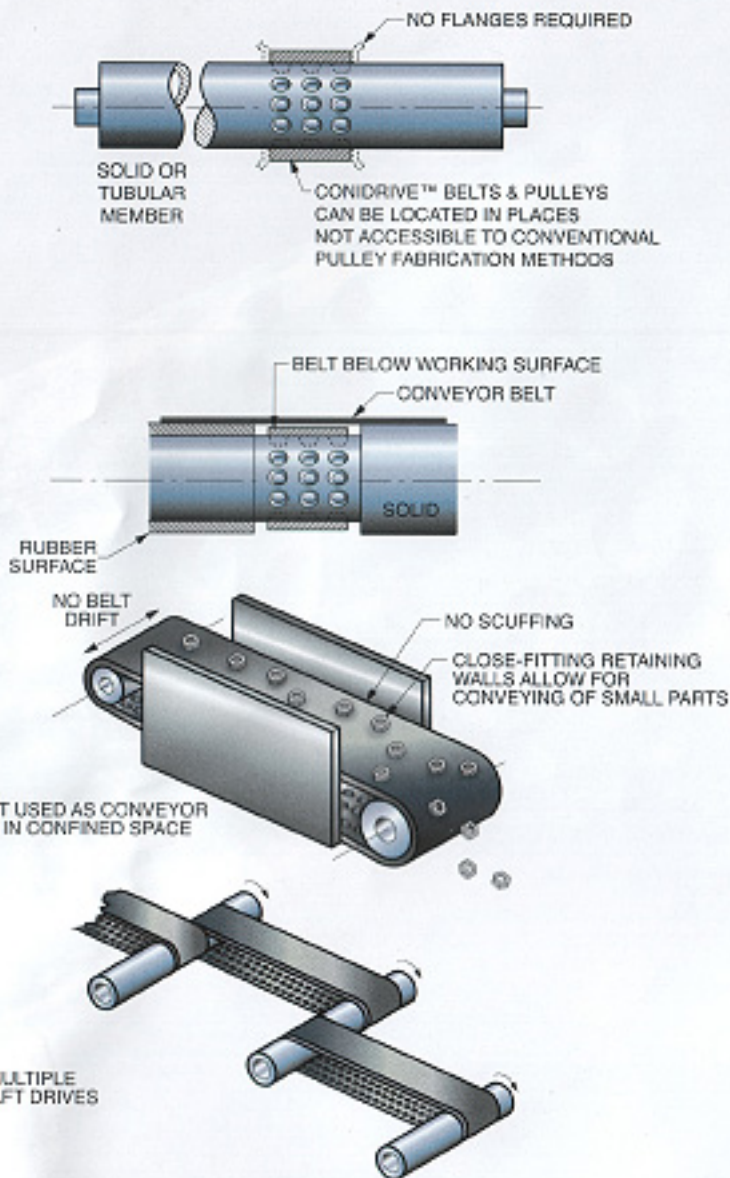


Some examples of applications with solutions unique to

**CONIDRIVE™** components.



## CONIDRIVE™ N10 DESIGN DATA

All CONIDRIVE™ N10 belt and pulley systems should be designed, incorporating the design data shown below to ensure reliability and long-life operation.

CONIDRIVE™ N10 belts are available in Endless Style and as Belt Stock.

### • Rotational Belt Drives

The power transmitting capability is dependent on various parameters; namely torque to be transmitted, the rpm of the smallest pulley (driver), the number of teeth on the drive & driven pulleys and the number of teeth on the belt. However, in all cases, the allowable belt tension values shown in **Tables 1, 2 and 4** must not be exceeded. It is advisable to remain below these values if shock loads are anticipated.

### • Reciprocating Belt Drives

Reciprocating belt drives employing belt stock materials can be selected based on an allowable static load of 8 lbs. per engaging tooth and belt load from static and acceleration forces not to exceed values indicated in **Table 4**.

### • Horsepower Calculations

H.P. to be transmitted - 3/4

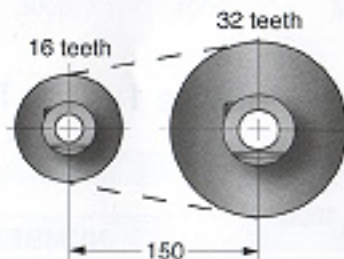
rpm of small pulley (driver) - 1750

Belt style - 2 row

Small pulley DIA. (mm) - 49.49 (16 teeth)

Large pulley DIA. (mm) - 100.42 (32 teeth)

Center distance - 150 mm



### • Step 1 - Determine no. of teeth in engagement at small pulley

N = No. of teeth in engagement

n = No. of pockets per row in  
small pulley

D = Diameter of large pulley (mm)

d = Diameter of small pulley (mm)

C.D. = Center distance (mm)

$$N = \frac{n}{360} \left[ 180 - \frac{60(D-d)}{C.D.} \right]$$

$$N = \frac{20}{360} \left[ 180 - \frac{60(100.42 - 49.49)}{150} \right]$$

$$N = 8.868$$

• **Step 2** - Calculating horsepower using graphs provided

By interpolating the maximum allowable force in **Table 1**

**TANGENTIAL FORCE = 400 N**

$$\text{H.P.} = \frac{\text{TANGENTIAL FORCE} \times \text{PULLEY DIA.} \times \text{rpm}}{14.34 \times 10^{-6}}$$

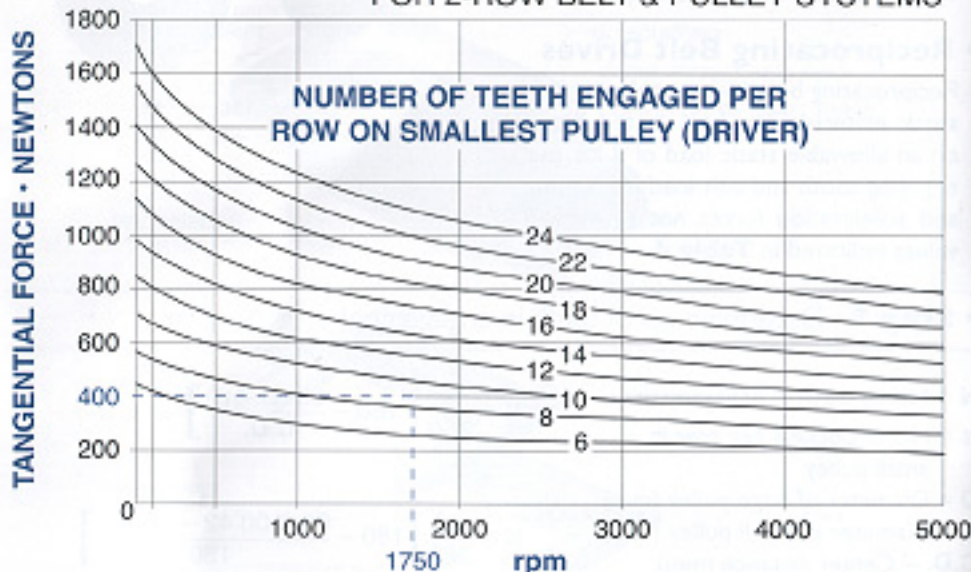
$$\text{H.P.} = \frac{400 \times 49.49 \times 1750}{14.34 \times 10^{-6}}$$

$$\text{H.P.} = 2.41$$

Therefore belt/pulley selection can transmit:  
**3/4 H.P.** with a theoretical safety factor of **3.21**

• **Table 1**

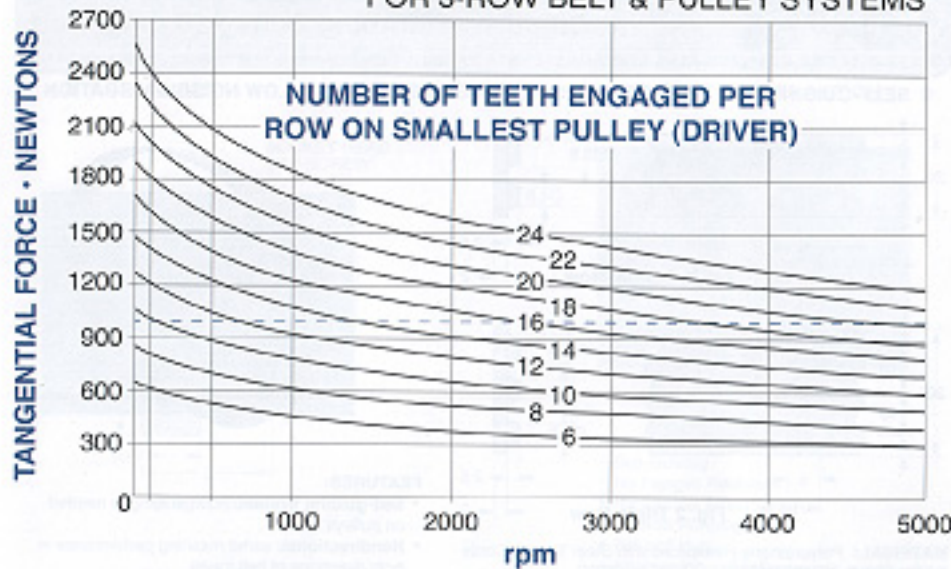
**TANGENTIAL FORCE VS. rpm**  
FOR 2-ROW BELT & PULLEY SYSTEMS





• **Table 2**

**TANGENTIAL FORCE VS. rpm**  
FOR 3-ROW BELT & PULLEY SYSTEMS



• **Table 3**

Minimum no. of pulley teeth per row - 16

Minimum inner idler diameter - 40 mm

Minimum outer idler diameter - 50 mm

**NOTE:** Inner idlers must have pockets to receive belt projections.

• **Table 4**

**Allowable belt tension (N)**

Belt Width (mm)	10	20	30
Belt Stock	650	1300	1950
Endless Belts	—	650	975

**Can't find the sizes you need?**  
**Other sizes available on special order.**