

Shuttle Maintenance & Service

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

⚠ 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 the Gearmotor

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



- 2 Disconnect the cables from the gearmotor.



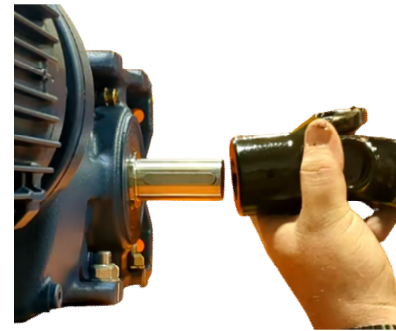
- 3 Remove the cardan shaft covers.



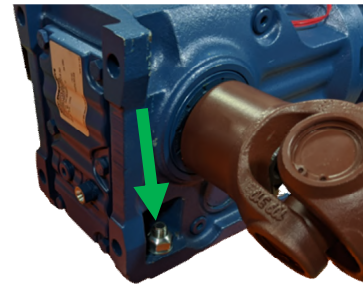
- 4 Undo the setscrews in the universal joints on both sides of the gearmotor.



- 5 Remove the universal joints from gearmotor shafts.



- 6 Undo the screws (4) holding the gearmotor to the base.



- 7 Replace the gearmotor.



- 8 Reverse the above steps to complete the gearmotor replacement.



- 9 Complete restore power procedure and verify proper function.



How to Replace a Cardan Shaft

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



- 2 Remove the cardan shaft covers.



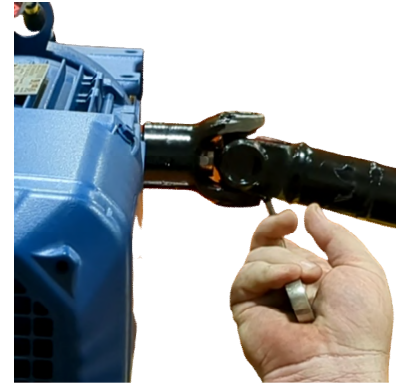
- 3 Undo the setscrews in the universal joints at both ends of the cardan shaft.



- 4 Remove and replace the cardan shaft.



- 5 Tighten the setscrews.



- 6 Install the cardan shaft covers.



- 7 Complete restore power procedure and verify proper function.



How to Replace a Guide Wheel

- 1 Remove the retaining ring.



- 2 Remove the roller.



- 3 Press the roller on with caution; *do not beat and press against the outer ring.*



- 4 Mount the retaining ring.



How to Replace an Idle Wheel

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



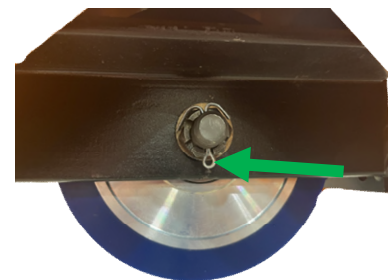
- 2 Raise the shuttle using a hoisting device (chain hoist or jack), until the idle wheel block so that it has enough clearance to be removed.



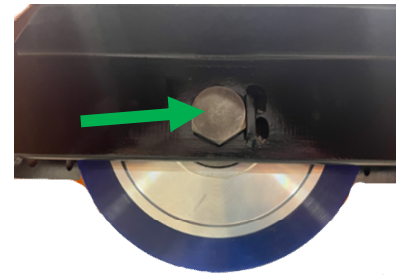
- 3 Loosen and remove the four screws that hold the idle wheel block to the trolley.



- 4 Remove the cotter pin. Loosen and remove the nut.

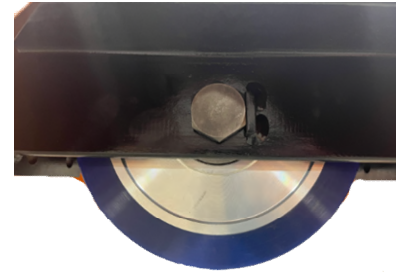


- 5 Remove the M25 shoulder screw that serves as the axle for the idle wheel.

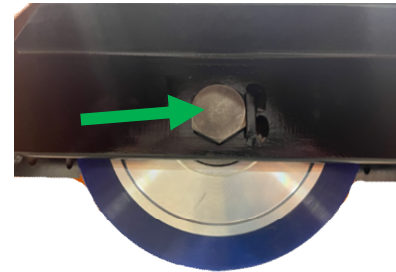


Remove and replace the idle wheel.

- 6 **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.

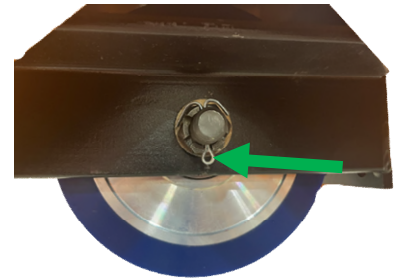


- 7 Insert the M25 shoulder screw.



- 8 Screw on and snug up the hex nut. Insert the cotter pin to lock the hex nut in place.

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



- 9 Return the idle wheel block onto the shuttle and tighten the four screws that hold the idle wheel block to the trolley. Torque the screws to 330 Nm.



- 10** Lower the shuttle so that the idle wheel is back on the rail.



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



How to Replace a Drive Wheel

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



- 2 Raise the shuttle using a hoisting device (chain hoist or jack), until the drive wheel block so that it has enough clearance to be removed.



- 3 Remove the cardan shaft cover.



- 4 Remove the setscrew in the universal joint to the drive wheel.



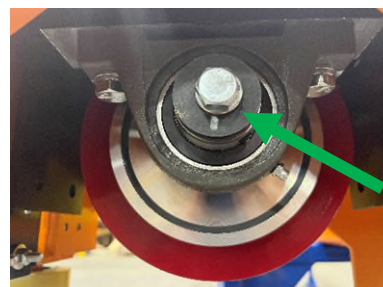
- 5 Disconnect the cardan shaft from the drive wheel shaft.



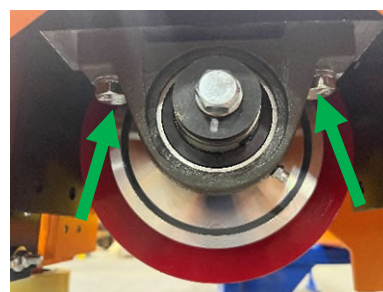
- 6 Loosen and remove the four screws that hold the drive wheel block to the trolley.



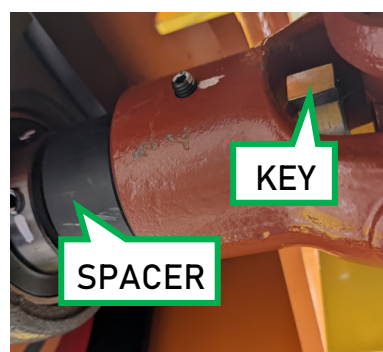
- 7 Loosen and remove the screw, washer, and retainer that goes into the drive wheel shaft.



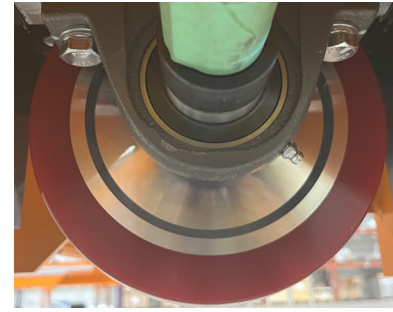
- 8 Remove the pillow block bearing that is on the same side of the drive wheel as the above screw.



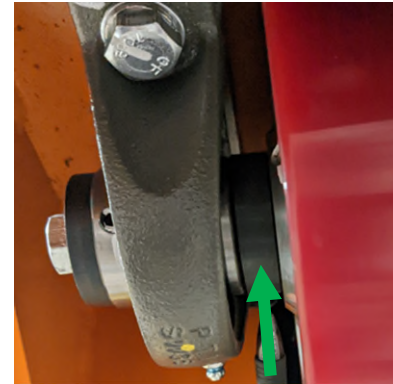
- 9 Pull the drive wheel shaft out of the drive wheel without removing it completely from the drive wheel block.
- Note:** Retain the spacers and the drive wheel shaft key for the new wheel.



- 10** Remove the old drive wheel from the drive wheel block.



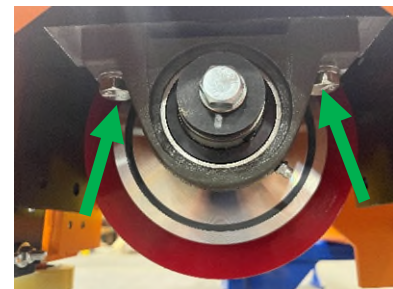
- 11** Align the keyway of the new drive wheel and the drive shaft then insert the new wheel onto the shaft.
 Ensure that a spacer is between new drive wheel and the pillow block bearing that is still attached to drive wheel block.



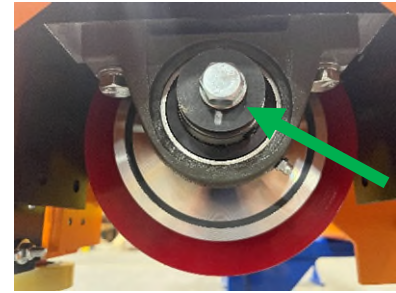
- 12** Place the spacer onto the other end of the drive shaft and insert the drive shaft through the pillow block bearing.



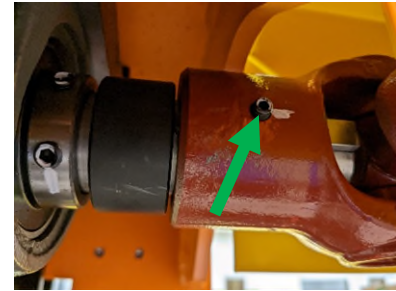
- 13** Apply removable Loctite to the end of the pillow block bearing bolts and mount the pillow block bearing with washer and lock washer to the drive wheel block.



- 14** Apply removable Loctite to the drive shaft end screw, washer, and retainer. Insert and tighten to complete the assembly.



- 15** Align the drive shaft key with the cardan shaft end and insert. Tighten the set screw on the cardan shaft.



- 16** Lower the shuttle so that the idle wheel is back on the rail.



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

