



Installation & Service Manual for the Twin Draft Weld Booths

Models

TD-3036-1.5 HP

TD-3048- Dual 1.5 HP

TD-3072- Dual 1.5 HP

Twin Draft Weld Booths

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Twin Draft Weld Booths

Disclaimer

Although instructions and recommendations are included for installation of your **Twin Draft Weld Booths, TD Series**, the manufacturer does not assume responsibility for the installation of this equipment nor shall he be held liable for direct or consequential damages resulting from improper installation, application, maintenance or use.

The immense variety of contaminants make it impossible to list all of the potential hazards that may be encountered with air pollution control systems. It is therefore important that the application of the equipment be discussed with an AER Control Systems representative or application engineer prior to use. Additionally, users should consult and comply with all National and Local Fire, Electrical and /or other appropriate codes when determining the application, location and operation of any air pollution control equipment.

Collection of combustible or explosive materials and collection on flame or spark-generating operations may require specific system configurations (contact AER Control Systems LLC. Applications Engineering Department for questions and/or design assistance). The combined collection of combustible or explosive materials and contaminants from spark or flame generating operations, with a common collector or duct system, is not recommended, unless special design provisions have been made to the system (sparks or flames resulting from such operations may ignite the combustible or explosive material). Under no circumstances should anyone be allowed to discard a lighted cigarette, other burning materials, or refuse into an inlet hood or the duct of the collection system. It is the responsibility of the end user to comply with all applicable national, state, and local fire and safety codes.

This manual should be read completely before attempting Operation or Maintenance of this equipment. All work should be performed by qualified personnel according to local requirements.

WARNING

Failure to comply fully with the following instructions and local code requirements may increase your risk of physical injury due to fire, explosion or electrical shock.

All data and dimensions in this manual have been thoroughly checked however, we cannot assume responsibility for possible errors or omissions. We reserve the right to change designs and/or specifications without notice.

Twin Draft Weld Booths

SECTION 1

Uncrating

1. Remove banding and cardboard shipping carton and packing.
2. Filter units and the Weld booths are the basic components for this system, Mounting hardware is included for mounting these items. Be sure to check all boxes for any miscellaneous parts or hardware items before discarding.
3. Inspect the exterior of the unit and accessories for shipping damage or shortages that may not have been noticed or recorded when the shipment was initially received; you have 30 days to notify AER Control Systems LLC. of any discrepancies. Contact the shipping company if any damage or shortages have occurred.

Description & Operation

The Twin Draft Weld Booth and Filter Unit consist of the Weld Booth and a vertically positioned filter unit which houses the filters. The type of filters will depend on the type of particulate being filtered. In most cases a standard filter arrangement would consist of a metal mesh spark arrestor, followed by a 95% ASHRAE efficient fiberglass media filter. Optional pre-filters can be installed such as poly pads, throwaway pleated filters, and 99.97% HEPA Afterfilters. Below the filters is a removable dust pan for collecting any dust that may drop out of the dirty airstream. The motor/blower is located on the clean air side of the system and provides airflow for the weld booths which draws air and particulate down into the table top and to the rear through slots. The Weld Booth Tables comply with the ADA Accessibility Guidelines for Handicaps.

Optional Equipment

Pre-filters (polypads, pleated filters)
99.97% HEPA Afterfilters

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SECTION 2

Applications - General

1. Dust & Fume - The **Twin Draft Weld Booth and Filter Unit (TD Series)** is designed for the capture and removal of **DRY** dust and/or fumes generated from sanding, grinding, welding and other industrial processes. The TD Series consists of a Welding Booth and downdraft table with backdraft, filter unit with cleanable or throwaway media filters, collection dust tray, and finally the blower and motor to create the suction at the table. The filter unit can be arranged in a variety of configurations and can be equipped with specialized filters for application specific filtration requirements.
2. Size - It is important that the proper size filter unit has been selected for the application. Too little airflow will not draw the contaminant into the filter and the unit will not be completely effective. Too much airflow may result in loss of efficiency or the unit will pick up large or heavy solid particles increasing the frequency of maintenance or filter replacement. Questions regarding proper unit sizing should be directed to your local AER Control Systems representative or the main office (toll free 866-265-2372)
3. Models - Model codes are utilized to identify the various unit configurations available. The model TD 3036, TD3048, & TD 3076 describes the table top size, table depth is 30" and width is either 36, 48, or 76". The filter unit uses a direct drive blower (sometimes called a plug fan) along with the number 1.5 HP. The 1.5 HP Filter unit has a 1.5 HP direct drive motor and blower. In some cases on the larger booths such as the TD3048 and TD3076 two filter units are required to provide strong enough suction at the table top and backdraft, this is indicated by Dual 1.5 HP after the model. Example the TD3036-1.5 HP uses one 1.5 HP Filter unit, the TD3048 Dual 1.5 HP uses two 1.5 HP filter units.

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SECTION 3

Installation

Assembly & Installation Twin Draft Weld Booths with Filter Units

Standard booths and filter units are pre-assembled, the only field assembly is to bolt the filter unit or units depending on booth size to the rear of the booths using 1/4-20 bolts, flat washers and lock washers. Access to this assembly is through the bottom of the filter unit, the bottom door would have to be removed and unit rectangular opening can be aligned with the booth rear rectangular opening. The bolts can be screwed into the bolt pattern around the opening.

The integral junction box is factory wired for 115 volts 1 phase (unless otherwise specified on the purchase order) requiring only a qualified electrician to connect input power to the unit. Suitable overload protection such as a motor starter is required. Refer to the electrical section. (Combination motor starters with fusible disconnect packages are available through most local AER Control Systems LLC. distributors).

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SECTION 3

Installation continued

All single or three-phase units are wired for the input voltage specified on the purchase order. Unless specified otherwise, standard units are wired for 115 volts, 1 phase or 460 volt, 3 phase, 60 Hz operation.

Motors used on the Twin Draft Filter Units are UL recognized and internal wiring is UL rated at 600-volts. Input power line protection is required for the motor and electrical components. Line load and current requirements are identified on the motor nameplate. Unless ordered with the machine, the power switch for operating the machine, any fusible disconnect, motor starter or controller are to be provided by the customer/user and located externally to the machine.

After electrical hook up it is important to verify that the fan rotation is correct. Incorrect rotation results in much lower airflow and increased noise. For standard three phase installations, changing connections of any two of the three input power lines will usually reverse fan rotation. Rotation direction can be found on the side and/or back of the motor.

If it becomes necessary to change the input voltage, the wiring diagram on the motor and transformer nameplates show the appropriate wire connections - these diagrams are also shown below:

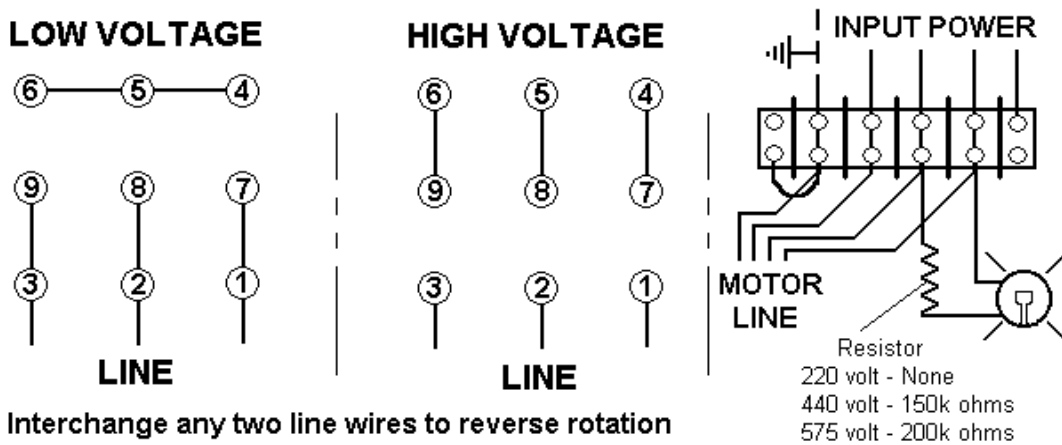


Figure 1 - Motor & Transformer Connection Diagram

NOTE

A motor starter with overload protection must be provided by the User. Thermal overload heaters are installed in the external motor starter. Consult the starter manufacturer for recommended heater size for the installed motor.

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SECTION 4

Ordering Replacement Parts

Information required for prompt delivery of replacement parts will be:

1. Model and Serial Number
2. Part Number and Description

Contact your local AER Control Systems LLC. distributor for replacement parts. Use either our toll free telephone number or our website www.aercontrolsystem.com to obtain the nearest AER Control Systems LLC. distributor's name and telephone number.

1-866-265-2372

Part Number	Description	QTY
		TD-1.5 HP
1017-05	Blower Inlet Cone 280	1
1016-05	Blower Wheel 280	1
1003-10	Motor, 1.5 HP	1
1034-33	2" metal mesh spark arrestor	1
1036-04	95% ASHRAE Fiberglass	1
1040-28	99.97% HEPA Afterfilter	Opt.

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SECTION 5

Maintenance

Operation & Maintenance

Lubrication or other routine periodic preventative maintenance is not required. All that is needed is an occasional check of fasteners and an overall visual check of the unit . Periodic cleaning or replacement of the filters is required when necessary. Always empty the dust tray before it fills completely.

Filter Cleaning or Replacement

The pressure drop across the filters will eventually reach a point at which the airflow and suction are too low. The filter gauge will provide a pressure drop reading across the filters. At this time, the filters should be cleaned or replaced as follows:

1. Shut off electrical power to the blower and control box.
2. Open the middle filter access door on the front of the filter unit using four threaded knobs.
3. The filters slide into the cabinet on tracks.
4. Remove the filter by sliding it out of the unit and either clean or replace.
5. Close the filter access door.

Troubleshooting

Problem	Cause	Solution
Motor Fails to Start	No Power to Unit	Check overloads or fuses in starter if supplied. Check power source for power. Check main panel for blown circuit breaker.
	Power to unit	Check electrical connections. Check for bad motor
Low Airflow and/or suction	Blower is running backwards	Check blower rotation, to reverse rotation switch 2 out of 3 input wires. (3 phase only) Switch #5 & #8 for single phase.
	Filters are dirty	Clean or replace filters
Contaminant blowing out the filter unit exhaust	Damaged filter (possibly hole in filter)	Replace filter
	Filter seal is not adequate	Check to make sure filter is seated well on the filter track seal.
	Contaminant too small for filter	May need a more efficient filter

Specifications

Specifications	TD-3036 1.5 HP	TD-3048 Dual 1.5 HP	TD-3072 Dual 1.5 HP
Nominal Airflow-CFM	2000	2500	3000
Spark Arrestor –Qty.	1	2	2
Main Filter-Qty.	1	2	2
Motor HP	One 1.5	Two 1.5	Two 1.5
Motor Temp.-Max. C	40	40	40
Blower Drive	Direct	Direct	Direct
Voltage	115/220	115/220	115/220
Frequency-Hz.	60	60	60
Phase	Single	Single	Single
Frame-NEMA	56C	56C	56C
Power Factor	85	85	85
Motor Efficiency	70	70	70
Start Current Amps	50/25	50/25	50/25
Full Load Amps	16/8	16/8	16/8
Insulation Class	B	B	B
Motor Enclosure	TEFC	TEFC	TEFC
Service Factor	1.15	1.15	1.15
Duty Cycle	Continuous	Continuous	Continuous
Bearing Grease	Exxon PolyEx EM	Exxon PolyEx EM	Exxon PolyEx EM
Specification	UL & CSA	UL & CSA	UL & CSA



Limited Warranty

AER Control Systems LLC warrants all products sold only to purchasers for use in business or for resale, against defects in workmanship or materials under normal use, for one (1) year after the date of purchase from AER Control Systems LLC. Misapplication of the product, decomposition by reaction or chemical action and wear caused by abrasion will not constitute, or be considered as a defect. Warranty is void if the product has been subject to damage, unreasonable use, neglect, improper service, improper installation, or other causes not arising from defects in original materials or workmanship. Any part that is determined to be defective in material or workmanship and returned to an AER Control Systems LLC distributor or authorized service facility, as AER Control Systems LLC designates, shipping costs prepaid, will be, as the exclusive remedy, repaired or replaced at AER Control Systems LLC's option. AER Control Systems LLC shall not be liable for any incidental or consequential cost, expenses, or damages resulting from any failure, defect, or malfunction of this product, liability is expressly disclaimed. AER Control Systems LLC's liability in all events is limited to and will not exceed, the purchase price of the product. Title and risk of loss pass to the buyer on delivery to the common carrier. If a product is damaged in transit, the recipient MUST make note of the damage upon receipt of the product and file a claim with the carrier. AER Control Systems LLC will make a good faith effort for prompt correction or other adjustment, with respect to any product that proves to be defective within the warranty period.

Collection of combustible or explosive materials and collection on flame or spark-generating operation any require specific system configurations (contact AER Control Systems LLC's Applications Engineering Department for questions and/or design assistance). The combined collection of combustible or explosive materials and contaminants from spark or flame generating operations, with a common collector or duct system, is not recommended, unless special design provisions have been made to the system (sparks or flames resulting from such operations may ignite the combustible or explosive material). Under no circumstances should anyone be allowed to discard a lighted cigarette, other burning materials, or refuse into an inlet hood or the duct of the collection system. It is the responsibility of the end user to comply with all applicable national, state, and local fire and safety codes. AER Control Systems LLC's liability for consequential and incidental damage resulting from a fire or explosion is expressly disclaimed.

Installation of suitable overload protection such as a motor starter, according to NEC guidelines, is required. Failure to provide proper overload protection will void warranty coverage on electrical components in the system. (Combination motor starters with fusible disconnect packages are available through your local AER Control Systems LLC representative). To ensure optimum collector performance, always use AER Control Systems LLC replacement filters.