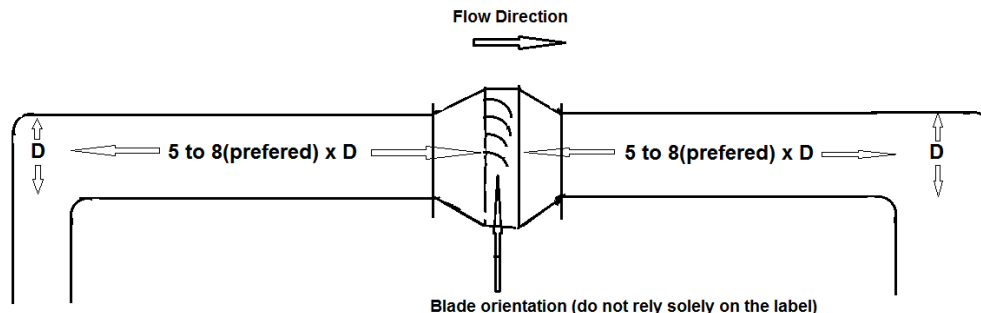


Installation & Operation

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.

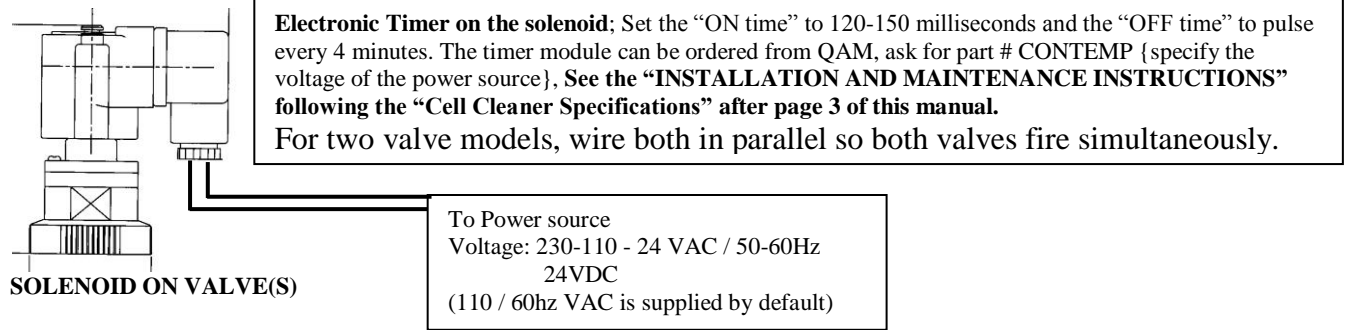
Warnings:

- 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 at least 8 duct diameters of _ 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)

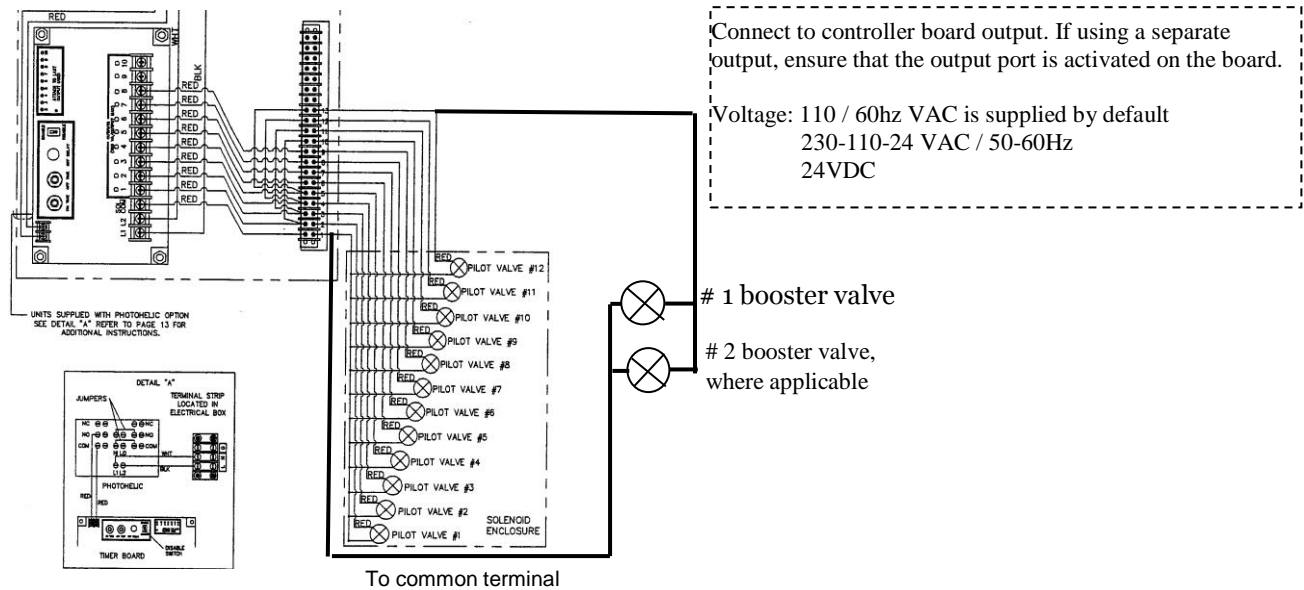
1. The cell cleaner assembly is supplied pre-installed in an extension of the inlet to the QUENCHER. Some models are shipped separately, for field assembly, to avoid the high shipping cost of oversized loads and escorted trucking. In these cases, bolt the two flanges together. **Make sure the pulse pipe 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. Whatever method of activation is selected, the hardware (switches, controllers) is either existing or must be supplied by the purchaser of the QUENCHER. 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.



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 maximum 150 milliseconds or the valve may not shut.

**TYPICAL PULSE-JET SEQUENCER,
Supplied with a dust collector**



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

Duct dia.	Part #	Quencher Model	Compressed Air Line The airline is schedule 40 pipe	Air (SCFM)	Valve
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

Duct dia.	Part #	Quencher Model	Compressed Air Line The airline is schedule 40 pipe	Air (SCFM)	Valve
25	CC-025		1 inch directly to the valve inlet coupling	0.68	DP25
26	CC-026		1 inch directly to the valve inlet coupling	0.68	DP25
27	CC-027		1 inch directly to the valve inlet coupling	0.68	DP25
28	CC-028	Q38	1 inch directly to the valve inlet coupling	0.68	DP25
29	CC-029		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
30	CC-030	QC30	1 1/2 inch directly to the valve inlet coupling	1.01	DP40
32	CC-032		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
31	CC-031		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
33	CC-033		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
34	CC-034		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
35	CC-035		1 1/2 inch directly to the valve inlet coupling	1.01	DP40
36	CC-036	Q48	1 1/2 inch directly to the valve inlet coupling	1.01	DP40
37	CC-037		1 1/2 inch directly to the valve inlet coupling	1.14	DP40
38	CC-038	QC38	1 1/2 inch directly to the valve inlet coupling	1.14	DP40
39	CC-039		1 1/2 inch directly to the valve inlet coupling	1.14	DP40
40	CC-040		1 1/2 inch directly to the valve inlet coupling	1.14	DP40
41	CC-041		1 1/2 inch directly to the valve inlet coupling	1.36	DP40
42	CC-042		1 1/2 inch directly to the valve inlet coupling	1.36	DP40
43	CC-043		1 1/2 inch directly to the valve inlet coupling	1.36	DP40
44	CC-044	Q60	1 1/2 inch directly to the valve inlet coupling	1.36	DP40
The following models use supersonic nozzles					
45	CC-045		1 1/2 inch directly to the valve inlet coupling	1.13	DP40
46	CC-046		1 1/2 inch directly to the valve inlet coupling	1.13	DP40
47	CC-047		1 1/2 inch directly to the valve inlet coupling	1.13	DP40
48	CC-048	QC48	1 1/2 inch directly to the valve inlet coupling	1.13	DP40
49	CC-049		1 1/2 inch directly to the valve inlet coupling	1.13	DP40
50	CC-050		1 1/2 inch directly to the valve inlet coupling	1.53	DP40
51	CC-051		1 1/2 inch directly to the valve inlet coupling	1.53	DP40
52	CC-052		1 1/2 inch directly to the valve inlet coupling	1.53	DP40
53	CC-053		1 1/2 inch directly to the valve inlet coupling	1.53	DP40
54	CC-054	Q72	1 1/2 inch directly to the valve inlet coupling	1.53	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	DP40
56	CC-056		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line	1.58	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	DP40
58	CC-058		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 1 1/2 inch main air line	1.58	DP40
59	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 main air line	2.00	(2) DP40
65	CC-065		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
66	CC-066		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
67	CC-067		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
68	CC-068		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
69	CC-069		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
70	CC-070		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
71	CC-071		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
72	CC-072	Q96, QC72	1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.28	(2) DP40
73	CC-073		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
74	CC-074		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
75	CC-075		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
76	CC-076		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
77	CC-077		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
78	CC-078		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
79	CC-079		1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
80	CC-080	Q108	1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.57	(2) DP40
84	CC-084	QC84	1 1/2 inch directly to the valve inlet coupling, Y-connected to a 2 inch main air line	2.85	(2) DP40
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

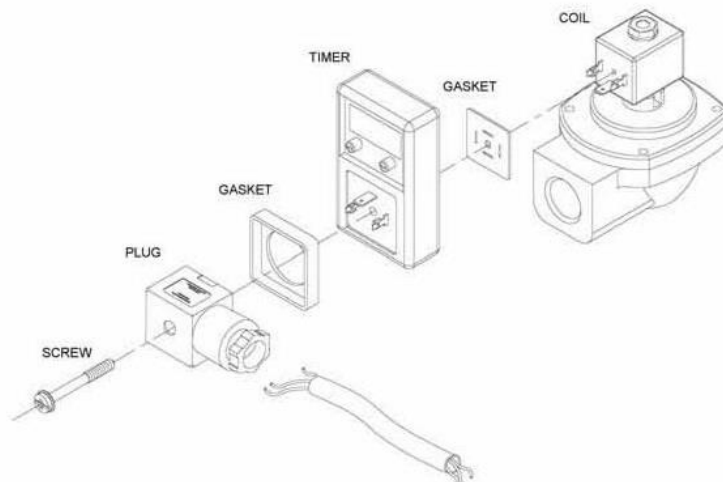
Quality Air Management reserves the right to make improvements and /or changes without notice.

Electronic Timer on the solenoid
See page 4 & 5 next

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.
2. Check that the coil voltage matches the supply voltage.
 The Timer is suitable based on 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.
8. 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.

Throughout the installation procedures insure that the electrical current is disconnected 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.

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:

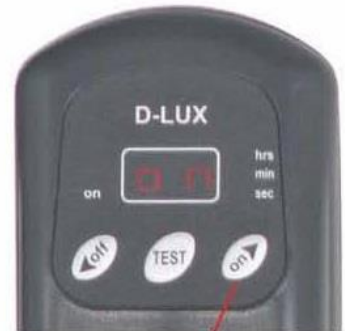
1. Press the button ON the display reads ON, at this point with the On / Off increment or decrement the value desired when value is reached not to press any key, wait a few seconds the display will flash showing that the new time is been saved.
2. Press the OFF button on the display reads OFF, at this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



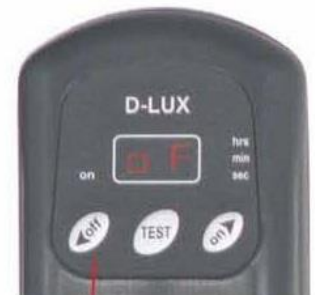
Button Test Activation EV.



Button to modify time ON



Led shows scale second;minutes;hours



Button to modify time OFF

Performance Guarantee for QUENCHER™ 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 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. 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 through the cell 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.