

INSTALLATION

How to Install Belts

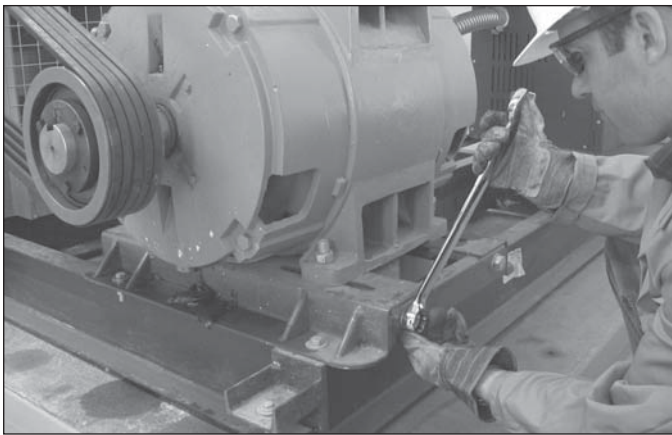
When a belt is being installed, the same basic steps must be followed, regardless of whether the belt is a V-belt or a synchronous belt.

Preparation

1. Confirm that the power is off, locked, and tagged. Never work on a belt drive until this important step is completed. Wear proper safety equipment (hardhat, gloves, safety glasses, steel toe shoes).
2. Remove belt guard and place away from drive so that it does not interfere with working on the drive.

Removal

3. Loosen motor mounting bolts or adjusting screws.



4. Move the motor in until the belt is slack and can be removed easily without prying. Never pry off a belt, as the sheave or sprocket can be damaged. Prying off belts also adds the risk of injury.



5. Remove old belt.

Inspection

6. Inspect the old belt for any unusual wear. Excessive or unusual wear may indicate problems with the drive design or past maintenance procedures. Refer to the Problem/Solution Summary Table in the Belt Performance and Troubleshooting section for guidelines in matching belt appearance to possible problem causes.
7. Inspect the sheaves or sprockets for unusual or excessive wear. Belt life will be reduced if the sheaves or sprockets are worn. Wear gloves for protection from nicks or sharp surfaces.

For V-belt sheaves: Inspect grooves for wear and nicks. Use Gates sheave gauges to determine if the grooves are worn. Place the proper sheave gauge into the groove and check for wear. If more than 1/32" of wear can be seen between the gauge and groove side wall, the sheaves are worn and should be replaced. A light source such as a flashlight may be used to backlight the gauge.



Do not be misled by "shiny" grooves. Grooves that are "shiny" are often polished because of heavy wear.

Inspect the sheave grooves for rust or pitting. If rusted or pitted surfaces are found, the sheave should be replaced.

For Synchronous sprockets: Inspect sprocket grooves for unusual or excessive wear. Check for excessive wear by both visually inspecting the grooves and by running your finger along the sprocket grooves. If you can feel or see noticeable wear, the sprockets are worn and should be replaced.

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Do not be misled by “shiny” grooves. Grooves that are “shiny” are often polished because of heavy wear.

Inspect the sprocket grooves for rust or pitting. If rusted or pitted surfaces are found, the sprocket should be replaced.

Check the sprocket flanges and make sure that they are not loose or bent. Bent flanges can interfere with the belt and cause premature belt wear and failure.

8. If necessary, clean sheave and sprocket grooves by wiping the surface with a rag slightly dampened with a light, non-volatile solvent. Do not sand or scrape the grooves to remove debris.

Installation

9. If necessary, install new sheaves or sprockets. Refer to page 14 for detailed instructions for installing QD or Taper-Lock® bushings.
10. Check the sheave or sprocket alignment. In order to achieve optimum belt life, it is important that the drive's sheaves or sprockets be aligned properly. Use a straightedge or Gates EZ Align® laser alignment tool. Adjust the sheave or sprocket position as necessary.
11. Install the new belt or set of belts.

Replace all belts on multiple V-belt drives. Never replace a single belt or a portion of a multiple belt drive. Always use belts from the same manufacturer on a multiple belt drive. If a new belt is used with old belts, the load will not be shared evenly between the belts on a multiple V-belt drive. Mixing new and old belts very possibly could lead to premature belt failure and uneven sheave wear.

When installing the belt, make sure that there is clearance to slip the belt over the sheave or sprocket. Do not pry or use force to install the belt. Do not roll the belt onto the drive.

12. Adjust the motor base adjustment screws to take up the center distance on the belt drive until the belts are tight.
13. Check belt tension, using a tension gauge or Sonic Tension Meter. Adjust the belt drive's center distance until the correct tension is measured.

On multiple belt drives, some belts may appear to hang unevenly when installed. It is normal for belts within RMA length and matching tolerances to have noticeable differences in the distance the belt span sags. This is called the “catenary effect”.

Catenary effect is a curve made by a cord of uniform weight suspended between two points.

Follow the recommended run-in and retensioning procedure to minimize the visible difference in belt sag.

14. Rotate the belt drive by hand for a few revolutions. Re-check the belt tension and adjust as necessary.
15. Re-check the drive alignment and adjust as necessary.

Completion

16. Secure motor mounting bolts to the correct torque.
17. Re-check the belt tension and adjust as necessary. Tightening the motor mounting bolts may have changed the belt tension.
18. Replace the belt guard.
19. Start the drive, looking and listening for any unusual noise or vibration. If possible, shut down the drive and check the bearings and motor for unusual heat. If the motor or bearings are hot, the belt tension may be too high, or bearings may not be properly lubricated. Temperatures can be checked with an infrared pyrometer.

V-Belt Run-In Procedure

20. A run-in procedure is recommended for all V-belt drives so that the optimum belt life can be achieved. A run-in consists of starting the drive and letting it run under full load for up to 24 hours. If a 24 hour run-in is not possible, let the belt drive run overnight, to the next shift, or at least a few hours. After the belts have run-in, stop the belt drive and check the belt tension. Running the belts under full load for an extended period of time will seat the V-belts into the sheave grooves.

V-belt tension will drop after the initial run-in and seating process. This is normal. Adjust the belt tension as necessary.

Since tension in V-belts will drop after the initial run-in and seating process, failure to check and retension the belt will result in low belt tension and belt slippage. This slippage will result in premature belt failure.

