RELIABILITY IN EVERY REVOLUTION

TECH TIPS

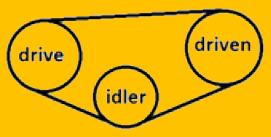
Idlers and Placement

A two shaft system on power transmission belt drives is always the preferred system. This is where you are able to move one shaft, allowing slack in the belt for tensioning. However, in certain applications, this is now always possible due to design or other factors.

Idlers may also be required in the following situations: to allow installation and tension when the shafts are fixed and not movable, clear obstructions, turning corners or making quarter turns, support long spans to avoid belt whip, maintain tension from a spring or weighted idler, to increase surface contact on a pulley, and to be used for clutching in some applications.

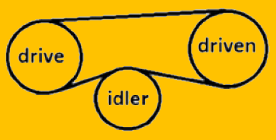
Four positions of an idler:

Inside:



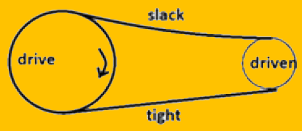
Idlers on the inside of the belt will have the least effect on the service life of the belt. The idler on the inside will also decrease the amount surface contact on the pulleys increasing the possibility for slipping.

Outside:



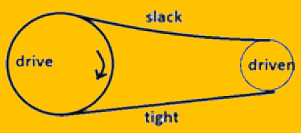
Idlers used on the outside of the drive will have a greater effect on the service life of the belt. The outside idler will give the greatest ability to make better contact on the pulley.

Slack:



belts have the best ability to transmit power to the driven pulley from the drive pulley when there is direct contact. It is recommended that you put the idler on the slack side, rather than the tight side. This will give better power transfer and lower the effects of an idler on the belts service life.

Tight:



Putting the idler on a tight side will decrease the service life of the belt - this is the least desired position.

General Information:

Idlers in a Span:

When running a grooved idler inside or outside, it is ideal to have it centered, creating the same angle to both pulleys in front and behind.

When using a flat idler, you will want it close to the proceeding pulley to allow distance to the next pulley. This will give the belt the best ability to stay aligned with the pulley.

Idler Size:

Keep your idler no smaller than the smallest loaded pulley in the application. Ideally, you want it to be 1.3 times bigger for inside idlers to give the belt the most gentle bend. With outside idlers, you ideally to want it to be 1.4 times larger to help decrease the back bend of the belt.

Idler Design:

When using grooved idlers, it is very important that the idlers are made to the applicable specs needed for the belt. With synchronous belts, you may be flanged on one side or both sides.

If running a flat roller inside or out you are going to want to make sure it is not crowned, that will cause the belt to run off. Flat idlers on the outside of the belt are going to want a flange that is at least 25% of the belt thickness, and 15%wider than the belt between the flanges.

Flat idlers used on the inside of the belt you are never going to want flanged, and not crowned.

Unflanged idlers on the outside you are going to be need 25% wider between the flanges then the back of the belt.

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