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# CC Car Service Manual

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**E. F. Bavis & Associates, Inc.**

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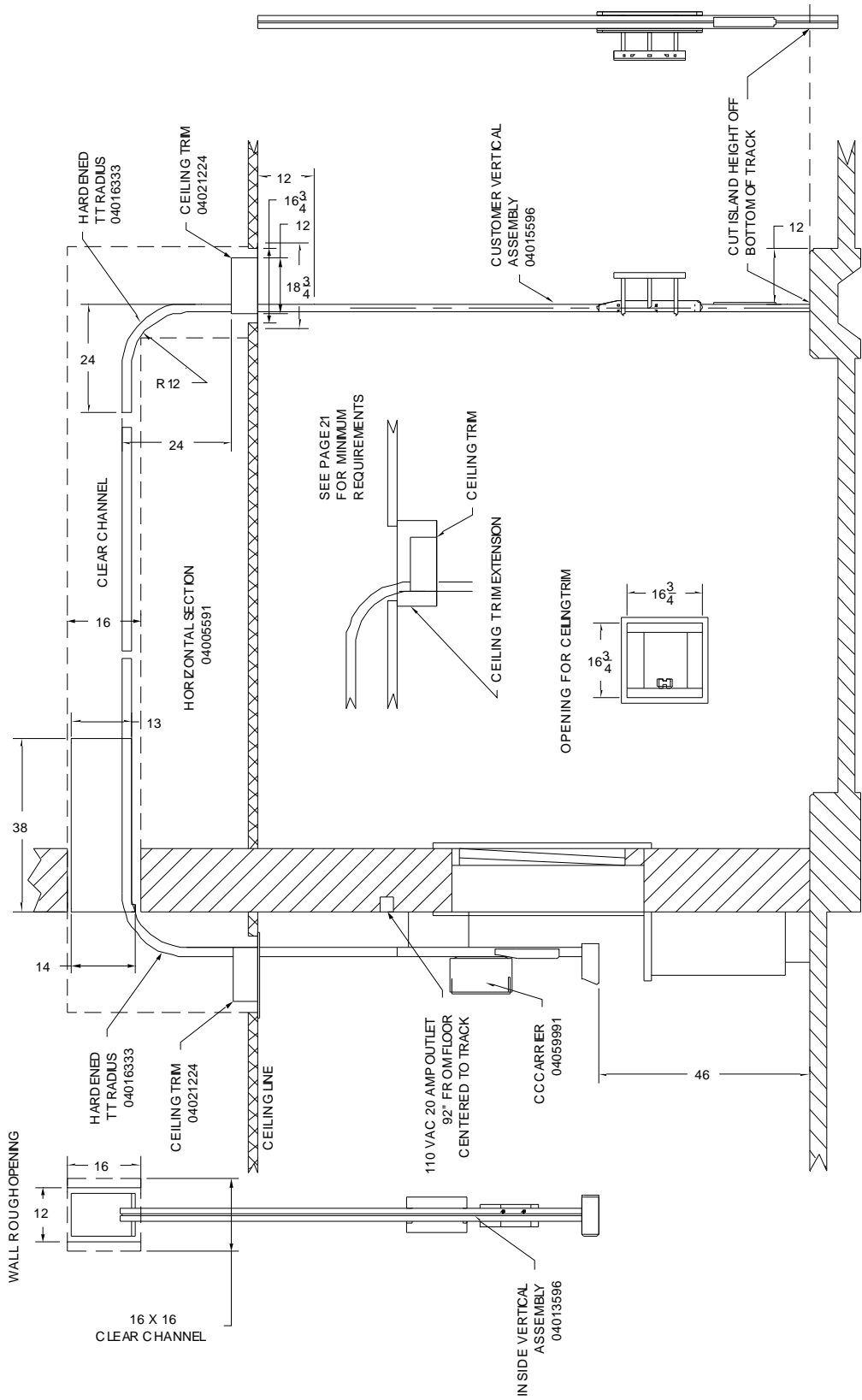
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## BASIC CAUTIONS

1. Do not use **WD40** on the system. It will gum up the tape and tape track causing a lasting problem with the unit running slow, broken sprockets, drive tape wearing out, etc.
2. Do not over tighten the four surround bolts. This will cause the unit to run slow and possibly damage the surround. Turn the bolts until they hit the surround and then 1/8 of a turn more.
3. Make sure that the tape track slots are beveled. If they are not it will cause the drive tape to wear out before its time. You should always check this if you have tapes that wear out prematurely.
4. **Do not remove** the drive assembly when changing the drive tape. This could cause problems with shorted wires that could damage the control board. Always remove the drive tape by taking off the speaker panel on the customer unit. Doing this the correct way will save time in the long run.
5. Do not modify parts to save time. Doing this could cause other problems which will result in more service calls. Always order the correct replacement parts from the factory.
6. Do not attempt to use tape of any kind to hold the brake release button down. This will cause overheating and possible damage to the brake.
7. When mounting the carrier to the drive tape, use the correct screws. Using incorrect screws will cause the carrier to jam in the radius and/or twist possibly damaging the carrier.



## **Maintaining the Captive Carrier Unit**

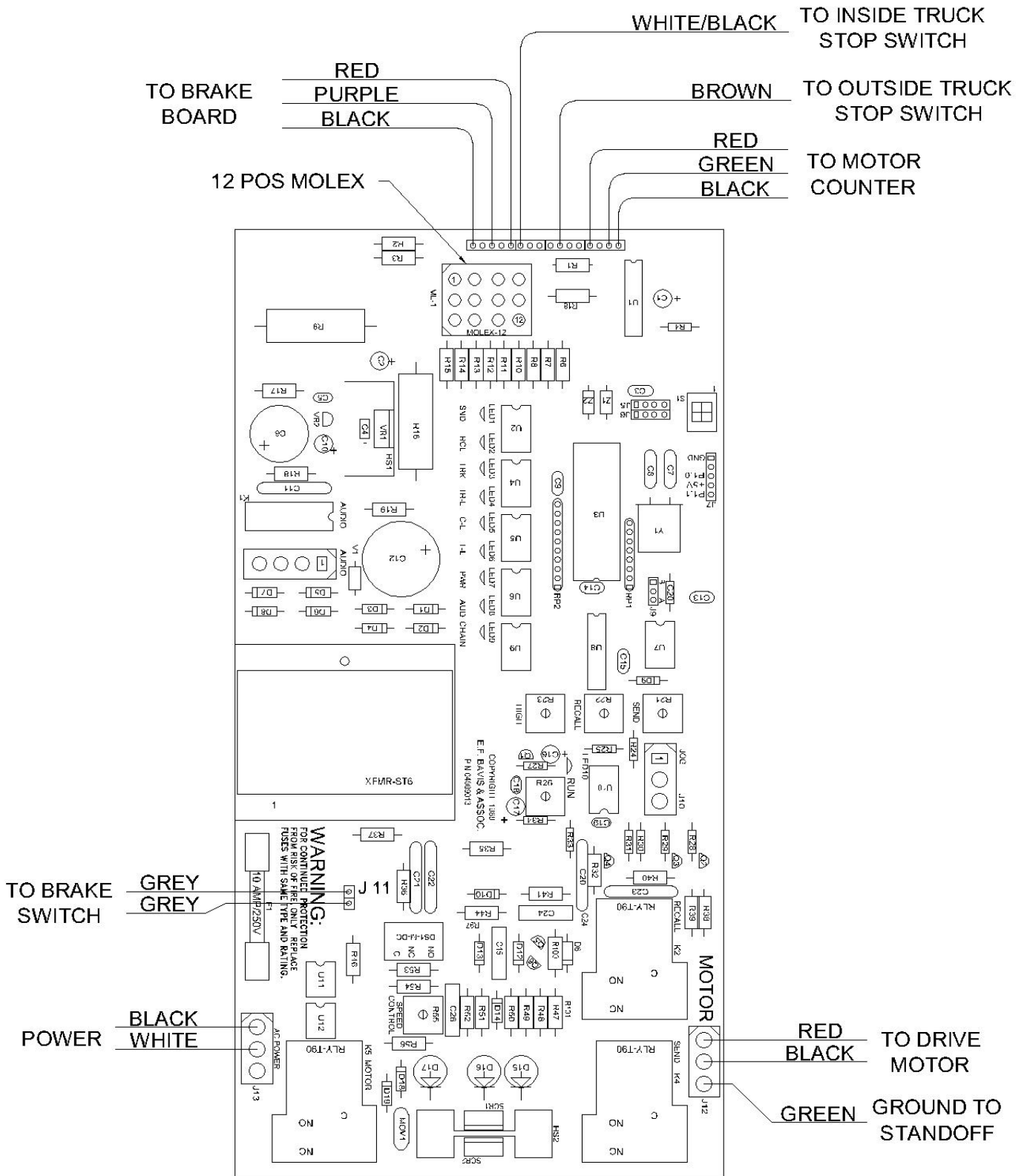
The Captive Carrier should be wiped down on both the customer and the inside vertical to remove road grime and other environmental contaminants.

You may see black dust on the vertical tubes and the inside control assembly. This is the units' process of self-lubrication. It is normal for this dust to form. However, it should be removed in the cleaning process.

The captive carrier drive tape does not require any form of lubrication as part of any maintenance.

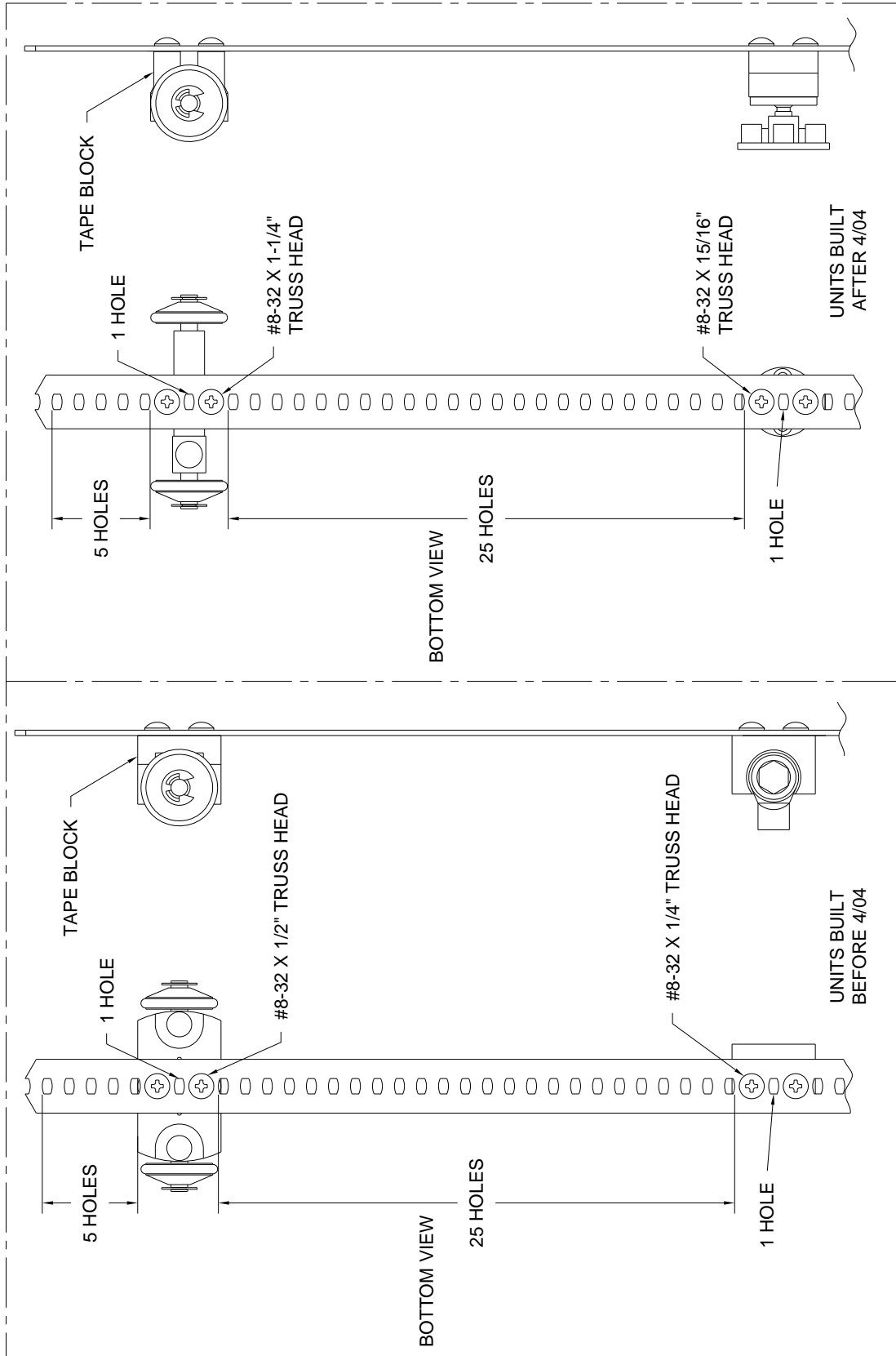
The drive tape should be inspected on a regular basis. If the tape is damaged, worn, or split, it should be replaced. Running the tape until failure could cause damage to the sprocket, surround, brake assembly, and the drive motor.

# CC Control Board Layout





# CC Carrier Mounting Diagram





# Shift Point Adjustment Procedure

Refer to the diagram on page 8. To adjust the shift points you will need to set the following:

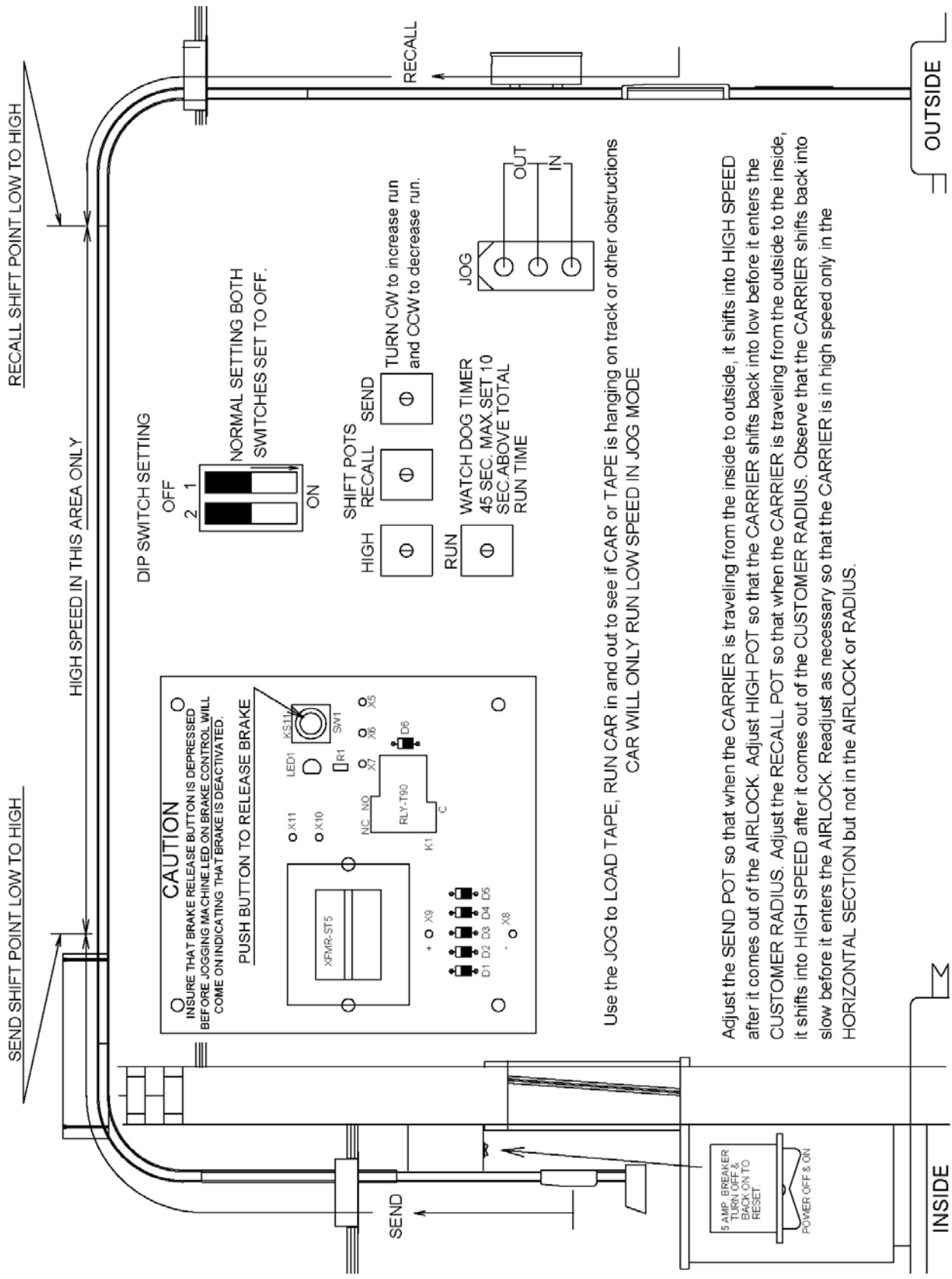
**SEND POT** - Adjusts how far the carrier goes up the inside vertical and around the radius and through the airlock until it shifts into high speed.

**RECALL POT** – Adjusts how far the carrier goes up the customer vertical and around the radius until it shifts into high speed.

**HIGH POT** – Adjusts how long the carrier stays in high speed in the horizontal.

**RUN POT** – Adjusts the watchdog timer. If the carrier gets jammed, it will shut the unit off after 45 seconds to prevent damage. This pot should be turned all the way clockwise.

1. Turn the send, recall, and high pot all the way counter clockwise.
2. Turn the send and recall clockwise  $\frac{1}{4}$  turn.
3. Turn the high clockwise  $\frac{1}{8}$  of a turn.
4. Send the carrier out. The carrier needs to shift into high after it comes out of the airlock in the horizontal. If it goes into high too soon, turn the send pot slightly clockwise. If it goes into high too late, turn the send pot slightly counter clockwise. Keep doing this until the carrier shifts right after the carrier comes out of the airlock.
5. Recall the carrier. The carrier needs to shift into high after it goes around the top of the outside radius. If it goes into high too soon, turn the recall light slightly clockwise. If it goes into high too late, turn the recall pot slightly counter clockwise. Keep doing this until the carrier shifts into high after it goes around the top of the outside radius.
6. Turn the high speed clockwise until the carrier slows down going into the airlock or going around the outside radius.



SEND SHIFT POINT LOW TO HIGH

RECALL SHIFT POINT LOW TO HIGH

HIGH SPEED IN THIS AREA ONLY

**CAUTION**  
INSURE THAT BRAKE RELEASE BUTTON IS DEPRESSED BEFORE JOGGING MACHINE ON BRAKE CONTROL WILL COME ON INDICATING THAT BRAKE IS DEACTIVATED.

**PUSH BUTTON TO RELEASE BRAKE**

XFMR-ST5  
K1  
D1 D2 D3 D4 D6  
X3 X8  
LED1  
X11 X10  
R1 SW1  
X5 X6 X7 X8  
RLV-T80  
C

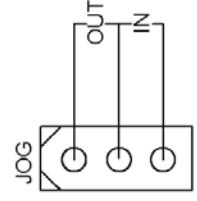
DIP SWITCH SETTING



SHIFT POTS

- HIGH
- RECALL
- SEND
- TURN CW to increase run and CCW to decrease run.

- WATCH DOG TIMER 45 SEC. MAX. SET 10 SEC. ABOVE TOTAL RUN TIME
- RUN



Use the JOG to LOAD TAPE, RUN CAR in and out to see if CAR or TAPE is hanging on track or other obstructions  
CAR WILL ONLY RUN LOW SPEED IN JOG MODE

Adjust the SEND POT so that when the CARRIER is traveling from the inside to outside, it shifts into HIGH SPEED after it comes out of the AIRLOCK. Adjust HIGH POT so that the CARRIER shifts back into low before it enters the CUSTOMER RADIUS. Adjust the RECALL POT so that when the CARRIER is traveling from the outside to the inside, it shifts into HIGH SPEED after it comes out of the CUSTOMER RADIUS. Observe that the CARRIER shifts back into slow before it enters the AIRLOCK. Readjust as necessary so that the CARRIER is in high speed only in the HORIZONTAL SECTION but not in the AIRLOCK or RADIUS.

INSIDE

OUTSIDE

# AUTOCYCLER

**The Captive Carrier is equipped with an autocycler that can be activated to run the carrier in and out. This is useful to check the unit for proper operation after service. This is also helpful if you are by yourself and have to check the unit outside.**

**The procedure for doing this is as follows:**

1. Recall the carrier to the inside stops.
2. Turn the power off using the breaker. The breaker is located under the black standoff that houses the control board and brake board.
3. Press and hold the car and truck buttons on the inside control panel while turning the breaker back on.
4. When the carrier starts moving, release the car and truck buttons.
5. To turn off the autocycler, press the power button on the inside control panel off.
6. To resume normal operating procedure, press the power button back on.

# **BRAKE SWITCH TEST AND ADJUSTMENT PROCEDURE**

**This is a test to see if the brake switch is out of adjustment. When this happens the unit will stop or not run unless you power it down and back up again. Then the unit will run for a while until it stops again. The brake switch being on a hairline trigger, or a short in the brake switch wires, causes this.**

## **TESTING THE BRAKE SWITCH**

1. Open the left door of the inside standoff to expose the control board.
2. Remove the two pin connector with grey wires. This is marked brake option and located on the lower left side of the control board.
3. Jump the two pins on the control board, press the power button on and press the car, truck, and recall buttons to see if the unit will run back and forth. If it does, continue to step 4.

## **ADJUSTING THE BRAKE SWITCH**

4. Remove the two top and the two bottom button head screws that hold the inside control front to the inside control back with a 3/32" allen wrench. Remove the control front.
5. Unplug the harness from the panel switch and set the control front off to the side.
6. To remove the inside control back by turning the one button head located on the bottom counter clockwise with a 3/32" allen wrench. This screw will turn but cannot be removed from the control back. After turning the screw, pull down on the bottom and remove the control.
7. Locate the brake switch. The switch is on the left side of the drive assembly toward the back. There are two grey wires going to it.
8. Take the bracket that the switch is mounted to and bend it slightly toward you.
9. Reconnect the panel switch and run the unit back and forth. If the unit fails to run or stops, repeat step 8 & 9.
10. If you still have problems, check the two grey wires for continuity. Repair or replace if needed.

## **Adjusting the Brake Switch (Continued)**

11. If the unit still will not run in either direction refer back to the carrier will not run in either direction on page 28.
12. If the unit still stops on its own, replace the control board.

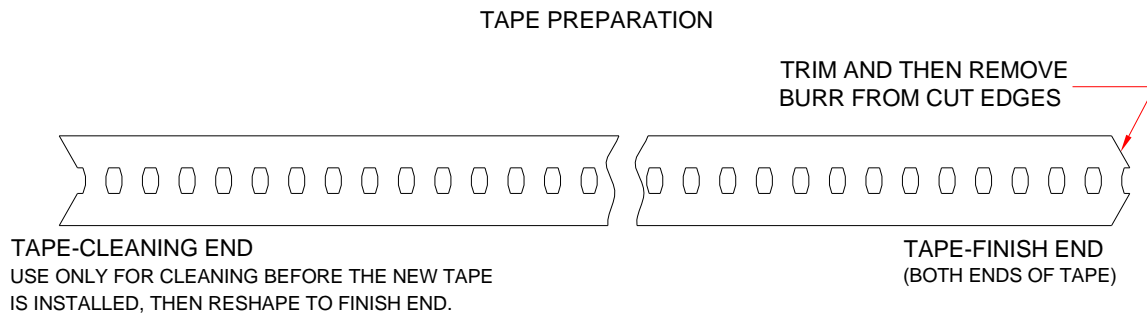
## Drive Tape Replacement Procedure

1. Remove the flat head screw(s) that hold the speaker panel to the customer vertical tube. The speaker panel can hang by the speaker lead.
2. Go inside and send the carrier to the car position outside. Turn the power off on the inside control assembly.
3. Open the right door of the inside vertical standoff. The door is hinged; removing the two screws will allow the door to open.
4. On the front side of the tube, insert a screwdriver into a slot in the drive tape.
5. Press and hold the brake release button on the brake board located on the right door.
6. Push up on the screwdriver pushing the tape up. Observe the carrier outside as it lowers. Do not let the carrier hit the island. Do this until the carrier disengages the drive sprocket.
7. Go outside and pull the drive tape completely out of the unit.
8. Remove the screws that attach the carrier to the drive tape.
9. Use the old drive tape to measure and cut the new drive tape.
10. Bevel and round the ends of the new drive tape with a file. See page 13.
11. Mount the carrier to the new drive tape. Make sure that the tape block holes are not stripped out. If they are, consult the factory for new tape blocks. You need to have 25 slots in the drive tape between the tape block screws. Refer to the diagram on page 5.
12. Feed the new drive tape back into the unit until you feel the drive tape stop.
13. Go to the inside and press the power button of the inside control assembly on.
14. Insert a screwdriver into a slot in the new drive tape.
15. Press and hold the brake release button on the control board.
16. Push down on the screwdriver feeding the tape around the drive sprocket. Continue to do this until the carrier is resting on the stabilizers outside. Be careful that the carrier is not caught on the speaker lead.



## Drive Tape Replacement Procedure (Continued)

17. Recall the carrier.
18. Run the machine and observe for proper operation. **Note:** If the carrier started out above the stop switches, it will not shift into high speed. Simply run the carrier again and it should change speed.
19. Check the shift point adjustment.
20. Replace the speaker panel on the customer vertical tube.



# **FM SWITCH TEST PROCEDURE**

**Red = Positive 24VDC**

**Black = Negative 24VDC (common)**

**Customer Brown (Truck Height) = Signal**

**Customer Green (Car Height) = Signal**

**Teller Orange/Black = Signal**

## **INSIDE VERTICAL**

1. Remove the FM switches. Insert a small screwdriver behind the top and bottom of the switch. Press in the tabs to remove the switch
2. With the power on, put your meter between the red and the orange/black wires. When the magnet is passed over the switch you should read 24VDC.
3. If you do not have 24VDC or the voltage is low, put your meter between the red and the black. If you still do not have 24VDC or it is low, check for continuity on your wires.
4. If the continuity is good, replace the FM switch.
5. If there still is a problem, replace the control board.

## **CUSTOMER**

1. Remove the FM switches. Insert a small screwdriver behind the top and bottom of the switch. Press in the tabs to remove the switch.
2. With the power on, put your meter between the red and the brown (customer height), or the green (car height). When the magnet is passed over the switch you should read 24VDC.
3. If you do not have 24VDC or the voltage is low, put your meter between the red and the black. If you still do not have 24VDC or it is low, check for continuity on your wires.
4. If the continuity is good, replace the FM switch.
5. If there still is a problem, replace the control board.

# CC CARRIER INSPECTION CHECKLIST

**Are the carrier covers bent?** – Replace the cover. Carrier Cover 04059011  
Replace the back cover. Carrier Back Cover 04078011

**Is the carrier chassis bent?** – Replace carrier. Repaired CC Carrier Assembly 04059883  
GC Carrier Assembly 04300991

**Is the carrier door bent?** – Replace the door. CC Carrier Door 04062014. CC Carrier Only.

**Is one or both of the door arms bent?** – Replace both arms. CC Carrier Only - Door Arm Kit 04062014

**Is the large tape block stripped out?** – Replace the tape block. CC & GC Carrier  
Large Tape Block Kit 04203991

**Is the spherical tape block stripped out?** – Replace. White Tape Block Kit 04221021

Black spherical Tape Block Kit  
04367991 CC & GC Carriers

**Are the brass wheels spinning freely?** – Lube the wheels. Blue/Green Grease 04191011

**Are the 0-rings on brass wheels missing** – Replace both O-rings. O-Ring 04071011

**Are the 10-32 pivot post nuts too tight?** – Loosen slightly.

**Are the door pivots worn out?** – Replace both door pivots. CC Carrier Only - CC Door Pivot 04066012

**Is the long cable frayed or broke?** – Replace. CC Carrier Only - CC Cable Replacement Kit 04340991

**Is the short cable frayed or broke?** – Replace. CC Carrier Only - CC Cable Replacement Kit 04340991

**Is the door open spring tight (newer)?** – CC Carrier Only - Loosen the compression spring bolts.

**Is the door open spring stretched (older)?** – Replace. CC Carrier Only  
CC Door Open Spring Assembly 04220991

**Is the door close spring stretched or missing?** – Replace. CC Carrier Only  
CC Door Close Spring Kit 04358991

## **CC CARRIER INSPECTION CHECKLIST (CONTINUED)**

**Are the tape blocks well lubed?** – Lube with clear grease. Clear Grease 04115011. CC Carrier Only.

**Is the bail spring stretched or broke?** – Replace. CC Carrier Only - CC Door Close Spring 04063011

**Is the hold down spring bent?** – Replace. CC Hold Down Spring 04105021 CC & GC carrier

**Are the liners in good condition?** – Replace as needed –

### **CC Carrier Assembly**

CC Liner Top & Bottom 04088031

CC Liner Side 04088011

CC Liner Back 04088021

### **GC Carrier Assembly**

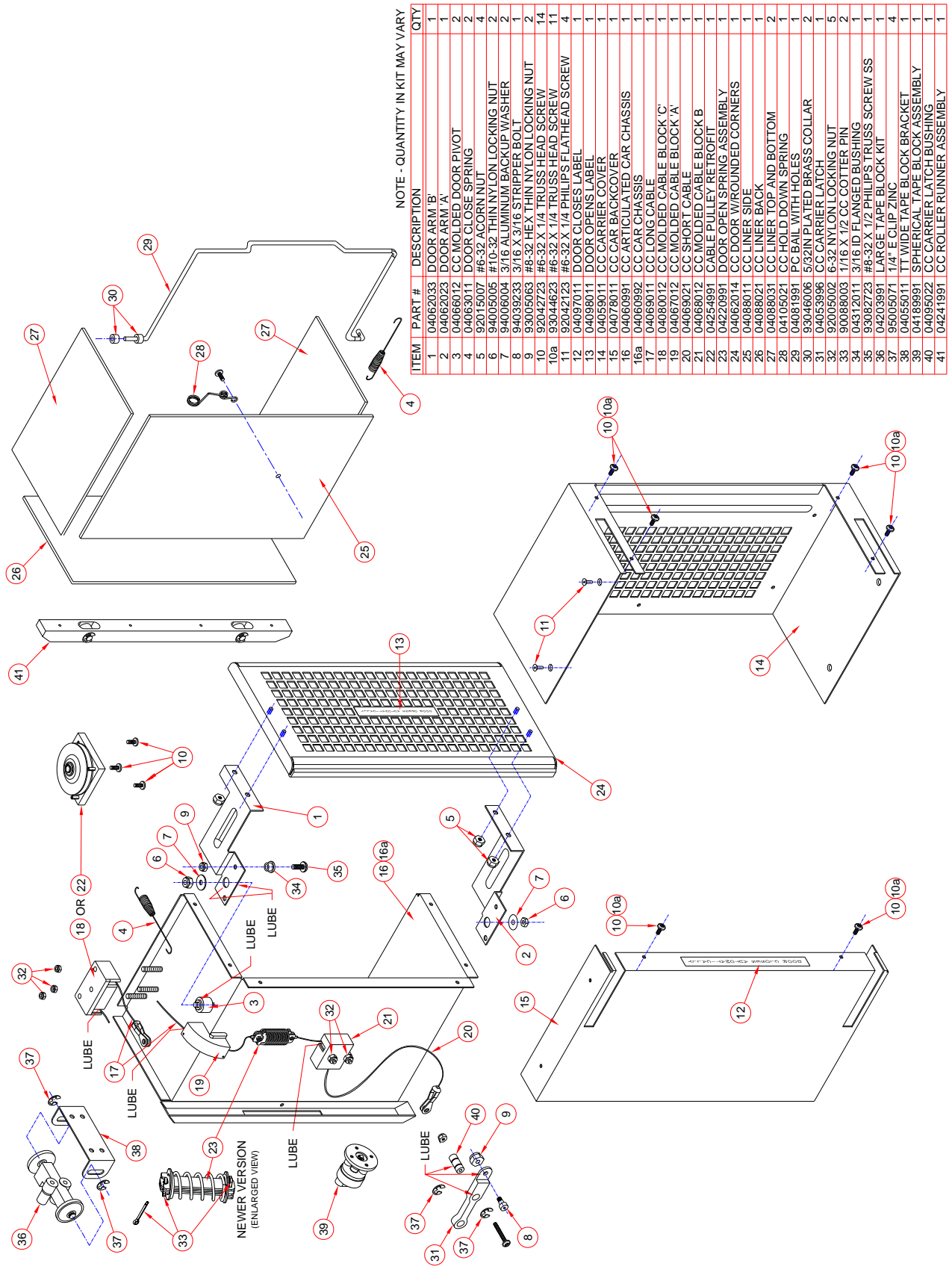
GC Liner Top & Bottom 04088051

GC Liner Back 04088041

## CC Replacement Parts Kits

Part Number	Description	Use
04210991	Brake Replacement Kit ( Brake)	Replaces the brake assembly and the brake switch. Instructions
04117011	CC Maintenance Kit (General)	Comes with drive tape, cc wheels, grease, and misc. hardware. Instructions.
04227881	CC Brake Board Kit (Brake)	Replaces the brake board. Instructions.
04221071	CC Carrier Door Kit (CC Carrier Only)	Replaces the carrier door arms and hardware. Instructions.(CC Carrier Only)
04221011	CC Carrier Latch Kit (CC Carrier Only)	Replaces a worn carrier latch. Can only be used if the latch has two springs connected to it. Instructions. (CC Carrier Only)
04221061	CC Carrier Liner Kit (CC Carrier Only)	Have all four liners to replace the liners in a cc carrier. Instructions. (CC Carrier Only)
04002596	CC Drive Replacement Kit (Drive)	Replaces a bad or worn out drive assembly. Also comes with a brake assembly. Instructions.
04221051	CC Molded Cable Block Kit (CC Carrier Only)	Comes with the corner block, the block closest to the latch, and a cable pulley. Instructions. (CC Carrier Only)
04203991	Large Tape Block Kit (CC Carrier Only)	Comes with a large tape block, cc wheels, hardware. Instructions.
04154991	TT/CC Sprocket Kit (drive)	Comes with a sprocket and 1/8 pin punch for removing the hex nut. Instructions.

<b>Part Number</b>	<b>Description</b>	<b>Use</b>
04226881	CC Exchange Control Board Kit (General)	Replaces the main control board. Instructions.
04059883	Repaired CC Car Assembly	Replaces a worn out or damaged carrier. Instructions. (CC Carriers Only)
04300991	GC Car Assembly	Updated and newest version of the CC car
04231011	CC Customer Stabilizer Kit (General)	Replaces worn out stabilizers (lands) on the customer vertical. Instructions.
04265991	TT Counter Replacement Kit (Drive)	Replaces the cc drive assembly motor counter. Instructions.
04340991	CC Cable Replacement Kit (CC Carrier Only)	Replaces the long cable, short cable, door open spring, and the cable block C. (CC Carrier Only)
04221021	White Tape Block Kit (CC Carrier Only)	Comes with a white spherical tape block, acute angle washers, hardware, Instructions. Replaces the white spherical tape block only. (Older)

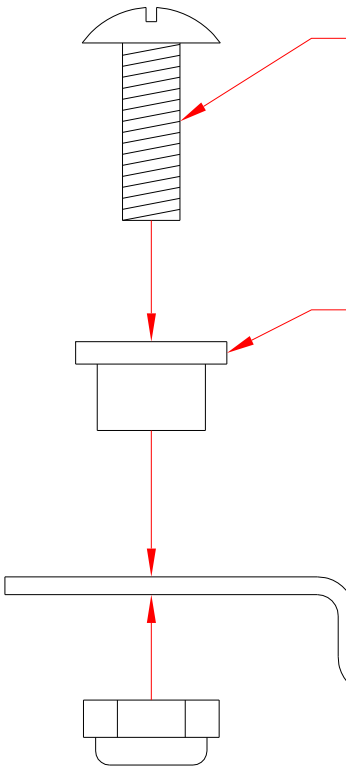


NOTE - QUANTITY IN KIT MAY VARY

ITEM	PART #	DESCRIPTION	QTY
1	04062033	DOOR ARM 'B'	1
2	04062023	DOOR ARM 'A'	1
3	04066012	CC MOLDED DOOR PIVOT	2
4	04063011	DOOR CLOSE SPRING	2
5	92015007	#6-32 ACORN NUT	4
6	94005005	#10-32 THIN NYLON LOCKING NUT	2
7	94006004	3/16 X 3/16 ALUMINUM BACKUP WASHER	2
8	93039233	#8-32 X 1/4 TRUSS HEAD SCREW	2
9	93050563	#8-32 X 1/4 TRUSS HEAD SCREW	14
10	92042723	#6-32 X 1/4 TRUSS HEAD SCREW	11
10a	93044623	#6-32 X 1/4 PHILIPS FLATHEAD SCREW	4
11	92042123	DOOR CLOSES LABEL	1
12	04097011	DOOR OPENS LABEL	1
13	04098011	CC CARRIER COVER	1
14	04059011	CC CARRIER COVER	1
15	04078011	CC CARRIER COVER	1
16	04069011	CC CALCULATED CAR CHASSIS	1
16a	04069012	CC CAR CHASSIS	1
17	04069011	CC LONG CABLE	1
18	04069012	CC MOLDED CABLE BLOCK 'C'	1
19	04069021	CC MOLDED CABLE BLOCK 'A'	1
20	04069021	CC SHORT CABLE	1
21	04069012	CC MOLDED CABLE BLOCK 'B'	1
22	04254891	CABLE PULLEY RETROFIT	1
23	04220891	DOOR OPEN SPRING ASSEMBLY	1
24	04062014	CC DOOR W/WRAPPED CORNERS	1
25	04068011	CC LINER SIDE	1
26	04068021	CC LINER BACK	1
27	04068031	CC LINER TOP AND BOTTOM	2
28	04105021	CC LINER TOP AND BOTTOM	2
29	04081991	CC HOLD DOWN SPRING	1
30	93046006	5/32 IN PLATED BRASS COLLAR	2
31	04053996	CC CARRIER LATCH	1
32	92005002	6-32 NYLON LOCKING NUT	5
33	90088003	1/16 X 1/2 CC COTTER PIN	2
34	04312011	3/16 ID FLANGED BUSHING	1
35	93082723	#8-32 X 1/2 PHILIPS TRUSS SCREW SS	1
36	04203991	LARGE TAPE BLOCK KIT	1
37	95005071	1/4" E CLIP ZINC	4
38	04055011	TT WIDE TAPE BLOCK BRACKET	1
39	04189991	SPHERICAL TAPE BLOCK ASSEMBLY	1
40	04095022	CC CARRIER LATCH BUSHING	1
41	04241991	CC ROLLER RUNNER ASSEMBLY	1

**REPLACE THE STRIPPER BOLT WITH THE FLANGED BUSHING FOR THE DOOR CLOSE SPRING.**

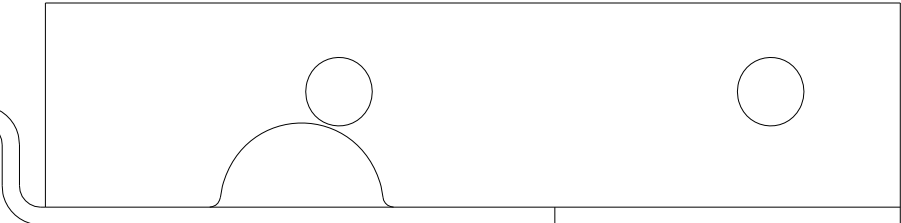
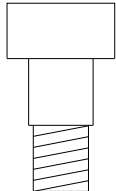
**INSTALL  
NEW  
STYLE**



**#8-32 x 1/2 PHILIPS  
TRUSS SCREW  
P.N. 93082723**

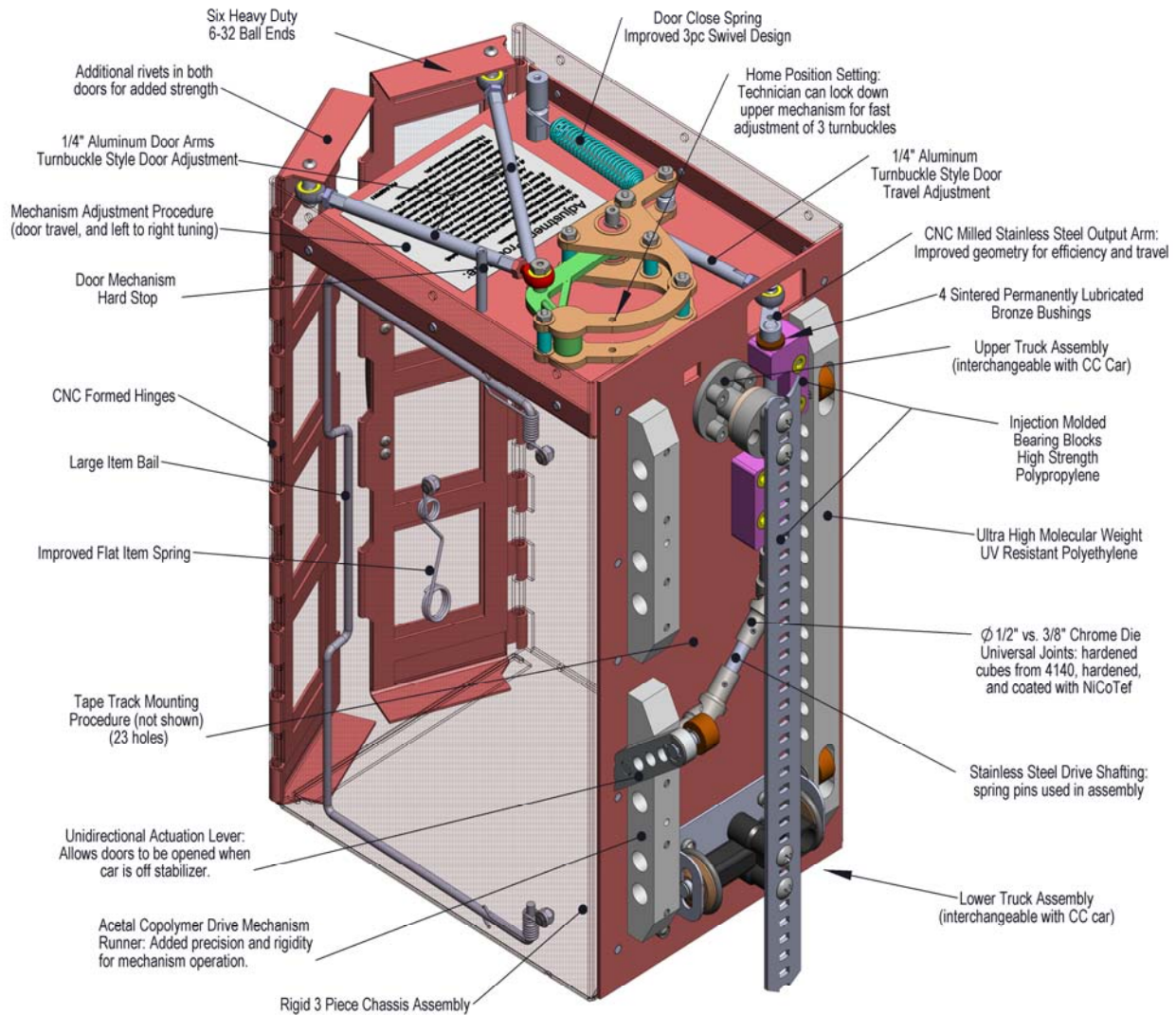
**3/16 ID FLANGED  
BUSHING  
P.N. 04312011**

**REMOVE  
OLD  
STYLE**





# G CAR SPECIFICATIONS



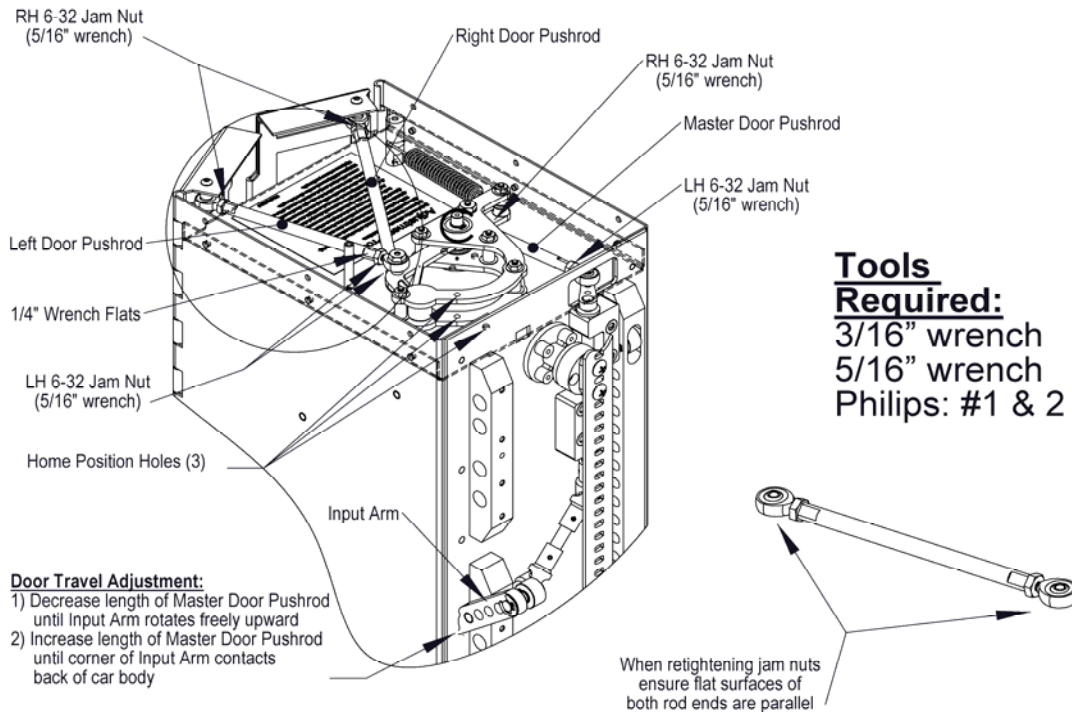
# G CAR DOOR ADJUSTMENT PROCEDURE

## HOME POSITION - LEFT TO RIGHT DOOR ADJUSTMENT:

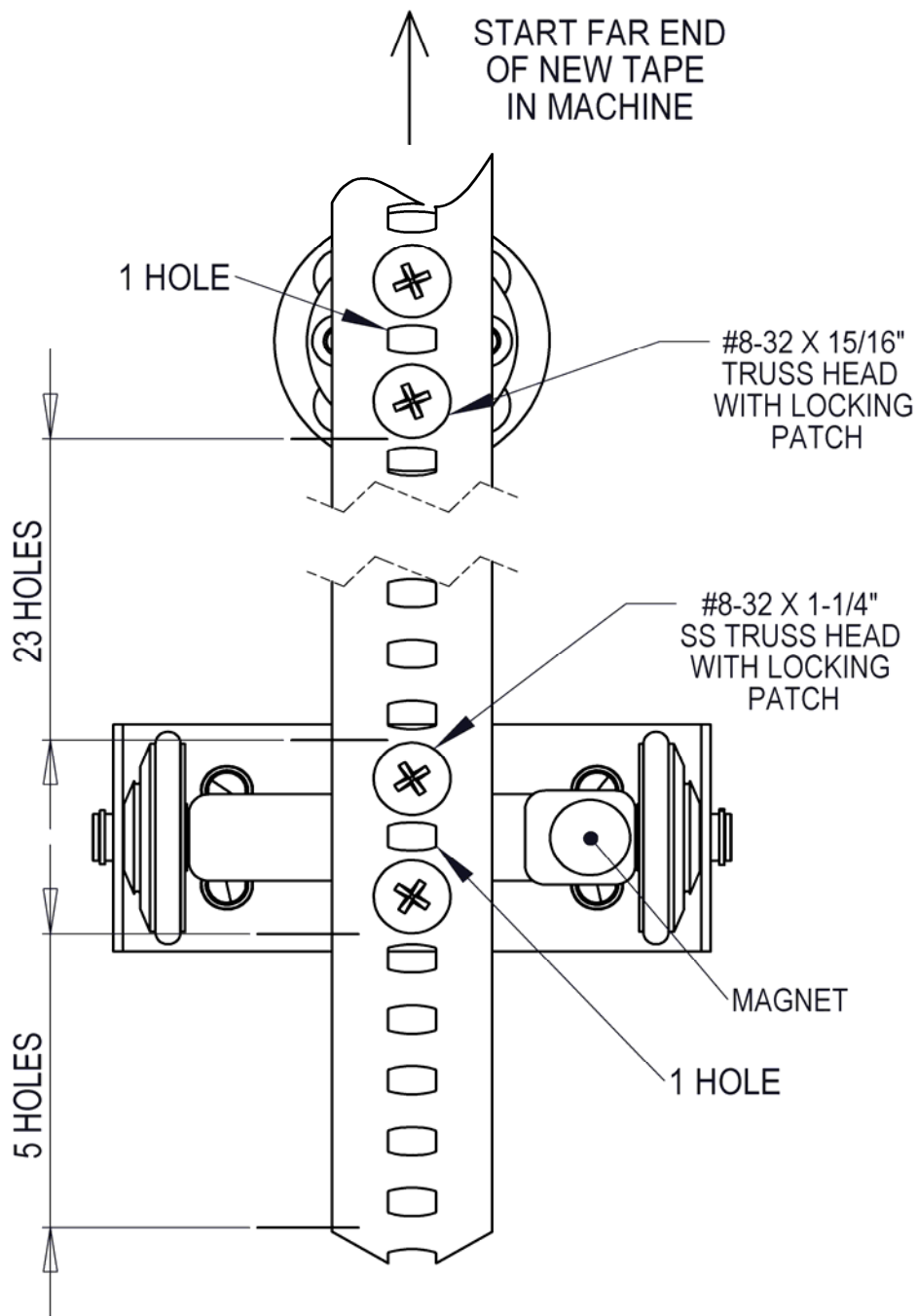
- 1) Car MUST be off stabilizers, either at the customer end or off the track entirely.
- 2) Remove Car Cover (6 screws on side, 3 screws on top).
- 3) Remove door close spring.
- 4) Loosen, and fully back off all 4 jam nuts on each door arm. Use a 5/16" wrench on the nuts and a 1/4" wrench on the pushrod wrench flats. **See diagram for Right hand and Left hand thread positions.**
- 5) Insert 1/8" pin into Home Position hole of the magnetic overrun assembly. Push pin thru both plastic arms.
- 6) Rotate the assembly until the pin drops into the 1/8" Home Position hole. **DO NOT FORCE** the mechanism or pin. If the pin does not find Home Position hole, the door arms may need to be lengthened.
- 7) With the pin thru all three Home Position holes, adjust the length of the door arms until both doors are fully closed.
- 8) Firmly tighten BOTH jam nuts on either end of BOTH door arms.
- 9) You are now ready to adjust the door travel.

## HOME POSITION - DOOR TRAVEL ADJUSTMENT:

- 1) Install door close spring.
- 2) Loosen, and fully back off both jam nuts on the Master Door Pushrod. Use a 5/16" wrench on the nuts and a 1/4" wrench on the pushrod wrench flats. **See diagram for Right hand and Left hand thread positions.**
- 3) Turn the Master Door Pushrod in the appropriate direction to decrease its length until the Input Arm rotates freely upward.
- 4) Turn the Master Door Pushrod in the opposite direction to increase its length until the lower corner of the Input Arm contacts the back of the car body. (See diagram below)
- 5) Firmly tighten BOTH jam nuts on either end of the drive arm.
- 6) Remove Pin from Home Position holes.
- 7) Reinstall Car Cover.
- 8) Verify the doors open past 90 degrees and close fully when installed on the machine.



# DRIVE TAPE MOUNTING DIAGRAM FOR G CAR



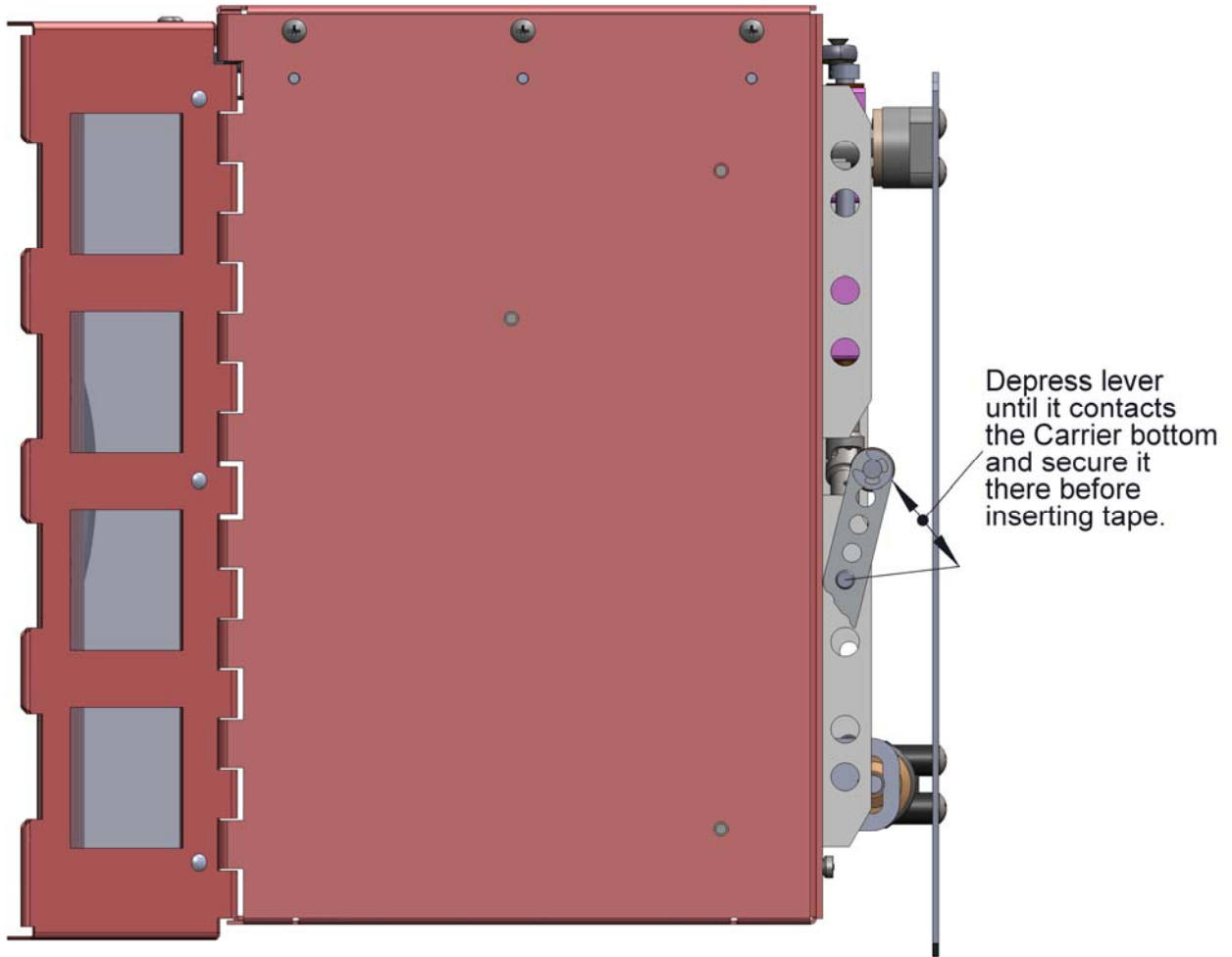
# **G CAR REPLACEMENT PROCEDURE**

## **\*CAUTION\***

**DO NOT USE TAPE TO HOLD DOWN THE BRAKE RELEASE BUTTON FOR A LONG PERIOD OF TIME. THIS WILL CAUSE OVERHEATING AND POSSIBLE DAMAGE TO THE BRAKE.**

**Check the stabilizer distance before you begin by using the stabilizer gauge and instruction sheet provided.**

1. Remove the flat head screw(s) that hold the speaker panel to the customer vertical tube. The speaker panel can hang by the speaker lead and mic wire.
2. Go inside and send the car to the car position outside. Turn the power off on the inside vertical assembly.
3. Open the right door of the inside vertical standoff. The door is hinged; removing the two screws will allow the door to open.
4. On the front of tube, insert a flat head screwdriver into one of the slots of the drive tape.
5. Press and hold the brake release button. This is located on the brake board that is mounted on the right door of the inside vertical standoff.
6. Push up on the screwdriver pushing the tape up. Be careful not to scratch the vertical tube, observing the car outside as it lowers. Do not let the car hit the island. Do this until the drive tape disengages from the drive sprocket.
7. Go outside and remove the screws that attach the car to the drive tape. Inspect the drive tape for wear. If there is wear, consult the factory for a replacement drive tape.
8. Mount the new car to the drive tape. Make sure that you have 23 slots in the drive tape between the tape blocks and that you use the screws provided. See the diagram on page 8.
9. Depress door opening lever until it contacts the Carrier bottom, and then use a piece of tape to hold the actuation lever in so that it will not jam on the stabilizer during installation. See the illustration on the next page.



10. Go inside and insert a screwdriver into one of the slots of the drive tape.
11. Press and hold the brake release button.
12. Pull down on the screwdriver feeding the tape around the drive sprocket. Continue to do this until the car rests on the stabilizers outside. Be careful that the car is not hooked on the speaker or mic wire.
13. Turn the power on at the inside control assembly.
14. Recall the car.
15. Run the unit and observe for proper operation. **NOTE:** If the car started out above the outside stop switches, it will not shift into high speed. Simply run the car again and it should shift speeds.
16. If the shift points need to be adjusted, Please refer to the diagram on page 7.
17. Replace the speaker panel on the customer vertical tube.

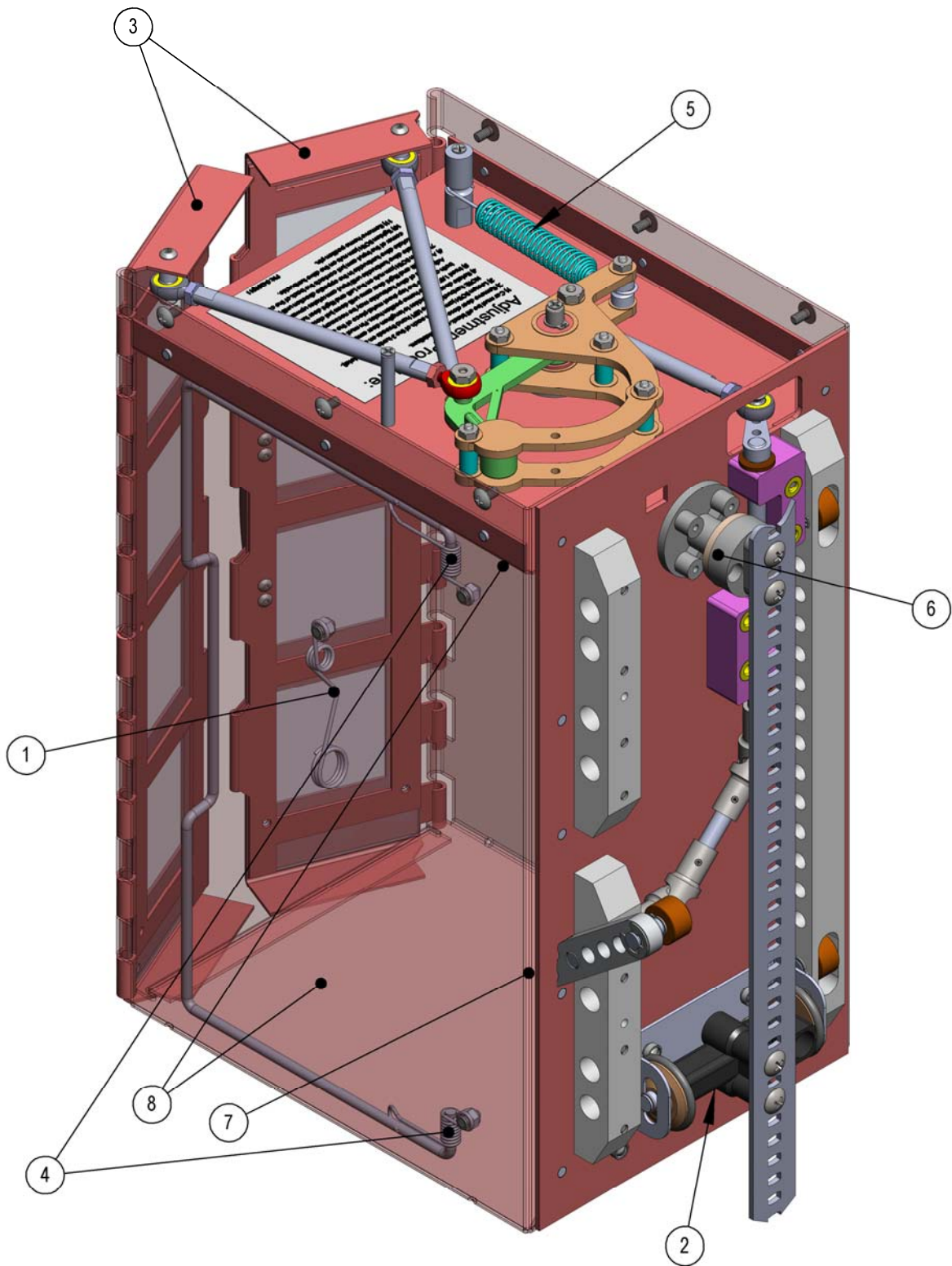
**Please consult the factory for any further information or assistance.**

## **G CAR REPLACEMENT PARTS**

- 1 - 04105021 – CC Hold Down Spring**
- 2 - 04203991 – Large Tape Block Assembly - Sold only as a kit.**
  
- 04304121 – GC Left Door Assembly**
- 3 - -- Sold In Sets Only**
- 04304111 – GC Right Door Assembly**
  
- 04338011 – GC Bail Top Spring**
- 4 - -- Sold In Sets Only**
- 04338021 – GC Bail Bottom Spring**
  
- 5 - 04317021 – GC Door Close Spring**
- 6 - 04189991 – Spherical Tape Block Assembly**
- 7 - 04088041 – GC Liner Back**
- 8 - 04088051 – GC Liner Top & Bottom**



# G CAR REPLACEMENT PARTS DIAGRAM



# **THE CARRIER DOES NOT RUN IN EITHER DIRECTION (CC & GC Carrier Assembly)**

**The brake switch is out of adjustment** – Adjust the brake switch. Refer to page 10 on how to do this.

**A bad motor cable** – Check the motor cable for continuity. If it is bad, repair or replace.

**There is no power going to the unit** – Connect the power to the unit.

**The motor counter is not hooked up correctly** – Connect the counter correctly. Refer to the diagrams on pages 4 and 6.

**You have a bad control board** - Put your meter on the two pins where the red and the black wires are. If you do not have 36VDC in low speed, replace the control board.  
CC Control Board 04225881

**The brake switch harness is shorted or unplugged** – Plug the brake switch harness in. Also check the harness for continuity. If there is a short, repair or replace as needed.

**A bad drive assembly** - If you have 36VDC down to the motor but the motor still will not run, replace the drive assembly. CC Drive Assembly 04002596



## **THE CARRIER TRAVELS ROUGH OR SKIPS (CC & GC Carrier Assembly)**

**The motor sprocket is worn or teeth are broken** – Replace the sprocket.  
TT/CC Sprocket Kit 04154991

**The drive tape is bad** – Remove the drive tape. Refer to page 12 on how to do this. If it is worn or split, replace. CC Maintenance Kit 04117011

**The carrier mounting screws are loose** – Remove the drive tape and carrier. Refer to page 12 on how to do this. Inspect the mounting screws to make sure that they are tight to the tape blocks. If the blocks are stripped out, consult the factory for replacement tape block.

## **THE CARRIER WILL NOT TRAVEL IN HIGH SPEED (CC & GC Carrier Assembly)**

**The counter is not hooked up, shorted or bad** – If the chain led on the control board is not flashing, make sure that the counter cable is hooked up correctly to the control board. Refer to the diagrams on pages 4 and 6. Then check the continuity of the counter cable. If both connections and continuity are good, replace the motor counter.

**The shift points are not set** – Set the shift points. Refer to page 7 on how to do this.

**The drive tape is worn** – Remove the drive tape and inspect. Refer to page 12 on how to do this. If the tape is worn, replace the tape. Also clean the aluminum track.  
CC Maintenance kit 04117011

**A bad control board** – If the chain led flashes but the carrier still will not shift into high.  
CC Control Board 04225881

## **THE FUSE BLOWS ON THE CONTROL BOARD WHEN THE MOTOR IS ACTIVATED (CC & GC Carrier Assembly)**

**A shorted motor cable** – Unplug the motor from the motor harness. If the fuse blows when the car, truck, or recall is pressed, check for a pinched wire under the motor plate. If it does not blow, check the motor cable harness for continuity.

**A bad drive motor** – If you have 36VDC down to the drive assembly when the car, truck, or recall is pressed and the motor connectors are good, replace the drive assembly.  
CC Drive Assembly Kit 04002596

**A bad control board** – Replace the control board.  
CC Control board 04225881

## **THE FUSE BLOWS OR THE BUILDING BREAKER THROWS (CC & GC Carrier Assembly)**

**Each unit is not on a dedicated 110VAC-20A breaker** – Wire each unit to an 110VAC-20A dedicated breaker.

**You have a bad control board** – Replace the control board.  
CC Control board 04225881

**You had a power surge to the unit** – Check for burned leads on the back of the control board. Replace if needed. CC Control board 04225881

## **NOTHING WORKS (CC & GC Carrier Assembly)**

**You do not have voltage to the unit** – Check that the building breaker is not thrown and the unit is plugged in.

**A blown control board fuses** – Replace the fuse.

**A blown fuse/disconnect** – If the main disconnect of the unit is a round cylinder, turn the toggle switch and see if the fuse inside is blown. Replace if needed. If the fuse/disconnect is broke, replace. Fuse Retrofit Kit 01086991

**A thrown breaker/disconnect** – Reset the breaker/disconnect. If the breaker/disconnect is bad, replace. Breaker/Disconnect 04046021

**The control board is bad** – If you have voltage to the control and nothing works, replace the control board. CC Control Board 04225881

### **THE UNIT NEEDS TO BE POWERED DOWN AND BACK UP AGAIN FOR THE MOTOR TO RUN (CC & GC Carrier Assembly)**

**The run pot is not turned up all the way** – Turn the run pot all of the way clockwise. Refer to page 7 on how to do this.

**The brake switch is out of adjustment** – Adjust the brake switch. Refer to page 10 on how to do this.

**The relays are sticking on the control board** – Replace the control board.  
CC Control Board 04225881

### **THE CARRIER PASSES THE INSIDE STOP SWITCHE(S) (CC & GC Carrier Assembly)**

**The carrier is traveling in high speed** – Set the shift points. Refer to page 7 on how to do this.

**You have a bad customer send switch** – If the RCL led on the control board is on, unplug the outside send switches one at a time. If the RCL led on the control board goes out, replace that switch. Piezo Switch Kit 00319992

**You have a bad inside recall switch** – If the RCL led on the control board is on, unplug the inside panel switch. If the RCL led on the control board goes out, replace the switch assembly.  
4 Button Switch Assembly 04014031

## **THE CARRIER WILL NOT RECALL WHEN THE RECALL BUTTON IS PRESSED (CC & GC Carrier Assembly)**

**You have a bad inside stop switch** – Check to see if the T-L led on the control board is on. If it is, unplug the inside stop switches one at a time. If the T-L led on the control board goes out, replace that stop switch. FM Switch with Lead 06934594

**You have a bad inside panel switch** – Unplug the harness from the inside panel switch... Short the orange and black wires from the harness together. If the carrier recalls, replace the inside panel switch. 4 Button Switch Assembly 04014031

**You have a shorted wire** – Check the entire inside panel switch harness wires for continuity. Repair or replace as needed.

**A bad control board** – Press the inside recall button. If the RCL led on the control board does not come on, replace the control board. CC Control Board 04225881

## **THE CARRIER WILL NOT SEND FROM THE INSIDE VERTICAL (CC & GC Carrier Assembly)**

**Bad customer stop switch(s)** – Check The C-L and the TR-L led on the control board and see if the led is on. If it is, remove the outside stop switches one at a time. When the led goes out, replace that stop switch. FM Switch with Leads 06934594

**Bad inside panel switch** – Unplug the harness from the inside panel switch. Short the car or the truck button together. If the carrier sends, replace the inside panel switch.  
4 Button Panel Switch 04014031

**Shorted wires** – Check the continuity of the car and/or truck send wired. Repair or replace if needed.

**Bad control board** – Press the car or truck button on the inside vertical unit. If the SND led on the control board does not come on, replace the control board. CC Control Board 04225881

## **ALL OF THE STOP SWITCHES ARE DEAD AT THE CUSTOMER UNIT (CC & GC Carrier Assembly)**

**The horizontal cable is disconnected** – See if the other functions on the customer work. If they do not, check the horizontal cable.

**The carrier is traveling in high speed** – Adjust the shift points. Refer to page 7 on how to do this.

**The stop switches are disconnected** – Remove the outside stop switches. If they are disconnected, reconnect.

**The control board is bad** – With the 12 pin Molex on the control board unplugged, check pins 1 and 2 on the control board with a meter. If you do not have 24VDC across the two pins, replace the control board. CC Control Board 04225881

**The stop switches are bad** – If everything else checked o.k., replace the stop switches. FM Switch with Lead 06934594

## **CARRIER WILL NOT RECALL WHEN THE CUSTOMER SEND BUTTON IS PRESSED (CC & GC Carrier Assembly)**

**A bad inside stop switch(s)** - Check the control board and see if the T-L led is on. If it is, unplug the inside stop switches on at a time. When the T-L led goes out, replace that stop switch. FM Switch with Lead 06934594

**Bad outside send switch(s)** – Short the two wires going to the send switch together. If the carrier recalls, replace that bad start switch. Piezo Switch Kit 00319992

**Shorted start switch wires** – Check the continuity of the start switch wires. Repair or replace as needed.

**The control board is bad** – Press the start button on the customer unit. If the RCL led does not come on, replace the control board. CC Control Board 04225881

## **THE CARRIER DOOR WILL NOT OPEN (CC Carrier Only)**

**The door open spring is stretched or broke** – Replace the spring. Do not try to repair.  
CC Door open spring assembly 04207991

**The carrier is damaged** – Inspect the carrier chassis. If it is bent, replace the carrier. 2  
Repaired CC Car Assembly 04059883  
GC Car Assembly 04300991

**The long cable is broke or frayed** – Replace the cable.  
CC Cable Replacement Kit 04340991

**The short cable is broke or frayed** – Replace the cable.  
CC Cable Replacement Kit 04340991

**The carrier door arms are bent** – Replace the door arms.  
CC Carrier Door Arm Kit 04221071

**The carrier door arms are too tight** - Loosen the 10-32 nuts that mount the door arms to the door pivots Use Blue Loctite on the nuts if possible.

## **THE CARRIER DOOR WILL NOT CLOSE (CC Carrier Only)**

**The door close spring is stretched or broke** - Replace the door close spring.  
CC Door Close Spring Kit 04358991

**The carrier door arms are bent** – Replace the door arms. CC Door Kit 04221071

**The carrier chassis is damaged** – Inspect the carrier chassis. If it is bent, replace the carrier.  
Repaired CC Car Assembly 04059883  
GC Car Assembly 04300991

**The carrier back cover end is bent.** – Bend the carrier back cover slightly to allow the door arms to move freely.

**The long cable is broken or frayed** – Replace the long cable.  
CC Cable Replacement Kit 04340991

**The short cable is broken or frayed** – Replace the short cable.  
CC Cable Replacement Kit 04340991

## **THE CARRIER JAMS ON THE OUTSIDE STABILIZERS (CC Carrier Only)**

**The carrier latch is not in the horizontal position** – See if the two twist springs (older style carrier) are missing or stretched. If they are, replace. Twist Car Spring 04052011

**The compression spring between the long and short cable is tight** – See if you can compress the spring by hand. If you can't, loosen slightly the two bolts that hold the cables to the spring until you can compress it by hand.

**The carrier is tight on the stabilizers** – Order a stabilizer gauge to accurately adjust the stabilizers. Stabilizer Gauge 04233011

**The carrier does not have a cable pulley** – See if the carrier has a pulley in place of the large C block. If it does not, order a carrier upgrade kit. CC Carrier Retrofit Kit 04264991

### **(CC & GC Carrier Assembly)**

**The drive tape is worn** – Remove the drive tape. If it is worn or split, replace.  
CC Maintenance Kit 04117011

**The carrier chassis is bent** – Inspect the carrier chassis. If it is bent, replace the carrier.  
Repaired CC Car Assembly 04059883 , GC Car Assembly 04300991

# THE CARRIER STICKS IN THE RADIUS OR THE TWIST

## (CC Carrier Only)

**The acute angle washers are missing or backwards (white spherical tape block only) –** Replace or turn around the acute angle washers. White Tape Block Kit 04221021

**The spherical tape block mounting screws are too long –** The white spherical tape block should have 8-32x1/2 truss screws. The black spherical tape block should have 8-32x15/16 truss head screws with locking patch.

## (CC & GC Carrier Assembly)

**The drive tape is worn –** Remove and inspect the drive tape. If it is worn or split, replace. CC Maintenance Kit 04117011

**The slots between the tape blocks are incorrect –** Check to make sure that there are 25 slots in the drive tape between the tape block screws. Refer to the diagram on page 5.

**The carrier mounting screws are loose –** Remove the carrier and drive tape. Make sure that the screws are tight to the tape blocks. If the blocks are stripped out, please consult the factory for replacements.

# THE CARRIER DRIFTS AFTER COMING TO A STOP

**The brake pad is stripped out –** Remove the brake and see if the pad where the hex nut fits into the brake is rounded out or hex shaped. If it is rounded out, replace the brake assembly. Brake Replacement Kit 04210991

**The brake board is not working –** See if the red led goes off when the carrier stops. If it does not, replace the brake board. Brake Board Kit 04227881

**The brake does not work –** See if you can move the carrier up and down with the power off to the unit. If you can, replace the brake assembly. Brake Replacement Kit 04210991





## **BENT CARRIER CHASSIS**

**The carrier is bent where the chassis and the body meet. This needs to be checked when the carrier is hit by a car and/or damaged. When this happens the carrier must be replaced.**



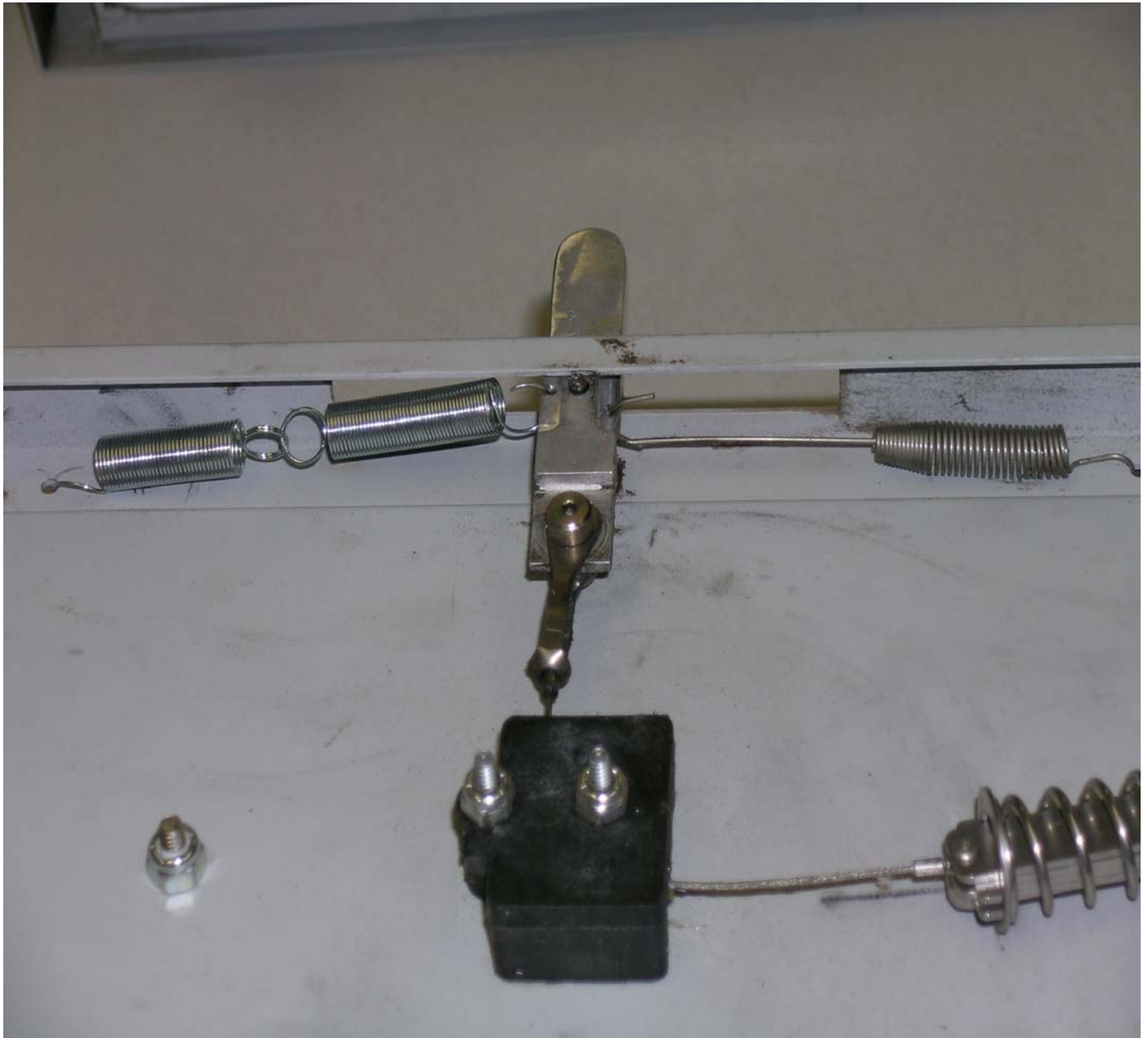
## **THE DOOR OPEN SPRING INSTALLED INCORRECTLY**

**If the door open spring installed in this picture was left on the carrier there would be a good chance of the cables breaking and the door failing to open. When a spring is bad, it is necessary to consult the factory for a new spring pack.**



## **A WORN OUT DRIVE TAPE**

**This is a drive tape that is worn out and delaminated. This tape should have been replaced before it ended up at in this condition. This could cause the drive tape to jam up in the motor surround possibly damaging the sprocket, surround, or even the drive motor. This is why it is a good practice to inspect the drive tape at every service call.**



## **THE CARRIER LATCH SPRING INSTALLED INCORRECTLY**

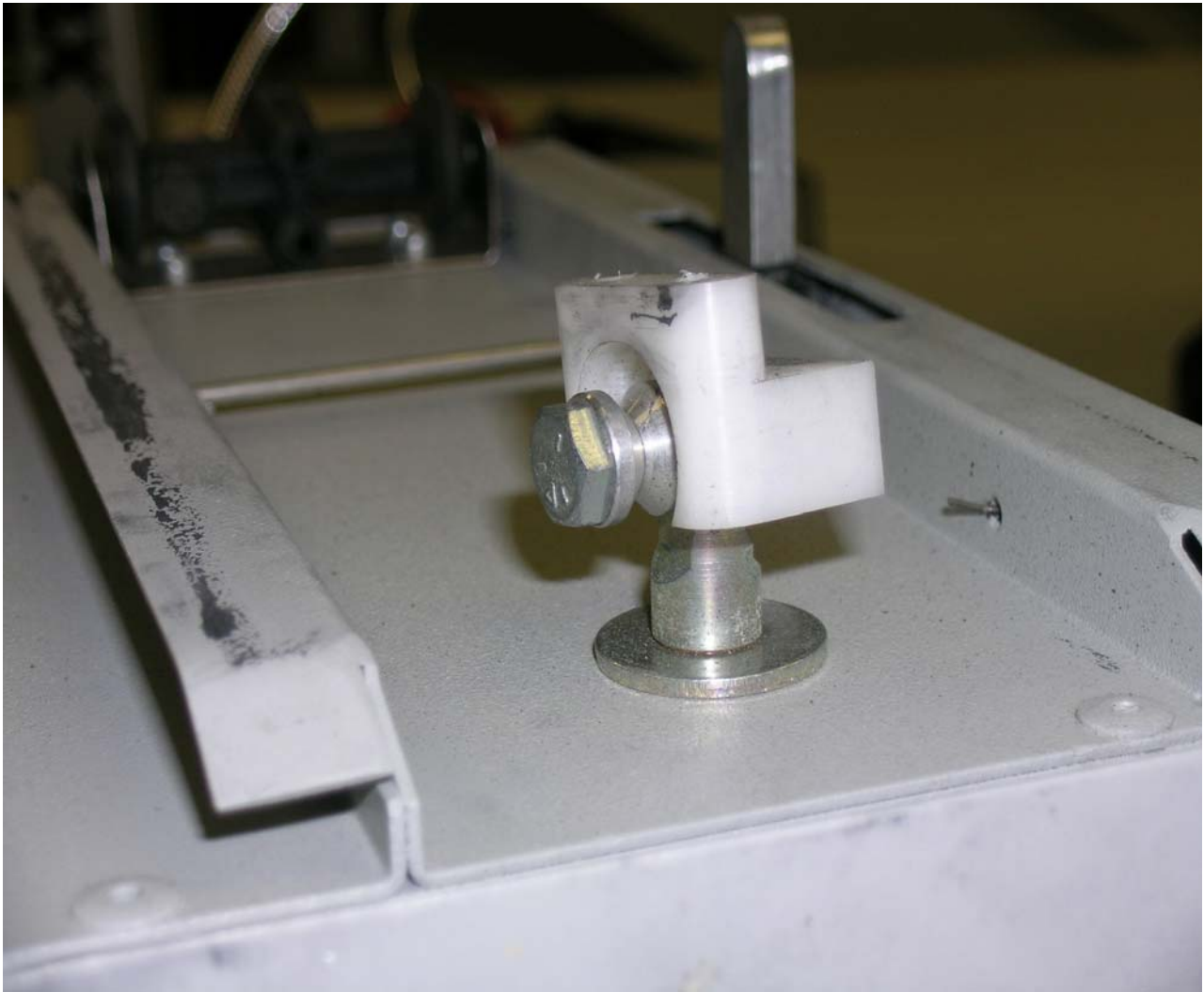
**Never try to fix a carrier by making a makeshift solution to the problem. By using two springs instead of ordering one that is made for the latch could cause the carrier latch not to return to center. If this happens the carrier could jam on the stabilizers damaging the latch, stabilizers, drive tape, or the carrier itself. Always use the correct parts.**





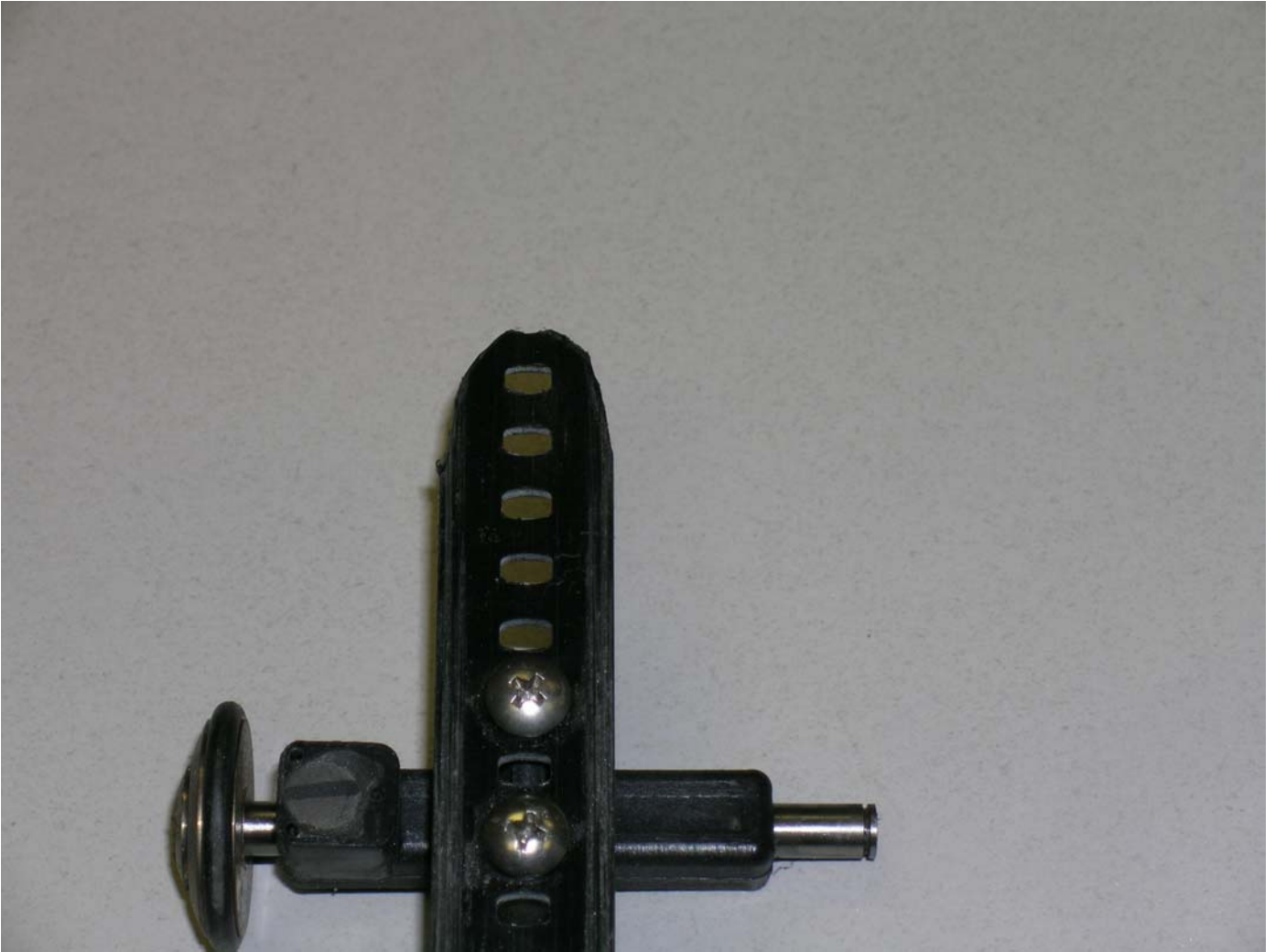
## **THE CARRIER DOOR PIVOT POST NOT PRESENT**

**If you find a carrier missing parts like this one, you need to order the correct parts and repair. This carrier was doomed to failure because there was not any way the carrier door would continue to operate properly. This carrier pivot post was broke so the carrier was not usable. If the pivot was used this might not have happened.**



## **THE ACUTE ANGLE WASHER INSTALLED INCORRECTLY**

**Both of the acute angle washers on this carrier were mounted on the same side instead of one on each side of the pivot post. This will cause the carrier to jam in the twist and/or the radius. If you are unsure about how to install a part, check the manual provided or consult the factory for further information.**



## **THE DRIVE TAPE END NOT BEVELED CORRECTLY**

**Check and make sure that when you bevel the ends of the tape that you do not have your tape come to too much of a point. If this happens there is a chance of the drive tape coming out of the track at the radius. Round the end of the drive tape with a radius. See the diagram on page 13.**

