INSTALLATION ADVICE

It is generally advisable to use drives with adjustable wheelbase.
The fixed distances automatically require an idler pulley tensioner .
In the case of adjustable axes (engine or machine on a sliding base) is advisable that the real distance between the axes can be shortened or elongated, so as to allow the mounting and tensioning of the belts.

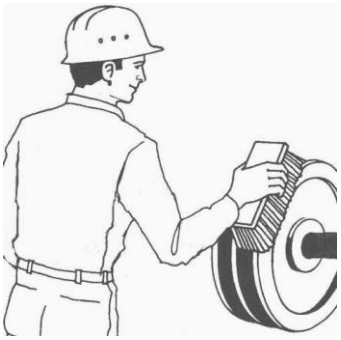
X + y = 0,045L where L = belts length ; x = 0,030L y = 0,015L

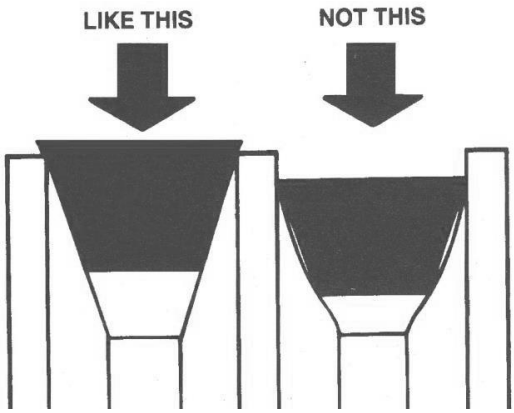
If the distance is fixed , the tensioner must have sufficient slack taking into account the above advice

V-Belt Installation, Maintenance & Storage

Installation

1. Check pulleys for rust, oil, grease, dust, dirt and other foreign materials. Clean the pulleys. Foreign materials accelerate belt wear and dramatically reduce belt life. Dirt and dust lead to slippage. Oil and grease reduce belt traction and destroy the belt surface.

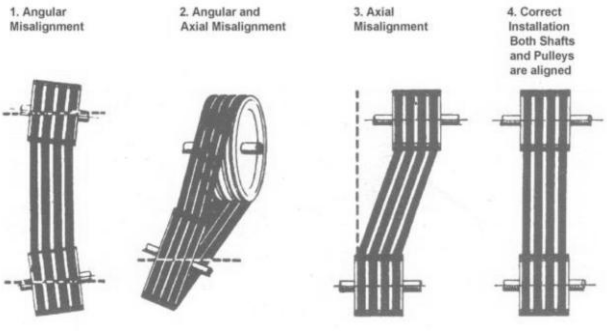


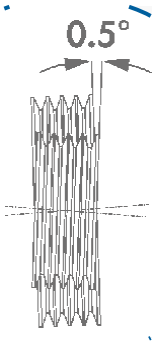


2. Inspect pulleys for wear. Worn pulleys greatly reducbelt life. Extreme wear can lead to belts bottoming in grooves. The result is slippage and excessive heat buildup. Use a pulley groove gauge to check for wear. V-belts should ride at least flush with the top of the pulley and may ride out up to 0.1". Check for burrs, nicks, gouges and severe scratches as these will drastically reduce belt life. Replace if necessary.

Alignment of V-groved pulleys

Any out of parallel deviation = max 0,5% of the centre distance

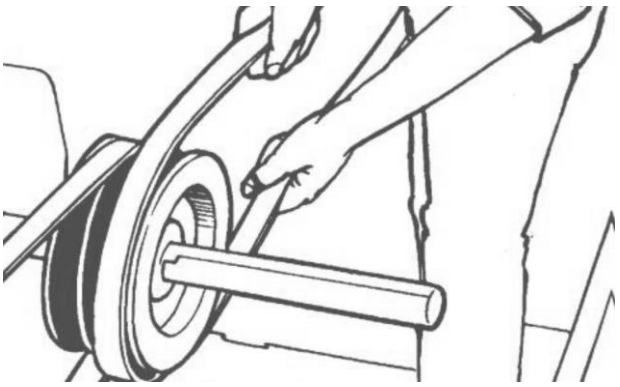


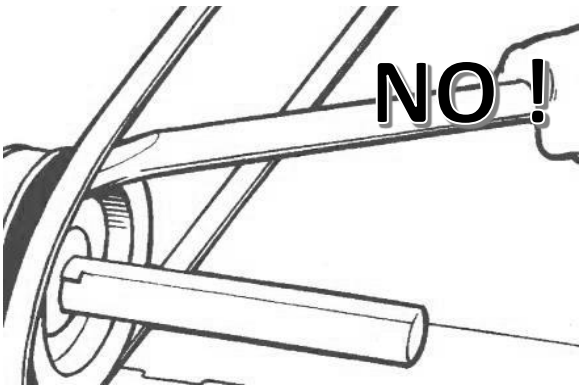


Horizontal alignment of Shaft

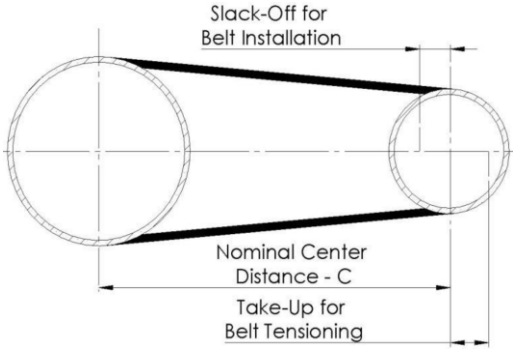
4. Ensure all belts are the same. Do not mix belt brands. Do not mix belt constructions. (Such as raw edge, cogged, wrapped, single and banded) Do not mix new and used belts. The new belt or belts will carry the entire load. Do not mix used belts from different drives. Any mixed belts will cause the load to be carried unevenly, causing the belt carrying the majority of the load to fail rapidly, followed by the remaining belts.

5. Place belts on the drive. Never force the belts into the pulley using a lever. Doing so can cause irreversible cord damage and/or fabric tearing. Always move the driver unit forward so the belts can be slipped into the pulley grooves without damage to the belts.





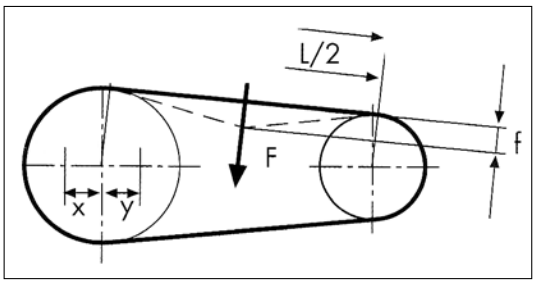
6. Center distance allowances for belt installation and take-up. The center distance should be determined from a standard pitch length and designed so that the centers can be moved closer together and farther apart to allow for installation and tensioning.



BELT TENSIONING

Method of deflection.

A method to be used in preference to the transmissions of low power or with a short centre distance.Fit the belts on pulleys aligned correctly. Slide the engine or apply the tensioner until the two branches are no longer loose. Tensioning the belts gradually by turning the transmission of a few turns after each shot and measuring belt deflection f at the center of span ; the deflection obtained at the span center under the deflection force F calculated and exerted perpendicularly to the belt.



Profile	Small pulley diam. mm	Static tensioning for span [N]			
		Wrapped belts		Raw edge belts	
		First tensioning	value after 24h	First tensioning	value after 24h
SPZ - XPZ 3V -3VX	< 71	20	15	25	20
	71 > 90	25	20	30	25
	90 > 125	30	25	35	30
	>125	to be calculate			
SPA XPA	< 100	35	25	40	30
	100 > 140	40	30	50	40
	140 > 200	50	40	60	45
	>200	to be calculate			
SPB -XPB 5V - 5VX	< 160	65	50	70	55
	160 > 224	70	55	85	65
	224 > 355	90	70	100	80
	>355	to be calculate			
SPC XPC	< 250	100	80	140	110
	250 > 355	140	110	160	120
	355 > 560	180	140	190	150
	>560	to be calculate			
Z ZX	< 50	9	7	12	9
	50 > 71	12	9	14	11
	71 > 100	14	11	16	13
	>100	to be calculate			
A AX	< 80	15	11	20	15
	80 > 100	20	15	25	20
	100 > 132	30	25	40	30
	>132	to be calculate			
B X	< 125	30	25	45	35
	125 > 160	40	35	50	40
	160 > 200	50	40	60	45
	>200	to be calculate			
C CX	< 200	70	50	80	60
	200 > 250	80	60	90	70
	250 > 355	90	70	100	80
	>355	to be calculate			

Value data are referred to the max trasmissible power for each belt

Method of stretching.

To be used in preference to the transmission of high powerand large centre distances, or transmission with multiband belts .Mount the belts on pulleys aligned correctly. Slide the engine or apply the tensioner until the two branches are no more loose. Put on the back of the belt two transverse lines as far as possible from one another, but always on the same span of the belt. Gradually tighten the belts by turning the transmission of some turns after each shot until the length of tension between the two lines increases the percentage as specified in the table below.
Example: initial centre distance of 1000 mm between the two lines turn in 1006 mm (+ 0,6%), 1008 mm (+ 0,8%) o 1010 mm (+ 1%)

		torque or resistance uniforms	torque or resistance variables	torque or resistance highly variable
medium extension in %	Narrow Vbelt Classical Vbelt	0,6 0,5	0,8 0,6	1 0,8

The values of elongation in% shown in this table, and those obtained as a result of the formulas to calculate deflection force, are effective values of service. Therefore, taking into account variations due to the break-in, it is advisable to retension belts after a few hours of service in order to return to the initial value of elongation A%, or deflection force - to ensure reliable operation of the transmission.

DURING OF LIFE

THEORY
When a belt transmits power , the tension cable are subject to a number of efforts :
- the tractive effort on the torque to be transmitted ;
- a tensile stress due to centrifugal force , which tends to bring out the belt from the throat ;
- a tensile stress complementary , due to the tension of the assembly, which is necessary to avoid an abnormal slipping during the service ;
- a tensile stress caused by the bending of the belt in the instant when they enter into the pulley grooves .

It is the cyclic repetition of these tensile stresses that generates a fatigue of service , to consider when we calculate the gross transmitted powers. This statement is based on the following:

We can assume that a belt with a certain length travels a certain distance and at certain speed. We add a notion of wear rate , that is a theoretical speed at which a belt with a given length is consumed . From this speed and known distance, we can deduce the work time, or in other words , the theoretical time of during of life .The transmissible powers indicated in mentioned tables are referred to a life of 25 000 hours.

CHOOSING A TRANSMISSION
- Considering these theoretical notions, be sure to apply the proper service factor to the power to be transmitted. In fact, it is precisely this element of service which gives you the ability to move from theory to practice, because it is dependent on the specific characteristics of the transmission (eg, number of starts, irregularities in the operation, external influences, ...)
- It is very important to remember that the bending stress due to the winding on the smaller pulley, is particularly damaging to the longevity of the belt. Therefore, you should always use the pulley diameters as big as possible, and never less than the minimum diameters indicated.

TENSION
In addition to checking that the shafts are parallel and that the transmission is properly aligned, it is also very important for life of belts, apply the correct tension. Insufficient tension results in slippage with overheating and consequent damage to the belts or limits the ability to absorb torque peaks to which the transmission is subject.

WARNING! Tension mounting or stretching does not remain constant during the initial service. The belts fit and have a variable elongation during their useful life

TENSIONING VALUE- or elongation indicated on the following pages , are always tension or elongation in standard conditions of speed.

BREAK-IN PERIOD
Since the sides of the belt fit the pulley grooves and since the components are stabilized during the service, the mounting tension will decrease.

During the first few minutes of operation , there is an elongation of the belt higher than the actual elongation of the cables .

From the moment when the belt begins to move , the elongation mounting decreases again , because the belts will fit, and then they find a stable value which corresponds to 60-70% of the original value. Tension the belt after a break-in period of a few hours , applying a tension force additional 50 to 60 % of the value initially applied. There will be a new loss of tension, before stabilizing the value of effective elongation (Aeff) required. Graph shows the evolution of elongation in the process of re-tensioning described above.