

Acoustical Motorized Smoke Vent Installation, Operation and Maintenance

Part Number:
IOM_SVX45M

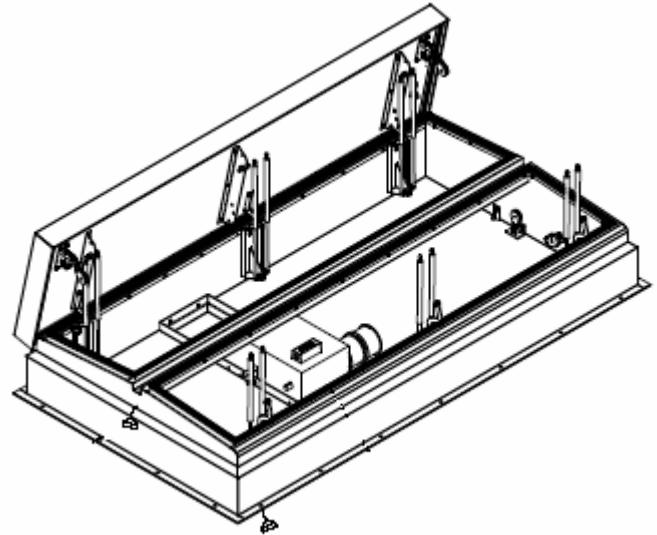
Revision

A

Overview

Installation

Operation and Maintenance



1. Overview

This product manual describes the installation, operation and maintenance of motorized acoustical smoke vents. Acoustical smoke vents are designed and used to provide emergency smoke and heat ventilation. Prompt venting in case of fire is vitally necessary to the safe evacuation of occupants and effective fire-fighting conditions within a building.

Design and Features

Acoustical smoke vents are designed and are rated to a Sound Transmission Class (STC) of 45 and the Outdoor-Indoor Transmission Class (OITC) value of 37. ASTM: E90(99) and E1332(94) test procedures outline methodology to determine transmission loss values. The innovative two-door construction offers many advantages over conventional 4 door designs. It is easier to install and operate.

COVER: 14 gauge galvanized steel.

LINER: 12 gauge galvanized steel.

INTERIOR CURB: 12 gauge galvanized steel.

EXTERIOR CURB: 14 gauge galvanized steel.

HARDWARE: Zinc plated steel.

COVER/CURB INSULATION: 3" thick composite acoustic insulation.

SPRING: High pressure gas springs automatically open against a 10 psf snow load when released.

FINISH: Powder coat paint.

WIND UPLIFT RESISTANCE: 30 psf, doors remain latched closed.

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Operation

Motorized operation allows for convenient operation of the smoke vents. Motor input; 115V AC power, 1 phase, 60 HZ, 6.5 Amps at full load. Motor output; ½ HP@ 1000RPM.

Smoke Vent Opening Methods:

Manual: Inside and outside release handles.

Internal release comes with 10ft of cable, extension down to floor level by others.

Thermal: 165°F fusible links integrated into a latching assembly attaching pulleys to the doors.

Electrical push button control: 3 Buttons; Open, Close, Stop

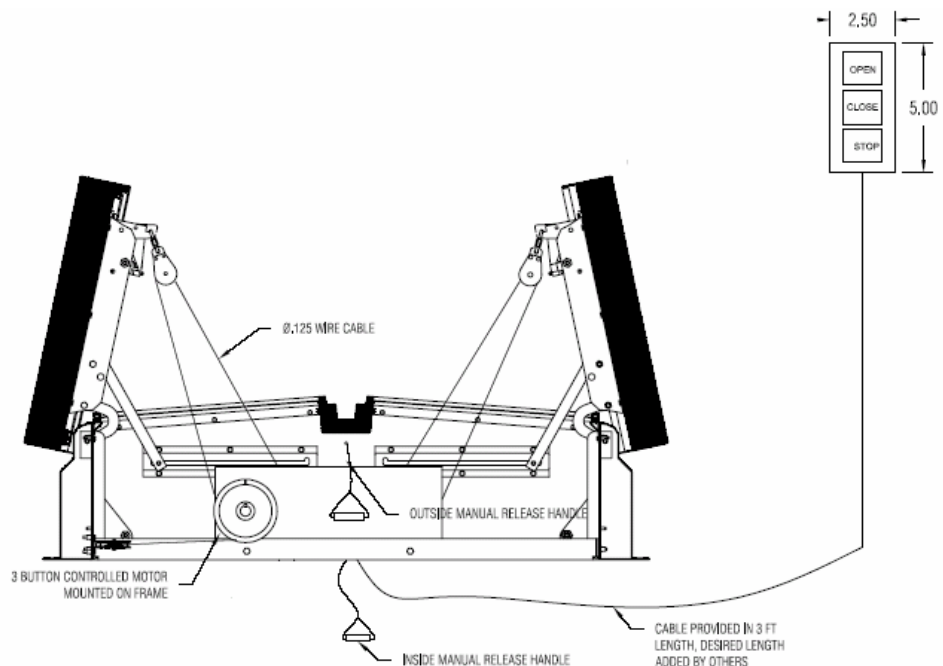
Comes attached to motor in vent and remotely located by others, if desired

Electrical 24VDC relay built into motor assembly.

External power source coming from a smoke detector, fire alarm system, heat sensor, etc can tie into motor and actuate and open the smoke vents.

Smoke Vent Closing Methods:

Electrical push button control: 3 Buttons (open, close, stop)



These instructions are meant as a general guide only. Some variations may occur, refer to construction drawings before proceeding.

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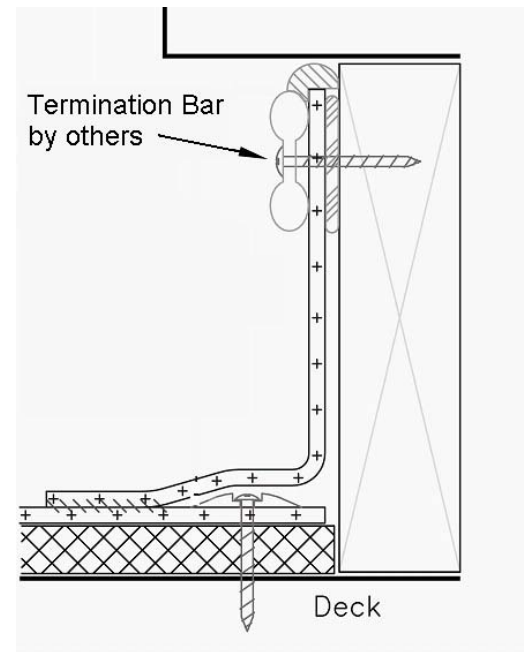
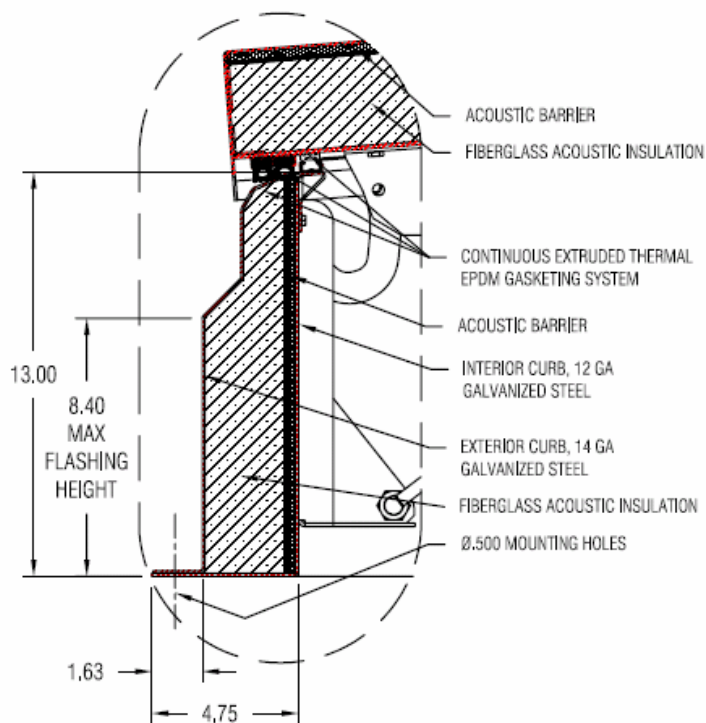
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2. INSTALLATION

1. Place the smoke vent over the existing opening in roof. Mark the pre-drilled 1/2" diameter holes from the mounting flange through to the roof deck. Drill roof deck for installation of anchors or other approved fasteners (3/8" lag bolts), provided by others. Bolt or otherwise fasten the curb flange to the roof deck using local accepted standard roofing procedures.
2. Install roofing material up to and surrounding the roof curb. Termination bars may be used to terminate roofing material to the curb. Lap and seal all joints in roofing material to provide a weathertight seal.
3. Do not mount any features such as termination bars or grounding rods above the max flashing height of 8.4". This area is clearance space for the doors when in the open position. Damage may occur if there is any interference when the doors open.



3. OPERATION AND MAINTENANCE

Smoke Vent products to be as maintenance-free as possible. Products should be manually operated once a year to check performance and lubricate moving parts as required. If there are questions regarding the operation or maintenance of the products, please contact us for assistance.

These instructions are meant as a general guide only. Some variations may occur, refer to construction drawings before proceeding.

Model DJM

Smoke Hatch Operator Installation Manual

OPERATOR SPECIALTY CO., INC.
P.O. BOX 128, CASNOVIA, MI 49318

Power Connection

Connect power to terminals L1 and L2 on single-phase machines or terminals L1, L2, and L3 on three-phase machines. After power is properly connected, depress the **OPEN** or **CLOSE** button on the 3-button station. **BE PREPARED TO PUSH THE STOP BUTTON!** If the motor is operating in the wrong direction, reverse rotation. To do this on single-phase machines, reverse motor wires on the capacitor. On three-phase machines, reverse any two of the three incoming power leads.

IMPORTANT

- A. Power supply must be of correct voltage and phase.
- B. Always disconnect power from the operator before servicing.
- C. Keep clear of the door during operation.

Clutch and Cutoff Switch Adjustment

The clutch is set light at the factory and must be properly field adjusted for the size and weight of the door. Adjust clutch spring tension so the operator will drive the door closed without activating the cutoff switch prematurely. It is best to start with a light adjustment and tighten 1/2 turn at a time. Be careful not to throw cables on the unit. Because the operator works in both directions, it is best to do a preliminary test in the open direction. If the unit is not sensitive enough, bend the cutoff switch bracket toward the sprocket.

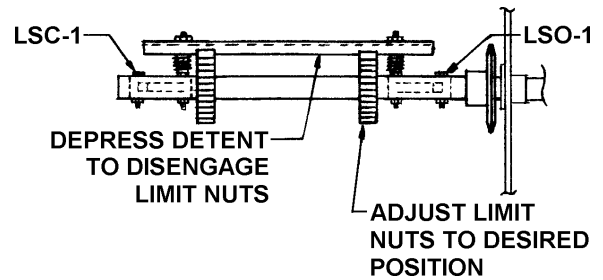
Electrical Connection

The complete electrical circuit print can be found inside the operator cover. Electrical power supply should be brought into the operator with no smaller than No. 14 wire. Power must be of correct voltage and phase, and the supply must be ample and not from an overloaded line, as faulty operation will result. The motor contains a thermal overload device to protect against overheating due to overload conditions.

Limit Switch Adjustment

The jackshaft hatch operator includes two limit switches. The close limit switch (smaller than the open limit switch) will stop the motor operator when the switch lever is depressed by the nylon limit nut. The open limit switch performs two functions and is actually two switches in one. When the lever is depressed on the open limit switch, two clicks can be heard. The first click of the switch (designated as LSO-2 in the schematic

diagram) is a selector limit switch that allows for single button operation. The second click of this switch (designated as LSO-1) is the switch that stops the motor in the open direction.



The nylon limit nuts on the threaded shaft directly over the limit switches must be adjusted so that the open limit switch lever is fully depressed when the operator is fully open and the close limit switch lever is fully depressed when the hatch is fully closed. Depress the spring-loaded detent plate to disengage it from the limit nuts. Turn the limit nuts in the desired direction.

Troubleshooting

Hatch won't operate from OPEN or CLOSE button:

- A. Motor overload kicked out. Wait 15 minutes. Overload will automatically reset. Be sure door is not binding and brake is releasing.
- B. Fuse or overload in main box blown. Replace/reset.
- C. Check for defective transformer.
- D. Check for defective **STOP** button or loose connection in stop circuit.

Door won't open from OPEN but closes from CLOSE:

- A. Check open limit switch to be sure it isn't hung up.
- B. Look for loose wire on **OPEN** or contactor open coil.
- C. Check for defective open coil of contactor.

Door won't close from CLOSE but will open:

Same as preceding problem but in reverse.

Operator stops when you release button (makes rocking noise):

Clutch spring too loose. Tighten clutch nuts.

Door runs in wrong direction:

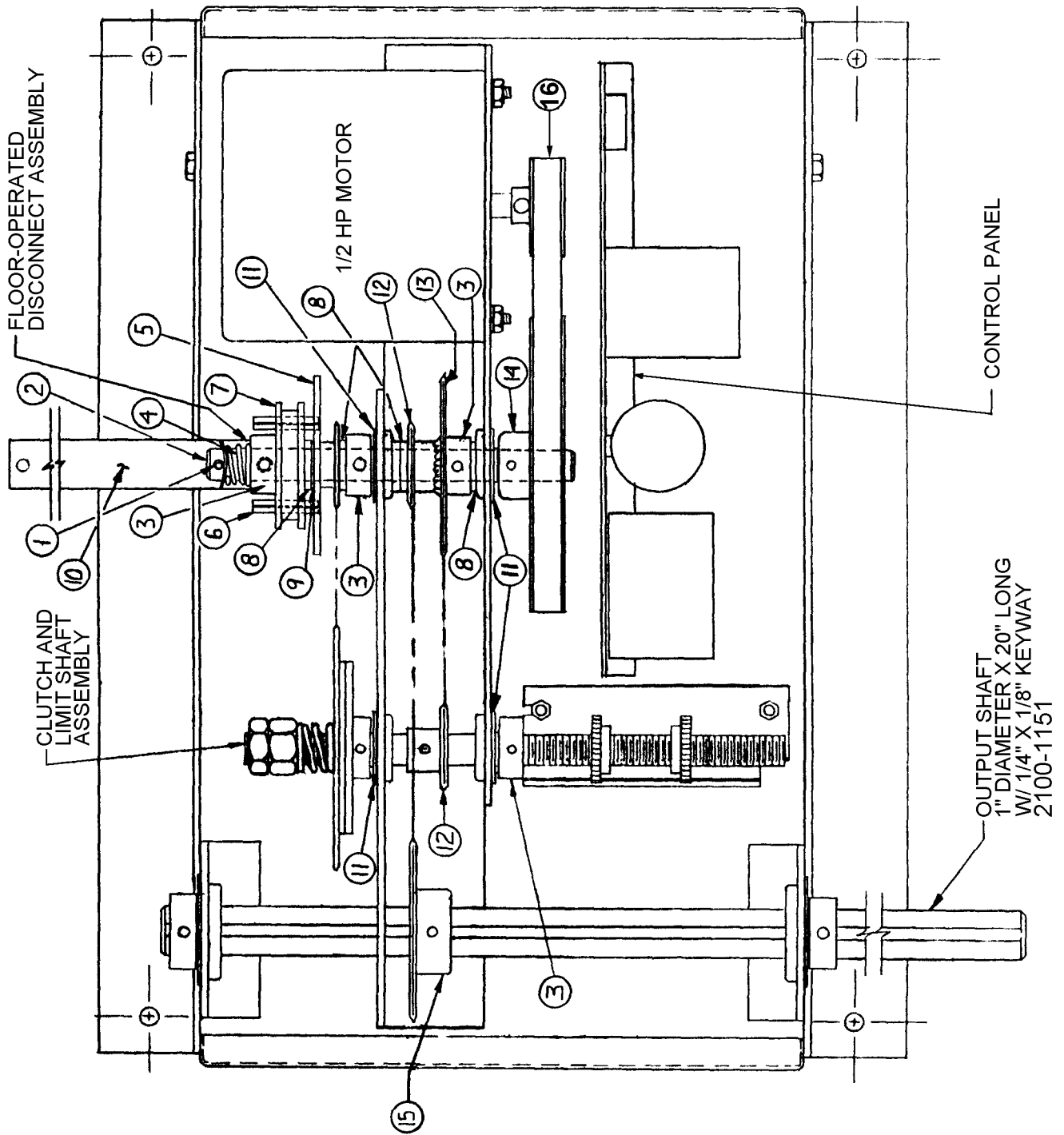
- A. Three-phase: Reverse 2 incoming.
- B. Single-phase: Reverse motor.

Door not closing properly:

- A. Be sure spring loaded guide on rotary limit switch is properly engaging travel limit nuts.
- B. Be sure drum is turning with output shaft on operator.

Motor runs but door doesn't move:

- A. Tighten clutch.
- B. Check set screw in motor pulley.
- C. Check V belt.



DWG 400-019-1

Model DJM
Mechanical Parts List • Drawing #400-019-1

<u>Ref. No.</u>	<u>Part No.</u>	<u>Description</u>
		<i>Disconnect and Intermediate Shaft Assembly</i>
1	2400-088	Roll Pin, 3/16" x 1 3/8"
2	2100-666	Shaft
3	2200-233	Set Collar, 5/8"
4	2200-293	Spring
5	2110-180	Disconnect Disc
6	2400-164	Roll Pin, 1/4" x 1 1/4"
7	2110-095	Shifter Block
8	2400-187	Thrust Washer, 1/8"
9	2400-215	E-Ring, 5/8"
10	2110-231	Disconnect Lever
11	2200-078	Roller Flange Bearing, 5/8"
14	2200-074	Pulley, 6"
	2100-803	Disconnect Fulcrum
	2400-026	Roll Pin, 3/16" x 1"
	2100-549	Disconnect Pin
	2220-009	Free-Floating Sprocket Assembly
12	2200-800	Sprocket, 48 B 10, 3/4" bore
13	2200-280	Sprocket, 48 A 30, 1" bore
		<i>Clutch and Limit Shaft Assembly</i>
	2110-369	Clutch and Shaft Assembly
16	2200-151	V-Belt, 4L 250
		<i>Frame</i>
	2100-744	Main Frame
	2100-767	Door Bracket
	2100-117	Left Mounting Channel
	2100-1630	Right Mounting Channel
	2200-195	Flange Bearing, 5/8"
	2100-759	Bearing Bracket
	2100-608	Louvered End
	2100-988	Operator Cover
		<i>Jackshaft</i>
	2100-1151	Jackshaft, 20"
	2200-066	Sprocket, 48 B 20
	2200-015	Set Collar, 1"
		<i>Motors</i>
	2500-692	1/2 HP, 115V, 1 Phase
	2500-693	1/2 HP, 230V, 1 Phase
	2500-1414	1/2 HP, 380V, 3 Phase
		<i>Miscellaneous</i>
	2200-039	#48 Chain, 21 Links
		#48 Chain, 25 1/2 Links
	2400-005	HHCS, 1/4"-20 x 3/4"
	2400-006	Lock Washer, 1/4"
	2400-007	Hex Nut, 1/4"-20
	2400-017	Flat Washer, 3/8"
	2400-014	HHCS, 3/8"-16 x 1"
	2400-016	Lock Washer, 3/8"
	2400-015	Hex Nut, 3/8"-16
	2400-077	Set Screw, 5/16"-18 x 5/16"
	2400-091	#10 Screw, 1/8"
	2400-169	Push-On Nut, 1/4"

**Model DJM
Electrical Parts List**

<u>Part No.</u>	<u>Description</u>
	115 VAC, 1 Phase (WD #2600-377)
2500-012	Contactator
2500-212	Transformer
2500-029	Limit Switch, open
2500-030	Limit Switch, close
2500-086	Terminal Strip
	208/230 VAC, 1 Phase (WD #2600-098)
	208/230 VAC, 3 Phase (WD #420-162)
2500-791	Transformer
	460 VAC, 3 Phase (WD #420-162)
2500-214	Transformer

LIMITED ONE-YEAR WARRANTY

This electric operator is warranted for a period of one (1) full year from date of installation against defects in materials or workmanship. Any part, parts, or complete unit which fails because of such defects within this period shall, at the manufacturer's option, be repaired or replaced at no charge. The manufacturers will not be responsible for transportation and/or field service charges.

This warranty is in lieu of all other warranties, expressed or implied, and shall be considered void if visible evidence implies recommended installation procedures and maintenance instructions were not followed.