F4 Ventilation Blower

Owner's Manual

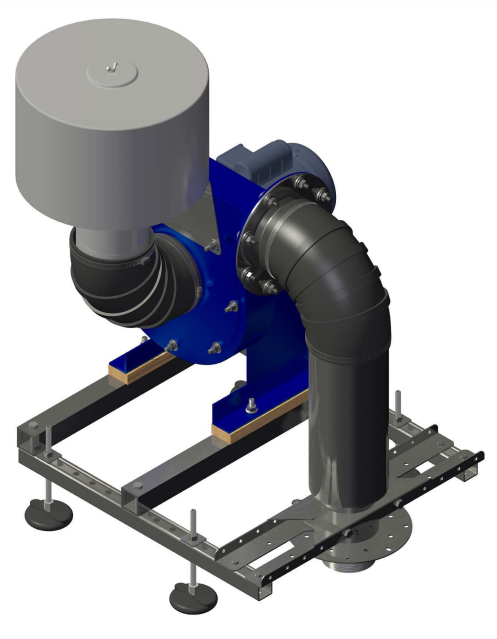


Table of Contents

F4 Ventilation Blower

Owner's Manual

Safety

IMPORTANT

YOU MUST COMPLETELY READ AND FULLY UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING, OPERATING, OR SERVICING THIS UNIT.

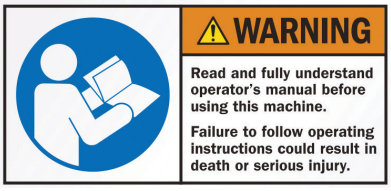
Be sure you have read all installation, operation, maintenance and safety instructions before you install, service or begin to operate this unit.

Accidents occur every year because of careless use of industrial equipment. You can avoid hazards by following these safety instructions, and applying some ordinary common sense when operating or servicing this unit.

Keep in mind that ***full operator attention and alertness*** are required when operating or servicing this unit.

USE COMMON SENSE!! Most accidents can be avoided by using ***common sense and concentration*** on the job being done.

Carefully read safety information when you see any safety symbols.



Safety

IMPORTANT

YOU MUST COMPLETELY READ AND FULLY UNDERSTAND THESE INSTRUCTIONS BEFORE INSTALLING, OPERATING, OR SERVICING THIS UNIT.

Identify all possible hazards. Determine what safeguards are needed and implement them. **Only you, the user,** understand your product and system characteristics fully. ***The ultimate responsibility for safety is with you. Your safety ultimately rests in your hands.*** Do your part and you will enjoy safe, trouble free operation for years to come. This instruction manual is not intended to include a comprehensive listing of all details for all procedures required for placement, operation and maintenance. If you have a question about a procedure or are uncertain about any detail, **Do Not Proceed.** Please contact Ixom Watercare Customer Service at **866-437-8076** to speak to a representative.

IMPORTANT!!!

Follow all federal and state laws in regards to safety regulations of working at heights, confined spaces, rescue, etc. as required by the U.S. Department of Labor, Occupational Safety and Health Administration. Use necessary PPE when placing and servicing this unit.

ELECTRICAL HAZARD

WARNING: THIS EQUIPMENT CONTAINS HIGH VOLTAGE! ELECTRICAL SHOCK CAN CAUSE SERIOUS OR FATAL INJURY. ONLY QUALIFIED PERSONNEL SHOULD ATTEMPT PLACEMENT, OPERATION AND MAINTENANCE OF ELECTRICAL EQUIPMENT. REMOVE ALL SOURCES OF ELECTRICAL POWER BEFORE PERFORMING ANY SERVICE WORK TO THE MACHINE. USE PROPER LOCKOUT TAGOUT (LOTO) PROCEDURES TO ENSURE A SAFE WORK ENVIRONMENT.

Crush Hazard

WARNING: DO NOT REMOVE ANY FLOAT ASSEMBLY BOLTS OR PINS WHILE EQUIPMENT IS FLOATING IN WATER. EQUIPMENT MUST BE SECURELY SUPPORTED BEFORE PERFORMING SERVICE.

Rotating Hazard

CAUTION: KEEP BODY APPENANDAGES OR LOOSE CLOTHING AWAY FROM EQUIPMENT WHILE OPERATING. ENSURE EQUIPMENT IS OFF BEFORE ATTEMPTING SERVICE.

Entanglement Hazard

WARNING: ENSURE THAT PERSONNEL ARE CLEAR OF THE ELECTRIC CORD AND CHAIN TO AVOID ENTANGLEMENT.

Thin Ice Hazard

WARNING: ICE SURROUNDING MACHINE MAY NOT SUPPORT WEIGHT, KEEP CLEAR OF THIN ICE.

Laceration Hazard

CAUTION: EDGES MAY BE SHARP AND CAUSE LACERATION IF PROPER CARE IS NOT USED.

Safety

Protect Yourself

It is important that you comply with all relative OSHA and local regulations while installing and performing any maintenance to the mixer circulation equipment.

Key OSHA Compliance Standards that must be followed (and not limited to) are:

- **1910.146 Permit-required confined spaces**
- **1910.147 Lockout/Tagout**
- **1926.500 Fall Protection**

Fall Protection Tips

- Identify all potential tripping and fall hazards before work starts.
- Look for fall hazards such as unprotected floor openings/edges, shafts, open hatches, stairwells, and roof openings/edges.
- Inspect fall protection and rescue equipment for defects before use.
- Select, wear, and use fall protection and rescue equipment appropriate for the task.
- Secure and stabilize all ladders before climbing.
- Never stand on the top rung/step of a ladder.
- Use handrails when you go up or down stairs.
- Practice good housekeeping. Keep cords, welding leads and air hoses out of walkways or adjacent work areas.

Refer to 29 CFR 1926.500 for complete regulations set by OSHA. Refer to your state's regulations if your state established and operates their own safety and health programs approved by OSHA.

Lockout Tagout

When the On/Off switch is in the "ON" position, the mixer may start up at any time if not already operating. The mixer's On/Off switch can be locked out by placing a pad lock thru the door latch of the controller after the switch has been turned to the "OFF" position. The On/Off switch is to be used as the emergency stop.

Permit-Required Confined Spaces

A confined space has limited openings for entry or exit, is large enough for entering and working, and is not designed for continuous worker occupancy. Confined spaces include underground reservoirs, ground storage tanks, elevated tanks, silos, manholes, and pipelines.

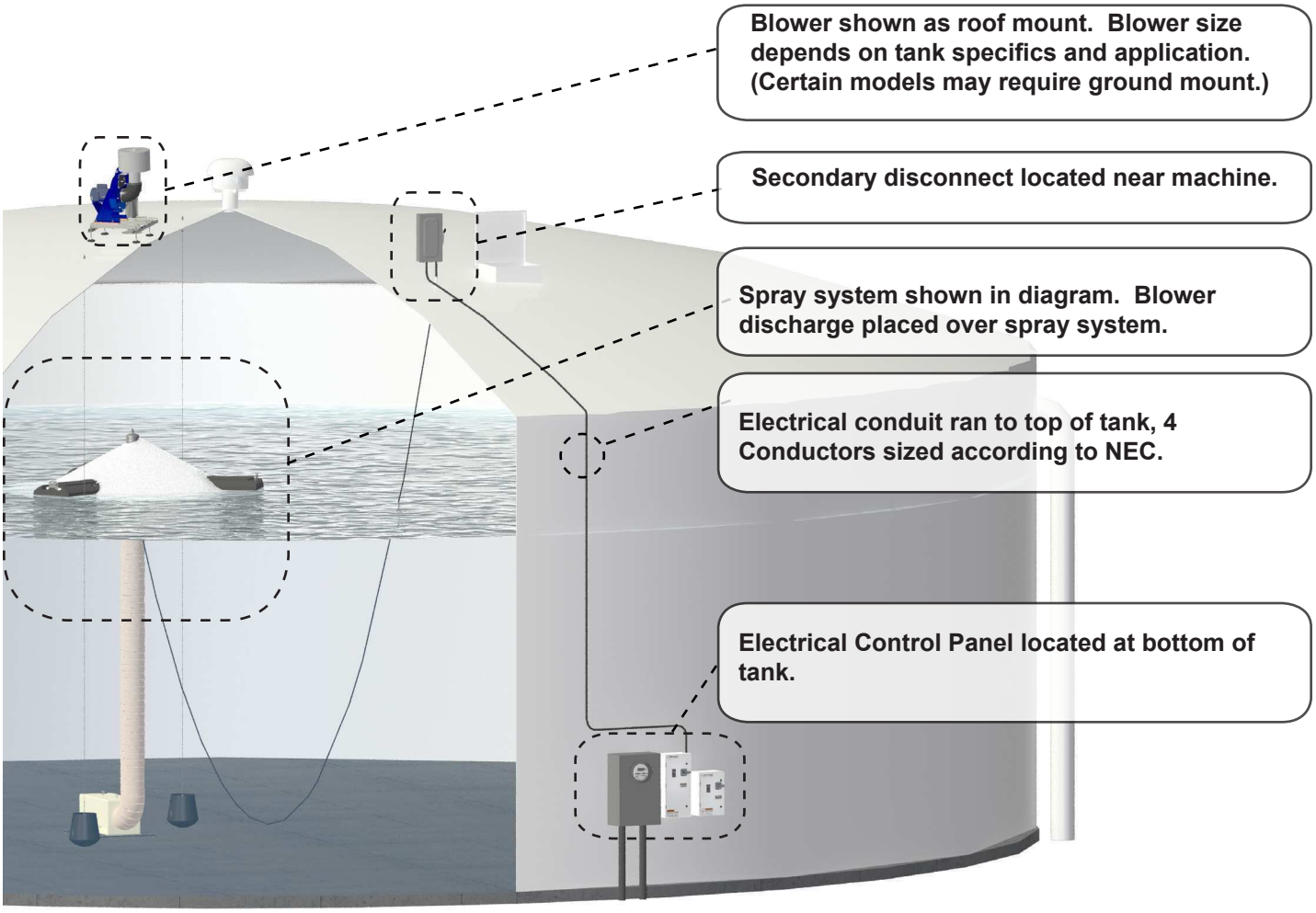
Confined Space Tips

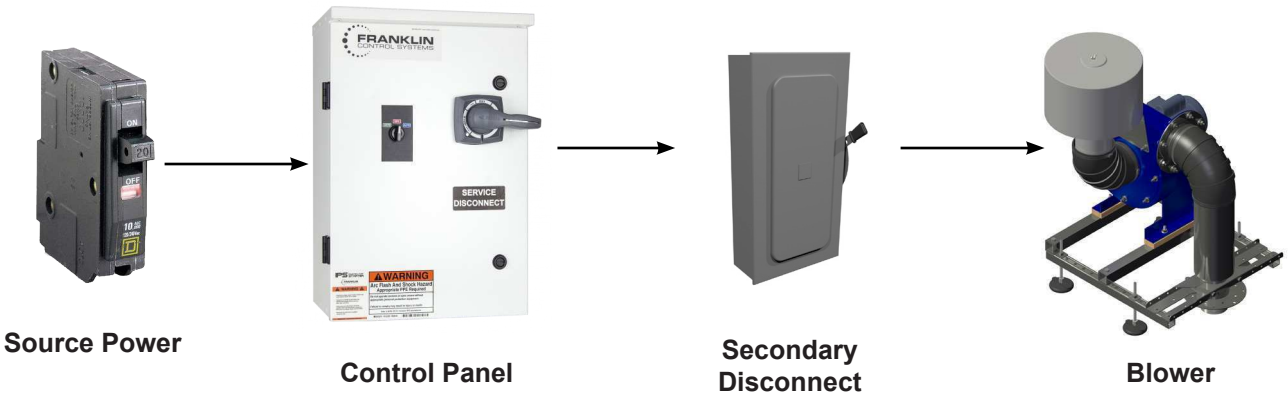
- Do not enter permit-required confined spaces without being trained and without having a permit to enter.
- Review, understand and follow employer's procedures before entering permit-required confined spaces and know how and when to exit.
- Before entry, identify any physical hazards.
- Before and during entry, test and monitor for oxygen content, flammability, toxicity or explosive hazards as necessary.
- Use fall protection, rescue, air monitoring, ventilation, lighting and communication equipment according to entry procedures.
- Maintain contact at all times with a trained attendant either visually, via phone, or by two-way radio. This monitoring system enables the attendant and entry supervisor to order you to evacuate and to alert appropriately trained rescue personnel to rescue entrants when needed.

Refer to 29 CFR 1910.146 for complete regulations set by OSHA. Refer to your state's regulations if your state established and operates their own safety and health programs approved by OSHA.

Placement Overview

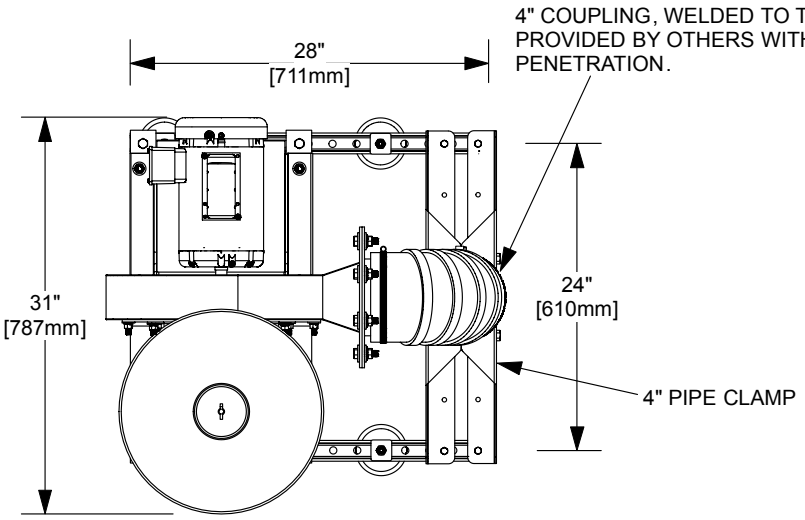
Blower

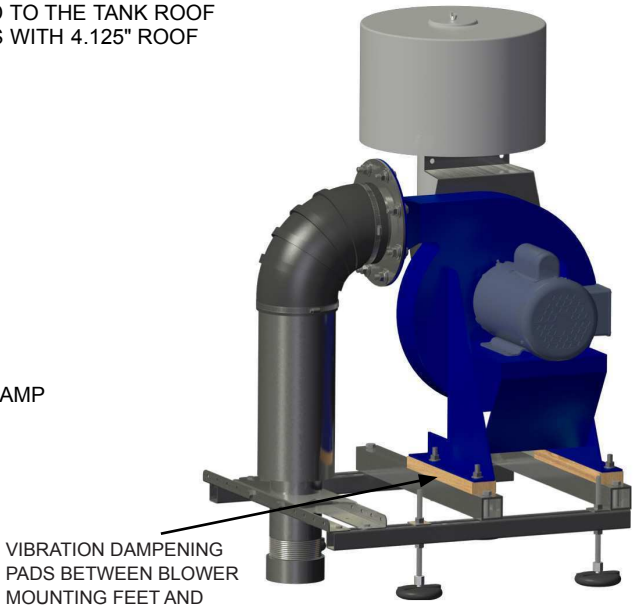


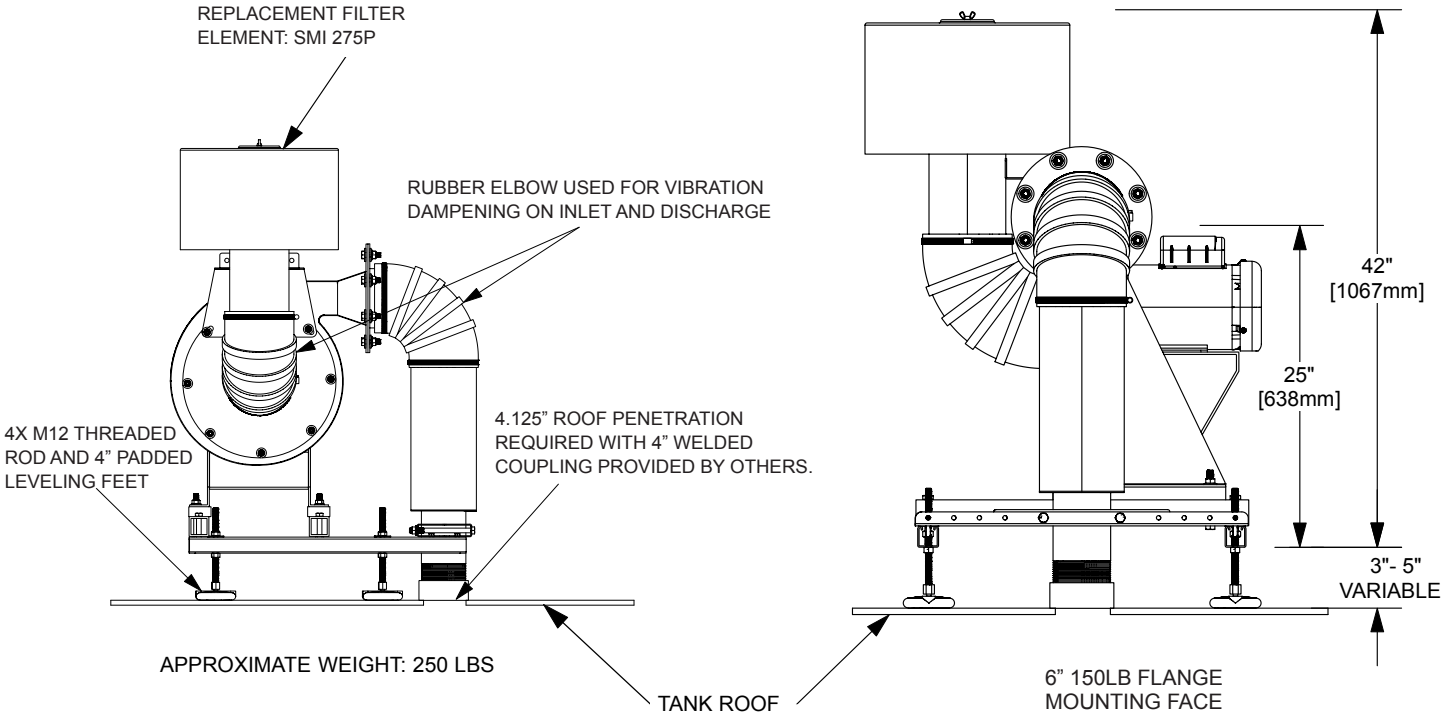


Source Power | Control Panel | Secondary Disconnect | Blower

WELDED MOUNTING FOR STEEL ROOF







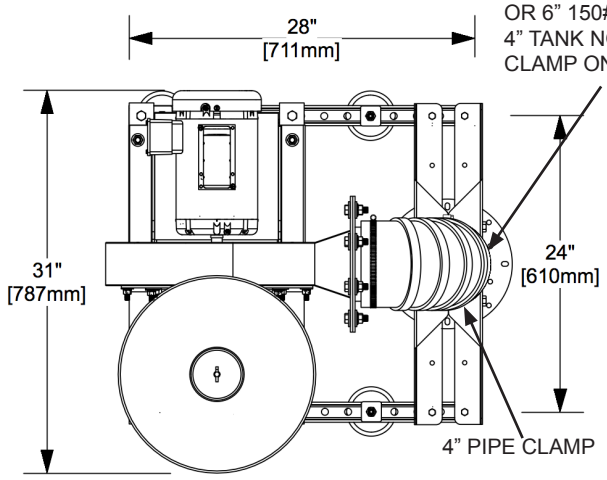
ORIENTATION NOTE: BLOWER ATTACHMENT TO COUPLING FLANGE NEEDS TO BE ORIENTATED SO BLOWER IS ON THE DOWNWARD SIDE OF THE SLOPE FROM THE COUPLING.

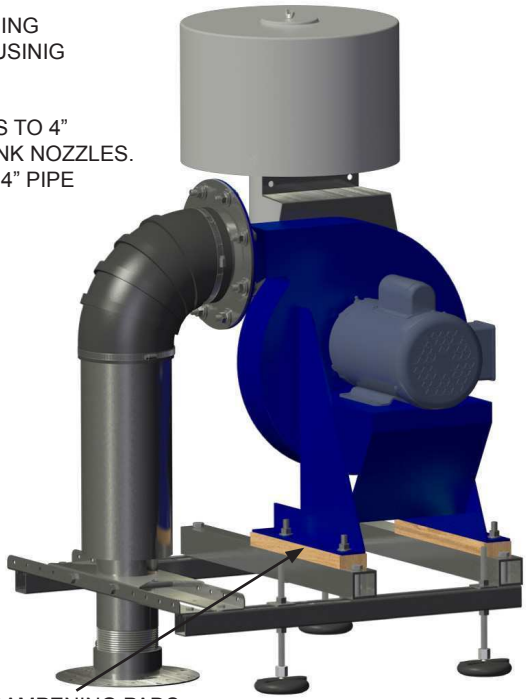
BOLTED ROOF MOUNT

for Steel Roof

4" COUPLING FLANGE, MOUNTED USING SS M8 BOLTS & WASHERS, SEALED USINIG LEXEL HIGH GRADE SEALANT.

NOTE: 4" COUPLING FLANGE ADAPTS TO 4" OR 6" 150# FLANGES OF TYPICAL TANK NOZZLES. 4" TANK NOZZEL PREFERED DUE TO 4" PIPE CLAMP ON BLOWER SKID.

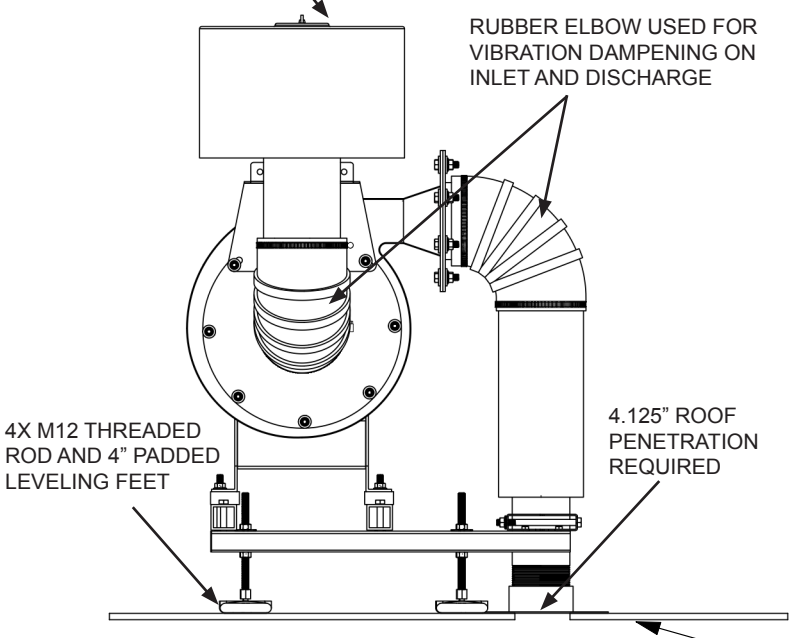


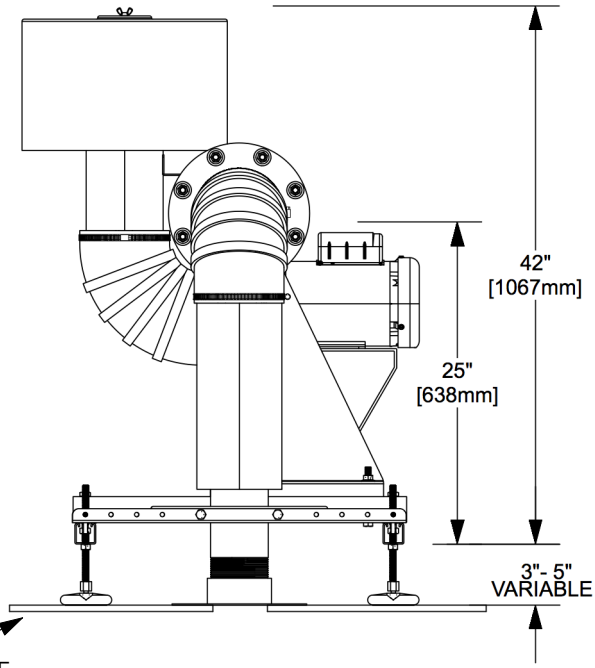


VIBRATION DAMPENING PADS BETWEEN BLOWER MOUNTING FEET AND BASE FRAME

REPLACEMENT FILTER ELEMENT: SMI 275P

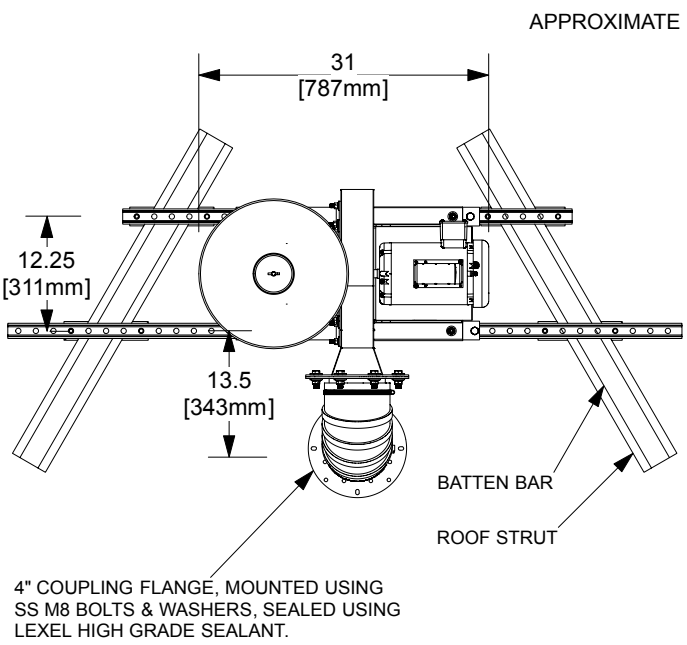
RUBBER ELBOW USED FOR VIBRATION DAMPENING ON INLET AND DISCHARGE

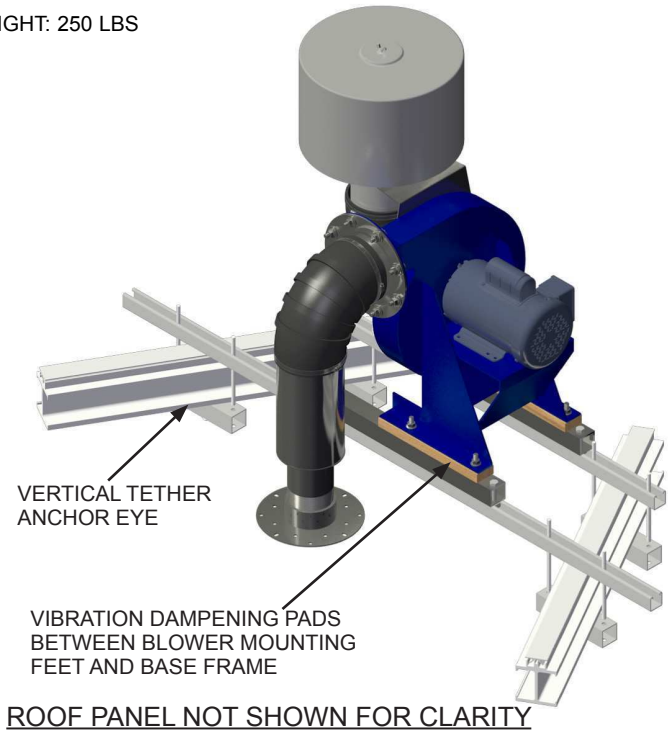




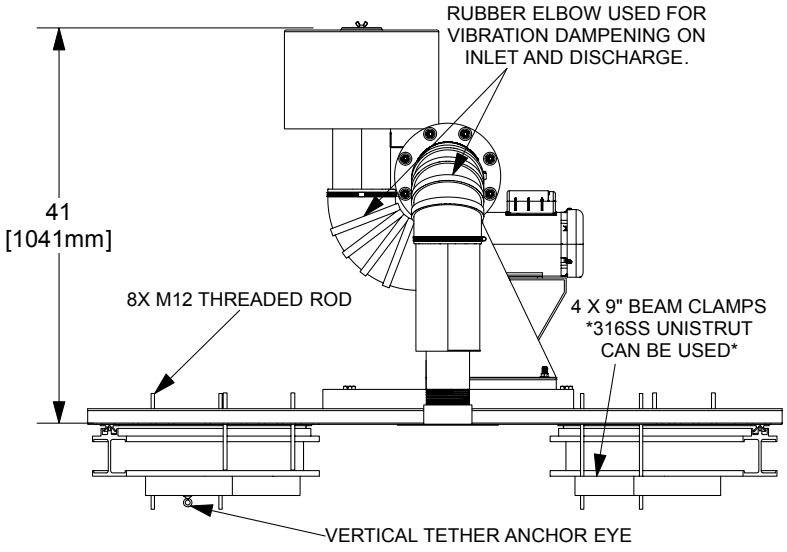
ORIENTATION NOTE: BLOWER ATTACHMENT TO COUPLING FLANGE NEEDS TO BE ORIENTATED SO BLOWER IS ON THE DOWNWARD SIDE OF THE SLOPE FROM THE COUPLING.

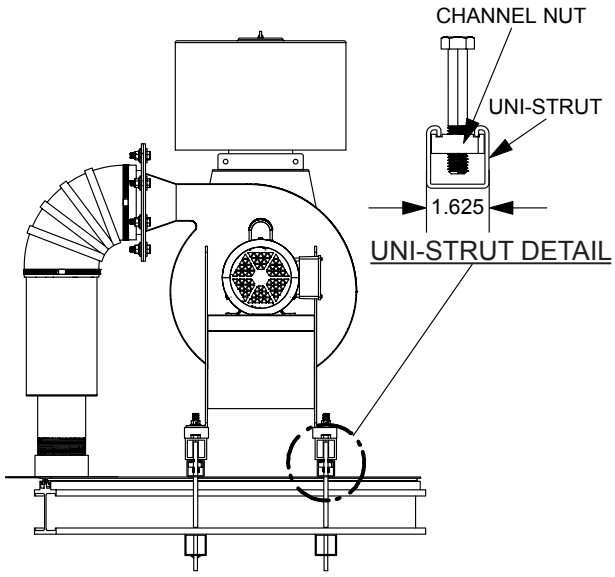
MOUNTING FOR GEODESIC DOME





ROOF PANEL NOT SHOWN FOR CLARITY





ALUMINUM GEODESIC DOME ROOF ATTACHMENT GUIDELINES:

1. UNISTRUT TO BE INSTALLED AT 12.5” CENTER SPACING ACROSS TWO ROOF BEAMS USING (4) 316SS BEAM CLAMPS AND M12 THREADED ROD, WASHERS AND M12 HARDWARE. M12 SS JAM NUT AND WASHER TO BE USED BETWEEN ROOF PANEL AND UNISTRUT TO SEAL EACH PENETRATION.

2. A SINGLE 4-1/8” HOLE AND (6) 11/32” DIA. HOLES WILL BE DRILLED TRHOUGH TOP OF ALUMINUM TANK. (6) 316SS M8 BOLTS, WASHERS AND NYLOCK NUTS TO BE USED TO BOLT COUPLING FLANGE TO TANK ROOF.

3. LEXEL SEALANT TO BE USED AT EVERY PENETRATION POINT, INCLUDING BETWEEN TANK SURFACES AND HARDWARE, TO SUSTAIN TANK INTERGRITY.

4" Coupling Flange Assembly

For Steel Roof Systems

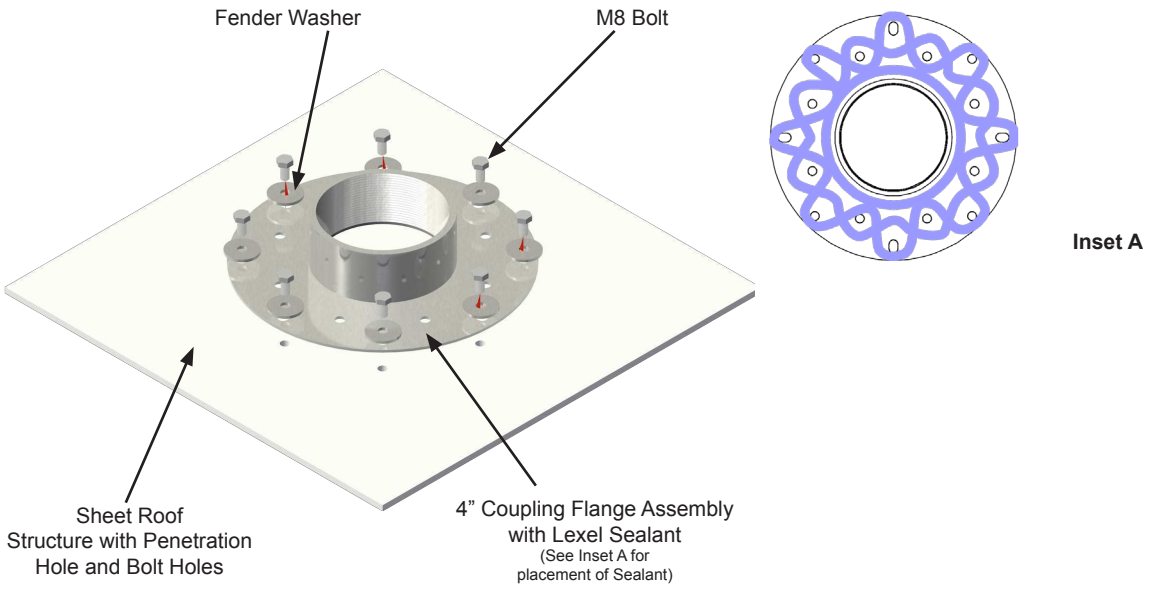


Figure 1: Outside Tank Bolt Installation

***** NOT DESIGNED AS A SUBMERSIBLE PENETRATION *****

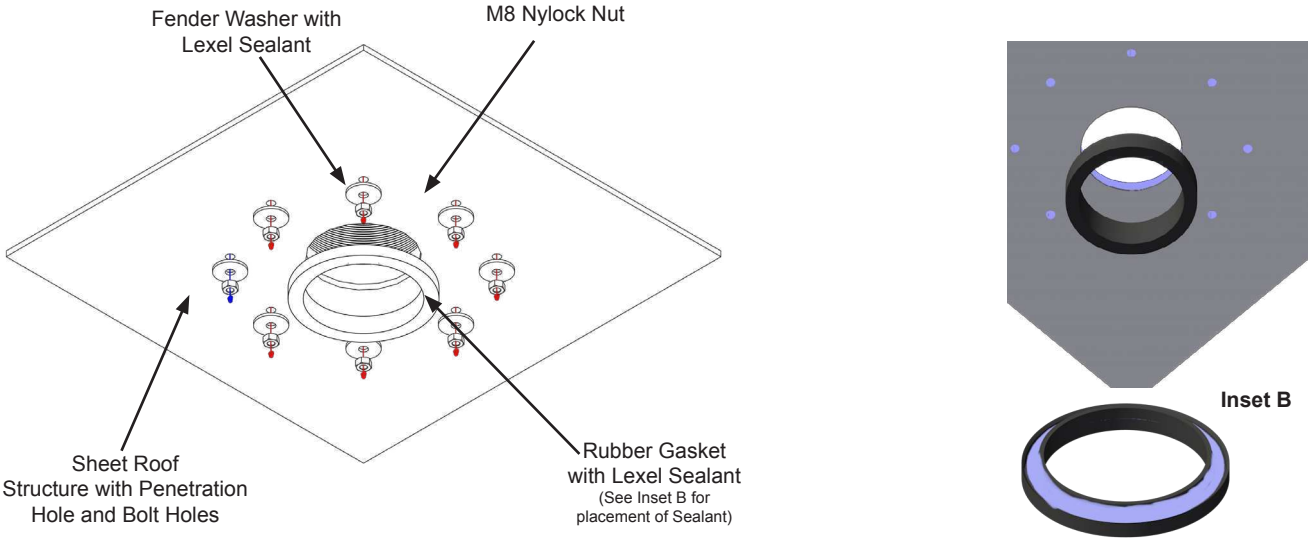


Figure 2: Inside Tank Bolt, Gasket and Flange Installation

4" Coupling Flange Assembly

For Steel Roof Systems

T316 SS FLANGE PENETRATION: 4" COUPLING FLANGE ASSEMBLY

TANK PENETRATION IS SEALED WITH
PVC GASKET ACCOMPANIED BY
LEXEL® CO-POLYMER RUBBER-BASED SEALANT

1 FLANGE PER MACHINE:

BOLT PATTERN:	STD 4" 150LB FLANGE STD 6" 150LB FLANGE
GASKET OD:	5.350"
BORE REQUIRED OD:	4.125"
BOLT HOLE OD:	0.346"

Procedural Steps

1. Use Coupling Flange as a template for center hole and at least 6 bolt holes and mark on roof.
2. Make sure to not drill into interior structural beams. Pick a clear location to place the flange.
3. Mark and then cut holes, catch and collect filings.
4. Make sure all holes that have been cut are coated in Lexel sealant.

1 FLANGE PER MACHINE

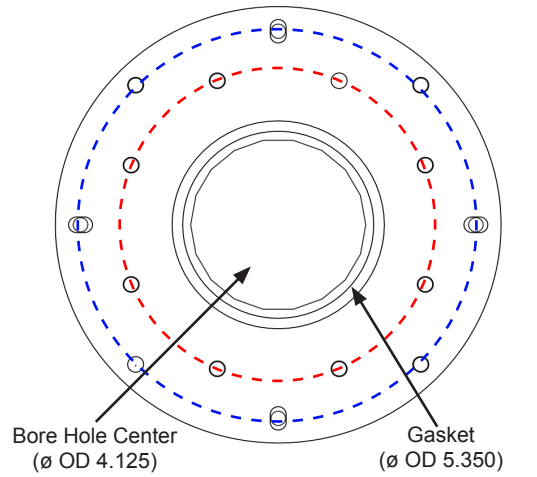


Figure 3: Flange Bolt Pattern Outside Tank

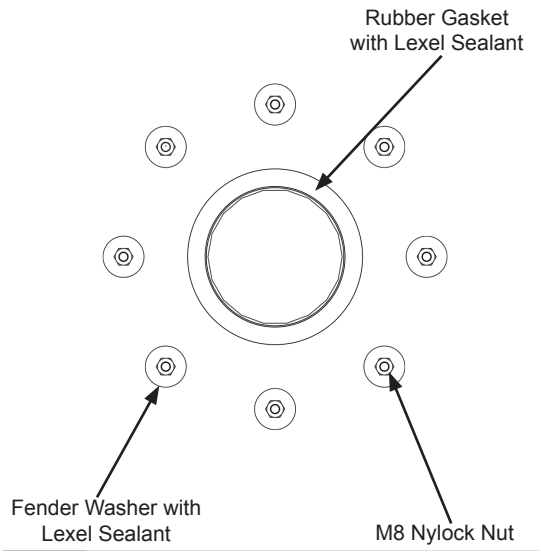
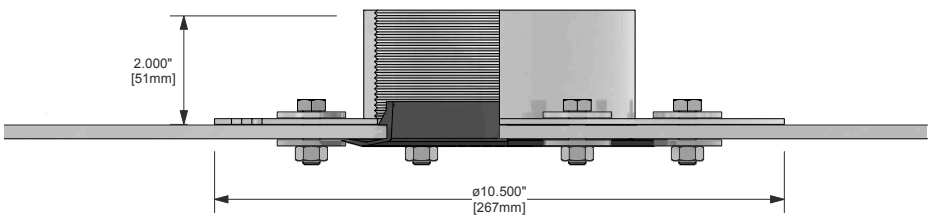
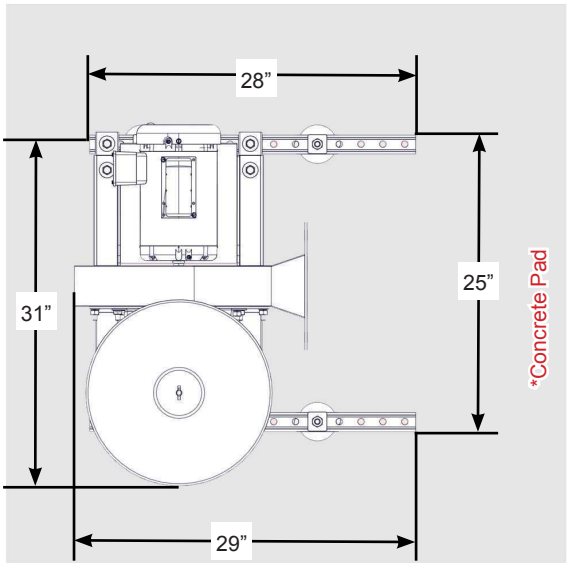


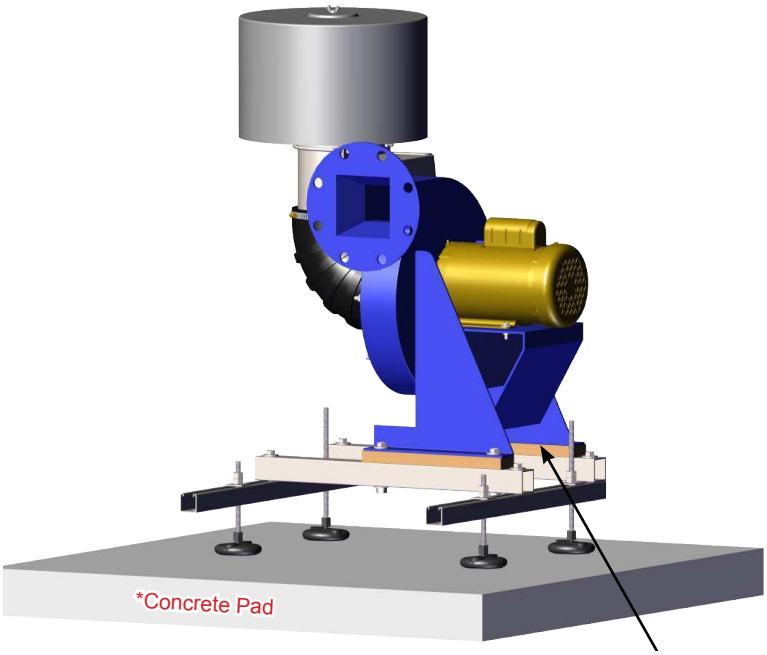
Figure 4: Bolt View Inside Tank

Figure 5: Side Cutaway View of Completed Installation



GROUND MOUNTING

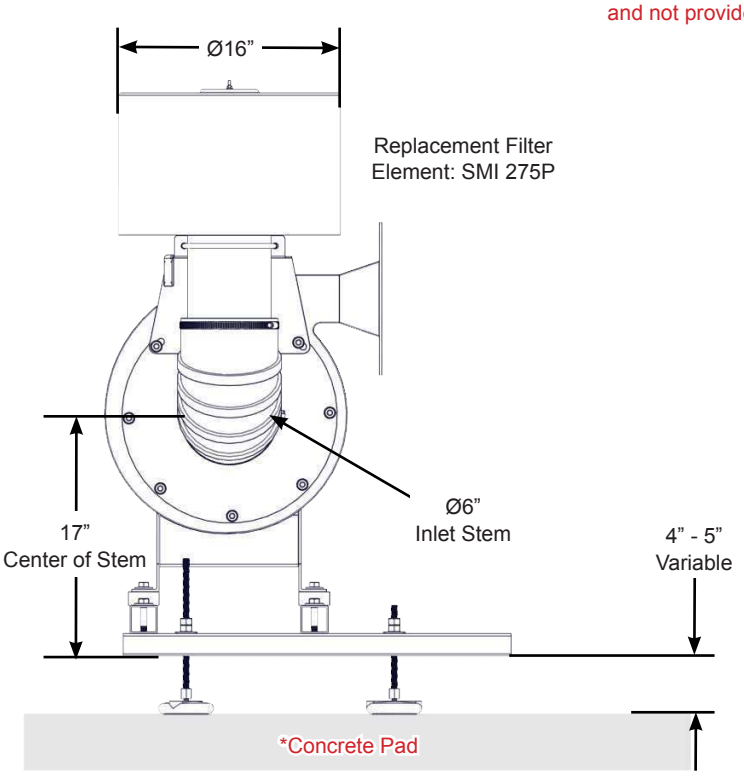


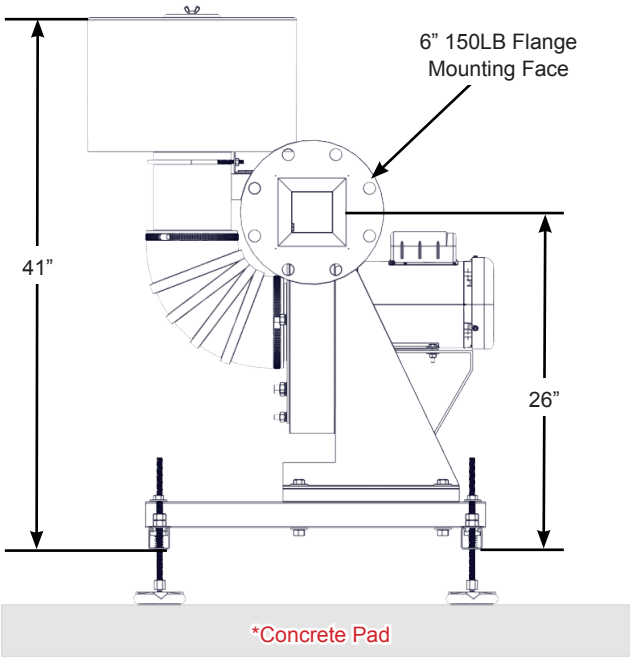


Approximate Weight: 250 LBS

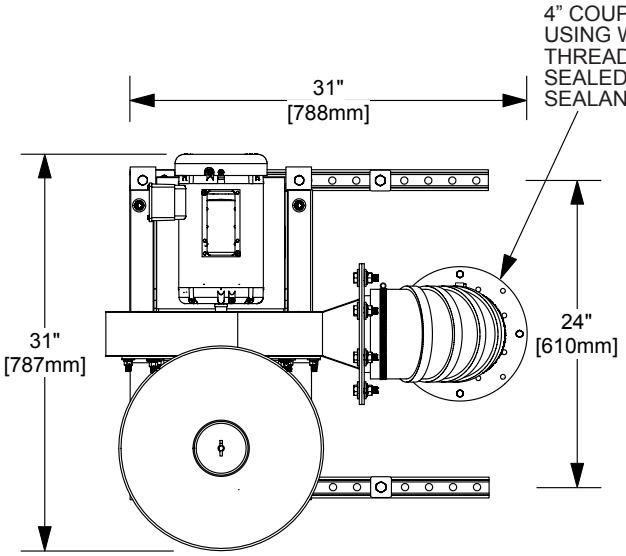
*Concrete Pad is shown for clarity only and not provided by Ixom.

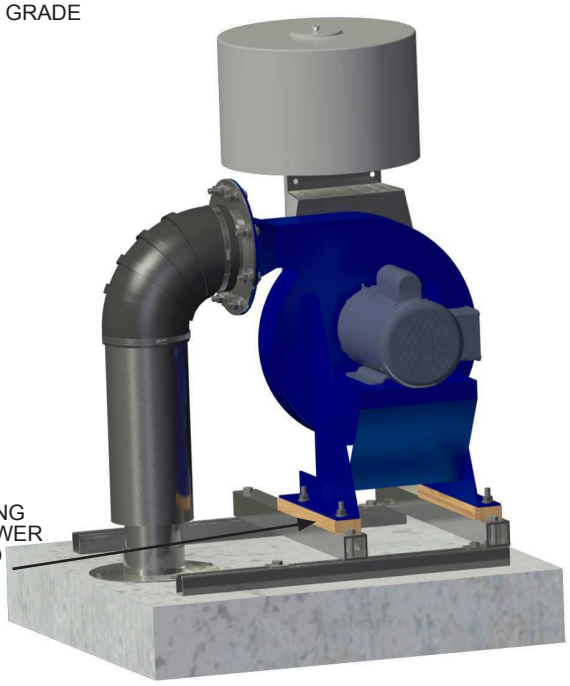
Vibration Dampening Pads Between Blower Mounting Feet and Base Frame

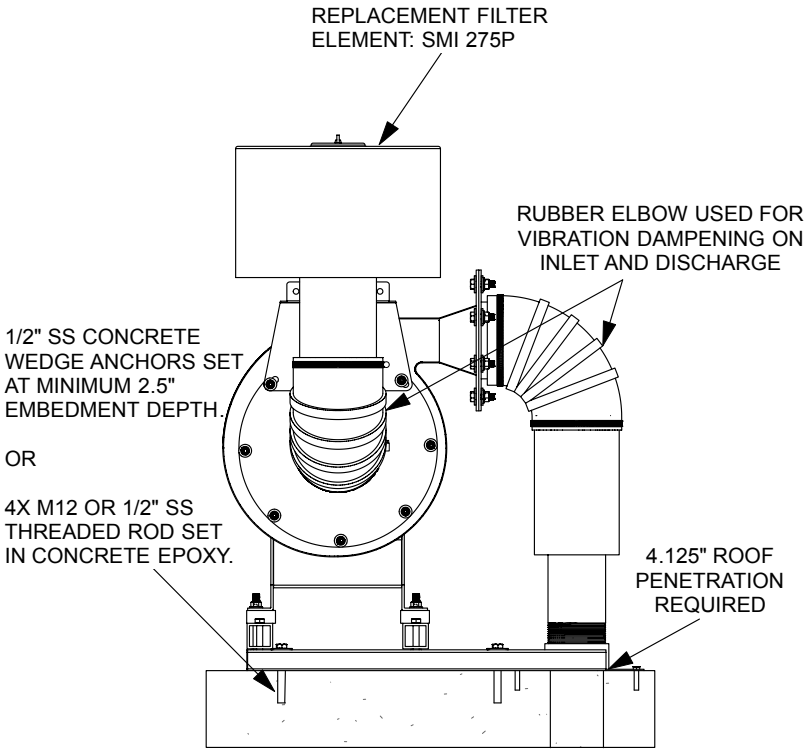


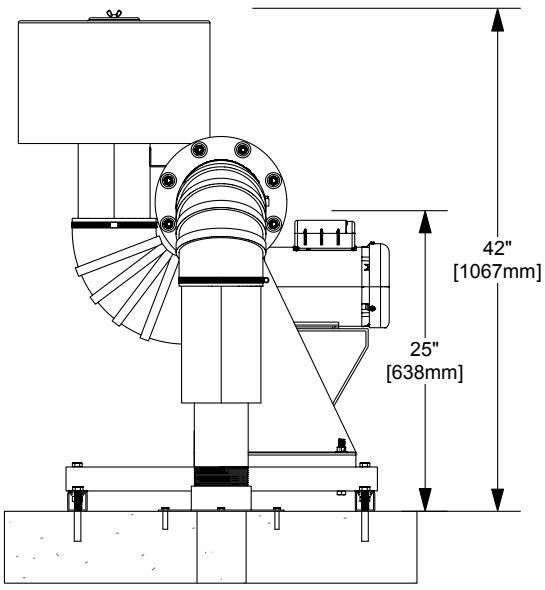


MOUNTING FOR CONCRETE ROOF







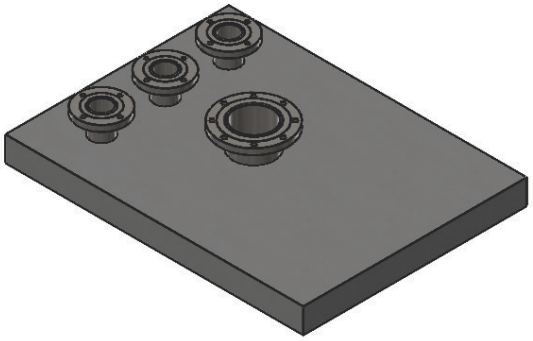


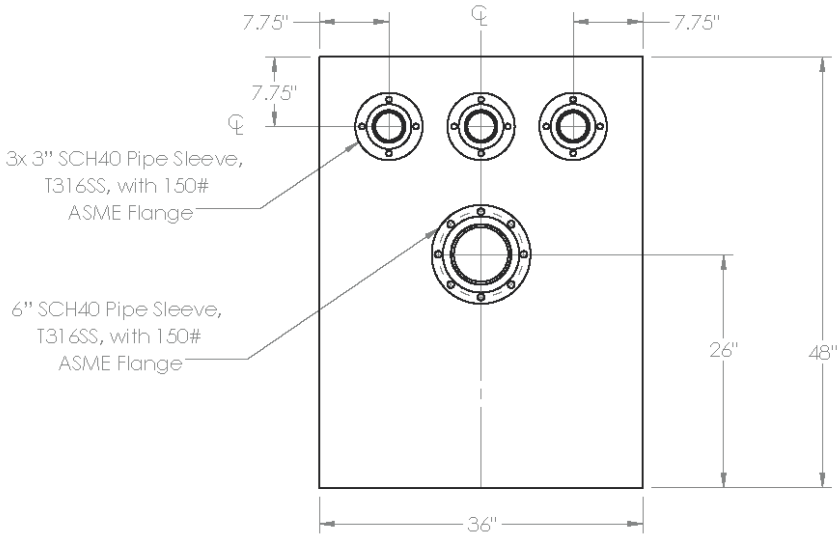
APPROXIMATE WEIGHT: 250 LBS

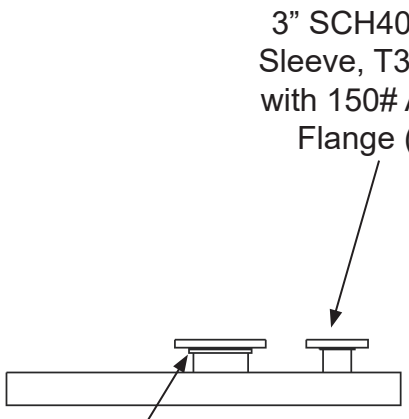
ORIENTATION NOTE: BLOWER ATTACHMENT TO COUPLING FLANGE NEEDS TO BE ORIENTATED SO BLOWER IS ON THE DOWNWARD SIDE OF THE SLOPE FROM THE COUPLING.

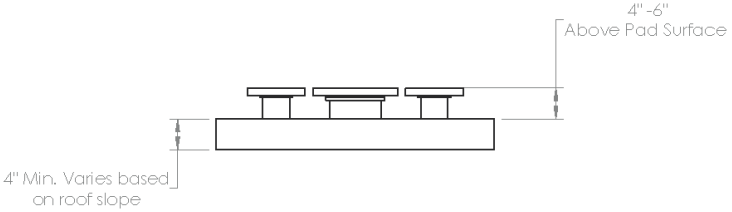
F4 Ventilation Blower Cast Concrete Pad

Supplied by Others, not Ixom

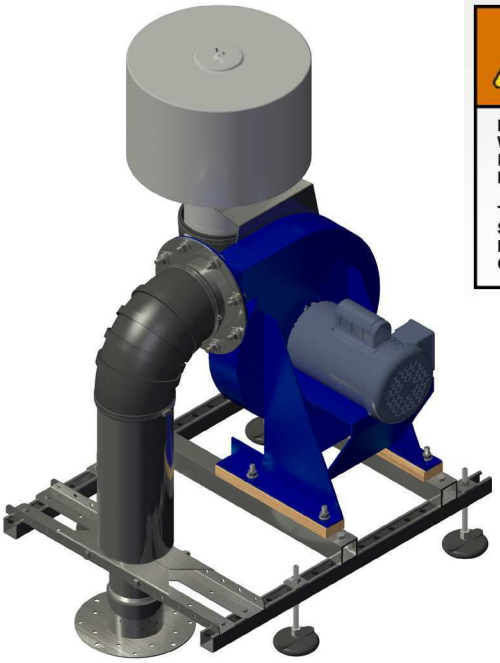








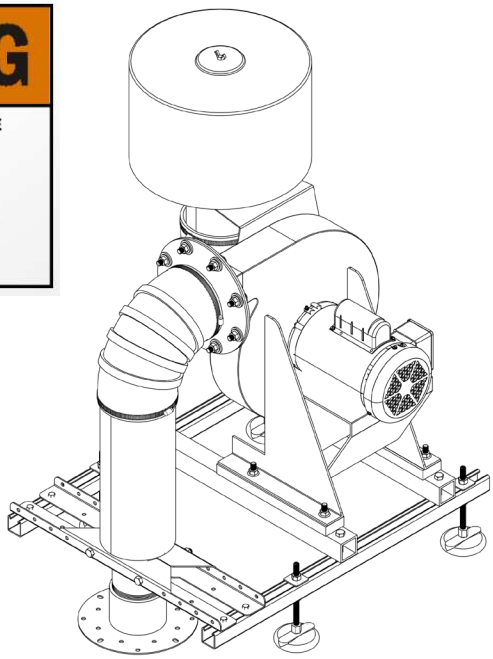
Wiring for F4 Ventilation Blower Unit



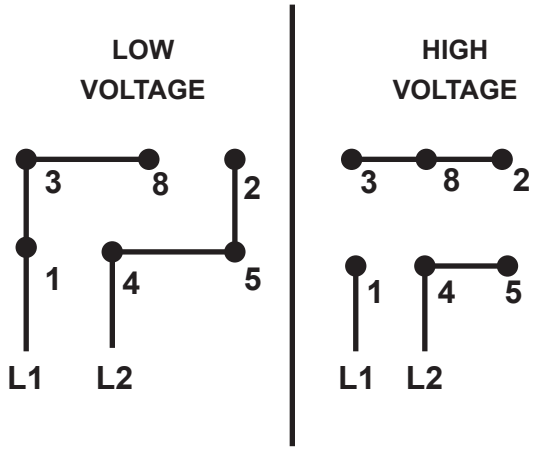
WARNING

MOTOR MUST BE GROUNDED IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE AND LOCAL CODE BY TRAINED PERSONNEL TO PREVENT SERIOUS ELECTRICAL SHOCKS.

TO SERVICE MOTOR, DISCONNECT POWER SOURCE FROM MOTOR AND ANY ACCESSORY DEVICES AND ALLOW MOTOR TO COME TO A COMPLETE STAND STILL.



☐ Single Phase Wiring



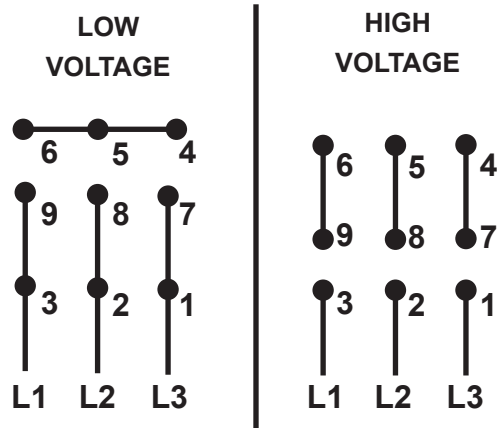
INTERCHANGE 5 AND 8 LEADS TO REVERSE ROTATION.

☐ 23.0 Amps @ 115VAC / 60HZ / 1-Phase
Motor Resistance: 0.2 Ω

☐ 11.5 Amps @ 230VAC / 60HZ / 1-Phase
Motor Resistance: 1.0 Ω

Service Factor: 1.15

☐ Three Phase Wiring



INTERCHANGE ANY TWO LINES (1-3) TO REVERSE ROTATION.

☐ 5.3 Amps @ 208VAC / 60HZ / 3-Phase
Motor Resistance: 4.6 Ω

☐ 5.0 Amps @ 230VAC / 60HZ / 3-Phase
Motor Resistance: 4.6 Ω

☐ 2.5 Amps @ 460VAC / 60HZ / 3-Phase
Motor Resistance: 6.9 Ω

Service Factor: 1.15

F4 Ventilation Blower

Maintenance

Caution: Never attempt maintenance on a blower unless the electrical supply has been completely disconnected, and lockout/tagout procedures are followed. The rotating assembly may also need to be secured to eliminate the potential for wheel rotation due to other means such as wind milling or back feeding from other blowers.

General Maintenance:

Blowers must be regularly inspected, the frequency being determined by the severity of the application. Routine inspections should include the following

Bearing Maintenance:

Motor bearings are pre-packed with grease. For re-lubrication select a grease that is compatible with a #2 Lithium Complex grease.

High Speed Operation - in the higher speed ranges, too much grease will cause over-heating. The amount of grease that the bearing will take for a particular high speed application can only be determined by experience. If excess grease in the bearing causes overheating, it will be necessary to remove grease fitting to permit excess grease to escape. The bearing has been greased at the factory and is ready to run. **When establishing a relubrication schedule, note that a small amount of grease at frequent intervals is preferable to a large amount at infrequent intervals.**

Ixom strongly cautions against over-greasing with too large of amounts per application as stated above. Only personnel that understand using a very little amount of grease per application should be responsible for lubrication of the bearings on the equipment we supply.

Air Filters:

The use of any type of filter requires that it **be kept clean** to prevent excessive pressure drop in the lines.

The dry element of the filter may be cleaned with soap & water and reused.

One filter occupies the filter housing. It is recommended the filter be cleaned periodically, and especially leading into seasons of critical application.

Filter element should be replaced when showing signs of wear which may be typical after several washes.
Filter element replacement should comply with the below requirements:

1,100cfm : 5 Micron : Pleated polyester.
Model: Solberg 275P.

Technical Data Sheet

F4 Ventilation Blower

Technology Description- Single Stage Ventilation Blower with electric motor. Filtered air intake, distributes air inside tank for ventilation of tank head space, designed to evacuate volatilized THM's, gases and other contaminants from the head space. Features 4" tank connection and supported by 4 adjustable self-leveling feet.

Part Numbers - 100015 (single-phase) 100016 (three-phase)

Materials of Construction - T316 stainless steel skid base and hardware, welded steel housing and motor support, epoxy primered with urethane topcoat, radial bladed aluminum impeller, EDPM gasket and elbows.

Air Filter - Duct Sizing Requirement (For Ground Mounted Blowers) - Ø 8" minimum or equivalent open space for up to 100 ft span and 3 elbows. Larger ducting required for greater than 100 ft. 99%+ removal efficiency to 5 micron, pleated polyester air filter rated for 1100 CFM (31 m^3/min), 19ft^2 surface area, washable, epoxy coated steel wire reinforcement on both sides. Galvanized metal end caps and Neoprene gaskets on open ends. Dimensions: 8" ID, 11.75" OD, 9.625" H. Replacement Filter PN: 20012050

Air Flow Rate - Tank gravity vents must allow for 50 square inch (after screens and mesh) minimum open surface area per blower.

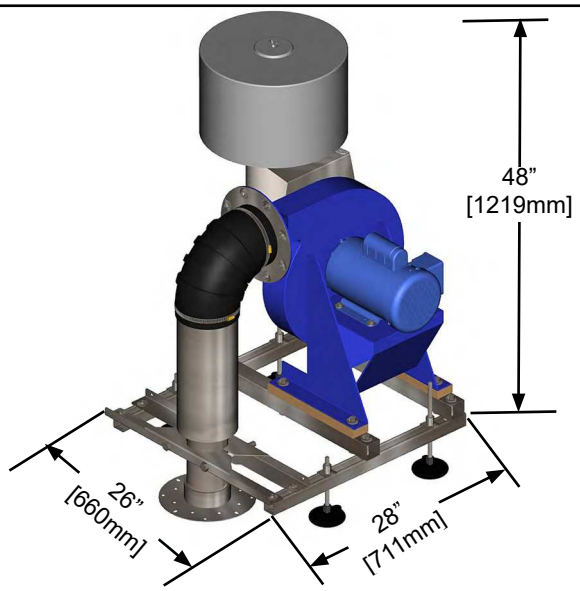


Figure 1: *F4 Ventilation Blower (Steel roof mount configuration shown.)*

Blower Performance (SCFM) at varying Static Pressures (Inches of Water)					
0"	1"	2"	3"	4"	6"
780	775	770	765	760	750

Vibration Isolation - Secured to T316SS skid, separated by cork and/or rubber isolation pads properly sized for blower weight and operation. Additionally, the skid is equipped with (4) 4" self-leveling vibration dampening feet, constructed of glass-reinforced nylon with elastomer pad for anti-skid and light-duty vibration control applications.

Mounting - Ground mount or roof mount configurations available.

Electrical Requirements - Requires 120VAC or 240VAC for single-phase units, and 240VAC or 480VAC for three-phase units, 60Hz power. 208V three-phase available by special request. Each motor is dual voltage and can be wired for either low or high voltage. Ixom recommends secondary disconnect to be located near blower equipment. Three-phase motor protection is recommended. *All conduit, conductors, switches, breakers, emergency stop buttons, control panels and other controls shall be installed in accordance to all NEC, State, and local regulations.* ***(Not supplied by Ixom.)***

Motor - 2HP TEFC induction motor, designed for continuous operation, low power requirement, direct drive, no gearbox and no lubrication schedule required. No heater. Estimated Decibel - 75dB @ 5ft, 65dB @ 25ft, 55dB @100ft.
Motor Bearing - Bearings filled with low-noise, low-friction grease, lubricated for life and are maintenance-free. The grease life is considered L10. (-20°F, +300°F)
Wiring - 3-conductors required for single-phase motors. 4-conductors required for three-phase motors. Electrical conduit body mounted to motor housing for conduit connection and electrical splicing.

Shipping Size / Weight

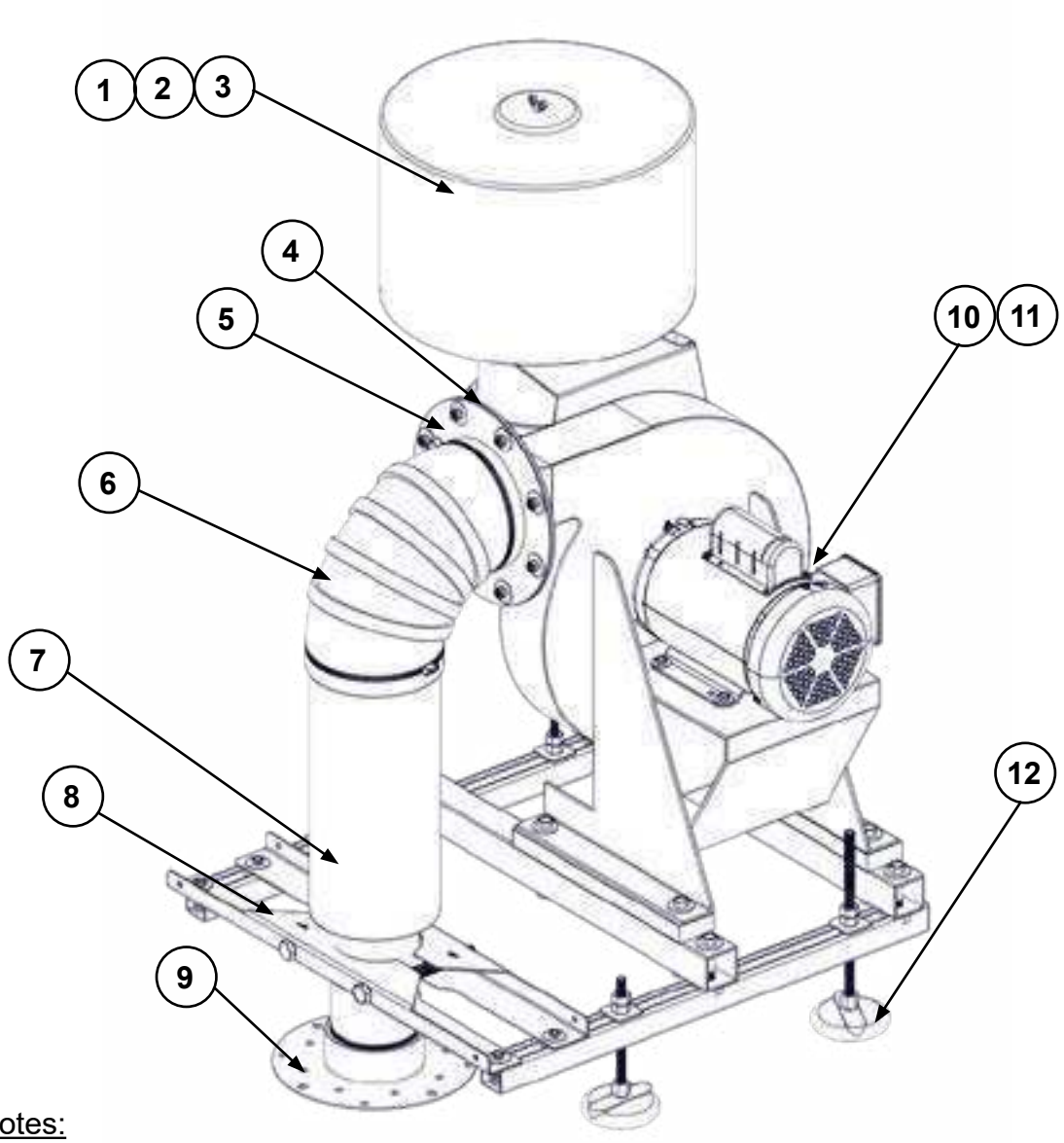
- **Crate -** 42in x 26in x 24in (106cm x 66cm x 61cm) / 350lbs (158kg). *Exact weight and dimensions may vary dependent on blower and roof mount configuration.*

Maintenance / Warranty - Limited maintenance. Limited 2-year parts only. See GridBee THM Removal Systems Limited Replacement Warranty for more details.

Subject to change without notice.

F4 Ventilation Blower

Parts Diagram



General Notes:

1. 20012053 - Air Filter Housing
2. 100703 - Pre-Filter, Air Element (INSIDE COVER)
3. 20012050 - Air filter Element, 1100 CFM 5 Micron (INSIDE COVER)
4. 16016041 - Gasket, 6” X 1/8” x 150LB Red Rubber
5. 100014 - Discharge Flange, 6”
6. 16011045 - Elbow, 6” ID EPDM 90°
7. 18262040 - Blower Discharge Pipe, 2HP, 6” X 4” NPT
8. 18124158 - Channel Clamp
9. 18264145 - Flanged Coupling, 4”
10. 20012004 - Blower, 2HP 3Phase
11. 20012002 - Blower, 2HP Single Phase
12. 12015161 - Leveling Feet. 4” Glass Filled Nylon. Non Skid Pad

GridBee THM Removal Systems

Limited Replacement Warranty

GridBee SN Spray Units. GridBee SN Spray Units and blowers are warranted to be free of defective parts, materials, and workmanship for a period of two years from the date of purchase. The optional control panels, by other manufactures, are covered by a manufacturer's warranty of one year from date of purchase. This warranty is valid only for use of the GridBee THM Removal System in accordance with the owner's manual and any initial and ongoing factory recommendations. This warranty is limited to the repair or replacement of defective components only and does not apply to normal wear and tear. If the factory's service crews performed the original on-site placement and startup, then this warranty also includes labor. Where labor is included, in lieu of sending a factory service crew to the site for minor repairs, Ixom may choose to send the replacement parts to the owner postage-paid and may pay the owner a reasonable labor allowance, as determined solely by Ixom, to install the parts. There is no liability for consequential damages of any type. The warranty that is submitted and provided with the purchased equipment is the valid warranty.

GridBee control panels, and any optional accessories. These items are considered "buyout" items for Ixom, and as such include a warranty against defects in material and workmanship for one year from the date of purchase. This warranty covers parts only, not labor. Parts that are determined by Ixom to be defective in material or workmanship under normal use during the one year warranty period will be repaired or replaced. Shipping charges are the responsibility of the customer.

Terms applicable to all equipment. This Limited Replacement Warranty is subject to the terms of Ixom's General Terms and Conditions of Sale. In the event of any inconsistency between the terms of this Limited Replacement Warranty and Ixom's General Terms and Conditions of Sale, the terms of this Limited Replacement Warranty shall prevail to the extent of that inconsistency.

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We design and manufacture many trusted brands including GridBee®, SolarBee®, MIEX®, and ResidualHQ© for use across the water quality spectrum. This includes solutions for Water Treatment, Distribution Treatment, Wastewater Treatment and Lakes & Source Water Reservoirs.

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