MAGLINER®

CooLift®

Service Manual

For CooLift models with electric hydraulic lift AND propulsion
(CPA-- models)

IMPORTANT: Read entire manual before operating

Serial #: _____

Date of Purchase: _____

1-800-MAGLINE (624-5463)

www.magliner.com

Table of Contents

CooLift Toolkit

- Set of torx drivers
- #2, #3, #4 Phillips head screwdrivers
- 5/16”, 7/16”, two - 9/16”, 5/8”, 11/16”, 3/4”, 13/16” wrenches
- 6mm, two - 8mm, 10mm, 12mm, 13mm, 14mm, 17mm, two - 33mm, 35mm wrenches
- Four spacer blocks (4” x 4” x 24” wooden blocks)
- Isopropyl alcohol
- Vise on workbench
- Four vise-grip plier clamps (size 6r)
- Channel locks
- Rubber mallet
- Drift pin
- 1/2” socket w/extension and ratchet
- Needle nose pliers
- #1 flat head screwdriver
- 4mm, 5mm Allen wrench
- 5/16”, 9/64” Allen wrench
- Tape measure
- Torque wrench
- Medium flat head screwdriver
- Drip pan (cake pan will work)
- Absorbing material (kitty litter)
- DOT 3 or DOT 4 brake fluid
- Hydraulic fluid
- Shop towels
- Tube of clear silicone sealant
- Medium strength thread locker (blue)
- Flashlight
- Hydraulic thread sealant
- Utility knife

VERTICAL LOOP THROTTLE HANDLE REMOVAL

TOOLS NEEDED:
TORX T30 DRIVER, #3 PHILLIPS SCREWDRIVER, 7/16” WRENCH, 7/64 ALLEN WRENCH

1) Turn off main power switch. Disconnect the batteries.
2) Unplug the throttle and throttle interlock button wiring from the main wiring harness (see pages 6-7).
3) Remove the two socket head screws at the lower part of the handle using two 7/16” wrenches.
4) Remove the two pan head machine screws at the top of the handle using #3 Phillips and one 7/16 wrench.
5) Remove the pan head machine screw holding the horizontal brace to the vertical loops.
6) Rotate the vertical loop handle toward center to clear the upper handle mounts.
7) The handle should be able to slide vertically through the end of the horizontal brace and removed. This may take some effort and the end of the brace can be pried open slightly if necessary to ease removal.
8) As the handle lifts, carefully guide and pull the throttle and throttle interlock cables through the opening in the enclosure.
9) Once the cables have been pulled out of the enclosure the handle can be removed completely.

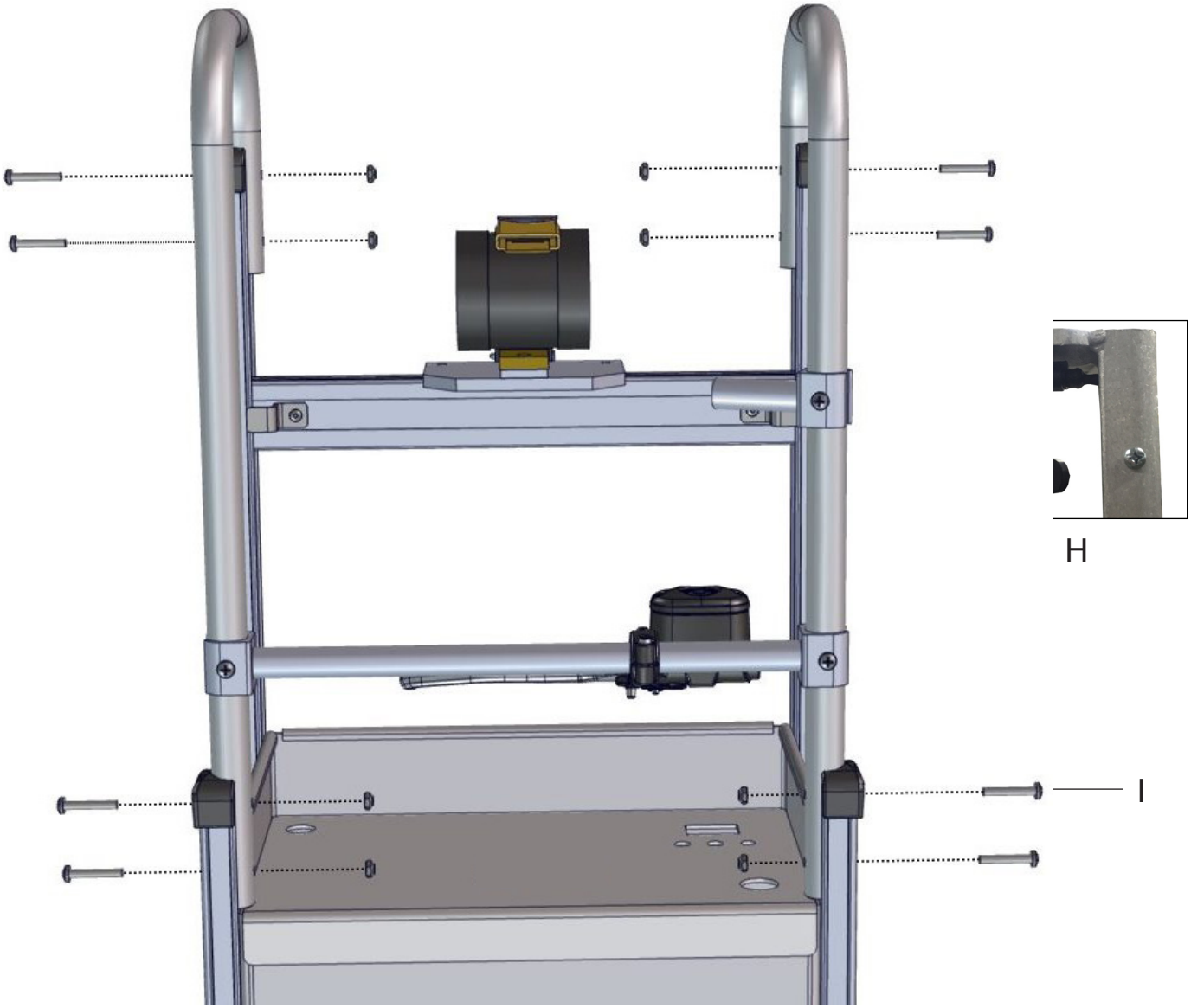
VERTICAL LOOP THROTTLE HANDLE REPLACEMENT

TOOLS NEEDED:
TORX T30 DRIVER, #3 PHILLIPS SCREWDRIVER, 7/16” WRENCH, , 7/64 ALLEN WRENCH

NOTE: Replacing a handle on the CooLift requires that the entire handle assembly first must be removed. See Vertical Loop Handle Removal for instructions.

1) Turn off main power switch. Disconnect the batteries.
2) With the entire handle assembly removed from the CooLift, take the new vertical loop handle and slide the replacement handle into the horizontal brace, before it is lowered into place take the throttle and interlock cables and feed them into the opening of the enclosure. Slide the replacement handle into place and replace the screw; finger tighten only for now.
3) As the handle is lowered into place carefully pull the cables into the enclosure being sure not to pinch them under the handle.
4) Once the handle is seated down rotate the top of the vertical loop handle into position.
5) Place the two screws into the top holes in the handles and then hand tighten it to the frame.
6) Place the screws the bottom holes located in the handles and hand tighten them to each of the corner posts.
7) Place the remaining screw in the hole that secures the horizontal brace to the vertical loop handle, carefully being sure not to pinch the cables in the handle, and tighten them using #3 Phillips screwdriver and 7/16” wrench.
8) Tighten all previously hand tightened screws.
9) Plug the throttle cable and the interlock cable back into the main wiring harness going to the controller (see pages 6-7).

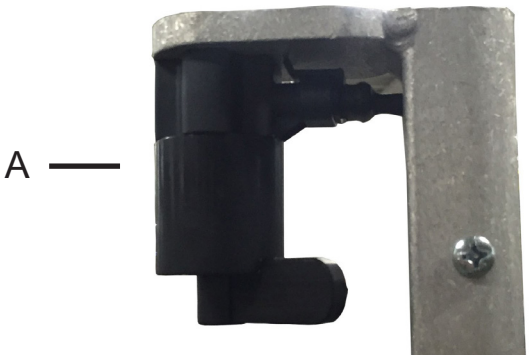
Item		Qty.	Part Number
A	Vertical loop handle - RH (includes handle, throttle mount weldment, throttle interlock button and cable)	1	309667
B	Vertical loop handle - LH	1	309568
C	Horizontal brace	1	309560
D	Pan head machine screw - 1/4”-20 x 1-1/2” long	6	80105
E	Hex lock nut 1/4”-20	10	80675
F	Pan head machine screw - 1/4”-20 x 1-3/4” long	2	80106
G	Brake master cylinder	1	309218
H	Throttle	1	309782
I	Hex head cap screw - 1/4”-20 x 3/4” long	2	80005



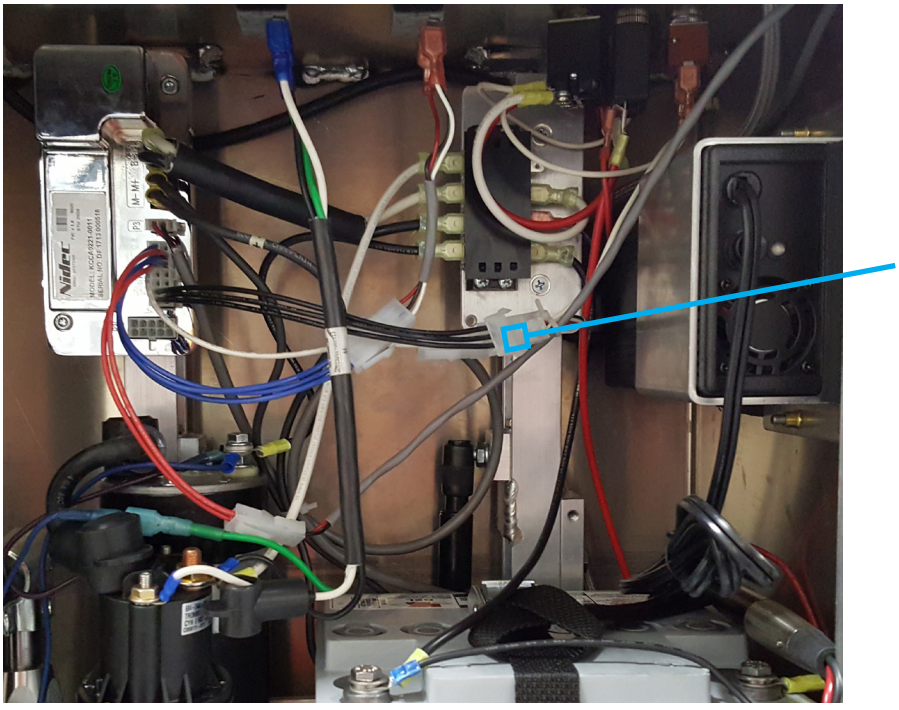
REPLACING THROTTLE

TOOLS NEEDED: 33mm WRENCHES; 3mm ALLEN WRENCH

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch. Remove back panel. Disconnect the batteries.
3) Unplug the throttle wiring harness from the main wiring harness that goes to the controller (see below)
4) Using the Allen wrench remove the two screws from the top of the throttle mount.
5) Lift up on the tab and pull on the connector. Remove throttle cable.
6) Put new throttle on by pushing the cable into the new throttle until the plastic lock clicks.
7) Put two screws back into the top of the throttle with the lever towards the handle and snug up the screws. Be careful not to tighten too much - over-torqueing may cause the lever to not move freely. Tighten the screws and test to ensure that the throttle system is still moving freely.
8) Reconnect the throttle to the main wiring harness going to the controller and replace the back panel.



Item		Qty.	Part No.
A	Throttle	1	309782

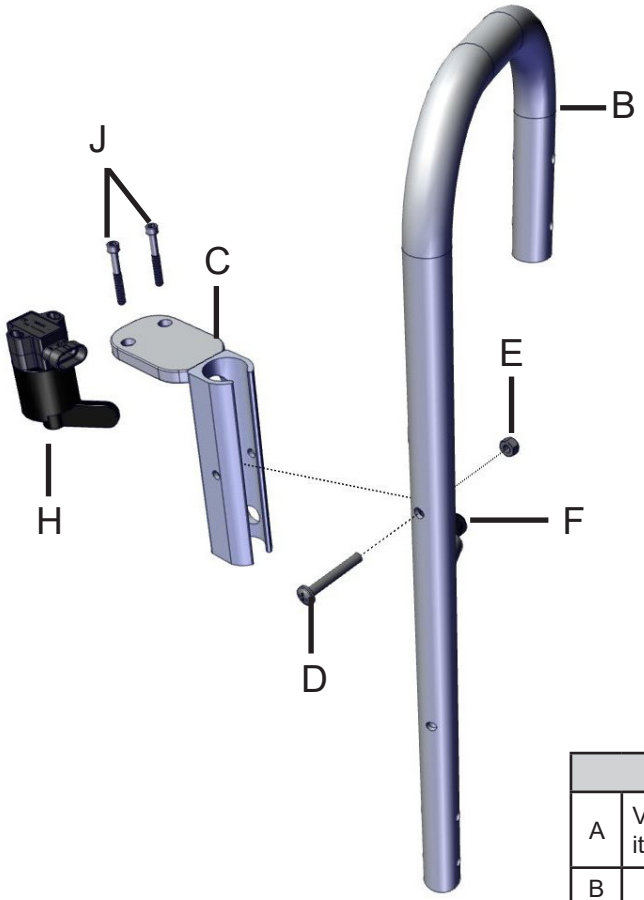


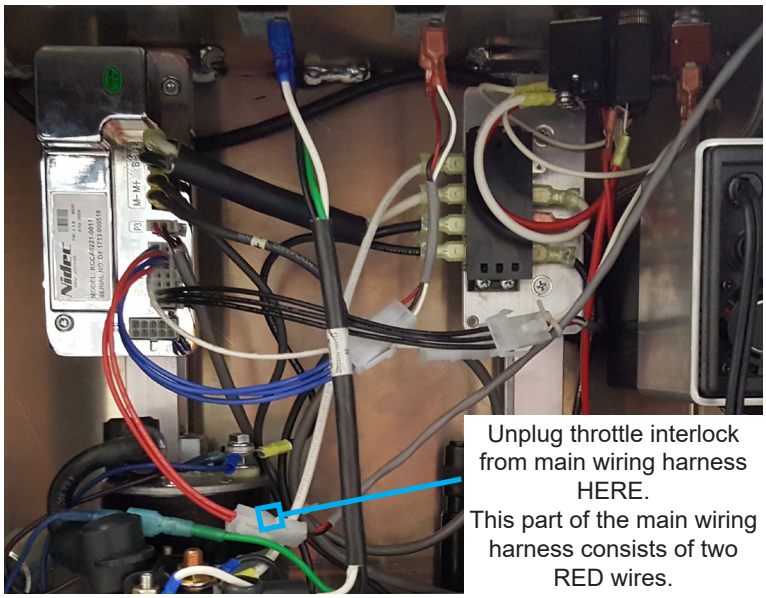
Unplug throttle from main wiring harness HERE. This part of the main wiring harness consists of three BLACK wires.

REPLACING THROTTLE INTERLOCK BUTTON

TOOLS NEEDED: #3 PHILLIPS SCREWDRIVER, FLAT HEAD SCREWDRIVER, 7/16” WRENCH, NEEDLE NOSE PLIERS

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch. Remove back panel. Disconnect the batteries.
3) Unplug throttle interlock button wiring harness from the main wiring harness that goes to the controller (see below).
4) Carefully pull old interlock button out of the handle being careful not to damage the wiring. Use the flat head screwdriver if necessary.
5) Remove wires from button.
6) Attach wires to the new button (quick connect tabs) by aligning the connector with tab and push on. It does not matter which wire goes on which tab.
7) Carefully insert button into the hole in handle, and press in place.
8) Plug throttle interlock button wiring harness into the main wiring harness as shown below.





Unplug throttle interlock from main wiring harness HERE.
This part of the main wiring harness consists of two RED wires.

Item		Qty.	Part No.
A	Vertical handle assembly with throttle (includes items below):	1	309667
B	Handle	1	309627
C	Mounting weldment for throttle	1	309765
D	Pan head machine screw - 1/4”-20 x 1-3/4” long	1	80106
E	Hex lock nut - 1/4”-20	1	80675
F	Throttle interlock button	1	62042
G	Cable for throttle interlock (in handle, not shown)	1	62057
H	Throttle	1	309782
I	Throttle cable (in handle, not shown)	1	62073
J	Socket head cap screw - #10-24 x 1-1/2” long	2	80145

CPA43 BULK HEAD REMOVAL

TOOLS NEEDED:
7/16” WRENCH, 1/2” WRENCH, #3 PHILLIPS SCREWDRIVER, #4 PHILLIPS SCREWDRIVER
SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Raise the deck to the highest position.
3) Place a spacer block between the deck and the base of the cart.
4) Turn off main power switch.
5) Remove the two screws (I) that attach the bulk head (A) to the base plate using the #4 Phillips screwdriver and the 1/2” wrench.
6) Take out the four screws (G) that attach the bulk head saddle plate (B) and the load retaining strap assembly and spacer (C, D) to the bulk head and the main cart using the #3 Phillips screwdriver and the 7/16” wrench.
   NOTE: If the bulk head is going to be reinstalled after servicing, only the two screws (G) anchored to the main cart and the saddle plate need to be removed. If the bulk head is taken off and the CooLift will be used in the 53” pallet configuration, a new saddle plate (309151) will need to be installed.
7) Lift and remove the saddle plate. Then lift and remove the bulk head frame to disengage from the base plate.

CPA43 BULK HEAD INSTALLATION

TOOLS NEEDED:
7/16” WRENCH, 1/2” WRENCH, #3 PHILLIPS SCREWDRIVER, #4 PHILLIPS SCREWDRIVER
SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Raise the deck to the highest position.
3) Insert a spacer block between the deck and the base of the cart.
4) Turn off main power switch.
5) Slide the bulk head (A) into position on the bulk head mounts located on the base plate.
6) Place the bulk head saddle plate (B) into position with the containment strap assembly and strap spacer (C, D) above it and attach using the four screws (G) and lock nuts (H) and finger tighten.
7) Attach the bulk head to the mounts on the base plate using the two screws (I) and securely tighten them to the lock nuts (J) using the #4 Phillips screwdriver and the 1/2” wrench.
8) Securely tighten the four screws (G) in the bulk head saddle plate (B) using the #3 Phillips screwdriver and the 7/16” wrench.

Item		Qty. for CTA43	Qty. for CTA53	Part Number
A	Bulk head for CTA43	1	--	309790
B	Bulk head saddle plate for CTA43	1	--	309341
C	Containment strap	1	1	309152
D	Containment strap mounting spacer	1	1	309150
E	Screw - 3/8”-16 x 1-1/2” long	1	1	79988
F	Hex lock nut - 3/8”-16	1	1	80603
G	Screw - 1/4”-20 x 2-3/4” long	4	2	80111
H	Hex lock nut - 1/4”-20	4	2	80675
I	Screw - 5/16”-18 x 1” long	2	--	80313
J	Hex lock nut - 5/16”-18	2	--	80676

Completed assembly

CPA48 BULK HEAD REMOVAL

TOOLS NEEDED:
7/16” WRENCH, 1/2” SOCKET END WRENCH, #3 PHILLIPS SCREWDRIVER, TWO 9/16” WRENCHES, SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Raise the deck to the highest position.
3) Place a spacer block between the deck and the base of the cart.
4) Turn off main power switch.
5) Remove the two screws (I) and lock nuts (F) that attach the bulk head (A) to the base plate using the 1/2” socket end wrench.
6) Take out the four screws (G) and lock nuts (H) that attach the bulk head saddle plate (B) and the containment strap assembly and spacer (C, D) to the bulk head and the main cart using the #3 Phillips screwdriver and the 7/16” wrench.
   NOTE: If the bulk head is going to be reinstalled after servicing, only the two screws (G) anchored to the main cart and the saddle plate need to be removed. If the bulk head is taken off and the CooLift will be used in the 53” pallet configuration, a new saddle plate (309151) will need to be installed.
7) Lift and remove the saddle plate. Then lift and remove the bulk head frame to disengage from the base plate.

CPA48 BULK HEAD INSTALLATION

TOOLS NEEDED:
7/16” WRENCH, 1/2” SOCKET END WRENCH, #3 PHILLIPS SCREWDRIVER, TWO 9/16” WRENCHES, SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) Slide the bulk head (A) into position on the base plate in the location shown in Figure 2.
4) Fasten in place using the two screws (I) and lock nuts (F) and finger tighten (the screw heads will be on top of the base plate and the lock nuts underneath).
5) Place the bulk head saddle plate (B) into position and attach using the four 1/4”-20 x 2-3/4” long screws (G) and 1/4”-20 lock nuts (H) and finger tighten.
6) Place the containment strap mounting spacer (D) onto the bulk head saddle plate and then place the containment strap assembly (C) onto the mounting spacer. Insert one 3/8”-16 x 1-1/2” long screw (E) and 3/8”-16 lock nut (F) and securely tighten using the two 9/16” wrenches.
7) Once all items are in place, securely tighten the hardware for the bulk head saddle plate and for the hardware connecting the bulk head to the base plate

Item		Qty. for CTA48	Qty. for CTA53	Part Number
A	Bulk head for CTA48	1	--	309791
B	Bulk head saddle plate for CTA48	1	--	309341
C	Containment strap	1	1	309152
D	Containment strap mounting spacer	1	1	309150
E	Screw - 3/8”-16 x 1-1/2” long	1	1	79988
F	Hex lock nut - 3/8”-16	3	1	80603
G	Screw - 1/4”-20 x 2-3/4” long	4	2	80111
H	Hex lock nut - 1/4”-20	4	2	80675
I	Screw - 3/8”-16 x 1-1/4” long	2	--	80026

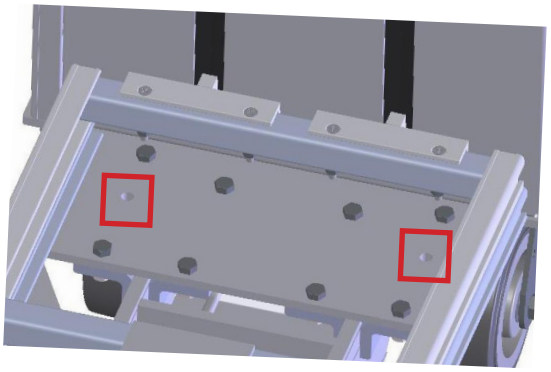


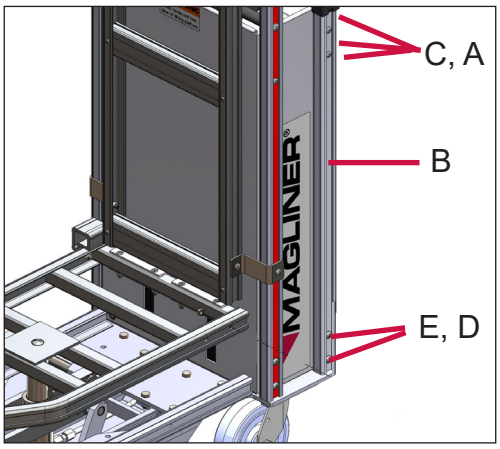
Figure 2

REPLACING CORNER POST

TOOLS NEEDED:
7/16” WRENCH, 1/2” WRENCH, #3 PHILLIPS HEAD SCREWDRIVER

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) Remove the battery box (see Replacing Battery Box for proper removal).
4) Remove the five screws (C, E) and hex nuts (A, D) and the corner post (B).
5) Position the new corner post in place and secure with the previously removed screws and nuts.
6) Replace the battery box (see Replacing Battery Box for proper installment).



Item		Qty.	Part Number
A	Hex lock nut - 1/4”-20	3	80675
B	Corner post assembly	1	309108
C	Screw - 1/4”-20 x 1-1/2” long	3	80105
D	Hex lock nut - 5/16”-18	2	80676
E	Screw - 5/16”-18 x 1-1/2” long	2	80115

Quantities listed are for one side of the CooLift

REPLACING PALLET STOPS - CPA43 AND CPA48

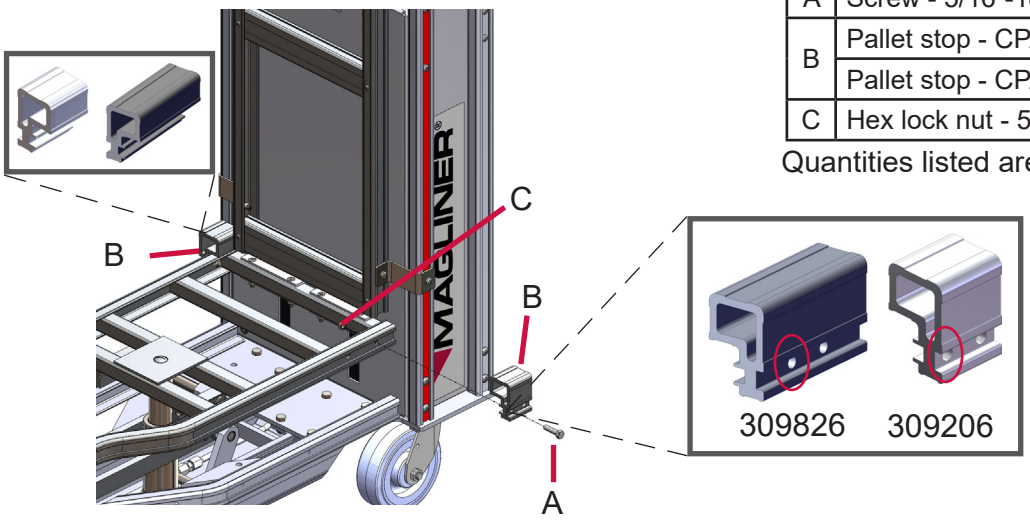
TOOLS NEEDED:
1/2” SOCKET END WRENCH

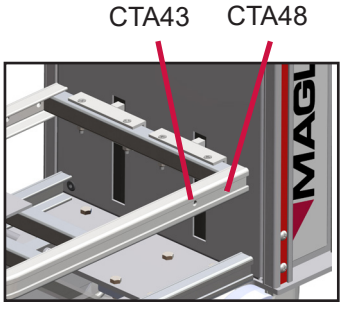
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) Remove and discard old pallet stop.
4) Locate the front hole of the pallet stop as shown in Figure 1 and insert the screw (A).
5) Locate the front hole on the deck (for CTA43 models) or the back hole on the deck (for CTA48 models). Insert the pallet stop (B) and the screw (A) as shown. Fasten with the 5/16”-18 lock nut (C) using the 1/2” socket end wrench on the lock nut on the inside of the deck frame channel.
6) Repeat process for the opposite side.

Item		Qty.	Part No.
A	Screw - 5/16”-18 x 1-1/4” long	2	80012
B	Pallet stop - CPA43 models	1	309826
	Pallet stop - CPA48 models	1	309206
C	Hex lock nut - 5/16”-18	2	80676

Quantities listed are for both sides of the CooLift



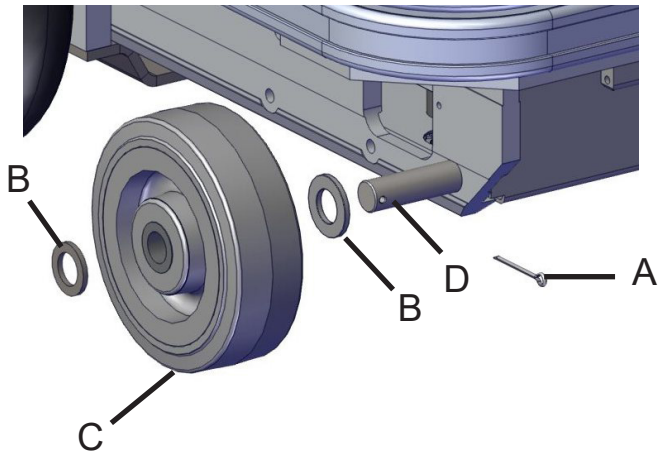


REPLACING FRONT WHEEL

TOOLS NEEDED: PLIERS

Caution: Remove and replace only one roller at a time.

1) With the cart sitting on a level flooring surface and the holding brake engaged, remove the cotter pin, washers and roller.
2) Replace with new roller and washers as shown below. Install cotter pin and bend the ends to hold in place.



Item		Qty.	Part Number
A	Cotter pin - 1/8” x 1-1/2” long	1	81078
B	Washer	2	80723
C	Front wheel	1	130014
D	Front axle - 13” long	1	309844

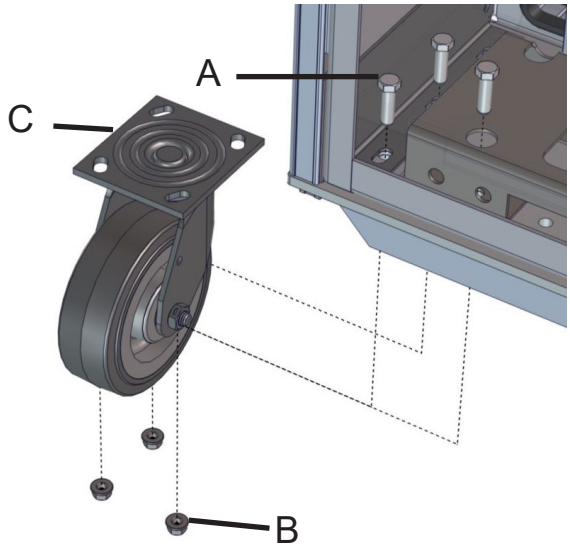
Quantities listed are for each front roller

REPLACING REAR SWIVEL CASTER

TOOLS NEEDED: TWO 9/16” WRENCHES

Caution: Remove and replace only one caster at a time.

1) With the cart sitting on a level flooring surface, the holding brake engaged and the rear access panel removed, remove the battery(ies).
2) Loosen the three screws that hold the caster mount to the base of the cart using the pair of 9/16” wrenches.
3) The entire rear swivel caster assembly can now be lowered and slid out of position.
4) Position the replacement rear swivel caster in place and insert the three screws through the base of the cart and fasten with lock nuts against the swivel caster mount using the pair of 9/16” wrenches.
5) Replace back access panel.



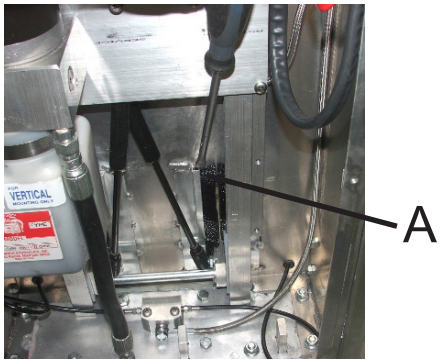
Item		Qty.	Part Number
A	Hex head cap screw - 3/8”-16 x 1-1/4” long	3	80026
B	Hex lock nut flange - 3/8”-16	3	80624
C	Caster assembly - 6” x 2” swivel grey flat tread	1	130066

Quantities listed are for each rear swivel caster

REPLACING BRUSHES

TOOLS NEEDED:
FLAT HEAD SCREWDRIVER, #3 PHILLIPS SCREWDRIVER, PAIR OF PLIERS
Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface.
2) Engage the holding brake.
3) Turn off main power switch.
4) Remove the back access panel from the cart.
5) Insert the flat head screwdriver into end of the slotted frame that holds the brush section and bend the end of the slot open enough to allow the old sections to slide out (A, B).
6) Remove the old brush sections using the pliers to grab them and slide them out of the slots.
7) Slide in the new brush sections (A, B) into place.
8) Using the pliers, re-crimp the ends of the slots to enable the brush sections to remain in place.
9) Place the back access panel back into position and secure with the latches.

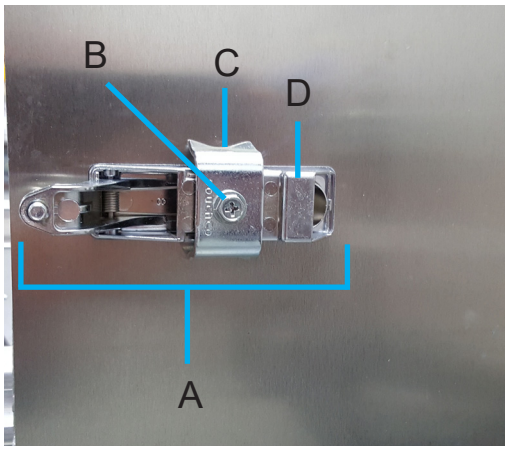


Item		Qty	Part Number
A	Yoke brush	1	309257
B	Back panel brush	1	309259

REPLACING BACK PANEL LATCH

TOOLS NEEDED: #3 PHILLIPS SCREWDRIVER

1) Remove back panel from the unit. Remove the damaged latch from back panel.
2) Insert new latch in the orientation shown below. Position the mounting bracket on the opposite side for the panel.
3) Install enclosed screw through the bracket and latch; tighten.
4) Adjust the clamp screw:
   - Loosen jam nut.
   - Adjust the screw in or out until latch will firmly secure door in place.
   - Tighten jam nut.



Item		Qty.	Part Number
A	Back access panel latch (includes items below, not sold separately)	1	309573
B	Screw	1	-
C	Mounting bracket	1	-
D	Latch assembly	1	-

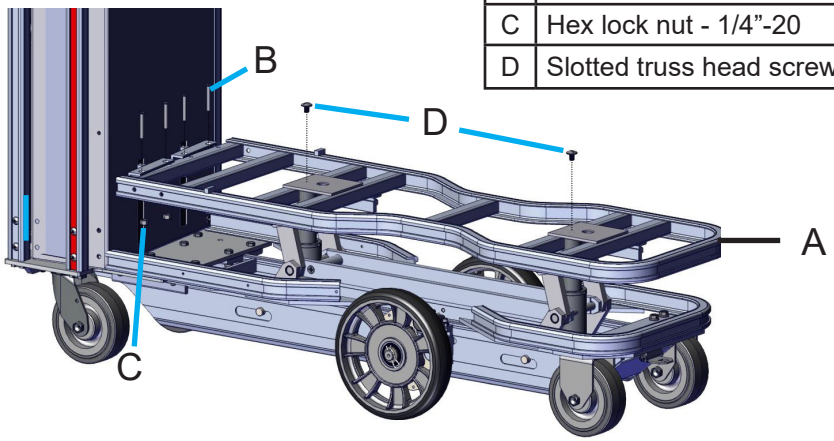
NOTE - full back panel assembly replacement part number is 309842.

REMOVING THE DECK

TOOLS NEEDED: #3 PHILLIPS SCREWDRIVER, FLAT HEAD SCREWDRIVER, 7/16” WRENCH

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Raise the deck to the highest position.
3) Turn off main power switch. Disconnect batteries.
4) Remove the two screws connecting the deck to the hydraulic cylinders.
5) Remove the four screws and lock nuts connecting the back of the deck to the yokes.
6) Pull deck forward out of the yokes; use light blows with a soft mallet if needed.
7) Reconnect batteries.

Item		Qty.	Part Number
A	Deck	1	309825
B	Flat head machine screw - 1/4” -20 x 2” long	4	80224
C	Hex lock nut - 1/4”-20	4	80675
D	Slotted truss head screw - 3/8”-16 x 1/2” long	2	80286

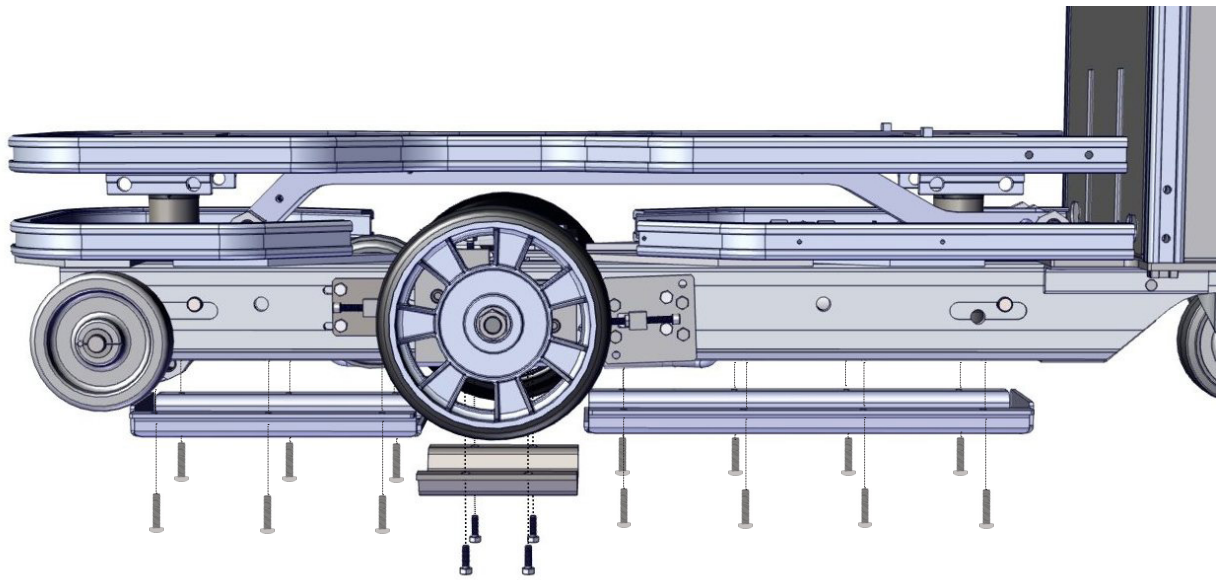


REMOVING BOTTOM PANS/BRACE

TOOLS NEEDED: 1/2” WRENCH, T30 TORX SCREWDRIVER, BLUE THREAD LOCKER

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged. For some procedures, the CooLift can be placed safely on sturdy surfaces that raise the CooLift at least 12” off the ground.
2) Remove the front and rear pans using the T30 Torx screwdriver.
3) Remove the center brace using 1/2” wrench.
4) When reinstalling these items to the CooLift, coat the threads of all fasteners with blue thread locker.



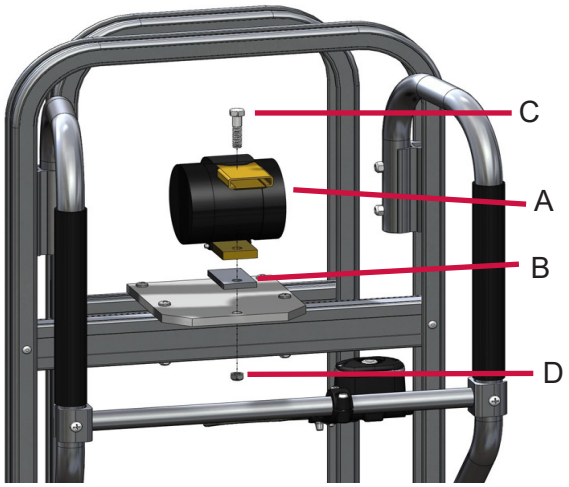
Item		Qty.	Part Number
A	Front pan	1	309821
B	Center brace	1	309614
C	Rear pan	1	309822
D	Pan head thread forming screw - 1/4”-20 x 3/4” long	14	80308
E	Hex head cap screw with thread locking patch - 5/16”-18 x 3/4” long	4	80010

REPLACING CONTAINMENT STRAP

TOOLS NEEDED: TWO 1/2” WRENCHES

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Remove the containment strap assembly (A) by taking out the mounting screw (C) and lock nut (D) using the two wrenches.
3) Position the new containment strap assembly (A) such that the tab sits on top of the mounting spacer (B). Insert the previously removed screw (C) and tighten the lock nut (D) using the two wrenches.



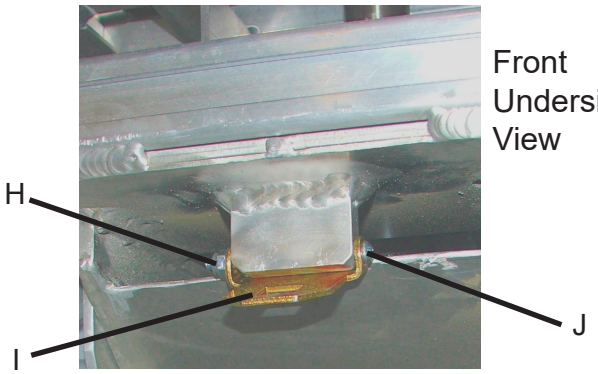
Item		Qty.	Part Number
A	Containment strap	1	309152
B	Containment strap mounting spacer	1	309150
C	Screw - 3/8”-16 x 1-1/2” long	1	79988
D	Hex lock nut - 3/8”-16	1	80603

REPLACING CONTAINMENT STRAP TONGUE

TOOLS NEEDED: #2 PHILLIPS HEAD SCREWDRIVER AND 3/8” WRENCH

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Remove the containment strap tongue (I) by taking out the mounting screw (J) and lock nut (H) using the #2 Phillips head screwdriver and the 3/8” wrench.
3) Position the new containment strap tongue (J) so the tab with the rectangle-shaped hole is facing outward from front of cart and the holes are lined up with the holes on the mounting block and secure it with the previously removed screw (J) and lock nut (H), allowing the tongue to rotate freely.



Front Underside View

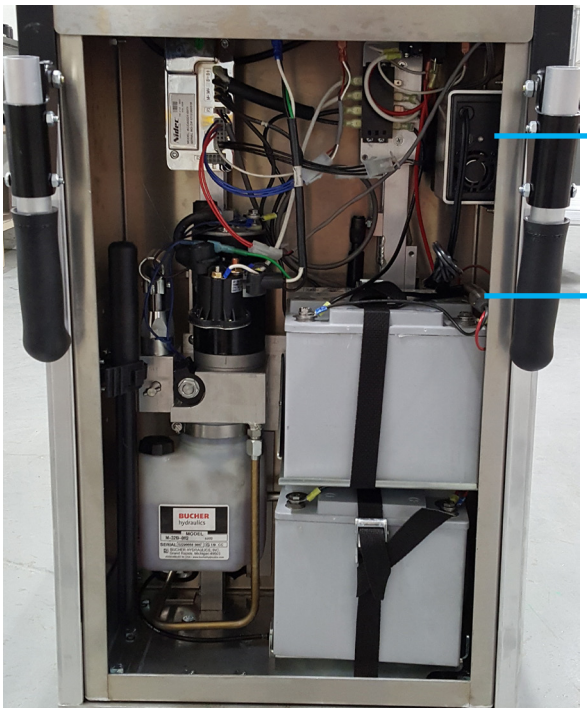
Item		Qty.	Part Number
H	Hex lock nut w/ nylon insert - #10-24 UNC	1	80683
I	Containment strap tongue	1	309133
J	Screw - #10-24 x 2-1/2” long	1	80004

REPLACING BATTERY CHARGER

TOOLS NEEDED:
#2 PHILLIPS HEAD SCREWDRIVER

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface.
2) Engage the holding brake.
3) Turn off main power switch. Remove the back access panel. Unplug the charger connect cable (A).
4) Disconnect the batteries from the existing charger (B).
5) Unplug the output cord from the charger.
6) Remove the two #10 x 3/4" long screws (C) from the U-shaped mounting bracket (D) using the #2 Phillips head screwdriver, taking care to keep the charger and bracket from dropping once the screws are removed.
7) Unplug the input cord from the charger. Remove the old battery charger from the mounting bracket.
8) Place the charger ON/OFF switch on the ON position on the new charger (see Figure 3). Plug the input cord in the new charger.
9) Center the charger in the mounting bracket. NOTE: The charger ON/OFF switch should be oriented towards the back wall.
10) Carefully place the charger and mounting bracket against the RH inside enclosure wall, centering the charger within the mounting bracket. Reinstall the 3/4" long screws into the mounting bracket.
11) Plug the charger output cord into the charger.
12) Connect the charger output cord to the batteries.
13) Test the charger by plugging the charger cord into a grounded 115v outlet and check the charger indicator lights.
    Troubleshooting tips if no light turns on:
    - Confirm 115v outlet is operable.
    - Confirm the charger ON/OFF switch is in the ON position.
    - Confirm the input power cord is securely plugged into the charger receptacle.
14) Replace the back access panel.



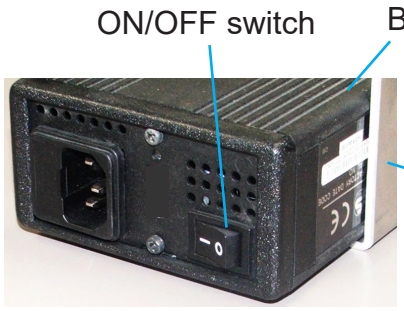


Figure 3

Item	Description	Qty.	Part #
A	Charger connect cable	1	62046
B	AC charger for 24v battery	1	63004A
C	Pan head machine screw - #10-32 x 3/4" long	2	80121
D	Charger mounting bracket	1	309207

REPLACING CHARGER CORD

TOOLS NEEDED:
SLIP JOINT PLIERS
#2 PHILLIPS HEAD SCREWDRIVER
#3 PHILLIPS HEAD SCREWDRIVER
18 AWG WIRE STRIPPER/CUTTER

Note: It is important to keep the CooLift upright at all times.

1) Turn off main power switch. Unplug the charger connect cable.
2) Loosen the cord grip using slip joint pliers. Remove the jam nut on the cord grip and pull out the rubber insert to allow the cord to move freely within the fitting.
3) Remove the male end of the plug from the existing cord using the #2 Phillips head screwdriver.
4) Remove the back access panel from the cart by removing the mounting screws using the #3 Phillips head screwdriver.
5) Unplug the existing cord from the charger socket and remove from the enclosure.
5) Cord installation:
   a. Assembling into the enclosure
      i. Remove the male end of the plug (D) from the replacement cord using the #2 Phillips head screwdriver.
      ii. Slip the cord (C) from the inside of the enclosure up through the hole in the enclosure and through the cord grip (A) and lock nut (B).
      iii. Remove excess cord from the inside of the enclosure until a length of 6-1/2” to 7” is left.
      iv. Tighten the jam nut.
   b. Assemble cord plug (see wiring part diagram, next page)
      i. Shorten the three exposed wires to 1-1/8”long, then strip each wire back 9/16” from the end.
      ii. Insert the cord end through the cord plug base, then insert and secure the three wires to the plug terminals:
         a. Green wire to center terminal
         b. Black or blue wire to terminal with black or brass screw terminal
         c. White or brown wire to silver screw terminal
         Note: Review wiring part diagram to confirm correct wire-terminal connection.
      iii. Reassemble cord plug and securely tighten cord grip clamp.
6) Test the charger by plugging the charger cord into a grounded 115v outlet and check the charger indicator lights.
   Troubleshooting tips if no light turns on:
   - Confirm 115v outlet is operable.
   - Confirm the charger ON/OFF switch is in the ON position.
   - Confirm the input power cord is securely plugged into the charger receptacle.
7) Replace and secure the enclosure panel using the #3 Phillips head screwdriver.
8) To store the charger cord, coil the charger cord around the two brackets, interlacing the cord plug within the coiled cord loops to secure it. Figure 2 shows the completed bracket assembly with the cord properly secured to the brackets.

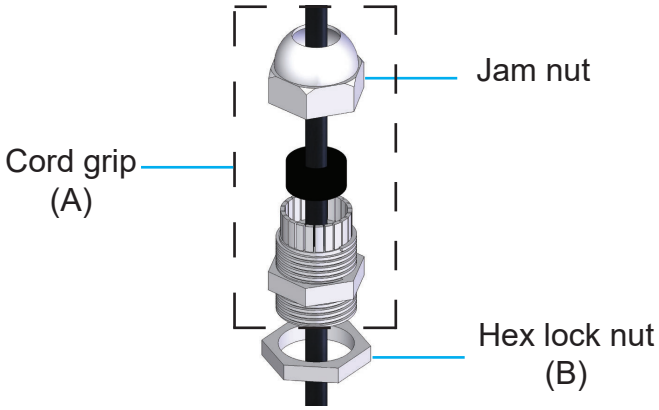


Figure 1

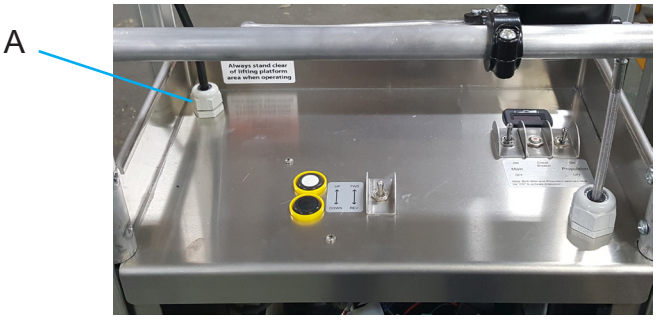
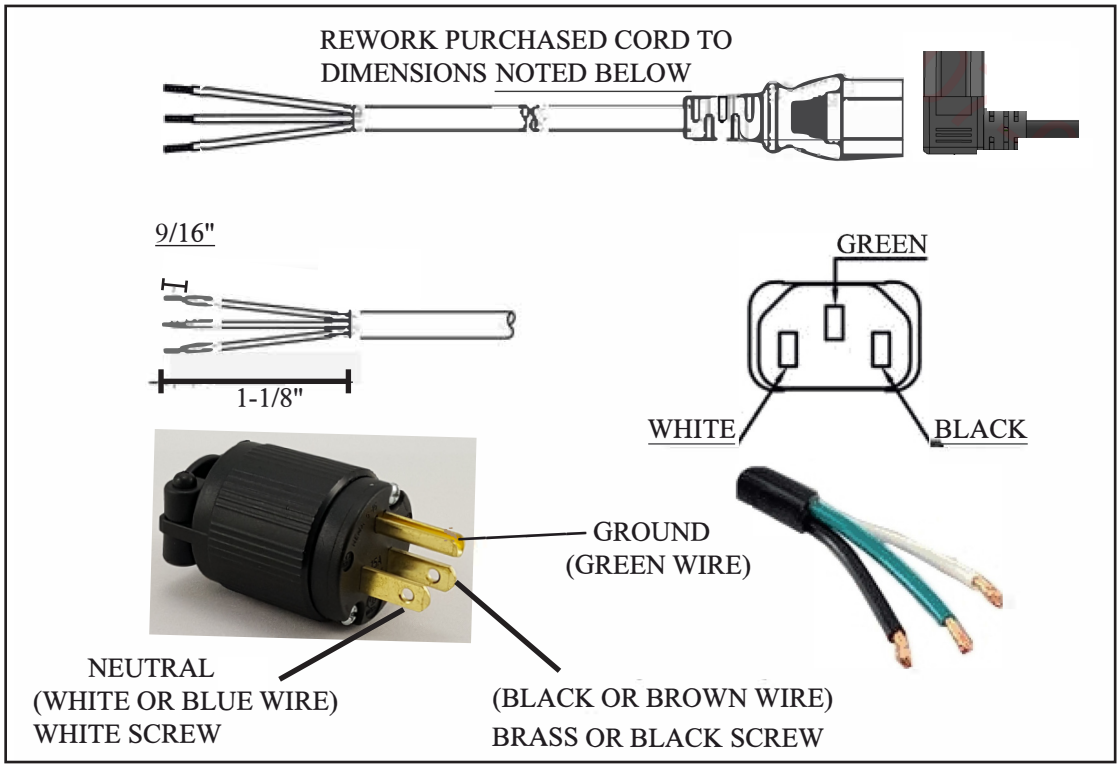


Figure 2



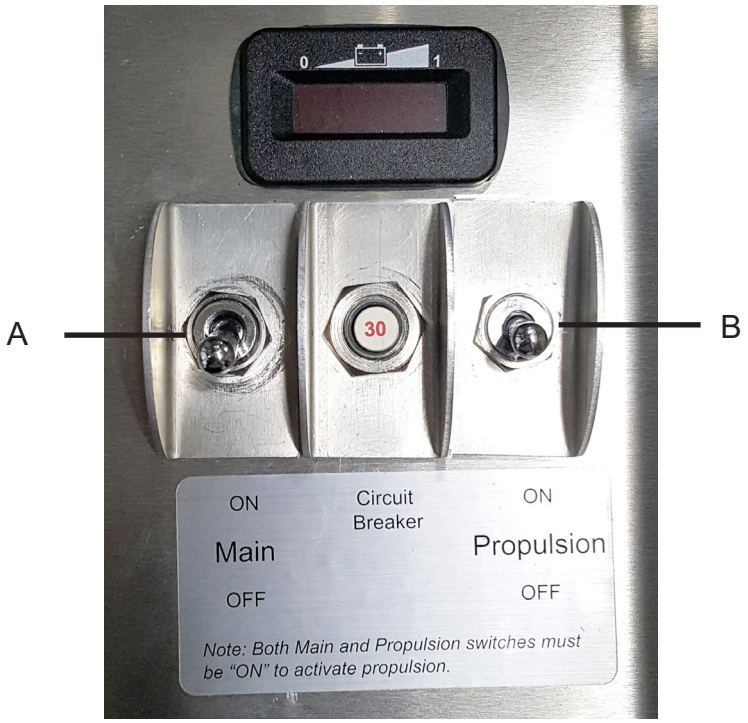
Wiring Part Diagram

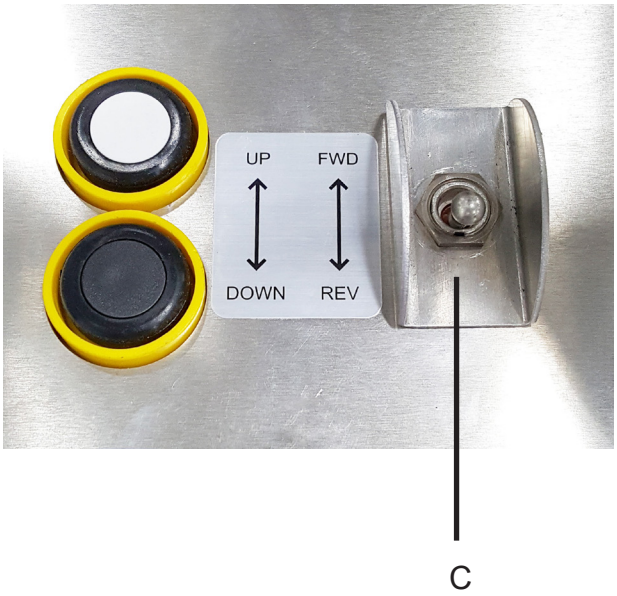
Item	Description	Qty.	Part #
A	Cord grip - PG-16	1	309122
B	Hex lock nut - PG-16	1	309123
C	Electrical cord 8’ long with C13 connector on one end	1	64020
D	Plug - 15A rated 5-15p three-prong cord plug	1	61053

REPLACING POWER SWITCHES, DIRECTIONAL SWITCH

TOOLS NEEDED: 14mm WRENCH

1) Place the CooLift on a level flooring surface and engage the holding brake.
2) Turn off main power switch. Remove back panel. Disconnect the batteries.
3) Disconnect the wiring connections from the back of the damaged switch and connect them to the new replacement switch making sure to follow the same connection layout.
4) When all of the new connections have been made, the damaged switch should be able to be removed by grasping it firmly in one hand and removing the hex nut on the outside of the enclosure shelf with the 14mm wrench.
5) Note the locations of the backup hex nut, the locking ring and the lock washer on the damaged unit and replicate it on the new replacement component.
6) Hold the replacement switch in place on the enclosure shelf and tighten the hex nut on the outside with the 14mm wrench.
7) Recheck all connections for correct wiring placement and tightness. Reconnect the batteries.





Item		Qty.	Part Number
A	Main power on/off switch	1	62016
B	Propulsion power on/off switch	1	62038
C	Propulsion directional switch	1	62080

REPLACING BATTERY METER

1) Place the CooLift on a level flooring surface.
2) Engage the holding brake.
3) Turn off the main power switch. Remove the back panel. Disconnect batteries.
4) To release the battery meter from the CooLift enclosure, reach underneath the enclosure and find the tabs located on both sides of the meter (see Figure 1). Squeeze the tabs inward and ease the battery meter upward and out of the enclosure.
5) Disconnect the red wire (+) from the BATTERY (+) terminal of the battery meter and ensure the wire end does not fall back through the hole of the enclosure.
6) Disconnect the black wire (-) from the BATTERY (-) terminal of the battery meter and ensure the wire end does not fall back through the hole of the enclosure.
7) Disconnect the white wire from the KEYSWITCH terminal of the battery meter and ensure the wire end does not fall back through the hole of the enclosure.
8) Check to be sure that the rubber gasket is in place on the new battery meter - install the rubber gasket to the battery meter if necessary.
9) Connect the black wire (-) to the BATTERY (-) terminal of the battery meter (see Figure 2).
10) Connect the white wire to the KEYSWITCH terminal of the battery meter (see Figure 2).
11) Connect the red wire (+) to the BATTERY (+) terminal of the battery meter (see Figure 2).
12) Snap the meter back into place in the enclosure shelf, making sure that the battery indicator label is at the top of the meter (see Figure 3).
13) Recheck all connections for correct wiring placement and tightness

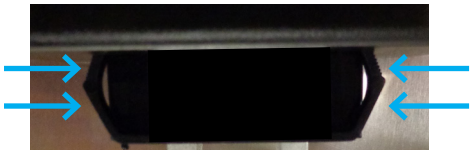


Figure 1

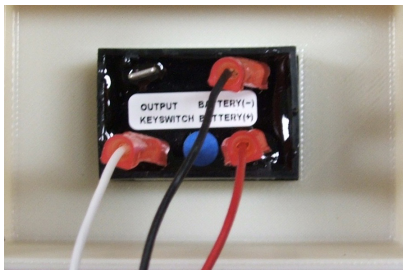


Figure 2

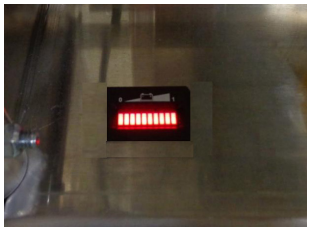


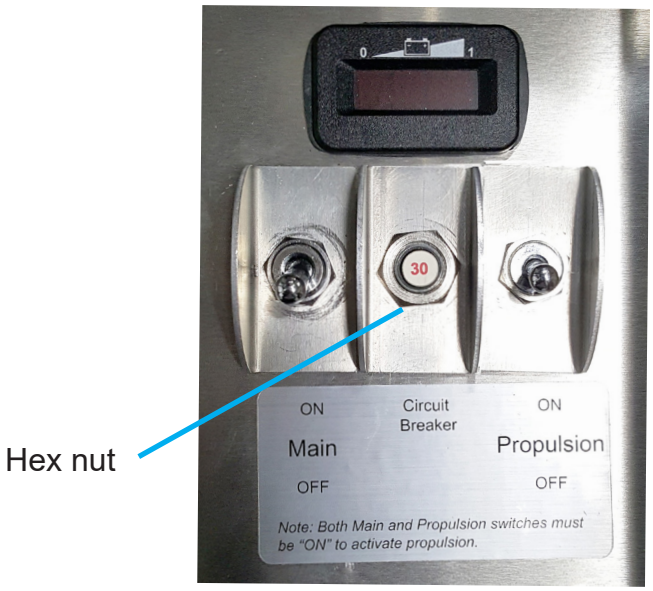
Figure 3

Description	Qty.	Part Number
Battery charge meter	1	62033

REPLACING POWER CIRCUIT BREAKER

TOOLS NEEDED: 17mm WRENCH

1) Place the CooLift on a level flooring surface and engage the holding brake.
2) Turn off main power switch. Remove back panel. Disconnect the batteries.
3) Disconnect the wiring connections from the back of the damaged circuit breaker one at a time and connect to the new circuit breaker making sure to follow the same connection layout.
4) When all of the new connections have been made, the damaged circuit breaker should be able to be removed by grasping it firmly in one hand and removing the hex nut on the outside of the enclosure shelf with the 17mm wrench.
5) Note the locations of the backup hex nut, the locking ring and the lock washer on the damaged unit and replicate it on the new replacement component.
6) Hold the replacement circuit breaker in place on the enclosure shelf and tighten the hex nut on the outside with the 17mm wrench.
7) Recheck all connections for correct wiring placement and tightness. Reconnect the batteries.

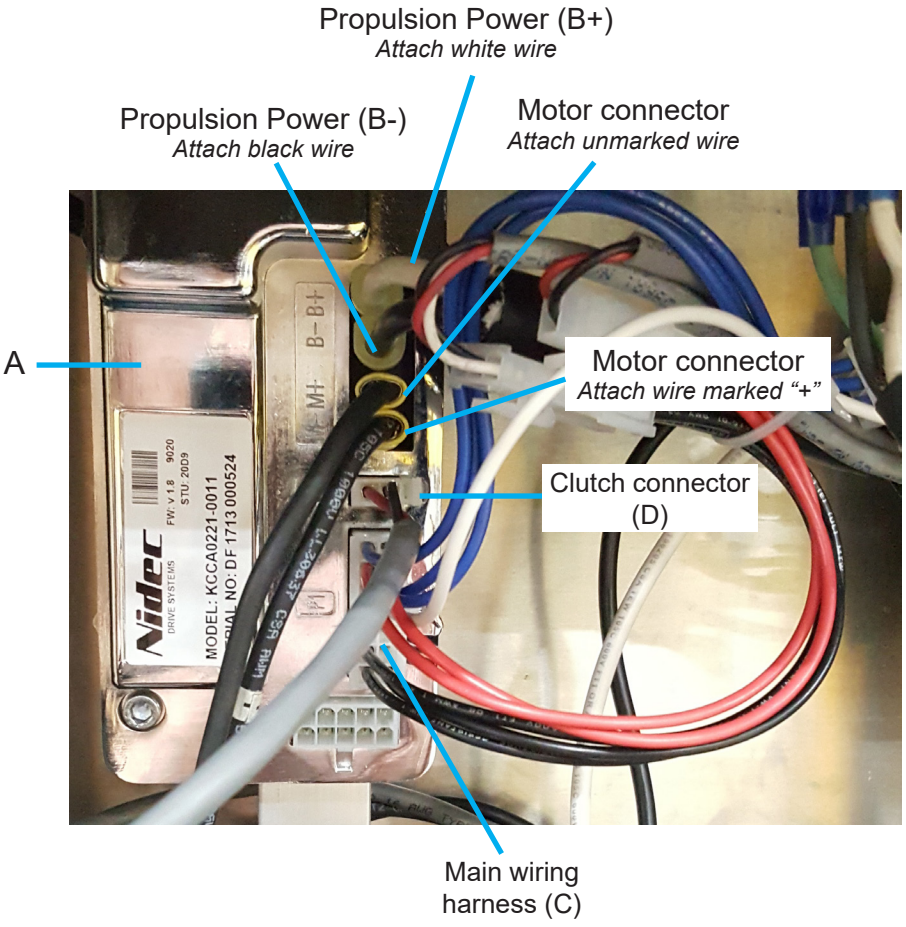


Item	Part Number
Circuit breaker	62037

REPLACING PROPULSION CONTROLLER

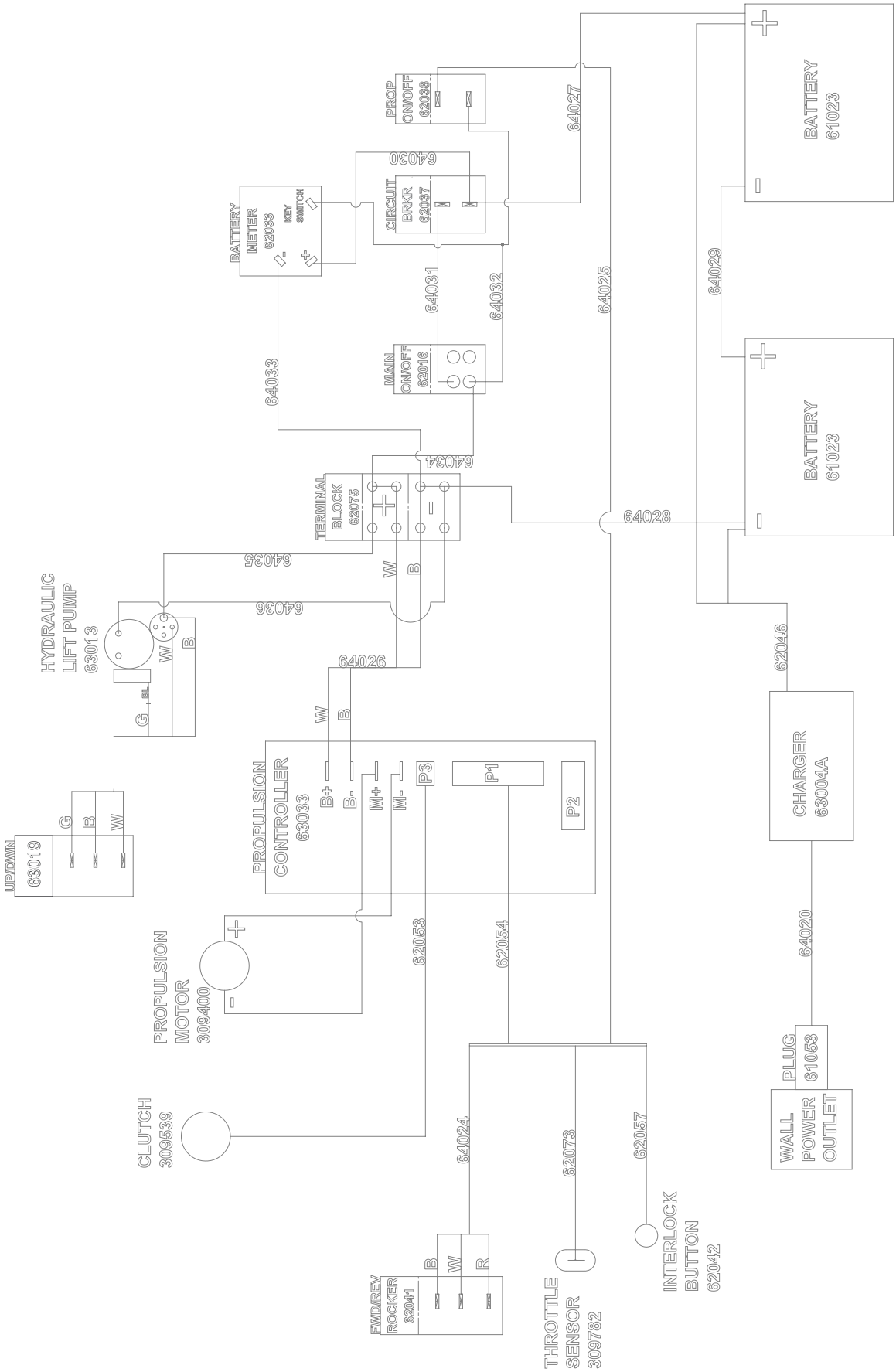
TOOLS NEEDED: 5/32 ALLEN WRENCH, 3/8 WRENCH

1. Place the CooLift on a level flooring surface.
2. Engage the holding brake.
3. Turn off the main power switch. Remove the back panel. Disconnect the batteries.
4. Unplug the motor connectors from controller (A).
5. Unplug the clutch connector (B) from controller by depressing latch on lower side of connector and pulling.
6. Unplug the main harness connector from the controller by depressing latch on lower side of connector and pulling.
7. Remove the two mounting screws and nuts using the 5/32 Allen wrench and 3/8 wrench. Then remove the old controller from the mounting plate. Retain all mounting screws and nuts.
8. Place the new controller against the mounting plate and fasten with mounting screws and nuts.
9. Plug in the main harness connector (orientate the harness so the clip is at the bottom).
10. Plug in the clutch connector.
11. Plug in the motor connectors - Please read below, it may be different from what's expected!
    a. The motor wire labeled "+" connects to the "M-" tab.
    b. The motor wire not labeled connects to the "M+" tab.
14. Plug in the propulsion power connectors. NOTE: reversing these could cause damage to the controller.
    a. The black wire connects to the "B-" tab.
    b. The white wire connects to the "B+" tab.
15. Plug in the main power to the lift controller (white, black and red wires).
16. Turn on both power switches.
17. Operate the propulsion system to verify that it is operating in the correct direction. If it is operating in the opposite direction, turn off both power switches and swap the two motor connectors on the controller.



	Description	Part No.
A	Propulsion controller	63033
B	Wiring harness for propulsion power	64026
C	Main wiring harness	62054
D	Wiring harness for clutch connector	62053

FULL ELECTRICAL SCHEMATIC

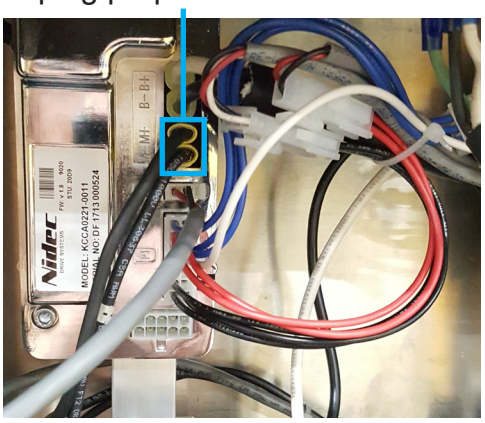


REPLACING PROPULSION MOTOR ASSEMBLY

TOOLS NEEDED: #2 AND #3 PHILLIPS SCREWDRIVER, 7/16” WRENCHES, 1/2” WRENCHES, 3/16 ALLEN WRENCH, 5/16 ALLEN WRENCH, BLUE THREAD LOCKER

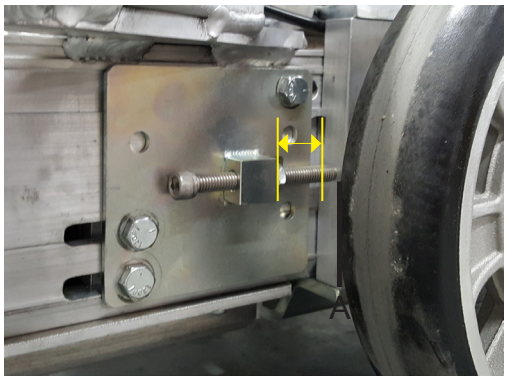
1) Place the CooLift on a level flooring surface with the holding brake engaged. Raise deck completely. Turn off main power switch. Disconnect the batteries.
2) Disconnect the motor from the propulsion controller.
3) Remove the deck and the rear bottom pan.
4) Loosen the jam nut on the motor adjustment plate on both sides of the unit. Loosen the 3” long outer adjustment screw so that the motor can slide forward.
5) Find the master link on the chain connecting the motor output sprocket to the clutch input sprocket. Use pliers or a screwdriver to remove the master link. Remove and retain the chain and master link.
6) Remove the four 1” long hex head cap screws (B) from the motor adjustment plate on the LH side of the unit (note - if you are only replacing the motor adjustment plate on this side, skip to Step 12).
7) Remove the two 2” long hex head cap screws (C) from the motor adjustment plate on the RH side of the unit (note - if you are only replacing the motor adjustment plate on this side, skip to Step 13).
8) Lift the motor assembly and motor spacer plate out of the unit. Retain the motor spacer plate.
9) The new lift motor assembly will come with two screws in the side of the unit. Remove the two screws as shown.
10) Place the spacer plate against the RH side of the motor so that the notch is toward the front of the CooLift (as shown). Also ensure the plate is flush against the motor gearbox.
11) Place the motor in place in the CooLift. Wrap the chain around the motor output sprocket.
12) Apply blue thread locker to the four 1” long hex head cap screws (B) and insert through the adjustment plate and into the CooLift onto the LH side rail; finger tighten only for now.
13) Apply blue thread locker to the two 2” long hex head cap screws (C). Insert into the motor adjustment plate and into the CooLift onto the RH side rail; finger tighten only for now.
14) Wrap the chain around the clutch input sprocket. Install the master link.
15) Adjust the outer adjustment screws on the motor adjustment plates until the chain has 1/4” play between the two sprockets. Make sure that the motor adjustment plates are the same distance apart from the block on both sides of the frame.
    NOTE 1: Uneven tensioning of the chain between the clutch and motor will cause alignment issues. Misalignment will cause: extra noise, chain wear, uneven sprocket wear, potential for the chain to come off sprocket, and potential failure of the chain and/or sprocket.
    NOTE 2: Over-tensioning of the chain (even if tensioned evenly on both sides) can also cause issues. Over-tensioning may cause deflection of the motor output shaft resulting in miss alignment of the chain (see NOTE 1) and may result in shorter bearing life in the propulsion motor. Over tensioning will cause the chain to stretch faster, leading to shorter chain and/or sprocket life.
16) Tighten the jam nut on the motor adjustment plate.
17) Fully tighten the hex head cap screws in all adjustment plates.
18) Replace the deck and bottom pan (use blue thread locker on the screws for bottom pan). Plug the motor into the controller. Reconnect the batteries.
19) Turn on the unit. Carefully test propulsion to make sure it drives in the intended direction.

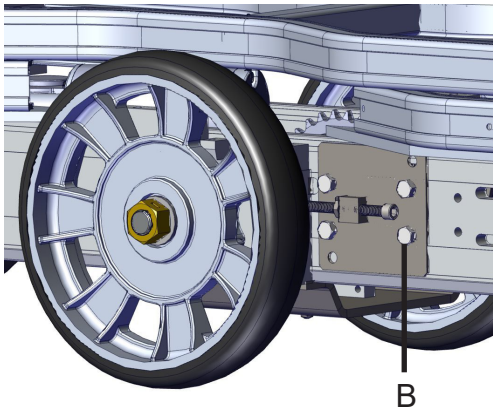
Unplug propulsion motor HERE

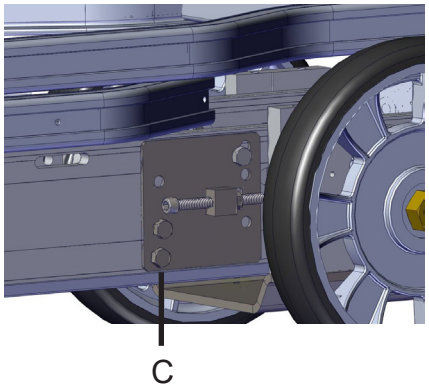


Propulsion controller
(inside enclosure, upper left)

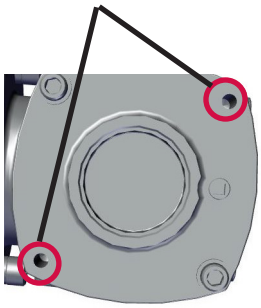
Ensure the distance between these two lines are equal on both sides of the CooLift.

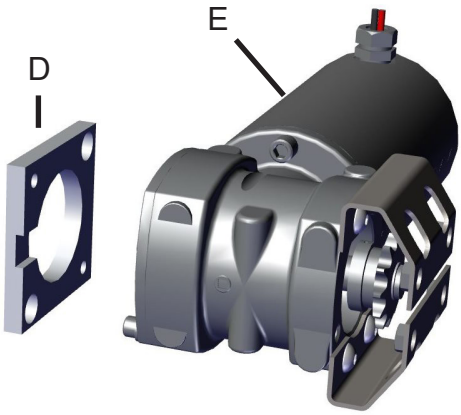






Remove these screws from new motor





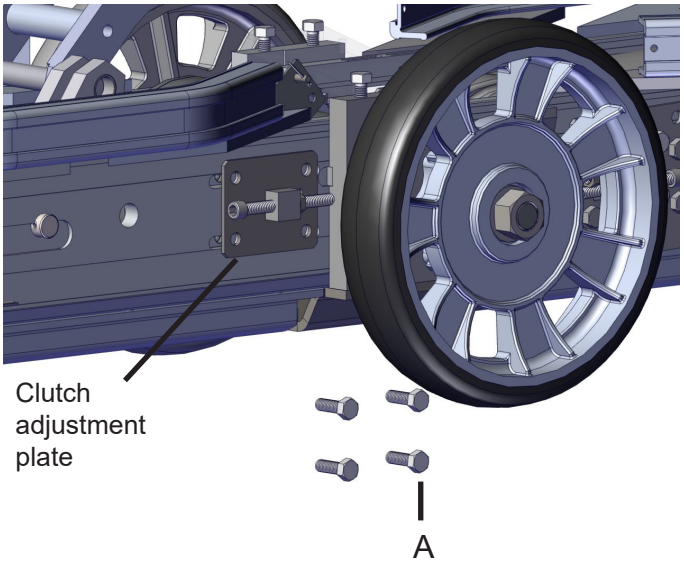
Orient the notch in spacer plate toward front of motor

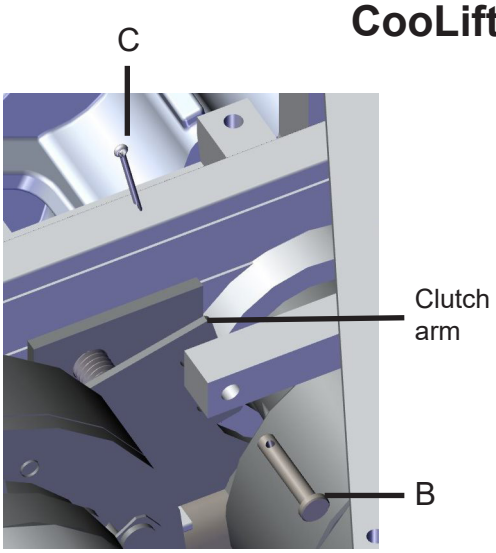
Item		Qty.	Part Number
A	Socket head cap screw - 5/16”-18 x 3” long	2	80126
B	Hex head cap screw - 5/16”-18 x 1” long	4	80011
C	Hex head cap screw - 5/16”-18 x 2” long	2	80015
D	Motor spacer plate	1	309808
E	Motor assembly	1	309837

REPLACING CLUTCH ASSEMBLY

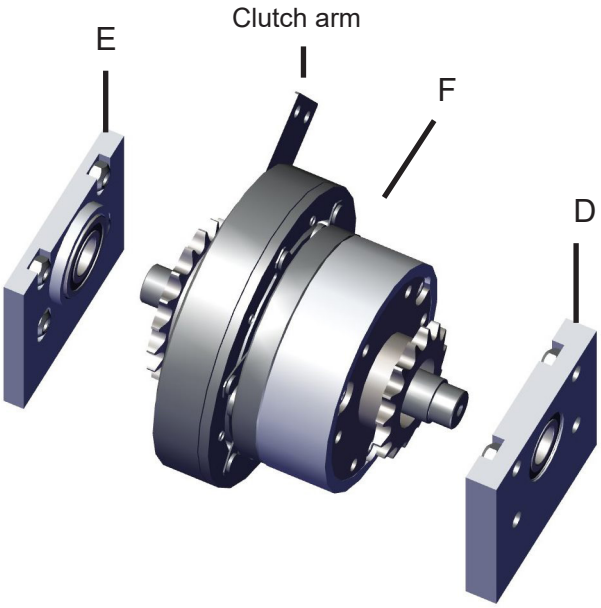
TOOLS NEEDED: #2 AND #3 PHILLIPS SCREWDRIVER, 7/16” WRENCHES, 1/2” WRENCHES, 3/16 ALLEN WRENCH, 5/16 ALLEN WRENCH, BLUE THREAD LOCKER

1) Place the CooLift on a level flooring surface with the holding brake engaged. Raise deck completely. Turn off main power switch. Disconnect the batteries.
2) Remove the deck and the front bottom pan.
3) Loosen the jam nut on the motor adjustment plate on both sides of the unit. Loosen the four hex head screws on the LH side motor mount plate and the two hex head screws on the RH motor mount plate. Turn adjustment screw and slide the motor toward differential slightly to loosen chain.
4) Loosen the four long hex head screws (A) from the clutch mounting plates on each side of the CooLift with 1/2” wrench. Loosen the jam nut on clutch adjustment plate and turn the adjustment screws and slide the clutch forward slightly to loosen the chain to the differential. Make sure both chains are loose.
5) Loosen the two #10-32 screws and lock nuts found on the clutch anti-rotation bracket.
6) Remove clevis and cotter pins (B, C) securing the clutch arm to the anti-rotation bracket.
7) Remove the master link from both chains, and remove both chains (motor to clutch; clutch to differential).
8) Unplug clutch wiring harness from the clutch.
9) Remove the four screws (A) from the clutch adjustment plate on both sides of the CooLift. Be careful so that the lock nuts nested inside the square clutch bearing plates (D, E) are not lost.
10) Lift the clutch (F) out of the CooLift taking care to constrain the clutch shaft bearing mount plates (which are not fixed) on both sides of the clutch. Place the bearing mount plates on the new clutch.
11) Place the lock nuts back into the clutch bearing plate if they have fallen out - use tape on the inside of the bracket to keep them in place.
12) Place new clutch/mount plate assembly into the unit.
13) Place adjustment plates on the outside of the CooLift frame - secure to the lock nuts in the clutch bearing plate with four screws, washers and lock nuts. Do this for both sides. Finger tighten only for now.
14) Rotate the clutch to align the clutch arm with the anti-rotation bracket and secure with cotter and clevis pins.
15) Replace chain between the clutch and differential and secure with master link.
16) Turn the adjustment screws in the clutch adjustment plate so that there is 1/4” play in the chain between the clutch and differential and they are the same distance apart on both sides from the differential mount block. Tighten jam nuts on both sides. Fully tighten the hex head cap screws in the clutch and motor adjustment plates.
17) Adjust the tension of the anti-rotation bracket to prevent clutch arm rotation. Tighten the #10-32 screws in the anti-rotation bracket. Plug the wiring harness into the clutch.
18) Replace the chain between the clutch and propulsion motor and secure with master link.
19) Turn the adjustment screws on the motor adjustment plates until the chain has 1/4” play between the two sprockets. Make sure that the motor adjustment plates are the same distance apart on both sides (see page 27).
    NOTE 1: Uneven tensioning of the chain between the clutch and motor will cause alignment issues. Misalignment will cause: extra noise, chain wear, uneven sprocket wear, potential for the chain to come off sprocket, and potential failure of the chain and/or sprocket.
    NOTE 2: Over-tensioning of the chain (even if tensioned evenly on both sides) can also cause issues. Over-tensioning may cause deflection of the motor output shaft resulting in miss alignment of the chain (see NOTE 1) and may result in shorter bearing life in the propulsion motor. Over tensioning will cause the chain to stretch faster, leading to shorter chain and/or sprocket life.
20) Tighten the jam nut on the motor adjustment plate. Fully tighten the four hex head screws on the LH side motor mount plate and the two hex head screws on the RH motor mount plate.
21) Replace the deck and bottom pan. Plug the clutch into the controller. Reconnect the batteries.

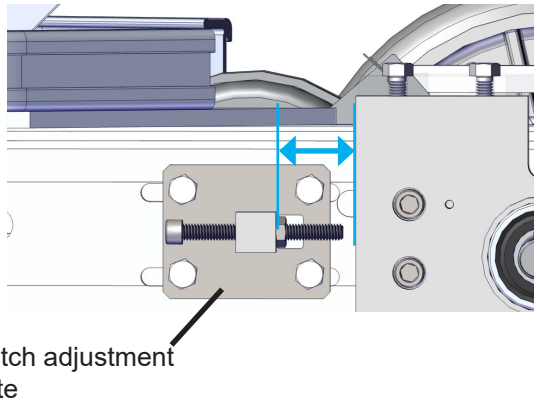




Tape can be used to keep lock nuts in place in the bearing mount plates.



Ensure the distance between these two lines are equal on both sides of the CooLift (wheel not shown for illustrative purposes).



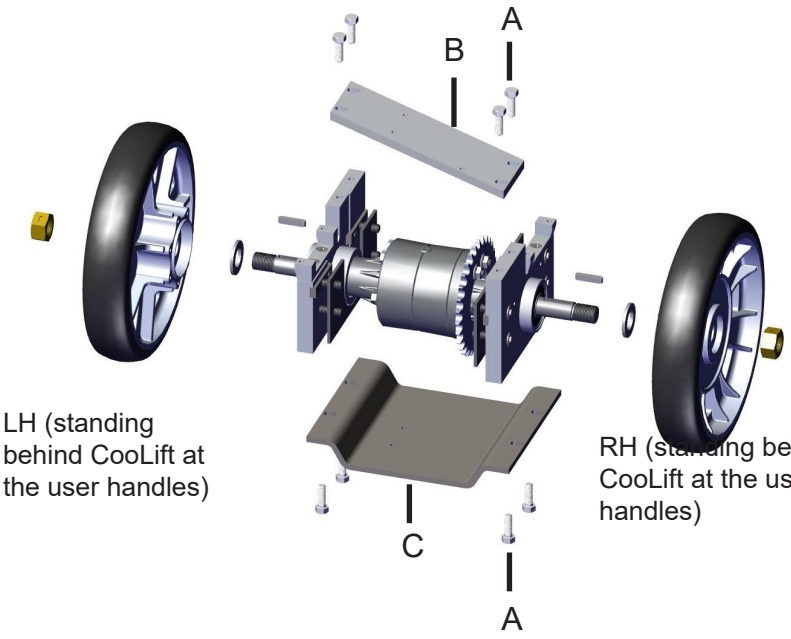
Item		Qty.	Part Number
A	Hex head cap screw - 5/16”-18 x 1” long	8	80011
B	Clevis pin - 3/16” diameter x 1” long	1	81093
C	Cotter pin - 1/16” x 3/4” long	1	81071
D	Clutch bearing mount plate - RH	1	309835
E	Clutch bearing mount plate - LH	1	309836
F	Clutch assembly	1	309676

REPLACING DIFFERENTIAL ASSEMBLY

TOOLS NEEDED: #2 AND #3 PHILLIPS SCREWDRIVER, 7/16” WRENCHES, 1/2” WRENCHES, 3/16 ALLEN WRENCH, 5/16 ALLEN WRENCH, BLUE THREAD LOCKER

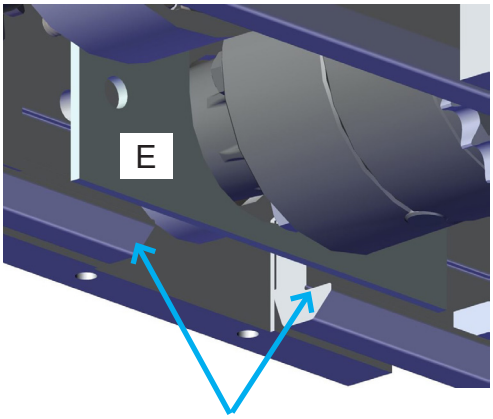
1) Place the CooLift on a level flooring surface with the holding brake engaged. Raise deck completely. Turn off main power switch. Disconnect the batteries.
2) You will need to remove the differential from the bottom of the CooLift. Place the CooLift safely on sturdy surfaces that raise the CooLift at least 12” off the ground.
3) Remove the deck and the center brace.
4) Loosen the jam nut on the motor adjustment plate on both sides of the unit. Loosen the four hex head screws on the LH side motor mount plate and the two hex head screws on the RH motor mount plate. Turn adjustment screw and slide the motor forward slightly to loosen chain.
5) Loosen the four hex head screws from the clutch mounting plates on each side of the CooLift with 1/2” wrench. Loosen the jam nut on clutch adjustment plate and turn the adjustment screws and slide the clutch toward the differential slightly to loosen the chain to the differential. Make sure both chains are loose.
6) Loosen the two #10-32 screws and lock nuts found on the clutch anti-rotation bracket and top diagonal brace.
7) Remove clevis pin securing the clutch to the anti-rotation bracket.
8) Remove the master link from then chain between the clutch and differential; remove the chain. Engage the CooLift parking brake and remove the retaining lock nut for each wheel. Keep the nut for reassembly.
9) Release parking brake. Remove the brake calipers by removing the caliper mounting screws using a 5mm Allen wrench. NOTE: Do not engage the brake lever while the brake calipers are off the cart.
10) Remove the wheels, making sure to keep the key and washer for reassembly.
11) Remove the four 1” long hex head screws (A) from diagonal top brace and remove (B).
12) Remove the four 1” long hex head screws (A) from lower brace and remove (C).
13) Take out the four socket cap screws (F) and lock nuts (G) that fasten the differential mount assemblies (H) to the reinforcement plate (E) (for both sides).
14) Tip - this step is easier with two people - To remove differential from assembly, the reinforcement plates must be moved inward to clear the frame side rail “lip.” Once plates are removed, the differential can drop from the CooLift frame.
15) Retain the differential mount assemblies and reinforcement plates.
16) Remove the 4-1/4” long screws (H), hex lock nuts (J) and sprocket (I) from the differential. Reassemble the sprocket and hardware to new differential.
17) Slide the bearing mount plates over the new differential axle, taking care not to slide them in all the way down the differential shaft. Try to keep them toward the outer edge of the shaft as you replace. Ensure they are in the same orientation on the shaft as shown.
18) Tip - this step is easier with two people - push the differential up into the CooLift frame and hold in place while you replace the reinforcement plates. Make sure reinforcement plates are positioned on the side rail lip and are flat against the side rail. When properly in position, the trans axle should be able to be rested on the enforcement plates.
19) Replace the four screws and lock nuts for the bearing mount plates and reinforcement plates, on both sides. Replace the lower brace onto the frame; apply blue thread locker on screws before replacing.
20) Reconnect the chain between the differential and clutch.
21) Replace the top diagonal brace to the frame; apply blue thread locker on screws before replacing.
22) Replace the wheel key into the axle (gently tap with hammer if needed); replace the wheel, washer and lock nut. Tighten the lock nut until snug.
23) Replace the calipers; apply blue thread locker on screws before replacing. Tip: Put calipers in position; install the screws and turn them snug still allowing the caliper assembly to move. Set and lock the brake - this will center the caliper around the disk on the wheel. Then fully tighten the screws.
24) Turn the adjustment screws on the clutch adjustment plates so that the clutch chain has 1/4” of play when you push on it. Make sure that the clutch adjustment plates are the same distance apart from the differential mount block. Tighten the jam nut on the clutch adjustment plate (see page 29).
    NOTE 1: Uneven tensioning of the chain between the clutch and motor will cause alignment issues. Misalignment will cause: extra noise, chain wear, uneven sprocket wear, potential for the chain to come off sprocket, and potential failure of the chain and/or sprocket.
    NOTE 2: Over-tensioning of the chain (even if tensioned evenly on both sides) can also cause issues. Over tensioning will cause the chain to stretch faster, leading to shorter chain and/or sprocket life.

25) Tighten the two #10-32 screws and lock nuts found on the clutch anti-rotation bracket and top diagonal brace.
26) Adjust the outer screws on the motor adjustment plates until the chain has 1/4" of play between the two sprockets. Make sure that the motor adjustment plates are the same distance apart from the differential mount block (see page 27). Tighten the jam nut on the motor adjustment plate.
27) Fully tighten the hex head cap screws on motor and clutch adjustment plates.
28. Replace the drivetrain cover. Plug the lift motor into the controller. Reconnect the batteries.
29. Turn on the unit. Carefully test propulsion to make sure the CooLift drives in the intended direction.

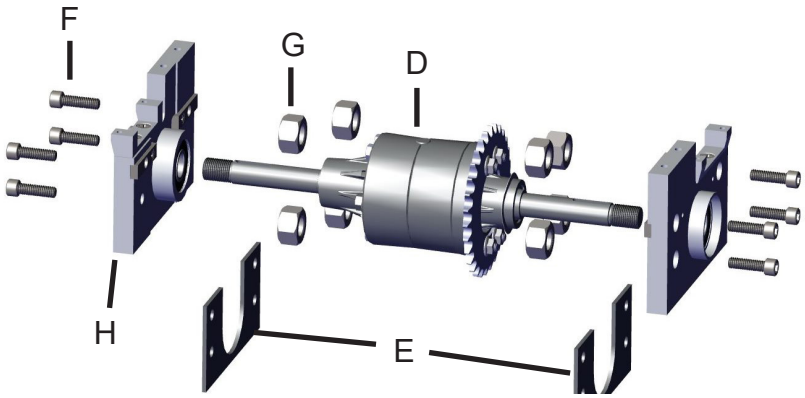


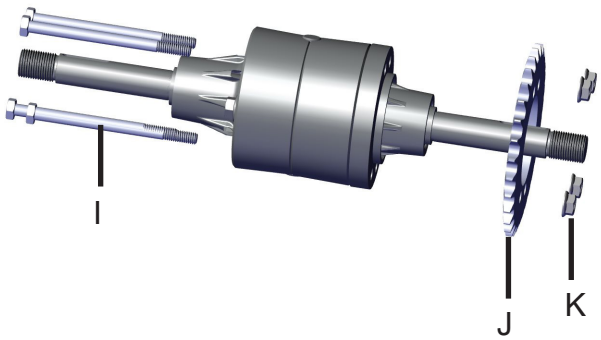
LH (standing behind CooLift at the user handles)

RH (standing behind CooLift at the user handles)



Reinforcement plate needs to be moved inward or rotated to be removed from the frame rail "lip." BE CAREFUL once these are removed as these plates support the differential assembly! Use two people for easier removal.





Item		Qty.	Part No.
A	Hex socket head cap screw - 5/16"-18 x 1" long	8	80011
B	Frame top brace	1	309445
C	Frame bottom brace	1	309614
D	Differential assembly	1	309622
E	Reinforcement plate	2	309444
F	Hex socket cap screw - 3/8"-16 x 1-1/4" long	8	80132
G	Hex lock nut - 3/8"-16	8	80603
H	Differential mount assembly	2	309681
H	Hex head cap screw - 5/16"-18 x 4-1/4" long	4	80134
I	Differential drive sprocket	1	309442
J	Hex lock nut with flange - 5/16"-18	4	80627

CHANGING BRAKE CALIPER

TOOLS NEEDED:
THREE SPACER BLOCKS (4” x 4” x 24” WOODEN BLOCKS)
2.5mm ALLEN WRENCH
5mm ALLEN WRENCH
8mm WRENCH
TORQUE WRENCH
MEDIUM FLAT HEAD SCREWDRIVER
DRIP PAN
ABSORBING MATERIAL (for containing spills)
ISOPROPYL ALCOHOL
Note: It is important to keep the CooLift upright at all times.

CAUTION: DOT 4 and DOT 5 brake fluids are a slip hazard on any flooring surface.

Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Place the CooLift on a pair of spacer blocks positioned on each side of the center wheel such that the front most block is directly under the front hydraulic cylinder and the rear most block is directly under the rear hydraulic cylinder.
2) Disengage the holding brake.
3) Raise the deck by pressing the up switch until fully extended.
4) Position a spacer block between the deck and the base of the cart.
5) Turn off main power switch.
6) Remove the brake caliper (D) by removing the caliper mounting screws (A) using a 5mm Allen wrench. NOTE: Do not engage the brake lever while the brake calipers (D) are off the cart (Figure 1).
7) Place the large flat head screwdriver between the brake pads (B) on the caliper (D) and rotate it to compress the piston position and force as much brake fluid as possible back into the brake fluid reservoir (Figure 2).
8) Remove the brake pads and leaf spring from the caliper (Figure 3).
9) Position the caliper (D) directly over the drip pan and remove the banjo bolt (F) using the 8mm wrench to disconnect the brake line.
10) Install the brake line (E) to the new caliper (D) making sure to utilize an O-ring (G) on each side of the banjo fitting (H) and tighten to 60 +/- 5 in/pounds of torque (Figure 4).
11) Wipe up any brake fluid that has leaked on the caliper (D).
12) Pinch the brake pad tabs together so that the pad material on both pads are touching.
13) Slide brake pads into the top window of the caliper until they come to a stop (see Figure 3).
14) Using a 2.5mm Allen wrench install and tighten the pad retaining pin. Pad pin torque should be 10

+/- 1 in.-lbs.

15) Position the calipers (D) within the caliper mounts and lightly hand tighten the mounting screws (A). NOTE: Do not use the wrench on them until the calipers have been aligned or damage to the brake disc could result.

16) With the caliper mounting screws (A) lightly hand tightened, engage the holding brake to correctly position the caliper (D) orientation to the brake disc (C). Then the screws may be tightened using the 5mm Allen wrench.

17) Bleed the brake system (see Bleeding the Brakes).

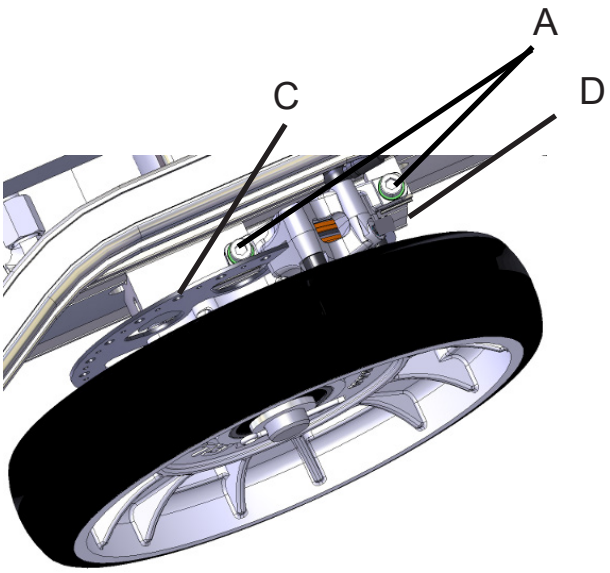


Figure 1

Figure 2
Compressing the piston

Figure 3
Removing/Inserting the pads

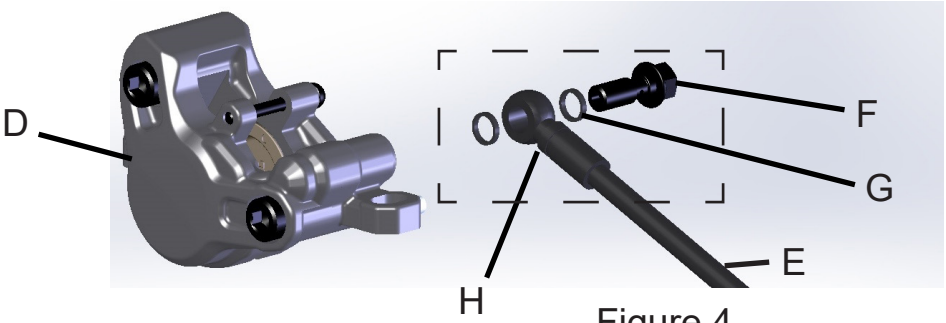


Figure 4

Item		Qty.	Part Number
A	Hex socket head cap screw - M6 x 20mm	2	80003
B	Pair of brake pads with leaf spring	1	309594
C	Brake disc	1	309050
D	Caliper assembly	1	309595
E	Caliper brake line assembly (includes F, G and H)	1	309145
F	Banjo bolt	1	80135
G	O-rings	2	n/a
H	Banjo fitting on brake line	1	n/a

Quantities listed are for one side of the CooLift

CHANGING BRAKE PAD

TOOLS NEEDED:
THREE SPACER BLOCKS (4” x 4” x 24” WOODEN BLOCKS)
2.5mm ALLEN WRENCH
5mm ALLEN WRENCH
8mm (5/16) WRENCH
MEDIUM FLAT HEAD SCREWDRIVER
DRIP PAN
ABSORBING MATERIAL (for containing spills)
ISOPROPYL ALCOHOL
Note: It is important to keep the CooLift upright at all times.

CAUTION: DOT 4 and DOT 5 brake fluids are a slip hazard on any flooring surface.

Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Place the CooLift on a pair of spacer blocks positioned on each side of the center wheel such that the front-most block is directly under the front hydraulic cylinder and the rear most block is directly under the rear hydraulic cylinder.
2) Disengage the holding brake.
3) Raise the deck by pressing the up switch until fully extended.
4) Position a spacer block between the deck and the base of the cart.
5) Turn off the main power switch.
6) Remove the brake caliper (C) by removing the caliper mounting screws (A) using a 5mm Allen wrench (Figure 1). NOTE: Do not engage the brake lever while the brake calipers (C) are off the cart.
7) When changing the brake pads (B) the brake fluid should remain within the system but for added protection the caliper (C) should be positioned over the drip pan until it is mounted back on the cart.
8) Place the large flat head screwdriver between the brake pads (B) on the caliper (C) and rotate it to compress the piston position and force as much brake fluid as possible back into the brake fluid reservoir (Figure 2).
9) With a 2.5 mm Allen wrench, remove the pad retaining pin from the caliper.
10) Using your fingers pull the pad tabs and pad leaf spring through the window on the top of the caliper.
11) Using the boxed end of an 8mm wrench, push the caliper pistons back all the way into the bore of the caliper. This will give you more room to fit in the new pads. Walk the piston back and forth until the piston is all the way back in the bore. Do the same thing on the other side. NOTE: Do not push the edge of the piston as they may crack or chip.

12) Place the leaf spring onto one of the brake pads so that the spring feet are on either side of the pad material (see Figure 3).
13) Place the opposing pad onto the leaf spring so that the spring feet are on either side of the pad material.
14) Pinch the pad tabs together so that the pad material on both pads are touching.
15) Slide pads and leaf spring into the top window of the caliper until they come to a stop (see Figure 5). Using a 2.5mm Allen wrench install and tighten the pad retaining pin. Pad pin torque should be 10 +/- 1 in.-lbs.
16) Position the caliper (C) within the caliper mount and lightly hand tighten the mounting screws (A) (Figure 4). NOTE: Do not use the wrench on them until the caliper has been aligned or damage to the brake disc could result.
17) Engage the holding brake.
18) With the caliper mounting bolts lightly hand tightened and the holding brake engaged, the caliper will correctly self position its orientation relative to the brake disc.
19) Tighten the caliper mounting screws (A) with the 5mm Allen wrench.

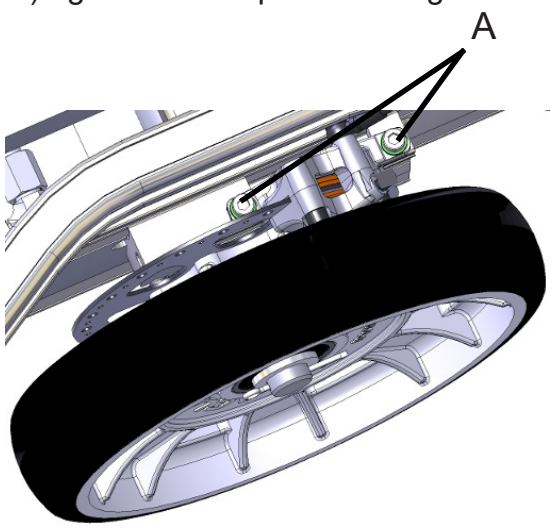


Figure 1

Figure 2
Compressing the piston

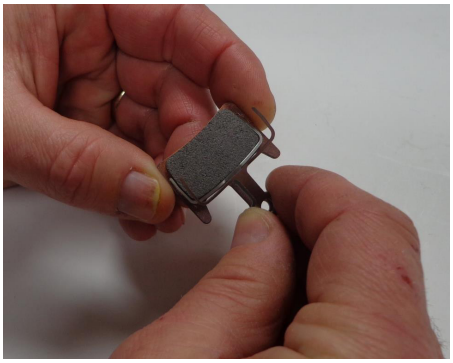


Figure 3
Assembling spring to pads

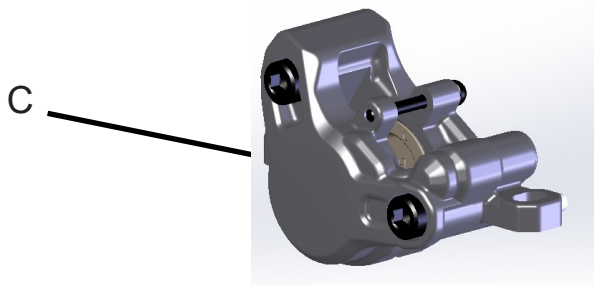


Figure 4

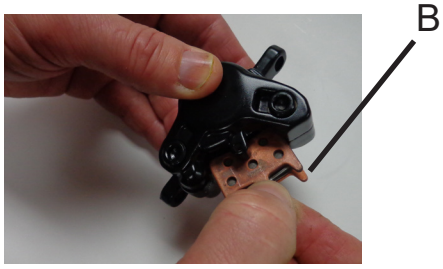


Figure 5
Inserting the pads

Item		Qty.	Part Number
A	Hex socket head cap screw - M6 x 20mm	2	80003
B	Pair of brake pads	1	309594
C	Caliper assembly	1	309595

Quantities listed are for one side of the CooLift

CHANGING UPPER BRAKE LINE

TOOLS NEEDED:
12mm WRENCH
TWO 33mm WRENCHES
36mm WRENCH
#3 PHILLIPS SCREWDRIVER
DRIP PAN
ABSORBING MATERIAL (for containing spills)
ISOPROPYL ALCOHOL
Note: It is important to keep the CooLift upright at all times.

CAUTION: DOT 3 and DOT 4 brake fluids are a slip hazard on any flooring surface.

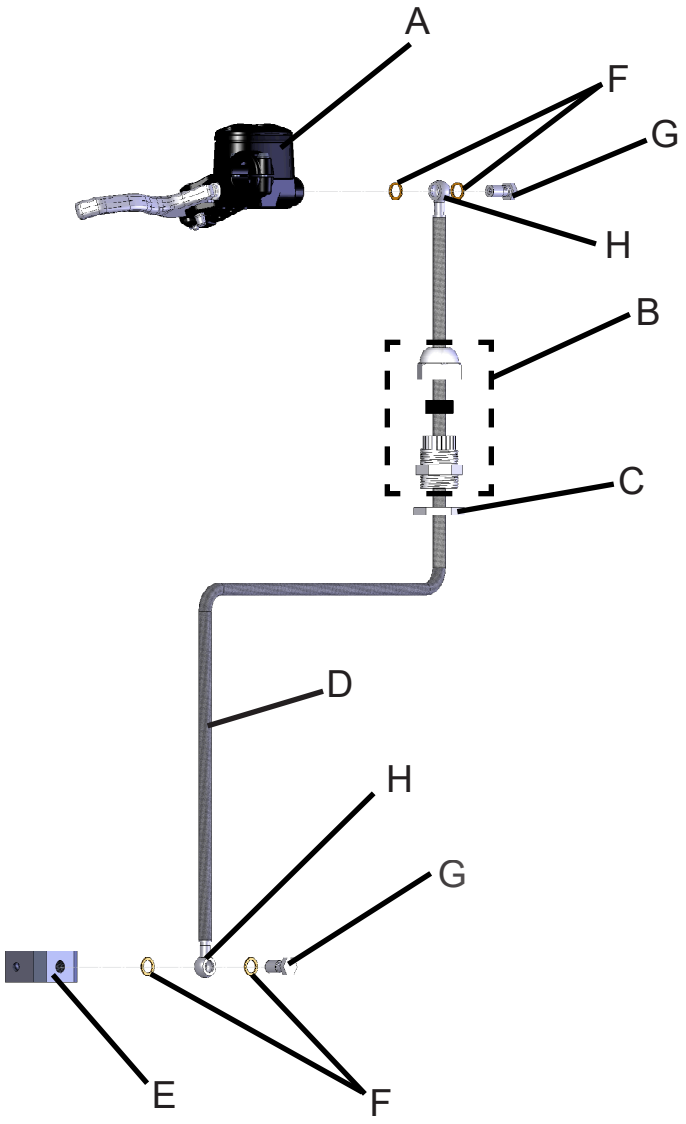
Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Disengage the holding brake.
2) Turn off main power switch.
3) Remove the battery box (see Replacing Battery Box).
4) Remove the locknut (C) from the bottom of the cord grip fitting (B) using a 36mm wrench.
5) Remove the brake line (D) from the junction block (E) by removing the banjo bolt (G) and the copper crush washers (F) using the 12mm wrench. Drain as much brake fluid as possible into the drip pan. NOTE: Do not engage the brake lever while the brake line is removed.
6) Remove the brake line (D) from the master cylinder (A) by removing the banjo bolt (G) and the two copper washers (F) using the 12mm wrench.
7) Pull the entire brake line (D) and cord grip (B) out through the top of the cabinet.
8) Wipe up any brake fluid that wasn't caught inside the drip pan.
9) Remove the cord grip fitting (B) from the brake line (D) to be replaced using two 33mm wrenches.
10) Slide the rubber sleeve out of the top of the fitting and remove the defective brake line.
11) Mount the cord grip fitting (B) onto the cabinet using a 33mm and 36mm wrench.
12) Insert the new brake line (D) into the cord grip (B) and tighten with a 33mm wrench, allowing enough slack to reach to the master cylinder (A).
13) Connect the new brake line (D) to the junction block (E) using a copper washer (F) on each side of the banjo fitting (H) and tighten with the 12mm wrench.
14) Connect the other end to the master cylinder in the same manner.
15) Bleed the brake system (see Bleeding the Brakes).
16) Reinstall the battery box (see Replacing Battery Box).

Item		Qty.	Part Number
A	Master cylinder	1	309218
B	Cord grip - PG-21	1	309124
C	Hex lock nut - PG-21	1	309125
D	Master cylinder brake line	1	309083
E	Junction block	1	309051
F	Copper washer	4	80712
G	Banjo bolt	2	80124
H	Banjo fitting	-	n/a



CHANGING LOWER BRAKE LINE

TOOLS NEEDED:
12mm WRENCH
8mm WRENCH
#3 PHILLIPS HEAD SCREWDRIVER
UTILITY KNIFE
DRIP PAN
ABSORBING MATERIAL (for containing spills)
ISOPROPYL ALCOHOL
PAIR OF PLIERS
SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
Note: It is important to keep the CooLift upright at all times.

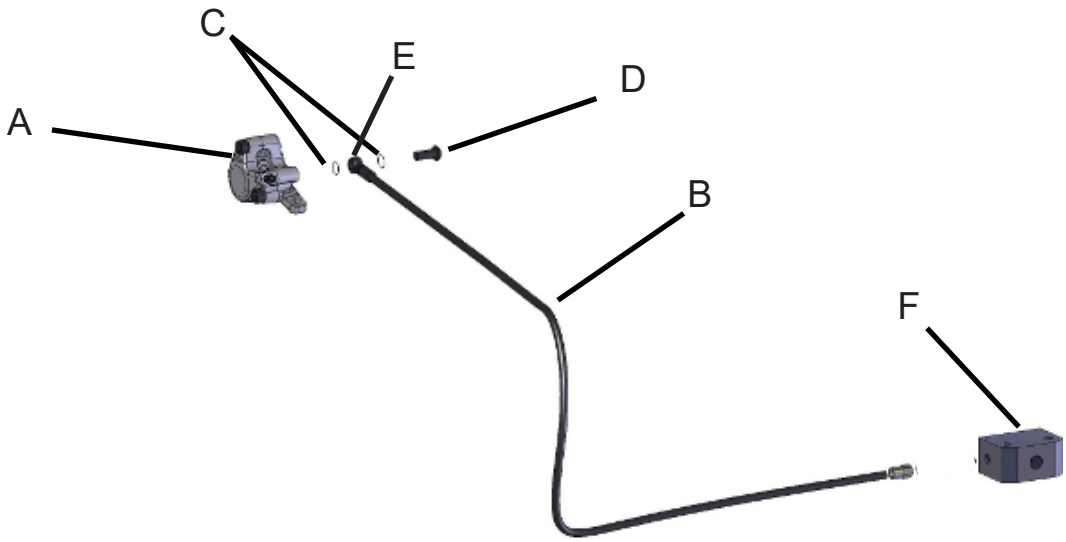
CAUTION: DOT 4 and DOT 5 brake fluids are a slip hazard on any flooring surface.

Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Disengage the holding brake.
2) Raise the deck by pressing the up switch until fully extended.
3) Position a spacer block between the deck and the base of the cart.
4) Turn off main power switch.
5) Remove the battery (see Replacing Battery Box).
6) Position the drip pan below the caliper (A) and remove the banjo bolt (D) using the 8mm wrench taking care to make sure both of the O-rings (C) are accounted for. NOTE: Do not engage the brake lever while the brake line (B) is off the cart.
7) Drain as much of the brake fluid into the drip pan as possible from the brake line (B).
8) Using an 8mm wrench, remove the other end of the brake line (B) from the junction block (F) and pull the brake line back through the routing position.
9) Connect the banjo fitting end (E) to the caliper (A) with the banjo bolt (D) making sure to have an O-ring (C) on each side of the fitting and tighten it with the 8mm wrench to 60 +/- 5 in/pounds of torque.
10) Connect the new brake line (B) to the junction block (F) using the 8mm wrench and reroute it through in the same locations as the line to be replaced.
11) Bleed the brake system (see Bleeding the Brakes).
12) Reinstall the battery box (see Replacing Battery Box).



Item		Qty.	Part Number
A	Caliper assembly	1	309595
B	Caliper brake line assembly (includes items C-G)	1	309145
C	O-rings	-	309577
D	Banjo bolt	-	80135
E	Banjo fitting on brake line	-	n/a
F	Junction block (one per CooLift)	1	309051

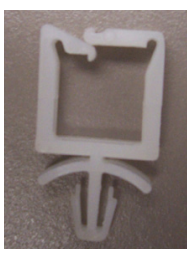
Quantities listed for items A-B are for one side of the CooLift

REPLACING BRAKE LINE CLIPS

Note: It is important to keep the CooLift upright at all times.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) If the brake clip is still closed around the brake line, slide the clip open by sliding the two pieces of the top of the clip away from the center of the clip; remove brake line from clip.
4) Grab the brake clip with either your fingers or pliers and firmly pull towards the inside of the deck to remove the clip.
5) Align a new brake clip so that the point of the brake clip will enter the frame from the inside of the unit and push the clip to snap into place.
6) Return brake line to inside of clip. Push the longer side of the clip top down towards the brake line to close the clip.

Item	Qty.	Part Number
Brake line clip	6	61019


Open position


Closed position

REPLACING BRAKE MASTER CYLINDER

TOOLS NEEDED:
ABSORBING MATERIAL (for containing spills)
TORX T30 WRENCH
TORX T20 WRENCH
14mm WRENCH
DRIP PAN
ISOPROPYL ALCOHOL
Note: It is important to keep the CooLift upright at all times.

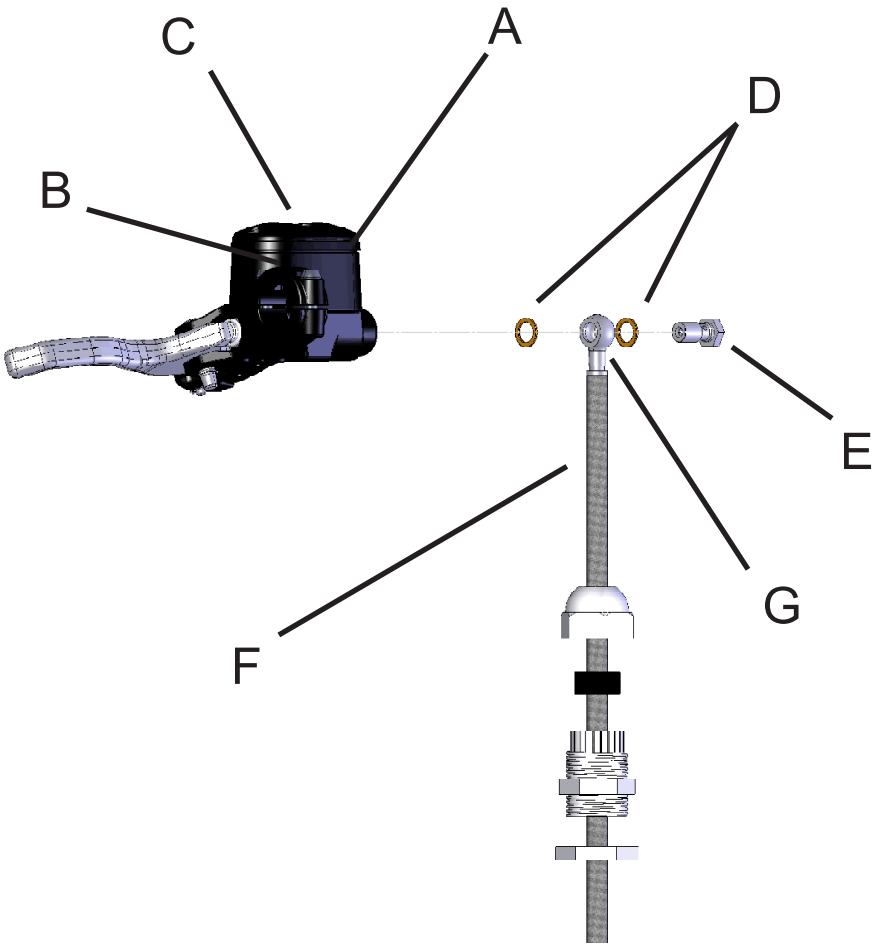
CAUTION: DOT 3 and DOT 4 brake fluids are a slip hazard on any flooring surface.

Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Place the CooLift on a level flooring surface.
2) Remove the two screws that hold the master cylinder (A) to the horizontal brace using the T30 wrench.
3) Hold the master cylinder (A) to be replaced above the drip pan and remove the reservoir cover (C) by removing two screws (B) using the T20 wrench and pour the fluid into the drip pan. NOTE: Do not squeeze the brake lever while the reservoir cover is off because it may introduce air into the system.
4) Position the new master cylinder (A) in place on the horizontal grip and tighten into place using the T30 wrench.
5) Take the reservoir cover (C) off the new master cylinder using the T20 wrench and fill it to the full line with DOT 3 or DOT 4 brake fluid.
6) Hold the old master cylinder (A) in the upright position and remove the master cylinder brake line (F) by removing the banjo bolt (E) using the 14mm wrench. NOTE: There will be a copper crush washer (D) on both sides of the banjo fitting.
7) Mount the master cylinder brake line (F) to the new master cylinder (A) taking care to hold it upright until it is position to keep as much fluid within the line as possible.
8) With the cover off the brake fluid reservoir slowly depress the brake lever approximately one half of its full stroke four or five times to allow as much air to escape from the brake system as possible.
9) Replace the reservoir cover (C) and tighten the screws (B) with the T20 wrench.
10) Check the brake system for proper functioning.
11) If the system seems to be squishy or not functioning properly there may be some air trapped in the lines and they will need to be bled (see Bleeding the Brakes).



Item		Qty.	Part Number
A	Master cylinder (includes B - C)	1	309218
B	Cover screws		n/a
C	Reservoir cover		n/a
D	Copper washer	2	80712
E	Banjo bolt	1	80124
F	Master cylinder brake line (includes G)	1	309083
G	Banjo fitting		n/a

Quantities listed are for quantities shown - 2 additional 80712 and 1 additional 80124 are used at the lower end of the master cylinder brake line

BLEEDING BRAKES

TOOLS NEEDED:
14mm WRENCH
#3 PHILLIPS SCREWDRIVER
T10 TORX DRIVER
T20 TORX DRIVER
TORQUE WRENCH
SPACER BLOCK (4” x 4” x 24” WOODEN BLOCK)
DOT 4 or DOT 5 BRAKE FLUID
DRIP PAN
ABSORBING MATERIAL (for containing spills)
ISOPROPYL ALCOHOL
Note: It is important to keep the CooLift upright at all times.

CAUTION: DOT 4 and DOT 5 brake fluids are a slip hazard on any flooring surface.

Brake fluid will strip paint; any spills on a painted surface should be wiped up and rinsed with isopropyl alcohol immediately.

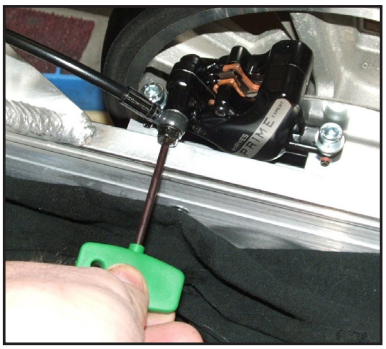
Brake fluid can be an irritant to human tissue and should be washed off in flowing water.

If brake fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

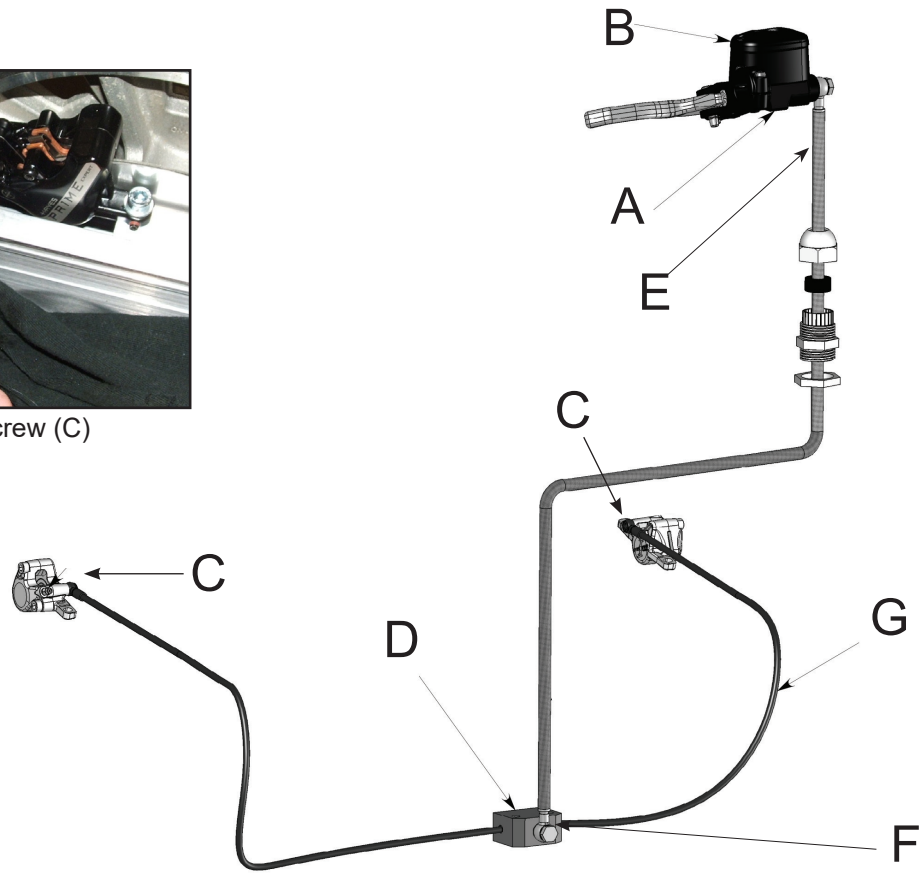
1) Place the CooLift on a level flooring surface.
2) Raise the deck to its highest position.
3) Insert the spacer block between the deck and the base of the cart.
4) Turn off main power switch.
5) Remove the back access panel from the cart using the #3 Phillips screwdriver.
6) Remove the reservoir cover (B) from the brake master cylinder reservoir using the Torx T20 driver.
7) Check the fluid level in the master cylinder (A) making sure it is filled to the fill line marked on the inside of the reservoir.
8) Set the reservoir cover (B) back on top of the master cylinder (A) to keep fluid from splashing out, but do not tighten the screws.
9) Pump the brake handle eight to ten times and note the amount of pressure it takes each time. If the amount of pressure needed to fully compress the handle begins to increase after the first few pumps, skip the next step of bleeding the master cylinder brake line (E).
10) When there is no noticeable increase in pressure after ten pumps, the master cylinder brake line (E) needs to be bled first. Using the 14mm wrench, loosen the banjo bolt (F) that connects it to the junction block (D) until fluid is noticed seeping out at the junction block fitting. NOTE: It is not necessary to take the banjo bolt out entirely, it just needs to be loosened a few turns to allow the air in the brake line to escape and be replaced with brake fluid. Once fluid seeps out of junction block fitting, re-tighten the banjo bolt.
11) Remove the reservoir cover (B) and recheck the fluid level. Set the reservoir cover (B) back on top of the master cylinder (A) to keep fluid from splashing out, but do not tighten the screws.
12) Place the drip pan on the floor under the caliper on the left side of the cart.
13) The lower brake lines need to be bled next. Open the bleed screw in the banjo bolts on the calipers with the T10 torx driver until fluid is noticed seeping out of the bleed screw. NOTE: It is not necessary to take the bleed screw out entirely, it just needs to be loosened a few turns to allow the air in the brake line to

escape and be replaced with brake fluid. You can gently pump the brakes to help accelerate this process. One the fluid is seeping out, re-tighten the bleed screws

14) Remove the reservoir cover (B) and recheck the fluid level. Set the reservoir cover (B) back on top of the master cylinder (A) to keep fluid from splashing out, but do not tighten the screws.
15) Pump the brake handle several times and hold it in the compressed position, loosen the caliper bleed screw (C) 1/4 turn with the T10 torx driver until the fluid pressure that was built up is released, tighten the bleed screw to 35 +/- 5 inch pounds of torque and release the brake handle. NOTE: Repeat this step until straight fluid without air bubbles is noticed escaping during the bleed screw loosening process. Check the fluid level and refill the reservoir if necessary after every other cycle.
16) Repeat the previous three steps on the right side caliper of the cart; then repeat these same steps for the left side caliper. Keep repeating these steps, alternating sides, until no air is seen in the brake fluid and pumping the brake handle does not increase the pressure in the lines.
17) Recheck and refill (if necessary) the master cylinder reservoir.
18) Put the reservoir cover (B) back on the master cylinder (A) and tighten the screws with the Torx T20 wrench to 60 +/- 5 inch pounds of torque.
19) Wipe any brake fluid that may have leaked into the drip pan located underneath the CooLift deck using the absorbing materials.



Caliper bleed screw (C)



Item		Qty.	Part Number
A	Master cylinder (includes B)	1	309218
B	Reservoir cover	-	n/a
C	Caliper bleed screw	-	80135
D	Junction block	1	309051
E	Master cylinder brake line	1	309083
F	Banjo bolt	1*	80124
G	Caliper brake line assembly	2	309145

*Quantity listed is for quantity shown - an additional 80124 is used at the top of the master cylinder line assembly

CHANGING HYDRAULIC PUMP

TOOLS NEEDED:
7/16” WRENCH
11/16” WRENCH
1/2” WRENCH
10mm WRENCH
13mm WRENCH
#3 PHILLIPS HEAD SCREWDRIVER
DRIP PAN
ABSORBING MATERIAL (for containing spills)
Note: It is important to keep the CooLift upright at all times.

CAUTION: Hydraulic fluid is an extreme slip hazard on any flooring surface.

Hydraulic fluid can be a skin irritant in rare instances and should be washed off with soap and water.

If hydraulic fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) Disconnect and remove the batteries.
4) Disconnect each wiring harness (B) from the pump connections using the 10mm and 13mm wrenches.
5) Disconnect the hydraulic line (A) that connects the pump to the bulk head fitting located in the base plate at the pump end using the 11/16” wrench and drain as much of the hydraulic fluid as possible into the drip pan.
6) Remove the three screws (F) that hold the pump mount plate (C) to the vertical slides using the #3 Phillips head screwdriver. NOTE: Take care to support the pump and pump mount plate when taking out the screws to avoid dropping on your fingers.
7) Set the pump assembly (D) to be replaced on the floor or a bench in an upright position resting on the pump reservoir and remove the three pump mount screws (E) located on the back of the pump mount plate (C) using the #3 Phillips head screwdriver.
8) Secure the new pump assembly (D) to the pump mount plate (C) using the three previously removed screws and tighten using the #3 Phillips head screwdriver.
9) Secure the pump mount plate (C) to the vertical slides using the three previously removed screws and tighten using the #3 Phillips head screwdriver.
10) Reconnect the hydraulic line (A) back on the pump body using the 11/16” wrench.
11) Reconnect each wiring harness (B) to pump connections using the 10mm and 13mm wrenches.
12) Reinstall the batteries.
13) The hydraulic system should be purged of all air within the system (see Bleeding the Hydraulic System).

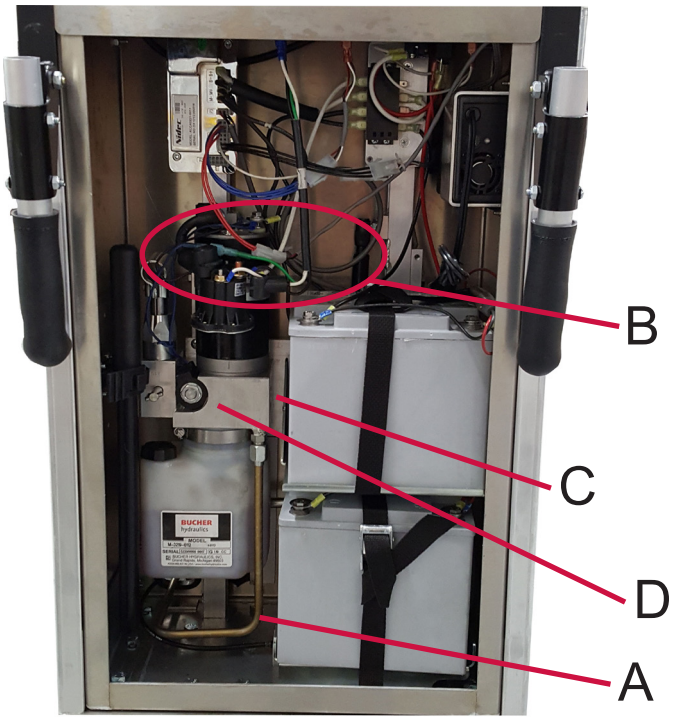


Figure 1

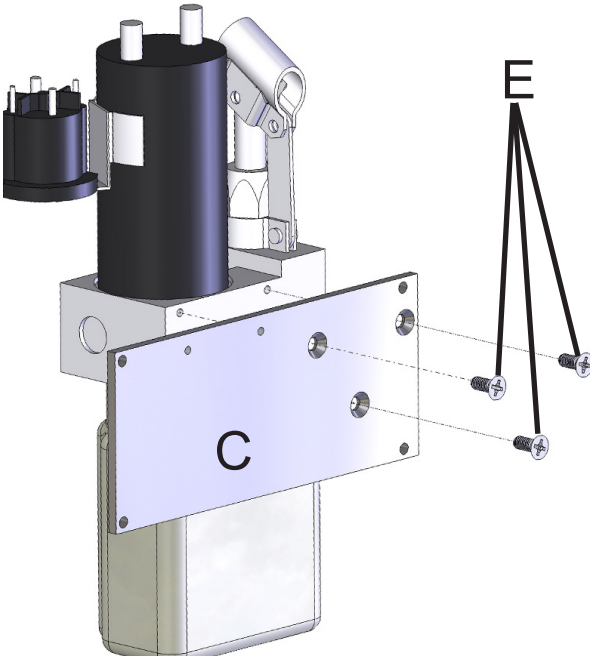


Figure 2

Figure 3

Items		Qty.	Part No.
A	Hydraulic line	1	55422
B	Wiring harness from pump to terminal block	1	64036
	Wiring harness from up/down switch to pump	1	64037
	Wiring harness from solenoid to terminal block	1	64035
C	Pump mount plate	1	309831
D	Pump assembly (includes items all pictured in Figure 3)	1	63013
E	Flat head machine screw - 5/16”-18 x 3/4” long	3	80261
F	Pan head machine screw - 1/4”-20 x 3/4” long w/ locking patch (visible when batteries are removed)	3	80257
G	Manual pump handle	1	63014
H	Hydraulic pump reservoir	1	59501
I	Pump starter - 24v DC (solenoid)	1	63015

CHANGING HYDRAULIC CYLINDER

TOOLS NEEDED:
11/16” WRENCH
3/4” WRENCH
1/2” DEEP WELL SOCKET AND RATCHET
1/2” WRENCH
#3 PHILLIPS
LARGE FLAT HEAD SCREWDRIVER
HYDRAULIC THREAD SEALANT
BLUE THREAD LOCKER
TWO SPACER BLOCKS
DRIP PAN
SHOP TOWELS
ABSORBING MATERIAL (for containing spills)
Note: It is important to keep the CooLift upright at all times.

CAUTION: Hydraulic fluid is an extreme slip hazard on any flooring surface.

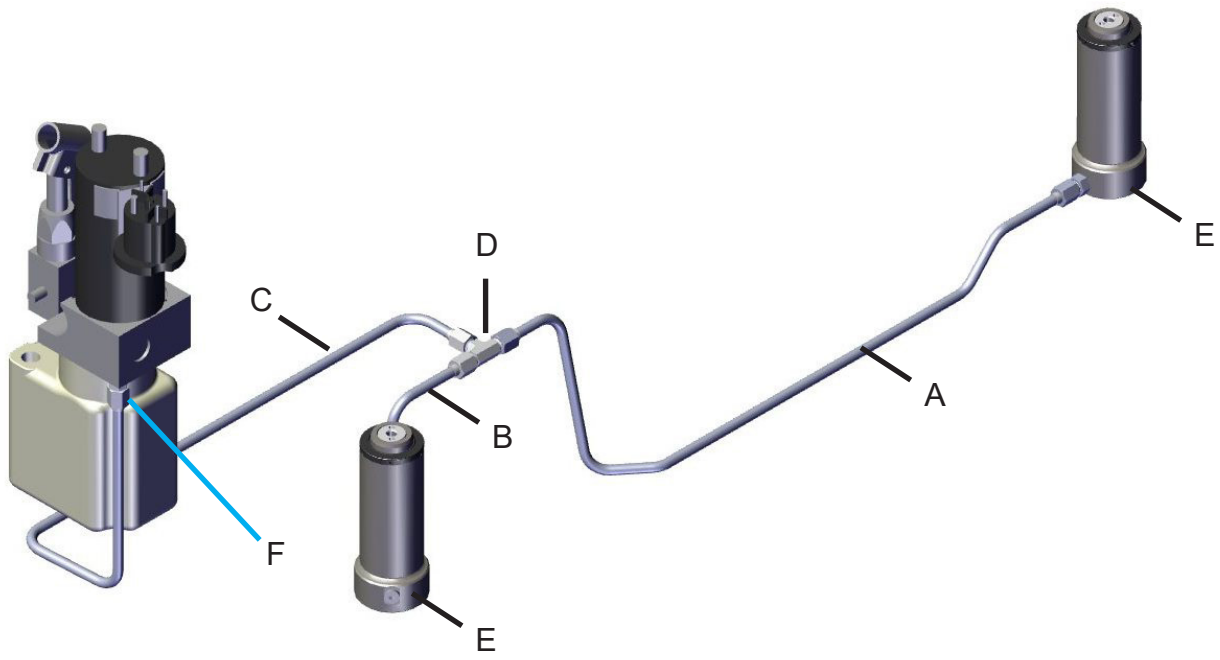
Hydraulic fluid can be a skin irritant in rare instances and should be washed off with soap and water.

If hydraulic fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

1. Place the CooLift on a level flooring surface with the holding brake engaged.
2. Elevate lift platform to maximum height with electric pump.
3. Remove deck screws from top of cylinders; set aside for reuse.
4. Block the lift platform with two 2” x 4” wooden spacer blocks on edge.
5. Lower the cylinders completely using the electric pump.
6. Turn off the power switch.
7. Remove the bottom front and rear pans.
8. Loosen the hydraulic fittings from each hydraulic cylinder using the 11/16” wrench. Use absorbing material to capture escaping hydraulic fluid.
9. Remove the screws from the bottom of the CooLift which hold the cylinders in place (set aside for reuse). Set old cylinder aside sitting upright with the fitting at the top as to not spill hydraulic fluid (fluid will be reused).
10. Position new cylinder in CooLift and finger tighten the flare fitting to the hydraulic fitting in the new cylinder.
11. Replace the screws which secure the cylinders in the CooLift and tighten.
12. Tighten the flare fitting to the cylinder fitting.
13. Re-install the front and rear pans; apply blue thread locker to the screw threads.
14. Pour hydraulic fluid from old cylinders into the pump reservoir.
15. Turn on the power switch.
16. Elevate the cylinders to maximum height using the electric pump. Make certain the cylinder top fits properly in the mounting bracket in the CooLift deck.

17. Bleed the air out of the hydraulic system following the instructions (see Bleeding the Hydraulic System).

NOTE: BOTH CYLINDERS MUST BE BLED EVEN IF ONLY ONE CYLINDER WAS REPLACED



Items		Qty.	Part Number
A	Line - tee to front cylinder	1	55420
B	Line - tee to rear cylinder	1	55421
C	Line - tee to coupling	1	55422
D	Tee fitting	1	55403
E	Cylinder assembly (includes 55419 fitting, 80396 screw and 80754 washer)	2	59006
F	Fitting - NPT to flare	1	55401
-	Cylinder mount screw (not shown)	4	80010

Note: 55419 fitting compatible with cylinders manufactured 2017 and later.

BLEEDING HYDRAULIC SYSTEM

TOOLS NEEDED:
#4 PHILLIPS
#3 PHILLIPS
MEDIUM FLAT HEAD SCREWDRIVER
HYDRAULIC FLUID
HYDRAULIC FLUID ADDITIVE
3/16” ALLEN WRENCH (REV H CYLINDERS)
9/64” ALLEN WRENCH (ALL OTHER CYLINDERS)
FLASHLIGHT
SHOP TOWELS
ABSORBING MATERIAL (for containing spills)
Note: It is important to keep the CooLift upright at all times.

CAUTION: Hydraulic fluid is an extreme slip hazard on any flooring surface.

Hydraulic fluid can be a skin irritant in rare instances and should be washed off with soap and water.

If hydraulic fluid is exposed to the eye, flush immediately and continuously for 15 minutes.

Note: This procedure uses very low pressure to bleed the air out of the cylinders. Failure to properly follow these instructions might cause damage to the bleed screw seal and leakage of hydraulic fluid may occur.

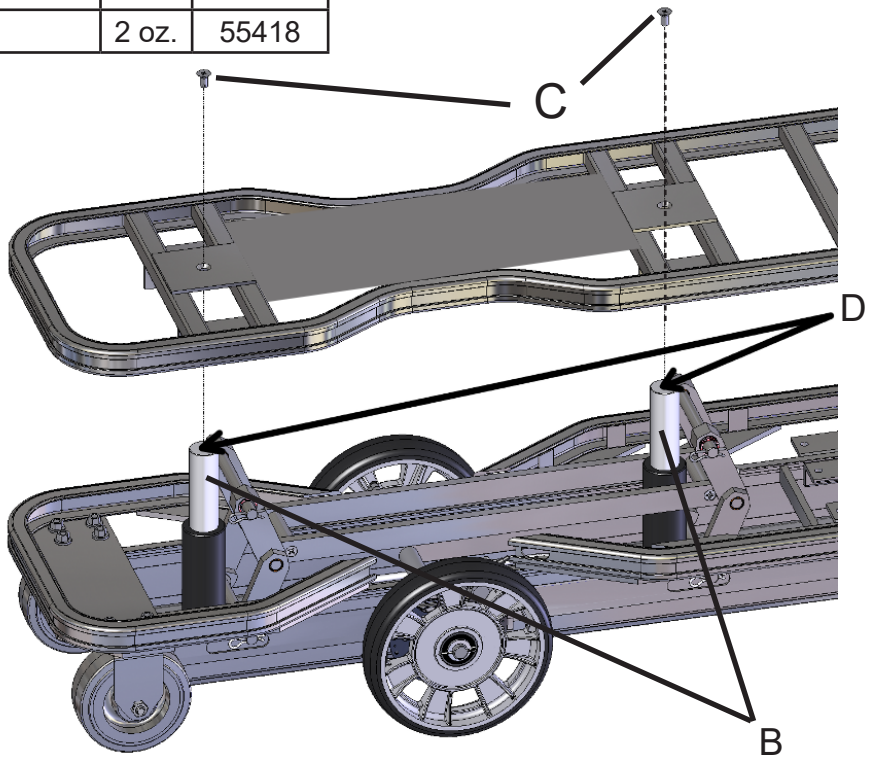
Note: Rev H cylinders are marked with the part number and rev level on the cylinder body above the port.

1) Place the CooLift on a level flooring surface with the holding brake engaged.
2) Turn off main power switch.
3) Remove the back access panel from the CooLift by removing the seven mounting screws using the #3 Phillips head screwdriver.
4) Add 2 fluid ounces of the hydraulic additive to the pump reservoir (A).
5) Check the fluid level in the pump reservoir making sure it is filled to the proper level (see illustration) – refill as needed.
6) Fully raise the deck. Remove the two screws and lock washers (C, D) that attach the deck to the top of the hydraulic cylinders (B) using a medium flat head screwdriver.
7) Lower the cylinders about 1/4”.
   - The center section of the rod end should be recessed slightly.
   - This sequence places the cylinders so that they are nearly fully extended but without any significant hydraulic pressure.
8) Using the 3/16” or 9/64” Allen wrench, loosen the bleed screw on the front cylinder by three complete revolutions.
   - For Rev H cylinders, loosen the bleed screw 1/4 turn.
   - For all other cylinders, loosen the bleed screw by three complete revolutions.

9) Allow air to escape. When fluid begins to collect in the deck screw tapped hole, proceed to the next step.
10) Tighten the bleed screw 1/4 turn for Rev H cylinders or three complete turns for all other cylinders. DO NOT ATTEMPT TO FULLY TIGHTEN the bleed screw at this time; it should only be “snug.”
11) Repeat steps 8 through 10 for the back cylinder.
12) Lower the cylinders completely.
13) Repeat steps 7 through 12 as needed until the air is out of the system (usually 2 or 3 repetitions are all that is needed).
14) Once the cylinders have been bled, fully raise the cylinders.
    - The center section of the rod end should be flush with the outside section of the cylinder rod.
    - Full system pressure should be on the cylinders.
15) Finish tightening both of the bleed screws to 40 in-lbs torque (for all cylinders).
16) Check for leaks in the hydraulic system.
17) Clean the excess fluid out of the deck screw tapped hole.
18) Secure the deck back in place using the lock washer and deck screws previously removed.
19) Lower the deck and recheck the fluid level in the reservoir - refill if necessary.
20) Secure the back panel with the previously removed screws and the #3 Phillips head screwdriver.
21) Wipe up any hydraulic fluid that may have leaked into the drip pan using the shop towels.
22) If any hydraulic fluid was spilled onto the flooring surface clean it up by first absorbing it with either a shop towel or the absorbing material and then mopping the area with floor soap to prevent slips and falls.

Item	Description	Qty	Part #
A	Hydraulic pump reservoir	1	59501
B	Hydraulic cylinder assembly with fitting (includes items C and D)	2	59006
C	Slotted truss head screw 3/8”-16 X 3/4”	2	80396
D	Helical lock washer 3/8” dia x 1/8” thick	2	80754
-	Hydraulic fluid	--	55407
-	Hydraulic fluid additive	2 oz.	55418

(Fill to 1/2 inch below the top when the deck is at the lowest position)



REPLACING BRAKE PAWL

TOOLS NEEDED:
5/16” WRENCH
#2 PHILLIPS
MEDIUM FLAT HEAD SCREW DRIVER
MEDIUM STRENGTH THREAD LOCKER (BLUE)

Note: It is important to keep the CooLift upright at all times.

1. Pull the brake lever back approximately 1/2” to 3/4” and secure it in place using a heavy duty cable tie (Figure 1).
2. Figure 2 shows the three holes that will be utilized with the new brake pawl assembly. Remove the self-locking retaining clip that holds the current pawl in place by prying it off with a flat screwdriver. Pull out the pin to remove the spring and the pawl, taking care to keep track of the spring as it will be used within the new assembly.
3. Place the spring inside the new pawl (B) as illustrated in Figure 3 and slide it in place over the end of the brake lever and secure with the screw, flat washer and locknut provided (C,D,E); tighten to minimize L-R movement with free rotation. Test the spring action after the installation (it should react in the same way the old pawl did).

Figure 1

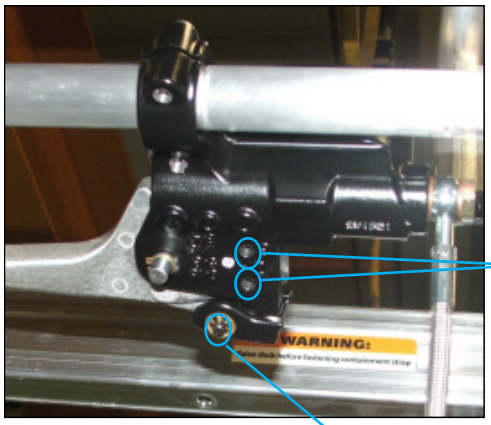


Figure 2

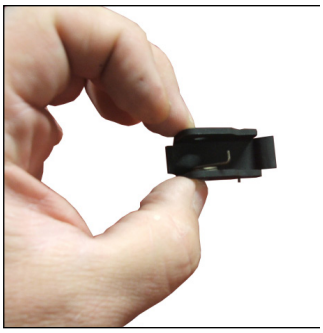


Figure 3

Item	Description	Qty.	Part Number
Brake Pawl Kit (includes all items below)			309219
A	Master cylinder U-bracket	1	309182
B	Brake pawl for master cylinder	1	309183
C	Pan head machine screw - #10-32 UNF x 1” long	1	80123
D	Flat washer for #10 screw	1	80763
E	Hex lock nut 10-32UNF thread	1	80684
F	Round head machine screw - #10-32 UNF x 7/8” long	2	80122
G	Lock washer split for #10 screw	2	80747
H	Cable tie	2	61052

4. Slide the latching section of the new pawl assembly in place as shown in Figure 4. Install the latching section in place and secure it using lock washers (F,G) and blue thread locker, applied 3/16” to 5/16” from the head and end of the screw. Note: A small pin or drill bit can be used to align the latch block with the master cylinder holes.
5. After the installation is complete, engage the holding brake and release it a few times to insure it is working properly.

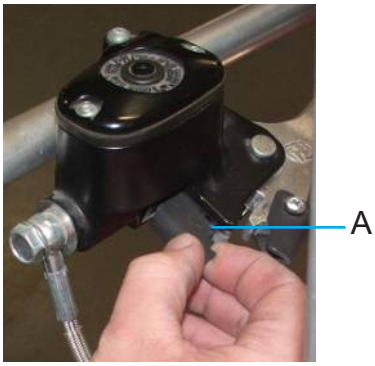


Figure 4

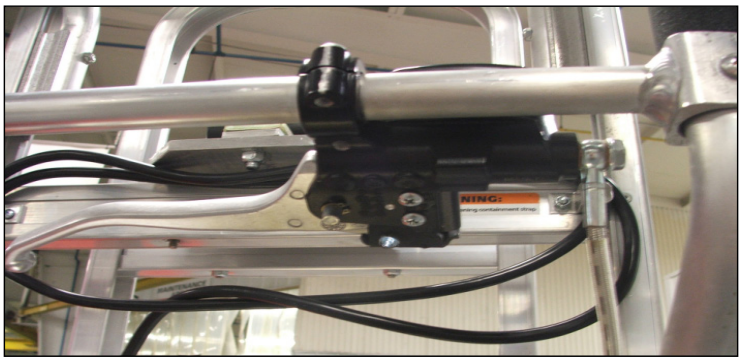


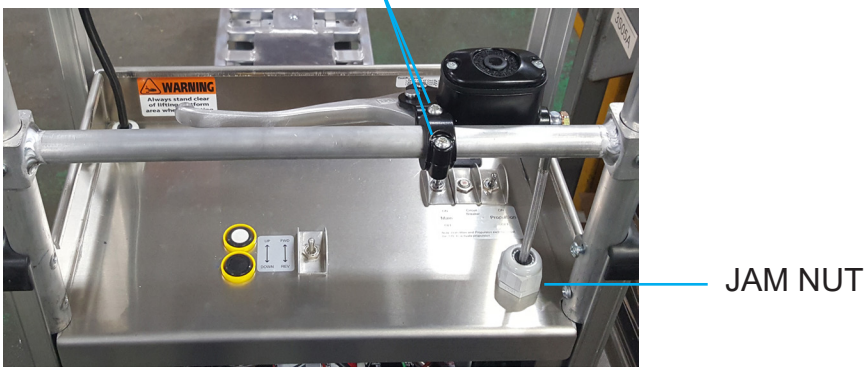
Figure 5

RELOCATING MASTER CYLINDER

TOOLS NEEDED:
TORX T30 WRENCH

Note: It is important to keep the CooLift upright at all times.

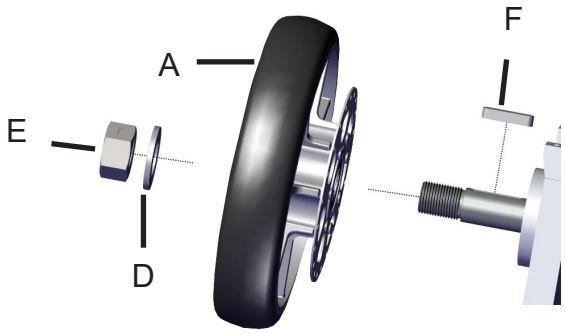
1) Place the CooLift on a level flooring surface.
2) Loosen the two screws that hold the master cylinder to the horizontal brace using the T30 wrench.
3) Loosen the top jam nut on the cord grip if more brake line needs to be released from the inside of the cabinet and retighten after repositioning.
4) The master cylinder can now be slid into another location. NOTE: Keep the master cylinder upright during this process to keep from introducing air into the brake system.
5) Tighten the screws to secure the master cylinder in the new location.



REPLACING CENTER WHEEL

TOOLS NEEDED: 5mm WRENCH, 4 x 4 WOODEN BLOCKS, 1-1/8” SOCKET WRENCH, HIGH STRENGTH (RED) THREADLOCKER

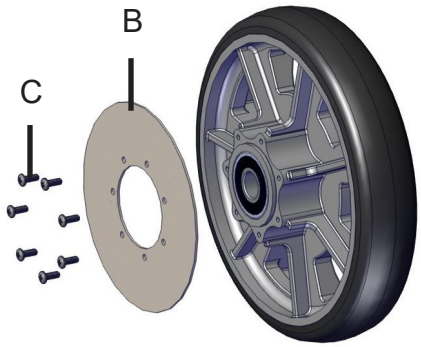
1) Place the CooLift on 4x4 blocks on a level flooring surface.
2) Turn off main power switch.
3) Engage the parking brake and remove the wheel retaining lock nut with the 1-1/8” wrench. Remove the flat washer.
4) Disengage the parking brake. Remove caliper by removing the caliper mounting screws using a 5mm Allen wrench (see CHANGING BRAKE PAD section for more details). NOTE: Do not engage the brake lever while the brake calipers are off the cart. Remove the wheel and then the key from the drive axle.
5) Install new key (you may need to gently tap into place with a hammer).
6) Slide the wheel onto the axle and key. Replace washer and lock nut.
7) Tighten the lock nut until snug.
8) Replace caliper.



REPLACING WHEEL BRAKE DISC

TOOLS NEEDED: 5mm WRENCH, PHILLIPS SCREWDRIVER, 4 x 4 WOODEN BLOCKS, 1-1/8” SOCKET WRENCH, HIGH STRENGTH (RED) THREADLOCKER

1) Place the CooLift on 4x4 blocks on a level flooring surface.
2) Turn off main power switch.
3) Engage the parking brake and remove the wheel retaining lock nut with the 1-1/8” wrench. Remove the flat washer.
4) Disengage the parking brake. Remove caliper by removing the caliper mounting screws using a 5mm Allen wrench (see CHANGING BRAKE PAD section for more details). NOTE: Do not engage the brake lever while the brake calipers are off the cart. Remove the key and then the wheel from the drive axle. Retain the key for reassembly.
5) Carefully remove and retain the seven screws attaching the brake disc to the wheel.
6) Place the new brake disc against the wheel. Apply red threadlocker to the threads of the screws and replace. Tighten fully in a star pattern.
7) Reinstall axle key (you may need to gently tap into place with a hammer).
8) Slide the wheel onto the axle and key. Replace washer and lock nut.
9) Tighten the lock nut until snug.
10) Replace caliper.



Item	Description	Qty.	Part Number
A	Wheel kit (includes 10” x 2” wheel and items below):	1	309685
B	Brake disc for center wheel	1	309050
C	Pan head machine screw - #10-24 UNF x 3/8” long	7	80246
D	Flat washer - 3/4”	1	80706
E	Hex lock nut - 3/4”-16	1	80628
F	Wheel key - 6mm x 30mm	1	309626

Troubleshooting

The unit does not turn on.

- ✓ Is the main switch turned on?
- ✓ Have the batteries been charged?
- ✓ Has the circuit breaker been tripped?
- ✓ Is the battery box fully plugged in?
- ✓ Check electrical connections for tightness, including battery terminals within the enclosure.
- ✓ Contact Magline if problem persists.

The CooLift is not charging up.

- ✓ Is the charger working correctly?
- ✓ Is the battery box connected correctly?
- ✓ Have all electrical connections been checked?
- ✓ Is there any damage to the plug or cord?
- ✓ Is the internal charger switch in the ON position?
- ✓ Is the charger working correctly?
- ✓ Is the power plug plugged in the charger socket?
- ✓ Is the charger output cord plugged into the battery pack charger port?

The pump is running but the deck is not lifting.

- ✓ Is the fluid level correct in the reservoir?
- ✓ Do you see any leaks in the hydraulic system?
- ✓ Is the manual pump release valve open?
- ✓ Is the breather cap for the pump reservoir plugged?

The deck lifts to the top position but then gradually lowers.

- ✓ Is the manual release valve fully closed?
- ✓ Do you see any leaks in the hydraulic system?

The deck lifts OK but lowers slowly.

- ✓ Does it go down quicker when opening the manual release valve?
- ✓ Do you see any fluid leaking out of the gas springs?

The deck lifts slower than usual.

- ✓ Is the manual release valve closed all the way?
- ✓ Is the fluid level correct in the reservoir?
- ✓ Do you see any leaks in the hydraulic system?

The deck is in the up position and will not go down.

- ✓ Is there any foreign matter in the linkage system?
- ✓ Check for loose wire connections.
- ✓ Use the manual pump handle to lower the deck (the manual pump handle is stored inside the enclosure)

The brakes are not working or braking unevenly side to side.

- ✓ Do you see any leaks in the brake system?
- ✓ Is the brake fluid level correct in the reservoir?
- ✓ Are both of the calipers mounted tightly to the rail?
- ✓ If you pump the brake lever several times, does it start working?
- ✓ Check to see that the discs are running true and mounted properly.
- ✓ Check to see if disc mounting screws have not backed out.
- ✓ Contact Magline if problem persists.

The pump runs and will not shut off.

- ✓ Turn off main power switch.
- ✓ Check the continuity of the starter solenoid.
- ✓ Check the continuity of the operator on/off switch.

Hydraulic or brake fluid has dripped into the drip pan underneath the CooLift deck.

- ✓ Wipe up any fluid that may have leaked into the drip pan using shop towels.

Brake fluid has dripped into the drip pan underneath the CooLift deck.

- ✓ Check for leaks in the brake system and tighten loose components, or repair any damaged components.
- ✓ Wipe up any fluid that may have leaked into the drip pan using shop towels.
- ✓ Contact Magline if problem persists.

The propulsion assist feature is not operating.

- ✓ Have the batteries been charged?
- ✓ Are both the lift system and propulsion system switches turned to the ON position?
- ✓ Fully lower the deck and turn both the lift system and propulsion system switches to the OFF position. Wait 2-3 minutes and turn the lift system and propulsion system switches to the ON position.
- ✓ Have you pressed the throttle interlock button before using the throttle?
- ✓ Are the wires to the interlock and throttle connected? Both in the enclosure and on the handle?
- ✓ Check the chains in the propulsion system to see if they are in place and tensioned properly.
- ✓ Has the parking brake been released?
- ✓ Check for loose wire connections from the controller or battery.
- ✓ Is there any debris in the chains or in other parts of the propulsion system?
- ✓ Contact Magline if problem persists.

Required Maintenance Procedures and Inspection Log

Cart Serial No: _____ Maintenance Date: _____

Customer: _____ Completed By (name): _____

Area	Related Components	Maintenance Instructions	Frequency	Notes
Propulsion System	Drive chain lubrication	• Lift deck to its fully raised position • Remove cover protecting the propulsion system • Turn off CooLift • Oil chains lightly with a 40 weight (or greater) oil. Moly chain lubricant may be used as a substitute.	Monthly	
Propulsion System	Drive chain tension	• Lift deck to its fully raised position • Turn off CooLift • Chain should have 1/4” side-to-side play between sprockets when you push on it • To adjust, loosen or tighten the 5/16”-18 x 2” long socket head cap screws in the mount plate until 1/4” play in chain is reached	Monthly	

Cart Serial No: _____ **Inspection Date:** _____

Customer: _____ Inspector's Name: _____

Estimated Usage: _____

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
General Inspection	Cart is straight and properly aligned	Visual inspection	• Frame is not twisted or bent • User enclosure is perpendicular to the frame • Deck is angled slightly toward enclosure when retracted • Handles are not bent or damaged		Daily	
General Inspection	No damage or excessive wear	Visual inspection	• Straight sections • Smooth curves • Flat surfaces		Daily	
General Inspection	Cart rolls smoothly	Push cart and let roll	Cart should travel in nearly a straight line for several feet		Daily	
General Inspection	Brakes are responsive when applied	Roll cart at walking speed and apply brakes	• Brakes should feel responsive and not "soft" • Brake lever should not contact handle		Daily	
General Inspection	Holding brake remains active over time	Lock brakes for 10 minutes then push on cart with brake still locked	Brake should remain engaged		Daily	
Hydraulics	Electrical operation	Operate hydraulic pump up and down several times electrically	• No excessive noise or extraneous sounds from pump or pump motor • No rattles from tubing • No squeaks or groans from cylinders • Manual bypass valve should not leak		Daily	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Propulsion System	Electrical	Operate Fwd/Rev switch several times	• Unit should run smoothly in either direction • No rattling or excessive noise		Daily	
Brake System	Holding brake pawl in good condition and operating properly	Visual inspection Set brake	• No visible damage • Brake locks in place		Daily	
Electrical	Buttons and switches	Visual inspection	• No cracks or damage. • No loose mounting hardware.		Daily	
General Inspection	Warning and branding labels are in good condition	Visual inspection	• Labels are in place and not coming loose • Labels are in good condition • Red stripes are in place and in good condition		Weekly	
Frame	Frame is in good condition • No damage • No excessive wear	Visual inspection	• Straight sections • Smooth curves • Flat surfaces • Minor scratches and dings are expected		Weekly	
Frame	Containment strap plate	Visual inspection	• Plate should be flat and free of damage or excessive wear • Plating should not be cracked or damaged • Mounting screw should be tight		Weekly	
Deck	Deck is in good condition • No damage • No excessive wear	Visual inspection	• Straight sections • Smooth curves • Flat surfaces • Minor scratches and dings		Weekly	
Deck	Yoke screws are not loose in deck	Manual inspection	Screws are tight		Weekly	
Brake System	No system leaks • Fittings on master cylinder, connecting block & calipers • Master cylinder body • Caliper body • Hoses	Wipe around fittings and master cylinder with dry rag	No leaks (rag remains dry)		Weekly	
Brake System	Brake lever in good condition and operating properly	Visual inspection Operate brake	• No visible damage • Smooth operation		Weekly	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Brake System	Mounting screws tight • Master cylinder mount to handle • Master cylinder cap • Connecting block to base of enclosure • Caliper mounting	Manual inspection	• Parts are tight to mounting surfaces		Weekly	
Brake System	Mounting screws on brake discs are tight	Visual inspection	• Mounting screws on brake disc are not backing out • Brake disc is mounted tightly to the center wheel		Weekly	
Hydraulics	Cylinders not leaking (note especially front cylinder)	Visual inspection	Thin film of oil on piston rod		Weekly	
Hydraulics	Cylinder condition • No rod scoring • Return springs fully functional	Visual inspection	Cylinder rod is smooth and retracts fully into cylinder body		Weekly	
Suspension	Wheels and tires are in good condition	Visual inspection	Wheels and tires are free of damage		Weekly	
Suspension	Components are straight and undamaged • Front wheel mounting yoke • Main axle • Rear swivel caster frames	Manual inspection	• Components are not damaged and operate freely • Main axle plating is not cracked or damaged		Weekly	
Operator Interface	External mounting screws are tight • Base plate mounting to frame • Enclosure mounting or base plate • Handle mounting screws • Switch mounting hardware is tight	Manual inspection	Components are tight to mounting surfaces		Weekly	
Operator Interface	• Handle, enclosure and door are free of damage and in good condition • Door latches are fully functional	Visual inspection	• Straight sections • Smooth curves • Flat surfaces • Minor scratches and dings are expected		Weekly	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Operator Interface	Containment strap	Manual / Visual inspection	• Belt should be free of tears and abrasions • Plating on buckle should not be cracked or damaged • Mounting screws should be tight • Mounting tab should not be bent or damaged • Belt should retract into housing such that only the buckle protrudes • Housing should not be cracked or damaged • Strap tongue should rotate freely		Weekly	
Operator Interface	Handle grips	Visual inspection	Grips are not worn or damaged		Weekly	
Electrical	Lift system • Limit switches • Motor	Manual inspection	• No loose components • Wiring harness are not damaged • Check connectivity		Every 2 weeks	
Electrical	Propulsion system • Motor • Clutch	Manual inspection	• No loose components • Wiring harness are not damaged • Check connectivity		Monthly	
Brake System	Fluid level	Visual inspection	Fluid level up to notch in master cylinder reservoir		Monthly	
Brake System	Hose without damage, abrasion, wear	Visual inspection	No visible damage or wear		Monthly	
Brake System	Brake discs have minimal rub and warp	Spin wheel	Wheel should continue to rotate several times before stopping		Monthly	
Suspension	Wheels and casters spin freely	Manual inspection	Wheel should continue to rotate several times before stopping		Monthly	
Suspension	Mounting hardware is tight • Front wheel axle/pin • Rear caster frame • Main axle mounts to frame and axle clamp • Nuts for main wheels	Manual inspection	All hardware is tight		Monthly	
Hydraulics	No cracks or damage to hose or tubing	Visual inspection	No deep scratches or dents		Monthly	
Hydraulics	Cylinder mount screws to frame and deck are tight	Manual inspection	Cylinder body is tight to frame; deck mounting screw is tight		Monthly	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Hydraulics	Fittings not leaking • Hose fittings inside enclosure • Tube fittings under enclosure and in frame • Cylinder fittings	Wipe around fittings with dry rag	No leaks (rag remains dry)		Monthly	
Hydraulics	Manual operation	Operate hydraulic pump up and down several times manually using pump handle and bypass valve	• Deck should lift completely within 35 strokes of pump handle • Manual bypass valve should allow deck to descend and not leak once re-closed		Monthly	
Hydraulics	Cylinder bearing cap is tight	Manual / Visual inspection	• Manually attempt to turn the bearing cap • Inspect to determine if bearing cap is flush with top of cylinder - should not see any threads above cylinder body		Monthly	
Hydraulics	Fluid level	Visual inspection	Fluid should be about 1/2 inch below top of reservoir when deck is down		Monthly	
Suspension	Wheels and casters spin freely	Manual inspection	Wheel should continue to rotate several times before stopping		Monthly	
Suspension	Components are straight and undamaged • Front wheel mounting yoke • Main axle • Rear swivel caster frames	Manual inspection	• Components are not damaged and operate freely • Main axle plating is not cracked or damaged		Monthly	
Propulsion System	Propulsion system mount screws to frame and deck are tight	Manual inspection	Propulsion system mount screws are tight to frame		Monthly	
Propulsion System	Hardware is properly installed and undamaged	Visual inspection	All hardware is in place and in good condition		Monthly	
Propulsion System	• Mounting hardware is properly installed and tightened • Chain tension is within acceptable range	Visual inspection	• No loose or missing fasteners • Approximately 1/4” play in chain when pushed between sprockets		Monthly	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Operator Interface	Internal mounting hardware is tight • Vertical slide mounting screws • Guide block cotter pins in rod • Pump mounting plate • Pump mounting screws • Pump band clamp • Battery box mounting screws	Manual inspection	Components are tight to mounting surfaces		Monthly	
Linkage System	Hardware is properly installed and undamaged • Spring pins • Washers • Springs	Visual inspection	All hardware is in place and in good condition		Monthly	
Linkage System	Link pins	Visual inspection	• Pins are straight with no signs of wear • Pin plating is not cracked or damaged		Monthly	
Linkage System	Links • Minimal play between pins and bushings • Bushings are not working out of links	Manual / Visual inspection	• Links are straight with no signs of damage or wear • Minimal play between pins and links • Bushings are flush with side of the links		Monthly	
Linkage System	Link pins are not loose in deck, frame or sync links	Visual inspection	Minimal play between pins and deck, frame and synch links		Monthly	
Welds	No cracked welds	Visual inspection	No cracks or damage		Monthly	
Welds	Front caster plate	Visual inspection	No cracks or damage		Monthly	
Welds	Base plate	Visual inspection	No cracks or damage		Monthly	
Welds	Enclosure	Visual inspection	No cracks or damage		Monthly	
Welds	Frame - general	Visual inspection	No cracks or damage		Monthly	
Welds	Handle cross bar	Visual inspection	No cracks or damage		Monthly	
Welds	Vertical slide rod	Visual inspection	• Rod is straight with no signs of wear • Rod plating is not cracked or damaged		Quarterly	

Area	Description	Method of Inspection	Normal Condition	Findings Pass or Fail	Timing	Notes
Operator Interface	Guide blocks	• Visual inspection • Cycle deck up and down several times	Blocks are not damaged or worn and move freely in the vertical slide		Quarterly	
Operator Interface	Gas spring mounting • Mounting studs • Rod and body connectors • Preload screws are tight	Manual / Visual inspection	Components are tight and connectors engaged fully with studs		Quarterly	
Electrical	Wiring • Wire connections • Wire crimps, connectors and solder joints	Manual inspection	No loose connections, crimps or solder joints		Quarterly	
Electrical	Control boards	Manual / Visual inspection	• No loose components • Wiring harness connectors are securely in place • Wiring harnesses are not damaged		Quarterly	
Electrical	Operation	Cycle deck up and down several times	• Deck should move through entire range of motion without tripping circuit breaker • Buttons should not stick in down position		Quarterly	
Operator Interface	Gas spring condition and operation	• Visual inspection • Disconnect cylinders from studs per instructions in manual and try to compress the spring	• Rods should be straight and free of oil • Spring should not compress easily and return to fully extended position if compressed		Annually	

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