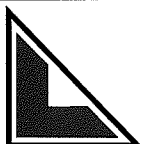


Installation and Operation of a Wire Mesh Conveyor Belt

WIREMATION CONVEYOR BELTING

DIVISION OF LUMSDEN CORPORATION

1-800-367-3664



LUMSDEN CORPORATION

P.O. BOX 4647 • LANCASTER, PENNSYLVANIA 17604
(717) 394-6871 • FAX: (717) 394-1640

Installation and Operation of a Wire Mesh Conveyor Belt

I. CONVEYOR ALIGNMENT

Wiremation wire mesh belts are designed and built to run true when all rolls and support beds are level and at right angles to the center line of the conveyor.

It is essential that all major rolls, such as end rolls, the drive roll, and the take-up roll are level and mutually parallel. It is suggested in most cases that any stationary major roll be pinned in place after alignment. In addition, the take-up roll must be checked to assure that it remains parallel with the other major rolls in all positions. On very short conveyors where belt tension is quite low it is possible to deviate from this principle without some sacrifice of belt performance.

II. INSTALLATION OF THE BELT

Correct installation procedures must be observed to assure that the quality built into the belt by Wiremation will result in low maintenance and long belt life.

A wire mesh belt may be pulled into the conveyor by means of a rope which has been previously threaded through the conveyor. This rope should not be attached directly to the belt but rather should be connected to a pull bar which is, in turn, wired or brazed to the belt. If the pulling rope is connected directly to the belt, it is suggested that the last two feet of fabric be discarded to prevent the introduction of distorted spirals into the belt.

Another method of pulling a new belt through a conveyor is to attach it to the old belt. If both belts are of the same mesh, they may be connected by means of a straight rod. Where the meshes are different, they should be wired together across the full width. This method should not be used to pull a belt into an oven or furnace while it is at temperature.

While the belt is being pulled into the conveyor, it should be carefully watched to assure that all spirals lie flat in the plane of the belt. Any spirals which are not lying flat will generally show up as "bumps." These spirals must be turned to lie flat. If tension has been applied before the turned spiral has been discovered, the spiral must be removed to assure proper tracking of the belt.

After the belt is installed it should be run without load and under the slightest possible counter-tension required to drive it. This will not only seat the spirals on the crimp rods but will also serve as a second check to make certain that all spirals lie flat in the plane of the belt. After several complete revolutions at this tension level, the counter-tension may be increased to the full operating value in a series of steps. Close attention must be paid to the belt during this period as frequent tracking adjustments may be necessary.

Where the belt is to operate at elevated temperatures, it should be tracking satisfactorily before temperature is applied. In order to properly break in the new belt, the temperature should be increased gradually. One rule of thumb is that the temperature should be increased at the rate of approximately 100° per hour. During this period, the belt must be watched carefully as continuous tracking adjustments are required.

III. TRACKING THE BELT

Tracking a wire mesh belt is accomplished by using the proper procedures. The most important single principle is that a wire mesh belt always tracks in a direction perpendicular to the support rolls over which it passes. To track the belt in a particular direction, it is only necessary to skew the support rolls in the desired direction. Do not track the belt by moving the end rolls out of parallel. Following are the steps involved in tracking a wire mesh belt:

1. Make certain the conveyor unit has been carefully aligned following the procedures outlined previously.
2. Place at least one mark on the belt with paint or chalk to serve as a reference point in tracking adjustments. If desired, a series of numbers may be painted on the belt at regular intervals.
3. Run the belt for several complete revolutions and, on each revolution, measure the lateral position of the reference point on the charge roll. This will indicate the direction and extent of lateral movement.
4. If adjustments are required, adjust the support rolls. The support rolls should be adjusted a measured distance in the direction of the discharge and on the side of the conveyor where belt side travel is noted or adjust the support rolls toward the charge end on the opposite side of the conveyor or both. It is important to keep in mind **always** that slight adjustments on each roller support are more effective than large adjustments on a few rollers.
5. Continue checking the lateral position of the reference point and making adjustments until the belt comes on the charge roll consistently in the proper position. At this point, the belt is tracking in a repeating pattern.
6. Check the lateral position of the belt on the discharge roll and if satisfactory, tracking is complete.
7. If the lateral position on the discharge roll is not satisfactory, it will be necessary to adjust the top pass support rolls until the belt is positioned properly on the discharge roll. In this case, it is then necessary to re-zero the position of the belt on the charge roll to complete tracking.

IV. CARE OF THE BELT

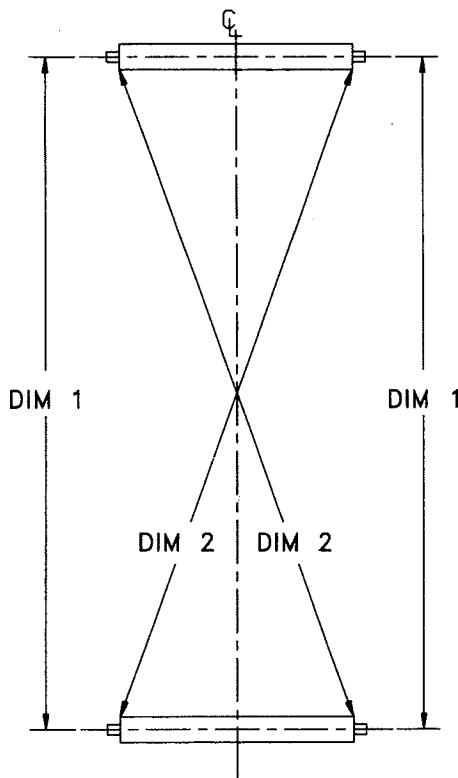
Proper care will assure a long and satisfactory service life for the belt. In fact, with practically all installations, the service life of the belt is heavily predicated by the care given it.

One of the most important single factors is to make certain the belt tracks satisfactorily so the edge is not damaged. Related to this is the installation of alarm equipment to warn if tracking passes beyond predetermined limits.

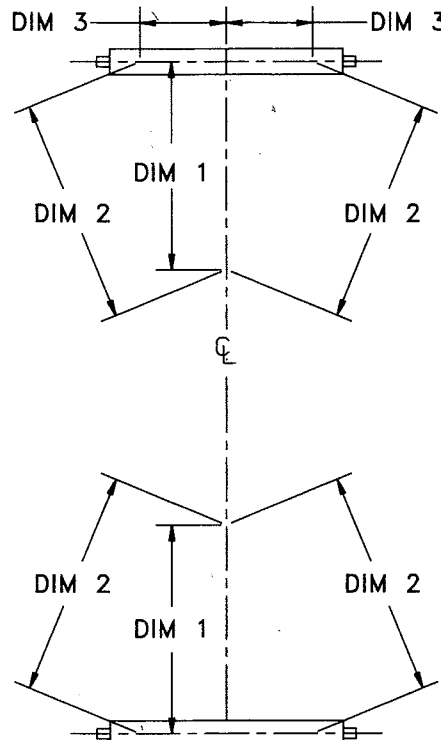
Another important factor to consider is movement of the belt while temperature is being applied. A belt should always be moving while the furnace is in operation.

WIREMATION CONVEYOR BELTING

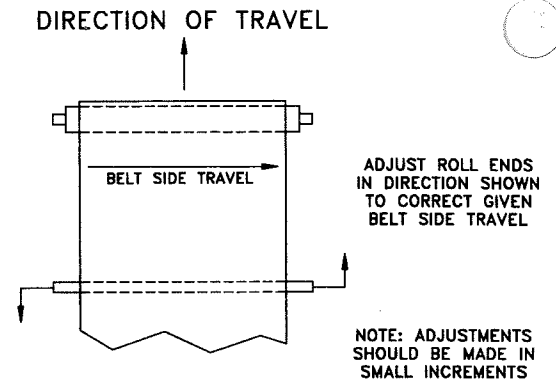
Belt Adjustments, Alignment, and Tracking



DIAGONAL METHOD
OF TERMINAL DRUM
ALIGNMENT



CENTERLINE METHOD
OF TERMINAL DRUM
ALIGNMENT

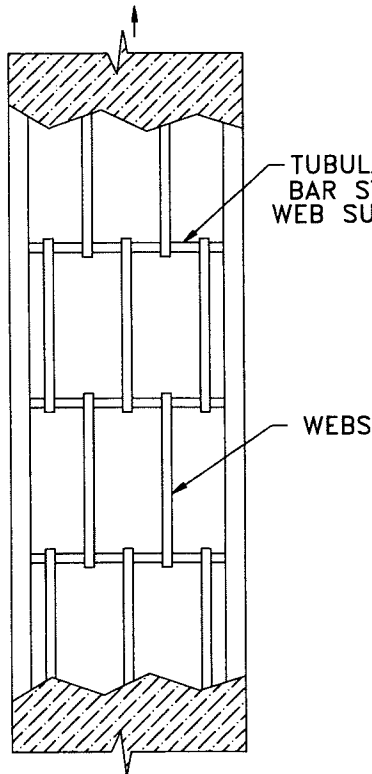


NOTE: ADJUSTMENTS
SHOULD BE MADE IN
SMALL INCREMENTS

ADJUSTMENT TO CORRECT BELT
SIDE TRAVEL

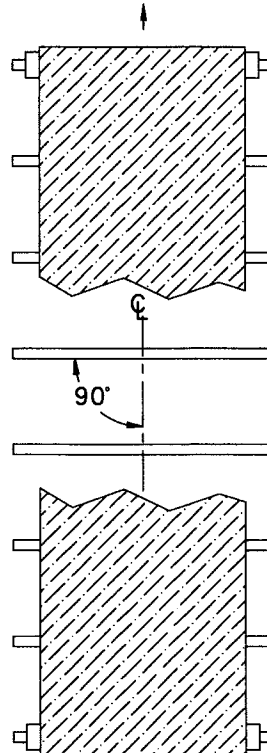
Typical Belt Support Layouts

DIRECTION OF TRAVEL



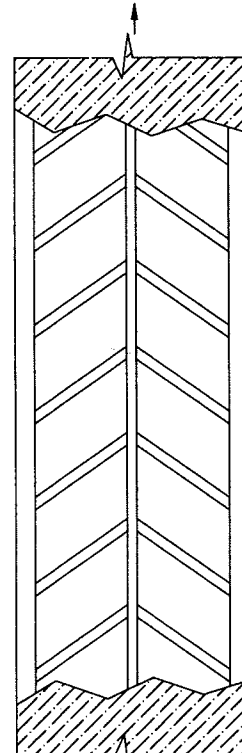
LONGITUDINAL SUPPORT

DIRECTION OF TRAVEL



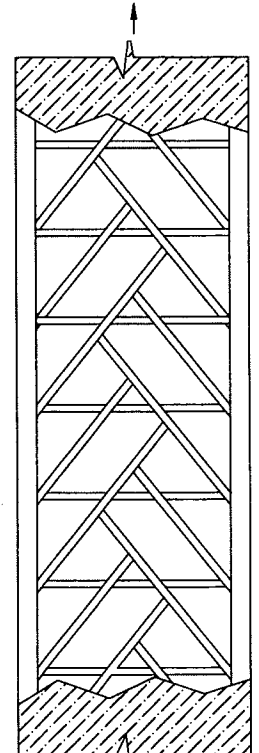
ROLLER SUPPORT

DIRECTION OF TRAVEL



HERRINGBONE SUPPORT
WITH CENTER RAIL

DIRECTION OF TRAVEL



HERRINGBONE SUPPORT
WITH CROSS BARS