

# Double Batch Dryer

Model Number: ME-DBD-S-200 – Operation Manual



## THEORY OF OPERATION

The double batch dryer is used to dry the food product to a point that will disallow mold from forming after the product has been packaged in a bag or box. The dryer achieves this by passing warm air across the product, thus removing moisture. This can also cool the product to room temperature after the drying process has been completed.

## GENERAL OPERATING INSTRUCTIONS

Set the desired drying temperature by adjusting the set point value on the temperature controller. The temperature controller will turn the furnace on and off as needed to maintain the desired temperature. Each drying basket has a dedicated blower motor that pushes air through the drying basket. The blower motors can be operated independently of each other. To dry the product, load product into one or both of the baskets, turn on the blower motor, furnace, and twist both dry/cool handles to the dry position. **IMPORTANT** : Do not allow the furnace to operate unless at least one of the blower motors is running and the dry/cool handles for the running blower motor are set to the dry position. As the product is drying, the operator may stir the product to promote air flow through the product. Stirring the product will also mitigate excessive temperature from darkening the product. Before the final moisture content of the product is achieved, turn off the furnace and twist the dry/cool handles to the cool position. The product will continue to dry even though room temperature air is passing through the product. When the product has reached the final moisture content and has reached a suitable temperature, the product can be dumped out of the basket. To dump the product out of the basket, place a container under the basket discharge spout, open the discharge door (the door may be pinned open with the supplied pin), and press up on the dump lever. After the product is dumped into the container, press down on the dump lever to return the basket to the drying position. The speed at which the basket is lifted and retracted can be adjusted by changing the settings of the speed control valves. The speed control valves are attached to the main pneumatic valve that is used to lift and lower the basket and is located inside the front control panel of the dryer. Refer to Figure 1 and Table 1 below. Additional exploded views and part lists of the dryer assemblies may be available upon request.



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## MACHINE MAINTENANCE

The bearings on the blower wheel shaft are sealed bearings and cannot be greased. If the bearings fail, the entire bearing must be replaced.

Before startup, inspect the heat exchanger of the furnace for splits, cracks or holes. If there is any deterioration of the heat exchanger, it must be replaced to keep from filling the room with harmful combustion gasses. Also, refer to the furnace installation manual supplied with the dryer for proper installation of flue pipe, etc.

Keep the furnace and heat ducts free from excessive buildup of dust. Excessive dust buildup can be a fire hazard.

Inspect all drive train belts and replace as necessary.

The air cylinders that dump the basket require clean dry compressed air. There is a regulator and filter at the compressed air input on the dryer. Ensure that the air pressure after the regulator is at 90 to 100 psi so that the baskets will operate properly. There is a gauge installed on the regulator that will allow the monitoring of air pressure.

The baskets are removable by pulling three T-pins. Two of these pins are installed in the basket hinges, and one is installed where the air cylinder connects to the rear of the basket. The basket is removable so that it may be cleaned thoroughly inside and out. The air duct underneath the basket may also be cleaned thoroughly with the basket removed.

The frame of the batch dryer may be split on either side of the frame that holds the furnace. Remove the bolts on the frame at the location where the frames connect. Remove the belt guard and motor belts. Also, disconnect the airlines going to the air cylinder that dumps the basket. Splitting the frame in this manner will allow access to the inner parts of the air ducts so they can be cleaned of any dust that may have built up over time.

The plenum on the back side of the furnace has a door that can be removed to allow for cleaning of the inside of the plenum and for inspecting the back side of the heat exchanger. The plenum door is easily removed by disengaging 4 toggle clamps.

## INSTALLATION

The dryer should be installed on a level concrete floor. Minor variances in the floor can be accounted for by adjusting the adjustable feet of the dryer. Place a level on the dryer's frame and adjust the feet until the frame is level. Attach a compressed air supply line to the air regulator. The dryer requires 90 – 100 psi of air pressure to operate correctly. All electrical connections should be made by a qualified electrician. A wiring diagram of the dryer will be included inside of the dryer control panel. Additional wiring diagrams may be supplied upon request. Refer to the furnace installation manual supplied by the furnace manufacturer for important installation details pertaining to the furnace.



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## SAFETY GUIDELINES

All electrical connections should be made by a qualified electrician. Before servicing the machine, ensure that the main power is disconnected.

Alert all operators and adjacent employees to the hot surfaces of the furnace and dryer ducts.

Never operate the machine with protection guards removed.

There is a main shutoff valve for the compressed air supply. Close this valve and bleed off the air pressure in the pneumatic assembly before performing any maintenance or repair to the pneumatic assembly.

There is a check valve on the air cylinders that dump the baskets. The check valve is to ensure that if there is a catastrophic loss of pressure in the pneumatic assembly, the basket does not fall down possibly injuring a person or damaging the machine. Never remove or bypass these check valves.

All gas connections to the furnace should be made by a qualified technician. Always check for gas leaks before operating the dryer in a production environment.



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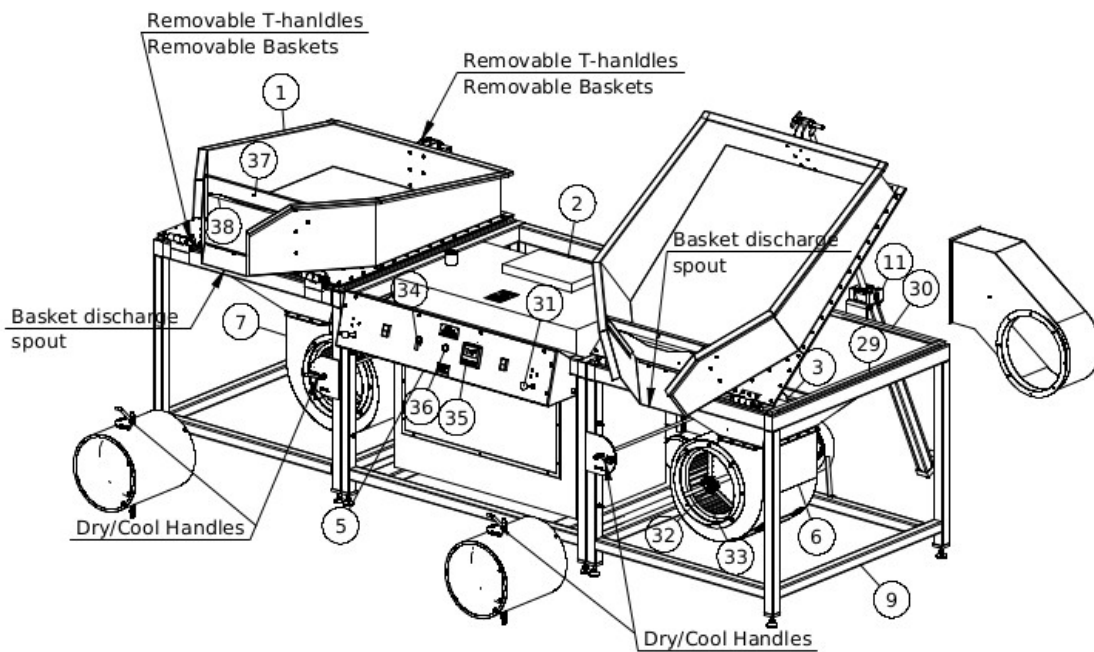
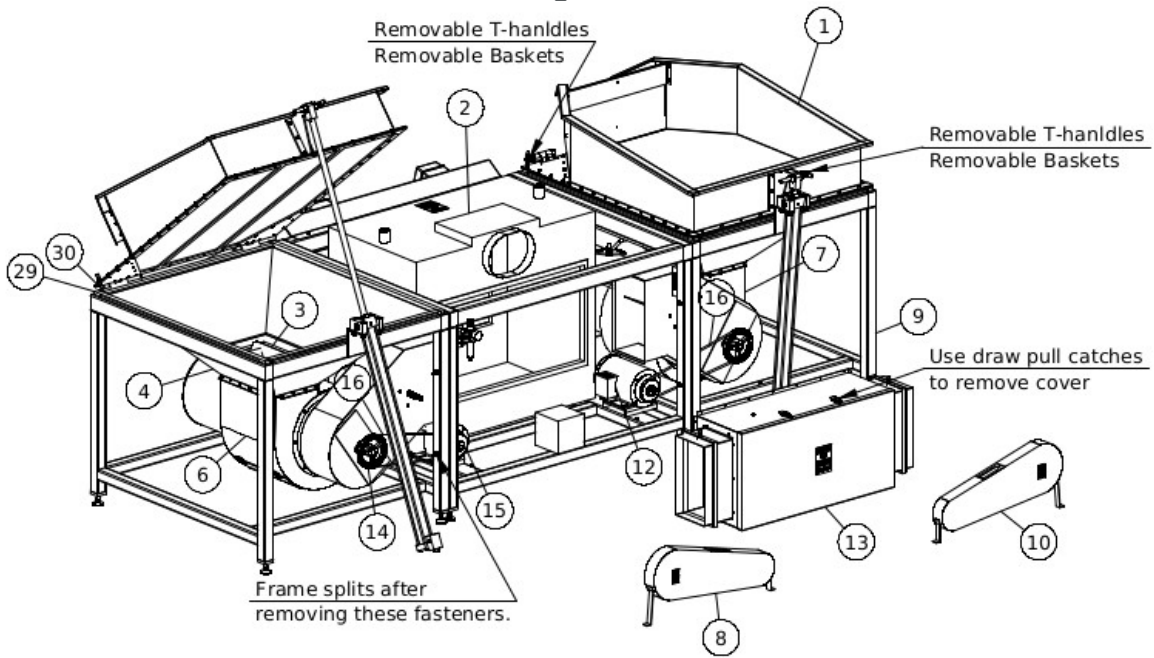
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## FIGURES

Figure 1



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## TABLES

Table 1

Bubble No.	Item Number	Quantity	Part Description
58	32900211018	2	Bilingual Decal, Danger Hot 5 X 3-1/2
56	32900211025	2	Decal, Directional Arrow 5 X 2
53	32900211017	3	Decal, Caution Disconnect Before...
52	32900511000	1	Serial Plate, Silver 2 X 4 me&e
51	31603401004	4	Drive Screw, Stn. Stl. #4 x 3/16 Round-h
45	32600611005	1	Enclosure, Cstl. 6 X 6 X 4
41	32900211014	2	Bilingual Decal, Do Not Operate Without
38	21300101532	2	Door, DBD Basket
37	31603301002	2	Detent Pin, 5/16 OD X 3/4 Grip
36	32600311016	1	Switch, Push On/Push Off 120VAC Green
35	32900111008	1	Temperature Controller, 100-240 VAC
34	32600311022	1	Switch, Twist On/Off 120VAC
33	31401203021	2	Blower Wheel, 12-5/8 X 12-5/8 X 1 in.
32	31800102000	4	Bearing, Agricultural 2.0472 OD X 1 ID
31	32800711020	2	Valve, 1/4 NPTF Manual Air
30	32300106001	4	Gasket, 39-3/16 in. DBD
29	32300106001	4	Gasket, 46-15/16 in. DBD
27	31603101004	40	Nut, Stn. Stl. 1/4-20 Hex
26	31603001004	44	Lock Washer, Stn. Stl. 1/4
23	31600501001	44	Bolt, Stn. Stl. Hex Head 1/4-20 X 1/2
16	32200106041	2	V-Belt, 4L X 57
15	31900102013	2	V-Pulley Cast, 3.2 PD X 5/8 4L Belt
14	31900102029	2	V-Pulley Cast, 6 PD X 1 4L Belt
13	11000301012	1	Plenum Assy, DBD
12	12600111068	1	Electrical Assy, DBD
11	12900111000	1	Pneumatic Assy, DBD
10	11000301013	1	Belt Guard LH Assy, DBD
9	12400101193	1	Frame Assy, DBD Complete
8	11000301002	1	Belt Guard Assy, DBD
7	11000301011	1	Blower Duct Assy, DBD LH
6	11000301010	1	Blower Duct Assy, DBD RH
5	11000301001	1	Control Panel Assy, DBD
4	10500101144	2	Hopper Assy, DBD
3	11000301000	2	Meal Pan / Air Diffuser, Batch Dryer
2	12800111070	1	Duct Furnace NG/Intake Screen Assy
1	11300101075	2	Basket Assy, DBD Complete



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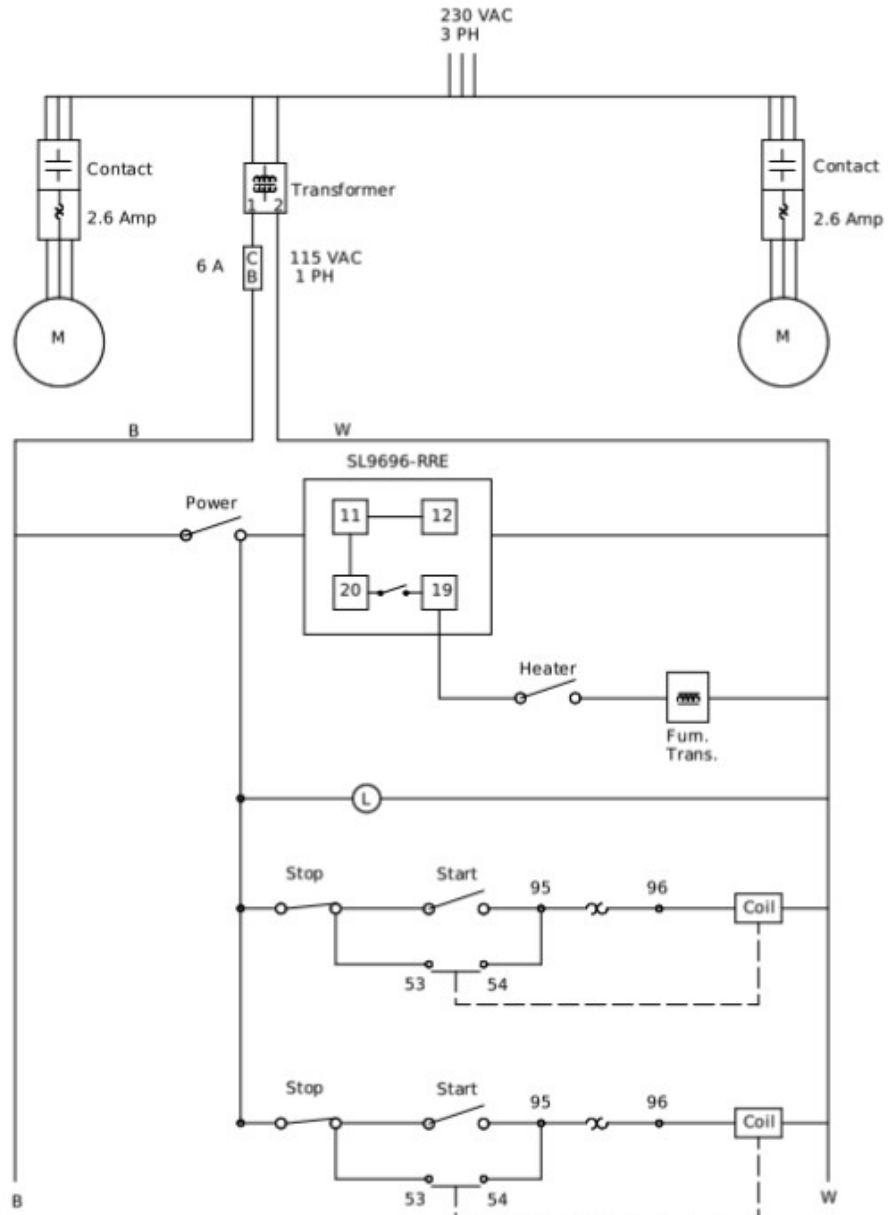
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## ELECTRICAL DIAGRAMS



Note: Dashed lines represent mechanical link

This is the electrical schematic for US installations.



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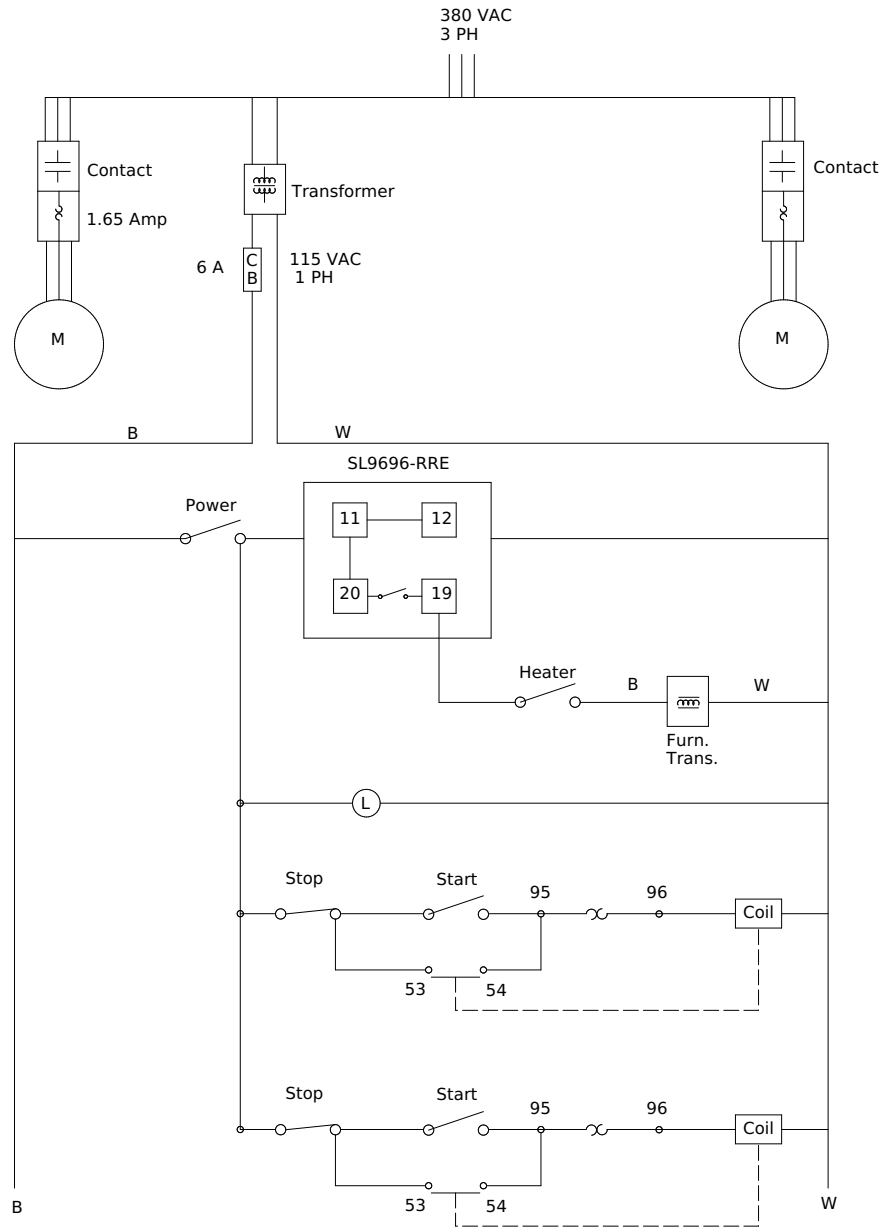
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This wiring was used on all US batch dryers made after 12/2019 for the US Market. Dryers produced before this date will have a different wiring scheme.



Note: Dashed lines represent mechanical link

Electrical schematic for international installations.



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## FREQUENTLY PURCHASED ITEMS

Part Number	Description	Quantity Per Dryer
32600311018	Switch, Snap Disc Open 200 Deg Closed 160 Deg	1
32801511019	Ignition Controller, X-250	1
32801511016	Pilot Assembly, LP Electronic Ignition <i>**For Propane Furnace</i>	1
32801511017	Pilot Assembly, NG Electronic Ignition <i>**For Natural Gas Furnace</i>	1
32800511003	1/4 in. Aluminum pilot line tubing	3 ft
32900111005	Thermocouple, Type K 1/4 Dia. X 6 in 6 ft Stn. Stl. overbraided wire	1
31401203021	Blower Wheel, 12-5/8 X 12-5/8 X 1 in. Bore Double Inlet	2
32900111008	Temperature Controller, 100-240 VAC SPDT	1
32800711020	Valve, 1/4 NPTF Manual Air	2
32600311040	Push-button, 22mm momentary	2
32600311022	Switch, Twist On/Off 120VAC	1
32600311016	Switch, Push On/Push Off 120VAC Green Illum.	1
32600311034	Contact, 3 phase, 120 VAC Coil 9A 3 Pole	2
32600311043	Thermal Overload Relay, 1.1-1.65 A <i>**For International Dryers</i>	2
32600311035	Thermal Overload Relay, 2.2-3.4 A <i>**For Domestic Dryers</i>	2
32600311041	Auxiliary Contact, LH/RH	2
32600611028	Control Transformer, 208X277X380 to 120X240VAC 100VA	1
32801511000	Transformer, 24 VAC	1
32600411014	Circuit Breaker, 6A 277VAC 48VDC DIN Rail Mount	1
32800711027	Air Cylinder Seal Kit, 2 in. Bore 38 in. Stroke	2
32800711028	Air Cylinder Repair Bushing, 2 in. Bore 38 in. Stroke	2
32800511001	Dual Gas Valve, Intrmtnt. Pilot NG/LP Combo 3/4 in. Inlet/Outlet	1
32600311037	Contact Block, Normally Open	1
32200106041	V-Belt, 4L X 57	2
32100102001	Motor, 3/4 Hp 3 PH TEFC 56 Frame Foot-mounted/C Flange 208-230/460//190-220/380-415 V 50/60 Hz	2
22801511001	Duct Furnace, X-250 Aluminized Steel LP Modified for DBD <i>**For Propane Use</i>	1
22801511000	Duct Furnace, X-250 Aluminized Steel NG Modified for DBD <i>**For Natural Gas Use</i>	1



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