522AX Series

Installation and Operator Manual

May 2022
ComCo Systems, INC. A division of Communications Conveyor Company

P/N: 500660 Rev. -

System Features

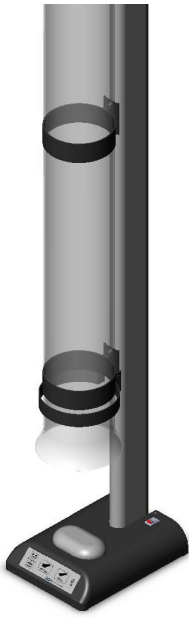
The Model 522AX is an overhead pressure/vacuum system that utilizes 4.5" tubes and carriers. The carrier travels from the teller unit to the customer unit under vacuum and returns under pressure. The blower unit is located inside of the customer unit.

- **The Model 522AX is configured with four major subsystems:**

1. **Single-Sided Chute Teller Unit P/N: 200656**
2. **Blower Unit: P/N: 201282**
3. **Customer Unit (CU) P/N: 201283**
4. **System Controller P/N: 200703**

1 Single Pack Blower 201282

Features (Ea. Single Pack):
1 High Voltage Control Box
1 Blower for pressure
1 Blower for vacuum



Single-Sided Teller Chute (STC4500) STC-4500-200656

Doorless operating unit which is suspended from the ceiling, typically over the counter top.

522 System Controller SC-521-200703

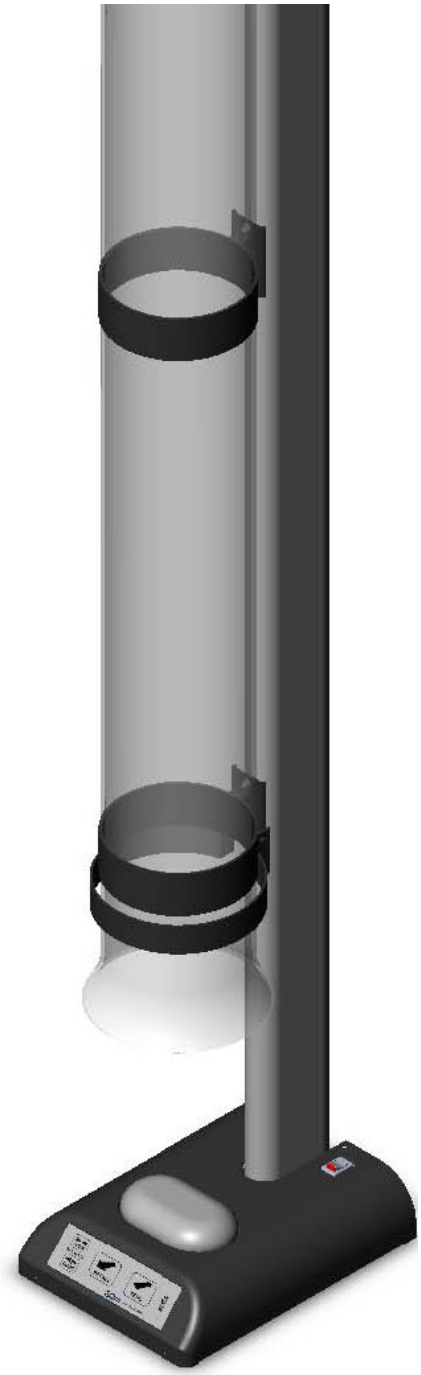
System Controller

Customer Unit (CU) CU-522AX-201283

Fully automatic door operation with tip tube, integrated blower module, and optional 2 way video unit.

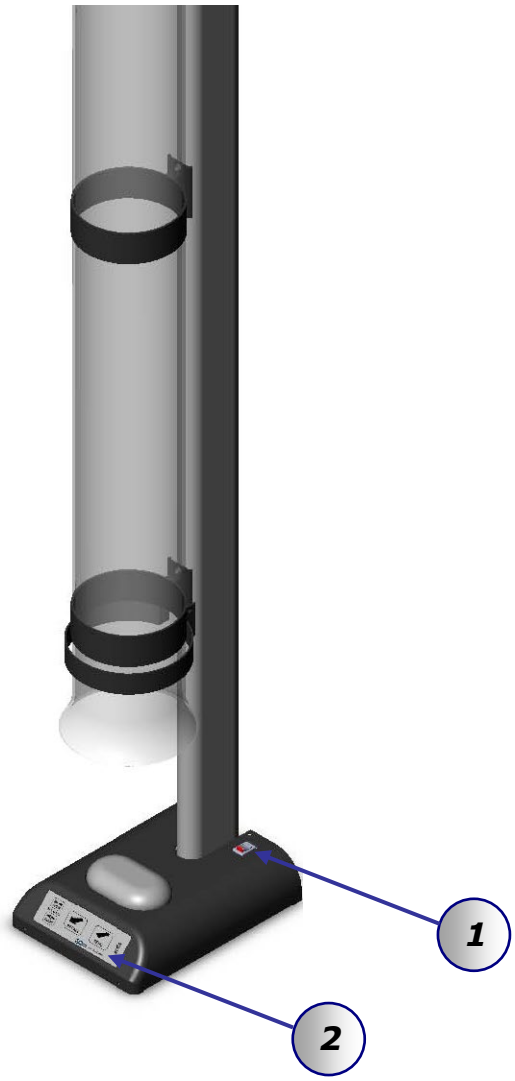
Single-Sided Teller Chute

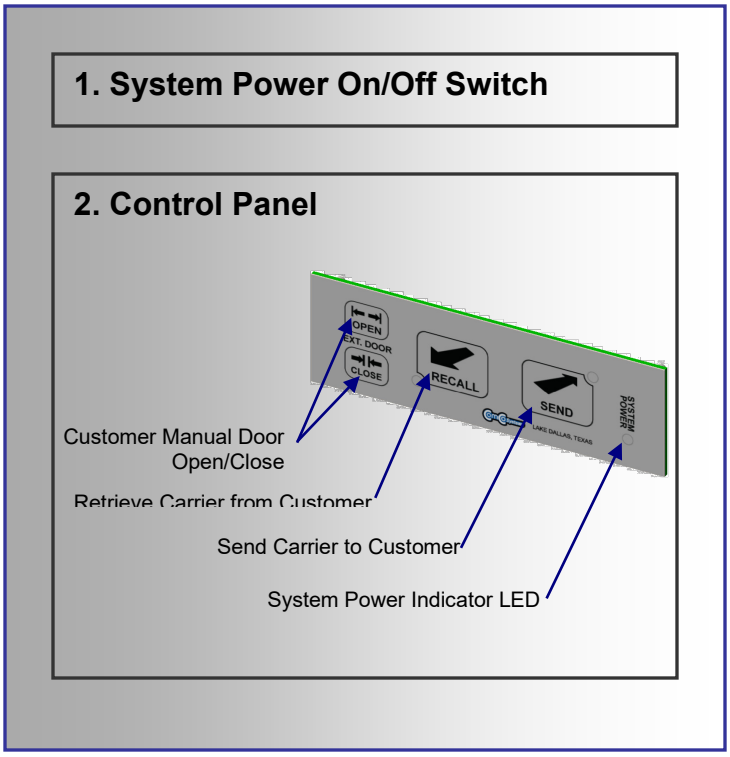
Model: ***STC-4500-200656***



Single-Sided Teller Chute (STC4500) *(P/N: 200656)*

The single-sided teller chute utilizes an open door design. Insert the carrier in the open tube and press Send. Carrier dispatches to the customer unit.





Single-Sided Teller Chute *(P/N: 200656)*

Switch Operating Instructions

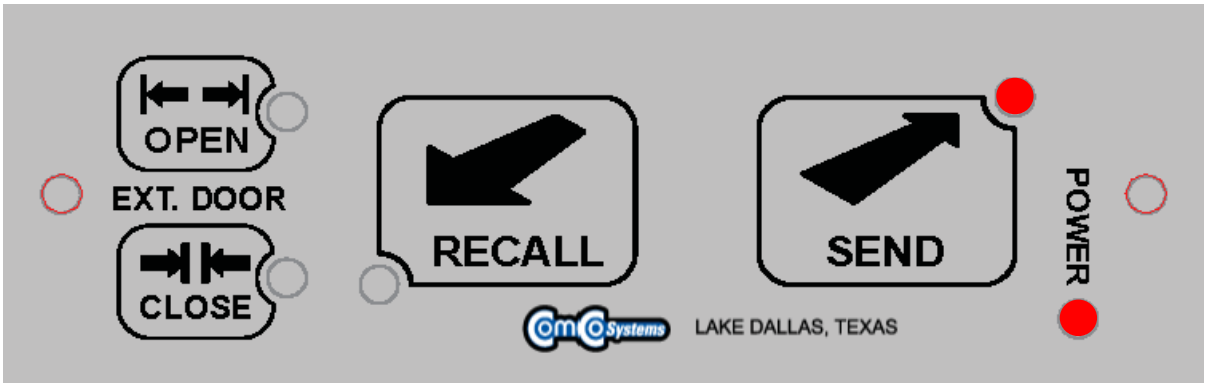


Fig. 1.0

ON/OFF Power cycles the complete system (Inside Unit, Outside Unit & Blowers). Power ON the system power light will be present and opens the customer unit door. Power OFF complete system power down and closes the customer unit door.

DOOR OPEN Opens the customer unit door.

DOOR CLOSE Closes the customer unit door.

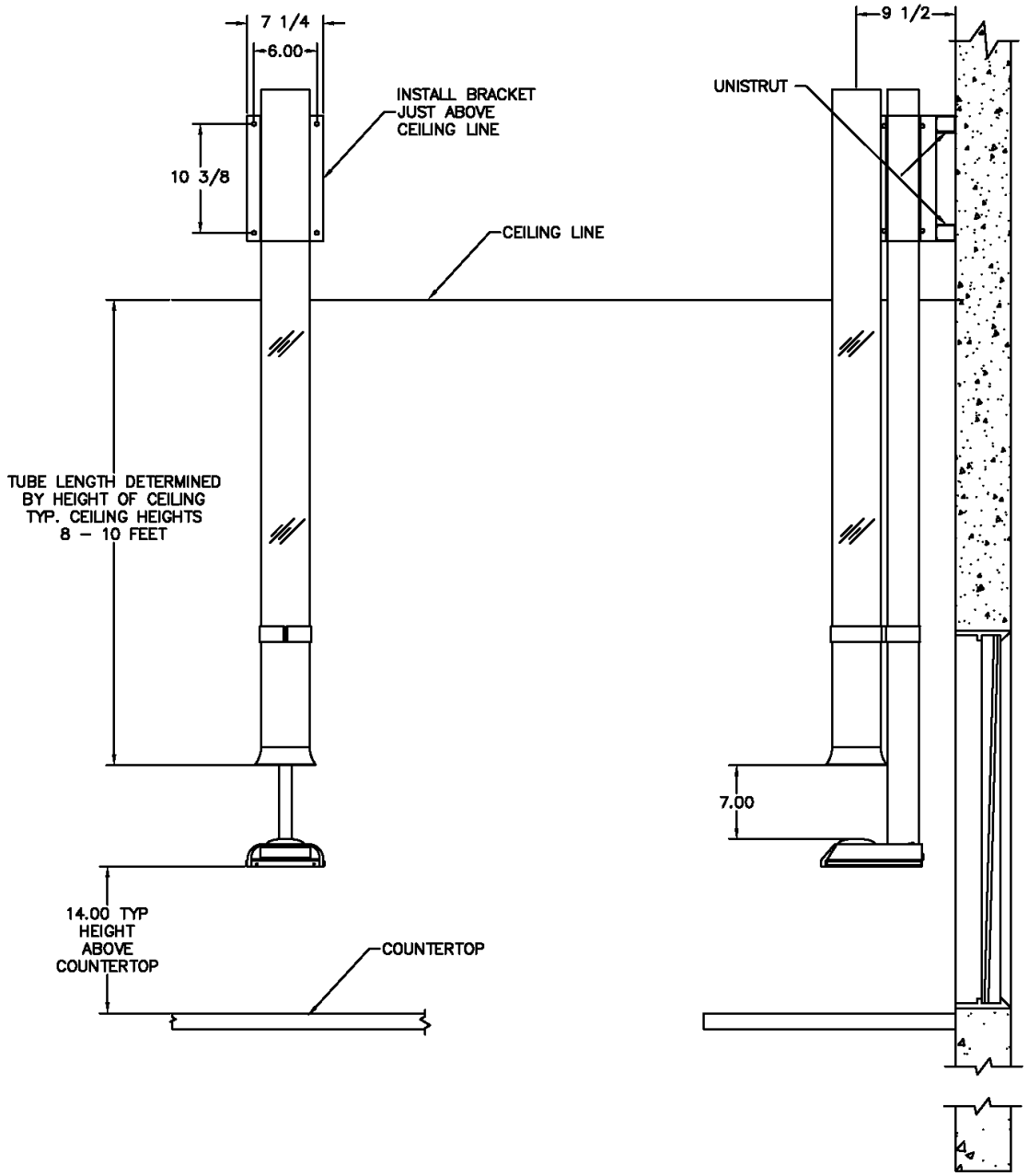
SEND Sends a carrier to the customer unit.

RECALL Recalls a carrier from the customer unit; – (the customer unit door will close when in the Send & Recall mode).

Single-Sided Teller Chute *(P/N: 200656)*

Dimensional & Electrical Specifications

Item	*Measurements*	*Value*
Unit (TU-101-200656)	Nominal Voltage Current (max)	24 VDC 1 amps



Installation of this unit must be done with only the assemblies supplied in STC2000 field service installation kit (P/N: 200745). See Appendix **B.**

Customer Unit

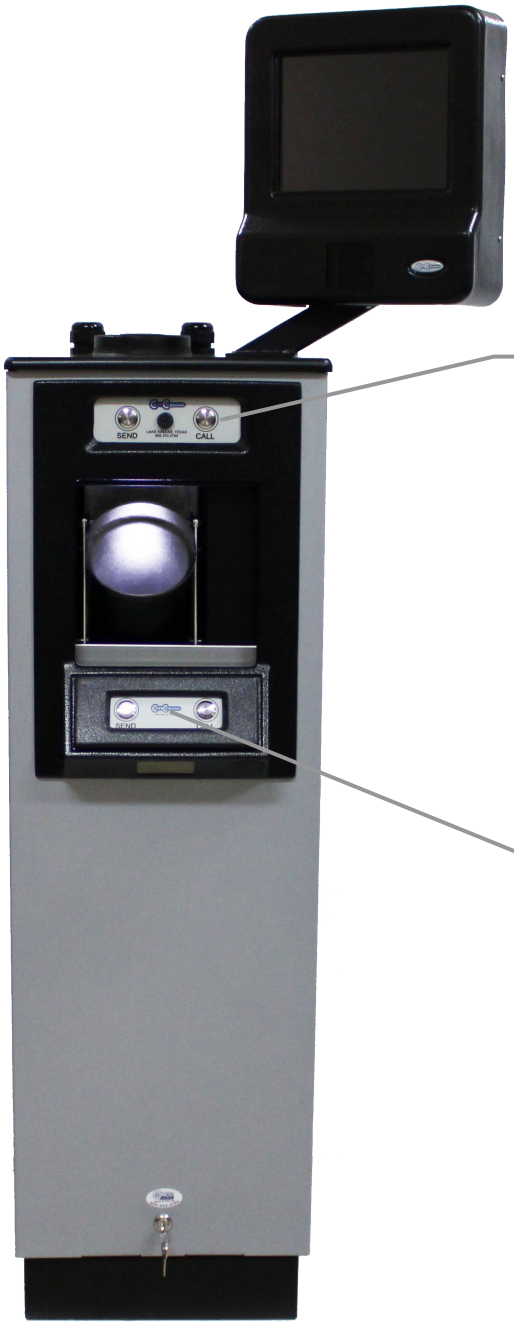
Model: *CU-522AX-201283*

Customer Unit *(P/N: 201283)*

Machine & Switch Operating Instructions

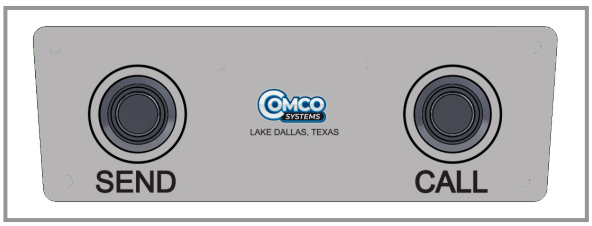
SEND Sends carrier to Teller Unit.
*(**NOTE:** DO NOT INSERT LOOSE ITEMS DIRECTLY INTO UNIT)*

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



Upper Switch Panel (P/N: 201350)

Lower Switch Panel (P/N: 201328)



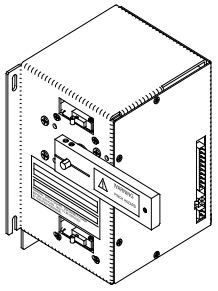
Customer Unit *(P/N: 201283)*

Dimensional & Electrical Specifications

Item	*Measurements*	*Value*
Customer Video Module (CV-200-200903-10)	Nominal Voltage Current (max)	12 VDC 3.5 amps
Door Motor Module (DM-100-200367)	Nominal Voltage Current (max)	120 VAC, 60Hz 1 amps
Blower Module (201282)	Nominal Voltage Current (max)	120 VAC, 60Hz 10 amps

Customer Video Module 200903-10

Audio Microphone & Speaker; See Audio Section on pg.32 for Specifications

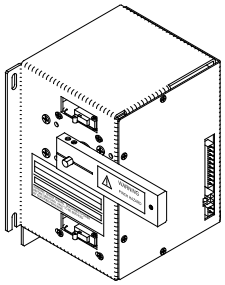


Door Motor Module DM-100-200367

Blower Module 201282

Customer Unit Door Motor Module (P/N: 200367)

Line Voltage Installation



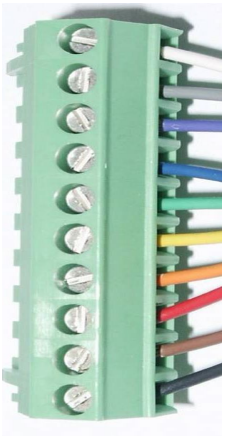
Installation of this unit must be done with only the assemblies supplied in 522AX series field service wiring kit (P/N: 200438-1). See Appendix **B.**

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 ***

Plug Rating 15A 250V Field Wiring

L – Black
GND – Green
N – White

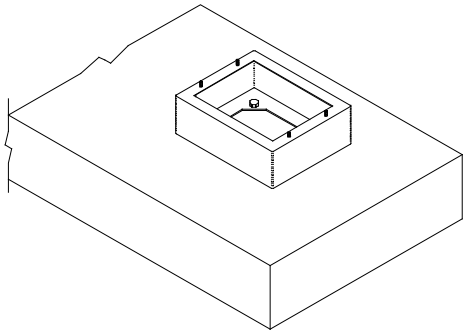
SHOCK HAZARD

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

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

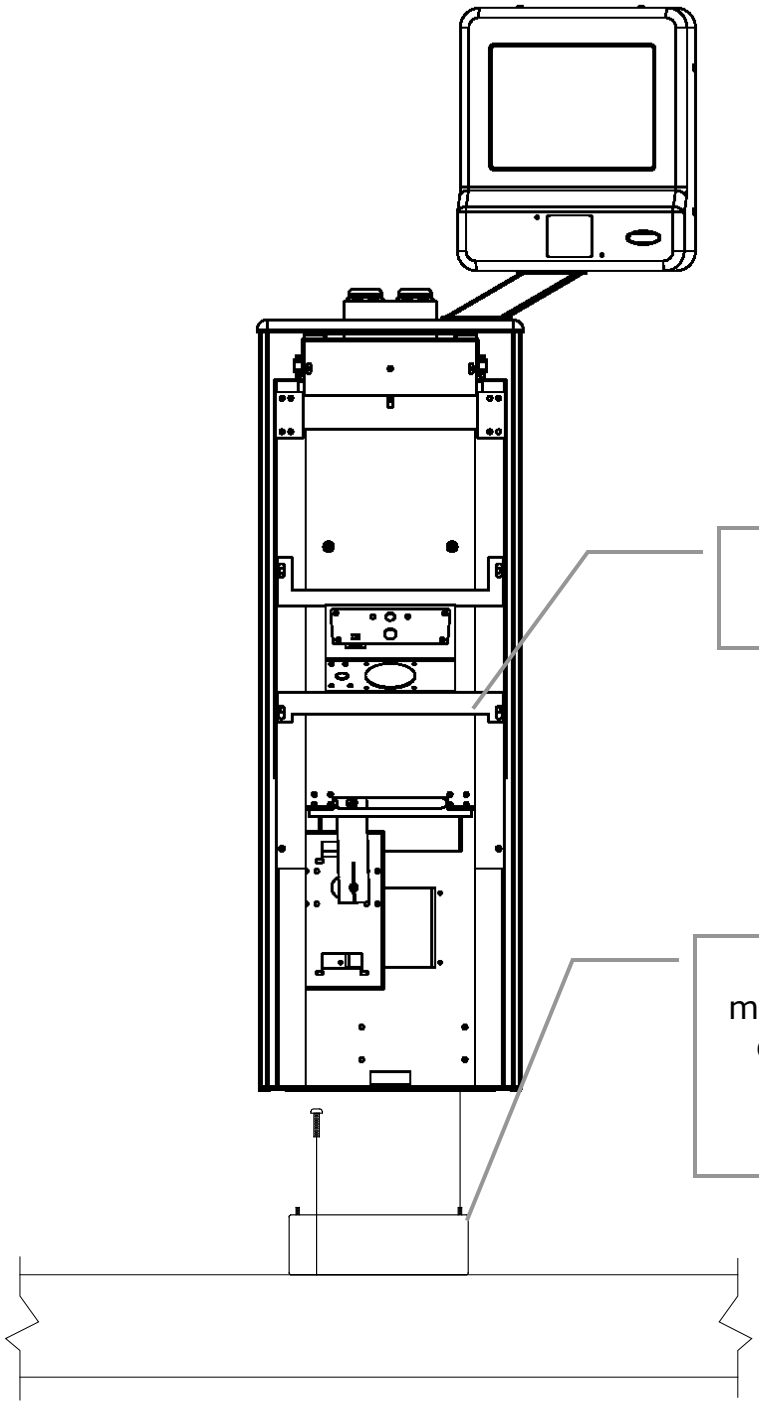
Customer Unit *(P/N: 201283)*

Mounting & Access



Base ISO View

Completed installation of base on a typical island



Remove front panel for installation or service access.

Fasten Mounting Bracket to Island. Using minimum ¼" hardware position leading edge of bracket "X" in. from edge of island and shim level if needed.
("X" Distance see cut sheets for job site)

Single Pack Blower

Model: *522AX Blower*

Single Pack Blower Module (P/N: 201282)

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: 200438-1) 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

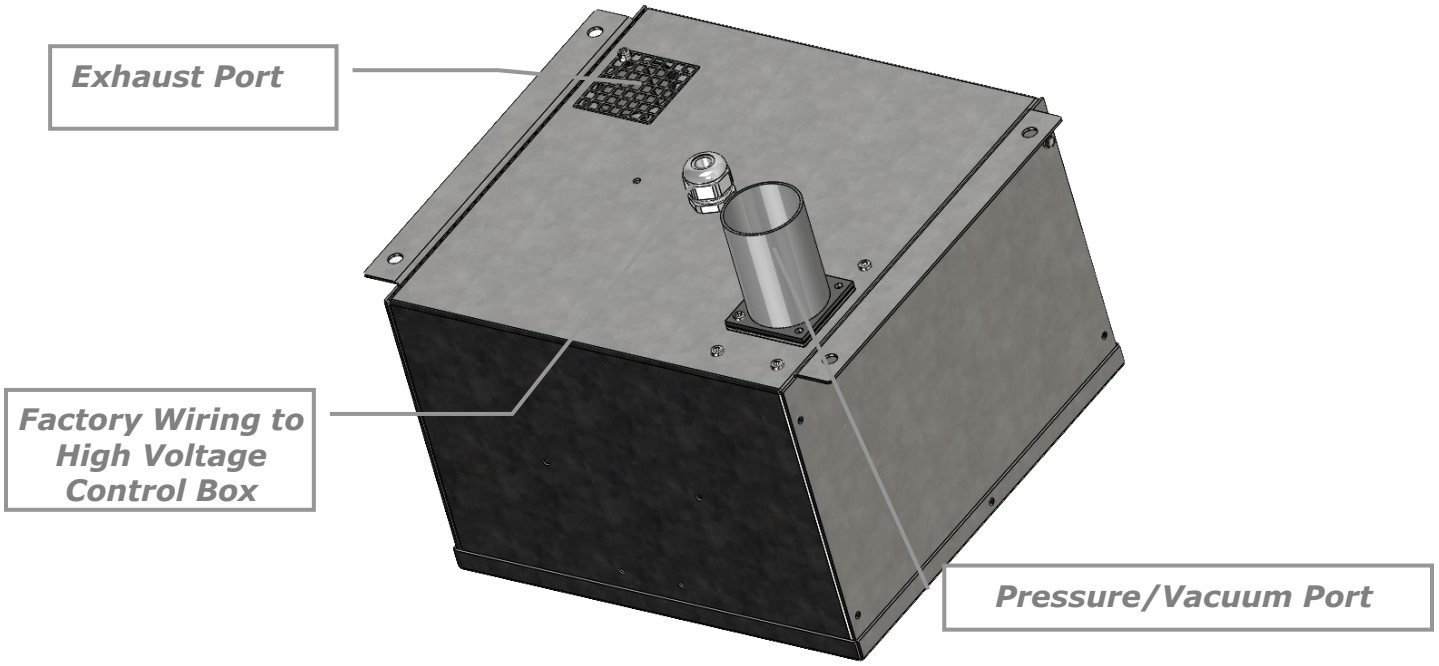
NOTE:

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



522 System Controller

Model: SC-521-200703

4 1/2" Carrier *(P/N: 602033)*

Carriers must be closed fully 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 3.5 lbs.

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 at the back of the teller chute controls power to the system. The red LED on the switch panel 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 and presents tip tube with carrier
4. System is now in ready state

Power OFF

1. Teller switches power off
2. Power indicator extinguishes
3. Customer Unit door closes
4. System is now off

> ***NOTE**: 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 chute
2. Send cycle begins
3. Vacuum blower activates
4. Carrier is propelled from Teller Unit into transmission tubing, towards Customer Unit
5. Carrier passes Port Bend over Customer Unit
6. Carrier decelerates due to pressure in front of carrier
7. Carrier arrives at Customer Unit, cycle timer times out
8. Vacuum blower deactivates
9. Customer Unit door opens and presents carrier
10. Send cycle ends; System is now in ready state

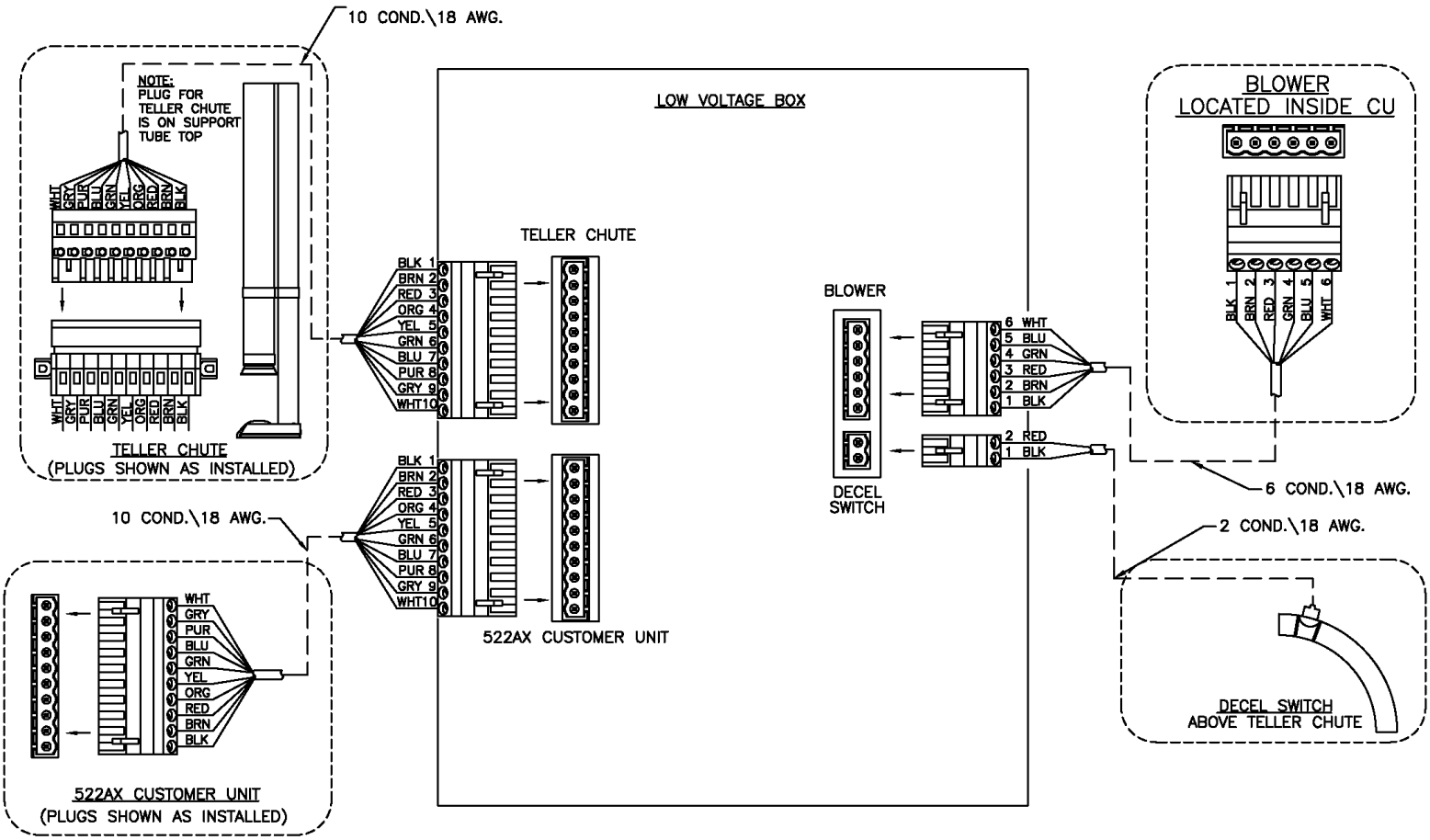
Recall cycle

1. Customer inserts carrier into Customer unit tip tube
2. Customer presses SEND
3. Customer unit door closes and retracts carrier *(Note: if the safety switch actuator at the top of the door is lifted when the door is closing, the door will reverse and the cycle will be canceled)*
4. Recall cycle begins
5. Pressure blower activates
6. The carrier is dispatched to the teller chute
7. Carrier passes the Deceleration Switch above the teller chute
8. Pressure blower deactivates and Braking Solenoid activates
9. Carrier soft lands at teller chute
10. Recall cycle ends – system is now in ready state

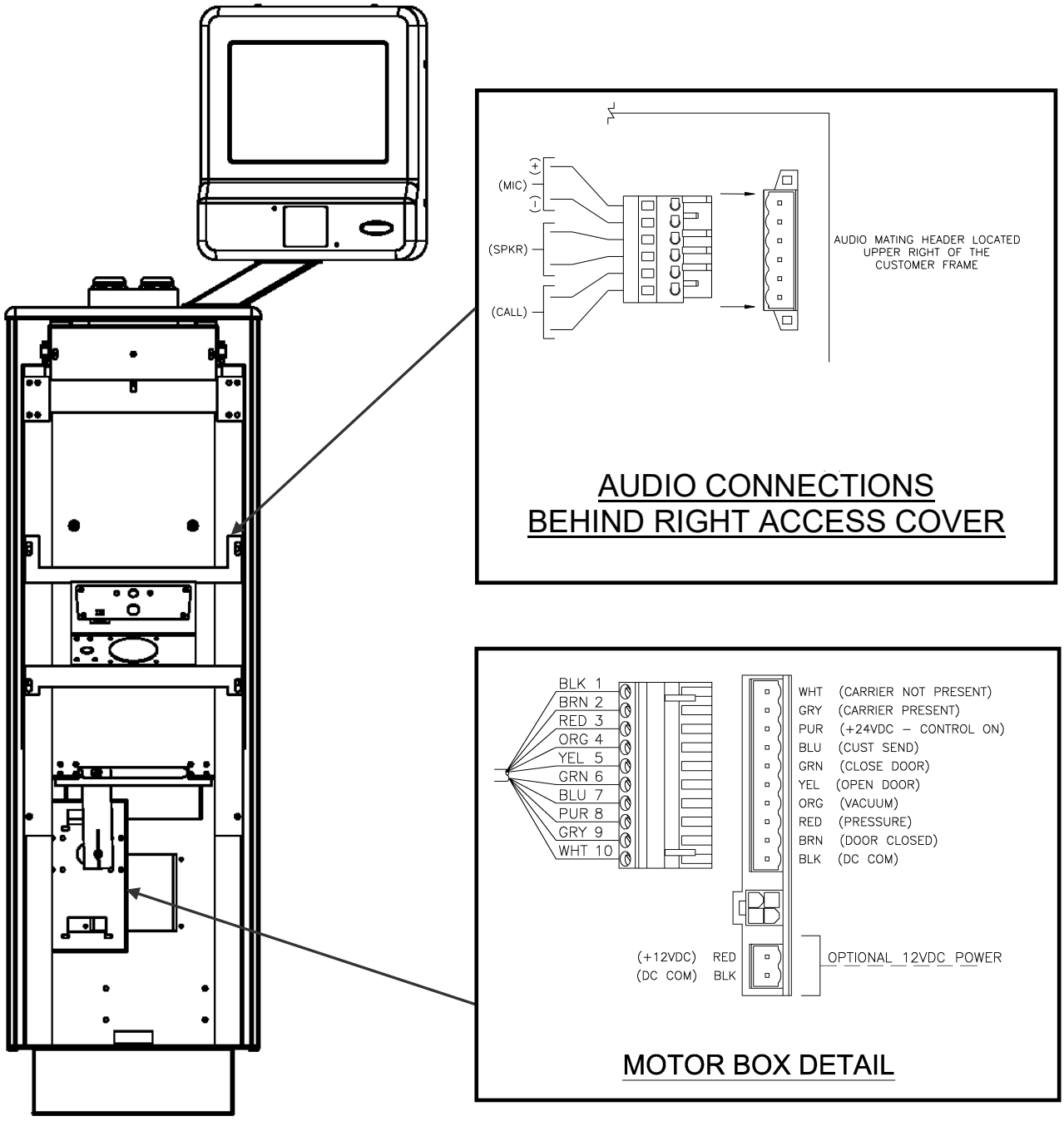
Installation

Control Field Wiring Diagram (P/N: 500330)

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.*



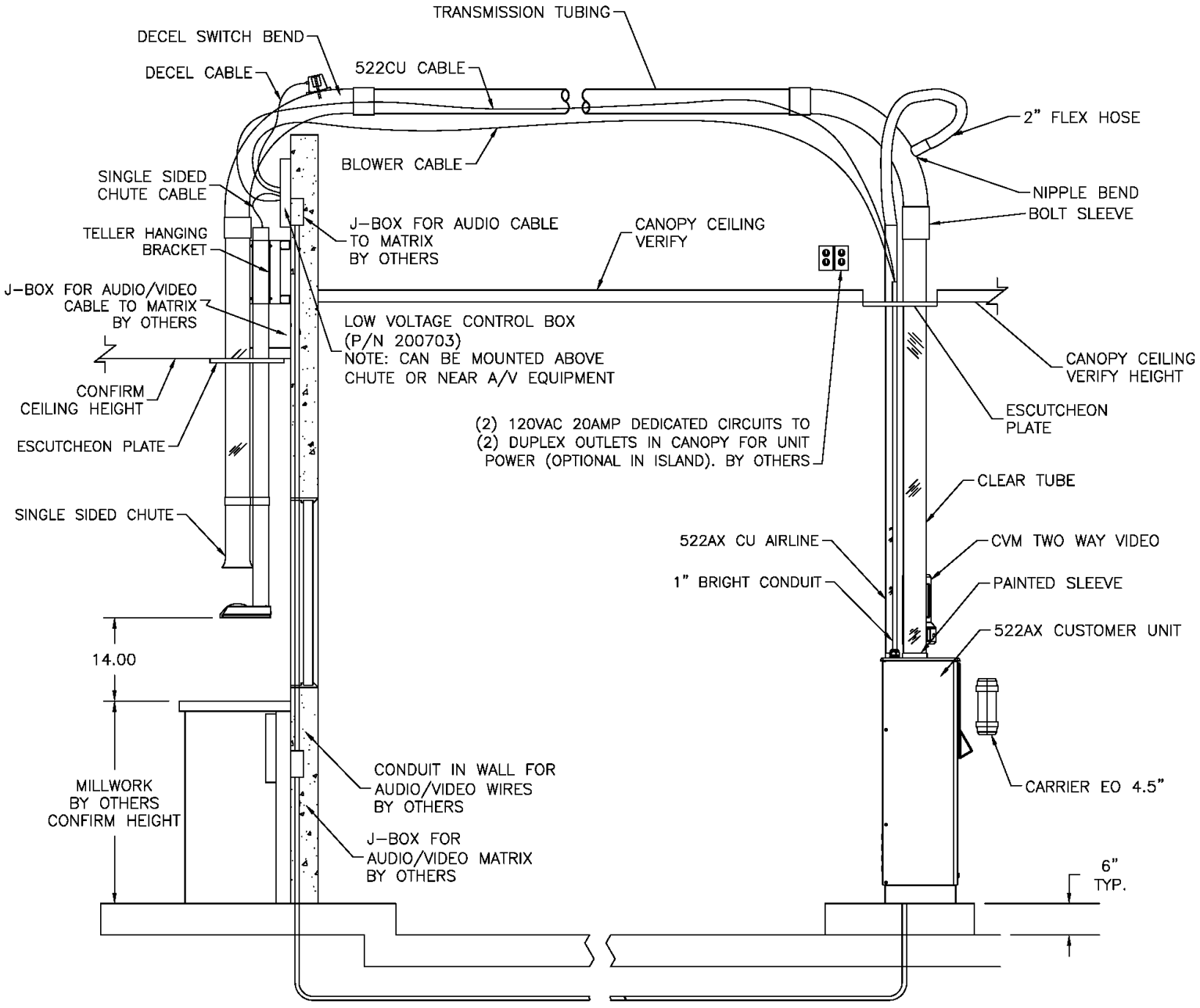
Control/Audio Field Wiring Diagram



(Shown without front cover)

System Riser Diagram & Options

Parts Descriptions:



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.

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 2-3 years, depending on usage.

NOTES:

TIMERS
(T1) CYCLE TIMER. CONTROL TIME RANGE WITH OPTION SWITCH 6.

(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.

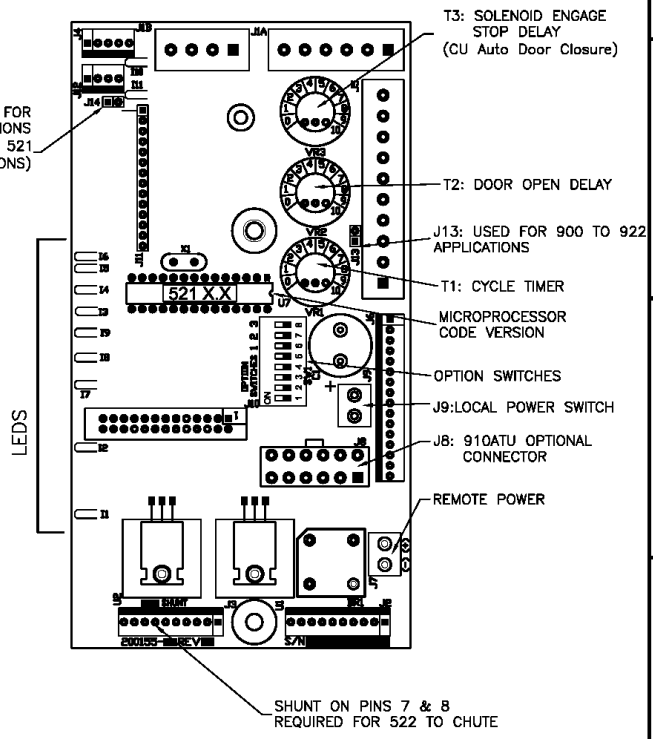
(RLY3) PRESSURE: CONTROLS PRESSURE BLOWER. LED INDICATES PRESSURE SIGNAL ACTIVE.

(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	INTIAL RELEAS – NEW REV K CONTROLLER	12–13–2007	JNB
A	PCB LAYOUT REVISED, ADDED LED LEGEND	12–15–2007	JNB
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

GUIDE, ADJUSTMENT, CONTROLLER, 521-K

DOCUMENT NO	REVISION	PAGE	SCALE	SHEET
500356	E	1 OF 1	2=1	A

FILE: INTERNAL\\500K\500356.DWG

TOLERANCES
LINEAR: X = ±0.1, XX = ±0.01, XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

THIRD ANGLE PROJECTION

COMCO SYSTEMS (800) 533–3794 LAKE DALLAS, TX

Customer Unit *(P/N: 201283)*

Field Service Wiring Kit				200438-1
Part Number	***Description***		***U/M***	***Quantity***
601479	Cable, AC Power		Ea	2
601500	AC Power Entry Module, R/A		Ea	2
603125	Plug, 10 Position, Phoenix		Ea	1
601434	Zip Tie, 14”		Ea	1

STC2000 Teller Unit *(P/N: 200656)*

Field Service Installation Kit				
Part Number	***Description***		***U/M***	***Quantity***
201255	Bracket, Wall, STC2000		Ea	1
400995	Escutcheon, STC2000		Ea	1
910007	#10 Flat Washer - Zinc		Ea	4
910035	10-32 x 5/8” Pan Head Phil, Zinc		Ea	2
910036	10-32 Nylon Insert Hex Nut		Ea	2
910171	10-24 x 3” Pan Head Stainless		Ea	4
910242	#8 x ½” Hex Washer Head Tek Screw		Ea	4
910277	10-24 Toggle		Ea	4

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#). EMAIL: PARTS@COMCOSYSTEMS.COM

- 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
  - Serial number of product

- 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

www.comcosystems.com

24/7 Toll Free Number *800.533.3794*
Fax *940.222.2699*

- ***Customer Service & Technical Support***
  service@comcosystems.com *800.533.3794 Option 2*
  support@comcosystems.com

- ***Parts Orders***
  parts@comcosystems.com 800.533.3794 Option 4

- **Equipment and System Sales**
  sales@comcosystems.com 800.533.3794 Option 5

- **Project Management**
  800.533.3794 Option 1

- ***Accounting***
  accounting@comcosystems.com *800.533.3794 Option 3*

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