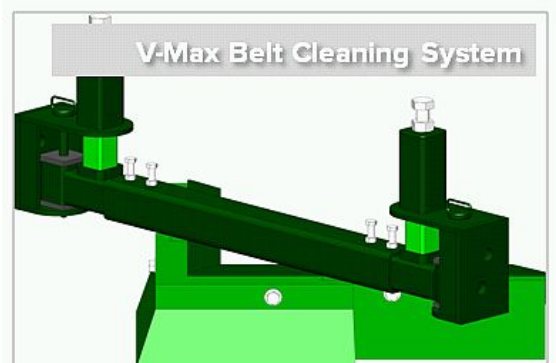


Belt Cleaning Manual



Belt Cleaning Manual

Section 1: Belt Cleaner Selection

1.1

Before carrying out any work, be sure to properly tag and/ or lock out the conveyor system. You may also need to adhere to specific site safety requirements.



1.2

Conveyors without functioning cleaners will experience the following issues:

- Carryback - anthills
- Safety issues - slips, trips and falls
- Housekeeping
- Belt tracking issues
- Associated component and asset damage
- Production loss
- Maintenance staff inefficiency
- Dust and environmental related emissions

1.3

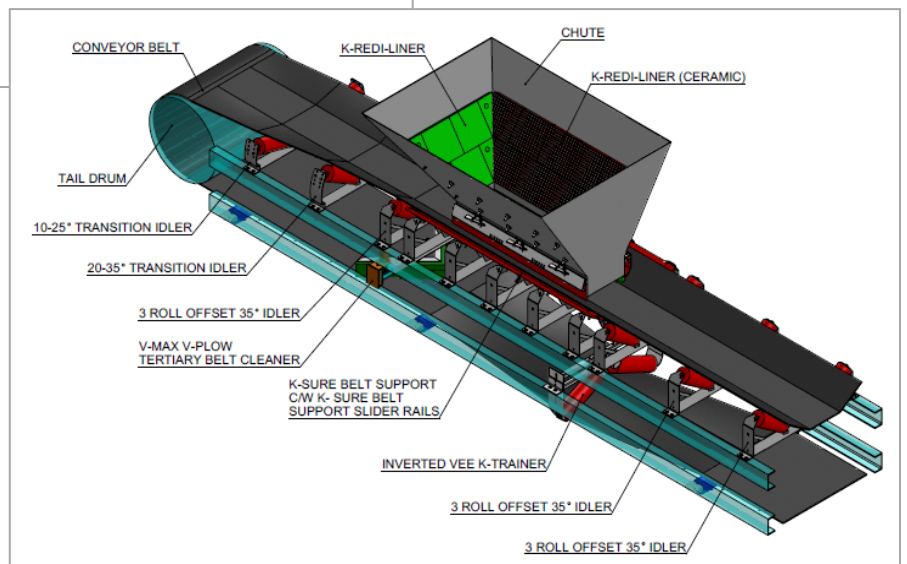
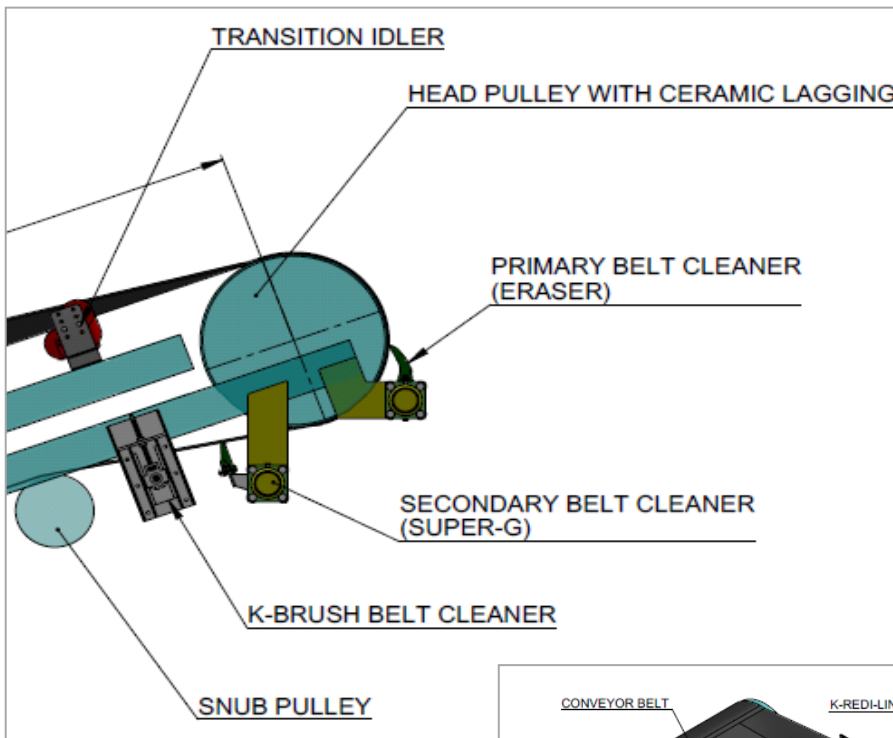
Belt Cleaners are application specific Consider the following prior to installing a new belt cleaner:

- What is the material falling off the belt?
- What is the material size?
- Are there any existing cleaners?
- Length of conveyor
- What is the pulley diameter and is it flat or crowned?
- How is the belt spliced?
- What is the condition of the belt?
- Are elevated temperatures present?
- What is the moisture content?
- What is the belt speed and capacity?
- Does the conveyor reverse?
- Is the pulley flat or crowned?



Belt Cleaning Manual

Section 1: Belt Cleaner Selection *continued*



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Belt Cleaning Manual

Section 1: Belt Cleaner Selection *continued*

1.4 Belt Cleaner Material Selection Guide

Tungsten Features

- Extreme abrasion resistance
- Low wearing
- Aggressive towards mechanical fasteners
- Segmented blades
-

Polyurethane Features

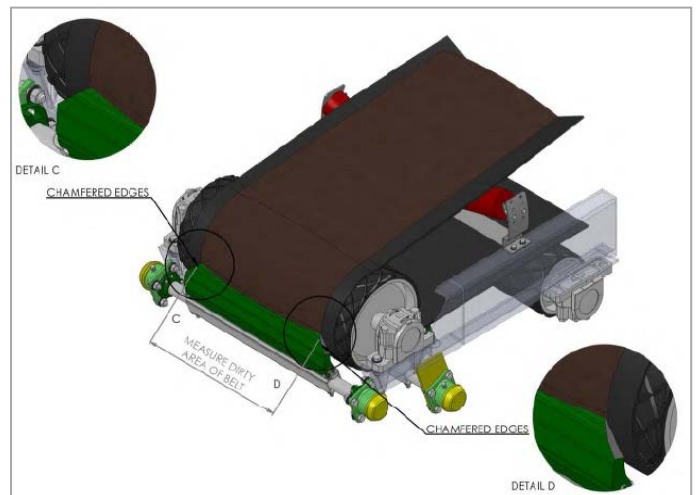
- Light-weight
- Easy to install
- Low risk of conveyor belt damage
- Low coefficient of friction
- Reduced conveyor drag
- May be single blade or segmented

Ceramic

- Highest abrasion resistance
- Aggressive conveyor belt cleaner
- Aggressive to patches and mechanical fasteners
- Low wearing
- Segmented ceramic chips
- Small for compact areas
- May be installed with 2 sets in parallel
- May handle elevated temperatures

1.5 Cleaner blade/tips should be equal to material burden width:

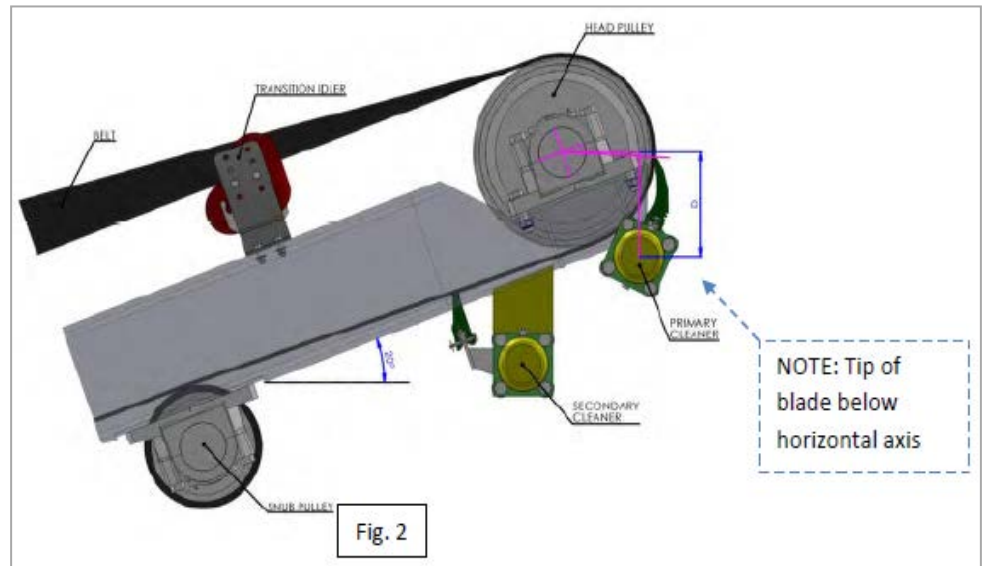
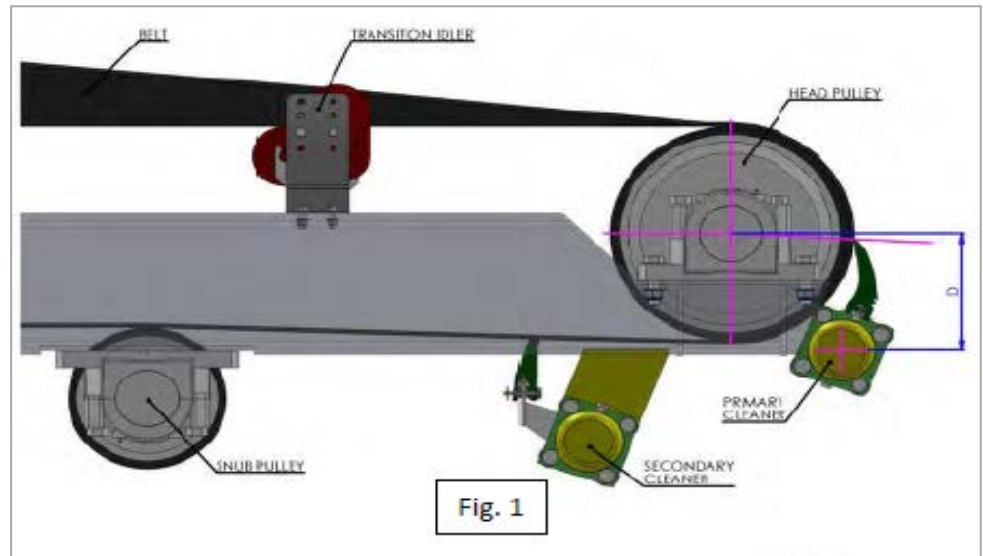
- Decreases heat generation between contacting points
- Promotes even wear across the blade width
- Increase cleaning efficiency
- Increases life of belt cleaner
- Reduces conveyor belt damage
-



Belt Cleaning Manual

Section 2: Belt Cleaner Installation Rules

2.1: Correct Positioning



Belt Cleaning Manual

Section 2: Belt Cleaner Installation Rules *continued*

2.1 Correct Positioning Continued

- Positioned below the horizontal line perpendicular to the pulley vertical line
- Not necessarily parallel to the stringers or conveyor belt
- Out of the material flow – not assisting the material discharge.

Choose correct belt cleaner type to suit the positioning constraints

- In an around the stringer and structural members
- Confined spaces
- Around pulleys and bearings
- Chutes access

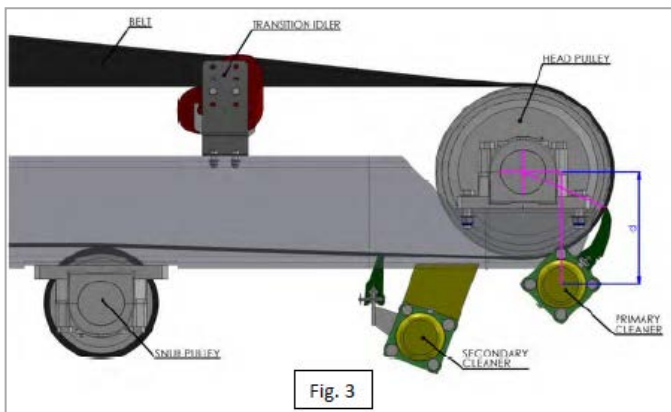


Figure 2.3: Slow Belt Speed Conveyor

2.2 Correct Tensioning

- Optimizes and improves belt cleaner wear life
- Reduces conveyor belt damage
- Assists in preventing chattering

Each cleaner has its own tensioning system

- Wire
- Spring
- Counterweight
- Torque Transmission

Make sure to consult the Suppliers Instruction Manual for a tension recommendation

TENSIONING GUIDE		
BELT WIDTH (METRIC)	Number of Clicks	Force in Lbs / Nm
300	4	50 / 5.7
450		
600		
750	5	50 / 5.7
900		
1050		
1200	4	50 / 5.7
1400		
1500		
1800	5	60 / 6.8
2100		
2400		
2800	6	70 / 7.9
3000		

**** Do Not Over tension****
4 to 5 clicks is our standard which is recommended for most applications.

Figure 2.4: Example Tensioning Guide

Belt Cleaning Manual

Section 3: Belt Cleaner Maintenance Requirements

3.1 Maintenance Recommendation Checklist

Period	Belt Cleaner Maintenance Requirement
Daily	Clean build up on belt cleaner blade and arms
Weekly	Check for excessive carryback
Weekly	Check for uneven or excessive blade wear
Weekly	Check tension of belt cleaner

Notes

- Install access hatches and windows, inline with the conveyor belt cleaner
- Provide an ergonomically friendly environment for safe work
- Cleaning tips should slide in and out without the removal of the conveyor belt cleaner mainframe



Belt Cleaning Manual

Section 4: Troubleshooting Belt Cleaners

4.1 Conveyor Belt Cleaner may experience underperformance due to:

- Conveyor belt cleaner mainframe not parallel to the pulley
- Incorrect distance between the conveyor belt cleaner blade tip and the conveyor belt
- Incorrect tension and pressure on the conveyor belt
- Incorrect conveyor belt cleaner blade
- Conveyor belt cleaner not installed correctly
- Excessive vibrations or possible belt flap.

4.2 Belt Flap and Conveyor Belt Cleaners Occurs when:

Vibrations on the return side of the belt caused by high speed rotating frequencies.

Natural Frequency =
Belt Tension Frequency + Return Idler Space

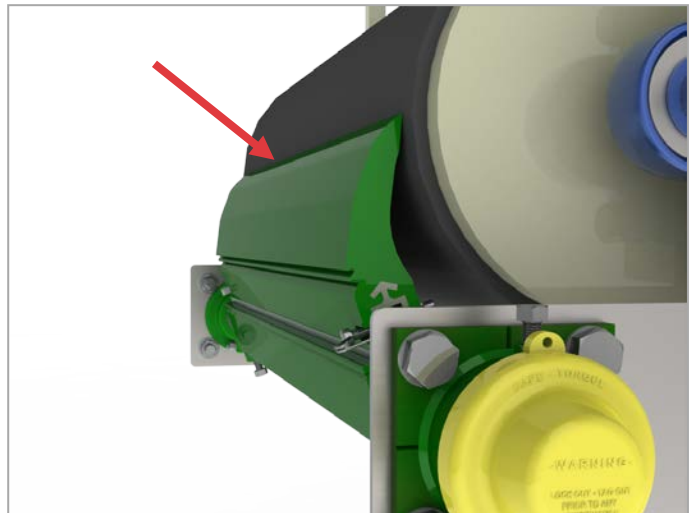
This causes the conveyor belt cleaners to oscillate and damage belt with the tips.

To eliminate belt flap:

- Increase number of return rollers on the conveyor
- Change the belt speed
- Change the Belt Tension

4.3 Primary Conveyor Belt Cleaner – Heeling

Heeling occurs if:
If the primary belt cleaner is mounted too close, gap between the conveyor belt cleaner blade is formed. This causes material to build up and push the conveyor belt cleaning tips away from the conveyor.



Section 4.1 – Primary Belt Cleaner without heeling