CADDY CORPORATION

Food Service Equipment Air Systems

STA-R Soiled Tray Accumulator

Installation and Maintenance Manual

509 Sharptown Road P.O. Box 345 Bridgeport, NJ 08014
Email: service@caddycorp.com Fax: 856-467-5511
Internet: http://caddycorp.com Phone: 856-467-4222

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Precautionary Steps

1. Chain guards, housing doors and skirting panels must be in place when conveyor is in operation in order to prevent bodily injury to operating personnel.

Conveyor must NOT be operated without chain guards, housing doors and skirting panels in place.

2. Turn conveyor circuit breaker **OFF** when performing maintenance on equipment. Since equipment acts as a conductor of electricity, respect all grounding and bonding codes.
3. When inspecting operation of conveyor, keep away from sprockets, chains, motors, etc.
4. Lubricate conveyor chain only when equipment is stopped but just prior to start-up. Lubrication is best applied at a point where the belt moves away from the nearest sprocket.
5. **A word to the wise!** Limit switches supplied with equipment are there for specific purposes: such as safety, tray control, wear prevention, etc. Circumventing the operation of these switches can cause personal injury and conveyor damage, and may void warranty and manufacturer's liability.
6. Conveyor wiring is water-tight but **will not withstand direct hosing down of electrical parts.** Such hosing is hazardous to operating personnel; it will cause severe damage to the equipment resulting in costly repairs and long periods of down time, and will void the warranty.
7. When the conveyor is off, rotating the motor by hand can cause damage to electrical controls if the motor leads remain attached.

CAUTION

- **Never place your hands where you cannot see them!**
- **Do not place your hands anywhere in the chain drive area!**
- **Do not spray water directly onto motor, wires or any electrical parts.**
- **Do not block limit switches with an object in order to stop conveyor! If trays are coming too fast, slow the conveyor down!**

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Installation Instructions

This system must be installed and serviced by qualified electrical maintenance personnel familiar with electrical and mechanical systems. This manual is designed to give general information on the electrical and mechanical operation of this conveyor system. The system must be installed as per the applicable electrical codes."

The following Grounding Instructions are dependant upon the ratings and power connection of each system.

GROUNDING INSTRUCTIONS (Any permanently connected systems)
This appliance must be connected to a grounded, metal, permanent wiring system; or an equipment-grounding conductor must be run with the circuit conductors and connected to the equipment-grounding terminal or lead on the appliance.

GROUNDING INSTRUCTIONS (Systems rated 120 V, 15 A or less; cord connected)
This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER - Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is for use on a nominal 120 V circuit, and has a grounding plug that looks like the plug illustrated in sketch A in the following figure. A temporary adaptor, which looks like the adaptor illustrated in sketches B and C, may be used to connect this plug to a 2-pole receptacle as shown in sketch B if a properly grounded outlet is not available. The temporary adaptor should be used only until a properly grounded outlet can be installed by a qualified electrician. The green colored rigid ear, lug, and the like, extending from the adaptor must be connected to a permanent ground such as a properly grounded outlet box cover. Whenever the adaptor is used, it must be held in place by the metal screw.

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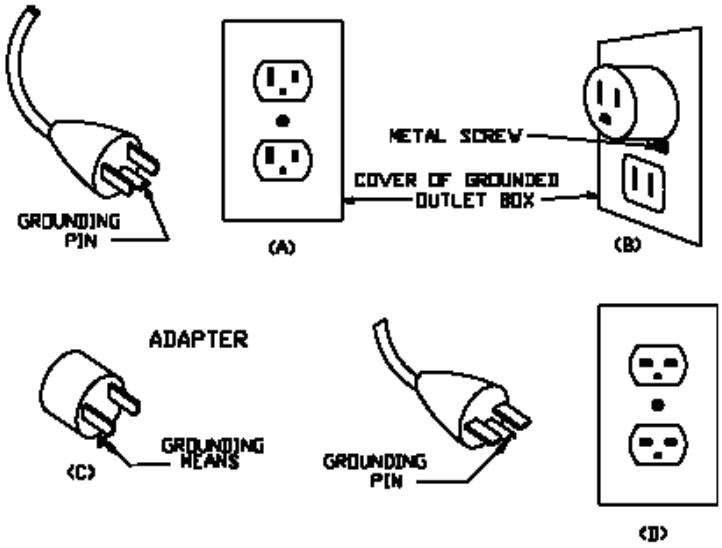
Grounding Methods



To Reduce the Risk of Electric Shock, this appliance has a polarized plug (one blade is wider than the other). This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician to install the proper outlet. Do not change the plug in any way.

GROUNDING INSTRUCTIONS (Systems rated more than 120V and/or more than 15 A; cord connected)

This appliance must be grounded. In the event of malfunction or breakdown, grounding provides a path of least resistance for electric current to reduce the risk of electric shock. This appliance is equipped with a cord having an equipment-grounding conductor and a grounding plug. The plug must be plugged into an appropriate outlet that is properly installed and grounded in accordance with all local codes and ordinances.

DANGER - Improper connection of the equipment-grounding conductor can result in a risk of electric shock. The conductor with insulation having an outer surface that is green with or without yellow stripes is the equipment-grounding conductor. If repair or replacement of the cord or plug is necessary, do not connect the equipment-grounding conductor to a live terminal. Check with a qualified electrician or serviceman if the grounding instructions are not completely understood, or if in doubt as to whether the appliance is properly grounded. Do not modify the plug provided with the appliance – if it will not fit the outlet, have a proper outlet installed by a qualified electrician.

This appliance is for use on a circuit having a nominal rating more than 120 V (or This appliance is rated more than 15 A and is for use on a circuit having a nominal rating of 120 V), and is factory equipped with a specific electric cord and plug. No adapter should be used with this appliance. If the appliance must be reconnected for use on a different type of electric circuit, the reconnection should be made by qualified service personnel; and after the reconnection, the appliance should comply with all local codes and ordinances.

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Before starting the accumulator for the first time, the following should be checked:

1. Accumulator must be clear of all debris.
2. Wash grit off of accumulator and superstructure.
3. Electric eye limit switch is installed correctly.
4. Check that all the skirting and cover plates are installed and secure
5. Make sure there are no objects on the carriers.
6. Make sure that the speed control is set at zero.

Proceed by pushing the ON button (if provided) or the START button (if provided). The conveyor will not move until the speed is increased. To do this turn the speed dial until the accumulator begins to move.

CAUTION:
If any loud sounds are heard, shut the conveyor off immediately and look to see if an object is jamming the accumulator. If the belt moves smoothly, the speed may be increased by turning the speed dial to desired speed.

Motor Controls: Caddy Corporation currently provides a DC motor control (Caddy part number 6235-02). This controller offers a wide range of selections. For the purposes of this manual, we will concern ourselves with two: speed and torque. The speed is regulated through a potentiometer which, at its highest setting, will run the conveyor at twelve feet per minute. The speed can be reduced to whatever setting is comfortable for your operation. The current limit (CL/Torque adjustment) CL circuitry is provided to protect the motor and control against overloads. The CL also limits the inrush current to a safe level during startup. The CL is factory set to approximately 1.5 times the full load rating of the motor. The trim pot is preset at the factory but may need to be adjusted, as time goes on, due to resistance build up.

The **normal Trim pot settings** are as follows, (expressed as a % of full clockwise rotation)

MIN (minimum speed)	0%
MAX (maximum speed)	60%
IR (IR compensation)	15%
CL (current limit/torque)	65%
ACCEL (acceleration start)	50%

CAUTION: Never place hands under the skirting of the accumulator while the conveyor is in motion.

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Installing STA-R Carrier Chain

1. Turn off electricity for conveyor.
2. Remove tray carriers by lifting up on carrier and pulling out.
3. Remove top canopy/cover that covers the chain.
4. Remove and save cotter pins, washers, and bearings from pins on the chain that are holding the carrier mount assembly in place.
5. Remove tray carrier mount assemblies/hangers from the chain.
6. Remove old conveyor chain from around sprockets/gears by disconnecting the master link. The master link has an extra clip holding the link together. Or just break the chain with a chain breaker if you can not locate the master link. These sprockets are the larger top sprockets. The conveyor chain is the chain with the pins sticking up to hold the tray carrier assembly.
7. Install new chain around sprockets/ gears.
8. Install master link and clip into new chain.
9. If new chain is too loose you may have to shorten the chain by removing a link from the new chain. Add a half link if a link has to be removed.
10. A Chain breaker and chain tightening tool have been supplied with the new chain and carriers.
11. Turn electricity back on to the conveyor.
12. Check operation of conveyor chain and make sure it is tight enough. If it is not tight enough you may have to remove another link.
13. Install tray carrier mount assemblies/hangers back onto new chain with bearings, washers, and cotter pins and check operation. Make sure tray carrier assemblies/hangers are running smoothly.
14. Install tray carriers back onto carrier mount assemblies/hangers. Check to make sure tray carriers run smoothly.
15. Install top canopy/cover back on top of conveyor and tighten down.

Model STA-R-50

1. To remove tray carriers, lift up on carrier-pull out.
2. For lubrication requirements, follow the procedures called out on page 13.
3. The Tray Carrier Chain is factory pre-stretched. No adjustment is required.
4. Follow the preventive maintenance schedule.
5. Observe precautionary steps.

CAUTION: Conveyor wiring is water-tight but will not withstand direct hosing down of electrical parts. Such hosing is hazardous to operating personnel; it will cause severe damage to the equipment resulting in costly repairs and long periods of down time and will void the warranty.

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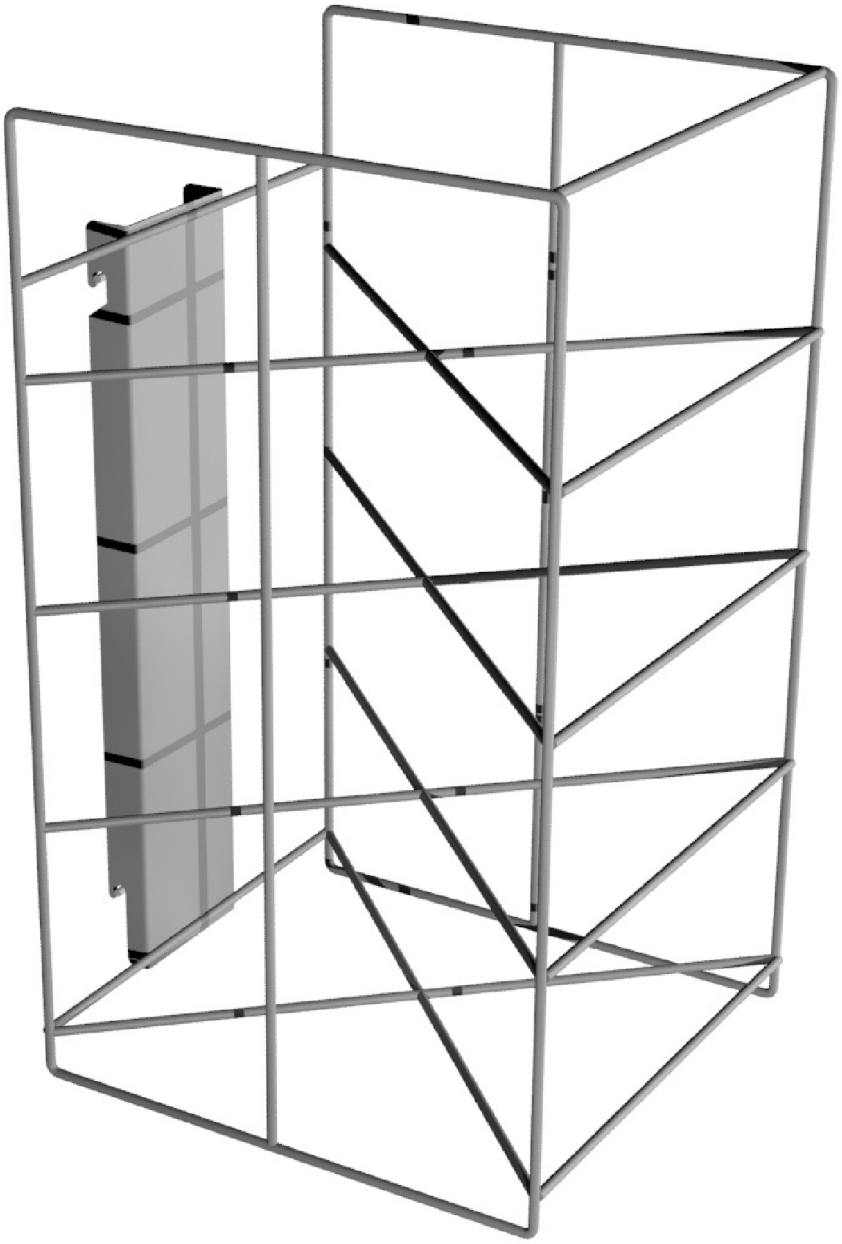
Tray Carrier



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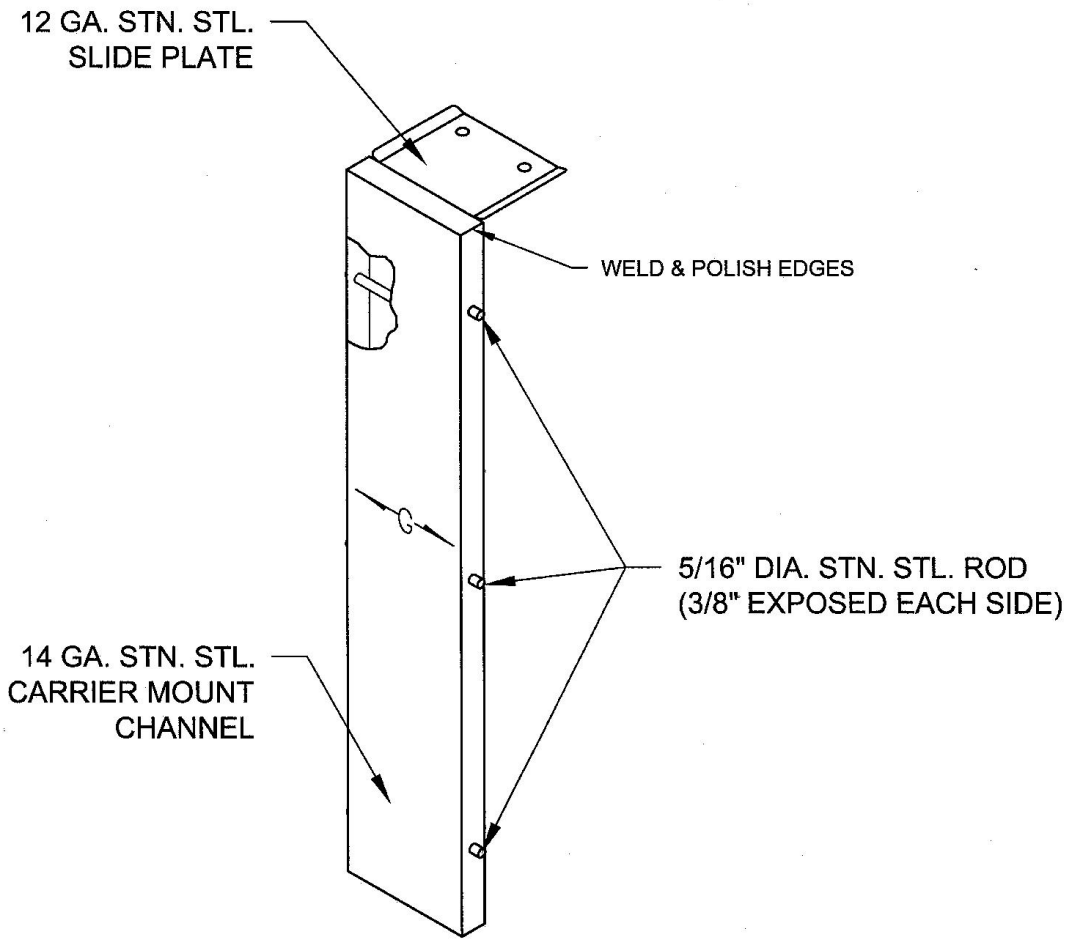
Carrier Mount Assembly
(Part No. 7530-01)



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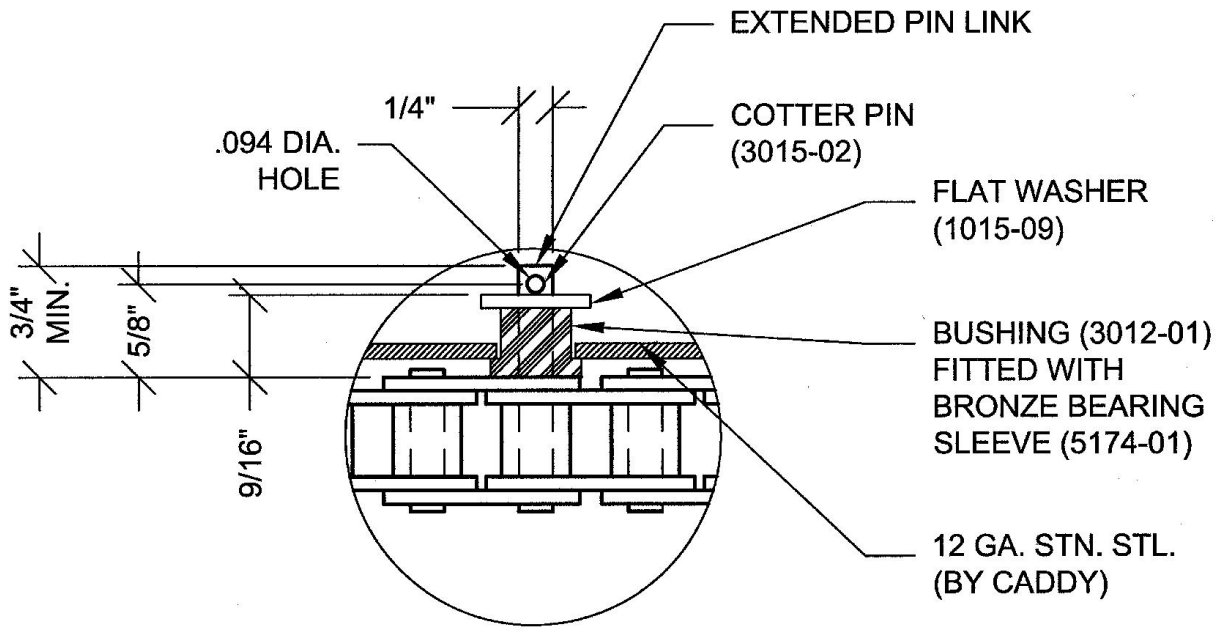
Carrier Pin Detail



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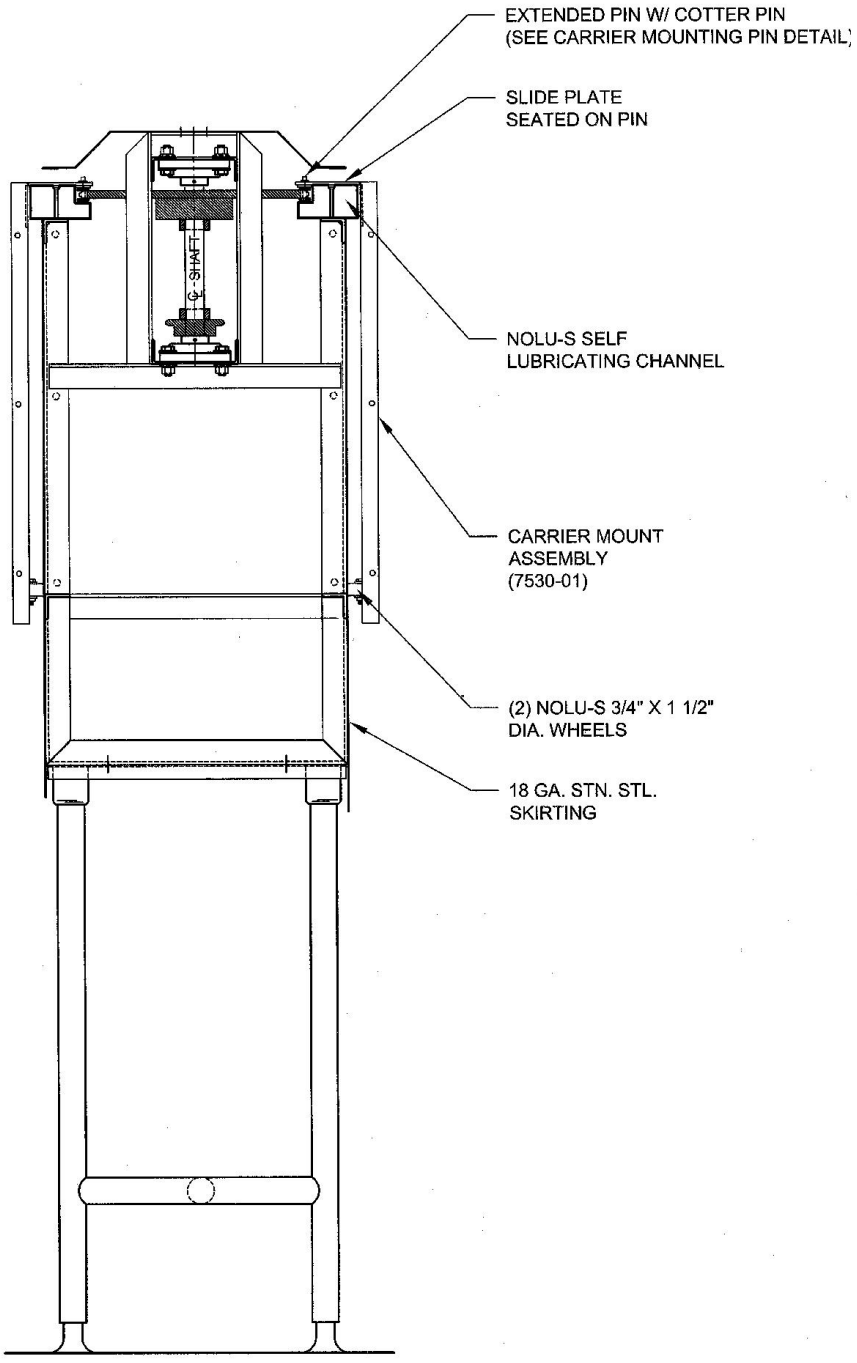
STA-R Section (with Carriers removed)



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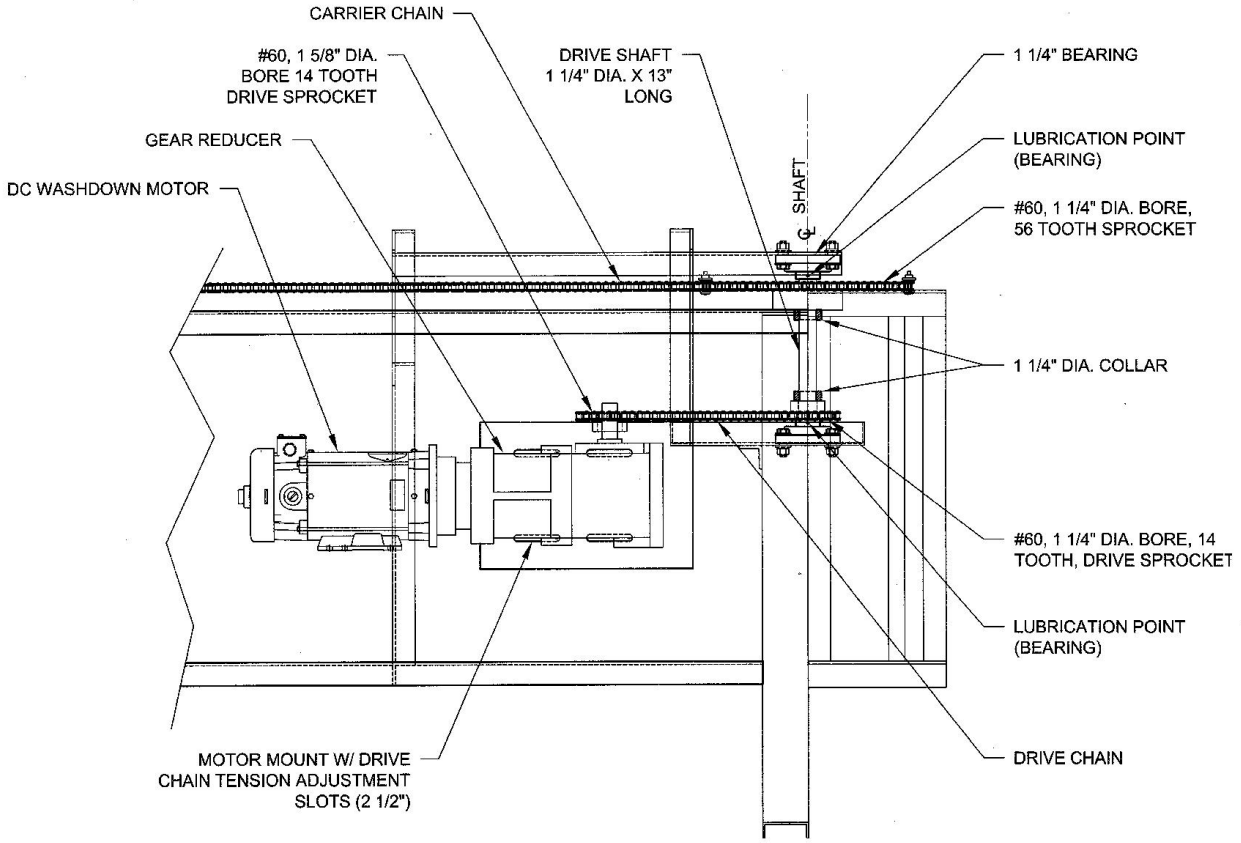
STA-R Drive End Elevation



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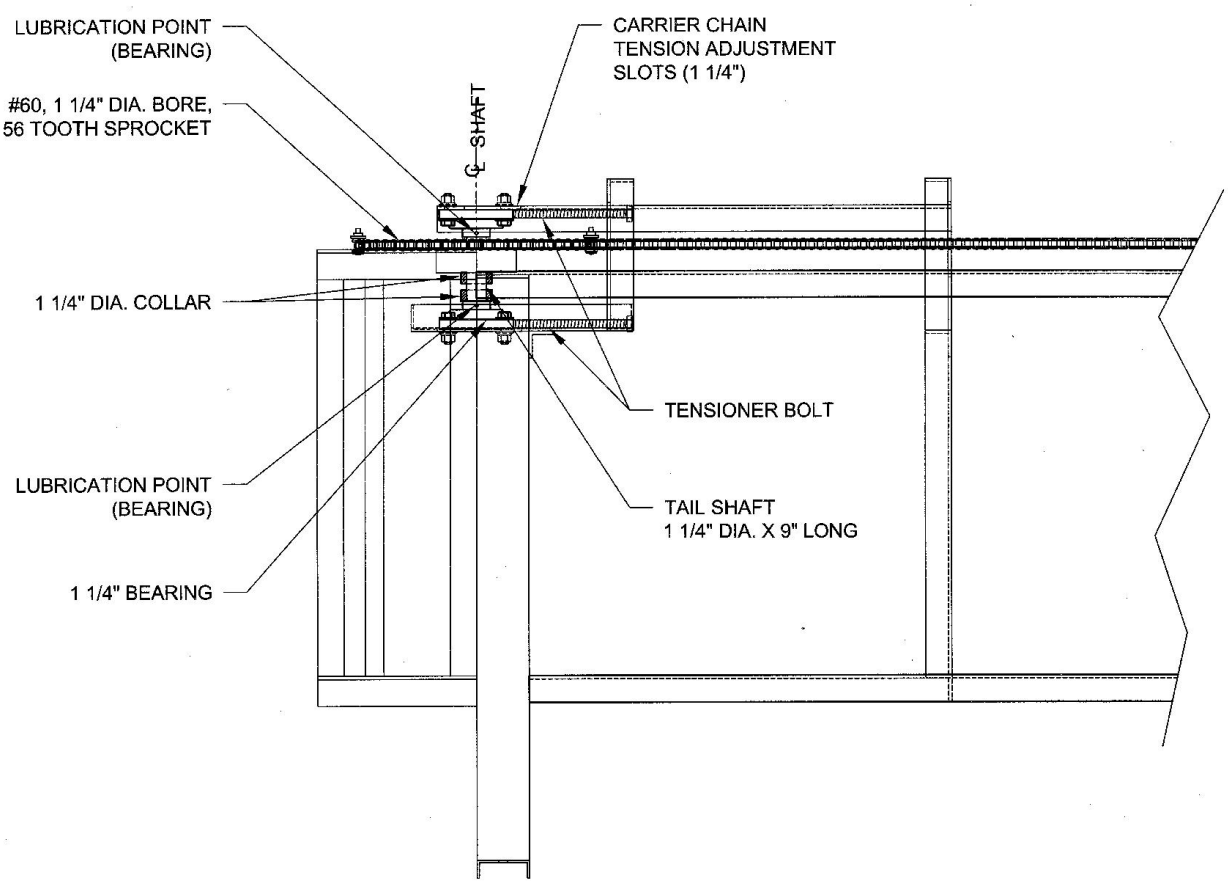
STA-R Tail End Elevation



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Adjustments and Lubrication

1. **Bearings:** The bearings at both the drive and tail end of the accumulator should be lubricated monthly, with general purpose grease. See pages 11 & 12 for locations of lubrication points.
2. **Drive Chain:** The drive chain must be lubricated with light oil at least once every three months. Be sure accumulator is stopped when lubricating and all covers are reinstalled properly.
3. **Sprockets:** Check sprockets for tightness after one week of operation, tighten if necessary. Check and tighten each month after initial start-up.

CAUTION: Failure to maintain proper lubrication will cause excessive noise and premature failure of moving parts**.**

Preventive Maintenance

Must Be Done Immediately Upon Installation of STA-R

CAUTION: Accumulator must be off for any inspection!

Main Drive Chain: The main drive should be checked after the first week of operation, and excessive slack removed. The drive chain is generally kept with ¾" of slack (minimum), since a tight chain may cause bearings on the gear box to fail.

Notes:
- The drive chain is a standard roller chain. Links can be removed in the conventional manner.
- Half-links may be installed where required to insure the best adjustment.
- Final adjustment is achieved by moving the motor in its slotted mounting holes on the base plate.

Important: Improper slack left in the drive chain will give the chain a chance to "climb" the drive sprocket of the gear reducer and thus create a jam which may damage the gear reducer, the motor and the base.

The motor mounting bolts must be checked for tightness after shipment and installation, and before the initial start up of the unit. Failure to do so may cause premature wear or failure on the drive chain, sprockets or bearings.

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To Be Done Monthly

CAUTION: Accumulator must be off for any inspection!

1. **Sprockets**: Sprocket should be checked, aligned, and their set screws tightened after the first week of operation and at least once a month thereafter.
2. **Carrier Chain Track:** The track should be checked regularly for wear and sediment build-up.
3. **Bearings**: Bearings are located on each shaft of the conveyor. These bearings must be lubricated every three months with a general purpose bearing grease. The set screw on the bearings should be checked after the first week of operation and at three month intervals thereafter.

To Be Done Every Six Months

CAUTION: Accumulator must be off for any inspection!

Motors: A DC motor has been provided on all conveyors for the purpose of speed control and safety. DC motors are equipped with carbon brushes. These brushes should be checked semi-annually and replaced as necessary.

Replace carbon brushes with original factory brushes only. Any other type may result in rapid brush wear and/or motor failure.

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Trouble Shooting Guide for

STA-R Soiled Tray Accumulator

Condition	Probable Cause	Correction
Motor won't run	1. Electric eye limit switch activated 2. Power off 3. Brushes worn 4. Water damaged component 5. Object jammed in accumulator 6. Frozen bearings 7. Controller defective 8. Torque too low	1. Remove object, restart conveyor 2. Restore power 3. Replace brushes 4. Replace component 5. Remove object 6. Replace bearings 7. Replace controller 8. Increase torque setting (see Page 5)
Motor runs but belt does not	1. Belt sprocket mis-aligned 2. Torque too low 3. Key out of drive shaft	1. Re-align sprocket and tighten set screws 2. Increase torque setting (see Page 11) 3. Replace key and tighten set screw
Motor runs intermittently	1. Control erratic 2. Loose wire connection	1. Replace controls 2. Tighten connection
Carriers do not run smoothly	1. Carrier wheels are stuck 2. Object in carrier chain track 3. Turn track material worn	1. Clean and/or replace 2. Remove object. Clean track 3. Replace turn track material

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Care and Cleaning of Stainless Steel Equipment

Contrary to popular belief, stainless steels ARE susceptible to rusting and pitting.

Corrosion on metals is everywhere. It is recognized quickly on iron and steel as unsightly yellow/orange rust. Such metals are called “active” because they actively corrode when their atoms combine with oxygen to form rust.

Stainless steels are passive metals because they contain other metals, like chromium, nickel and manganese that stabilize the atoms.

Chromium provides an invisible passive film that covers the steel’s surface acting as a shield against corrosion. As long as the film is intact and not broken or contaminated, the metal is passive and stainless. If the passive film of stainless steel has been broken, equipment starts to corrode. At its end, it rusts.

The Enemies of Stainless Steel

There are three basic things which can break down stainless steel’s passivity layer and allow corrosion to occur.

1. **Mechanical Abrasion** - Steel pads, wire brushes and scrapers are prime examples of things that will scratch a steel surface.
2. **Water and Deposits** - Water has varying degrees of hardness. Depending on the area you live in, you may have hard or soft water. Hard water may leave spots, and when heated, leave deposits that will break down the passive layer and rust stainless steel. Other deposits from food preparation and service must be properly removed.
3. **Chlorides** - Chlorides are found nearly everywhere. They are in water, food and table salt. Some of the worst chloride perpetrators come from household and industrial cleaners.

Here are a few steps that can help prevent stainless steel rust and pitting.

1. **Use the proper tools.**

   When cleaning stainless steel products, use non-abrasive tools. Soft cloths and plastic scouring pads will not harm steel’s passive layer. Stainless steel pads also can be used but the scrubbing motion *must* be in the direction of the manufacturers’ polishing marks.

2. **Clean with the polish lines**

   Some stainless steel comes with visible polishing lines or “grain”. When visible lines are present, always scrub in a motion parallel to the lines. When the grain cannot be seen, play it safe and use a soft cloth or plastic scouring pad.

3. **Use alkaline, alkaline chlorinated or non-chloride containing cleaners.**

   While many traditional cleaners are loaded with chlorides, the industry is providing an ever-increasing choice of non-chloride cleaners. If you are not sure of chloride content in the cleaner used, contact your cleaner supplier. If your present cleaner contains chlorides, ask your supplier if they have an alternative. Avoid cleaners containing quaternary salts; they can attack stainless steel and cause pitting and rusting.

4. **Treat your water.**

   Though this is not always practical, softening hard water can do much to reduce deposits. There are certain filters that can be installed to remove distasteful and corrosive elements. To insure proper water treatment, call a treatment specialist.

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5. **Keep your food equipment clean.**

   Use alkaline, alkaline chlorinated or non-chloride cleaners at recommended strength. Clean frequently to avoid build-up of hard, stubborn stains. If you boil water in stainless steel equipment, remember the single most likely cause of damage is chlorides in the water. Heating cleaners that contain chlorides have a similar effect.

6. **Rinse, rinse, rinse.**

   If chlorinated cleaners are used, rinse and wipe equipment and supplies dry immediately. The sooner you wipe off standing water, especially when it contains cleaning agents, the better. After wiping equipment down, allow it to air dry; oxygen helps maintain the stainless steel's passivity film.

7. **Never use hydrochloric acid (muriatic acid) on stainless steel.**

Review

- Stainless steels rust when passivity (film-shield) breaks down as a result of scrapes, scratches, deposits and chlorides.
- Stainless steel rust starts with pits and cracks.
- Use the proper tools. Do not use steel pads, wire brushes or scrapers to clean stainless steel.
- Use non-chlorinated cleaners at recommended concentrations. Use only chloride-free cleaners.
- Soften your water. Use filters and softeners whenever possible.
- Wipe off cleaning agents and standing water as soon as possible. Prolonged contact eventually causes problems.

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WARRANTY

Products manufactured by Caddy Corporation are warranted to the original purchaser as follows:

Mechanical components are warranted to be free from defects in material and workmanship under normal use, storage and service for a period of one year from the date of installation or eighteen months from factory shipment, whichever occurs first.

Electrical components are warranted to the original purchaser to be free from defects in material and workmanship under normal use, storage and service for a period of ninety days from the date of shipment.

Caddy Corporation shall repair or replace, at our discretion, any part or product which we determine to be defective during the warranty period.

Under no circumstances will Caddy Corporation honor any repair or back charges by any party regardless of whether such equipment is within the warranty period, unless the Service Department of Caddy Corporation has authorized such work in writing.

If the equipment is repaired or altered in any way whatsoever by any person without prior written consent by Caddy Corporation, this warranty shall not apply.

The following are ***NOT*** covered under this warranty:

- Normal wear on parts, such as bulbs, gaskets, etc.

- Defects or damages resulting from accidents, alterations, abuse or misuse of equipment and/or any of its components.

- Damage of electrical components resulting from connecting the equipment to any power supply other than specified on the nameplate, or resulting from unauthorized altering of the equipment.

- Damage from water conditions causing malfunction of electric components and/or control equipment.

There is no other express warranty.

Any and all implied warranties are excluded to the extent permitted by law. Implied warranties, when included by law, including those merchantability and fitness for a particular purpose, are limited to one year from the date of shipment.

Liability for consequential damages under any and all warranties is excluded. This warranty is the buyer's exclusive remedy.

It is Caddy's policy to constantly improve the design and manufacture of our products. Accordingly, all equipment is subject to change consistent with such policy without prior notice and some items may be discontinued without obligation.

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Tray Carrier Parts	
Description	**Part Number**
Carrier Mount Assembly STA-R	7530-01
Bushing, Oil-Lite	3012-01
Bearing Sleeve, Bronze (1 Per Bushing)	5174-01
Washer Flat STA-R Carrier	1015-09
Pin, Cotter S/S	3015-02
Wheel, STA-R Carrier Mount, NOLU-S	7529-01
Clamp, Vibration Damping (4 Per Carrier)	3015-03

New Style STA-R Drive/Tail Section Parts	
Description	**Part Number**
Bearing 4 Hole 1 1/4" Dia. Shaft	5716-02
Collar 1 1/4" Dia.	5717-02
Tail Shaft 9" Lg 1.248 Dia STA-R	5690-02
Drive Shaft 13" Lg 1.248 Dia STA-R	5691-02
Sprocket 14 Tooth #60 1 1/4" Dia. (Driven, Drive Shaft)	5751-02
Sprocket 14 Tooth #60 1 5/8" Dia. (Driver, Gear Reducer)	5752-02
Sprocket 56 Tooth #60 1 1/4" Dia. (Carrier Chain Sprocket)	5753-02

Old Style STA-R Drive/Tail Section Parts	
Description	**Part Number**
Bearing 4 Hole 1 1/8" Dia. Shaft	5716-01
Collar 1 1/8" Dia.	5717-01
Tail Shaft 9" Lg 1.124 Dia STA-R	5690-01
Drive Shaft 13" Lg 1.124 Dia STA-R	5691-01
Sprocket 14 Tooth #60 1 1/8" Dia. (Driven, Drive Shaft)	5751-01
Sprocket 14 Tooth #60 1 1/2" Dia. (Driver, Gear Reducer)	5752-01
Sprocket 56 Tooth #60 1 1/8" Dia. (Carrier Chain Sprocket)	5753-01

Electrical Information and Parts
See electrical drawing or contact Caddy. Please have conveyor Model, Serial Number and facility location prior to contact.

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