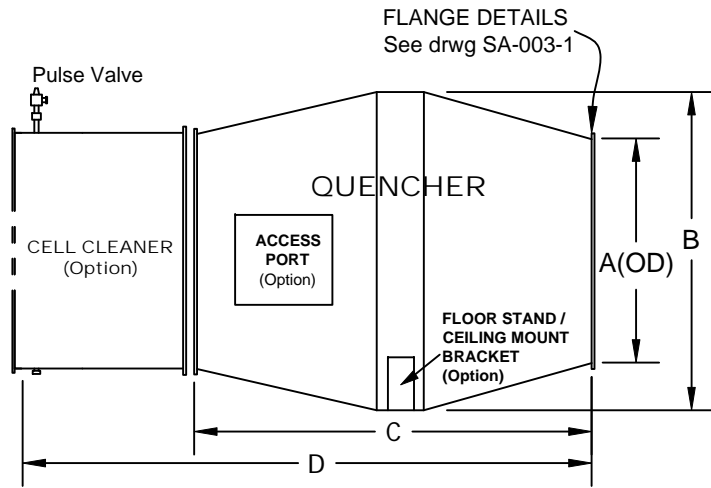


# Standard QUENCHER Spark Arrestor

## For common ducted dust collection



### CONSTRUCTION:

- Three styles are available;
  1. QUENCHER STANDARD MODEL (Qxxx); includes transitions upstream and downstream to duct size.
  2. QUENCHER CELL ONLY (QCxxx); can be inserted into an existing duct, of equal diameter.
  3. MINI-QUENCHER; for high pressure vacuum systems
- Products are built to North American compliance with EPA, OSHA, NFPA, SMACNA round duct standards. Compliance with local codes and standards, and accuracy of order to job site operating conditions are the responsibility of the purchaser.
- HRS welded construction; Q008 to Q048 = 14 gauge, Q060 to Q084 = 12 gauge, Q096 to Q120 = 10 gauge, good up to 650°F. Special construction available; SS=304 & 316 stainless steel, MD=medium duty for temperature above 650°F, HD=heavy duty for abrasion and tough applications.
- Reducer-transition sections are supplied at both the inlet and outlet of the Quencher cell with a slope not to exceed 15°. These transition sections are designed to adapt the QUENCHER to the most common duct sizes. Other duct sizes are available upon request.
- Paint Finish; Terra Brown RAL8028, outside surfaces, alkyline degreased, iron phosphate chemical etch, Q008 to Q072 are powder coated, Q084 TO Q120 are primed and top coat painted two part epoxy, good to 250°F. Special high temperature, corrosion and abrasion resistant finishes available upon request.
- Flanges and bolt pattern are according to the drawing SA-003 Flanges & Adapters. Others are available with purchaser's specification.
- Pressure drop is 0.96 - 2.68"WC at rated flow (SCFM). It is recommended to allow at least 5 duct diameters of straight duct upstream (inlet side) and downstream (outlet side) of the QUENCHER, otherwise pressure drop will be unpredictable.
- Dust Loading of up to 35-45 grains per cubic foot can be tolerated.

### Dimensions: cubic feet per minute, inches, pounds

MODEL	SCFM min - max	A dia.	B dia.	C	D	ACCESS PORT	WEIGHT	WEIGHT w/ cell cleaner
Q008	490-820	6	8	14	29	n/a	12	25
Q010	790-1310	8	10	14	37	n/a	16	31
Q012	1100-1840	10	12	16	39	n/a	25	47
Q016	1800-3000	12	16	26	49	6 x 10	44	69
Q020	2980-4960	14	20	36	63	10 x 10	68	98
Q024	4420-7360	16	24	38	68	10 x 10	89	128
Q030	7070-11,800	22	30	46	81	10 x 10	135	193
Q038	11,300-18,800	28	38	56	93	12 x 12	211	301
Q048	18,300-30,600	36	48	68	111	12 x 12	333	468
Q060	28,900-48,200	44	60	80	129	18 x 18	688	913
Q072	41,600-69,300	54	72	92	147	18 x 18	945	1305
Q084	57,000-94,000	62	84	108	161	18 x 18	1305	1710
Q096	74,000-123,000	72	96	118	173	24 x 24	1890	2520
Q108	94,000-157,000	80	108	134	192	24 x 24	2745	3465
Q120	116,000-192,000	88	120	150	208	24 X 24	3987	4764

### AUTOMATIC CELL CLEANER (not available with Mini-Quencher):

1. A high pressure pulse is periodically injected to the air stream which blows out accumulated debris that may have settled in the turbulation cell.
2. Standard voltage for diaphragm valve is 120 VAC/60 Hz, UL/ULC approval.

### OPTIONS:

1. ACCESS PORT on upstream side of Quencher assembly, c/w piano hinge and spring latch.
2. FLOOR STAND / CEILING MOUNT BRACKET; to mount the Quencher on the floor or from the ceiling.
3. UPGRADED CONSTRUCTION; SS=304 & 316 stainless steel, MD=medium duty for above 650°F, HD=heavy duty for abrasion and tough applications.
4. NON-STANDARD INLET/OUTLET connections; Custom build, adds 2-4 weeks to delivery.
5. COMPANION FLANGES; extra set of two angle flanges for the install on the duct.
6. ROLLED EDGE adapter (for clamp together ducts); available for 6" to 24" duct, adds 5" to "C" or "D" dimension.
7. SLEEVE JOINT (slip / raw edge) for slip on ducting, **not recommended for Q024 and larger models.**

**CAUTION: For conditions other than standard air (70°F, 0% RH or moisture, sea level, and no refrigeration cycle effects), consult factory. Selection of any spark arrestor must be done by a professional who knows how to make necessary adjustments when dealing with conditions other than ideal standard air.**

**DO NOT Operate Below the Minimum SCFM**

**QAM reserves the right to change design and specifications without notice.**

**Any custom duct size can be supplied.**

Built to

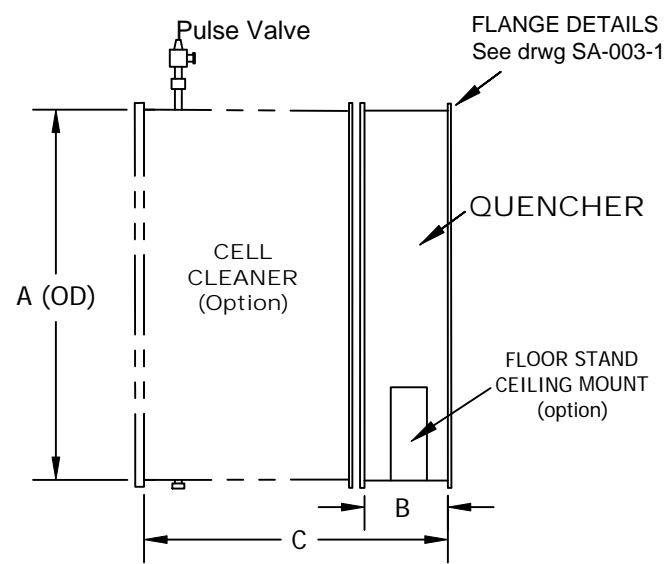


COMPANY		QUALITY AIR MANAGEMENT	
		Phone: 1-800-267-5585	
		www.qamanager.com	
TITLE	PAGE	DATE	SCALE
Quencher Specifications	1 OF 1	Feb 27, 2019	NTS

ALL DIMENSIONS ARE IN INCHES UNLESS STATED OTHERWISE			PROJECTION
2	6/3/2019	changed CFM to SCFM	
1	3/20/19	update cell cleaners	
REV.	REV. DATE	REVISION DESCRIPTION	DWG. NO.
			SA-001-1

# QUENCHER Spark Arrestor

## Cell Only Model



**CONSTRUCTION:**

- **Three styles are available;**
  1. QUENCHER STANDARD MODEL (Qxxx); includes transitions upstream and downstream to duct size.
  2. QUENCHER CELL ONLY (QCxxx); can be inserted into an existing duct, of equal diameter.
  3. MINI-QUENCHER; for high pressure vacuum systems
- Products are built to North American compliance with EPA, OSHA, NFPA, SMACNA round duct standards. Compliance with local codes and standards, and accuracy of order to job site operating conditions are the responsibility of the purchaser.
- HRS welded construction; Q008 to Q048 = 14 gauge, Q060 to, Q084 = 12 gauge, Q096 to Q120 = 10 gauge, good up to 650°F. Special construction available; SS=304 & 316 stainless steel, MD=medium duty for temperature above 650°F, HD=heavy duty for abrasion and tough applications.
- Paint Finish; Terra Brown RAL8028, outside surfaces, alkyline degreased, iron phosphate chemical etch, Q008 to Q072 are powder coated, Q084 TO Q120 are primed and top coat painted two part epoxy, good to 250°F. Special high temperature, corrosion and abrasion resistant finishes available upon request.
- Flanges and bolt pattern are according to the drawing SA-003 Flanges & Adapters. Others are available with purchaser's specification.
- Pressure drop is 0.96 to 2.68"WC at rated flow (SCFM). It is recommended to allow at least 5 duct diameters of straight duct upstream (inlet side) and downstream (outlet side) of the QUENCHER, otherwise pressure drop will be unpredictable.
- Dust Loading of up to 35-45 grains per cubic foot can be tolerated.

**Dimensions: cubic feet per minute, inches, pounds**

MODEL	SCFM min - max	A dia.	B	C	WEIGHT	WEIGHT w/ cell cleaner
QC008	490-820	8	6	25	9	27
QC010	790-1310	10	6	29	14	36
QC012	1100-1840	12	8	32	18	45
QC016	1800-3000	16	10	40	32	65
QC020	2980-4960	20	12	47	41	95
QC024	4420-7360	24	14	51	59	122
QC030	7070-11,800	30	16	59	86	180
QC038	11,300-18,800	38	16	68	126	270
QC048	18,300-30,600	48	20	68	203	460
QC060	28,900-48,200	60	20	73	410	855
QC072	41,600-69,300	72	24	79	563	1166
QC084	56,500-94,200	84	24	82	774	1584
QC096	74,200-123,700	96	26	88	977	2025

**AUTOMATIC CELL CLEANER:**

- a high pressure pulse is periodically injected to the air stream which blows out accumulated debris that may have settled in the turbulation cell.
- Standard voltage for diaphragm valve is 120 VAC/60 Hz, UL/ULC approval.

**OPTIONS:**

1. FLOOR STAND / CEILING MOUNT BRACKET; to mount the Quencher on the floor or from the ceiling.
2. UPGRADED CONSTRUCTION; SS=304 & 316 stainless steel, MD=medium duty for above 650°F, HD=heavy duty for abrasion and tough applications.
3. COMPANION FLANGES; extra set of two angle flanges for the install on the duct.
4. ROLLED EDGE adapter (for clamp together ducts); available for 6" to 24" duct, adds 5" to "C" or "D" dimension.

**CAUTION: For conditions other than standard air (70°F, 0% RH or moisture, sea level, and no refrigeration cycle effects), consult factory. Selection of any spark arrestor must be done by a professional who knows how to make necessary adjustments when dealing with conditions other than ideal standard air.**

**DO NOT Operate Below the Minimum SCFM**

QAM reserves the right to change design and specifications without notice.

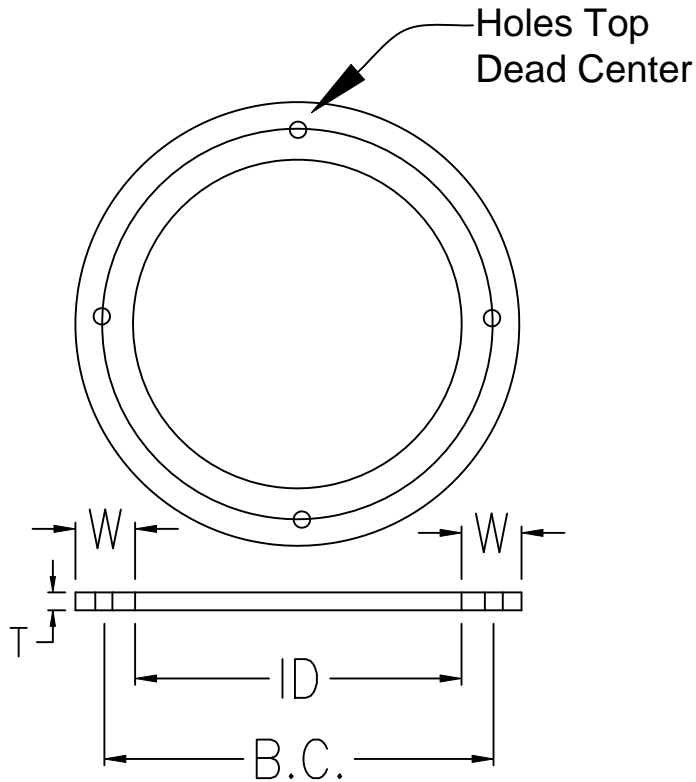


COMPANY <b>QUALITY AIR MANAGEMENT</b> Phone: 1-800-267-5585 www.qamanage.com		ALL DIMENSIONS ARE IN INCHES UNLESS STATED OTHERWISE		PROJECTION 	
TITLE <b>QC-series Specifications</b>	PAGE 1 OF 1	DATE Feb 27, 2019	SCALE NTS	REV. DATE	DWG. NO. <b>SA-001-2</b>
			2	6/3/2019	changed CFM to SCFM
			1	3/20/19	update cell cleaners
			REVISION DESCRIPTION		

# QUENCHER & CELL CLEANER

## Standard FLANGES

see SA-003-2 for companion flanges



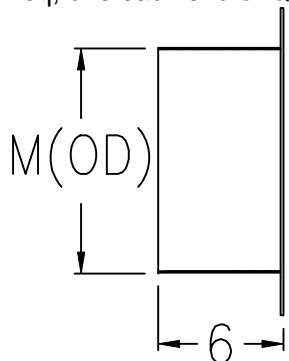
All dimensions in inches

MODEL	I.D.	W	T	No. holes	Hole size	B.C.	L	M
Q008	6	1	1/8 (1)	6	9/32	7.25	3.625	5.875
Q010/QC008	8	1	1/8 (1)	6	9/32	9.25	3.625	7.875
Q012/QC010	10	1	1/8 (1)	6	9/32	11.25	3.625	9.875
Q016/QC012	12	1	1/8 (1)	6	9/32	13.25	3.875	11.875
Q020	14	1.5	1/8 (1)	8	9/32	15.75	4.875	13.875
Q024/QC016	16	1.5	3/16	8	7/16	17.75	4.875	15.875
QC020	20	1.5	3/16	10	7/16	21.75	4.875	19.875
Q030	22	1.5	3/16	10	7/16	23.75	4.875	n/a
QC024	24	1.5	3/16	12	7/16	25.75	4.875	n/a
Q038	28	2	3/16	14	7/16	30.25	n/a	n/a
QC030	30	2	3/16	14	7/16	32.25	n/a	n/a
Q048	36	2	3/16	16	7/16	38.25	n/a	n/a
QC038	38	2	3/16	18	7/16	40.25	n/a	n/a
Q060	44	2	3/16	20	7/16	46.25	n/a	n/a
QC048	48	2	3/16	22	7/16	50.25	n/a	n/a
Q072	54	2.5	3/16	28	7/16	56.75	n/a	n/a
QC060	60	2.5	3/16	30	7/16	62.75	n/a	n/a
Q084	62	3	1/4	32	7/16	65.50	n/a	n/a
Q096/QC072	72	3	1/4	36	7/16	75.50	n/a	n/a
Q108	80	3.5	1/4	40	7/16	84	n/a	n/a
QC084	84	3.5	1/4	42	7/16	88	n/a	n/a
Q120	88	3.5	1/4	44	7/16	92	n/a	n/a
QC096	96	3.5	1/4	48	7/16	100	n/a	n/a
QC108	108	3.5	1/4	48	7/16	112	n/a	n/a

(1) HD construction; T = 3/16 thickness  
HRS construction

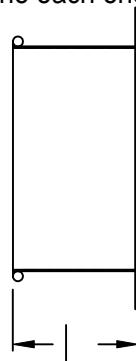
### SLEEVE / SLIP JOINT ADAPTER

(2 req, one each end of Quencher)



### ROLLED EDGE ADAPTER

(2 req, one each end of Quencher)

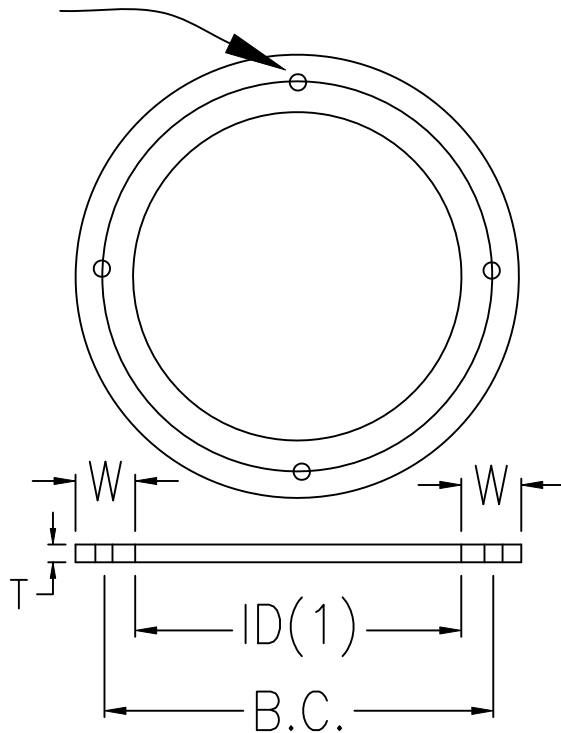


COMPANY:			QUALITY AIR MANAGEMENT		
TITLE:			STANDARD FLANGES AND ADAPTERS		
DWG.No.		SA-003-1		REV. No.	2
DATE:		February 9, 2018		SCALE:	NOT TO SCALE
				DRAWN BY:	GRB
				DATE:	6/13/18

# COMPANION FLANGES

See S8-003-1 for Quencher & cell cleaner flanges

Holes Top Dead Center



All dimensions in inches

MODEL	I.D.	w	T	No. holes	Hole size	B.C.
Q008	6.125	15/16	1/8(1)	6	9/32	7.25
Q010/QC008	8.125	15/16	1/8(1)	6	9/32	9.25
Q012/QC010	10.125	15/16	1/8(1)	6	9/32	11.25
Q016/QC012	12.125	15/16	1/8(1)	6	9/32	13.25
Q020	14.125	1.438	1/8(1)	8	9/32	15.75
Q024/QC016	16.125	1.438	3/16	8	7/16	17.75
QC020	20.125	1.438	3/16	10	7/16	21.75
Q030	22.125	1.438	3/16	10	7/16	23.75
QC024	24.125	1.438	3/16	12	7/16	25.75
Q038	28.125	1.938	3/16	14	7/16	30.25
QC030	30.125	1.938	3/16	14	7/16	32.25
Q048	36.125	1.938	3/16	16	7/16	38.25
QC038	38.125	1.938	3/16	18	7/16	40.25
Q060	44.125	1.938	3/16	20	7/16	46.25
QC048	48.125	1.938	3/16	22	7/16	50.25
Q072	54.125	2.438	3/16	28	7/16	56.75
QC060	60.125	2.438	3/16	30	7/16	62.75
Q084	62.125	2.938	1/4	32	7/16	65.50
Q096/QC072	72.125	2.938	1/4	36	7/16	75.50
Q108	80.125	3.438	1/4	40	7/16	84
QC084	84.125	3.438	1/4	42	7/16	88
Q120	88.125	3.438	1/4	44	7/16	92
QC096	96.125	3.438	1/4	48	7/16	100
QC108	108.125	3.438	1/4	48	7/16	112

(1) HD construction; T = 3/16 thickness

HRS construction

COMPANY:		
QUALITY AIR MANAGEMENT		
TITLE:		
COMPANION FLANGES FOR QUENCHERS		
DWG.No.	S8-003-2	REV. No. 1
		DATE: 6/15/2018
DATE:	SCALE:	DRAWN BY:
February 12, 2018	NOT TO SCALE	GRB

The spark arrestor shall be a static device, with no moving parts and electrical controls. The fixed overlapping curved blade assembly is designed to agitate the gas flow in a dust collection ducted system producing turbulent flow which strips oxygen away from and cools a spark or ember to within 50°F of the temperature in the process gas stream. It shall be constructed of hot rolled steel according to SMACNA “round industrial duct construction standards” or better.

The spark arrestor shall be an in-line device, requiring no dropout or collection recipient, inserted into the ducted system, attached by [flanges, slip connections or rolled edge clamped duct].

The spark arrestor must be designed specifically as a spark arrestor, not just a converted air mixing or air blending device, and, be equipped with an automatic electro-pneumatically operated integral cell cleaner / booster.

The spark arrestor shall condition the process gas stream without relying on injection of water, chemicals, or other retardants.

The spark arrestor must be rated for \_\_\_\_\_ ACFM (actual cubic feet per minute) at an air stream temperature of \_\_\_\_\_ degrees F, for a \_\_\_\_\_ inch (OD) duct connection, and a minimum pressure drop of 0.75 inches WC.

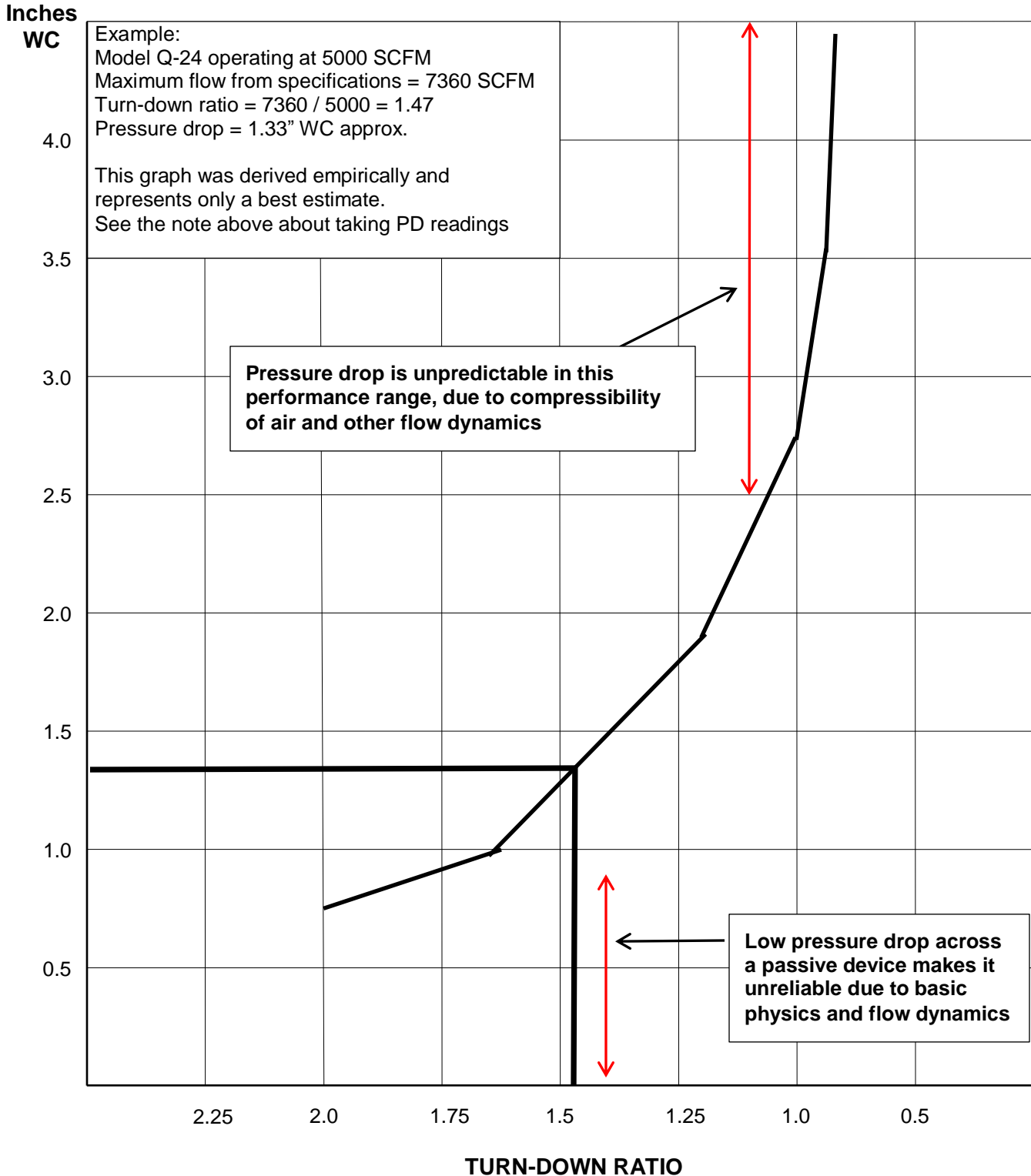
Acceptable product: **QUENCHER™** by Quality Air Management, phone; 1-800-267-5585, website; [www.qamanage.com](http://www.qamanage.com).

## Pressure Drop (inches WC)

Pressure drop readings, taken in the field, are very difficult to rely on due to the extreme turbulence developed in the QUENCHER cell.

Dwyer Instruments Inc requires “smooth straight duct sections a minimum of 8.5 diameters in length upstream and 1.5 duct diameters downstream from a flow measuring device (i.e. pitot tube)”. An accurate traverse of readings is necessary, per Dwyer specifications & Industrial Ventilation Manual. Provide an egg crate type straightener upstream from the measuring device. This will yield an accuracy of plus or minus 2%.

*Remember to allow for the friction loss of these duct lengths and deduct from the pressure readings.*

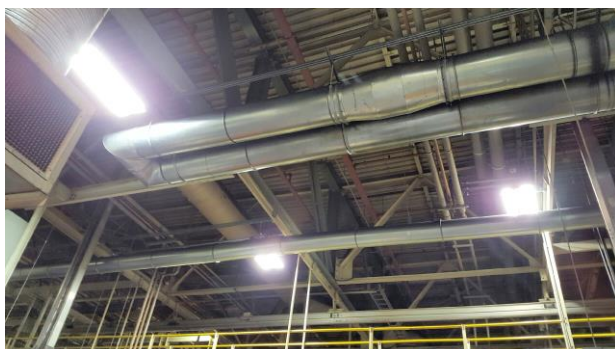




The question is often asked, “How much straight duct is required before and after the Quencher spark arrestor?”

This gets quite technical:

1. We recommend at least 5 duct diameters upstream and downstream to ensure laminar flow entering the Quencher and re-establishing laminar flow leaving the device.
2. In fact, Dwyer indicates that you need at least 8 diameters of straight duct to get accurate static and velocity pressure readings, using common pressure reading devices.
3. **Consult the factory for solutions** if you have difficulty meeting this requirement.
4. If you are too close on the inlet and the air stream is turbulent or spinning in the same direction as our vanes impart, the spark may not tumble enough through the cell to get extinguished.
5. If you are too close on the inlet and the air stream is turbulent or spinning in the opposite direction as our vanes impart, you would add turbulence through the cell to extinguish the spark, which is good. However, this effect will cause the pressure drop to skyrocket exponentially. The pressure drop through the Quencher would be unpredictable.
6. If you have an elbow, or other flow changing device, too close to the inlet side, you can skew the profile of the air entering the Quencher. If the air is squeezed to one side of the Quencher cell, where you have higher volume flow and low volume flow on the other side, the area of low flow may actually run under the minimum flow required for spark arresting action. Sparks may fall out and ignite debris or just deviate through the Quencher, instead of having enough turbulent energy to be effective.
7. If you have an elbow, or other flow changing device, too close on the outlet side, the Quencher will only partially work to extinguish the sparks because you would skew the profile of the air through the Quencher. You would have the same effect as described in point #6 above. Also, the pressure drop rises exponentially through the combination of devices. It would be impossible to predict or assign a pressure drop through the devices, let alone the Quencher itself.
8. If you have the recommended length of straight duct before and after the Quencher, then our pressure drop chart (see separate bulletin) will be a good estimate of the pressure drop through the Quencher.
9. **CAUTION;** do not attempt a loop, as shown in the pictures below, to obtain recommended duct diameters. This is a disaster. You will dramatically choke the flow (by as much as 75%), skew the air profile entering the Quencher, increase pressure drop, and cause sparks to flow through the Quencher, due to lack of turbulent energy.



## Performance Guarantee for QUENCHER™ Spark Arrestors

The QUENCHER is a static turbulating device that operates by cooling glowing sparks/embers within the exhaust ducting system. By changing the characteristics of the gas flow, through the duct, from laminar to turbulent flow; it will cool sparks that are over 20 microns in diameter with an average grain loading of less than 10 grains per cubic foot of sparks. 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 and well below ignition temperature. 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/explosions.

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 approximately 20°F. 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 CFM 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.*

Pressure drop through the device is excluded from the Guarantee and Warranty, due to its unpredictable nature.

An error in the selection or application, causing the possible return/exchange of a unit, with QAM authorization, must be claimed and received at the factory within 90 days of the original ship date, or, you will be expected to pay the full purchase price.

### 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, 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. **Complete jobsite and operating conditions must be provided, by the purchaser, either on our job survey forms or with the quote request or with the purchase order. Otherwise the performance guarantee and/or warranty shall be void.**
3. 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.
4. 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.

5. 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.
6. 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.
7. The foregoing does not apply to components which were not manufactured by QAM or its licensee.
8. 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.