
TransTrax[®] and TransTrax[®] Model II
Utilizing Bavcom[™] Audio

Installation and Service Manual

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TransTrax[®] and TransTrax[®] Model II

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TransTrax[®] & TransTrax[®] Model II

Overview

The TransTrax[®] is a mechanical, positive drive conveyor system kit intended for the conveyance of currency and documents between customers and tellers at drive-thru banking lanes. This kit features one piece of extruded architectural grade aluminum tubing, which has a satin anodized 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 TransTrax[®] 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 TransTrax[®] operates at two different speeds. The carrier travels at slow speed when it is exposed to either the customer or teller. 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 Model TTII 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.

A built-in duplex audio system is included with the TransTrax[®]. The Model II features an incoming boost button, which cancels the outgoing audio while "boosting" the incoming audio to improve the teller's ability to hear the customer.

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 (car and carrier) are below 40 lbs. of force when accessible by the users. The electrical power levels at all locations other than the *TELLER VERTICAL STANDOFF* are intrinsically safe in that they are at NEC Class II levels (24VDC 100 VAC) or lower.

The TransTrax[®] has been reviewed by a third party for safety and suitability for the given application. Please review the label applied to the machine for details concerning this review.

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.

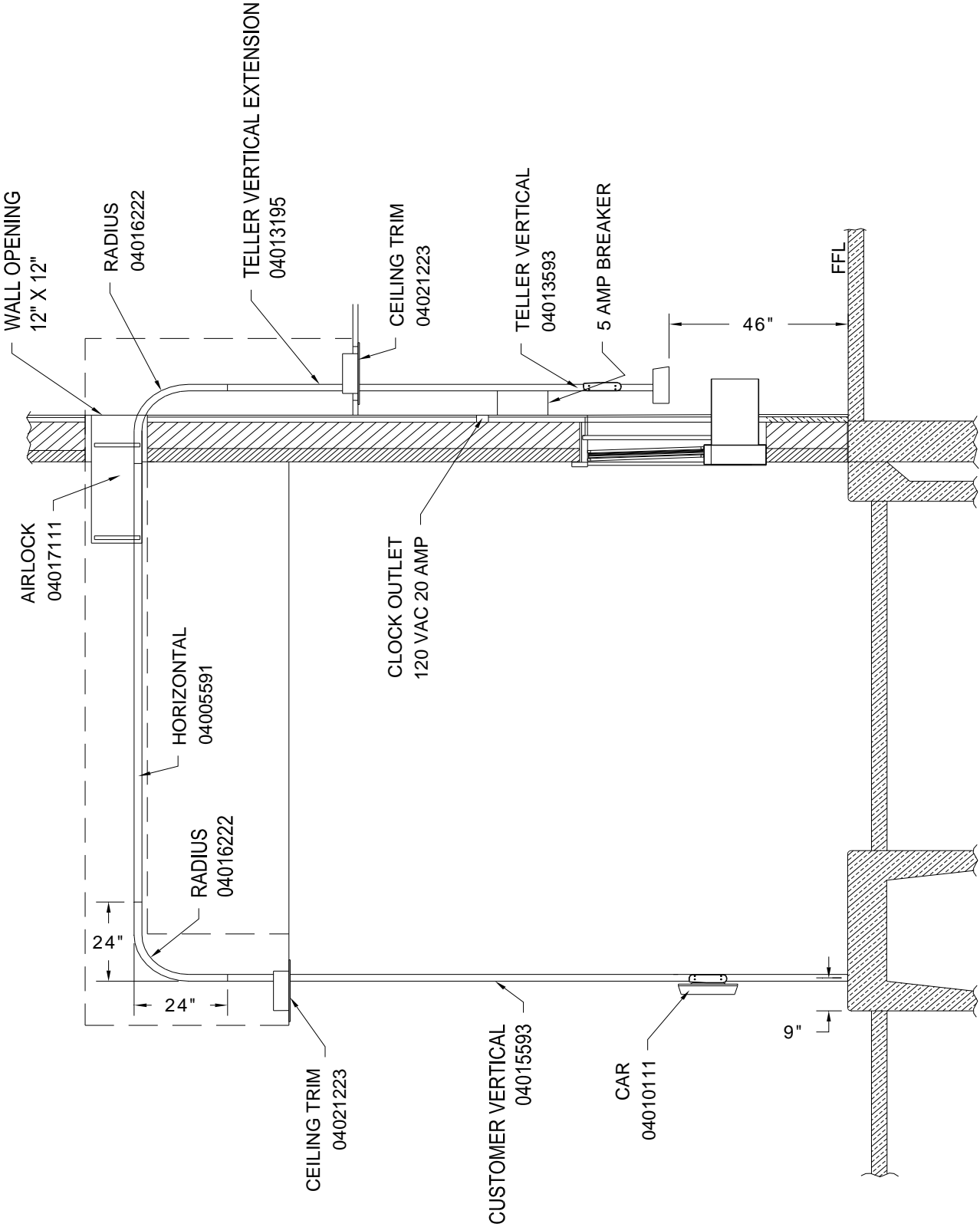
Each part in the kit contains a PSA label with the part name and number attached to it. Please read over this manual before installation to familiarize yourself with the different components and where they are used in the system.

A schematic of an installed TransTrax[®] system identifying major components by part number follows.

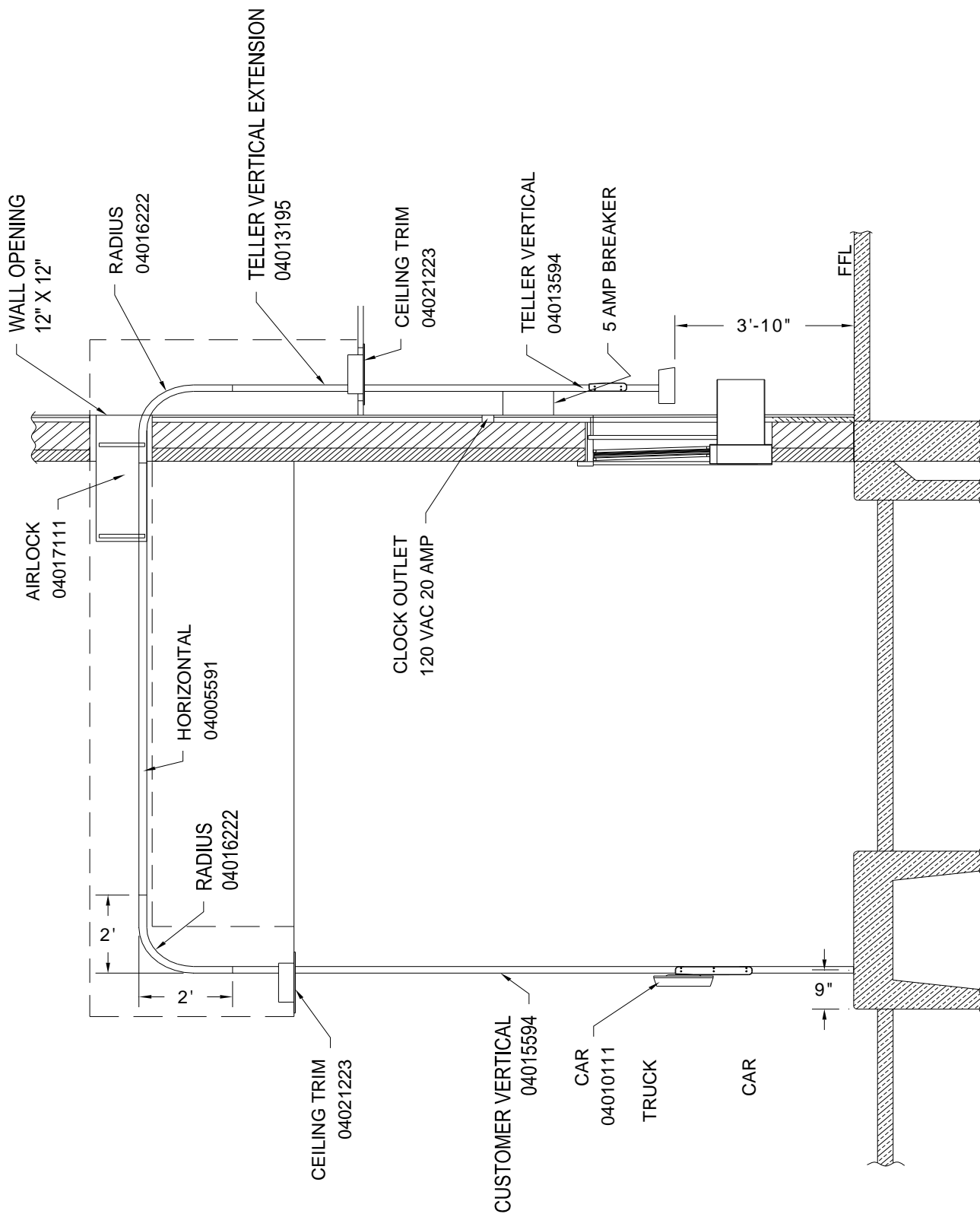
If there are questions about any of the following, contact the Technical Service Department at (513) 677-0500.

Note: Shipping manifests can be found on Pages 29-32; a listing of required tools on Page 28.

TransTrax[®] Overview Diagram



TransTrax® II Overview Diagram



Installation

Installation Overview:

The process of installing a TransTrax[®] into a building consists of first mounting the teller end, attaching the radius, adding the horizontal section, attaching the customer radius, and then mounting the customer end. 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 Trans Trax[®]. These are intended to be used when installing the *CEILING TRIMS* and *AIRLOCKS* 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 teller, customers 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 TransTrax[®].

Installation Procedures:

The first part of the TransTrax[®] Kit is a completely assembled *TELLER 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.

CAUTION: The *WALL STANDOFF* supports the entire weight of the *TELLER 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 bottom of the *TELLER 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.

The *TELLER 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 (see page 11).

NOTE: The area of the *TAPE SLOT* where the tubes are joined must actually be *CHAMFERED* on both tubes and on the top and bottom track and not just deburred to allow the tape to pass easily in the event of a slight misalignment. Inspect the factory prepared ends for an example. The factory prefers to use a conical rotary cutter in a high speed grinding tool such as a Dremel.

Pass the *WIRING HARNESS* 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 PLATE* (see page 11). Be careful when running screws into the tubing not to nick or cut any of the wires.

The *FORMED RADIUS* needs to be attached to the *TELLER VERTICAL EXTENSION* using the extruded internal *SPLICE PLATES* (see page 11).

CAUTION: The *FORMED RADII* are not designed to be cut. They were designed to be used as is. Any modifications to this component voids the warranty and will likely yield less than acceptable operation.

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.

The *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 UNIT*. The *CUSTOMER BASE UNIT* 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 12). Note that the holes must be predrilled with the short 1/8" 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 11).

The *FORMED RADIUS* needs to be attached to the *CUSTOMER VERTICAL UNIT* using the extruded internal *SPLICE PLATES* (see page 11).

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 deburr and chamfer each end of the tubing before proceeding (see page 11).

Airlock Assembly:

The *AIRLOCK ASSEMBLY* is a two-piece design. Attach the *AIRLOCK BOTTOM* using the self-tapping screws provided (see pages 3 & 4). 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" square opening with insulating material and cover with drywall, sheathing board or other appropriate material.

Ceiling Trims:

NOTE: When a skin is used on the customer end, no ceiling trim is utilized.

Secure the *CEILING TRIM* halves together around the TransTrax[®] 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 TransTrax[®] 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 car 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. (See Skin Section, page 14.)

Installing Tape:

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 *TELLER VERTICAL UNIT*. Cut the tape two feet longer than this dimension. Remove the tape and dress the ends (see page 12). Attach the *CARRIER* to the *TAPE* (see page 13). 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 *TELLER VERTICAL UNIT*, engage 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*.

Power Connection:

The AC Line connection is at the top of the *TELLER VERTICAL STANDOFF*. Connection method should comply with all authorities having jurisdiction, (i.e. National, State or Local

Electrical Codes). A 1/2" knockout is provided on a single gang box cover. Removing the cover will reveal three leads for termination.

*The white wire is the neutral.
The black wire is the hot. (Single-phase 120vac)
Green is for ground.*

NOTE: To reduce the risk of shock hazard of both line voltage and static, the ground must be connected to a good earth ground.

The wiring can be enclosed in flexible metallic or nonmetallic conduit. If a cord connection is acceptable, one is provided in the kit complete with strain relief. Please reduce the cord to a minimum length before connecting. Do not use an extension cord for permanent wiring and do not run the cord through or conceal in walls, ceilings and or other permanent fixtures.

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**.

For TransTrax[®] Model II: 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.

For TransTrax[®]: With the power on, pressing the *RECALL* button should cause the *CARRIER* to come in. By pressing the *SEND* button, the *CARRIER* should go out to the stop position. If the *CARRIER* does not run, or does not run smoothly, please consult the factory for assistance.

Wiring:

The wiring for the TransTrax[®] is connectorized and is enclosed within the tubing of the machine. The vertical cable extends through the radii and connects with the horizontal cable on each end. The horizontal cable is identical on both ends and cannot be installed backwards.

Shift Point Adjustment:

Open the hinged *TELLER 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 28). **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 teller. **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 **CARRIER** may flip out of the car. Adjust the **SEND** pot so that when the **CARRIER** is traveling from the teller 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 teller, 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 pulling forward the side opposite the magnet, pushing back 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. On all TT Microprocessor Boards dated 1/19/00 or after, the Run LED is on constant. 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 *TELLER STANDOFF LEFT COVER*.

Audio Adjustment

Access to the *AUDIO SYSTEM* can be found under the right hand cover of *WALL STANDOFF*. If field adjustment of the *AUDIO SYSTEM* is necessary, it should be performed as follows:

With the teller speaking into the *INSIDE MICROPHONE* and a vehicle present at the *CUSTOMER UNIT*, the *OUTGOING VOLUME CONTROL* on the *AUDIO BOARD* should then be adjusted for satisfactory volume. The *INCOMING VOLUME CONTROL* on the *AUDIO BOARD* should be adjusted clockwise until feedback occurs, then counterclockwise until feedback stops. This should complete the adjustment. If the incoming level is not sufficiently high enough, the outgoing level will have to be reduced to be able to get additional incoming volume. The gain levels are a balance; adjustment of each has an effect on the other. If the incoming level is too high, the *TELLER INCOMING VOLUME CONTROL* can be adjusted to a lower level.

Older TransTrax[®] Model II audio included a *BOOST* feature. When the *BOOST* button is depressed, the incoming audio level is increased substantially. Note that to prevent feedback, the outgoing audio is turned off while the *BOOST* button is depressed. If feedback occurs when the *BOOST* button is activated, consult the factory.

Autocycler **TT-2 only**

The TransTrax[®] model II is equipped with an autocycler that can be activated to run the car in and out. This is useful to check the unit for proper operation after installation or service.

The procedure for doing this is as follows:

1. Recall the car to the inside stop.
2. Turn the power off using the breaker located on the bottom of the black standoff.
3. Press and hold the car and truck buttons on the teller control panel while turning the breaker back on.
4. When the car starts moving, release the car and truck buttons.

To turn off the autocycler, press the power button on the teller control panel and turn off the unit. To resume normal operating procedure, press the power button and turn the unit on.

Please consult the factory on how to start the autocycle for TT-1 units.

TRACK PREPARATION

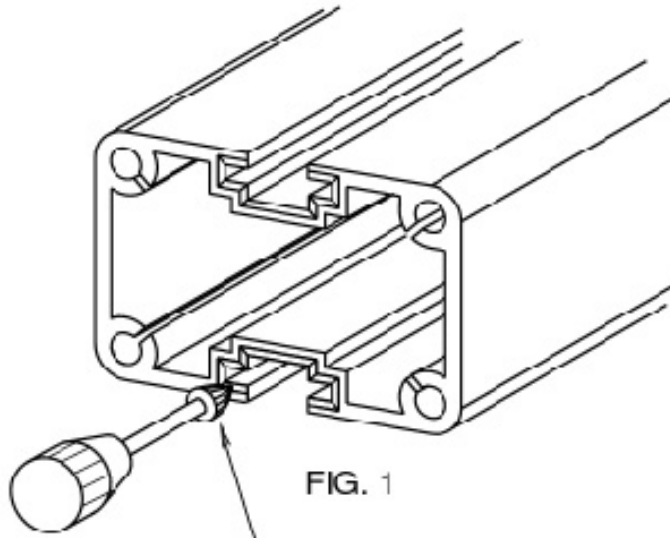


FIG. 1

USE 1/8" CONICAL BURR
125 DREMEL

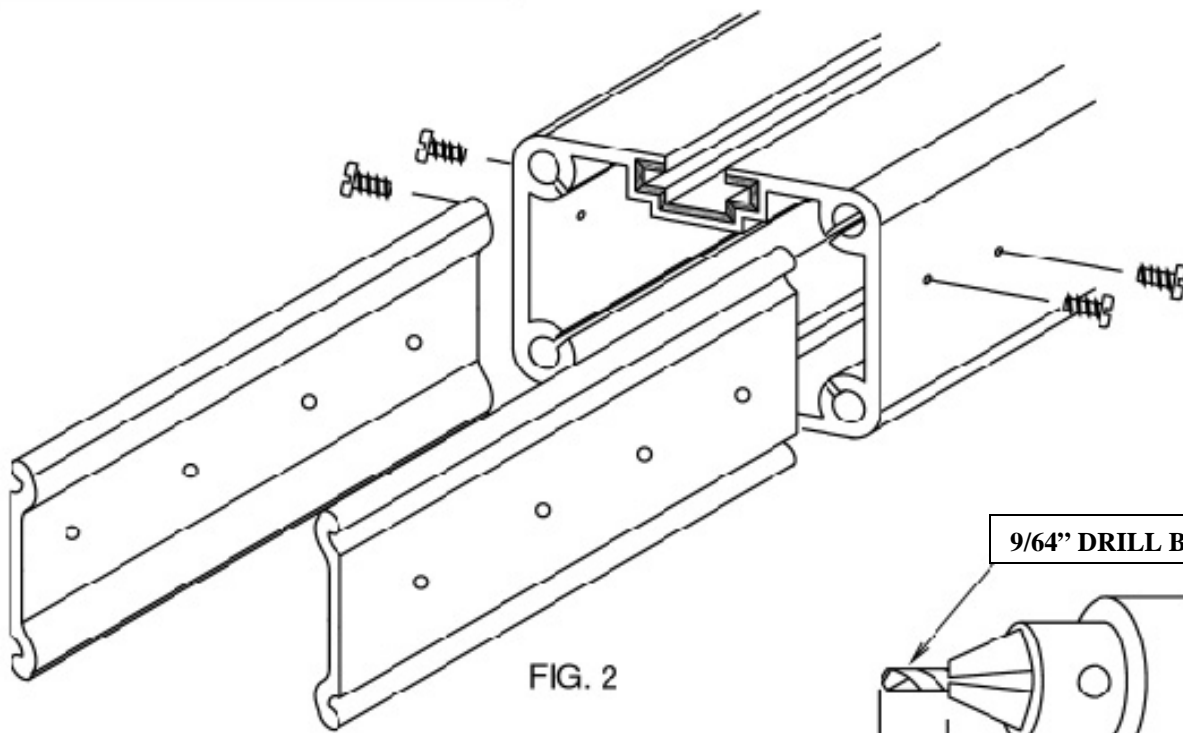
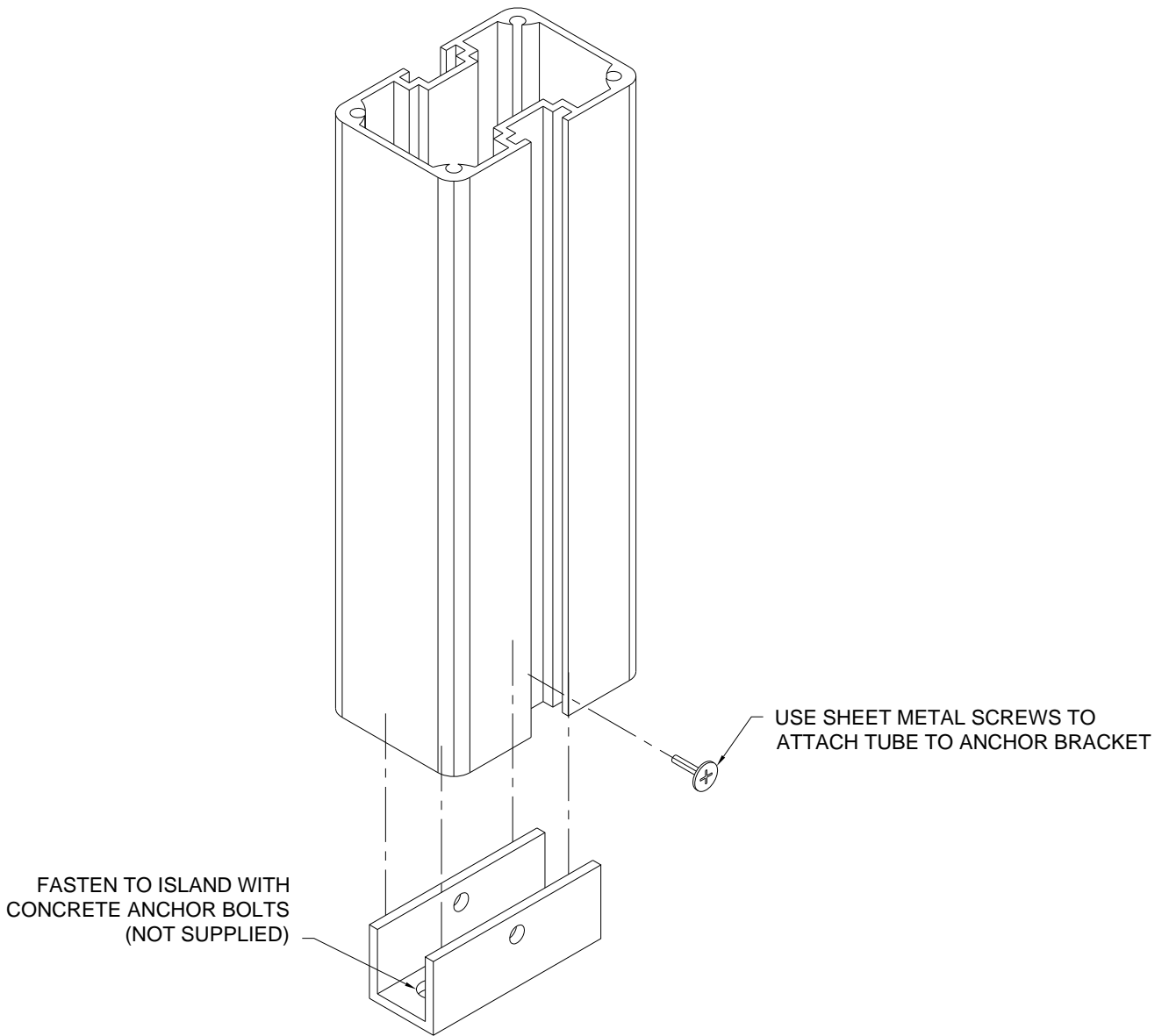


FIG. 2

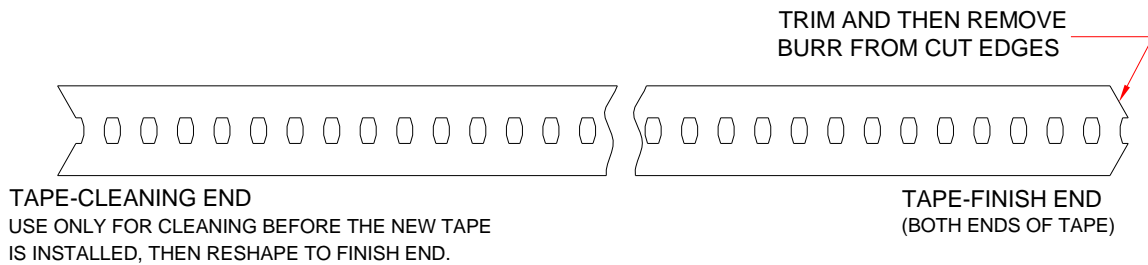
9/64" DRILL BIT

9/32"

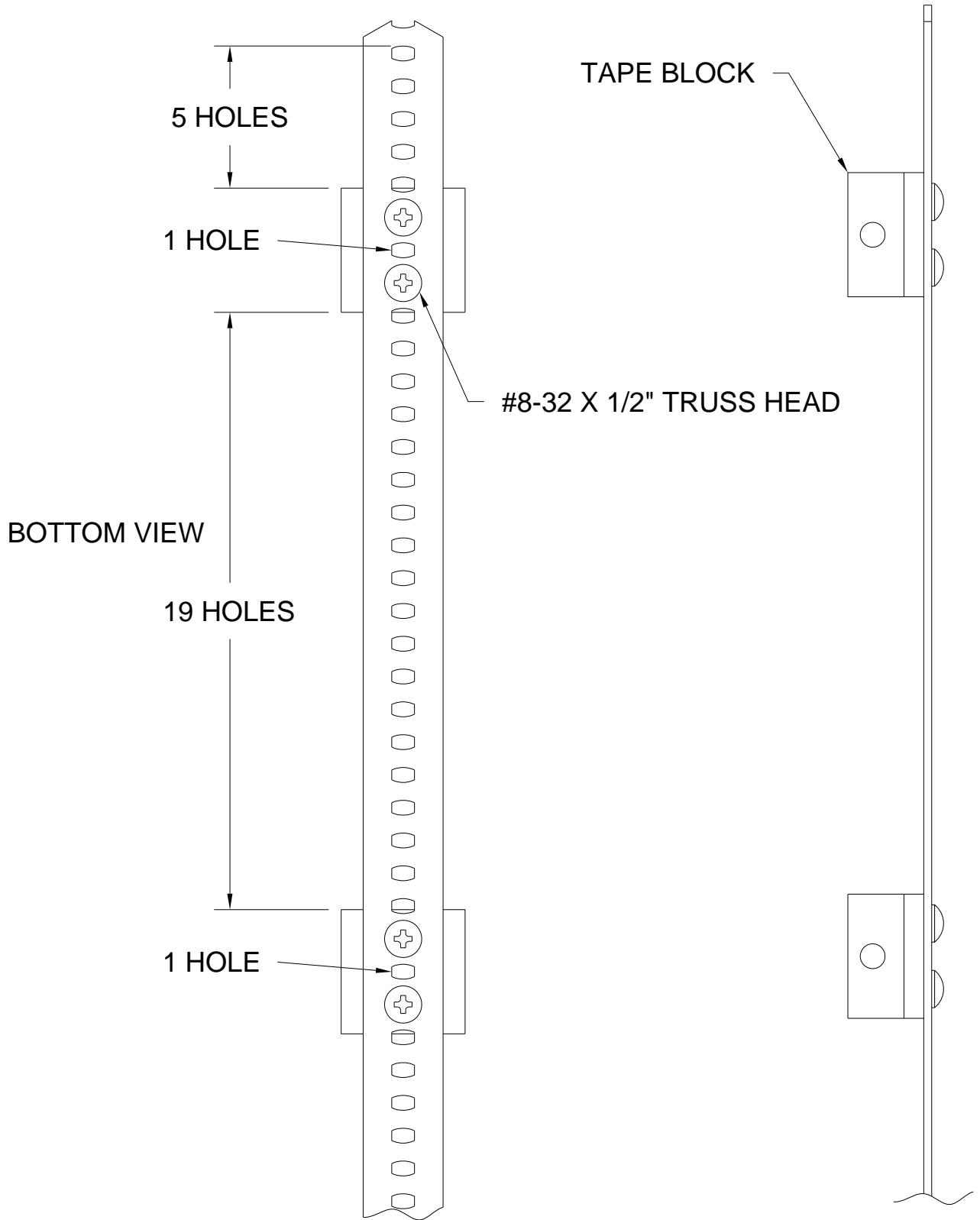
Customer Mounting & Tape Preparation Diagram



TAPE PREPARATION



Tape Block Mounting Diagram



TransTrax[®] Optional Skin

Note that the customer CEILING TRIM that contains the flaps is not used in conjunction with the skin kit.

Installation Procedures:

This skin kit is of a two-piece design that makes installation much easier and includes a lid that gives full coverage for the backside of the customer unit. The skins now come 12' tall as standard, which has eliminated the need for extensions on very tall installations.

Remove the *CUSTOMER SPEAKER PANEL* and then remove the speaker from it. The speaker will get reattached to the speaker plate with the #4-40 nuts provided.

Cut both the skin and lid to suit the site requirements. Be sure to protect the powder-coated surfaces with duct tape to prevent scratches when cutting. Cut the amount equal to the height of the island off of the *BOTTOM* of the skin, and then cut the amount off of the *TOP* of the skin necessary to fit under the canopy ceiling.

Note that the *TT CEILING FLANGE* should be slipped over the skin and customer tube during this step as it will need to be installed later. Mount the back of the two-piece skin to the back of the tubing with the sheet metal screws provided. The "C" skin then goes around the *CUSTOMER VERTICAL TUBE* and control panel and mounts to the skin back. As always, be careful if predrilling screw holes or driving screws to not hit any of the wiring.

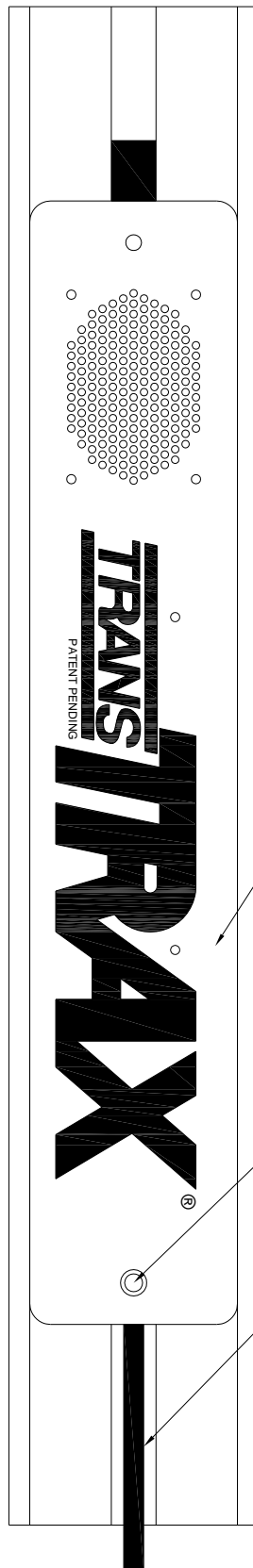
Mount the speaker filler plate over the speaker grid on the inside of the *CUSTOMER SPEAKER PANEL* with the #4-40 nuts provided. Attach the speaker extension harness to lengthen the harness between the audio board and speaker. Run the speaker extension harness down the tape slot of the customer vertical. Attach the *CUSTOMER SPEAKER PANEL* back on the customer vertical being careful not to run the bottom flathead screw into or pinching the speaker extension harness. See diagram on page 15.

Run the speaker extension harness through the skin and connect to the speaker harness extending from the speaker on the speaker plate. Mount the plate to the face of the skin with the sheet metal screws provided.

Install *TT CEILING FLANGE* to the tubing with the self-drilling sheet metal screws provided and to the skin on the outer face of the skin (see page 17). Then attach the *TT CEILING FLANGE* to the ceiling.

<p>NOTE: The <i>TT CEILING FLANGE</i> and Square Trim Bottom Panel are necessary to prevent the <i>SKIN</i> from twisting and interfering with the CARRIER.</p>

Speaker Panel Mounting Diagram



RUN THE SPEAKER
EXTENSION CABLE
OUT THE BOTTOM
OF THE SPEAKER PLATE

MOUNT THE SPEAKER PANEL
THE SAME WAY AS YOU
REMOVED IT.

BE SURE THAT YOU
DO NOT CUT OR PINCH
THE SPEAKER EXTENSION
CABLE WHEN TIGHTENING
THE FLAT HEAD SCREW.

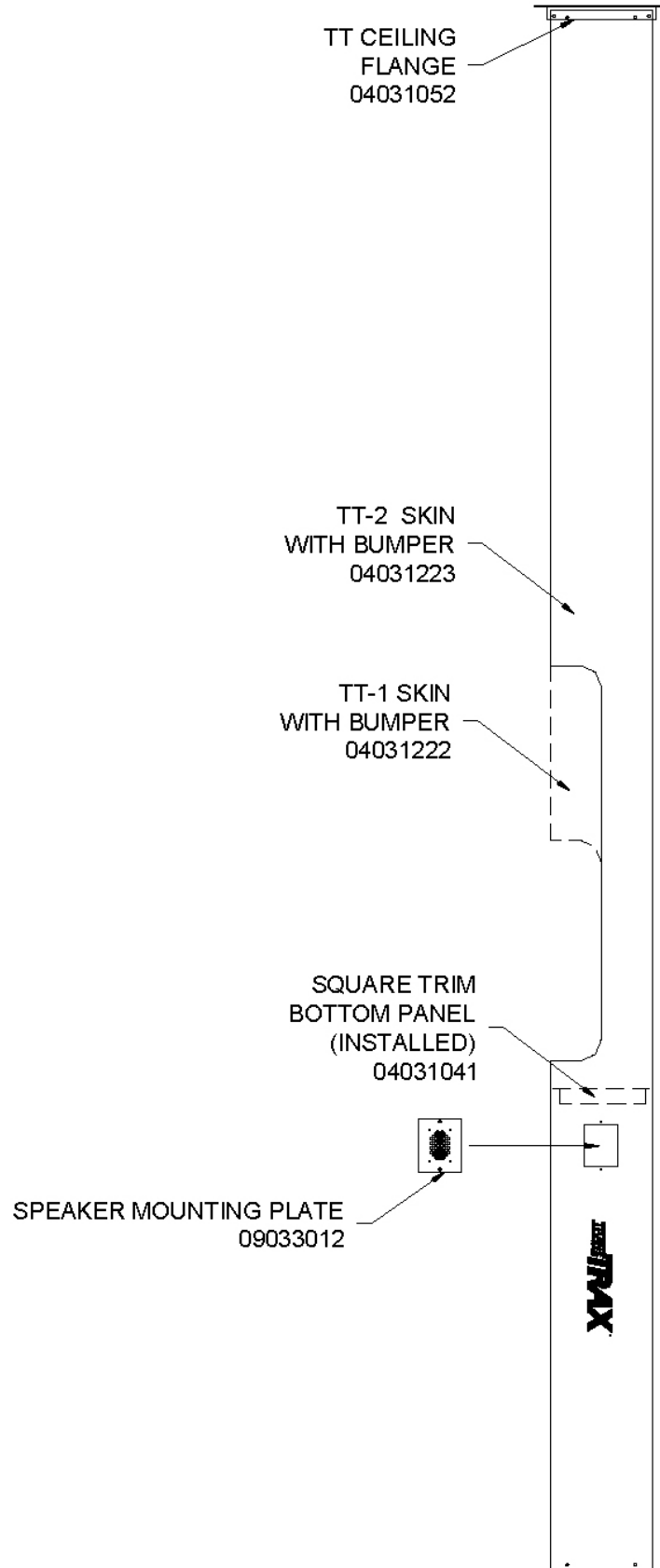
CONNECT THE SPEAKER
EXTENSION CABLE TO THE
SPEAKER HARNESS COMMING
FROM THE CUSTOMER SPEAKER.

CUSTOMER SPEAKER
PANEL

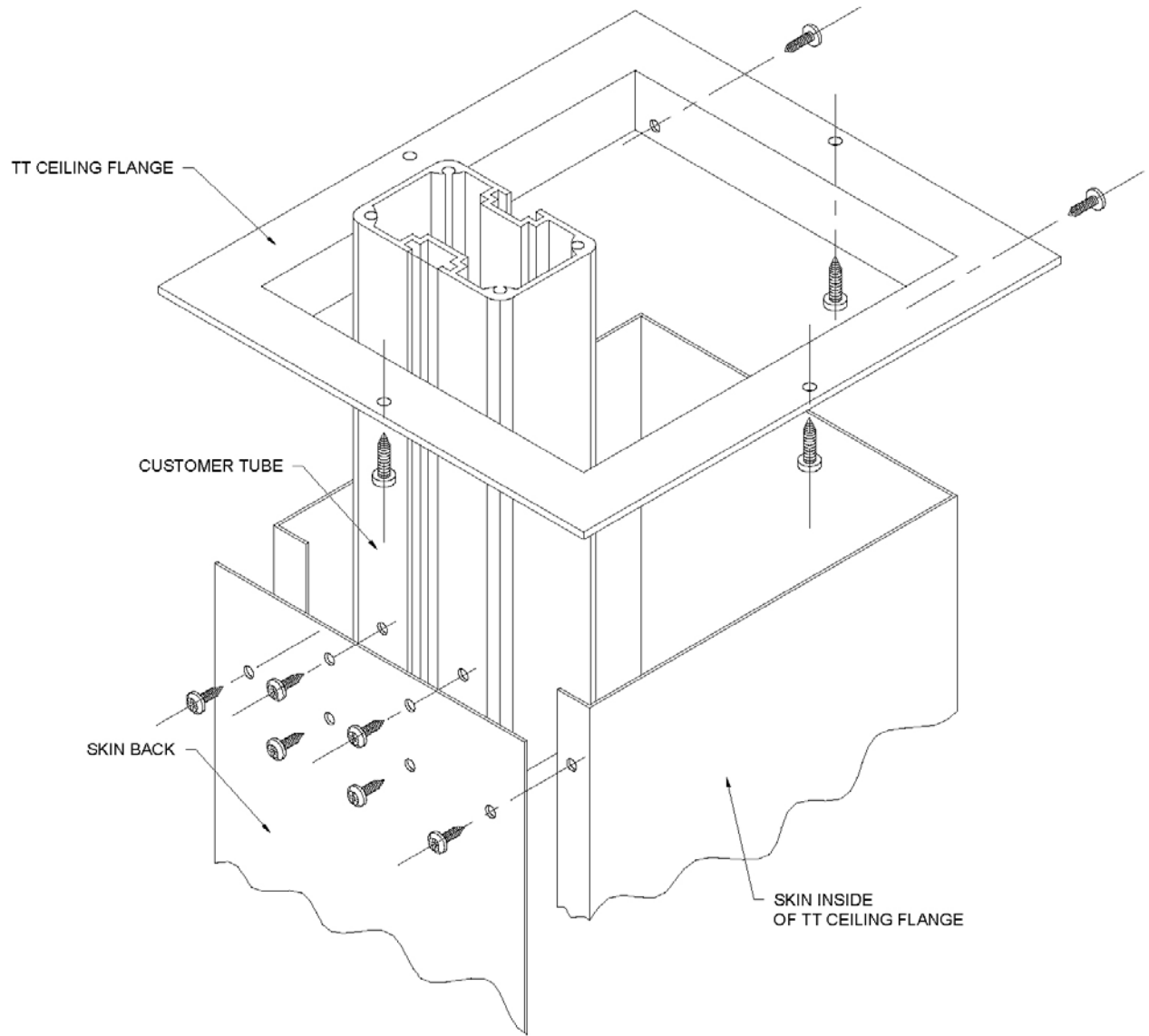
FLATHEAD
SCREW

SPEAKER EXTENSION
HARNESS

TransTrax[®] Optional Skin Diagram



TransTrax[®] II Overview Diagram



Troubleshooting the TransTrax[®]

This section assumes that the machine in question has been inspected for loose, damaged or missing parts, tape, belts, wiring, etc.

NOTHING WORKS:

Check the 110vac power coming into the machine. Do this by removing the plug from the onboard three-position connector marked *POWER*. Insert the meter leads into positions 1 & 2 (the two positions closest to the tapered end of the connector) of the connector with the pigtail. You should measure 110vac. No 110vac, you need to check the circuit breaker in the bank or have an electrician restore power to the unit. If 110vac is present, replace the *AC POWER* fuse. If it blows again, check for shorted control or audio wiring and a bad *AUDIO BOARD*.

POWER ON LED WON'T COME ON:

This presumes that the audio works and the machine runs properly. Replace the *TELLER SWITCH ASSEMBLY*. Press the power on off button. If the LED doesn't come up, replace the *CONTROL BOARD*.

CARRIER WON'T RUN IN WHEN RECALL BUTTON IS DEPRESSED:

This presumes that the carrier will run out. Check the LED marker T-L, teller limit. It should not be on. If it is, replace the *TELLER STOP SWITCH*. If it is not, press the button marked *RECALL*. When the *RECALL* button is depressed, the LED marked RCL, recall, should be on. If it does not come on, replace the *TELLER SWITCH ASSEMBLY*. If it does come on, replace the *CONTROL BOARD*.

CARRIER WON'T RUN IN WHEN CUSTOMER START 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 *TELLER 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 does come on, replace the *CONTROL BOARD*.

CARRIER WON'T RUN OUT WHEN SEND BUTTON IS DEPRESSED (FOR TRANSTRAX[®]):

This presumes that the carrier will run in. Check the LED marked C-L, customer limit. It should not be on. If it is, replace the *CUSTOMER STOP SWITCH*. If it is not, press the teller button marked *SEND*. When the button is depressed, the LED marked SND, send, should be on. If it does not come on, replace the *TELLER SWITCH ASSEMBLY*. If it does come on, replace the *CONTROL BOARD*.

CARRIER WON'T RUN OUT WHEN THE CAR BUTTON IS DEPRESSED (FOR TRANSTRAX® MODEL II ONLY):

This presumes that the carrier will run in. Check the LED marked C-L, customer limit. It should not be on. If it is, replace the *CAR STOP SWITCH*. If it is not, press the teller button marked out. When the button is depressed, the LED marked SND, send, should be on. If it does not come on, replace the *TELLER SWITCH ASSEMBLY*. If it does come on, replace the *CONTROL BOARD*.

CARRIER WON'T RUN OUT WHEN THE TRUCK BUTTON IS DEPRESSED (FOR TRANSTRAX® MODEL II ONLY):

This presumes that the carrier will run in. Check the LED marked TR-L, truck limit. It should not be on. If it is, replace the *TRUCK STOP SWITCH*. If it is not, press the teller button marked out. When the button is depressed, the LED marked TRK, truck send, should be on. If it does not come on, replace the *TELLER SWITCH ASSEMBLY*. If it does come on, replace the *CONTROL BOARD*.

CARRIER WON'T RUN EITHER DIRECTION:

This presumes that the audio, power LED and audio LED work properly. If they do not, go to the paragraph on "*NOTHING WORKS*". First replace the *MOTOR FUSE*. Replace it only with an AGC10 fuse. This is a UL listed fuse rated for 120vac. Do not use fuses rated for only 32vac. If the carrier does not run, proceed to the paragraph "*CARRIER WON'T RUN IN WHEN TELLER RECALL BUTTON IS DEPRESSED*". If the carrier still won't run, replace the *MOTOR*.

CARRIER WON'T SHIFT INTO HIGH SPEED:

Adjust the speed shift points as instructed on page 8. If the **CARRIER** will still not run in high speed, monitor the voltage to the motor at the connections to the motor in the power module. Note: These connections are fully insulated quick connects, however, there is room to carefully slip meter leads into them sufficient to make contact for measuring purposes. The motor must be connected for this test. Run the **CARRIER**. The voltage should be approximately 36vdc in slow and 88vdc in high. If the voltage changes and the speed doesn'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 CHAIN LED. This LED should flash on twice for each revolution of the motor. If it does not, replace the **DRIVE 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 8.

CARRIER OVERRUNS STOP POSITION ON TELLER 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 stop position and the magnet positioned on one of the stop switches, check the LED labeled T-L. It should be on. If it is not, replace the *SWITCH*; if it is still not on, replace the *CONTROL BOARD*.

CARRIER OVERRUNS THE CAR & TRUCK STOP POSITIONS ON THE CUSTOMER END (FOR TRANSTRAX[®] MODEL II ONLY):

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 labeled C-L. With **CARRIER** at truck stop position, check LED labeled TRK-L. It should be on. If it is not, replace the *SWITCH*; if it is still not on, replace the *CONTROL BOARD*.

CARRIER OVERUNS STOP POSITION ON CUSTOMER END (FOR TRANSTRAX[®] ONLY):

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 labeled C-L. It should be on. If it is not, replace the *SWITCH*; if it is still not on, replace the *CONTROL BOARD*.

AUDIO WON'T WORK:

It is assumed that the machine and call tone work properly. If not, refer to the paragraph "*NOTHING WORKS*". Press the audio on/off switch and the audio LED should come on. If it does not, replace the *TELLER SWITCH ASSEMBLY*. If the audio LED will still not come on, replace the *CONTROL BOARD*. With the audio LED on and still no audio, temporarily disconnect the brown four position connector. With a jumper, short the brown wires on the end connected to the audio board. If the audio works, replace the *CONTROL BOARD*. If the audio does not work, replace the *AUDIO BOARD*.

AUDIO WON'T WORK INCOMING:

This presumes that there is outgoing audio. Perform the audio adjustment as outlined on page 9. If there is no incoming audio, temporarily disconnect the outside field wiring under the logo/speaker plate. Touch a black lead of the shielded pair with your finger. If a 60 cycle hum is heard in the inside speaker, replace the *OUTSIDE MICROPHONE*. If no hum is heard, temporarily replace the *INSIDE SPEAKER*. If there is incoming audio, permanently install the new speaker. If no incoming audio is heard, replace the *AUDIO BOARD*.

AUDIO WON'T WORK OUTGOING:

This presumes that there is incoming audio. Perform the audio adjustment as outlined on page 10. If there is no outgoing audio, temporarily disconnect the *INSIDE MICROPHONE* inside the

power module. Touch the black lead of the shielded pair with your finger. If a 60 cycle hum is heard in the outside speaker, replace the *INSIDE MICROPHONE*. If no hum is heard, temporarily replace the *OUTSIDE SPEAKER*. If there is outgoing audio, permanently install the new speaker. If no outgoing audio is heard, replace the *AUDIO BOARD*.

CALL TONE WON'T WORK:

This presumes that there is incoming and outgoing audio. Temporarily disconnect the brown four position connector. Short the two yellow wires together on the lead coming from the audio board. If the call tone comes on, replace the *CALL BUTTON*. If the tone does not sound, replace the *AUDIO BOARD*.

Maintaining the TransTrax®

Overview:

The TransTrax® 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.

Weekly Maintenance:

Weekly, or even daily, the TransTrax® should be wiped down on both the customer and teller end to remove road grime and other environmental contaminants.

NOTE: Cleaning is the single most important aspect of TransTrax® maintenance.

One may also notice a light gray to black dust. This material is produced by the TransTrax® 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 TransTrax® 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 TransTrax®. 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 TransTrax®. However, conditions of the "real world" may be more harsh 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.

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 TransTrax[®] 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 button sends the carrier out to the customer end of the unit. Pressing the RECALL button brings the carrier back into the teller end of the unit.

Audio:

The audio is activated when the AUDIO button is pressed and the LED is illuminated. All adjustments for audio volume levels are set at time of installation. See the audio section of this manual in order to make adjustments.

Overloaded Carriers:

If a customer overloads a carrier, there are two possible outcomes when the carrier is sent in toward the teller 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 box from the car. Send it into the teller and then return it to the customer end. The TransTrax[®] is now ready for use.

Carrier does not arrive at teller station:

If an overloaded carrier box has been sent into the bank 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:

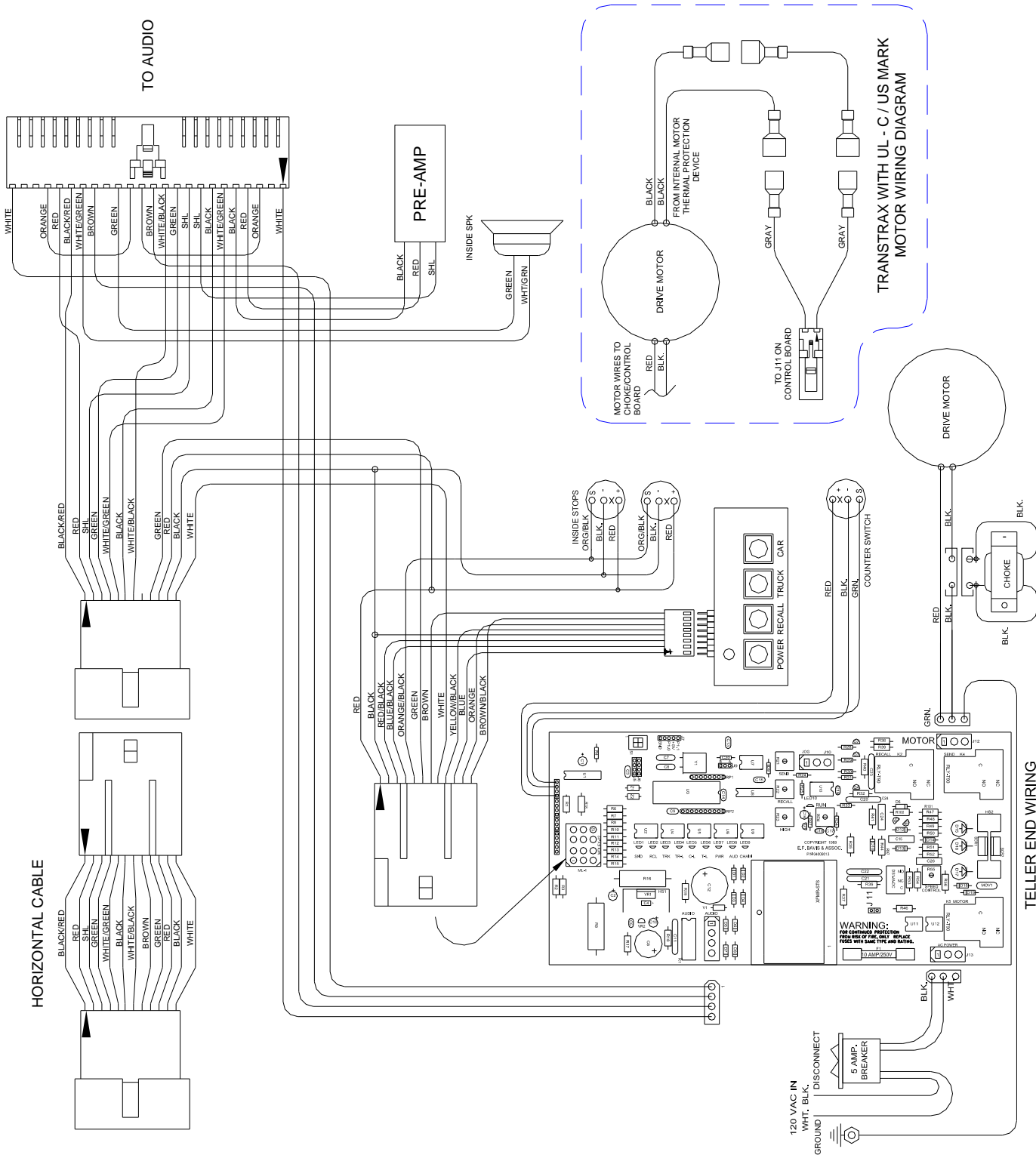
Turn off all power to the machine. Place something like a pen or small screwdriver into one of the holes in the tape and gently and slowly apply downward pressure to move the carrier toward the teller end. Once the carrier is in reach, remove the carrier box from the car. Then turn on the power and press the recall button. The machine should now be reset for normal use.

Remove carrier and retrieve:

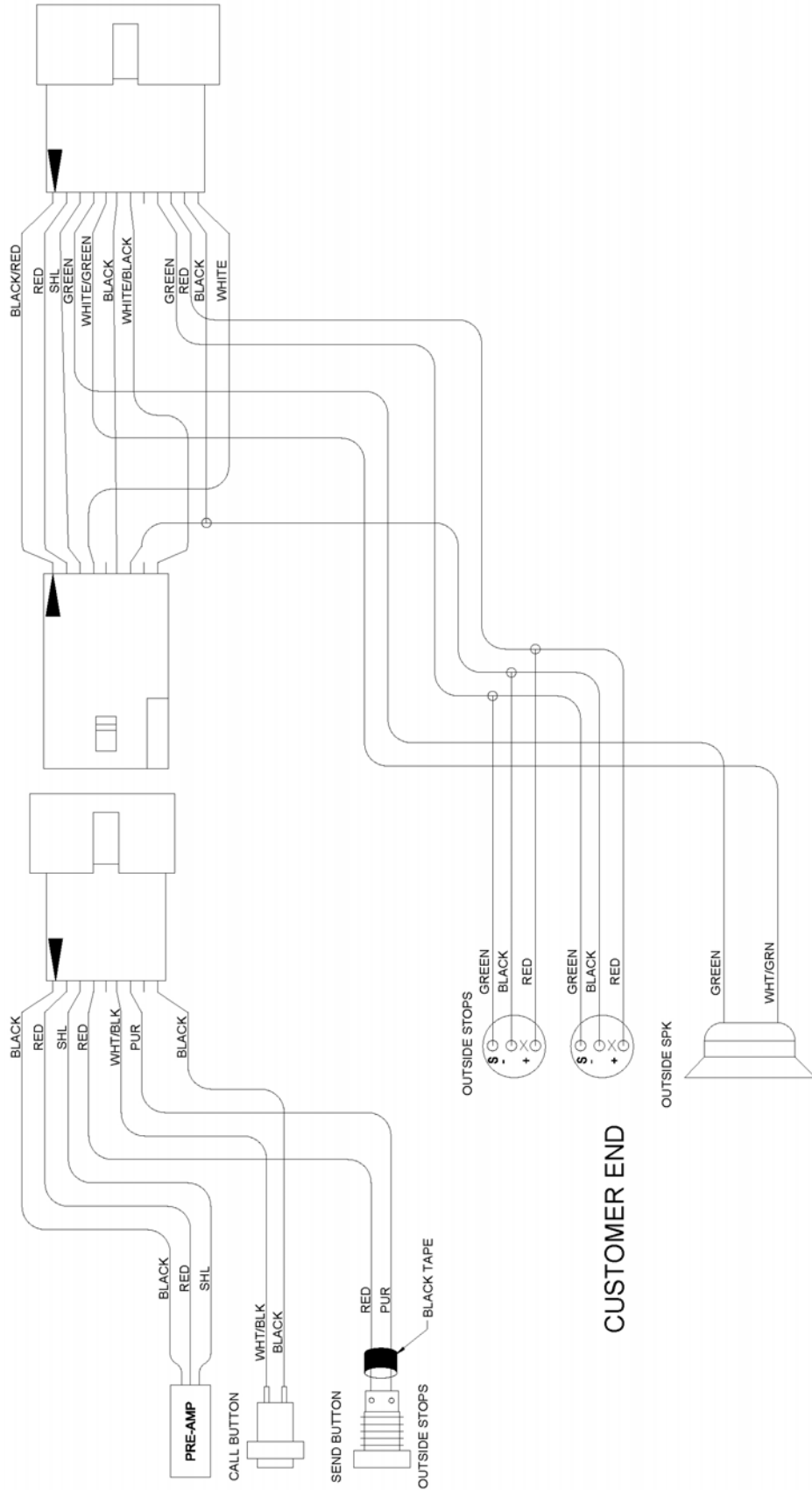
Have a service person get to where the car is located. Remove the overloaded carrier box and then have a user press the RECALL button. The car should move to the teller end and upon arrival be ready for normal use.

As you can see, operation of the unit was designed to be simple.

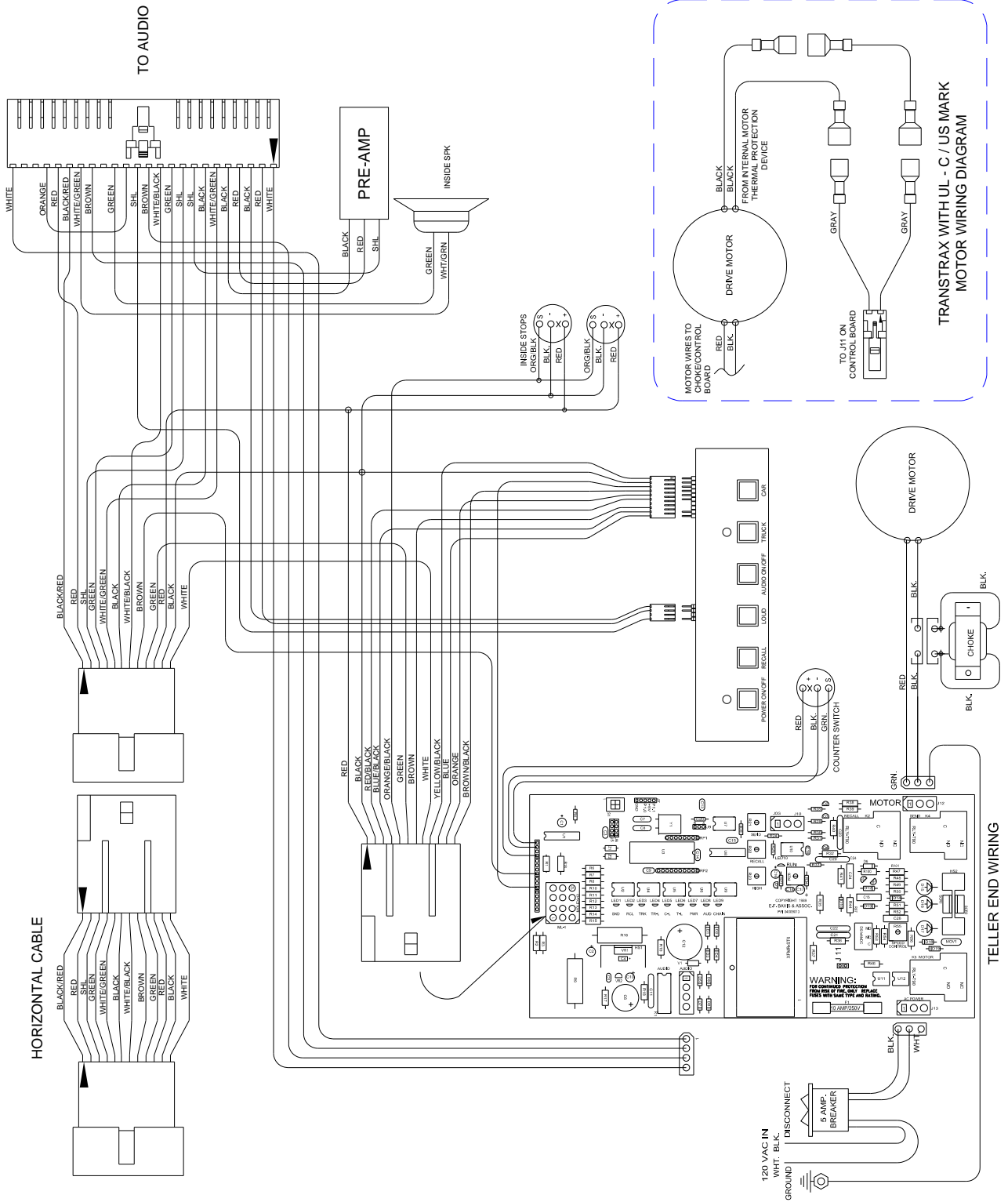
TransTrax[®] Teller Wiring Diagram



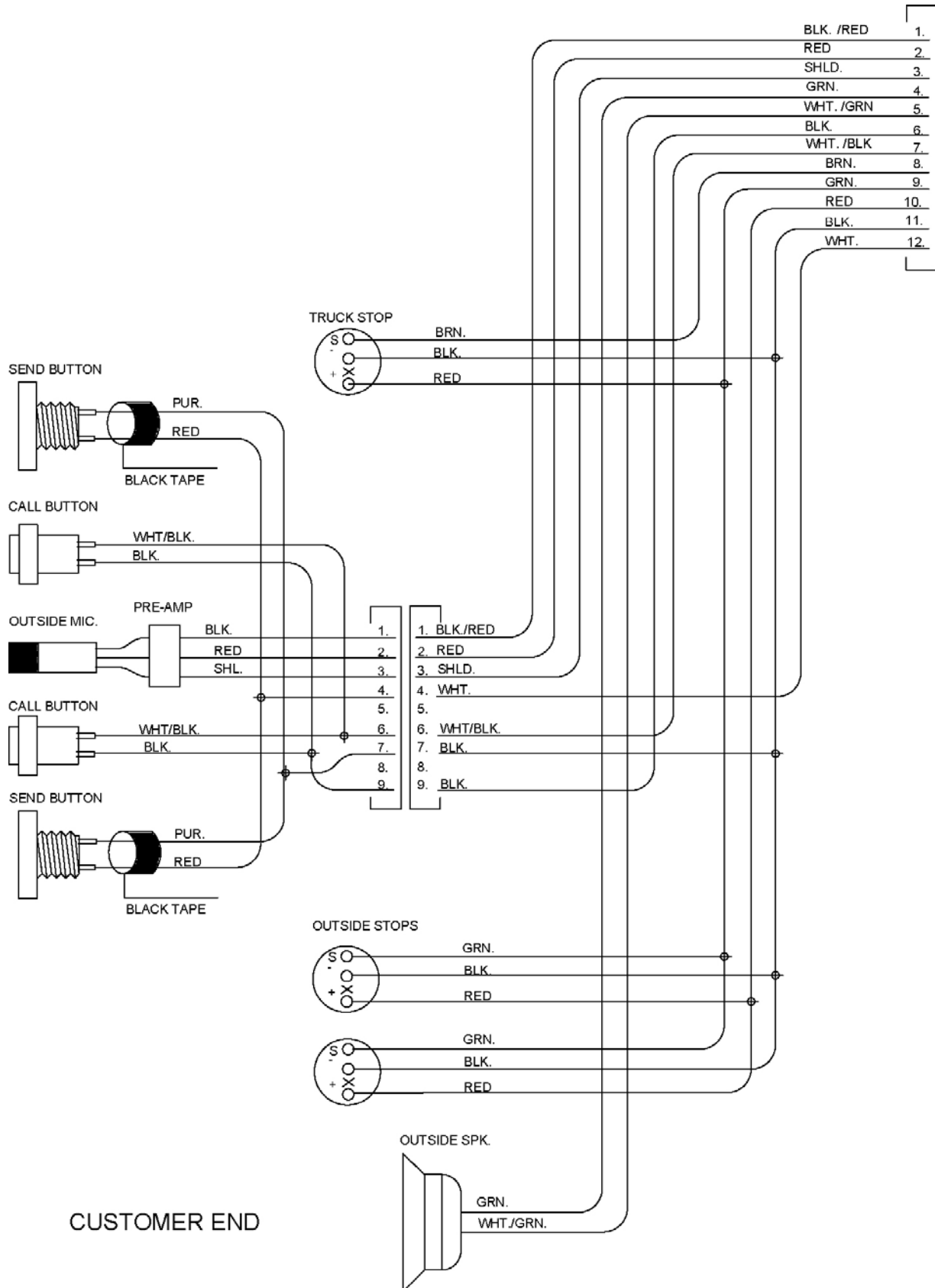
TransTrax[®] Customer Wiring Diagram



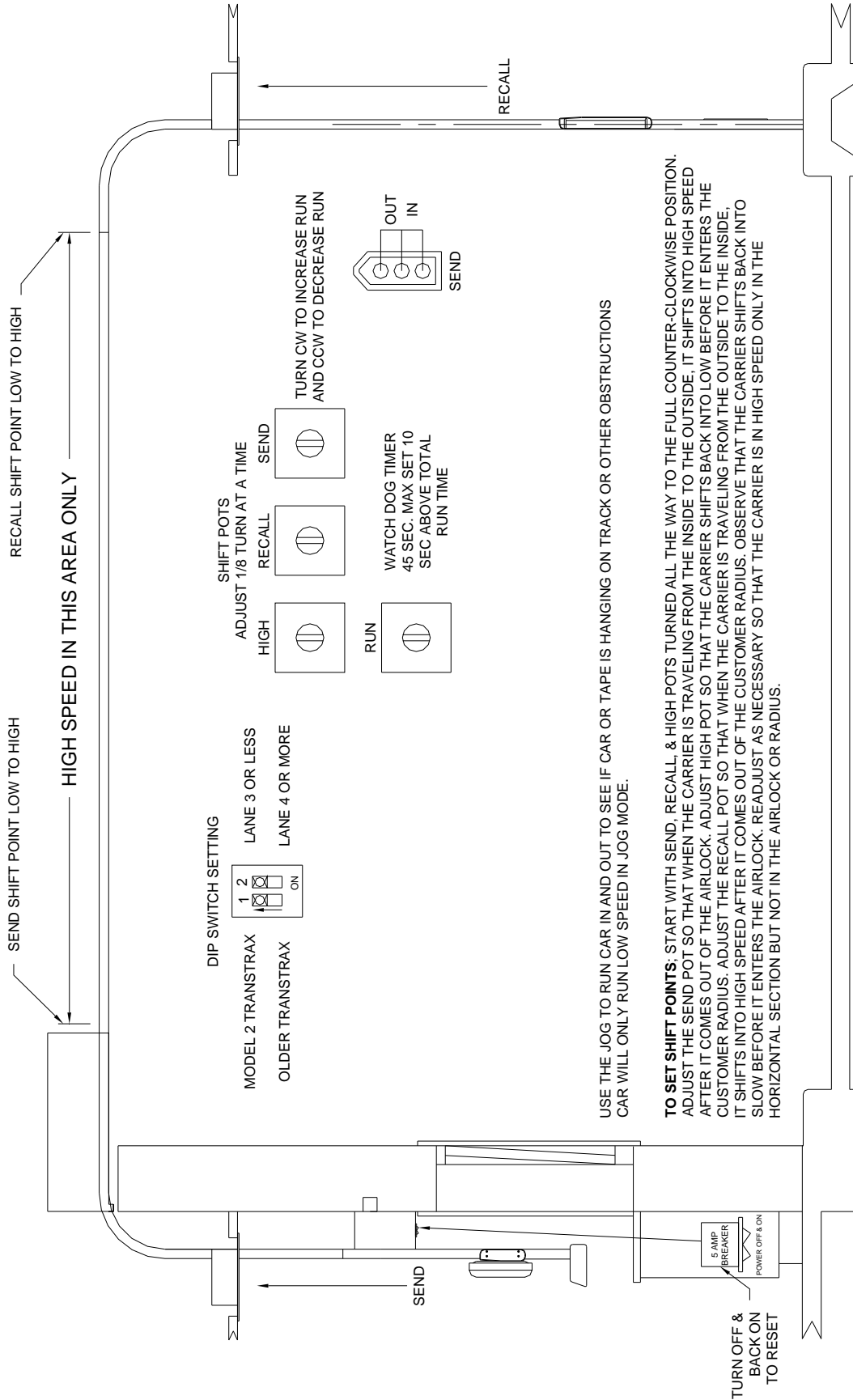
TransTrax® II Teller Wiring Diagram



TransTrax® II Customer Wiring Diagram



Switch Setting Diagram



TransTrax[®] & TransTrax[®] Model II

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)

Serial # _____

TransTrax[®] Shipping Manifest

Part 04000992

<u>Qty.</u>	<u>Description</u>	<u>Part Number</u>
1	Horizontal Section 10'	04005591 _____
1	Car Assembly	04010111 _____
1	Teller Vertical Extension	04013195 _____
1	Teller Vertical Assembly	04013593 _____
1	Customer Vertical Assembly	04015593 _____
2	Formed Radius	04016222 _____
1	TT Airlock Assembly	04017111 _____
2	Ceiling Trim Assemblies	04021223 _____
1	Horizontal Wiring Harness	04024112 _____
1	Trax Documentation Manual	00601011 _____
In Box:		
4	Carriers	00321011 _____
33 ft.	Drive Tape	06820012 _____
In Double Bag:		
6	1" Corner Brace	01008492 _____
2	9/64" Short Drill Bit	55555237 _____
1	High speed dremel cutter	01081021 _____
1	Inside Mic Windscreen Kit	22018991 _____
1	Power Cord	02926031 _____
1	Customer Base	04023011 _____
1	TT Splice Plate 14 Pack	04058991 _____
1	Romex Connector	06926011 _____
1	Bag of Splice Plate Screws	04224011 _____
5	#8-32 x 1/2 Truss Head Screws	93082723 _____
12	#8 x 5/8 sheet screws	93101621 _____
1	Roll of Electrical Tape	22016011 _____

Motor/Machine S/N _____

Control Board S/N _____

Audio Board S/N _____

TransTrax[®] Skin Shipping Manifest

TT Part # 04031992

Qty.	Description	Part Number	
1	TT Skin Lid	04031013	_____
1	TT Skin With Bumper	04031222	_____
1	Square Trim Bottom Panel	04031041	_____
1	TT Ceiling Flange	04031052	_____
1	Speaker Mounting Plate	09033012	_____
5	#4-40 nuts	91005001	_____
3	#8 x 1/2 flathead sheet metal screws	93080123	_____
25	#8 Self Drilling Screws	93101623	_____
4	1" x 8 SST panhead sheet metal screws	93160623	_____
1	Speaker Extension Panel	01022011	_____
1	Speaker Blank Plate	04170011	_____

TransTrax® II Shipping Manifest

Car/Truck Dual Height

Part 04002992

<u>Qty.</u>	<u>Description</u>	<u>Part Number</u>
1	Horizontal Section 10'	04005591 _____
1	Car Assembly	04010111 _____
1	Teller Vertical Extension	04013195 _____
1	Teller Vertical Assembly	04013594 _____
1	Customer Vertical Assembly	04015594 _____
2	Formed Radius	04016222 _____
1	TT Airlock Assembly	04017111 _____
2	Ceiling Trim Assemblies	04021223 _____
1	Horizontal Wiring Harness	04024112 _____
1	Trax Documentation Manual	00601011 _____
In Box:		
4	Carriers	00321011 _____
33 ft.	Drive Tape	06820012 _____
In Double Bag:		
6	1" corner brace	01008492 _____
2	9/64" Short Drill Bit	55555237 _____
1	High speed dremel cutter	01081021 _____
1	Inside Mic Windscreen Kit	22018991 _____
1	Power Cord	02926031 _____
1	Customer Base	04023011 _____
1	TT Splice Plate 14 Pack	04058991 _____
1	Romex Connector	06926011 _____
1	Bag of Splice Plate Screws	04224011 _____
5	#8-32 x 1/2 Truss Head Screws	93082723 _____
12	#8 x 5/8 sheet screws	93101621 _____
1	Roll of Electrical Tape	22016011 _____

Motor/Machine S/N _____

Control Board S/N _____

Audio Board S/N _____

TransTrax® Model II Skin Shipping Manifest

TT Model II Part # 04031993

<u>Qty.</u>	<u>Description</u>	<u>Part Number</u>	
1	TT Skin Lid	04031013	_____
1	TT-2 Skin With Bumper	04031223	_____
1	Square Trim Bottom Panel	04031041	_____
1	TT Ceiling Flange	04031052	_____
1	Speaker Mounting Plate	09033012	_____
5	#4-40 nuts	91005001	_____
3	#8 x 1/2 flathead sheet metal screws	93080123	_____
25	#8 Self-Drilling Screws	93101623	_____
4	1" x 8 SST panhead sheet metal screws	93160623	_____
1	Speaker Extension Panel	01022011	_____
1	Speaker Blank Plate	04170011	_____

