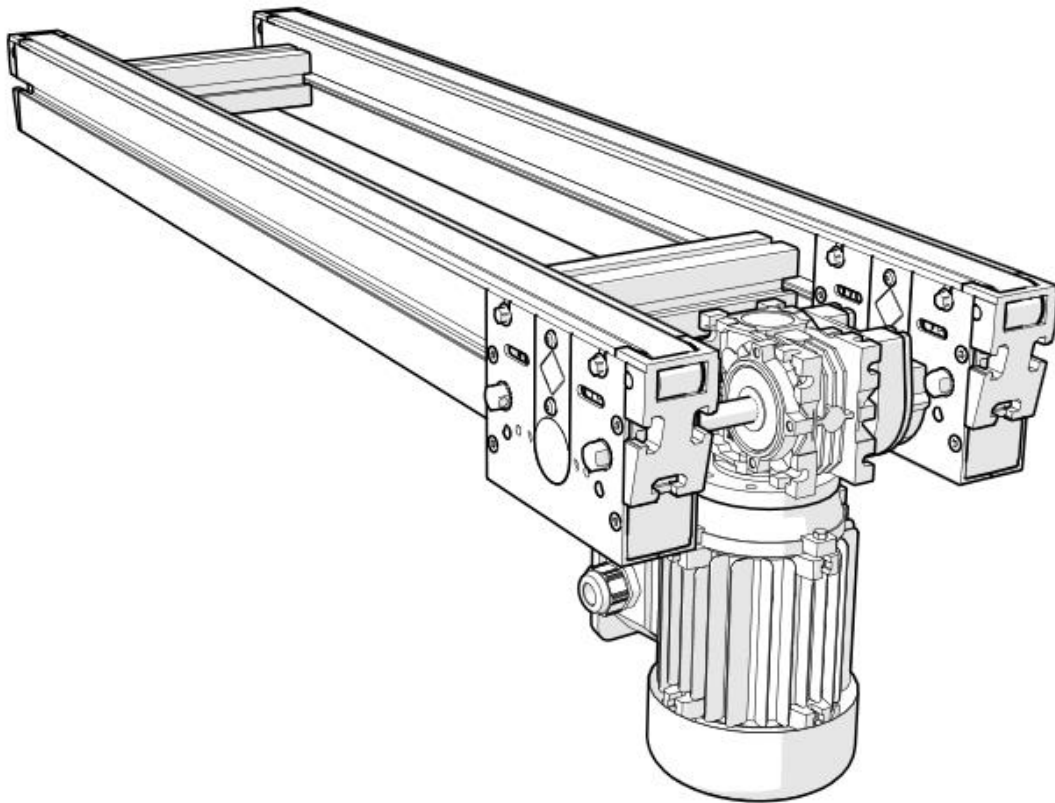


Glide-Line™ Conveyor

Installation & Maintenance Manual








Easy · Flexible · Precise · Fast

V2.0

Manual Information

Throughout this manual are the following information blocks indicated in the appropriate sections by signal words as specified by ANSI Z535.4 Standard (section 4).

	<p>Warning – This information must be followed to prevent harm to individuals or damage to equipment.</p>
	<p>Automatic Equipment – This equipment may start or stop automatically.</p>
	<p>Electrical Shock – This equipment has connection to an electrical circuit with potentially hazardous energy levels.</p>
	<p>Consult Manual – This manual must be completely reviewed prior to performing any service.</p>
	<p>Lock Out Power – All sources of energy must be controlled before servicing equipment</p>



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1. Introduction

1.1. Description of System




The conveyor frame and equipment are extruded aluminum shapes with 10mm t-slots for modular bolt together construction. The standard distance conveyors are set apart from one another in a system is 4mm end cap to end cap.

Frame:	Conveyor base frame is 6063 T6 anodized aluminum beam, 45mm x 75mm
Belt:	Conveyor belts are T5 x 25mm wide Polyurethane belting with stainless steel tension members (may contain anti-static feature)
Drive Pulley:	Zinc, positive engagement
Slider Bed:	UHMWPE
Product Rails:	Integrated UHMWPE guide rails (may not be included in all configurations)
Motors:	Motors are dual rated for 230/460 VAC 60 Hz 3 phase, inverter capable (24 VDC options are also available)

Part Number:

GLT(A)-(B)(C)-L(D)-D(E)-(F)-(G)-(H)-(I)-(J)-(K)-C(L)

- A - Number of Conveyor Strands
- B - **PW** for Pallet Width, Switch to **GW** for Guided Width, or **OW** for Overall Width
- C - Width of conveyor in mm
- D - Length of Conveyor in mm
- E - Distance of motor package from end of conveyor in mm. Can also take the value of **L** for Left, **R** for Right, or **C** for centered, **CL** for centered left, or **CR** for centered right
- F - Belt Type, **S** for Standard polyamide cover green belts, **A** for Antistatic black belts, **P** for no cover polyurethane white belts
- G - Motor/Gearbox Combination Code
- H - Gearbox strand position
- I - Gearbox Worm Position, **W1** and **W2** available
- J - Gearbox Reduction (5 to 100 available)
- K - Motor rotation: **0, 45, 90, 180, 270, and 315** available
- L - crossmember location and/or breakpoint

Personnel working on or around this equipment must be properly trained in operation, maintenance, and lock-out/tag-out procedures.

1.2. Operating Conditions and Environment

Equipment should be located in an ambient temperature room. Equipment should not be subject to high humidity or wash-down conditions. Clean-up to be by wipe down / air blow off only.

This unit must be connected to an external control system to operate properly. This equipment was not designed to run in a standalone configuration. No control voltage, programmable controller, or other functionality have been provided with this equipment. This equipment must be connected to a suitable e-stop circuit for protection. Any reference to an E-stop in this manual requires the customer or user to provide an external E-stop circuit. Failure to connect this equipment to a proper E-stop circuit will void any and all warranties.

1.3. Chemical and Corrosion Resistance

Components used by Glide-Line™ are made from materials that are highly resistant to common household materials including all fruit and vegetable juices, inks, soaps, and most common detergents.

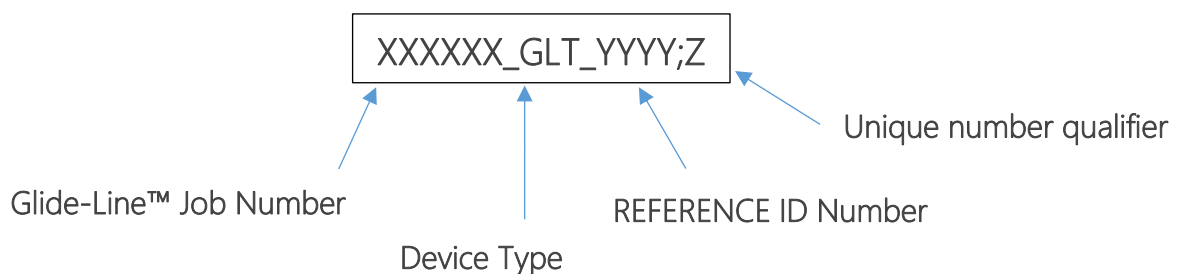
It is recommended that customers contact the factory and obtain samples of applicable modules to be exposed to conditions of the proposed application to determine resistance of material and its durability.

1.4. Description of Operation

Power is applied to the system when the machine is connected in to the power source and the E-STOP button is reset. The machine operation is designed to be automatic with another machine.

1.5. Serial Number Information

The Serial number for your conveyor can be found on the base plate of the unit. Serial number information will be displayed as follows:



2. Installation

2.1. Unpacking and Set-up

When the unit arrives, care must be taken to unpack the unit. The conveyor will be shipped upside down on a wooden pallet. To unpack, simply remove all plastic wrappings, and cut any bands used for shipment. The conveyor may be lagged to the skid with one or two bolts, either bolted to the cross member or side frame. After removing these lags, the conveyor may be lifted off the pallet, and flipped 180 degrees for proper orientation.

The frame of the unit has 10mm t-slots along its length which can be used to attach the conveyor to the desired frame.


The unit must have power supplied through a properly sized and specified multi-conductor cable.

2.2. Leveling and Anchoring

It is critical that the equipment is installed level. The unit should be attached to a frame that includes leveling feet. Once level, it is recommended that these feet be lagged to the floor so the conveyor is properly supported.

3. Safety Instructions

3.1. Operation

	<p>Due to the hazardous moving parts on conveyors, all personnel in the area of a conveyor should be warned when a conveyor is about to be started.</p>
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Only properly trained personnel should be permitted to operate conveyors. Training should include emergency procedures.

Machine stopping devices should be clearly marked and easily accessible. Personnel working on or near the equipment should be trained in the location of stopping devices.


The area around machinery should be kept clear.

Conveyors must only carry materials each was designed to carry.

Personnel must not ride conveyors under any circumstance.

Safety and warning devices must not be tampered with in any way that could endanger personnel.

Personnel must be made aware of all potential hazards including but not limited to entanglement of items such as long hair, loose clothing or jewelry.




	<p>Personnel must not cross over, above or underneath the conveyor.</p>
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All safety devices, including wiring of electrical safety devices, must be designed to work in a failsafe mode to avoid hazardous conditions from occurring during a power failure.

If an emergency stop occurs, the system must be setup to require a manual reset or start at the location where the emergency stop took place before the system can resume operation.

Refer to ANSI Z244.1-1982, American National Standard for Personnel Protection – Lockout/Tagout of Energy Sources – Minimum Safety Requirements and OSHA Standard Number 29 CFR 1910.147 "The Control of Hazardous Energy (Lockout/Tagout)."

4. Maintenance

			<p>Only trained personnel should perform maintenance procedures. Company approved lock-out/tag-out procedures should be strictly adhered to. Please consult this manual before servicing.</p>
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Routine inspections along with preventive and corrective maintenance must be performed to insure proper functioning of equipment.

Maintenance schedules should be established to insure proper operation and to avoid potential hazards.

Maintenance must not be performed on equipment while in operation. Personnel should be trained in proper maintenance procedures as well as the hazards of not following procedures properly.

When equipment is stopped for maintenance, lockout/tagout procedures should be followed in order to avoid potential hazards to personnel performing the maintenance.

All safety devices and guards must be replaced before starting conveyors for normal operation.

Any product breakages that introduce small pieces of material into the inner frame of the conveyor will require the disassembly and cleaning of each frame member.

The drive shaft bearings are sealed and do not require periodic lubrication.

One Week & 30-Day Inspections

After the first week of operation, the system should be inspected for belt stretching and wear, etc. During this inspection, check the following components for wear and/or damage:

Belt – top and bottom

Sprockets – check for wear, proper engagement with the belt, and location on the shafts

Slider beds – check for wear

Belt return system – idlers at the ends and tensioners in the drive box.

If any wear or damage is found, adjustments may be required. If adjustments are made, inspect the system again after another week for belt stretching.

This procedure should be repeated after 30 days in operation.



4.1. Belt



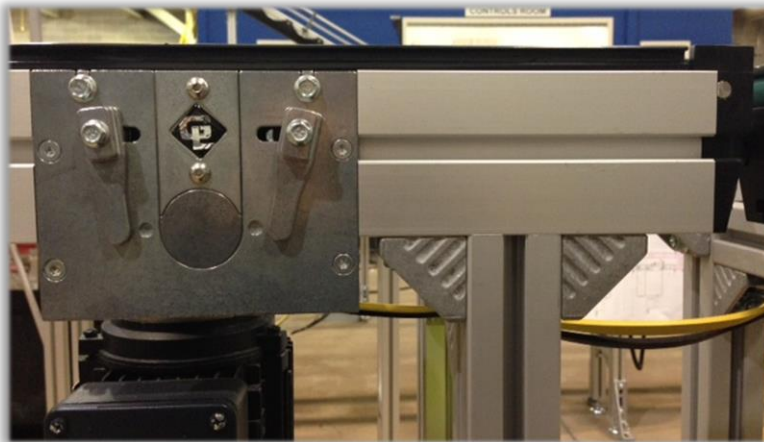
Do not over-tighten belt. Tension higher than necessary will shorten the life of the belt and other components. The belt need only be tight enough to prevent the belt from slipping on the drive pulley and ensure proper sprocket engagement.

Belt Tightening – For Lever Arm Drive Box (DC Conveyors):

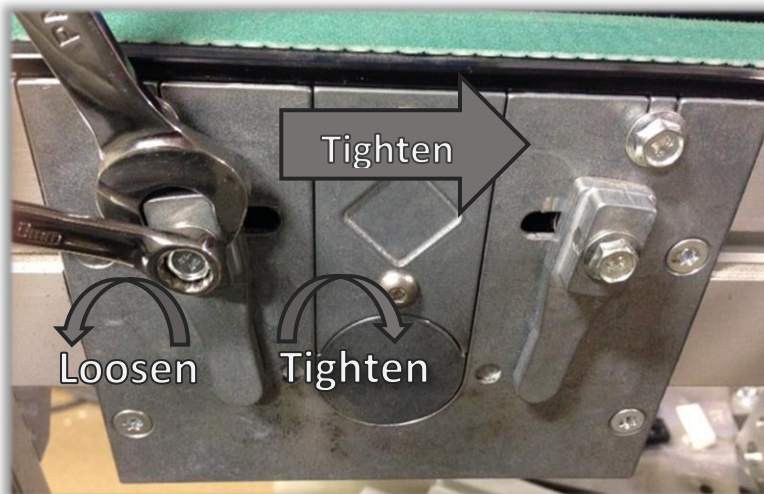
Tools Needed:

- (1) 8mm wrench
- (1) 13mm wrench

1. Ensure that the belt has been properly installed and drive cartridge is level.

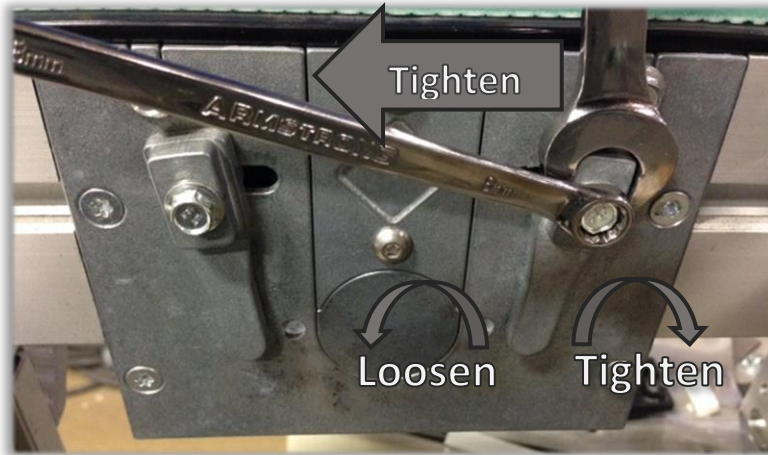


2. Loosen the hex bolt with the 8mm wrench while pulling towards the center with the 13mm wrench to tighten. When the belt is appropriately tight, use the 8mm wrench to tighten the hex bolt to 240 in/lb.

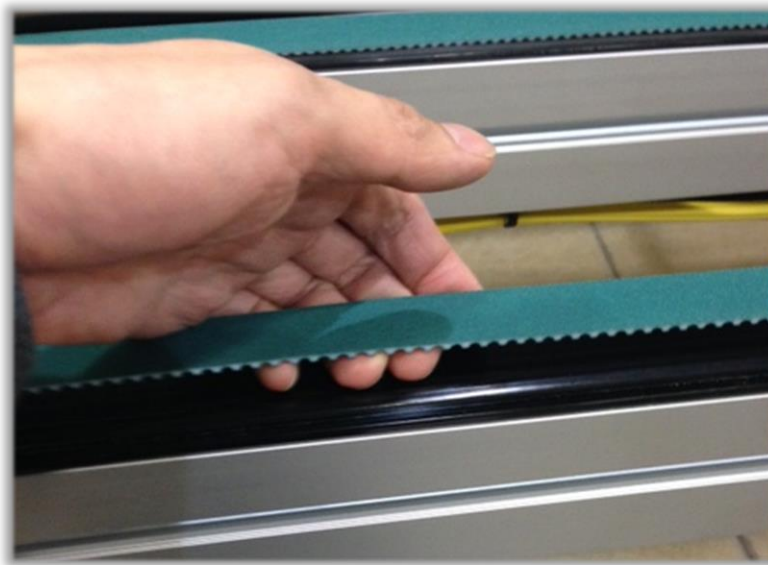


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- Repeat step 2 on second hex bolt as shown below.



- Check the belt for proper tension.



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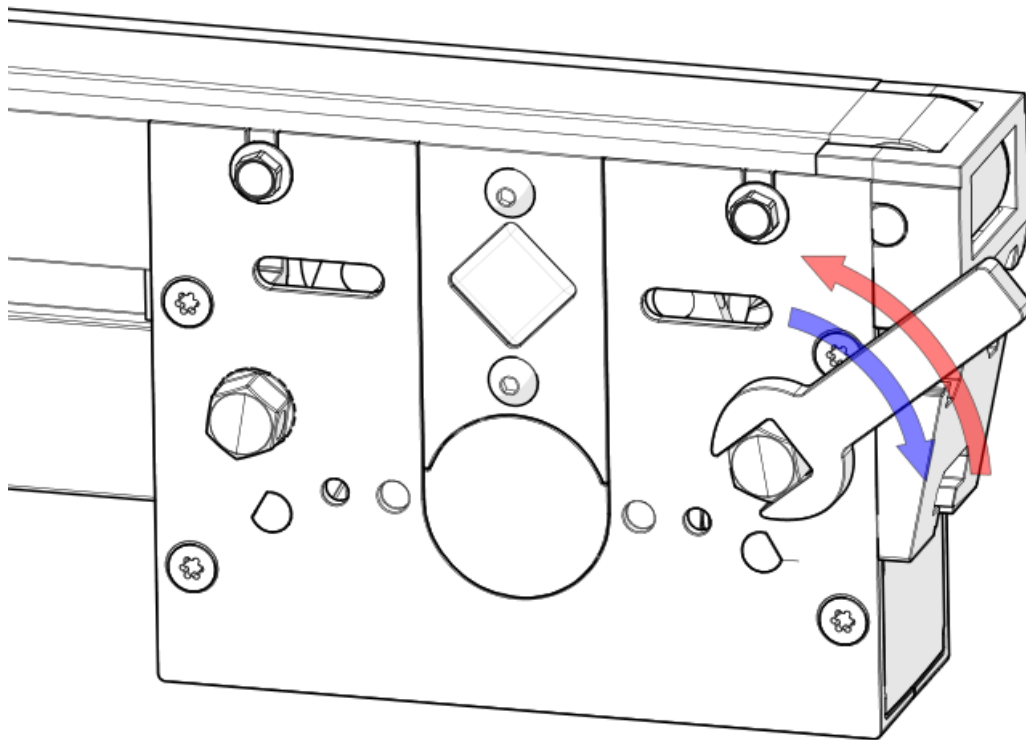
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Belt Tightening – For Cam-Style Drive Box (General Purpose):

Tools Needed:

(1) 13mm Wrench

1. Cam-style drive boxes (identifiable by their hex-studded adjustment shafts that protrude from each side of the box) do not require adjustment during the service life of the conveyor. If doing maintenance to the belt, simply put a 13mm Crescent Wrench on a Hex Stub, and rotate away from drive box (pictured in blue below). To tighten, rotate toward the drive box (shown in red below).



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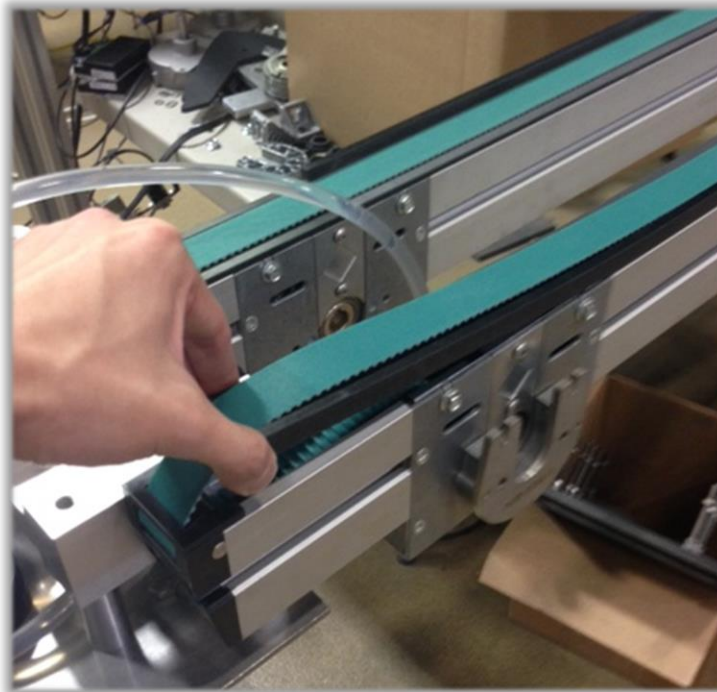
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Belt Replacement – Removal:

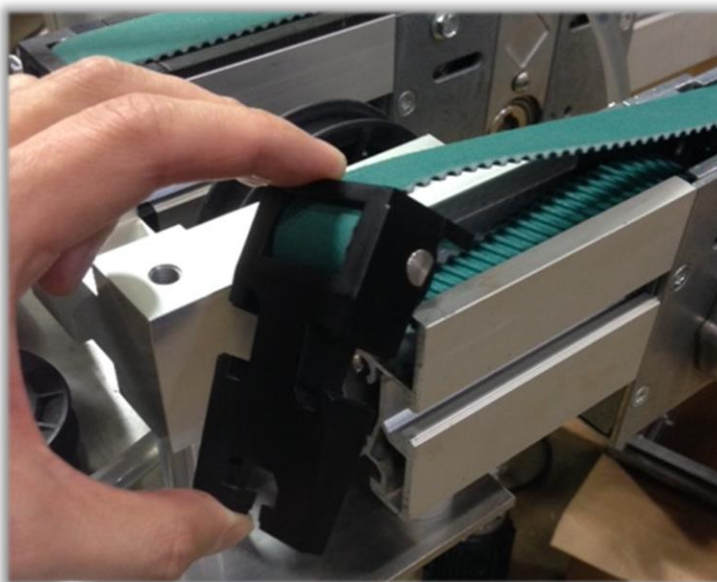
Tools Needed:

- (1) 8mm wrench
- (1) 13mm wrench

1. Pull off the top slider bed and save it.



2. Remove the end cap with the roller and shaft attached.



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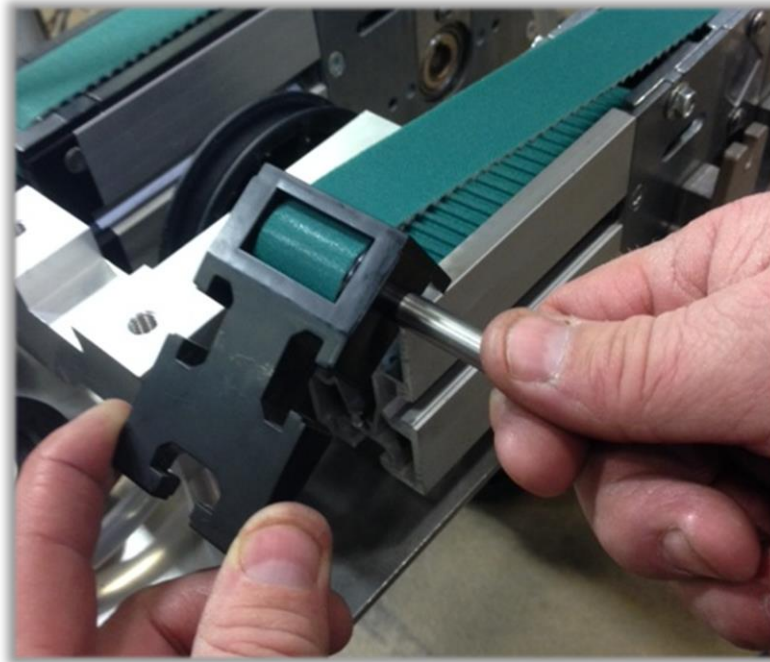
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3. Remove the shaft and save it as well as the end cap. You may need the aid of a hand tool to take out the shaft.



4. Loosen the four hex bolts on the top edges of the drive box with an 8mm wrench.



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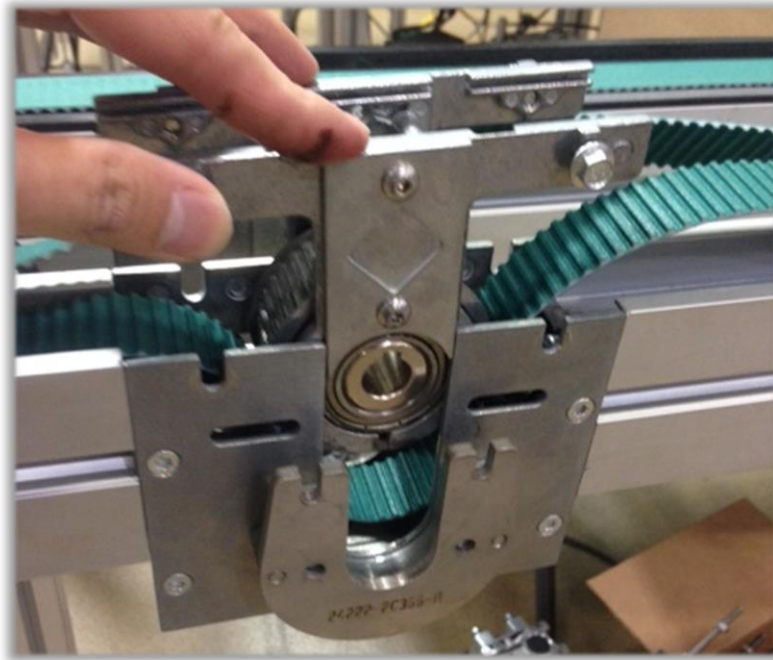
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5. Remove the drive box and save it.



6. Remove the old belt and dispose of it.



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Belt Replacement – Installation:

Tools Needed:

- (1) 8mm Wrench

- 1) Lay the new belt along the length of the unit.
- 2) Insert the drive box and make sure the drive box is flush with the other edges.
- 3) Tighten the four hex bolts with an 8mm wrench.
- 4) Insert the roller into the end cap with the belt in between them.
- 5) Insert the shaft into the end cap and roller. Make sure the surfaces of the shaft and end cap are flush.
- 6) Insert the end cap onto the frame extrusion.
- 7) Insert the slider bed onto the top of the frame extrusion with the high side facing toward the outside.
- 8) Tighten the belt. Refer to section 4.1 Belt Tightening.

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4.2.Gearbox Replacement

Gearbox Removal:

Tools Needed:

- (1) 8mm wrench
- (1) 3/32 Hex Key
- (1) 2.5mm Hex Key

1. Loosen the hex bolts with an 8mm wrench.
 - a. If there is a drive box on the other side, loosen the hex bolts on the direct opposite side.
2. Loosen the two set screws with a 2.5mm hex key.
 - a. If equipped with a slave driven pulley, loosen 10-24 thread set screw with a 3/32 hex key.
3. If your system has a slave driven pulley, pull out the clear belt and leave it aside to allow for the shaft to be removed.
4. Remove the shaft. Be aware that the collars or drive key may fall off.
5. Loosen the two hex bolts and pull up the motor and connecting parts.
6. Remove the three hex bolts with a 5mm hex key and save them.
7. Remove the gearbox flange and save it.
8. Loosen the four hex bolts with an 8mm wrench until the motor can be removed and save the four hex bolts.
9. Remove the gearbox and connecting flange from motor.
10. Remove the six hex bolts with an 8mm wrench and save them.
11. Remove the flange from the gearbox. Keep the four hex bolts in place as they will be needed when connecting the flange back to the gearbox. Replace old gearbox with new gearbox.

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Gearbox Installation:

Tools Needed:

- (1) 8mm Wrench
- (1) 2.5mm Hex Key
- (1) 3/32 Hex Key

1. Connect the six hex bolts with an 8mm wrench to the new gearbox. Make sure the four hex bolts, used to connect the flange to the motor, are in place on the top of the flange.
2. Reattach the gearbox hanger and tighten cap screws with a 5mm hex key.
3. Tighten four hex bolts with an 8mm wrench.
4. Tighten the two hex bolts with an 8mm wrench and make sure the brown key guard tube is inserted.



Warning: Failure to have the key guard tube inserted on the shaft within the flange could result in injury.

5. Push the shaft back in place until the end of the shaft meets the edge of the keyhole. Reinsert shaft keys in necessary and realign them.
6. Realign the collars and tighten the set screws with a 2.5mm hex key.
 - a. If applicable, realign pulley and tighten set screw with 3/32 hex key. Reattach with clear belt.
7. Reattach upper drive cover and lower drive cover. Insert the two button head cap screws.
 - a. If there is a drive box on the other side, reattach the upper and lower drive covers as well.
8. Tighten the belt and do the same for the other side. Refer to section 3.1 Belt Tightening.

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4.3.Preventative Maintenance Schedule

Daily

Prior to Starting Equipment

1. Perform a visual inspection of the equipment for possible maintenance needs.
2. Remove any foreign objects that may be on or leaning against conveyor or equipment.

After Starting - Prior to Production

1. Perform a visual and auditory inspection of the equipment and product transportation for possible maintenance needs.

Weekly

1. Check conveyor belts for proper tension or excessive wear and adjust as required.
Note, not required for CAM style drive boxes.
2. Inspect all belts, beds, and bearings for wear.

Monthly

1. Check conveyor belting for signs of wear and replace as necessary.
2. Check slider bed for wear and replace as necessary.

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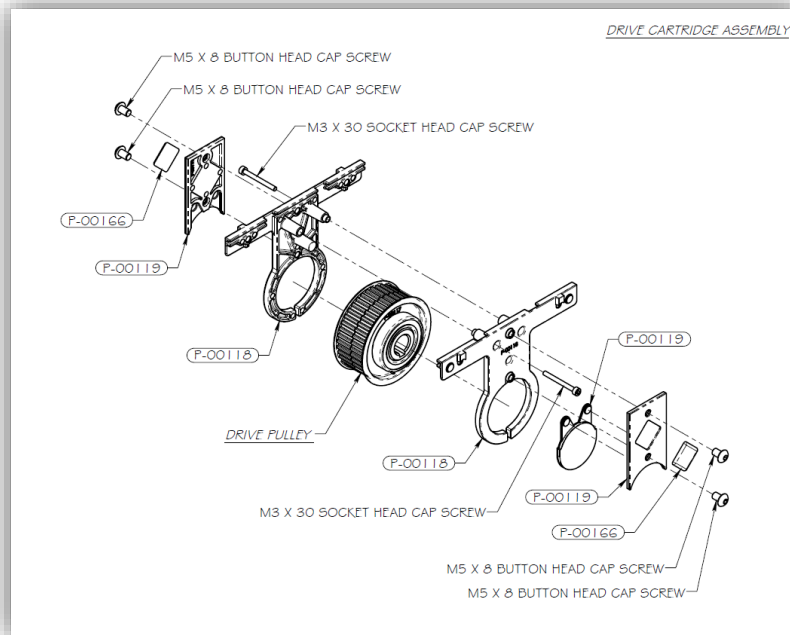


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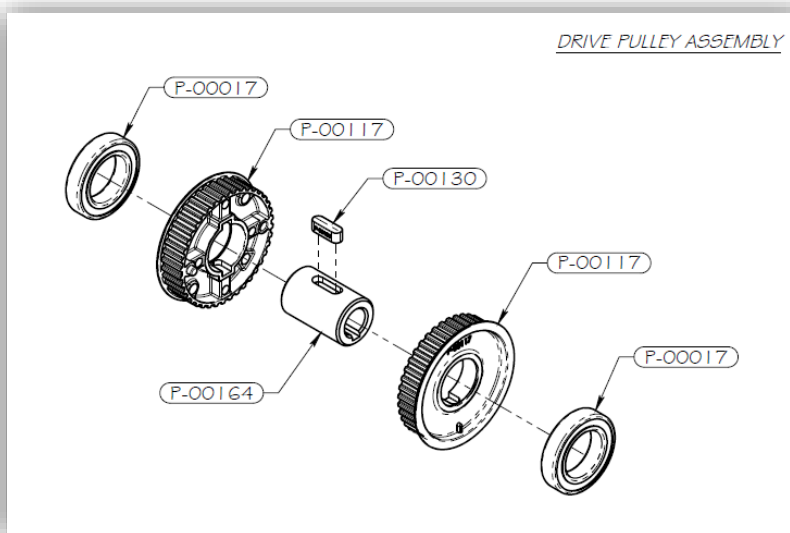
4.4. Breakdown of Sub-Assemblies & Common Kits Used

This section's purpose is to breakdown each of our subassemblies used in GLT Conveyors to help customers identify parts. Please see below for the breakdown of following sub-assemblies: drive cartridge, drive pulley, flanged roller kit, and take-up cam.

Drive Cartridge Sub-assembly – A-00049 (14mm – also available in 18mm)



Drive Pulley Sub-assembly – A-00010



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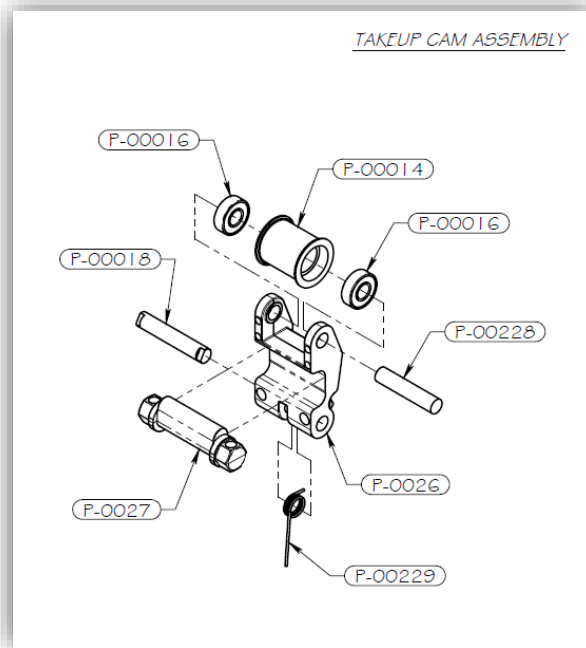
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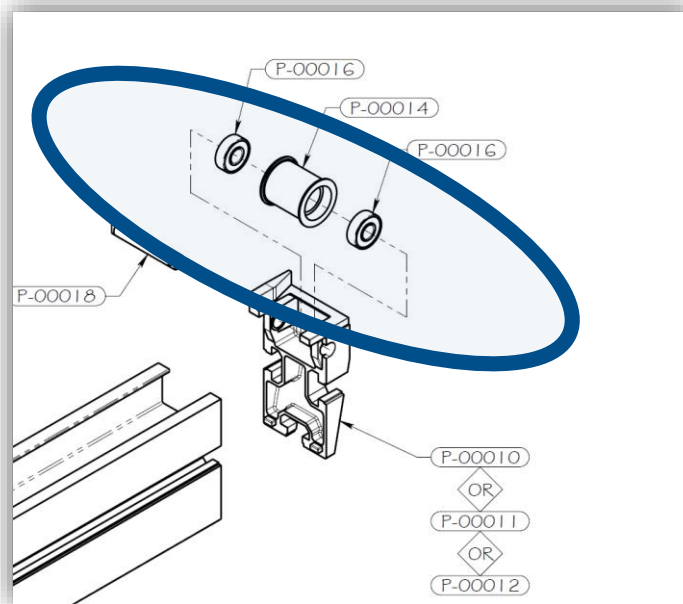
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Take-Up Cam Sub-assembly – A-00066



Flanged Roller Kit – A-00065

Note – ¼ of the flanged roller kit is used in Take-Up Cam sub-assembly and is shown below. P-00016s are pressed into P-00014. The kit has quantity four flanged rollers (P-00014) with quantity eight total bearings (P-00016) in the kit.



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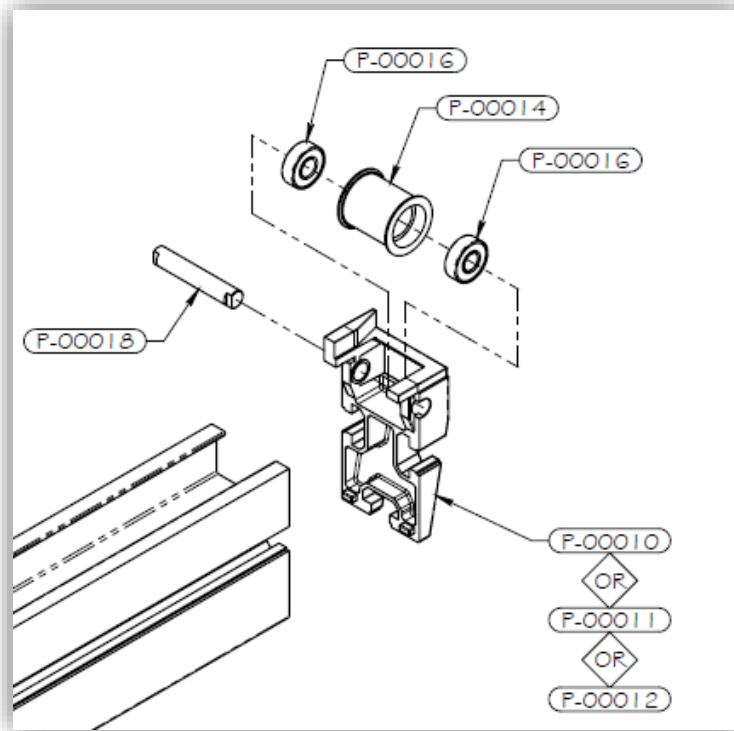
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End Cap Kits – A-00011, A-00012, A-00013

Note – End Cap kit A-00011 is RH end cap with guide on right side, A-00012 is LH end cap with guide on left side, and P-00013 is center end cap with no guide.



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5. Troubleshooting

Problem	Cause	Solution
Belt not engaging with drive sprocket.	Incorrect belt tension around drive sprockets.	Increase tension on belt by tightening pulley lever.
	Insufficient belt wrap around drive sprockets.	Adjust rollers to tension belt and improve sprocket wrap.

Problem	Cause	Solution
Excessive belt wear.	Belts, sprockets, or slider bed exposed to abrasive material.	Eliminate or reduce the presence of abrasive material which might come in contact with the belt, sprockets or slider bed.
	Excessive belt speed.	Reduce belt speed if possible to reduce wear.
	Incorrect slider bed gaps	Contact manufacturer for specifications.
	Sharp corners on edges of slider bed	Make sure the leading edge of any slider beds are beveled for smooth belt travel.

Problem	Cause	Solution
Excessive belt edge wear or damage.	Belt contacting obstructions on conveyor return way, frame, or adjacent equipment.	Check the conveyor frame to ensure it is level and square. Correct any conditions causing belt to rub or bind.
	Uneven or incorrect product loading.	Add support under product to relieve belt loading. If product is side loaded, add a side guide to opposite side of belt.
	Conveyor frame not square or level.	Check the conveyor frame to ensure it is level and square. Correct any conditions causing belt to rub or bind.

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Problem	Cause	Solution
Conveyor does not run.	Motor not turning or burned up.	Remove motor from unit and run without any load. If motor does not turn, or turns in random intervals, a new motor must be ordered and installed.
	DC ONLY: Drive card may be damaged/defective	Troubleshoot by switching cards/motors to define if motor or card is bad. Replace components as necessary.

Problem	Cause	Solution
Gearbox makes noise.	Gearbox worn/leaking.	Replace gearbox and investigate cause. Look for evidences of oil leakage around input and output shaft seals.

Problem	Cause	Solution
Drivebox makes noise.	Drive cartridge bearing wear.	Replace drive cartridge assembly.

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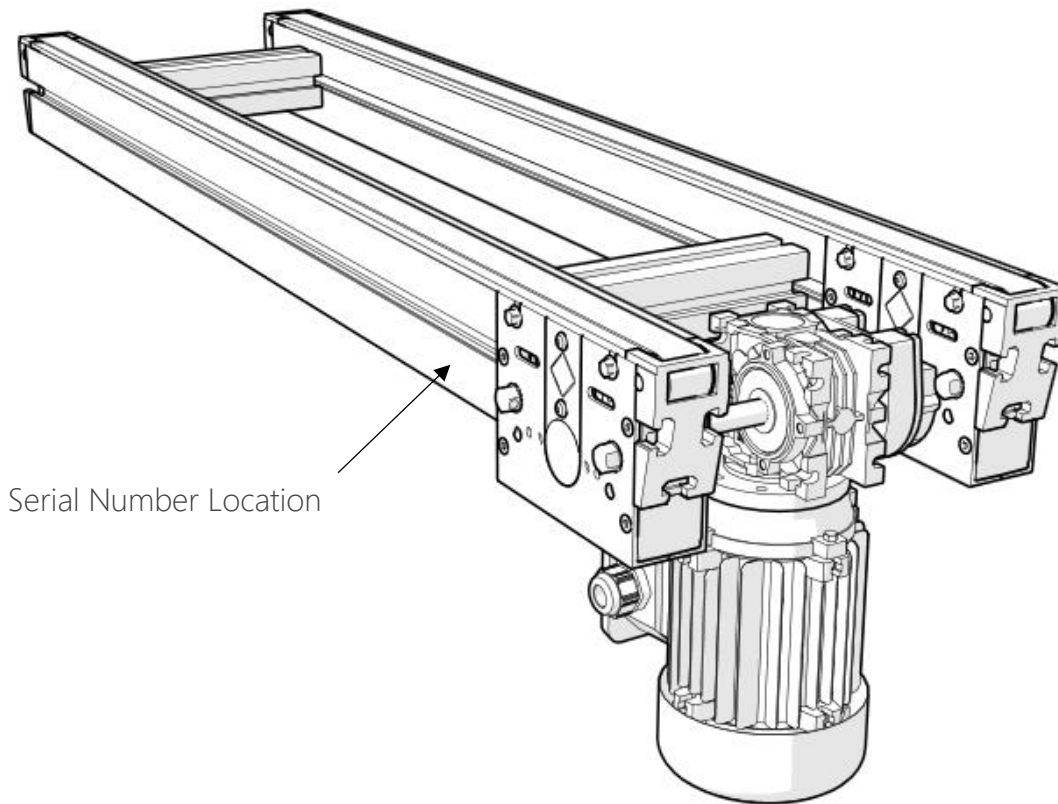
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6. How to Order Spare Parts

Spare parts may be purchased directly from Glide-Line™.

For a full list of spares for your conveyor as configured, please reference the serial number located near the drive box of your conveyor, and contact a Glide-Line™ representative at 215-721-1900.



7. Returns

	<p>Under no circumstances will a component be accepted without a Glide-Line™ RMA number.</p>
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When requesting a Return Materials Authorization (RMA), please have the following information available:

- Customer's name and address
- Customer original purchase order number
- Glide-Line's™ project number or serial number
- Description of part(s) being returned
- Reason for return

To preserve the return, all returned parts must be properly packaged to prevent shipping damage. The Glide-Line™ issued RMA number must be clearly marked and visible on the exterior packaging. The Glide-Line™ issued RMA form must also be included inside the package.

Includes:

- Location, type of service and length of time in service
- Complete description of the faulty operation of the component and the circumstances of failure.
- State requested service – warranty or non-warranty
- Complete shipping instructions for return of component
- Name and telephone number of person to be contacted if there are any questions about the returned part.

If a part is damaged or lost during transit, the customer is responsible for directing a claim to the carrier. The customer is responsible for return freight.

Upon receipt of the defective component(s), Glide-Line™ will examine it for warranty defects. A credit will be issued for the replacement when and if the component is found to be defective.

Following the above procedure correctly will expedite handling of the returned component and will prevent unnecessary additional charges for inspection and testing to determine the problem with the component. For all orders and service, a written Purchase Order for repairs must be enclosed.