BUCKET ELEVATOR BELT INSTALLATION INSTRUCTIONS O.M. 08903

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⚠ WARNING

Do not proceed with these instructions until you have READ the orange cover of this MANUAL and YOU UNDERSTAND its content.* These WARNINGS are included for the health and safety of the operator and those in the immediate vicinity.

***If you are using a Clemco Distributor Parts and Maintenance Guide refer to the orange warnings insert preceding the Index before continuing with the following instructions.**

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1.0 INTRODUCTION

1.1 Scope

1.1.1 This manual covers the replacement of Clemco bucket elevator belts. Although styles vary slightly, these instructions may be used for all Clemco elevators.

1.2 Hazard Alerts

1.2.1 Clemco uses signal words, based on ANSI Z 535.2-1991, to alert the user of a potentially hazardous situation that may be encountered while operating this equipment. ANSI's definitions of the signal words are as follows:

! NOTICE

"Notice" is used to indicate a statement of company policy as the message relates directly or indirectly to the safety of personnel or protection of property.

! CAUTION

"Caution" is used to indicate a potentially hazardous situation which, if not avoided, may result in minor or moderate injury.

! WARNING

"Warning" is used to indicate a potentially hazardous situation which, if not avoided, could result in death or serious injury.

! DANGER

"Danger" is used to indicate an imminently hazardous situation which, if not avoided, will result in death or serious injury.

1.3 FOREWORD

1.3.1 Most Clemco elevators have top take-up adjusting screws. For a short period of time in the early 1980s, elevators had bottom take-up adjusting screws. Although these instructions refer to the top take-up adjustment, the process is the same for both types. The difference is: raising the take-up on top adjusting elevators tightens the belt, lowering the take-up on bottom adjusting elevators tightens the belt. Ref. Figure 1.

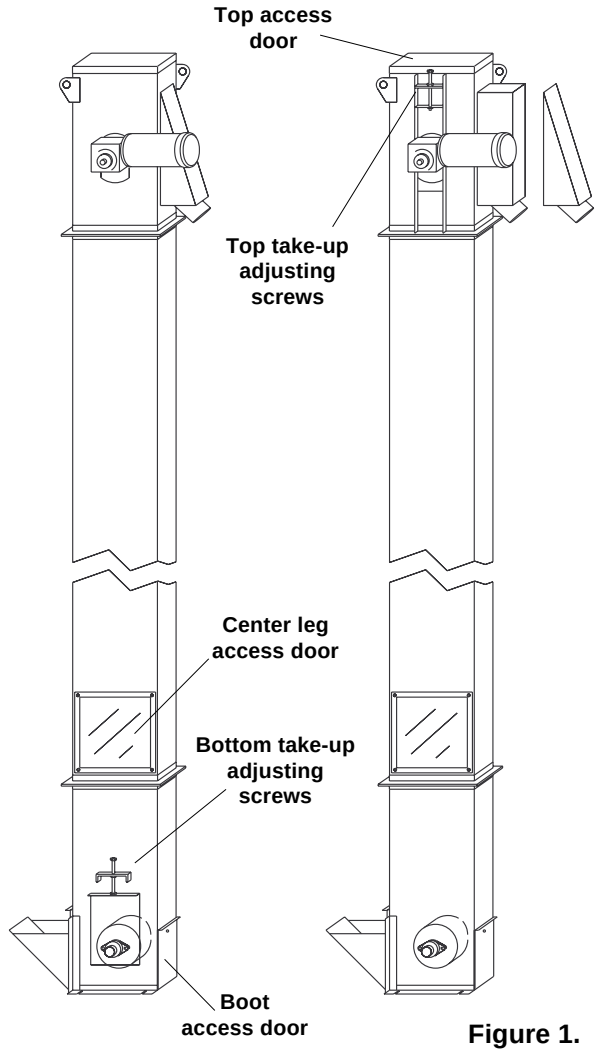

Figure 1.

! WARNING

Due to the weight and pull of the elevator belt, the more the belt is fed into the elevator, the heavier it becomes. Care must be used when installing or removing the belt assembly. Anyone working at the top access opening must wear a safety belt and work from a safe platform.

2.0 OLD BELT REMOVAL

1.3.2 There are two methods for removing and installing elevator belts; from the top, through the access door in the elevator head, or from the side, through the access opening in the center leg. Choose the method best suited to the conditions. Install the belt from the side when there is ample working space around the center leg opening and the opening is above floor level. Install the belt from the top, when there is limited space around the center leg opening and a platform or lift is accessible.

! WARNING

Lock-out and tag-out electrical power to prevent activation of the elevator during service. Unanticipated starting of the elevator could cause severe injury.

2.1 Remove access door covers on elevator head, center leg section, and boot section.

2.2 Rotate the bucket elevator belt until the splice is visible through the access opening.

2.3 Adjust the take-up screws so that the top pulley is at its lowest position.

2.4 Through the leg access opening, attach a rope to the belt on the lower side of the splice. Tie the rope to prevent the belt from falling into the boot when the splice is removed.

2.5 Remove the splice bar assembly from the belt.

2.6 Enlist the aid of another person to work at the top access opening to help feed the belt over the top pulley, and prevent the belt from falling into the elevator.

2.7 Pull the upper end of the belt downward and out through the access opening. Doing so will feed the rope under the lower pulley and up and over the top pulley while the old belt is being removed. Use the rope to prevent the old belt from falling as it is removed.

2.8 When the old belt is entirely clear of the elevator, attach the rope to the end of the new belt to facilitate installation per Section 3. NOTE! Check the direction of the buckets to be certain the belt is installed correctly. When the belt is installed, the open end of the buckets must face toward the discharge.

3.0 BELT INSTALLATION

3.1 Side Installation

3.1.1 At the top access opening, the rope should be down both sides of the upper pulley, loop around the lower pulley, and through the center leg access opening.

3.1.2 Tie the end of the rope on the discharge side of the elevator to the end of the belt so that when the belt is raised the buckets on the discharge side will face down.

3.1.3 With the help of a second person at the top access opening, feed the belt through the center leg access, while using the rope to pull the belt up through the elevator.

3.1.4 Continue feeding the belt in and rope out until the belt is fed over the top pulley and down the other side. The belt must reach the bottom of the boot.

3.1.5 Ensuring that the belt is not twisted, work through the boot access opening and run the belt around the lower pulley.

3.1.6 Continue feeding the belt and pulling the rope until the end is again at the access opening.

3.1.7 Care should be taken that the splice bar bolts are evenly tightened, and the two ends of the belt are aligned properly, at the same time the splice bar is tightened.

3.1.8 Verify that all ropes, and other tools used during assembly, are removed.

3.1.9 Proceed to Section 4.0.

3.1.10 Raise the belt take-up adjusting screws until the belt is barely taut. It is important that both drive and idle sides are taken up uniformly and that the pulley is level. This will insure the belt tracks in the center of the pulley.

3.2 Top Installation

3.2.1 Working through the top opening, lower the end of the belt with the buckets facing down, into the discharge side of the top pulley, until the end is visible at the center leg access opening. Tie the belt off on the discharge side of the elevator to prevent it from falling farther into the elevator.

3.2.2 Check that buckets will dump toward the discharge.

3.2.3 Lower the other end of the belt (buckets facing up) down the other side of the pulley until it reaches the bottom of the boot.

3.2.4 Insuring that the belt is not twisted, work through the boot access door and run the belt around the lower pulley.

3.2.5 Lower a rope from the center leg access opening, and attach it to the end of the belt. Pull the rope to bring the end of the belt to the opening.

3.2.6 Draw the two free ends of the belt together, remove the threading rope and install the splice bar as shown in Figure 2. Care should be taken that the bolts are evenly tightened, and the two ends of the belt are aligned properly at the same time the splice bar is tightened.

3.2.7 Verify that all ropes, and other tools used during assembly, are removed.

3.2.8 Raise the belt take-up adjusting screws until the belt is barely taut. It is important that both drive and idle sides are taken up uniformly and that the pulley is level. This will insure the belt tracks in the center of the pulley.

4.0 BELT TRACKING

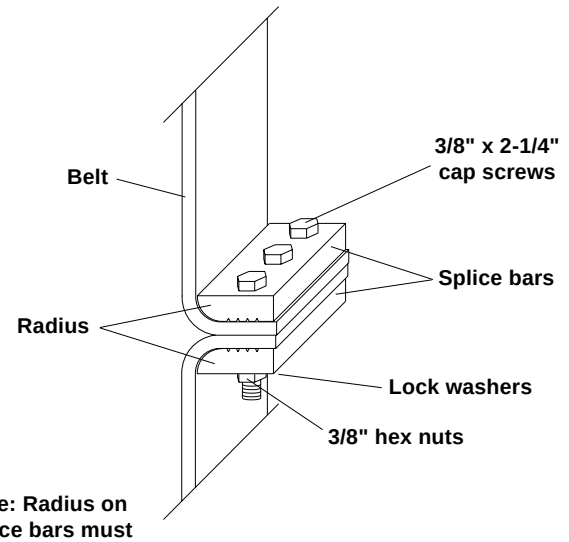

Figure 2.

4.1 Two people are needed during the initial belt tracking adjustment. While the person making the adjustment observes the belt through the access opening in the bucket elevator head, the other jogs the elevator drive motor.

! DANGER

Tracking is checked visually through the upper access opening while adjustments are being made. The elevator must be running to insure proper tracking. Extreme care must be taken to keep hands, tools, clothing, etc., away from the opening while the elevator is running. Any limbs, loose clothing, tools or any other articles, catching on a bucket or caught between the belt and pulley will cause severe injury.

4.2 Adjust the take-up screws evenly until slack has been taken out of the belt, and the upper pulley is level. During the tightening process, make sure the belt is in the center of both the upper and lower pulley.

4.3 After all slack has been removed from the belt, and it has been determined that the belt will run without coming off the upper pulley, the motor can be kept running and belt tension can be adjusted per Section 5.0.

NOTE: If the elevator runs for several seconds and shuts off, adjust the underspeed monitor as instructed in the underspeed monitor manual.

5.0 BELT TENSION AND TRACKING

5.1 While the elevator is running, tighten the belt by alternately adjusting the take-up screws, keeping it centered on the upper pulley. The pulley is slightly crowned so the belt will run in the center as long as the take-up screws are moved in unison.

5.2 Shut the elevator off, and lock-out and tag-out the electrical power.

! WARNING

Lock-out and tag-out electrical power before checking tension. Unanticipated starting of the elevator could trap limbs, and cause severe injury.

5.3 Working through the access opening, use both hands, to draw the two sides of the elevator belt together. If the belt is tightened correctly, it cannot be drawn any closer together than between 1-1/2" to 2" See Figure 3.

5.4 Check belt tension, and adjust as required to obtain correct tension. Be certain to inspect for proper tracking after each adjustment. Once this tension has been established, reactivate the system.

5.5 After the final adjustment is made, belt tracking should be observed for several minutes to ensure there is no long term drift of the belt on either side of the pulley.

5.6 Install all access opening covers.

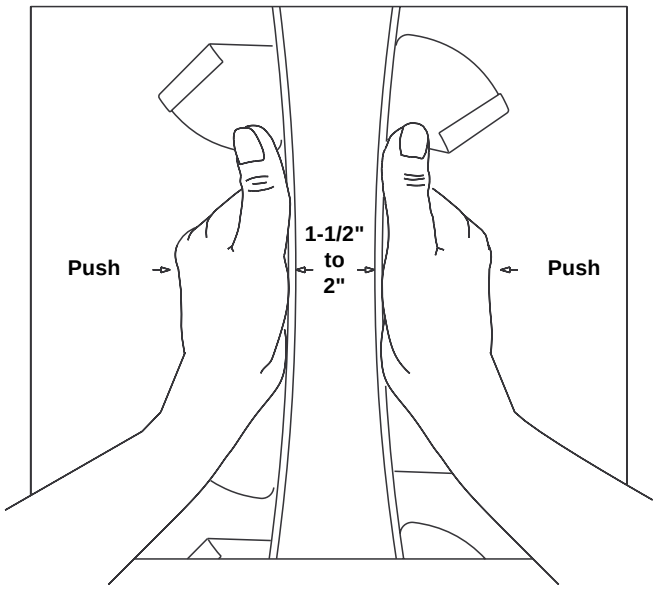

Figure 3.

5.7 Run the elevator without abrasive for eight hours. This provides suitable belt break-in, so that initial stretching of the belt can take place.

5.8 After the bucket elevator has run for several hours with no load, shut down the system and recheck belt tension.

5.9 During the first week of operation, check belt tension and tracking daily.

5.10 During the first month, check belt tension and tracking weekly.

5.11 After the initial one month break-in period, the elevator belt should be inspected monthly for wear and stretching.