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# Vittleveyor<sup>®</sup> RG Systems (VVRG)

## User Reference Manual



# Vittleveyor<sup>®</sup> 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.

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## **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:

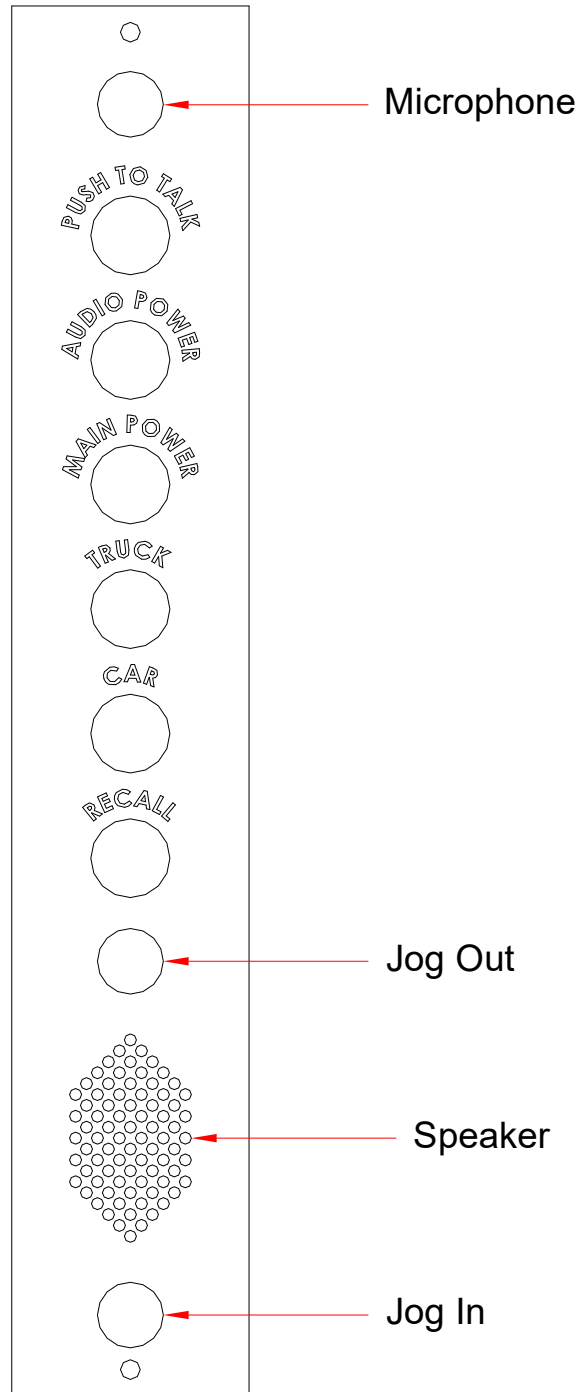
The Drive-thru Vittleveyor® System provides the user with the following controls:

#### 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 each of the control button except the TALK button which does not have an LED.

Behind the control panel is a customer call buzzer. This buzzer volume of the call buzzer is not adjustable. This buzzer sounds when the customer presses the call button.

## Server Control Panel



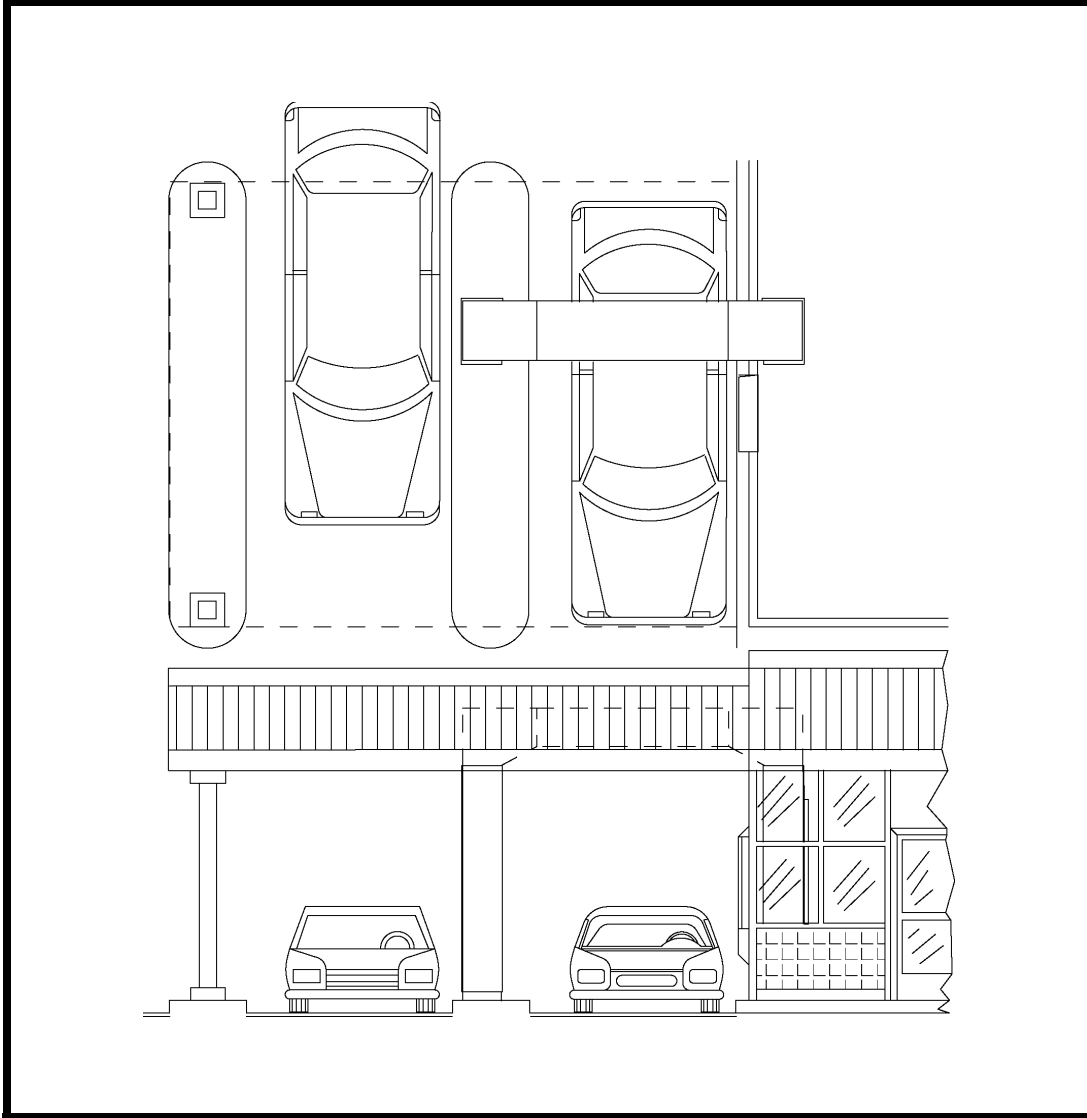
### Customer Controls:

The Customer controls consist of two “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 an audio speaker and microphone.

## User Operation Instructions

### The Drive-thru Vittleveyor<sup>®</sup> System:

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



Drive-thru Vittleveyor<sup>®</sup>



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

<b>Drive-Thru Vittleveyor® Server Control Functions</b>		
<b>Button</b>	<b>Required Basket Position</b>	<b>Operation initiated by pressing button</b>
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	Not sensitive to basket position	The POWER button toggles the power on and off. When the power is toggled on, the outside door will open; when the power is toggled off, the outside door will close. When the power is toggled off nor will not 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. Note that the audio toggles on and off automatically when the POWER button is toggled.
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.

## 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, there are operational considerations that have been relayed to us 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!***

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® 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.

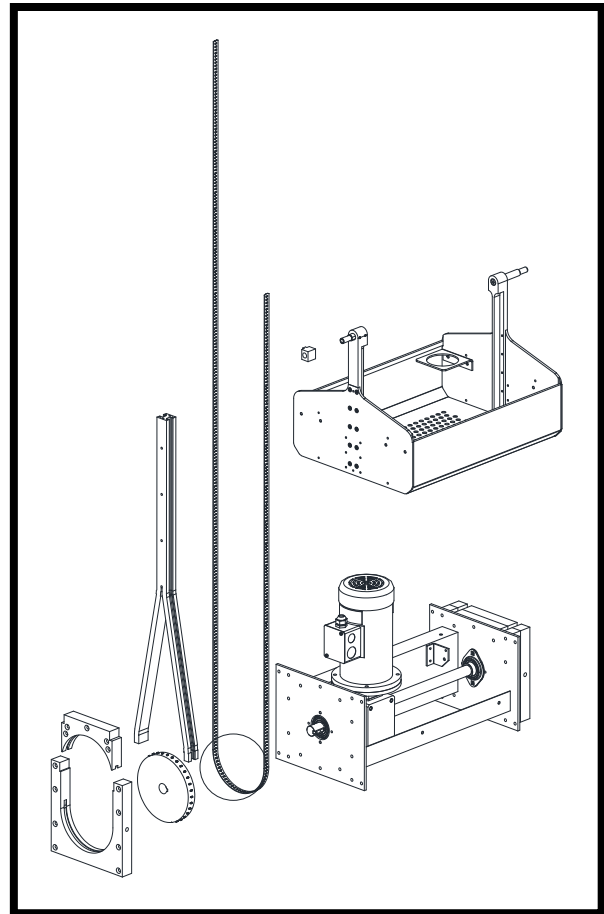
Use the Car and Truck button so that the height of the basket is convenient to your customer.

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.

## 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**

Note that these are two classes of training for individual working on any of the Vittleveyor<sup>®</sup> 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<sup>®</sup> System and its safety devices and have read and understood the Vittleveyor<sup>®</sup> 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<sup>®</sup> 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**

<b>Button Light</b>	<b>Condition of Light</b>	<b>Meaning</b>	<b>Action (To be performed by a Qualified Operator)</b>
<b>POWER</b>	<b>Light will not come on when pressed</b>	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.
<b>AUDIO</b>		Audio system off.	Press button to activate audio. If pressing button does not activate light and audio, CALL FOR SERVICE
<b>CAR and TRUCK</b>	<b>FLASHING</b>	Emergency Safety Bar above the server 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.
<b>RECALL</b>		Emergency Safety Bar above the customer opening has been tripped.	
<b>CAR, TRUCK and RECALL</b>	<b>FLASHING</b>	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.

## User Care and Maintenance

### **General:**

The most important aspect of care and maintenance for any Vittleveyor<sup>®</sup> 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 maintenance procedures for the users of the Drive-thru Vittleveyor<sup>®</sup> are listed on the following page:

## Care and Maintenance

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

### NOTE:

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.

## **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.

### **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.

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## The Vittleveyor® Diagnostics

NUMBER	NAME	CONDITION	INDICATES
<b>INPUTS</b>			
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	PHOTO EYE / INTERLOCKED DOOR	ON OFF	NORMAL PHOTO EYES ARE BLOCKED, OR AN INTERLOCKED DOOR IS OPEN
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
<b>OUTPUTS</b>			
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



## **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.

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

<b>SIZE</b>	<b>LOCATION</b>	<b>PURPOSE</b>
AGC10	DC drive board, top fuse	Controls one leg of the 208-240vac feed to the Regenerative Drive
AGC10	DC drive board, lower fuse	Controls remaining leg of the 208-240vac feed to the Regenerative 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 Mean?**

The movement of the basket 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 basket when under this automatic control, or if the basket needs to be moved for service, the 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 basket to be jogged? Full travel of the safety bar, a dirty machine such that the basket 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:**

**Note: Only trained personnel should attempt Jogging the machine.**

There are two Magnetic sensors hidden in the black buttons above and below the speaker on the Upper Level control panel which control the jogging of the machine, (see Pg. 3).

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.

**Note: Be careful when jogging the unit, as all safety, over-travel and stop switches do not work when operating the unit in jog mode! Only trained personnel should use the jog mode. Contact the factory for support.**

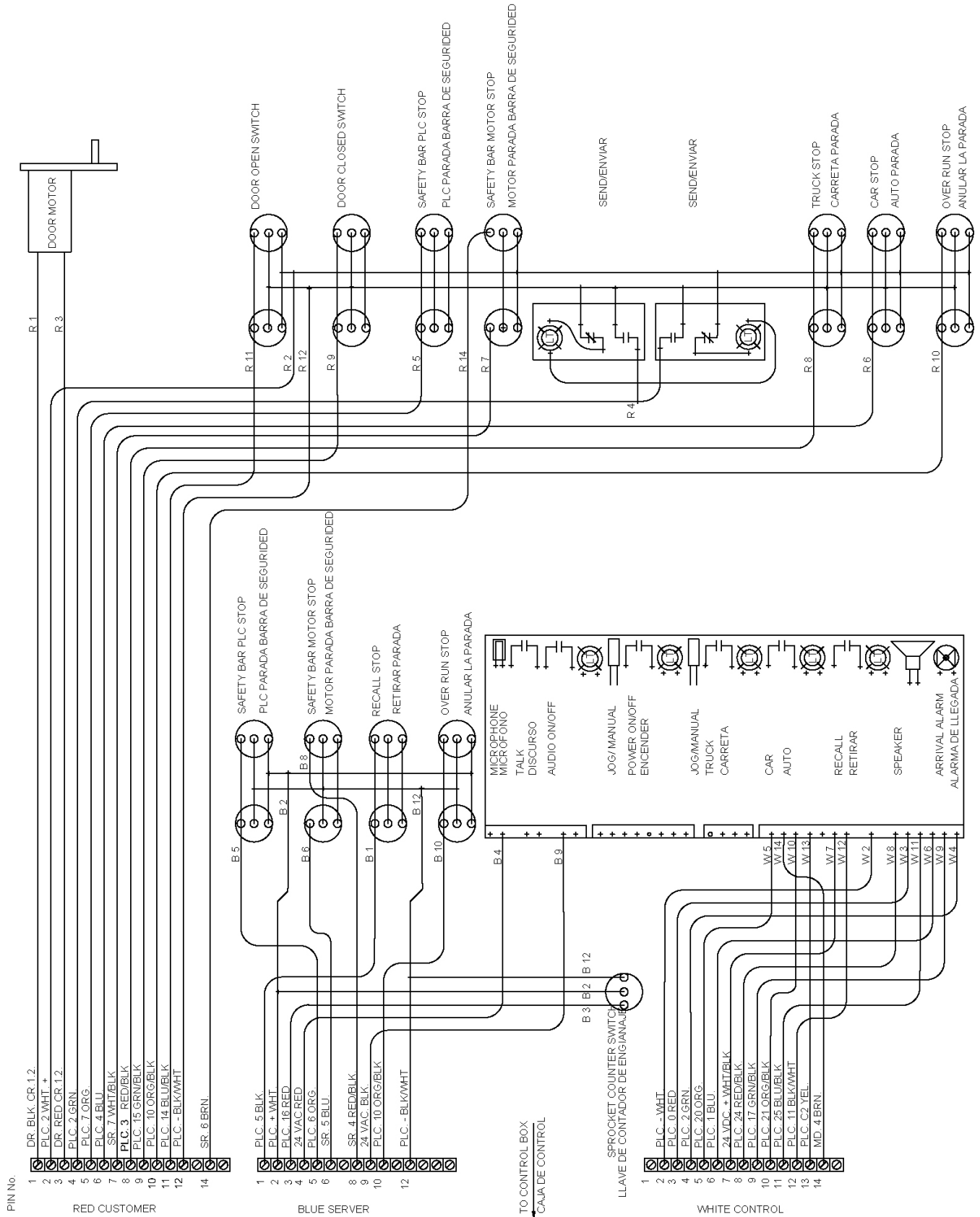
In order to manually move the basket in toward the server end of the unit, apply the north side of the jog magnet, which was provided with your unit, to the black dot that is above the speaker. This will cause the carrier to move out toward the customer end of the unit. Moving the magnet away from the button will make the basket stop. Applying the north end of the magnet to the black dot below the speaker will make the carrier move in to the server end.

When jogging the unit, be careful not to crash the basket into the bottom of either end of the machine. If the basket 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 original problem more difficult and time consuming. If a jam of this type occurs, call the factory for support.

## **Wiring Diagrams of the Vittleveyor® Units:**

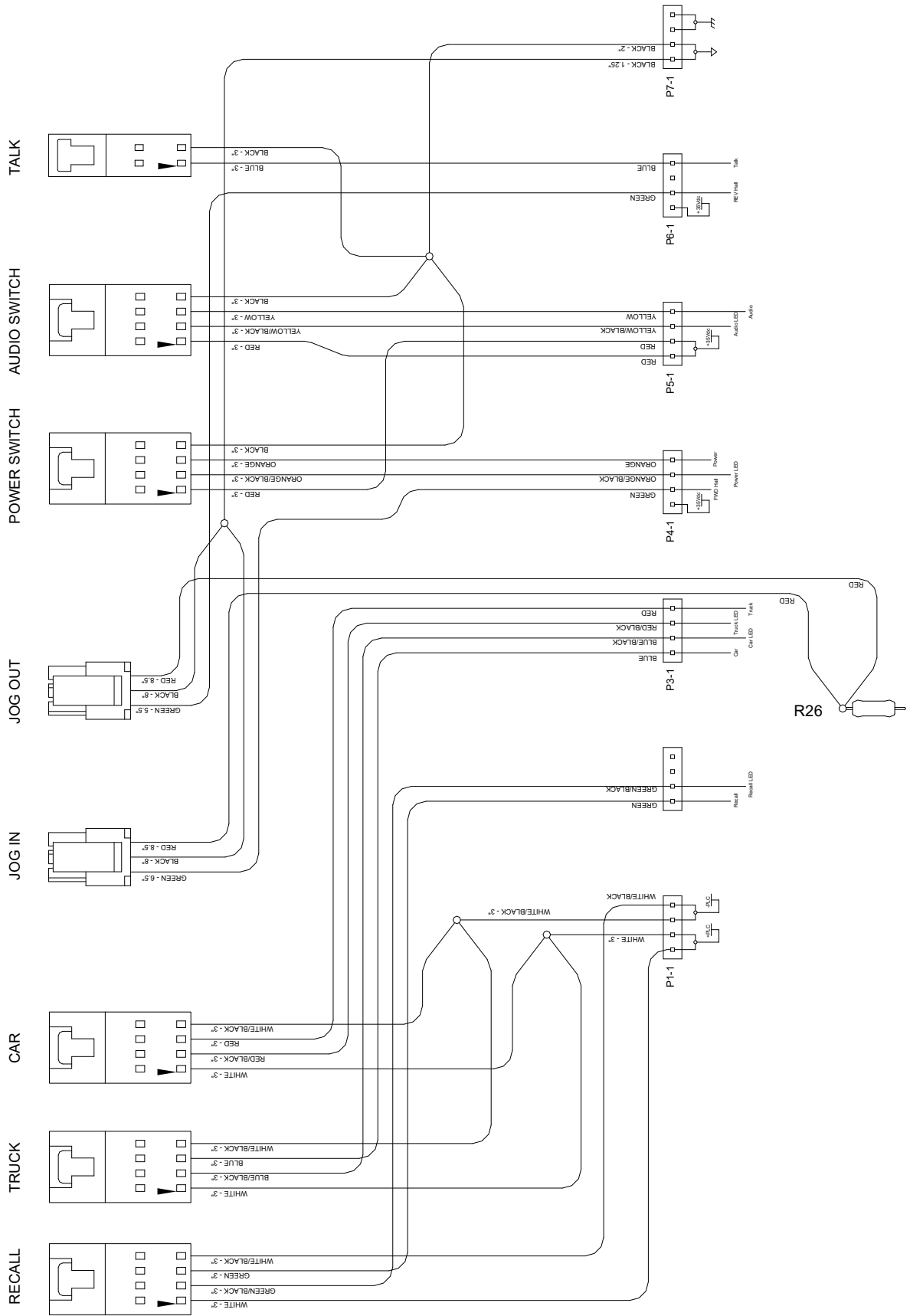
All versions of the Vittleveyor® use the same control box. What varies between the versions is the field wiring and programming. The diagrams that follow document the control box and field wiring.

# Vittleveyor® Drive Thru Wiring





# Control Panel Button Wiring



**Revised**

<b>ECN</b>	<b>Date</b>
13512	02/16/2012
20640	03/31/2021

