
Fan Equipment Co., Inc.

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Revised 11-10-2009

DETAILED SPECIFICATIONS FOR TRAILER MOUNTED VENTILATING FAN

1. Ventilation Fan:

- a. **Type:** Heavy duty, industrial, backward curve fan. The fan shall have an efficiency rating of not less than 75 percent.
- b. **Rating:** 12,000 CFM minimum capacity at 4" SPWG.
- c. **Housing:** The fan housing shall be of heavy welded steel Construction with a single inlet and single 18- inch screened outlet. The last 3 inches of the outlet shall be flat and round to allow secure attachment of a standard 18" flexible duct. The inlet shall be sufficiently shrouded to reduce fan noise to the sides of the unit.
- d. **Shaft:** 1045 TG&P Steel fan shaft with pressed carbon shaft seal. Split-block spherical roller bearings. (400,000 hr L-10 life)
- e. **Safety:** AMCA "B" Spark Resistant Design with aluminum fan wheel. Heavy gauge screens on the air inlet and air outlet.

2. Engine:

- a. **Type:** Four-cycle industrial diesel engine with full USA manufacture's warranty. A "grey market" engine is not acceptable. Engine shall be California Air Resources Board and Environmental Protection Agency certified for on-road use. Engine shall be oil lubricated and water cooled.
- b. **Rating:**
 - 22 BHP minimum continuous rating at 3000 rpm
 - 12.5 BHP minimum continuous rating at 1800 rpm
 - 45 LB-FT minimum continuous rating at 1800 rpm

12000 CFM Portable Ventilating Fan

c. **Air Intake and Exhaust System:** The air intake and exhaust system shall be designed and constructed for minimal noise levels with minimal loss of engine performance.

(1) **Intake System:** The air intake system shall be provided with an enclosed air filter housing with replaceable filter element.

(2) **Exhaust System:** The engine shall have a vertical exhaust with muffler and raincap. The point of exhaust shall be positioned so as to prevent the exhaust gases from being drawn in to the ventilating fan inlet. The entire exhaust system shall be well supported to reduce noise generated by the exhaust pipe and muffler shell.

(a) **Muffler:** The exhaust system shall incorporate a heavy duty aluminized steel muffler.

(b) **Exhaust Pipe:** The exhaust pipe shall be heavy duty aluminized steel or stainless steel construction. Flex pipe shall not be used. The pipe shall be assembled with wide bands to ensure leak-free operation.

(b) **Raincap:** The exhaust raincap shall be a Mercury Products Corporation "Silencer" raincap, zinc plated construction.

d. **Cooling System:** The engine cooling system shall provide for continuous engine operation at an ambient air temperature of 110 F while providing for full fan load delivering 12,000 cfm at 4-inches SPWG. A coolant overflow tank shall be provided.

e. **Electrical System:** The engine shall be electric start and provided with a 12V electrical ignition system, 12 V – 1.0 KW starter, and 12V – 20A alternator

f. **Controls and Gauges** The following controls and gauges shall be mounted on a central control panel located inside the engine enclosure.

(1) Key start ignition switch with three keys

(2) Hour meter

(3) Oil pressure indicator light

(4) Temperature indicator light

(5) Ammeter indicator light

g. **Fuel Tank** A 20 gallon capacity fuel tank with lockable fuel cap and fuel level indicator shall be mounted to the assembly frame. Fuel supply and ventilation lines shall be routed, supported, and protected to prevent in-service

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damage or vandalism. The method of protection shall be approved by the Engineer prior to construction.

h. Battery: A heavy duty 12 volt, automotive-type battery sized for the service required shall be included. The battery shall be mounted in a fully enclosed battery box with provisions for pad lock or key lock. The interior of battery box shall be constructed of a material which will not corrode in the presence of battery acid gases. Exact mounting location of the battery box shall be approved by the Engineer.

i. Manufacturer's Standard Warranty: The engine shall be warranted by the manufacturer for no less than 5-years/5000 hours. The manufacturer's standard warranty information shall be included in a document delivery envelope.

4 Drive Assembly:

The fan shall be driven through a fixed pitch V-belt drive assembly connected to a hand-operated centrifugal clutch with overspeed protection. Shaft bearings shall be spherical roller bearing construction with 400,000 hour L-10 life.

5. Enclosures:

a. Belt and Shaft Guards: The unit shall be equipped with OSHA belt and shaft guards. The guards shall be removable for belt and shaft maintenance.

b. Engine Enclosure: The entire engine assembly shall be covered by a engine enclosure. The enclosure shall be removable to allow unrestricted access to the engine. The enclosure shall be equipped with hinged access doors to allow engine control and routine engine maintenance without removal of the enclosure.

(1) Enclosure Construction: The enclosure shall be of heavy steel construction with adequate bracing to reduce engine and vibration transmitted noise. Soundproofing materials, baffles and deflectors shall be incorporated in to the enclosure as required to minimize the transmittal of engine noise.

(2) Access Doors: Access doors shall be of heavy steel construction and shall have continuous hinges and heavy duty rubber tie-down latches. Access door openings shall incorporate rubber seals to minimize the transmission of engine and vibration-induced noise.

6. Assembly Frame:

The fan, engine, drive assembly, and enclosures shall be mounted on a structural steel assembly frame. The frame shall be constructed from structural steel tubing or equivalent strength structural steel shapes with adequate cross members and bracing to maintain proper alignment of all assembly components and to resist torsional stress imposed when operating over rough ground.

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Assembly frame and cross members shall be welded construction. Frame shall be designed such that the stresses shall not exceed one-half of the elastic limit of the materials used with uniformly distributed maximum specified payload.

The assembly frame shall be bolted to the trailer frame with rubber vibration isolation mounts. The frame shall also be restrained to the trailer by free floating dowels or studs capable of restraining the fan/motor/drive assembly in case of failure of the isolation mounts.

7. Trailer:

a. Type: Single-axle equipped for safe and legal highway travel in California at speeds up to 65 mph, without instability, and to withstand towing over rough terrain job sites.

b. Rating: 3500 lb capacity

c. Frame: Trailer frame shall be constructed from structural steel tubing or equivalent strength structural steel shapes with adequate cross members and bracing to maintain proper alignment of unit and to resist torsional stress imposed when operating over rough ground. Trailer frame, tongue, and cross members shall be welded construction. Frame shall be designed such that the stresses shall not exceed one-half of the elastic limit of the materials used with uniformly distributed maximum specified payload.

d. Brakes, Axles, Suspension, and Springs: Brakes, axles, suspension, and springs and related components shall absorb brake torque and weight transfer due to emergency stopping using service brakes with vehicle loaded to specified Gross Vehicular Weight, without damage or loss of control of vehicle.

e. Trailer Axle: Spring axle with brake hubs. Axle, hubs, and bearing to have manufacturer's rated capacity of at least 3500 lbs and greater than or equal to the maximum applied load. Overall width over tires shall be kept to a minimum.

f. Axle Spring Capacity: Not less than 3500 lbs and at least the manufacturer's rated capacity less unsprung weight.

g. Service Brakes: Inertia applied, hydraulic, surge actuated brakes with provisions for automatically stopping trailer in case of breakaway from towing vehicle and for allowing free backing when trailer is reversed.

h. Tires, Rims and Wheels:

Tires, rims and wheels shall have a load capacity equal to or greater than that listed for use in highway service in the current Tire and Rim Association Year Book.

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(1) **Tires:** Radial, single tires on each axle. Tires shall not be over 14 months old at the time of delivery and shall be new, not used or re-tread. All tires shall be identical size and type.

(2) **Rims:** 14-inch minimum size. Five-bolt steel rims. Rims shall be widest size available of those listed in the current Tire and Rim Association Year Book for the tire size and duty.

i. **Fenders:** . Full fenders of at least 16 gauge steel construction.

j. **Trailer Tongue Weight:** The tongue weight shall be not less than 8 percent, nominal, of the gross trailer weight.

k. **Drawbar:** Shall be "A" frame type of not less than four (4) inch structural or reinforced steel channel to carry weight of additional equipment. Standard length drawbar.

l. **Trailer Hitch:** 2" ball coupler shall be bolted to the A-frame drawbar.

m. **Safety Chains:** Two, class 3, safety chains shall be furnished in accordance with SAE J 684f. Chain ends shall be fitted with eye hooks attached with chain shackles. Chains shall have ample strength to hold entire GVW. Connection of chains to trailer shall have a strength equal to or greater than the strength of the chains.

n. **Front Landing Gear:** Heavy-duty, hand screw retractable type operation, with landing pad.

o. **Rear Jack-Legs:** Furnished with not less than one retractable type jack-leg, installed at the rear of the trailer, to stabilize unit during operation. If one jack-leg is furnished, it shall be located at the center of the trailer. If two jack-legs are furnished, they shall be located at the rear corners of the trailer.

p. **Accessories:** All accessories shall be first quality, standard make, complete with necessary fittings and wiring, and securely installed in a workmanlike manner. Lighting system shall be 12 volts. All wiring shall be securely mounted in looms or ready-wired sealed wiring harnesses. Size of wiring looms shall conform to American Trucking Association Standards.

The following accessories shall be furnished and installed:

(1) **Rear Reflectors:** Required.

(2) **Combination-Stop-Tail and Turn-Signal Lights:** Required.

(3) **License Plate Light:** Required

(4) **License Plate Holder:** Required.

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(5) **Clearance Lights:** Required.

(6) **Reflectors:** Required.

(7) **Trailer Electrical Connector:** American Trucking Association Standard, Pollak 11-700 plug, 7-prong type provided on trailer. Wiring shall extend not less than 24 inches beyond the maximum reach of the trailer's tongue. Wiring shall be securely mounted to the trailer.

(8) **Storage Compartment:** Additional storage compartment for ear plugs, safety glasses, and gloves. Dimensions of box shall be approximately 10 in. x 14 in. x 4 in, with provisions for padlock or keyed lock. Padlock is not required. Exact mounting location of the storage compartment shall be approved by the Engineer.

(9) **Chock Blocks:** Two Worden, Model MWG-medium chock blocks or parking brake shall be furnished for each unit delivered. The exact location of the storage brackets will be determined by the engineer.

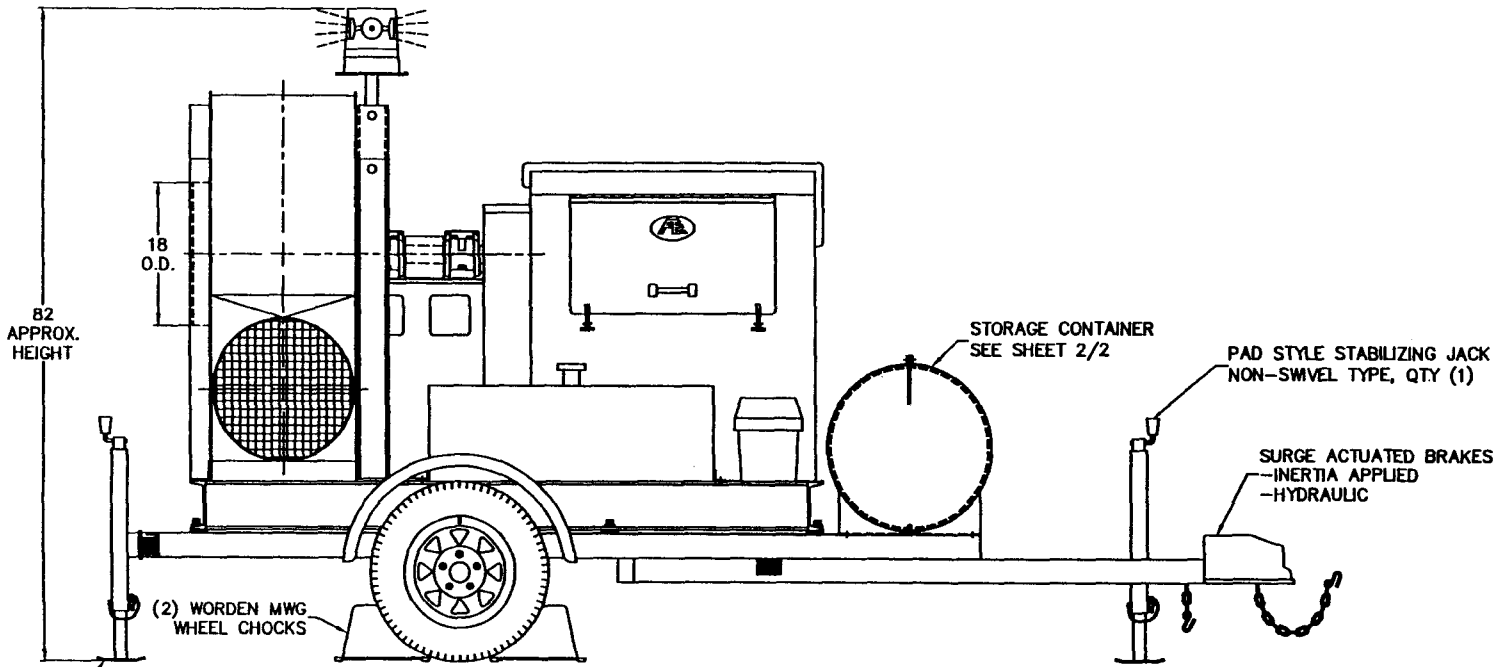
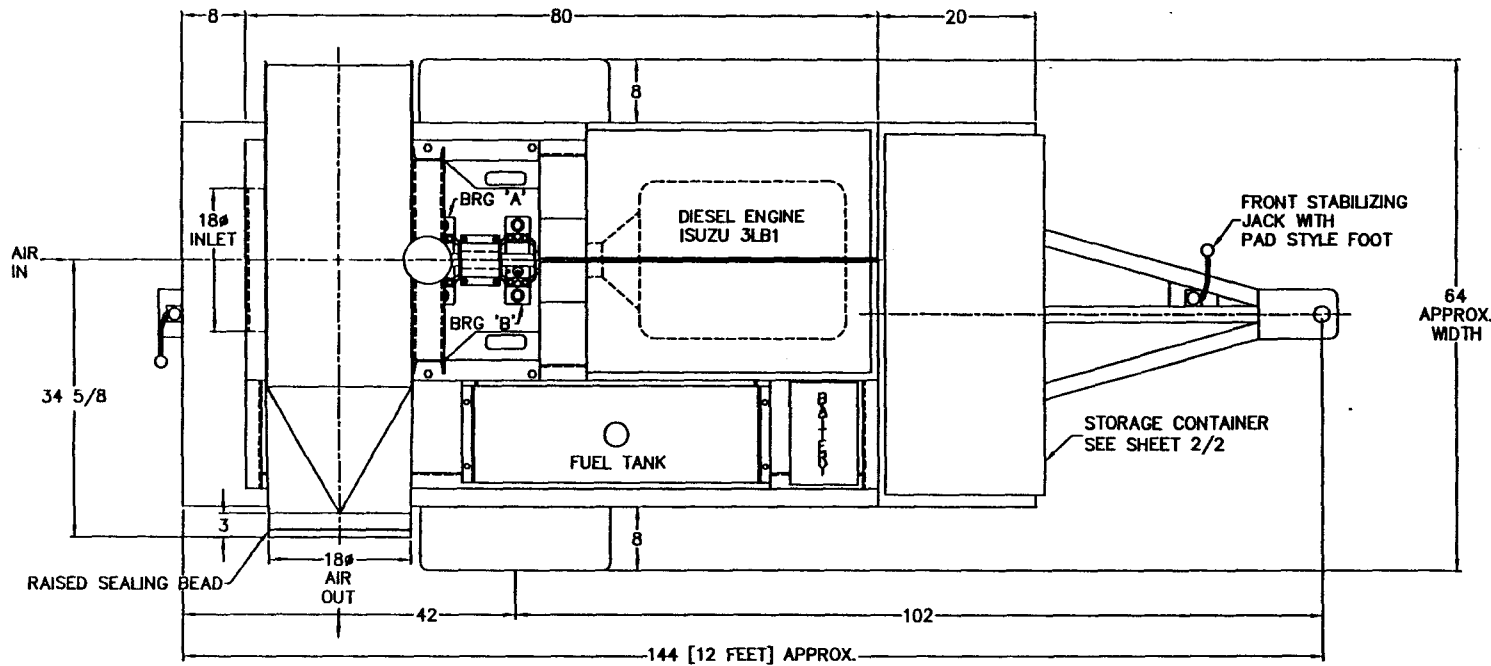
8. **Paint**

The entire assembled portable ventilating fan unit shall be painted in white enamel. Manufacturer's name plates and identification tags shall not be overpainted and the information printed on the name plates and identification tags shall be legible.

9. **Warranties, Manuals, and Documentation:** The Contractor shall provide the following manuals and documentation:

- Engine Owner's Manual
- Complete parts/assembly list showing part/assembly Manufacturer's information, product Identification Number, and Product Serial Number.
- Manufacturer's maintenance manual(s) for all parts and assemblies.
- Manufacturer's Standard Warranties for all parts and assemblies.

All documentation shall be contained in a document delivery binder or envelope.



PERFORMANCE

RATING AT 0.075 LBS/FT³ INLET DENSITY
 CFM - 12,000 @ 4 INCHES W.G.S.
 RPM - 1746 BHP - 12.5
 MAXIMUM DESIGN TEMPERATURE - 110°F

DIESEL ENGINE

MANUFACTURER- ISUZU MODEL 3LB1
 NET CONTINUOUS RATED POWER:
 21.0 HP @ 3000 RPM
 17.0 HP @ 2000 RPM
 15.4 HP & 51.9 LB-FT TORQUE @ 1800 RPM
 3 CYLINDER, 4 CYCLE
 WATER COOLED WITH OVERFLOW TANK
 AIR INTAKE- ENCLOSED AIR FILTER HOUSING
 WITH REPLACEABLE FILTER ELEMENT
 EXHAUST- VERTICAL W/ MUFFLER AND RAIN CAP
 MUFFLER- HEAVY DUTY ALUMINIZED STEEL
 RAIN CAP- ZINC PLATED CONSTRUCTION
 FROM MERCURY PRODUCTS CORP.
 ELECTRICAL SYSTEM- 12 VOLT
 STARTER- 12 VOLT, 1 KW
 KEY START IGNITION W/ 3 KEYS FURNISHED
 HOUR METER
 OIL PRESSURE INDICATOR LIGHT
 TEMPERATURE INDICATOR LIGHT
 AMMETER INDICATOR LIGHT
 CENTRIFUGAL CLUTCH

FUEL TANK

22 GAL, LOCKING CAP, LEVEL INDICATOR
 STAINLESS STEEL SUPPLY AND VENT LINES

PAINT

AIRSTREAM & EXTERIOR- WHITE ENAMEL

V-BELT DRIVE

MOTOR PULLEY - 5/3VS.6-2517 x 1 7/16
 FAN PULLEY - 5/3VS.5-2517 x 2 3/16
 V-BELTS - (5) 3VX475

BEARING DETAILS (DODGE)

FAN SHAFT - 2 3/16# C1045 S.S.
 BEARING A- P2B-513-USAF-203 IER C3 (HELD)
 BEARING B- P2B-513-USAF-203 IER C3 (FREE)
 REGREASE EACH BEARING EVERY 2 MONTHS
 WITH 2 CU. IN. OF MOBILITH SHC100

INCLUDED ACCESSORIES

A.M.C.A. 'B' SPARK RESISTANT
 CONSTRUCTION INCLUDES:
 ALUMINUM FAN WHEEL W/ STEEL HUB
 ALUMINUM SHAFT RUBBING RING
 ROTATING 12 VOLT SAFETY LIGHT
 LOCKABLE STORAGE CONTAINER (SEE SH. 2/2)
 SHAFT GUARD & BELT GUARD
 LOCKABLE BATTERY COVER

MAX FAN OPERATING SPEED- 2027
 ENGINE GOVERNOR SET AT- 2350

TOTAL UNIT WEIGHT (WET)- 2,800 LBS

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 CERTIFIED CORRECT FOR CONSTRUCTION
 by Michael A Walker date 1-13-04
 REVISED-DESTROY PREVIOUS DRAWINGS
 AS BUILT

PAD STYLE STABILIZING JACK SWING-UP TYPE QTY (1)

REV	DESCRIPTION	DATE
A	ADDED TRAILER BRAKE NOTE	1-7-04
B	ADDED OVERALL DIMENSIONS	1-8-04
C	UPGRADED STORAGE CONTAINER ADDED	1-11-04
D	CERTIFIED FOR CONSTRUCTION	1-13-04

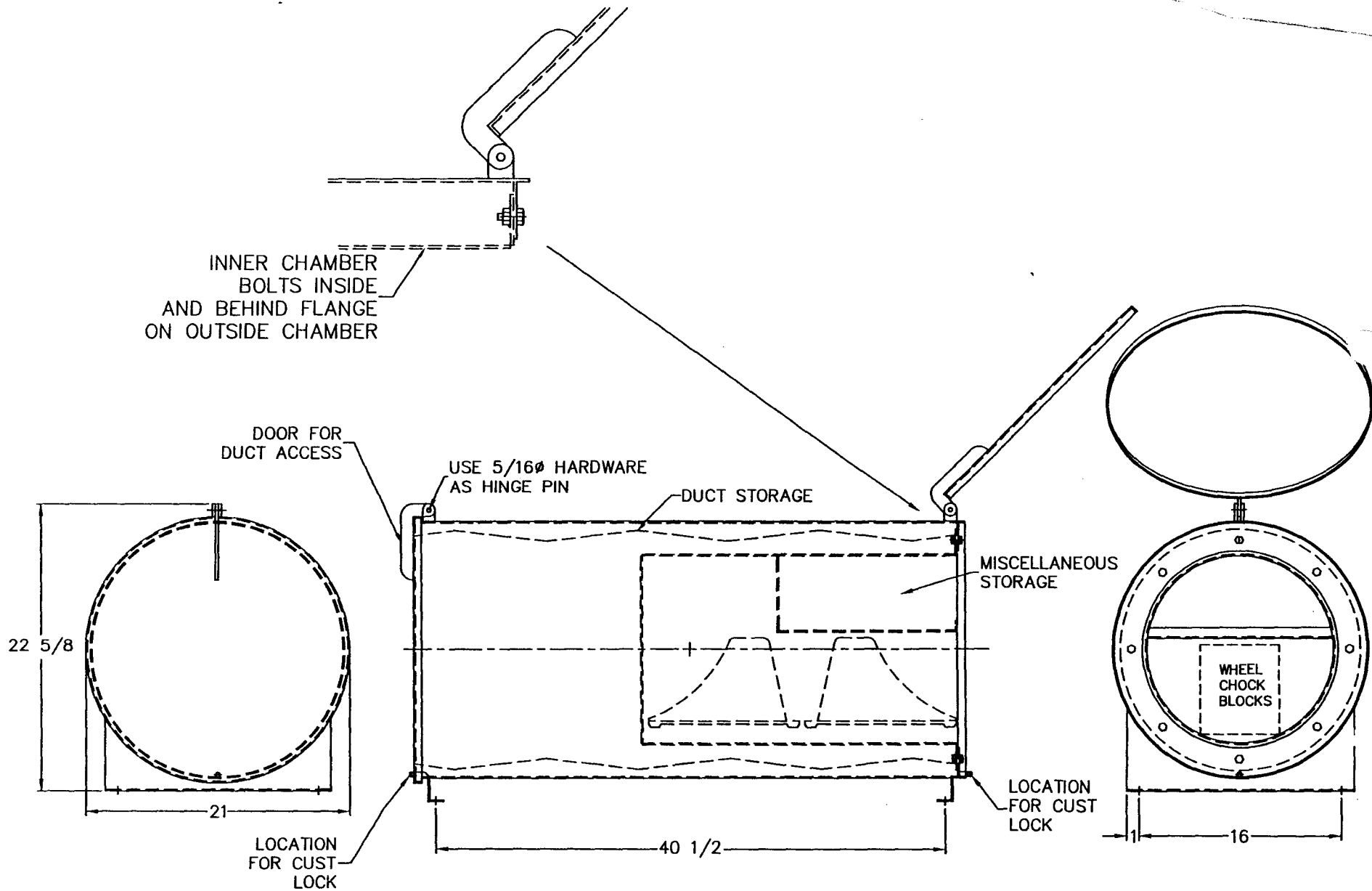
CUSTOMER: LOS ANGELES DWP
 TRUNK LINE CONST. MANAGEMENT GROUP
 P.O. NO.: 41913-4
 TOLERANCES ± 1/8"
 'C' SIZE DRAWING SCALE : NONE



FAN EQUIPMENT CO., INC.
 3925 WEST SUNSET ROAD
 LAS VEGAS, NV 89118
 (702) 270-8344
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VENTILATOR 400
 TRAILER MOUNTED
 VENTILATING FAN

DRAWN BY: MAW
 DRAWING NO.: 2003856
 SHEET: 1/1
 REV: D



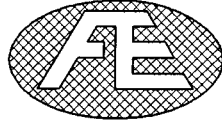
NOTE: BOLTED DESIGN MAKES PAINTING EASIER



FAN EQUIPMENT CO., INC.
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VENTILATOR 400
 COAXIAL STORAGE CONTAINER

DRAWN BY	DRAWING NO.	SHT.	REV.
MAW	2003856	2/2	



Fan Equipment Co., Inc.

TERMS AND CONDITIONS OF SALE

The following terms and conditions shall be part of any contract of sale which may be entered into between the buyer and Fan Equipment Co., Inc. Any terms and conditions in the buyer's purchase order, purchase order acknowledgment, or any other writing pertaining to such order, irrespective of its' wording or of when received by us, which are in conflict or inconsistent with or add to the terms and conditions hereof, will not be acceptable or become a part of any resulting contract without our express typed or handwritten consent.

1. PRICES AND TERMS OF PAYMENT

- A. Prices, freight policy and terms of payment relating to products are published herein. The acceptance of orders is subject to credit approval. Unless otherwise specifically stated herein agreed upon in writing, our terms are net cash within 30 days from date of invoice. In some instances, a 1% discount is given if payment is made by the date specified on the invoice. This discount can be rescinded at any time if unearned discounts are being taken.
- B. Unless otherwise previously agreed upon in writing, the prices at which we invoice will be those in effect at the time of shipment. The prices shown herein may be withdrawn or subject to change without notice at any time prior to receipt and acceptance of buyer's purchase order at our offices.
- C. Taxes: Unless otherwise indicated no Sales Tax will be charged in our prices. The amount of any such taxes which are paid or payable, in connection with any order and are not included in the purchase price, shall be added to the invoice and paid by the customer to us directly as part of the total invoiced amount. If a state resale card is not on file with Fan Equipment Co. an appropriate tax amount will be added to the invoice.

2. SHIPMENTS

- A. The time of delivery named by us is the date for shipping from our facility. We will not be liable for delays in delivery caused by any reason beyond our control.
- B. Unless otherwise agreed upon in writing, all shipments are F.O.B. our facility. We are not responsible for damage to or loss of products after delivery to the transportation company.
- C. Fan Equipment Co. will determine how to package and ship the equipment unless specifically instructed otherwise by the customer's purchase order.

3. WARRANTY

- A. Fan Equipment Co., Inc. warrants that the design, construction and materials of our products will be first-class, and free from defects in the materials and workmanship for a period not to exceed eighteen(18) months from shipment or twelve(12) months from date of installation, whichever occurs first. Our sole obligation under this Warranty is limited to the repair or replacement, without charge, at the purchase order F.O.B. point, any defective parts. Fan Equipment Co., Inc. will not be responsible for damages, contingent liabilities, or consequential damages of any nature, resulting from the above stated Warranty; or from any defect in our products, either in materials, design, or construction, or arising from the use of such products. **We do not guarantee against abrasion, corrosion, erosion, or accumulation of material on the fan rotor(buildup).**

The above stated Warranty is given expressly in lieu of all other warranties express or implied, including warranties of merchantability and fitness for particular purpose, and constitutes the only Warranty made by seller.

- B. Warranties on equipment not of our manufacture are limited to the Warranty terms of our suppliers.
- C. All Warranty claims must be submitted to Fan Equipment Co., Inc. within ten(10) days of discovery of defect within the warranty period, or shall be deemed waived. Do not attempt to make any repairs on the fan equipment during the warranty period without the prior written authorization of Fan Equipment Co., Inc. or its representatives; otherwise the Warranty is voided.
- D. Fan Equipment Co., Inc. shall not be liable for any injury to persons or property resulting from improper installation, operation, misapplication, neglect, modification, repair, or maintenance(including lubrication) of equipment by customers or third parties.

Acknowledged

By: _____

Title _____