

# UltraCleaner

## Robotic Torch Cleaner



**Reference from Operator Manual**  
**Pages 6 - 15**

**Section 5: Installation and Set-Up**

**Section 6: Optional Air Blast Control**

# SECTION 5 - INSTALLATION AND SETUP

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## 5-1 Model 1 - Limit Switch Activated

### Installation

- 1) Place UltraCleaner on a secure surface. If using the optional stand, mount it to the floor using appropriate anchors.
- 2) Fill tank with anti-spatter fluid to the bottom of the float guard. (See Figure 1, Pg. 9)
- 3) Connect supplied hose to pump inlet. (See Figure 2, Pg. 9)
- 4) Place other end of hose into the anti-spatter container (cut hose to length).
- 5) Plug unit into a grounded 120VAC receptacle.
- 6) Red "PUMP ON" light should come on indicating that the pump is filling the tank to the proper level. This may take several minutes. The pump is self priming.
- 7) Once "PUMP ON" light turns off, manually move the activating switch until "CLEANER ACTIVATED" light turns on.

*The system is now ready for the robot to be programmed.*

### Robot Programming

- 1) Install new consumables and verify Tool Center Point is defined accurately
- 2) Remove nozzle from torch. (See Figure 3, Pg. 9)
- 3) Program the robot path to go above the tank then down into the tank until the fluid level is slightly below the gas holes in the gas diffuser.
- 4) Move the torch towards the activating switch until Cleaner Activate light comes on. Move the torch an additional 1/4" further. (See Figure 4, Pg. 9).
- 5) Make a wait statement for as much time as your cycle time will allow (2 to 3 second minimum). Use fine point or small zero zones for the final position location.
- 6) Reverse the robot path.
- 7) Replace the nozzle.
- 8) Move the torch away from the UltraCleaner and program the shielding gas (purge) or optional air-blast control to provide a burst of air to remove any excess anti-spatter fluid. Set air-blast time for 0.5 to 1.0 second. The blast can occur over a container or while the robot travels back to the home position. **DO NOT** turn on the air-blast over the UltraCleaner. Doing so may displace the fluid in the tank!
- 9) Return home.
- 10) Test the program in Teach mode (low speed) to verify the robot path and that the cleaner activates.

*The system is now ready for production.*

## SECTION 5 - INSTALLATION AND SETUP

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### 5-2 Model 2 - I/O Controlled

#### Installation

- 1) Place UltraCleaner on a secure surface. If using the optional stand, mount it to the floor using appropriate anchors.
- 2) Wire interface cable to the robot controller 24VDC output. (Circuit Diagram #1, Pg. 10)
- 3) Fill tank with anti-spatter fluid to the bottom of the float guard. (See Figure 1, Pg. 9)
- 4) Connect supplied hose to pump inlet. (See Figure 2, Pg. 9)
- 5) Cut hose to length. Insert the suction tube wire into the end of the hose and place it into the anti-spatter container.
- 6) Plug unit into grounded 120VAC receptacle.
- 7) Red "PUMP ON" light should come on indicating that the pump is filling the tank to the proper level. This may take several minutes. The pump is self priming.
- 8) Once "PUMP ON" light turns off, manually set the robot output to activate the cleaner. "CLEANER ACTIVATED" light should turn on.

*The system is now ready for the robot to be programmed.*

#### Robot Programming

- 1) Install new consumables and verify Tool Center Point is defined accurately.
- 2) Remove nozzle from torch. (See Figure 3, Pg. 9)
- 3) Program the robot path to go above the tank.
- 4) Program the output to activate the cleaner.
- 5) Program the robot path so the torch goes into the tank until the anti-spatter fluid level is slightly below the gas holes in the gas diffuser. (See Figure 4, Pg. 9).
- 6) Make a wait statement for as much time as your cycle time will allow (2 to 3 second minimum). Use fine point or small zero zones for the final position location.
- 7) Reverse the robot path.
- 8) Replace the nozzle.
- 9) Move the torch away from the UltraCleaner and program the shielding gas (purge) or optional air-blast control to provide a burst of air to remove any excess anti-spatter fluid. Set air-blast time for 0.5 to 1.0 second. The blast can occur over a container or while the robot travels back to the home position. **DO NOT** turn on the air-blast over the UltraCleaner. Doing so may displace the fluid in the tank!
- 10) Return home.
- 11) Test the program in Teach mode (low speed) to verify the robot path and that the cleaner activates.

*The system is now ready for production.*

## SECTION 5 - INSTALLATION AND SETUP

### 5-3 Model 3 - Dual Robot I/O Controlled

#### Installation

- 1) Place UltraCleaner on a secure surface. If using the optional stand, mount it to the floor using appropriate anchors.
- 2) Wire interface cable to each robot controllers 24VDC output. (Circuit Diagram #2, Pg. 11)
- 3) Fill tank with anti-spatter fluid to the bottom of the float guard. (See Figure 1, Pg. 9)
- 4) Connect supplied hose to pump inlet. (See Figure 2, Pg. 9)
- 5) Cut hose to length. Insert the suction tube wire into the end of the hose and place it into the anti-spatter container.
- 6) Plug unit into grounded 120VAC receptacle.
- 7) Red "PUMP ON" light should come on indicating that the pump is filling the tank to the proper level. This may take several minutes. The pump is self priming.
- 8) Once "PUMP ON" light turns off, manually set the robot output from each robot controller to activate the cleaner. "CLEANER ACTIVATED" light should turn on.

*The system is now ready for the robot to be programmed.*

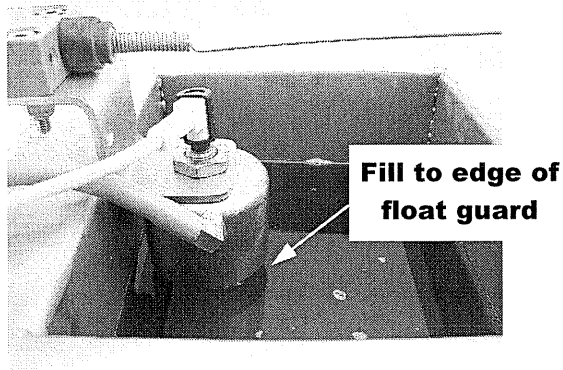
#### Robot Programming

- 1) Install new consumables and verify Tool Center Point is defined accurately.
- 2) Remove nozzle from torch. (See Figure 3, Pg. 9)
- 3) Program the robot path to go above the tank.
- 4) Program the output to activate the cleaner.
- 5) Program the robot path so the torch goes into the tank until the anti-spatter fluid level is slightly below the gas holes in the gas diffuser. (See Figure 4, Pg. 9).
- 6) Make a wait statement for as much time as your cycle time will allow (2 to 3 second minimum). Use fine point or small zero zones for the final position location.
- 7) Reverse the robot path.
- 8) Replace the nozzle.
- 9) Move the torch away from the UltraCleaner and program the shielding gas (purge) or optional air-blast control to provide a burst of air to remove any excess anti-spatter fluid. Set air-blast time for 0.5 to 1.0 second. The blast can occur over a container or while the robot travels back to the home position. **DO NOT** turn on the air-blast over the UltraCleaner. Doing so may displace the fluid in the tank!
- 10) Return home.
- 11) Test the program in Teach mode (low speed) to verify the robot path and that the cleaner activates.
- 12) Repeat the above steps for the second robot. Note: There needs to be interlocks to prevent the robots from crashing!

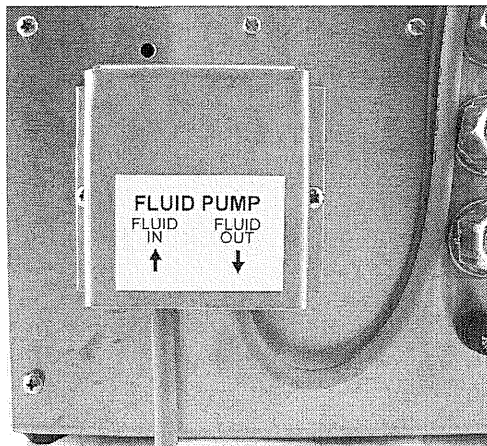
*The system is now ready for production.*

## SECTION 5 - INSTALLATION AND SETUP

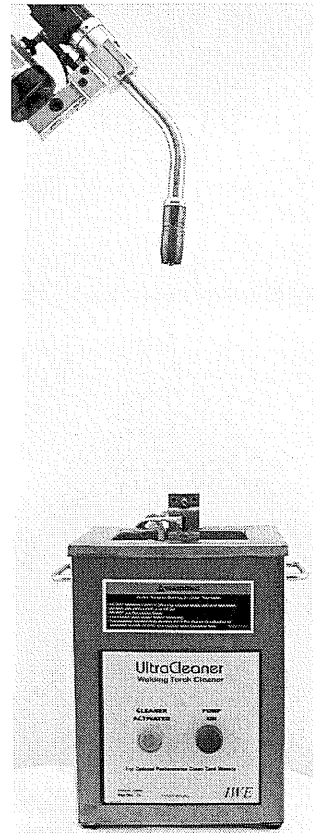
### 5-4 Figures 1-4



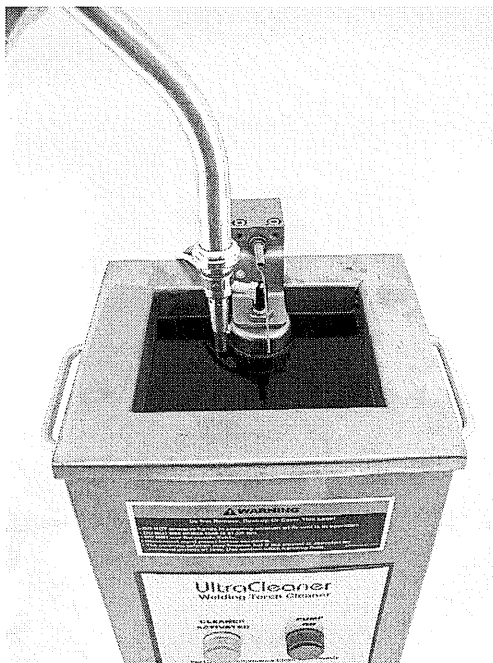
**Figure 1**



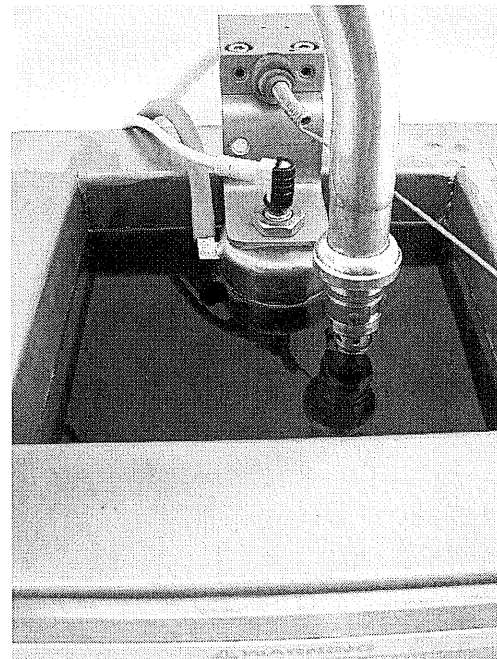
**Figure 2**



**Figure 5**



**Figure 3**

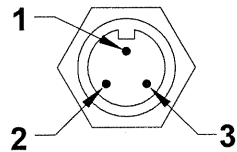


**Figure 4**

## SECTION 5 - INSTALLATION AND SETUP

### 5-5 Circuit Diagram #1 - Model 1 Limit Switch Control

#### AC INPUT POWER RECEPTACLE



- 1- GND
- 2- 120VAC (L1)
- 3- COMMON (L2)

#### ULTRACLEANER

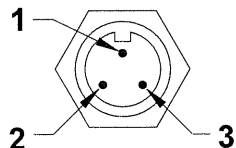
3 PIN

- 1 ← GND
- 2 ← 120VAC (L1)
- 3 ← COMMON (L2)

## SECTION 5 - INSTALLATION AND SETUP

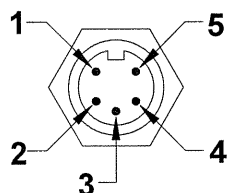
### 5-6 Circuit Diagram #2 - Model 2 I/O Control

#### AC INPUT POWER RECEPTACLE

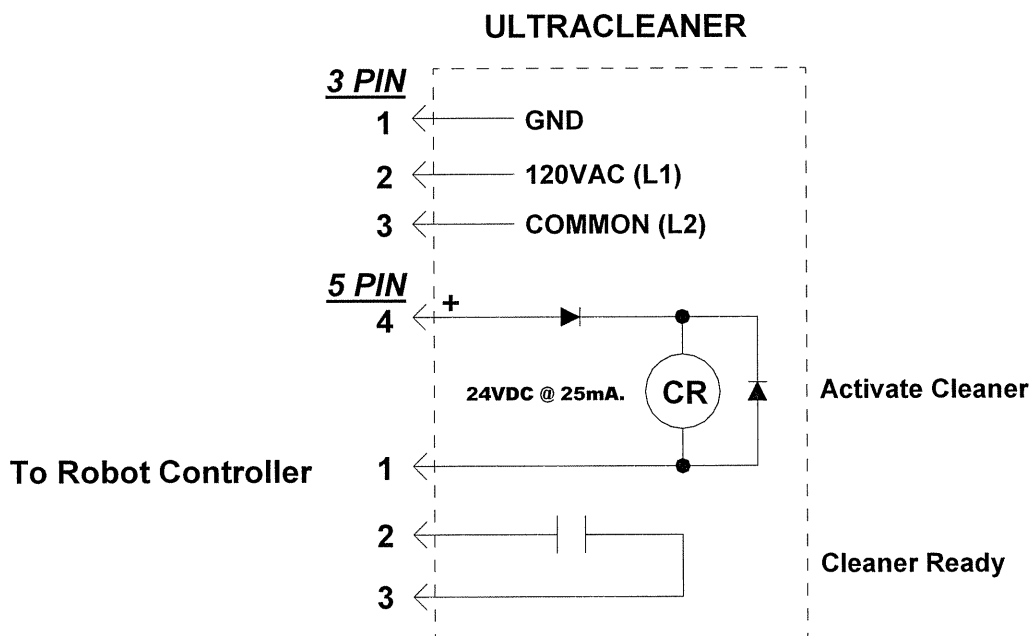


- 1- GND
- 2- 120VAC (L1)
- 3- COMMON (L2)

#### INTERFACE RECEPTACLE



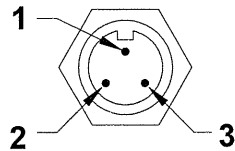
- 1- 0VDC INPUT
- 2- CLEANER READY (COMMON)
- 3- CLEANER READY (SIGNAL)
- 4- +24VDC INPUT (ACTIVATE CLEANER)
- 5- NO CONNECTION



## SECTION 5 - INSTALLATION AND SETUP

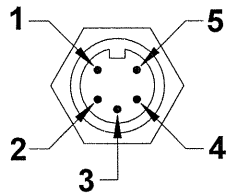
### 5-7 Circuit Diagram #3 - Model 3 Dual I/O Control

#### AC INPUT POWER RECEPTACLE

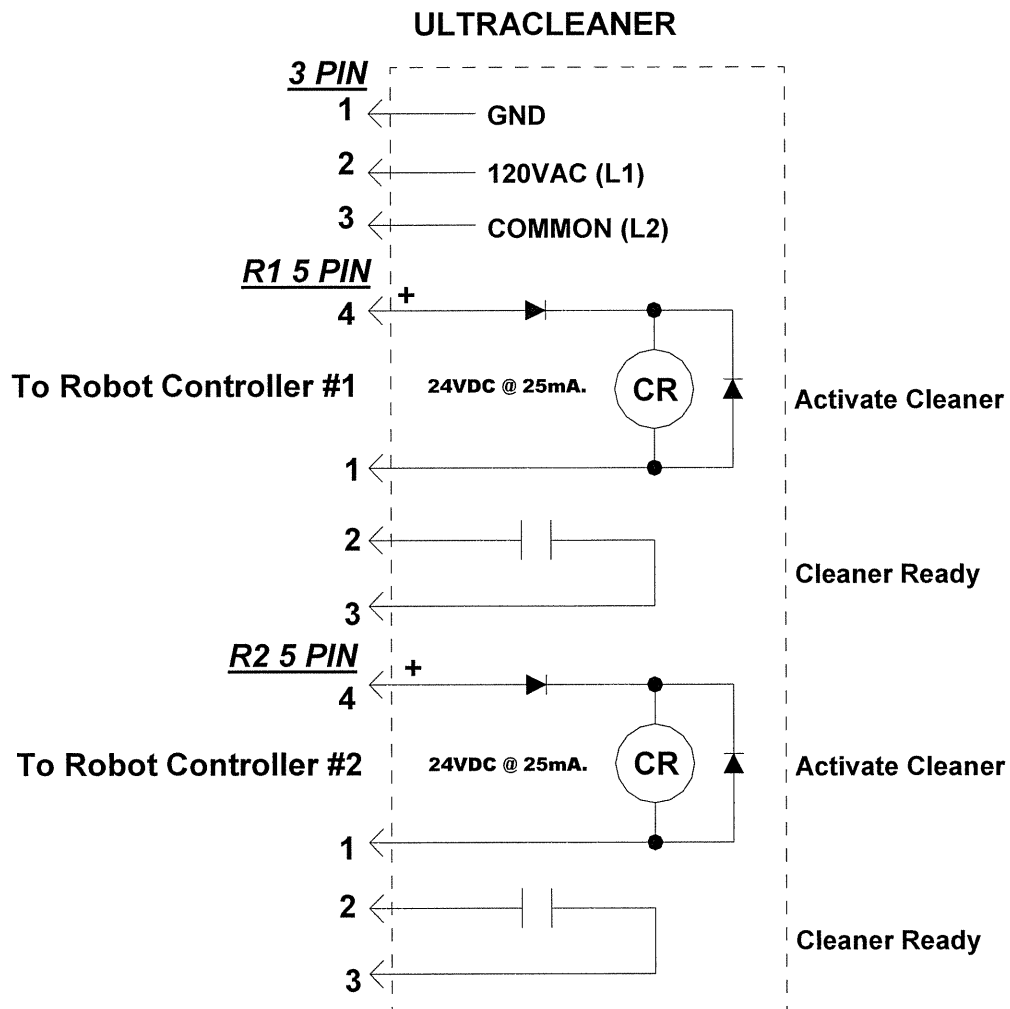


- 1- GND
- 2- 120VAC (L1)
- 3- COMMON (L2)

#### INTERFACE RECEPTACLE R1 AND R2



- 1- 0VDC INPUT
- 2- CLEANER READY (COMMON)
- 3- CLEANER READY (SIGNAL)
- 4- +24VDC INPUT (ACTIVATE CLEANER)
- 5- NO CONNECTION

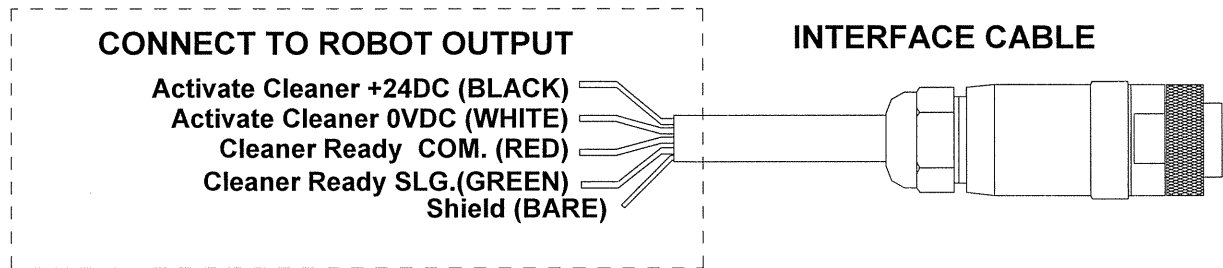




## SECTION 5 - INSTALLATION AND SETUP

### 5-8 Circuit Diagram #4 - Optional Robot Interface Cable

ROBOT CONTROL CABINET



## **SECTION 6 - OPTIONAL AIR-BLAST CONTROL**

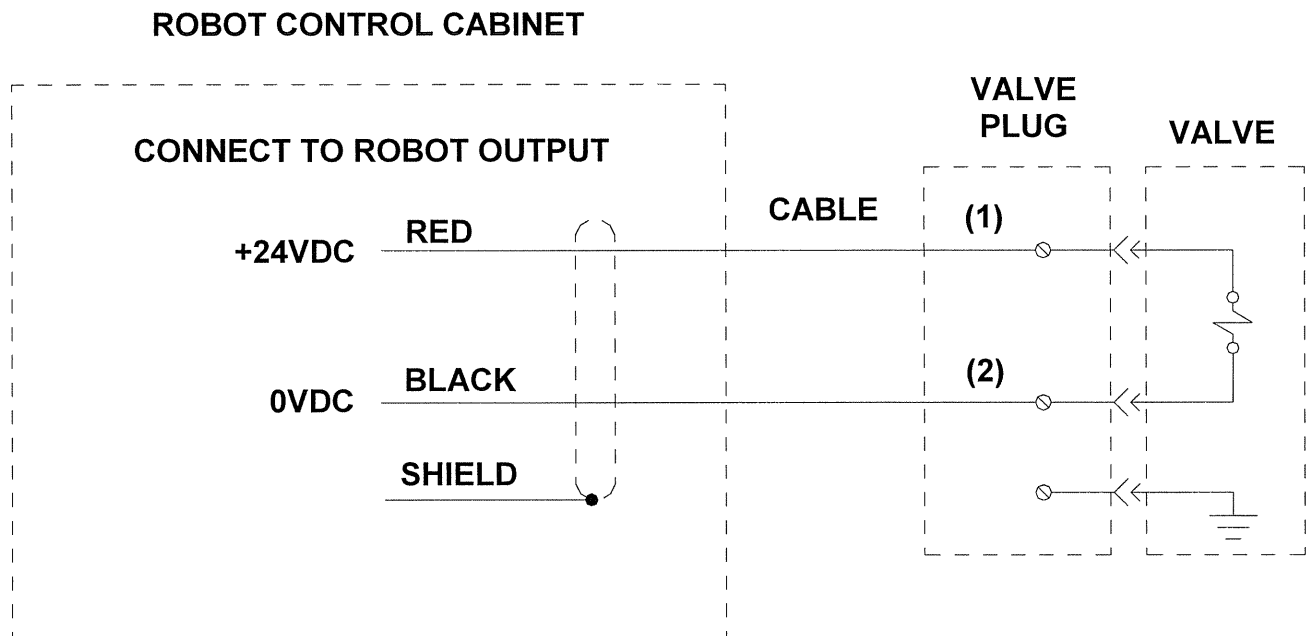
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### **6-1 Installation**

- 1) Mount air valve assembly.
- 2) Wire valve to robot I/O. (See Circuit Diagram #5 & #6 Pg. 15)
- 3) Connect outlet from the valve to the torch air-blast line.
- 4) Connect input to air supply. Set air pressure below maximum rating of components.  
(Maximum air pressure varies by torch manufacturer.)
- 5) Program the air-blast output so after cleaning the torch in the UltraCleaner a 1.0 to 1.5 second air blast occurs. The air-blast can occur over a container or while the robot travels back to the home position. Make sure that the torch is far enough away from the fluid so that the air blast does not displace the fluid in the tank!

## SECTION 6 - OPTIONAL AIR-BLAST CONTROL

### 6-2 Circuit Diagram #5– w/DIN Connector & 25ft Cable



**OUTPUT REQUIRED: 24VDC @ 120mA.**