

Installation & Operation



Installation:

Install the QUENCHER to allow 5-8 diameters of straight duct between the spark source and the inlet of the QUENCHER. Allow a minimum of 5-8 diameters of straight duct between outlet of the QUENCHER and the nearest downstream transition piece (i.e. elbow, dust collector inlet). Provide adequate structural support when installing and operating the QUENCHER. Observing the directional flow arrow on the QUENCHER label, install the QUENCHER in-line with the duct. Verify that the label is on correctly by comparing to the "Blade Orientation" sketch. For flange mounting, supply gasket material (such as RTV sealant) 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 is within a specific range of velocities of through the turbulator 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 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 <u>at least</u> 8 duct diameters of <u>straight duct</u> beyond the cell or outlet of the reducer section of QUENCHER. It also requires an upstream reading where the flow is perfectly laminar in the duct. Dwyer Instruments Inc requires straight duct 1.5 duct diameters upstream and 8.5 straight duct diameters downstream from a flow measuring device.
- 3) If operating below 0.9 inches WG pressure drop, a CELL CLEANER / BOOSTER is recommended to prevent dust accumulations before and after the QUENCHER.

CELL CLEANER / BOOSTER Set-Up (for models supplied with the option)

- 1. The cell cleaner assembly is supplied pre-installed in an extension of the inlet to the QUENCHER. <u>Some models are shipped separately, for</u> <u>field assembly, to avoid the high shipping cost of oversized loads and escorted trucking. In these cases, bolt the two flanges together.</u> **Make sure the pulse pipe is at the far extremity away from the QUENCHER cell.**
- 2. Mount the diaphragm valve (packaged separately with the QUENCHER) on the pulse pipe protruding from the inlet extension. Ensure that the valve port labeled "IN" is connected to the air line and the port opposite the solenoid is on the pulse pipe.
- 3. Connect a compressed air line to the diaphragm valve. **85 PSI maximum air pressure** is required. A regulator is needed to ensure proper pressure. **A pulse length (ON-TIME) of 120-150 milliseconds is required**. OFF-TIME is application dependent, consult factory.
- 4. **Two possible electrical activation methods may be used**; electronic timer on the diaphragm valve or activation by the pulse sequencer at the dust collector. <u>Whatever method of activation is selected</u>, the hardware (switches, controllers) is either existing or must be supplied by the purchaser of the <u>QUENCHER</u>. **IMPORTANT: check carefully the solenoid voltage rating and use the appropriate power input**.

Activation by localized timer: Activate the cell cleaner by connecting a power source to the timer on the solenoid of the diaphragm valve.



Electronic Timer on the solenoid; Set the "ON time" to 120-150 milliseconds and the "OFF time" to pulse every 4 minutes. The timer module can be ordered from QAM, ask for part # CONTEMP {specify the voltage of the power source}, See the "INSTALLATION AND MAINTENANCE INSTRUCTIONS" following the "Cell Cleaner Specifications" after page 3 of this manual. For two valve models, wire both in parallel so both valves fire simultaneously.

To Power source Voltage: 230-110 - 24 VAC / 50-60Hz 24VDC (110 / 60hz VAC is supplied by default)

Activation by pulse sequencer at the dust collector: Activate the cleaner by using one of the existing dust collector sequencer outputs. Ensure that the "ON-TIME" setting is <u>maximum 150 milliseconds or the valve may not shut.</u>



Cell Cleaner Specifications:

Quality Air Management reserves the right to make improvements and /or changes without notice.

Duct	Part #	Quencher	Compressed Air Line	Air	Valve					
dia.		Model	The airline is schedule 40 pipe	(SCFM)						
Flow is based on a 4 minute pulse frequency. Other frequencies; i.e. 7 minutes = SCFM x 4 / 7										
4	CC-004		3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
5	CC-005		3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
6	CC-006	Q8	3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
7	CC-007		3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
8	CC-008	Q10,Q11,QC8	3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
9	CC-009		3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
10	CC-010	Q12,Q14,QC10	3/4 inch piped directly to the valve inlet coupling	0.26	DP20					
11	CC-011	QC11	3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
12	CC-012	Q16, QC12	3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
13	CC-013		3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
14	CC-014	Q20, QC14	3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
15	CC-015		3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
16	CC-016	Q24, QC16	3/4 inch piped directly to the valve inlet coupling	0.34	DP20					
17	CC-017		1 inch directly to the valve inlet coupling	0.45	DP25					
18	CC-018		1 inch directly to the valve inlet coupling	0.45	DP25					
19	CC-019		1 inch directly to the valve inlet coupling	0.45	DP25					
20	CC-020	Q26, QC20	1 inch directly to the valve inlet coupling	0.45	DP25					
21	CC-021		1 inch directly to the valve inlet coupling	0.45	DP25					
22	CC-022	Q30	1 inch directly to the valve inlet coupling	0.45	DP25					
23	CC-023		1 inch directly to the valve inlet coupling	0.68	DP25					
24	CC-024	QC24	1 inch directly to the valve inlet coupling	0.68	DP25					

Call Oxdeel Interacting structure structure structure (SC 6 a) 28 CC 205 1 1 http://www.new.new.new.new.new.new.new.new.new.	Duct	Part #	Quencher	Compressed Air Line	Air	Valve
25 CC 026 1 </td <td>dia.</td> <td>00.005</td> <td>Model</td> <td>I ne airline is schedule 40 pipe</td> <td>(SCFM)</td> <td>DDoc</td>	dia.	00.005	Model	I ne airline is schedule 40 pipe	(SCFM)	DDoc
20 CC-267 1100000000000000000000000000000000000	25	CC-025		1 inch directly to the valve inlet coupling	0.68	DP25
28 CC-268 CO38 Inc. directly to the value instroughing CO88 OP25 29 CC-289 CC-301 112 inch directly to the value inlet coupling 1.01 DP40 30 CC-303 CC-31 1.12 inch directly to the value inlet coupling 1.01 DP40 31 CC-33 1.12 inch directly to the value inlet coupling 1.01 DP40 34 CC-33 1.12 inch directly to the value inlet coupling 1.01 DP40 34 CC-33 1.12 inch directly to the value inlet coupling 1.01 DP40 35 CC-35 1.12 inch directly to the value inlet coupling 1.01 DP40 36 CC-35 1.12 inch directly to the value inlet coupling 1.14 DP40 36 CC-38 CC-38 1.12 inch directly to the value inlet coupling 1.14 DP40 40 CC-34 1.12 inch directly to the value inlet coupling 1.14 DP40 41 CC-34 1.12 inch directly to the value inlet coupling 1.36 DP40 42 CC-34 1.12 inch directly to t	20	CC-020		1 inch directly to the valve inlet coupling	0.00	DP25
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50 CC-050 11/2 inch directly to the valve inlet coupling 1.53 DP40 51 CC-051 11/2 inch directly to the valve inlet coupling 1.53 DP40 52 CC-053 11/2 inch directly to the valve inlet coupling 1.53 DP40 53 CC-054 Q72 11/2 inch directly to the valve inlet coupling 1.53 DP40 55 CC-055 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 56 CC-056 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 58 CC-057 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 59 CC-058 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 61 CC-061 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 62 CC-062 11/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 63	49	CC-049		1 1/2 inch directly to the valve inlet coupling	1.13	DP40
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34 CC-054 C1/2 DP40 55 CC-055 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 56 CC-057 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 57 CC-057 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 58 CC-059 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 1.58 (2) DP40 60 CC-060 QC60 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 61 CC-061 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 62 CC-062 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 63 CC-063 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line 2.00 (2) DP40 64 CC-064 Q84 1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch	53	CC-053	070	1 1/2 inch directly to the valve inlet coupling	1.53	DP40
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36CC-05511/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line1.58(2) DF4057CC-05711/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line1.58(2) DF4058CC-05811/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line1.58(2) DF4060CC-060QC6011/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line2.00(2) DF4061CC-06111/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line2.00(2) DF4062CC-06211/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line2.00(2) DF4063CC-06311/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line2.00(2) DF4064CC-064Q8411/2 inch directly to the valve inlet coupling, Y-connected to a 11/2 inch main air line2.00(2) DF4065CC-06511/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DF4066CC-06611/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DF4067CC-06711/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DF4068CC-06811/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DF4070CC-07011/2 inch directly to the valve inlet coupling,	50	CC-055		1 1/2 inch directly to the valve inlet coupling, Y connected to a 1 1/2 inch main air line	1.00	(2) DP40
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30CC-05011/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line1.36(2) DP4060CC-060QC601 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4061CC-0611 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4062CC-0621 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4063CC-0631 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4064CC-064Q841 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4065CC-0651 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4066CC-0661 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4067CC-0671 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4068CC-0691 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4070CC-0701 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4071CC-0711 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4073CC-072Q96, QC721 1/2 inch dir	58	CC-058		1 1/2 inch directly to the valve inlet coupling, 1-connected to a 1 1/2 inch main air line	1.50	(2) DP40
303011/2 linch directly to the valve linet coupling, Y-connected to a 1 1/2 linch main air line1/2 linch main air line1/2 linch main air line1/2 linch main air line2.00(2) DP4061CC-0611 1/2 linch directly to the valve inlet coupling, Y-connected to a 1 1/2 linch main air line2.00(2) DP4062CC-0621 1/2 linch directly to the valve inlet coupling, Y-connected to a 1 1/2 linch main air line2.00(2) DP4063CC-064Q841 1/2 linch directly to the valve inlet coupling, Y-connected to a 1 1/2 linch main air line2.00(2) DP4064CC-0651 1/2 linch directly to the valve inlet coupling, Y-connected to a 1 1/2 linch main air line2.00(2) DP4065CC-0661 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4066CC-0661 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4067CC-0671 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4069CC-0681 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4070CC-0701 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4071CC-0711 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main air line2.28(2) DP4073CC-072Q96, QC721 1/2 linch directly to the valve inlet coupling, Y-connected to a 2 linch main a	59	CC-059		1 1/2 inch directly to the valve inlet coupling, 1-connected to a 1 1/2 inch main air line	1.50	(2) DP40
010203030403030403 <td>60</td> <td>CC-060</td> <td>00.60</td> <td>1 1/2 inch directly to the valve inlet coupling. Y-connected to a 1 1/2 inch main air line</td> <td>2.00</td> <td>(2) DP40</td>	60	CC-060	00.60	1 1/2 inch directly to the valve inlet coupling. Y-connected to a 1 1/2 inch main air line	2.00	(2) DP40
6162CC-06211/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4063CC-0631 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4064CC-064Q841 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4065CC-0651 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4066CC-0661 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4067CC-0671 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4068CC-0681 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4069CC-0691 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4070CC-0701 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4071CC-0711 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4073CC-072Q96, QC721 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.57(2) DP4073CC-0741 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.57(2) DP4074CC-0751 1/2 inch directly to the valve	61	CC-061	0000	1 1/2 inch directly to the valve inlet coupling. Y-connected to a 1 1/2 inch main air line	2.00	(2) DP40
63CC-0631 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4064CC-064Q841 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line2.00(2) DP4065CC-0651 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4066CC-0661 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4067CC-0671 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4068CC-0681 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4069CC-0691 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4070CC-0701 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4071CC-0711 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.28(2) DP4073CC-0731 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.57(2) DP4074CC-0741 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.57(2) DP4075CC-0751 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line2.57(2) DP4075CC-0761 1/2 inch directly to the valve inlet coupling, Y-connected to	62	CC-062		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line	2.00	(2) DP40
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	88	CC-088	Q120	1 1/2 inch directly to the valve inlet coupling. Y-connected to a 2 inch main air line	3.07	(2) DP40

Quality Air Management reserves the right to make improvements and /or changes without notice.

Electronic Timer on the solenoid See page 4 & 5 next



TURBO Srl VIA PO N33/35 20811 CESANO MADERNO (MB) ,ITALY TEL.++39/0362/574024 FAX++39/0362/574092 P.IVA & C.F.:02765350968

INSTALLATION & MAINTENANCE INSTRUCTIONS Temporized Electronic Connector series "CONTEMP"

The Electronic Timer is designed to fit between the coil and plug of any DIN 43650A connection solenoid valve, for applications in the Dust Control industry, as for the following pictures.



Before installing the Timer check that the electrical power supply is switched off, and that the compressed air in the system has been vented (pressure = 0).

- 1. Remove the plug from the coil of the solenoid valve and discard the screw.
- Check that the coil voltage matches the supply voltage. The Timer is suitable based of type of model for voltages from 10-48V or 110-240V AC or DC, 50Hz or 60Hz. The Timer will be seriously damaged if the coil voltage is different to the supply voltage!
- 3. Fix the gasket which is supplied with the Timer onto the connection terminals of the coil.
- 4. Push the Timer onto the connection terminals of the coil.
- 5. Reconnect the plug onto the connection terminals of the Timer and fasten the whole assembly by using the long screw supplied with the Timer. Check that the screw is tightened sufficiently to ensure optimum gasket sealing.
- 6. Adjust the cycle time as necessary.
- 7. Switch on the compressed air system and wait for the system to reach the operating pressure.
- Switch on the electrical supply to the Timer/valve assembly. The Timer starts its cycling procedure with the ON cycle, so when switching on the electrical supply the valve will open.

These installation instructions are based on the assumption that the solenoid valve is already installed on the dust control equipment. If that is not the case, refer to the installation instructions of the dust control equipment manufacturer for guidance in installing the valve correctly. Having installed the valve simply follow the instructions above for installing the Timer between the coil and plug of the valve.

<u>Throughout the installation procedures insure that the electrical current is disconnected</u> and that the compressed air in the system has been vented (pressure = 0).

MAINTENANCE

The Timer requires no maintenance. Periodically test the unit by pushing the TEST button and listening if the valve opens (compressed air will go through the valve).

If the compressed air system of the Dust Control equipment is not fitted with a filter then it is possible that particles, condensate, rust, scale and other debris could eventually cause the valve to block up. Most valves can be cleaned.



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SET UP TEMPORIZED ELETRONIC CONNECTOR

• The connector is preset timer with 3 sec. ON time and 30 min. OFF time.

· Pressing the test button, you can control the operation of the solenoid.

ON time (Activation Valve) can be set from 0.1 to 99 sec / min / hours may be changed in this way:

1. Press the button ON the display reads ON, at this point with the On / Off increment or decrement the value desired when value is reached not to press any key, wait a few seconds the display will flash showing that the new time is been saved. 2. Press the OFF button on the display reads OFF, at this point with the On / Off increment or decrement the value desired when value is reached not to press any key, wait a few seconds the display will flash showing that the new time is been saved.

Note:

To change the scale of seconds to minutes or minutes to hours, increase value up to full scale "99" you will notice that the LED at the word "sec" will pass "min" and then "hrs".



Button Test Activation EV.







Led shows scale second;minutes;hours



Button to modify time OFF

Performance Guarantee for QUENCHERtm Spark Arrestors

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 20° F of the gas temperature in the duct. The QUENCHER is suitable for spark arrestor duty and under the conditions described herein, will eliminate any sparks and embers from the air stream. It is a good safety device but no guarantee against all factors which cause fires.

The operating conditions are that the conveyed material has been <u>completely combusted and is strictly in the form of embers before</u> <u>reaching the QUENCHER</u>. The QUENCHER will not stop an explosion or flame front propagating in the duct and to the dust collector. It is not meant to be used in lieu of a fire or explosion suppression system. 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 <u>through the cell</u> which is the SCFM range stated on the product specification sheets. The effectiveness and pressure drop across the device is related to the gas density and volume flowing through the QUENCHER & cell cleaner, and, proper installation (such as respecting straight duct sections entering and leaving the device and vertical install limitations). **The QUENCHER can be supplied with a pneumatically actuated Booster-Cell Cleaner to prevent dust from settling in the relatively slow speed through the cell.**

One Year Limited 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 or technical support will be provided when there is a delinquent 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 herein 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.