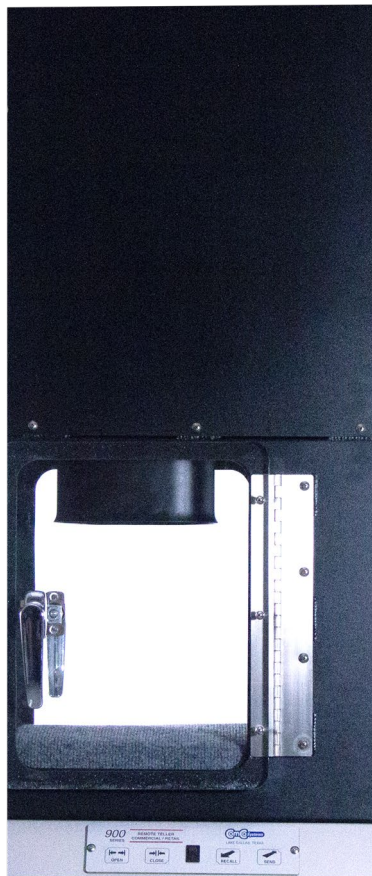


## Installation and Operator Manual





## 901AX Series

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October 08, 2021

ComCo Systems, INC. A division of Communications Conveyor Company

P/N: 500655 Rev. -

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## System Features

The Model 901AX is an overhead pressure/vacuum system that utilizes 4x7 tubes and carriers. The carrier travels from the teller unit to the customer unit under vacuum and returns under pressure. The blower unit is located near the customer unit.

- The Model 901AX is configured with three major subsystems:

1. Teller Unit 900A (TU) P/N: 200430
2. Blower Unit : P/N: 200217-3
3. Customer Unit 901AX (CU) P/N: 201298
4. Dual-Sided Manual Teller Unit : P/N: 200747



### Dual Sided Teller Unit (TU)

**TU-900A-200747**

Dual Manual operating doors, which is suspended from the ceiling, typically over counter top.



### Teller Unit (TU)

**TU-900A-200430**

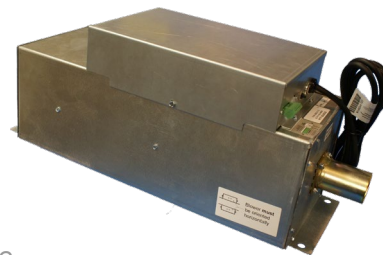
Manual operated door unit which is suspended from the ceiling, typically over counter top.



### Customer Unit (CU)

**CU-901AX-201298**

Fully automatic door operation with optional 2 way video unit.



### 1 to 3 Single Pack UL Blowers

**BM-200-200217**

Features (Ea. Single Pack):

- 1 Power Cord
- 115Vac/15A
- 1 Blower for pressure
- 1 Blower for vacuum

# ***Teller Unit***

Model: ***TU-900A-200430***



## Manual Operated Teller Unit (TU) (P/N: 200430)

The manual teller unit utilizes a manually operated door. The teller unit's door *MUST* remain closed during a send or recall cycle for the system to function properly. The teller unit door should *only* be opened when a carrier is being inserted to send to the customer unit, or immediately after a carrier has arrived from the customer unit. *Opening the door will cancel operation*, to resume operation close door and press RECALL or SEND.

Please note the reference guide in Fig. 1.0.

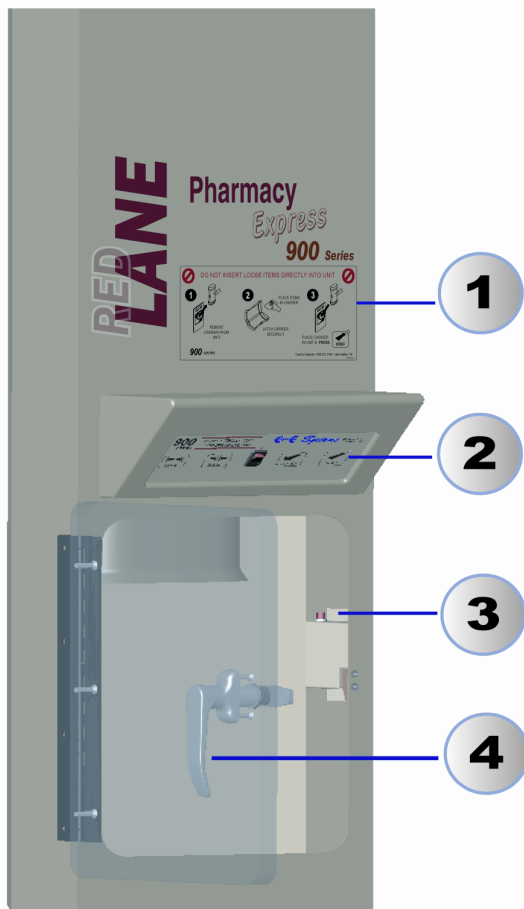


Fig. 1.0

### 1. Instruction Panel

Reference to operator instructions for system start up for ready state and office closing shut down.

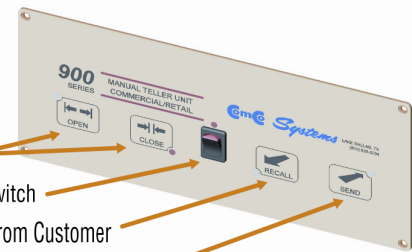
### 2. Control Panel

Customer Manual Door Open/Close

System Power On/Off Switch

Retrieve Carrier from Customer

Send Carrier to Customer



### 3. Door Indicator

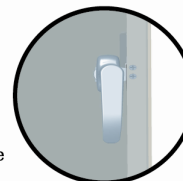
Door light indicator will be illuminated when both the Customer Unit and Teller doors are closed. If the indicator is extinguished the system will not operate.

Light All Doors Closed Indicator



### 4. Door Handle

Door handle must be in the latched position to SEND or RECALL carrier. Unlatch handle to open door to retrieve carrier.



Door Latched



Door Unlatched

**\*\*NOTE:** Door Close Lights on both the switch panel and the light next to the manual door handle *MUST* be ON to function properly!



### Teller Unit (P/N: 200430) Switch Operating instructions

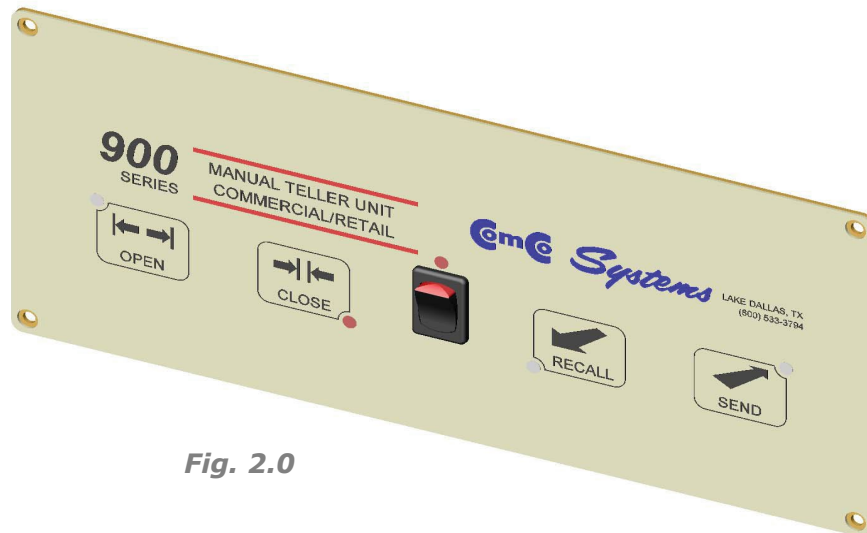


Fig. 2.0

#### **ON/OFF**

The power switch cycles the complete system (Inside Unit, Outside Unit & Blowers). Power ON all lights will be present and opens the customer unit door. Power OFF complete system power down and closes the customer unit door. If installed it will power down the Customer Video Module (CVM).

**DOOR OPEN** Opens the customer unit door.

**DOOR CLOSE** Closes the customer unit door.

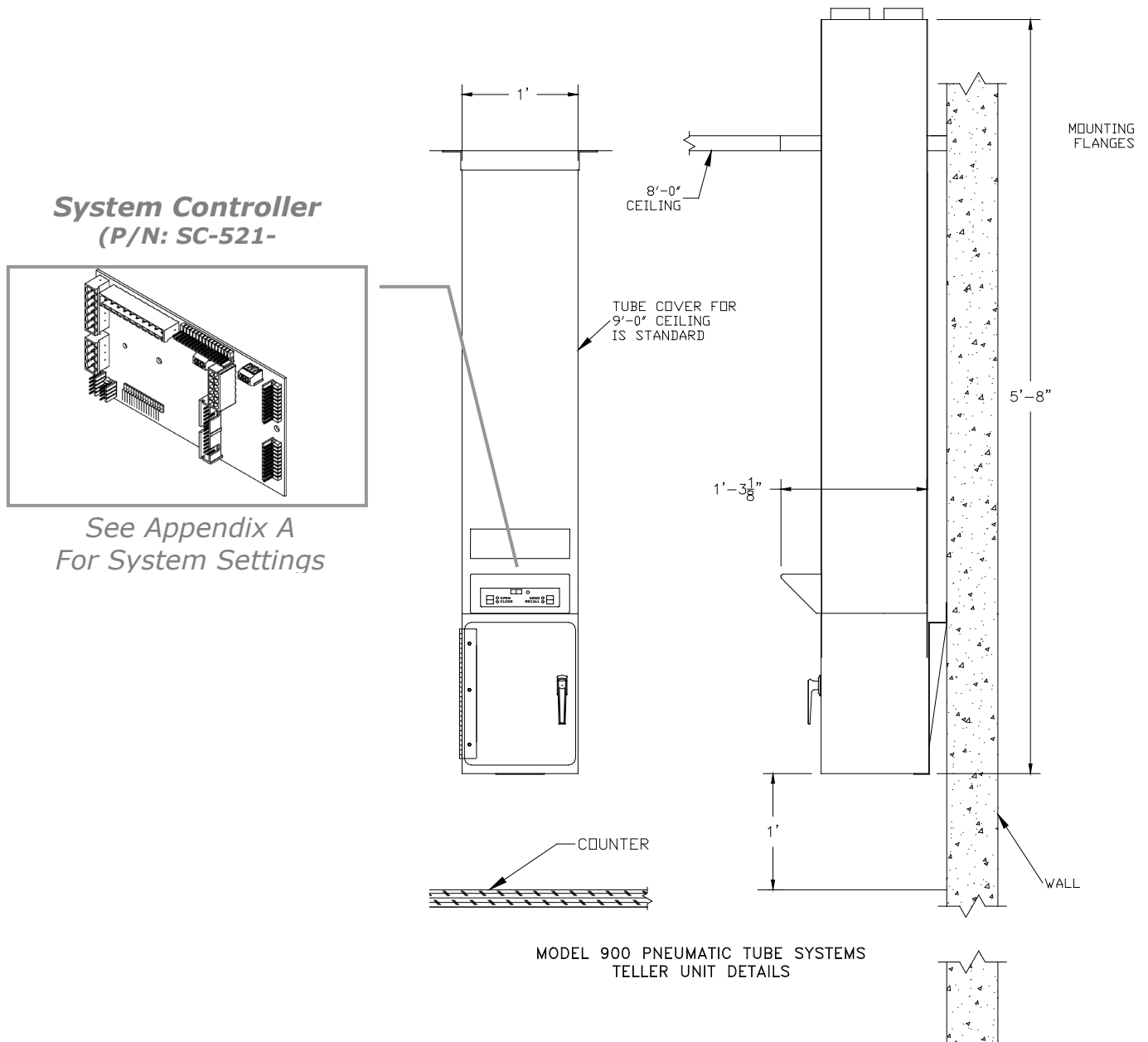
**SEND** Sends a carrier to the customer unit. The teller unit door must be closed in order to send a carrier to the customer unit. The SEND switch is deactivated when there is a carrier present at the customer unit.

**RECALL** Recalls a carrier from the customer unit. The carrier settle switch in the customer unit does not need to be engaged for the teller to initiate a recall cycle. The teller unit door must be closed in order to recall a carrier from the customer unit.

## Teller Unit (P/N: 200430)

### Dimensional & Electrical Specifications

Item	Measurements	Value
Teller Unit (TU-900-200430)	Nominal Voltage	24 VDC
	Current (max)	2 amps

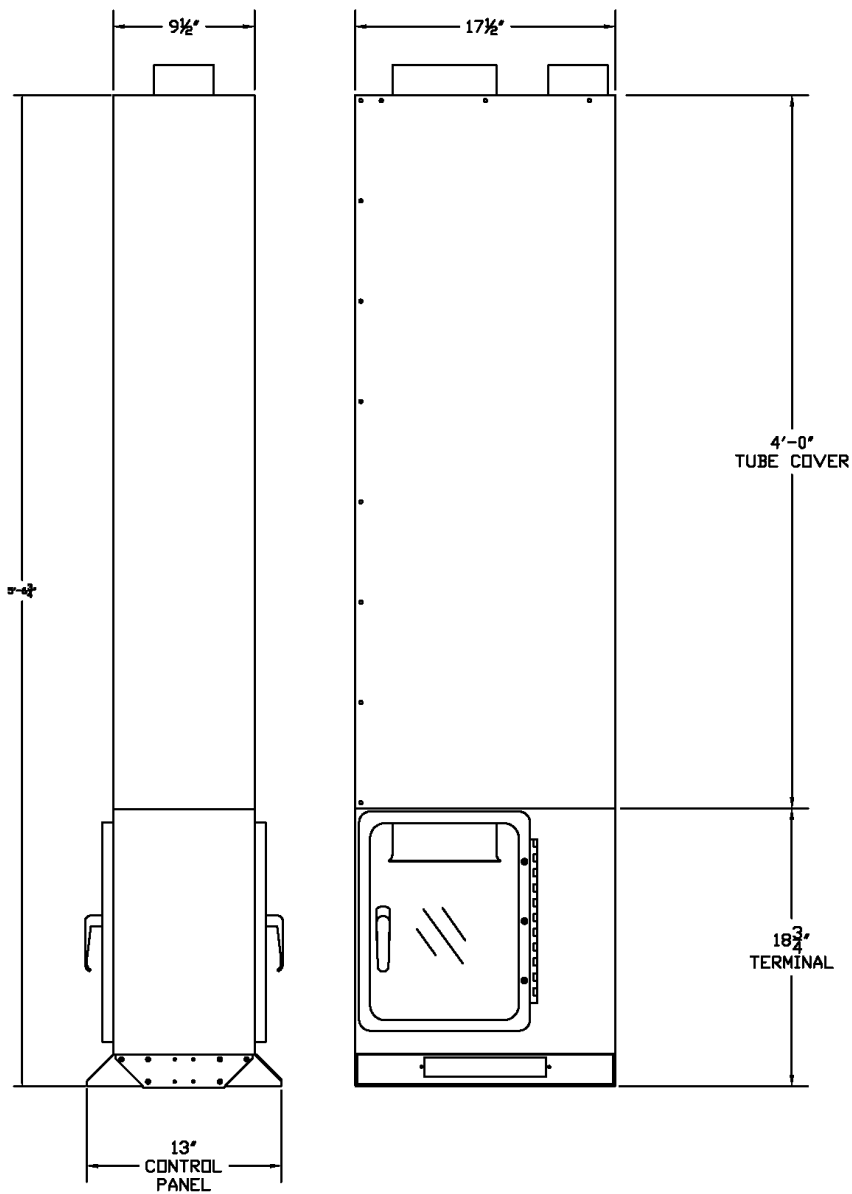
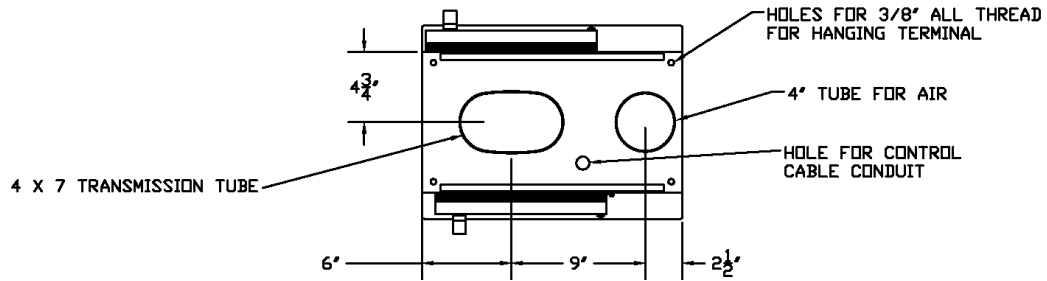




# *Dual Sided Manual Teller Unit*

**Model: TU-900-200747**





# ***Customer Unit***

**Model: CU-901AX-201298**



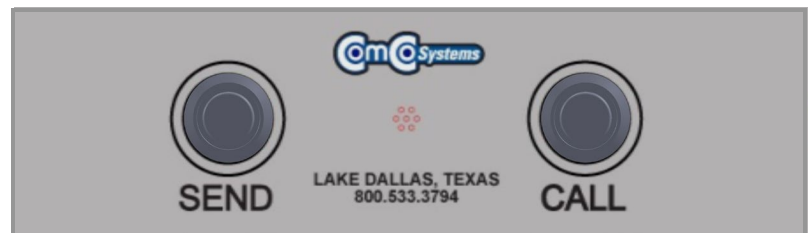
## Customer Unit (P/N: 201298) Machine & Switch Operating Instructions

**SEND** Sends carrier to Teller Unit.  
(NOTE: DO NOT INSERT LOOSE ITEMS DIRECTLY INTO UNIT)

**CALL** Generates audible tune at the Teller Center when depressed.



Switch Panel (P/N: 201350)

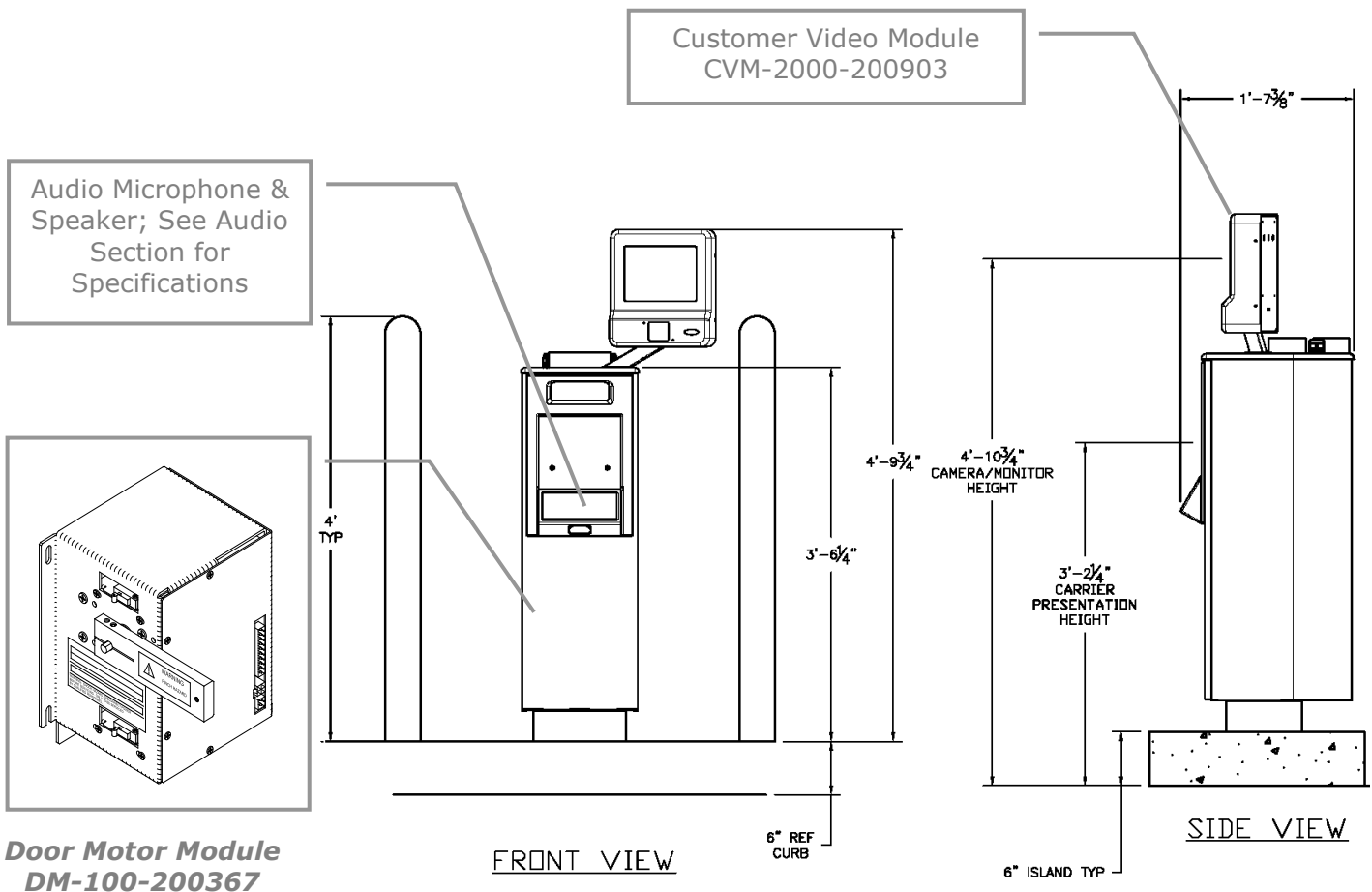


Instruction Panel (P/N: 200463-1)



### Customer Unit (P/N: 201298) Dimensional & Electrical Specifications

Item	Measurements	Value
Customer Video Module (CVM-2000-200903)	Nominal Voltage Current (max)	12 VDC 3.5 amps
Door Motor Module (DM-100-200367)	Nominal Voltage Current (max)	120 VAC, 60Hz 1 amps

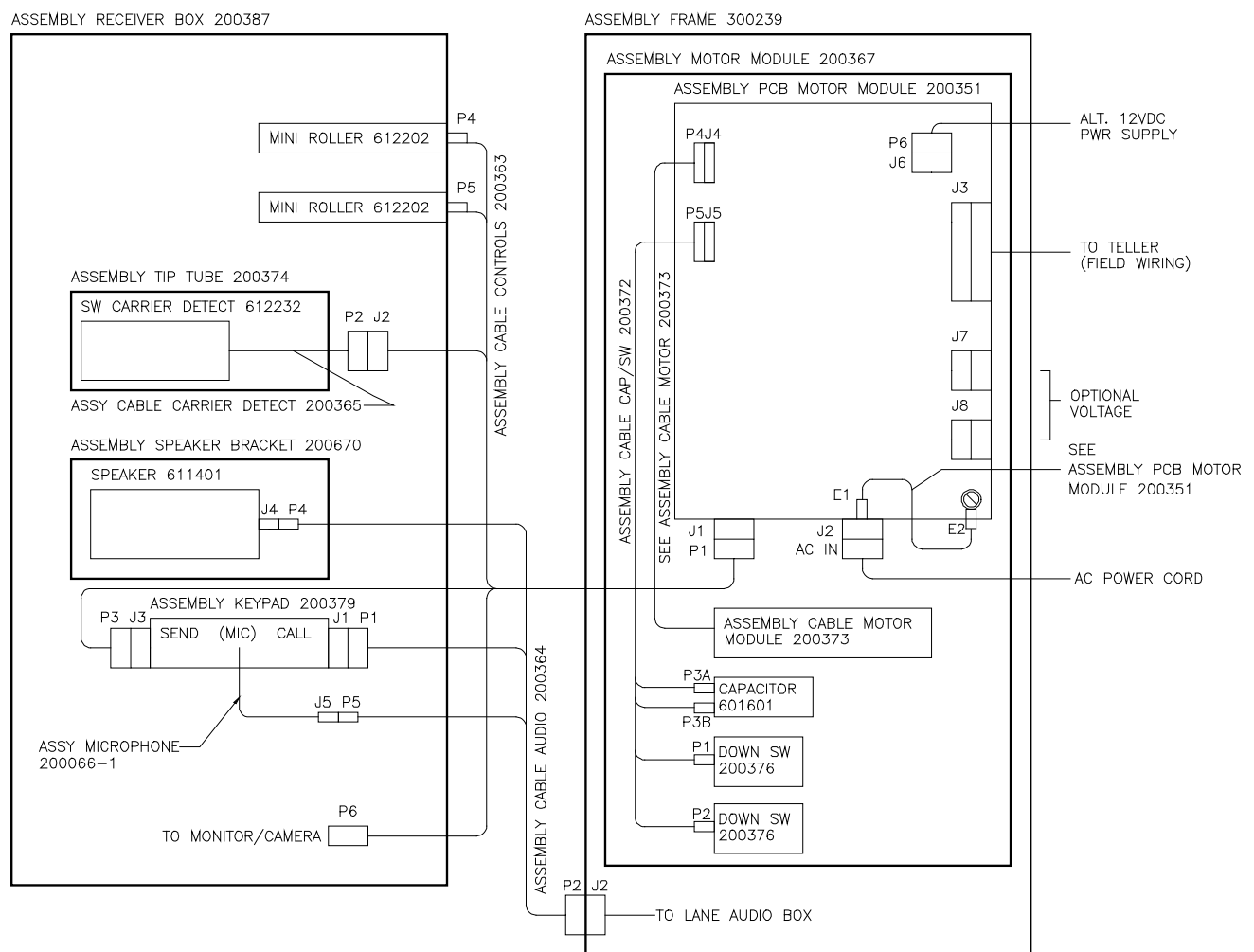


## Customer Unit (P/N: 201298)

### Main Wiring Diagram

### **WARNING: SHOCK HAZARD**

Power Down the system before initiating procedures described in this section. Severe personal injury could result if power remains on during these procedures.

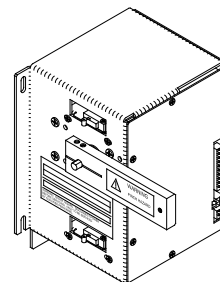


FINAL ASSEMBLY CABLE DRAWING



### Customer Unit Door Motor Module (P/N: 200367) Line Voltage Installation

Installation of this unit must be with only the assemblies supplied in 900 series field service wiring kit (P/N: 200438). See Appendix B.



#### **WARNING: SHOCK HAZARD**

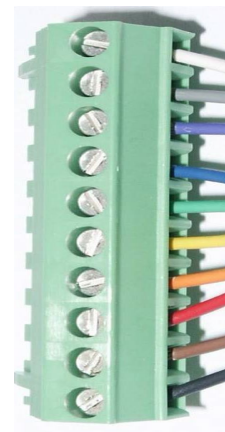
Disconnect AC Power before Servicing Unit!

\*AC Service Disconnect for Unit is located at the readily accessible branch circuit protection\* All Line Power must be in compliance with the NEC 2005  
Only by Authorized/Qualified Personnel.



#### **Class 2 Field Wire**

White  
Grey  
Purple  
Blue  
Green  
Yellow  
Orange  
Red  
Brown  
Black



Wire Colors

#### **SHOCK HAZARD**

Disconnect AC Power before Servicing Unit  
\*AC Service Disconnect for Unit is located at the readily accessible branch circuit protection \*

#### **SHOCK HAZARD**

Disconnect AC Power before Servicing Unit  
\*AC Service Disconnect for Unit is located at the readily accessible branch circuit protection \*

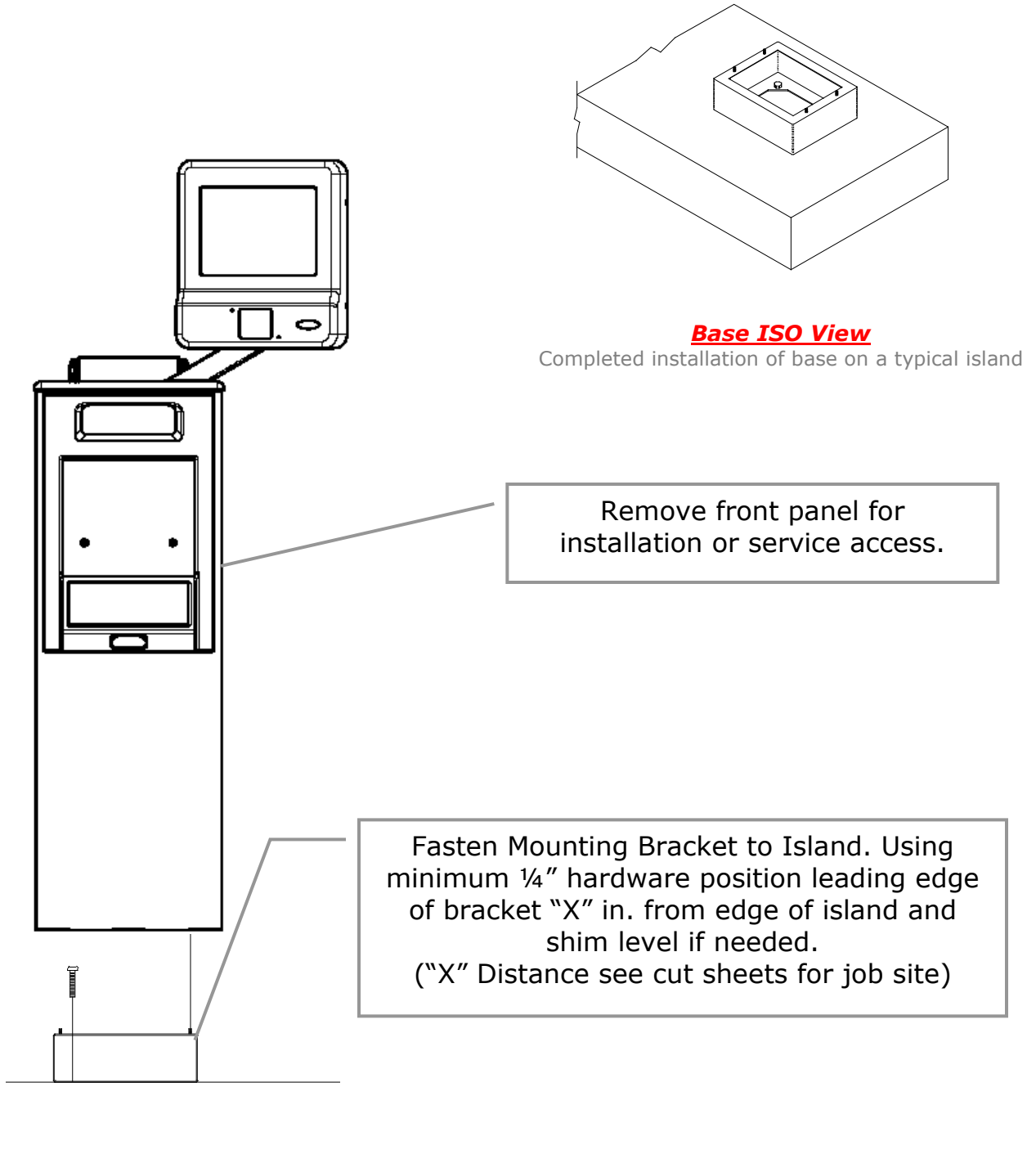
#### **15A 250V Field Wiring Plug Rating**



L - Black  
GND - Green  
N - White

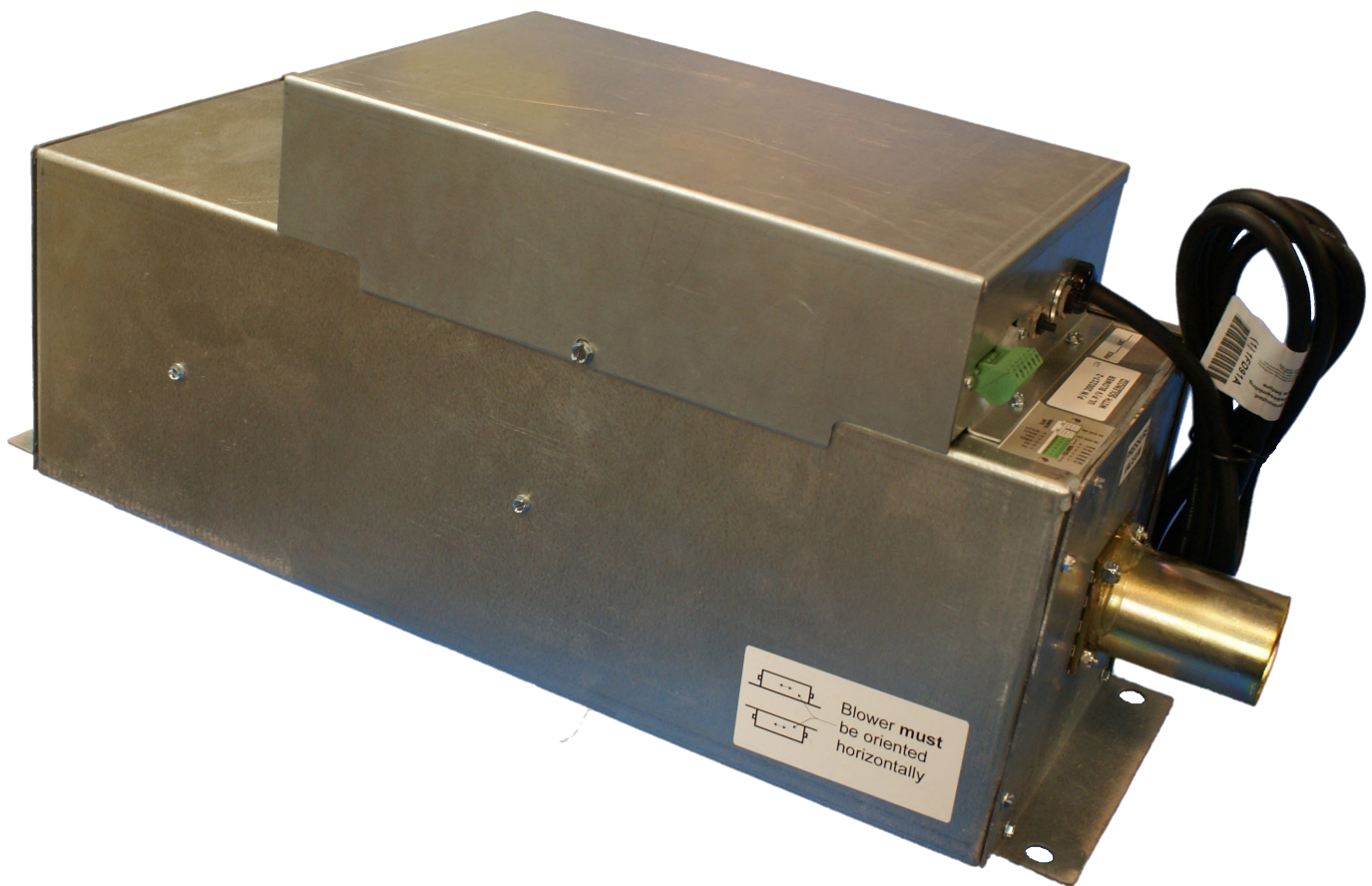
#### **Serviceable FUSE Location Rating: 1A 250VAC Fuse UL Listed Only**

Customer Unit (P/N: 201298)  
Mounting & Access



# ***Single Pack Blower***

Model: ***BM-200-200217***



## Single Pack Blower Module (P/N: 200217)

### Line Voltage Installation

For Installation of this unit refer to construction site plans or cut sheet for locating the unit. If the blower is installed in a closed canopy, the exhaust port must be vented to outside air to prevent overheating. Refer to field service wiring kit (P/N: 200438) for all control and 115 VAC plugs.

### **WARNING: SHOCK HAZARD**

Disconnect AC Power before Servicing Unit Only to be serviced by Qualified Personnel

**\*AC Service Disconnect for Unit is located at the Main Junction Breaker Box\***

### **NOTE:**

*There must be a 115VAC @ 20A dedicated circuit within 3.0 ft of the unit. All Line Power must be done in compliance with the NEC (National Electrical Code) by authorized/qualified personnel.*

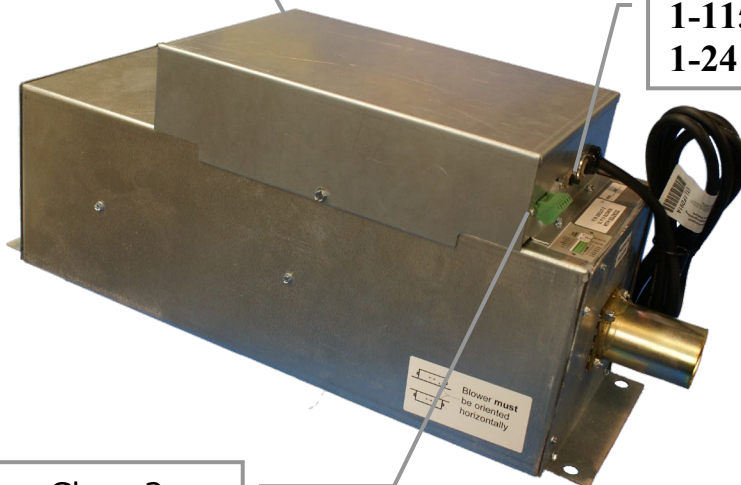
### **SHOCK HAZARD**

Disconnect AC Power before Servicing Unit

**\*AC Service Disconnect for Unit is located at the Main Junction Breaker Box\***

**2-115 VAC 10A  
Resettable Fuse**

**1-115 VAC 0.5 A Resettable Fuse  
1-24 VAC 1.5 A Resettable Fuse**



**Class 2  
Field Wiring**

**Use ¼" minimum hardware to  
mount unit in place. For  
mounting location see cut  
sheets for job site.**

### 4x7 Carrier (P/N: 400215)

Carriers must be fully closed before they are inserted into either the teller unit or the customer unit. Carriers that are not fully closed may fail to leave the sending unit, may become lodged within the transmission tubing, or possibly lose their contents during transmission.



If coins are to be sent, it is recommended that they be rolled and placed in a pouch or bag. Loads that can shift during transmission may cause malfunction or damage to the carrier or system.

Carriers are not to exceed a gross weight of 10lbs.

The contents of the carrier must be fully within the carrier and not caught between edges. Multiple transmissions should be used if a load is too large to fit within the single carrier.





## Theory of Operation

### Powering the System

The rocker switch in the center of the teller unit control panel controls power to the system. The adjacent red LED indicates “power on.”

**NOTE:** The power switch does **not** switch off 120VAC service to any component. It is only used to deactivate the system. Some components may remain energized and/or active when the system is “off.”

### Power ON

1. Teller switches power on
2. Power indicator illuminates
3. Customer Unit door opens (if carrier is present)
4. *CVM Systems only:* Camera and monitor in CVM are powered on
5. System is now in ready state

### Power OFF

1. Teller switches power off
2. Power indicator extinguishes
3. Teller Unit door closes
4. Customer Unit door closes
5. *CVM Systems only:* Camera and monitor in CVM are powered off
6. System is now off

The power switch may be used to recover from unusual system conditions simply by switching it off and on – this will reset the system.

### Send cycle

1. Teller inserts carrier into teller unit
2. Teller closes teller unit door and presses SEND
3. Send cycle begins
4. Vacuum blower activates
5. The valve in the Customer Unit Check Valve opens and the valve in the Teller Unit opens, pulling air pressure from Teller Unit
6. Carrier is propelled from Teller Unit into transmission tubing, towards Customer Unit
7. Carrier decelerates due to pressure in front of carrier
8. Carrier arrives at Customer Unit, activating carrier settle switch (*Note: if carrier settle switch does not activate, the cycle timer times out, and the send cycle ends, but the customer unit door does not open*)
9. Vacuum blower deactivates
10. Customer Unit door opens
11. Send cycle ends; System is now in ready state



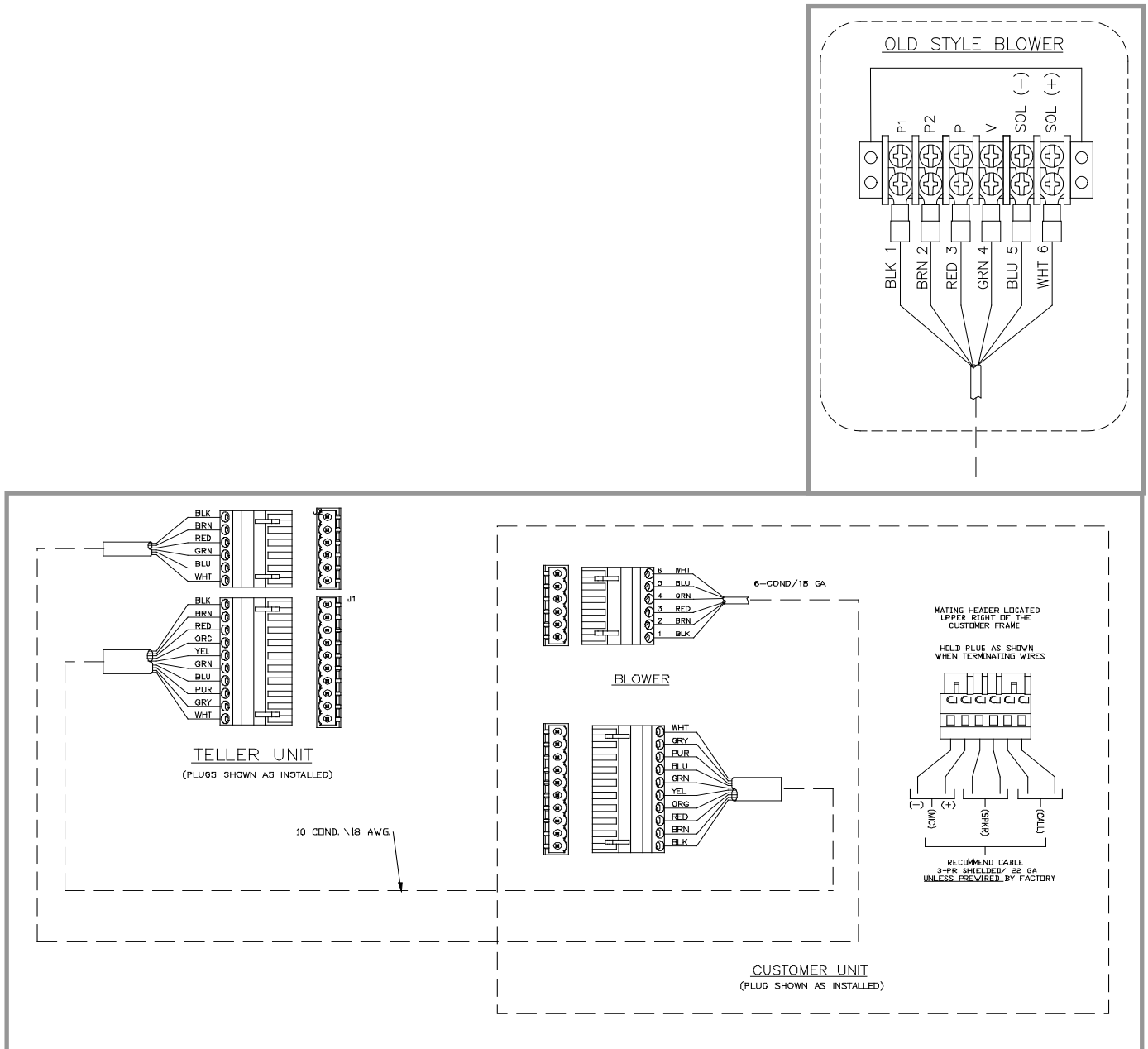
### Recall cycle

1. Customer inserts carrier into Customer unit
2. Carrier activates carrier settle switch
3. Customer presses SEND
4. Customer unit door closes (*Note: if the safety switch actuator at the top of the door is lifted when the door is closing, the door will reverse until the actuator is lowered*)
5. Recall cycle begins
6. Pressure blower activates
7. The valve in the above Customer Unit Check Valve closes and the Valve in the lower Customer Unit opens, sending pressure to the Customer Unit
8. Carrier is pushed from Customer Unit into transmission tubing towards Teller Unit
9. Carrier passes Teller relief valve
10. Carrier is decelerated by pressure ahead of carrier (*valve in Teller Check Valve blocks pressure from Teller Unit*)
11. Carrier arrives at Teller Unit.
12. Cycle timer times out
13. Recall cycle ends – system is now in ready state

## Installation

### Field Wiring Diagram (P/N: 500165)

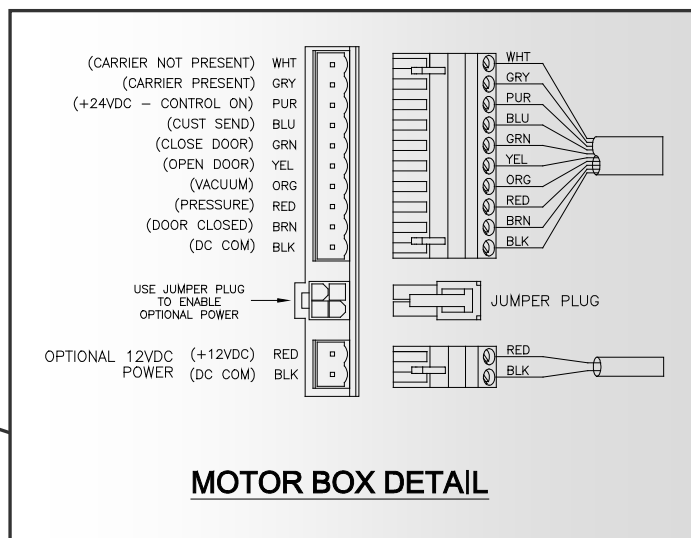
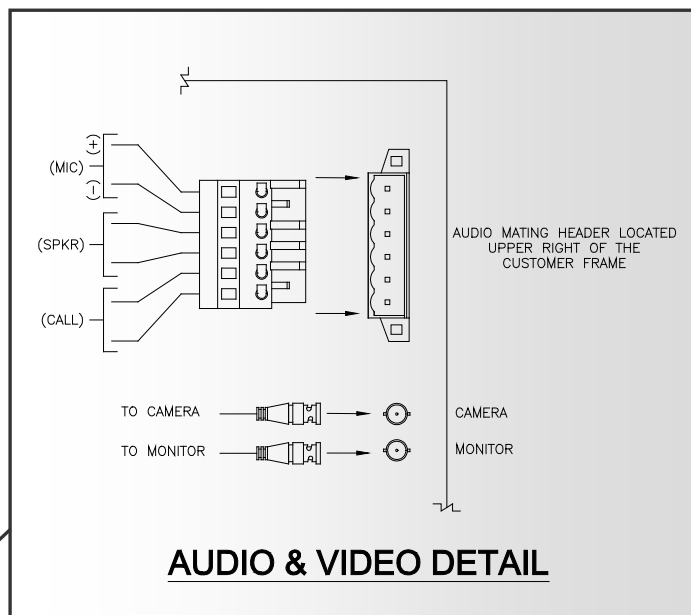
**NOTE:** All Class 2 interconnecting cabling must be done in compliance with the ARTICLE 800.33 (A) FPN No.2, exception No.2, of the NEC (National Electrical Code) by an authorized/qualified personnel.



### Control/Audio Field Wiring Diagram

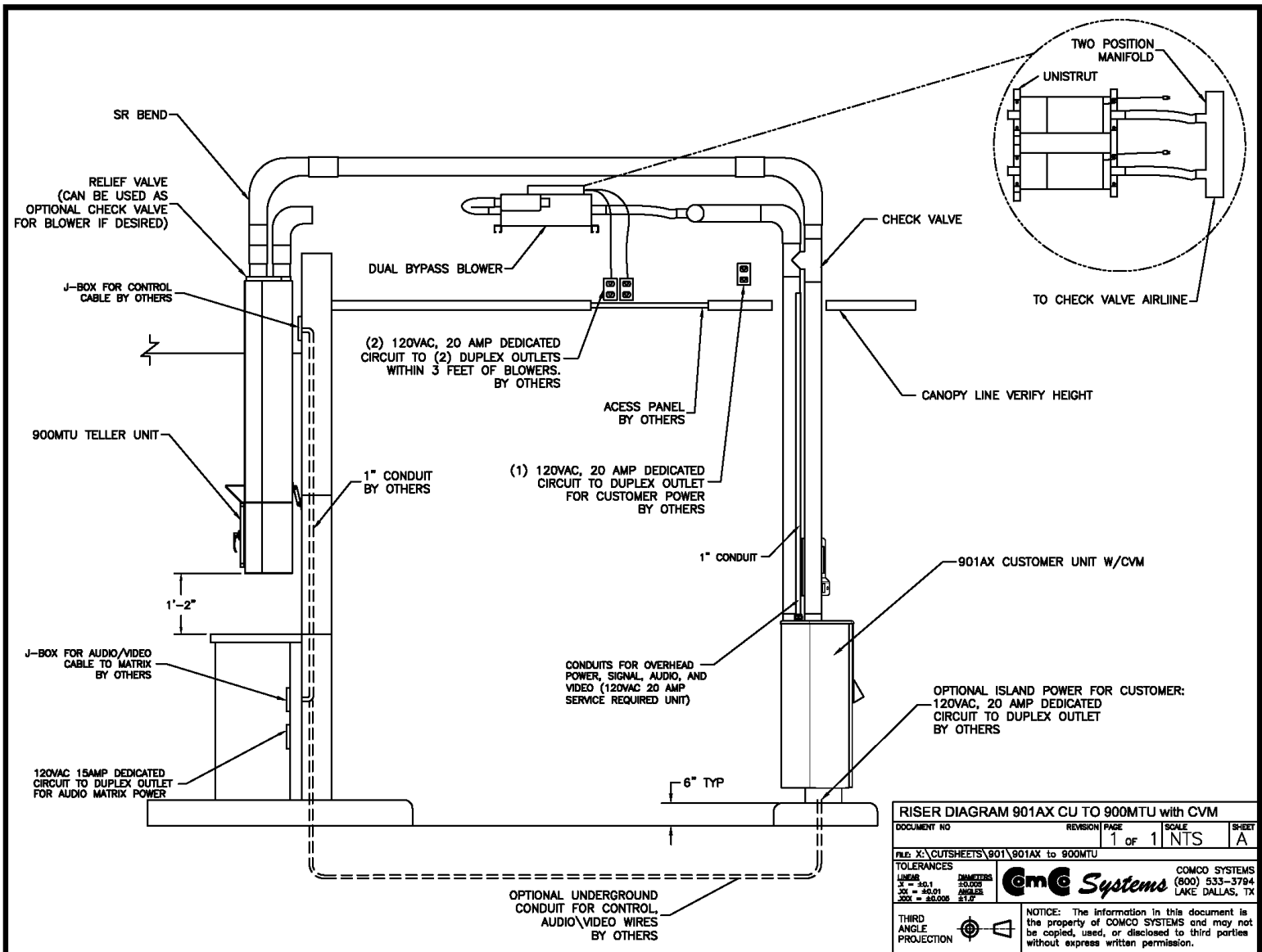
# Installation

**901AX Series**



## System Riser Diagram & Options

### Parts Descriptions:



### *Blower*

All blower packs are suitable for installation in restricted access locations at maximum operating ambient 40C deg/104F deg.

**Note:** If blower is installed in a closed canopy the exhaust port must be vented to outside air to prevent overheating.

### *Tubing*

All tubing *must* be sealed properly. *Seal all joints* – especially those at the teller and customer units. All inside edges of tube joints *must be de-burred and ground to an angle* to prevent excessive wear on carriers.

### *Timer Adjustment*

Adjust timer (T1) for approximately 5 seconds greater than the time required for an empty carrier to be recalled from the customer unit to the teller unit (this should be 2-3 seconds after the carrier lands at the teller unit). See Appendix A for switch settings and other timing settings.

### *Customer Video Module (CVM) Power Switch*

The CVM power switch is located inside the Door Motor Control Module. Power switch (SW1) factory default setting “OFF” will cycle power to CVM with system power. Power switch (SW1) in the “ON” position allows CVM to remain powered on at all times even if the system is powered down.

## Maintenance

### *Carriers*

Carriers should be inspected regularly for signs of wear. Carriers landing hard at either customer or teller unit may be a sign of worn wear bands on carrier.

Wear bands should be replaced regularly – usually every 3-6 months, depending on usage.

### *Customer Unit & Teller Chute*

The carrier deceleration switch is required for proper operation. If it is inoperable, the carrier will land hard at the teller chute.

Carrier deceleration switches should be replaced regularly – usually every 8-9 months, depending on usage.

### NOTES:

**TIMERS**

(T1) CYCLE TIMER. CONTROL TIME RANGE WITH OPTION SWITCH 8.

(T2) DOOR OPEN DELAY TIMER. DELAY DOOR OPENING WITH OPTION SWITCH 3.

(T3) SELECT PROCESSOR VER. LEVEL  
(CHIP VER. 2.0 AND HIGHER)  
SOLENOID ENGAGE TIMER. SWITCH 4 NOT USED.  
TIME SOLENOID STAYS ENGAGED, RANGE 5-15 SEC.  
(CHIP VER. PRIOR TO 2.0)  
STOP VALVE DELAY. NOT NORMALLY USED.  
ACTIVATE/DEACTIVATE WITH OPTION SWITCH 4.

**OPTION SWITCHES**

(1) 521/LOBBY TELLER APPLICATION:  
OFF=521 APPLICATION(STD)  
ON=LOBBY TELLER APPLICATION

(2) DISABLES AUTOSEND:  
OFF=MANUAL TELLER  
ON=MOTORIZED TELLER

(3) DOOR OPEN DELAY AFTER CYCLE:  
OFF=NO DELAY AFTER CYCLE  
ON=ADJUSTABLE DELAY WITH TIMER #2.

(4) STOP VALVE DELAY: SELECT PROCESSOR VER. LEVEL  
(FOR VERY SHORT RUNS OR OTHER NONSTANDARD INSTALLATIONS).  
NORMALLY "OFF".  
(CHIP VER. 2.0 AND HIGHER)  
OFF=INACTIVE  
ON=ACTIVE (500 MILLISECOND-FIXED)  
(CHIP VER. PRIOR TO 2.0)  
OFF=INACTIVE  
ON=ACTIVE, ADJUST DELAY WITH T3, RANGE 100-400MS

(5) SELECT PROCESSOR VER. LEVEL  
(CHIP VER. 2.0 AND HIGHER)  
DIVERter OPTION:  
OFF=INACTIVE  
ON=ACTIVE (DOOR OPENS EACH CYCLE)  
(CHIP VER. PRIOR TO 2.0)  
NOT USED:

(6) CYCLE TIMER RANGE:  
OFF=T1 RANGE 0-100 SEC.(10-SECOND INCREMENTS)  
ON=T1 RANGE 0-10 SEC.(1-SECOND INCREMENTS)

(7) SELECT PROCESSOR VER. LEVEL  
(CHIP VER. 2.0 AND HIGHER)  
900A OPTION: (CARRIER DETECT, DOOR CONTROL)  
OFF=INACTIVE  
ON=ACTIVE  
(CHIP VER. PRIOR TO 2.0) NOT USED:

(8) SELECT PROCESSOR VER. LEVEL  
(CHIP VER. 2.0 AND HIGHER)  
DOOR REVERSAL OPTION: (LTS TO 521TU)  
OFF=INACTIVE  
ON=ACTIVE  
(CHIP VER. PRIOR TO 2.0) NOT USED:

**CONNECTORS**

(J1) FIELD WIRES: ALL SIGNALS FROM REMOTE UNIT

(J2) CONTROL SWITCHES: TELLER UNIT CONTROLS

(J3) MOTOR/LIMIT SWITCHES: TELLER UNIT OPERATIONS

(J4) REMOTE DOOR: JUMPER ON PINS 4-5 IF NO REMOTE DOOR, OTHERWISE REMOTE DOOR SIGNALS

(TB1) REMOTE POWER: USED TO CONTROL POWER RELAY AT CVM OR OTHER REMOTE ACCESSORY

**RELAY/LED FUNCTIONS**

(RLY5) LOCAL DOOR: CONTROLS TELLER UNIT AUTOMATIC DOOR (IF PRESENT). LEDs INDICATE DOOR OPEN/CLOSED STATE-CONTROLLED BY RELAY.

(RLY4) VACUUM: CONTROLS VACUUM BLOWER. LED INDICATES VACUUM SIGNAL ACTIVE.

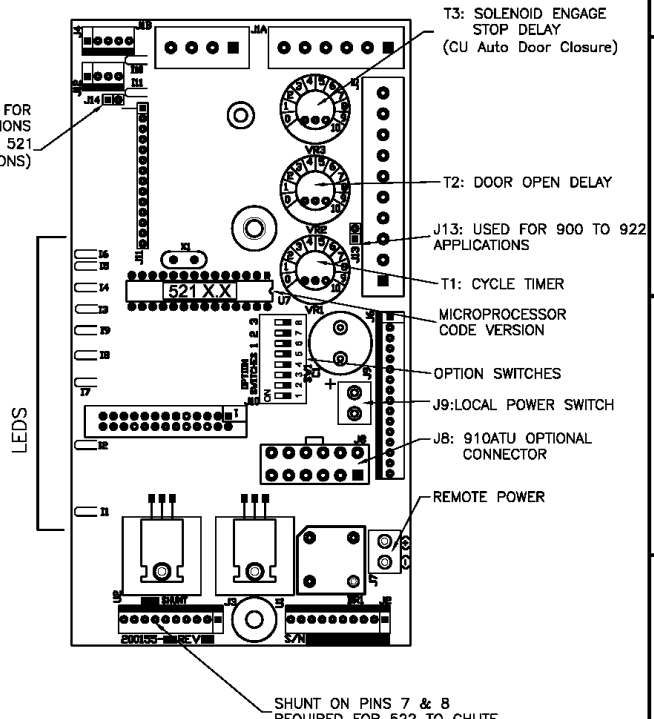
(RLY3) PRESSURE: CONTROLS PRESSURE BLOWER. LED INDICATES PRESSURE SIGNAL ACTIVE.

(RLY2) SOLENOID: CONTROLS STOP SOLENOID. LED INDICATES SOLENOID SIGNAL ACTIVE.

(RLY1) REMOTE DOOR: CONTROLS CUSTOMER UNIT AUTOMATIC DOOR (IF PRESENT). LEDs INDICATE DOOR OPEN/CLOSED STATE-CONTROLLED BY RELAY.


### REVISIONS

REV	DESCRIPTION / REFERENCE	DATE	BY
NC	INITIAL RELEASE - NEW REV K CONTROLLER	12-13-2007	UNB
A	PCB LAYOUT REVISED, ADDED LED LEGEND	12-15-2007	UNB
B	ADDED NOTE FOR SHUNT ON PINS 7 & 8 (522 TO CHUTE)	01-22-2007	SJM
C	ADDED J14 JUMPER SHUNT	04-01-2008	BLB
D	ADDED NOTE FOR J-13	08-05-2008	SJM
E	UPDATED J13	01-14-2015	NDJ



**LED LEGEND**

(I1): Local Door Closed  
(I2): Local Door Open  
(I3): Send  
(I4): Recall  
(I5): All Doors Closed  
(I6): Decel Switch  
(I7): Solenoid  
(I8): Vacuum  
(I9): Pressure  
(I10): Remote Door Closed  
(I11): Remote Door Open

<b>GUIDE, ADJUSTMENT, CONTROLLER, 521-K</b>			
DOCUMENT NO <b>500356</b>	REVISION PAGE <b>E 1 of 1</b>	SCALE <b>2=1</b>	SHEET <b>A</b>
FILE: INTERNAL\500K\500356.DWG			
TOLERANCES		COMCO SYSTEMS	
LINEAR	DIMENSIONS	(800) 533-3794	
$\pm .01$	$\pm .005$	LAKE DALLAS, TX	
$\pm .001$	$\pm .001$		
$\pm .0005$	$\pm .0005$		
THIRD ANGLE PROJECTION			
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# Return Material Authorization Procedure

**Please follow the instructions below to return any items to ComCo Systems for repair.**

- Call ComCo Systems at 800.533.3794 to request a Return Materials Authorization number (RMA#).
- Please give the Customer Service Representative the following information;
  - Company Name and Phone Number
  - Company Contact
  - Store#
  - Component (s) being returned for repair
  - Description of problem
- Send your return items to the following address;

ComCo Systems  
306 W. Overly Dr.  
Lake Dallas, TX. 75065

RMA# XXXX

All RMAs will be processed in the order they are received. ComCo Systems will not accept any returns that do not have an RMA# assigned.

To check on the status of an RMA call our Customer Service Representatives with your RMA#.

- **ComCo Systems Inc.**

Mon. - Fri. 8am – 5pm Central	-	940.498.1850
After Hours & Weekends	-	800.533.3794
24/7 Toll Free Number	-	800.533.3794

- **Customer Service & Support**

[support@comcosystems.com](mailto:support@comcosystems.com)

- **Parts Orders**

•Fax	-	940.498.9937
•Call In	-	940.498.1850

*When Calling After Hours & Weekends provide the following:*

•Callers Name	Company
•Return Phone #	Service
•Nature of Call	