

INGERSOLL-RAND®

AIR COMPRESSORS

Ingersoll-Rand Company
 Reciprocating Compressor Division
 Small Compressor Business Unit
 Campbellsville, KY 42718

Supplement

Belt Tensioning on Models 2340, 2420, 2475, 2545 & 7100 (10 Horsepower Motors & Below)

PURPOSE

The purpose of this supplement is to provide you with updated maintenance information regarding belt tensioning on Models 2340, 2420, 2475, 2545 and 7100 compressor units with motors 10 horsepower and below. The information contained in this supplement supercedes the belt tensioning instructions and maintenance intervals given in your manual.

Keep this supplement in a safe place along with the manual provided with your unit.

PRECEDENCE

The belt tightening device has been eliminated from some compressor units. The frequency of routine belt tension checks has also changed.

CHECKING BELT TENSION

While the need for belt maintenance has been greatly reduced, tension should be checked occasionally, especially if looseness is suspected. New belts must also be properly tensioned upon installation.

A quick check to determine if adjustment is proper may be made by observing the slack side of the belt for a slight bow when the unit is in operation. If a slight bow is evident, the belt is usually adjusted satisfactorily. See Figure 1. A more accurate method is the gauge method, described below.

TENSIONING BELTS

Belt tensioning can be achieved by loosening the motor anchor screws, pushing the motor away from the pump, and retightening the motor anchor screws. The motor can be easily moved by placing a prying tool beneath it. A commercially available spreader or other belt tensioning device can also be helpful should tensioning be necessary.

Follow the procedures outlined below to correctly set and measure belt tension on models 2340, 2420, and 2475. Refer to Figure 2 for a visual representation.

- 1). Lay a straight edge across the top outer surface of the belt drive from pulley to sheave.
- 2). At the center of the span, perpendicular to the belt, apply pressure to the outer surface of the belt with a tension gauge. Force the belt to the deflection indicated in the table at right. Compare the reading on the tension gauge to the table below.

| Deflection in Inches | Min. Tension (Lbs.) | Max. Tension (Lbs.) |
|----------------------|---------------------|---------------------|
| 0.29 | 4.9 | 7.1 |

Follow the procedures outlined below to correctly set and measure tension on models 2545 and 7100. Refer to Figure 2 for a visual representation.

- 1). Measure the span length (t) of the drive.
- 2). Determine the amount of deflection (in inches) required to measure deflection force (in pounds) by multiplying the span length (t) by 1/64. For example, a 32" span length multiplied by 1/64 equals 1/2" of deflection required to measure deflection force.
- 3). Lay a straight edge across the top outer surface of the belt drive from pulley to sheave.

Figure 1. Visual Belt Tension Check.

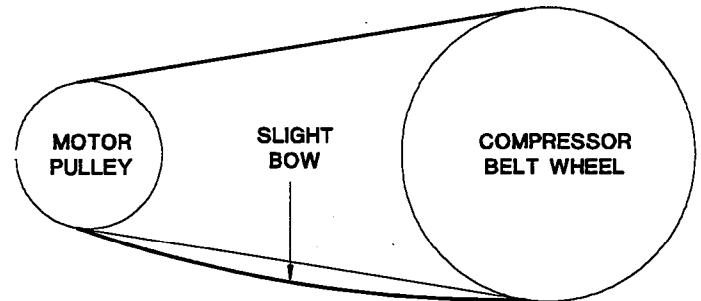
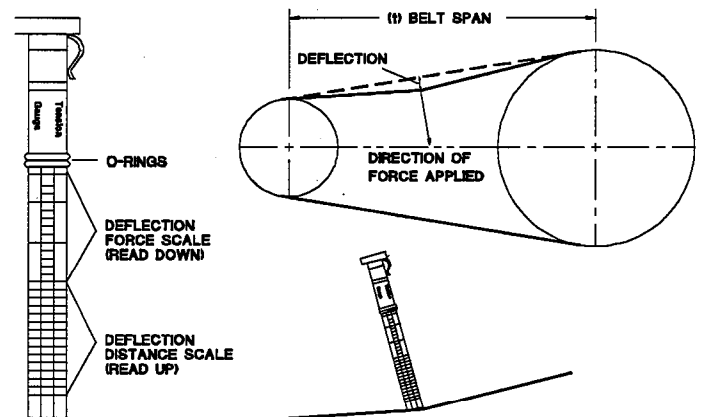


Figure 2. Belt Tensioning.



- 4). At the center of the span, perpendicular to the belt, apply pressure to the outer surface of the belt with a tension gauge. Force the belt to the predetermined deflection calculated in step 2. Compare the reading on the tension gauge to the table below.

| Motor Horsepower | Tension @ 1/64" Deflection per Inch of Span | |
|------------------|---|---------------------|
| | Min. Tension (Lbs.) | Max. Tension (Lbs.) |
| 7.5 | 7 | 10 |
| 10 | 8 | 12 |

Ensure the pulley and sheave are properly aligned and the motor anchor screws are adequately retightened prior to restarting the compressor.

CAUTION

Improper pulley/sheave alignment and belt tension can result in motor overload, excessive vibration, and premature belt and/or bearing failure. To prevent these problems from occurring, ensure the pulley and sheave are aligned and belt tension is satisfactory after installing new belts or tensioning existing belts.