

SAFARI
BELTING SYSTEMS

Installation Manual

Plastic Conveyor Belt System

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Installation Instructions

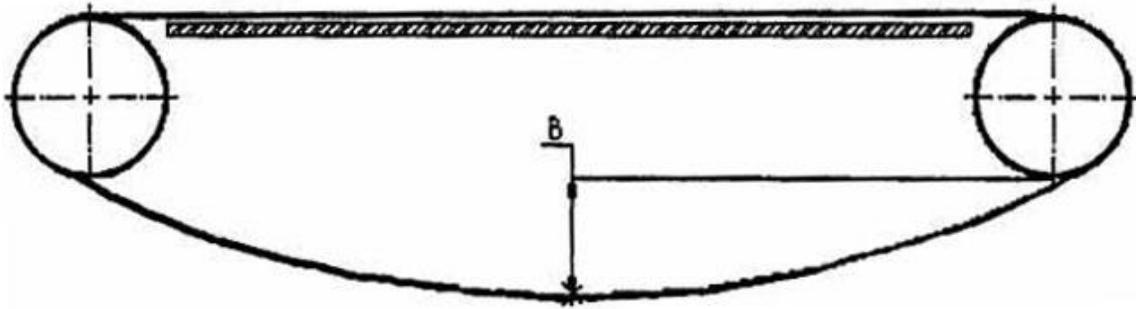
1. Make sure power is off to system. Be sure to lock-out and/or tag-out.
2. Install correct number of sprockets on drive and idle shaft. (See [Table #1](#))
3. Align timing marks on sprockets if applicable.
4. Secure only the center sprocket using retainer rings or set collars on the drive and idle shaft.
5. Allow remaining sprockets to “float”.
6. Install shafts, making sure they are square to the conveyor.
7. Check to make sure that the wear-strip/carry-bed is clean, in good condition and free of any snag points.
8. Install and connect each belt section using the pins provided.
9. Using a soldering iron, partially melt the pin connecting each section one (1) link from the edge; this will serve to retain the pin in the belt. To remove the pin, simply place a punch on the pin end and strike with a hammer.
10. Once the entire belt is installed, make sure the belt and sprocket are engaged properly.
11. Adjust the catenary sag. There should be 1” to 4” of sag between return rollers or shoes placed 36” to 48” apart (See [Table #1](#)).
12. Make sure nothing is obstructing the operation of the conveyor belt.
13. Either by hand, or at low RPM, operate the conveyor, checking the performance of the conveyor system.
14. Adjust the conveyor system as needed.
15. Normal break-in period is expected and usually occurs during the first several days. Removal of 1 to 2 rows of belt may be necessary to maintain proper belt tension and reduce catenary sag.

Table #1

# of Sprockets	Belt Width	Carry Way Support
1	4”	2
2	6” to 10”	2
3	12” to 20”	3
5	24” to 32”	4
7	36” to 48”	5

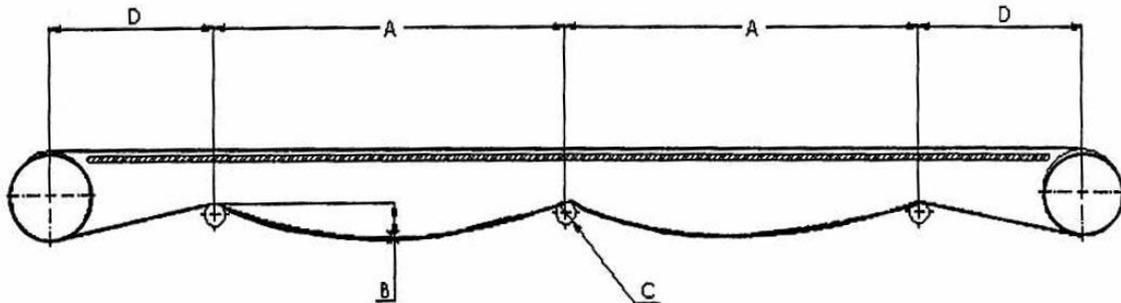
Conveyor Belt Under 6 Feet

For conveyor belts less than 6 feet in length, the “B” centenary sag is between 1” to 4”.



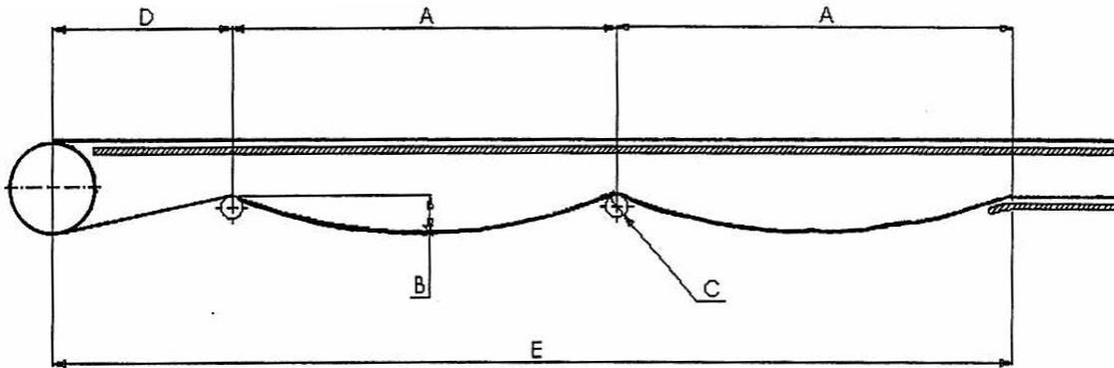
Conveyor Belt Over 6 Feet

- “A” – Spacing of return roller between 36” to 48”.
- “B” – Catenary sag is between 1” to 4”.
- “C” – 2” minimum solid-roller return.
- “D” – Snub-roller spacing (drive and idle shaft) between 10” to 20”. Placement of roller should allow for 180-degree to 215-degree belt wrap on drive and idle sprockets.



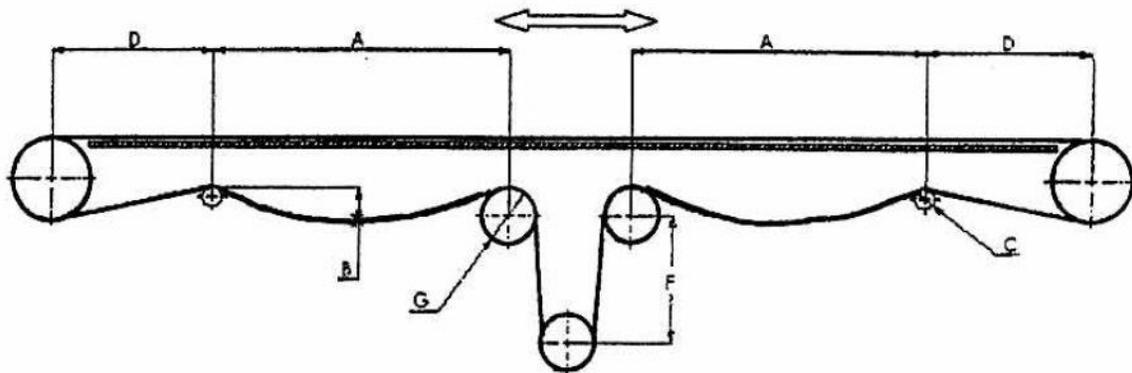
Conveyor with Full Return Slider Bed

- "A" – Spacing of return roller between 36" to 48".
- "B" – Catenary sag is between 1" to 4".
- "C" – 2" minimum solid-roller return.
- "D" – Snub-roller spacing (drive and idle shaft) between 10" to 20". Placement of roller should allow for 180-degree to 215-degree belt wrap on drive and idle sprockets.
- "E" – Slider bed should be between 30" to 49" from drive belt. Slider belt and return roller combination can also be used.



Center Drive Conveyor

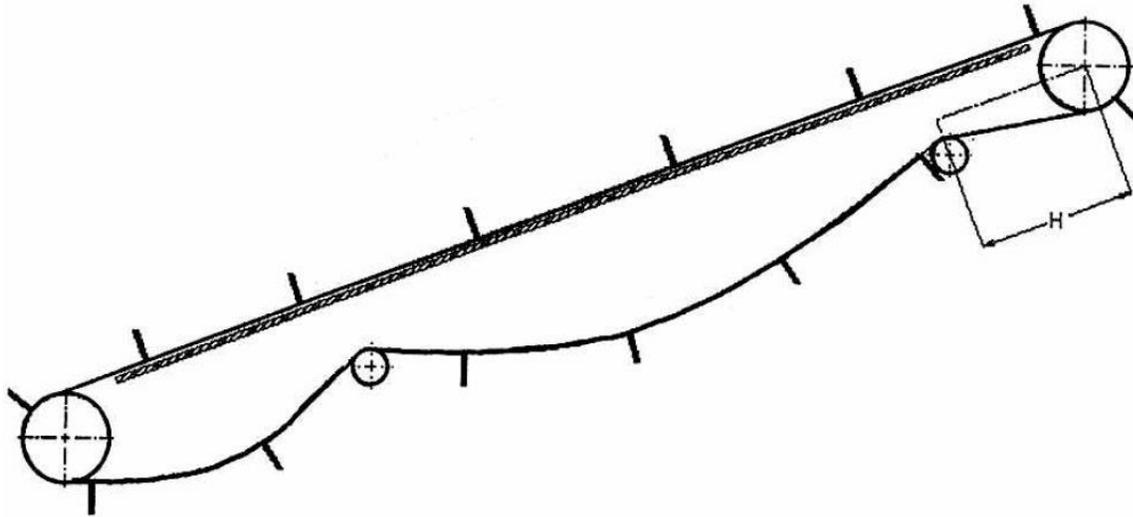
- "A" – Spacing of return roller between 36" to 48".
- "B" – Catenary sag is between 1" to 4".
- "C" – 2" minimum solid-roller return.
- "D" – Snub-roller spacing (drive and idle shaft) between 10" to 20". Placement of roller should allow for 180-degree to 215-degree belt wrap on drive and idle sprockets.
- "F" – 8" on-center spacing
- "G" – 6" roller



Incline Conveyor

“H” – 10” to 20” spacing. Belt should not be allowed to sag:

- Idle shaft should be replaced with Clean-in-Place (CiP) system. Guides should be installed on the conveyor frame to track the belt.
- If drip pans are installed, check for clearance of belts and flights.
- Return rollers and shoes should have a minimum radius of 6”.



Wear-Strip and Belt Support Structure

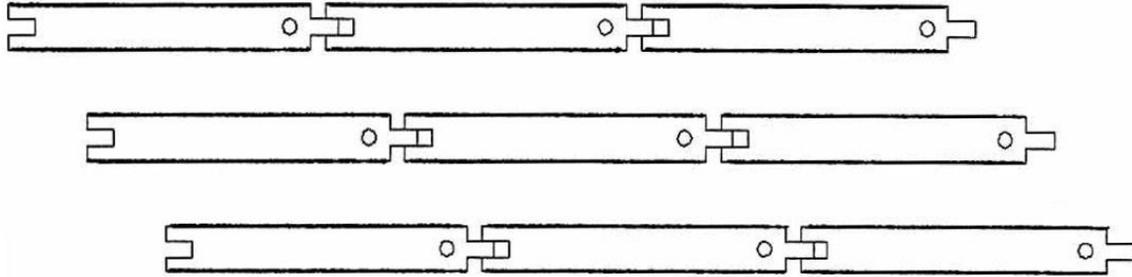
- The carry-way should be constructed of plastic wear-strip material such as UHMW or HDPE. Wedge or parallel styles are common and proven designs ([Figure #1](#) and [Figure #2](#)).
- Full bed support should be used in high impact but does limit access for cleaning.
- Wear-strips should be easily removable for cleaning.
- Care should be taken with the wear-strip prior to belt installation.
- Do not weld, grind or leave the wear-strip outside. This can cause foreign material to become imbedded in the wear-strip and cause severe belt wear.
- Clean the wear-strip thoroughly before belt installation.
- Inspect the wear-strip to avoid catch points and high spots that could interfere with normal belt operations. Radius all edges to eliminate catch points.

Returnways

- Returnways should be constructed of UHMW or HDPE.
- Solid rollers or shoes with a large radius should be used.
- On flighted belts, make sure the returnway does not snag the flight.

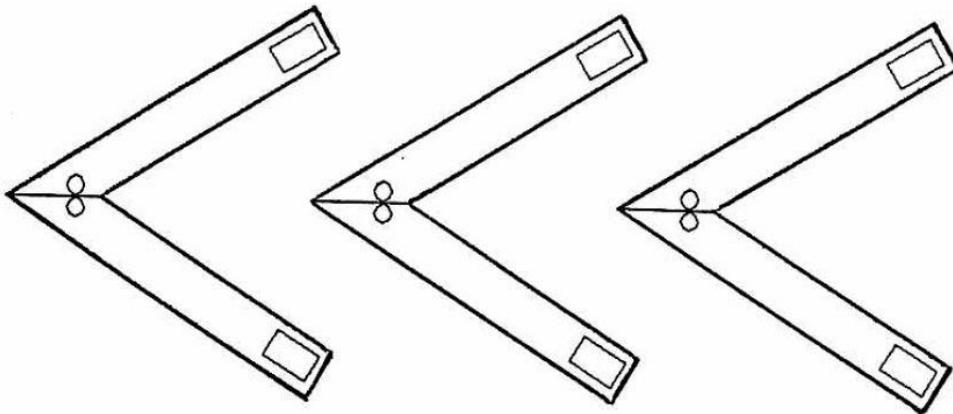
Parallel Style Wear-Strip Pattern

- This design is best for light loads.
- This design does not distribute the load and wear equally. This can cause unequal belt wear.
- Make sure there are no sharp edges on the wear-strip that could cause interference with the conveyor belt.
- In high impact applications, use a solid 0.75" or greater UHMW support bed in the impact zone. UHMW or HDPE are acceptable wear-strip materials.



Wedge Style Wear-Strip Pattern

- This design is best for heavy loads.
- Provides better distribution of load and wear to the belt.
- Make sure there are no sharp edges on the wear-strip that could cause interference with the conveyor belt.
- In high impact applications, use a solid 0.75" or greater UHMW support bed in the impact zone.
- UHMW or HDPE are acceptable wear-strip material.

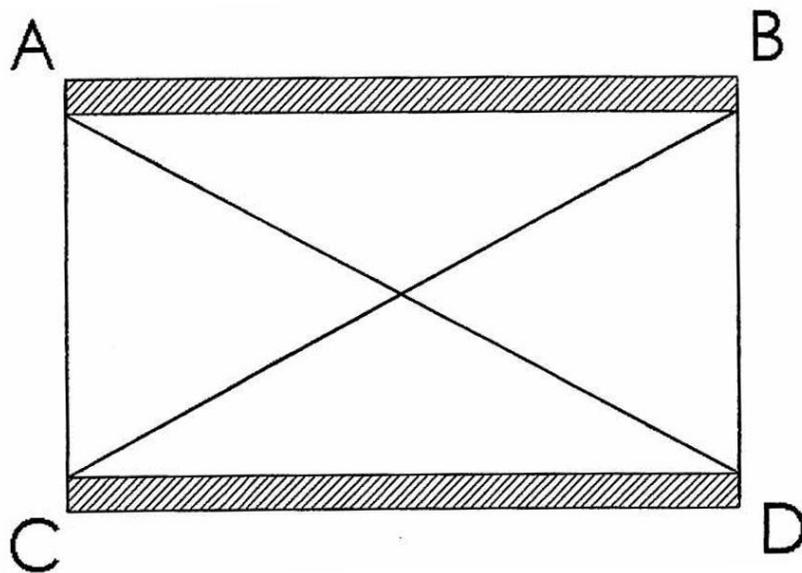


Belt Tracking

- The center sprocket on the drive and idle shaft must be “locked” into position.
- The use of retainer rings or locking collars should be utilized.
- The free play between the center sprocket and retainer rings/locking collars should be no less than 0.02”.
- On applications using only two (2) sprockets per shaft, retain the drive side sprocket. All other sprockets should be evenly spaced on the drive and idle shaft. These sprockets should be allowed to “float”.
- Do not allow the outermost sprocket to be less than 1” from the outermost edge of the conveyor belt.
- Single retainer rings can be added to the outside of the shaft to keep the sprockets in contact with the belt.
- To achieve proper belt tracking, the locked sprocket on the drive and idle shaft must be aligned with each other. Proper belt tracking is achieved by aligning the tracking lug located in the sprocket “V” with the tracking recess on the underside of the belt.
- If a Clean-in-Place (CiP) system is installed in place of the idle shaft, guides must be installed on the conveyor to the belt. This will keep the belt from rubbing on the conveyor frame and keep the belt running straight.

Shaft Squareness

If DA and CB are equal, and CA and DB are also equal, then the system is square.

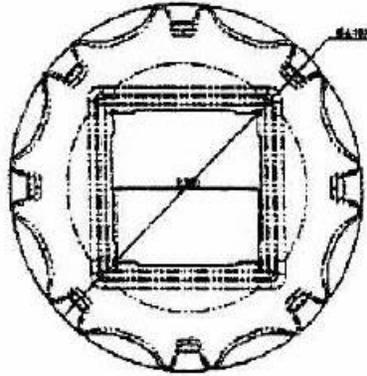


Sprocket Installation

Sprockets are needed to drive the conveyor belt. Safari sprockets utilize a square bore/square shaft combination. Sprockets with a total tooth count divisible by 4 need no timing marks. Sprockets with a total tooth count not divisible by 4 must use a timing mark. All timing marks must be aligned on each shaft.

Figure #1

1.5"/2.5" x 6.5" sprocket, 8 tooth = 2. **No timing mark needed.**



6.5" Wheel

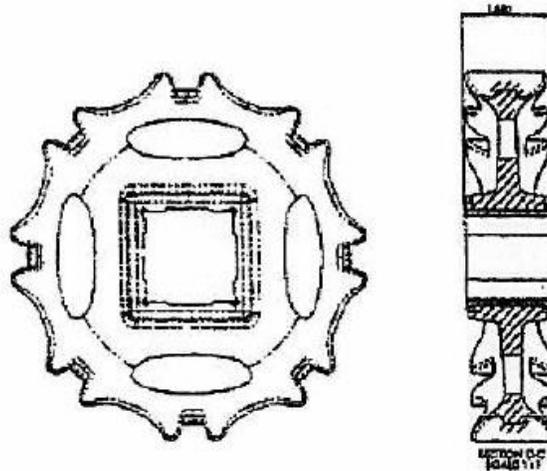
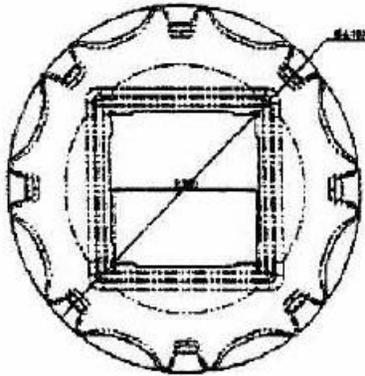
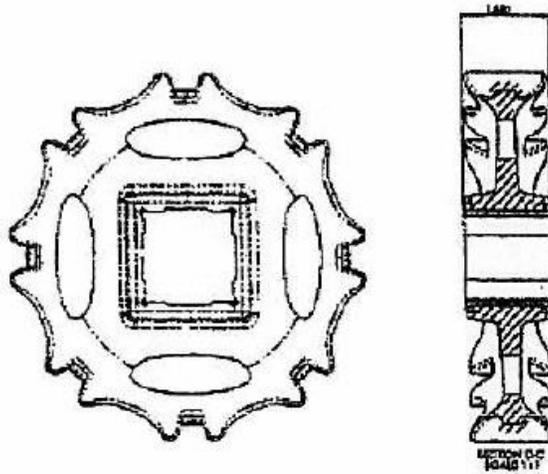


Figure #2

1.5"/2.5" x 10.5" sprocket, 13 tooth = $13/4 = 3.25$. **Must have a timing mark.**



10.5" Wheel



Contact Information

For further information regarding the installation, use and maintenance of Safari Systems products, please contact us at:

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