

Turn Table – Eccentric Lift Maintenance & Service

This section will describe service procedures for major mechanical elements of a pivot table.

⚠ WARNING ⚠

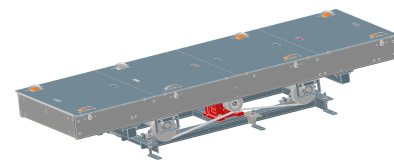
- Only qualified and trained personnel should perform the disassembly and assembly of electrical and mechanical components.
- Before attempting any maintenance on this equipment all involved personnel should follow plant internal regulations along with any state, federal, or province regulations. Do not begin any repair procedure until the proper shutdown procedures and the appropriate power lockout procedures have been applied.

Placing the Turn Table – Eccentric Lift into the Maintenance Position

- 1 Remove any payload from the eccentric lift.



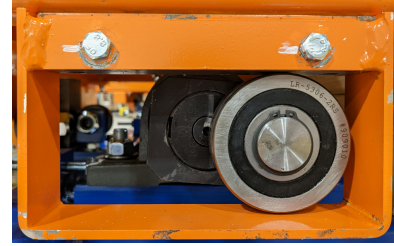
- 2 Move the lift to the full up position.



- 3 Place the maintenance blocks at the corners of the lift.



- 4 Slowly lower the lift onto the maintenance blocks until the cam rollers are just clear of the rail.



- 5 Cut and lock out power to the lift using your plant's safety procedures.



How to Replace a Turn Gearmotor

- 1 Remove and lock out power to the shuttle using your plant's procedures.



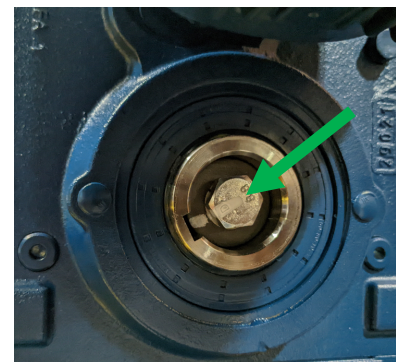
- 2 Disconnect the cables from the gearmotor.



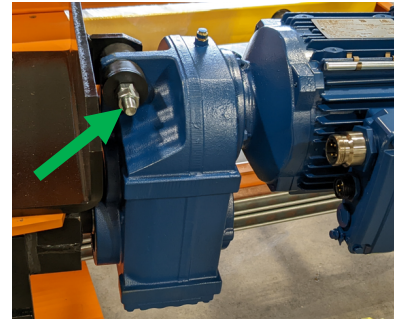
- 3 Remove the drive shaft cover on the gearmotor.



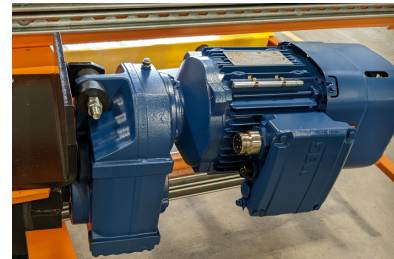
- 4 Loosen and remove the screw that connects the gearmotor to the drive shaft.



- 5 Loosen the nut and bolt that holds the gearmotor to the trolley.



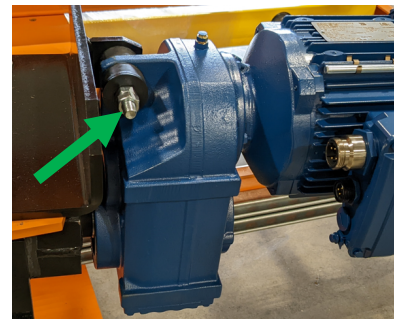
- 6 Remove the gearmotor from drive shaft.
Note: Remove gearmotor exactly in axial direction using an appropriate handling device if necessary.



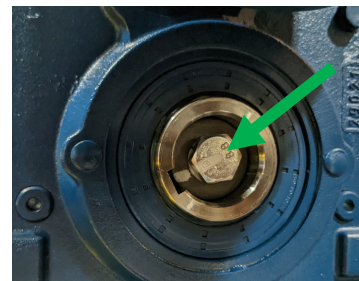
- 7 Install the new gearmotor onto the drive shaft, after checking parallel key for integrity.



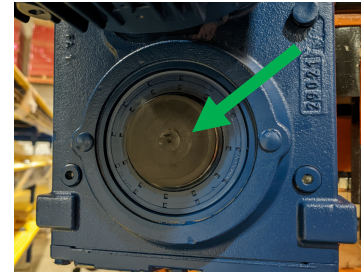
- 8 Insert and tighten the nut and bolt to 20 Nm that holds the gearmotor to the trolley.



- 9 Insert and tighten the screw to 88 Nm that connects the gearmotor to the drive shaft.



- 10 Install the drive shaft cover.



- 11 Reconnect the cables to the new gearmotor.



- 12 Complete restore power procedure and verify proper function.



Replacing the Drive Wheel



- 1 Remove any payload from the pivot/turn table.

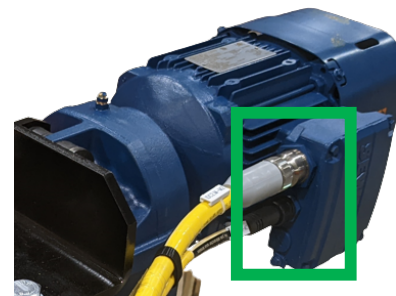
- 2 Remove and lockout all power sources to the area.



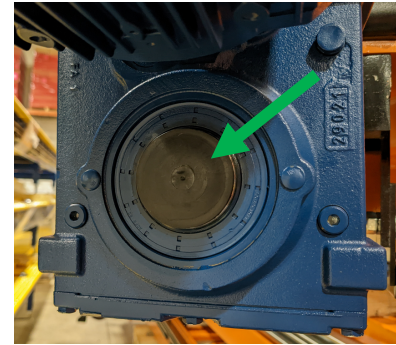
- 3 Raise the end of the drive wheel assembly slightly using a hoisting device (chain hoist or jack), until the drive wheel is just off the rail. Do not lift further than to this point.



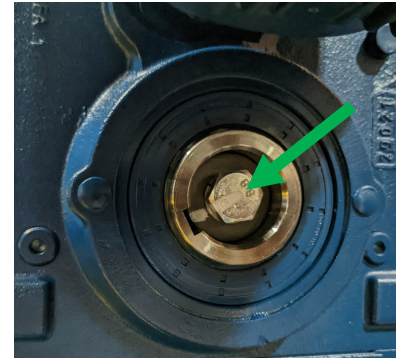
- 4 Disconnect the cables from the gearmotor.



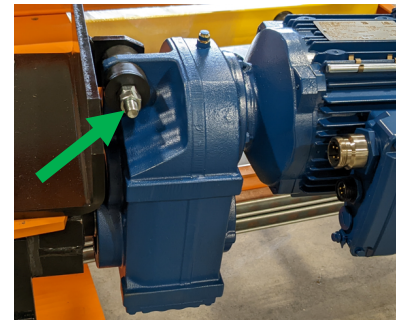
- 5 Remove the drive shaft cover on the gearmotor.



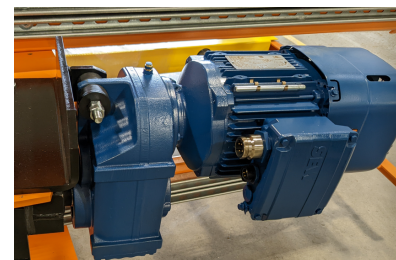
- 6 Loosen and remove the screw that connects the gearmotor to the drive shaft.



- 7 Loosen the nut and bolt that holds the gearmotor to the trolley.



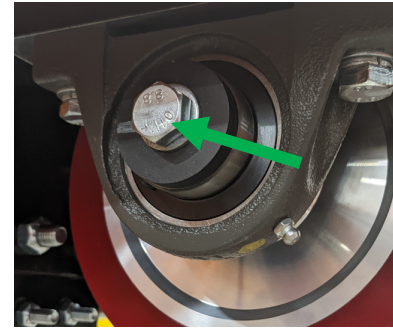
- 8 Remove the gearmotor from drive shaft.
Note: Remove gearmotor exactly in axial direction using an appropriate handling device if necessary.



- 9 Loosen and remove the four screws holding the drive wheel block to the trolley, and transfer the drive wheel block to a workbench.

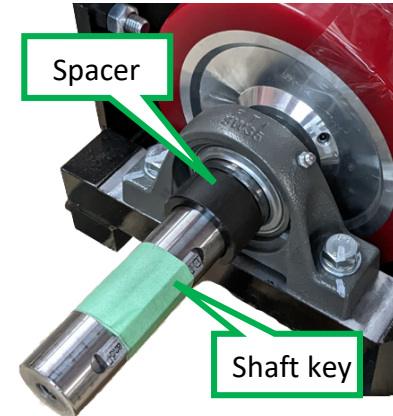


- 10** Remove the screw and end cap opposite of the drive shaft.



- 11** Pull the drive shaft through the pillow block bearings and drive wheel until you are able to lower the drive wheel out of the drive wheel block.

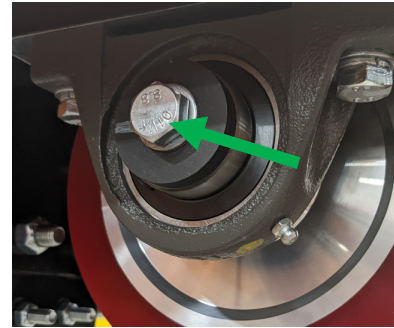
Note: Keep the spacers and drive shaft key to use with new drive wheel.



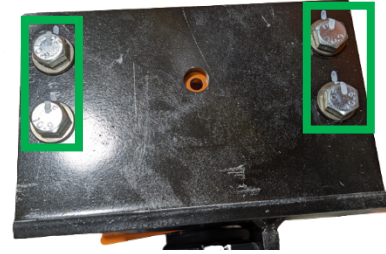
- 12** Place the new drive wheel into the drive wheel block and insert the drive shaft through the spacers and block.



- 13** Apply removable Loctite to screw from step 10 and insert and screw in with washer and shaft end cap into drive shaft. Tighten to 360 Nm.



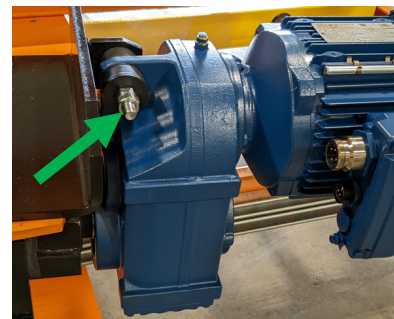
- 14** Install and secure the drive wheel block onto the pivot table with the four screws and washers from step 9. Apply removable Loctite onto the screws before inserting and tighten these screws to 330 Nm.



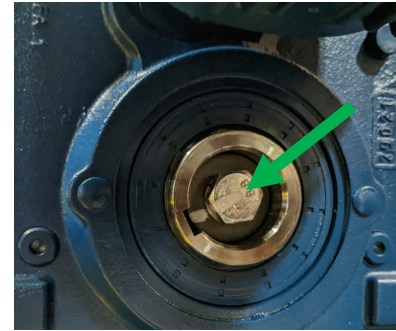
- 15** Install the new gearmotor onto the drive shaft, after checking parallel key for integrity.



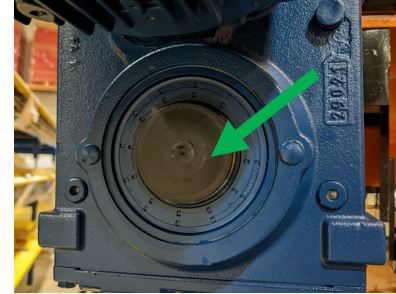
- 16** Insert and tighten the nut and bolt that holds the gearmotor to the trolley.



- 17 Insert and tighten the screw to 88 Nm that connects the gearmotor to the drive shaft.



- 18 Install the drive shaft cover.



- 19 Reconnect the cables to the new gearmotor.



- 20 Lower the trolley back onto the rail.



- 21 Complete restore power procedure and verify proper function.



Replacing the Idle Wheel



- 1 Remove any payload from the pivot/turn table.

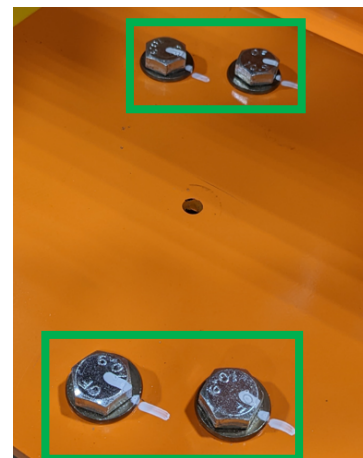
- 2 Remove and lockout all power sources to the area.



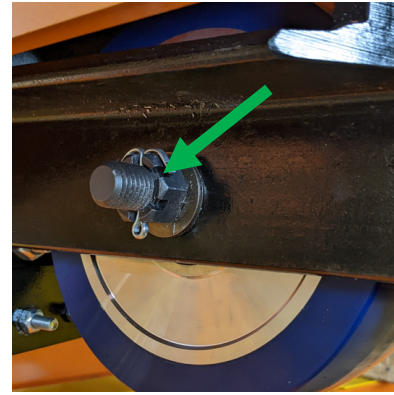
- 3 Raise the end of the trolley slightly using a hoisting device (chain hoist or jack), until the idle wheel is just off the rail. Do not lift further than to this point.



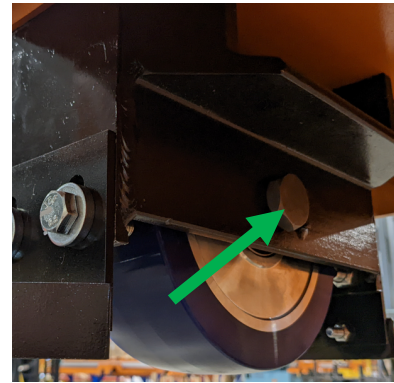
- 4 Loosen and remove the four screws holding the idle wheel block to the trolley and transfer the idle wheel block to a work bench.



- 5** Remove the cotter pin holding the slotted nut in place.
Loosen and remove the nut.

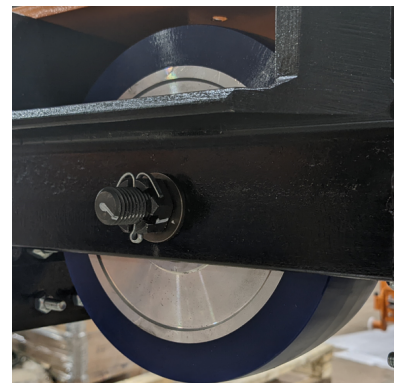


- 6** Remove the M25 shoulder screw that serves as the axle for the idle wheel.

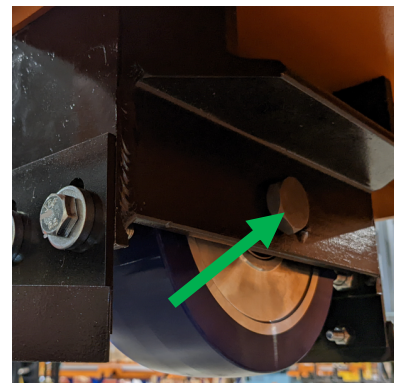


Replace the idle wheel.

- 7** *Note: Be aware that there are two spacers – not shown in the figure – that fit in between the wheel and the block that you will need to re-use.*

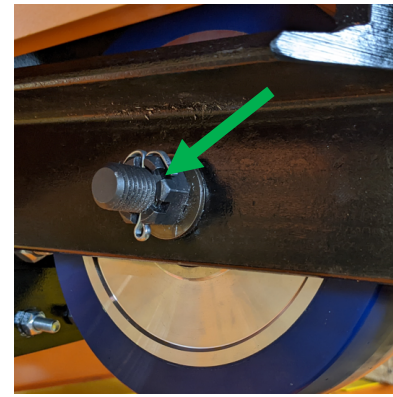


- 8** Insert the M25 shoulder screw. Screw on and snug up the hex nut.

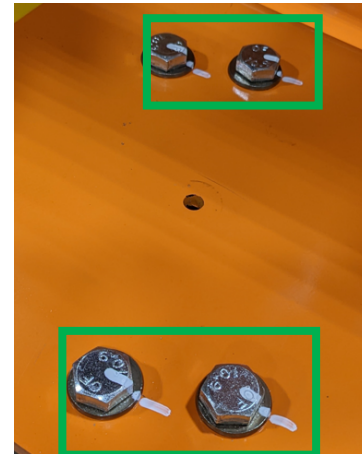


Insert the cotter pin to lock the hex nut in place.

- 9** *Note: If you are using a new M25 shoulder screw, bore new hole for the cotter pin.*



- 10** Install and secure the idle wheel block onto the trolley with the four screws and washers from step 4. Apply removable Loctite onto the screws before inserting and tighten these screws to 330 Nm.



- 11** Lower the trolley back onto the rail.



- 12** Complete restore power procedure and verify proper function.



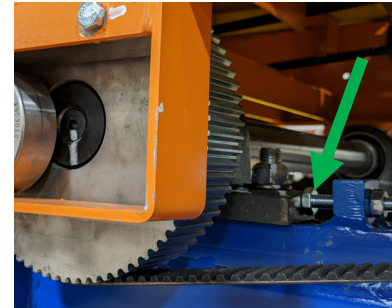
How to Replace the Lifting Belts

- 1 Place the lift into the maintenance position.

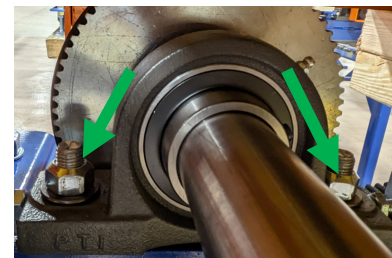


Loosen the inner jack screws for all the pillow block bearings.

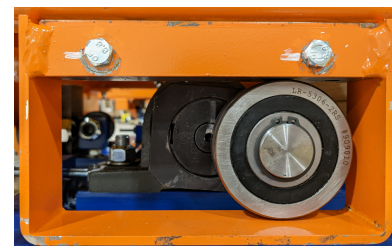
- 2 **Note:** *DO NOT* make any adjustments to the outer jack screws at this time. They will be used as a reference when returning the pillow block bearings to their original positions.



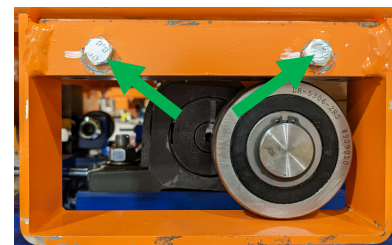
- 3 Loosen the pillow block bearing M16 bolts for all the pillow block bearings.



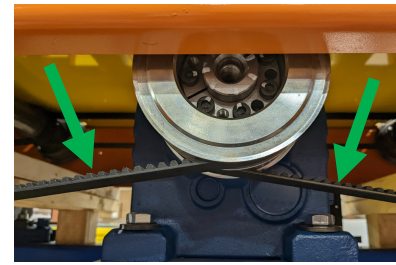
- 4 Pull the lifting cam assemblies slightly to the center of the lift to reduce tension on the lifting belts.



- 5 While someone is holding the cam roller guard on the lift pulley side, loosen and remove the M8 bolts that hold the cam roller rail to the lift table. Set the rail aside for now.
Repeat for the opposite side.



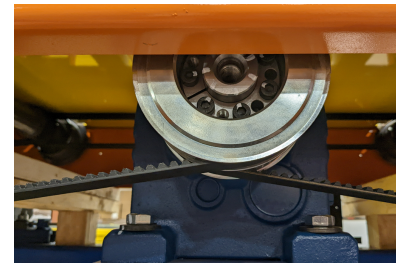
- 6** Remove the lifting belts.



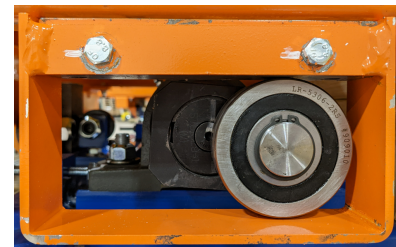
- 7** Inspect the lift pulley, cam rollers, and the drive pulley for wear and damage. Replace as necessary.



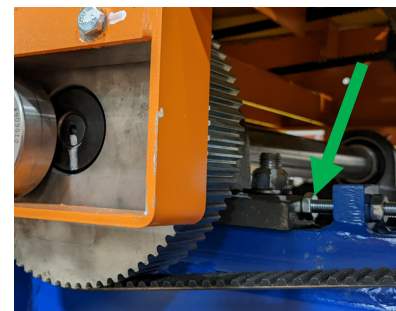
- 8** Place the new lifting belts around lift and drive pulleys.



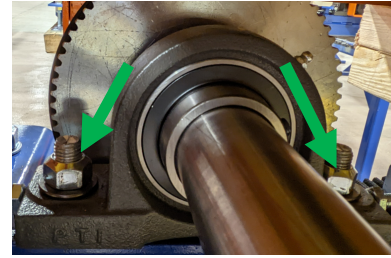
- 9** Install the cam roller rails reusing any shims that were in place.



- 10** Tighten the inner jack screws evenly keeping the lift pulleys parallel with the drive pulley until the lift belts are properly tensioned. If necessary, adjust the outer jack screws.



- 11 Tighten all the M20 bolts for the pillow block bearings.



- 9 Restore power to the system and lift the table off the maintenance blocks. Return the maintenance blocks to their designated storage area.



- 10 Cycle the lift table and observe that the lifting belts are tracking straight and that the table is even all around. Correct if necessary.



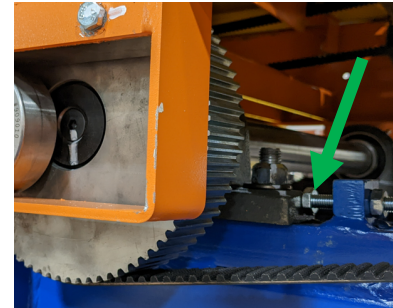
How to Replace the Drive Pulley

- 1 Place the lift into the maintenance position.

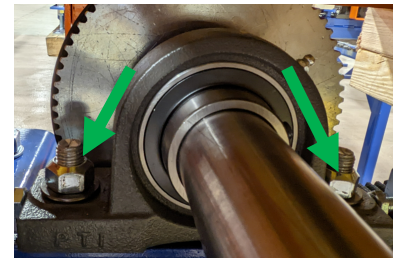


Loosen the inner jack screws for all the pillow block bearings.

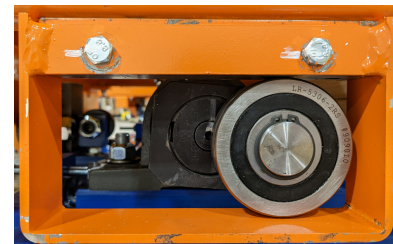
- 2 **Note:** *DO NOT* make any adjustments to the outer jack screws at this time. They will be used as a reference when returning the pillow block bearings to their original positions.



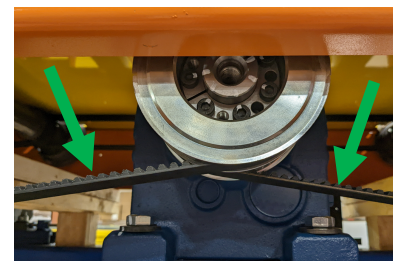
- 3 Loosen the pillow block bearing M16 bolts for all the pillow block bearings.



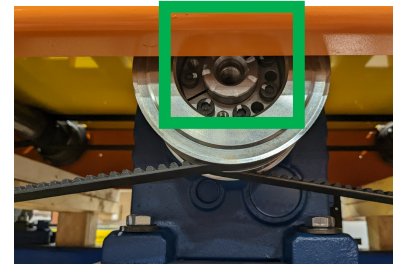
- 4 Pull the lifting cam assemblies slightly to the center of the lift to reduce tension on the lifting belts.



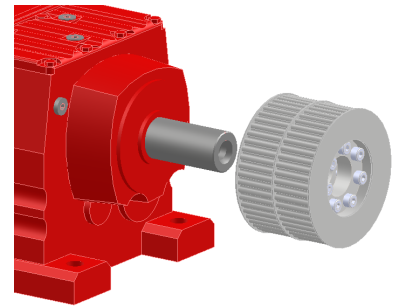
- 5 Remove the belts off the drive pulley.



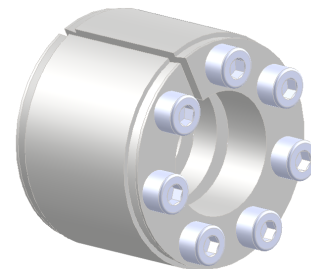
- 6** Loosen the screws in the clamping set that is inside the drive pulley.



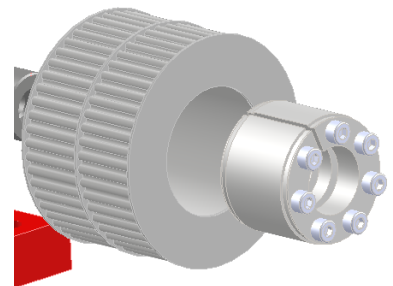
- 7** Pull the original drive pulley off the motor drive shaft.



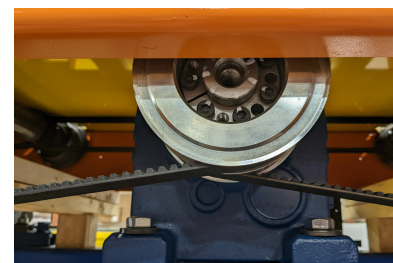
- 8** Remove the clamping set and inspect for damage. Replace if necessary.



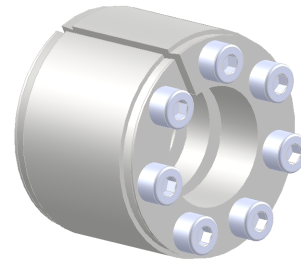
- 9** Insert the clamping set into the new drive pulley



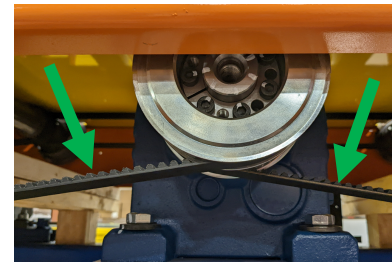
- 10** Align the drive pulley so that the lifting belts will run in the center.



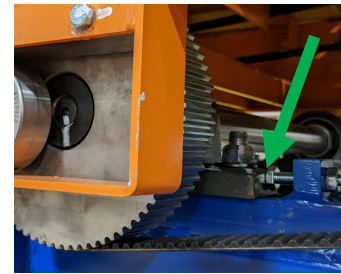
- 11** Tighten the screws of the clamping set in an alternating pattern to 41 Nm.



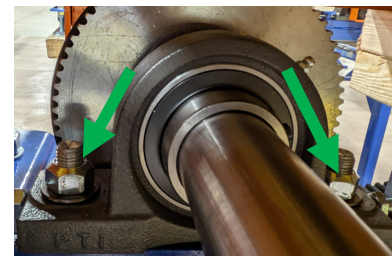
- 12** Mount the belts onto the drive pulley.



- 13** Tighten the inner jack screws evenly keeping the lift pulleys parallel with the drive pulley until the lift belts are properly tensioned. If necessary, adjust the outer jack screws.



- 14** Tighten all the M20 bolts for the pillow block bearings.



- 15** Restore power to the system and lift the table off the maintenance blocks. Return the maintenance blocks to their designated storage area.



- 16** Cycle the lift table and observe that the lifting belts are tracking straight on the drive pulley. Correct if necessary.

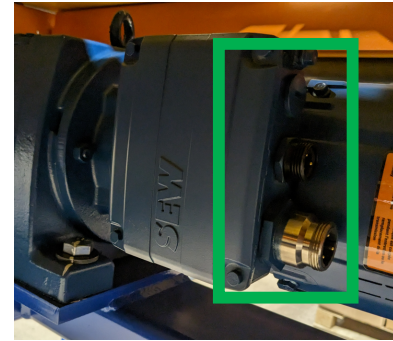


How to Replace the Belt Lift Motor

- 1 Place the lift into the maintenance position.

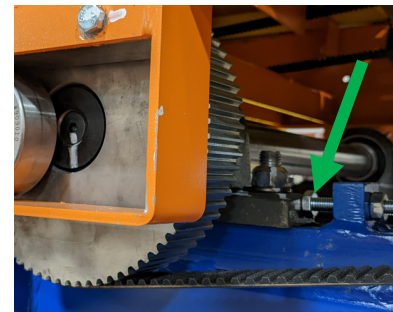


- 2 Disconnect the cables from the lift motor.

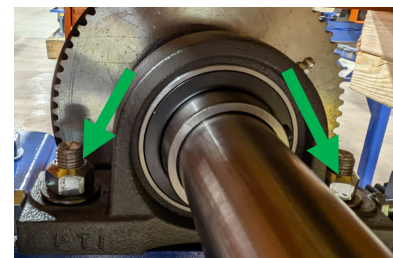


Loosen the inner jack screws for all the pillow block bearings.

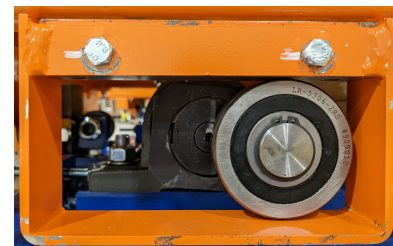
- 3 **Note:** *DO NOT* make any adjustments to the outer jack screws at this time. They will be used as a reference when returning the pillow block bearings to their original positions.



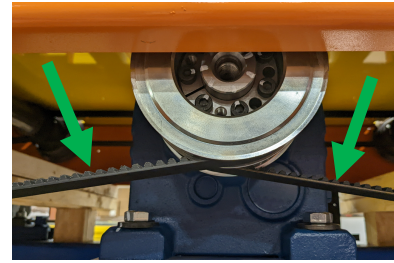
- 4 Loosen the pillow block bearing M16 bolts for all the pillow block bearings.



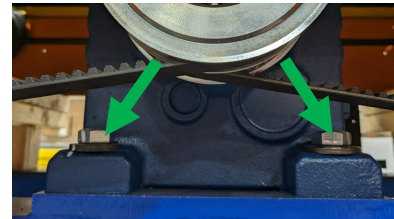
- 5 Pull the lifting cam assemblies slightly to the center of the lift to reduce tension on the lifting belts.



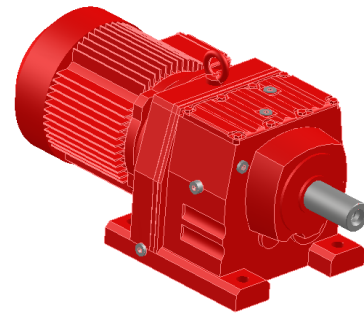
- 6 Remove the lifting belts off the drive pulley.



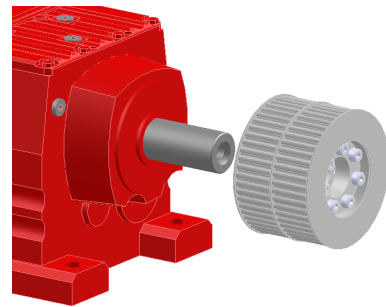
- 7 Loosen and remove the M16 bolts (4) that hold the lift motor to the lift table base.



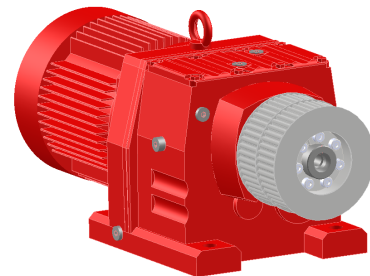
- 8 Remove the motor from the lift table.



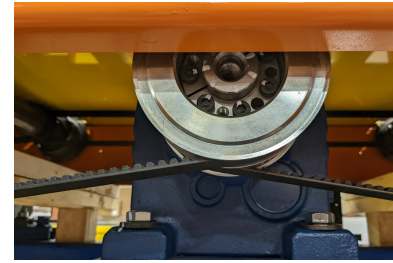
- 9 Inspect the drive pulley for wear and damage. If none found, remove the pulley from the old motor and install on the new motor. Otherwise install a new drive pulley onto the new motor.



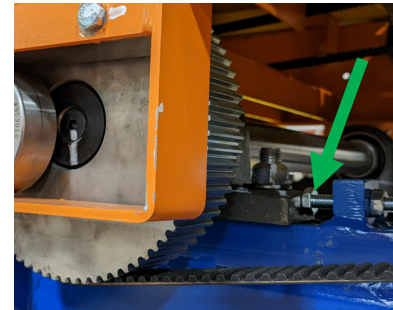
- 10 Install the new motor into the lift table.



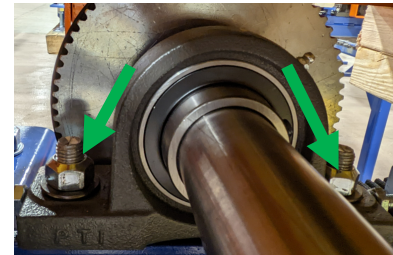
- 11** Align the drive pulley so that the lifting belts will run in the center.



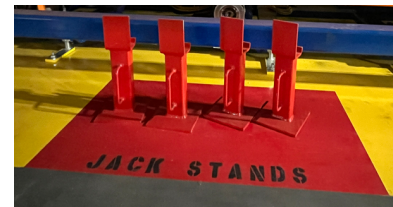
- 12** Tighten the inner jack screws evenly keeping the lift pulleys parallel with the drive pulley until the lift belts are properly tensioned. If necessary, adjust the outer jack screws.



- 13** Tighten all the M20 bolts for the pillow block bearings.



- 14** Restore power to the system and lift the table off the maintenance blocks. Return the maintenance blocks to their designated storage area.



- 15** Cycle the lift table and observe that the lifting belts are tracking straight and that the table is even all around. Correct if necessary.

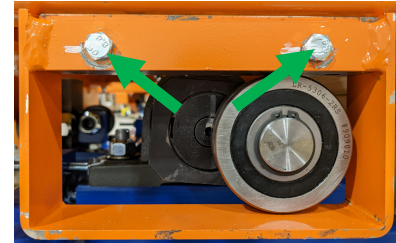


How to Replace a Cam Roller

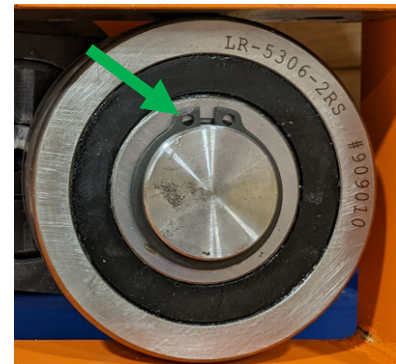
- 1 Place the lift into the maintenance position.



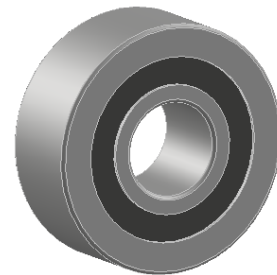
- 2 Loosen and remove the M8 bolts (2) that hold the cam roller rail to the lift table.



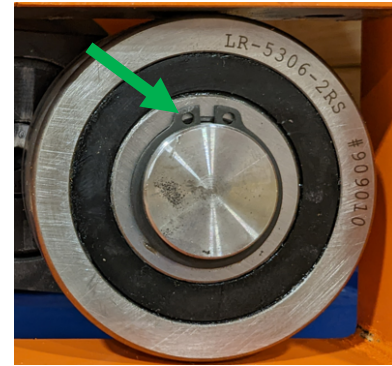
- 3 Remove the retainer ring on the original cam roller.



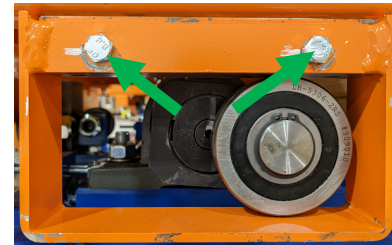
- 4 Replace the cam roller.



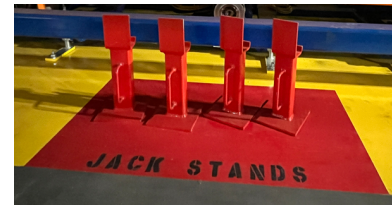
- 5 Re-install retainer ring.



- 6 Install the cam roller rail with M8 bolts (2).



- 7 Restore power to the system and lift the table off the maintenance blocks. Return the maintenance blocks to their designated storage area.



- 8 Cycle the lift table and test for proper operation.

