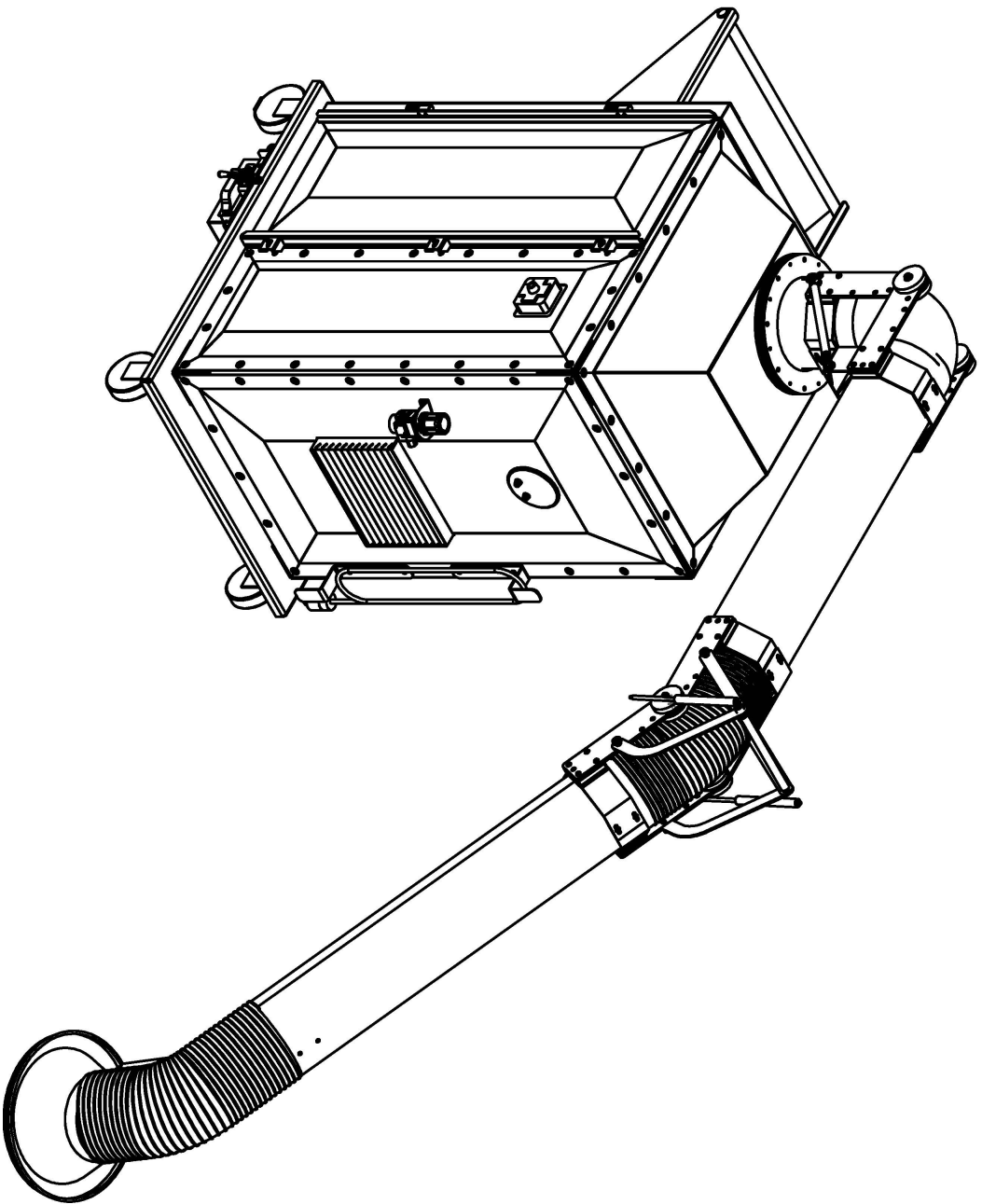


CVX-12RPA PORTABLE FILTRATION UNIT MANUAL



Introduction

This document has been prepared with information necessary to properly receive, install, operate, and maintain the CVX filtration system. All parties involved in purchasing, installing and operating the filter system MUST read and comply with this document prior to installation and operation. These instructions apply to the Car-Mon Products, Inc. CVX series. All ancillary tasks including, but not limited to, such as electrical work, mechanical work, equipment handling, and safety procedures must be in accordance with standard industry practice and all relevant local, state, and federal codes, laws and policies.

Safety Statement

The supplied filtration unit is an industrial piece of equipment and at all times must be handled as such. Safety must be a priority from all personnel involved with the operation, installation and maintenance.

The intention of this unit is to provide fume capture and recirculation of cleaned air. Therefore understanding the application that the unit will operate in will be important to maintaining proper safety.

Improper operation of the filter unit may contribute to an unsafe work zone that may result in personal injury and property damage. It is necessary to understand the information laid out in this installation and operation manual. DO NOT operate filter unit if IOM has not been read and/or understood.

Receiving

Prior to accepting the shipment, care must be taken to inspect all equipment received both for proper count and for damage. All irregularities must be noted on the carrier's copy of the shipping receipt to assist in settling any claims for damage or shortages. All equipment is shipped FOB point of origin whether on a prepaid or collect freight basis.

ANY CLAIM FOR DAMAGE IN TRANSIT OR SHORTAGES MUST BE BROUGHT AGAINST THE CARRIER BY THE RECEIVER.

Once your claim has been filed with the carrier, contact Car-Mon Products to notify us of the problem. We will then advise the appropriate repair procedure or recommend it be returned to our factory, depending on the extent of the damage. Do not return anything until an RMA has been authorized and assigned by Car-Mon Products.

INSPECTION OF THE SHIPMENT

Main Assembled Frame & Extraction Arm: Particular attention should be paid to the sheet metal housing of your collector. The unit should be inspected for dents, cracks or rips. A dented housing may seriously affect the structural integrity of the unit.

Installation

Car-Mon Products, Inc. CVX-RPA series portable filtration unit may be shipped either in one fully assembled piece with extraction arm attached or in two pieces with our extraction arm to bolt in place. If arm arrives on a separate pallet please refer to the assembly drawings for bolt up instructions.

Before attempting to move and/or operate the unit review both the general assembly drawing supplied from CAR-MON PRODUCTS and the information supplied in this manual.

For operation and maintenance instruction for Car-Mon series WXS extraction arm, please refer to the manual marked WXS Series.

Operating Principle

CVX Series filtration unit is a self-cleaning, self-contained manual pulse jet style filtration unit that uses vertical hanging cartridge filter to remove dust and noxious fumes from the airstream. The fine dust particulate will be captured on the outside of the filter cartridge. Clean airflow will then move vertically upward through the center of the cartridge filter and exhaust out through the outlet.

Pulse Cleaning is used to remove the fine dust particles from the cartridge filter. Filter cleaning shall be done when fan motor is shut down and filter gauge indicates a need for cleaning. The cycle is triggered by bringing a compressed airline into the regulator stem. The air is delivered into a tank inside the CVX cabinet.

The regulator is pre-set from the factor at 90 PSI. (PSI pressure should not exceed 100 or go below 85).

To engage the cleaning cycle, a push button is provided on the valve. See assembly drawing for the location. The button should be engaged as many times as it takes for the differential pressure gauge needle to drop to a point in the clean zone, typically between 1.5 and 3" W.G. If the gauge continues to read a higher level and cleaning cycle has been engaged, the filter will need to be replaced; typical high limit is between 4 and 6" W.G.

The dust will release off the filter and into the dust bin located at the bottom of cabinet, under the door. For location please review assembly drawings.

If there are any questions, please contact the factory for support.

Start-up Checklist

WXS Connection:

All bolts on extraction arm flange should be tight and arm should be secured down to CVX cabinet plenum. Hand damper on arm should inline with duct in the open position.

Electrical:

Plug should be connected to the proper outlet matching outlet configuration and electrical power

Equipment Start-Up Sequence

Check that all access doors, hatches, ports, and other openings are closed and latched or bolted.

The main fan can now be started from the provided fan starter located on the cabinet.

Shutdown Procedure

The unit is shut down by flipping the toggle to the “off” position located on the starter enclosure.

The starter is provided with a lockout at the toggle switch. Please use proper lockout procedures when maintaining unit.

Optional Equipment

Magnehelic® Gage

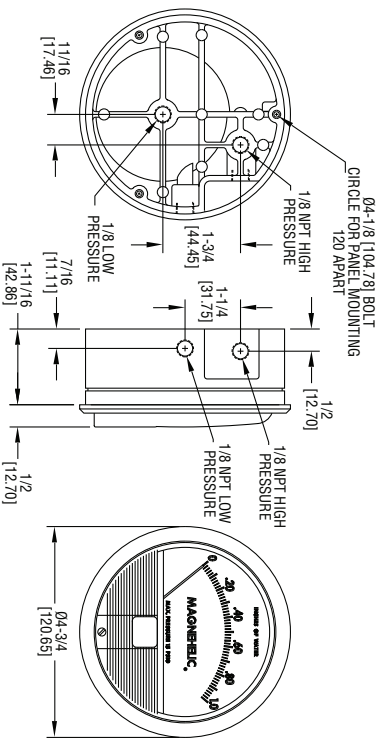
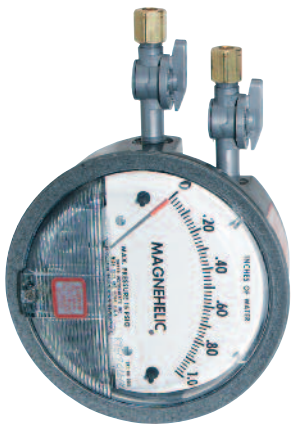
The Magnehelic is a differential pressure gauge used to measure pressure difference between clean-air and dirty-air plenums. It provides a visual display indicating when filters need to be changed. The high-pressure tap is located in the dirty air plenum on the drop-out chute of the collector. The low-pressure tap is located on the clean air plenum on the collector body right above drop out chute. Refer to drawing for specific location.

The gauge arrives installed on the CVX series filter unit. Maintain gauge as directed in the manufacturer's operation and maintenance instructions provided



Dwyer®

Series 2000 Magnehelic® Air Filter Gages Specifications - Installation and Operating Instructions



The Magnehelic® gage consists of two pressure-tight compartments separated by a molded flexible diaphragm.

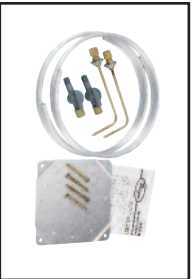
The interior of the gage case serves as the "high" pressure compartment and a sealed chamber behind the diaphragm serves as the "low" pressure compartment.

Differences in pressure between the "high" and "low" sides of the diaphragm cause the diaphragm to assume a balanced position between the two pressures. The front support plate of the diaphragm is linked to a leaf spring which is anchored at one end. The spring provides calibrated resistance to the diaphragm motion. Motion of the spring is transmitted through an exclusive magnetic linkage to the pointer.

The Magnehelic® gage requires no maintenance. The only field adjustment required is occasional zero setting of the pointer which is done by opening the plastic vent valves and turning the adjustment of the gage.

STANDARD ACCESSORIES FURNISHED

Two 1/8" NPT plugs for duplicate pressure taps, two 1/8" pipe thread to rubber tubing adapter and three flush mounting adapters with screws. (Mounting and snap ring retainer substituted for 3 adapters in MP & HP gage accessories.)



Air Filter accessories furnished are mounting panel with necessary screws, two static pressure tips with integral compression fittings, two five foot lengths of 1/4" aluminum tubing and the two molded plastic vent valve with compression fittings.

The Magnehelic® gage with molded plastic vent valves for easy zeroing. Available with adjustable signal flag (not shown), option "ASF" at extra cost) for immediate visual reference to maximum allowable pressure drop. External front screw for zero adjustment. Red and green scale overlays to highlight safe and dangerous readings are also available.

FEATURES

- Easiest reading for personnel accustomed to dial type gages.
- Lowest cost pointer type gage.
- Easy zeroing with molded plastic vent valves.
- Sensitivity to 0.01" w.c.
- Withstands vibration.
- Unaffected by over range pressure surges.

SPECIFICATIONS

Service: Air and non-combustible, compatible gases. (Natural Gas option available.)

Wetted Materials: Consult Factory.

Housing: Die cast aluminum case and bezel, with acrylic cover. Exterior finish is coated gray to withstand 168 hour salt spray corrosion test.

Accuracy: ±2% of full scale (±3% on - 0 and ±4% on - 00 ranges), throughout range at 70°F (21.1°C).

Pressure Limits: -20" Hg. to 15 psig.† (-0.677 bar to 1.034 bar). MP option: 35 psig (2.41 bar), HP option: 80 psig (5.52 bar).

Overpressure: Relief plug opens at approximately 25 psig (1.72 kPa), standard gages only.

Temperature Limits: 20 to 140°F* (-6.67 to 60°C).

Size: 4" (101.6 mm) Diameter dial face.

Mounting Orientation: Diaphragm in vertical position. Consult factory for other position orientations.

Process Connections: 1/8" female NPT duplicate high and low pressure taps - one pair side and one pair back.

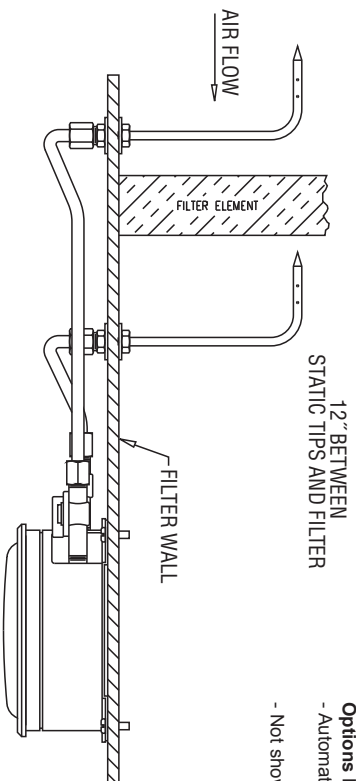
Weight: 1 lb 2 oz (510 g), MP & HP 2 lb 2 oz (963 g).

* Low temperature models available as special option.

† For applications with high cycle rate within gage total pressure rating, next higher rating is recommended. See Medium and High pressure options at lower left.

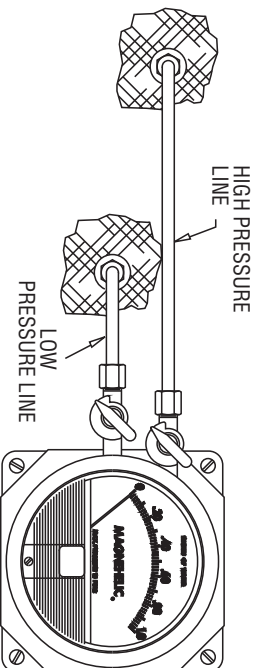


Cutaway view of the Magnehelic® gage showing the actuating diaphragm, the leaf spring with magnet, the helix which turns the indicating pointer in response to the position of the magnet without mechanical linkages.



Options Not Shown:

- Automatic signal flag integral with plastic gage cover
- Not shown Scale plate overlays in green and red



INSTALLATION PROCEDURE

1. Screw vent valves into side connections of gage. Be sure back connections of gage are sealed with plugs provided with the gage. Attach gage to mounting plate with three No. 6-32 screws provided.
2. Select a convenient location on filter wall and punch or drill four 1/8" dia. max. holes for mounting plate as shown in drawing above. Attach mounting plate to filter wall with four self-tapping screws provided. If gage is to be flush mounted in control panel, refer to Bulletin No. A-27.
3. Drill two 7/16" holes in the duct, one on each side of the filter and at least 12" distant*. Secure the static pressure tips as in the drawing above, with the tips directed into the air flow.
4. Connect 1/4" metal tubing from the static pressure tips to the gage. The tip on the downstream side of the filter is connected to the vent valve in the low pressure connection of the gage. The tip on the upstream side is connected to the vent valve in the high pressure connection.
5. Turn both vent valves to "VENT" position and adjust the gage pointer to zero by means of the external adjustment screw in the face of the gage. After zeroing, turn vent valves to "LINE" position.

***NOTE On location of static pressure tips:** The location of static pressure tips is of primary importance in securing reliable readings. For maximum accuracy, it is essential that the influence of the velocity of the air be eliminated to permit sensing the true static pressure. Note that some installations do not provide a straight duct approach to the filter bank which may cause air to swirl and eddy.

Tips should be located as recommended by the specifying engineer or by the filter manufacturer. In the absence of such recommendations, locate the tips at least 12" upstream and downstream from the filters in a zone of minimum turbulence.

INSTALLATION CHECK AND TROUBLE SHOOTING

Before putting your air filter gage into service or in the event of initial pressure drop readings that do not agree with the filter manufacturer's specified pressure drop, make the following checks:

1. Check zero adjustment of the gage as described above.
2. Check all tubing connections for tightness from the gage to the static tip or fitting connection.
3. Check plastic cover of gage to be sure it is securely in place and air tight.
4. Check static pressure tips or fittings to be sure they are not plugged.
5. Check installation of static tips or fittings*. Be sure static pressure tips point directly into the air stream. A velocity pressure error can be created if the air blows directly into the opening.

OPERATION

With vent valves in "LINE" position the gage will indicate pressure drop across the filter. If the reading varies substantially from the filter manufacturer's rating for a clean filter, check the system for proper setting of controls, air balancing of system, leakage in system and whether or not the correct filter has been installed.

When pressure drop across the filter reaches the minimum recommended by the manufacturer, the filter should be serviced or replaced.

Routine Maintenance

Frequency of required inspections will vary as widely as there are operating conditions. In general proceed as follows:

Daily –

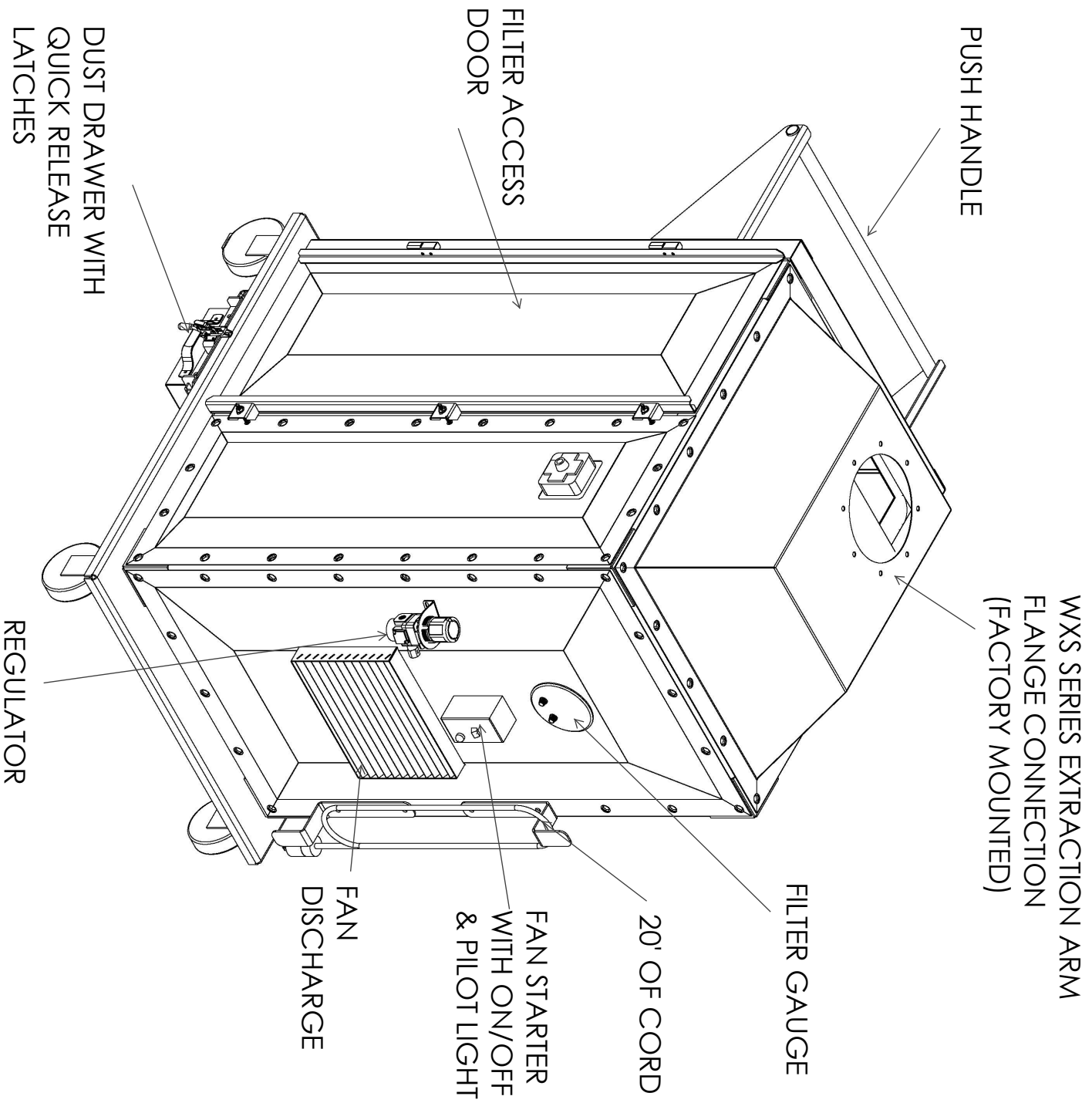
- Check unit differential pressure.
- Check dust drawer for debris. Dump as needed.

Weekly – Monthly –

- Check Filter inside cabinet.
- Visual check on cabinet.
- Make sure pulse cleaning is functioning

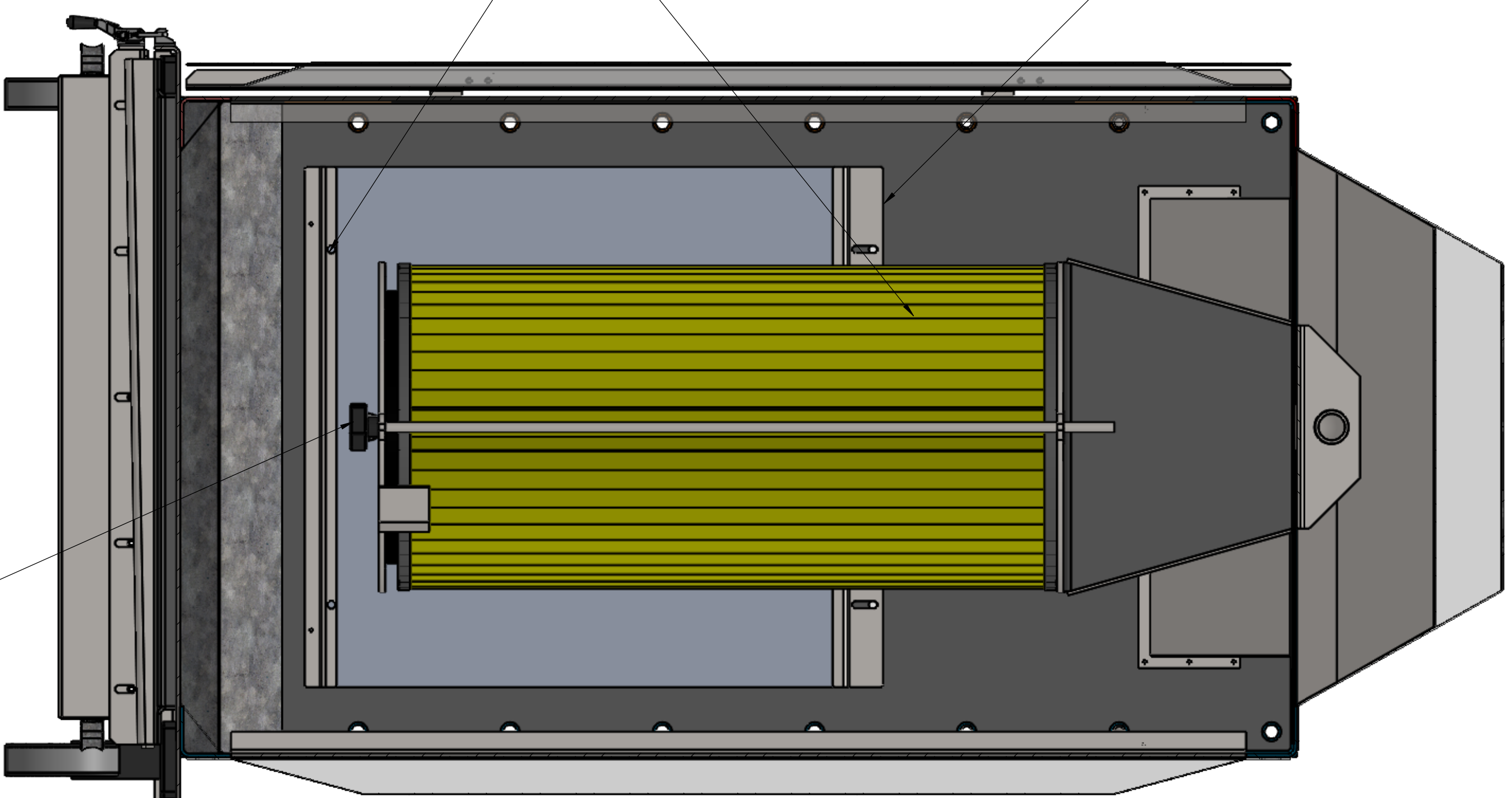
Repairs

Filter Cartridge – The Nanofiber filter is designed for extended life but usage will be a key factor in determining the length of the filter life. An estimated range is one to two years. If replacing the filter, please review filter change-out instructions. Please have job serial number for reference when contacting the factory.



WITH MAIN FILTER OUT
REMOVE UPPER RAIL TO
REMOVE PRE-FILTER TO CLEAN OR
REPLACE

THEN RE-TIGHTEN THUMB
SCREWS ON UPPER AND LOWER
RAIL LIGHTLY TO COMPRESS
PRE-FILTER TO FOAM GASKET

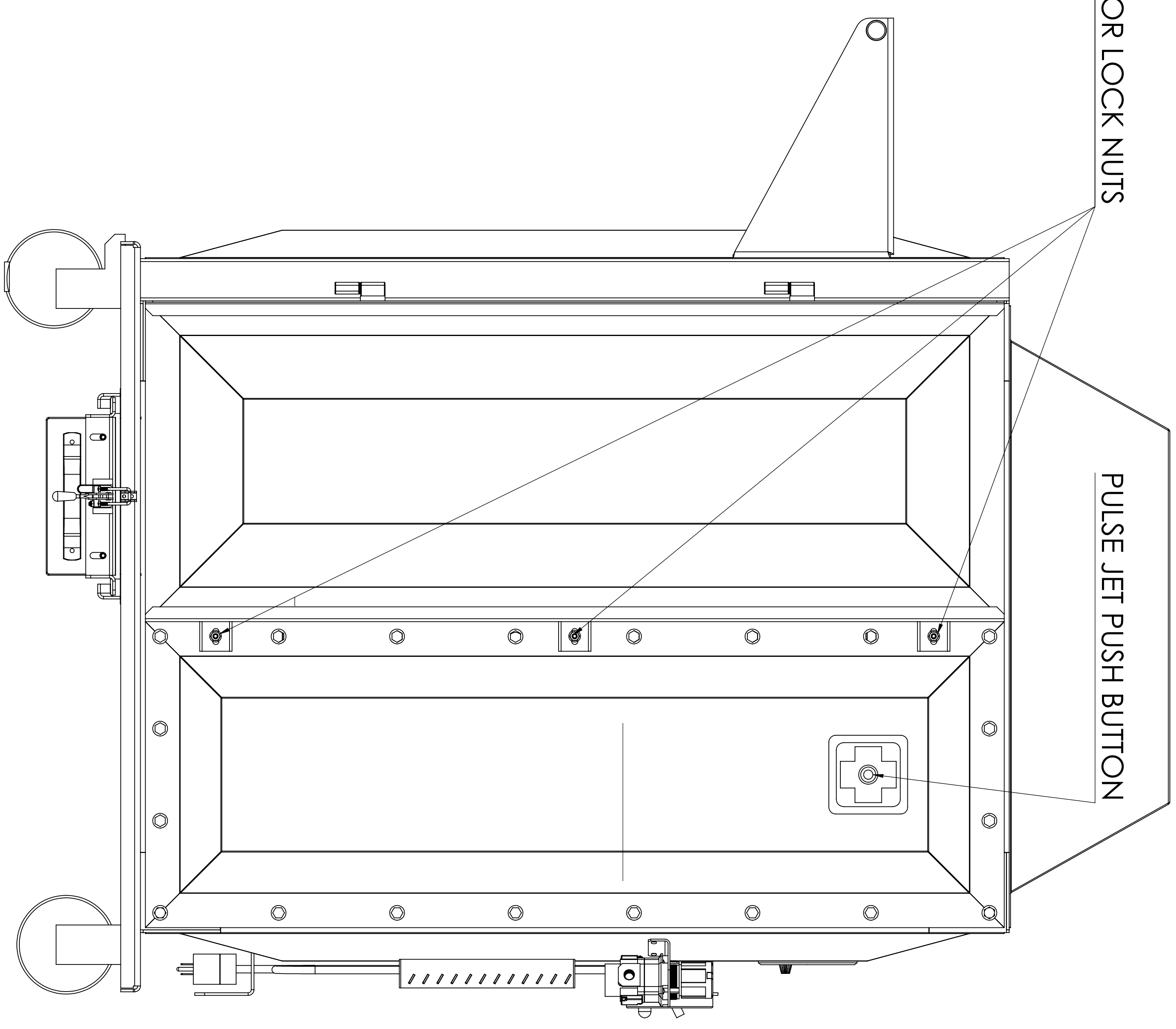


SECTION B-B

LOOSEN WING NUTS JUST
ENOUGH TO REMOVE FILTER
RE-TIGHTEN ENOUGH TO COMPRESS
GASKET OF NEW FILTER

FILTER DOOR LOCK NUTS

PULSE JET PUSH BUTTON



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