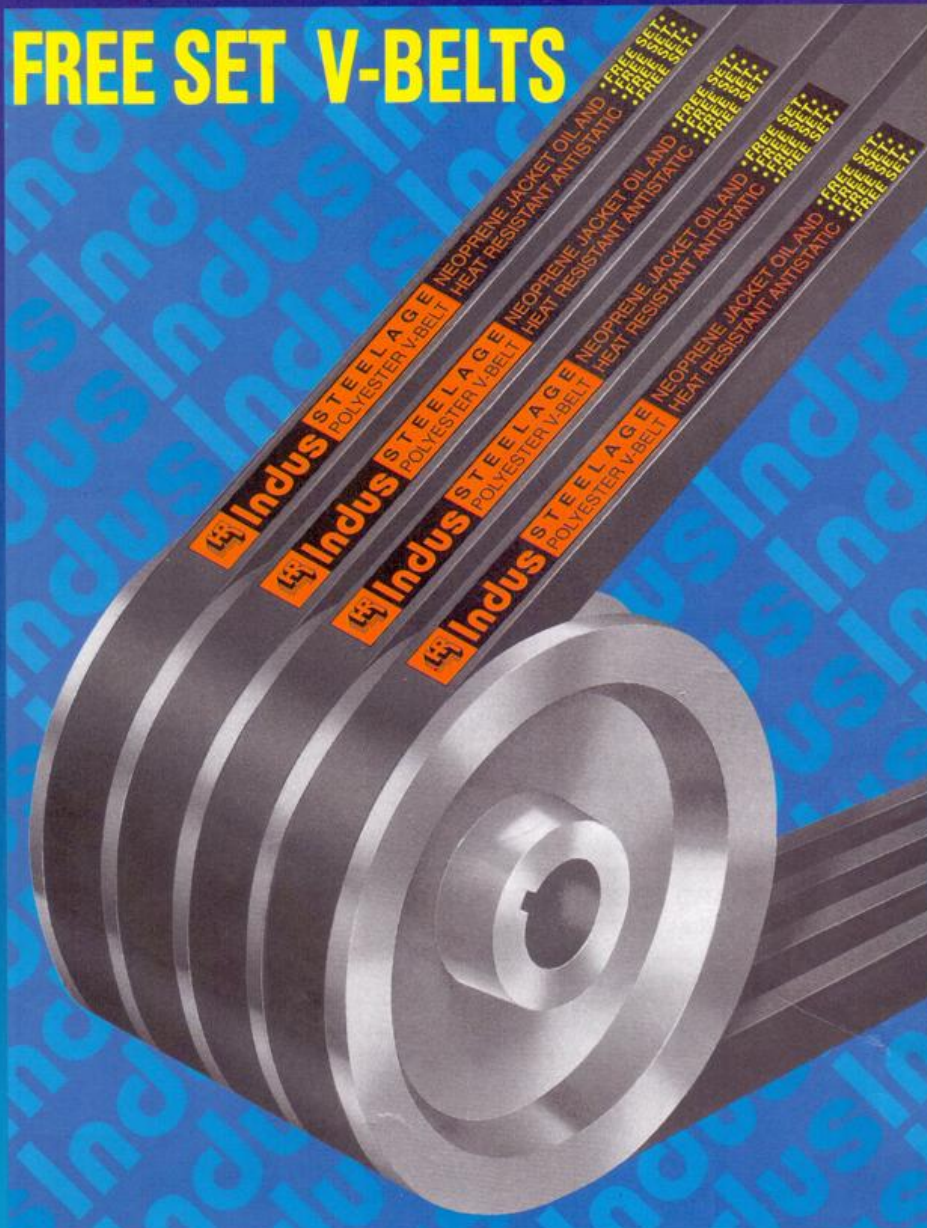


# Indus<sup>®</sup>

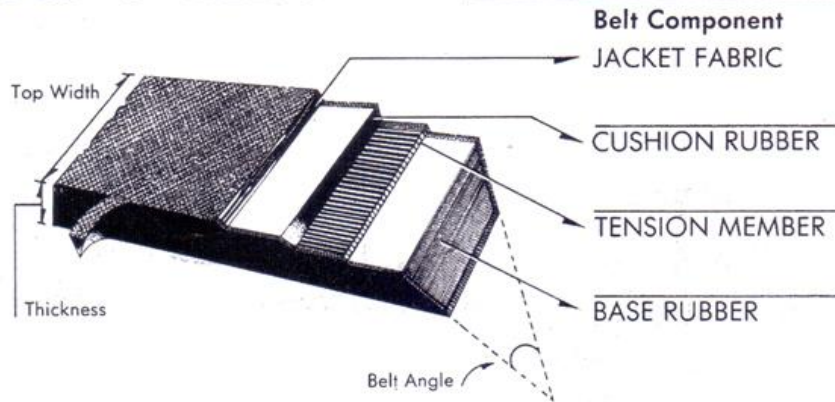
## FREE SET V-BELTS



## POWER BEHIND THE NAME

# Indus V - BELTS

## BELT CONSTRUCTION



### Special Design Features

### Advantages conferred to Product

**1. Jacket Fabric**

Consists of specially designed abrasion resistant fabric.

Heat / oil / wear resistance and anti - static property.

**2. Cushion Rubber**

Consists of temperature stabilised filter rubber.

Minimises internal friction in the cords, improves adhesion between cords, cord to rubber and with base rubber, insulates cords and holds them in position.

**3. Tension Member**

Consist of extra strong polyster cords which are rubberised with special compound for super bonding of filaments.

High strength, excellent length stability, low elongation, high flex fatigue resistance, excellent flexibility and high resistance to shock loads in service.

**4. Base Rubber**

Consists of firm, uniquely compounded rubber to withstand compression & to expand side ways to grip the pulley grooves while flexing over the pulley.

Better flexibility, better belt grip on pulley grooves, high compression resistance, better dimensional stability.

The manufacture of Indus belts has been made possible by the use of new high tensile fibres, improved manufacturing processes and strict Quality Control. This ensures the following characteristics :

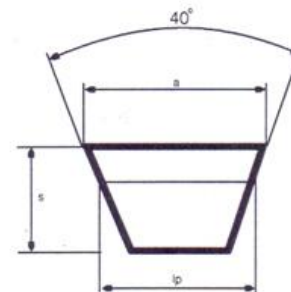
- High Performance
- Longitudinal Stability Irrespective of age
- Anti static properties
- Oil Resistance

**Belt Sections**

Indus V-belts for industrial use are available in the following sections:

### STANDARD PRODUCT RANGE CLASSICAL SECTION V - BELTS

Dimensions (in mm)								
Section	TopWidth	Thickness	Angle	Li to Lp	Li to La	Lp to Li	La to Li	La to Lp
Z	10.0	6.0	40°	+22	+38	-22	-38	-16
A	13.0	8.0	40°	+36	+50	-36	-50	-14
B	17.0	11.0	40°	+43	+69	-43	-69	-26
20	20.0	12.5	40°	+48	+79	-48	-79	-31
C	22.0	14.0	40°	+56	+88	-56	-88	-32
25	25.0	16.0	40°	+61	+100	-61	-100	-39
D	32.0	19.0	40°	+79	+119	-79	-119	-40
E	38.0	23.0	40°	+92	+145	-92	-145	-53



- a = Top Width
- s = Thickness
- lp = Pitch Width



- Classical section V-belts are also known as conventinal type V-belts. They are designed for general application in industrial & agricultural use.



## WEDGE - SECTION V - BELTS

Section	TopWidth	Thickness	Angle	Li to Lp	Li to La	Lp to Li	La to Li	La to Lp
SPZ	10.0	8.0	40°	+37	+50	-37	-50	-13
SPA	13.0	10.0	40°	+45	+63	-45	-63	-18
SPB	17.0	14.0	40°	+60	+88	-60	-88	-28
19	19.0	15.0	40°	+69	+94	-69	-94	-25
SPC	22.0	18.0	40°	+83	+113	-82	-113	-30



## HIGH CAPACITY NARROW V - BELTS

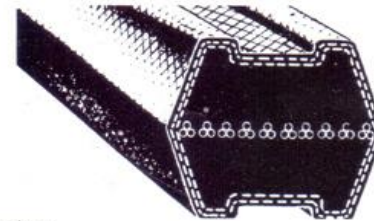


Section	TopWidth	Thickness	Angle	Li to Lp	Li to La	Lp to Li	La to Li	La to Lp
3V	9.7	8	40°	+37	+50	-37	-50	-13
5V	15.8	13.5	40°	+60	+85	-60	-85	-25
8V	25.0	23	40°	+92	+145	-92	-145	-53

- ★ Wedge section and high capacity narrow V - belts are also known as space saver belts. They are compact, efficient and economical. They can transmit 50% to 100% more power than classical V - belts with same topwidth.

## HEXAGONAL V - BELTS

Section	Central Width	Thickness	Angle
AA	13	10	40°
BB	17	14	40°
CC	22	17	40°



HEXAGONAL V - BELT

- ★ Hexagonal V - belts are suitable where the belts is to bend in both directions for power transmission. These are used where several pulleys are located in one plan and direction of rotation of the driver pulleys is to be reversed without crossing the belt.

## BANDED BELTS



Indus Wedge Banded V - Belt

Banded belts are consists of V-belts joined together across their top surface by a reinforced cover strip. They are mainly made against customers requirements in classical section, wedge section and other v-sections from 2 to 5 bands. They are mainly used for problem solving areas as such shock loads, V-flat drives, vertical shafts, etc.

The use of Banded Belts prevents belt twisting, whipping, turning over or leaving the groove completely.



Indus Classical Banded V - Belt

## CABLE CORD FLAT BELTS OR JOINT LESS FLAT BELTS

Cable cord flat belts are made in endless construction (Joint less). These belts can be used in any flat belt applications. They are suitable for small pulley drives and where torque requirement is very high.

Range : Width 50 mm to 750 mm • Thickness : 4 mm to 6 mm • Length : up to 25 mtrs. Power rating as per your requirement.

Joint Less Flat Belts provide the following advantages :

- High flexibility
- Constant driving grip.
- Long term inextensibility
- High efficiency
- Light in weight
- Uniform thickness
- Works on high speed
- Elimination of vibrations
- High tensile
- Longitudinal stability
- Reduced dimensions of drive
- Low maintenance

Suitable for many Industries

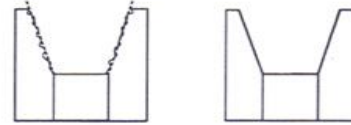
- Packing / Packaging
- Textile machinery
- Wood and metal working
- Weigh feeders.
- High precision machine tools And many other flat drive application.



Indus Cable Cord Flat Belt

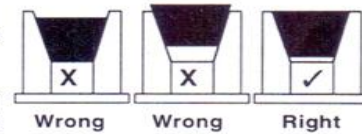
## 1. Check Pulleys

- Pulley grooves should be free from paint, grease, sharp edges & Burrs. V - grooves of pulleys wear out in service, worn pulleys should be replaced immediately.
- Pulley grooves should be uniform. Non-uniformity leads to uneven sitting of belts and therefore load sharing by belts in matched sets would be unequal.
- Groove pitch of the pulleys should be uniform and same for each pulley of the drive. Variation in groove pitch will misalign belts.



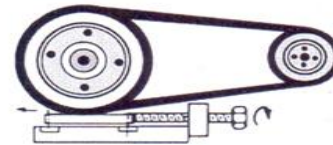
## 2. Check Belts

- The belts should be of the correct length and required section.
- The belts being used in a set should be in a matched set of the required numbers. Use Indus match free Belts.
- All belts to be used in a set should be from one manufacturer only. It is important that belt from different manufacturers should never be mixed for one matched set.
- New and old belts should not be mixed together.



## 3. Installation Procedure

- Mount pulleys as close to bearing as possible. Excessive overhang may cause bearing failure.
- Move motor or prime mover inwards to enable belts be placed on the pulleys. Never force belts over pulleys with lever or roll them in pulleys with the driving shaft in rotation. This may cause damage to belt jacket or tension member or both. This may also result in injury to operator by trapping his fingers between pulley and belt.
- Shift motor or prime mover outwards for tensioning and check shaft and pulley alignment.

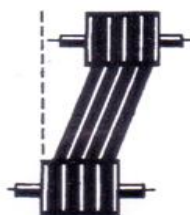


## INSTALLATION OF INDUS V - BELTS

### How to install belts



Perfect alignment

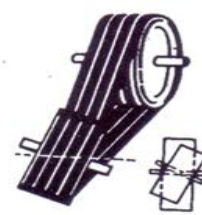


Misalignment of pulleys due to shift of pulleys even through the axis of the pulleys are parallel leading to severe jacket wear.

### How not to install belts



Misalignment of pulleys due to axis of the pulleys not being parallel even through they are in the same plane leading to severe jacket wear.



Axis of pulleys not parallel and also not in the same plane leading to very severe jacket wear.

**Note :** The belts should be properly tensioned as specified in IS 2494 & BS 1440 for the various sections of the belts to get optimum life.



### Maintenance of V - Belts

- Maintain minimum recommended pulley diameters for different sections of V-belts.
- Keep belts away from heat and oil.
- Never use belt dressing of any kind.
- Ensure proper tension in the belts.
- Keep the drive well ventilated
- Even if one belt gives way, replace the entire set
- Check drive for proper alignment before replacing belts.

### Storage of Indus V - Belts

- The storage temperature should be between 15° C/59° F and 25° C/77° F.
- The storage area should be dry, dust free and reasonably well ventilated. V-belts must not be stored close to chemicals, solvents, fuels, lubricants and acids etc.
- V-belts should be protected against light, especially direct sunlight and high intensity artificial light having a high ultra violet content. Where possible, windows should be painted with a red or orange protective paint. Under no circumstances should blue colour be used.
- Damp store rooms are unsuitable. This leads to mildew formation which effects belts jackets.
- In order to counteract the harmful effects of ozone, warehouses should not contain any ozone producing appliances.
- If V-belts have been kept for a long duration, it is advisable to run these belts on the drive system for 10/30 minutes without any load. This would help the belts develop flexibility. Thereafter full load can be applied.
- Because stresses can promote both permanent deformation and the formation of cracks, care must be taken to ensure that V-Belts are stored without stress, i.e. without tension, pressure or any other form of deformation.
- The physical properties of correctly stored V-belts will not change over a period of many years (up to six years). In poor storage conditions and with incorrect handling, rubber products are, however, subject to change in their physical properties.

#### Minimum Recommended Pulley Diameters

Section	Z	A	B	C	D	E	SPZ/3V	SPA	SPB/5V	SPC	8V
Diameter in mm	50	75	125	200	355	500	63	90	140	224	330

#### INDUSTRIAL RANGE OF V - BELTS

SECTION	RANGE
Z	All Sizes 18" and above
A	All Sizes 19" and above
B	All Sizes 20" and above
20	All Sizes 44" and above
C	All Sizes 36" and above
25	All Sizes 50" and above
D	All Sizes 88" and above
E	All Sizes 180" and above
AA	All Sizes 65" and above
BB	All Sizes 70" and above
CC	All Sizes 86" and above
SPZ	All Sizes 487 mm and above
SPA	All Sizes 725 mm and above
SPB	All Sizes 1250 mm and above
19	All Sizes 2200 mm and above
SPC	All Sizes 2000 mm and above
3V	All Sizes 3V - 280 and above
5V	All Sizes 5V - 510 and above
8V	All Sizes 8V - 940 and above
Cable Cord Flat Belt	All Sizes 1500 mm and above

## TROUBLE SHOOTING

PROBLEMS	CAUSES	REMEDIES
<b>Excessive elongation</b>	<ul style="list-style-type: none"> <li>● Worn or badly machined pulley grooves.</li> <li>● New and used belts mixed on the drive.</li> <li>● Belts of different manufacturers on one drive.</li> </ul>	<ul style="list-style-type: none"> <li>● Replace pulleys.</li> <li>● Replace with a new belt set.</li> <li>● Matched set used should be of one manufacturer.</li> </ul>
<b>Belt breaking after Fitment</b>	<ul style="list-style-type: none"> <li>● Belt forced over pulley damaging tension member and cover fabric.</li> <li>● Shock loads.</li> <li>● Less than required belts or wrong section.</li> <li>● Drive stalled.</li> <li>● Foreign matter obstructs running.</li> </ul>	<ul style="list-style-type: none"> <li>● Reduce drive center distance to fit belt.</li> <li>● Recheck design. Check belt tension. Recheck design and fit correct number of belts.</li> <li>● Check cause and correct.</li> <li>● Install effective guard.</li> </ul>
<b>Excessive Wear</b>	<ul style="list-style-type: none"> <li>● Incorrect pulley grooves angles.</li> <li>● Drive misaligned.</li> <li>● Small pulley diameter less than recommended.</li> <li>● Mismatched belts.</li> <li>● Belt slips.</li> <li>● Belt hits against protruding parts.</li> </ul>	<ul style="list-style-type: none"> <li>● Use new pulley.</li> <li>● Realign drive.</li> <li>● Redesign drive. Use Indus match set.</li> <li>● Replace with matched belts.</li> <li>● Provide proper tension.</li> <li>● Check and remove obstruction.</li> </ul>
<b>Belt turned over in pulleys</b>	<ul style="list-style-type: none"> <li>● Drive misaligned.</li> <li>● Broken cord caused by forcing belt over pulleys.</li> <li>● Incorrect pulley groove section or excessive groove wear.</li> <li>● Shock loads.</li> <li>● Excessive belt flap.</li> <li>● High belt tension.</li> <li>● Ingress of foreign matter.</li> </ul>	<ul style="list-style-type: none"> <li>● Realign drive.</li> <li>● Replace belt set correctly.</li> <li>● Use new pulley.</li> <li>● Apply proper tension.</li> <li>● Use inside idler on slack side. Use banded belts.</li> <li>● Retension.</li> <li>● Remove foreign matter.</li> </ul>
<b>Belt Vibration.</b>	<ul style="list-style-type: none"> <li>● Insufficient belts on drive.</li> <li>● Center distance too long.</li> <li>● Low belt tension.</li> <li>● Unbalanced pulleys.</li> <li>● High shock loading.</li> </ul>	<ul style="list-style-type: none"> <li>● Check drive design and modify.</li> <li>● Reduce centers. Use inside idler on the slack side.</li> <li>● Use banded belts.</li> <li>● Retension.</li> <li>● Use suitably balanced pulleys.</li> <li>● Use an inside idler pulley on the slack side. Use banded belts.</li> </ul>
<b>Belt cannot be retensioned.</b>	<ul style="list-style-type: none"> <li>● Insufficient allowance for stretch.</li> <li>● Incorrect belt length.</li> <li>● Belt from different manufacturers used on same drive.</li> <li>● Stretch caused by insufficient belts or wrong belt section for drive.</li> </ul>	<ul style="list-style-type: none"> <li>● Modify drive for more take up.</li> <li>● Use correct belt length.</li> <li>● Use matched belts of one manufacturer.</li> <li>● Check drive design.</li> </ul>
<b>Excessive Noise.</b>	<ul style="list-style-type: none"> <li>● Drive misaligned.</li> <li>● Incorrect belt tension.</li> <li>● Overloaded drive.</li> <li>● Unbalanced pulleys.</li> </ul>	<ul style="list-style-type: none"> <li>● Realign.</li> <li>● Retension.</li> <li>● Redesign drive.</li> <li>● Use balanced pulleys.</li> </ul>
<b>Cuts and breaks in belt base rubber.</b>	<ul style="list-style-type: none"> <li>● Pulley diameter too small.</li> <li>● Excessive belt slip.</li> <li>● Ambient temperature too high (above 60° C).</li> <li>● Outside idler pulley in use.</li> <li>● Contamination by oils, chemicals.</li> </ul>	<ul style="list-style-type: none"> <li>● Redesign drive with correct pulley diameter.</li> <li>● Check drive design. Ensure correct number of belts. Check belts tension.</li> <li>● Protect belts from direct heat. Ensure good ventilation. Refer to our engineers for special belt construction.</li> <li>● Replace with inside idler pulley on the slack side. Increase the size of existing idler pulley.</li> <li>● Protect drive from contamination.</li> </ul>



## Hindustan Rubbers (Silvassa)

Office : 1, Janki Centre, Off Veera Desai Road, Andheri (W), Mumbai - 400 053,  
 Tel. : 639 1990 (5Lines) ● Fax : 91-22-639 1975  
 E mail : ravasco@bom3.vsnl.net.in ● Website : www.ravasco.com

Works : Survey No. 375 / P, Village Kharadpada, Naroli, Dadara & Nagar Haveli, Via - Bhilad. (W.R.) Pin : 396 235