To our valued customers:

We at Cambelt International Corp. (CIC) are pleased that you have selected the Cambelt Conveyor to fill this particular bulk materials handling need. This manual has been prepared to assist you in making the best possible use of our equipment, and in fully understanding its operation. We have attempted to cover all of the pertinent areas, and hope that our efforts have been successful. If, however, you have any questions concerning the installation, operation, or maintenance of our equipment, which are not covered in this Manual, please feel free to contact CIC or the Cambelt Representative in your area.

Owner's Responsibility

The following are not covered by the warranty and are the responsibility of the owner

1. Periodic lubrication and adjustments that become necessary because of use and operation of the conveyor
2. Changing or adding oil in the gear reducer.
   Note: Conveyors are shipped without oil in the gear reducer
3. Electrical system, wiring fuses starters.
4. V-Belt drive adjustments
5. Conveyor belt adjustments and alignment
6. Proper feeding of material at designated rate
7. Changes in character of material
8. Design of auxiliary equipment to insure unobstructed discharge of material

Warranty

Refer to CIC Warranty Form Number CIC-OM-1-04 and CIC-OM-1-02 for details of items covered. Items such as motors, reducers, electrical controls that are manufactured by others are covered by their warranties respectively

Service Available

The CamBelt Conveyor is designed to be installed and serviced by plant personnel. However, if factory service is desired, please contact your local CamBelt representative or CIC.

Read these Instructions carefully and pass them on to any others who will be directly responsible for the installation, operation and maintenance of the CamBelt Conveyor. Remember the operation of the CamBelt Conveyor depends on how well these instructions are followed.

This manual covers the standard CamBelt Conveyor. It does not cover all design details or modification.

Immediately upon receiving the conveyor(s), inspect for damage or indication of rough handling. Make sure all shafts rotate freely and examine the housing for obstructions or sharp edges in the path of the belt. Check for shortages referring to packing list or Bill of Materials for a record of items shipped and package number. Report any damage or shortage claims immediately to the carrier, keeping a record of your report then notify your CamBelt Conveyor representative or CIC. CIC is not obligated to replace free of charge, items which show as being shipped on the Packing List. CIC must be notified within 10 days after receipt of equipment of any shortages and/or damage. This will not relieve the carrier of its responsibility but will aid CIC in processing your claim with the carrier. Failure to notify CIC as specified will be notice that the equipment was received complete and in good condition.
Installation of the Conveyor Housing

Normally, all conveyors are shipped in component sections; i.e., head section, tail section, turn section, etc. Refer to the General Arrangement drawing and assemble components accordingly. Also, refer to the drawing for support points or special support methods. Figure 1 shows generally recommended methods of support. Head sections, tail sections, and turn sections always require support.

Mount the motor and speed reducer (if so equipped) on the conveyor head section (see Figure 2). Be sure the head section is supported adequately to take the additional weight of the drive.

![Figure 1](image)

**CAUTION:** If welded supports are used, never weld on the conveyor housing after the belt has been installed unless special precautions are taken to prevent burning the belt.

II. Installation of the Conveyor Belt

Prior to threading the belt, all pulleys and slide plates must be checked for possible shipping damage or misalignment. Pulleys are checked by rotating them in their bearing. Check to make sure there is free rotation and the pulley is centered in the middle of its housing. The set screws on the bearing locking collar and the taper lock bushing must be securely tightened to prevent side movement of the pulley shaft.

Inspect the leading and trailing edges of all the slide plates (the metal plates on which the loaded belt slides), to make certain they are flat and allow for a smooth uninterrupted passage of the belt. If the slide plates are bowed, bent or torn they need to be repaired or replaced before threading the belt (see Figure 2A). Be sure to check all sections that make up the conveyor system for slide plate flatness and proper alignment. Slide plates must make a smooth flat transition between each intermediate section. If the slide plates do not line up, loosen the flange bolts and adjust the slide plate alignment.

![Figure 2](image)

With the conveyor housing fully erected, remove quick-opening access panels or any cover that will aid in the stringing of the belt. Refer to Figure 3 position of belt in relation to various pulleys.

![Figure 2A](image)
It is often helpful to use a fish tape or similar device to help thread the belt through the conveyor housing. It will take approximately 5 feet of access to the belt in order to lace it properly. It is often advisable to remove a belt cover, and feed the belt into the conveyor at a point that will be convenient to lace it. Talcum powder or a similar material applied to the belt will aid in installing and in the initial test running of the conveyor. Never run the conveyor "dry" for any length of time. The material being conveyed will lubricate the belt during normal operation. When threading the belt make certain that the flat underside of the belt is threaded riding on top of all slider plates.
III. Operation of the Automatic Constant-Tension Take-Up (see figure 5)
The CIC Constant Tension Take-Up operates by utilizing a number of powerful constant tension coil-type springs called “Negator” springs (see figure 4). Unlike ordinary springs, they produce a constant force regardless of how far they are extended.
When a bank of Negator springs is coupled to the belt take-up device, the correct amount of belt tension is always maintained, regardless of belt stretch, belt load, or the position of the take-up pulley.

IV. Screw Type Take-Up (see figure 6)
Some conveyors are equipped with a screw-type take-up. When installing the belt in a conveyor where the screw type take-up is used the following procedure

Figure 4
“Negator” Springs

Figure 5
Constant-Tension Take-Up (Tail Section)
should be followed. Adjusting nuts on either side of the tail section, attached to the take-up bearings, should be backed off so that the tail pulley is in the forward-most position. All slack should be removed from the belt, and the belt pre-tensioned using similar methods to those described in Section V. With the tail pulley in the forward-most position, cut the ends of the belt so they butt flush and proceed to lace the belt as per Instruction in Section VI. The belt is placed in tension by turning the adjusting nuts so that the tail pulley is moved toward the rear of the tail section. The adjusting nuts are also used in aligning the belt at the tail pulley (see Section VI). Sufficient tension should be put on the belt to keep it from slipping on the head (drive) pulley when under maximum load. (Over-tensioning may cause belt damage.)

Observe the conveyor carefully during the first several days of operation, as this is when most belt stretch will occur. Retensioning maybe necessary during this period. Belt alignment should also be watched closely at head, tail and turn sections, and proper adjustments made to insure that the belt tracks properly. (See Section X Paragraph C for instruction on belt alignment.)

V. Pre-tensioning Belt

There are two methods of pre-tensioning the belt prior to lacing. Both methods are acceptable and the choice depends upon the equipment available. Method 1 (preferred):

Attach a "come-along" or similar device to the belt by means of two belt clamps located approximately 5 ft. apart (see Figure 7)

Method 2:

This method requires no "come-along" or belt clamps, but care should be taken to make sure that all possible slack is removed from the belt prior to lacing. A cocking device (dog and ratchet) is located on the front end of the tail section. The ratchet should be turned in a forward rotation until the tension springs are fully extended, and the tail pulley is in its forward-most position. Lock the cocking device by engaging the dog in the ratchet. With the take-up cocked, bring the ends of the belt together, removing all possible slack, so that when the belt is laced a minimum amount of take-up travel will be lost due to slack or stretch left in the belt. Cut the ends of the belt so they butt flush, and proceed to lace the belt as per instructions in section VI.

After the belt is faced, release the cocking ratchet. The constant tension take-up will then maintain the required amount of belt tension. Adjustment nuts on the push rods attached to both sides of the tail pulley shaft can be rotated to insure that the belt tracks properly in the tail section housing (see Section VII).

Method 2 is only as reliable as the "pull" put into the belt to remove the slack. If slack is left the belt may have to be recut and respliced if the take-up travel is used when the cocking ratchet is released.

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Figure 7
Pretension the belt by drawing the ends of the belt together. By doing this, you are also "cocking" the constant tension take-up. When the belt is stretched so that the take-up springs are fully extended and the tail pulley is in the forward-most position, wind up the tensioning cable and lock the cocking device by engaging the dog in the ratchet. With the take-up cocked, cut the ends of the belt so they butt flush, and proceed to lace the belt as per instructions in Section VI. The advantage of this method is that the belt is pretensioned with the full take-up travel remaining.

After the belt is laced, release the cocking device. The constant tension take-up will then maintain the required amount of belt tension. Adjustment nuts on the push rods attached to that the belt tracks properly in the tail section housing (see Section VII).
VI. Splicing the Belt

With the take-up in the forward-most position and the ends brought together, the belt is ready to splice.

Figure 8
Mark one end and cut belt where it will butt against other end. NOTE! This cut must be square. Use a mechanics square as shown in Figure 9. Do not eyeball cut.

Figure 9.
Check to see both ends are square. (Note: This is very important to insure proper belt tracking.)

Figure 10
Center Flexco template making sure the vertical template lugs are against end of belt, mark back of belt to outside edge of template. Cut into back cover of belt along marking. BE CAREFUL NOT TO CUT INTO FABRIC!

Figure 11
Remove back cover strip (both ends). Cover strip must be clean to first layer of fabric.

Figure 12
Remove first row of nubs (both ends).

Figure 13
Center and Position special template at end of belt making sure vertical template lugs are against end of belt. Punch required number of holes.
Figure 14
Notch side flange of belt at a 45° angle as shown. Belt is now ready to install fasteners.

Figure 15
Install appropriate number of fasteners

Figure 16
Tighten nut several times using Flexco wrench and a carpenter’s brace or suitable tool. Remove the temporary keeper plates from the underside of the belt splice clips after tightening the clip nuts. (Be sure not to overtighten the nuts.)

Figure 17
Install screw-on nub on protruding studs. Use pliers to tighten. After splicing the belt and installing the screw-on nubs, make certain that the tops of the screw-on nubs do not protrude above the top of the belt flange. Cut to fit from bottom of nub if necessary. Warranty is violated if conveyor is run without screw on nubs.

VII. Belt Alignment

With the belt spliced, replace belt cover at lacing point and check belt cover and belt clearance. After the belt has been installed and prior to running the belt, check the belt covers for dings and dents which may have been incurred during shipping or erection. All dents must be removed so the belt will not come in contact with the belt cover.

Clearance must also be checked between the belt top and the cover plate around the inlet hopper. Hopper weight, material weight, or other loads transferred to the conveyor belt cover may cause the cover plate to sag into the belt. If this happens, add supports to the hopper to prevent sagging. In some cases, the cover can be shimmed to provide additional clearance.

The next step is check the belt alignments at all pulley locations.

1. Remove inspection covers nearest each pulley for observation.
2. Prior to starting conveyor, be sure the conveyor is clear of all tools and foreign objects and the gear reducer has been filled with oil. (Refer to lubrication instructions on name plate and owner's instruction manual.) Bearings are pre-greased at the factory
3. If conveyor is going to operate over five (5) minutes without handling material, apply talcum powder, or material to be conveyed, to the belt. NOTE: During operation, the material being conveyed will provide adequate lubrication for the belt.
4. Check the alignment of the belt at each pulley with the conveyor running. Often the belt will wander from side to side and this is permissible as long as the belt does not contact the side of the conveyor. If the belt needs adjustment, refer to Figure 18. The belt will drift to the slack side of the pulley at the head and tail sections of the conveyor but will normally run to high (tight) side of the pulley at the turn section.

After all pulleys have been aligned, run the conveyor and check no-load amperage. The amperage should be within the name plate rating on the drive.
motor with no large surges. Excessive high amperage may be the result of one or more of the following:
1. Improper belt alignment
2. Excessive friction caused by no material in the conveying system
3. Crooked belt splice.
4. An obstruction in the path of the belt
5. Belt rubbing on belt cover or inlet

**VIII. Operating Instructions**

Having aligned the belt, replaced all cover plates, and checked the no-load amperage and found it to be within limits stamped on motor name plate, you are now ready to operate the conveyor.

Make sure bearings and drive have been serviced according to the manufacturer's instructions and the operation and adjustment of the drive are thoroughly understood. Special attention to the V-belt drive is necessary during initial start-up and operation, as the belts will tend to stretch. 3V section belts which are normally used require greater operating tension than other types of V-belts.

1. Start the conveyor without load and allow a couple of seconds for it to accelerate to full operating speed before feeding material into the conveyor.
2. The CamBelt Conveyor is normally equipped with an adjustable shut-off gate and replaceable orifice inlet plates for the inlet to the conveyor.

This inlet is designed to control the flow of material onto the belt. If the material being conveyed is allowed to enter the inlet with no attempt at control, it is possible for the belt to accept more material than it can elevate. If this happens, the excess material will fall through the ladder bar, eventually filling the tail section which could jam and break the conveyor belting. Three different size orifice plates are supplied as standard equipment with the conveyor (see note below). The proper combination of the length of the inlet opening (controlled by the adjustable slide gate) and the width of the inlet opening (depending on the size orifice plate used) will generally give adequate control of the material entering the conveyor. Some experimenting may be necessary to determine the proper combination of

**Note:** Three inlet orifice plates are provided as standard equipment with each CamBelt Conveyor. They are normally attached to the tail section for shipment. Care should be taken that they are not misplaced or lost during installation of the conveyor, as they will be needed as described above.

![Figure 18](image1)

**Figure 18**

NOTE: Outboard flange bearings with jack screw should require little or no adjustment

![Figure 19](image2)

**Figure 19**

Inlet with adjustable slide gate and orifice plates.

3. The capacity of the conveyor is based on volume, i.e., cu. ft./hour, not weight/hour. Never feed more material to the belt than the conveyor was designed to handle. If in doubt as to how much material you are feeding to the belt, remove an inspection cover just past the feed area and observe the belt while it is running. Normally, the belt should be less than two-thirds full. An amperage check should be taken while the belt is operating at its assumed capacity. If the amperage reading is over that stamped on the motor name plate you may be overfeeding the belt. The amperage should not pulsate greatly; this also indicates an overloaded situation.

As a generally accepted practice it is not advisable to stop the conveyor when the belt is loaded if the angle of incline of the conveyor exceeds the angle of repose of the material being conveyed. Whenever possible all material in the belt should be discharged before stopping the conveyor. If the conveyor is stopped while loaded, the material in the belt will generally (depending on the flowability, particle size and weight of the material), run to the low point of the conveyor. This will be either a turn section, a tail section or both, and may cause an overload condition when the conveyor is restarted.
IX. Ladder Bar Wear Check

The ladder bars are located directly beneath the inlet feed hopper and belt in tail section of the CamBelt (see figure 5). The purpose of the ladder bars is to support the belt as the material drops through the inlet hopper onto the belt. The bars may be removed from either side of the housing by removing the retaining nuts and keepers. (With CamBelt Conveyors incorporating constant tension take-up springs, it may be necessary to disconnect the spring assembly from the housing in order to remove the ladder bars.)

Wear tolerances of the ladder bars should not exceed 1/8” to 3/16” at the point of maximum wear and the minimum thickness of the bar at its narrowest point should not be less than 5/16” (see figure 20).

If the ladder bars have exceeded the 1/8” to 3/16” wear tolerance they should be replaced or rotated 180°. If the bars are less than 5/16” thick at their narrowest point, they should be replaced.

When installing ladder bars, keepers and retaining nuts, care must be taken to tighten the retaining nuts equally, just enough to prevent the bars from rotating as the belt passes over them.

When the conveyor belt stops while in operation due to a "jam-up," one of the following will normally occur.
1. Belt slippage on the head pulley
2. V Belt slippage on the motor drive pulleys
3. Motor overload heaters kick out

In order to take the proper corrective action check the following possible causes
1. Belt Tension
   Inadequate belt tension can cause slippage of the belt at the head pulley with a resulting jam-up. Two types of belt take-up devices are used on CamBelt Conveyors, and should be checked as follows
   A. Most CamBelt Conveyors are equipped with a constant tension take-up device which automatically provides the proper amount of tension to the belt (see Section III). If slippage does occur check for the following possible causes:
      1. Broken tension springs
      2. Any obstruction which may interfere with the free travel of the belt
      3. A build-up of material either in or around the tail section which might interfere with the free travel of the take up.
      4. Belt has stretched beyond take-up length. If this condition occurs the belt will need to be respaced per Section IV.
   B. For conveyors equipped with a screw-type take-up slippage will usually occur as a result of normal belt stretch. Belt tension can be increased by turning the take-up adjusting nuts on either side of the tail section. Care should be taken to see that proper belt alignment is maintained (see Section V).
2. Overloading
   Wherever possible the CamBelt Conveyor should have a controlled feed. If the material being conveyed is allowed to enter the conveyor without attempt at control, it is possible for the belt to accept more material than it can elevate. When this happens the excess material will eventually accumulate in the lower portions of the conveyor and could cause it to jam up. Two generally accepted methods of control are as follows:
   A. The CamBelt Conveyor is normally equipped with an adjustable slide gate and a replaceable orifice plate (three size orifice plates are furnished as standard equipment) The proper combination of the length of the inlet opening (controlled by the slide gate), and the width of the inlet opening (depending on the size orifice plate used) will generally give adequate control of the material entering the conveyor. Some experimenting may be necessary to determine the proper combination with any given material. It is always good practice to begin using a smaller orifice and then increase the length of the inlet opening with the adjustable slide gate, or the width of the opening by changing to a wider orifice plate, until you have determined the proper setting for the amount of material to be conveyed in keeping with design capabilities. A change in the flow characteristics of the material due to moisture content particle size etc., may require a change in the size of the inlet opening. Some material accumulation in the turn and tail sections is normal, and will not affect the operation of the conveyor,
as this material is normally recycled. If this material hardens due to moisture, pressure, etc., it would interfere with the belt, and cause excessive belt wear. Clean out material build-up as necessary.

B. When space is available, a rotary type feeder can be used to control the flow of material to the inlet of the CamBelt Conveyor. In this instance the RPM of the feeder vanes control the material flow, and should be reduced if over-feeding occurs.

3. Restricted Discharge
   An unrestricted discharge is necessary to insure proper operation of the CamBelt Conveyor. Any build-up of material at the discharge could cause it to backleg down the return housing of the CamBelt with resultant jam-up. Common causes of back-legging are as follows:
   A. Overfilling of the bin or hopper being fed by the CamBelt.
   B. Inability of auxiliary equipment (conveyors, mixers, etc.) accepting material from the CamBelt to take the material away as fast as it is being fed.
   C. Improper discharge chute design. The angle of decline in discharge chutes should rarely be less than 60 degrees in order to insure proper flow of material away from the CamBelt Conveyor.

4. Material Build-Up
   In normal operation of the CamBelt Conveyor, some accumulation of loose material will occur in the lower portions of the conveyor. A hardening of this material due to moisture content, pressure, chemical action, etc., could cause excessive drag on the belt with resultant belt wear and possible motor overload. An inspection of the belt may reveal unusual wear, and give indications of where this build-up is taking place. Hot spots on the conveyor housing will also indicate excessive contact by the belt which may be caused by a build-up of material. Areas where build-up might occur are slide plates, belt covers, and pulley faces, as well as the lower portions of turn sections, intermediate section, and tail sections. Quick opening panels should be removed to check for build-up on slide plates and belt covers. If the problem continues, contact your Cambelt Representative or CIC.

   Note: Materials that cause build-up usually have a moisture content between 5 and 12%, depending on the type of material.

5. Belt Alignment
   Improper belt alignment can contribute to conveyor malfunction by causing excessive drag on the belt, which could show up in either belt slippage or over-loading the drive motor. Check Paragraph C of Trouble Shooting Guides for instruction on how to align belt.

6. Pulley Alignment
   If pulleys become misaligned, they can rub against the side of the conveyor housing, causing wear as well as excessive overloading of the drive motor, and belt misalignment, all of which can contribute to conveyor malfunction. Bearing adjustment screws are located at most bearing locations. Where adjustment screws are not provided, slotted mounting holes in the bearings are normally adequate for adjustment.

7. V-Belt Slippage
   The CamBelt Conveyor Drive is normally equipped with 3V-Section drive belts. These belts generally require more tension that A, B, C, or D section belts. Proper V-belt tension is maintained by adjusting the motor mount in a direction away from the driven pulley. The drive belts should always be adjusted prior to start-up and frequently during the first few days of operation.

8. Obstructions and Sharp Edges
   During assembly of the CamBelt conveyor, extra care should be taken to insure that there are no obstruction or sharp edges in the path of the belt. Damage which might occur during shipping and handling, if not corrected prior to assembly, can cause belt damage and excessive drag on the belt, with resultant belt wear and contribute to conveyor malfunction. Most common areas where this can occur are at flanged connections where intermediate section are bolted together, or to turn, head, or tail section, and to the belt covers, where dents or bends can cause a restriction to the belt. If the belt shows excessive wear, a check should be made to determine the reasons and locate the obstruction. Foreign objects left in the conveyor during erection, or introduced into the conveyor with the material to be conveyed, can cause serious problems, and should be watched for.

B. Belt Wear
   1. Check to see if there is damage or abnormal wear on the belt which might be caused by a mechanical problem in the conveyor, such as misaligned slide plates or a foreign object in the conveyor.
   2. An incorrectly spliced belt can cause belt wear or damage. Check to see that the ends of the belt were cut squarely, and that there are no edges that protrude beyond the body of the belt.
   3. A material being conveyed, which has a high oil content, can cause the belt to swell. Other materials may cause the belt to abraid or attack the belt fabric.
   4. All of the pulleys must turn freely. Check for bad bearings that may cause the pulley to lock up or turn slowly.
   5. If the belt is threaded through the conveyor housing improperly, severe belt wear or damage can occur. (Check Figure 3.)
   6. An extremely abrasive material could cause wear on the slide plates or other parts of the conveyor creating sharp edges which in turn could damage the belt.
   7. Normal wear may result in small quantities of rubber being present in the product. Generally there is not enough to be visible but if you feel there is an excess, check items 1 through 6 thoroughly.
   8. A build-up of hardened material at any point in the conveyor where it can interfere with passage of the belt may cause belt wear and must be cleaned out.

C. Belt Alignment
   1. Misalignment of the belt is often caused by a pulley which is out of alignment. Adjust the bearings on the problem pulley shaft, by loosening them and moving them in their slots, or turning the bearing adjusting screw. If the belt does not become aligned by moving the bearings in one direction, try the opposite direction. You would normally move the bearings on each side of the conveyor housing in opposite directions.
2. Build-up of material on the slide plate or pulleys could cause the belt to misalign.
3. A crooked belt splice, causing a "dog-leg" in the belt, can cause a misalignment.
4. Deterioration of the belt through chemical or mechanical means can cause the belt to be difficult to align.

D. Low Capacity
If the conveyor has operated for a long enough period to obtain an accurate volumetric capacity, and a check reveals that the capacity is under that for which it was designed, the following could be a problem:
1. A restriction at the inlet to the conveyor.
2. Bridging of the material above the inlet is a common cause of low capacity. A special agitator above the inlet may be necessary if bridging is a common problem with the material being conveyed.
3. If the material does not seem to flow into the belt even when the inlet is at its largest opening, special characteristics of the material may require a larger inlet opening. Contact your Cambelt Representative or CIC.
4. Changes in the characteristics, or flow rate of the material, or inaccurate design information, may result in an improper belt speed. Since the ability of a given material to enter the belt properly, as well as the capability of the conveyor to deliver the desired capacity is directly related to belt speed, it is very important that the correct speed be used. Contact CIC or your Cambelt Representative if you have a question concerning this.
5. As mentioned in Paragraph 4, changes in the characteristics of the material being conveyed can affect the operation of the CamBelt Conveyor. An increase in particle size, density or moisture content will generally decrease the capacity of the conveyor as a result of the changed flow characteristics of the material.

E. General
1. CamBelt Conveyors that have high incline configurations and with short horizontal sections should coast after the power to the drive motor has been shut off. If the belt does not coast for a short time, it could mean that there is some problem causing excess drag on the belt. A check should be made to see that the belt is properly aligned, or that there are no obstructions to the belt or build-up of material which might interfere with belt travel. Conveyors with long horizontal sections usually will not coast.
2. Many times operational problems are people problems rather than mechanical ones. Make sure that your operations and maintenance people understand those operational features which are peculiar to the CamBelt Conveyor. It will give you years of dependable service if they do. Don't hesitate to contact CIC or your Cambelt Representative for assistance in understanding any phase of its operation or maintenance should the need arise.
3. Bearing Lubrication: Bearings have been factory prelubricated with high quality grease and for normal conditions of service require no further lubrication. Normal service is considered as operation in a clean, dry, atmosphere at temperatures between 20°F and 180°F and at shaft surface speeds up to 2100 ft. per minute. This corresponds to a 1" shaft at 8000 RPM, a 2" shaft at 4000RPM or a 3" shaft at 2700 RPM.

Where service is abnormal with respect to speed, temperature, exposure to moisture, dirt or corrosive chemicals, or where extremely long life is required, periodic relubrication may be advisable. To relubricate: remove pipe plug and replace with a standard 1/8" pipe thread grease fitting. The bearing manufacturer will advise of suitable greases for abnormal service on request. For bearing replacements, order by number on seal (not on inner or outer ring).

Note: Bearings should be inspected once a month and lubricated as required. Do not over lubricate as seal rupture may occur. See the manufacturer's specification sheets enclosed.

Gear boxes are shipped without oil. Gear boxes must be filled with the proper oil before operating the conveyor. See the manufacturer's specification sheets enclosed.

For operational information on motors provided, see the manufacturer's specification sheets enclosed.

Special Instructions for Conveyors Equipped with Zero Speed Switches (see figure 22)

Application
Conveyors that are left unattended during operation should be equipped with a zero speed switch that is mechanically connected to the conveyor belt. In the event that the conveyor becomes jammed and the belt speed drops below a preset rate, the zero speed switch is designed to shut off the power to the motor. Without this type of protective device, an unattended conveyor that became jammed could continue to operate, causing serious damage to the conveyor belt, the motor, and other component parts.

Principle
As the conveyor belt turns, many pulley shafts turn with it. One of these shafts is mechanically coupled to the zero speed switch shaft. When the zero speed switch shaft rotates inside an alnico magnet, it produces an electromagnetic torque proportional to the shaft speed. This principle is used to open and close the switch. Should the conveyor belt speed drop below a preset rate, the switch will actuate and cut the power to the motor.

Mounting Location
A zero speed switch can be mounted at anyone of several places on the body of a conveyor. The switch is mounted at the conveyor assembly plant in a pre-selected position on the conveyor, suitable to the customer.

Wiring
The operating manual contains a wiring diagram for connecting the zero speed switch to the motor circuit.
Figure 21
Schematic diagram for Allen-Bradley 808 Zero Speed Switch. NOTE: Branch circuit protection by customer to be in compliance with national electrical codes.
Figure 22
Zero Speed Switch Assembly. Allen Bradley Plugging Switch

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Note: Failure to follow these instructions may void your warranty on this conveyor