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Visit the Diva Acoustical Shell web page at [wengercorp.com](http://wengercorp.com) for more information.

**Note:** Please read and understand these instructions before using.

**Note:** If you need additional information, contact Wenger Corporation using the information below.

# ***Important User Information***

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## ***General***

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All rights reserved. No part of the contents of this manual may be reproduced, copied, or transmitted in any form or by any means including graphic, electronic, or mechanical methods or photocopying, recording, or information storage and retrieval systems without the written permission of the publisher, unless it is for the purchaser's personal use.

Printed and bound in the United States of America.

The information in this manual is subject to change without notice and does not represent a commitment on the part of Wenger Corporation. Wenger Corporation does not assume any responsibility for any errors that may appear in these instructions.

In no event will Wenger Corporation be liable for technical or editorial omissions made herein, nor for direct, indirect, special, incidental, or consequential damages resulting from the use or defect of these instructions. The manufacturer reserves the right to change this product at any time.

The information in this document is not intended to cover all possible conditions and situations that might occur. The end user must exercise caution and common sense when assembling or installing Wenger Corporation products. If any questions or problems arise, call the Wenger Corporation at (800) 4WENGER (493-6437) or +1-507-455-4100 worldwide.

## ***Manufacturer***

The Diva® Air Transporter is manufactured by:

Wenger Corporation  
555 Park Drive  
Owatonna, MN 55060  
(800) 4WENGER (493-6437) • +1 (507) 455-4100  
wengercorp.com

## ***European Representative***

See the EC Declaration of Conformity for information about a European Representative.

## ***Name and Model***

Diva Air Transporter 230 volt.

## ***Machine Description***

A Diva Air Transporter is designed to receive acoustic towers. The machine is only intended to lift and transport acoustic towers.

The operator loads and unloads a Diva Air Transporter manually. It requires a 230 VAC 50 or 60 Hz single-phase 15 amp main electrical supply.

The air blower operates at a maximum pressure of 0.15 Bar (2.25 psig) at the maximum load and flow rate of 1840 to 3681 liters/min (65 to 130 cubic feet/min).

## ***Intended Use***

- This product is intended for indoor use in normal ambient temperature and humidity conditions — it must not be exposed to prolonged outside weather conditions.
- This product is intended to be used only as described in these instructions.

## ***Warranty***

This product is guaranteed free of defects in materials and workmanship for five full years from date of shipment. A full warranty statement is available upon request.

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# ***Important User Information (continued)***

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## **EC Declaration Of Conformity**

**Manufacturers Name:** Wenger Corporation

**Manufacturers' Address:** 555 Park Drive, Owatonna, MN 55060 USA

Declare that the machinery described below complies with applicable health and safety requirements of Part 1 of Annex 1 of the Machinery Directive 98/37/EC taking full account of the additional requirements of Machinery Directive 2006/42/EC and the EMC Directive. Confidential technical documentation has been compiled in accordance with Part A of Annex VII of Machinery Directive 2006/42/EC and is available to European national authorities on written request only. If a request is received documentation will be transmitted by post.

**Description:** Diva Air Transporter 230 volt

**Model Number:** 185E549

**Sizes:** An Air Transporter is designed to receive acoustic towers varying in size from 4.8 m (192 inches) to 9.7 m (384 inches) high, 3 m (120 inches) to 3.6 m (144 inches) wide and length 1.4 m (56 inches) deep weighing up to 885 Kg (1950 lbs). The machine is only intended to lift and transport acoustic towers. The different types of acoustic tower that can be lifted and transported are identified in operating instructions.

The following standards have either been referred to or been complied with in part or in full as relevant:

**ENISO 12100 - 2** Machinery Safety - Basic concepts, general principles for design – Part 2: Technical principles and specifications

**EN 954-1** Machinery Safety - Safety Related Parts of Control Systems – Part 1: General Principles for Design

**EN 811** Machinery Safety - Safety distances to prevent danger zones being reached by the lower limbs

**EN 614** Machinery Safety - Ergonomic design principles

**EN 953** Machinery Safety -General requirements for the design and construction of guards

**EN 418** Machinery Safety - Emergency stop equipment, functional aspects. Principles for design

**EN 60204-1** Machinery Safety - Electrical Equipment of Machines

**EN61000-6-3:2001** EMC - Generic emissions standard

**EN61000-6-1:2001** EMC - Generic susceptibility standard

Full Name of Responsible Person:.....(Typed)

Position:.....(Typed) Place of Signing:.....

Signature: ..... Date: .....

Full Name of Authorized European Representative:.....(Typed)

Position:.....(Typed) Place of Signing:.....

Signature: ..... Date: .....

Full Name of Authorized European Representative:.....(Typed)

Position:.....(Typed) Place of Signing:.....

Signature: ..... Date: .....

## Safety Precautions

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Throughout this document you may find cautions and warnings which are defined as follows:

- **WARNING:** Failure to follow the instruction could result in serious injury or damage to property.
- **CAUTION:** Failure to follow the instruction could result in minor injury or damage to property.

Read all of these safety instructions before using the equipment.

 <b>WARNING</b>
<i>Make sure that anyone working with the air transporter has read and understands these instructions.</i>

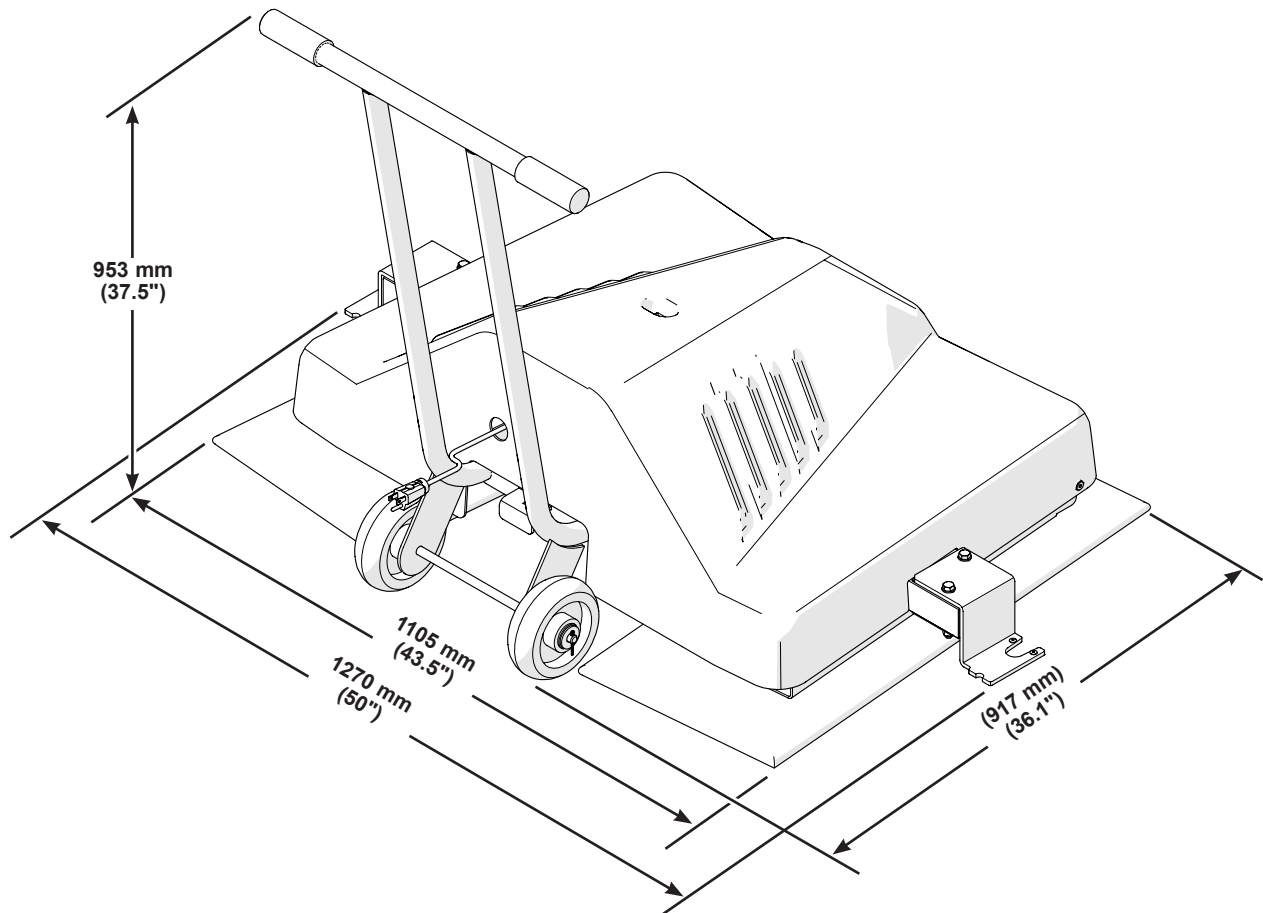
 <b>WARNING</b>
<i>Failure to comply with Warnings and Cautions in this document can result in damage to property or serious injury.</i>

 <b>WARNING</b>
<i>Always observe and comply with the Warnings and Cautions posted on the system equipment.</i>

## Installation

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### Dimensions



## ***Installation (continued)***

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### ***Stage Load Specifications***

An air transporter is designed to receive acoustic towers varying in size from 4877 to 9754 mm (16' to 32') high, 3048 to 3658 mm (10' to 12') wide, 1448 mm (4' 9") deep and weighing up to 885 kg (1950 lb).

The machine is only intended to lift and transport Wenger Diva Acoustic Towers.

### ***Floor Level Specifications***

An air transporter must only be used on level ground.

### ***Required Working Environment***

An air transporter is designed for use indoors in a normal working environment.

The intended operating temperature range is 7°C (45°F) to 35°C (95°F). It must only be used on level ground, on a smooth solid floor with no ridges, holes or obstructions.

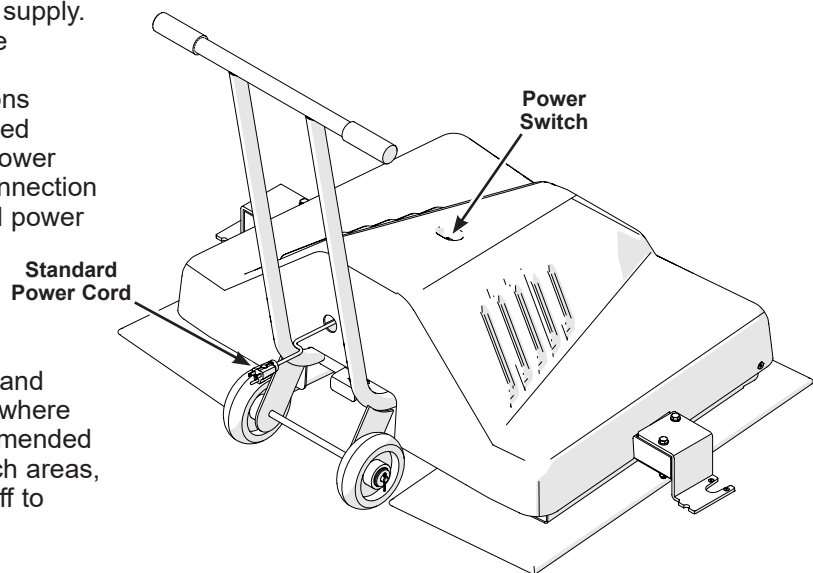
### ***Main Electrical Power Supply***

A power switch is provided to enable an air transporter to be disconnected from the main electrical supply.

When the power switch is switched from the OFF position to the ON position, the earth connection is made before power connections are made. When the power switch is switched from the ON position to the OFF position, power connections are broken before the earth connection is broken. In the OFF position, the electrical power supply is removed from the entire machine.

The electrical power supply is provided by the use of a standard power cord.

The standard power cord must be routed where there is no risk of personnel tripping and falling because it has been routed in areas where personnel are expected to walk. It is recommended that cables should be routed away from such areas, run in rubber ramps or the area cordoned off to keep people away.



### ***Ground Connection***

The blower motor, electrical control box, and metalwork of the machine are bonded to earth (ground) to prevent a build up of static electricity. This is necessary to ensure that there is no risk of an increase in the voltage potential of the blower motor, electrical control box and metalwork of the machine as a result of static electricity that might be generated.

The earth conductor in the incoming main power supply is connected to a protective earth terminal and one cable taken from this terminal to an earth distribution connector block. Functional earth connections to the blower motor, electrical control box, and metalwork of the machine, etc. are connected to the earth distribution connector block.

# Operation

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## Ambient Light Levels

An air transporter is only intended for use inside buildings where there will be artificial lighting. Ambient lighting must be sufficient for operators to see inside and around all parts of the machine. There is no need to provide additional internal lighting under the hood. Maintenance personnel can see all internal parts when access covers have been removed and there is no need to provide additional internal lighting.

Local ambient lighting should achieve a light intensity of 300 LUX around the air transporter and in the immediate vicinity of those parts of the machine where maintenance must be performed.

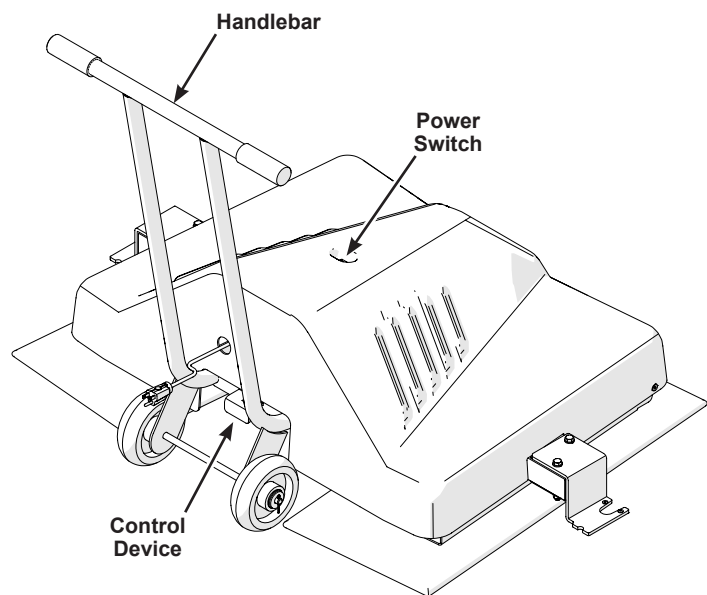
There are no exposed rotating parts on an air transporter that might put operators at risk if there are stroboscopic effects due to lighting powered by a 50 or 60 Hz AC mains electrical supply. This is because all rotating parts of an air transporter are behind plain metal panels or hoods.

## Control Devices

The control device for raising and lowering the front caster is a foot activated mechanism. This is located at the rear center of the base. Operators stand behind the handlebar of the machine where they are able to see all parts of the machine while it is being maneuvered. A second person is needed to determine whether there are other personnel who might be in the path of the machine. This makes it possible for operators to safely maneuver acoustic towers.

The power switch is hand operated and located at the upper rear of the base shroud. In this position it is easy to access and operate. There is no need for adjustment, the power switch is accessible to persons of all heights. The power switch is a positive action on/off switch that has immediate feedback of being engaged or disengaged. The device only provides lift and does not provide locomotion. One person can lift all heavy items that need to be lifted for maintenance with ease. The machine does not determine the work rate because the operator is not required to position acoustic towers onto the machine at a rate that is set by the machine.

Control devices are located at levels where tall and short operators have ease of access and where they are in full view of the operator. The function of each control device and what it achieves is marked alongside each control using characters that are typically 6 mm or more high. There is only one set of controls and no risk of a second operator being able to control the machine using a second set of controls in conflict with the first.



## **Operation (continued)**

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### **Tower Set Up**

In normal operation, an air transporter can be maneuvered manually with ease once the air cushion has been inflated. There is little risk of fatigue by the operator. The force needed to push the assembly is 13.6 kg (30 lb) and this is not excessive. Acoustic towers weigh up to 885 kg (1950 lb) and are positioned manually, with minimal physical effort.

While maneuvering the machine, two people are required. One person is needed to push the air transporter while the second person is needed to ensure that the way is clear for an acoustic tower to be moved forward. To assist operators, the acoustic towers are positioned simply by engaging lugs on the air transporter in the feet of an acoustic tower. This enables tall and short operators to position the acoustic towers without the need to reach or stoop and is not stressful.

Provided acoustic towers of the correct type are presented to the machine, there should be no handling problems. Operating instructions provide instruction on how to attach acoustic towers to an air transporter and how to check the security of acoustic towers so that they cannot come loose.

#### **⚠ CAUTION**

***Never use the air transporter for any purpose other than to move and position towers.***

#### **⚠ CAUTION**

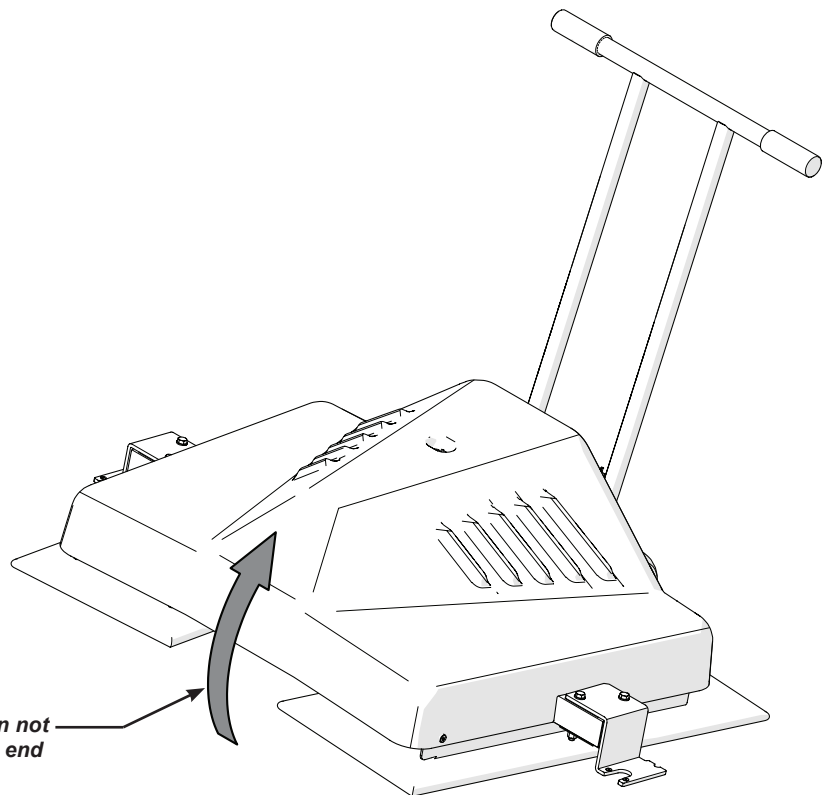
***Never attempt to manually lift or move a tower without using an air transporter.***

#### **⚠ WARNING**

***Never move a tower on an inclined surface or ramp.***

1. To move the air transporter when it is not supporting an acoustical tower, tilt the front end upward on the rear casters about 10 to 15 degrees. The front caster will drop downward and lock into place.  
Move the air transporter to the acoustic tower that is to be moved.

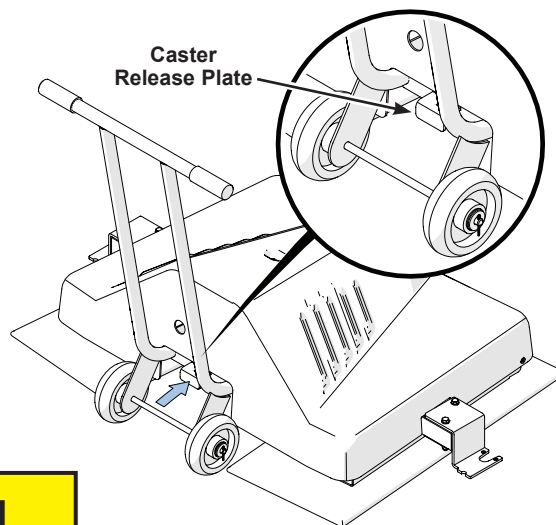
***To move the air transporter when not supporting a Tower, tilt the front end upward about 10 to 15 degrees***



## Operation (continued)

### Tower Set Up (continued)

2. Press inward in the caster release plate with the toe of your shoe to disengage the caster lock and allow the front of the air transporter to lower to the floor surface.



#### **CAUTION**

*Two or more people must work together when moving an acoustic tower. One person must always watch for obstructions on the stage and above the stage while a second person pushes the air transporter.*

#### **CAUTION**

*Always clear all people and objects from the stage when moving acoustic towers to or from storage.*

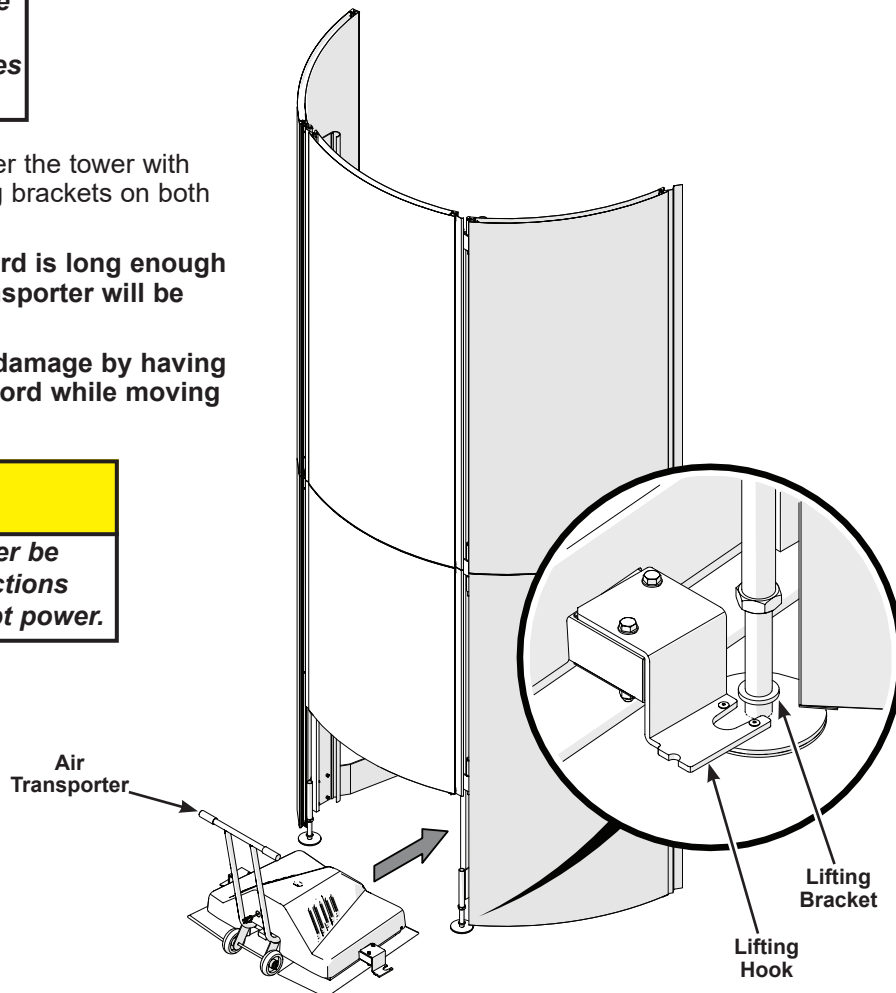
3. Position the air transporter under the tower with the lifting hooks under the lifting brackets on both sides of the tower.

**Be sure that the extension cord is long enough to reach wherever the air transporter will be moved.**

**Prevent cord interference or damage by having another person manage the cord while moving the towers.**

#### **CAUTION**

*When using the air transporter be sure that all electrical connections will not separate and interrupt power.*





## Operation (continued)

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### Tower Set Up (continued)

- Turn on the air transporter air blower by turning on the power switch.

**Note:** Be sure that both lift hooks engage the lifting brackets.

- Slowly pull the air transporter to move the acoustic tower approximately 1524 mm (5') out from the others.

#### **⚠ WARNING**

**Never move a tower on an inclined surface or ramp.**

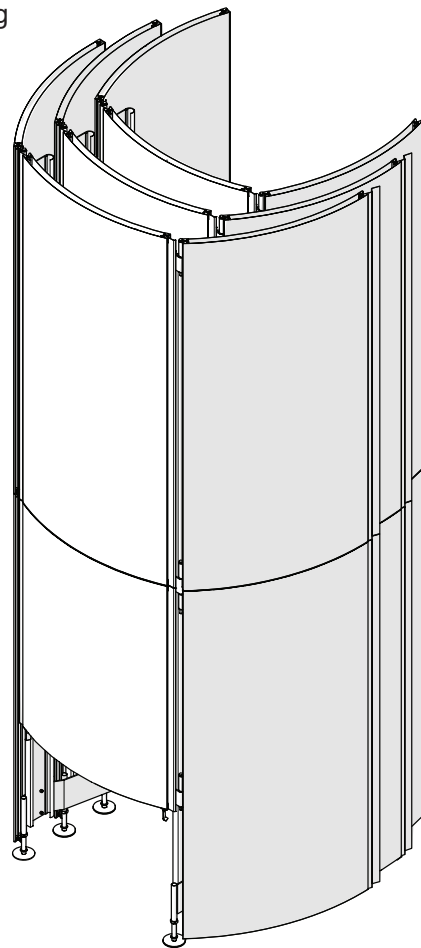
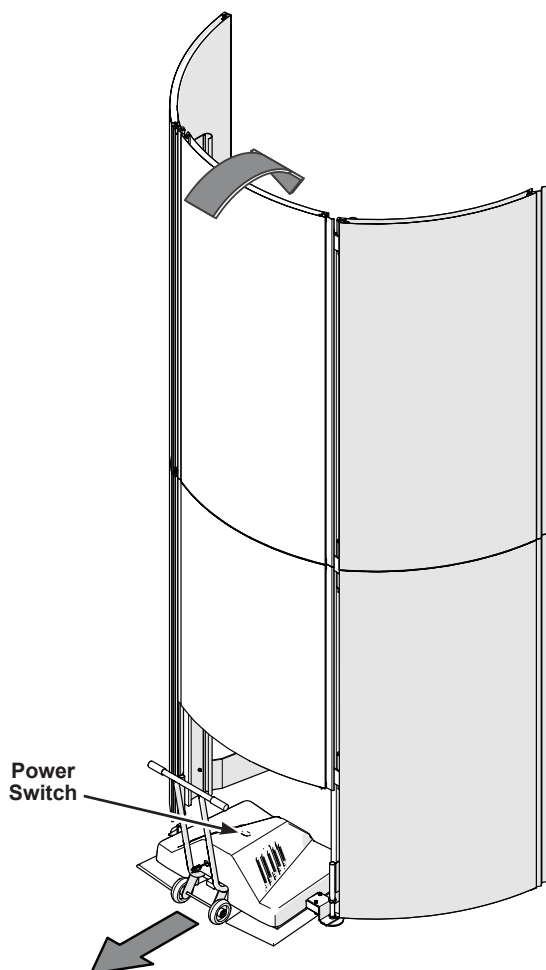
#### **⚠ WARNING**

**Always clear people and objects from the stage when moving a tower.**

- Stop moving the acoustic tower so that a second person can make sure that the wing panels are locked in the storage position and that the wing doors are locked to the wing panels.

#### **⚠ CAUTION**

**Always rotate and lock the tower wing panels to the storage position before moving the tower to or from the performance position.**



## Operation (continued)

### Tower Set Up (continued)

7. With one person pushing the tower and a second person guiding, slowly move (no faster than 0.3 m [1 foot] per second) the tower to the performance position.  
Be careful to not push the tower into any obstructions on the stage floor or above the stage floor (such as ceiling panels, etc.).

#### **⚠ CAUTION**

*Never move a tower faster than 0.3 m (1 foot) per second. Moving an acoustic tower carelessly or too fast can cause an accident such as tipping it over or running into objects.*

#### **⚠ CAUTION**

*Two or more people must work together when moving a tower. One person must watch for obstructions on the stage and above the stage while a second person pushes the tower.*

**Note:** It is best to create permanent marks for the final performance locations for all towers before moving them from storage.

8. When the tower is in the final performance location, turn off the air blower by turning off the power switch.

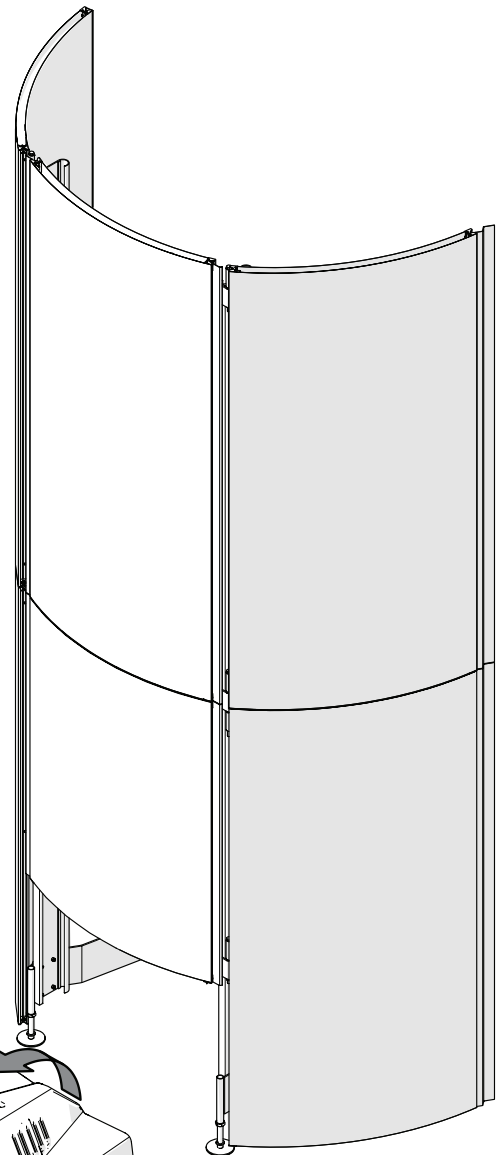
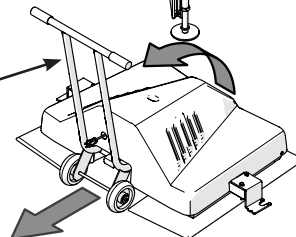
**Note:** As the air escapes from the air pads, the tower will tilt slightly forward.

#### **⚠ CAUTION**

*A dangerous pinch point develops when lowering a tower to the floor.*

9. Remove the Diva Air Transporter from the acoustic tower as follows.
  - a. When the air pads are deflated, pull the air transporter away from the acoustical tower until the lift hooks are clear of the tower lift brackets.
  - b. Place a foot against the rear of the air transporter and tilt the front upward until the front caster locks into place (down position).
  - c. Move the air transporter to the next acoustical tower to be moved.
10. Repeat these steps to move the remaining towers to their performance positions.

*Pull the air transporter clear of the acoustic tower and tip front end upward to deploy the front caster (lock into the down position).*



## ***Operation (continued)***

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### ***Power Failure***

If there is a failure of the main electrical power supply, the air transporter ceases to operate. When the main electrical power supply has been restored, power is returned to the air transporter and the air cushions will inflate. The air transporter only provides lift, and does not provide locomotion. There is therefore, no risk of a air transporter moving unexpectedly following failure of the main electrical power supply.

#### **⚠ CAUTION**

***When using the air transporter be sure that all electrical connections will not separate and interrupt power.***

### ***Abnormal Uses***

Examples of abnormal uses to which an air transporter should not be put. Wenger takes no responsibility for the safety of machines if they are used for any purpose other than the intended purpose as specified in these instructions.

- Crushing, impact or entrapment should an acoustic tower topple because an air transporter is used to transport shells or other panels besides those prescribed.
- Crushing, impact, or entrapment as a result of failing to connect acoustic towers to the machine using a suitable means of attachment.
- Crushing, impact or entrapment should an air transporter be used to lift and transport a heavy load other than an acoustic tower and the machine fails structurally.
- Exposure to any hazards on the machine as a result of operating the machine under the influence of drugs or alcohol or while wearing loose clothing.
- Exposure to flying or ejected objects caused by using poor quality replacement parts that have been obtained from an unauthorized source.

#### **⚠ CAUTION**

***Never use the air transporter for any purpose other than to move and position towers.***

## ***Replacement Parts***

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Should there be a need for replacement parts, contact Wenger at +1-507-455-4100.

## ***Training***

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Training is provided at the time of installation.

# Air Beam Replacement

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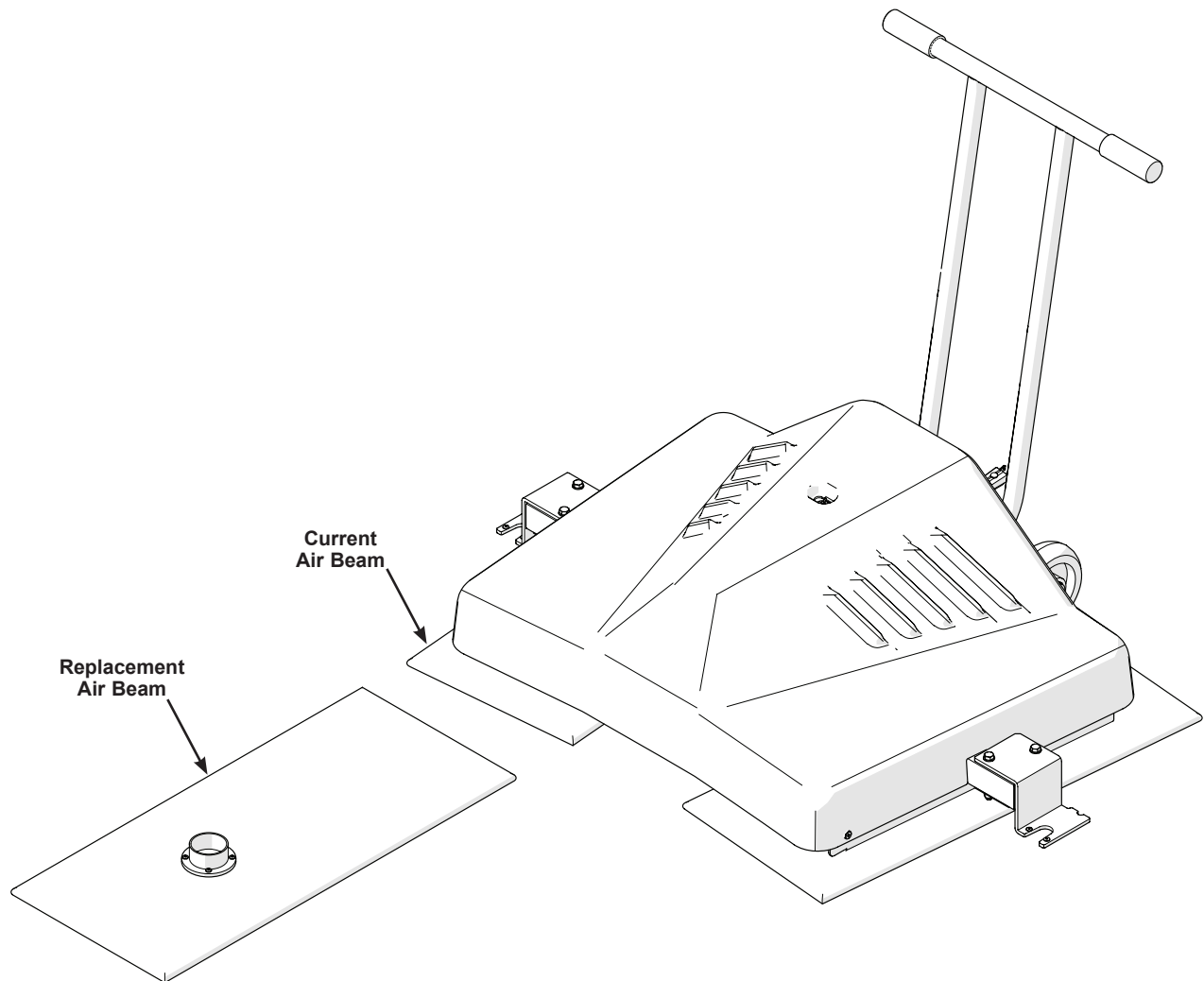
The air beam on a diva air mover may need to be replaced if it has been torn or worn through.

## Check Size of the Air Beam

1. Remove the new air beam from the package and make sure it's the same size as the damaged one being replaced on the air mover.

**Note:** Feel through the fabric and measure the size of the wood backer.

2. If the new air beam is not the same size as the old one (within 13 mm [ $\frac{1}{2}$ "]), contact Wenger Corporation before continuing.

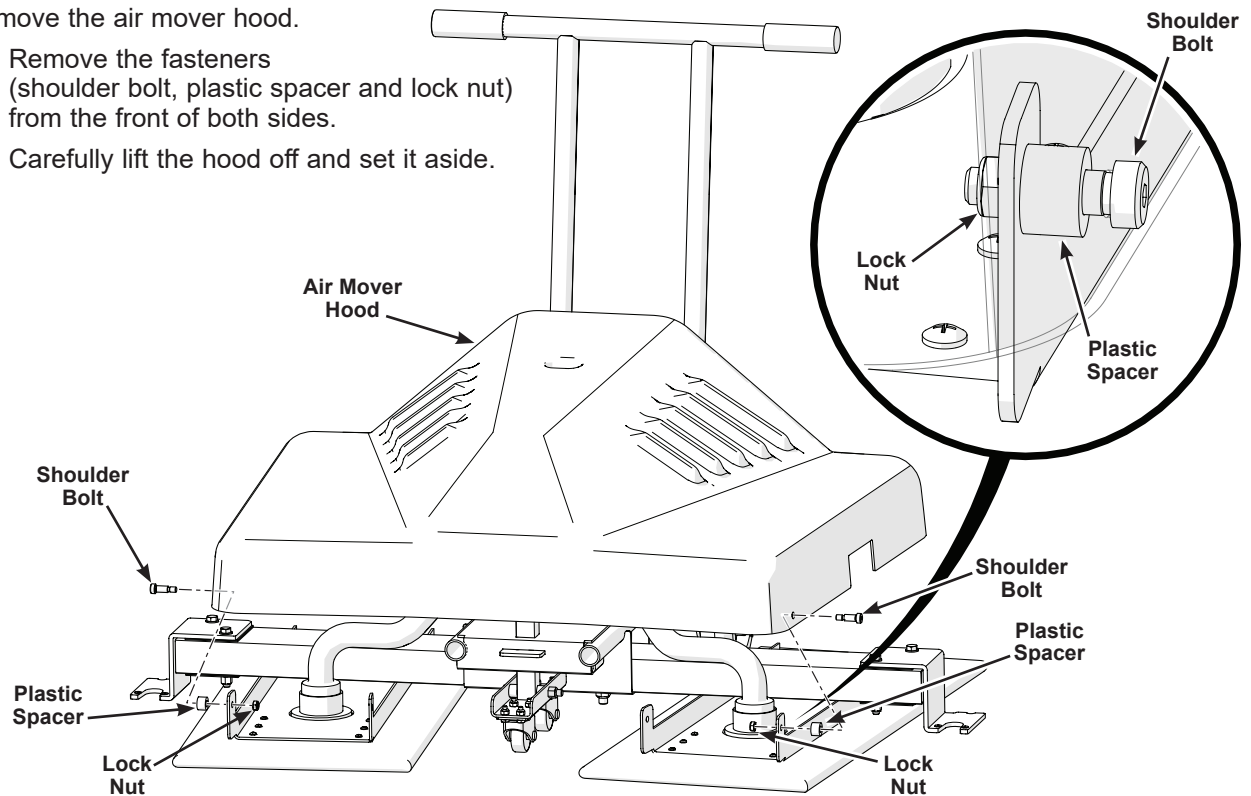


## Air Beam Replacement (continued)

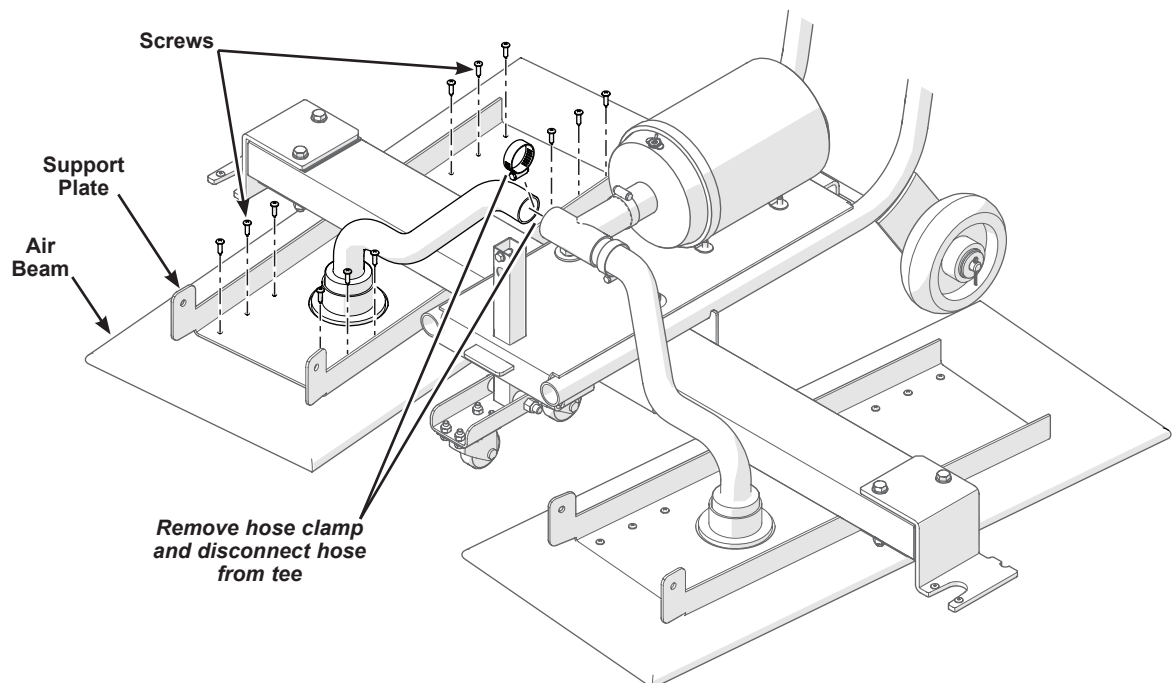
### Remove Current Air Beam

**IMPORTANT:** Keep all fasteners and clamps that are removed, they will be used to attach the new air beam.

1. Remove the air mover hood.
  - a. Remove the fasteners (shoulder bolt, plastic spacer and lock nut) from the front of both sides.
  - b. Carefully lift the hood off and set it aside.



2. Remove the hose clamp and disconnect the hose from the tee at the blower motor.
3. Remove the twelve screws that attach the air beam to the support plate.

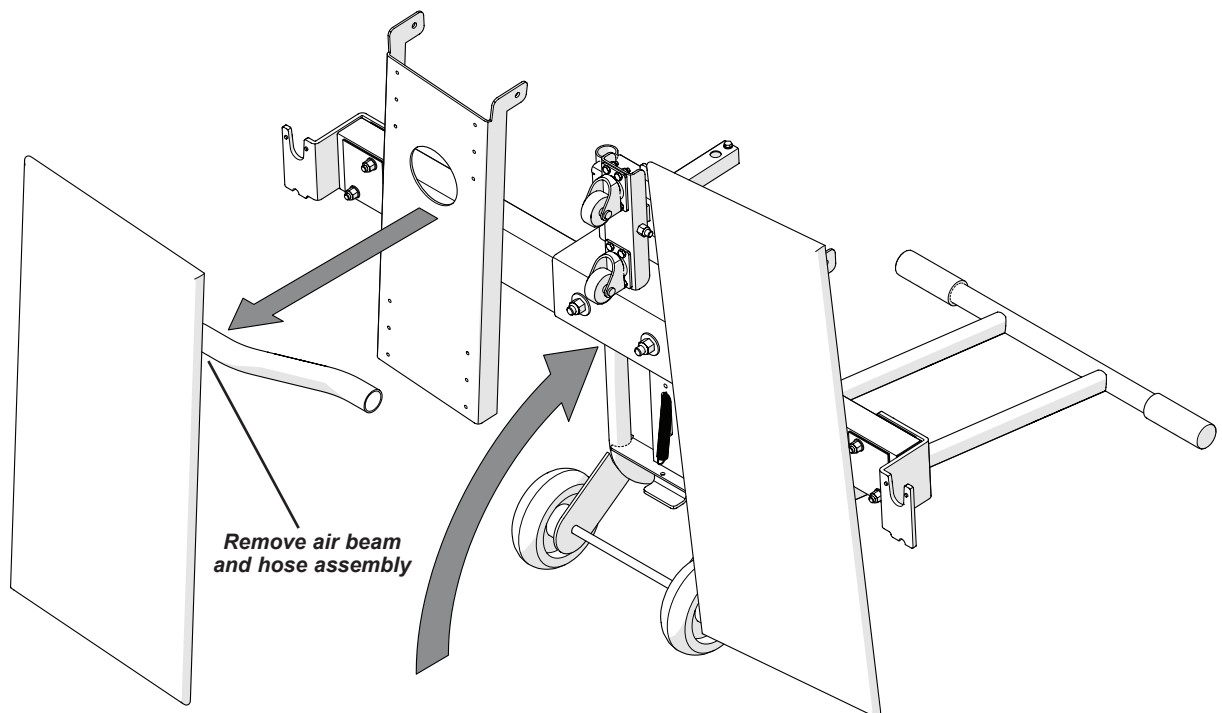


## ***Air Beam Replacement (continued)***

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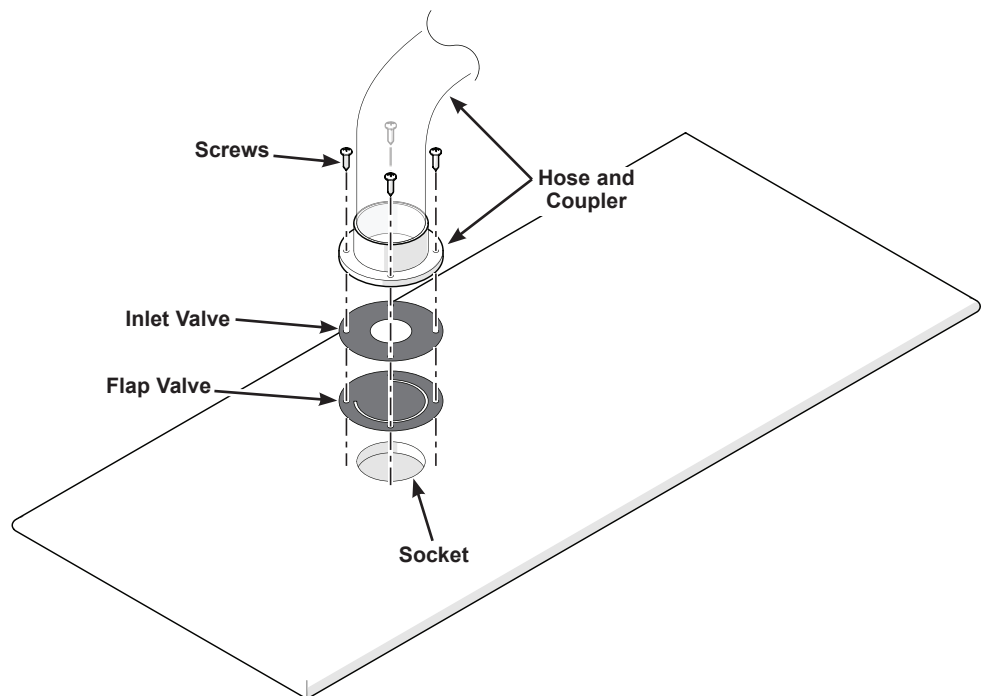
### ***Remove Current Air Beam (continued)***

3. Tip the air mover back and pull the air beam and hose assembly away from the support plate.



4. Remove the hose/coupler and valves from the air beam.

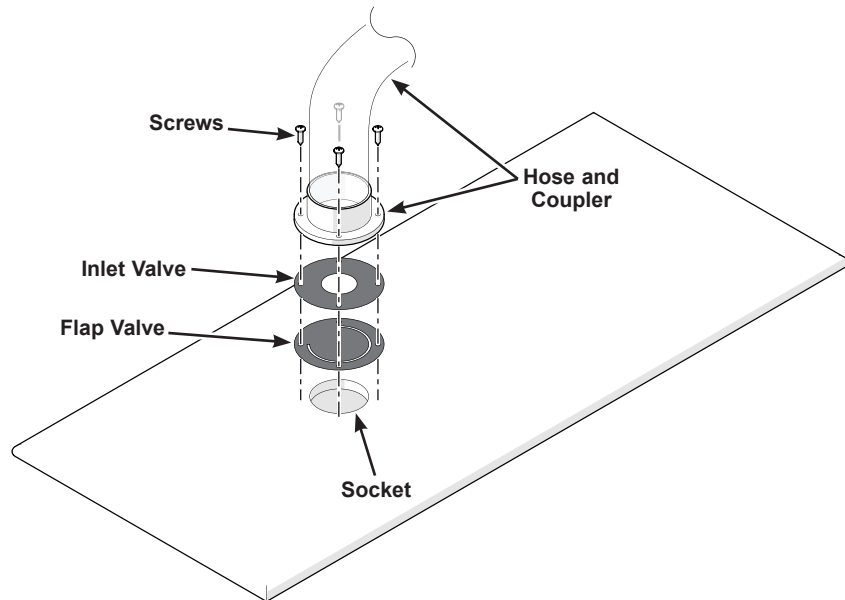
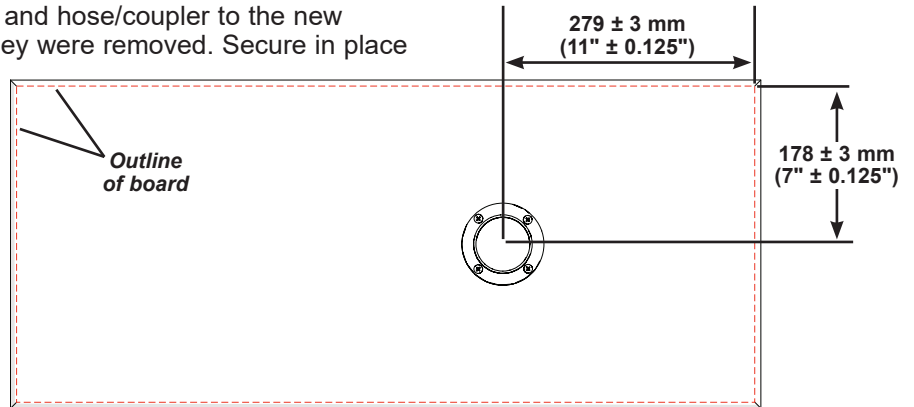
**IMPORTANT:** The hose is glued to coupler and cannot be removed from the coupler. The coupler must be removed from the original air beam and installed on the new air beam.



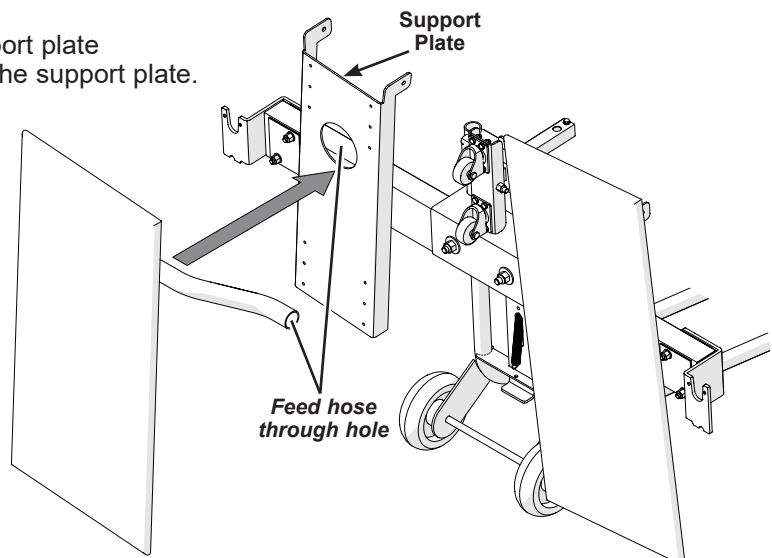
# Air Beam Replacement (continued)

## Attach New Air Beam

1. Remove and discard any existing coupler from the new air beam.
2. Attach the flap valve, inlet valve, and hose/coupler to the new air beam in the same order as they were removed. Secure in place with the existing screws.



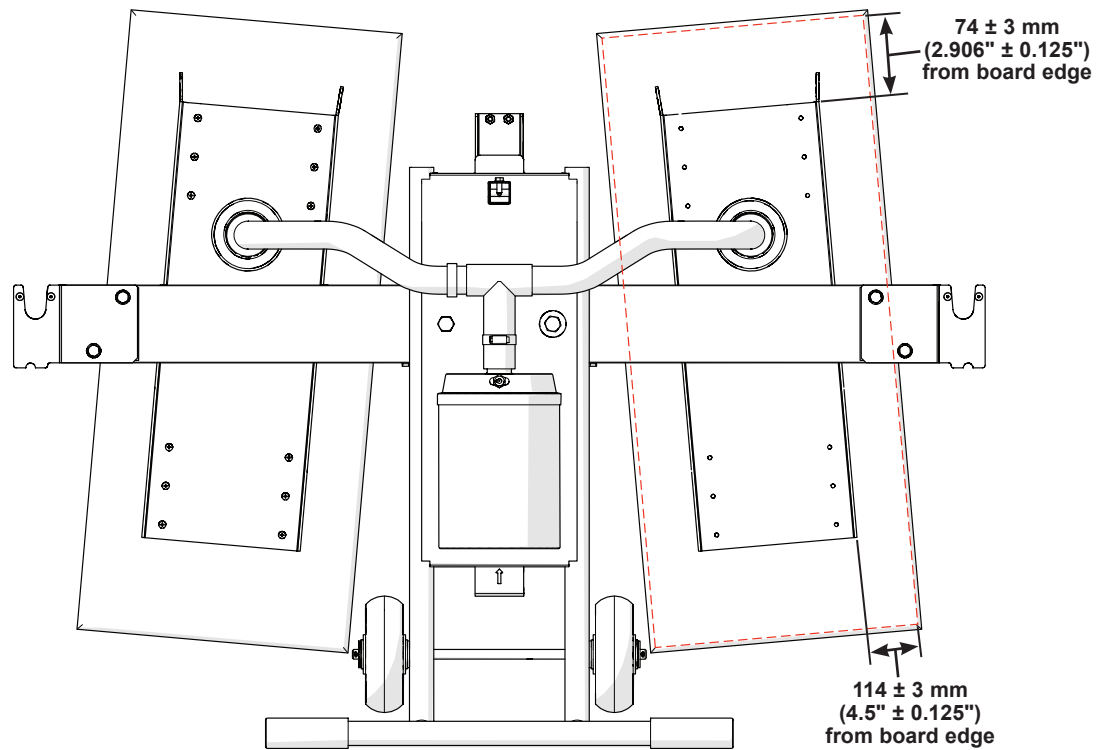
3. Feed the hose through the hole in the support plate and position the air beam to be parallel to the support plate.
4. Tip the air mover upright.



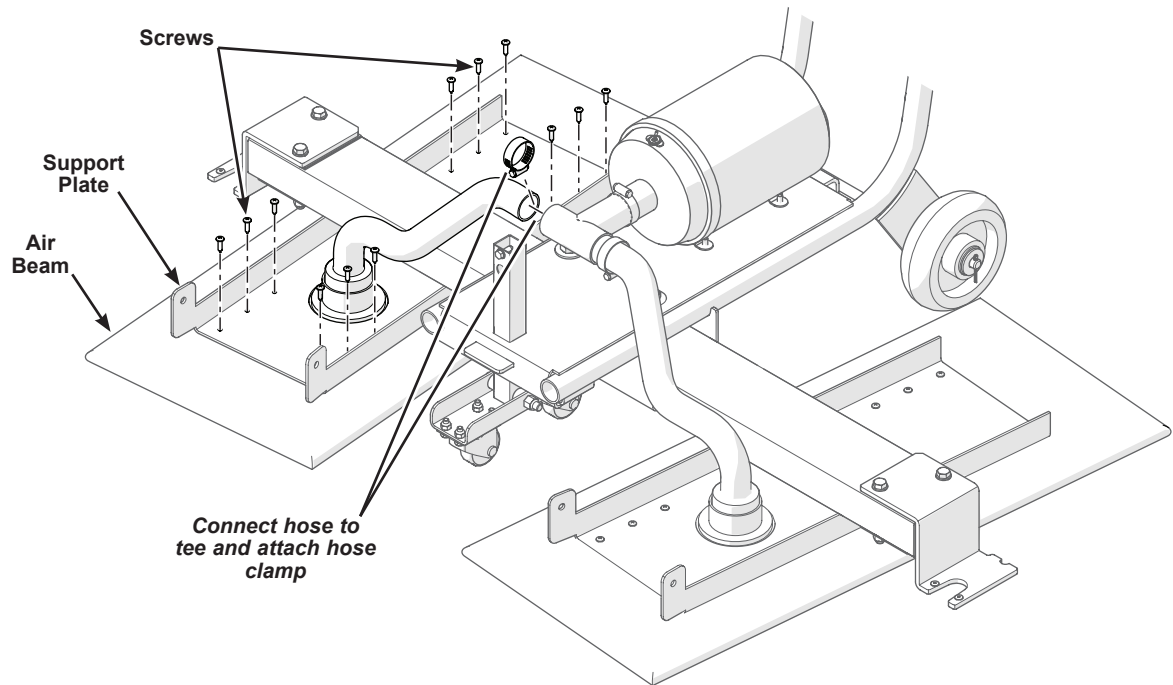
## ***Air Beam Replacement (continued)***

### ***Attach New Air Beam (continued)***

4. Attach the air beam to the support plate using the original twelve screws according to these measurements.



5. Connect the hose to the tee at the blower motor and attach it using the original hose clamp.



6. Replace the air mover hood using the original fasteners.