



5900 Schooner Street – Belleville, MI 48111 – USA

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www.Eberbachlabtools.com

E3303.00
VARIABLE SPEED CUTTING MILL
(115 V, 60 HZ)

**USE AND CARE OF CATALOG NUMBER:
E3303.00 Mill (115 V, 60 HZ)**

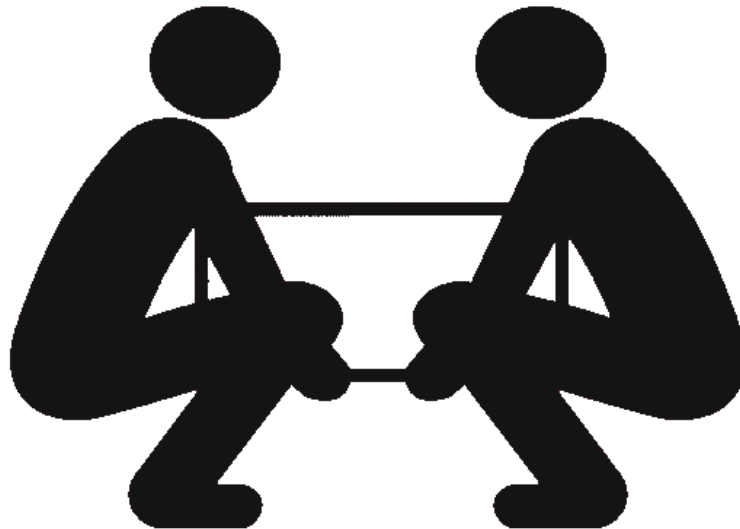
PRELIMINARY

Mill has been properly adjusted at the factory. However, clearance between stationary and rotor knives should be checked manually before power is turned on, to prevent possible damage caused if any of the stationary knives have shifted during shipment. Check for tip-to-tip clearance between all rotor blades and the six stationary knives by placing a piece of paper of average thickness (.002 to .003 in.) against each stationary knife in turn and turning the rotor shaft by hand counterclockwise so that all four rotor blades pass the stationary knives. Knives should touch the paper but not cut it. Greater clearance will interfere with the action of the mill.

Unpacking:

Save the packaging incase the unit needs to be returned. Use team lift to remove mill from the box.

IMPORTANT



USE TEAM LIFT

!!!DANGER!!!



NEVER REACH INSIDE THE CHAMBER WHEN THE CHAMBER DOOR IS CLOSED.

NEVER LEAVE THE PLUNGER OR ANY OTHER LARGE OR HARD OBJECT INSIDE THE CHAMBER WHILE THE DOOR IS CLOSED AND POWER IS CONNECTED.

THIS UNIT REMAINS ENERGIZED UNTIL POWER IS DISCONNECTED OR DOOR IS OPENED.

FAILURE TO COMPLY WITH WARNING NOTICES COULD RESULT IN DEATH, SERIOUS INJURY, OR EQUIPMENT/PROPERTY DAMAGE AND VOID THE WARRANTY.

!!!DANGER!!!

Installation:

Place the mill near an appropriate electrical outlet. **DO NOT USE WITH AN EXTENSION CORD OR MULTIPLE OUTLET STRIP. DO NOT PLUG INTO A GFI OUTLET.** The mill should be plugged into an outlet with no other appliances on the circuit.

Assembly:

Open the mill chamber by turning the chamber hand wheel counter-clockwise. Lift the right arm of the support bracket away from the latch.

Assemble the hopper onto the top of the head. Seat the hopper cover.

To install a sieve, loosen the receiver assembly by turning the two sieve release hands wheels at the bottom of the mill until the alignment pins disengage. Be sure that the sieve is oriented with the label face up on the edge closest to the chamber door.

Latch door and tighten chamber hand wheel. Attach power cord to rear of mill and plug into an appropriate electrical socket.

FIRST TIME SETUP:

WHEN MILL HAS NOT BEEN USED FOR 1 YEAR OR LONGER TURN ON POWER SWITCH AND LET MILL SIT FOR 2 HOURS PRIOR TO USE, THIS WILL REFORM THE DRIVE CAPACITORS.

Operation:

In order to power up the machine, install power cable into rear outlet in machine. Plug machine into outlet.

Move rocker switch on front of machine to the ON position and wait for display to show main program screen.

Start the mill before adding sample. Materials, which do not flow freely, may be forced into the chamber with the plunger.

For optimal results, feed material slowly so that the rate of feed approximates the rate of delivery of ground material. Do not overload or overfill the chamber. The chamber should not contain more material than can be agitated by the revolving blades. Overloading may result in heating, caking, or clogging. The mill is equipped with a circuit breaker that will trip when overloading occurs. In cases of severe jamming the motor may shut itself down before circuit breaker trips. This can be corrected by cycling the power and clearing the jam.

Hard or tough materials should be reduced to small size before feeding into the mill. If jamming occurs stop the mill immediately (red stop button) and shut off power. Open the chamber door and remove the jamming particles.

Due to the static charge created when some plastics are ground best results are usually obtained at higher speeds, to take advantage of the fanning effect of the rotating knives.

A safety interlock prevents operation of the mill with the chamber open.

After each sample is ground, clean the chamber and receiver with a narrow, fairly stiff brush. Alternatively, a blast of clean, dry air is effective.

CAUTION:

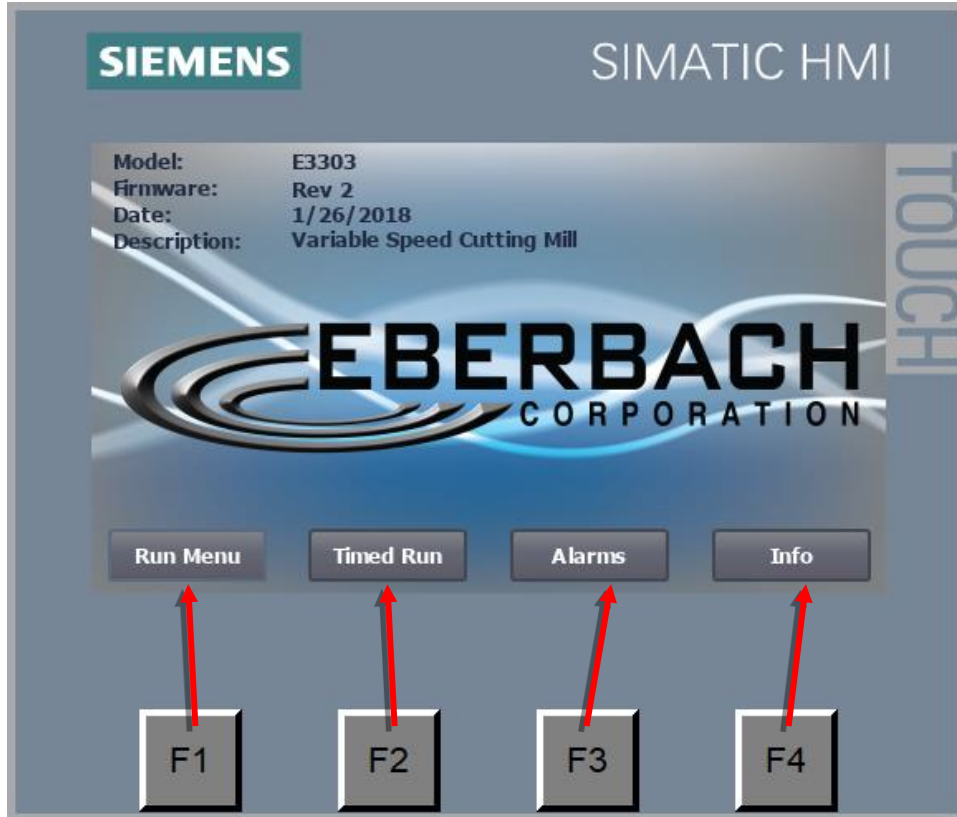
**DO NOT OPEN THE CHAMBER DOOR WHILE THE MACHINE IS RUNNING.
SERIOUS INJURY MAY RESULT IF THESE INSTRUCTIONS ARE NOT
FOLLOWED.**

Main Program Screen



After powering on the machine, the main program screen will be displayed. Press the start button located in the middle of the screen.

Operations Screen

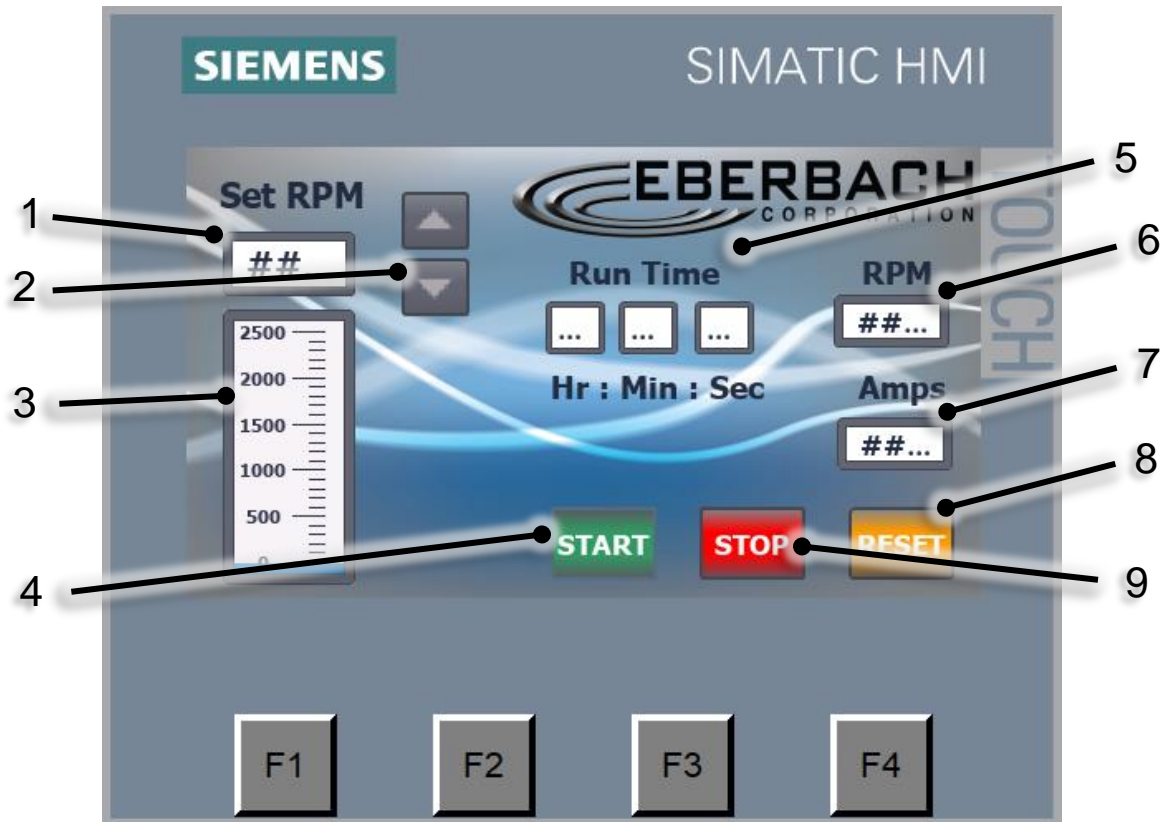


After pressing start on the main program screen, the operations screen will be displayed. Here the user can select from the following options.

SOFT BUTTONS

- F1 - RUN MENU
- F2 - TIMED RUN MENU
- F3 - ALARMS MENU
- F4 - INFO

Run Screen

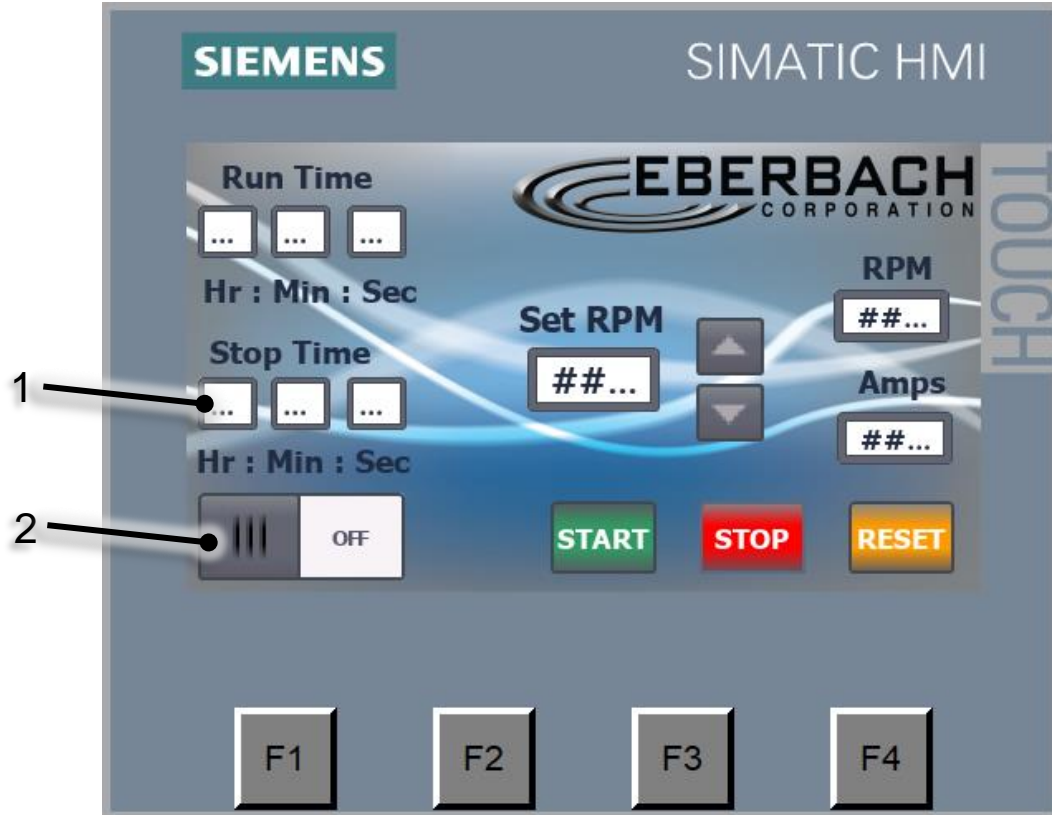


The run menu can be used for basic operation. The user can set the rpm by touching the “set RPM” White box (1). A numeric keypad will be displayed where the user can type in the desired run speed. The small Grey Up and Down buttons (2) allow the user to raise or lower the speed during operation by 25 RPM increments.

Once the desired speed is entered, the user can press start (4) to start the mill. During operation the run time (5), RPM (6), and Amps (7) are displayed.

To stop the machine, press the stop button (9). If multiple runs are conducted, the Run Time clock will remain persistent showing a cumulative run time. If individual run times are required, the user can press the Reset button (7) in between runs to reset the Run Time counter.

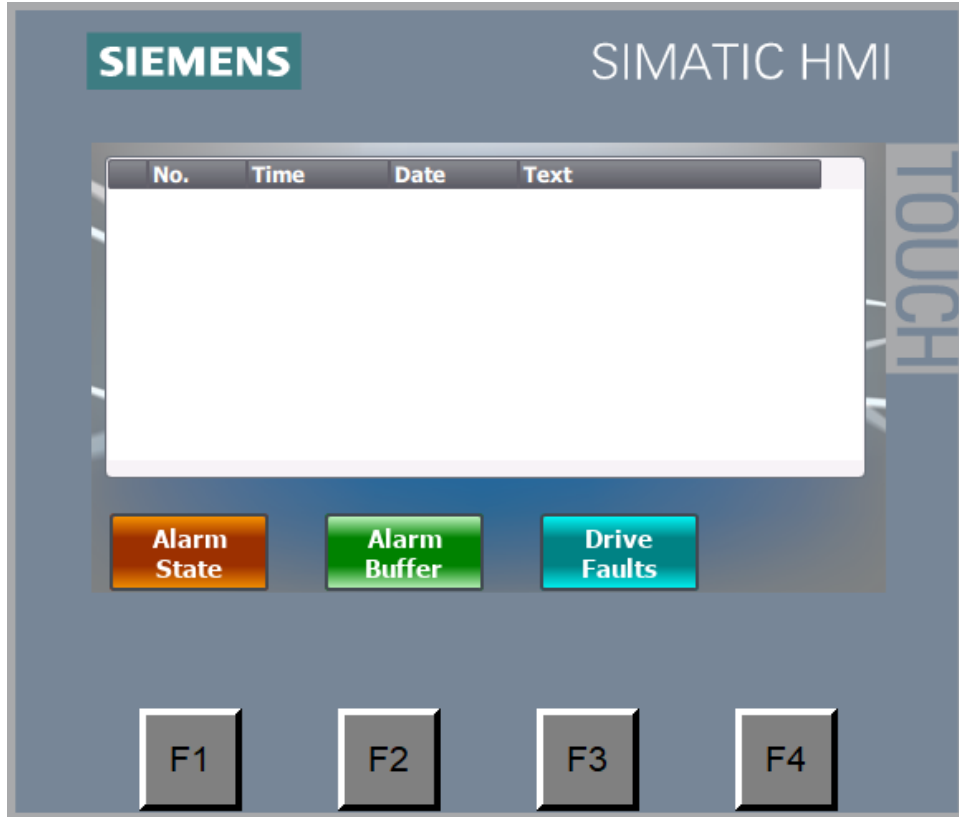
Run Screen



The timed run menu can be used to automatically stop the machine after a specified duration of time. To set the desired run time, the user must enter a “Stop Time” by pressing the White box below the words “Stop Time”(1). After the desired time is entered the user can press the White box under “Set RPM” to enter the desired speed.

The user can then press the start button to start the mill. The mill will begin to run, but the run time counter will not start until the user presses the Grey button in the lower Left-hand corner of the screen (2).

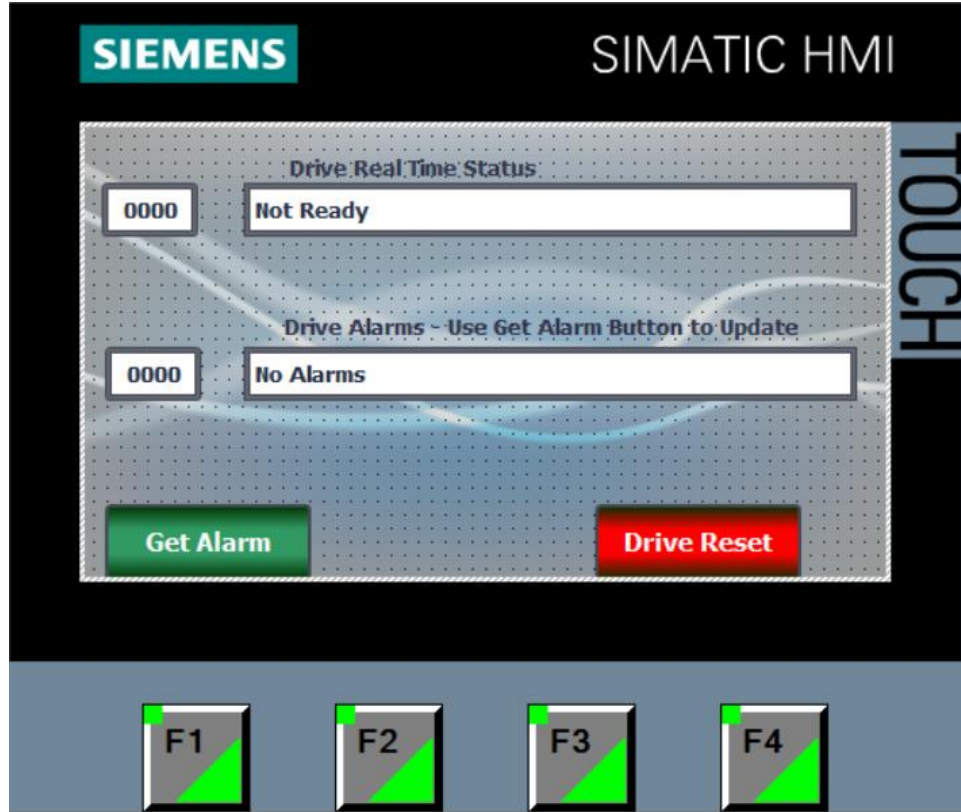
Alarm Screen



The alarm screen will display any active alarm to assist with trouble shooting.

This information will be required by the Eberbach technical support staff to troubleshoot any machine malfunction.

Drive Fault Screen



The drive fault screen will display any active faults on the motor controller drive unit.

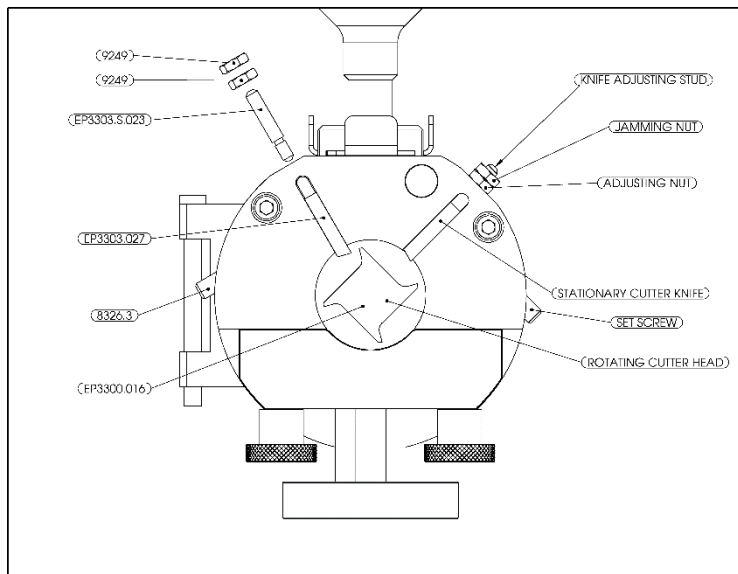
This information will be required by the Eberbach technical support staff in order to trouble shoot any machine malfunction.

CLEANING / REPLACEMENT OF KNIVES

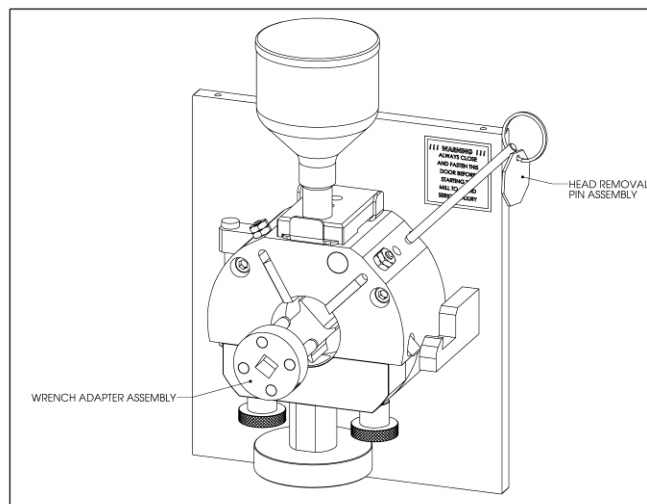
CAUTION: Make certain all electric power to the mill is shut off before replacing any blades. Unplug mill from outlet as an additional safety precaution.

CAUTION: When replacing or handling rotating blades use appropriate personal protective equipment.

1. Remove hopper from the top of the mill and open the chamber door.



2. Loosen the *rotating cutter head* from the shaft by engaging the *head removal pin assembly* with the spindle and unscrewing the *rotating cutter head* with the *wrench adapter assembly*. Carefully remove the *rotating cutter head* and set on workbench.

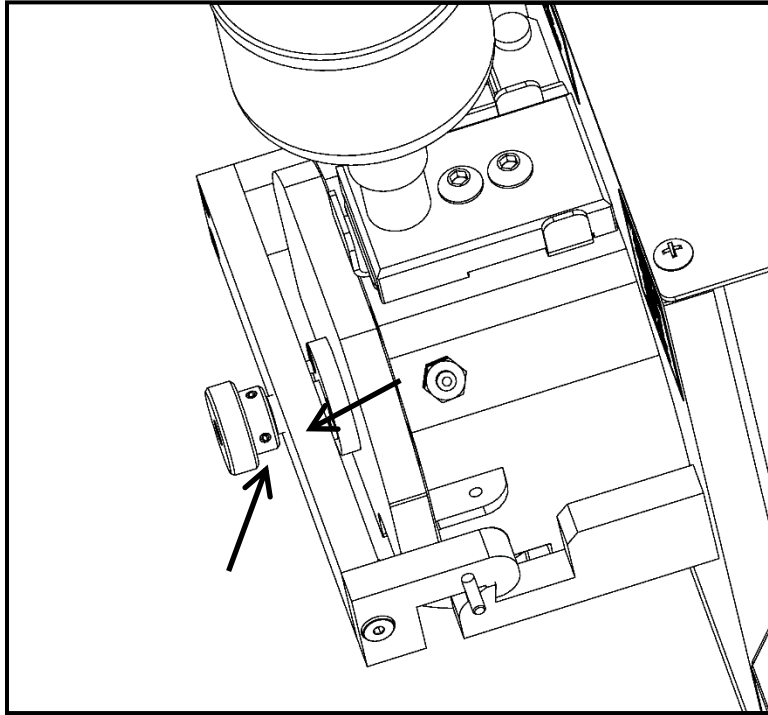


3. Clean the *rotating cutter head*, making certain that all burrs, chips and dirt have been removed. Replace *rotating cutter blade* if damaged or worn out.
4. There is a *setscrew* associated with each *stationary knife*. These *setscrews* lock the knives firmly in position.
5. Loosen the *setscrew* holding the first stationary knife that is to be replaced. (If replacing the entire set of stationary knives, it may be convenient to start with the knife in the upper right.)
6. Hold or support the knife while removing both *jamming nut* and *adjusting nut* from the *knife adjusting stud*. Carefully remove the knife.
7. If other *knives* are being replaced, remove the remaining knives.
8. Unpack replacement *knives*. Insert *threaded stud* into its hole and seat *knife* in slot. (See illustration for correct position of knife bevel.) Replace the two *nuts* and draw the *knife* up so that there is ample clearance between it and the *rotating cutter head*. Repeat this operation for the other *knife* being replaced, and draw up the remaining *knife*.
9. Loosen *nuts* of the first stationary *knife* to be adjusted. Insert a piece of paper of the necessary thickness (about 0.003" inch) between the *knife* and the *rotating cutter head*, and adjust the clearance by raising or lowering the *adjusting nut* until the *knife* pinches the paper but does not sever it.
10. Slightly tighten the *setscrew* to clamp on the knife. (May require further adjustment later.)
11. Turn *rotating cutter head* to make certain that all edges clear the installed *stationary knife*. If one rotor knife projects beyond the others, adjust clearance of stationary knife with respect to this rotor knife. Identify this rotor knife and make all stationary knife adjustments to it.
12. Repeat steps 9 and 11 above for the remaining *stationary knives*. Recheck all clearance and all associated nuts and set screws.

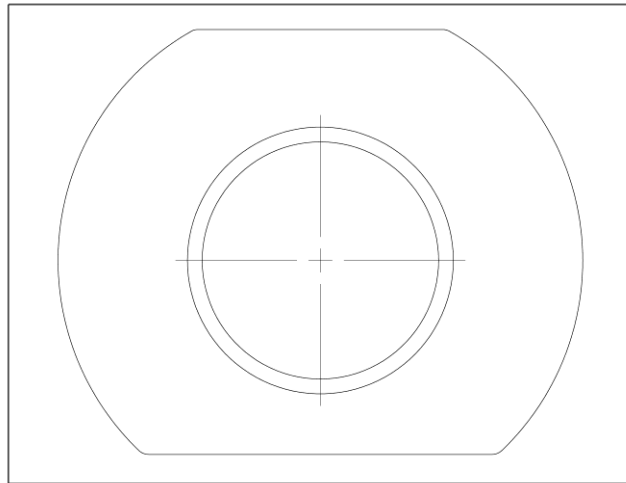
NOTE: Do not over-tighten to the point where threads may be stripped.

If you have any doubts or inquiries concerning operation contact your supplier or Eberbach Corporation technical service.

Maintenance



The door screw could become difficult to tighten over time. If so apply MOLYKOTE 1000 on the threads.



If the seal were to be damaged, replace with a suitable type. Standard seal (Viton) used on E3303.00 is Eberbach stock #5457.7

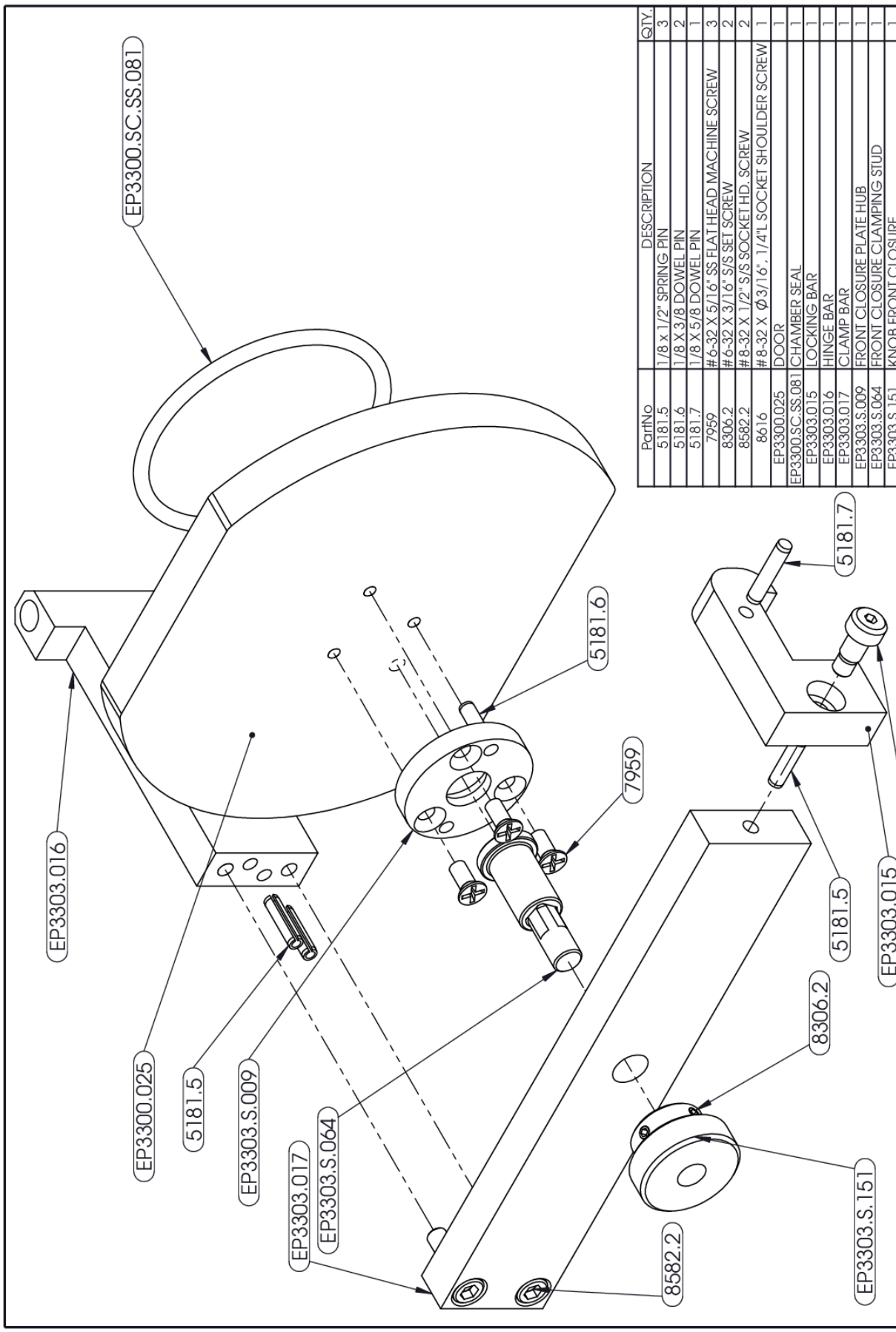
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PartNo	DESCRIPTION	QTY.
4166	BEARING	2
4299.5	4L240	1
4404.1	1/8" X 1-1/4" KEY	1
4776.5	1/4"-20 SS KNOB	2
4952	OIL SEAL BEARING	1
5185.5	1/4" X 3/4" S/S 316 DOWEL PIN	2
5185.7	1/4" X 3/4" STEEL DOWEL PIN	2
5227	PIN	1
5324.7	E-CLIP	1
5505.7	RUBBER FOOT	4
5634	3/8" COMBINATION BOX WRENCH	1
5641.1	1/8" ALLEN HEX L KEY WITH BALL	1
5707	SMALL BRUSH	1
5708	ANGLE SCRAPER	1
5810	4oz GLASS JAR WITH CAP	3
5811.5	BLACK POLYPROPYLENE SCREW COVER	3
6063	CABLE TIE, LOW PROFILE MOUNT	2
6063.2	CABLE TIE	3
6122.5	CIRCUIT BREAKER TYCO 8 AMP	1
6277.5	FILTERED AC INLET	1
6455	SAFETY SWITCH	1
6515.5	DPST ROCKER SWITCH RED - POWER	1
6649	115V POWER CORD, TYPE B PLUG	1
6771.1	SIEMENS ASSEMBLY	1
6804	CUTTING FINGERS STICKER	1
7104	SERVO MOTOR	1
7104.1	SERVO DRIVE 400W	1
7104.2	STO CN8 SAFETY FUNCTION CABLE	1
7104.3	POWER CABLE	1
7104.4	ENCODER CABLE	1
7661	#8-32 X 1/4" S/S ROUND HD. MACHINE SCREW	2
7779	#10-32 X 1/2" S/S ROUND HD. MACHINE SCREW	4
8005	#8-32 X 1/2" FLAT HD. MACHINE SCREW	2
8050	#4-40 x 3/8" S/S PAN HD. MACHINE SCREW	2
8118.5	1/4"-20 X 3/4" CROSS HEAD MACHINE SCREW	2
8277.4	#10-32 X 3/8" S/S TRUST HD. SCREW	2
8285	#8-32 X 1/4" S/S TRUST HD. SCREW	32
8285.5	#8-32 X 3/8" 316 S/S TRUST HD. SCREW	3
8291	#8-32 X 1/4" BUTTON HD. SOCKET SCREW	3
8294.5	1/4"-20 X 3/8" S/S BUTTON HD. SOCKET SCREW	1
8326.3	1/4"-20 X 1.5" S/S SET SCREW	2

8509	1/4"-20 X 5/8" HEX HEAD SCREW	8
8569	7/16"-14 X 1" S/S HEX HEAD SCREW	4
8569.5	7/16"-14 X 3-1/2" S/S HEX HEAD SCREW	4
8579.4	#6-32 X 1/2" S/S SOCKET HD. SCREW	12
8580	#6-32 X 3/4" SOCKET HD. SCREW	2
8580.6	#10-32 X 3/8" SOCKET HD. SCREW	3
8582	#8-32 X 3/8" SOCKET HD. SCREW	4
8582.1	#8-32 X 1/2" SOCKET HD. SCREW	3
8585	#10-32 X 3/4" SOCKET HD. STEEL SCREW	2
8589.2	1/4"-20" X 1-5/8" S/S SOCKET HD. SCREW	2
8590.5	1/4"-20 X 2-1/2" S/S SOCKET HD. SCREW	2
9217	#4-40 S.S NYLON LOCK NUT	2
9225	#6-32 S/S MACHINE SCREW NUT	2
9254.1	#10-32 316 S/S MACHINE SCREW NUT	4
9285.5	7/16"-14 S/S HEX NUT	4
9435	#12 SAE WASHER	8
9474	#6 S/S SAE WASHER	2
9504.5	7/16" S/S WASHER	4
9521	#10 SPLIT LOCK WASHER	2
9527.5	7/16" S/S SPLIT LOCK WASHER	4
E3300.A.HP.S	HOPPER ASSEMBLY	1
E3300.A.S20	SIEVE 20 MESH	1
E3300.A.S40	SIEVE 40 MESH	1
E3300.A.S60	SIEVE 60 MESH	1
EP3300.015	SPINDLE	1
EP3300.016	ROTATING CUTTER HEAD	1
EP3300.019	HEAD CHAMBER	1
EP3300.026	LIMIT SWITCH BRACKET	1
EP3300.027	PLUNGER	1
EP3300.501A	HEAD REMOVAL PIN ASSEMBLY	1
EP3300.504A	WRENCH ADAPTER ASSEMBLY	1
EP3300.516A	FRONT CLOSURE PLATE AND HINGE ASSY	1
EP3300.530A	DELIVERY CHUTE ASSEMBLY	1
EP3303.002	BEARING CARTRIDGE	1
EP3303.005	BEARING SPACER	1
EP3303.008	FEET POST	4
EP3303.018	LOCKING PAD	1
EP3303.025	STATIONARY OUTSIDE HINGE PAD	1
EP3303.027	STATIONARY BLADES	2
EP3303.032	MOTOR MOUNT YASKAWA	1
EP3303.035	SPINDLE PULLEY	1
EP3303.037	MOTOR PULLEY	1

EP3303.040	TOP PANEL	1
EP3303.050	BASE	1
EP3303.052	RIGHT SIDE PLATE	1
EP3303.053	LEFT SIDE PANEL	1
EP3303.054	MOUNTING PLATE	1
EP3303.057	SIDE CONTROL CLEAT	1
EP3303.073	ELECTRONICS BRACKET	1
EP3303.169	DOOR WARNING LABEL	1
EP3303.505A	REAR PANEL ASSEMBLY	1
EP3303.507A	CONTROL PANEL ASSEMBLY	1
EP3303.652A	WIRING HARNESS	1
EP3303.S.004	REAR BEARING CAP	1
EP3303.S.023	KNIFE ADJUSTING STUD	2
EP3303.SS.072	SERVO PACK BRACKET	1

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PartNo	DESCRIPTION	QTY.
5181.5	1/8 x 1/2" SPRING PIN	3
5181.6	1/8 X 3/8 DOWEL PIN	2
5181.7	1/8 X 5/8 DOWEL PIN	1
7959	#6-32 X 5/16" SS FLAT HEAD MACHINE SCREW	3
8306.2	#6-32 X 3/16" S/S SET SCREW	2
8582.2	#8-32 X 1/2" S/S SOCKET HD. SCREW	2
8616	#8-32 X Ø3/16", 1/4"L SOCKET SHOULDER SCREW	1
EP3300.025	DOOR	1
EP3300.SS.081	CHAMBER SEAL	1
EP3303.015	LOCKING BAR	1
EP3303.016	HINGE BAR	1
EP3303.017	CLAMP BAR	1
EP3303.S.009	FRONT CLOSURE PLATE HUB	1
EP3303.S.064	FRONT CLOSURE CLAMPING STUD	1
EP3303.S.151	KNOB FRONT CLOSURE	1

EBERBACH CORPORATION U.S.A.

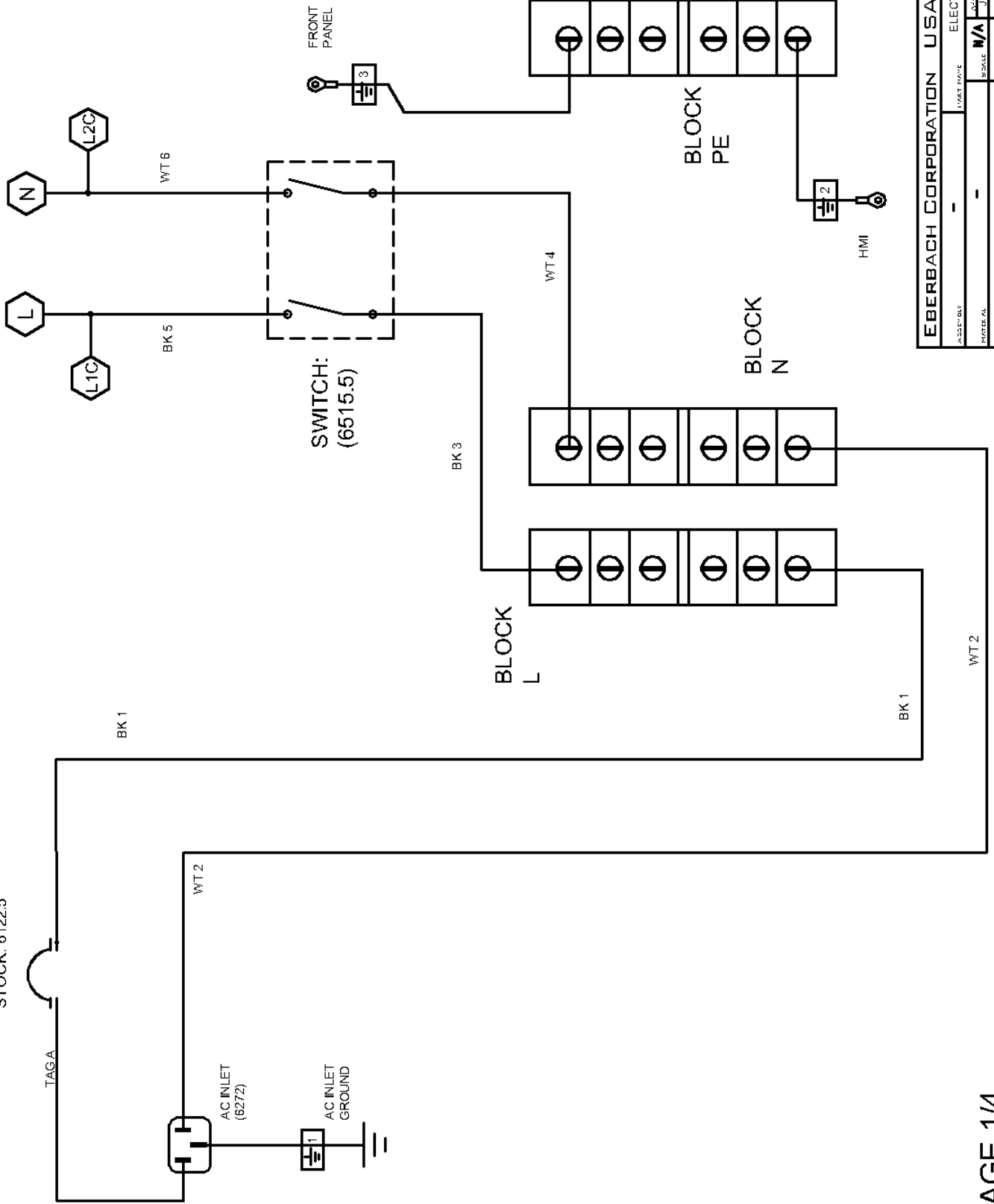
DIMENSIONS IN INCHES FOR REFERENCE UNLESS OTHERWISE SPECIFIED		MATERIAL		STOCK NO.	
FRACTION	DECIMAL	X 1/1		FRONT CLOSURE PLATE AND HINGE	
ANGLE	XX. X .01	X 1/16		ASSY	
3RD ANGLE PROJ	SCALE	ASSEMBLY	DATE	WEIGHT	REV.
1:1	10/10/2017	DRW.	10/10/2017	2.0lb	A-01
C.J.	A	C.J.	A	EP3300.516A	

MAINS CIRCUIT

24V POWER SUPPLY
DRIVE CONTROL L1C, L2C

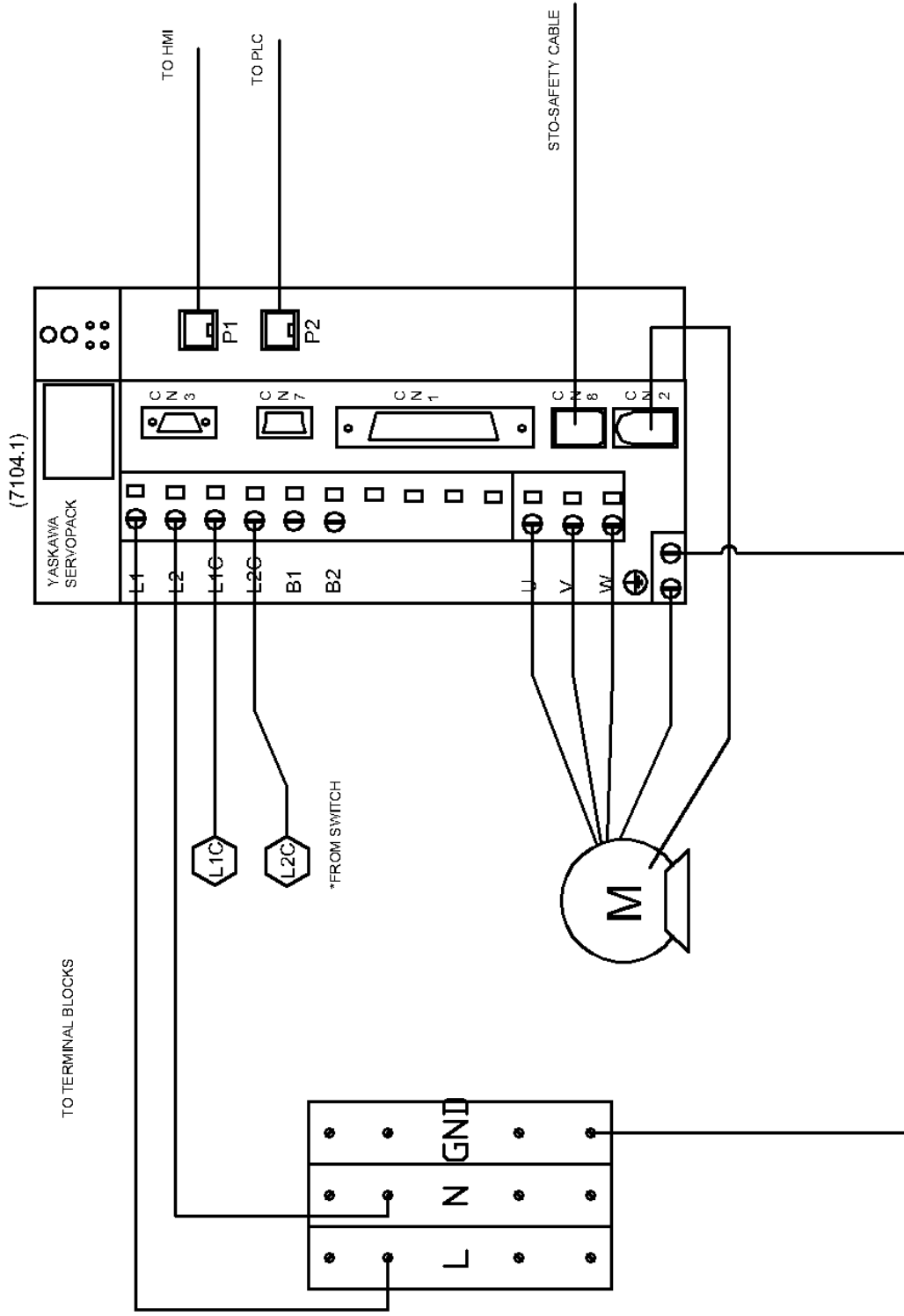
8A 1-POLE
CIRCUIT BREAKER
STOCK: 61225

115VAC



ELECTRICAL DIAGRAM			
ASSEMBLY	UNIT NAME	SCALE	DATE
		M/A	10/8/2018
PROJECT #	JOB #	DRAW #	DATE
		1	ASB
REV. NO.	REV. DATE	REV. BY	REV. REASON
E3303.605A			

DRIVE CIRCUIT



EBERBACH CORPORATION USA		ELECTRICAL DIAGRAM	
MODEL NO.	7104.1	REV. NO.	1
DATE	-	DATE	10/22/13
PROJECT	M/A	DESIGNER	FAH
JOB NO.	-	DATE	AS/1
REV. NO.	1	REV. NO.	E3303 605A

