201 Grandin Road
Maineville, Ohio 45039
(513) 677-0500

Vittleveyor® Systems

Reference and Installation Manual

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Vittleveyor® Systems

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Important Safety Instructions

1. READ THESE INSTRUCTIONS.

2. KEEP THESE INSTRUCTIONS.

3. HEED ALL WARNINGS.

4. FOLLOW ALL INSTRUCTIONS.

5. DO NOT CLEAN THIS APPARATUS WITH A WATER SPRAY OR THE LIKE.

6. DO NOT BLOCK ANY VENTILATION OPENINGS. INSTALL IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS.

7. DO NOT INSTALL NEAR ANY HEAT SOURCES SUCH AS RADIATORS, HEAT REGISTERS, STOVES OR OTHER APPARATUS THAT PRODUCES HEAT.

8. ONLY USE ATTACHMENTS/ ACCESSORIES SPECIFIED BY THE MANUFACTURER.

9. TURN THE POWER SWITCH TO THE "OFF" POSITION WHEN THE APPARATUS IS NOT IN USE AND BEFORE SERVICING.

10. REFER ALL SERVICING TO QUALIFIED SERVICE PERSONNEL. SERVICING IS REQUIRED WHEN THE APPARATUS HAS BEEN DAMAGED IN ANY WAY, SUCH AS LIQUID HAS BEEN SPILLED OR OBJECTS FALLEN INTO THE APPARATUS, THE APPRATUS DOES NOT OPERATE NORMALLY.

Grounding Instructions

1. THIS MACHINE MUST BE CONNECTED TO A GROUNDED METAL, PERMANENT WIRING SYSTEM; OR AN EQUIPMENT-GROUNDING CONDUCTOR MUST BE RUN WITH THE CIRCUIT CONDUCTORS AND CONNECTED TO THE EQUIPMENT-GROUNDING TERMINAL OR LEAD ON THE CONVEYOR.

2. DANGER-CHECK WITH A QUALIFIED ELECTRICIAN OR SERVICEMAN IF THE GROUNDING INSTRUCTIONS ARE NOT COMPLETELY UNDERSTOOD, OR IF IN THE DOUBT AS TO WHETHER THE APPARATUS IS PROPERLY GROUNDED.

Overview

The Purpose of the Vittleveyor® System:

The Vittleveyor® System is designed to transport packaged food and currency between food preparation areas and customer serving area. This transport can be at a drive-thru where two points consist of the final order assembly area and the drive-thru lane, or can be some form of internal conveyance where food and/or currency is moved between floors or from one point within a restaurant to another.

The Vittleveyor® is designed to move packaged customer orders quickly in high transaction restaurants. **It was not designed, nor is it suited, to move bulk materials, live loads or any load in excess of 25 pounds.** For best results, make sure that loads are not too heavy.

Applications Served:

While there are many different applications served by the Vittleveyor®, the Vittleveyor® can be classified for purposes of this document by the type of control systems that are present on any given machine. Currently there are two specific control systems. The control types are: Drive-thru and Vertical Reciprocating Conveyor (VCR).

Note that while the programmable controls vary between the two machines, the control box, which handles either of the controls contains the same computer and electronic drive system. What varies in the control box between the two classifications is the program in the computer. Control Boxes are designed to serve either classification once the proper program is loaded.

The Drive-thru Vittleveyor® System:

The Drive-thru Vittleveyor® System provides the user with the following controls:

Server Controls:

The Server Control Panel features the following push button switches: TALK, AUDIO on/off, POWER on/off, TRUCK, CAR and RECALL. Hidden within the server control panel are switches which provide trained service personnel a way to manually operate the carrier. For details on the manual operation, see the section on JOGGING the carrier. There are Light Emitting Diodes (LED's) associated with all of the control button except the TALK button which does not have an LED.

On the bottom section of the control panel is a black customer call buzzer. This buzzer features an adjustable ring which, when rotated, varies the volume of the call buzzer. This buzzer sounds when the customer presses the call button.

Customer Controls:

The Customer controls consist of two lighted "START" buttons to send the carrier to the server end and two "CALL" buttons which, when pressed by the customer, operate a buzzer on the server end. This call button is designed to get the attention of the server when pressed by the customer. Note that the customer control also includes the audio speaker and microphone.

The VRC Vittleveyor® System:

The VRC Vittleveyor® provides the user with the following controls:

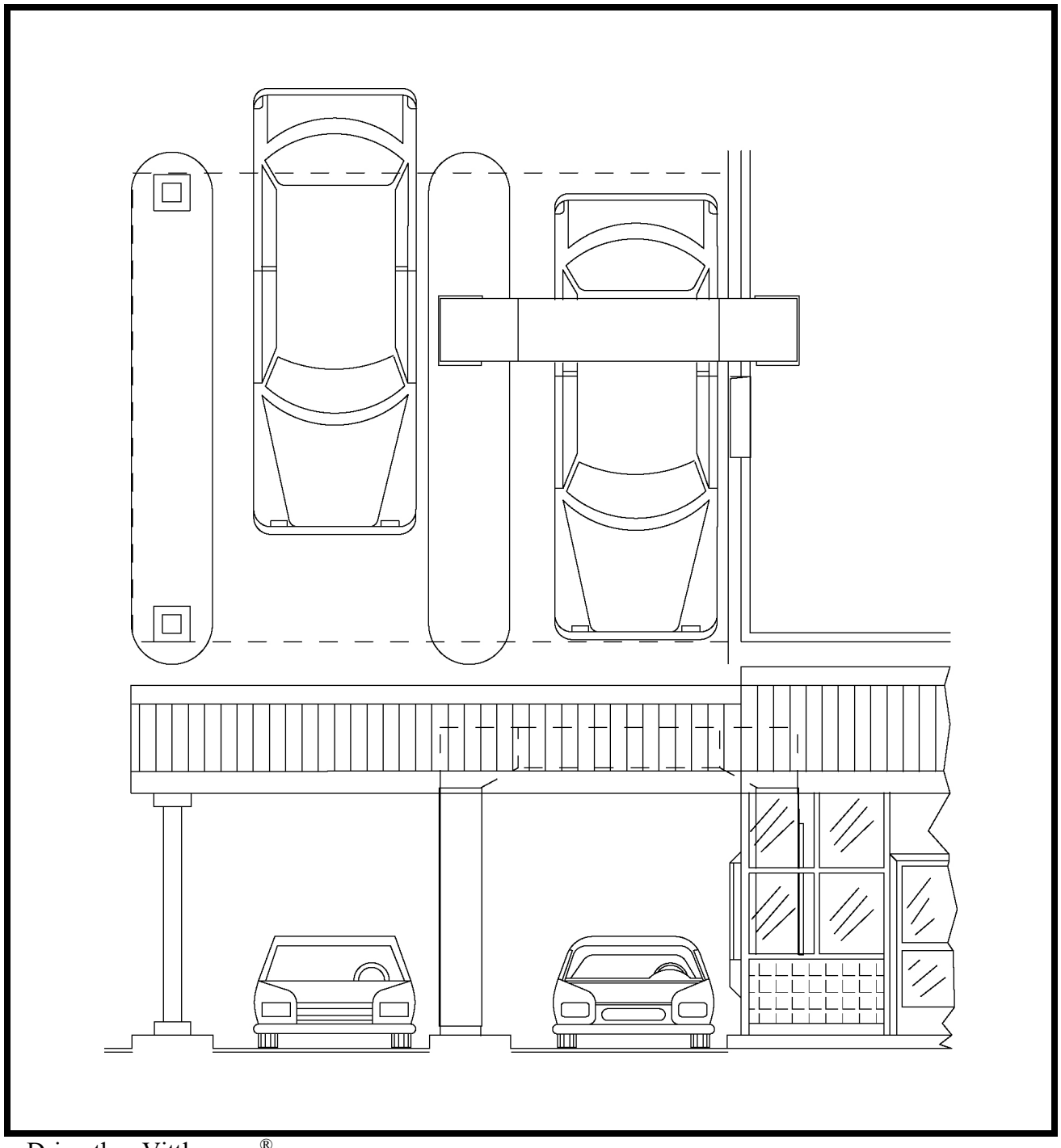
Upper Station:
The upper station offers the user only a lighted SEND button. Note that the light is only operational when the carrier is in motion. There are options available for a key switch recall and a carrier arrival buzzer light combination, but these features are not included with a system unless ordered specifically when the unit is purchased.

Lower Station:
The lower station offers the user a lighted SEND button, a POWER on\off switch, a key switch for manual carrier operation and an arrival buzzer/light combination annunciator.

User Operation Instructions

The Drive-thru Vittleveyor® System:

The operation of Drive-thru Vittleveyor® is straightforward. It consists of having the server press the appropriate button to initiate the desired function.

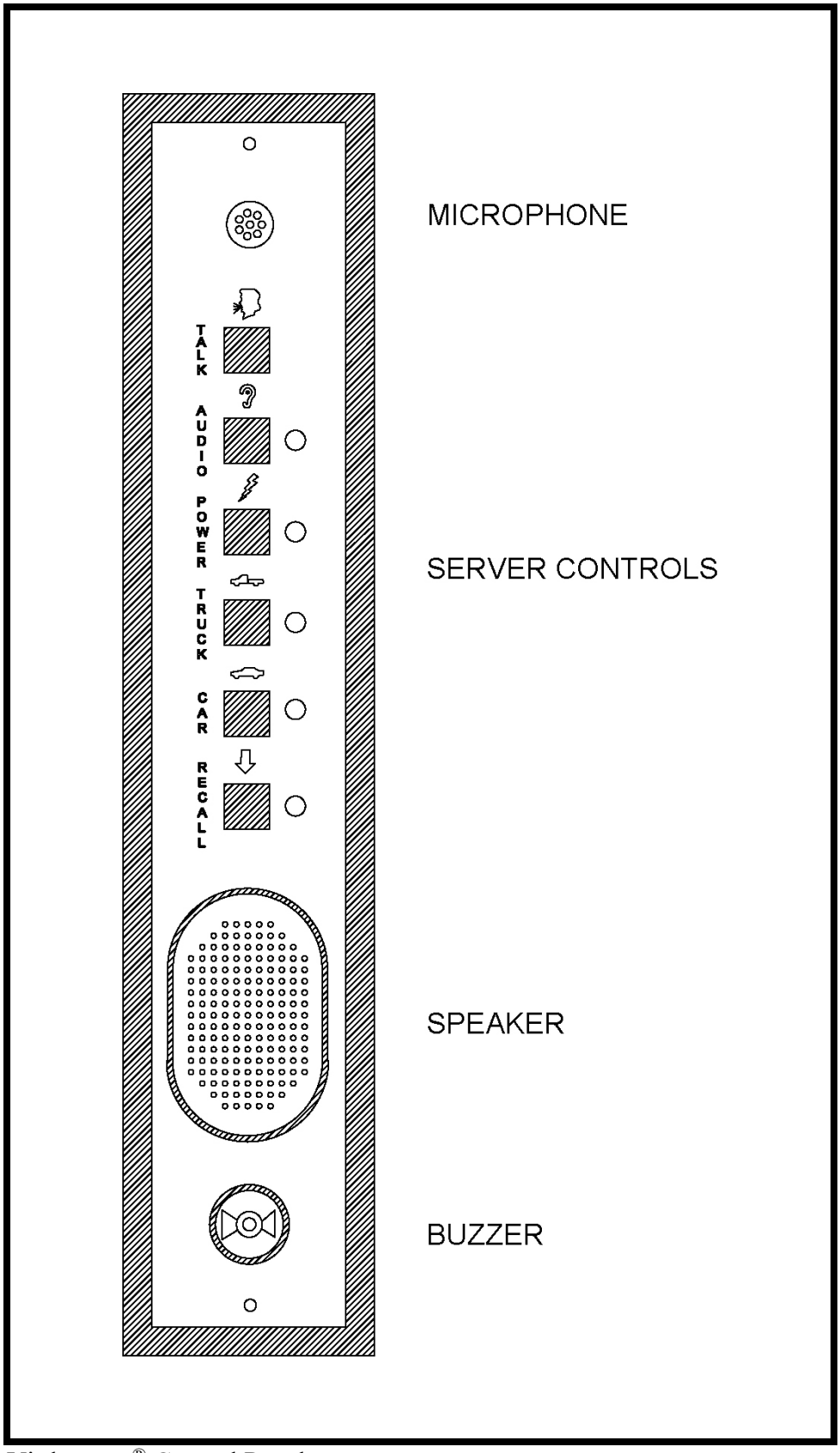


Drive-thru Vittleveyor®

Below is a table that describes each of the server functions:

Drive-Thru Vittleveyor® Server Control Functions		
Button	**Required Basket Position**	**Operation initiated by pressing button**
TALK	Not sensitive to basket position	If the AUDIO is in the "ON" position with the AUDIO LED lit, pressing this button turns the microphone at the server end on allowing the server to talk to the customer. Note that pressing this button cancels the incoming audio. One must release this button in order to hear the customer.
POWER	Basket must be at SERVER END	The POWER button toggles the power on and off. When the basket is at the SERVER END and the power is toggles on, the outside door will open; when the power is toggled off, the outside door will close. When the power is toggled off while the basket is at the customer end, the door will not close, nor will the unit allow the basket to be sent in either direction. Note that the power button also functions to reset the computer in the case of a safety bar trip. To reset, toggle the power off, then on quickly.
AUDIO	Not sensitive to basket position	Pressing this button toggles the incoming audio on and off. Note that the audio comes on automatically when the POWER is turned on.
TRUCK	Basket must be at either the SERVER END or at the CUSTOMER END at the car position.	When the power is on and the basket is at the SERVER END< pressing the TRUCK button will send the carrier to the TRUCK position. Please see specification print for details on this position. When the basket is at the CUSTOMER END in the car position, pressing the TRUCK button will bring the carrier up 12 inches to the truck position. The carrier will not go back down to the car position after being up to the truck position without being recalled to the server position.
CAR	Basket must be at either SERVER END or at the CUSTOMER END at the truck position.	When the power is on and the basket is at the SERVER END, pressing the CAR button will send the carrier to the CAR position. Please see specification print for details on this position. When the basket is at the CUSTOMER END at the truck position, pressing the CAR button will bring the carrier down 12 inches to the car position. Note that once the move from car to truck position has been made, the carrier must be recalled to the server end before it will go back to the car position.
RECALL	Basket must be at either position on the CUSTOMER END.	Pressing the RECALL button brings the basket back from either of the CUSTOMER end positions to the SERVER end.

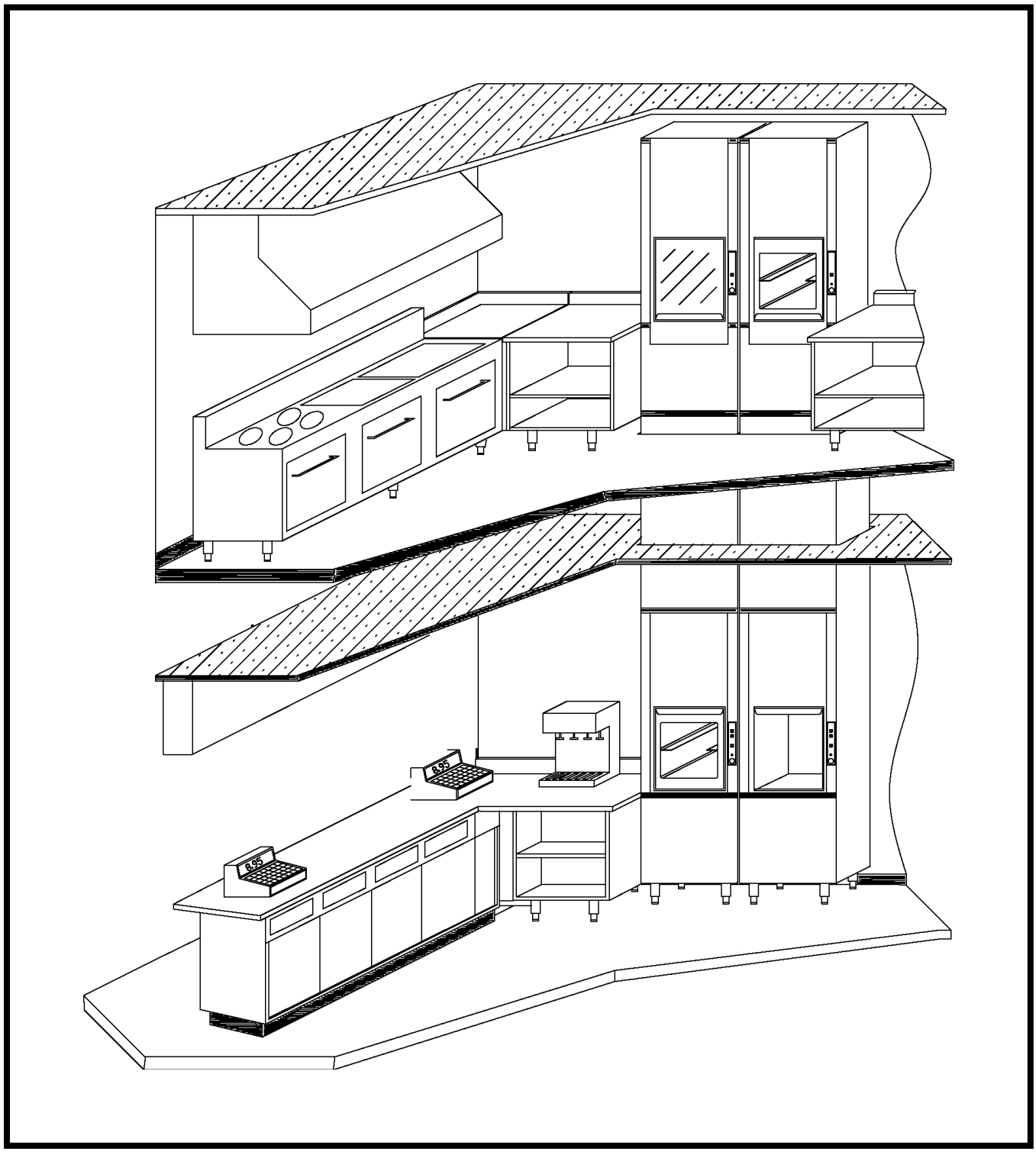
The Customer End features two controls, a START button which sends the basket to the SERVER end when pressed and a CALL button which activates a tone to alert the server that the customer needs assistance.



Vittleveyor® Control Panel

The VRC Vittleveyor® System:

The controls of the BCR Vittleveyor® System vary by level. The bottom level of the system is considered the Master Station and the upper floor is considered the Slave Station. Each station's controls are described below. Note that the VRC version of the Vittleveyor®; rather, it uses a two shelf carrier specially designed to move trays of pre-packaged food.



VRC Vittleveyor®

VRC Vittleveyor® System
Master Station Control
(Lower Level)

Button	Required Carrier Position	Operation initiated by pressing button
POWER	Not sensitive to carrier position	Pressing this button so that it locks in flush with the switch bezel and illuminates the light behind the switch places the machine in the run mode. Essentially, this turns the machine on so that the controls operate.
MANUAL (Key Switch) Note: This is referred to as the JOG KEY.	Not sensitive to carrier position	This is the switch used to manually operate the carrier. One must first insert the key into the switch. Turning the key to the right makes the carrier go up. Turning the switch to the left makes the carrier go down. Note that this switch is to be operated only by qualified and trained service personnel. It is not designed for normal use.
SEND	Carrier must be at lower level	Pressing the SEND button sends the carrier to the upper station.

The upper station of the VRC Vittleveyor® offers only one button. This button is labeled SEND. Depressing this button sends the carrier back to the master station when the carrier is present on the upper floor. It is not operational when the carrier is not at the upper floor.

Operational Considerations

General:

Making the Vittleveyor® System a success at your site is much more than just installing the machine properly. The Vittleveyor® Systems must also be used correctly from an operational standpoint. For each of the two systems below are operational considerations that have been relayed from other users of the equipment that have aided them in becoming successful.

The Drive-thru Vittleveyor® System:

The most important aspect of success with a drive-thru Vittleveyor® System is to promote its existence to your customer. If the Vittleveyor® System has been installed to provide drive-thru service where it was not present before, advertising with banners on the building, where allowed, and advertising drive-thru service in the local press has built business very quickly. If you are adding a second lane of drive-thru with the Vittleveyor® System, it is advisable to announce this service as a competitive advantage. After all, you now have two lanes of drive-thru to all of your other competitor's one!

The second most important aspect of the operational use of the Vittleveyor® is to tell customers what to expect when they arrive at the drive-thru while they are at the menu board. Making the following statement to your customer will aid greatly not only in the customers' acceptance of the equipment, but also in the overall throughput of the system:

> ***Your order comes to a total of $XX.XX. Please move forward to the Vittleveyor®, place this amount in the cup and press the lighted start button. Thank you!***

If you want assurances that greetings, instructional messages and thanks-you's are always delivered, contact E. F. Bavis and Associates, Inc. about the TALKER™. This product can be used in either a stand alone version or integrated with the functions of the Vittleveyor® System to provide your customers with the information they need when they need it.

Another very important aspect of Vittleveyor® success is keeping the Vittleveyor® System clean. After all, no one wants to receive their food in a dirty container. Other Important aspects of drive-thru Vittleveyor's® success include:

Ease of use of the drive-thru lane without the need for tight turns and obstructed signs.

A canopy so that your customers do not get wet being serviced at the drive-thru during rain or snow.

Use the Car and Truck button so that the height of the basket is convenient to your customer.

Thank the customer for their order. If this is done as soon as the carrier is sent, the customer prepares to receive the order, lessening his perceived time in line and allowing him to quickly retrieve his food, so that the next customer can move into position.

The VRC Vittleveyor® System:

The most important operational consideration for the VRC Vittleveyor® is to get the order to the food prep/assembly area as soon as is possible. Most accomplish this by having their point of sale equipment transmit the order to the food prep area as soon as the total is generated. This allows the order to be assembled while the money portion of the transaction is being completed.

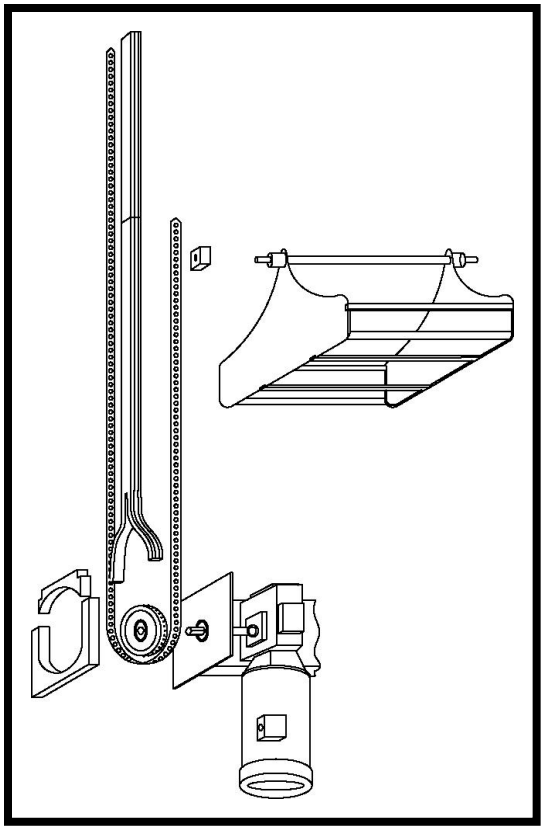
Some have decided to have the server prepare the drinks to give the food prep people more time to complete the order. All Vittleveyor® Systems are designed to carry drinks with lids without spilling. Operationally, however, it may be better to have them prepared by the server.

Like with the drive-thru Vittleveyor®, it is very important to keep the equipment clean.

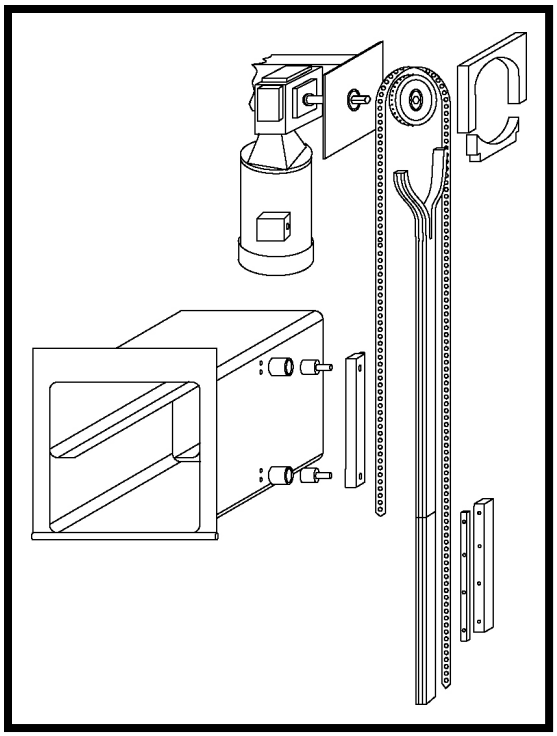
User Diagnostics

The user diagnostics in either version of the machine are designed to give the server an immediate indication that either one of the safety devices has been activated or that some form of drive/positioning malfunction has occurred.

User diagnostics use the lights or LED's depending on the specific system, associated with the server control panel in order to report the diagnostic information. Therefore, attention must be paid to the function of the lights in the system making sure that when they burn out they are replaced immediately. Waiting to replace lights when burned out makes diagnostics difficult, if not impossible, for the system user and may cause loss of use of the system when not warranted. For instance, if a safety bar is activated, the basket or car stops. If the server knows, as a result of these diagnostic reports,
that the safety bar is the problem, they can clear the cause and get on with operation. Without this diagnostic report, the server may consider the equipment out of order, not take the remedial action and result in loss of use of equipment when not required.



VV Drive System



VRC Drive System

Note that these are two classes of training for individual working on any of the Vittleveyor® systems. They are provided the title of either Trained Operators or Qualified Operators. The purpose of this distinction is to point out that there are different levels of ability required to do varying tasks associated with maintenance and problem resolution. Ignoring these distinctions places the person servicing the equipment at risk.

Trained individuals are those who have been fully trained by a Qualified Operator, understand the function of the Vittleveyor® System and its safety devices and have read and understood the Vittleveyor® manual. They must also be fully aware of all your company's policies regarding OSHA lockout/tagout regulations and know how to follow those regulations. This individual is the front line of support with the equipment a should be restaurant personnel.

A Qualified Operator is a Trained Operator who is also familiar with and has had formal training on the repair, maintenance and related safety procedures associated with that repair and maintenance of restaurant equipment and has attended the E. F. Bavis and Associates, Inc. Vittleveyor® Service Technician Training Seminar. It is the responsibility of the equipment owner to acquire training for and determine the level of the person working on the equipment. User diagnostics are geared toward the Trained Operator.

The Drive-thru Vittleveyor® System:

The Drive-thru Vittleveyor® System user diagnostic program can report two specific types of situations with different light patterns on the server control. They are: the activation of the safety bars or a fault in the motor drive system. Note that the user diagnostics are intentionally limited to these two reports for simplicity on the part of the user. There are extensive diagnostic indicators for use by service personnel that are covered elsewhere in this document.

User Problem Resolution Chart

Button Light	**Condition of Light**	**Meaning**	**Action** (To be performed by a Qualified Operator)
POWER	**Light will not come on when pressed**	No Power to Vittleveyor® System	Check fuse or electrical breaker and restore power to Vittleveyor® circuit. If the breaker or fuse is not off or blown, CALL FOR SERVICE.
AUDIO		Audio system off.	Press button to activate audio. If pressing button does not activate light and audio, CALL FOR SERVICE
CAR and TRUCK **RECALL**	**FLASHING**	Emergency Safety Bar above the customer opening has been tripped.	Clear obstruction. Press the button again for the transaction desired. If the carrier does not move to the proper position, CALL FOR SERVICE. If the lights continue to flash, but the carrier moves to the proper position, press the POWER button off and then on to reset the lights. If lights continue to flash after toggling power, CALL FOR SERVICE.
CAR, TRUCK and RECALL	**FLASHING**	Either some form of jam has occurred which delayed the basket's arrival or the basket has missed the proper stopping point.	Determine basket position and CALL FOR SERVICE. Provide service personnel with basket position and status of lights.

The VRC Vittleveyor® System:

The VRC Vittleveyor® does not have a sufficient number of lights in order to make a distinction between safety bar activation and faults within the drive system. Therefore, it offers only one diagnostic report, the flashing SEND light to indicate that there is some sort of problem. The server must use carrier position and remedial action in order to determine the problem or contact a Qualified Operator to resolve the problem.

The most common cause of the carrier stopping is activation of the safety bars. When this occurs, the SEND light will flash at each end. The Trained Operator should clear the obstruction and press the SEND button of the sending station in order to place the machine back into operation.

If the carrier does not resume progress toward its destination when the SEND button is pressed, then see the section: Jogging the Basket or Carrier.

User Care and Maintenance

General:

The most important aspect of care and maintenance for any Vittleveyor® System is to keep the system clean. No other aspect will extend the life of the machine or keep downtime to a minimum.

The tape used to move either the basket or the car, depending on the model that applies, is designed as the major wear component of the system; therefore, this tape must be replaced as part of normal preventive maintenance. It is recommended that this component be replaced annually on drive-thru systems and every other year on VRC's. If the machine is very heavily used, or if it sits in a particularly harsh environment, it is possible more frequent replacement may be required. Not replacing this tape may result in a catastrophic failure at some point in the future.

The Drive-thru Vittleveyor®:

The maintenance procedures for the users of the Drive-thru Vittleveyor® are listed on the following page:

Care and Maintenance

Daily Care Trained Operators Only	Monthly Care Qualified Operators Only	Annual Care Qualified Operators Only
Clean all exposed internal and external surfaces including windows, liners and trays.	Check tape and guide tracks for loose mounting screws. Tighten as required.	Clean horizontal tape and guide tracks. Check mounting fasteners. Tighten as required.
Clean basket and guide wheels.	Clean radii tape and guide track.	Replace main and door drive tape.
Clean all visible tape and guide tracks.	Check all exposed screws for tightness. Tighten as required.	Replace basket mounting blocks and screws.
Check customer and server Safety Bars for proper operation.	Clean and inspect external door track, tape and tape track.	Replace basket guide wheels.
Replace change cup as needed.		Inspect gearbox and add gear oil as required. Use AGMA Type 7C synthetic lubricant. Do not use EP rated gear lube.

Care and Maintenance Notes:

1. **Use only mild, non-abrasive, cleaners, such as Windex, that do not leave a residue. If soap and water is used to clean the unit, make certain that all surfaces are rinsed of any soap residue.**
2. **DO NOT lubricate the tape, tape track, guide track or guide wheels. These are either self lubricating or do not require lubrication. Lubricating these components leads to dirt problems.**
3. **Close server window in order to limit air flow and reduce dirt and grease build-up in machine.**
4. **To make maintenance easy, keep the jog magnet and skin wrench close to the unit.**

The VRC Vittleveyor® Maintenance:

The VRC, because it is not exposed to the outside elements, is not subject to the wear that the drive-thru version experiences. This by no means indicates that it does not require regular maintenance. Like with the Drive-thru version, keeping the tape and track free from dirt, grease and environmental contaminants is paramount to the success of the machine. Everything contained in the previous maintenance chart for the drive-thru product applies to the VRC version.

Installation Notes

Before Ordering:

Before ordering any of the Vittleveyor® products, make sure that the specifications of the machine are fully understood. A general specification print is available for each product. Also note that there is a great deal of information contained in this specification print. This Information includes hole sizes, support requirements, electrical requirements and the like. The specification print is critical to measuring the unit for the site and then properly preparing the site to accommodate the Vittleveyor®.

This information should be passed on to the general contractor as early as is possible.

Suggested Tools for Installation:

Having the proper tools to install the Vittleveyor® is very important to having a cost effective and proper installation. Below is a list of the basic tools required for an installation. Note that site conditions may require you to alter this list:

1. 2-6’ or 8’ ladders
2. 7/16” wrenches and sockets
3. 9/16” open end wrench
4. Screwdrivers – Slotted and Phillips
5. Torx head screwdriver (T-15 and T-20) supplied with unit
6. Drill and bits
7. Hammer drill and 3/8” concrete bit
8. 3/8” x 2-1/2” anchors – 4 required – supplied with unit
9. 16’ or 50’ tape recommended
10. 2’ or 4’ level
11. Volt meter
12. Caulking gun
13. Crow bar
14. Sufficient moving equipment to transport equipment inside building, i.e. two 4 wheel carpeted dollys
15. 16 oz. Hammer
16. 3 man crew minimum

Arrival on Site:

The Vittleveyor® system must be transported to the site, preferably in the factory made crate in order to minimize shipping damage. Each crate includes a shock detector to insure that the crate was not dropped or otherwise mishandled in transit. Note should be made of the condition of these shock indicators prior to accepting the Vittleveyor® crate with a notation being made on the receiving document of the condition of the shock indicator.

Once the crate is on site, the top can be opened by removing the screws which hold it in place. It is recommended that a screw runner with a #2 Phillips head bit be used to remove these screws from the crate and that the crate lid then can be removed. Most find that removing one or both of

the ends of the crate provides sufficient access to the unit so that it can be unpacked. Do not stand on any part of the unit.

Before Installation – Work by Others:

The following work must be completed prior to installation of the Vittleveyor® into a site. This work is typically the responsibility of a general contractor.

Drive-thru Unit

1. All necessary openings in the building, concrete island and driving surface.

2. Canopy or enclosing structure. All Portions of the Vittleveyor® not enclosed, ie: HORIZONTAL UNIT, are to be contained above the ceiling within the structure of the building or canopy.

3. All necessary openings shall be closed. Note that all enclosures must feature at least ¼" clearance around components of the Vittleveyor® in order to allow the equipment to float within the structure.

4. The ceiling shall be finished to the CUSTOMER and SERVER UNITS. Note: The ceiling structure should not be attached to the Vittleveyor®.

5. 5208-240vac, 50-60hz, 20A single phase power is to be connected at the bottom of the SERVER UNIT. A handybox with 12ga THHN pigtails is provided for this purpose. Electrical connections shall be made according to the NATIONAL ELECTRICAL CODE and/or any applicable LOCAL CODES. Electrical service must be roughed in prior to installation. Final connection is to be done at the time the Vittleveyor® is installed. All electrical connections are to be done by qualified individuals according to the jurisdiction having authority.

6. A SERVICE ACCESS PANEL shall be provided on the CUSTOMER END.

7. The Vittleveyor® is listed by Underwriters Laboratories with regards to electrical, fire, shock and casualty hazards; however, the Vittleveyor® is not rated for penetrating fire floors or walls and/or compliance with any fire related standards. All, state and local codes should be complied with. (ASME B20.1-1990, section 5.15).

VRC Unit

1. All necessary openings in the building.

2. All necessary openings shall be closed up to the machine.

3. 208-240vac, 50-60hz, 20A single phase power is to be connected at the bottom of the SERVER UNIT. A handybox with 12ga THHN pigtails is provided for this purpose. Electrical connections shall be made according to the NATIONAL ELECTRICAL CODE and or any applicable LOCAL CODES.

4. The Vittleveyor® is listed by Underwriters Laboratories with regards to electrical, fire, shock and casualty hazards; however, the Vittleveyor® is not rated for penetrating fire floors or walls and/or compliance with any fire related standards. Applicable national, state and local codes should be complied with. (ASME B20.11-1990, SECTION 5.15).

Before Turning Unit Over for Operation:

Drive-thru Unit

1. HORIZONTAL, CUSTOMER and SERVER UNITS are to be plumbed and squared. **Note: When leveling the machine vertically only level from the inside machine surfaces:** The machine should be checked for proper operation before continuing. Other than the customer base, no part of the Vittleveyor® should be secured to the building structure. If the horizontal unit is 10' or longer, it requires support every 10' within 10' of that section's midpoint. This support shall have the capacity to handle a loading of 150 pounds, but not be fastened (bolts, screws, etc) to the unit.

2. The CUSTOMER UNIT is to be securely anchored to the ISLAND. Holes are provided in the base of the CUSTOMER UNIT for this purpose. Four Hilti HDI-3/8 anchors with graded bolts are provided with the unit for this purpose. It is necessary to drill 3/8" holes in the concrete island for these anchors.

3. The GEARBOX shall be vented by removing the plug from the end of the flexible blue tube after standing the unit.

4. The EMERGENCY STOP BARS are to be tested and should stop the carrier when activated. Note: Only the safety bar on the end from which the carrier is sent will stop and latch the unit into the fault mode.

5. The CONTROL BOX LID and SKINS shall be properly reinstalled after setup. Install the server trip panels to seal the vertical to the inside wall. Check all black position sensors with the jog magnet by running the north side of the magnet over the switch and observing the LED response on the computer.

6. Shipping blocks must be removed.

7. Jog the unit out and back with the jog magnet and then run basket out and back in.

8. The owners and operators shall be instructed on proper OPERATION of the unit.

9. The JOG MAGNET should be removed from the SERVER CONTROL PANEL and stored in a secure place. Please note that operating the Vittleveyor® via the JOG MAGNET disables all safety and protective features of the machine. This feature is to be utilized for service and setup by authorized personnel only. The manual and Torx skin screwdriver should be stored with the jog magnet.

VRC Unit

1. **The VRC needs to be plumb. Note: When leveling the machine only level from the inside machine surfaces**. The machine should be checked for proper operation before continuing. The VRC is also to be secured to the building to prevent excess movement of the unit. If it is necessary to attach bracing to the machine, it is only acceptable to utilize the #10 thread rolling screws provided. Use the #19 drill bit provided to first drill a pilot hole. The only suitable position to drill is on either of the 31' faces, ½" to 2" inwards from either edge. Each fastener is rated for 100 pounds maximum.

2. The GEARBOX shall be vented by removing the plug from the end of the flexible blue tube after standing the unit.

3. The EMERGENCY STOP BARS are to be tested and should stop the carrier when activated. Note: Only the safety bar on the level from which the carrier is sent will stop and latch the unit into the fault mode. Check all stop switches.

4. The CONTROL BOX LID and PANELS shall be properly reinstalled after setup.

5. The owners and operators shall be instructed on proper OPERATION of the unit.

6. The MANUAL KEY should be removed from the LOWER CONTROL PANEL and stored in a secure place. Please note that operating the VRC via the MANUAL KEY disables all safety and protective features of the machine. This feature is to be utilized for service and setup by authorized personnel only. The manual and Torx skin screwdriver should be stored with the MANUAL KEY.

Safety Features of the Vittleveyor® System

Drive-thru Unit:

The Vittleveyor® is intrinsically safe considering that the maximum force that can be exerted by the CARRIER is limited electronically by the DRIVE to 50 pounds initially, gradually working to a maximum of 72 pounds over a period of 5 to 10 seconds. To avoid excessive wear and damage to the equipment, the ***Maximum Load limit is 25 pounds****.*

The Vittleveyor® will automatically stop if it is stalled for over 10 seconds longer than a normal transaction would take.

In the downward motion of the CARRIER on both the SERVER & CUSTOMER UNITS, the CARRIER is programmed to stop four inches before any pinch point. The switching is redundant.

The Vittleveyor® has a SAFETY BAR above each opening. These have four sensors each. Two sensors report to a SAFETY MODULE which directly stops the motor. This is the first line of protection activated by the raising of the SAFETY BAR and will reset upon releasing the SAFETY BAR. The second line of protection is two additional sensors which report to the PLC. This causes the machine to stop and flashing lights indicate a fault at the operator's control. The machine must then be reset by toggling the power off, then on to resume operation.

The CUSTOMER DOOR is also a positive drive tape system both in the up and down directions. The drive for this door utilizes a dynamic brake. The maximum power that the door can exert both upward and downward is limited to 30 pounds by a mechanical slip clutch between the motor and tape sprocket. The door also will stop automatically if stalled for approximately 10 seconds longer than the time necessary for the door to travel up or down.

The CARRIER travels in slow speed when accessible by the operators and/or users and at a high speed when not accessible. The shift points are controlled accurately by a counter connected to an output shaft.

VRC Unit:

The VRC is intrinsically safe considering that the maximum force that can be exerted by the CARRIER is limited electronically by the DRIVE to 25 pounds.

The VRC will automatically stop if it is stalled for over 5 seconds longer than a normal transaction would take.

In the downward motion of the CARRIER on the LOWER UNIT, the CARRIER is programmed to stop four inches before any pinch point. The switching is redundant.

The VRC has a SAFETY BAR above the LOWER opening and at the bottom of the UPPER opening. These have four sensors each. Two sensor report to a SAFETY MODULE which directly stops the motor. This is the first line of protection activated by the raising of the SAFETY BAR and will reset upon releasing the SAFETY BAR. The second line of protection is two additional sensors which report to the PLC. This causes the machine to stop and flashing lights indicate a fault at the operator's control. The machine must then be reset by toggling the power off, then on to resume operation.

The UPPER UNIT has a self actuating guillotine type door. The CARRIER automatically opens the door when it arrives at the level and closes it when it leaves.

The CARRIER travels in slow speed when accessible by the operators and at a high speed when not accessible. The shift points are controlled accurately by a counter connected to an output shaft.

Service Diagnostics

In order to service the machine, the Vittleveyor® system computer provides LED indicators of the status of the machine. Below are tables of the input/output status by LED number. The Vittleveyor® System, computer is located in the control box. Note that whenever service work is done in the field, E. F. Bavis & Associates, Inc. is available to provide telephone assistance.

Two Versions of Control Boxes:

There are two versions of Vittleveyor® control boxes. Early models of the Vittleveyor® were equipped with the large control box which has external dimensions of approximately 9-1/4" x 18-1/2" x 10-1/2". Newer models of the Vittleveyor® are shipped with a smaller control box which has external dimensions of approximately 5-1/4" x 12-3/4" x 9-1/4".

Field wiring, the three colored plugs on the right side of the box, is compatible between the two units. Motor plugs are different, however, the wiring leading to the plugs is the same. Adapters are available from the factory should you need to move from one version of the box to the other.

Internally, the boxes are very dissimilar. The larger box is a multi-layer construction with the computer and diagnostic LED's on the right, fuses and door relay on the left and the mercury displacement relay and green SCR/DC drive board underneath.

The small box is hinged with the DC drive board mounted on the hinged lid and with the other components mounted on the inside of the box. This smaller box features a great deal of system integration with far fewer hand wiring terminations when compared to the large box.

Note that the computers found in the two boxes are different and, therefore, the program chip is not transferable between boxes. If you must move between versions of control boxes, inform the factory at the time of order and a new control chip will be made for you and shipped with the box.

Following are descriptions of information for both versions of controls. Identify the version you have by measuring the outside dimensions of your controls. Remember the large control box has external dimensions of approximately 9-1/4" x 18-1/2" x 10' ½". The small control box has approximate dimensions of 5-1/4" x 12-3/4" x 9-1/4".

The Vittleveyor® Diagnostics

The Drive-thru Diagnostics of the *Large Control Box:*

NUMBER	NAME	CONDITION	INDICATES
INPUTS			
0	TRUCK	OFF ON	NORMAL TRUCK SWITCH DEPRESSED
1	CAR	OFF ON	NORMAL CAR SWITCH DEPRESSED
2	RECALL	OFF ON	NORMAL RECALL SWITCH DEPRESSED
3	TRUCK STOP	OFF ON	NORMAL CARRIER AT TRUCK POSITION
4	CAR STOP	OFF ON	NORMAL CARRIER AT CAR POSITION
5	RECALL STOP	OFF ON	NORMAL CARRIER AT RECALL POSITION
6	SERVER SAFETY	OFF ON	NORMAL SERVER SAFETY BAR RAISED TO ACTIVATED POSITION
7	CUSTOMER SAFETY	OFF ON	NORMAL CUSTOMER SAFETY BAR RASIED TO ACVTIVATED POSITION
10	OVERTRAVEL	OFF ON	NORMAL CARRIER HAS OVERUN STOP SWITCHES ON CUSTOMER OR SERVER UNIT
11	POWER	OFF ON	POWER SWITCH OFF POWER SWITCH ON
12	N/A	OFF	NORMAL
13	N/A	OFF	NORMAL
14	DOOR	OFF ON	NORMAL CUSTOMER DOOR OPEN
15	DOOR	OFF	NORMAL CUSTOMER DOOR CLOSED
16	COUNTER	OFF ON FLASHING	DRIVE MOTOR OFF DRIVE MOTOR ON DRIVE MOTOR RUNNING
OUTPUTS			
17	RECALL	OFF ON	NORMAL RECALL LAMP LIT
20	MOTOR	OFF ON	NORMAL DRIVE RUNNING OUT SLOW
21	MOTOR	OFF ON	NORMAL DRIVE RUNNING IN SLOW
22	MOTOR	OFF ON	NORMAL DRIVE RUNNING OUT FAST
23	MOTOR	OFF ON	NORMAL DRIVE RUNNING IN FAST
24	TRUCK	OFF ON	NORMAL TRUCK LAMP LIT
25	CAR	OFF ON	NORMAL CAR LAMP LIT
26	DOOR	OFF ON	NORMAL DOOR OPENING
27	DOOR	OFF ON	NORMAL DOOR CLOSING

The Drive-thru Diagnostics of the *Small Control Box:*

NUMBER	NAME	CONDITION	INDICATES
INPUTS			
0	UNUSED	OFF	NORMAL
1	DOOR	OFF ON	NORMAL CUSTOMER DOOR CLOSED
2	COUNTER	OFF ON FLASHING	DRIVE MOTOR OFF DRIVE MOTOR ON DRIVE MOTOR RUNNING
3	TRUCK STOP	OFF ON	NORMAL CARRIER AT TRUCK POSITION
4	CAR STOP	OFF ON	NORMAL CARRIER AT CAR POSITION
5	RECALL STOP	OFF ON	NORMAL CARRIER AT RECALL POSITION
6	SERVER SAFETY	OFF ON	NORMAL SERVER SAFETY BAR RAISED TO ACTIVATED POSITION
7	CUSTOMER SAFETY	OFF ON	NORMAL CUSTOMER SAFETY BAR RASIED TO ACTIVATED POSITION
8	OVERTRAVEL	OFF ON	NORMAL CARRIER HAS OVERUN STOP SWITCHES ON CUSTOMER OR SERVER UNIT
9	UNUSED	OFF	NORMAL
10	DOOR	OFF ON	NORMAL CUSTOMER DOOR OPEN
11	CAR START	OFF ON	NORMAL CAR START SWITCH DEPRESSED
12	RECALL START	OFF ON	NORMAL RECALL START SWITCH DEPRESSED
13	TEST MODE	OFF ON	NORMAL TEST MODE ENGAGED
14	TRUCK START	OFF ON	NORMAL TRUCK START SWITCH DEPRESSED
15	POWER	OFF ON	POWER SWITCH OFF POWER SWITCH ON
OUTPUTS			
0	RECALL	OFF ON	NORMAL RECALL LAMP LIT
1	TRUCK	OFF ON	NORMAL TRUCK LAMP LIT
2	CAR	OFF ON	NORMAL DRIVE RUNNING IN SLOW
3	UNUSED	OFF	NORMAL
4	UNUSED	OFF	NORMAL
5	UNUSED	OFF	NORMAL
6	DOOR	OFF ON	NORMAL DOOR CLOSING
7	DOOR	OFF ON	NORMAL DOOR OPENING
8	MOTOR	OFF ON	NORMAL DRIVE RUNNING OUT SLOW
9	MOTOR	OFF ON	NORMAL DRIVE RUNNING OUT FAST
10	MOTOR	OFF ON	NORMAL DRIVE RUNNING IN SLOW
11	MOTOR	OFF ON	NORMAL DRIVE RUNNING IN FAST

The VRC Diagnostics

Diagnostics of the *Large Control Box:*

NUMBER	NAME	CONDITION	INDICATES
INPUTS			
0	N/A	ON	NORMAL
1	LOWER SEND	OFF ON	NORMAL LOWER SEND SWITCH DEPRESSED
2	UPPER SEND	OFF ON	NORMAL UPPER SEND SWITCH DEPRESSED
3	N/A	OFF	NORMAL
4	UPPER STOP	OFF ON	NORMAL CARRIER AT UPPER POSITION
5	LOWER STOP	OFF ON	NORMAL CARRIER AT LOWER POSTION
6	LOWER SAFETY	OFF ON	NORMAL LOWER SAFETY BAR RAISED TO ACTIVATED POSITION
7	UPPER SAFETY	OFF ON	NORMAL UPPER SAFETY BAR RAISED TO ACTIVATED POSITION
10	OVERTRAVEL	OFF ON	NORMAL CARRIER HAS OVERUN STOP SWITCHES ON UPPER OR LOWER UNIT
11	POWER	OFF ON	POWER SWITCH OFF POWER SWITCH ON
12	N/A	OFF	NORMAL
13	N/A	OFF	NORMAL
14	N/A	OFF	NORMAL
15	N/A	OFF	NORMAL
16	COUNTER	OFF ON FLASHING	DRIVE MOTOR OFF DRIVE MOTOR ON DRIVE MOTOR RUNNING
OUTPUTS			
17	UPPER	OFF ON	NORMAL UPPER SEND LAMP LIT
20	MOTOR	OFF ON	NORMAL DRIVE RUNNING DOWN SLOW
21	MOTOR	OFF ON	NORMAL DRIVE RUNNING UP SLOW
22	MOTOR	OFF ON	NORMAL DRIVE RUNNING DOWN FAST
23	MOTOR	OFF ON	NORMAL DRIVE RUNNING UP FAST
24	N/A	OFF	NORMAL
25	LOWER	OFF ON	NORMAL LOWER SEND LAMP LIT
26	OPTIONAL: UPPER ARRIVAL ALARM	OFF ON	NORMAL UPPER ARRIVAL ALARM ON
27	LOWER ARRIVAL ALARM	OFF ON	NORMAL LOWER ARRIVAL ALRM ON

The Drive-thru Diagnostics of the *Small Control Box:*

NUMBER	NAME	CONDITION	INDICATES
INPUTS			
0	N/A	OFF	NORMAL
1	N/A	OFF	NORMAL
2	COUNTER	OFF ON FLASHING	DRIVE MOTOR OFF DRIVE MOTOR ON DRIVE MOTOR RUNNING
3	N/A	OFF	NORMAL
4	UPPER STOP	OFF ON	NORMAL CARRIER AT UPPER POSITION
5	LOWER STOP	OFF ON	NORMAL CARRIER AT LOWER POSITION
6	LOWER SAFETY	OFF ON	NORMAL LOWERSAFETY BAR RAISED TO ACTIVATED POSITION
7	UPPER SAFETY	OFF ON	NORMAL UPPER SAFETY BAR RASIED TO ACTIVATED POSITION
8	OVERTRAVEL	OFF ON	NORMAL CARRIER HAS OVERUN STOP SWITCHES ON UPPER OR LOWER UNIT
9	N/A	OFF	NORMAL
10	N/A	OFF	NORMAL
11	LOWER SEND	OFF ON	NORMAL LOWER SEND SWITCH DEPRESSED
12	UPPER SEND	OFF ON	NORMAL UPPER SEND SWITCH DEPRESSED
13	TEST MODE	OFF ON	NORMAL TEST MODE ENGAGED
14	N/A	OFF	NORMAL
15	POWER	OFF ON	POWER SWITCH OFF POWER SWITCH ON
OUTPUTS			
0	DOWN LIGHT	OFF ON	NORMAL LOWER SEND LAMP LIT
1	N/A	OFF	NORMAL
2	UP LIGHT	OFF ON	NORMAL UPPER SEND LAMP LIT
3	N/A	OFF	NORMAL
4	N/A	OFF	NORMAL
5	N/A	OFF	NORMAL
6	LOWER ARRIVAL ALARM	OFF ON	NORMAL LOWER ARRIVAL ALARM ON
7	UPPER ARRIVAL ALARM	OFF ON	NORMAL UPPER ARRIVAL ALARM ON
8	MOTOR	OFF ON	NORMAL DRIVE RUNNING UP SLOW
9	MOTOR	OFF ON	NORMAL DRIVE RUNNING UP FAST
10	MOTOR	OFF ON	NORMAL DRIVE RUNNING DOWN SLOW
11	MOTOR	OFF ON	NORMAL DRIVE RUNNING DOWN FAST

Adjustment of Integrated Audio System:

The Vittleveyor® is equipped with our latest design built-in audio system. This audio system is of a SIMPLEX variety, which is commonly referred to as "push to talk". The incoming audio (from the customer to the server) is normally on. When the operator depresses the TALK button, the incoming channel is turned off and the outgoing channel is activated.

An electronic CALL TONE is built into the SERVER CONTROL PANEL. The volume can be adjusted by rotating the shutter control on top of the buzzer.

There are two audio adjustments accessible to service personnel.

Access is gained by first removing the CONTROL TRIM BEZEL. The CONTROL TRIM BEZEL has four screws securing it which are located on the sides of the bezel. After removing these screws, the control panel has 2 screws that have to be removed. After these screws are removed, the control panel will slide out revealing the adjustments. The two black potentiometers located on the large circuit board are the master gain controls. Adjusting these controls clockwise will increase volume and vice versa. The controls are marked inside and outside.

Note: The AUDIO ON/OFF control mimics the POWER ON/OFF, i.e. When the power is turned off, the audio turns off. Depressing the AUDIO ON/OFF again will toggle the audio back off. Note that there is no audio system standard with the VRC version of the Vittleveyor®.

Other Technical Information

Control Box Fuses:

Note: To reduce the risk of the fire and/or shock only replace fuses with same type and rating.

Large Control Box:

The CONTROL BOX for the Vittleveyor® has six fuses located within it. Three fuses are located on the REGENATIVE DRIVE. The remaining three fuses are located on the STACKPLATE which is located over the REGENATIVE DRIVE CONTROL BOARD between the PLC and the REGENATIVE DRIVE SCR BOARD. Below is a list of fuses with size, location and purpose.

SIZE	LOCATION	PURPOSE
MDA10	Regenative drive SCR board, upper most fuse	Controls one leg of the 208-240vac feed to Regenative Drive
MDA10	Regenative drive SCR board, middle fuse	Controls remaining leg of the 208-240vac feed to the Regenative Drive
AGC1/4	Regenative Drive SCR board, lower fuse	Controls the 208-240vac feed to the logic portion of the Regenative Drive
AGC3	Stackplate, upper fuse	Controls 24vdc to the Door, Lamps, etc.
AGC3/4	Stackplate, middle fuse	Controls 208-240vac to the transformer, which supplies power for the 24vdc equipment.

Small Control Box:

The Control Box for the Vittleveyor® has four fuses located within it. Two fuses are located on the Regenative Drive. The other two fuses are located on the PLC. Following is a list of fuses with size, location and purpose.

SIZE	LOCATION	PURPOSE
AGC10	DC drive board, top fuse	Controls one leg of the 208-240vac feed to the Regenative Drive
AGC10	DC drive board, lower fuse	Controls remaining leg of the 208-240vac feed to the Regenative Drive
AGC3	Horizontal fuse	Controls 24vdc to the Door, Lamps, Input Switches, etc.
AGC1	Vertical fuse	Controls 10vac to the PLC logic

What does Jogging the Basket or Carrier Mean?

The movement of the basket or carrier of Vittleveyor® systems is controlled by the computer found in the control box. However, when some sort of problem develops that impedes or stops the carrier or basket when under this automatic control, service personnel may have to manually move the carrier back to the home position in order to reset the machine so that the automatic system can operate the carrier. This manual moving of the carrier outside the automatic control is called jogging the carrier.

What types of things would require the carrier to be jogged? Full travel of the safety bar, a dirty machine such that the carrier moves too slowly that it does not arrive within the allotted time, or some sort of mechanical impediment that stops the carrier before it arrives at the destination.

Jogging the Drive-thru Unit:

There are two Magnetic sensors hidden in the server control panel which control the jogging of the machine. The first is located between the TALK and the POWER buttons. The second is located between the POWER and the TRUCK buttons.

Before attempting to JOG the unit, make sure that there are no physical obstacles in the way of the carrier and that all people are clear of the machine.

In order to manually move the carrier in toward the server end of the unit, apply the north side of the job magnet which was provided with your unit at the position between the TALK and AUDIO buttons. This will cause the carrier to move in toward the server end of the unit. Applying the north end of the magnet between the POWER and TRUCK buttons will cause the carrier to move toward the customer end.

When jogging the unit, be careful not to crash the carrier into the bottom of either end of the machine. If the carrier does not move when it is jogged, do not attempt to free the jam by jogging the unit back and forth. This will cause damage and make repair of the cause of the problem more difficult and time consuming. If a jam of this type occurs, call the factory for support.

Jogging the VRC Unit:

The VRC unit uses a key switch on the jog circuit. This key switch is located on the lower control panel of the unit. After inserting the key, turning it clockwise will jog the carrier up, turning the key counter clockwise will jog the unit down.

Basket Flips:

There are three abnormal conditions that can cause the basket to flip upside down. They are:

1. Basket guide wheel being pulled from the guide track.

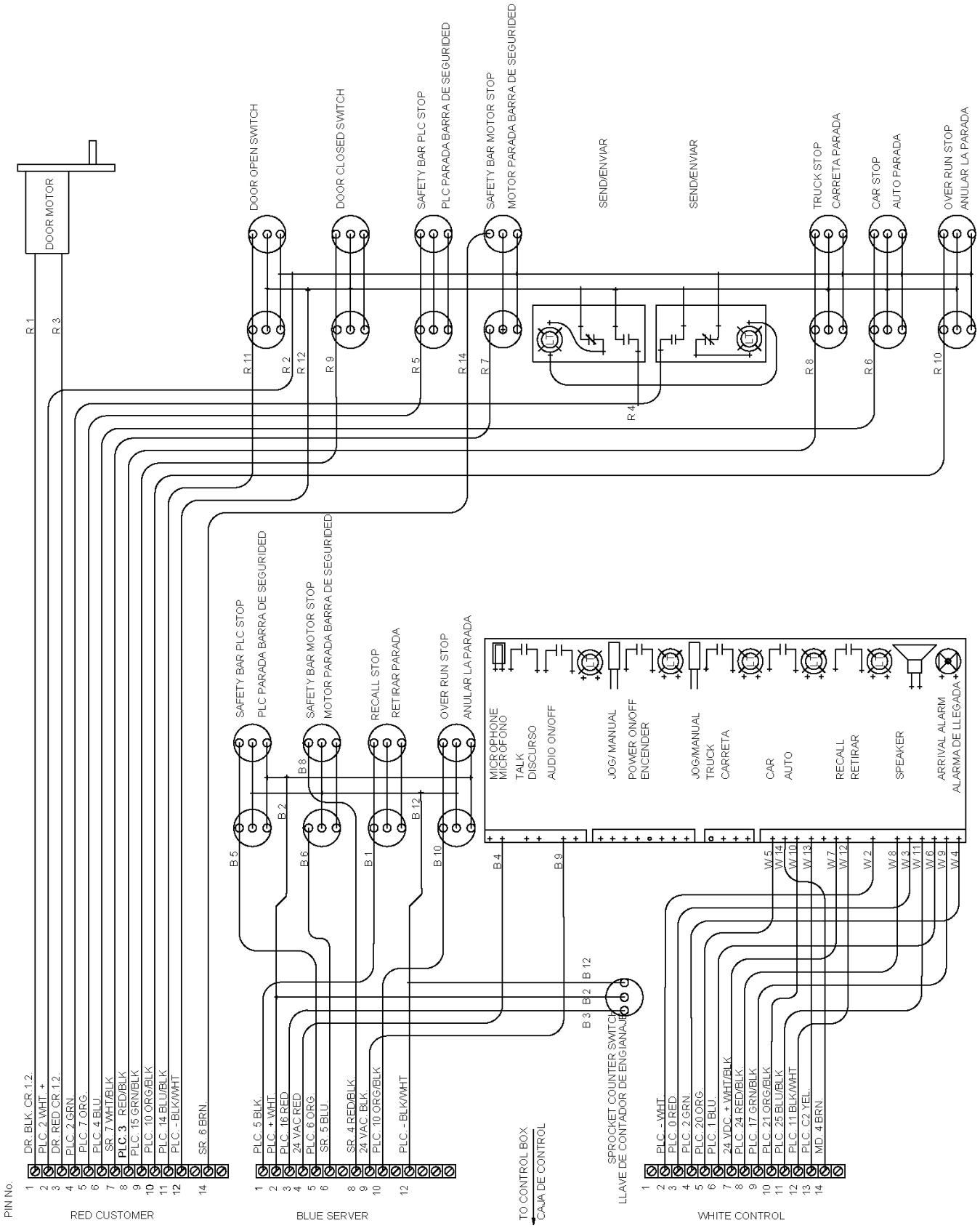
2. Basket being suddenly stopped while traversing the radius on either side of the machine.

3. Some form of physical impediment to the carrier in the horizontal of the unit.
   Note that very dirty guide track can be the cause of a physical impediment.

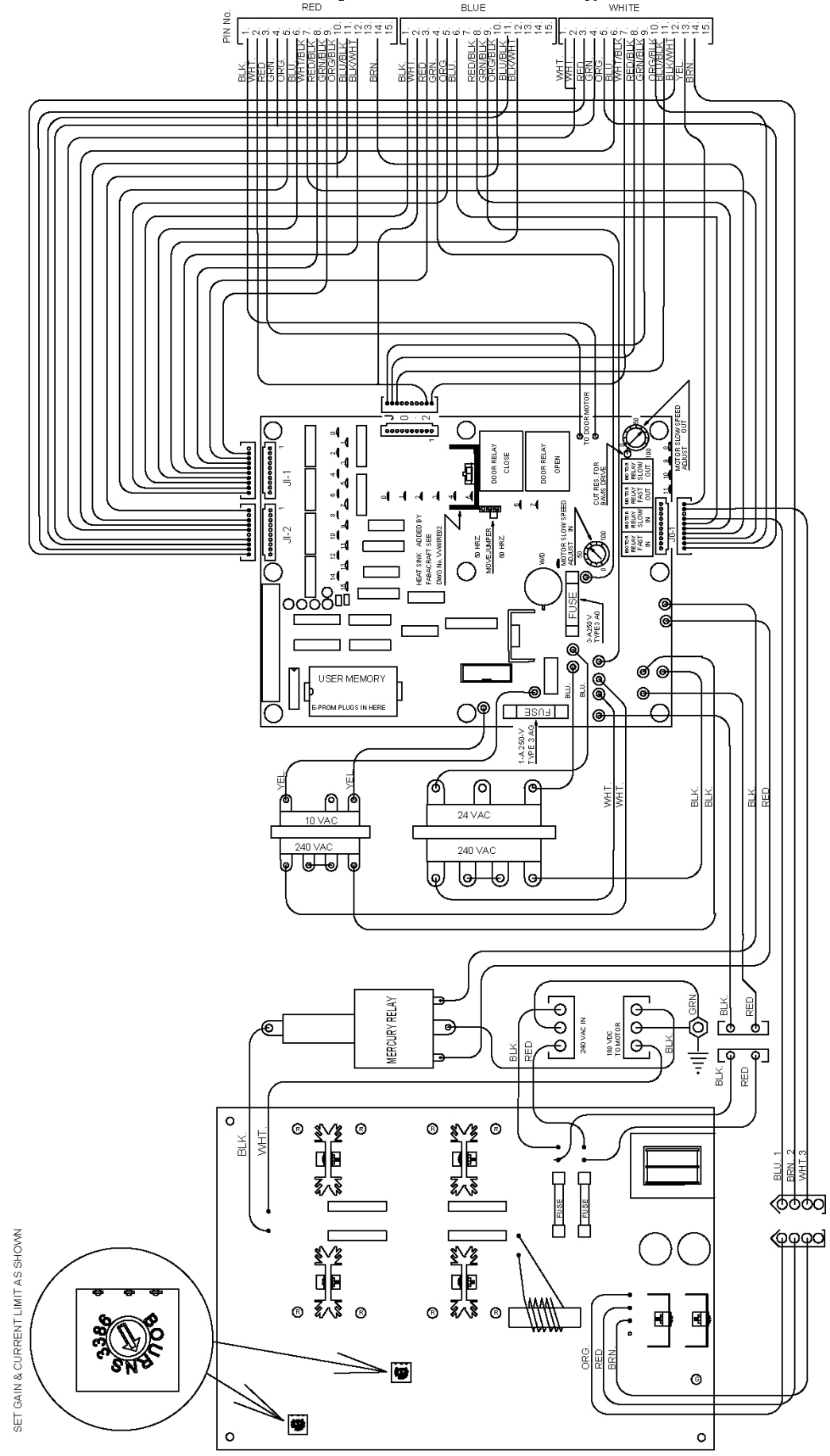
If the basket does flip, determine which of the above caused the flip, address the situation and then pop the guide wheel back into the proper place in the guide track.

Wiring Diagrams of the Vittleveyor® Units:

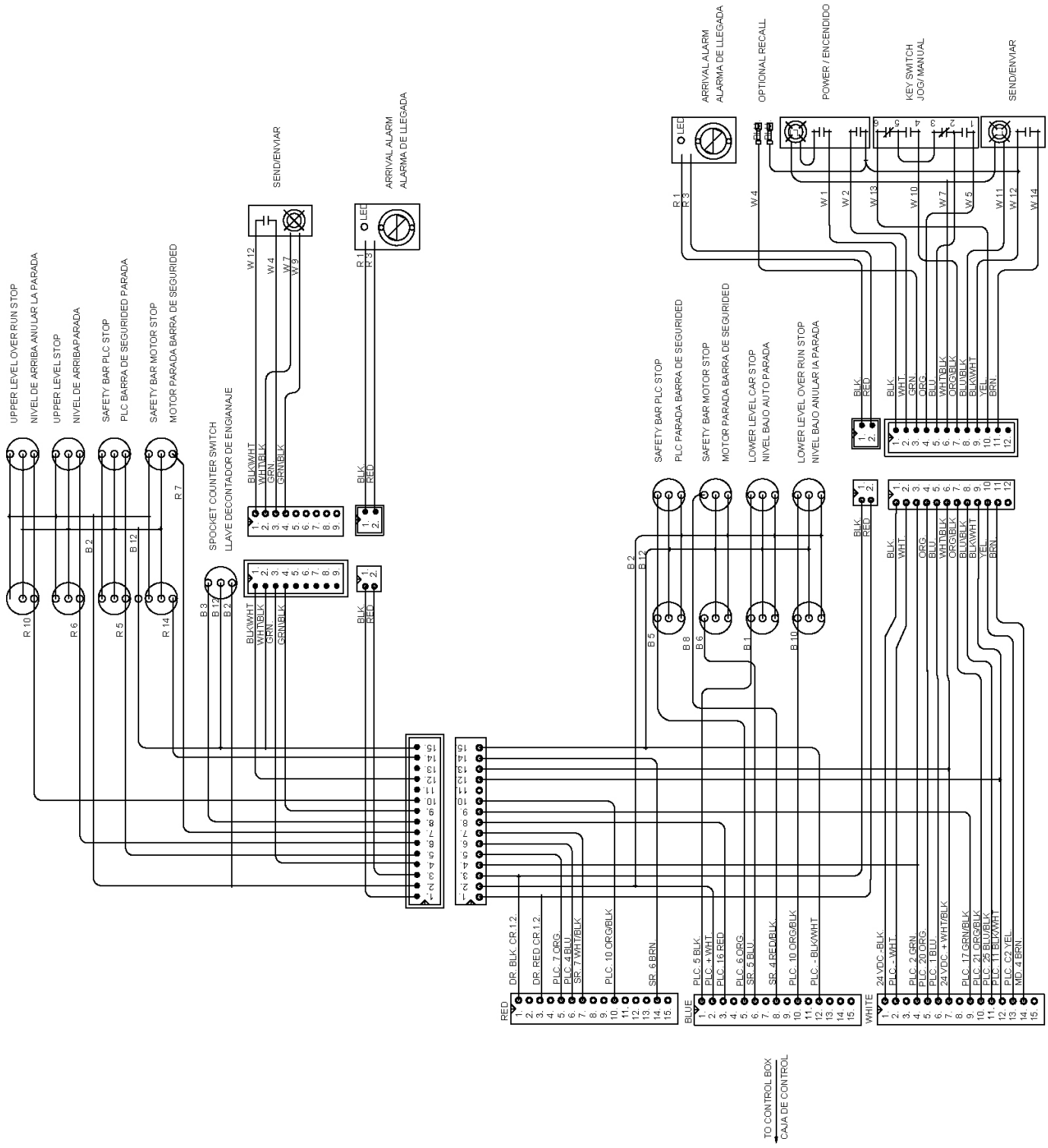
All versions of the Vittleveyor® use the same control box. What varies between the versions is the field wiring. The diagrams that follow document the control box and field wiring of the various models.


PIN No.
RED CUSTOMER
DR. BLK. CR 1.2
PLC. 2 WHT. +
DR. RED CR 1.2.
PLC. 2 GRN
PLC. 7 ORG
PLC. 4 BLU
SR. 7 WHT/BLK
PLC. 3 RED/BLK
PLC. 15 GRN/BLK
PLC. 10 ORG/BLK
PLC. 14 BLU/BLK
PLC. - BLK/WHT
SR. 6 BRN
BLUE SERVER
PLC. 5 BLK
PLC. + WHT
PLC. 16 RED
24 VAC. RED
PLC. 6 ORG
SR. 5 BLU
SR. 4 RED/BLK
24 VAC. BLK
PLC. 10 ORG/BLK
PLC. - BLK/WHT
TO CONTROL BOX
CAJA DE CONTROL
SPROCKET COUNTER SWITCH
LLAVE DE CONTADOR DE ENGANAJE
WHITE CONTROL
PLC. - WHT
PLC. 0 RED
PLC. 2 GRN
PLC. 20 ORG.
PLC. 1 BLU.
24 VDC. + WHT/BLK
PLC. 24 RED/BLK
PLC. 17 GRN/BLK
PLC. 21 ORG/BLK
PLC. 25 BLU/BLK
PLC. 11 BLK/WHT
PLC. C2 YEL.
MD. 4 BRN.
DOOR MOTOR
DOOR OPEN SWITCH
DOOR CLOSED SWITCH
SAFETY BAR PLC STOP
PLC PARADA BARRA DE SEGURIDED
SAFETY BAR MOTOR STOP
MOTOR PARADA BARRA DE SEGURIDED
SEND/ENVIAR
SEND/ENVIAR
TRUCK STOP
CARRETA PARADA
CAR STOP
AUTO PARADA
OVER RUN STOP
ANULAR LA PARADA
RECALL STOP
RETIRAR PARADA
MICROPHONE
MICROFONO
TALK
DISCURSO
AUDIO ON/OFF
JOG/ MANUAL
POWER ON/OFF
ENCENDER
JOG/MANUAL
TRUCK
CARRETA
CAR
AUTO
RECALL
RETIRAR
SPEAKER
ARRIVAL ALARM
ALARMA DE LLEGADA

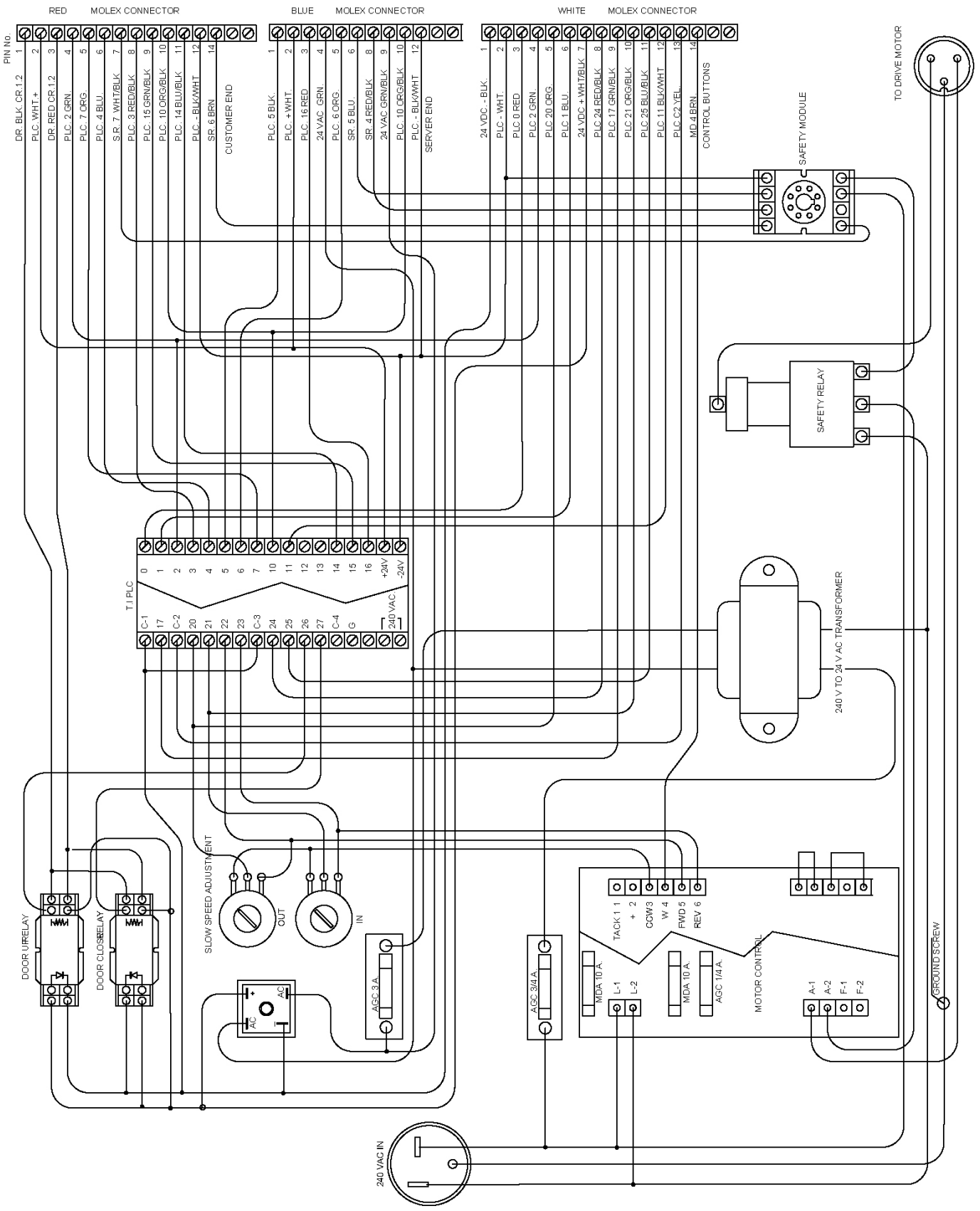
Vittleveyor® Control Wiring



VRC Vittleveyor® System



Vittleveyor® Control Box Wiring



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1774	10/11/2001
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