



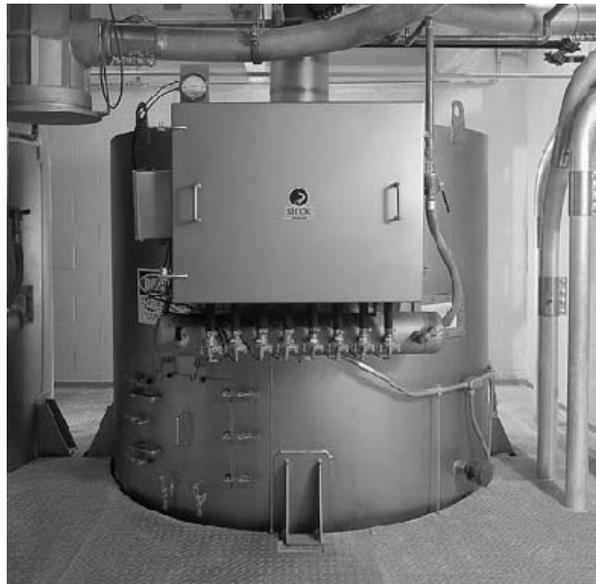
SHICK

www.shickusa.com

Operating Manual IQC Filter

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IQC-1

IQC Filter – Introduction & Contact Information

Thank you!

Thank you for choosing Shick's IQC filter for your dust collection needs. Shick is proud to be a partner with you in your product conveying needs. We developed the IQC as a way to reduce production down-time associated with filter change outs, and we have found that the increased filter element durability reduces both ongoing operating costs and filter replacement costs when compared to traditional bag and cage arrangements. Shick's drive for total customer satisfaction keeps us at the forefront of product development and the IQC is yet another example of that commitment.

Components Mission Statement

Shick will provide superior value to our customers through quality, price and exceptional customer service.

Contact Information



- Phone – 877-ShickUSA (877-744-2587) - Ask for Component Sales



- Fax – 816-921-1901



- Email – components@shicktube.com



- Mail – Attn: Component Sales

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IQC-2

IQC Filter – Recommended Spare Parts

Replacement Filters

Shick's Filter Element consists of 15 SpiroTubes (spiral formed tubes) that are supported in a single, compact frame. The SpiroTubes are thermally welded to ensure airtight construction.

The 26 mm (1.02 in.) diameter of each SpiroTube provides an optimal relationship between the total unit area and the open area between the tubes. Decreased face velocities and increased airflow in four directions between the elements enable better control of the airstream velocity and increased dust release capability.

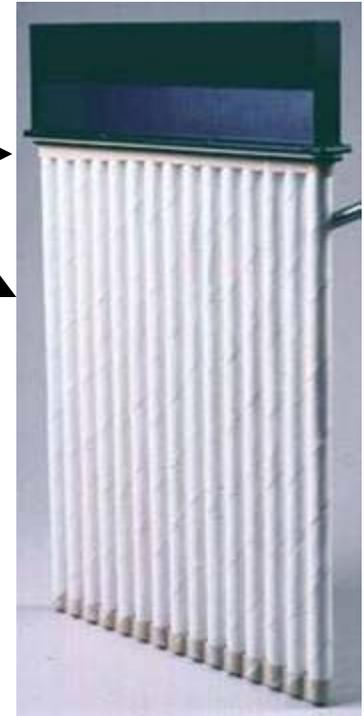
The one-piece, self-supporting filter elements are made of spun bonded polyester media laminated with expanded PTFE membrane. This filter media can operate in temperatures up to 176° F (80° C).

The unique spiral shape and non-stick surface of each filter element provides the best possible dust filtration and dust release with a low pressure drop.

Metal venturi is a separate, reusable piece. →

Gasket seated tightly in tube frame. →

Filter element is cleanable and replaceable. →



Part No.	No. Tubes Per Filter Element	Overall Length	Filter Area
18306	15	705 mm	0.86 m ²
		27.76 in.	9.23 ft ²
18307	15	1005 mm	1.23 m ²
		39.57 in.	13.24 ft ²
18308	15	1255 mm	1.53 m ²
		49.41 in.	16.46 ft ²

Filter Element Compact Frame	
18309	(separate piece that is reusable; one time purchase to replace costly OEM cage and venturi system)



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IQC Filter – Recommended Spare Parts

REMOTE CONTROL ACTUATED (DIAPHRAGM) VALVE (RCV)

Shick utilizes a “reverse-pressure” diaphragm valve on all IQC units. Each valve is equipped with 3/4” threaded inlet and outlet orifices with a unique star-shape, five-bolt pattern and an internal bleed hole in the diaphragm. A 1/8” solenoid is required to activate the remote control valve (RCV). The diaphragm has a tab or “flap” extending out of the valve opposite of the inlet orifice. The word “in” is embossed on the inlet orifice.

Each RCV Shick supplies have a readily available repair kit for the internal components of the valve. Repair is made simple by first loosening and removing the five 1/2” bolts (star pattern) of the valve, then gently lifting up on the face of the valve. Gentle prying between the face and the body of the valve is sometimes needed. Carefully lift the face of the valve, and then remove the spring and the diaphragm assembly from the valve. The diaphragm components come assembled so there is a complete drop-in replacement. Inset the spring onto the center seat of the diaphragm assembly. Replace the valve face by allowing the spring to inset into the spring tunnel in the face. The “flat” part of the star bottom must align with the inlet orifice of the valve. Replace the five 1/2” bolts and tighten to 5 lbs. You have now successfully repaired your RCV.

RCV Parts



RCV



RCV Diaphragm



RCV Body



RCV – Assembly view



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IQC Filter – Recommended Spare Parts

TIMER BOXES

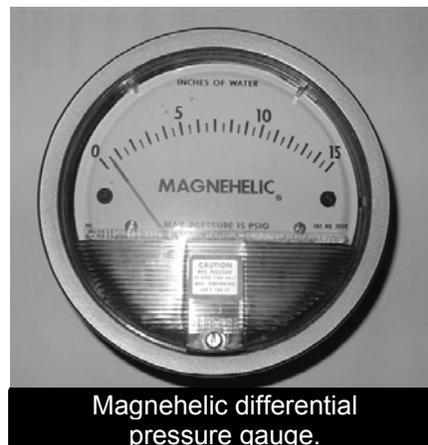
For ease of operation and functionality, Shick utilizes one of two timer boards pre-installed in the timer box: a 6-position (#DNC-T2006-A10) or a 10-position (#DNC-T2010-A10), depending on requested application. Both can be configured for different position types. The timer sends electrical signals to the solenoid pilot valves and triggers the momentary jet pulses of compressed air for sequential filter cleaning. The duration or “on time” is set to pulse through all solenoids once per minute for a duration of 40 msec. The time between pulses, called “off time,” is adjustable between 1.5 seconds and 30 seconds from the timer board. The solenoids are pre-wired to the timer; replacement solenoids are readily available. Each timer’s box has its own unique I.D. tag with all of the information needed to reorder components or parts (e.g., tube frames). Shick has made great development strides to ensure ease of operation and maintenance of the IQC and its components.

PILOT SOLENOID VALVE

Shick utilizes valves to operate the reverse-jet filter process. The pilot solenoid valve triggers the diaphragm valves from a remote location. We have simplified the service by reducing the solenoid need to a single model for all IQC applications. The pilot valves can be mounted separately or in multi-valve enclosures. Replacement valves come standard with 22” wire leads, 1/8” M3 NPT RP and 22 watt, 120 volt capacity.

PRESSURE GAUGE

Shick employs a universal gauge with frictionless magnehelic movement, to indicate pressure differential across the filters; resisting shock, vibration and over-pressures. Shick has made easy the replacement of the gauge assembly by fabricating and assembling each gauge assembly to exact specifications. The gauge has an ambient temperature range of 20°F to 140°F and a total pressure rating of 0” to 15” water column. The kit comes complete with the gauge mounted on a stainless steel bracket, 1/4” poly to 1/8” NPT fittings installed on the gauge and 1/4” poly to 1/8” NPT swivel fittings installed on the precut 1/4” polyflo tubing.



Magnehelic differential pressure gauge.



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IQC Filter – Installation Instructions and Tips

Steps:

1. Before accessing the dust collector and beginning the installation procedure, follow the proper lockout/tagout, and confined space entry procedures.
2. Open the access door of IQC unit. (See *photo-A on next page*)
3. Remove the hold-down knobs (black) that hold the air distribution tubes in place. (See *photo-B on next page*)
4. Remove the air distribution tubes by pulling up and away from the stud on the flat end of the tubes and then by pulling them away from the air inlets on the other end. (See *photo-C on next page*)
5. Remove the hold-down knobs holding the venturi retainers in place. (See *photo-D on next page*)
6. Remove the venturi retainers. (See *photo-D on next page*)
7. Remove the venturies over the tube-frame.
8. Carefully remove the filters for inspection, washing or replacement. (See *photo-E on next page*)
9. Before inserting a filter into the IQC housing, inspect it closely. (See inspection photos below and *photo-F on next page*)
10. Insert the filters into the IQC housing. (See *photo-G on next page*)
11. Install the venturies over the tube-frames. (See *photo-H on next page*)
12. Install the venturi retainers over the all thread anchoring rods lining up the notched edge with the venturies. (See *photo-O below*)
13. Apply anti-seize for Stainless Steel to the threaded stud to prevent the hardware from seizing.
14. Install the hold-down knobs and tighten to a snug fit. Enough to compress the gasket on the tube-frame. (See *photo-N below*)
15. Install the air distribution tubes. Set the open ends down over the air inlets and then push the flat end down and forward onto the protruding studs. The holes should face the tube-frames. (See *photo-I on next page*)
16. Apply anti-seize for Stainless Steel to the threaded stud to prevent the hardware from seizing.
17. Install the hold-down knobs and tighten to a snug fit. (See *photo-J on next page*)
18. Close and latch the door of the IQC unit. (See *photo-K on next page*)
19. Remove any locks or tags on the system from the lockout/tagout procedure.

IQC Parts Display and Installation Tips



(L) Venturi



(M) Air Distribution Tube



(N) Compress gasket for proper seal



(O) Retainers are notched for proper venturi alignment



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IQC Filter – Installation Photos



(A) Opening access door



(B) Loosening and removing hold-down knobs



(C) Removing air distribution tubes.



(D) Removing retainers and venturies



(E) Sliding out filter elements



(F) Inspecting filter elements



(G) Replacing elements



(H) Installing venturies and retainers



(I) Installing air distribution tubes



(J) Replacing and tightening hold-down knobs



(K) Closing access door

For a video on how to change these filters, visit:

www.shickusa.com/iqc/easy.html

- click on "Filter Change Video"

Video



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IQC Filter – Cleaning Instructions

Washing Procedures for Filter Elements Utilizing PTFE Membrane

Non-Water Soluble Dusts – If there is no backside blinding, put the filter element through several pulse cleaning cycles with primary air flow stopped. A hand-held compressed air wand should then be used to backflush (with 60 psi air) by running the wand up and down the interior of the filter elements. If a residue on the outside (PTFE membrane side) of the filter element remains, low velocity compressed air may be used directly only the outside, but care must be taken not to damage the membrane.

If there is significant backside blinding, compressed air may be used. However, forcing the dust further into the media from the backside is likely. Another option would be to remove and rotate the filter element while submerging it in a solvent which will dissolve the dust. Check for filter element compatibility.

Washing the filter element with a high pressure water jet or stream is not recommended.

Washing in place must be done only after air cleaning and with no greater than 40 psi water, unassisted by a nozzle or jet acceleration.

A water force similar to a soft garden spray attachment is appropriate.

Water Soluble Dusts – If there is no backside blinding, put the filter element through several pulse cleaning cycles with primary air flow stopped. A hand-held compressed air wand should then be used to backflush (with 60 psi air) by running the wand up and down the interior of the filter elements. If a residue on the outside (membrane side) of the filter element remains, low velocity compressed air may be used directly on the outside, but care must be taken not to damage the membrane.

If there is backside blinding, removal and rotation of the filter element in a water bath is recommended. Over a short period of time, if water soluble, the dust will dissolve. The filter element should be dried in a place of low moisture while applying low, dry heat, if possible. Do not exceed operational temperature.

Washing with a high pressure water jet or stream is not recommended. Washing in place must be done with no greater than 40 psi water, unassisted by any nozzle or jet acceleration. A water force akin to a garden spray attachment is appropriate.

IQC filter element inspection: Check the filter elements for the following:

1. Are there any holes?
2. Are there any creases?
3. Are there any cracks?
4. Are there any bulges?
5. Are there any dents?

A yes to any of the above questions means the filter needs to be replaced.

Contact your Shick representative if you have any questions regarding the cleaning of your tube frames.



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IQC Filter – Gasket Repair & Replacement

Overtime, gaskets may become loose from the top of the filter element. If it does, use adhesive to reattach the gasket to the filter element. The gasket should not be loose or it can cause leaking. This can be repaired or replaced as follows:

- 1) Remove the gasket completely. Excess adhesive should be removed from the end cap.
- 2) Roughen the surface of the end cap where the gasket attaches with an emery cloth.
- 3) Clean the gasket and end cap with isopropyl alcohol to remove residue.
- 4) Apply liquid silicone (GE RTV-118) to the end cap and attach the gasket.
- 5) Apply a small bead of silicone (GE IS808) to ID and OD of the gasket.

Allow the silicone adhesive to cure a minimum of 24 hours before using the filter.

Note: The surface of the IQC SpiroTube filter elements are laminated with PTFE membrane and are therefore very delicate. Care must be taken to prevent scraping of the surface when moving, handling or installing in the unit. Cardboard or other smooth material should be placed on or around rough surfaces (such as door frames and handrails) to protect the filtration surface from damage during handling. Do not stack the filter elements.

IQC filter gasket inspection: Check the filter element gasket for the following:

1. Are there any holes?
2. Are there any cracks?
3. Are there any creases?

A yes to any of the above questions means the filter needs to be replaced.



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