

## Conveyor Belt Alignment – Troubleshooting

A belt conveyor which is properly designed, constructed, erected, and maintained theoretically will consistently run true without concern for belt misalignment. However, in actuality, properly aligned belts are normally the exception rather than the rule.

The following belt training troubleshooting guide is provided to assist you in your efforts to correct belt misalignment problems that invariably lead to premature failure of belting, idlers, and pulleys.

### **Please follow these steps to ensure satisfactory performance of your belt conveyors:**

1. Square and level the head and tail pulleys with their axis at 90 degrees to the intended path of the belt.
2. Square all carrying and return idlers with the conveyor frame during the belt conveyor installation, be sure the idlers are in line and lie in the same horizontal plane, and secure all attachment bolts.
3. Level all frames to ensure a cross-section parallel to the ground plane. If one side of the conveyor frame is lower than the other, gravity will force the belt off-center.
4. The belt must be straight and the belt splice square. If side creep occurs only in the vicinity of the belt splice, the splice may not be square with the belt. In general, if detraining follows the belt movement, there is a problem with the belt. If it remains in one general vicinity, there are other problems with the conveyor. Some new belts may tend to wander to one side, in a certain position or portions of their length, because of temporary lateral mal-distributions of tension. Operation of the belt under tension corrects this condition in practically all cases. Use of self-aligning idlers will aid in making the correction.
5. The belt should make constant contact with all troughed idler rollers.
6. Conveyed material should always be centrally loaded onto the belt by means of chute work, loading hoppers, skirt boarding, etc.

### **There may be occasion when the above procedure is not sufficient and the belt detrains to one side. The following corrective measures may be initiated to prevent side movement:**

1. While running the belt at the lowest speed possible, find the point of maximum side motion. The idler preceding this point along the direction of belt travel can be adjusted to minimize side movement. The belt may be centered by pivoting, or “knocking” ahead (in the direction of belt travel) the end of the idler to which the belt runs. Shifting idlers in this way should be spread over some length of the conveyor preceding the region of trouble. Once the belt is centered, increase belt speed and load the belt with material. Continue adjusting until normal operating conditions do not cause the belt to misalign.
2. Recheck pulley alignment to ensure that they are level and with their axes at 90 degrees to the intended path of the belt. Head and tail pulleys should not be shifted in an effort to center the belt with the exception of the snub pulleys which may have their axes shifted when other training measures have failed.
3. Training idlers are not intended to compensate for a belt that has been poorly aligned, or to correct for off-center loading conditions. However, both troughed training and return training positive action idlers are recommended for lengthy conveyors to assist in correcting and re-centering occasional wandering belts. They should normally be located 15 meters from terminal pulleys and spaced 15 to 30 meters. Free rotation of the trainer’s vertical actuating rolls is essential for proper operation of the idler.
4. Re-check conveyor belt to verify that all splices are correct and square.
5. If the above steps do not resolve the belt training issues, the conveyor should be laser aligned and corrective action taken based upon the survey data.