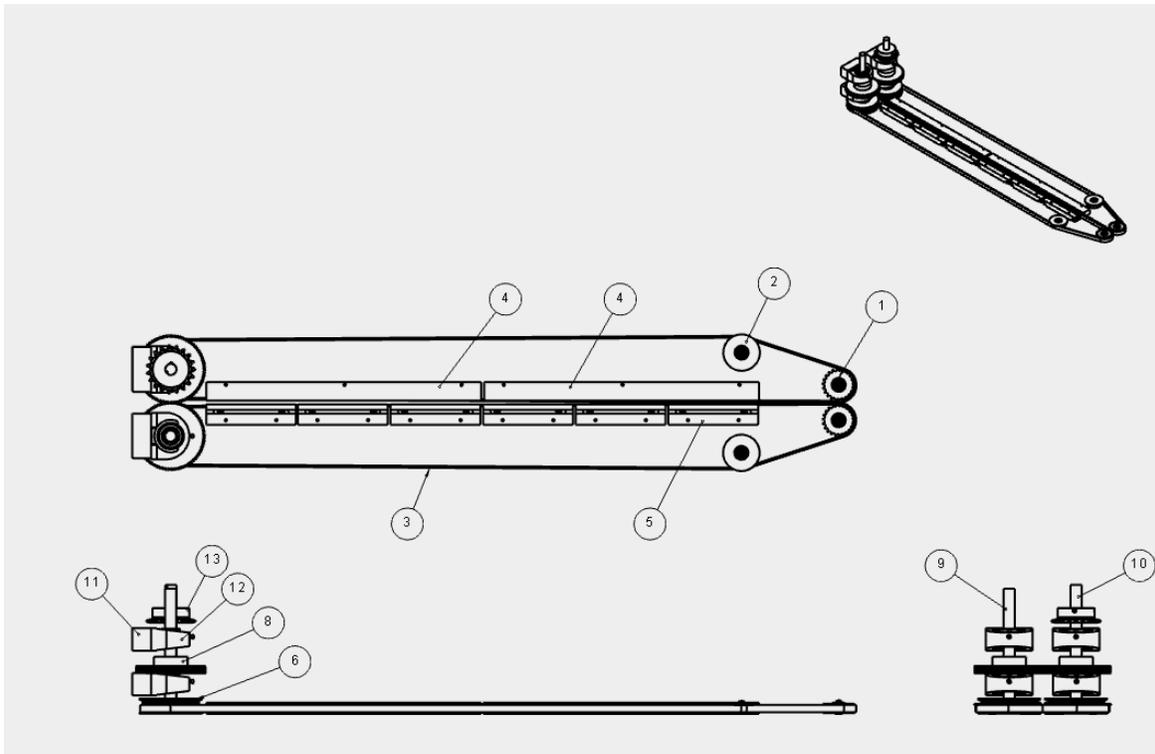
ASSY FRAME

ITEM	PART NUMBER	DESCRIPTION	QTY
1	2019-01	FRONT DECKPLATE	1
2	2019-02	REAR DECKPLATE	1
3	1004-7	REDUCER PLATE	1
4	2019-04	CENTER BRIDGE	1
5	2019-05	BRIDGE INFEED	1
6	2019-03	BRIDGE DISCHARGE	1
7	1004-10	BRACE	1
8	2019-09	SPACE INFEED GUIDE	2
9	2019-10	INFEED GUIDES	2



2022-02 ASSY CARRIER BELTS

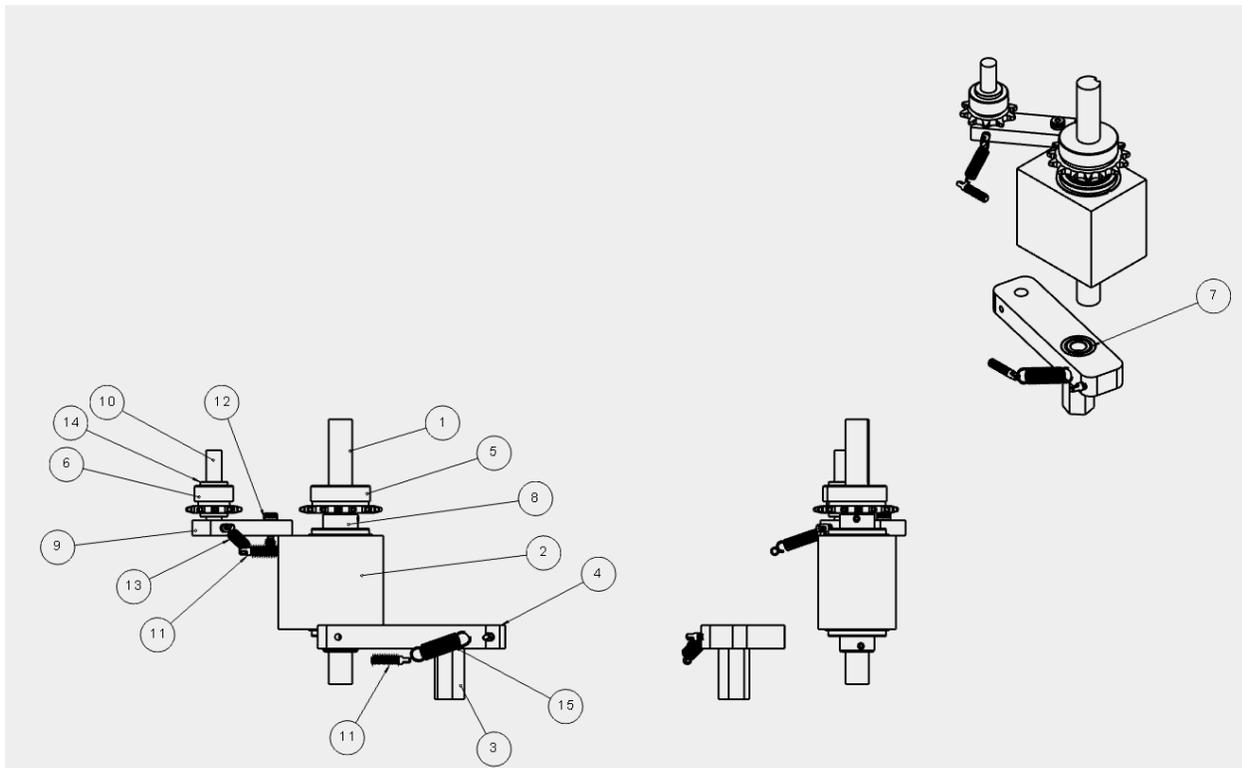
ITEM	PART NUMBER	DESCRIPTION	QTY
1	1002-100	ASSY NOSE ROLLER	2
2	1002-101	ASSY IDLER ROLLER	2
3	1002-01	CARRIER BELT 8MGT-2520-12 BELT	2
4	102-01	PRESSURE BAR STATIONARY	2
5	1002-102	ASSY PRESSURE BAR	6
6	900-189	PULLEY	2
7	900-041	TAPER LOCK BUSH 1210 .75B	2
8	1005-17	DRIVE GEAR S1672	2
9	1005-02	SHAFT SHORT DRIVE	1
10	1005-01	SHAFT LONG DRIVE	1
11	1000009	BEARING SPACER	4
12	900-053	COMPACT BASE MOUNTING BEARING	4
13	900-210	41B19 SPROCKET .75 BORE	1



2022-03

ASSY COMPRESSION DRIVE

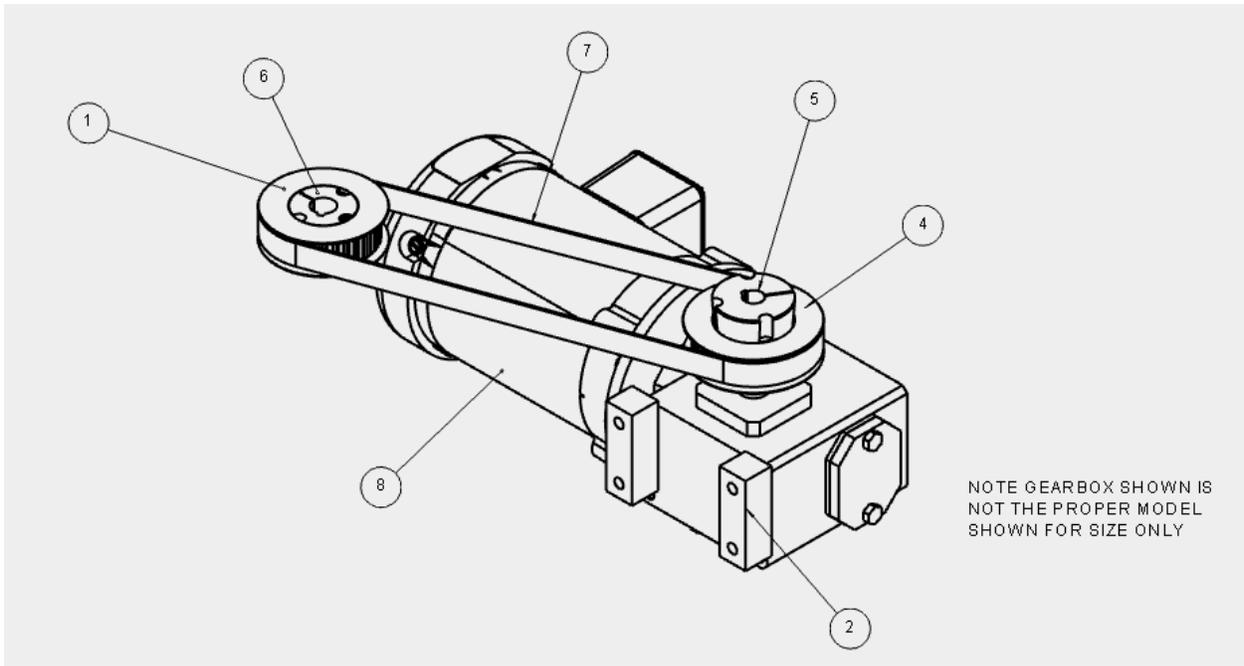
ITEM	PART NUMBER	DESCRIPTION	QTY
1	1003-10	COMPRESSION SHAFT	1
2	1003-09	STATIONARY BLOCK	1
3	1003-08	PIVOT ARM MOUNT	1
4	1003-07	PIVOT ARM	1
5	900-005	ROLLER CHAIN SPRKT 41B15	1
6	900-006	ROLLER CHAIN SPRKT 41B10	1
7	900-026	BRG ROLLER 1616RS	2
8	900-055	BRG BALL ER12	2
9	1005-12	IDLER BRACKET	1
10	1005-13	IDLER STUD	1
11	900-137	EXT SPRING STUD	4
12	900-072	BOLT SHOULDER 5/16 X .50	1
13	900-054	EXT SPRING LE-058D-06S	1
14	900-049	BRG FLANGED SLEEVE .50 ID X .688 OD X .5 LG .88 X .06 FLANGE	2
15	900-166	EXT SPRING LE-049E-04S	1



2022-04

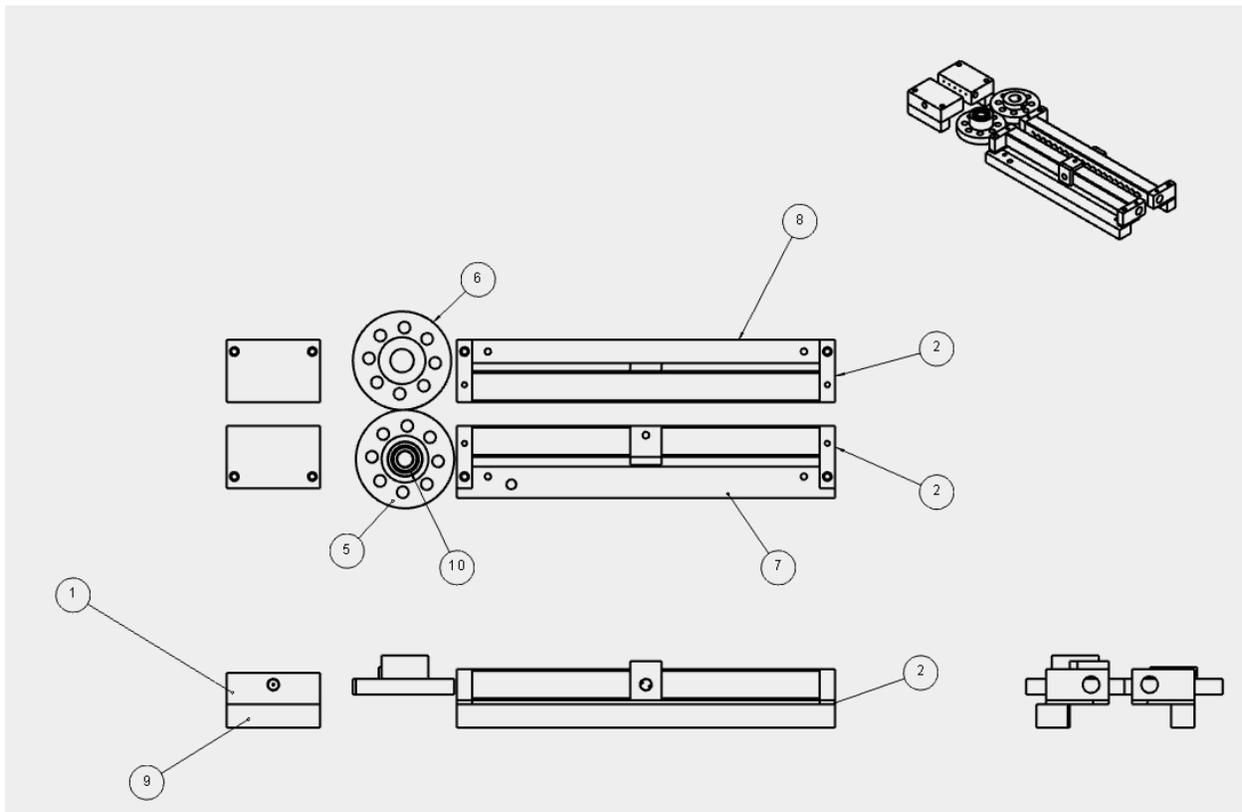
ASSY HOT AIR DRIVE

ITEM	PART NUMBER	DESCRIPTION	QTY
1	900-186	32 TOOTH PULLEY	1
2	2019-06	SPACER GEARBOX	2
3	900-190	REDUCER	1
4	900-187	34 TOOTH PULLEY	1
5	900-196	TAPER LOCK BUSH 1610 .625 B	1
6	900-195	TAPER LOCK BUSH 1210 .75 B	1
7	900-056	TIMING BELT	1
8	900-207	MOTOR 1/2HP 208/230 1720 RPM	1



2022-05 ASSY STANDARD SINGLE SEAL

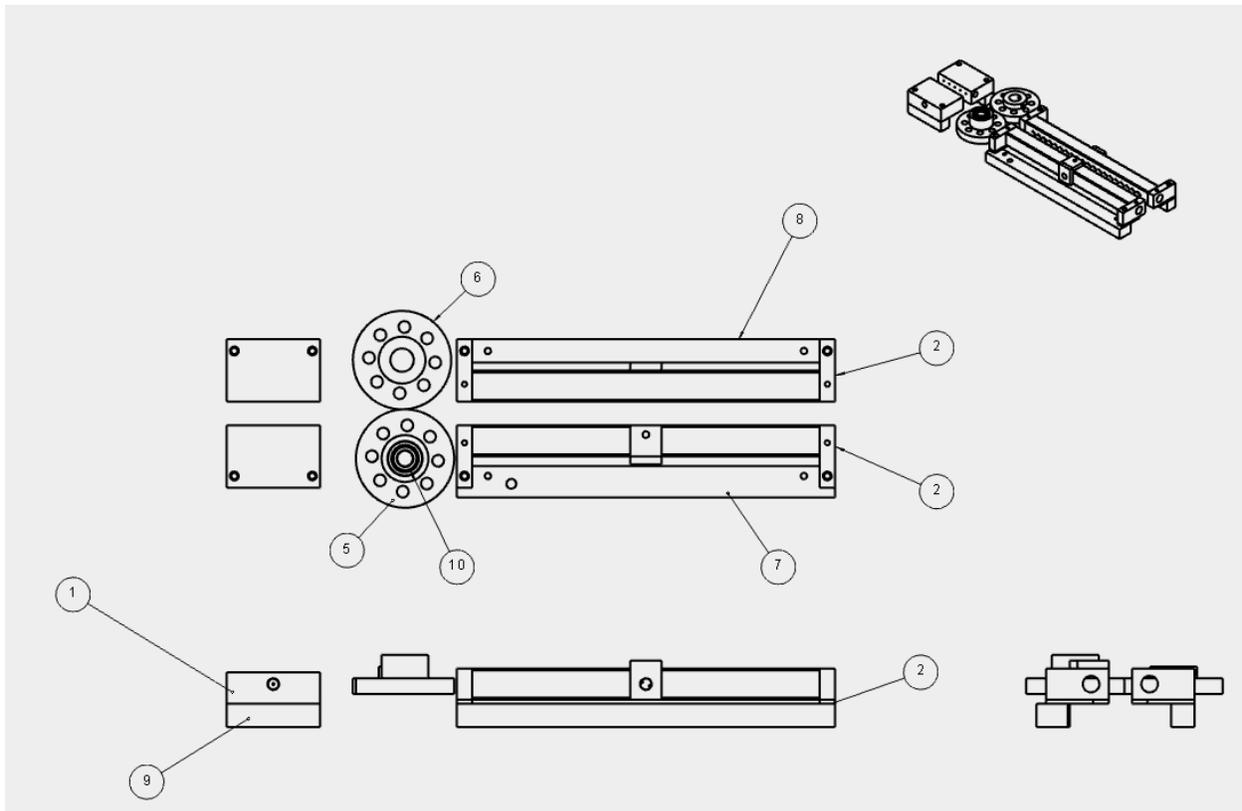
ITEM	PART NUMBER	DESCRIPTION	QTY
1	1003-04	COOLING BAR	2
2	1003-03	HEAT BAR SPACER	4
3	1003-02	WELDMENT HEAT BAR	1
4	1003-01	WELDMENT HEAT BAR	1
5	1003-05	COMPRESSION ROLLER IDLER .5	1
6	1003-06	COMPRESSION ROLLER DRIVEN .5	1
7	2019-07	SPACER HEAT BAR	1
8	2019-08	SPACER HEAT BAR	1
9	2019-12	SPACER COOLING BAR	2
10	900-026	BRG BALL 1616RS .5 BORE	2



2022-05

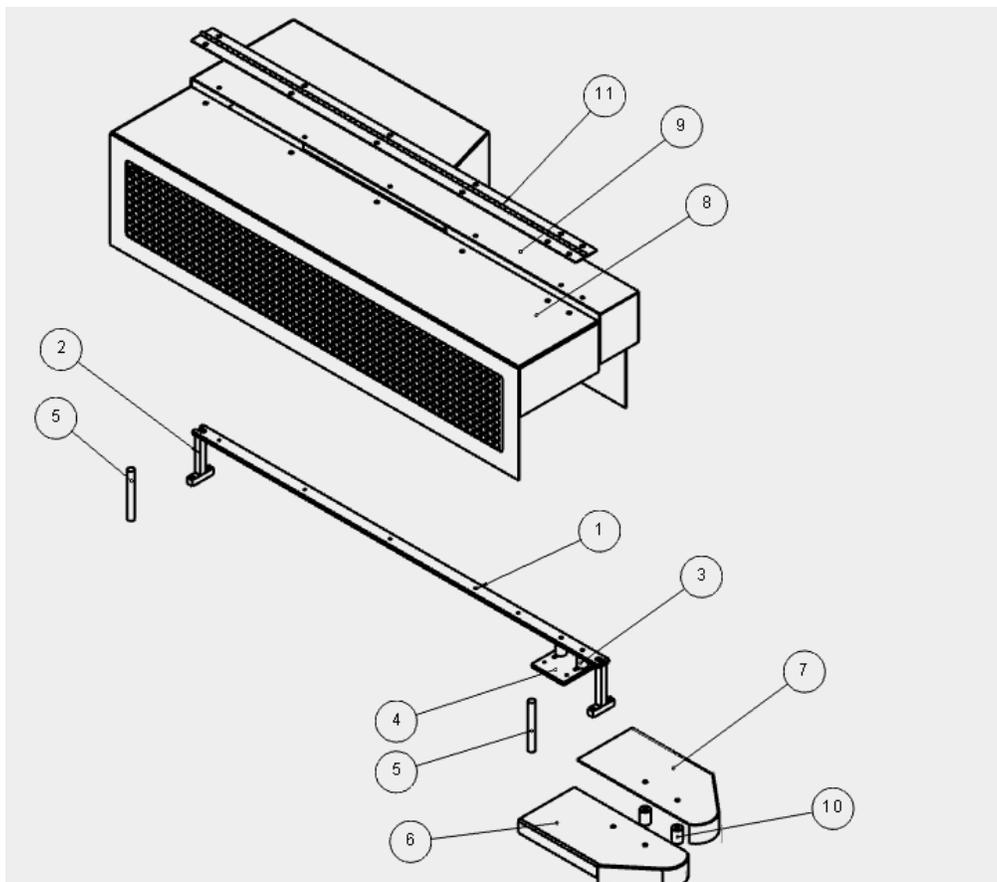
ASSY OPTIONAL DOUBLE SEAL

ITEM	PART NUMBER	DESCRIPTION	QTY
1	1003-04	COOLING BAR	2
2	1003-03	HEAT BAR SPACER	4
3	1003-102	WELDMENT HEAT BAR (DS)	1
4	1003-101	WELDMENT HEAT BAR (DS)	1
5	1003-105	COMPRESSION ROLLER IDLER .5 (DS)	1
6	1003-106	COMPRESSION ROLLER DRIVEN .5 (DS)	1
7	2019-07	SPACER HEAT BAR	1
8	2019-08	SPACER HEAT BAR	1
9	2019-12	SPACER COOLING BAR	2
10	900-026	BRG BALL 1616RS .5 BORE	2



2022-07	ASSY GUARDS HOT AIR
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ITEM	PART NUMBER	DESCRIPTION	QTY
1	1007-06	GUARD SUPPORT BAR	1
2	1007-05	WELDMENT GUARD SUPPORT	2
3	1000108	SPACER SAFETY SWITCH	2
4	1000107	SWITCH MOUNT	1
5	1000177	GUARD STAND OFF	2
6	2019-13	INFEED GUARD	1
7	2019-14	INFEED GUARD	1
8	2019-15	FRONT COVER	1
9	2019-16	REAR COVER	1
10	107-103	SPACER INFEED COVER	4
11	2019-120	HINGE FRONT COVER	1



ELECTRICAL

Component Part Numbers

PART NUMBER	DESCRIPTION
900-167	SOLID STATE RELAY 208/230 VOLT MACHINE
900-177	SOLID STATE RELAY 480 VOLT MACHINE
900-178	FUSE BLOCK
900-179	1 1/4 X 1 5/8 WIRE DUCT
900-180	WIRE DUCT CAP
900-181	TERMINAL STRIP #22A 8 AWG
900-182	TERMINAL STRIP #22A 14 AWG
900-168	WATLOW EZ-ZONE HEAT CONTROLLER
	TEMPCO HEAT CONTROLLER
As listed in enclosure	Fuse - 480V MACHINE
As listed in enclosure	Fuse - 230V MACHINE
900-171	480 / 220 TRANSFORMER
900-172	START / STOP SWITCH
900-173	HEAT SWITCH
900-174	DOOR SAFETY SWITCH
900-175	SPEED POTENTIOMETER
900-176	SPEED POTENTIOMETER KNOB
900-160	HEAT ELEMENT
900-211	THERMOCOUPLE