

EA-04b: Repair Kelly Dock (Hinge Pin/Ratchet Holddown/Chain, Pins)

SAFETY FIRST

- Place cones at the entrance to the dock to notify drivers that the dock is not available for use.
- Be sure to notify the dispatcher that maintenance is being performed on the dock.
- It is very important to have the dock adequately supported when working under the dock plate. Place the safety post in the safety post cup to brace the plate up and hoist as needed.
- If working in the evening or at night, a flashlight may be needed.
- Wear cotton gloves and a protective suit to protect skin and clothing from dirt and debris.

EQUIPMENT

- Tyvek suit
- cotton gloves
- orange cones
- flashlight
- prybar
- hinge pins (hinge pin replacement)
- hammer (hinge pin replacement)
- channel locks
- overhead hoists or boom crane
- pliers (ratchet hold-down assembly replacement)
- ratchet hold-down assembly (assembly replacement)

RESOURCES

- Kelly Owner's Manual
- McGuire Manual



Repair Kelly Dock (Hinge Pin/Ratchet Holddown/Chain, Pins)

Part A: Replace the Hinge Pins

Warning: You will be working underneath the dock plate when replacing dock plate hinges. Follow all recommended safe practices when using equipment associated with hoisting and securing the dock plate. Severe injury could result if safe practices are not observed.

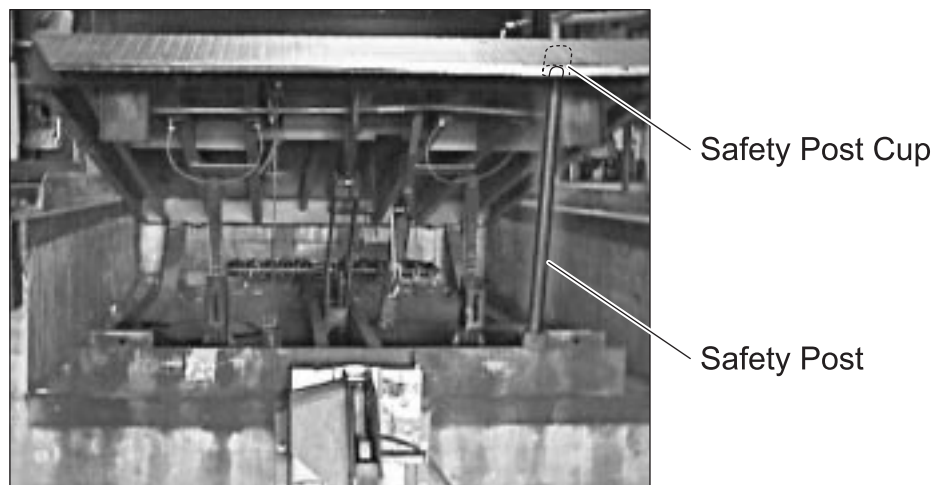
1. Prepare for the work.

- Notify the dispatcher that maintenance repair work is beginning on the dock.
- Set two or more cones at the entry door of the dock area to alert drivers that the dock is not available.
- Wear a Tyvek suit and gloves to protect clothing and skin from dock dirt and debris.

2. Secure the dock plate in the raised position.

Note: Ask for assistance when bracing up the dock.

- Swing the safety post up and secure in the safety post cup. See the figure below.

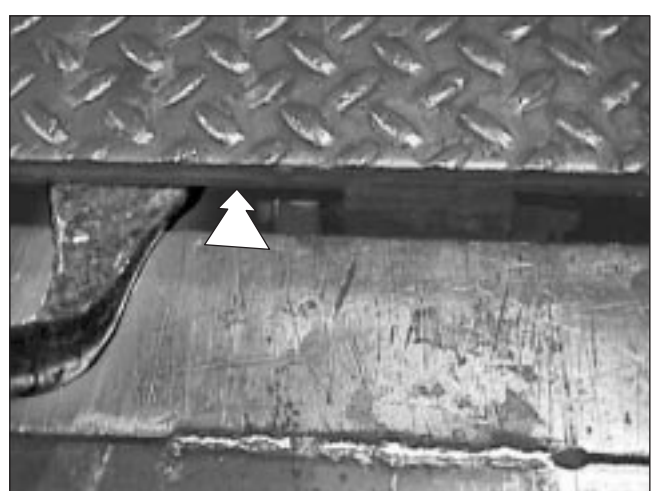
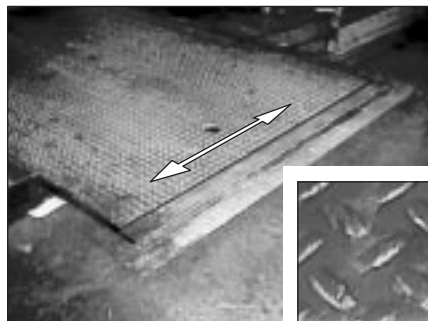


- Connect one of the hoist or boom crane hooks to the edge of the dock plate frame; connect the other hook to the opposite side, as shown below.



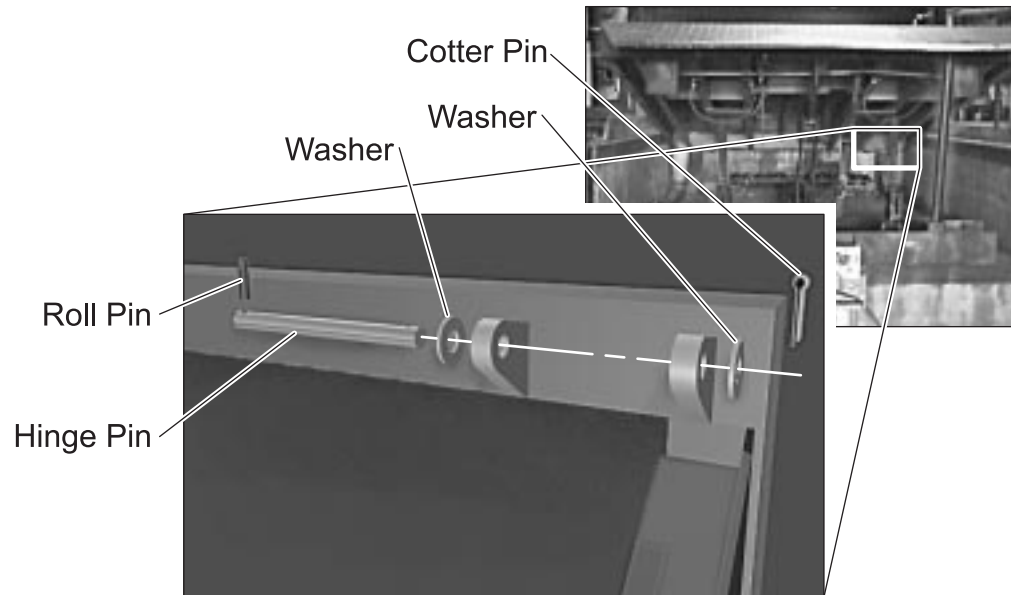
Lifting Hooks

- Hoist the dock plate until its weight is not resting on the dock plate frame.
- Using a prybar, nudge the dock plate until it is parallel with the frame. “Squaring up” the dock plate makes it easier to slide the hinge pin out of the hinge bracket. See the figure below.



3. Remove the hinge pin.

- Remove the cotter pin and washer. See the figure below.



- Using a hammer, tap the hinge pin out of the two brackets.
- Remove the roll pin from the end of the hinge pin.

4. Obtain the replacement part.

- Refer to the Operator's Manual, as necessary, for part numbers.

5. Using shop towels, wipe dirt and debris from the hinge area.**6. Install the new hinge pin.**

- Install the roll pin in the end of the hinge pin.
- Slide a washer on the hinge pin.
- Slide or tap the hinge through the hinge brackets.
- Install the washer.
- Install the cotter pin.

7. Remove all tools and parts from the work area.**8. Lower the dock plate to the dock level.**

- Lower the hoist to release the weight of the dock.
- Remove the hooks from the frame.
- Move the hoist aside.
- Return the safety post to the resting position.
- Walk the dock down.

9. **Operate the pull chain to verify that the hinge is operational.**

10. **Discard the defective parts.**

Part B: Replace the Ratchet Hold-down Assembly

Warning: You will be working underneath the dock plate when replacing the ratchet hold-down cylinder. Follow all recommended safe practices when using equipment associated with hoisting and securing the dock plate. Severe injury could result if safe practices are not observed.

1. **Prepare for the work.**

- Notify the dispatcher that maintenance repair work is beginning on the dock.
- Set two or more cones at the entry door of the dock area to alert drivers that the dock is not available.
- Wear a Tyvek suit and gloves to protect clothing and skin from dock dirt and debris.

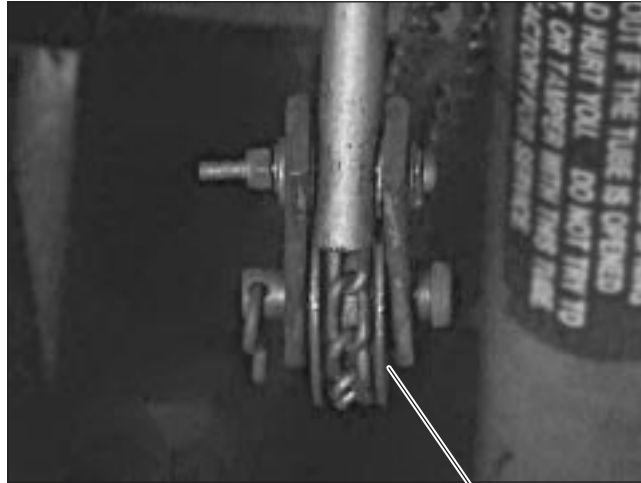
2. **Secure the dock plate in the raised position.**

- Swing the safety post up and secure it in the safety post cup.



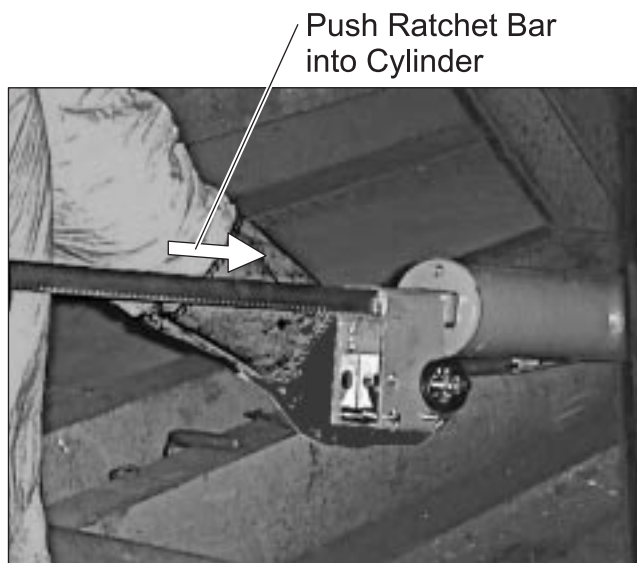
3. Remove the defective cylinder.

- Remove the cotter pin and clevis pin on the bracket/pulley assembly. Pull the clevis pin out to drop the chain from the release handle on the hold-down assembly. See the figure below.



Bracket/Pulley Assembly

- Remove the clevis pin securing the ratchet bar to the underside of the dock plate.
- Push the ratchet bar into the cylinder and set the cylinder, down in the subframe. See the figure below.



Push Ratchet Bar
into Cylinder



- Using pliers and a flashlight (if needed), remove the cotter pin and clevis pin securing the other end of the hold-down assembly to the subframe.
- Remove the hold-down assembly from underneath the dock and set aside.
- Remove the bracket/pulley assembly from the defective hold-down assembly.

4. Obtain the replacement part.

- Refer to the Operator's Manual, as necessary, for part numbers.

5. Install the new (or rebuilt) cylinder.

- Install the bracket/pulley assembly onto the ratchet release handle.
- Position the cylinder under the dock plate.
- Attach the lower end of the hold-down assembly to the subframe of the dock.
- Extend the ratchet arm and attach the arm to the underside of the dock plate.
- Thread the chain over the pulley.

6. Remove all tools from the work area and clean up the area.

7. Lower the dock plate to the dock level.

- Remove the safety post from the safety post cup.
- Walk the dock down.

Part C: Replace the Chain and Pins

Warning: You will be working underneath the dock plate when replacing the pull chain and pins. Follow all recommended safe practices when using equipment associated with hoisting and securing the dock plate. Severe injury could result if safe practices are not demonstrated.

1. Prepare for the work.

- Notify the dispatcher that maintenance repair work is beginning on the dock.
- Set two or more cones at the entry door of the dock area to alert drivers that the dock is not available.

- Wear a Tyvek suit and gloves to protect clothing and skin from dock dirt and debris.

2. Secure the dock plate in the raised position.

Note: Ask for assistance when bracing up the dock.

- Manually lift the dock far enough to access the hold-down cylinder lever.
- Using a prybar, or other device, actuate the lever.
- Swing the safety post up and secure in the safety post cup.

3. Remove the broken chain.

- From the top side of the dock plate, pull the chain out of the hole.
- Remove any other chain fragments and the ratchet bracket/pulley assembly.

4. Obtain the replacement part.

- Refer to the Operator's Manual, as necessary, for part numbers.

5. Install the new chain.

- Feed the chain through the top of the dock plate. Next, feed the chain through the pulleys.
- Install the chain on the bracket/pulley assembly onto the ratchet arm.
- Replace worn cotter and hair pins, as necessary.
- Remove all tools from the work area and clean up the area.

6. Lower the dock plate to the dock level.

- Remove the safety post from the safety post cup.
- Walk the dock down.

7. Operate the pull chain to verify that it releases the hold-down.

8. Discard the broken chain and clean up the work area.

9. Document the work history.

