Master Control Panel

Installation Manual
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Main Control Box

--- NOTICE ---
All wiring between the main control box and equipment should be **Class B, low-voltage**. *In most cases, a conduit is not required when using this type of wiring.*

--- WARNING ---
Before proceeding with any electrical installation, comply with and maintain all applicable local electrical code(s) and regulations.

1. Position the main control mounting box, so that the master control panel switches can be eye level, in a convenient location (near the office's entrance/exit).

2. Once the main control mounting box is in position, secure it using the brackets provided.

**IMPORTANT NOTE:** To ensure proper installation of the finished master control panel, the mud flange must be recessed by dry wall thickness.

3. Install the main control box wires as follows:

   a. Using a hammer and pliers, remove the appropriate knock-out from the main control mounting box.

   b. Fit a nylon grommet in the knock-out. *(This protects the wires from chaffing and shorting out.)*

   c. Run the appropriate wires to their respective equipment location. Then connect the wires according to the instructions on the following pages.

4. After all wiring connections are completed correctly, position the master control panel over the main control box and secure using the screws provided.

**WIRING CHART**

<table>
<thead>
<tr>
<th>Model No.</th>
<th>No. of Wires</th>
<th>Wire Under 150 ft.</th>
<th>Wire Over 150 ft.</th>
</tr>
</thead>
<tbody>
<tr>
<td>CV-101</td>
<td>3</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>CV-102</td>
<td>3</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>DV-301</td>
<td>3</td>
<td>18 AWG</td>
<td>16 AWG</td>
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<tr>
<td>DV-302</td>
<td>3</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>MC-201</td>
<td>6</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>MC-202</td>
<td>6</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>Air Compressor</td>
<td>3</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>MWCV Solenoid Valve</td>
<td>2</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
<tr>
<td>MWCV Transformer</td>
<td>2</td>
<td>18 AWG</td>
<td>16 AWG</td>
</tr>
</tbody>
</table>
Single/Dual Vacuum Pump Relay Box Connection

*(All Panels, Except Turbine)*

--- **CAUTION** ---
Before making any wiring connections to the main control box, the vacuum unit should be completely installed.

--- **WARNING** ---
Before proceeding with the single/dual vacuum pump relay box connection, make sure the electrical power supply to the vacuum pump is turned OFF.

--- **NOTICE** ---
All pumps (single or dual) must have three, low-voltage wires installed from the top of each relay box going to the main control box in order to operate the master control panel lighted ON/OFF switches.

**IMPORTANT NOTE:** For dual vacuum pump relay box connection to the main control box, Steps 1 through 8 listed below must be performed for each vacuum pump. Refer to the vacuum pump relay box wiring diagram on the next page.

**NOTE:** For vacuum pump relay boxes with factory-installed yellow, black and brown wires, it is not necessary to perform Steps 1 through 8.

1. Loosen the top and bottom retainer screws from the vacuum pump relay box and remove the cover.
2. Remove the black strain relief grommet from the top of the vacuum pump relay box.
3. Place the tap connector slot over the yellow transformer wire, and insert the brown wire into the end of the tap connector.
4. Squeeze the metal connector tight, and snap the attached cover in place.
5. Route the brown wire out through the strain relief grommet hole along with the yellow and black wires.
6. Reinstall the strain relief grommet around the yellow, black and brown wires.
7. Reinstall the relay box cover and tighten the top and bottom retainer screws.
8. Run and connect the low-voltage wires to the main control panel mounting box according to the applicable wiring diagram in Section II Schematics. *(Refer to the index on Page 8 for the location of the appropriate diagram.)*
Vacuum Pump Relay Box Wiring Diagram
Master Water Control Valve Connection

(With 24-Volt Lighted Control Switch)

--- NOTICE ---
When using low voltage to operate the master water control valve (MWCV), a 115-volt electrical receptacle for the MWCV “plug-in” transformer must be supplied.

--- WARNING ---
Before proceeding to Step 2, make sure all power is properly disconnected.

1. Remove the MWCV from the shipping container or locate a previously installed MWCV in the office.

--- WARNING ---
Do not plug in the transformer until all electrical connections are complete.

2. Dismantle the coil assembly.
3. Replace the 115-volt coil with the 24-volt coil included in the kit.
4. Provide power to the coil assembly using the “Plug-In” 115V/24V transformer supplied with the kit.
5. Connect the two low-voltage wires from the transformer according to the applicable master control panel wiring diagram in Section II.

--- WARNING ---
Do not plug in the transformer until all electrical connections are complete.

6. Test the MWCV and transformer as follows:
   a. Turn the light switch to the OFF position. (The light should be off.)
   b. Turn the light switch to the ON position. (The light should be on.)
   c. When the switch is activated, the MWCV should make a clicking sound, which indicates the valve is working properly.
   d. If the light fails to come on, or if the MWCV fails to function, check all connections referring to the applicable master control panel wiring diagram in Section II.

**NOTE:** If a light stays ON while the switch is in the Off position, simply reverse the wires numbered 2 and 3 on the switch. The light should then operate correctly.
Air Compressor Remote Connection

1. Turn **OFF** all power to the air compressor at the source.

2. Mount the compressor relay box near the junction box on the air compressor.

3. Connect the power source supply lines to L1 and L2 on the compressor relay box for new installation.

   **NOTE:** For existing installation, first remove the power source supply lines from the junction box.

4. Connect conduit from the compressor relay box to the junction box.

5. Connect the two lines from T1 and T2 to the two compressor power lines in the junction box.

6. Run and connect low-voltage wires to the main control box according to the applicable master control panel wiring diagram in Section II.
When connecting a RAMVAC pump, replace the VAC switch in the Master Control Panel with the loose switch supplied.

Please use this schematic for RAMVAC rocker switch installation in the following panels:

<table>
<thead>
<tr>
<th>PANEL</th>
<th>PART #</th>
</tr>
</thead>
<tbody>
<tr>
<td>MP300</td>
<td>64652017</td>
</tr>
<tr>
<td>MP1000</td>
<td>64568077</td>
</tr>
<tr>
<td>MP2000</td>
<td>64568110</td>
</tr>
<tr>
<td>MP1000A</td>
<td>64568171</td>
</tr>
<tr>
<td>MP2000A</td>
<td>64568174</td>
</tr>
</tbody>
</table>

Connect to an S1 Electrols as follows:

- Terminal #4 - connect to S1 terminal “G”
- Terminal #3 - connect to S1 terminal “H”
- Terminal #2 - connect to S1 terminal “F”
## Section II  Schematics

### Master Control Panel Wiring Diagrams Index

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<td>MP - 400</td>
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</tr>
<tr>
<td>MP - 700</td>
<td>11</td>
</tr>
<tr>
<td>MP - 900</td>
<td>12</td>
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<td>MP - 1000</td>
<td>13</td>
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<td>MP - 1100</td>
<td>14</td>
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<td>MP - 1200 / 1300</td>
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<td>MP - 1800</td>
<td>16</td>
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<tr>
<td>MP - 2000</td>
<td>17</td>
</tr>
<tr>
<td>MP - 2200</td>
<td>18</td>
</tr>
</tbody>
</table>
Section II  Schematics

MP - 100 / 300

One Switch, Single Vacuum

Wall-Mounted Switches
Shown from
Back of Switch Plate

Vacuum

Vacuum Pump Relay Box

Line Voltage
(To Source)

Load
(To Vacuum Pump)

Brown

Yellow

Black

Junction Box

L1  T1

L2  T2
NOTE: Using the circuit depicted in the diagram above, either switch will turn the vacuum pumps on. To wire pumps so that either switch will turn the vacuum pumps off, use the circuit shown in the diagram to the right.
Section II  Schematics

MP - 700

One Switch, Air Compressor

- Wall-Mounted Switches Shown from Back of Switch Plate
- Air Compressor
- Junction Box
- Compressor Relay Box
- Brown
- Yellow
- Black
- Red
- Line Voltage (To Source)
- Load (To Air Compressor)
**MP - 900**

**Three Switch, (Dynamic Dry) Single Vacuum, Air Compressor, Water**

[Diagram of a control panel with labels and connections for line voltage, load, and switches.]

- **Main Water Control Solenoid Valve**
- **Plug In Transformer**
- **Compressor Relay Box**
- **Main Water Control Solenoid Valve**
- **Dynamic Dry Relay Box**
- **Load (To Dynamic Dry)**
- **Line Voltage (To Source)**
- **Load (To Compressor)**
- **Line Voltage (To Source)**

Wire colors and connections:
- Brown
- Yellow
- Black
- Red
- Black
- L1
- L2
- T1
- T2

Air In, Vac In, Air Out, Vac Out connections:
- 24V AC
- 24V Coil

Wall-mounted switches shown from back of switch plate.
Three Switch, Single Vacuum, Air Compressor, Water

- Main Water Control Solenoid Valve
- Plug In Transformer
- Compressor Relay Box
- Wall-Mounted Switches Shown from Back of Switch Plate
- Brown Yellow Black
- Red Black
- L1 L2 T1 T2
- Air In Air Out Vac In Vac Out
- 213 24V AC
- 24V Coil
- 24V Coil In
NOTE: Using the circuit depicted in the diagram above, either switch will turn the vacuum pumps on. To wire pumps so that either switch will turn the vacuum pumps off, use the circuit shown in the diagram below.
Section II  Schematics

MP - 1200 / 1300

One Switch

(For Dual Starter Kits Only)

Lift Post

POWER
3 PHASE

White

Black

Connect Per Voltage Requirements (See Figure 1)

T1    T2          T3

T1    T2          T3

L1    L2          L3

L1    L2          L3

POWER
3 PHASE

SECONDARY

H1 H2 H3 H4 H5 H6

X2 F1                X1

Switch 1

Switch 2

Wall-Mounted Switches Shown from Back of Switch Plate

TURBINE 1

TURBINE 2

\[\text{Fuse Type FNM - 6 1/4 AMP} \]

\[\text{Fuse Type KLK - 12-2 AMP} \]

\[\text{Figure 1} \]
Section II  Schematics

Master Control Panels

MP - 1800

Two Switch, (Dynamic Dry) Single Vacuum, Air Compressor

Diagram showing the connection of the components:
- Compressor Relay Box
- Load (To Compressor)
- Line Voltage (To Source)
- Vacuum
- Air Comp.
- Wall-Mounted Switches—Shown from Back of Switch Plate
- Dynamic Dry Relay Box
- Load (To Dynamic Dry)
- Line Voltage (To Source)
- Air In
- Vac In
- Air Out
- Vac Out
Two Switch, Single Vacuum, Air Compressor

- Compressor Relay Box
- Vacuum Pump Relay Box
- Wall-Mounted Switches—Shown from Back of Switch Plate
- Air Comp., Vacuum
- L1, L2, T1, T2
- Red, Black, Blue, Yellow, Brown
- Air In, Vac In, Air Out, Vac Out
- Line Voltage (To Source), Load (To Compressor)
NOTE: Using the circuit depicted in the diagram above, either switch will turn the vacuum pumps on. To wire pumps so that either switch will turn the vacuum pumps off, use the circuit shown in the diagram below.
DentalEZ® Group

CustomAir® Division

Master Control Panels

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In the event that you experience difficulty with the application or operation of any of our products, please contact our customer service department at our expense at 1-866-DTE-INFO (1-866-383-4636).

If we cannot resolve the issue by telephone, we will arrange for a representative to contact you or suggest that the product be returned to our factory for inspection.

If product return or repair is required, we will provide you with a Return Authorization number and shipping instructions to return the product to the proper facility. If the product is under warranty, we will ask you to provide proof of purchase, such as a copy of your invoice. Please be sure to include the Return Authorization number on the package you are returning. Products returned without a Return Authorization number cannot be repaired.

Freight costs for product returns are the responsibility of the customer. Products under warranty will be repaired or replaced, at our sole discretion, and returned at our expense. Products outside the warranty limits will be repaired and returned with costs invoiced to the customer. We are not responsible for shipping damages. We will, however, help you file a claim with the freight carrier. Written repair estimates are available.

DentalEZ warrants the CustomAir Master Control Panels to be free of defects in material and workmanship, under normal usage, for a period of 2 years from date of installation.*

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• Warranties cover manufacturing defects only and do not cover defects resulting from abuse, improper handling, cleaning, care or maintenance, normal wear and tear or non-observance of operating, maintenance or installation instructions. Failure to use authorized parts or an authorized repair facility voids this warranty.

• Liability is limited to repair or replacement of the defective product at our sole discretion. All other liabilities, in particular liability for damages, including, without limitation, consequential or incidental damages are excluded.

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NON-WARRANTY REPAIRS: The warranty on parts either repaired or replaced on an out-of-warranty product will cover the repaired part only and will be for the time frame of a new parts warranty period.

PRODUCT RETURN: Opened products or product returns more than a year old cannot be returned for credit. There will be a 15% ($25.00 Minimum) restocking charge on all items authorized for return.

* Provided conditions defined in instruction manual are met.

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