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24V Captive Carrier TransTRAX[®]

Installation and Service Manual

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Features

Lower power consumption.

The brake is incorporated in the control board eliminating the need for a separate board.

The carrier runs quieter and smoother

There is an automatic shutoff if the carrier is stopped by an obstruction. The inside power LED will flash if this happens.

Important Safety Instructions

Unit should be installed in accordance with all national and local codes.

DO NOT clean this unit with water spray or the like.

DO NOT install near any heat sources such as radiators, heat registers, stoves, or other sources that produce heat.

Only use attachments / accessories specified by the manufacturer.

Turn the power switch to the off position when the apparatus is not in use and before servicing.

Refer all service to qualified service personnel. Servicing is required when the unit has been damaged in any way, such as liquid has been spilled or objects fallen into the units track or the unit does not work properly.

CAUTION

**Be careful with handling of the solar panel(s) or its wiring!
Any time light is shining on the panel(s), it will generate power. The only way to stop the panel(s) from generating power is to cover the panel(s) with something opaque. Be careful not to short the panel's leads together, as this could damage the solar panel.**

24V Solar Captive Carrier TransTrax[®]

Overview

The 24V Captive Carrier[®] is a mechanical, positive drive conveyor system kit intended for the conveyance of currency and medication between customers and pharmacist at drive-thru pharmacy lanes. This kit features one piece of extruded architectural grade aluminum tubing, which has a hard coated finish. The tubing can be, using a power miter box with the proper blade installed, cut and spliced to suit dimensions dictated by varying site conditions. The system is sold as a complete kit ready to install at a site. The standard kit allows for a maximum tubing centerline-to-centerline distance of 13' 11". Minimum distance is 3' 11". Maximum overall height is 11' 11". Longer, shorter and/or taller sites can be accommodated. Please consult the factory for assistance and pricing.

NOTE

With factory assistance, the minimum horizontal distance from center line to center line of the vertical tube is 32 inches; maximum horizontal distance from center line to center line of the vertical tube on a straight lane is 63 feet, 10 inches. Maximum horizontal distance from center line to center line of the vertical tube of a splayed or twisted lane is 53 feet, 10 inches. Maximum vertical height from the top of the horizontal tube to the drive surface or finished floor, whichever is the greater, is 16 feet.

The 24V Captive Carrier[®] must be run in an overhead configuration. It was not designed to accommodate "Downsend" configurations. If there is a need for this type of configuration at a given site, we suggest that you consider a product from our Autoveyor[™] product line. Please contact us for more details on this product line.

In order to provide the greatest speed and safety of operation, the 24V Captive Carrier[®] operates at two different speeds. The carrier travels at slow speed when it is exposed to either the customer or inside vertical. Then it travels at a much higher speed when in the horizontal section of the track when the carrier is not exposed to people. In addition, both models feature a proven system of distance monitoring to control shift points versus less sophisticated "time based" systems.

The 24V Captive Carrier features dual stopping heights: high for vehicles such as vans and trucks, low for cars. There are two sets (high and low) of premium weatherproof buttons for both send and help. The stopping height is determined by pressing the appropriate car or truck buttons when sending the carrier out to the customer. The system allows one move from car to truck or vice versa; then the carrier must be recalled.

The weight capacity of the system is conservatively rated at two pounds, which is equivalent to two rolls of quarters. There are safeguards built into the system which prevent catastrophic failure, should the carrier be overloaded.

This system is intrinsically safe in that the mechanical power levels at the moving parts are below 40 lbs of force when accessible by the users.

.Please note that the intrinsically safe power level does require that the system be smooth running without any extra drag induced by poor fitups, misalignment at joints in the tubing and other installation related problems, or it simply won't run properly.

Each part in the kit contains a PSA label with the part name and number attached to it. Please read over this manual before installation to familiarize you with the different components and where they are used in the system.

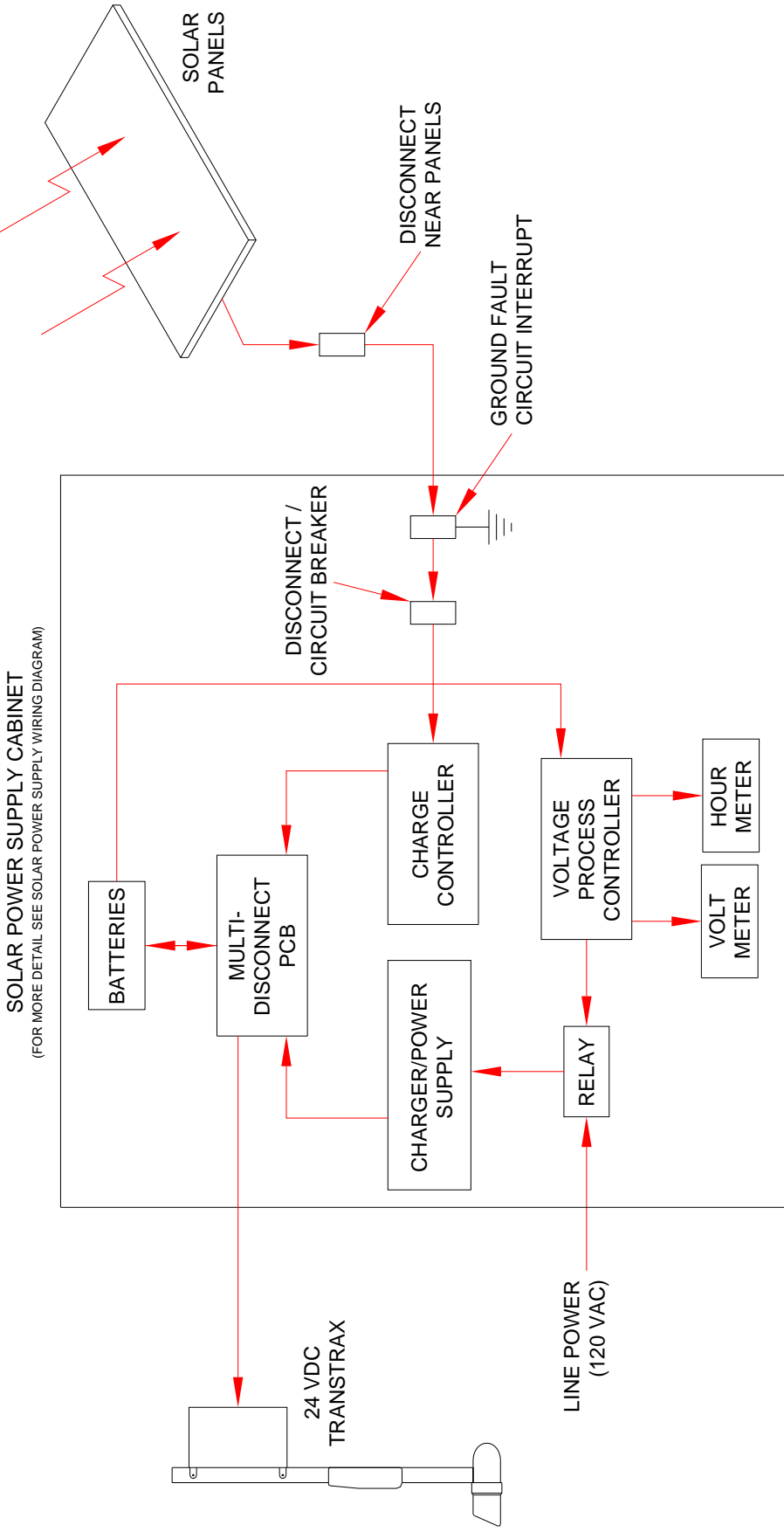
A schematic of an installed 24V Captive Carrier[®] system identifying major components by part number follows:

Installation should be in accordance with all national and local codes.

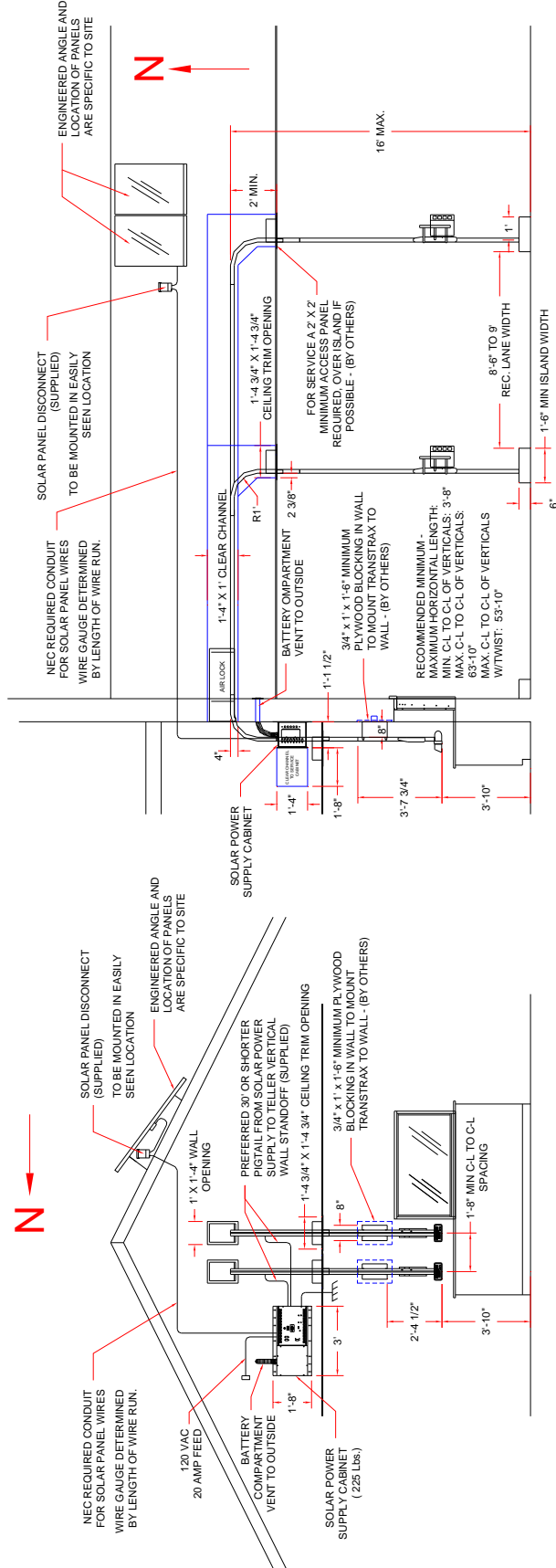
Note: This manual is written for the CC System featuring the BavSonic[™] Audio System. The BavSonic[™] Audio System was introduced in late 2001 as an enhancement over the previous BavCom[™] Audio System. The BavSonic[™] System features two audio boards: one at the teller end of the unit and the other at the Customer end.

The BavSonic[™] System, which comes standard with the 24V Captive Carrier[®], features a blinking LED when call button is pressed. Further it is compatible with both the BavSonic[™] telephone audio and BavSonic[™] Matrix Controller. Contact E.F. Bavis & Associates for details on these optional products.

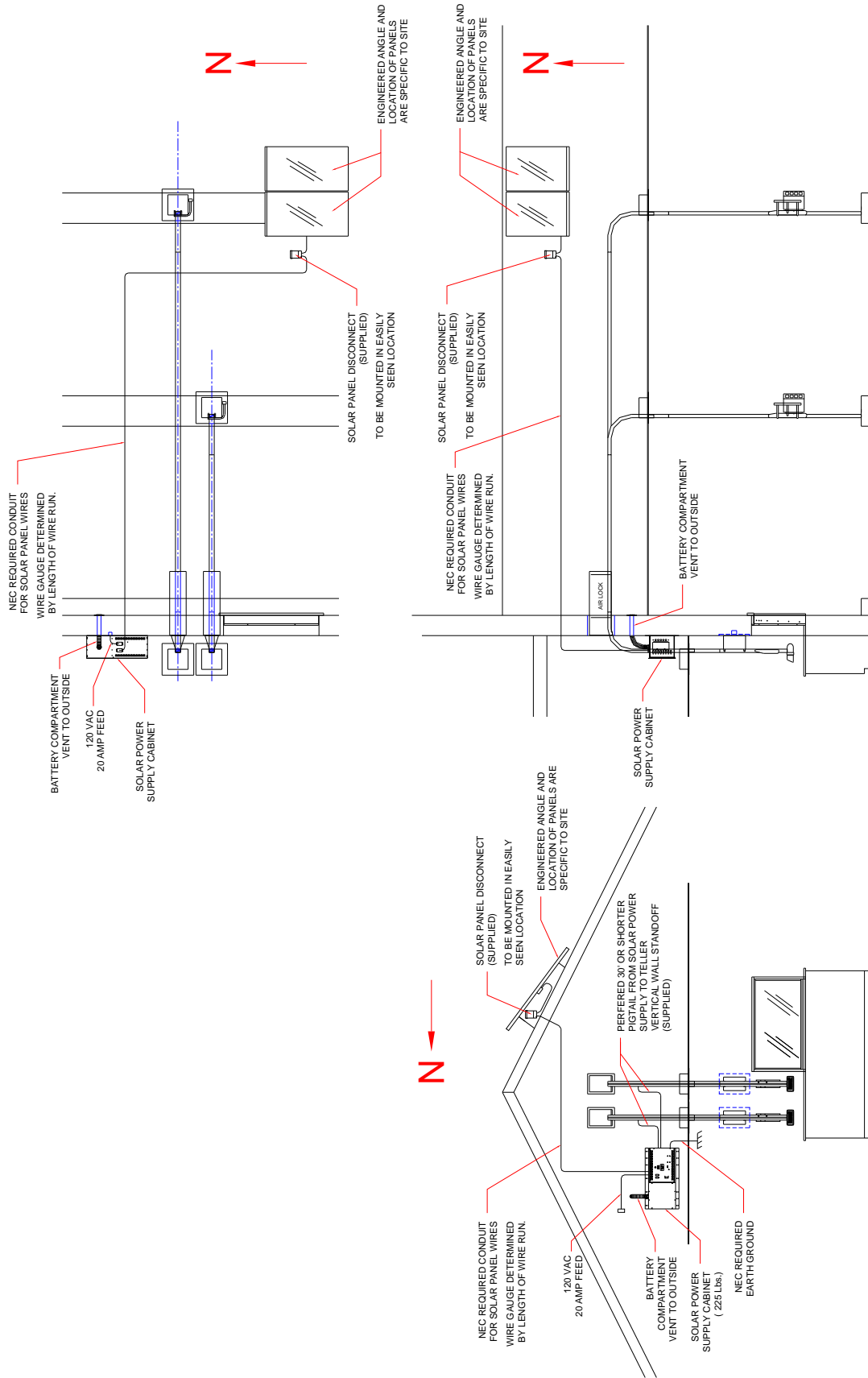
SOLAR TRANSTRAX POWER FLOW



24V Captive Carrier TransTrax[®] Mechanical Overview



24V Captive Carrier TransTrax[®] Solar Electrical Overview



Installation Overview

The process of installing a 24V Captive Carrier[®] into a building consists of first mounting the inside vertical unit, attaching the radius, adding the horizontal section, attaching the customer radius, and then attaching and mounting the customer vertical unit. All wiring is connectorized and is designed to run inside the tubing.

After the tubing is installed, the airlock assembly and ceiling trims are mounted. Six one inch angled reinforcement plates are included in the Installation Accessories of each 24V Captive Carrier[®]. These are intended to be used when installing the ceiling trims and airlock when it is not possible to get fasteners in from the bottom of the tube or the sides. The electrical connection is then made. The final aspect of the assembly process consists of feeding the drive tape into the machine, adjusting the electronic motor control and audio system.

The 24V inside vertical, customer and carriers are all tested as a unit in the factory. **Do not mix and match components when installing a multiple lane job.**

The following detailed description provides step-by-step details of this process, as well as important notes and cautions. Read these details carefully before attempting to install the 24V captive carrier[®].

Installing the Solar Panel

The mounting frame is heavy. Use the threaded rod, nuts, washers, and spacers. The angle of the solar panel is adjustable. You should have received a drawing ahead of time with specifics on the mounting.

Installing the Solar Power Supply (Please Refer to Page 28)

The solar power supply is heavy, it weighs about 225 lbs. We recommend removing the batteries before installation.

The procedure is as follows:

1. There is a link that connects the batteries together. Remove the link between the batteries.
2. Remove the positive and negative cables.
3. Remove the batteries.
4. Reverse this order to install the batteries.

This procedure helps to minimize the chance for a short. The batteries have a tremendous amount of energy stored in them.

There are provisions for wall mounting as well as suspended mounting with threaded rod. You should have received a drawing ahead of time on this.

CAUTION

The battery vent needs to go outside of the building. The batteries are classed as sealed, however if they get over charged they can outgas.

The power lead for the 24V Captive Carrier is designed to come out of the side of the inside radius tube in the ceiling. The cable will come out of the 7/8 hole provided in the radius.

When connecting the 24V TransTrax to the power supply, make sure that the screws on the bus bar are tight. If you shorten the cable you should tin the ends to make sure that the connections will be good.

24V Inside Vertical Installation

CAUTION

The wall standoff supports the entire weight of the 24V inside vertical unit. Do not just use molly bolts or similar type mounts into the drywall. Make certain that the fasteners and mounting surface are adequate to fully support this component and the forces that occur during operation.

The first part of the 24V Captive Carrier[®] kit is a completely assembled 24V inside vertical unit. The system electronics are housed in the wall standoff portion of the teller vertical unit. The wall standoff sides open outward to expose the back. The wall standoff back needs to be mounted securely to the wall.

The bottom of the inside vertical unit should be positioned 46" off the inside floor. If the vision window frame obstructs the placement of the wall standoff, it can be repositioned up to 6" higher on the vertical tubing by removing its associated screws and placing it at the higher position.

Extension and Horizontal

The inside vertical extension should be cut to a dimension that will allow the formed radius to exit the building via the 12" square clearance hole in the wall. The teller vertical extension should then be deburred and the tape slot chamfered (Refer to page 17).

The horizontal tubing needs to be cut to a dimension which will allow both of the vertical units to be plumb vertically after it is installed to the formed radii. Be sure to chamfer and debur each end of the tube before proceeding. (Refer to page 17).

Horizontal Connecting Cables

The wiring for the 24V Captive Carrier[®] is connectorized and is enclosed within the tubing of the machine. The vertical cable extends through the top of the vertical assemblies and connects with the horizontal cable. The horizontal cable is identical on both ends and cannot be installed backwards.

Pass the horizontal wiring cables through this section and all other tubing as the unit is assembled. Sometimes "fishing" the wiring harness through the tubing can be a challenge due to the screws, etc. We have found that a "fish tape" does a great job. Just attach one end of the harness to a 10-12' length of "fish tape" with electrical tape and push the tape through the tube. Attach the tubing to the teller vertical unit using two of the extruded internal splice plates (see page 17). Be careful when running screws into the tubing not to nick or cut any of the wires.

Inside and Outside Radius

The formed radius needs to be attached to the teller vertical extension using the extruded internal splice plates (see page 17).

CAUTION

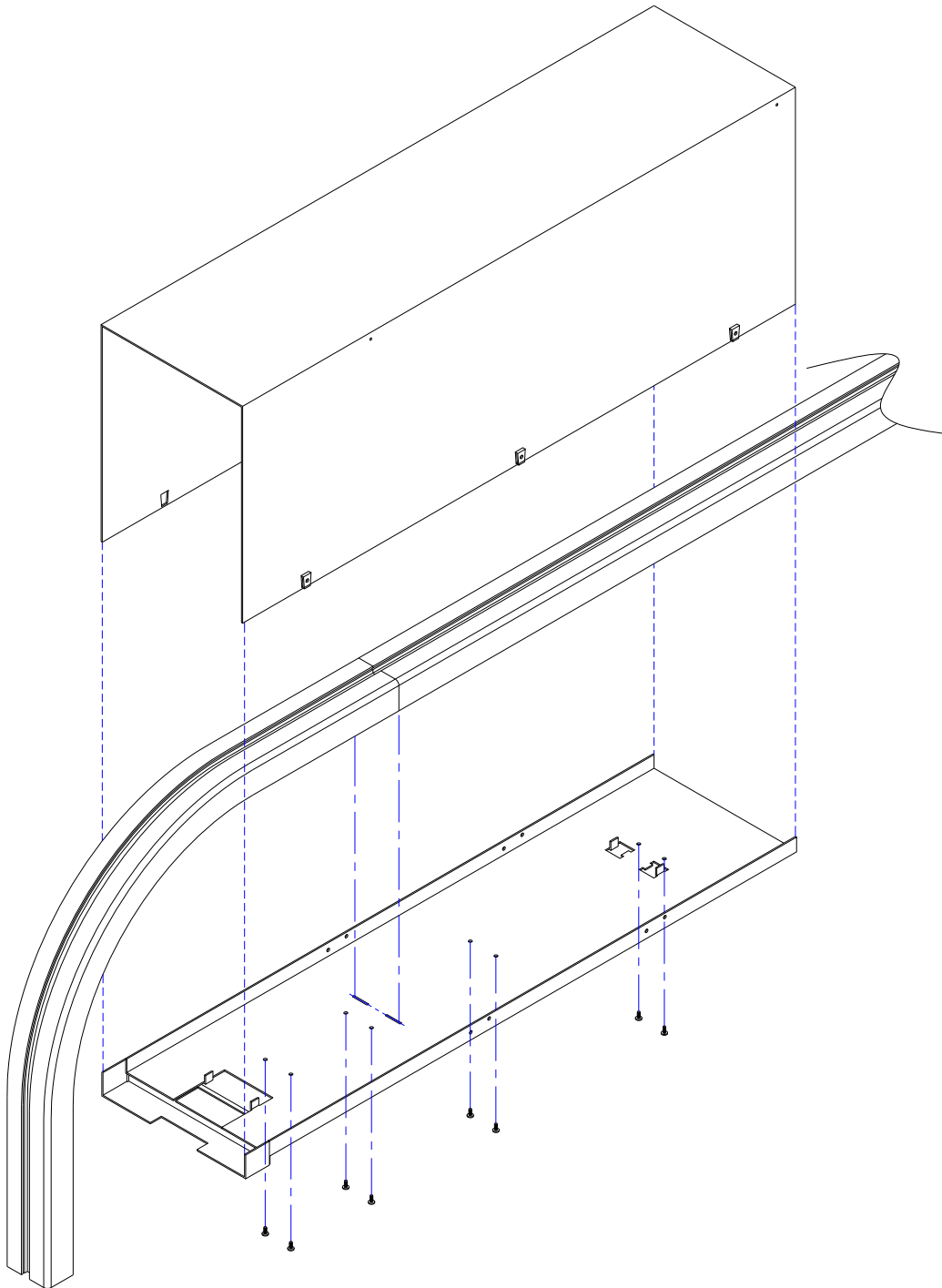
The formed radii are not designed to be cut. They were designed to be used as is. Any modifications to the radius will void the warranty and will likely yield less than acceptable operation.

. The radius with the 7/8 hole should be installed with the hole closest to the 24V teller vertical. The power cable from the teller vertical will be fed through this hole and connected to the solar power supply.

Airlock Installation

The airlock assembly is a two-piece design. Attach the airlock bottom using the self-tapping screws provided. Note the alignment tabs on this part that center it on the tube. The notched end goes on the radius. Install the airlock top to the bottom. Fill the area between the airlock assembly and the 12" x 16" opening with insulating material and cover with drywall, sheathing board or other appropriate material.

Airlock Assembly Diagram



24V Customer Vertical Installation

The 24V customer vertical unit is completely assembled and designed for installation at a site with no elevation difference from the lane to the island. Measure the distance from the lane to the island and cut this amount off of the bottom of the customer vertical unit. It mounts to the island with a customer base. The customer base mounts to the island via two 3/8" holes (Note: base unit to island fasteners not provided) and to the customer vertical tubing via two self-tapping screws (see page 18).

CAUTION

When cutting off the top of the customer unit, make sure that the vertical cable from the customer unit is pulled back down the customer tube to prevent cutting the cable.

NOTE

The holes must be predrilled with the short 9/64" bit provided in the installation accessories to prevent drilling into and damaging wiring. The customer vertical unit is 120" tall. It needs to be cut to length which will allow the horizontal tubing to be plumb horizontally after the formed radius is attached to it. Be sure to deburr and chamfer each end of the tubing before proceeding (See page 17).

Ceiling Trims

NOTE

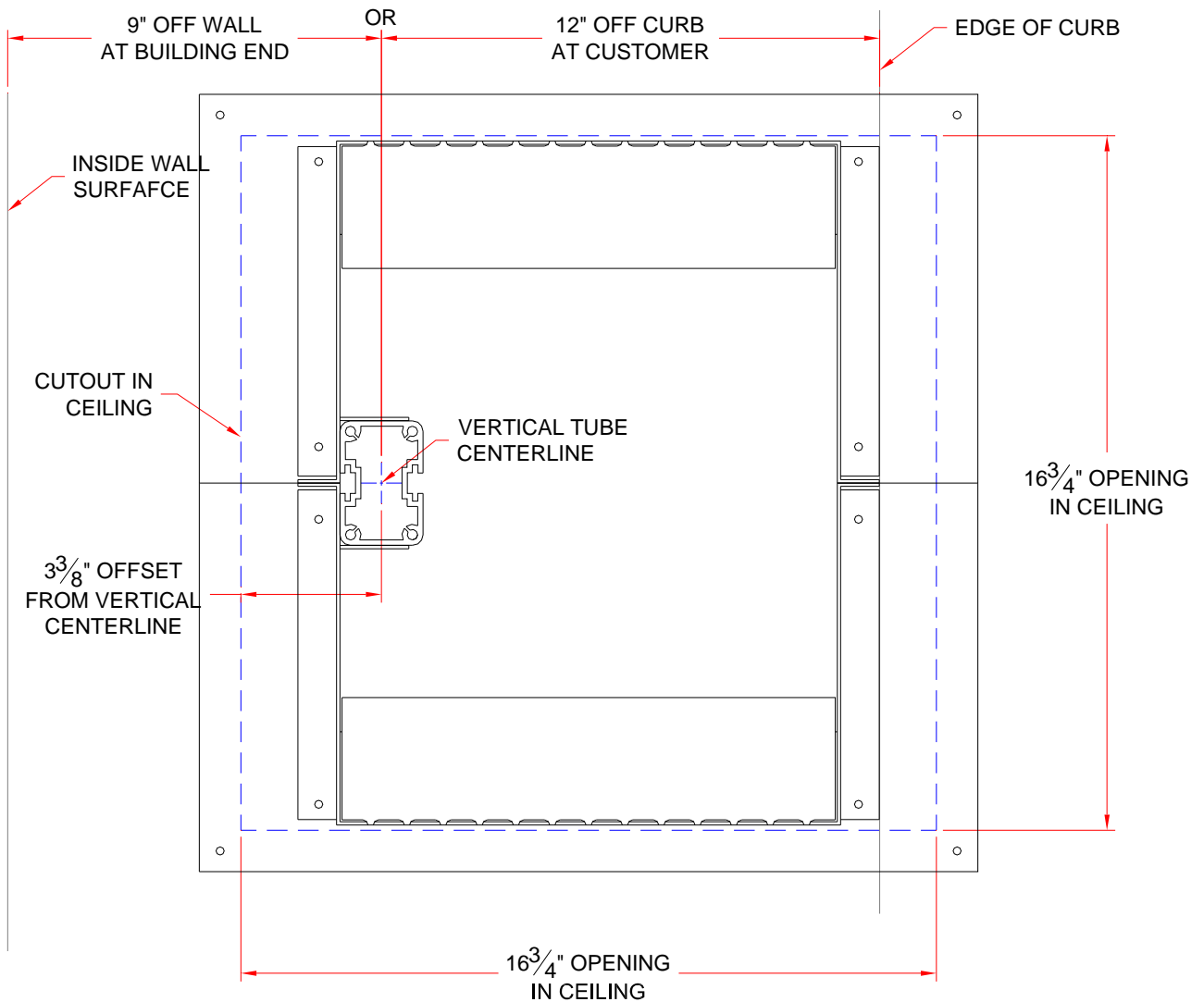
See page 12 for ceiling trim opening size and its position relative to the vertical tube centerline.

Secure the ceiling trim halves together around the 24V Captive Carrier[®] tube with the 8-32 hardware provided. Holes must be predrilled with the short 9/64" bit provided in the installation accessories to prevent drilling into and damaging wiring. Attach the ceiling trim to the tubing of the 24V Captive Carrier[®] with the #8x1/4" self-tapping screws provided. These screws do not protrude into the tubing greatly simplifying running the wiring. Note: The trim must be on the vertical section of tubing, not the radius. If it is necessary to attach the trim to the ceiling, it will be necessary to drill holes for this purpose, as there are no holes provided for this. Test the machine to insure that there is nothing preventing the carrier from traveling through the flaps.

NOTE

Ceiling trims are designed to be mounted on the vertical tube and are not designed to be mounted on the formed radius. When installing trims, make sure that the car moves freely through the trim and does not rub or bump the sides of this component.

Ceiling Trim Cutout Dimensions



Installing the Tape and Carrier

The 24V Captive Carrier Trans Trax uses a mechanical brake to keep the car from coasting. The brake must be released when removing and installing drive tape. The brake control is built into the solar control board. The unit must be powered up and then press the slide switch on the 24V control board which will release the brake.

Remove the customer speaker panel. Feed the tape into the tape slot at the customer speaker opening insuring that it pushes smoothly all the way into the power unit of the inside vertical unit. Cut the tape two feet longer than this dimension. Remove the tape and dress the ends (see page 18). Attach the carrier to the tape (see page 19). Before reinserting the prepared tape with carrier attached, take a section of the discarded tape (two feet will do) with square cut ends and run it through the system by hand with a screwdriver. If any rough spots or obstructions exist, correct them before proceeding. Reinsert the tape into the tape slot. At the inside vertical unit, slide the brake switch on the control board while engaging the tape with a small screwdriver pushing firmly down, without damaging the tape, consistently, but slowly, allowing the tape to engage the gear, wrap around and feed into the tape return slot. Do this until the magnet block of the carrier is engaging the upper black non-contact switch on the customer vertical unit. Replace the customer speaker panel.

Testing the Unit

Press the power button once. The led above it should come on indicating that the unit has power. Pressing it again should toggle the power off. The audio led will mirror the power led. Pressing the audio button will alternate the audio between on and off. Carefully jog the carrier inside and back outside while checking that there is nothing obstructing or binding the carrier. With the power on, pressing the recall button should cause the carrier to come in. By pressing the car button, the carrier should go out to the lower car stop position. By pressing the truck button, the carrier should go out to the higher truck stop position. Note that the microprocessor control will only allow one move between car and truck or truck and car before it will require the car to be recalled inside. If the carrier does not run, or does not run smoothly, please consult the factory for assistance.

Shift Point Adjustment

Open the hinged inside vertical standoff left cover to get access to the motor control board. The shift point adjustments are next. There are three adjustments, send, recall and high (see page 29). The send adjusts when the carrier shifts from low into high speed when the carrier is sent from teller to customer. Recall adjusts when the carrier shifts from low into high speed when the carrier is sent from customer to the inside vertical. High adjusts how long the carrier stays in high speed.

The carrier should be in low speed when traveling through the airlock, radii and in sight of users. It should be in high speed only in the horizontal section. If the car is in high speed in the radii, the contents may be thrown out of the carrier. Adjust the send pot so that when the carrier is traveling from the inside vertical to customer, it shifts into high speed after it comes out of the airlock. Adjust the high pot so that the carrier shifts back into low before it enters the customer formed radius. Adjust the recall pot so that when the carrier is traveling from the customer to the inside vertical, it shifts into high speed after it comes out of the customer formed 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 formed radii. Note: The shift points are controlled by a microprocessor that is monitoring the rotation of the sprocket shaft and the settings should not vary due to speed, voltage, temperature, age of machine, etc.

If there is a problem with a carrier missing a switch, check to see what the gap between the switch and the magnet is? Anything over 1/8" and the potential for missing switches exists. This can sometimes be adjusted by loosening the black carrier stabilizers and raising the side opposite the magnet, lowering the side with the magnet or a combination of both. Note that the carrier has to have some clearance to the stabilizers to prevent it from binding.

A run limit timer is factory preset at 45 seconds. If the carrier is obstructed during its travel, the motor will shut down after this delay. The Run LED should be on constantly. The only time the Run LED goes out is if the carrier times out. If the Run led is off, the run time limit has been exceeded. Toggling the on/off button will reset the timer. Close and secure the left door of the inside vertical standoff.

Autocycler

The solar TransTrax is equipped with an autocycler to run the unit automatically for test purposes.

The procedure is as follows:

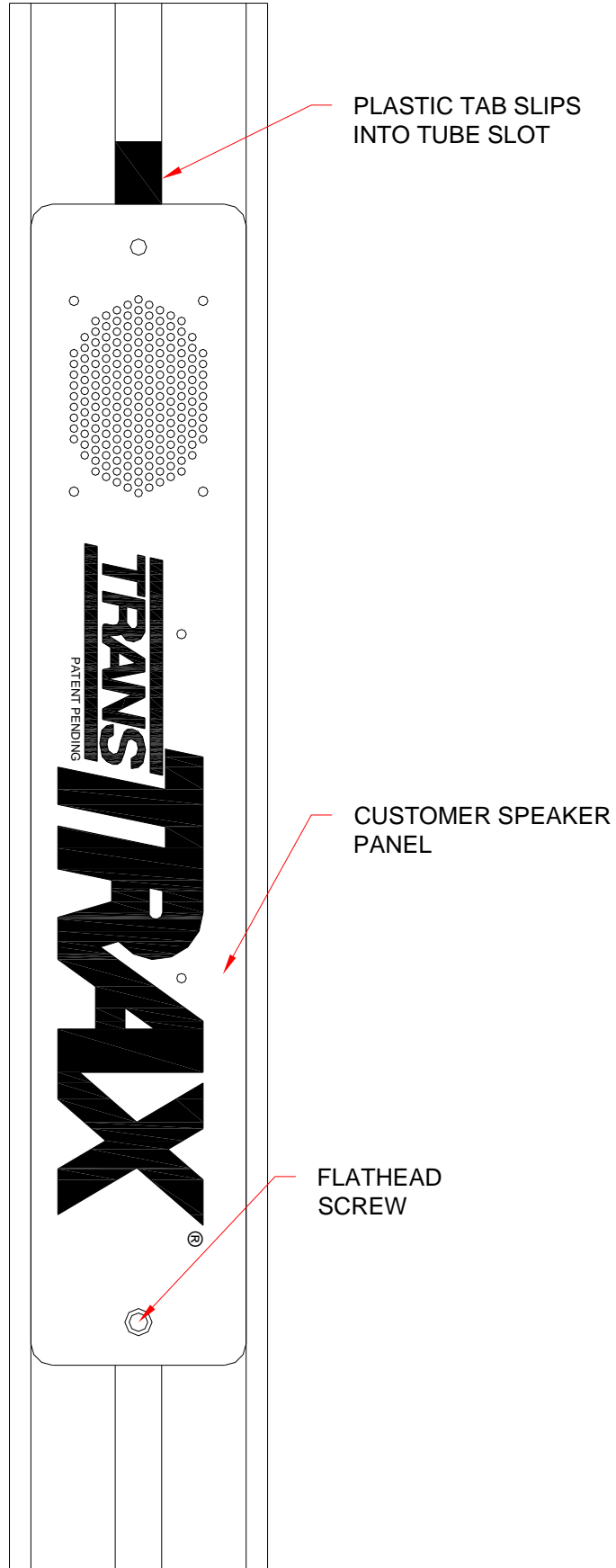
1. Recall the car to the inside vertical.
2. Turn the unit off.
3. Turn the unit breaker/disconnect off.
4. Wait 10 seconds and turn the breaker/ disconnect back on.
5. Hold the truck and car button down at the same time.
6. While holding the car and truck button down, press the power button on.
7. Keep holding the car and truck button down until the car moves.
8. Release the car and truck buttons.

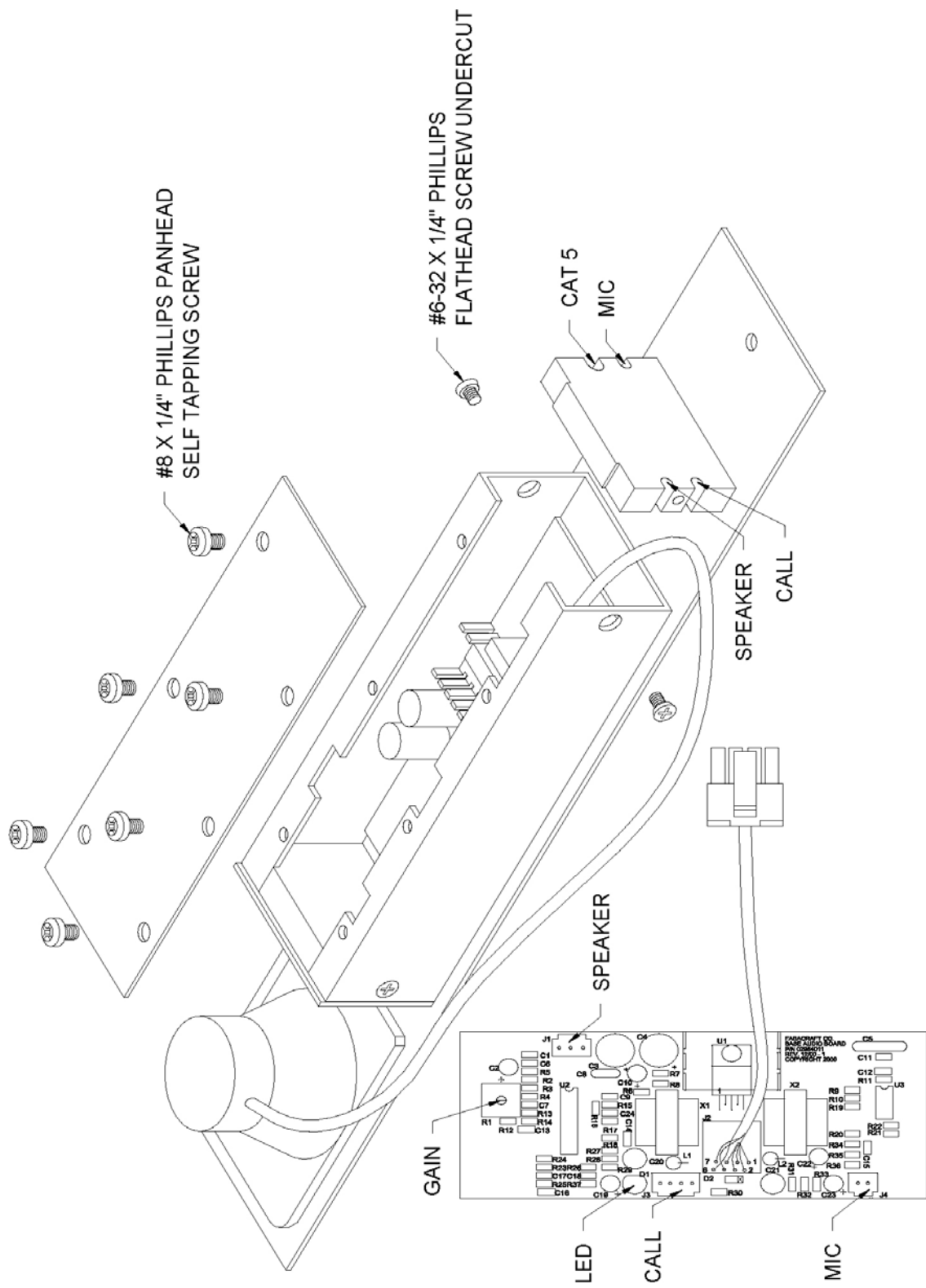
To stop the autocycler, turn the power off.

Sleep Mode

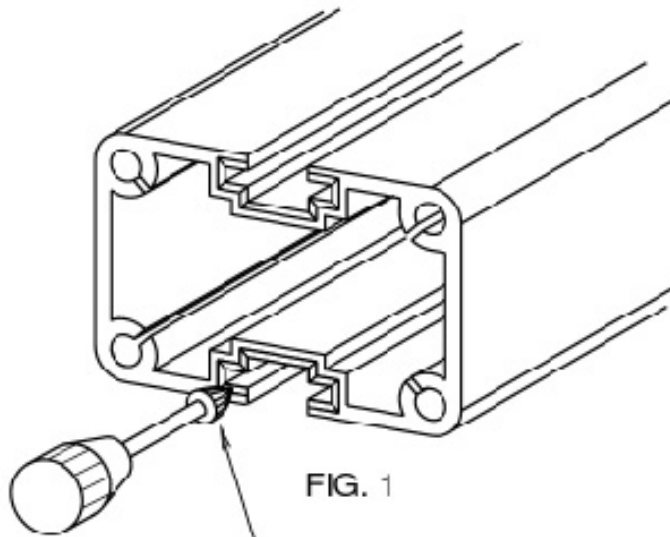
To conserve power the lane will go into the sleep mode if the power button is left off for more than 20 minutes. This is intended to save power. When you press the power on button you will hear the click of the power relay coming on. If you do not want the sleep mode there is a jumper to turn it off. If they don't turn the machines off at night or the jumper is installed the batteries will discharge and the AC line powered charger will turn on.

Customer Speaker Panel Assembly

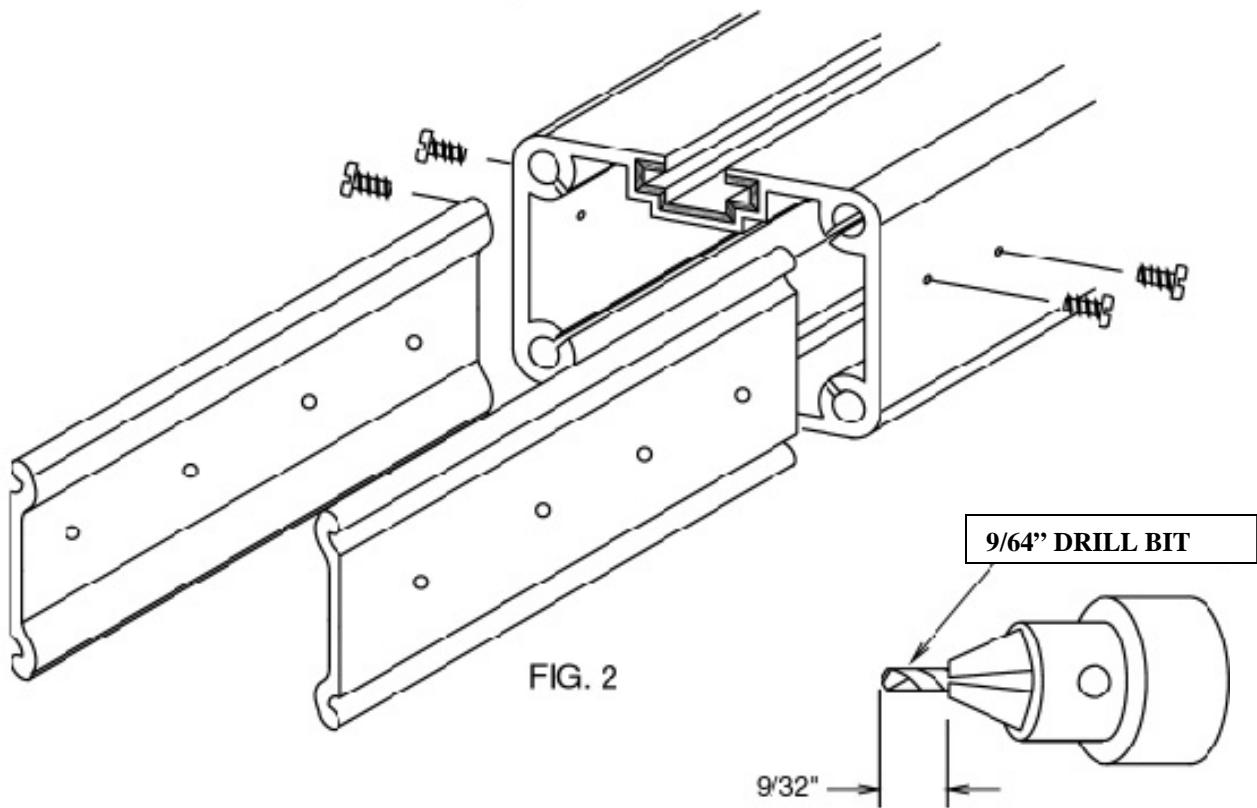




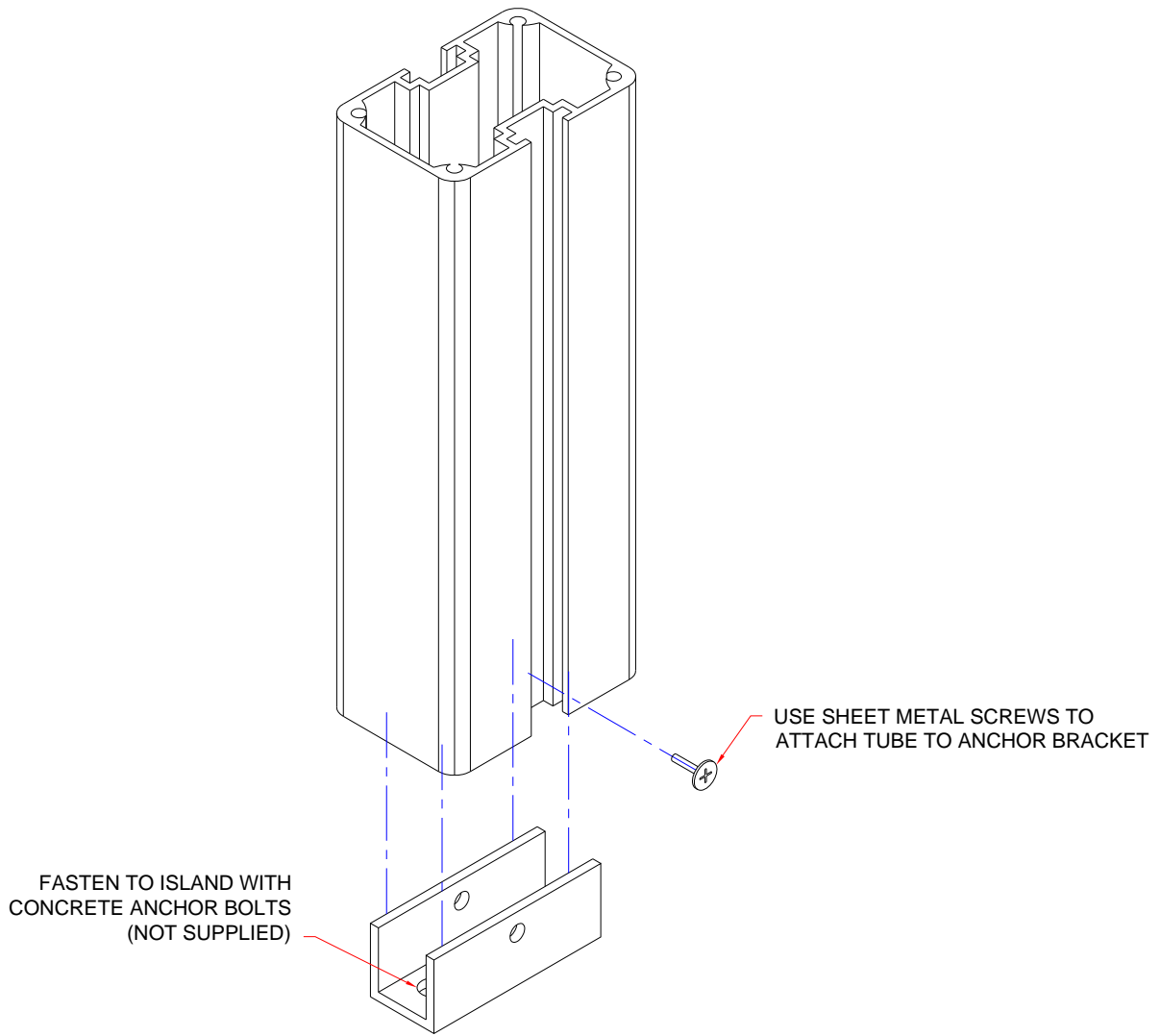
TRACK PREPARATION



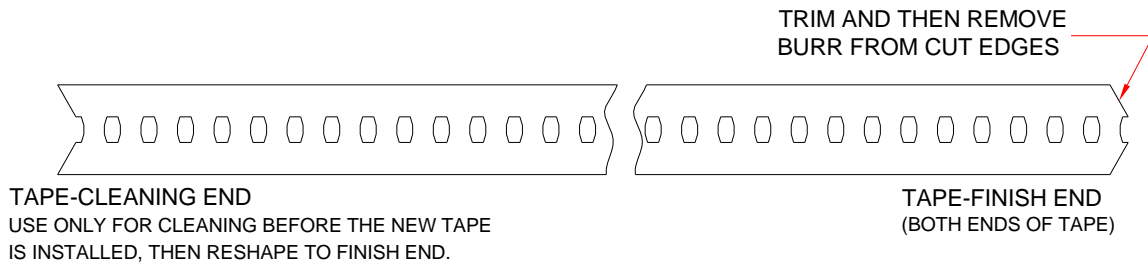
USE 1/8" CONICAL BURR
125 DREMEL



Customer Mounting & Tape Preparation Diagram

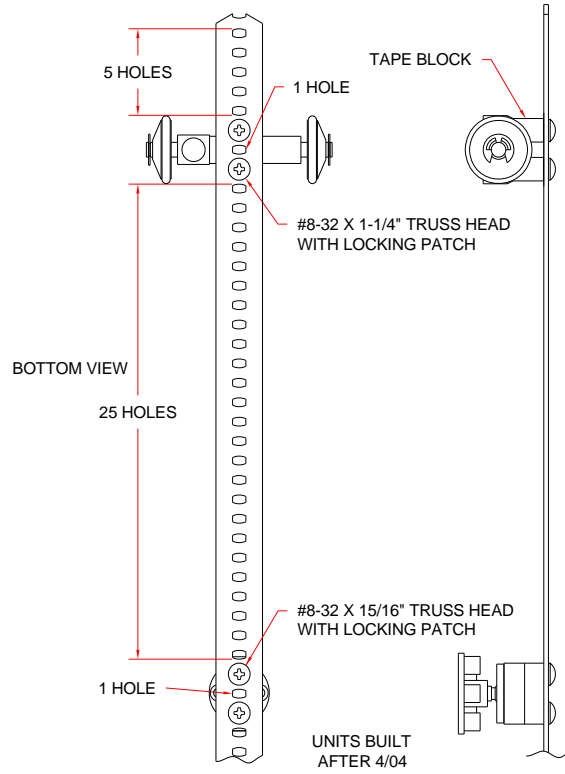


TAPE PREPARATION

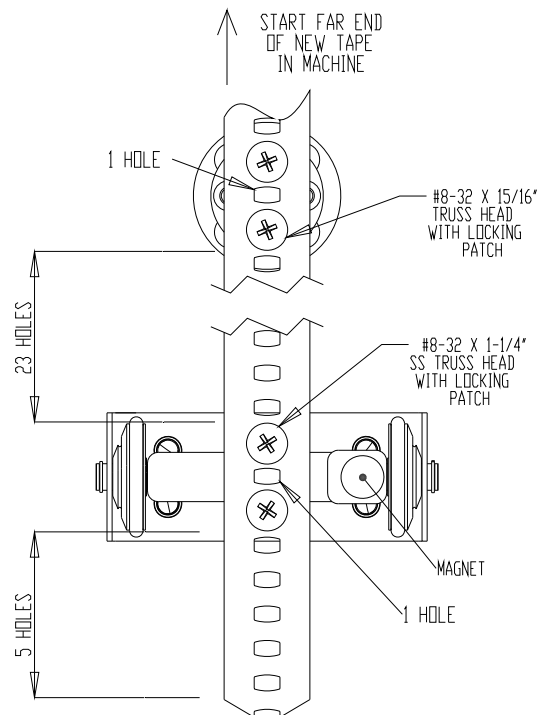


Mounting Blocks Diagram

Grey CC Carrier Hole Spacing



Red CC Carrier Hole Spacing



Troubleshooting the 24v Captive Carrier®

This section assumes that the machine in question has been inspected for loose, damaged or missing parts, tape, belts, wiring, etc. If the unit has a connector board located behind the customer speaker panel, remove the connecting and audio wires from the connector board and hardwire together matching color to color.

Nothing Works:

Check the 110vac power coming into the machine. Put the meter leads on the lower right side of the control board marked 24vdc & ground. You should measure 24vdc. If not, you need to check the circuit breaker in the pharmacy or have an electrician restore power to the unit. If 110vac is present from the building and you have 24vdc to the control board, replace the control board. If you have 110vac coming in but you do not have 24vdc to the control board, check the solar power supply.

The Power On Led Won't Come On:

This presumes that the machine runs properly. Press the power on off button. If the LED still does not come on, check the harness from the inside vertical panel switch assembly to the control board for continuity. If there is a break, repair the cable. If there is not, replace the inside panel switch. If it still does not work, replace the control board.

The Carrier Won't Run When the Recall Button is Depressed:

This presumes that the carrier will run out. Check the LED marked T-L (TELLER LIMIT). It should not be on. If it is, replace the inside stop switch. If it is not, press the button marked recall on the inside panel switch assembly. When the recall button is depressed, the LED marked RCL (RECALL), should be on. If it does not come on, replace the inside panel switch assembly. If it still does not come on, replace the control board.

The Carrier Won't Run in When the Customer Start Button is Depressed:

This presumes that the carrier will run out. Check the LED on the control board marked T-L (TELLER LIMIT). It should not be on. If it is, replace the inside stop switch. If it is not, press the customer start button. When the button is depressed, the LED marked RCL (RECALL), should be on. If it does not come on, replace the customer start switch. If it still does not come on, replace the control board.

The Carrier Won't Run out When the Car Button is Depressed:

This presumes that the carrier will run in. Check the LED on the control board marked C-L (CAR LIMIT). It should not be on. If it is, replace the customer stop switch. If it is not, press the inside panel switch button marked car. When the button is depressed, the LED marked SND (SEND), should be on. If it does not come on, replace the inside panel switch assembly. If it still does not come on, replace the control board.

The Carrier Won't Run out When the Truck Button is Depressed:

This presumes that the carrier will run in. Check the LED on the control board marked TK-L (TRUCK LIMIT). It should not be on. If it is, replace the truck stop switch. If it is not, press the inside panel switch button marked truck. When the button is depressed, the LED marked SND (SEND) should be on. If it does not come on, replace the inside panel switch assembly. If it still does not come on, replace the control board.

The Carrier Won't Run In Either Direction:

This presumes that the power led works properly. If they do not, go to the paragraph on "Nothing Works". If the power led is on and the carrier still will not run, see if you voltage coming out of the control board marked motor A and B. If you do not have 24vdc from the control board, replace the control board. If you have power, see if you have power through the motor leads to the drive assembly. If there is power, replace the drive assembly. If you do not have power, repair or replace the motor cable.

The Carrier Won't Shift Into High Speed:

Adjust the speed shift points as instructed on page 33. If the car will still not run in high speed, monitor the voltage to the drive assembly at the connections to the drive assembly at the control board. The motor must be connected for this test. Run the car. The voltage should be approximately 36vdc in slow and 88vdc in high. If the voltage changes and the speed don't, inspect the machine for anything causing excessive drag such as damaged tape, bows, sags or misalignment in the track or bad bearings in the surround. If the voltage doesn't change, observe the LED marked CHAIN (MOTOR COUNTER). This LED should flash on twice for each revolution of the drive assembly. If it does not, replace the counter assembly. If it still does not, replace the control board.

Carrier is in High Speed in the Vertical Sections:

Adjust the speed shift points as instructed on page 29.

The Carrier OVERRUNS the Stop Position on the Inside Vertical:

First, insure that the carrier is traveling in the slow speed in the vertical section. Check to insure that the gap between the magnet and the black switch is 1/8" or less. With the carrier at the stop position and the magnet positioned on one of the stop switches, check the LED on the control board marked T-L (TELLER LIMIT). It should be on. If it is not, replace the stop switch; if it is still not on, check the wiring and then replace the control board.

The Carrier OVERRUNS the Car & Truck Stop Positions on the Customer End:

First, insure that the carrier is traveling in the slow speed in the vertical section. Check to insure that the gap between the magnet and the black switch is 1/8" or less. With the carrier at the car stop position and the magnet positioned on one of the stop switches, check the LED on the control board marked CAR (CAR LIMIT). It should be on. If it is not, replace the switch. With the car at the truck position, check LED marked TRUCK (TRUCK LIMIT). It should be on. If it is not, replace the stop switch; if it is still not on, check the wiring and then replace the control board.

If you need further assistance, contact the manufacturer at 513-677-0500 and inform the operator that you need technical assistance for a Solar TransTrax system.

Maintaining the 24v Captive Carrier Trans Trax[®]

Overview

The Solar Captive Carrier[®] was designed to require very little maintenance; however, what is required is critical in order for the unit to operate as trouble free as possible.

NOTE

Cleaning is the most important aspect of 24V Captive Carrier[®] maintenance.

Weekly Maintenance

Weekly, or even daily, the 24V Captive Carrier[®] should be wiped down on both the customer and teller end to remove road grime and other environmental contaminants. One may also notice a light grey to black dust. This material is produced by the 24V Captive Carrier[®] in its process of self-lubrication. It is normal for this dust to form. However, it should be removed in the cleaning process.

CAUTION

The 24V Captive Carrier[®] does not require any form of lubrication as part of any maintenance. Do not put oil, grease, WD-40 or any other form of lubrication on any component of the 24V Captive Carrier[®]. Doing so voids all warranties on the product.

Annual Maintenance

Annually, we recommend replacement of the drive tape and inspection of the drive sprocket and drive surround. At that time we also recommend a complete cleaning of the track system with the tape removed. Under plant conditions, the drive tape lasts between 60,000 and 100,000 cycles in the 24V Captive Carrier[®]. However, conditions of the "real world" may be harsher than the environment found in our plant. Given the relative low cost of tape replacement on a scheduled basis compared to the cost of an unpredictable down time and loss of customer service if and when the tape fails is the basis of this recommendation. If the tape is run until the point of failure, there is a danger that either the drive sprocket or the drive surround will be damaged.

We also recommend an annual cleaning of the solar panel. Dirt on the glass face of the solar panel reduces the amount of energy produced.

The battery does not require a routine service.

Other Components

The motor is designed to provide in excess of 600,000 cycles under plant conditions. Actual life under "real world" conditions will vary. Since the 24V Captive Carrier[®] uses a totally enclosed non-vent DC motor, the failure after its rated life is caused by worn out brushes. While it is possible to re-brush the motor, it is not recommended, nor does the factory support it.

The other drive components are designed to outlast the motor; however, they can be damaged during a tape failure. It is, therefore, recommended that the annual tape replacement practice be followed.

User Instructions

Carrier Movement

Once the power button has been pressed and the Power led is illuminated, pressing the send, carrier, or truck button sends the carrier out to the customer end of the unit. Pressing the recall button brings the carrier back into the inside vertical end of the unit.

Overloaded Carriers

If a customer overloads a carrier, there are two possible outcomes when the carrier is sent in toward the inside vertical end:

Carrier does not move

If the carrier does not move when the send or recall button is pressed by either the customer or teller, remove the overloaded carrier contents from the carrier. Send it into the teller and then return it to the customer end. The 24V captive carrier[®] is now ready for use.

Carrier does not arrive at the solar inside vertical station

If an overloaded carrier box has been sent into the pharmacy and has not arrived at the teller station, there are three options:

Press the button again

Press the recall button repeatedly until the carrier arrives. If, after several attempts, this does not work, perform manual retrieval.

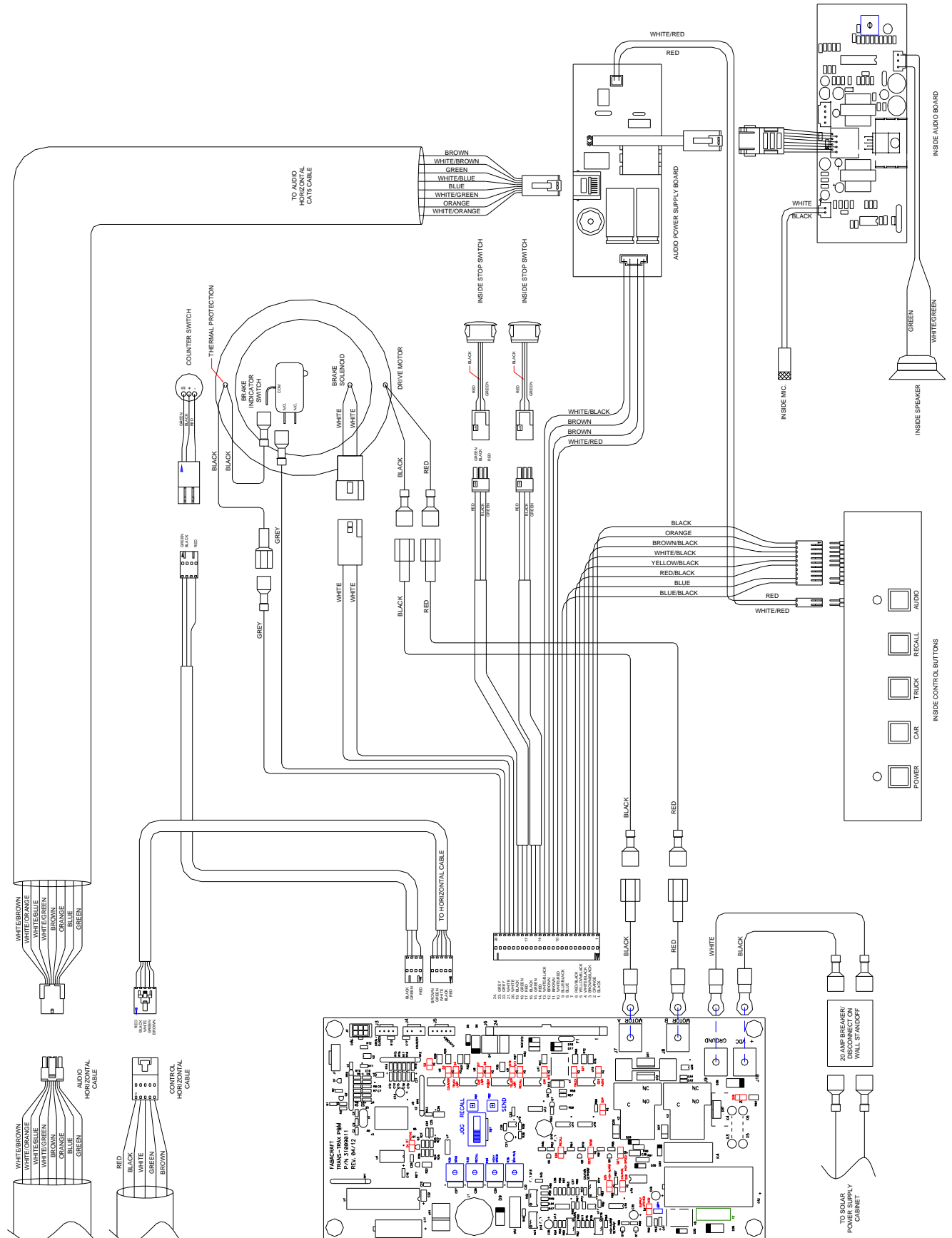
Manual retrieval

While pressing the brake release button on the control board, place something like a pen or small screwdriver into one of the holes in the tape and gently and slowly apply downward pressure to move the carrier toward the teller end. Once the carrier is in reach, remove the contents from the carrier. Then turn on the power and press the recall button. The machine should now be reset for normal use.

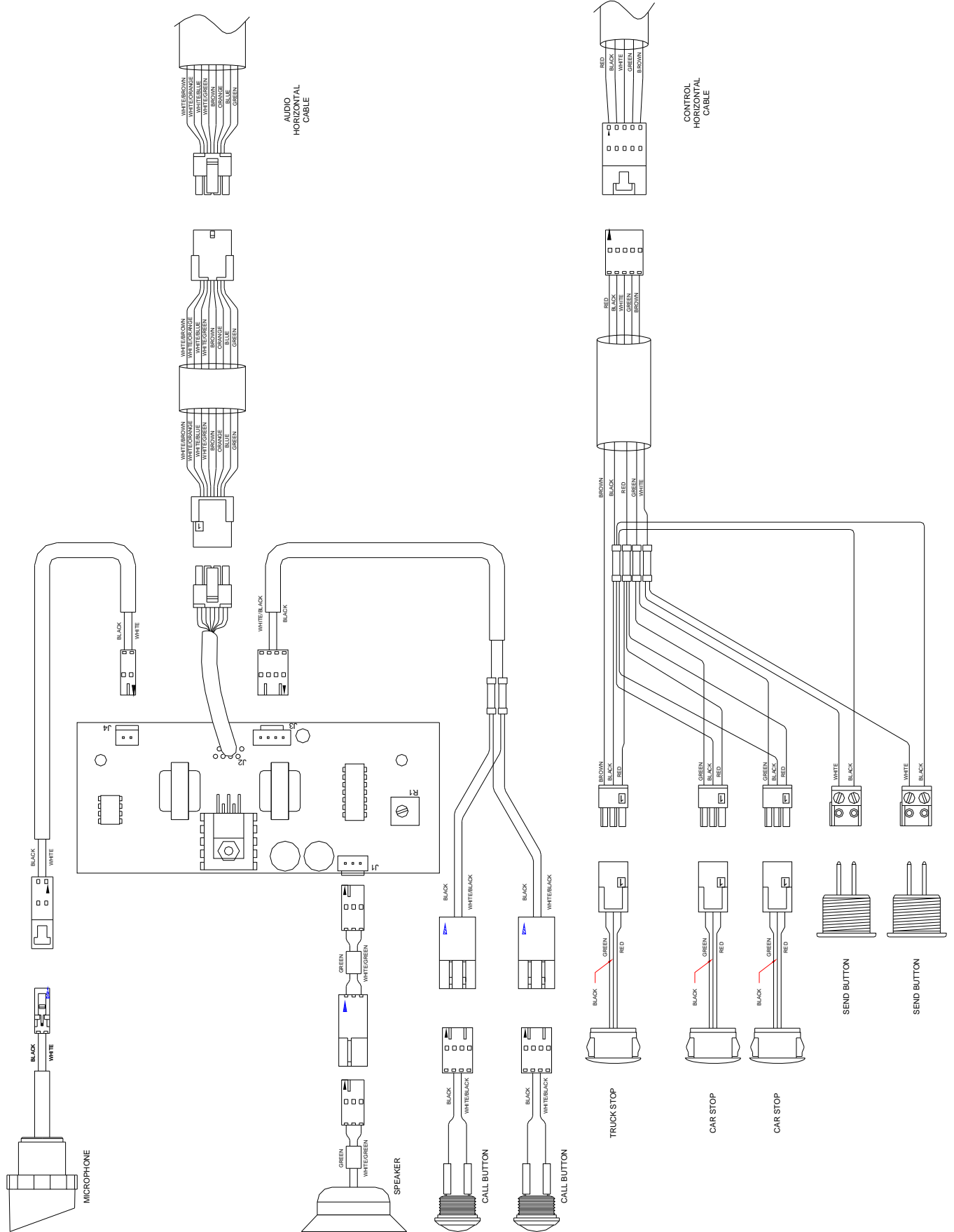
Remove carrier and retrieve

Have a serviceperson get to where the car is located. Remove the overloaded contents and then have a user press the recall button. The carrier should move to the solar inside vertical end and upon arrival be ready for normal use.

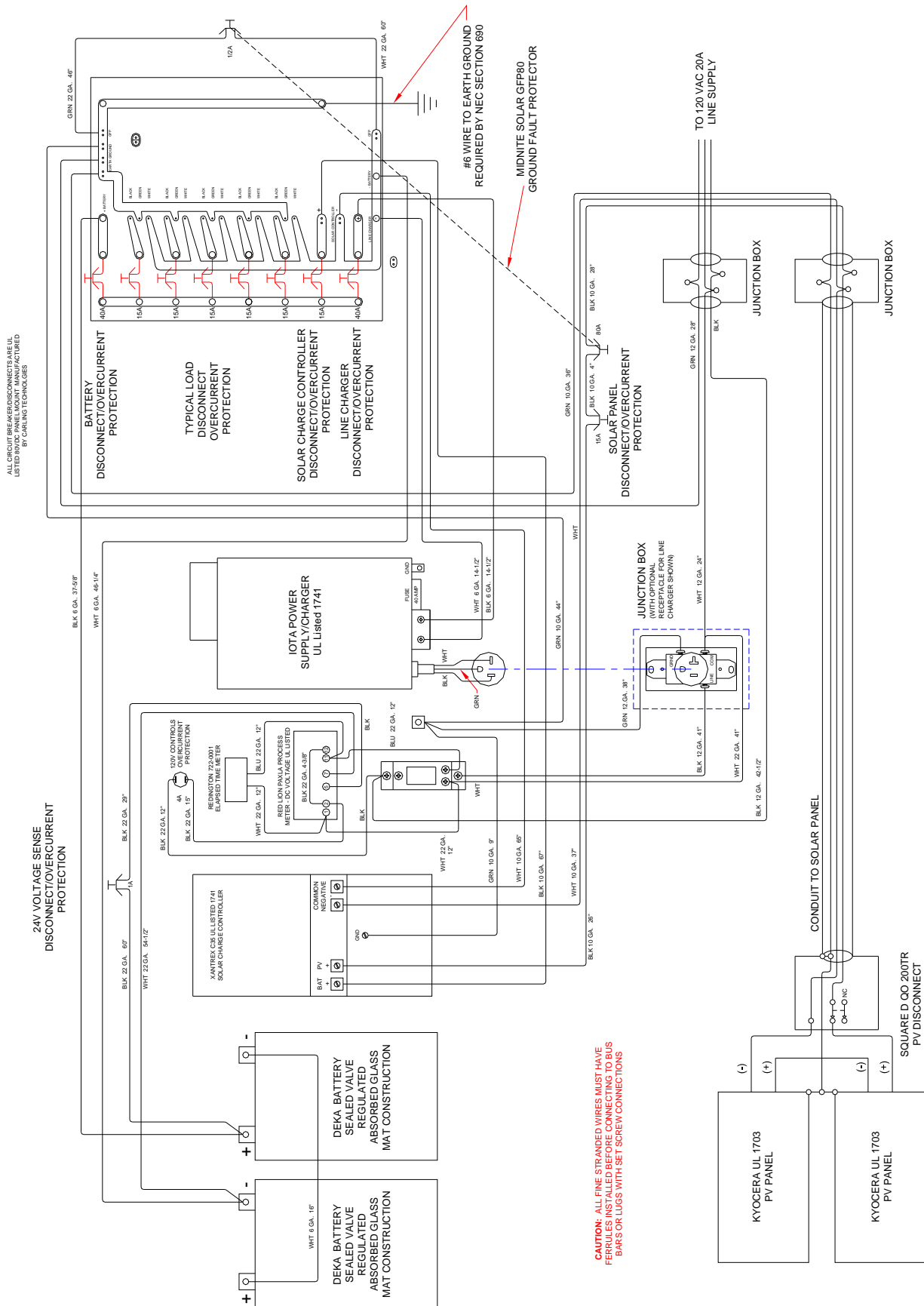
24V Inside Vertical Wiring Diagram



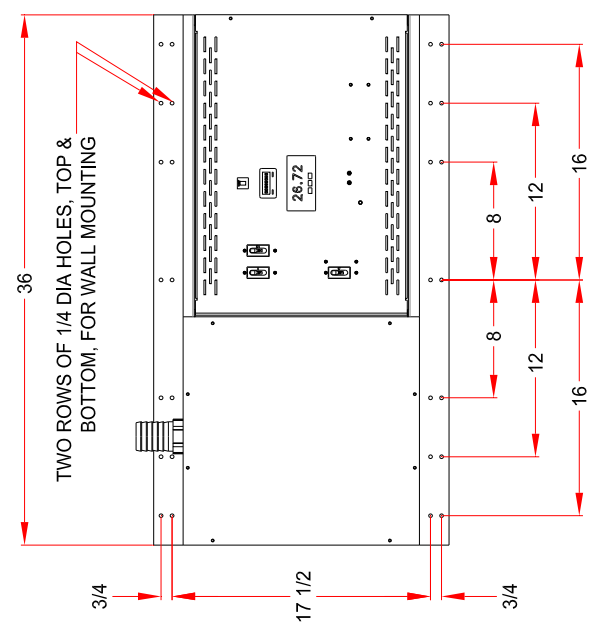
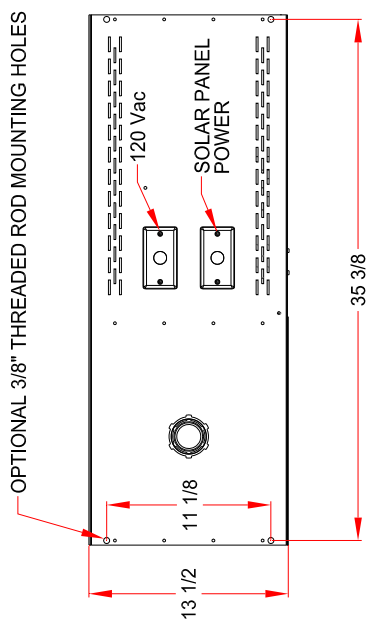
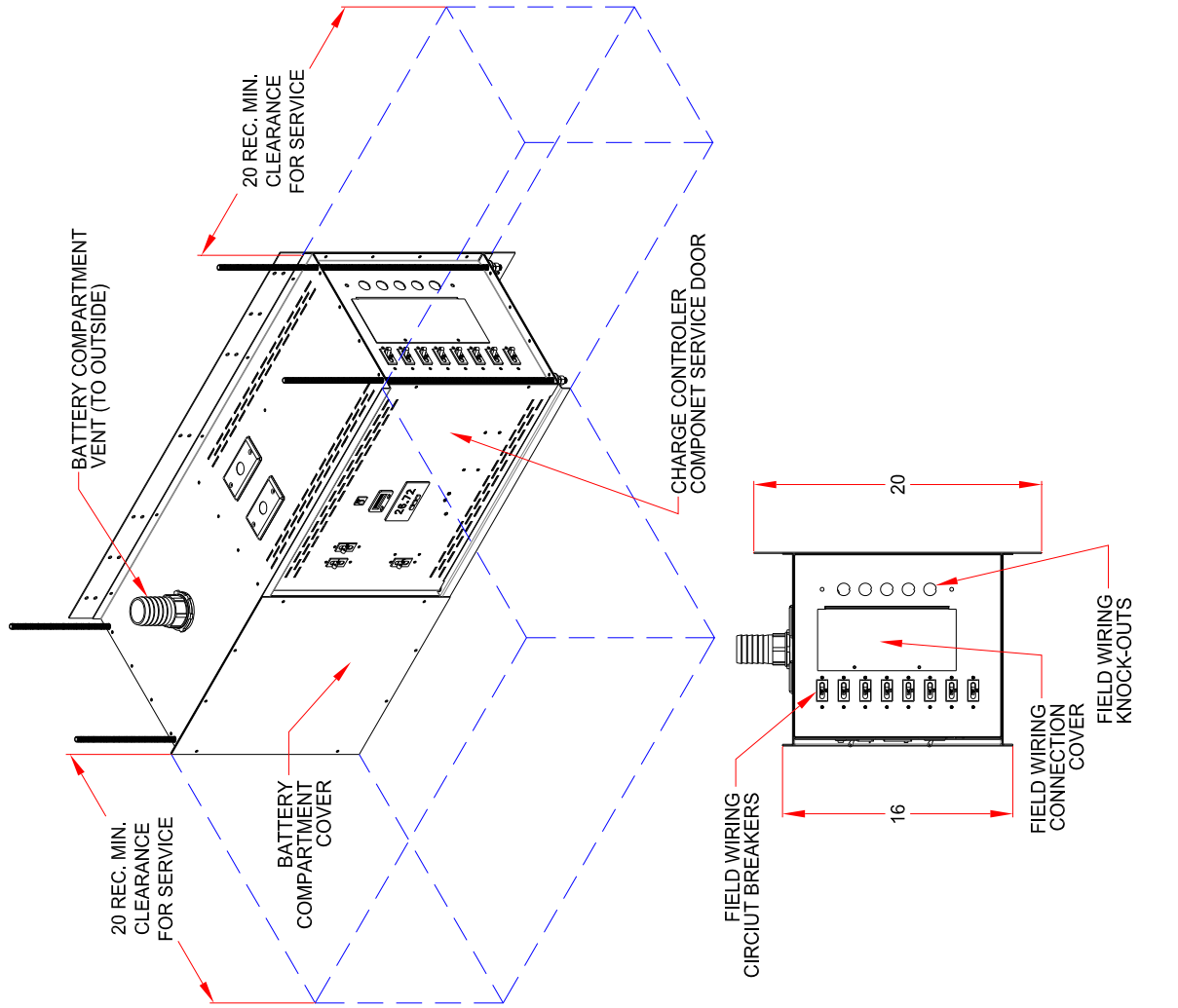
Customer Vertical Wiring Diagram



Solar Power Supply Cabinet Wiring Diagram



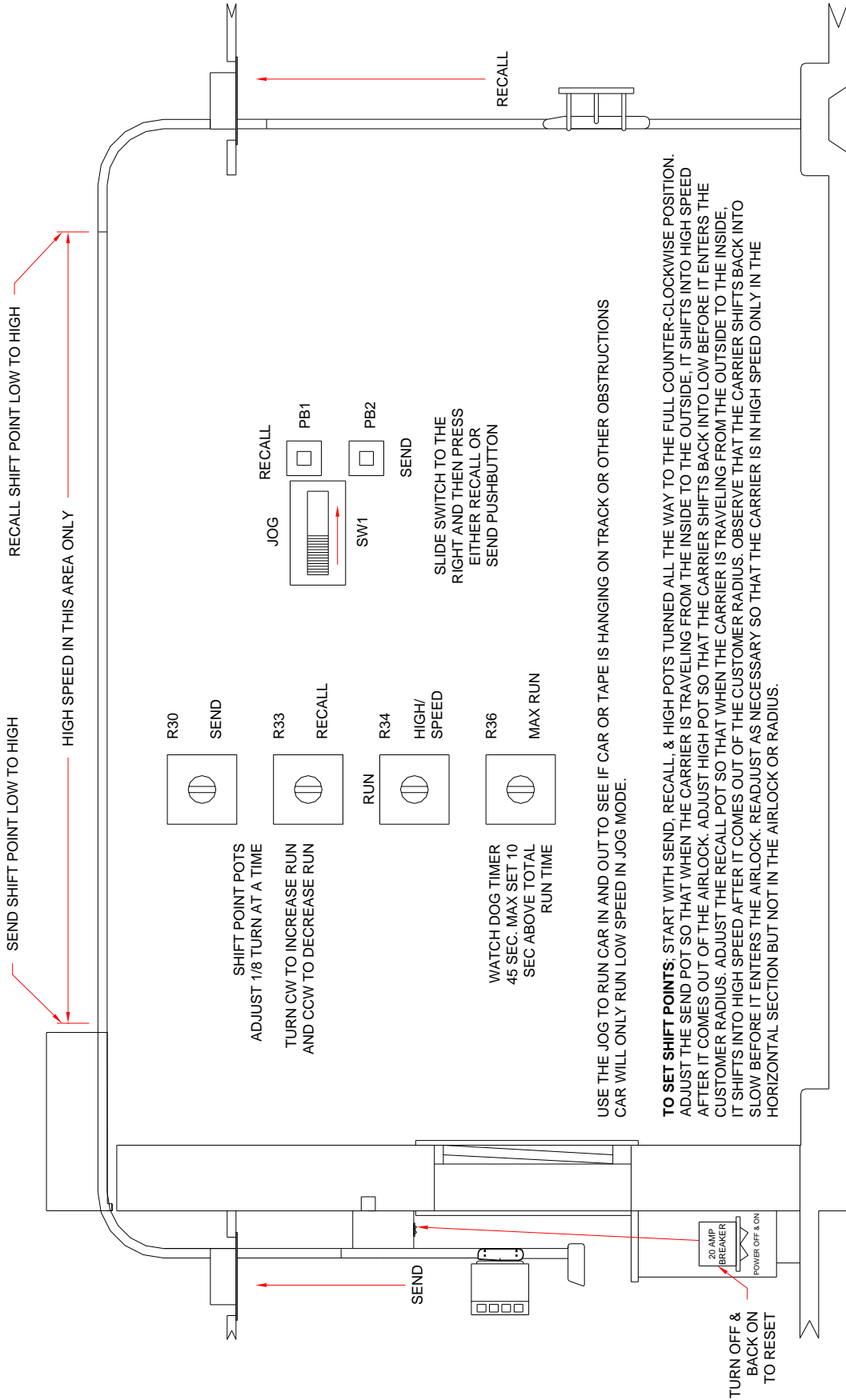
Solar Power Supply Installation



CAUTION! POWER SUPPLY WEIGHS 225 POUNDS WITH BATTERIES!

DIMENSIONS, SPECIFICATIONS AND APPEARANCE SUBJECT TO CHANGE WITHOUT NOTICE

Shift Point Adjustment Diagram



Tools Necessary for Installation

Phillips head screwdriver #2 tip

Flat tip screwdriver, #1F2R tip (miniature)

Screwrunner, #2 Phillips tip

Level

Tape measure

Half Round Bastard File 19/32 x 5/32 x 6

Power Miter Box with carbide tipped blade

Hammer Drill and Anchors

1/8 Shaft conical rotary cutter (Dremel tool preferred)

**24V Captive Carrier Shipping Manifest
31000991**

Qty.	Description	Part Number
1	24v CC Documentation Manual	00601017 _____
2	Horizontal Section 10'	04005591 _____
1	GC Car Assembly	04300991 _____
1	Inside Vertical Extension	04013195 _____
1	24v Inside Vertical Assembly	31013596 _____
1	24V Customer Vertical Assembly	04015594 _____
2	Formed Radius (1 with a 7/8" hole)	04016222 _____
1	Airlock Assembly	04017113 _____
2	Ceiling Trim Assemblies	04021224 _____
1	CC Horizontal Harness	04144011 _____
46 ft.	Coated Drive Tape	06820191 _____

Installation Accessories:

6	1" corner brace	01008492 _____
2	9/64" Short Drill Bit	55555237 _____
1	High speed dremel cutter	01081021 _____
1	Customer Base	04023011 _____
1	TT Splice Plate 24 Pack	04058992 _____
1	Bag of Splice Plate Screws	04224011 _____
5	#8-32 x 1/2 Truss Head Screws	93082723 _____
2	8-32 x 1-1/4 Phil Truss Head W/Locking Patch	93202723 _____
2	8-32 x 15/16 Phil Truss Head W/Locking Patch	93162724 _____
1	Electrical Tape	22016011 _____

