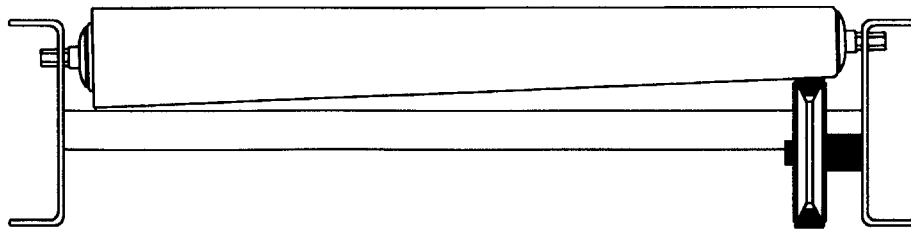
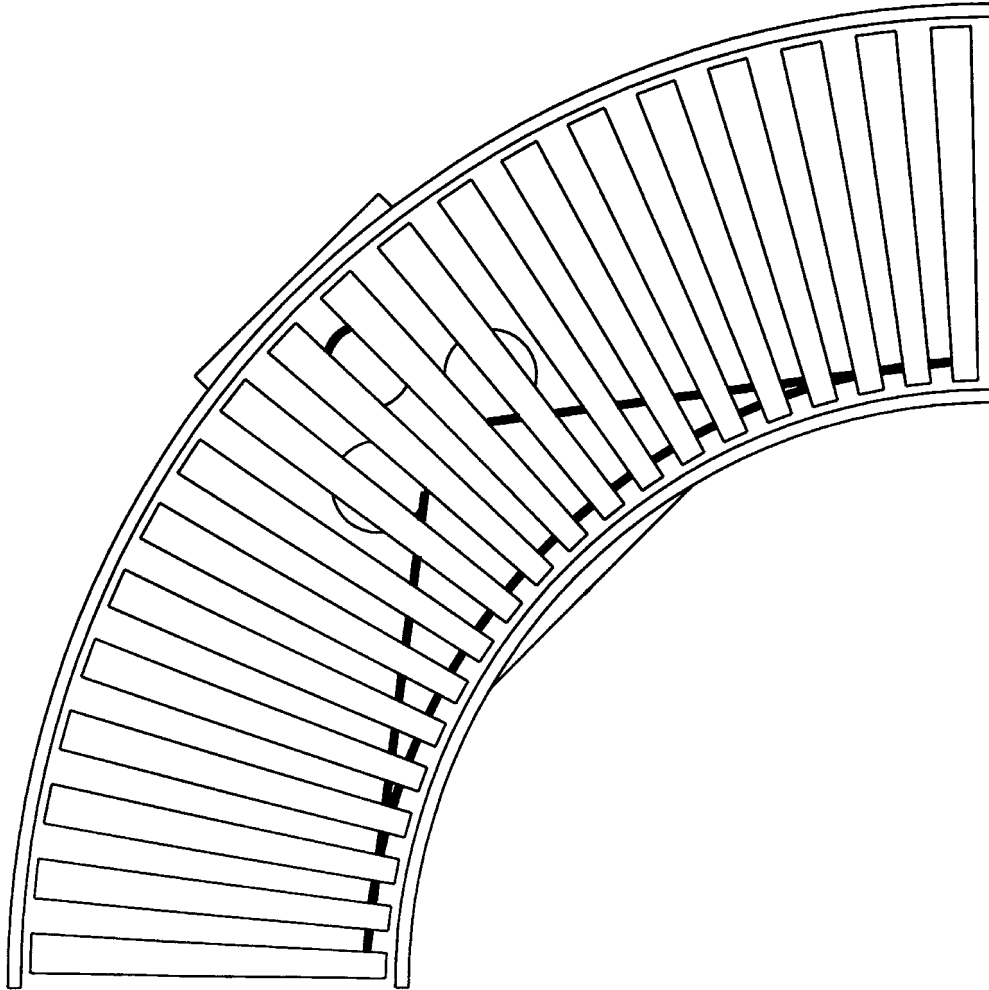




**METZGAR**  
CONVEYORS

# 450 Series Belt Driven Live Roller Curve Conveyor Installation and Maintenance Manual



# SAFETY PRECAUTIONS

**WARNING: DO NOT ATTEMPT MAINTENANCE ON ANY CONVEYOR WHILE IT IS IN OPERATION.**

**BEFORE STARTING MAINTENANCE:**

1. Maintenance functions are to be performed while the conveyor is off. The main power switch to the conveyor should be locked in the off position. This will prevent anyone from applying power to the system while maintenance personnel are at work.
2. Never work on a conveyor while it is running, unless maintenance procedure requires operation. When a conveyor must be operating to perform the maintenance; allow only properly trained maintenance personnel to work on the conveyor.

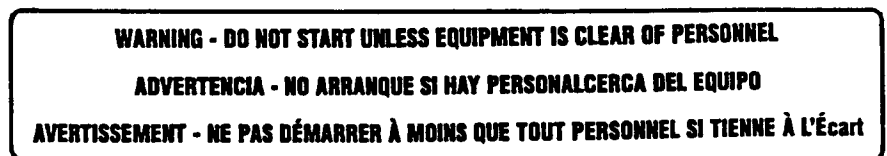
**DURING MAINTENANCE:**

1. Do not wear loose clothing while performing maintenance on operating equipment.
2. Be aware of hazardous conditions, such as sharp edges and protruding parts.
3. When using hoists, cables or other mechanical equipment to perform maintenance, use care to not damage conveyor components. Mis-aligned parts are dangerous as conveyor is started after maintenance is completed.
4. Keep area clean. Clean up lubricants and other materials before starting conveyor.

**AFTER MAINTENANCE:**

1. Before starting any conveyor after maintenance is completed, walk around the equipment and make certain all safety devices and guards are in place, pick up tools, maintenance equipment and clear any foreign objects from equipment-
2. Make certain all personnel are clear of the conveyor and made aware that the conveyor is about to be started.
3. Only authorized personnel should be permitted to start any conveyor following maintenance or emergency shut-off.

**PLEASE RECOGNIZE ALL WARNING STICKERS AND OBEY ANY SAFETY INSTRUCTIONS  
WARNING STICKERS ARE PLACED FOR YOUR SAFETY – PLEASE DO NOT REMOVE**

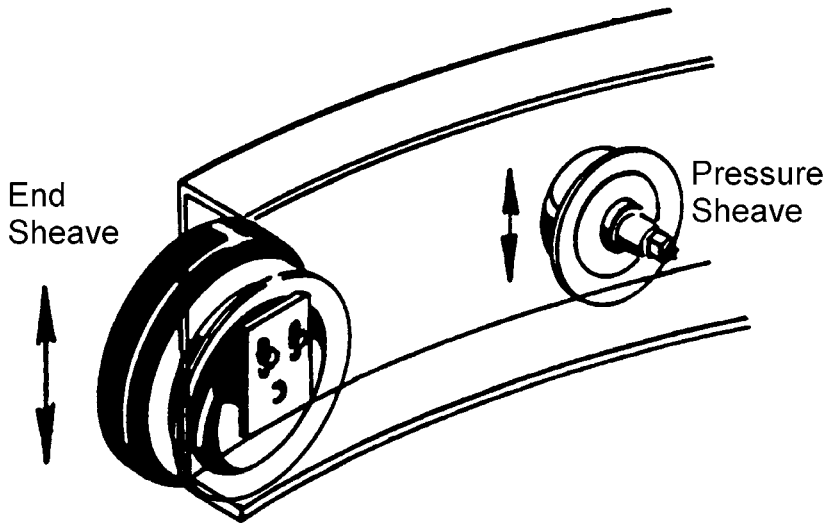


**CONDITIONS DO EXIST ON ANY CONVEYOR THAT CAN CAUSE INJURY TO PERSONNEL. NO MANUAL CAN COVER ALL THE HAZARDOUS CONDITIONS THAT MIGHT DEVELOP. THEREFORE, PERSONNEL INVOLVED SHOULD BE CONSTANTLY ON THE ALERT FOR UNSAFE CONDITIONS AND USE ALL POSSIBLE CARE, ALONG WITH COMMON SENSE AND STRICT ADHERENCE TO ACCEPTED SAFETY STANDARDS TO ESCAPE INJURY.**

## Equipment Assemblies:

The SERIES 450 conveyors typically ship complete except for mounting of the supports, installing a breather plug in the reducer, checking the oil level if required and wiring. The unit is ready for operation if the assembly and belt adjustments are complete. Sub-assemblies are packaged for shipment using combinations of wood, corrugated cardboard and steel strapping.

**Belt adjustment for alignment and tension is required prior to running unit.**



## Belt Tension Adjustment:

Check for proper alignment of drive pulley.

Belt tension is adjusted by loosening the four bolts on the motor mount plate and sliding the assembly back until the belt is just tight enough to drive the rollers. The Belt needs only to be tight enough to turn the rollers and drive the product.

**Excessive belt tension will cause premature belt failure as well as excessive bearing wear on the reducer, pressure sheaves and end idlers.**

It is necessary to readjust the belt tension after the unit has run for 20 hours and monthly thereafter.

## Adjustment of End Idler:

Locate the end idler centered between the last two rollers on the curve section, adjust the end idler up so the drive tire contacts both of the rollers. Add a small amount of pressure and tighten the mounting hardware. Repeat this procedure for the opposite end of the curve section. Readjust the belt tension when complete.

## Adjustment of Pressure Sheaves:

The pressure sheaves should be adjusted so the belt runs in a straight line or as close as possible to a straight line.

**Misalignment of the belt will cause premature belt failure as well as excessive bearing wear on the reducer, pressure sheaves and end idlers.**

It is necessary to readjust the belt tension after the unit has run for 20 hours and monthly thereafter.



**Mechanical Maintenance:**

Item	Schedule	Service
Motor and Gear Reducer	At Start-up and 100 Hours	Check Oil
	After 100 Hours	Change Oil and Check Oil Level at Regular Intervals
	After 2000 Hours	Change Oil
Flange Bearing	2000 Hours	Lubricate
Sealed for Life Bearing ( End Take-up pulleys, Snubber and Return Rollers)	Monthly	Check for Unusual Noise or Excessive Wear, Replace as Required
V-Belt	At 20 Hours and Monthly	Check for Alignment and Tension Belt as Required

Note:

Gear Reduction Drives Supplied With Metzgar Belt Units Are Filled With Lubricant Prior To Shipping. The Lubricant Level Should Be Checked Prior To Start-Up and the Breather Plug Installed in the Proper Location (See Reducer Manual Supplied With Unit)  
 Only Refill Reducers With The Approved Lubricant (Synthetic Compound)  
 Standard Service Only - If Service Is More Severe, The Oil Should Be Changed More Frequently.  
 Consult The Reducer Manufacturer For A More Specific Lubrication Schedule.

**Electrical Maintenance:**

**WARNING: DISCONNECT ALL POWER BEFORE PERFORMING THE FOLLOWING MAINTENANCE. ONLY A QUALIFIED ELECTRICIAN OR AN ELECTRICAL TECHNICIAN SHOULD PERFORM THE FOLLOWING MAINTENANCE.**

Item	Schedule	Service
Control Panels and Pushbutton Enclosures	Always	Enclosures should be Clean and Dry
	100 Hours and 2000 Hours	Check if components have Vibrated Loose Check Door/Power interlocks and Latches
	At Start-up, Monthly or if any problems Occur.	Check for Loose or Discolored Wires (Discolored Wires Indicate an Excessive Current Draw)
Photoeyes	At Start-up and 2000 Hours	Dust, Oil and Foreign Objects should be wiped from lens and Reflectors
Limit Switches	100 Hours and 2000 Hours	Check Arms for Adjustment and Tightness
Pushbuttons	100 Hours and 2000 Hours	Check Wires and Terminals for Tightness
Emergency Stop Devices	100 Hours and 2000 Hours	Check for Proper Operation
Conduit and Conduit Hangers	2000 Hours	Check for alignment and Damage, Exposed Wiring
Wiring	At Start-up, Monthly or if any problems Occur.	Check for Exposed Cords and Wires for Damage, Replace as Necessary

Note:

A Qualified Electrician Or Electrical Technician Should Keep A Log Book Of The Following Readings with any Excessive Deviation from Normal, Signals a Problem Area.

1. Measure Voltages And Current Of Incoming Power To Enclosure
2. Measure Current Readings Of All Motors
3. Measure Current Readings On Primary And Secondary Of Control Transformer To Insure Proper Infeed And Outfeed Voltage

Review Spare Parts:

Review Usage - Excessive Use of Fuses Or Replacing The Same Part Several Times Indicates an Excessive Current Draw, Faulty Components, or Exceeding The Capacity of the Conveyor Unit.



**Trouble Shooting Guide:**

**Motor and Gear Reducer:**

Hard To Start, Stalling Out Or Running Hot	Drag On Conveyor	Inspect For Obstruction Causing Drag And Remove
	Lack Of Lubricant	Check Oil Level In Gearbox, Verify Vent Plug Is Open
	Frozen Pulley or Sheave	Inspect All Pulleys And Bearings, Replace If Faulty
	Frozen Roller	Inspect All Rollers, Replace If Faulty
	Overloaded	Remove Load And Possibly Increase Horsepower
	Electrical	Check Wiring, Circuits And Take Amp Readings
Excessive Noise	Lack Of Lubricant	Check Oil Level In Gearbox & Add If Needed
	Damaged Gears	Replace Unit
	Faulty Bearing	Replace Bearings

**Electrical:**

Motor Not Operating	Emergency Stop Activated	Reset Pull Cord, Air Pressure Switch or Pushbuttons
	Blown Fuses	If Resistance From Hot To Ground Is Ok Replace Fuse
	Overload Relay Tripped	Reset Relay, Measure Current Draw Amprobe
	Check For Wiring Problems	Check Wiring Diagram For Correct Connections
Belt Running Wrong Direction	3 Phase Motor – Switch 2 wires	Check Proper Voltage Wiring Diagram
	1 Phase Motor Wired Incorrectly	Check Proper Voltage Wiring Diagram
	DC Motor Wired Incorrectly	Check Proper Voltage Wiring Diagram
Overload Relay Trips	Check Setting On Overload Relay With Full Load Amps On Motor Nameplate	If Incorrect Reset Overload Relay To Motor Full Load Amps
	Check For Mechanical Binding Or Jams	Remove Item Creating Drag Load On Unit - Check Belt
	Additional Load Is Too Much For Motor	Decrease The Amount Of Product Load On Unit
	Check If Motor Current Draw Is High	Drive May Require More Horsepower-Consult Factory
Unit Operates Sporadically	Check Photoeyes	Clean Lens and Check for Proper Alignment
	Check Reflectors	Clean and Check for Proper Alignment
	Limit Switches	Check Arm Location and Tightness
	Solenoids	Check Pressure at the Valve
	Loose Connections	Check Wire Nuts and Terminal Strip

**DO NOT ATTEMPT MAINTENANCE ON ANY CONVEYOR WHILE IT IS IN OPERATION**

**450 Series Replacement Parts:**

**450 Series Tapered Rollers:**

Overall Width	Tapered Steel With No Grooves
18	<b>450-18-TRS-NG</b>
24	<b>450-24-TRS-NG</b>
30	<b>450-30-TRS-NG</b>
36	<b>450-36-TRS-NG</b>
42	<b>450-42-TRS-NG</b>

**450 Misc Parts**

450 End Drive Shive with Molded Tire	<b>450-DSMT</b>
450 Pressure Shive D-8040	<b>450-PS</b>
450 Reducer Mounted Drive Shive	<b>450-RMDS</b>
450 Idler Shive ( All Sizes )	<b>450-IS</b>