

## V-BELT — HOW TO ALIGN AND SET TENSION

**Issue:** How to align and properly tension drive belts on Vmax oil sealed liquid ring vacuum pump systems.

Each Vmax system is tested and checked at the factory prior to shipment to ensure trouble-free operation. In the unlikely event you encounter a problem, we recommend that you consult with your local distributor for parts/service. Remember, when calling for service, parts or system information, always have the pump or system model number and serial number ready.

[Click here to find your local authorized distributor.](#)

For units utilizing Vbelt drives, it is important to inspect the belts periodically for proper tension, alignment and general condition.

**WARNING!** Before attempting any repairs, disconnect all power from the system by switching off power at the main breaker or disconnect switch. Always use appropriate Lock Out - Tag Out procedures.

Remove the belt guard then inspect the general condition of the belts. Look for glazed or hardened belts. This indicates the belts have been slipping. Check for cracks or other faults in the belt. If the belts appear cracked, glazed or hardened, replace the belts with a new set. When replacing belts, always install a complete set of identical belts. Never switch or mix belts from one groove to another on the sheaves.

Next, make sure the sheaves are properly installed and aligned before attempting to tension the drive. The V-belts should be placed over the sheaves and in the grooves without forcing them over the sides of the grooves. When handling the belts, be sure to never crimp or twist the belts.

Check for proper sheave or pulley alignment. If the sheaves are misaligned, it will cause premature belt wear, excessive belt noise, and vibration. Check the alignment by placing a straight edge along the outside face of both sheaves. Misalignment appears as a gap between the outside face of the sheaves and the straight edge. Align sheaves to eliminate the gap by adjusting the pump or the motor to make the shafts parallel. Check for “tilting” of the pulleys with a bubble level.

Belts must be properly tensioned initially then rechecked periodically. The ideal tension for a V-belt is the lowest tension at which the belt will not slip at the highest load condition.

With all belts in their grooves, adjust centers to take up the slack until they are fairly taut. Start the drive and continue to adjust until the belts have only a slight bow on the slack side while operating **with load conditions**.

After several days of operation, the belts will seat themselves in the sheave grooves. Further tensioning may be necessary until the drive shows a slight bow in the slack side. Insufficient tension is evidenced by slipping and squealing at startup.

Avoid excessive heat (140°F and higher), chemical vapors and lubricants as they can decrease the life of the belts. If the unit is idle for an extended period of time, remove the tension from the belts then retighten prior to startup.

