

**R. D. ANDERSON APPLIED
TECHNOLOGY CENTER
BID
SPECIFICATIONS
DUAL WELDSTATION**

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I. Compliance Specifications

1. Shall be utilized primarily for weld smoke removal, but may also be used for other applications such as plasma cutting and steel grinding.
2. Shall be Clean Air America Brand, Item # 31101
3. Bidder to provide 10 References to show the Weld Station in operation for 3 years or longer in educational facilities.
4. Each Dual Weld Station system shall be completely modular, utilizing one Power Drop and one Compressed Air Drop for two welding booths.
5. No DUCTING (Hard or Flex) will be used.
6. No Central Collector will be used.
7. Shall capture weld smoke from positional and overhead pipe welding.
1. Must use "BACK DRAFT" inlet only. Will not use a "downdraft" or "overhead inlet" (hood) method of capturing weld smoke. The BACK DRAFT Method of smoke extraction is the ACGIH's (American Conference of Governmental Industrial Hygienist) preferred method.
2. Electrical Panel shall include the following:
 - Shall be manufactured by an approved UL 508A and CAN/CSA C22.2 panel shop
 - Shall comply with all UL 508A and CAN/CSA C22.2 certifications
 - Shall have a NEMA 12 enclosure
 - Shall utilize electrical breakers not fuses
 - Shall utilize safe touch wiring
 - Shall utilize wire segregation
 - Shall utilize wire labeling
 - Shall utilize terminal labeling
 - Shall utilize fire retardant gasket
 - Shall utilize strain relief incoming outgoing couplings
3. Shall use integrated PLC that will perform the following:
 - Automatic pulsing
 - Manual Pulsing
 - Shut down pulsing
 - Valve testing
 - Display's pressure reading across the filters
 - Performs Auto Startup and shutdown (when equipped with economizer)
4. Will be illuminated from a High Intensity LED Light.
5. Shall use 10-12 GA 100% recycled steel on cabinet and 12-16GA 100% recycled steel on booth
6. Work area/work bench shall be adjustable to (3) heights and the ability to easily slide in and out from the cabinet.
7. Shall be a self contained unit consisting of the following:
 - (One) four cartridge collector housing per two welding booths
 - Two welding booths with back draft inlet
 - One motor/blower system
 - (4) filter cartridges positioned vertically with patented "Down Flow Technology"
 - One on-line "pulse on demand" filter cleaning system, this device pulses filters in two stages based on delta P,

 - no simple pulse timer will be used

II. Configuration Specifications:

1. The Dual Weld Station System shall consist of two welding booths with a single air filtration unit.
2. One air filtration unit shall be integrated and inseparable from one of the booths.
3. The booths shall have the ability to be placed in a side-by-side configuration or a back-to-back configuration.
4. The booth without the air filtration system shall have the ability to be placed on the left, right, or back side of the booth with the integrated air filtration system.
5. These configurations shall be bolted together and retain the ability to change configurations. NO DUCTING IS USED.
6. Shall be shipped in two main parts (Drive Booth and Secondary Booth) each separate booth is shipped completely welded and assembled.
7. Installation shall only require:
 - Up righting the main drive booth
 - Bolting the secondary booth to main drive booth
 - Connecting secondary booth lights
 - Attaching cover plates to unused inlets
 - Sliding in the metal mesh filter and baffle filter
 - Connecting three phase power drop
 - Connecting compressed air drop
 - Install Internal Baffle

III. Housing Specifications

1. Shall be constructed of 10-12 gauge steel with a welded body.
2. Shall have a powder coated exterior and interior finish.
3. Shall have an enclosed work space for each booth of 72"H x 58"W x 41"D.
4. Shall have a height of 120".
5. Shall have 2 access panels to motor/blower compartment.
6. Shall have 1 access panel to pulse valve compartment.
7. Each booth shall utilize back draft source capture filtration design
8. The booth shall utilize 5 levels of fire protection: 2 slide-in replaceable baffles, 2 metal mesh filters, 2 proprietary internal baffle plates, fire retardant filters and internal plenum.

IV. Features Specifications

1. The workspace in each booth shall be illuminated using High Intensity LED Lighting fed from a 24V DC power supply.
2. Each booth shall utilize back draft ventilation with removable and replaceable baffle spark arrestors and metal mesh.
3. Shall have a built-in acoustical lining in the blower compartment.
4. Shall utilize an air reservoir connected directly to the valves. The air reservoir shall have the ability to be connected to an air line regulated at 90 PSI using a 1 inch NPT connection.
5. Shall have a sound rating of 74 dBa @ 5ft ear level or lower @ OSHA Standard.
6. Shall be configured for electrical connections of 460VAC, 230VAC, or 208VAC three-phase power. Single phase is available.

V. Filtration Specifications

1. Shall utilize vertically mounted cartridge type filters.
2. Filters shall have an SAE 726J initial filter efficiency of 99%, and an overall filter efficiency of 99.9% using AC fine dust. MERV Rating 13
3. Filters shall have an ASHREA standard of 52-76 initial atmospheric dust spot efficiency of 40% with an average atmospheric dust spot efficiency of 93%, and an average synthetic dust weight arrestance of 100%.
4. Shall utilize four fire retardant, 100% cellulose filter cartridges. Each of these filters shall provide 226 square feet of filter media for a total of 904 sq/ft of filter media.
5. Filters shall be retained using a screw down, T-Handle style system.
6. Shall utilize two baffle type spark arrestors in each booth. The baffle spark arrestors and metal mesh filters shall be 23.6"W x 23.6"H x 7.875"D.
7. Shall utilize "True Down Flow Technology" patented filtration technology,
8. Shall utilize (4) vertically mounted cellulose filters. 12.75"x 26"
9. Shall have a self-cleaning filter design.
10. Shall utilize a reverse pulse cleaning technology. The reverse pulse cleaning must pulse air back through the filters to dislodge the filtered dust into the dust collection area.
11. Shall have the ability to pulse on demand. Simple timer shall not be used due to excessive compressed air usage.
12. Shall utilize a programmable pulse controller which has an integrated pressure differential display.
13. Shall be set up to perform a shut down pulse sequence automatically if the pressure differential across the filters reaches a set value. The filters shall be pulsed when the motor is stopped.
14. Shall be set up to perform an operating pulse sequence automatically if the pressure differential across the filters reaches a set value. The filters shall be pulsed when the motor is running.
15. Shall utilize a pulse controller which measures the pressure differential across the filters and controls (2) 1 inch valves. The valves must be actuated independently.

VI. Electrical Specifications

1. Shall utilize an integrated interlocking disconnect switch which disconnects all power to the unit.
2. Electrical box shall be at a height that can be maintained at floor level.
3. Shall utilize a momentary on/off button located on the electrical box at eye level.
4. Shall utilize a programmable pulse controller, which is operated on 24VDC power fed from an integrated power supply.
5. Shall utilize a motor contactor, which has a hold down coil actuated by 120VAC single-phase power fed from an integrated transformer.
6. Electrical Panel shall include the following:
 - Shall be manufactured by an approved UL 508A and CAN/CSA C22.2 panel shop
 - Shall comply with all UL 508A and CAN/CSA C22.2 certifications
 - Shall have a NEMA 12 enclosure
 - Shall utilize electrical breakers not fuses
 - Shall utilize safe touch wiring
 - Shall utilize wire segregation
 - Shall utilize wire labeling
 - Shall utilize terminal labeling
 - Shall utilize fire retardant gasket
 - Shall utilize strain relief incoming outgoing couplings

VII. Motor/Blower Package Specifications

1. Motor size shall be 5 HP running at 3450 RPM at 60Hz supply power.
2. Blower shall be a backward incline, airfoil high efficiency plug type blower.
3. Shall utilize a direct drive method for a motor/blower design. No gearing or pulley system shall be utilized.
4. Shall achieve 4000 CFM using the specified motor and blower at a pressure drop of 4 inches of water.

VIII. Accessories Specifications

1. 12" Risers: Lift booth internal height to 7' for overhead pipe welding.