

Automatic Motor Base Installation, Operation and Maintenance

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1 Theory of Operation

Automatic motor bases use a built-in spring, or series of springs, to control belt tension. The motor rides on cross members attached to tube rails, forming a carriage that automatically moves toward or away from the driven member as load increases or decreases. Adjustments are made with the motor running at the prevailing load. Belt tension is always maintained at a value just sufficient to keep the system operating at peak efficiency with neither slippage nor excessive tension.

Benefits of an Automatic Motor Base

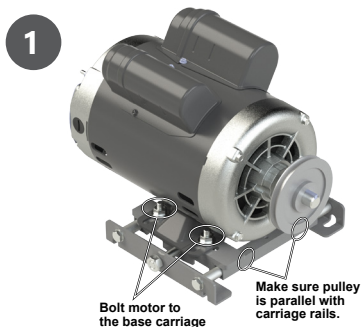
- Simple motor and belt installation
- Adjustments are made while the system runs
- No belt tension calculations required
- No guesswork in setting belt tension
- Handles overload and shock without affecting system performance
- Belt and bearing stresses are never excessively high
- Fewer service trips to remote or hard-to-access sites
- Longer belt and sheave life

2 Installation

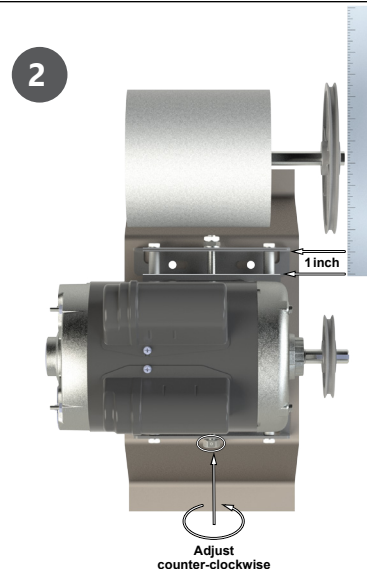


CAUTION – MOUNTING SURFACE MUST BE FLAT

THE SURFACE ON WHICH THE BASE IS MOUNTED MUST BE ABSOLUTELY FLAT. A BASE THAT IS DISTORTED OR WARPED WHEN BOLTED DOWN WILL NOT FUNCTION PROPERLY. CORRECT ALL SURFACE IMPERFECTIONS WITH SHIMS. THE SHIMS SHOULD HAVE HOLES SLIGHTLY LARGER THAN THE SECURING BOLTS, AND SHOULD BE LOCATED UNDER THE BASE MOUNTING HOLES.



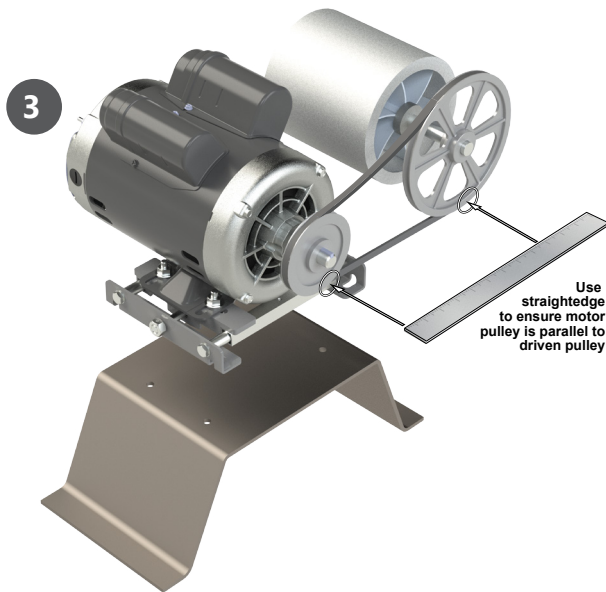
1. Attach the motor to the base carriage with the appropriate hardware making sure that the side of the pulley is parallel with the carriage rails.



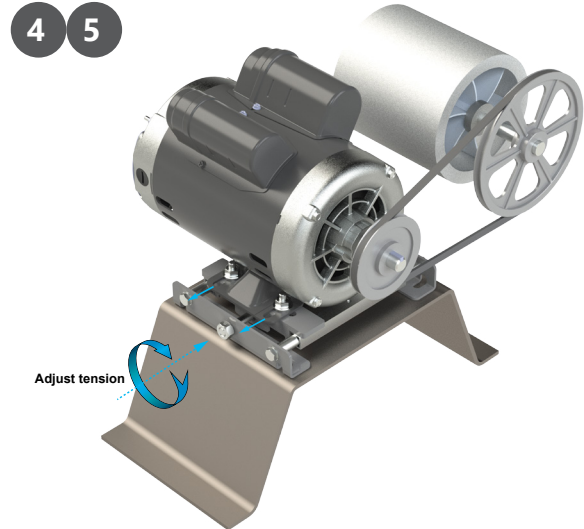
2. Turn the carriage adjusting screw counter-clockwise until the carriage is about 1 inch from the angle closest to the driven pulley.

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2 Installation Continued



3. Place the belt over both pulleys and precisely align with a straightedge or laser alignment tool. Install appropriate hardware to firmly mount the motor base to the mounting surface.



4. Fully tighten the mounting hardware to the recommended torque using hand tools.
5. Turn the adjusting screw to remove the slack and apply a small amount of tension to the belt. This creates compression in the spring. Start the motor with no load. Turn the adjusting screw until the motor and pulleys operate freely without any belt slippage.

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3 Setup

**IMPORTANT – APPLY THE MINIMUM TENSION**

The proper amount of belt tension is the minimum necessary to transmit the required power without slippage. Applying more tension than necessary shortens the life of the belt and bearings.

Required Tools:

- Infrared Thermometer
- Tachometer (continuous-reading, non-contact type recommended)
- Adjustable jaw wrench

Procedure:

Step 1: Apply reflective tape to the driven shaft if needed. Start the machine and apply full load conditions. Verify that the belts are not slipping. If the motor is controlled by a VFD, ensure the motor is running at full speed. After 5 minutes of operation, record driven shaft RPM and belt temperatures.

**DANGER – MOVING PARTS**

KEEP ALL TOOLS OUTSIDE PROTECTIVE GUARDS WHEN READING BELT TEMPERATURES WHILE THE MACHINE IS RUNNING. KEEP HANDS, TOOLS, AND CLOTHING CLEAR OF ANY MOVING PARTS.

Step 2: Turn the adjusting screw counter-clockwise until a loss of 1 to 2 RPM is noted. A rise in belt temperature should occur within 10 seconds to 2 minutes. Turn the adjusting screw clockwise until the driven shaft RPM returns to full speed. Allow 2 to 5 minutes for belt temperature to stabilize and record the reading. Turn the adjusting screw one full turn clockwise. Record final readings and keep them as a baseline.



NOTE: Sheave wear, belt guard ventilation, belt condition, and ambient conditions will affect belt temperature. Consult the belt manufacturer for the correct operating temperature ranges.

Step 3: After 2 to 4 weeks of operation, repeat steps 1 and 2.

4 Maintenance

Lubrication

Where the rail tubes are provided with holes or equipped with lube fittings, lubricate every 6 months, or as dictated by the application. Wipe down the tubes and adjusting screw with a clean oily rag and apply a light grade of grease. Be sure to remove all foreign material from the tubes and adjusting screws before regreasing.

Changing Belts

To maintain the original alignment, move the carriage with the adjusting screw only. Turn the adjusting screw counter-clockwise until the belts can be removed. Install new belts and turn the adjusting screw clockwise until the belts are snug and do not slip when running under full load. Once new belts are installed, complete the Setup procedure in Section 3.

Periodic Adjustment

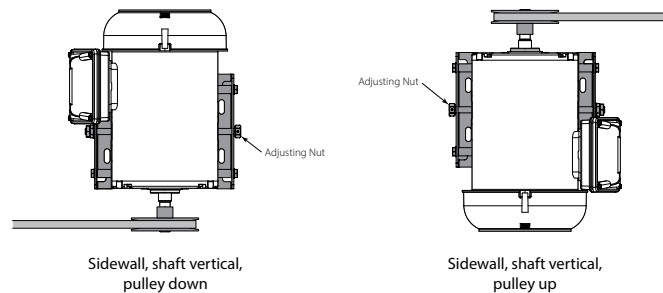
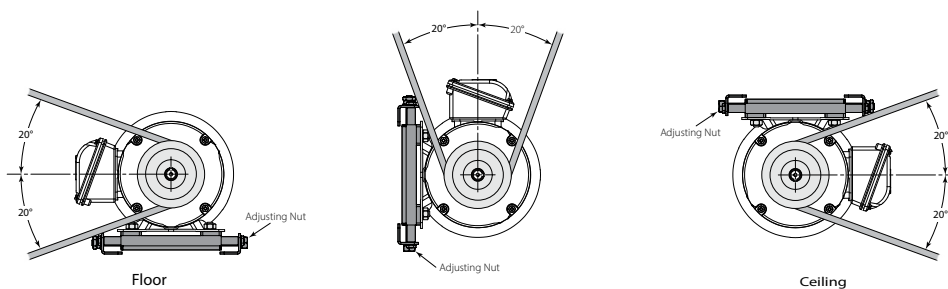
Periodic adjustment should not be required. However, if incorrect belt tension is suspected, complete the Setup procedure outlined in Section 3.

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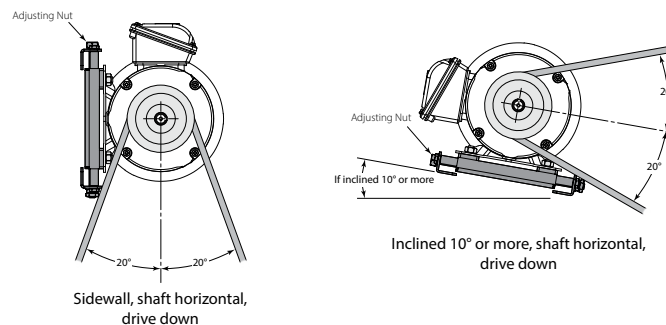
5 Motor Mounting Positions

Automatic motor bases may be mounted in either a horizontal or vertical position, detailed below.

IronHorse Automatic Motor Base Mounting Positions	
Horizontal	Vertical
• Floor mount • Ceiling mount • Side-wall, shaft vertical, pulley down • Side-wall, shaft vertical, pulley up • Side-wall, shaft horizontal, drive up	• Sidewall or inclined, shaft horizontal, drive down • Any installation inclined 10° or more from horizontal



A horizontal base can be used for any of the above motor mounting positions.



A vertical base must be used for either of the above motor mounting positions.