TK SERIES QUICK START INSTRUCTIONS

FOR YOUR SAFETY

If you smell gas:

1. **Open windows.**
2. **Don't touch electrical switches.**
3. **Extinguish any open flames.**
4. **Immediately call your gas supplier.**

RECEIVING AND INSPECTION

Upon receiving unit, check for any interior and exterior damage, and if found, report it immediately to the carrier. Also, check that all accessory items are accounted for and are damage free. Turn the blower wheel by hand to verify free rotation and check the damper (if supplied) for free operation.

WARNING!!

Improper installation, adjustment, alteration, service, or maintenance can cause property damage, injury or even death. Read the installation, operating and maintenance instructions thoroughly before installing or servicing this equipment. ALWAYS disconnect power and turn main gas valve off prior to working on this equipment.

NOTE TO INSTALLER

This manual should be reviewed with the customer and left with the equipment user.

naks NORTH AMERICAN KITCHEN SOLUTIONS
(800)854-3267

1 BLOWER ROTATION

Start the fan up, by turning the external disconnect to the ON position, and shut it OFF immediately to check rotation of the wheel with the directional arrow on the blower scroll.

Reversed rotation will result in poor air performance, motor overloading and possible burnout.

For units equipped with a single-phase motor check the motor wiring diagram to change rotation.

For 3-phase motors, any two power leads can be interchanged to reverse motor direction.

2 AIR FLOW

With all the accessories and ductwork attached, measure the burner profile pressure drop, using the high and low pressure taps provided in control vestibule.

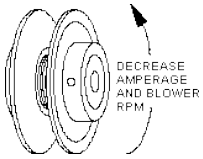
The pressure drop should be 0.25 to 0.55 inches water column, which will provide the correct pressure drop for burner combustion. Use the adjustable motor sheave (pulley) to increase or decrease the airflow if adjustments are necessary.

3 BLOWER RPM

Once the proper airflow is achieved, measure and record the fan speed with a reliable tachometer. Caution - Excessive speed will result in motor overloading or bearing failure. Do not set fan RPMs higher than specified in the maximum RPM chart. See the troubleshooting guide for more information.

4 MOTOR AMPS

Measure and record the motor voltage and amperage and compare the readings with the motor nameplate to determine if the motor is operating under safe load condition. Use the adjustable motor sheave (pulley) to increase or decrease the airflow if adjustments are necessary.



5 GAS PRESSURE

Restart the fan and check the gas supply pressure at the inlet gas tap upstream of all electronic valves. The inlet pressure is noted on unit name plate.

If the inlet pressure is too high, install an additional pressure regulator external to the unit.

Open the field installed manual gas shut-off valve and the manual main gas valve on the combination gas control valve.

Call for heat with the intake air thermo-stat (turn set-point to temperature above outside air) and allow the pilot to light. If the pilot does not light, purge the pilot line. If air purging is required, disconnect the pilot line at the outlet of the pilot valve.

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6 PILOT ADJUSTMENT

Check the pilot flame voltage at the Flame Safety Control interface test jacks. A weak pilot flame can be caused by low gas pressure, or a dirty pilot orifice.

To adjust the pilot flame, remove the cap from the pilot adjustment screw on the combination gas valve. Increase the pilot gas flow by turning the screw counter-clockwise. Decrease the pilot gas flow by turning the screw clockwise. The pilot DC voltage should read 12 VDC minimum and should typically be 18 VDC.

Once the pilot has been established, open the main manual gas shut-off valve downstream of the electronic valves. Check to make sure that the main gas valve opens, and gas flows to the burner.

7 HIGH FIRE

Create a high fire call for heat. This should be done with the blower on and all gas controls on.

On Maxitrol 14 systems remove the #4 wire from the A1014 amplifier.

On Maxitrol 44 systems remove the #4 and #2 wires from the A1044 amplifier.

The manifold pressure should be checked at the gas gauge downstream of the modulating valve. For natural gas systems, the high fire manifold pressure should not exceed 5 in. w.c. For propane gas, the high fire manifold pressure should not exceed 2.5 in. w.c.

Another method of checking high fire is to measure the temperature rise of the unit. The temperature rise should be set to design conditions and typically is minimum 70°F.

7 HIGH FIRE

Remove the cap from the combination gas valve regulator adjustment (size 1-3) or the cap from the MR212 valve (size 4-5).

Using the regulator pressure adjusting screw, adjust the high fire manifold pressure to name plate design manifold pressure.

High fire should be set to generate the desired temperature rise. If the high fire screw is at the end of its adjustment and more pressure is needed, then adjust the main building gas pressure regulator spring (located external to the unit) to achieve the proper manifold pressure. Turning the regulator screw clockwise will increase pressure and counter-clockwise will decrease pressure.

Reconnect the wire on the Maxitrol 14 amplifier at terminal #4 (wires #2 and #4 for Maxitrol 44).

COMBINATION VALVE

MR212 VALVE

MR212 VALVE HIGH FIRE

8 LOW FIRE

The low fire manifold pressure must now be set. Low fire can be achieved by removing the wire at terminal #8 from the Maxitrol 14 amplifier (remove #8 for Maxitrol 44).

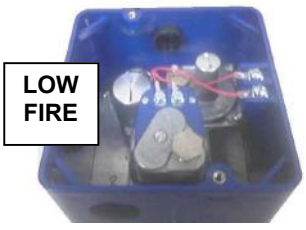
Using the bypass screw (located on the side of the M511 and M611 valves, and under the cap of the MR212 valve), adjust the low fire manifold pressure until there is a very thin flame along the entire length of the burner.

No dark spots should be seen in the burner. The burner may be observed through the view-port located on the external wall of the heater.

Replace the cap to the Maxitrol valve and restore all of the original wiring on the Maxitrol amplifier and gas components.

MR411 / 511 / 611 VALVE

MR212 VALVE



MR212 VALVE LOW FIRE