

## K-Tronic Series Installation and Start-Up Checkout Procedure.

Note: This procedure is applicable to electrically heated units only.

### Customer Information

Account Name	Contact Name
Address	Phone
City, State, Zip	Fax

### Equipment information

Model	Serial Number	Direction (Check One) <input type="checkbox"/> L-R <input type="checkbox"/> R-L	___ / ___ / ___
			Date of Installation

Unit equipped with (check all that apply):  Blower Dryer  22" Side Loader  Power Loader  Power Unloader  
 Drain Water Tempering Kit  Curved Blower Dryer

### Instructions

Please use this check list to assist in the installation and start-up of a MEIKO K-tronic Series conveyor warewasher.

Please perform each step in sequence. Please place a check mark in the box or the line located to the left of the step. If an item is not applicable, please mark "N/A" on the appropriate line. Some of the steps require the entry of information on the lines provided for this purpose.

**If you should require any assistance please contact the MEIKO Factory Service Department at 800-868-3840.**

### Tools Required:

- Metric wrenches/sockets
- Mutlimeter with a "Clamp On" Ammeter
- Digital Thermometer
- Metric hex wrenches
- Screwdrivers
- Anemometer
- Wire cutters

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### Initial Inspection:

- Visually inspect the machine and its contents.
  - Check that all the external panels are present and are not damaged.
- Verify that the following components are present and are properly in place;
  - Splash Curtain
  - Upper and Lower Wash Arms
  - Aux. Rinse Arms
  - Final Rinse Arms
  - Scrap Screens
  - Aux. Rinse Pump Intake Sieve
- Open and close the drain handles to check for proper operation.
- Check and/or adjust the unit so it is sitting level both front to back and left to right.
- Open and close the doors, check for a smooth operation and that they seat level and flush with the machine. Adjust slightly if not.
- Check for the tabling and table limit switch (TLS) (if supplied). The lip of the table should be over the entire end plate and connected to the machine. The table limit switch must be installed to function properly as per the design of the tabling. Verify proper operation of TLS with a meter (switch is electrically closed when not activated and opens upon activation). The mechanical/operational function will be tested later.
- Remove the lower external panels (including the panel that conceals the final rinse pump) at either end of the machine. This step is required to properly check for leaks, motor direction, etc.
- Verify that the utilities, hot water, cold water, drain, and electrical power appear to be connected to the unit.
- There should be **NO POWER** to the machine at this time.  
**WARNING! Turn OFF all external power before proceeding. Some machines may have multiple connections from different sources. Assure ALL incoming power is switched OFF before proceeding. Check with the electrician or onsite personnel for the location of the circuit breaker(s) and/or disconnect switch(s).**

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- Open the control cabinet/cabinets and verify there is no voltage present at the incoming terminals. (At this time all the internal circuit breakers should be in the **OFF** position, if not then please turn all breakers off at this time).
- NOTE:** Some machines have separate control boxes that have connections and circuit breakers. One example is the blower dryer control box. This is located behind the front panel beneath the blower section. Inspect that **ALL** the electrical connections have terminated properly.
- Close the control cabinet door and apply power to the machine. The “Mike 3” controller display (or Display) will be **OFF** at this time.
- Apply power to the machine, the open the control cabinet door and verify with a volt meter that the incoming voltage matches the data plate.
- Once verified, close the control cabinet door and turn OFF all the incoming power once more.

### Operational Checks

- Open the control cabinet door and turn **ON** all the circuit breakers **EXCEPT** for the final rinse (Typically 11F1 and 11F2. Always check the wiring diagram). Close the control cabinet door/doors.
- Power may now be applied to the machine. The **Display** will illuminate. A series of display changes will take place, and then it will display **MACHINE OFF**.
- BEFORE** turning on the machine, LOCATE the bolt shipped loose, inside a plastic bag located in the control cabinet labeled **baffle bolt**.
- Install bolt into a hinged plate that is inside the machine on the top, next to the final rinse arm. Install the bolt so that the panel springs open roughly  $\frac{1}{2}$ " (one-half inch), and secure the locking nut. **NOTE:** This is a baseline adjustment and may need to be adjusted again later during the process.



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- CLOSE** all doors at this time. **OPEN** all drain valve handles. Turn on the machine. The machine will begin to fill.  
**NOTE:** With the drain valves open, this will allow any debris in the water lines to be flushed out, while at the same time testing the operation of the drain system. The final rinse system is also being filled at this time.
- CHECK** for leaks on all the water and drain lines internal and external to the machine. The water and drain lines connected to the machine are the responsibility of others.
- CHECK** the incoming water lines for temperature (ensure that they are connected to the proper connections).
  - \_\_\_ Incoming Hot Water should be a minimum of 122°F**      **Actual: \_\_\_\_\_°F**
  - \_\_\_ Incoming Cold Water could be as low as 50°F**              **Actual: \_\_\_\_\_°F**
- The display will read "**FILLING**"; use the **ARROW DOWN** button until the display reads "**information info-output**". Push the **EXCLAMATION POINT SYMBOL** button (!) *once and* then the arrow down button until it displays "**CONSUMPTION**". Press the **EXCLAMATION POINT SYMBOL** button (!) *once more*, and then press the **ARROW DOWN** button. The display should now show the Final Rinse Water Flow in GPH. This reading should be approximately 84GPH. Note: Use the left arrow to get back to the main display.
- This will tell us that the final rinse system is filled and ready for power. The machine can now be turned **OFF**, circuit breakers turned **ON** for the final rinse and the drain valves closed.
- Turn machine **ON** and allow it to fill. As the machine is filling the display will show "**FILLING**" and the green LED by the **ON** button will flash. Once the PAR tank has reached the minimum level in its tank, the display will change to "**FILLING/HEATING**". Once filled, it will display "**HEATING**" then ready for operation. The LED will be ON steadily.
- The machine is now ready for further operation. Push the pump **START BUTTON** and check motor/pump direction. This can be accomplished using a tie-wrap. The Final Rinse pump will have an arrow on it to show proper direction.  
**NOTE:** All the motors (except for the optional blower dryer) are connected to the same main terminal block. If the Final Rinse pump is operating in the correct direction all the other pumps are correct as well. If the Final Rinse pump is operating in the opposite (wrong) direction, then turn the machine OFF. Two of the incoming power lines for the Motors and Controls will need to be swapped.



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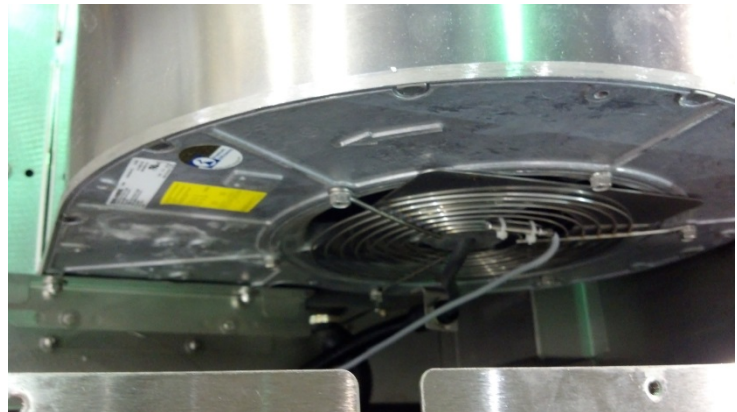
**WARNING!** Before switching the incoming power lines, all power must be turned **OFF** to the machine. Check the wiring diagram for the correct terminal block if multiple connections are present.

NOTE: If the unit was shipped with the control cabinet separated all motor will need to be tested individually. Two output legs on the corresponding contactor can be swapped to correct rotation on an individual motor/pump.

- \_\_\_ 3HP wash and prewash (LPW) pumps should rotate CCW (Counter Clock Wise) as viewed from the top (inside the tank).
- \_\_\_ 3/4HP prewash (PW) pumps should rotate CW (Clock Wise) as viewed from the top (inside the tank).

NOTE: If the machine has a blower dryer, check its operation separately.

- Blower rotation will be a visual check. **REMOVE** the top cover of the drying section. The squirrel cage fan must be turning in the direction towards the air knife. This can be done by either starting and stopping the operation or turning power **ON** then **OFF** to this section.



- Verify operation of all safety and limit switches.
  - \_\_\_ Check operation of the Door Safety Switches.
  - \_\_\_ Check operation of Conveyor Limit (jam) Switch.  
Note: This is factory set and may or may not need adjusting depending on the table configuration.
  - \_\_\_ Check operation of the Table Limit Switch by pushing on the switch plate and observing that the conveyor stops if dish racks are unavailable.

Note: If racks and ware are available. This is the best way to check the operation of the table limit switch as well as the Conveyor Limit (jam) Switch. Racks with ware should be able to be pushed down the table to the end and activate the TLS.

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- Record current draw and feed circuit breaker ampacity in the table below. Observe that the corresponding contactors are energized for the associated circuit that is being checked.

Terminal Block #	L1	L2	L3	Breaker Ampacity
TB1	A	A	A	A
TB2	A	A	A	A
TB3	A	A	A	A
TB4	A	A	A	A

- The external panels may now be put back in place and secured.
- Push the pump start button. The machine should maintain at or above the minimum temperature settings that are programmed. To prevent the machine from automatically timing out, place a rack upside down into the entrance of the machine, or use something to keep the rack start switch activated to keep it in full operation (this will activate the conveyor and pumps without the rack traveling through the machine). The machine should run at full operation for at least 20 minutes non-stop and observe the overall operating temperatures.  
Once the machine has run for at least 20 minutes and has maintained at or above its minimum temperatures and has not displayed any error codes, this test can be concluded. If minimum temperatures are not maintained, then some adjustments that will be required utilizing the following next steps.

**NOTE: If any adjustments are made, repeat the test above, until no further adjustments are not required.**

**NOTE:** With the machine in operation, there should be very little steam coming out the load end of the machine. Some steam may come out when a dish rack is entered into the machine. Too little or too much exhaust CFM can cause excessive steam and or reduced tank temperatures. If there is an excessive amount of steam coming out the load end, the baffle plate at the final rinse section may need adjusting to a wider opening (this baffle was where the **baffle bolt** was installed into earlier).

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- This should be done in small ¼" (one-quarter inch) increments so as not to affect the machines' overall temperatures.

**Final "Final Rinse" baffle setting \_\_\_\_\_" open.**

- There is also an adjustable damper on the top of the machine next to the extraction fan that can also be adjusted to minimize excessive steam from exiting the machine.

**Final "By-Pass" baffle setting \_\_\_\_\_" open.**

- There is also an adjustable baffle on exit end of if the unit is equipped with a Blower Dryer.

**Final "Blower Dryer" baffle setting \_\_\_\_\_" open**

(Please mark N/A if not equipped with a blower dryer).

- Observe the final rinse temperatures. The temperature should fluctuate between 180-195 degrees. In the event that it goes below 180 or above 195 for an extended period of time (e.g. 10 seconds), adjustment of the final rinse booster heater KW will be needed.

Note: The machine is tested at the factory for proper final rinse temperature with incoming cold water. In some cases due to warmer or cooler temperature water at the facility, the final rinse may go out its allowed tolerance.

The final rinse booster heater has a total of four (4) sets of heaters (12 elements total). There are two (2) sets of 9 KW and two (2) sets of 6 KW (a total of 30KW) and not all of them are used. The non-utilized heater sets are terminated on a connection block next to the circuit breakers.

For example 11F1 has a 9KW heater and 11F2 has a 6 KW heater and the final rinse is going over 195F and going below 180F for periods of time. Remove the 9KW heater on 11F1 and swap it for the 6KW heater, this should bring the temperatures to within the proper range.

- If available, run as many full racks (with ware) as possible through the machine to test performance under load. The scrap screens must be pushed all the way to the back wall when running loaded racks, and the manifold baffles should be half way closed to allow for the proper volume of wash water typically required.
- Observe to ensure that there isn't any water coming out from the bottom of the doors with full racks running through the machine. **NOTE:** Even though the machine appears level, you may notice the doors do not sit flush. Adjust the legs accordingly **AFTER**

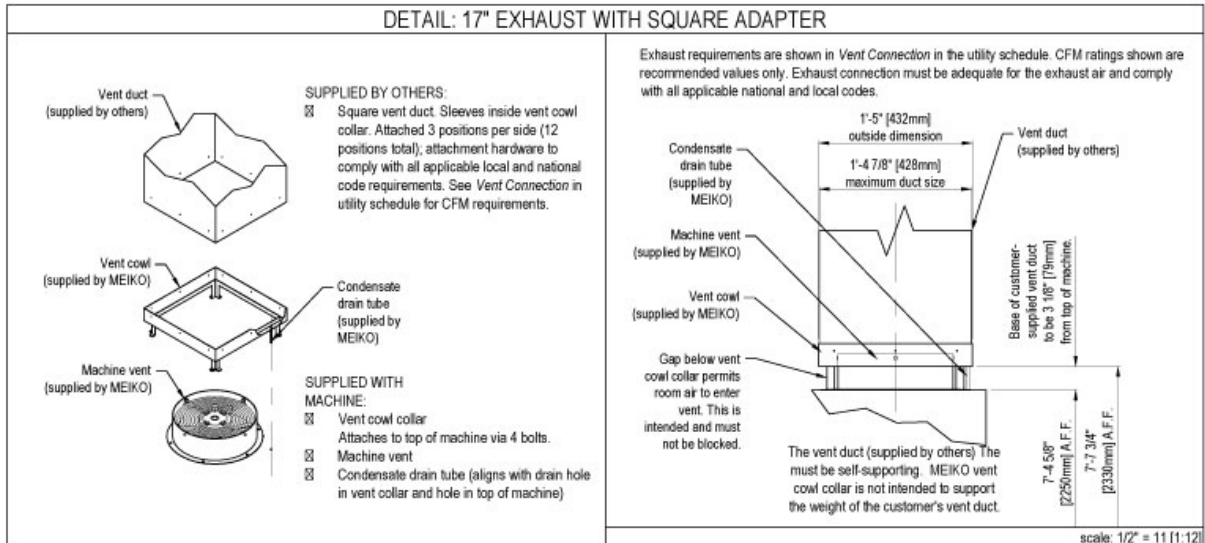
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**LEVELING THE MACHINE** to ensure a proper door seal. In addition make sure that the scrap screens are properly positioned (pushed) towards the back of the machine.

- Turn the machine **OFF** and **OPEN** all the drains at once and observe. Some facilities may not have adequate drainage to support all the drains opening at one time. If floor drain does not accommodate all of the water volume, please be sure on-site manager is aware that only one drain can be used at a time.
  
- Venting should be completed and balanced to Meiko's specifications prior to the start-up. The facility may have decided to interconnect their buildings exhaust circuit to the machine. There is a set of dry contacts located at the bottom of the control cabinet labeled external vent fan. These contacts have no power and only a 2AMP rating, normally connected to the control circuit of their exhaust. 13Q1 is the contactor that is connected to these contacts.

\_\_\_ **Vent connection is indirect per drawing below.**



- The waste air connection must be corrosion-resistant and frost-free. In particular, provisions must be made to prevent air temperatures of 32°F(0°C) or colder from reaching the machine at any time.
  
- A provision for draining moisture from the waste air pipe is strongly recommended.
  
- Machine exhaust, without blower dryer: 354 CFM (602m h)
  
- Machine exhaust, with blower dryer: 388 CFM (651m h)



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- Additional room air recommended for indirect vent: 120 CFM (170m h)

\_\_\_ **Measured airflow at connection: \_\_\_\_\_CFM**

- The extraction fan on the machine, turns ON and OFF with the operation of the machine. There have been some situations where the facility would like the buildings ventilation to run whenever the machine is on. In this situation, terminals 0-21 will be used. Be advised that these terminals are line voltage (2AMP rating) and energized from 4Q1.

- Please check the appropriate statement:

\_\_\_ The facility's ventilation system is automatically controlled by the MEIKO unit.

\_\_\_ The facility's ventilation system is manual controlled (e.g. by a manual switch).

\_\_\_ The facility's ventilation system is controlled by other means.

- The Anti-Frost thermostat is preset at the MEIKO factory – This thermostat is provided as secondary failsafe to help prevent the freezing and rupture of the heat exchanger for the Waste Air Heat Recovery System (W.A.H.R.S.) located directly under the extraction fan. The thermostat will operate the internal extraction fan therefore pulley room air through the heat exchanger.

\_\_\_ **Provisions to prevent freezing air from entering the unit have been installed by the facility to prevent rupture of the heat exchanger for the W.A.H.R.S.**

\_\_\_ **If not please remind the facility it is their responsibility to prevent freezing air from entering the machine at any time.**

\_\_\_ **Please inform the facility that if the electrical power disconnect for the warewasher is switched off, the fan will not be able to operate.**

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### Chemical Supplier Information

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Company Name

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Contact Name

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Product information (If available)

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Phone

Note: The chemical connections are located at the bottom of the control cabinet. These terminals are line voltage and are energized with power from 4Q1. Before attempting to connect to these terminals, turn OFF 4Q1. One side of the terminals is always live even with the machine OFF. Some chemical may require constant power. If constant power is needed (not labeled), use terminals 0-20. The detergent and rinse aid terminals are labeled.

Chemical dosing system connections have been completed.

### Final Checks

- Please ensure the customer is aware that the unit is ready for operation.
- Please inform the customer that the warranty starts on the date of installation.
- Please note that for our records we require both the customer's and the technician's signature on this completed form.

**Note: This form must be returned to the MEIKO Service Department ([service@meiko.us](mailto:service@meiko.us) or Fax -615-399-6620) within 48 hours of completion.**

### Service Agency Information

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Agency

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Technician Name

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Address

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Technician Signature

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Date

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City, State, Zip

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Office Phone Number

### Customer Acceptance

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Name

---

Signature

Date

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Company

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Contact Number

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Title

**Comments / Notes:**