



Over-Under Conveyor



Owner's Manual

Sonny's Enterprises LLC
5605 Hiatus Road
Tamarac, Florida 33321



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WARNING *SAFETY REQUIREMENTS* WARNING

1. All employees must be thoroughly trained in safe operation and standard maintenance practices. All employees must review this entire manual monthly.
2. Do not enter the wash tunnel when the equipment is operating. Death or dismemberment may occur.
3. Do not wear loose fitting clothing or jewelry around moving equipment. Do not allow any part of your body or other objects (including ladders, hoses, or tools) to come in contact with moving equipment. Entanglement may result causing death or dismemberment.
4. Do not leave a ladder or any other items such as wash down hoses or tools in the wash tunnel while equipment is running. Vehicle damage and injury, including death, can occur.
5. Always exercise caution when walking (never run) through the wash tunnel as there may be slippery conditions. Be careful so you do not bump into or trip over equipment.
6. Only those employees specifically instructed and trained by the location management are permitted to enter the wash tunnel to perform inspections or maintenance. At least two qualified maintenance people must be present when performing equipment repairs or preventive maintenance.
7. Do not perform any maintenance or work on equipment unless you first perform Lock-Out Safety Precautions. All electrically powered equipment must have manually operated disconnects capable of being locked in the "OFF" position. Equipment that has been "locked out" for any reason must be restarted only by the person who performed the "lock out" operation.
8. When working on any equipment that is higher than your shoulders, always use a fiberglass ladder that is in good condition.
9. Do not attempt to repair or adjust any pressurized liquid or pneumatic part, hose, pipe or fitting while that equipment is in operation.
10. Electrical connections and repairs must be performed by a Licensed Electrician Only.
11. Emergency "STOP" buttons must be well marked, and their location and proper use reviewed with all personnel. Any activated "STOP" button must be reset only by the person who activated it. Clear the wash tunnel of any people, ladders, hoses, tools, and other loose items before restarting the equipment. An audible device must sound to warn people that the equipment is starting.
12. Do not operate any piece of equipment that requires safety covers with those covers removed or improperly installed. Do not operate any piece of equipment if any component of that piece is suspected to be defective or malfunctioning.



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13. Store all cleaning and washing solutions and oils in a well-ventilated area. Clean up fluid spills immediately to prevent hazardous safety conditions. Be certain to follow all safety procedures on SDS Sheets for each chemical product used.
14. All hydraulic and electric systems in the wash tunnel equipped with a torque relief or overload should be checked and set at the minimum amount that will allow for proper functionality under normal washing conditions.
15. No unauthorized people should ever be permitted in the wash tunnel or near the equipment at any time.

* * *

!! CAUTION !!

When a piece of equipment must be in operation during inspection or maintenance, one qualified technician must stay at the power disconnect switch while another qualified technician performs the inspection or maintenance.



INTRODUCTION

This Manual contains information that is vital to the successful installation, operation and maintenance of your SONNY'S vehicle washing equipment.

Please read, and understand, the full contents of this manual before installation and operation of the equipment. Keep this booklet in a location where it may be used for ongoing reference.

Should you have any questions on the operation or servicing of this equipment please contact:

TECHNICAL SERVICES DEPT.

SONNY'S ENTERPRISES INC.

5605 Hiatus Road

TAMARAC, FLORIDA 33321

TELEPHONE: 800-327-8723 FAX: 800-495-4049

THANK YOU FOR YOUR CONFIDENCE IN SONNY'S !!!!





Product Specifications

- Accepts 13 inch wide tires.
- Rubber pads placed in strategic positions to help reduce operations noise.
- Direct drive speed reducer driven by high torque hydraulic motor.
- Available in electric or hydraulic drive.
- Removable cover on Take-Up section for ease of maintenance.
- Reliable air Take-Up standard, optional spring loaded system available.
- Long lasting SC78 conveyor chain is standard, optionally Log, X458 or D88K chains are also available.
- 3ft. 6 in roller spacing standard. Optional 3 in. roller spacing available.
- 4-wheel mid-profile UHMW roller assemblies are standard, low, and tall profile rollers are also available.
- 1/2 inch thick steel on top deck and 3/8 inch thick steel on all other levels. Also available in stainless steel.
- Soft-Drop exit door.
- UHMW protective covering for the guide rails.
- Air cylinder controlled roller-up fork.
- Solid state pulse switch kit available.
- Safety horn warning kit available.
- Tracking bars and Kick off plate must be used with all Front Wheel Pull (FWP) installation.

Smooth Operator



Problem:

You need a conveyor that you never need to think about, that is easy to maintain, and delivers unparalleled safety and reliability.

Solved:

Why is SONNY'S Over-Under Conveyor the best-selling car wash conveyor in the world? Some say it's because our thicker frame and top deck results in longer lifespan. Others claim it's because our Banana Peel rails not only accommodate today's low profile tires, wide rims, and all-wheel-drive vehicles, but that they can guide even the most poorly aligned vehicle straighter in both rear-wheel-push AND front-wheel-pull configuration. Some operators insist it's because our new Soft-Drop exit door not only reduces maintenance, but provides a smoother transition off the conveyor that customers love. To us, we're just proud every time a customer tells us that their 15-year old conveyor is still plugging along.



New level entrance plate and increased front sprocket travel for longer maintenance intervals!



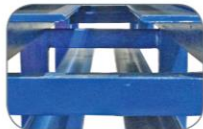
Electric or Hydraulic Drive to meet your requirements.



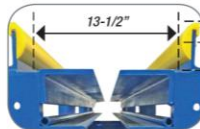
LifeTime Limited Weldment Warranty for generations to come.



1/2in thick top deck results in longer lifespan.



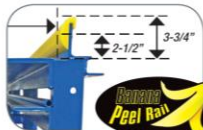
H-frame angle reinforcements every 4ft in a 15ft section for greater durability.



13-1/2in top deck width accommodates oversized tires. Custom widths available.



HEAVY-DUTY double roller bearing with easy access grease fittings.



Banana Peel rails for safer, more reliable vehicle tracking.



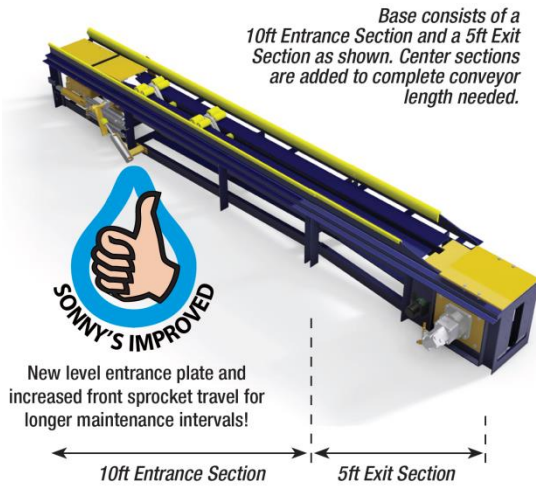
Air take-up for reliable performance that's simple to maintain. Spring take-up also available.



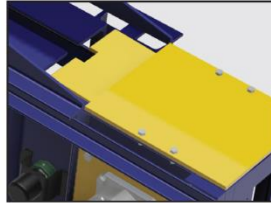
For in-depth information about this product, watch video at www.sonnysdirect.com

Specifications

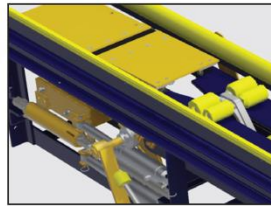
	Inches	Metric
Tire Clearance	13-1/2in	343 mm
Top Track	3in x 5in x 1/2in Angle	76mm x 127mm x 12.7mm Angle
Middle Track	3in x 4in x 3/8in Angle	76mm x 102mm x 9.5mm Angle
Bottom Track	3in x 4in x 3/8in Angle	76mm x 102mm x 9.5mm Angle



Soft-Drop Conveyor Trap Door Standard!



SONNY'S Soft-Drop conveyor exit end trap door lasts longer with less maintenance and provides a smoother, more customer friendly transition of the car off the conveyor. A revolutionary coupler design eliminates the use of counter weights, springs, or stops, just a simple mechanical innovation that will deliver reliable performance car after car, year after year. Standard on all new conveyors, owners of existing conveyors can update to the latest technology by replacing only the 5-foot drive section framework of their conveyor.



New Long-Slide Entrance Section Standard!

SONNY'S redesigned front entrance plate eliminates bumps and roll ahead while new longer take-up slide increases sprocket travel for longer maintenance intervals.

Configuring Your Over-Under Conveyor

Choose Your Finish



Painted Conveyor
Standard surface delivers excellent corrosion resistance at an affordable price.

or



Galvanized Conveyor
Optional surface coating can add years of life to your conveyor frame.

Choose Your Drive



Hydraulic Drive
Simple, safe, and durable choice for wet environment applications.

or



Electric Drive
Reduce utility consumption and eliminate the potential for hydraulic leaks.

Choose Your Take-Up



Air Take-up
Automatically adjusts to keep proper tension and easily releases for maintenance.

or



Spring Take-up
Long time industry standard for durability and reliability.

Choose Your Chain

Log Chain 
- Most durable
- Remove links without tools
- Easiest to maintain

X-458 
- Remove links without tools

SC78 
- Is the durable industry standard
- Compatible with older style D88K Chain

D88K 
- Self-locking chain.
(Available for 7' 4" spacing.
Call for pricing)

Features

- Anti-jam roller guides
- Exposed grease fittings for easy application
- Easy maintenance through access doors
- Durable 1/2in thick top deck & 3/8in steel frame
- Chain guides included
- Take-up idler sprocket or drum
- Exclusive double roller take-up bearings
- 1-1/2in stainless steel take-up adjustment shaft with UHMW poly bushings
- Heco direct-drive gear box available with electric or hydraulic motor

In Stock for Immediate Delivery!





INSTALLATION

Preparation of Concrete

THE MOST IMPORTANT FACTOR IN SUCCESSFUL CONVEYOR OPERATION IS ACCURATE CONCRETE WORK ON THE WASH TUNNEL FLOOR !!!

Faithful adherence to the specifications shown on SONNY'S drawings #CWS-SC-01 and #CWT-SC-98004-A3 will help to achieve this goal! While all dimensions and features shown on these drawings are very important some key factors require special attention:

1. For a standard trench using REAR WHEEL PUSH Conveyors the concrete shelf for the conveyor track must be 19 3/4 inches BELOW the finished floor elevation. (Ref. Section Thru Trench detail "E" Dwg. #CWS and #CWT)
2. For a standard trench using FRONT WHEEL PULL Conveyors the concrete shelf for the conveyor track must be 21 3/4 inches BELOW the finished floor elevation. (Ref. Section Thru Trench detail "E" Dwg. #CWS and #CWT)
3. For a self-cleaning trench Conveyors the concrete shelf for the conveyor track must be 24 inches BELOW the finished floor elevation for FWP and RWP. (Ref. Section Thru Trench detail "E" Dwg. #CWS and #CWT)
4. The width of the conveyor track shelf must be 20 inches and level from side to side. (Ref. Section Thru Trench detail Dwg. #CWS).
5. Proper placement of Customer supplied steel angle and flat plate as shown in Section Thru Trench detail Drawing #CWS.
6. The vertical wall adjoining the conveyor shelf must be plumb to the shelf itself with no bulges (Ref. Section Thru Trench detail dwg. #CWS).
7. The side to side slopes and level areas of the finished floor. (Ref. section thru trench detail Dwg. #CWS and #CWT).
8. The entrance to exit finished floor and conveyor track shelf entrance to exit slope should RISE 3/16 inch per 10 feet of conveyor length, or 1 inch for every 50 ft of length.
9. The wash water and rinse water drain slopes and drain lines are shown in Drawing #CWT. Minimum depth of the water trench is to be 8 inches below the Conveyor track shelf.
10. Be certain that all Notes shown on Drawings #CWS and #CWT are understood and performed properly.
11. Confirm the location of all in-ground chases and conduits as well as required dimensions and slopes prior to pouring concrete.



Utilities Requirements

Utilities interconnection and the materials required for interconnection to Sonny's equipment are the responsibility of the customer!

Perform all trades work to all applicable local and national codes!

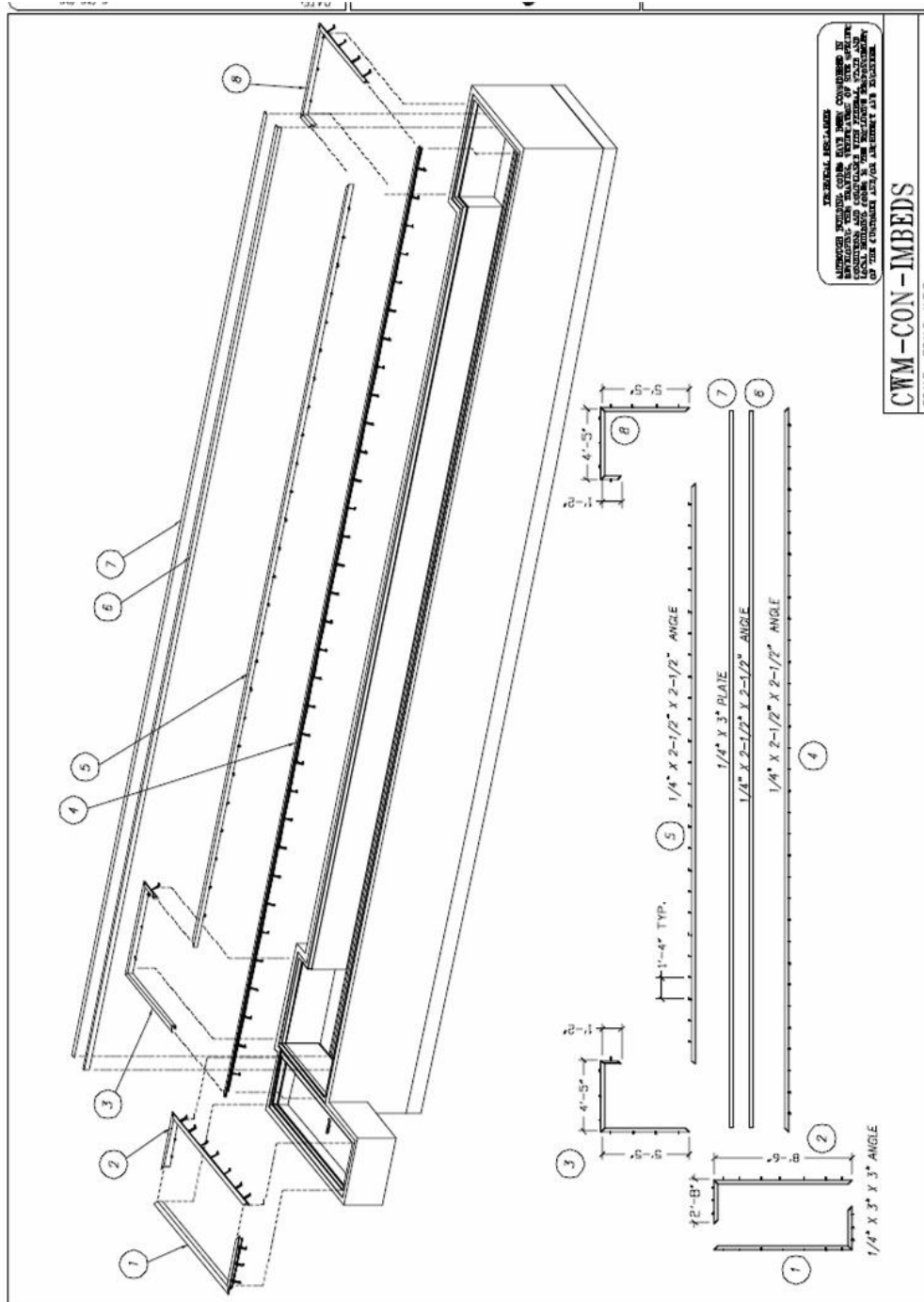
Electric

- The Customer's Electrician is to provide and install three #16AWG wires from the tunnel equipment controller to a pulse sensor switch located in the drive section of the conveyor or to an optional remote pulse switch.
- The Customer's Electrician is to provide and install two #16AWG wires from a 120VAC or 24VAC (specify with order) power source through the remote "Roller Up" control switch to the air solenoid valve or to the tunnel equipment controller.
- The Customer's Electrician is to provide and install two #16AWG wires from the tunnel equipment controller to an optional anti-jam switch located in the Take-Up section of the conveyor.
- The Customer's Electrician is to provide and install single phase power through the conveyor interlock circuit for the Horn Warning Kit and/or the Anti-Collision Control Kit. Reference the electrical schematic for the Horn Warning Kit and the electrical diagram with the Anti-Collision Kit.
- Where applicable, the Customer's Electrician is to provide materials and install 208VAC or 230VAC or 460VAC, 3-phase, 60Hz power to the electric motor on the hydraulic power pack or VFD panel from a properly sized three pole circuit breaker and motor starter with three thermal overloads.

Pneumatic

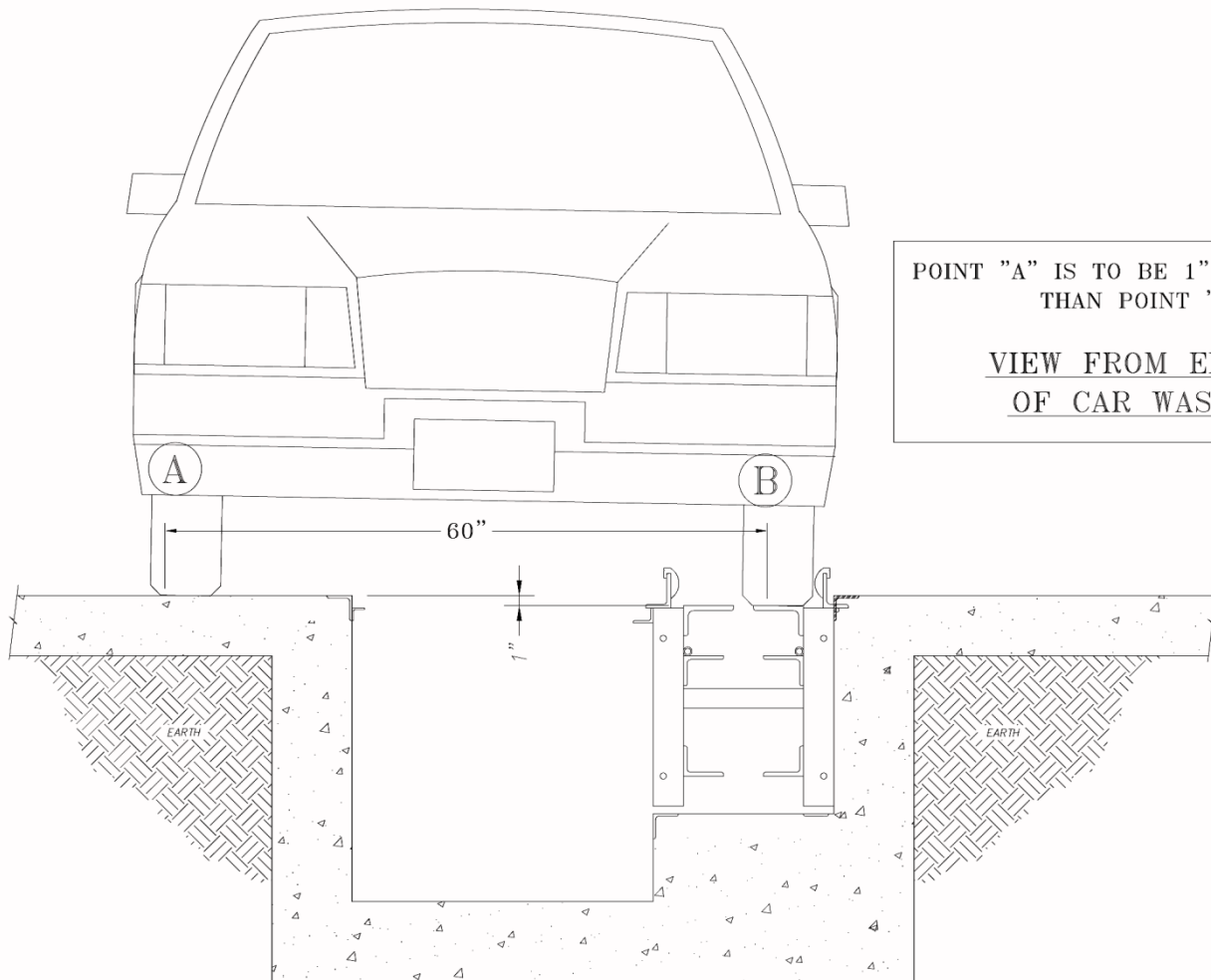
- The Customer's Plumber is to provide and install a 3/8 inch compressed air line (100PSI @ 0.5CFM) from the air compressor to the air distributor or to the regulator/solenoid manifold for the air cylinder on the conveyor Take-Up section.
- The Customer's Plumber is to provide and install a 3/8 inch compressed air line (100PSI @ 0.5CFM) from the air compressor to the air distributor or to the regulator/solenoid manifold for the optional air Take-Up.

Dimensions





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POINT "A" IS TO BE 1" HIGHER
THAN POINT "B"

VIEW FROM EXIT
OF CAR WASH

FRONT WHEEL PULL
SECTION THRU TRENCH

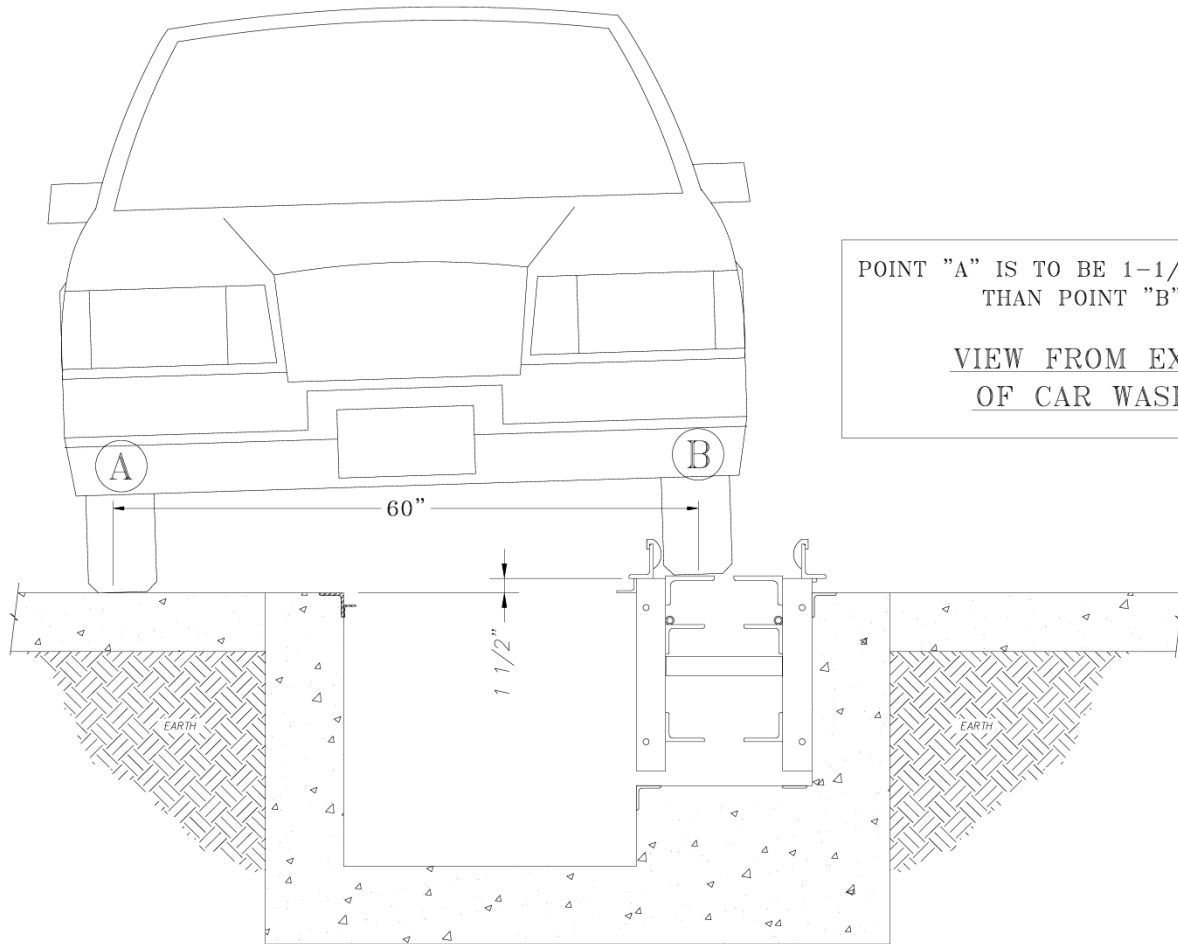
TECHNICAL DISCLAIMER
ALTHOUGH BUILDING CODES HAVE BEEN CONSIDERED IN DEVELOPING THIS DRAWING, VERIFICATION OF SITE SPECIFIC CONDITIONS AND COMPLIANCE WITH FEDERAL, STATE AND LOCAL BUILDING CODES IS THE EXCLUSIVE RESPONSIBILITY OF THE CUSTOMER AND/OR ARCHITECT AND ENGINEER.

CWD-CONV-ELEVATION

SCALE: N.T.S



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POINT "A" IS TO BE 1-1/2" LOWER THAN POINT "B"

VIEW FROM EXIT OF CAR WASH

REAR WHEEL PUSH
SECTION THRU TRENCH

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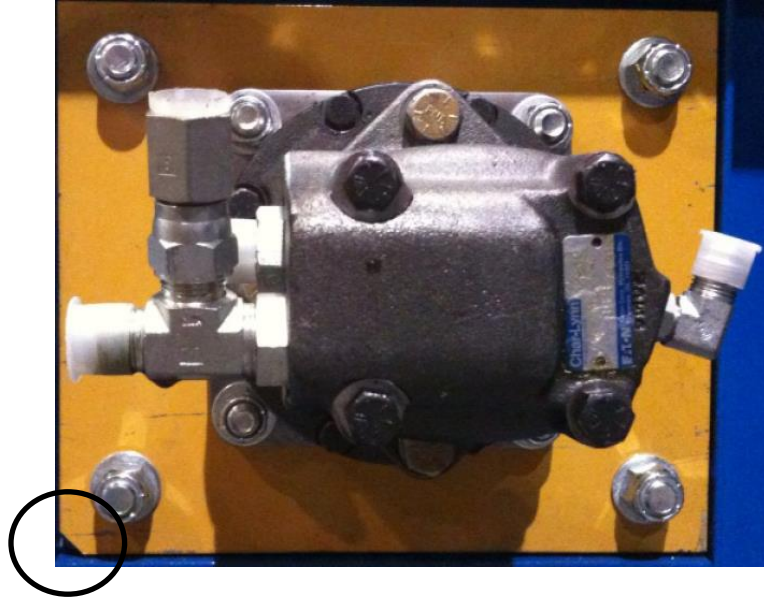
CWD-CONV-ELEVATION

SCALE: N.T.S

Gear box mounting plate should be installed with 2 ½" side **DOWN** as indicated by bull-nosed corner when uses on a 4-tooth sprocket.

Direction of Roller Travel

2 ½"

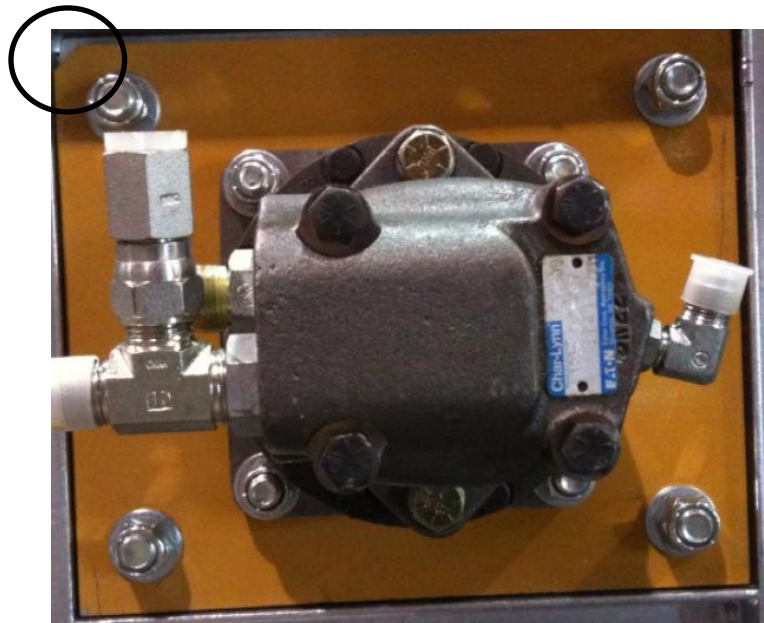


Gear box mounting plate should be installed with 2 ½" side **UP** as indicated by bull-nosed corner when used on a 12-tooth sprocket.



2 ½"

Direction of Roller Travel





Equipment Installation

**ACCURATE CONVEYOR INSTALLATION IS CRITICAL FOR PROPER OPERATION
BE CERTAIN THAT YOUR INSTALLERS ARE WELL EXPERIENCED
IN OVER AND UNDER CONVEYOR INSTALLATION**

Conveyor Installation

Tools

1. Safety Glasses
2. 1/2" Drive Ratchet Set
3. Standard Combo Wrenches
4. Sledgehammer
5. Tape Measure
6. Conveyor Leveling Tool
7. Conveyor Frame Lift
8. Cable Puller
9. 8" Bottle Jack
10. Various Size C Clamps
11. 5' Pry Bar
12. Welder
13. 6" Level
14. 4" Grinder
15. Sawzall
16. Forklift
17. Power Swaging Tool
18. Hose Cutter
19. Hose Cutter
20. Tape Measure

Work Force

Three (3) persons

Consumables

1. Anti-Seize Compound
2. Yellow Spray Paint
3. Marine Grease
4. Tie Wraps
5. 7/8" Clips
6. 3/4" Clamps

Time (assuming no problems)

6.00 - 8.00 hours

Installation Steps

Self-Cleaning or Standard Conveyor

1. Prepare the pit for the beam placement if it is a self-cleaning pit. Prepare the shelf for conveyor installation if standard.
2. Start by cleaning the pit angle irons where the cross beams or conveyor are to be placed. Using a flat shovel, scrape the concrete from the angle iron and then sweep the area.
3. Make certain that there is no concrete left behind that could adversely affect the welds on the angle iron of the driver and passenger sides.
4. Lay the cross beams in the pit. One (1) beam needs to be placed at each leg with one at each seam. Start at the take-up section (entrance) and work toward the drive section (exit). Place the first beam even with the rear pit wall and place the second beam ten feet (10') from the pit wall. The next set of beams is placed fifteen feet (15') from where the first set of beams were placed if working with fifteen foot (15') sections. Make sure the beams are level by placing ¼" shims under the beams if necessary.

Note: If a standard conveyor shelf is used place the conveyor on the shelf.

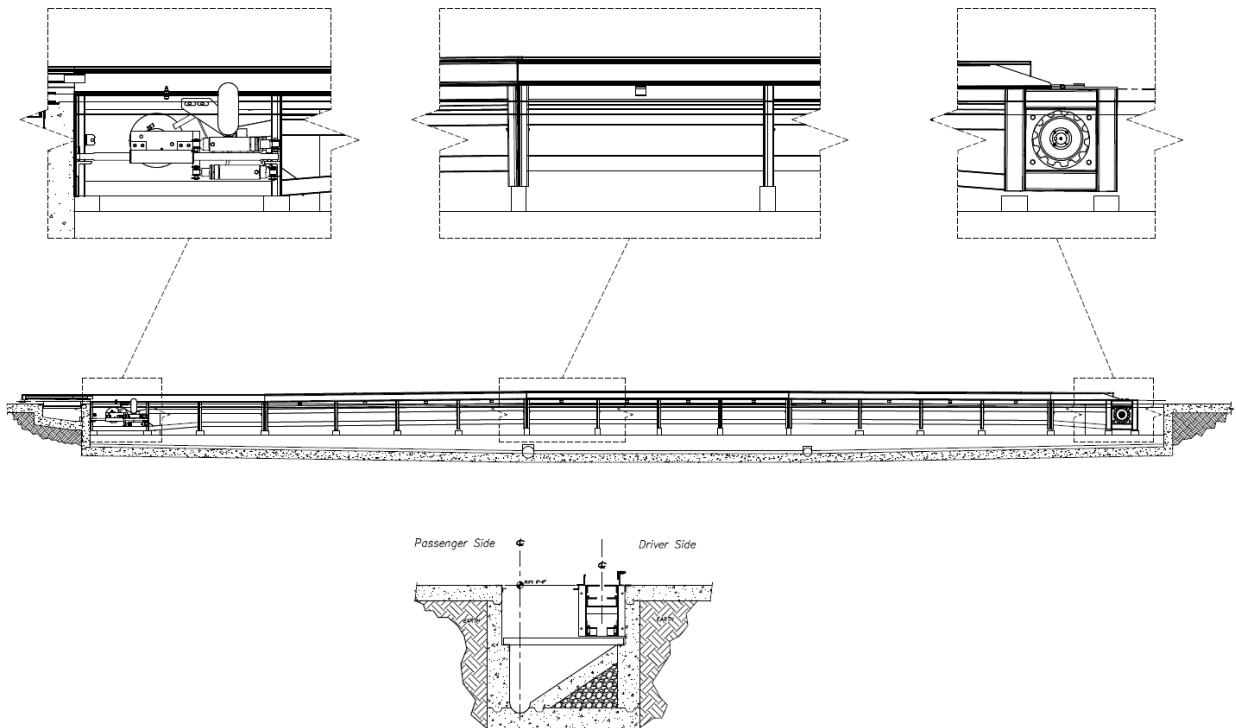


5. Using a forklift, lifting strap, and long chain, lay the conveyor in place.
6. Locate the drive section and the take-up section, which may be bolted together.
7. Unbolt the two sections using a wrench and an impact gun. Then attach a lifting strap/chain to the take-up section, making certain it is attached at the center point for balance. The other end of the strap needs to be attached to the lift-jig.
8. Using the lifting strap, attach each section making sure it is balanced. Then place each section, individually, in the pit. Have one person in the pit to assist in the proper placement of the crossbeams.
9. Bring the take-up section into the tunnel and place it in the pit. Next, line up the take-up section with the rear of the pit wall, as the additional sections will be lined up based on the placement of the first piece.

10. With the forklift and attach the next section as noted in step 3, taking each section into the tunnel area until all sections are in place.



Note: When placing the conveyor on the crossbeams some of the tubes may need to be placed on their ends. The conveyor measurement should start at zero on the entrance end for the first twenty five feet (25') then taper to one and a half inches (1.5"). The last fifteen to twenty five feet (15'-25') should taper to three quarters (3/4") of an inch.





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11. As each section is laid in the pit, make sure to butt it up against the previous section. All the sections will need to be re-adjusted before welding.
12. You will continue this process until all pieces of the conveyor have been laid in place.
13. The last piece of conveyor to be set in place is the drive section.

Note: When installing equipment that uses bolts it is necessary to apply Never Seize to the bolt to prevent the bolts from seizing. This procedure is applicable throughout this manual.

14. Using the leveling jig and starting at the take-up section place one side of the jig on the conveyor and the other side on the floor.
15. Then place the level on top of the jig and add the ¼" shim plates under the jig on the conveyor side until conveyor is level.



16. Using the jig, note the number of ¼" shim plates needed at each section of the conveyor (notations should be made at the back and front of each section) to ensure the conveyor is level.
17. Push the conveyor against the driver side pit wall.
18. Find the sideline that was placed at one hundred forty four inches (144") and using a tape measure, measure in towards the pit forty inches (40") and place a mark on the entrance pit wall. Repeat this process at the exit end.
19. Place a Tapcon® screw on the mark made on the pit wall at the entrance end. Repeat this process at the exit.
20. Using a masonry string, wrap one end of the string around the Tapcon® screw at the entrance end and tie it off.
21. Pull the string down to the exit, and keeping it taut, wrap it around the Tapcon® screw and tie it off.

22. Use this line down the center of the conveyor and move the conveyor until the line is centered the entire length of the conveyor. This will ensure your conveyor is straight for welding.
23. Gather the following tools to use in this process; welder, bottle jack, ¼" shim plates, protective clothing and a welding helmet.
24. Start welding the take-up section first. This is the most critical part for the conveyor welding, as the rest of the conveyor will be lined up off of this piece. Then line the take-up section flush with the wall in the rear of the pit, making sure it lined up perfectly and weld it to the cross beams. Then weld the cross beam to the angle iron in the pit shelf.



25. Next, weld the entrance guide rails onto the take-up section of the conveyor and then weld the guide rails on to the correlator.



26. Look at the shim plate markings made on the conveyor. Then, using the bottle jack, raise the section of conveyor up and adjust the cross beams if needed. Next, place the six inch (6") angle against the leg. Then weld the six inch (6") angle iron leg to the conveyor & cross beam. Next, weld the cross beam to the angle iron in the pit.



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27. Continue this process until the drive section is reached. The drive section will have some space between the conveyor and the pit wall, and there will be a guide-off plate that needs to be welded in place to close that gap.
28. After all the welding of the conveyor is complete, cut the conveyor railing from the conveyor to allow for clearance of the Tire Brush and Tire Shiner. For the Tire Shiner, lower the section three inches (3") and then weld it in place. For the Tire Brush remove the section before welding.
29. Outside the entrance end of the tunnel assemble the chain sections 20' to 30' in length. Start each section with a roller, installing rollers at the proper spacing, and end each with no roller.
30. Remove the Take-Up cover plate.
31. Tie a rope around the first roller of a section of chain and rollers and pull it into the conveyor making sure the rollers except the first go into the middle deck of the conveyor.
32. When the section is almost into the conveyor attach the next section of chain and roller to the end. At some point the assembly will become too heavy to pull by hand, then the cable puller will need to be used.
33. When almost to the exit end of the tunnel remove the cover plate from the Drive section.
34. When the first roller reaches the Drive section of the conveyor pull it about six feet beyond the end of the conveyor.
35. Remove the rope or cable puller from the roller.
36. Insert the first roller around the Drive sprocket and into the bottom deck of the conveyor.
37. Remove the motor from the gearbox and pull the sun gear out.
38. Using the cable puller, continue to pull chain and roller sections into the conveyor by pulling the assembly back towards the entrance end of the tunnel.
39. When the last section of chain is attached and pulled into the conveyor, stop pulling it in when the end of that section is even with the end of the tunnel attach the Pin and Cotter section to the last section.
40. Feed the end of the Pin and Cotter section of chain around the Take-Up sprocket and pull it as close as possible to the first roller.
41. Attach the cable puller to the Take-Up Slide and the frame of the conveyor. Compress the tensions spring and tighten the nut down against the crossbeam.
42. Connect the first roller to the Pin and Cotter section of chain.
43. Loosen the nut from the crossbeam and run it back down to the cotter pin end.
44. Loosen and remove the cable puller from the Take-Up Slide.



45. Check the position of the Spring Tension Bolt. It should extend 2-3 inches beyond the crossbeam. If it does not remove or add links from the painted section of chain until it does. The air take-up should sit between the split collars.
46. Replace the cover plates at both ends of the conveyor.
47. Replace the Sun Gear in the Heco Gear Box.

Hydraulic

48. Remove the plug from the port of the Conveyor hydraulic motor closest to the driver's side. Thread in a 1/2" x 5/8" o-ring fitting and tighten. This is the oil Feed port.
49. Remove the other plug and thread in a 1/2" JIC x 5/8" o-ring tee fitting and tighten with the tee portion facing down. This is the oil return port.
50. On the exit end of the motor remove the 1/4" o ring plug and replace it with a 3/8" JIC x 1/4" o-ring fitting. Tight the fitting so the JIC portion faces down. This is the return from the gearbox.
51. Coat the 3/8" MPT portion of the gearbox return hose with PTFE tape or paste. Thread it into the 1/2" JIC x 3/8" FPT adapter and tighten.
52. Thread the other end of the gear box return hose onto the 3/8" JIC Fitting in the return from the gearbox.
53. Set up the Power Swaging Tool in the tunnel and get out a reel of 1/2" Hydraulic hose in both Black and Orange. Crimp a 1/2 Female Swivel on the end of the black hose.
54. Screw a plug into the fitting to prevent any debris from entering the hose.
55. Snake the fitting end of the hose into the last chase way. Once the hose is thru the chase way, remove the plug and tighten the fitting to the Quick Disconnect fitting in the output port of the Top Power Pack.
56. Cut the hose to fit on the oil feed port with 12" to 18" of slack.
57. Repeat steps 6 thru 9 with the orange or red hose and attach it from the oil return port on the motor to the oil filter on the power pack

Pneumatic

58. Get out a reel of 3/8" compressed air line (100PSI @ 0.5CFM) and place in the tunnel near the Take-Up end of the conveyor. Place an end cap over the line end to prevent any debris from entering line.
59. Snake the end of the line into the chase way to the Air Manifold with the valve for the Roller-Up function.



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60. Once the hose is through the chase way, remove the cap and connect the line to the output of the air regulator/valve combination for the Roller-Up function. Leave enough slack in the line in case it must be connected to the other output.
61. Return to the Take-Up section of the conveyor and cut the line the proper length to connect to the Roller-Up air cylinder.
62. A manual drain valve should also be installed at the lowest point in the air line to facilitate draining liquid trapped in the line.
63. Repeat Steps 11 thru 15 for the other end of the Roller-Up air cylinder.

Electrical

64. If the pulse switch is installed on the Drive end of the conveyor place a reel of 3-#16AWG wire cable in the tunnel near the Drive end of the conveyor and snake the end into the chase way to the tunnel controller.
65. If a remote pulse switch is being utilized run the 3-#16AWG wire cable from it to the tunnel controller.
66. Select one color wire (prefer white) and connect it to the common(C or COM) terminal on the pulse switch and to the common(C, COM or HOT) terminal on the tunnel controller.
67. Select another color wire (prefer black) and connect it to the switched (NO) terminal of the pulse switch and to the pulse signal input (Pulse or Clock) terminal on the tunnel controller.
68. Select the last color wire (prefer green) and connect it to the ground terminal of the pulse switch or metal casing, if no ground terminal is provided. Connect the other end to the earth ground (GRD) terminal on the tunnel controller.
69. Connect the wires to the Roller-Up air solenoid valve and to the Roller-Up function terminals on the tunnel equipment controller.
70. Connect the wires to the anti-jam switch and to the Anti-Jam function terminals on the tunnel equipment controller.



Adjustments and Testing

Conveyor Speed

1. Conveyor speed can be adjusted at the flow control valve on the Hydraulic Power Pack that supplies fluid for the Conveyor.
2. Conveyor speed may be set from 50 to 200 cars per hour depending on the equipment in the tunnel and the quality of wash desired.
3. To determine the speed of the chain measure the length in inches a roller travels in 15 seconds. That number will be the same as the number of cars per hour the conveyor is set to.

Inches of Roller Travel in 15 seconds = Cars Per Hour

Speed and Torque Adjustment

1. Hydraulic
 - a. The speed can be adjusted on the flow control for the power pack.
 - b. To increase the speed move the handle on the flow control closer to the number 10.
 - c. To decrease the speed move the handle on the flow control closer to the number 1.
 - d. The torque must be set prior to operation and should be set between 600 and 900 PSI. For information on how to set the torque please refer to the Hydraulic Power Pack Manual.
2. Electric
 - a. The speed can be adjusted on the Variable Frequency Drive (VFD).
 - b. To increase the speed adjust the Hertz on the VFD to a higher number.
 - c. To decrease the speed adjust the Hertz on the VFD to a lower number.
 - d. The Overload on the Motor Starter protector(s) must be set at the lowest level to allow for operation. Adjust the amps in accordance with motor(s) name plate.

Conveyor Stall Torque

1. Conveyor stall torque can be adjusted at the bypass valve on the Hydraulic Power Pack that supplies fluid for the Conveyor.
2. Pressure gauge should indicate 1200PSI when the Power Pack is running with the conveyor stalled.



Roller-Up Function (Spring)

1. Adjustment is made at air regulator on the air distribution manifold.
2. Should be set to 70 - 80PSI for up position and 30 – 60PSI for down position.
3. Observe movement of Roller-Up forks should smoothly and completely up and down

Roller-Up Function (Air)

1. Adjustment is made at air regulator on the Control Panel.
2. Should be set to 40-50PSI at the switch.
3. Observe movement of Roller-Up forks should smoothly and completely up and down

Tension

1. The air take-up should have 40-50PSI at the switch for all chain except Log. Log chain should be 60-80PSI.
2. The low pressure safety switch can be adjusted using the adjustment screw and should be set at 30PSI for all chain except Log. Log chain needs to be set at 60PSI.



Chain Tension Adjustment - Spring

1. This is the most common service performed on the Conveyor.
2. Run conveyor to position chain so removable links are easy to work on and stop it there.
3. Check the tension bolt in the Take-Up section of the conveyor if there is less 1" of threads between the nut and the cross plate continue.
4. Run the Conveyor until you see the master link section approaching the Take-Up section and stop the Conveyor just before that section reaches the Take-Up Sprocket.

Caution: You must shut off all power to the conveyor and lock out the Motor Control Center before getting in conveyor pit and starting this repair.

5. Shut off all power to the conveyor and lock out the Motor Control Center.
6. Use cable puller to pull chain together to create slack so a chain link can be disconnected.
7. Screw nut down tension bolt so nut is flush with cross beam, this will hold slack in chain if hand wrench fails.
8. Remove pin and cotter from a chain link.
9. Remove pin and cotter from other end of the same chain link and remove the link.
10. Reconnect the ends of the chain using pin and cotter, replace cotter if damaged.
11. Screw nut back up tension bolt to the cotter installed in its end.
12. Carefully release cable puller to allow chain to be tensioned.

Caution: Before returning power to the conveyor and removing lock out from the Motor Control Center make sure all personnel are clear of the operational area.

13. Remove lock-out and run conveyor, check tension bolt to ensure there is more than 1" of thread show between nut and cross beam. If not repeat Steps 1 – 10.

Chain Tension Adjustment - Air

1. This is the most common service performed on the Conveyor.
2. Run conveyor to position chain so removable links are easy to work on and stop it there.
3. Check the position of the carriage on the slide tube if there is less than ½" between the carriage and split collar a link should be removed. (See figure #1 for collar placement)
4. Run the Conveyor until you see the master link section approaching the Take-Up section and stop the Conveyor just before that section reaches the Take-Up Sprocket.

Caution: You must shut off all power to the conveyor and lock out the Motor Control Center before getting in conveyor pit and starting this repair.

5. Shut off all power to the conveyor and lock out the Motor Control Center.
6. Release the air pressure to the shocks using the tension valve on the control panel.

Note: It may be necessary to use a pry bar to move the carriage all the way forward.

7. Remove pin and cotter from a chain link.
8. Remove pin and cotter from other end of the same chain link and remove the link.
9. Reconnect the ends of the chain using pin and cotter, replace cotter if damaged.
10. Flip the tension valve back to the on position to allow chain to be tensioned.

Note: If chain tension appears not to be working properly, check the air cylinders for water. If water is encounter, cylinders will need to be replaced and an air dryer added to the air compressor.

Caution: Before returning power to the conveyor and removing lock out from the Motor Control Center make sure all personnel are clear of the operational area.

1. Remove lock-out and run conveyor, make sure the carriage sits between the two collars. If not repeat Steps 1 – 9.

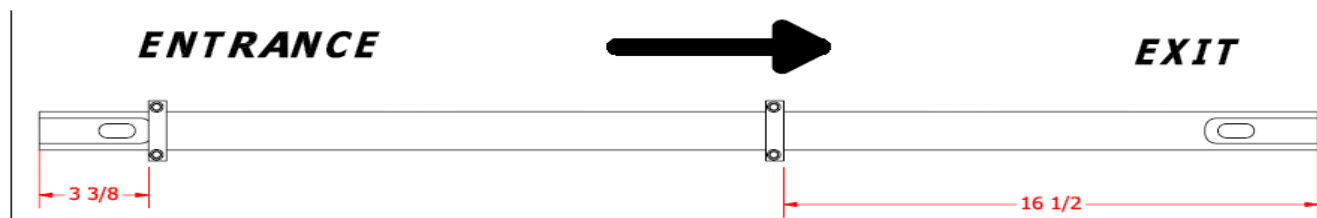


Figure #1



GENERAL OPERATION

CONVEYOR OPERATION

Starting and stopping conveyor movement is controlled by push-button switches that operate the motor starter coil for the conveyor drive hydraulic power pack.

The "Roller Up" function, to move vehicles through the car wash on the conveyor is controlled for each vehicle by a push-button switch on the tunnel controller push-button station. "Back Up" rollers may be raised automatically through the tunnel controller.

The "Anti-Jam" function prevents roller jams caused by the rollers being brought up at a point that would cause them to jam in the transition to the top deck.

The speed of conveyor movement may be changed by the flow control valve on the conveyor hydraulic power pack. See Adjustments and Testing Section.

OPTIONAL EQUIPMENT OPERATION

PULSE SWITCH KIT - Each time any magnet on the circular aluminum disc passes within range of the solid state sensor switch an electrical pulse signal is sent to the equipment Programmer to start and stop each piece of equipment according to the cumulative pulse count for each vehicle. The quantity of pulses transmitted in any given time frame is directly proportional to the speed of the conveyor.

SAFETY HORN WARNING KIT - Each time the conveyor start switch is pressed the horn will sound for a pre-determined period of time **BEFORE** the conveyor begins to move. Five seconds minimum of horn operation is suggested.

ANTI-COLLISION CONTROL KIT - When a vehicle has departed the last piece of equipment in the wash tunnel but has not vacated the exit concrete pad of the wash tunnel the Anti-Collision sensor detects this vehicle's presence. When a second vehicle approaches the last piece of equipment in the wash tunnel the Anti-Collision control sensor that has detected the first vehicle on the exit pad causes the conveyor to stop thereby preventing the second vehicle from hitting the first vehicle. The conveyor will not start automatically after the first vehicle clears the anti-collision sensor. As a safety measure conveyor restart can only occur from a manual start operation.



PREVENTIVE MAINTENANCE

DAILY

1. Opening Checks
 - a. Check for leaks around hoses and fittings, repair any hydraulic leaks immediately.
 - 1) At Drive Section, check for hydraulic leaks around the Drive Motor and connectors.
 - 2) At Take-Up Section, check for air leaks around Roller-Up cylinder and shocks.
2. Operational Checks
 - a. Check the chain tension bolt, if less than 2 inches of threads showing plan to remove link from chain during weekly maintenance to ensure the chain does not become slack and cause chain jams.
 - b. General examination of general operation, listening for any unusual noises. Observe the operation of the conveyor, the roller-up function, and power pack, watch for anything out of place and listen for any unusual noises.
3. Closing Checks
 - a. Remove pit grading from the Take-Up and Drive sections of the conveyor and wash down the conveyor using prep gun. This should be done at the end of each day to prevent buildup which could cause chain jams and premature wear.
 - b. Open manual drain valves in the Roller-Up air cylinder air lines at the end of business each day.

WEEKLY

1. Perform a close inspection of operation.
 - a. Check Roller-Up operation, fork alignment and freedom of travel at the Take-Up section.
 - b. Check for oil leaks around drive motor and speed reducer at the Drive section.
 - c. Check for sprocket alignment and sprocket wear at both Take-Up and Drive sections.
2. Wipe excess dirt and grime off the Take-Up slides with a clean rag.
3. Grease Take-Up shaft bearings with 1-2 pumps per bearing.
4. Check the chain tension bolt, if less than 1" remove a chain link.
5. Spray lubricant on the air cylinder rod end and clevis.



Owner's Manual Over-Under Conveyor

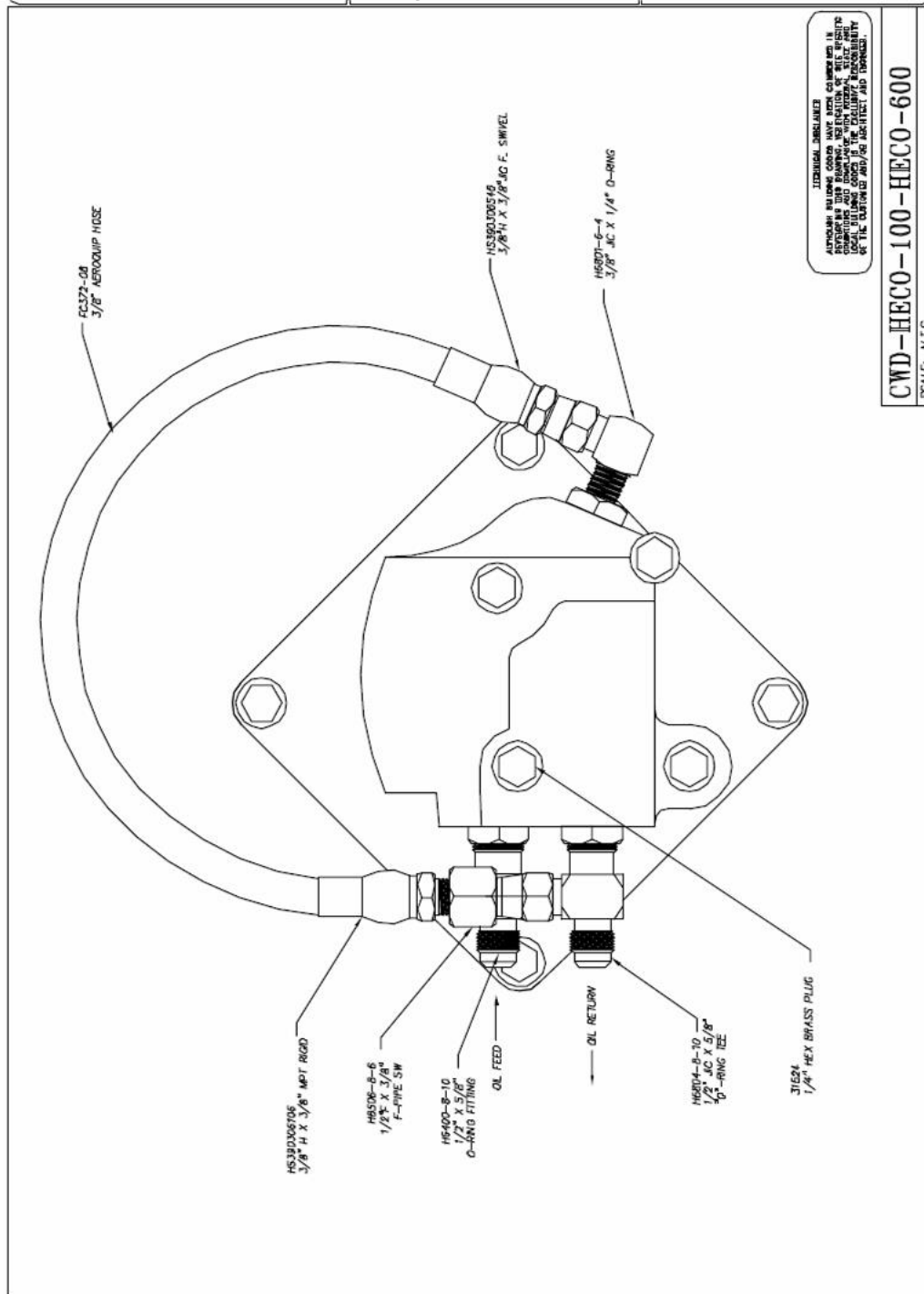
MONTHLY

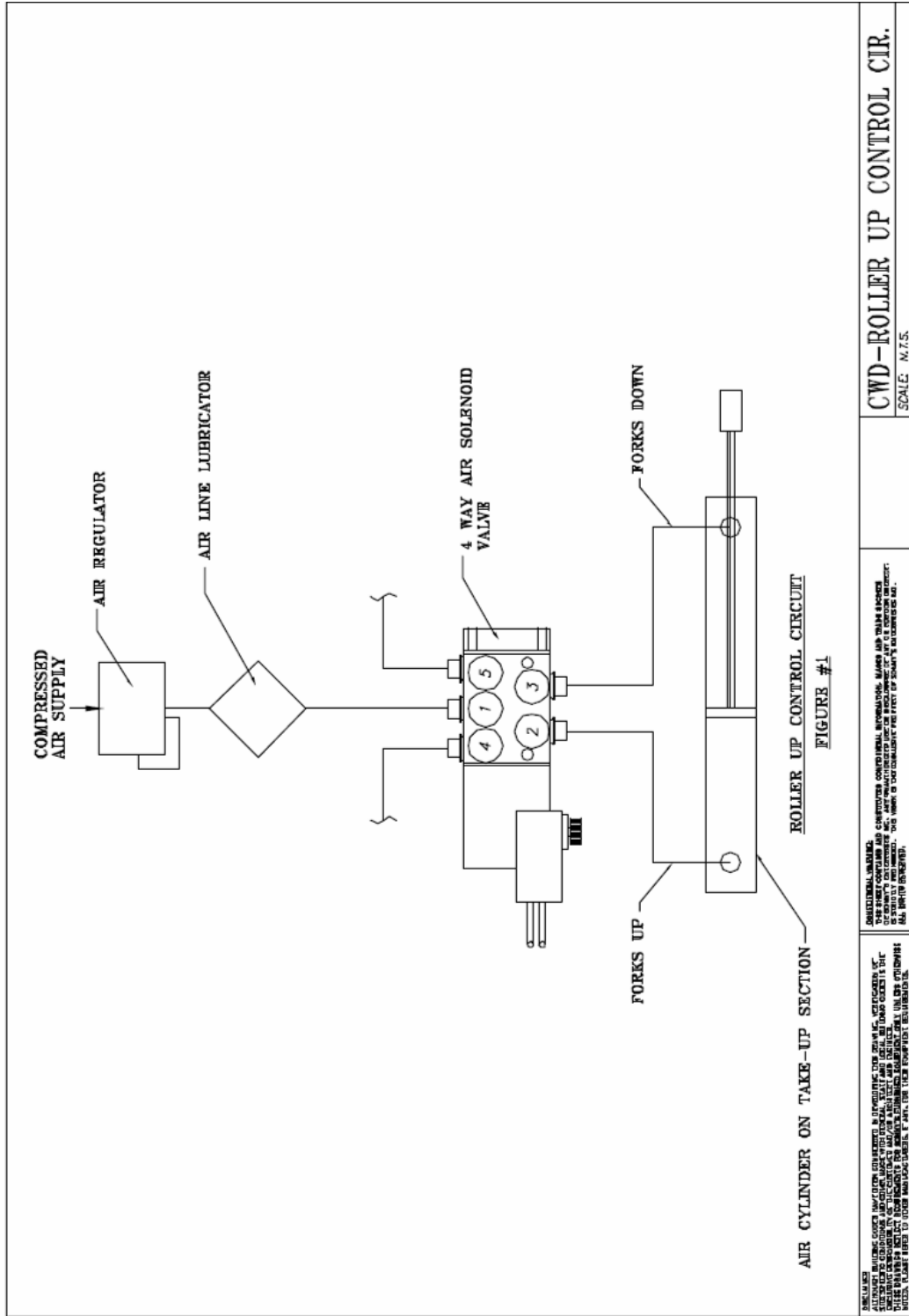
1. Closely inspect each roller, chain link and cotter pin closely for wear and damage, replace, as necessary.
2. Inspecting all hardware and fittings for tightness.
3. Grease the 2 slide tubes, until grease comes out the weep hole.
4. Clean the entire assembly thoroughly.

ANNUALLY

1. Drain, flush, and refill the hydraulic power pack with new, non-foaming, non-detergent hydraulic fluid (ISO #46).
2. If the chain is starting to wear unevenly, flip the chain upside down to extend its life.

Conveyor Hydraulic Drive Motor



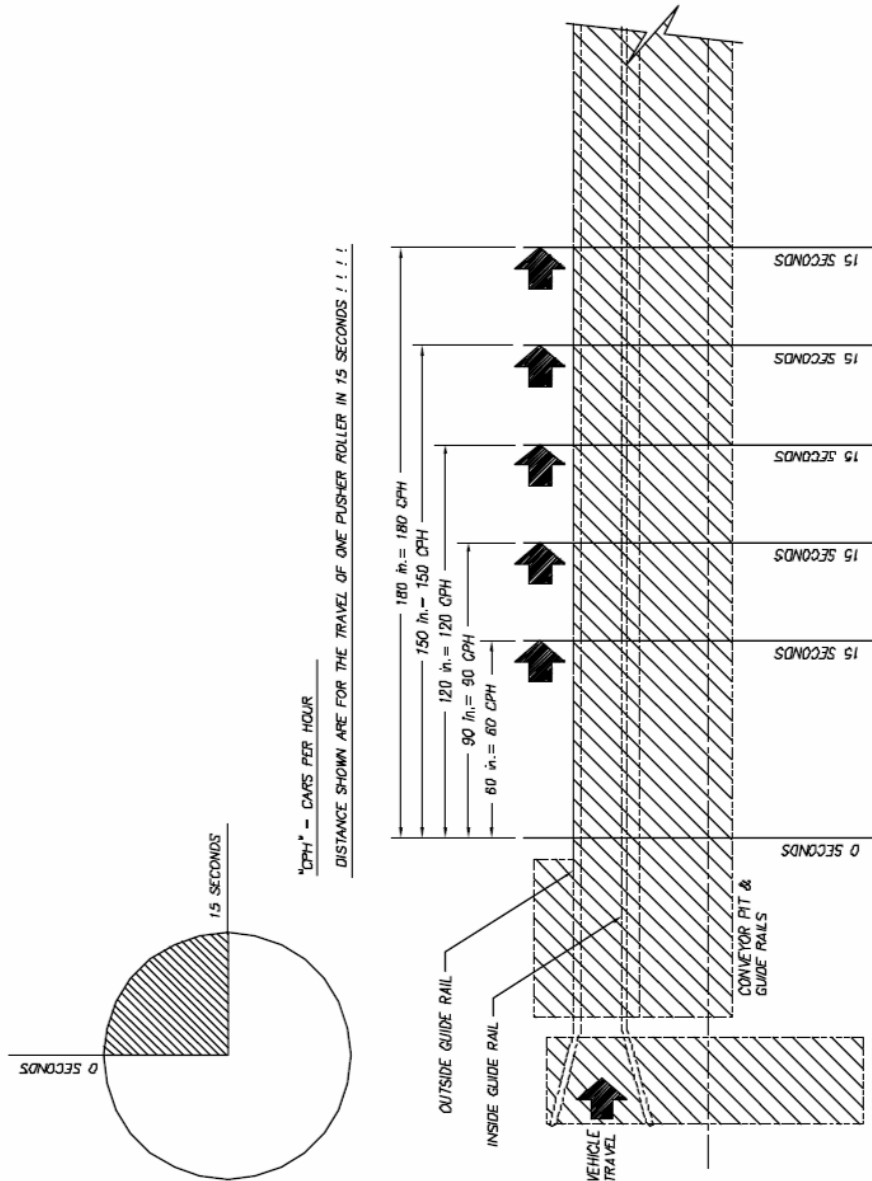


CWD-ROLLER UP CONTROL CIR.
SCALE: N.T.S.



Owner's Manual Over-Under Conveyor

QUICK REFERENCE CHART FOR
CALCULATING CONVEYOR SPEED
IN THEORETICAL CARS PER HOUR.





WARRANTY

SONNY'S ENTERPRISES, INC. FACTORY LIMITED LIFETIME WARRANTY

Equipment manufactured by SONNY'S ENTERPRISES, INC. is warranted to be free from defect in material and workmanship. Welded metal framework and other non-moving, non-wearable fabricated metal components manufactured by SONNY'S are warranted for the life of the equipment to the original purchaser. Fabricated metal wearable surface and moving components manufactured by SONNY'S are warranted for a period of one (1) year to the original purchaser of the equipment.

All components assembled to SONNY'S equipment that are manufactured by others are warranted by the appropriate manufacturer and subject to that manufacturer's limited warranty. Contact SONNY'S for the specific information on other component manufacturer's warranty terms. All new cloth shipped with new SONNY'S equipment is warranted for a period of one (1) year or 80,000, whichever occurs first.

This warranty is not assignable or transferable. The warranty period begins the first day following installation or 30 days from the original invoice date, whichever occurs first. The Seller's liability shall be limited to repair or replacement of materials found to be defective within the warranty period. In the event of repair or replacement this limited warranty is noncumulative. The Purchaser must supply the Seller with immediate written notice when any defects are found. The Seller shall have the option of requiring the return of defective material to establish the Purchaser's claim. Neither labor nor transportation charges are included in this warranty. Transportation damage claims are to be submitted to the carrier of the damaged materials.

This warranty is based upon the Purchaser's reasonable care and maintenance of the warranted equipment. It does not apply to any equipment which has been subject to misuse, including neglect, accident or exposure to harsh chemicals or chemicals that react violently with water, organic acids (e.g. acetic acid), inorganic acids (e.g. hydrofluoric acid), oxidizing agents (e.g. peroxides), and metals (e.g. aluminum). Chemicals corrosive to aluminum alloys, carbon steel, and other metals. Nor does it apply to any equipment which has been repaired or altered by anyone not so authorized by SONNY'S. Further, the equipment must be properly installed with proper accuracy of all specified plumbing, electrical, and mechanical requirements. This warranty does not apply to normal wear and tear or routine maintenance components.

EXCEPT AS EXPRESSLY STATED HEREIN, SONNY'S SHALL NOT BE LIABLE FOR DAMAGES OF ANY KIND IN CONNECTION WITH THE PURCHASE, MAINTENANCE, OR USE OF THIS EQUIPMENT INCLUDING LOSS OF PROFITS AND ALL CLAIMS FOR CONSEQUENTIAL DAMAGES. THE LIMITED WARRANTY EXPRESSED HEREIN IS IN LIEU OF ALL OTHER WARRANTIES EXPRESSED OR IMPLIED. SONNY'S NEITHER ASSUMES NOR AUTHORIZES ANY PERSON TO ASSUME FOR IT ANY OTHER OBLIGATION OR LIABILITY IN CONNECTION HEREWITH.



CUSTOMER SERVICE

Please contact SONNY'S Equipment Department for installation and/or operational questions regarding this piece of equipment.

Please refer to the Parts Catalog and contact SONNY'S Customer Service Order Entry Department for any replacement parts for this piece of equipment.

You can also visit the web at www.SonnysDirect.com.

DEPARTMENT

Toll Free Main Line
Equipment Department

PHONE NUMBERS

800-327-8723
954-720-4100

FAX NUMBERS

800-495-4049
954-720-9292

Or you can email Sales at sales@SonnysDirect.com

Thank you for being a SONNY'S car wash equipment owner!

From all of us here at

