



INSTRUCTION MANUAL FOR MODEL PRC

## POWER ROLLER CONVEYOR



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# INSTRUCTION MANUAL FOR MODEL PRC- POWER ROLLER

## 1. OPERATION

### 1.1. GENERAL DESCRIPTION

The Power Roller Conveyor usually forms an integral part of the scrapping table. Its function is to convey 20" x 20" dish racks to the gravity roller conveyor or directly to the dishwasher. This conveyor has been custom designed to suit your application. Do not use this conveyor to convey items other than 20" x 20" dish racks.

The low-pressure accumulation principle treats each roller as an individual unit. Hence when the racks get accumulated, the rollers underneath them stop turning where as the remaining rollers will continue to function.

### 1.2. OPERATION

#### 1.2.1. GENERAL INSTRUCTIONS

1. Turn the 'MAIN DISCONNECT' switch on the main control panel to "ON" position.
2. Push the green 'START' button marked 'Rack Conveyor'. Some systems may have auxiliary push button stations located in other required areas.
3. To shut down the conveyor, push the red 'STOP' button marked 'Rack Conveyor'. Then turn the 'MAIN DISCONNECT' switch to 'OFF'.

**Note:** Power rollers run at constant speed at low pressure driving force, allowing accumulation to take place without having to stop the conveyor.

## **2. MAINTENANCE**

### **2.1. CHAIN TAKEUP**

Generally the drive chain does not need any replacement. However, it requires time-to-time adjustment to remove the slack developed in the chain due to the tension. This can be accomplished either by moving the gear motor away from its initial position or by removing a few links from the chain. The first method is recommended for the small adjustments where as the second method is ideal choice for the large adjustments.

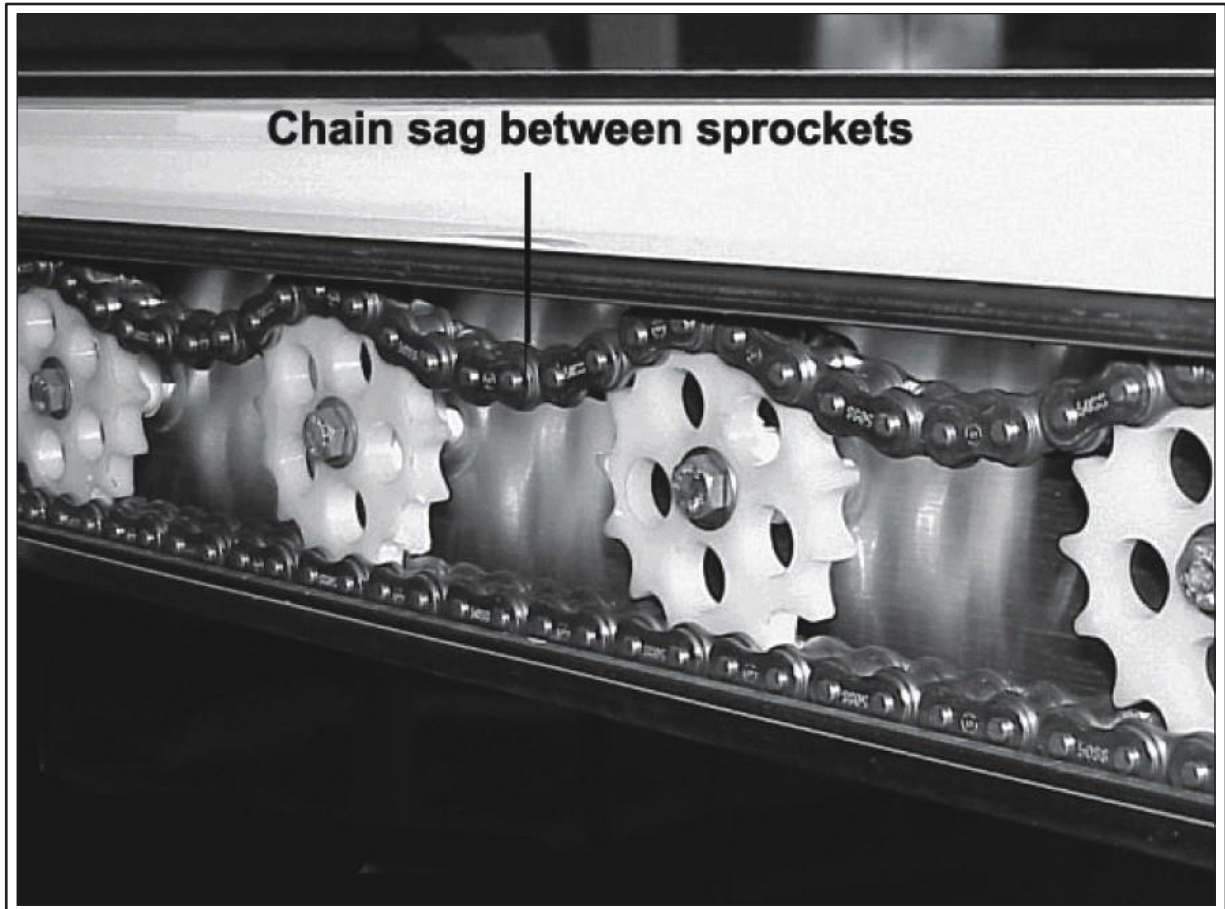
#### **2.1.1. GEAR MOTOR TAKEUP**

1. Disconnect the power to avoid accidental starting.
2. Remove the drive housing cover.
3. Loosen the gear motor mounting bolts and gently lower the gear motor.  
Since the drive sprocket mounted the motor shaft, lowering the motor reduces the slack in the chain.
4. Tighten the gear motor mounting bolts.
5. Run the system to make sure that the chain take-up is adequate and conveyor operation is smooth.
6. Turn off the power and replace the side covers.

#### **2.1.2. CHAIN LINK TAKEUP**

1. Disconnect the power to avoid accidental starting.
2. Remove the drive housing cover.
3. Disconnect the chain preferably at the location of the removable link.  
If it is hard to locate this link, use a chain breaker to disconnect at any other link.  
Estimate the number of links required to be removed to eliminate the slack.
4. Remove the access links from the chain.
5. Reconnect the ends and turn on the power.

6. Run the system to make sure that the chain take-up is adequate and the conveyor operation is smooth.
7. Turn off the power and replace the drive housing cover.



**Figure 1.0 Normal Chain Sag between Plastic Sprockets**

## **2.2. ELECTRICAL SYSTEM**

The electrical system control unit contains all relays, starters and other devices required for the operation of conveyor control. There may be some auxiliary start-stop stations in addition to the main control panel. Check the schematic for details. The main control panel is **NOT** waterproof. Under no circumstances shall the control panel be hosed down with water, during cleaning.

All fuses are sized individually for control or power circuit. Refer to electrical wiring schematics when replacing fuses.

**Note:** Power roller conveyor does not require any accumulation switches. Conveyor operates as a low-pressure accumulation system the allows rollers to stop and chain to continue running when product is accumulated on the conveyor.

## **2.3. LUBRICATION**

### **2.3.1. BUSHINGS**

Lubrication is required on the plastic bushings once every month. Always use the food grade grease. Please follow the steps given below for the lubrication.

1. Shut down the conveyor and disconnect the power at main circuit breaker.
2. Apply the grease to the bushing located on the body of the conveyor and the rollers.
3. Do not over lubricate the bushings to avoid grease build up.
4. Inspect the roller shafts, bushings and sprockets for any damage. In most of the cases, all these parts will have same extent of damage.

### **2.3.2. GEAR MOTOR**

Gear motor is an integrated unit of a motor and step down gear box. The unit has been lubricated for life and no maintenance lubrication is required.

## **2.4. MAINTENANCE SCHEDULE**

Our conveyor systems are built to the high quality standards to provide a reliable service and trouble free operation. The service life of the equipment can be extended services by Aerowerks or authorized service agents. The following are the recommended maintenance schedule.

### **2.4.1. DAILY**

1. Hose down the conveyor and conveyor beds to clean and remove the foreign materials. The conveyor can be running during a hose down period to expose all the expose all the external surfaces of the rollers to the water jet.

### **2.4.2. MONTHLY**

1. Inspect and replace any rollers or bushings that are damaged. Lubricate bushings.

### **2.4.3. SEMI-ANNUALLY**

1. Remove the chain guard and inspect the chain tension. The excess slack in the Chain shall be removed either by repositioning the motor or removing the chain links.
2. Inspect the sprockets, shafts and bushings for wear. Replace all the worn parts.

### **2.5. REPLACING FRAME BUSHINGS**

When replacing the frame bushings, check the shafts, roller bushings and sprockets also for replacement. A new bushing with an old shaft will get damaged very soon. The service technician on site can easily replace the bushings in the body of the conveyor. But the bushings in the individual rollers are difficult to replace. It is recommended to replace complete roller or both of the bushings in the roller. Please refer figure 2 for the assembly details of the roller. Please follow the steps given below to replace the bushings.

1. Disconnect the power from the main circuit breaker to avoid accidental starting.
2. Remove the side access cover to the drive chain. Disconnect the chain preferably at the location of the removable link.
3. Remove the shaft and roller assembly. Remove the old bushings from the frame and replace it with new ones. If new bushing is not able to fit by hand use a softheaded hammer to lightly tap the bushing into its place. The bushing should sit tight within the holes of the frame, without any crack.
4. Check to make sure that the roller is freely rotating. Misalignment in the bushings will not allow the roller to rotate freely.
5. If all the rollers roll freely, assemble the chain by reconnecting the ends. Adjust the chain length if necessary.
6. Turn on the power to the system to make sure that the power rollers are running smooth.

### **2.6. REPLACING GEAR MOTOR**

An electrician should do replacement of the gear motor. Before replacing the gear motor, please follow the trouble shooting procedure to determine if the motor is defective. If the gear motor is defective, please contact us with the model number and make of the gear motor. Follow the steps given below to replace the gear motor:

1. Turn off the main circuit breaker to disconnect the main power to the conveyor.
2. Remove the side access cover of the drive chain.
3. Release the tension of the chain by adjusting the motor take-up.  
If it is required to disconnect the chain, remove the connecting link or use a chain breaker to disconnect.
4. Remove the key between the motor shaft and the drive sprocket.  
Remove the drive sprocket.
5. Remove the mounting bolts and the gear motor.
6. Replace with new gear motor. Turn on the power to check the direction of rotation.
7. If the shaft rotates in the right direction, replace the drive sprocket and the key.
8. Assemble the chain and adjust the motor take-up.
9. Replace the cover and then test run the conveyor.

## **2.7. REPLACING ROLLER SHAFTS**

At the time of replacing roller shaft, we must also look at the bushings and the sprockets as well. An old shaft develops burrs and jagged edges, which may damage the bushings. Serious operational problems are likely to happen when a roller is used on a new shaft with worn out bushings and sprocket or on an old shaft with new bushings and sprocket.

It is necessary to replace new bushings and sprocket along with a new shaft. Please refer to the parts list and contact us with part number and the model number.

Follow the steps given below when replacing the roller shaft:

1. Disconnect the power from the main circuit breaker to avoid accidental starting.
2. Remove the side access cover of the drive chain. Disconnect the chain preferably at the location of the removable link. If the link is not found, use a chain breaker to disconnect the chain.
3. Remove the old shaft and the sprocket. Remove the sprocket from shaft.  
At this point replace the bushing and sprocket if required.



4. Bolt the sprocket to the new shaft and assemble it through the bushings and the roller to the machine.
5. Reconnect the chain and adjust the chain take-up, if required.
6. Turn on the power and test run the machine.
7. If the operation is satisfactory, turn off the power and replace the side panels.

## **2.8. REPLACING SPROCKETS**

At the time of replacing the sprockets, check the shafts and the bushings. The sprocket can be easily replaced on site by a service technician. Follow the steps given below when replacing the sprockets:

1. Disconnect the power from the main circuit breaker to avoid accidental starting.
2. Remove side access cover of the drive chain. Disconnect the chain preferably at the removable chain link. If the link is not found use a chain breaker to disconnect the chain.
3. Remove the old shaft and the sprocket assembly. Remove the bolt fastening the sprocket to the shaft. Replace the bushings if required.
4. Bolt the sprocket to the new shaft and assemble it through the bushings and the roller to the machine.
5. Assemble the chain and adjust the chain take up if necessary.
6. Turn on the power and test run the conveyor.
7. If the operation is satisfactory, turn off the power and replace the side panels.

3.

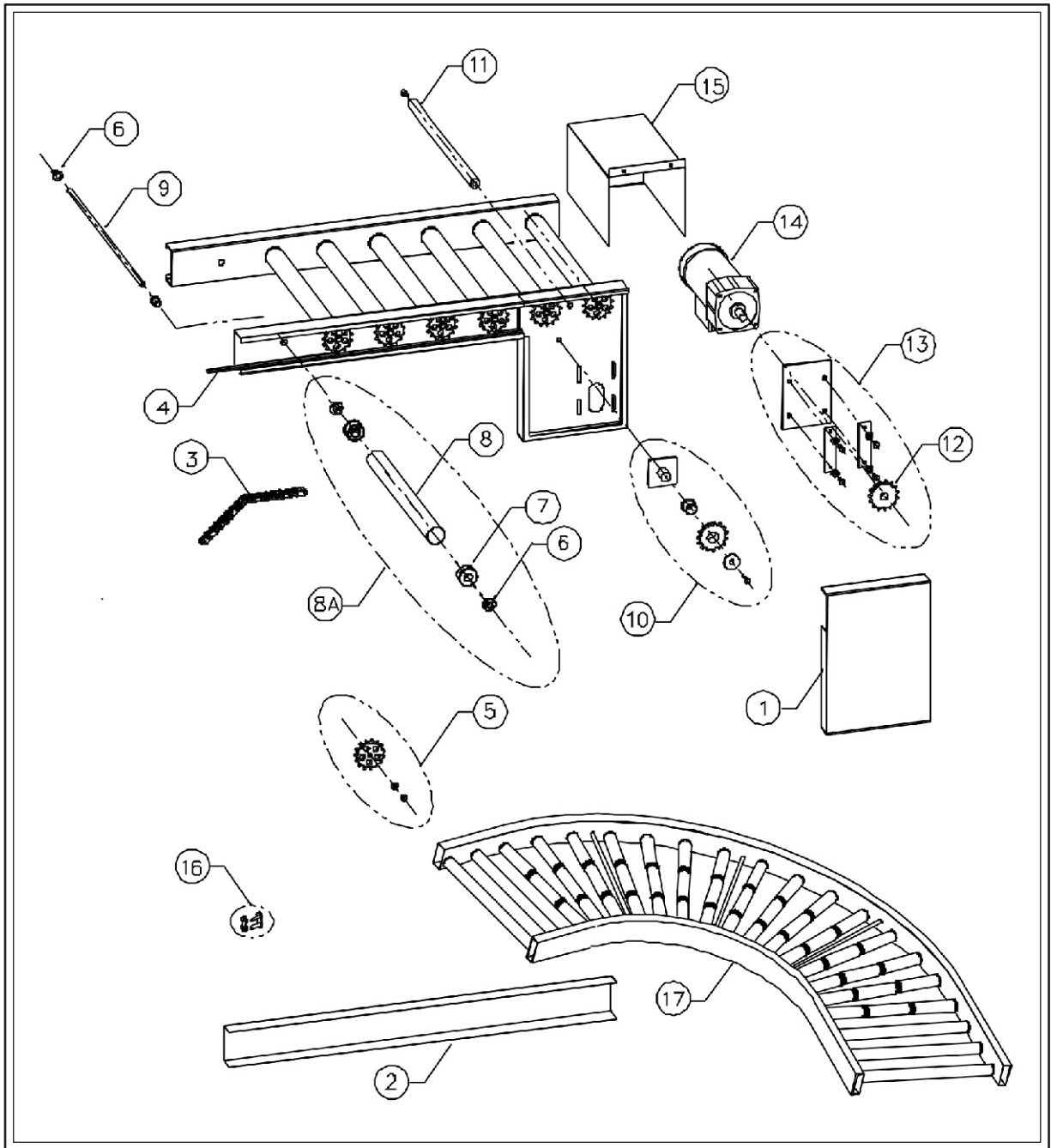
**TROUBLESHOOTING**

PROBLEM	PROBABLE CAUSE	SOLUTION
Empty racks do not move on the power roller conveyor	The power roller system requires some amount of load on the rollers to develop driving force to rotate with the shaft, which is driven by the sprocket. The load on the roller due to the empty rack may not create enough driving force.	Convey the fully or partially loaded racks. This problem is most common for a new system.
Individual rollers do not turn	<p>Refuse jammed at the ends of the roller.</p> <p>Bushings at end of the roller and the body frame are worn out.</p>	<p>Clean the ends</p> <p>Inspect the bushings &amp; replace them. It is recommended to replace the stainless steel shaft along with the worn out bushings.</p> <p>Generally nylon sprocket and the shaft wear out at the same time. Therefore it may be feasible to replace the shaft, sprocket and bushing assembly at the same time.</p>
Start button pushed but system does not work	<p>Power supply is not available</p> <p>Fuse in the main control panel has blown.</p>	<p>Make sure that the power supply is available to the system.</p> <p>Replace the fuse. If the fuse blows again, check the chain track to make sure that nothing is struck the chain and causing the overload to the motor.</p>

**Note:** If you continue to experience problems, please notify Aerowerks

4.

**MODELPRC-POWEREDROLLERCONVEYORPARTS**



**PRC - POWERED ROLLER CONVEYOR PATRS LIST**

<b>Item #</b>	<b>Part #</b>	<b>Description</b>	<b>Unit</b>
PRC 1	0082118	Drive housing cover	
PRC 2	0082117	Side cover	
PRC 3	8117408	Power roller chain #50 S/S	
PRC3A	8117404	Power roller chain #50 S/S side bow	
PRC 4	8402156	UHMW wear strip	
PRC 5	8103205	Nylon sprocket	
PRC 6	8102071	Mushroom bushings	
PRC 7	8102080	Roller bushings	
PRC 8	0081111	S/S roller	
PRC 8A	0095202	S/S roller w/bearings	
PRC 9	0081112	S/S shaft	
PRC 10	0082119	Snub sprocket complete assembly	
PRC 11	0081130	S/S tube spacer	
PRC 12	8103309	Drive sprocket	
PRC 13	----	Gear motor mounting plate & clips w/hardware	
PRC 14	8701001	Gear motor	
PRC 15	0082130	Gear motor housing	
PRC 16	8117462	Chain Link	
PRC 17	501315	Power roller curved section	
S/S 50B15	8103215	Sprocket	
----	810302	Super lube grease (Aerosol)	

## 5. WARRANTY FOR MODEL PRC-POWERED ROLLER CONVEYOR

### 5.1. WARRANTY PERIOD

Aerowerks warrants its products to the original purchaser against any defects in material and workmanship, under normal use and service for a period of one year after the date of installation by Aerowerks personnel or an Aerowerks authorized agent.

### 5.2. GENERAL

Aerowerks will not cover for damage to electrical/mechanical equipment on conveyors due to power surges, water damage (due to building plumbing leaks or improper equipment maintenance) & overload trips under warranty. Aerowerks is not liable for any faulty installation, damage, mechanical & electrical failure caused by unauthorized alteration, misuse or abuse of the equipment. Liability or obligation in connection with the products of Aerowerks other than those covered in this warranty by any other person's assumption is not authorized by Aerowerks. This warranty is limited to the United States and Canada.

### HOW TO HANDLE A WARRANTY CALL

Please contact Aerowerks Customer Support Staff at **1-888-774-1616 ext. 0** for all concerns regarding Aerowerks equipment. Hours of operation are 8:00 am to 4:30 pm EST.

**Do not contact Hobart Service:** Hobart Service is our authorized service agent and will only perform warranty service with a valid purchase order and authorization from Aerowerks. Contacting us will speed up the process of your warranty concern to minimize your downtime. If you require after hours emergency service please call Hobart Service. In the event if Hobart Service has scheduled a service call without prior notification to Aerowerks they must notify Aerowerks and request a valid purchase order from Aerowerks during our normal business hours before invoicing Aerowerks.

**Please Note:** Aerowerks will cover the cost of the service call, overtime charges will be the customer's responsibility. The claim must be submitted to Aerowerks immediately for validation.

### 5.3. WARRANTY COVERAGE

It is important to follow the proper operation and maintenance procedures outlined in the service manual, so that the new Aerowerks System will provide you years of trouble free operation. Failure to follow proper operating and maintenance procedures will void the warranty of your equipment.

**Please review complete system manual for operation, clean-up and maintenance procedures.**

The obligation of Aerowerks under this warranty is to repair or replace any defects in the equipment. All the services covered under the warranty will be provided by Aerowerks during the regular working hours. All claims against this warranty must be made in writing to Aerowerks. Equipment must be serviced either by technicians of Aerowerks or agents authorized by Aerowerks. All warranty parts will be shipped to the client via regular ground transportation.

### **Powered Roller Conveyor**

The following are not covered under this warranty:

Normal wear on parts including sprockets, rollers, shafts, bushings and equipment damage due to power surges or overload trips. Aerowerks is not liable for any faulty installation, damage, mechanical & electrical failure caused by unauthorized alteration, misuse or abuse of the equipment.

