Vertical Drop Lifter Maintenance & Service

This section will describe service procedures for major mechanical elements of your system.

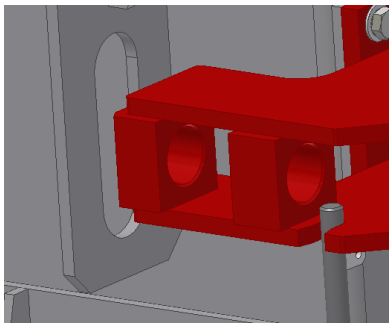
⚠ WARNING ⚠

Only qualified and trained personnel should perform the disassembly and assembly of electrical and mechanical components.

Securing the Vertical Drop Lifter

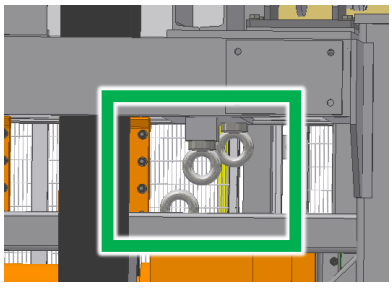
Whenever you are maintaining and/or servicing the Vertical Drop Lifter, you should mechanically secure it. Use the following procedure:

1. Depending on maintenance requirements, lower either the lift carriage or counterweight so that its locking pin slot aligns with the lock pin bracket.

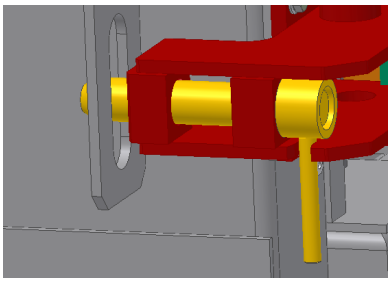


2. Shutdown and lockout the VDL according to plant lockout procedures.

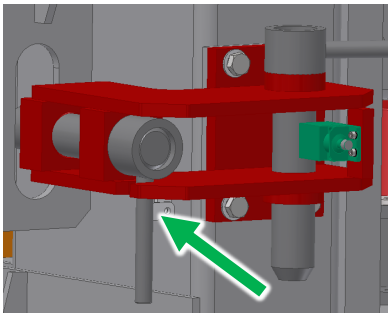
3. Attach safety straps or chain from the eyebolts at the top of the VDL to the eyebolts that are at the top of the component – either lift carriage or counterweight – that is at the top of the VDL.



4 Locate and remove the appropriate safety pin from its stowed position on and completely insert it into the locking position on the bracket so that the end of the safety pin protrudes though the locking slot.

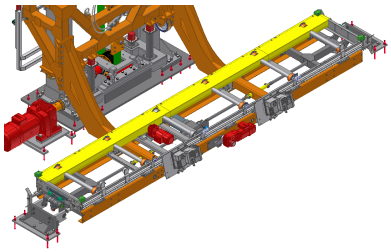


5 If the safety pin being used and the lock pin bracket are equipped with lock flags, insert your safety lock through the lock flags to ensure that safety pin is not prematurely removed.

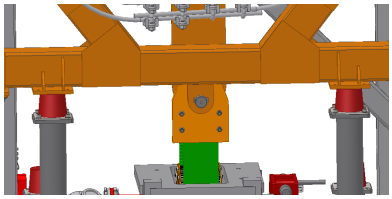


Replacing the Lifting Belts

1 Remove any load on the lift carriage.



2 Jog the lift carriage down until it is sitting on the bumpers.



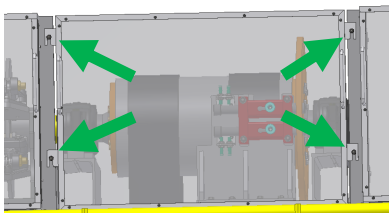
3 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

4 Shutdown and lockout the VDL according to your plant's lockout procedures.

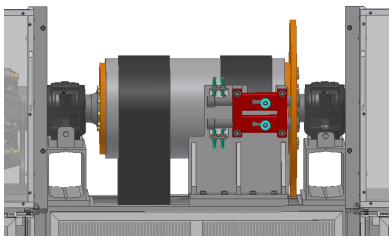
5 Remove the drive belt tension by loosening the ring nut at the top of the tension spring with a 2" spanner wrench.

6 Wear and secure the appropriate anti-fall PPE as required per your plant safety policies.

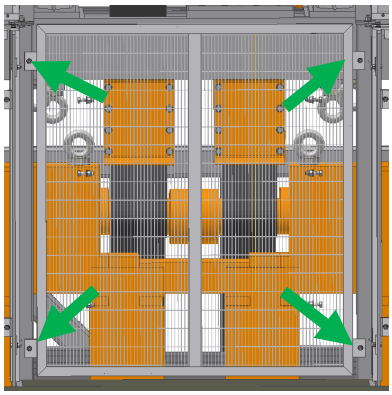
7 At the maintenance platform, loosen the four bolts holding the polycarbonate panel assembly using the 13mm combination and socket wrenches.



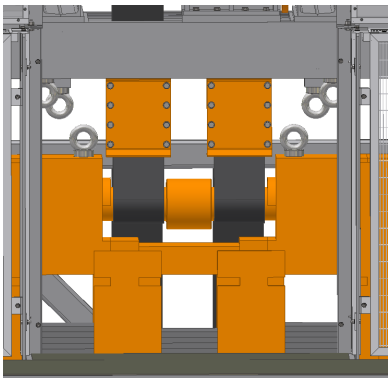
8 Lift the polycarbonate panel assembly off the bolts and stow in a safe location.



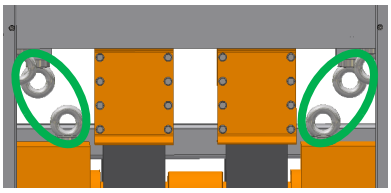
9 Loosen and remove the four bolts holding the counterweight safety panel using the 13mm combination and socket wrenches.



10 Remove and stow the counterweight safety panel in a safe location.

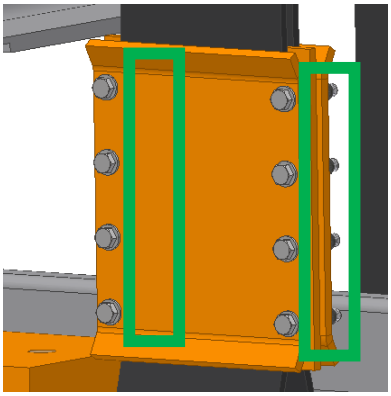


11 Secure the counterweight so it will not move by attaching a strap or similar from the eyebolts on top of the counterweight to the eyebolts on the VDL frame.



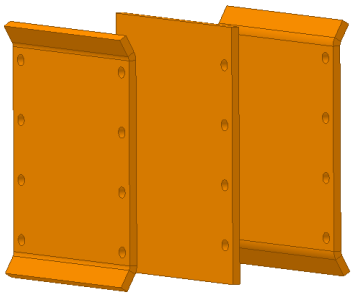
COUNTERWEIGHT BELTS REMOVAL

12 Loosen and remove the bolts that hold the counterweight belt clamping plates together using the 19mm combination and socket wrenches at a belt while a colleague is holding the plates.

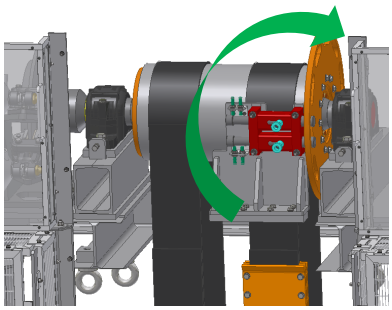


13 Discard the torque nuts but keep the bolts and washers.

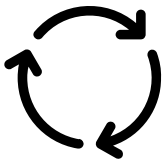
Stow the clamping plates in a safe location.



14 Pull the belt off the drum and toss it over to the floor opposite the maintenance platform.

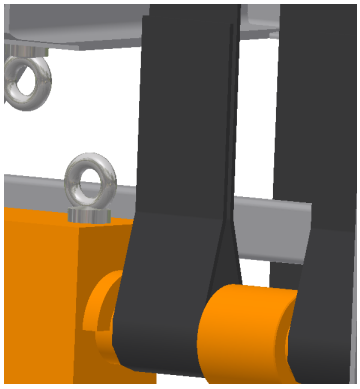


15 Repeat steps 12-14 for the second belt.

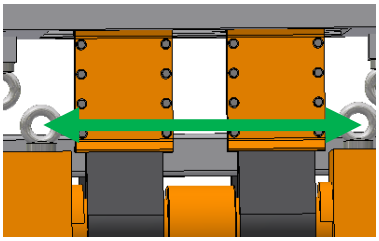


COUNTERWEIGHT BELTS REMOVAL

16 Wrap one end of a belt around the top of the counterweight.



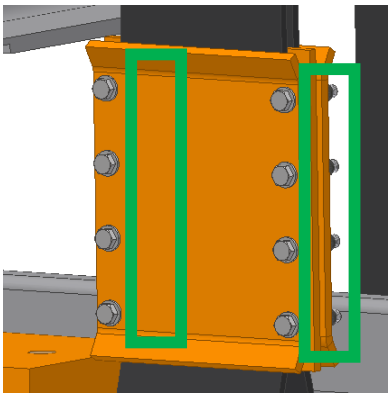
17 Place the clamping plates ensuring the bottom of the clamp plates is even with the top of the counterweight.



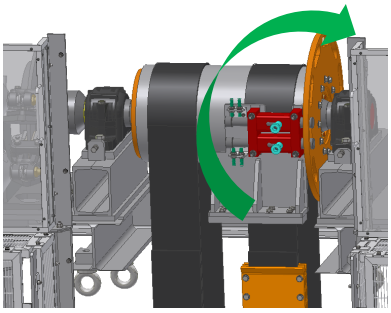
Insert the bolts, washers, and new torque nuts to hold the clamping plates together.

18 Alternately tighten them in steps up to 89Nm (65 ft-lbs) with the torque wrench.

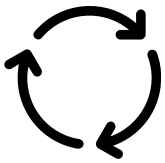
Paint witness marks on the bolts to the clamping plates when completed.



19 Wrap the new belt onto the top of the lifting drum and lower the remainder down the other side of the VDL.

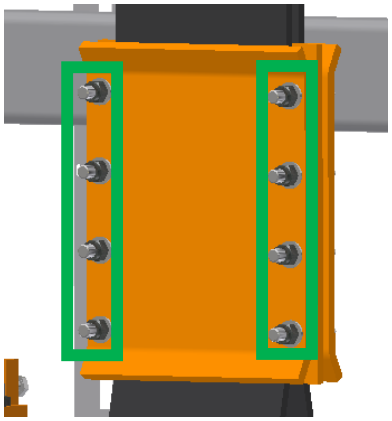


20 Repeat steps 16-19 for the second belt.



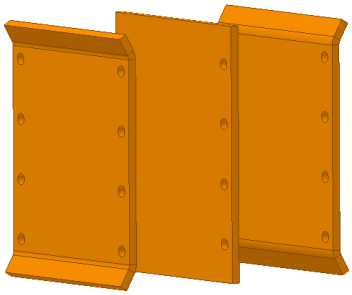
CARRIAGE BELTS REMOVAL

21 At the top of the lift carriage, loosen and remove the bolts, washers, and torque nuts that hold the belt clamping plates together using the M19 combination and socket wrenches at the belts while a colleague is holding the plates.

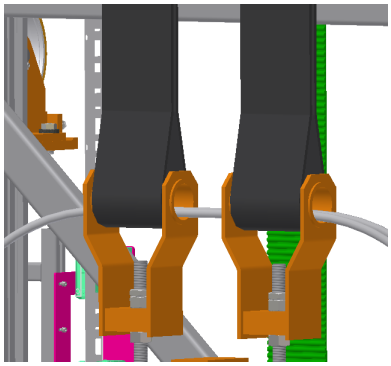


22 Discard the torque nuts but keep the bolts and washers.

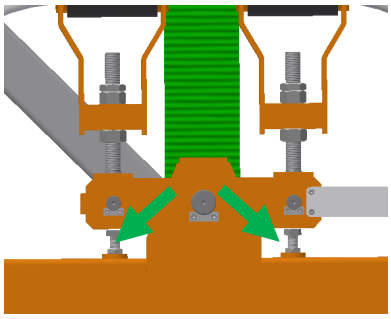
Stow the clamping plates in a safe location.



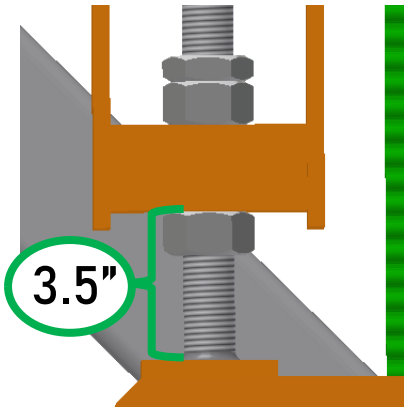
23 Pull the old belts off their turnbuckles and discard responsibly.



24 Raise the support bolts underneath the slack belt actuator lever using the 30mm wrench until they hold it level.

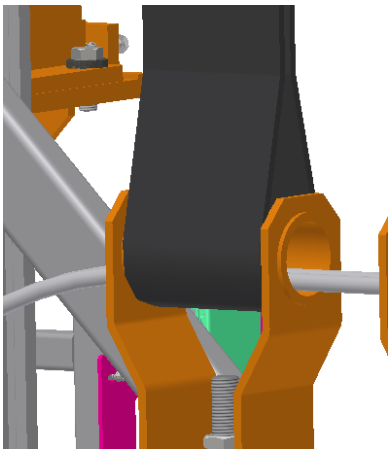


25 Reposition the turnbuckles' height above the lever to a setup value of 3.5 inches using the 46mm wrench as necessary on the locking and adjusting nuts.

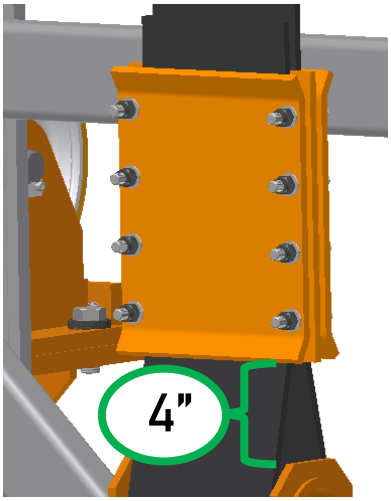


CARRIAGE BELTS INSTALLATION

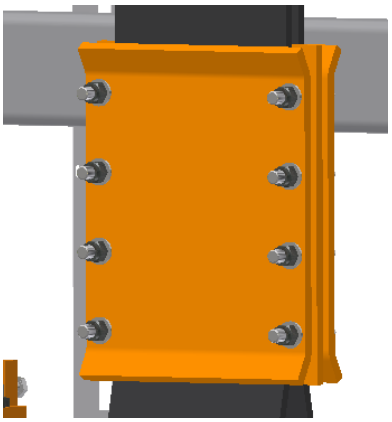
26 Wrap one end of a belt around the turnbuckle



27 Place the clamping plates with the bottom of the clamp plates four (4) inches above the top of the turnbuckle.



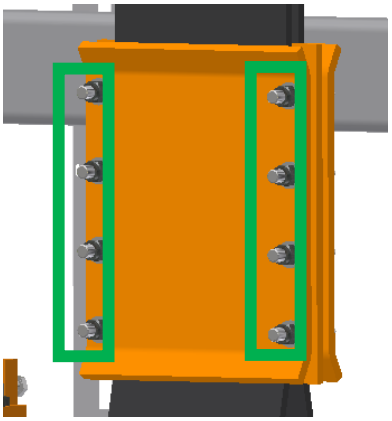
28 Insert and hand tighten the bolts, washers, and new torque nuts to hold the clamping plates together.



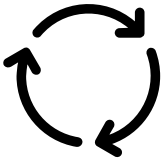
Make the lifting belt as taut as possible as it hangs from the lifting drum and around the turnbuckle.

29 Tighten the clamping plates nuts and bolts in steps up to 89Nm (65 ft-lbs) with the torque wrench.

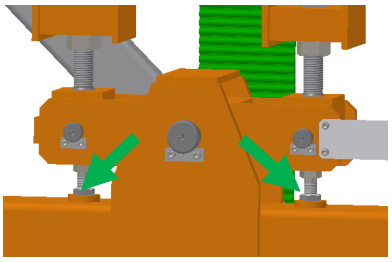
Paint witness marks on the bolts to the clamping plates when completed.



30 Repeat steps 26-29 for the second belt.



31 Lower the support bolts into the lift carriage frame.

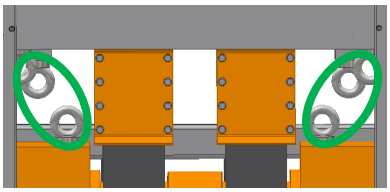


⚠ WARNING ⚠

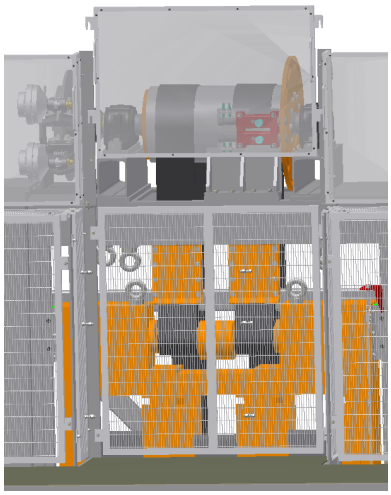
Not lowering these support bolts will prevent the slack/broken belt sensor from working properly.

32 Remove the straps that are holding the counterweight to the top of the VDL frame.

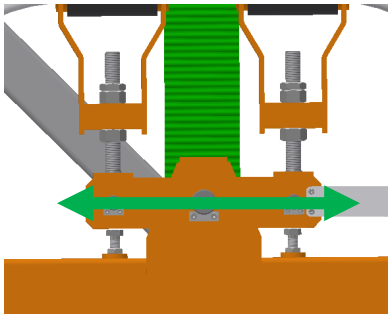
Note: *There should be load tension on the lifting belts now.*



33 Install the counterweight safety panel and the polycarbonate panel assembly that were removed earlier.



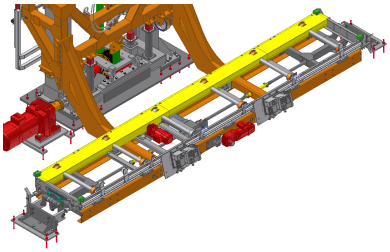
34 Check that the slack/broken belt lever is level. If not, adjust a turnbuckle as necessary to level the lever.



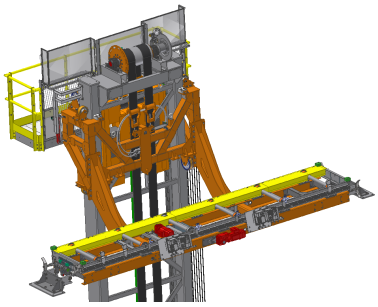
35 Check and adjust the tension using the Existing Drive Belt Tension Check procedure below.

Replacing the Drive Belt

1 Remove any load on the lift carriage.



2 Raise the lift carriage to the full up position.



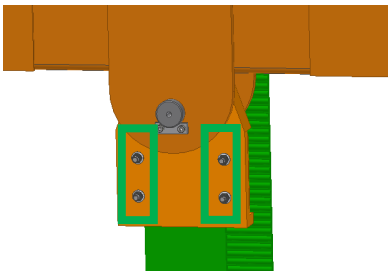
3 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

Mechanically secure the VDL per the procedure in Safety.

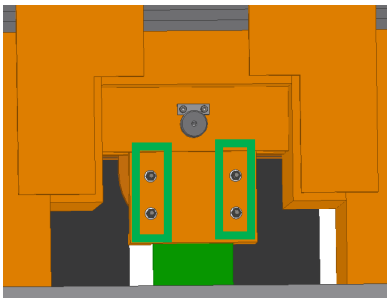
4 Shutdown and lockout the VDL according to your plant's lockout procedures.

5 Turn the Belt Tensioning Ring-nut counter-clockwise to completely relieve the spring tension on the drive belt using the 2" spanner wrench.

6 Remove the bolts from the belt connections below the carriage using the 17mm wrenches.

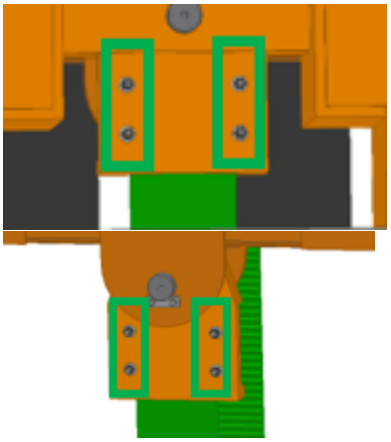


7 Remove the bolts from the belt connections the counterweight using the 17mm wrenches.



8 Remove and discard the torque nuts and original drive belt.

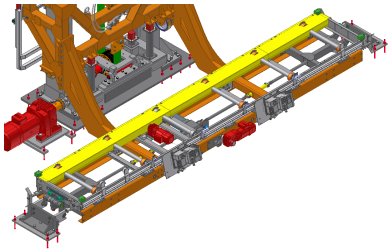
Install new drive belt and the bolts, washers, and new torque nuts at the belt connection points.



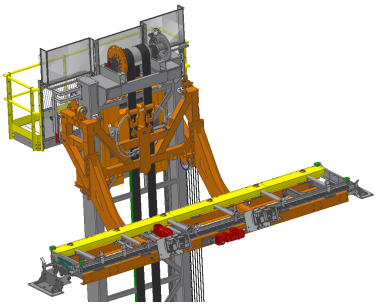
9 Check and adjust the tension using the New Drive Belt Tension Check procedure below.

New Drive Belt Tensioning

1 Remove any load on the lift carriage.



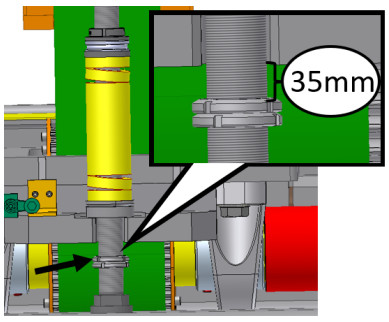
2 Raise the lift carriage to the full up position.



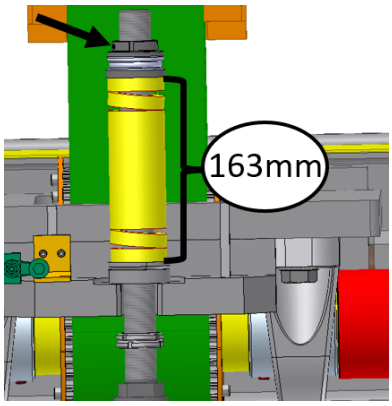
3 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

4 Shutdown and lockout the VDL according to your plant's lockout procedures.

5 Release the tensioning plate by turning the support ring-nut clockwise until there is at least 35mm or more of clearance from the plate and the washer.

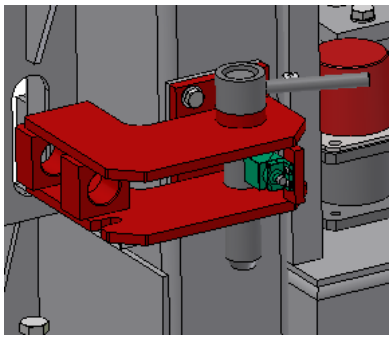


6 Turn the belt tensioning ring-nut clockwise with the 2” spanner wrench to compress the spring until it reaches the preset working height of 163mm.

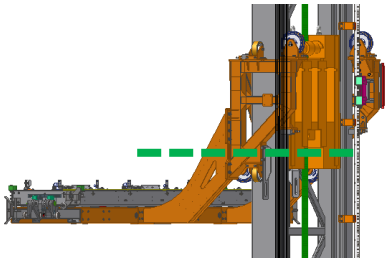


7 Stow the safety pins and remove any straps/chains that secure the lift carriage and counterweight to allow VDL function.

Restore power to the VDL.



8 Position the lift carriage and counterweight so that their drive belt connections are at the same level.



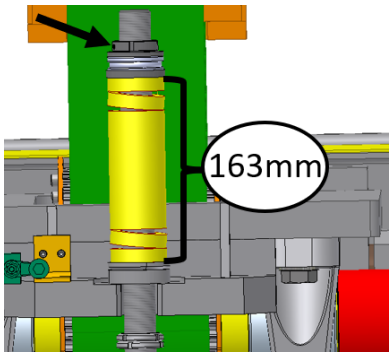
9 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

10 Lock Out the system again to return safety covers as needed then operate as normal.

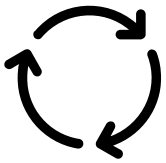
Manually release the lift gearmotor brake momentarily to even the tension on both sides of the drive belt.

11 Check to see if the working height of the spring has changed

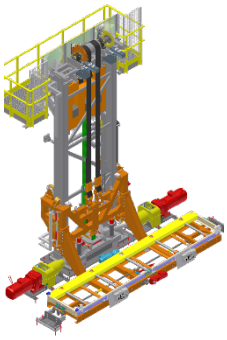
If yes, adjust the Belt Tensioning Ring-Nut as necessary to reset the working height to 163mm.



12 Repeat steps 9-11 for a few lifting and lowering cycles verifying the working height of the tension spring each cycle.

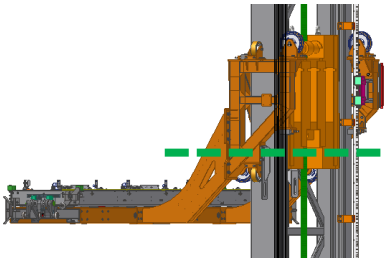


13 Install any safety guards removed and return to normal function.



Existing Drive Belt Tension Check

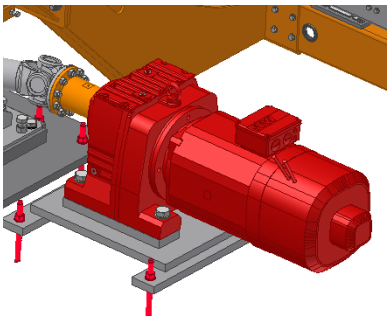
1 Position the lift carriage and counterweight so that their drive belt connections are at the same level.



2 Engage the safety brake and safety shot pin via the HMI.

3 Shutdown and lockout power to the VDL according to plant lockout procedures.

4 Manually release both lift gearmotor brakes momentarily to even the tension on both sides of the drive belt.



5 Place the sensor of the sonic tension meter close to the belt.

Tap or flick the belt with your finger while simultaneously monitoring the sonic tension meter display.

6 Note the reading and compare it to the table.

VDL Stroke	Belt Tension (Hz)
1981mm	26.7 ±1.9
2000mm	26.7 ±1.9
2591mm	22.1 ±1.5
3810mm	16.2 ±1.1
4420mm	14.4 ±1.0
5791mm	11.4 ±0.8
6401mm	10.4±0.7
10211mm	6.8±0.5

7 If the reading is out of the acceptable range Turn the Belt Tensioning Ring-Nut using the 2” spanner wrench a quarter turn.

- clockwise to increase the belt tension
- counterclockwise to reduce belt tension

8 Check the drive belt tension with the sonic tension meter.

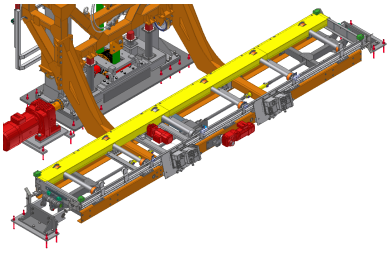
Repeat until the drive belt is within specification.

9 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

10 Lock Out the system again to return safety covers as needed then operate as normal.

Safety Brake Pad Adjustment

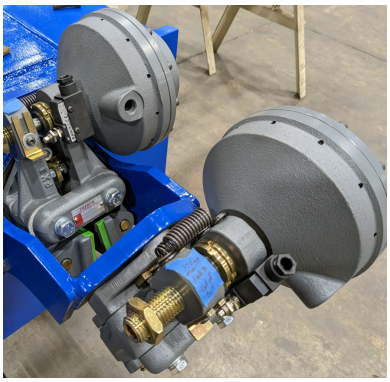
1 Lower the lift carriage to the down position.



2 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

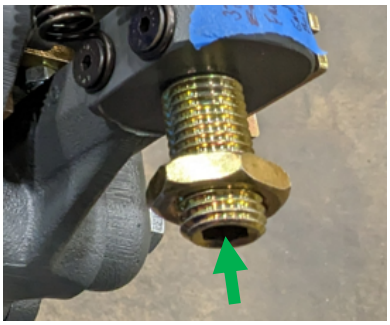
3 Release the safety brake via the HMI. Ensure that the safety brake is disengaged.

Note: *If the brake is engaged, there is an E-Stop condition that needs to be resolved first.*

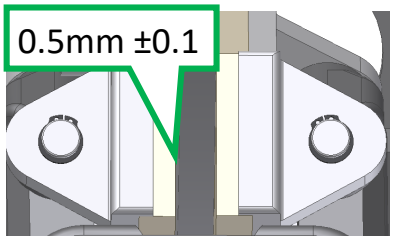


4 Loosen the caliper locking nut with the 36mm combination wrench.

5 Tighten the caliper adjustment screw using the 12mm hex key wrench until both pads comes into contact with the brake disc.



6 Loosen the caliper adjustment screw until there is a 0.5mm ±0.1 gap between the pads and disc as measured by the feeler gauge.



7 Tighten the caliper locking nut when the correct clearance has been set to lock the caliper adjustment screw.

8 Repeat steps 4-7 for the other caliper.

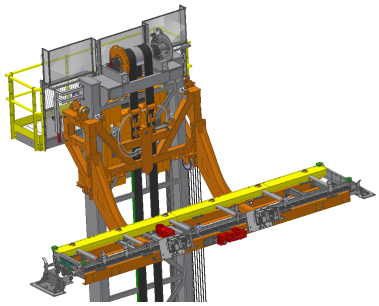
9 Engage the safety brake via the HMI.

Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

10 Lock Out the system again to return safety covers as needed then operate as normal.

Replacing a Side Guide Roller

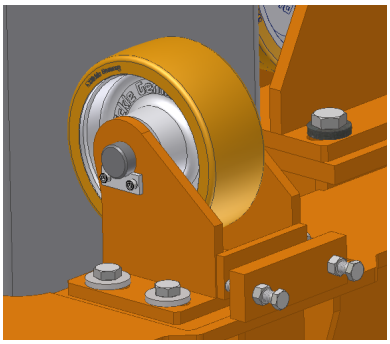
1 Raise the lift carriage to the full up position.



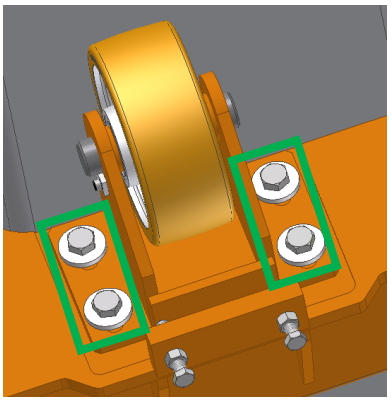
2 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

3 Shutdown and lockout the VDL according to your plant's lockout procedures.

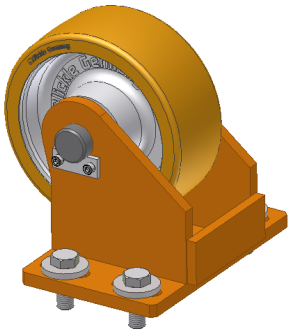
4 Locate the side guide roller to be serviced on the carriage.



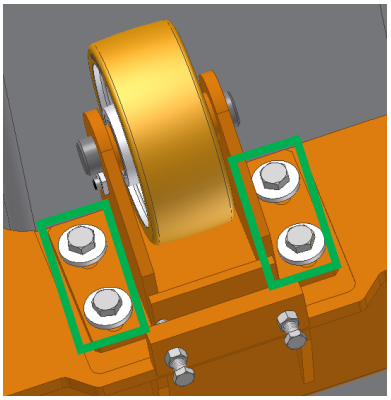
5 Loosen and remove the M16 bolts (4) securing the side guide roller assembly to the carriage frame.



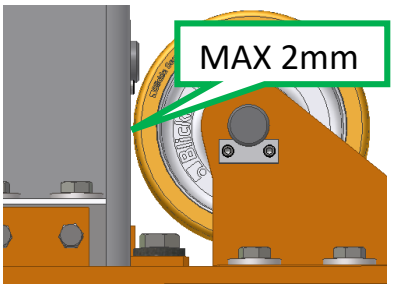
6 Remove the original side guide roller assembly and replace with the new one.



7 Tighten the M16 bolts (4) securing the side guide roller assembly to the carriage frame.



8 Verify that there is a gap between the roller and frame with a maximum of 2mm.

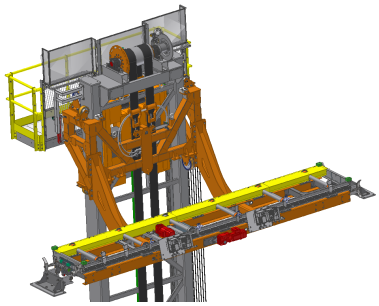


9 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

10 Lock Out the system again to return safety covers as needed then operate as normal.

Replacing a Guide Wheel

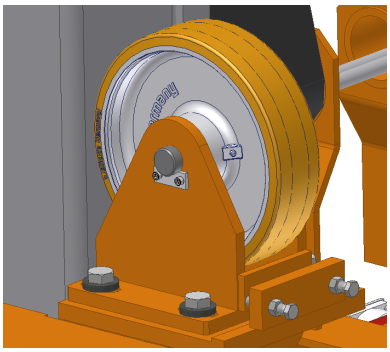
1 Raise the lift carriage to the full up position.



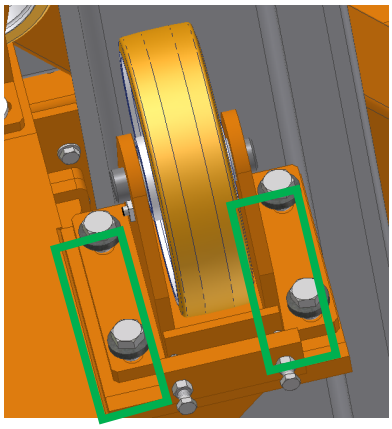
2 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

3 Shutdown and lockout the VDL according to your plant's lockout procedures.

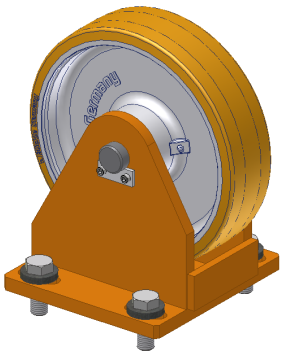
4 Locate the guide wheel to be serviced on the carriage.



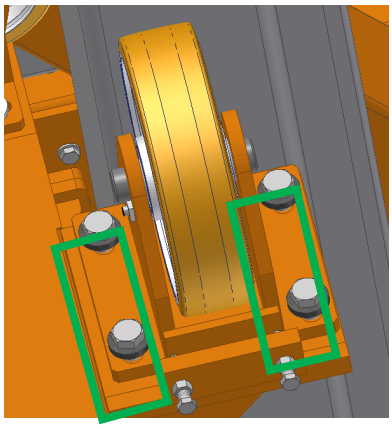
5 Loosen and remove the M20 bolts (4) securing the guide wheel assembly to the carriage frame.



6 Remove the original side guide roller assembly and replace with the new one.



7 Tighten the M20 bolts (4) securing the guide wheel assembly to the carriage frame.

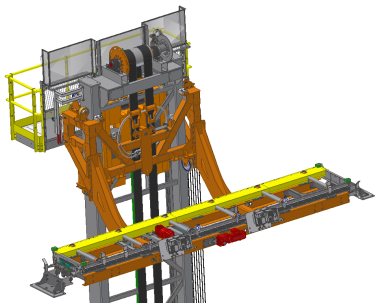


8 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

9 Lock Out the system again to return safety covers as needed then operate as normal.

How to Replace a Cardan Shaft

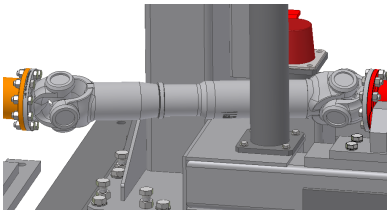
1 Raise the lift carriage to the full up position.



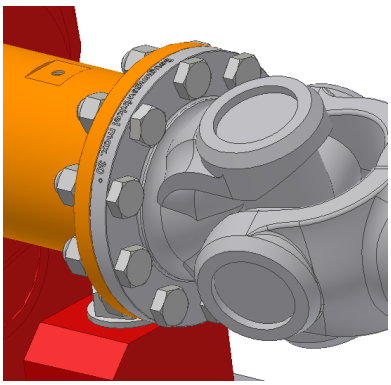
2 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

3 Shutdown and lockout the VDL according to your plant's lockout procedures.

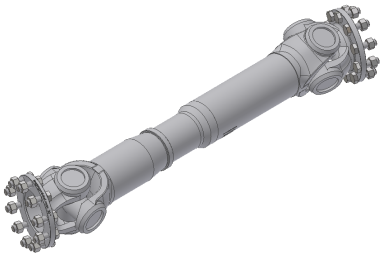
4 Support the cardan shaft.



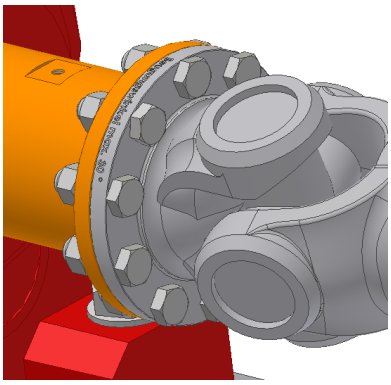
5 Remove the M16 bolts (10) securing the cardan shaft to the companion flanges on both ends.



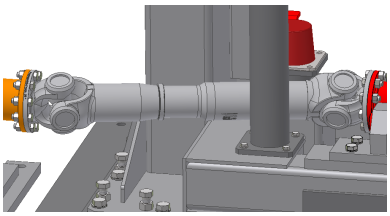
6 Remove and replace the cardan shaft.



7 Return and tighten the M16 bolts (10) securing the cardan shaft to the companion flanges on both ends.



8 Remove the support for the cardan shaft.



9 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

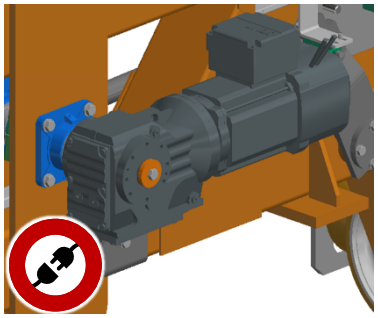
10 Lock Out the system again to return safety covers as needed then operate as normal.

How to Replace a Locking Mechanism Gearmotor

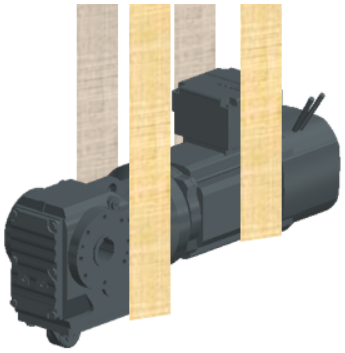
1 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

2 Shutdown and lockout the VDL according to your plant's lockout procedures.

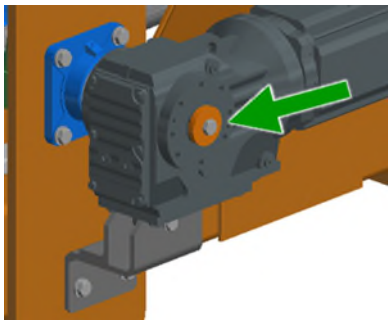
3 Disconnect all cables from the gearmotor.



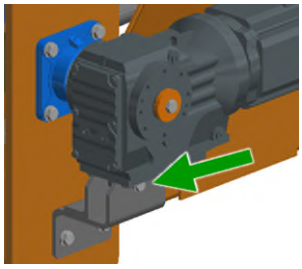
4 Support the gearmotor's weight.



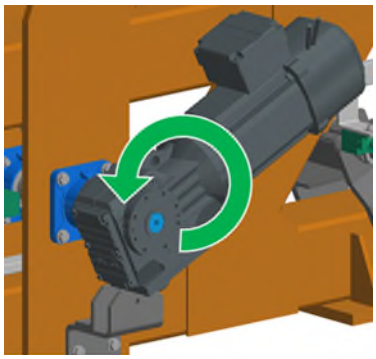
5 Remove the bolt and washer from the end of the drive shaft.



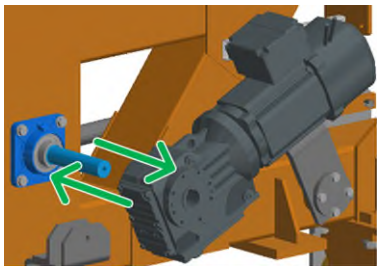
6 Remove the bolt securing the motor to its mount.



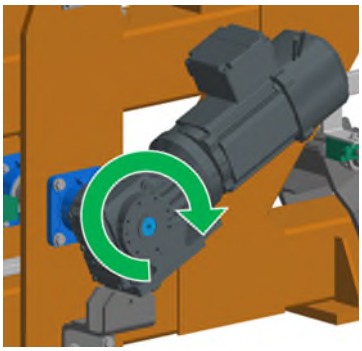
7 Rotate the gearmotor around the shaft until it is able to be removed.



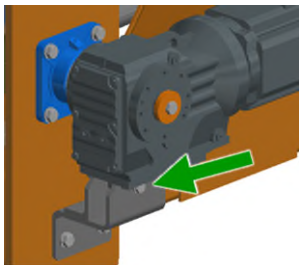
8 Remove the old gearmotor and replace it with the new unit.



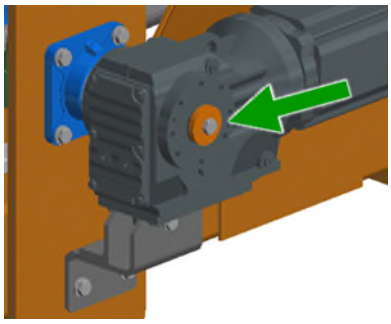
9 Rotate the new gearmotor back into position on its mount.



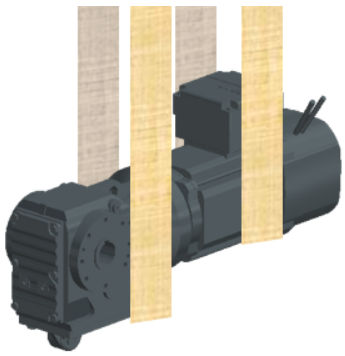
10 Reinstall the bolt securing the motor to its mount.



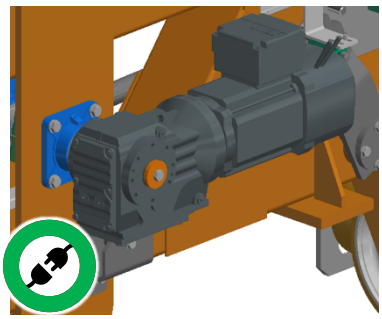
11 Reinstall the bolt and washer on the end of the drive shaft.



12 Remove any straps or supports from the gearmotor.



13 Reconnect all cables to the gearmotor.

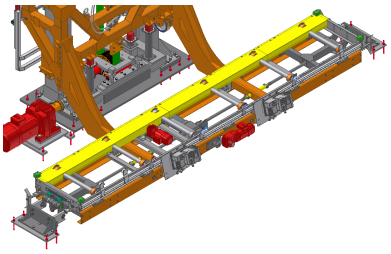


14 Cycle the VDL and observe for proper function. Correct if necessary.

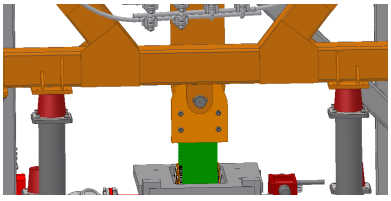
15 Return VDL to service.

How to Switch Lift Gearmotor from Primary to Standby

1 Remove any load on the lift carriage.



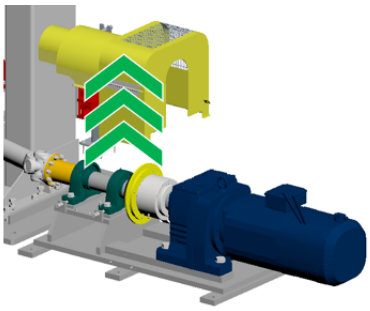
2 Jog the lift carriage down until it is sitting on the bumpers.



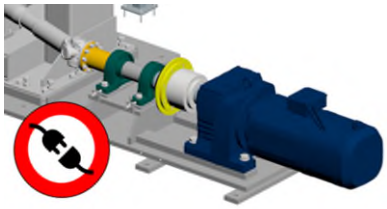
3 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

4 Shutdown and lockout the VDL according to your plant's lockout procedures.

5 Remove safety covers from both gearmotors



6 Disconnect all cables/wires from both motors.

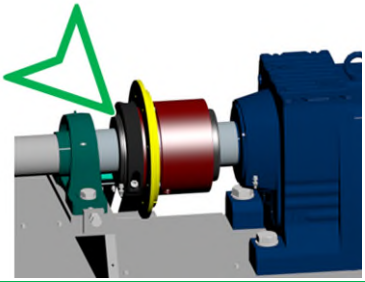


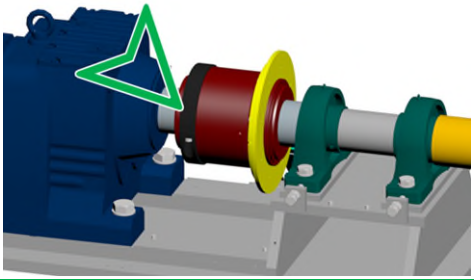
Identify which drive is currently **Primary** and which is the **Standby**:

Primary: The collar is on the **bearing-side** of the coupler.

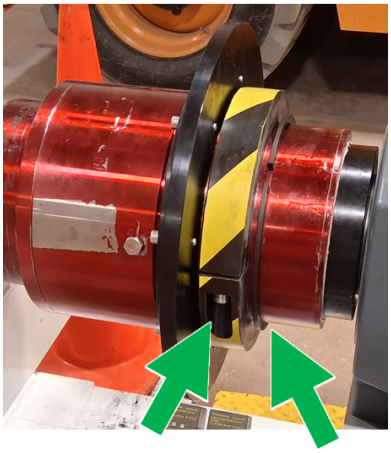
Standby: The collar is on the **motor-side** of the coupler.

7





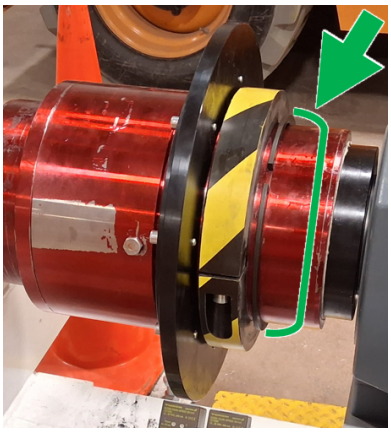
8 Remove the collars from **both** drives by removing the bolts holding them together.



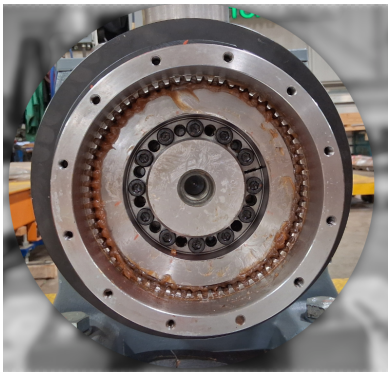
On the **Primary Drive:** Slide the coupler **away** from the motor to disengage the drive.

9 Replace the collar so it sits between the coupler and the retaining ring on the shaft.

This motor is now disengaged.

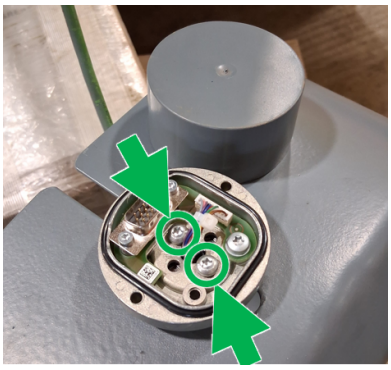


10 On the **Standby Drive:** Slide the coupler **toward** the motor as far as it can, until the internal spline teeth collide with their partner spline.
Note: If the splines align perfectly and no adjustment is needed, you can skip to step 22.

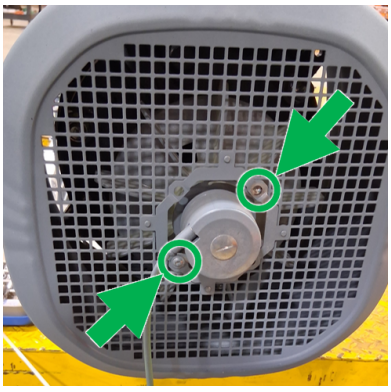


11 **Aligning the splines:**
On the **Standby Drive:** Remove the first fan cover from the motor.

12 Remove the plastic cap from the fan circuit board and loosen the 2 star bolts to free it from the fan cover.



13 Remove the two star screws from the fan motor to detach it from the second fan cover.



14 Remove the second fan cover.

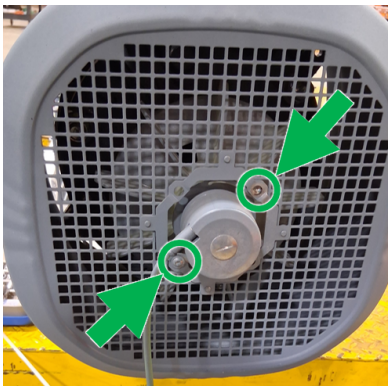
15 Remove the brake pin from the side of the motor and use it to temporarily disengage the brake.

16 Slowly rotate the motor fan to rotate the spline while another person applies pressure to the coupler until the spline teeth align. Once in position the coupler should be touching the retaining ring on the shaft.

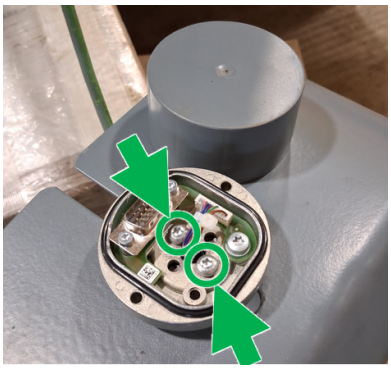
17 Reengage the motor brake and place the brake pin back into its designated location.

18 Replace the second fan cover

19 Reinstall the two star screws onto the fan motor to attach it to the second fan cover.

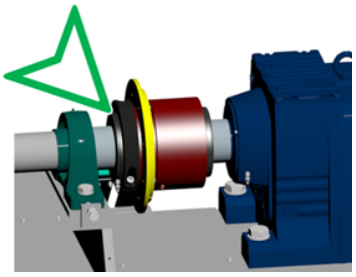


20 Slide the fan circuit board back into position on the first fan cover and tighten down the 2 star bolts to secure it.
Replace the plastic cap on the circuit board.

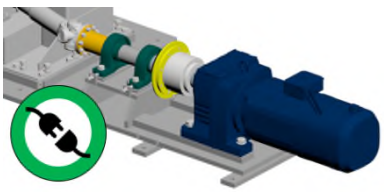


21 Reinstall the first fan cover.

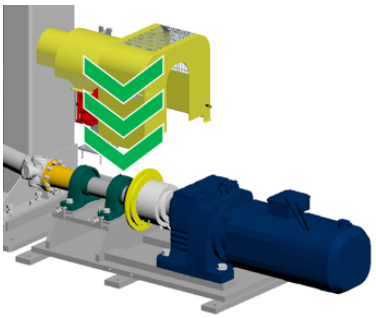
22 Reinstall the collar on the **bearing-side** of the shaft so that it holds the coupler in its new position.
This motor is now engaged and the "Primary" motor.



23 Reconnect all cables/wires to both motors.



24 Reinstall all safety covers.



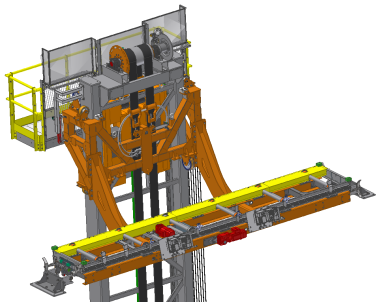
25 Restore power to the system and remove all safety pins.
Return the safety pins to their designated storage areas.

26 Cycle the VDL and observe for proper function. Correct if necessary.

27 Return VDL to service.

How to Replace a Lift Gearmotor

1 Raise the lift carriage to the full up position.

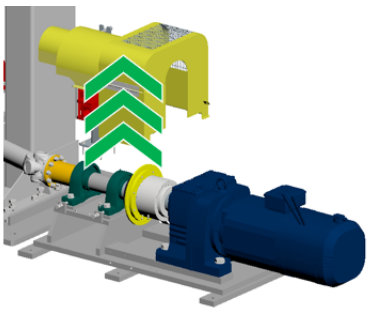


2 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

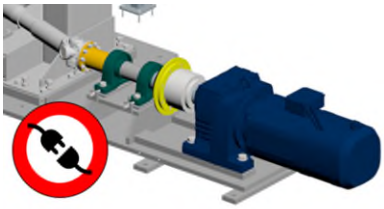
3 Shutdown and lockout the VDL according to your plant's lockout procedures.

4 ***Note:*** The following steps assume that you are replacing the **Standby** motor. If you need to replace the **Primary** motor, you must first perform the steps detailed in the above section *"How to Switch Lift Gearmotor from Primary to Standby."*

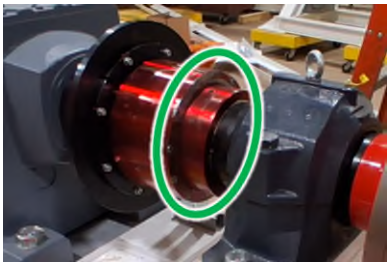
5 Remove safety covers from the Standby motor.



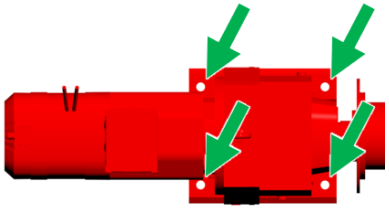
6 Disconnect all cables/wires from the Standby motor.



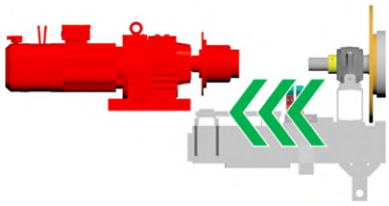
7 Remove the bolts on the inner coupler ring to separate the shaft coupler.



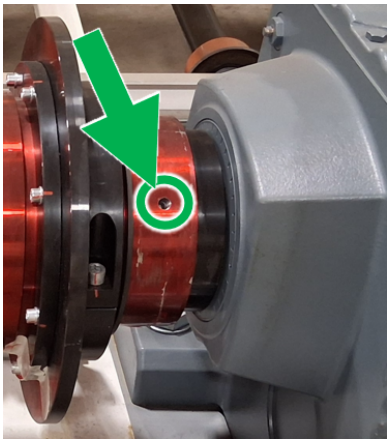
8 Remove the 4 bolts securing the gearmotor to the frame.



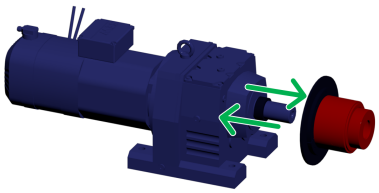
9 Carefully pull the gearmotor and coupler away from the shaft as one piece.



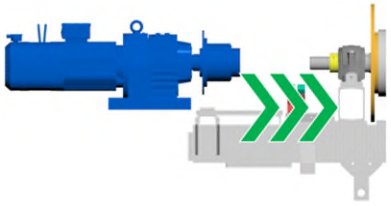
10 Loosen the set screw on the coupler.



11 Remove the coupler and spacers and place them onto the new gearmotor unit. Tighten down the coupler's set screw on the new motor shaft once in position.



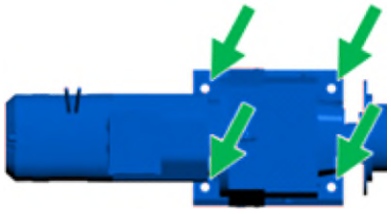
12 Carefully move the new gearmotor + coupler back into position on the drive unit.



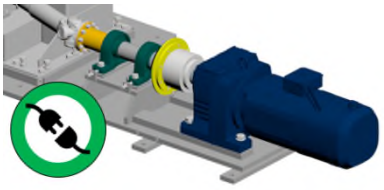
13 Hand-tighten bolts at the gearmotor base.

14 Tighten the bolts on the inner coupler ring to reconnect the shaft coupler.

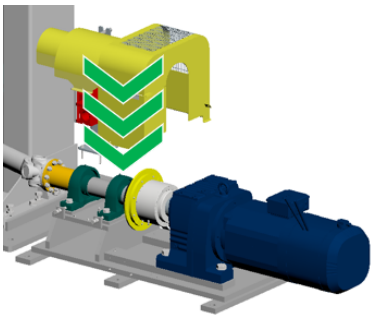
15 Tighten the bolts securing the gearmotor to the base plate.



16 Reconnect all removed cables/wires to the Standby motor.



17 Reinstall all safety covers.



18 Restore power to the system and remove all safety pins. Return the safety pins to their designated storage areas.

19 Restore power to the system. Run the Lift and verify proper function. Correct if necessary.

20 Lock Out the system again to return safety covers as needed then operate as normal.

VDL - Power Roll Bed Maintenance & Service

This section will describe service procedures for major mechanical elements of a Power Roll Bed NA.

⚠ WARNING ⚠

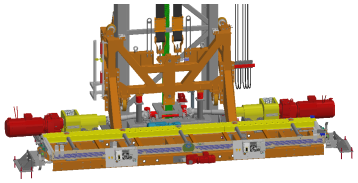
- Only qualified and trained personnel should perform the disassembly and assembly of electrical and mechanical components.
- Before attempting any maintenance on this equipment all involved personnel should follow plant internal regulations along with any state, federal, or province regulations. Do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

How to Replace a Gearmotor

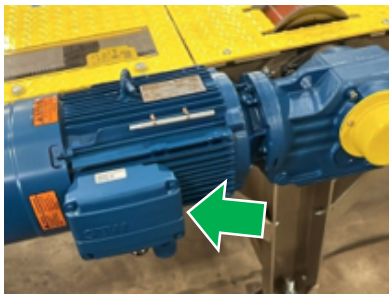
1 Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

Remove and lock out power to the Power Roll Bed using your plant's procedures.

2 Remove covers where necessary.

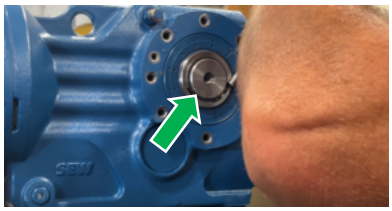


3 Remove all required electrical connections.

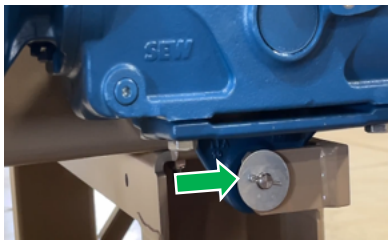


4 Remove all screws to remove the gearmotor cover.

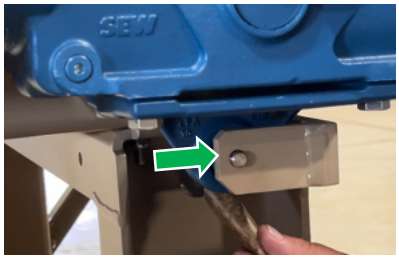
5 Remove the retaining ring from the drive shaft.



6 Remove the cotter pin and washer from the frame mount.

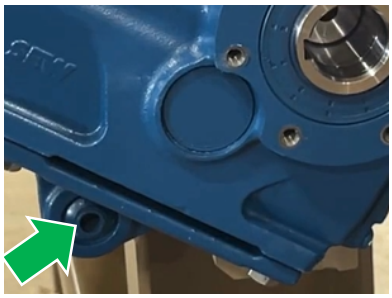


7 Remove the retaining pin from the frame and the gearmotor base.

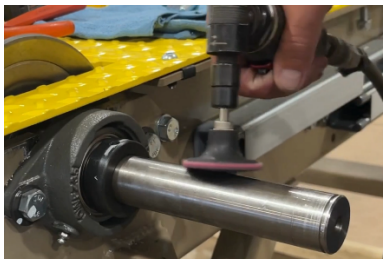


8 Using an overhead crane, carefully hoist the gearmotor off the unit.

9 Remove the gearmotor base from the old gearmotor to install on the new gearmotor.



10 Using a fine-grit sand disk, gently clean the external drive shaft to remove any material buildup.



11 Install a new key by carefully inserting and gently tapping it into the slot on the drive shaft.

12 Gently sand the edges of the new key to eliminate any burrs for easier insertion into the gearmotor.

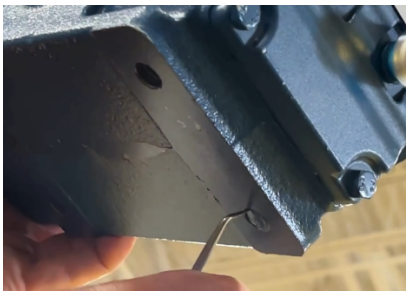
13 Remove the protective shipping caps and the contents of the hollow bore in the SEW gearmotor.

14 Set aside the SEW provided NOCO-Paste corrosion protection and lubricant.

15 Remove the retaining ring from the hollow bore and set it aside.

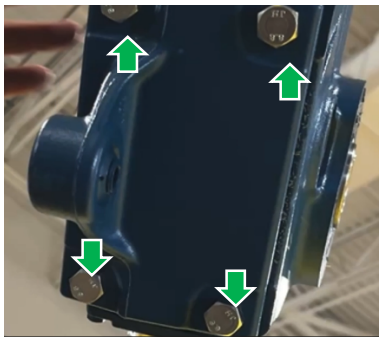
16 Take out the screw plugs located around the perimeter of the hollow bore.

17 Remove the screw plugs from the bottom of the gearmotor as well.

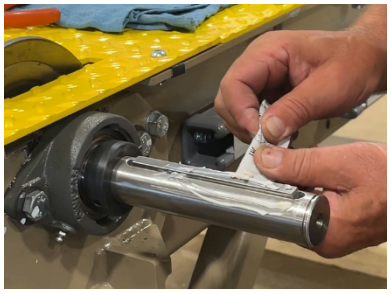


18 Apply Loctite to the bolts intended for securing the gearmotor base to the bottom of the gearmotor.

19 Affix the gearmotor base to the underside of the gearmotor.

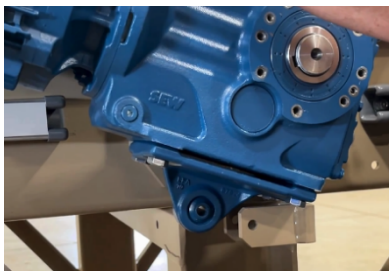


20 Apply the SEW-supplied NOCO-Paste for corrosion protection and lubrication on the drive shaft.



21 Using an overhead crane, place the new gearmotor on the drive shaft. Remove any excess NOCO-Paste.

22 Align the mounting holes on the new gearmotor base with the holes on the conveyor frame.



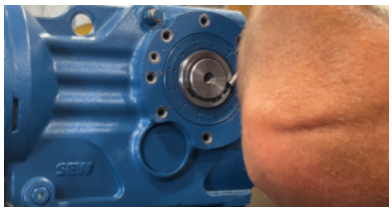
23 Reinsert the retaining pin on the frame and the gearmotor base.

24 Due to restricted space, utilize a C-clamp to aid in maneuvering the pin through the holes.

25 Gently tap the pin the rest of the way through.

26 Reinsert the washer and cotter pin on the frame mount.

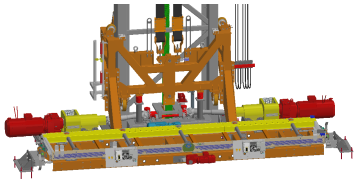
27 Reinsert the retaining ring on the drive shaft.



28 Place the gearmotor safety cover back on the gearmotor.

29 Re-attach all required electrical connections.

30 Place cover(s) back on Power Roll Bed and tighten bolts.



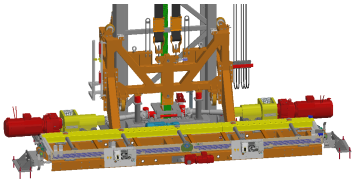
31 Restore power to the system and test for proper operation.

How to Replace a Driven Belt

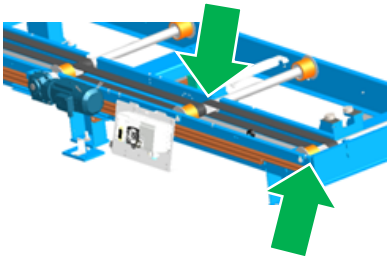
1. Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

   Remove and lock out power to the Power Roll Bed using your plant's procedures.

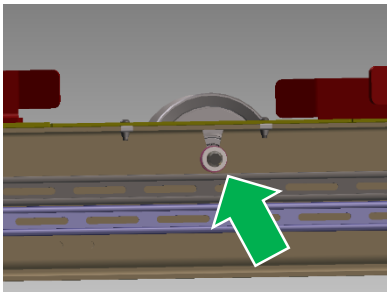
2. Remove covers.



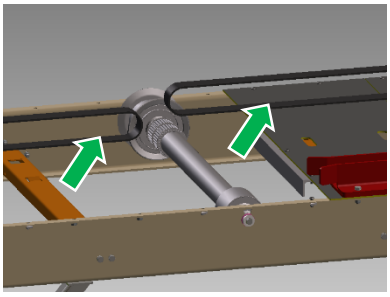
3. Both belt sharing rollers of the damaged belt will need to be loosened from the frame to free up any tension and to replace the belt.



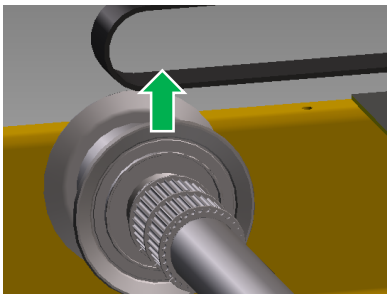
4. Remove the hex head bolts holding the shafts on both sides of the rollers.



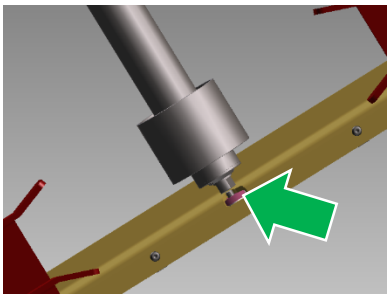
5. Lift roller shaft upward and remove one end of the belt. Perform the same to belt sharing roller shaft.



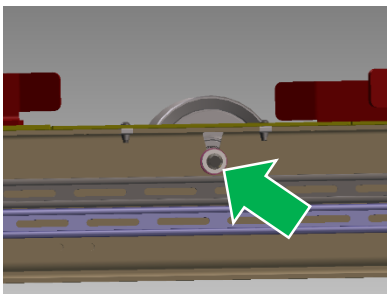
6 Remove damaged belt and replace it with a new belt. Thread each roller through the toothed belt(s) so that they are on the appropriate pulleys and rollers.



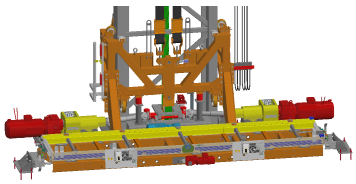
7 Insert rollers into both sides of the frame, turning the roller so that flats on the rod end fit into the slots.



8 Retighten bolts on both sides of rollers on the Power Roll Bed.



9 Place cover back on Power Roll Bed and tighten screws.



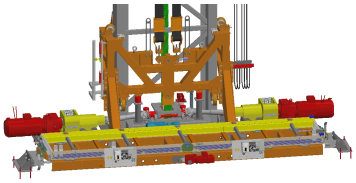
10 Restore power to the system and test for proper operation.

How to Replace a Driven Roller

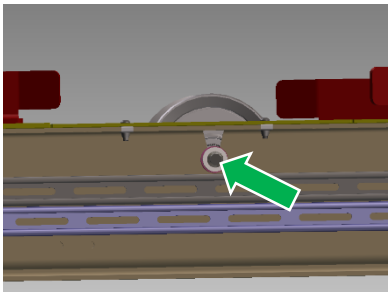
1. Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

   Remove and lock out power to the Power Roll Bed using your plant's procedures.

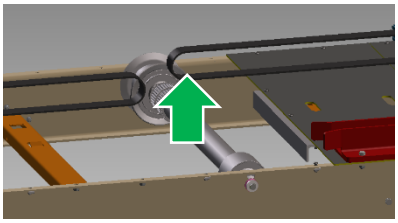
2. Remove covers.



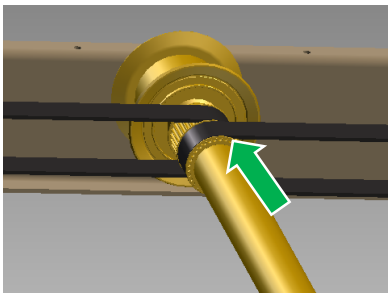
3. Remove the hex head bolts holding the shafts on both sides of the roller. To replace an interior roller, the belt sharing rollers may also need to be loosened from the frame to free up tension from the belts.



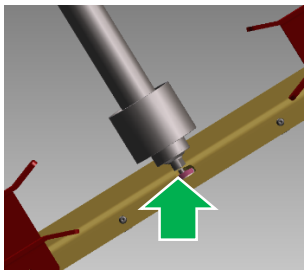
4. Lift roller shaft upward and remove belt(s) off roller shaft.



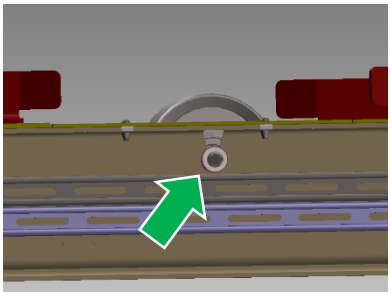
5. Insert new roller through the toothed belt(s) and place on the pulley.



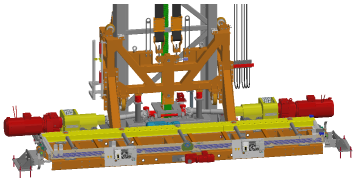
6 Turn the roller so that the flats on the rod end fit into the slots on both sides of the frame.



7 Retighten bolts on both sides of the Power Roll Bed.



8 Place cover back on Power Roll Bed and tighten screws.



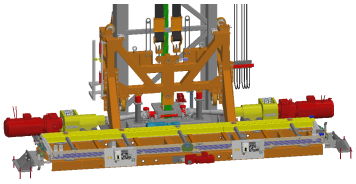
9 Restore power to the system and test for proper operation.

How to Replace a Drive Belt

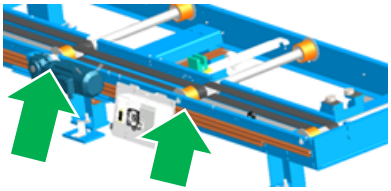
1. Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

   Remove and lock out power to the Power Roll Bed using your plant's procedures.

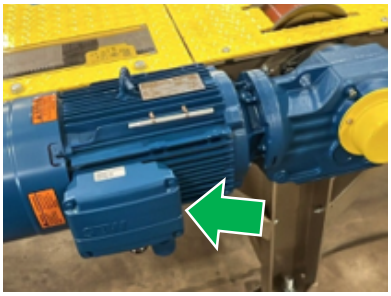
2. Remove safety covers.



3. Both belt sharing rollers of the damaged belt will need to be loosened from the frame to free up any tension and to replace the belt.

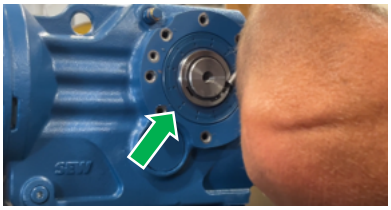


4. Remove all required electrical connections from the gearmotor.

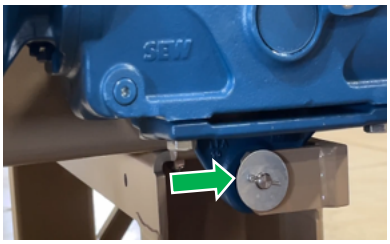


5. Remove all screws to remove the gearmotor cover.

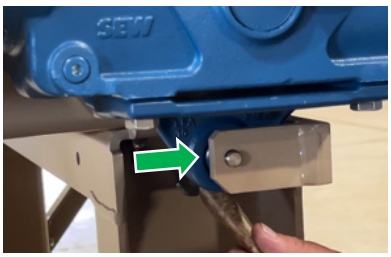
6 Remove the retaining ring from the drive shaft.



7 Remove the cotter pin and washer from the frame mount.

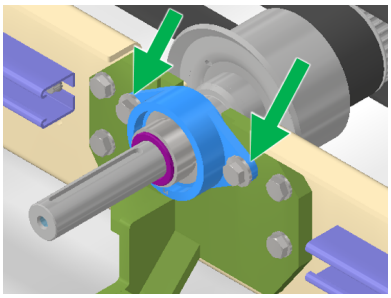


8 Remove the retaining pin from the frame and the gearmotor base.

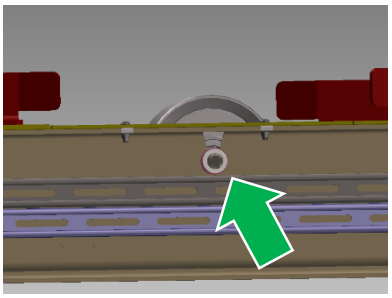


9 Using an overhead crane, carefully hoist the gearmotor off the unit.

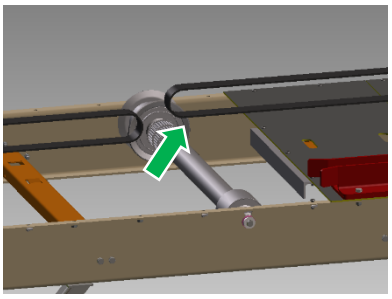
10 Remove the bolts securing the bearings to the frame on both ends of the drive roller.



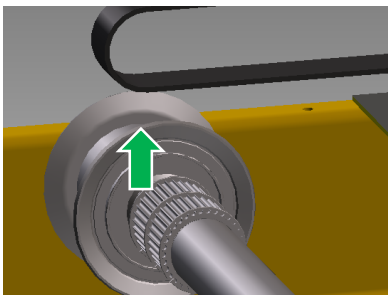
11 Remove the hex head bolts holding the shafts on both sides of the driven roller.



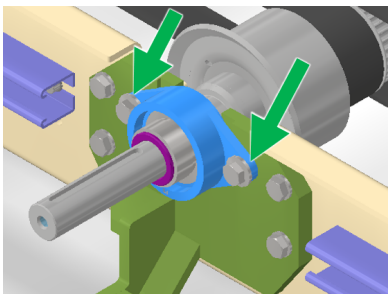
12 Lift roller shaft upward and remove one end of the belt. Perform the same to belt sharing roller shaft.



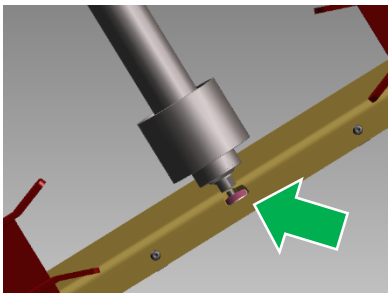
13 Remove damaged belt and replace it with a new belt. Thread each roller through the toothed belt(s) so that they are on the appropriate pulleys and rollers.



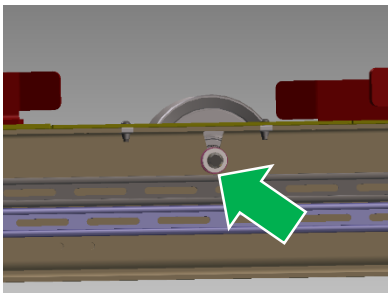
14 Place the drive roller back into position and tighten the bolts securing the bearings to the frame on both ends of the roller.



15 Place the partner driven roller back into the frame, turning the roller so that flats on the rod end fit into the slots.

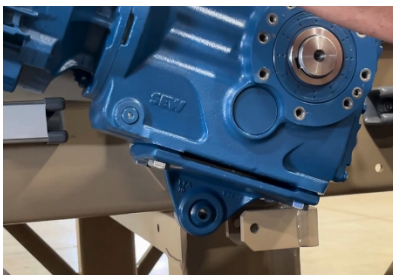


16 Retighten bolts on both sides of the driven roller on the Power Roll Bed.



17 Using an overhead crane, place the gearmotor back on the drive shaft.

18 Align the mounting holes on the gearmotor base with the holes on the conveyor frame.



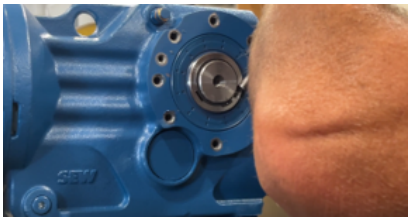
19 Reinsert the retaining pin on the frame and the gearmotor base.

20 Due to restricted space, utilize a C-clamp to aid in maneuvering the pin through the holes.

21 Gently tap the pin the rest of the way through.

22 Reinsert the washer and cotter pin on the frame mount.

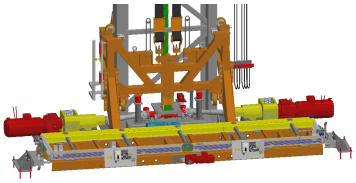
23 Reinsert the retaining ring on the drive shaft.



24 Place the gearmotor safety cover back on the gearmotor.

25 Re-attach all required electrical connections.

26 Place cover back on Power Roll Bed and tighten screws.



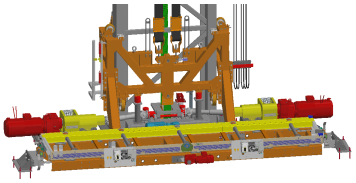
27 Restore power to the system and test for proper operation.

How to Replace a Drive Roller

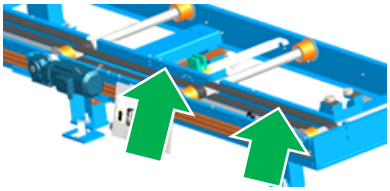
1. Mechanically secure the VDL per the procedure in the above section: ***Securing the Vertical Drop Lifter***

   Remove and lock out power to the Power Roll Bed using your plant's procedures.

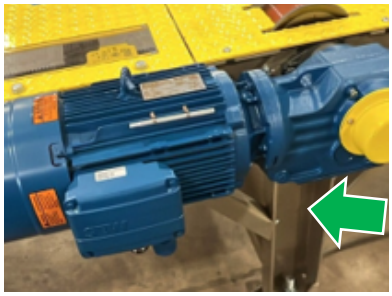
2. Remove safety covers.



3. Both belt sharing rollers of the damaged roller will need to be loosened from the frame to free up any tension and to replace the belt.

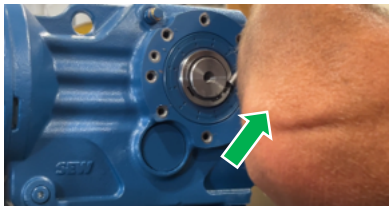


4. Remove all required electrical connections from the gearmotor.

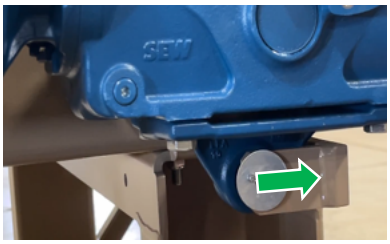


5. Remove all screws to remove the gearmotor cover.

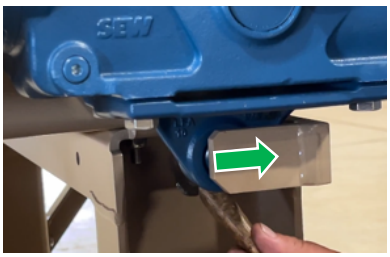
6 Remove the retaining ring from the drive shaft.



7 Remove the cotter pin and washer from the frame mount.

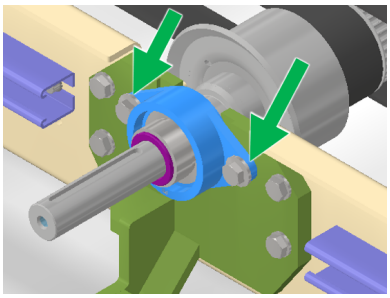


8 Remove the retaining pin from the frame and the gearmotor base.

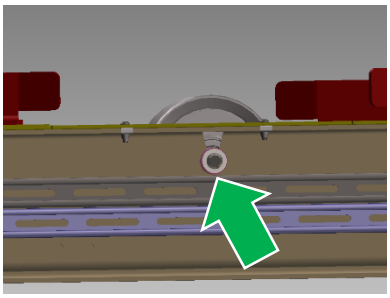


9 Using an overhead crane, carefully hoist the gearmotor off the unit.

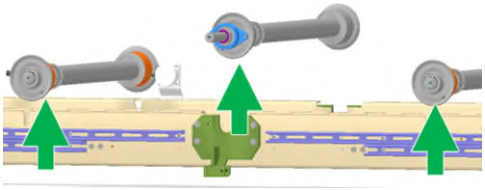
10 Remove the bolts securing the bearings to the frame on both ends of the drive roller.



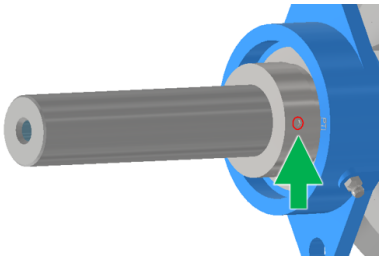
11 Remove the hex head bolts holding the shafts on both sides of the driven rollers.



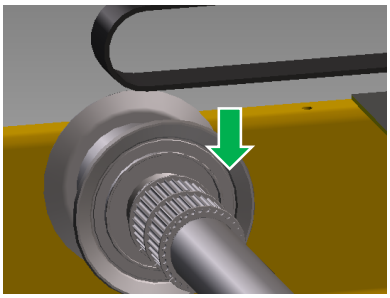
12 Lift the rollers out of the frame until you are able to remove the belts from the drive roller.



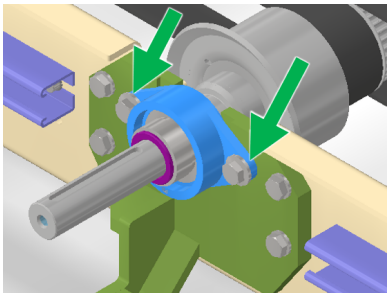
13 Loosen the set screws on both bearings on the drive roller to remove them. Place the bearings onto the new drive roller to be inserted.



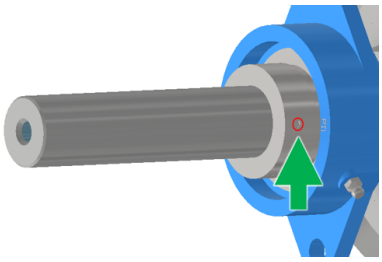
14 Place belts back on the removed rollers. Thread each roller through the toothed belt(s) so that they are on the appropriate pulleys and rollers.



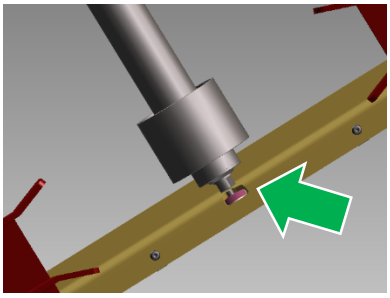
15 Place the drive roller back into position and tighten the bolts securing the bearings to the frame on both ends of the roller.



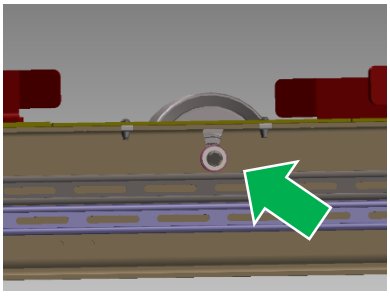
16 Retighten the set screws on both bearings on the drive roller.



17 Place the partner driven roller back into the frame, turning the roller so that flats on the rod end fit into the slots.

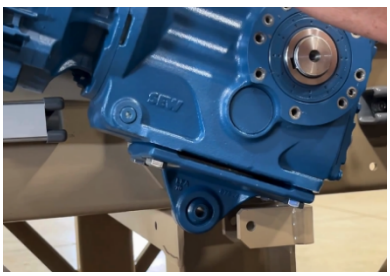


18 Retighten bolts on both sides of the driven roller on the Power Roll Bed.



19 Using an overhead crane, place the gearmotor back on the drive shaft.

20 Align the mounting holes on the gearmotor base with the holes on the conveyor frame.



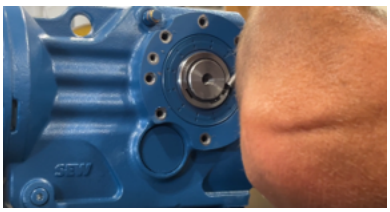
21 Reinsert the retaining pin on the frame and the gearmotor base.

22 Due to restricted space, utilize a C-clamp to aid in maneuvering the pin through the holes.

23 Gently tap the pin the rest of the way through.

24 Reinsert the washer and cotter pin on the frame mount.

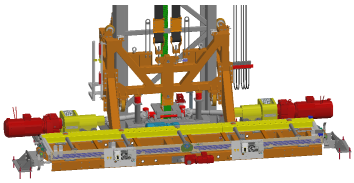
25 Reinsert the retaining ring on the drive shaft.



26 Place the gearmotor safety cover back on the gearmotor.

27 Re-attach all required electrical connections.

28 Place cover back on Power Roll Bed and tighten screws.



29 Restore power to the system and test for proper operation.