

QUENCHER™ Installation & Set-up

Installation:

Install the QUENCHER to allow 5 duct diameters between the spark source and the inlet of the QUENCHER. Leave a recommended minimum of 5 duct diameters (where possible) between the outlet of the QUENCHER and the nearest transition piece or dust collection / filter device. If 5 duct diameters are not available, then install at a location along the duct that leaves the maximum distance possible between the outlet of the QUENCHER and the next transition piece. Provide adequate structural support when installing and operating the QUENCHER. No specialty tools are required for installation or operation.

Observing the directional flow arrow on the QUENCHER label, install the QUENCHER in-line with the duct. For flange mounting, supply gasket material between mating flanges to assure an air-tight seal. For slip-fit mounting, make sure the mating duct connection or mating flex hose connection is air-tight. The recommended installation is in a horizontal duct run. For vertical duct installation, consult with the factory about possible explosive conditions.

Operation:

Turn on your system fan and draw process air through the QUENCHER. The QUENCHER will cool sparks that pass through the unit. The basic QUENCHER is a static device with no moving or electrical parts. It will function automatically when the system fan is turned on. You must ensure gas flow of 1500-2500 FPM through the cell (stated as SCFM in the product specifications) is maintained for proper functioning. Otherwise, there may not be enough turbulent energy generated to extinguish sparks and prevent debris accumulation at the bottom of the cell. Refer to the attached QUENCHER guarantee and warranty for details on performance and limitations.

Maintenance:

There are no electronic controls and no water or chemical retardants, making the QUENCHER virtually maintenance-free. To avoid combustible dust accumulation, periodically check the inside of the QUENCHER and observe whether or not solids accumulate within. In applications where solids arrest against the internal blades of the QUENCHER and/or appreciably adhere to the inside surfaces, a regularly scheduled cleaning should be considered to prevent obstruction.

Warnings:

- 1) If the QUENCHER is provided with an access door, never open the doors when the system is operating. Also, never open access door when a duct fire is suspected.
- 2) Pressure drop readings, taken in the field, are difficult to rely on due to the extreme turbulence developed in the QUENCHER cell. We recommend at least 5 duct diameters of straight duct beyond the cell or outlet of the reducer section. It also requires an upstream reading where the flow is perfectly laminar in the duct. Dwyer Instruments Inc requires straight duct 8.5 duct diameters upstream and 1.5 straight duct diameters downstream from a flow measuring device.
- 3) If operating below 0.9 inches WG pressure drop, A BOOSTER is needed to prevent dust accumulations before and after the QUENCHER.

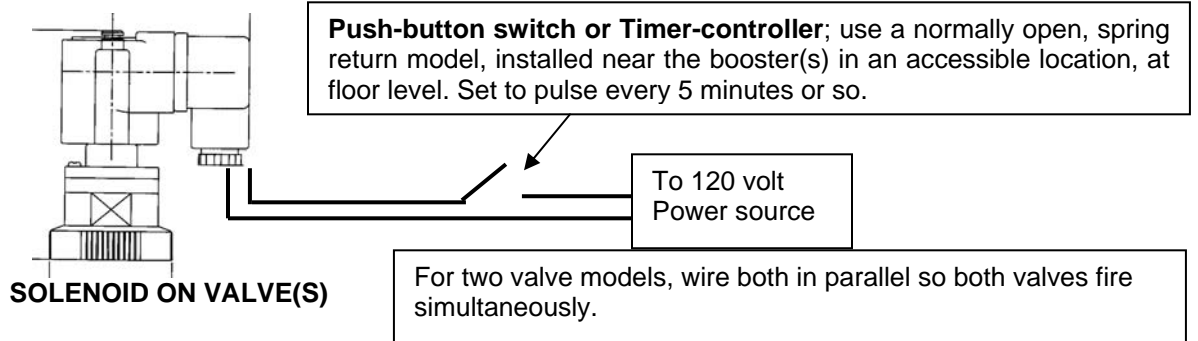
BOOSTER – DUCT CLEANER Set-Up (for models supplied with a booster)

1. The BOOSTER is usually supplied pre-installed in an extension of the inlet to the QUENCHER.
2. Connect a compressed air line to the diaphragm valve. **85 PSI maximum air pressure** is required. A regulator is recommended to ensure proper pressure. A pulse length (on-time) of 100-150 milliseconds is required.

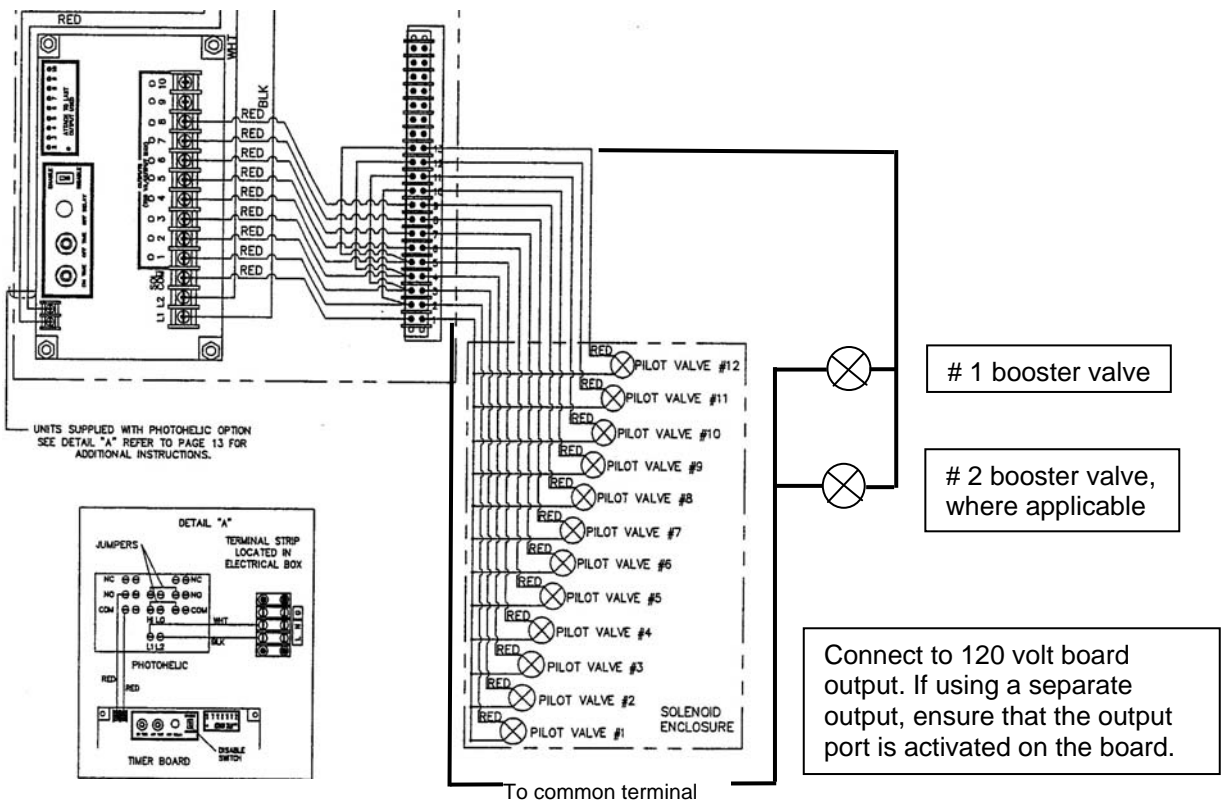
<u>Quencher Model</u>	<u>Compressed Air Line Connection Size</u>	<u>Air consumption (SCF/pulse)</u>
Q-08 to Q-24	3/4 inch directly to the valve inlet coupling	0.104 - 0.933
Q-30 & Q-38	1 inch directly to the valve inlet coupling	1.394 - 2.258
Q-48 & Q-60	1 1/2 inch directly to the valve inlet coupling	3.735 - 5.576
Q-72 & Q-84	1 1/2 inch directly to the two(2) valve inlet couplings	8.400 – 11.793
Q-96	2 inch air line to a 2 : 1 1/2 inch reducer into the two(2) valve inlet couplings	14.925
Q-108	2 inch directly to the two (2) NPT female valve inlets	18.429

- Two possible electrical activation methods may be used; manual switch or automatic sequencing. *Whatever method of activation is selected, the hardware (switches, controllers) is either existing or must be supplied by the purchaser of the QUENCHER.*

MANUAL: Activate the cleaner by pushing the button and releasing immediately when pulse is activated. **DO NOT HOLD TOO LONG OR THE VALVE MAY NOT SHUT!**



AUTOMATIC PULSE: Activate the cleaner by using one of the existing dust collector sequencer outputs. Ensure that the "ON-TIME" setting is maximum 150 milliseconds or **the valve may not shut.**



TYPICAL PULSE-JET SEQUENCER, supplied with a dust collector

Guarantee for QUENCHER Spark Arresters

The QUENCHER is a static mixing device that operates by cooling glowing embers within the exhaust ducting system. It cools the sparks by changing the characteristics of the gas flow through the duct from laminar to turbulent flow. This change in type of flow causes a relative velocity difference between the sparks and the gas flowing past the sparks. It is effective when the air temperature in the process is lower than the spark temperature. The sparks will be cooled to within 20degreesF of the gas temperature in the duct. The QUENCHER is suitable for spark arrester duty under the conditions described herein.

The operating conditions are that the conveyed material has been completely combusted and is strictly in the form of embers before reaching the QUENCHER. The QUENCHER will not stop an explosion or flame front propagating in the duct and to the dust collector. When the design of the process gas system mixes different gas streams at different temperatures, the QUENCHER functions as an air blender and will lower the mixture temperature to a theoretical value of a well mixed gas stream with a temperature gradient of 20degreesF. The mixture must have a suitable mixture composition to prevent a flame from developing in and through the QUENCHER, as described above. The QUENCHER must be selected for gas flow of 1500 – 2500 FPM through the cell which is the SCFM range stated on the product specifications.

THE QUENCHER CAN BE SUPPLIED WITH A PNEUMATICALLY ACTUATED BOOSTER TO PREVENT DUST FROM SETTLING IN THE REALTIVELY SLOW SPEED THROUGH THE QUENCHER.

PRESSURE DROP ACROSS THE DEVICE IS RELATED TO THE GAS DENSITY AND VOLUME FLOWING THROUGH THE QUENCHER & BOOSTER.

Limited One Year Warranty

The QUENCHER when purchased and installed for industrial use is warranted by Quality Air Management (QAM) to the purchaser for one (1) year against defects in material or, workmanship of the product. Any defective part in the product will be, at QAM's option, either repaired or replaced. The purchaser must return such defective part, with all transportation charges prepaid by said purchaser to Customer Service Department, Quality Air Management. The repaired or replacement part will, in turn, be shipped by QAM, to the purchaser, freight collect, with the purchaser to be responsible for all freight charges. The warranty on any repaired or replacement part shall be for duration of time no longer than the remaining or unexpired term of the original warranty. This warranty does not cover any labor or other service charges incurred by the purchaser.

Disclaimers and Exclusions

- (1) No warranty service or technical support will provided where there is a delinquent and/or past due payment by the purchaser.
- (2) The warranty described hereinabove shall be IN LIEU of any other warranty, express or implied. Except as set out hereinabove, there are NO other warranties and any statutory or implied warranty of MERCHANTABILITY or fitness for a particular purpose is EXCLUDED from this transaction and shall not apply.
- (3) The purchaser agrees that his sole and exclusive remedy against QAM, shall be for the repair or replacement of defective parts as provided hereinabove. The purchaser agrees that NO OTHER REMEDY (including, but not limited to, incidental or consequential damages for lost profits, lost sales, injury to person or property, or any other incidental or consequential loss) shall be available to him. The sole purpose of the stipulated exclusive remedy provided for herein, shall be to provide the purchaser with repair and replacement of defective parts in the manner provided for herein. This exclusive remedy shall not be deemed to have failed of its essential purpose so long as QAM, is willing and able to repair or replace defective parts in the prescribed manner. The purchaser shall not be required to deliver a defective part to QAM, if:
 1. The part was destroyed as a result of its defect or any defect in any part covered in this warranty; and
 2. QAM, is reasonably satisfied that the part was defective at the time of sale.If both of these conditions are met, QAM will replace the part in the same manner provided herein as if the purchaser had delivered it to QAM.
- (4) The purchaser acknowledges that no oral statements purporting to be warranties, representations, or guarantees of any kind about any product of QAM, have been made to purchaser by QAM, or its dealer, which in any way expands, alters or modifies the terms of the warranty set out herein. Any such statements do not constitute warranties, shall not be relied on by the purchaser, and are not part of the contract of sale. This writing constitutes a complete and exclusive statement of the terms of any warranty, express or implied, of QAM.
- (5) There is NO WARRANTY for any defective part of a QAM product which has been removed from its original installation site or which arises from mishandling, neglect, fire, flood, lightning, corrosive atmosphere, improper installation of the product, unauthorized modification of the product, improper fuel or electrical supply to the product. There is NO WARRANTY for any defective part of a QAM product that arises from the failure of the purchaser to perform the normal and routine maintenance on the product as it is set out in the owner's manual. There is NO WARRANTY for any defective part of a QAM product that arises from a change of application, or collected contaminant from that which was initially specified.
- (6) The foregoing does not apply to components which were not manufactured by QAM or its licensee.
- (7) This warranty and all rights granted here-in-under shall be void and of no force or effect if consumable elements (i.e. filters) are replaced with elements that are not approved or supplied by Quality Air Management Corp.