

Knowledge Domain: Motors
Unit: Tightening/Attachment/Balance
Skill: Mounting Motors

Tools and Parts Required:

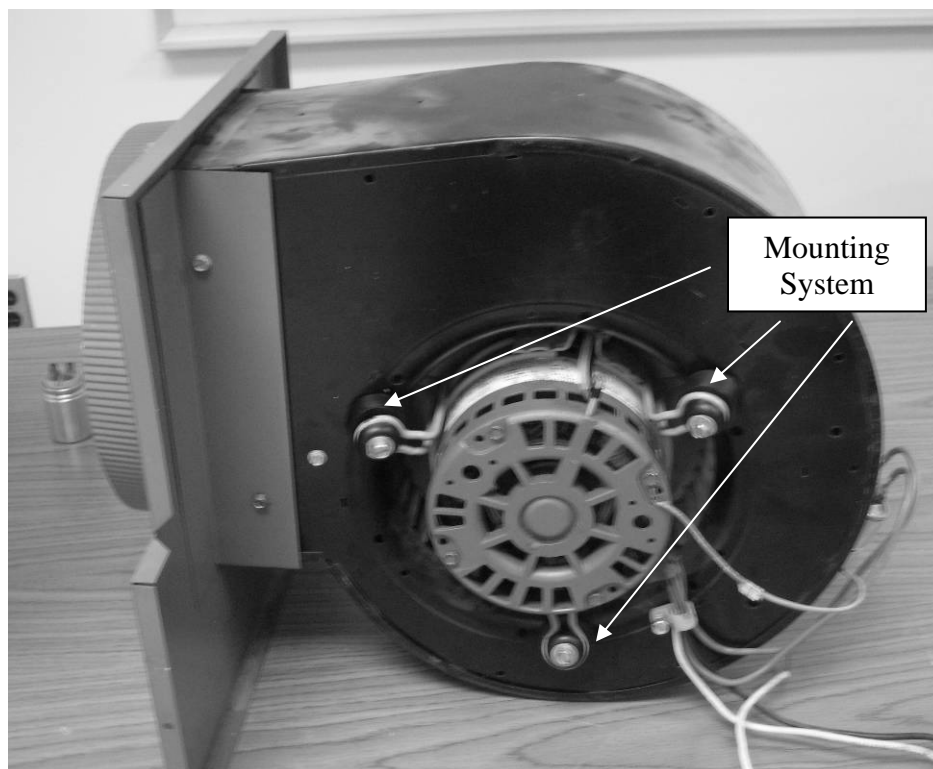
- 1) Motor
- 2) Screwdriver
- 3) Screws
- 4) Pipe Clamp
- 5) Bicycle or Surgical Tubing
- 6) Scissors

Introduction

Mounting systems hold motors securely in place. Mounted motors must be balanced. Rubber cushions are added to the mounting system to prevent motor vibrations reaching the rest of the device. Sometimes mounting systems fail. Motors that are not mounted rattle around inside the device. Motors that are not mounted properly do not run well and may create excessive vibration. Failed mounting systems must be repaired.

Example

Below is a picture of a mounted motor.



Identification and Diagnosis

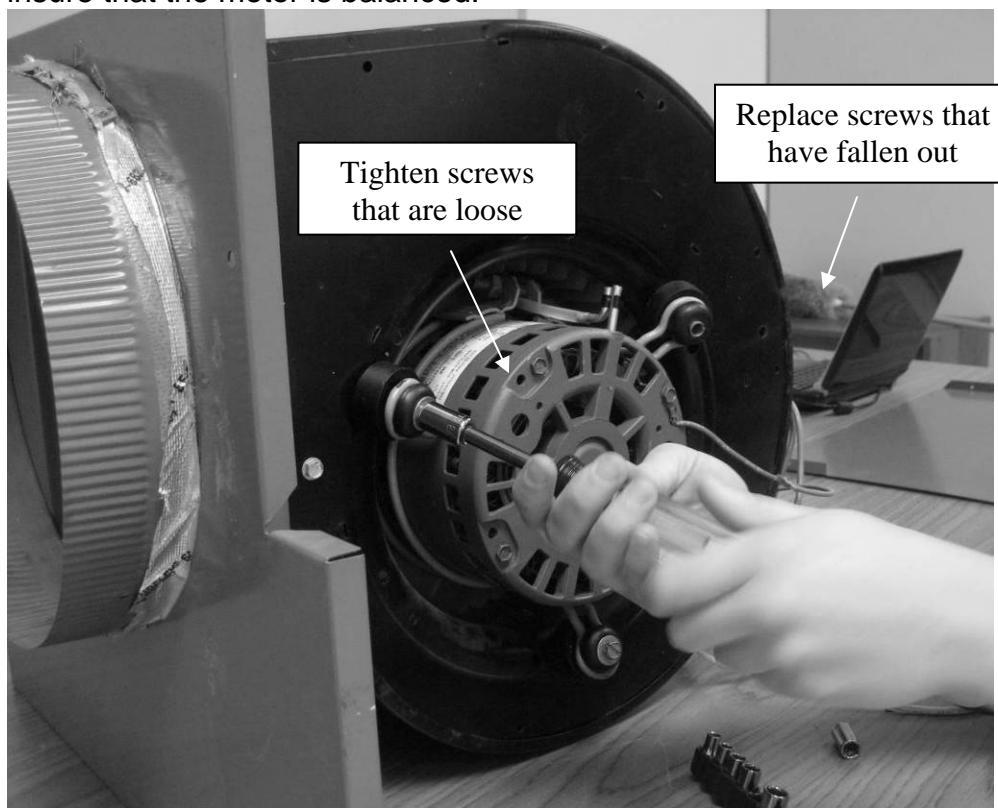
Check the mounting system if the motor does not run well or runs with excessive vibration.

Check the mounting system if there is excess noise when the motor runs. Check the mounting system if the motor shakes or rattles.

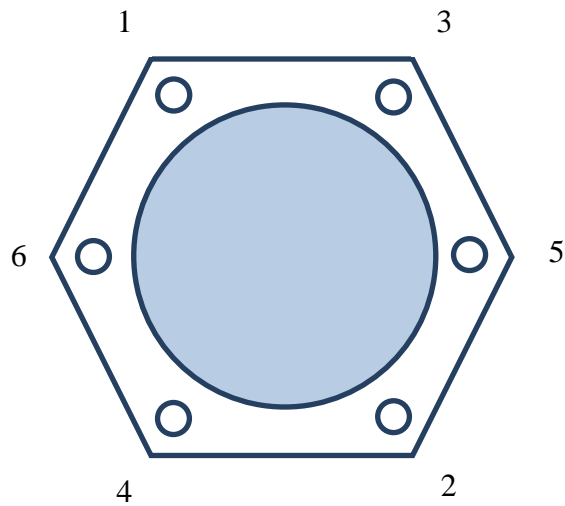
Procedure

Locate the mounting system. You may need to open the device.

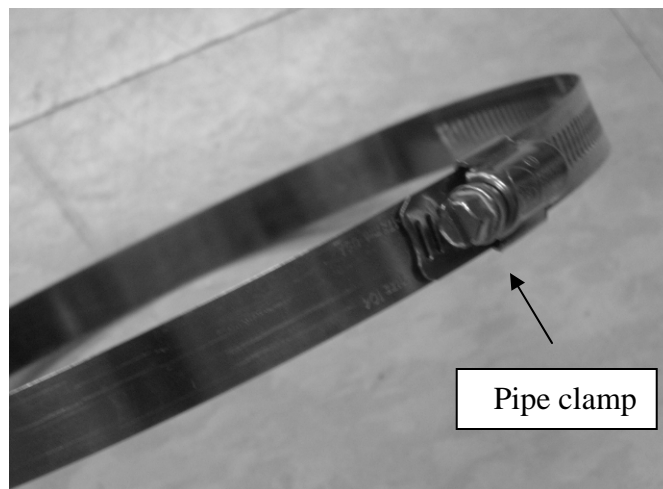
Verify that the mounting system is fully attached to the motor. Replace screws that have fallen out. Tighten screws that are loose. Tighten all screws the same amount to insure that the motor is balanced.



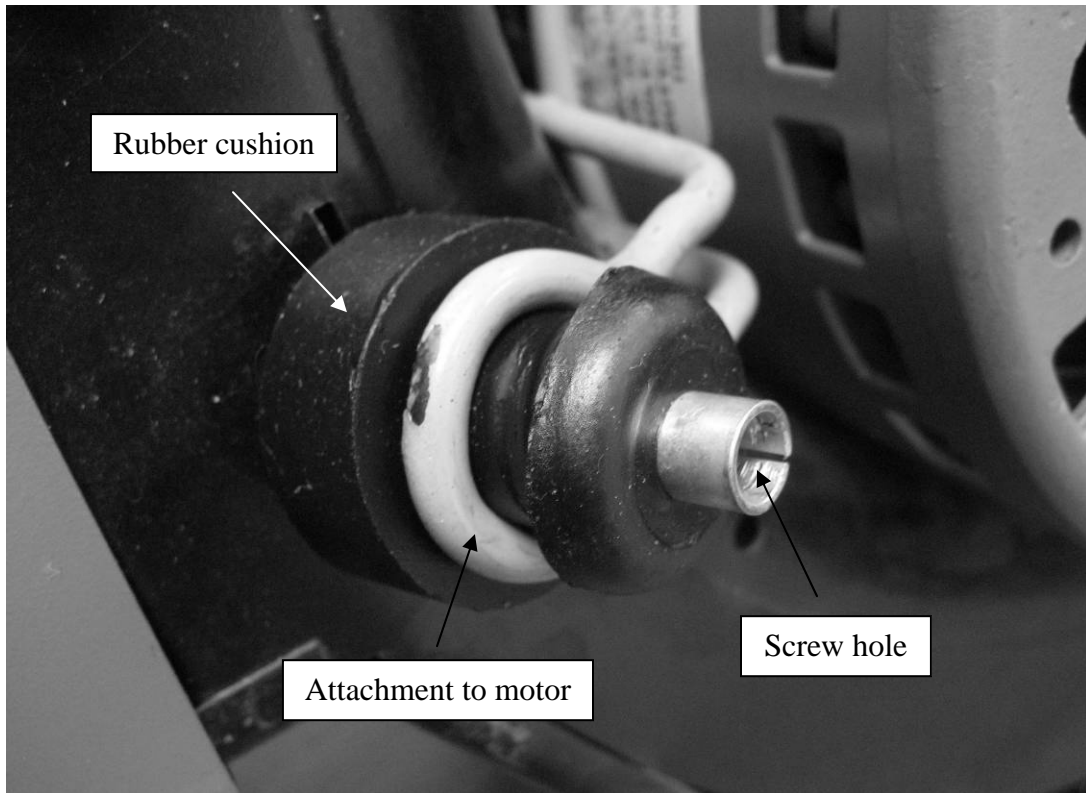
Tightening the Screws: In order to tighten the screws evenly, tighten the screws sequentially and in a pattern. Following the numbering pattern, tighten the first screw a few turns. Next, tighten the opposite screw a few turns. Continue the pattern of tightening a little until all the screws are evenly tightened. Do not tighten one screw fully before tightening the other screws.



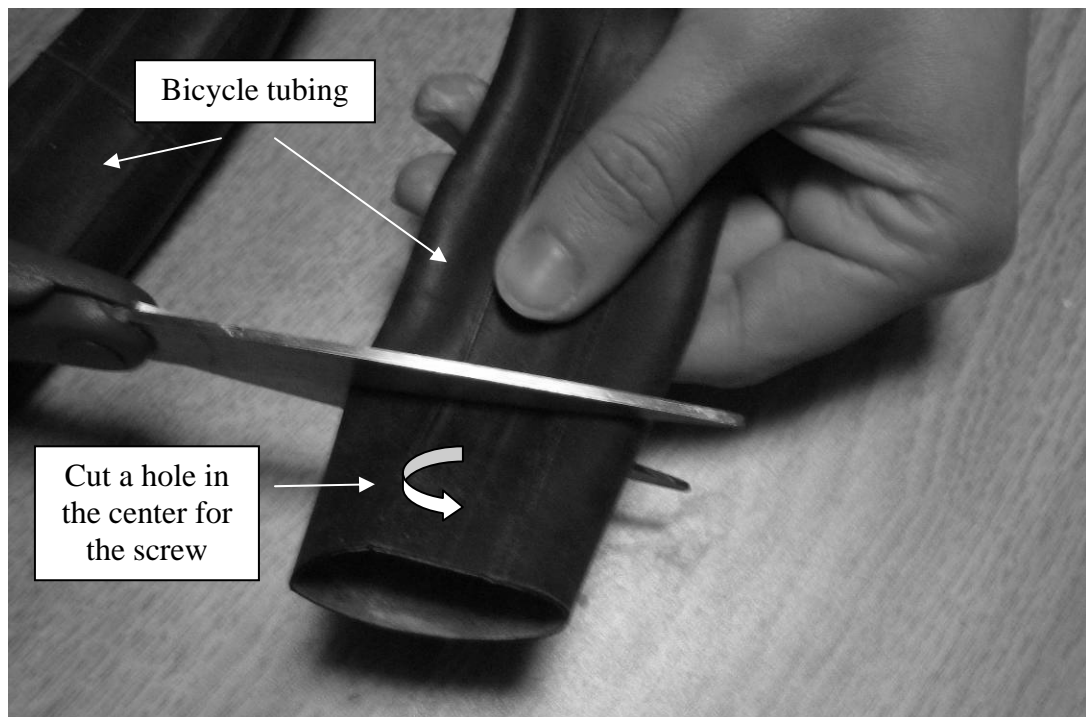
Assess the mounting system for damage. Determine whether the attachments to the motor are cracked or broken. Use a pipe clamp to attach the motor to the device where the original attachments are cracked or broken.

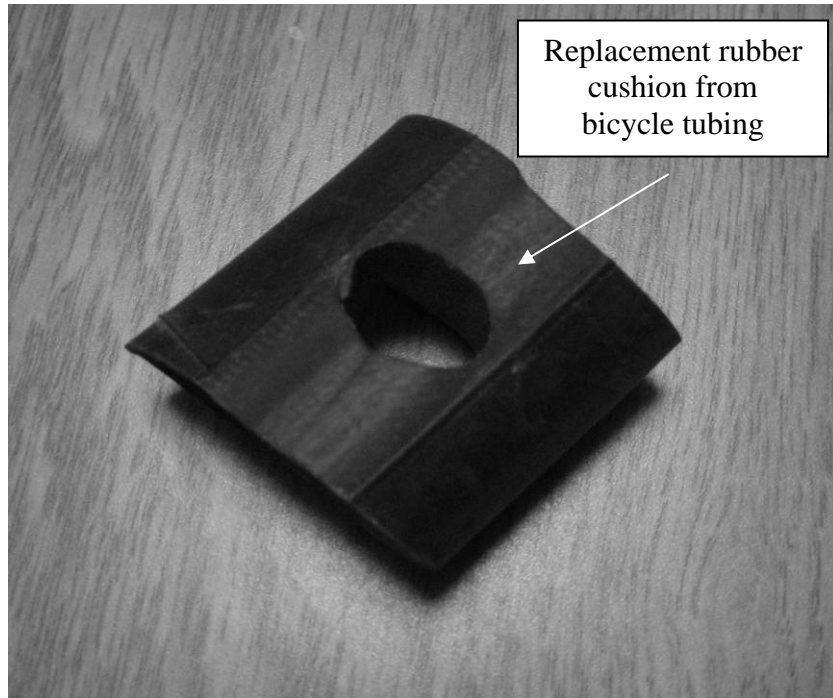


Determine whether the mounting system includes rubber cushions.



Evaluate the rubber cushions. Replace rubber cushions that are cracked, hardened, or broken. If you cannot find replacement rubber cushions, cut a similar rubber piece out of surgical tubing or bike tubing.





Reassemble the device. Test the motor. Verify that the motor runs quietly. Verify that the motor does not vibrate or shake. Verify that the motor is balanced.

Exercise

Your instructor will provide you with a motor.

Locate the mounting system. Evaluate the attachments to the motor. Repair the attachments to the motor as necessary. Evaluate the rubber cushions. Repair the rubber cushions as necessary.

Test the motor.

Your instructor must verify your work before you continue.

Preventative Maintenance and Calibration

Always calibrate every medical device before returning it to use.