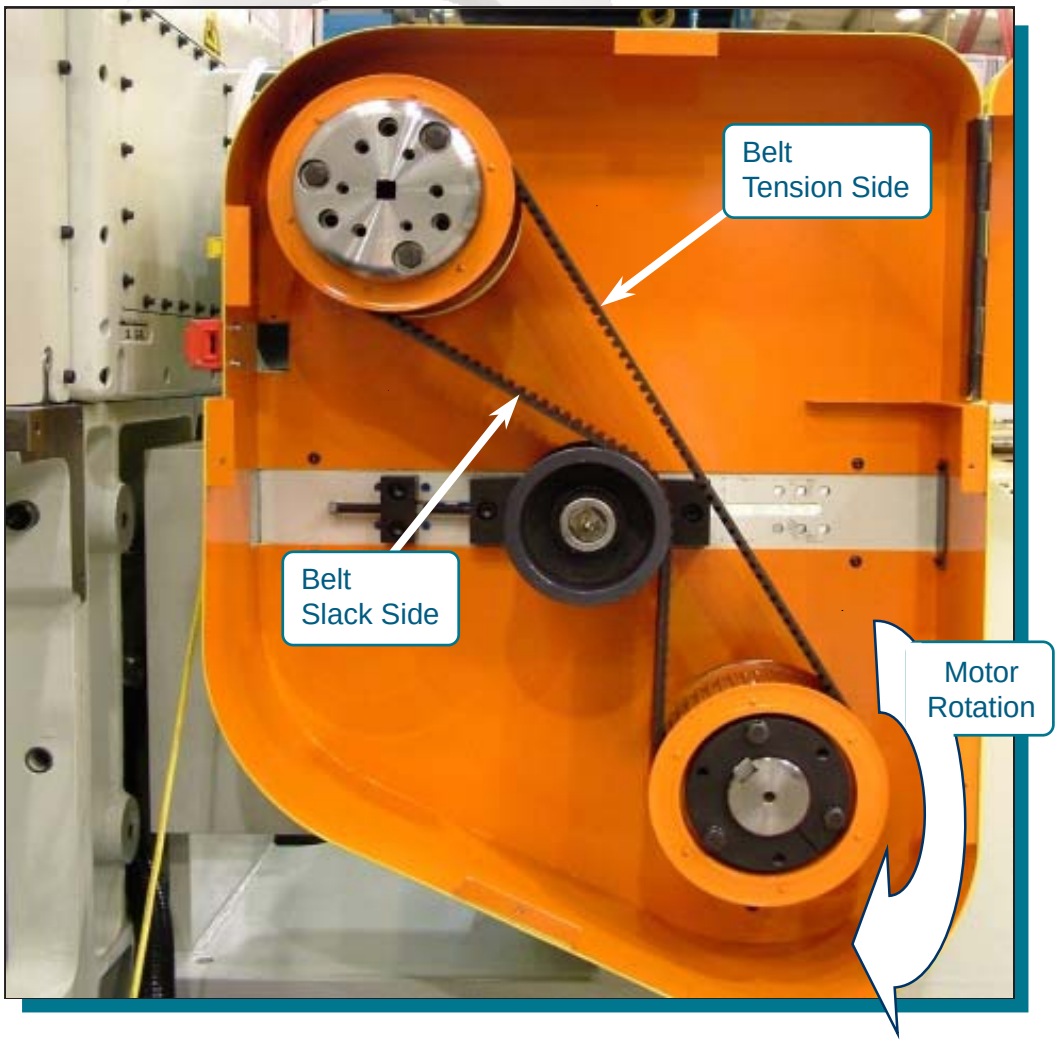
Belvac Production Machinery
Technical Bulletin
Information for Customers Operating and Maintaining Belvac Machines

ISSUE 9, VOLUME 11, AUGUST 2008

Neckers – Drive Belt Tension

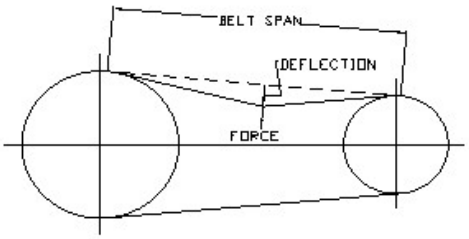
Belvac's Necking System drives are either tensioned via motor slide base (75 HP and less) or by external tensioner (100 HP and higher). In the case of the latter, it is important the tensioner is properly assembled relative to the rotation of the motor: The tensioner must be on the "slack" side of the driver as shown in the following illustration.



Belvac Production Machinery, Inc.
237 Graves Mill Road, Lynchburg, Va. 24502 USA Tel. (434) 239-0358 Fax (434) 239-1964
info@belvac.com http://www.belvac.com

The proper tension applied to the belt is fundamentally important to normal belt life. The following instructions will aid in this regard:

EXAMPLE SYNCHRONOUS BELT TENSIONING - FORCE DEFLECTION METHOD



Step 1. Measure the span length (in inches) as illustrated.
Step 2. Determine the deflection height required for the drive. The deflection height is always 0.015" / inch of span length.
Step 3. Using the formulas shown, calculate the min/max force values (pounds-force) to match the required deflection from Step 2.
Step 4. To measure the deflection height, place a straight edge from sprocket to sprocket on top of the belt. With a spring scale and rounded bar, deflect the belt the calculated distance. The force required to meet the required deflection must be between the min/max calculated values for a properly tensioned drive. For high torque applications, this may be increased to prevent teeth jumping.

Example Known Inputs:

Motor RPM	1725	INPUTS
Motor Horsepower	100	
Reducer Pulley # Teeth	48	
Motor Pulley # Teeth	52	
Belt Span [inches] Measured	28	

Deflection (Belt Span/64) [in]	0.44	<<< Calculated as 28/64
Max Force (4000*HP*SF/(RPM*Pitch Dia)) [Lb]	56	<<< Calculated as: 4000*100*2.20/(1869*8.421)
Min Force (5000*Motor HP/(RPM*Pitch Dia)) [Lb]	32	<<< Calculated as: 5000*100/(1869*8.421)

RPM (Smallest Timing Sprocket)	1869	
Reducer Sprocket # Teeth	48	
Motor Sprocket # Teeth	52	
Pitch Diameter, Smallest Sprocket [in]	8.421	<<< Calculated as: # Teeth/5.7 (Ref. 14mm Teeth)
Safety Factor (Class III, Idler)	2.20	

Contact Belvac Sales or Service Representatives for additional information.
All Belvac Technical Bulletins may be viewed on Belvac's web site, www.belvac.com.

Belvac Production Machinery, Inc.
237 Graves Mill Road, Lynchburg, Va. 24502 USA Tel. (434) 239-0358 Fax (434) 239-1964
info@belvac.com http://www.belvac.com