



CONVEYOR COMPONENTS COMPANY

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RFA / RLP CONVEYOR BELT CLEANERS GENERAL INSTALLATION INSTRUCTIONS

WARNING:

Serious INJURY can occur.

DO NOT attempt to install, service, or adjust belt cleaner while belt is in motion, or while conveyor system is in any motion.

SHUT-DOWN and LOCK-OUT conveyor system before installing, adjusting, or servicing belt cleaners.

Getting Started

Observe following steps BEFORE installing conveyor belt cleaning system:

1. To avoid personnel injury or conveyor system damage, equipment installation MUST be carried out in a safe and conscientious manner.
2. Refer to ANSI B20.1-1076, "SAFETY STANDARD FOR CONVEYORS AND RELATED EQUIPMENT," for further safety precautions during belt cleaning system operation and/or installation.
3. Observe all OSHA safety rules and recommendations during conveyor system and cleaning system installation and operation.
4. Check parts list against packaged components for cleaner model received. Do you have all required parts?
5. Determine system 'Service End'. Refer to page 3 for changing 'Service End' procedure.
6. Operate conveyor system and check for belt 'whip' belt on start-up and 'roll-back' on shutdown. Make all adjustments needed to minimize belt 'whip' and 'roll-back'. Spring arms may be damaged if there is 'roll-back'.
7. Check conveyor belt for holes, splits, cracks, etc., and repair if needed. Assure all belt splices are smooth: repair splices as necessary.
8. Determine head pulley working radius (pulley radius + lagging + belt thickness). Locate vertical and horizontal head pulley centerlines on both conveyor sides.
9. Using cleaning system installation drawings, obtain end-mounting-plate hole locating dimensions.
10. Check mounting placement location for interference between mounting plates and conveyor structure. Alter plates or structure as needed for proper cleaning system installation. Plates may be mounted on an angle if needed.
11. Lubricate all belt cleaner system adjusting mechanisms before initial installation.
12. Take all measurements before actual installation. Cut and drill all cross members before installation.

13. Larger sized cleaners have considerable weight. Make lifting provisions to avoid possible personnel injuries.
14. Gather together all required tools and materials at job side before attempting cleaner installation.
15. Recommended installation tool list:

Adjustable wrenches	Wrenches, assorted
Drill with 9/16" and assorted drill bits	Marking devices
Center punch	Hammer
Measuring tapes	Calipers, inside and outside
Lights (drop or portable)	Safety extension power cords
Scaffolding or platform	Lifting devices
Cutting / welding equipment	Power grinder / assorted files
Plumb / square / level	Straight edge
C- clamps, 4 medium size	Prying equipment
Clean up equipment	
Safety equipment (helmets, fire extinguisher, first aid kit, etc.)	

Theory of Operation

Cleaner Placement:

The cleaning apparatus covered in this manual may be installed in pairs for maximum cleaning effectiveness. This is especially advantageous for wet and sticky materials.

The purpose of dual installation is to provide for removal of the largest majority of the heavy accumulation, allowing it to fall back with the conveyed material using a "Tangential Mounted" scraper blade, and then completing the cleaning of the belt using the heavy duty spring arm type scraper blades.

This type of cleaning procedure has proven effective for such materials as wet coal and other materials that tend to adhere to the surface of the belt. These cleaners may also be installed individually in applications where materials may be properly removed from the belt by such installations.

Care must be taken to locate the 'Service End' of the cleaner.

Certain spring arm blades are directional and care must be taken to mount these blades properly on the arm.

Cleaning Force:

The cleaning force for the Model RLP when installed 'tangentially' to the pulley should only be sufficient enough to maintain contact with the belt. At no time should the force be such that the blade is caused to flex away from the surface of the belt. Such force serves no purpose and will only reduce the cleaning effectiveness of the RLP cleaner.

In reference to the RFA cleaner, it is recommended that only sufficient force be applied to the blades to properly remove the material. Excessive force only serves to accelerate blade wear, and in no way improves the cleaning effectiveness.

Installation

1. Refer to belt cleaner drawings, locate and mark chute cut-outs, and mark respective cleaner mounting hole locations. RLP cleaner scraper blades are most important in locating, as blades are mounted tangentially, and position must be exact for proper belt

contact. RFA cleaner blades may or may not be mounted on 'head pulley' perpendicular centerline.

2. Mounting plate contact surfaces must be flat and smooth.
3. Follow proper chute wall cutting procedures to assure mounting plates will not be warped when bolted in place. Warped mounting plates may cause operating mechanism binding.
4. Observe all safety precautions during cutting procedures.
5. For pressure handle units, choose conveyor side to install service end before cutting and drilling operations.
6. Service Plate is shipped assembled for installation as shown on cleaner assembly drawings. To mount plate on side opposite shown in installation drawing (NOTE: Ratchet adjustable units are interchangeable.):
 - a) Remove door from plate and set aside.
 - b) Remove hex bolts holding Tube Retainer to End Flange Assembly.
 - c) Remove Tube Retainer and set aside.
 - d) Remove bolt and hardware from Service Flange slot.
 - e) Remove Service Flange by rotating and sliding up toward plate top until holding ring is free and flange releases from plate.
 - f) On opposite side from where it was removed, reverse Step e) operation, and slide Service Flange into plate. Replace previously removed bolt and hardware into Flange Slot.
 - g) Replace Tube Retainer and secure.
 - h) Install door on opposite side plate.
7. Plate Mounting: Drill mounting holes (9/16" dia.) previously marked for respective cleaners. Mount cleaner plates using 1/2-13 x 2" screws, lock washers and nuts furnished, or equivalent if longer length screws are required.
8. Cleaner Insertion: Check required support assembly and cleaning tube assembly cutting and drilling dimensions. Measure and cut tubes and perform required drilling operations.
9. Support tubes may require installation from inside of chute. Check that all conveyor system electrical circuits are locked-out to prevent accidental system start-up during support tube and cleaning tube assembly installations.
10. Install support tube from either conveyor side (or inside if needed) and hold at opposite 'Service End'.
11. Slide sectional sections onto support tube from 'Service End' and bolt together. Secure Service End Tube.

Conveyor System Start-Up

1. Before starting system, make sure blade assembly is adjusted parallel with belt surface, and blade 'rake angle' is not at a 'positive rake angle.' Using adjustment handles, move blades away from conveyor belt before actual system start-up.
2. Remove all debris from conveyor belt and inside of chute, such as installation tools, material, etc., before start-up. Make sure all mounting fasteners are tight. Check all welds made for strength and make sure they are clean.
3. Using following steps, start-up conveyor system and perform all checks required. Stop conveyor system before making fine adjustments.
4. Back cleaning blades away from conveyor belt.
5. Make sure belt is empty of all foreign objects.
6. Place conveying material on conveyor belt. Material put on belt before starting up will help wear blades in and will also reduce initial friction between belt and blades. Belt may also be wet down with water.
7. Adjust tangentially mounted blade into belt. Do not use excessive pressure as blade is designed to just meet belt and perform an initial heavy material cleaning, which should fall into chute along with conveyed material. Apply pressure just sufficient to maintain contact with belt for removing material.
8. Adjust spring arm blades into belt.
9. Start conveyor system following established safety precautions.
10. Observe system cleaning action. Use light if needed and place more material on conveyor belt if needed. Let system run for five (5) minutes and check cleaning system action and effects of any belt splices on blades. Make note to dress smooth if interference is too great.
11. **SHUT-DOWN** system for fine adjustments and possible blade fitting to belt. Follow all safety precautions.
12. Fine adjust tangentially mounted blade. Blade does not have to be backed off from belt after initial start-up. Having been against belt for initial period running, blades should now show slight wear. Adjust blade to contact belt evenly across entire belt width. If excessive blade shock was noted during initial run, dress splices as smooth as possible.
13. Fine adjust spring arm blades. If spring arm blades have not conformed to belt profile, each arm may be adjusted by loosening spring arm holding bolts and adjusting blades into belt by hand. After adjusting each blade, tighten spring arm holding bolts into place very tight (40 ft-lbs.). Fine blade adjustments for better belt fit may be done by loosening and readjusting each spring arm blade. Again, tighten nuts holding blades securely.
14. Start conveyor system and observe cleaning action. Make sure all tools used in fine adjustments have been removed from belt and inside of chute. Put some material belt and, using proper safety precautions, start-up system. Again, observe blade cleaning action and make any final adjustment notes. If more adjustments are required, repeat steps 11, 12, & 13.
15. Clean up all construction tools and debris and clean up surrounding area.

16. Assembly operating and maintenance personnel at conveyor. Show each how to start-up system and how to check blade pressures. Each operator and maintenance person must read this manual, and should perform start-ups, shut-downs, and adjustments for appointed supervisory personnel.

Trouble Shooting:

Listed below are possible problems during belt cleaner operation with causes and solutions.

Problem:	Cause:	Cure:
Uneven cleaning	All blades not in contact Broken spring Damaged blade	Check position of blades Tighten bolts Replace Replace
Excessive vibration causing fasteners to loosen	Belt not supported: whip Belt in poor condition Blades set with positive rake angle	Add support collar Repair & dress splices Move mounting plates up
Damaged springs	Belt rolls back Excess vibration Excessive blade pressure Heavy materials striking blades	Repair brake See above problem Re-adjust Move cleaner. Check operation of tangential blade
RLP and RFA Type Cleaners:		
Poor blade life	Excessive blade pressure Wrong blade for application	Re-adjust Consult factory
Cannot place mounting plates per instructions	Conveyor structure in way Cannot be mounted on chute surface	Mounting plates may be mounted at an angle or modified if necessary Provide secure mounting surface
RLP Tangential Mounted Blade Cleaner:		
Blade folds back on start-up	Excessive tension Wrong angle Excess friction (belt dry) Damaged belt or splices	Re-adjust Check drawing Put material on belt Repair belt or dress splices
Adjusting assemblies hard to operate	Adjustment dirty or corroded	Clean and lubricate
Material not removed over entire surface of belt	Uneven contact Insufficient pressure on one side	Check location of adjusting plates Re-adjust