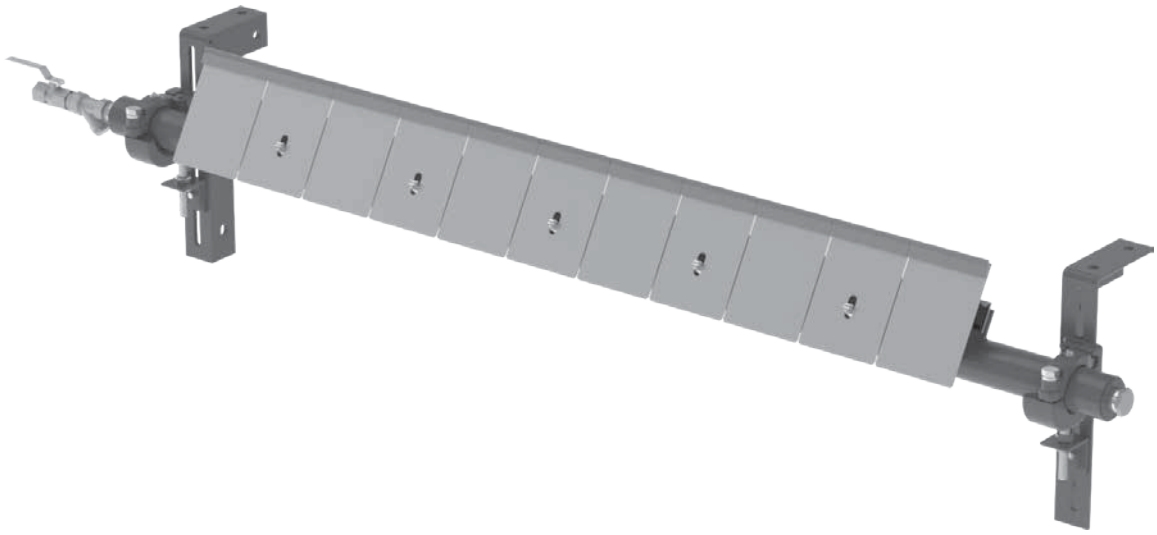
Spraywash Belt Cleaner

Installation, Operation and Maintenance Manual



FLEXCO

Spraywash Belt Cleaner

Purchase Date:_____

Purchased From: _____

Installation Date: _____

This information will be helpful for any future inquiries or questions about belt cleaner replacement parts, specifications or troubleshooting.

Table of Contents

Section 1 – Important Information

1.1 General Introduction

We at Flexco are very pleased that you have selected an Spraywash Belt Cleaning System for your conveyor system.

This manual will help you to understand the operation of this product and assist you in making it work up to its maximum efficiency over its lifetime of service.

It is essential for safe and efficient operation that the information and guidelines presented be properly understood and implemented. This manual will provide safety precautions, installation instructions, maintenance procedures and troubleshooting tips.

If, however, you have any questions or problems that are not covered, please visit our web site or contact our Customer Service Department:

Customer Service: 612-8818-2000

Visit www.flexco.com for other Flexco locations and products.

Please read this manual thoroughly and pass it on to any others who will be directly responsible for installation, operation and maintenance of this cleaner. While we have tried to make the installation and service tasks as easy and simple as possible**, it does however require correct installation and regular inspections and adjustments to maintain top working condition.**

1.2 User Benefits

Correct installation and regular maintenance will provide the following benefits for your operation:

- Reduced conveyor downtime
- Reduced man-hour labor
- Lower maintenance budget costs
- Increased service life for the belt cleaner and other conveyor components

1.3 Service Option

The Spraywash Belt Cleaning System is designed to be easily installed and serviced by your on-site personnel. However, if you would prefer complete turn-key factory service, please contact your local Flexco Field Representative.

Section 2 – Safety Considerations and Precautions

Before installing and operating the Spraywash Belt Cleaning System, it is important to review and understand the following safety information.

There are set-up, maintenance and operational activities involving both **stationary** and **operating** conveyors. Each case has a safety protocol.

2.1 Stationary Conveyors

The following activities are performed on stationary conveyors:

- Installation
- Blade replacement
- Repairs
- Tension adjustments
- Cleaning

⚠ DANGER

It is imperative that Lockout/Tagout (LOTO) regulations, be followed before undertaking the preceding activities. Failure to use LOTO exposes workers to uncontrolled behavior of the belt cleaner caused by movement of the conveyor belt. Severe injury or death can result.

Before working:

- Lockout/Tagout the conveyor power source
- Disengage any takeups
- Clear the conveyor belt or clamp securely in place

⚠ WARNING

Use Personal Protective Equipment (PPE):

- Safety eyewear
- Hardhats
- Safety footwear

Close quarters, springs and heavy components create a worksite that compromises a worker's eyes, feet and skull.

PPE must be worn to control the foreseeable hazards associated with conveyor belt cleaners. Serious injuries can be avoided.

2.2 Operating Conveyors

There are two routine tasks that must be performed while the conveyor is running:

- Inspection of the cleaning performance
- Dynamic troubleshooting

⚠ DANGER

Every belt cleaner is an in-running nip hazard. Never touch or prod an operating cleaner. Cleaner hazards cause instantaneous amputation and entrapment.

⚠ WARNING

Belt cleaners can become projectile hazards. Stay as far from the cleaner as practical and use safety eyewear and headgear. Missiles can inflict serious injury.

⚠ WARNING

Never adjust anything on an operating cleaner. Unforseeable belt projections and tears can catch on cleaners and cause violent movements of the cleaner structure. Flailing hardware can cause serious injury or death.

Section 3 – Spraywash Service Procedures

3.1 Routine Visual Inspection

All conveyors should be routinely inspected. An important element of the inspection is the belt cleaning system.

The safety aspects of an inspection with equipment operating must be observed, as the Spraywash cleaner operates at the discharge end of the conveyor and is in direct contact with the moving conveyor belt.

No attempt should be made to physically handle any section or element of the Spraywash cleaner which is inside the chute area.

A visual inspection of the cleaner's performance can be made from outside the chute, if closer inspection is required the conveyor must be shut down and locked out.

A visual inspection of the conveyor belt should be made to determine:

- No belt cover damage is occurring
- No area of the belt surface has a fixed pattern of material carryback
- There is no bouncing of the conveyor belt in the area of the belt cleaner. If bouncing is present, a hold-down roller may be required at 150-200m behind the cleaner
- If snub pulleys are present, a check should be made for material building up on the surface of the pulley

When any of the above conditions are observed, a determination should be made of the necessity for the interruption of production to complete needed repairs i.e., is the condition serious enough to warrant stopping the conveyor, or can it wait until the next maintenance period.

3.2 Physical Inspection

Under no circumstances should a physical inspection of any belt cleaner be undertaken with the conveyor in operation.

A physical inspection of the cleaner should be made to determine:
Note: Removal of the pole assembly is preferred.

PV:

- Check all tips for mechanical damage such as wear or fracturing of the tungsten carbide section of the tips
- If tips are worn out, remove tip and replace with new tips and align with a straight edge
- Ensure the tips cover the entire width of the belt
- Ensure that the tips of the cleaner are square to the belt before applying tension
- Check the rubber cushions of the cleaner for corrosion and indications that the metal plates of the cushion are separating from the rubber blocks
- Ensure that there are no blades pushed away back from the belt. If so, this could mean:
  - Material buildup between the tip and belt
  - The cushion is damaged
  - The cleaner pole top plate is bent
- Inspect the pole of the cleaner for corrosion, erosion and straightness
- Inspect the cleaner to ensure that all nuts are secure and that wear is not occurring, particularly to the nuts which secure the tips

- Replace all worn or damaged components
- Tension the cleaner to the belt
  - Tension the cleaner to the belt as described in the installation instructions
  - After adjusting the height of the adjuster bolts to the correct tension, pull the outer tip back until the contact is broke between the tip and belt and release. With correct tension the full thickness of the adjacent tip is visual at the belt. Adjust as needed. (This tension gives a 3mm-5mm lift in the belt at tip contact area)
  - Test run the conveyor and check for any abnormal noise or vibrations from the cleaner

3.3 Sprays

Ensure that the spray nozzles are secure and clear of build up and inspect the stainless steel deflecter shields are not damaged

3.4 Frequency of Inspection

PV: Inspect every 4-6 weeks

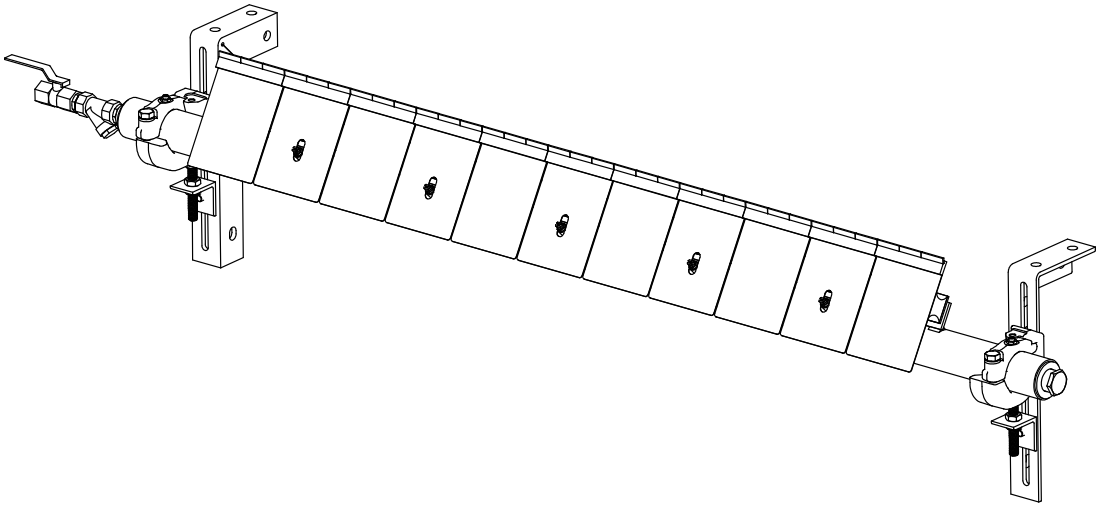
3.5 Tip Life Expectancy

(Blade life estimates vary by application and are dependent on the types and amounts of materials being cleaned off the belt, conveyor run times, and other factors. Severe applications may see reduced life.)

PV: 6-18 months

Section 4 – Spraywash Features and Benefits

4.1 Key Features and Benefits



1. **Conforms to the belt surface**
   The 150mm blade/cushion segments conform to the irregular contours of the belt, especially the loading-carrying centre, for a superior cleaning job.

2. **Constant, controlled blade pressure**
   Unique, segmented cushions deliver independent tensioning to each blade tip to help maintain a more consistent blade-to-belt pressure reducing blade re-tensioning maintenance and ensuring a more consistent cleaning job throughout the life of the blade.

3. **Cleaning efficiency of metal blades**
   The Spraywash offers two metal blade options:
   1) V-Tip with an increased cleaning angle for vulcanized belts
   2) C-Tip for vulcanized and mechanically spliced belts.

4. **Dumps carryback at the transfer point**
   The Spraywash compact design, needing only 200mm of vertical clearance for installation, means it can be mounted in most cases, right in the chute area. Optimally, it mounts 100mm from the transition point where the belt leaves the head pulley. It can also be mounted in front of a snub pulley or anywhere down the beltline.

5. **Low maintenance**
   Few parts and heavy-duty construction ensures repair-free wear.

Section 4 – Spraywash Features and Benefits

4.2 Other Features and Benefits

6. **Fits most conveyor structures**
   Available for belt widths from 450mm to 3000mm. Cleaner poles are extra long for varying conveyor structure requirements.

7. **Easy to install**
   Universal brackets can be easily bolted to welded to the conveyor structure. Laminated instruc- tions give simple step by step directions.

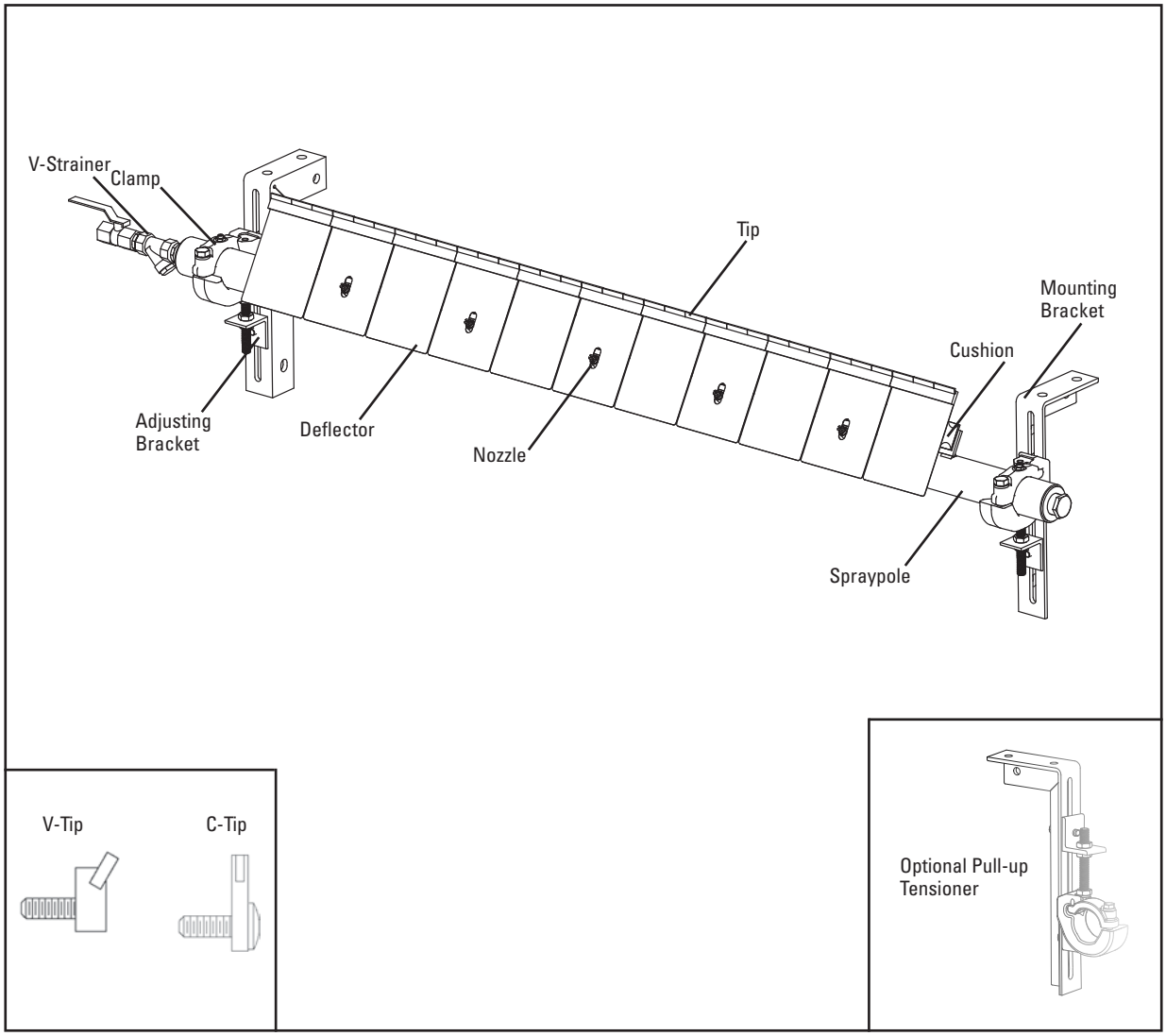
8. **Safety**
   All tension adjustments can be done safely from the sides of the conveyor. The pole can be easily removed from the cleaner so that blade replacement can be done off the conveyor.

9. **Superior cleaning power**
   For maximum cleaning in abusive applications, a second Spraywash may be required; or a complete cleaning system including a precleaner and one or more secondary cleaners. Flexco can design a system to meet your specific requirements.

10. **Service and support**
    Flexco has a variety of support options for specifying, installing or servicing your belt cleaners, including: local distributor service, on-site training, and factory technical support.

Section 5 – Installation Instructions

5.1 Spraywash Belt Cleaner



Tools Required for Installation:

- Tape Measure
- 19mm Wrench
- Ratchet with 19mm Socket
- 2 - 150mm (6") C-Clamps (For Temporary Positioning of Mounting Brackets)
- Cutting Torch and/or Welder
- Marking Pen

Before You Begin:

- Double check the tip style needed for your application:
  V-Tip - for vulcanized belts
  C-Tip - for mechanically spliced and vulcanized belts
- Physically lock out and tag the conveyor at the power source.
- For chute mounting it may be necessary to cut an access hole to allow for installation and inspections. (See dimensions in Step 2.)
- Follow all safety precautions when using a cutting torch.
- If welding, protect all fastener threads from weld spatter.

Section 5 – Installation Instructions

5.1 Spraywash Belt Cleaner

1. **Choose the position on the conveyor where the cleaner will be installed (Fig.** 1) The Spraywash Belt Cleaner may be installed at any position on the beltline starting from a point 100mm from where the belt leaves the head pulley and continuing on down the conveyor. The optimum positions are 100mm from the head pulley (Position A) or 150mm to 200mm in front of a snubber or return roller (Position B). If either of these positions is not possible, a hold down roller may be required to provide adequate tension for the tips. (If a hold down roller is required, the optimum cleaner position is 150mm to 200mm in front of the roller (Position C). A hold down roller is also required on conveyors where light belt tension makes constant tip contact unobtainable. Downward pressure is not required; the roller simply restricts any upward movement of the belt.

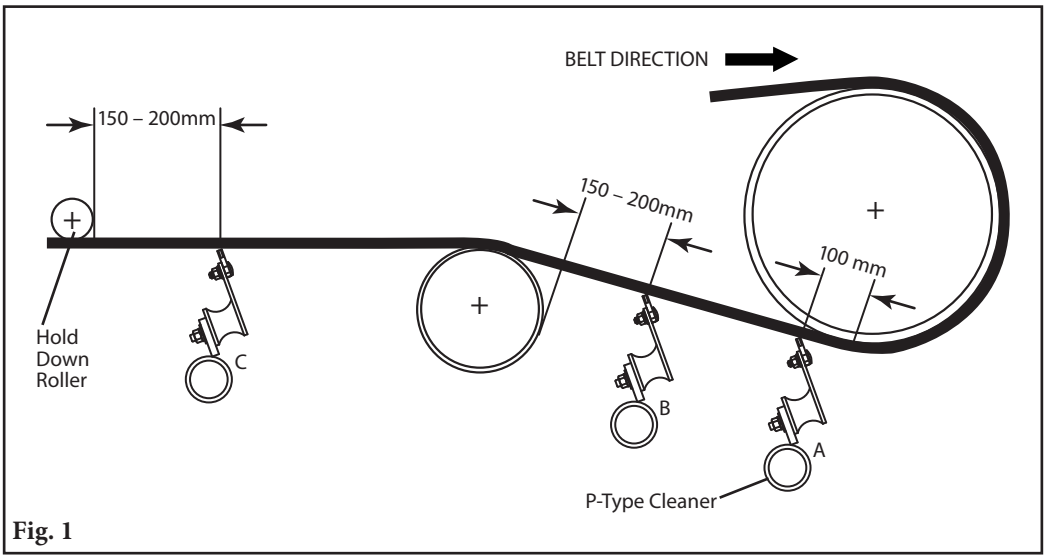


Fig. 1

2. **Install mounting brackets**

For chute mounting: For a chute installation a belt location line must first be established. Draw a line on the chute replicating this location. If head pulley and snub pulley are close, it may be necessary to assume an approximate belt line between the two. In the determined location draw a line perpendicular to the belt line. Make a mark on this line 175mm below belt location line (Fig. 2a). Locate a mounting bracket along this line allowing the centreline of the clamp block to align with this 175mm mark (Fig. 2b). To move the clamp blocks, if necessary, loosen the clamp block lock bolts and the adjusting bracket lock bolt and move the clamp block to a position where the centre of the hole is 175mm below the bottom of the belt. Bolt or weld in place. Repeat this step on the opposite side. On one side an access hole may be required (Fig. 2c). **NOTE:** The brackets must be aligned perpendicular to the belt.

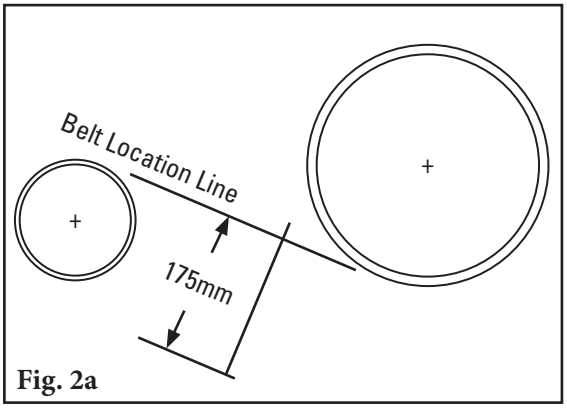


Fig. 2a

Fig. 2b

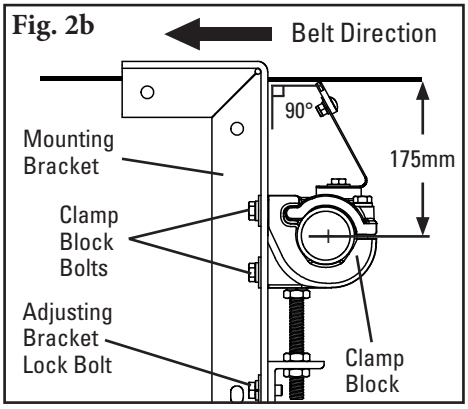
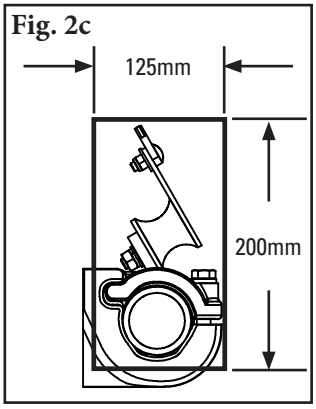


Fig. 2c



Section 5 – Installation Instructions

5.1 Spraywash Belt Cleaner

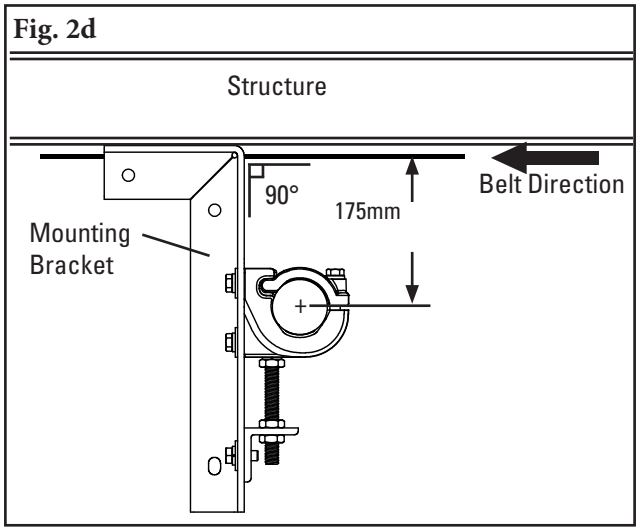


Fig. 2d

For structure mounting: In most applications the standard mounting brackets will have adequate room to fit on the structure with no cutting. Clamp the mounting bracket into position (use 150mm clamps). Move the clamp block to align the centre of the block with a point 175mm below the belt (Fig. 2d). To move the clamp blocks, if necessary, loosen the clamp block lock bolts and the adjusting bracket lock bolt and turn the adjusting bolt lock nuts. The bracket can now be bolted or welded in place. Locate and install bracket on the opposite side of belt in alignment with the first bracket. **NOTE:** The brackets must be aligned perpendicular to the belt.

3. Install the pole

Remove the two clamp block bolts on both clamp blocks and remove the outer half of the clamp blocks (Fig. 3). Slide the pole across the belt and into the clamp blocks. Position the outer clamp block halves over the pole and install the clamp block bolts. Position the pole so the tips are centred on the belt and snug the clamp block bolts.

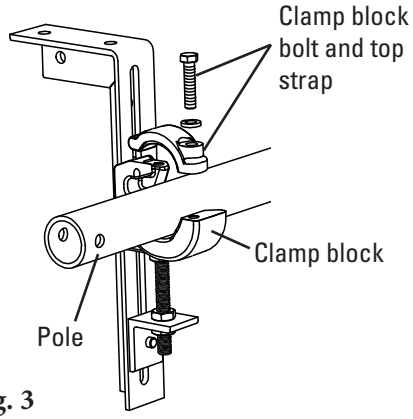


Fig. 3

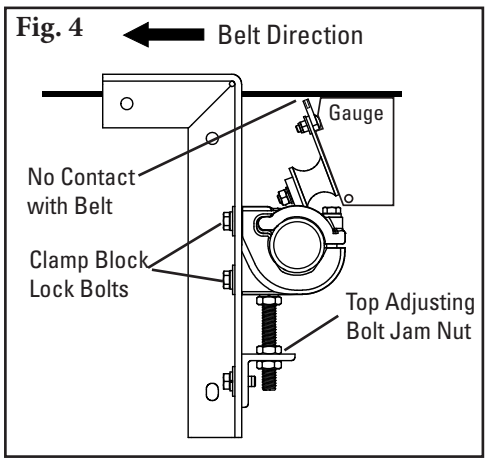


Fig. 4

4 Set the tip angle

With angle gauge provided, rotate the tips to the preset angle (Fig. 4) and lock the pole in place by tightening the clamp block bolts equally.

NOTE: Make sure there is NO tip to belt contact while making this alignment. If contact occurs, lower the pole by raising the top adjusting bolt lock nut and loosening the clamp block lock bolts, and repeat this step (Fig. 5).

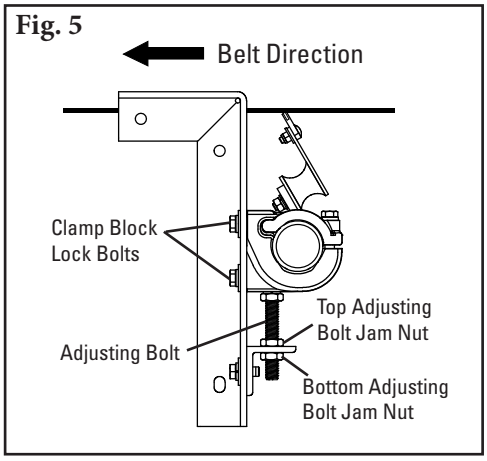
Section 5 – Installation Instructions

5.1 Spraywash Belt Cleaner

5 Set the tip tension

With all clamp block lock bolts slightly loosened, back down the bottom adjusting bolt lock nut 5-6 turns on both sides (Fig. 5). Turn the top adjusting bolt lock nuts down until light contact is made between tips and belt across the entire width of the cleaner. Give an additional 1-1/2 turns to both top adjusting bolt jam nuts and tighten both bottom adjusting bolt lock nuts. Tighten all clamp block lock bolts. Double check that all bolts and nuts on the cleaner are tight.

Fig. 5



6 Check the tip tension

Pull back on the outside tip until the belt-to-tip contact is broken and release. The total blade thickness of the adjacent tip must be visible (Fig. 6a & 6b). Add or reduce tension by 1/2 turn until full thickness is obtained.

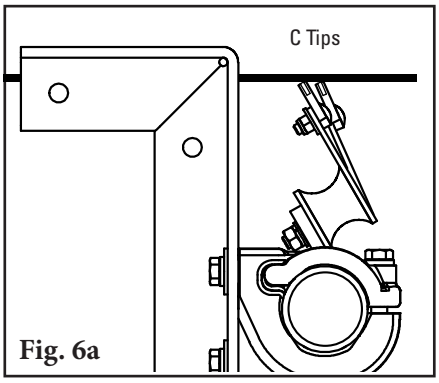


Fig. 6a

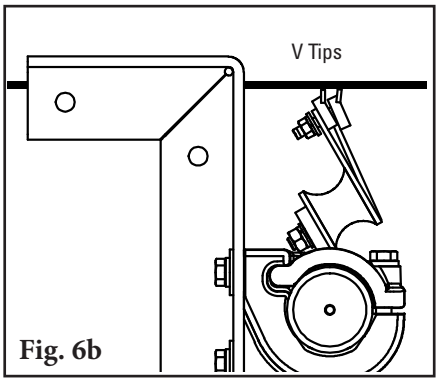


Fig. 6b

7 Check Water Sprays

Connect the Spraywash cleaner to the water source. check the water contacts the belt at a distance approximately 165mm in front of the cleaner tips (less for RS Spraywash cleaners)

Test run cleaner and inspect operation

If vibration occurs or more cleaning efficiency is desired, increase tip tension by making a 1/2 turn on each adjusting bolt.

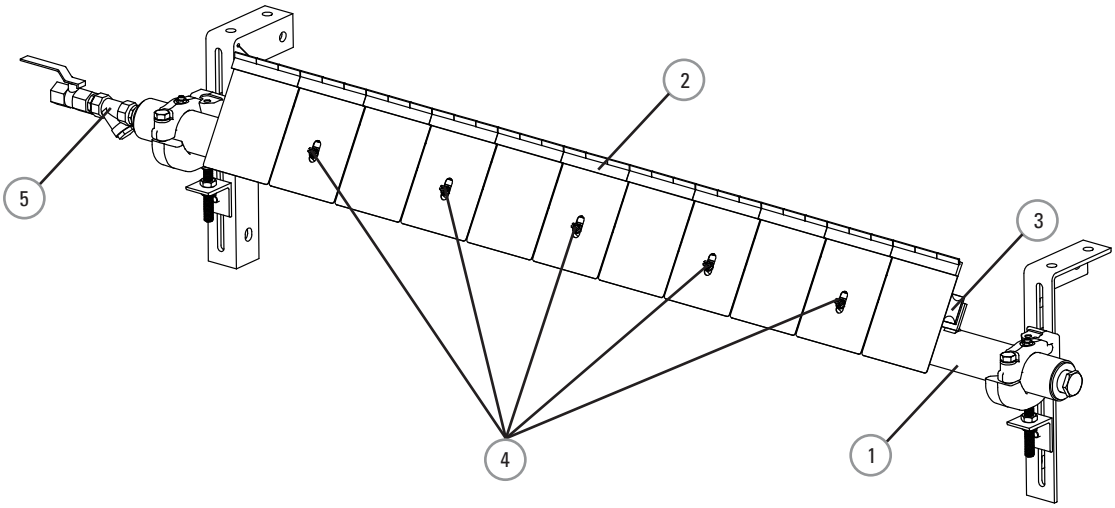
Section 6 – Blade Replacement Instructions

6.1 Blade Replacement Instructions

Belt Cleaner with C-Tips or V-Tips

- Blade replacement for the Spraywash cleaner is the same as for standard cleaners.
- Refer to sections on P or R Type for instructions.

Section 7 – Replacement Parts List



Replacement Parts

REF	DESCRIPTION	POLE DIAMETER	BELT WIDTH	POLE LENGTH	ORDERING NUMBER	ITEM CODE	WT. KG.
1	PS Spray Poles	60	600	1350	PS600PL*	73582	15.0
			750	1500	PS750PL*	73583	16.0
			900	1650	PS900PL*	73584	19.0
			1050	1800	PS1050PL*	73585	22.0
			1200	1950	PS1200PL*	73586	26.0
		73	1400	2200	PS1400PL*	73587	29.0
			1500	2350	PS1500PL*	73588	33.0
			1800	2650	PS1800PL*	74049	36.0
			2000	2850	PS2000 PL*	74050	40.0
2	P-V Tip				PVT6-S/S	75420	0.4
3	PH High Speed Cushion - Stainless				PHSC-S/S	73433	1.0
4	Spray Nozzle				PSN11010	74053	1.0
5	Valve Assembly				PSVA	73434	1.0
–	Water Control Board - 24 Volt DC				WCB	A0012	10.0
–	Stainless Shield - Notch				PSSS-N	73221	0.5
–	Stainless Shield - Hole				PSSS-H	73222	0.5

Hardware included
*Lead time: 3 weeks

Section 8 – Other Flexco Conveyor Products

Flexco provides many conveyor products that help your conveyors to run more efficiently and safely. These components solve typical conveyor problems and improve productivity.
Here is a quick overview on just a few of them:

EZP1 Primary Cleaner

- Patented ConShear™ blade renews its cleaning edge as it wears
- Visual Tension Check™ for optimal blade tensioning and simple retensioning
- Quick and easy one-pin blade replacement Material Path Option™ for optimal cleaning and reduced maintenance

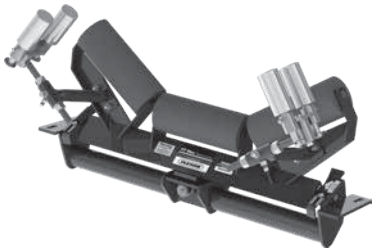
Flexco Slider/Impact Beds

- Adjusting troughing angles for easy installation and adjustability
- Long-wearing UHMW for sealing the load zone
- Offered in both Light & Medium duty designs to affordably fit your application

MHS SAC Secondary Cleaner

- Long-wearing tungsten carbide blades for superior cleaning efficiency
- Patented PowerFlex™ cushions, the proven design found on our industry-leading MHS Secondary Cleaner
- Service Advantage Cartridge can be easily removed and replaced, even in the dirtiest conditions
- Works with Flexco mechanical belt splices

PT Max™ Belt Trainer



- Patented "pivot & tilt" design for superior training action
- Dual sensor rollers on each side to minimise belt damage
- Pivot point guaranteed not to freeze or seize up
- Available for topside and return side belts

Flexco Specialty Belt Cleaners

- "Limited space" cleaners for tight conveyor applications
- Cleaners for severe, high heat applications
- A rubber fingered cleaner for chevron and raised rib belts
- Multiple cleaner styles in stainless steel for corrosive applications

Belt Ploughs

- A belt cleaner for the tail pulley
- Exclusive blade design quickly spirals debris off the belt
- Economical and easy to service
- Available in vee or diagonal models

The Flexco Vision

To become the leader in maximising
belt conveyor productivity for our customers worldwide
through superior service and innovation.

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