621 Series

Pharmacy Installation and Operator Manual

April 12th, 2021
ComCo Systems, INC. A division of Communications Conveyor Company

P/N: 500648 Rev. A

Contents

System Features

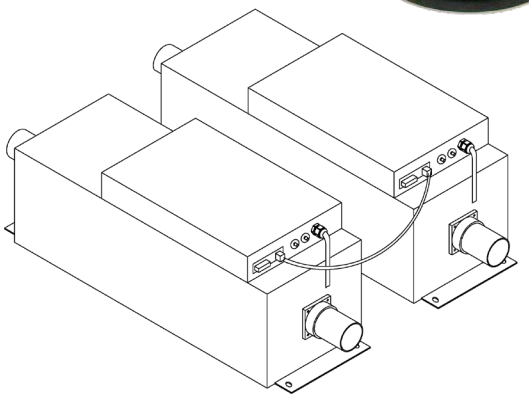
The Model 621 is an overhead pressure/vacuum system that utilizes 6” tubes and carriers. The carrier travels from the teller unit to the customer unit under pressure and returns under vacuum. The blower unit is located near the teller unit.

- **The Model 621 is configured with three major subsystems:**

1. **621 Operator Unit P/N: 201314**
2. **Dual Blower Unit P/N: 200281-3**
3. **621 Customer Unit P/N: 201315**

Customer Unit
CU-621-201315
Open carrier access design with optional 2-way video unit.

Operator Unit
TU-621-201314
Manual operated door unit, which is suspended from the ceiling, typically over countertop.



Dual Pack UL Blowers
200217-2(x2)
Features:
2 Power Cords
2 115Vac/15A
2 Blowers for pressure
2 Blowers for vacuum

Operator Unit

Model: ***TU-621-201314***

Manual Operator Unit *(P/N: 201314)*

The manual operator unit utilizes a manually operated door. The operator unit's door *MUST* remain closed during a send or recall cycle for the system to function properly. The operator 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. To resume operation close door and press RECALL or SEND. Please note the reference guide in *Fig. 1.0*.

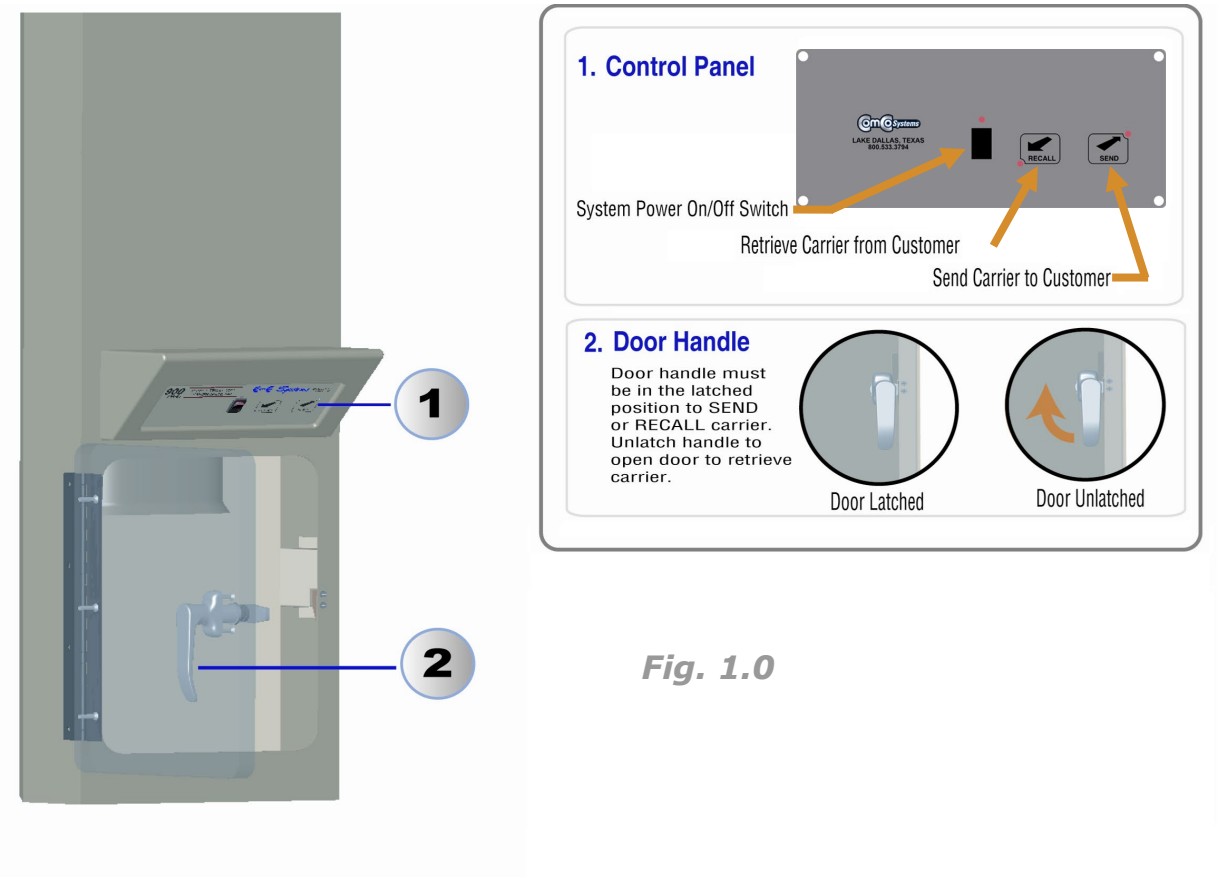
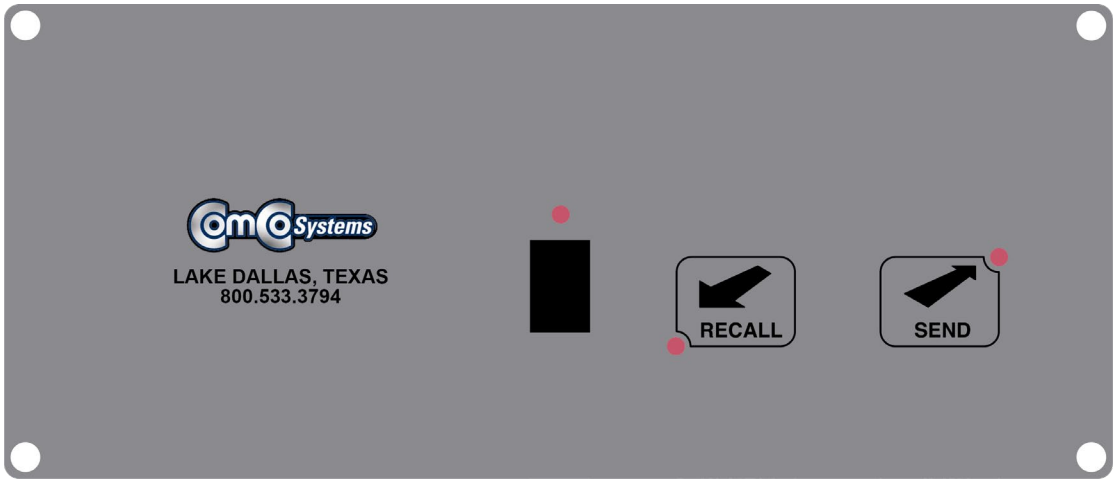


Fig. 1.0

Operator Unit *(P/N: 201314)*

Switch Operating instructions



ON/OFF The power switch cycles the complete system (Inside Unit, Outside Unit & Blowers). Power ON: all lights will be present. Power OFF: complete system power down.

SEND Sends a carrier to the customer unit. The operator unit door must be closed in order to send a carrier to the customer unit.

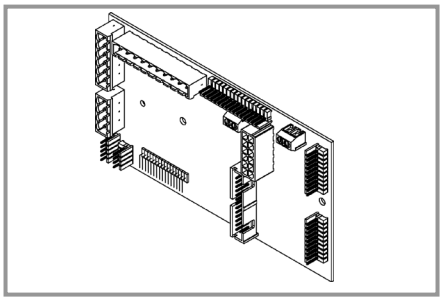
RECALL Recalls a carrier from the customer unit. The operator unit door must be closed in order to recall a carrier from the customer unit.

Operator Unit *(P/N: 201314)*

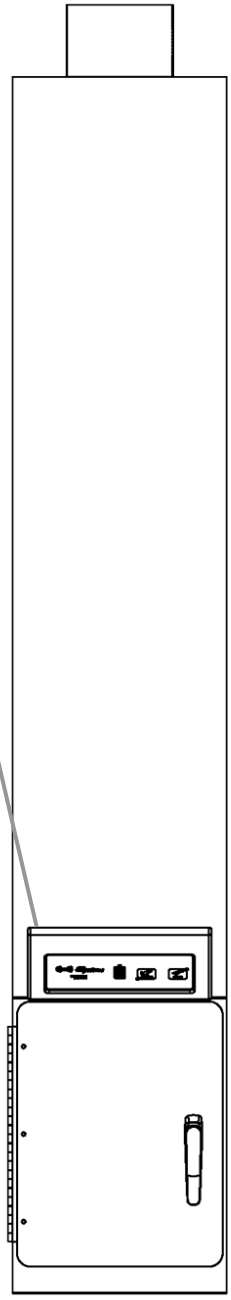
Dimensional & Electrical Specifications

Item	*Measurements*	*Value*
Operator Unit (TU-621-200430-1)	Nominal Voltage Current (max)	24 VAC From Blower 1 Amp

System Controller
(P/N: 200155K)



See Appendix A
For System Settings



Customer Unit

Model: ***CU-621-201315***

Customer Unit *(P/N: 201315)*

Machine & Switch Operating Instructions

SEND Sends carrier to Teller Unit.

CALL Generates audible tone at the Pharmacy when depressed.

Top Switch Plate (P/N: 201327)

Bottom Switch Plate (P/N: 201328)

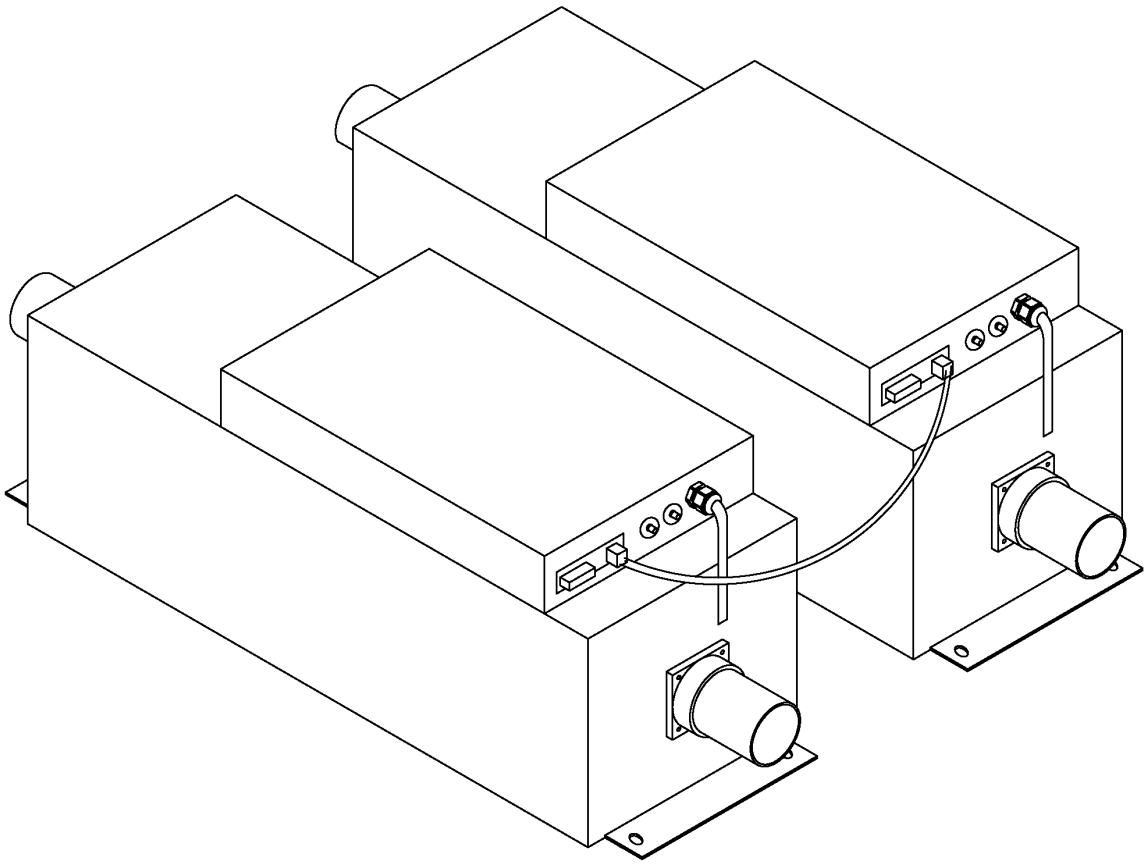
Customer Unit *(P/N: 201315)*

Dimensional & Electrical Specifications

Item	*Measurements*	*Value*
Customer Video Module (CVM-2000-200903-10)	Nominal Voltage Current (max)	12 VDC 3.5 Amps
1520 Lane Station (600651)	Nominal Voltage Current (max)	12 VDC 1.5 Amps

Dual Pack Blower

Model: *200217-2(x2)*



Dual Pack Blower Module (P/N: 200217-2(x2))

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.

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

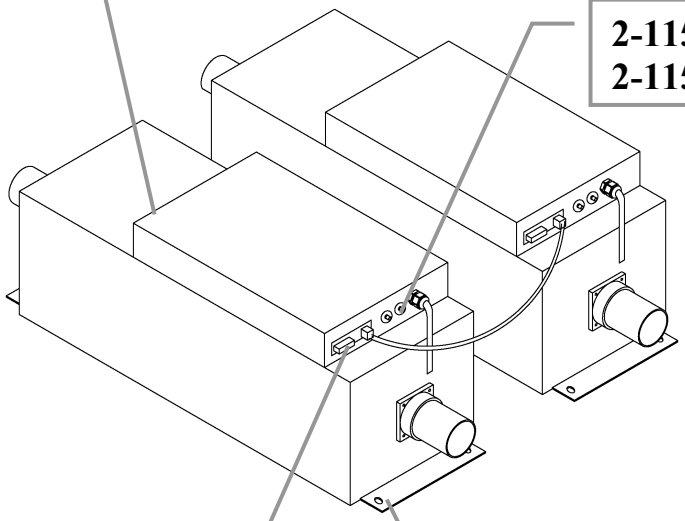
NOTE:
There must be (x2) 115VAC @ 20A dedicated circuits within 3.0 ft of the unit. All Line Power must be done in compliance with the NEC (National Electrical Code) by authorized/qualified personnel.

SHOCK HAZARD

Disconnect AC Power before Servicing Unit
AC Service Disconnect for Unit is located at the Main Junction Breaker Box

4-115 VAC 10A Resettable Fuse

2-115 VAC 0.5 A Resettable Fuse
2-115 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.

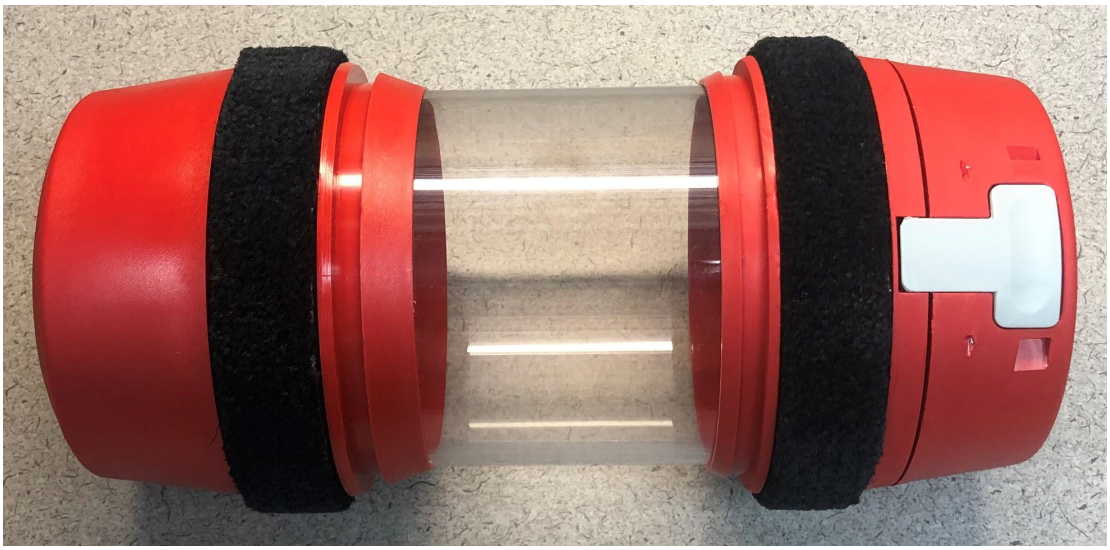
6” Carrier (P/N: 602124)

Carriers must be fully closed before they are inserted into either the operator 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 5lbs.

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 Operator 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. Technician switches power on
2. Power indicator illuminates
3. System is now in ready state

Power OFF

1. Technician switches power off
2. Power indicator extinguishes
3. 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

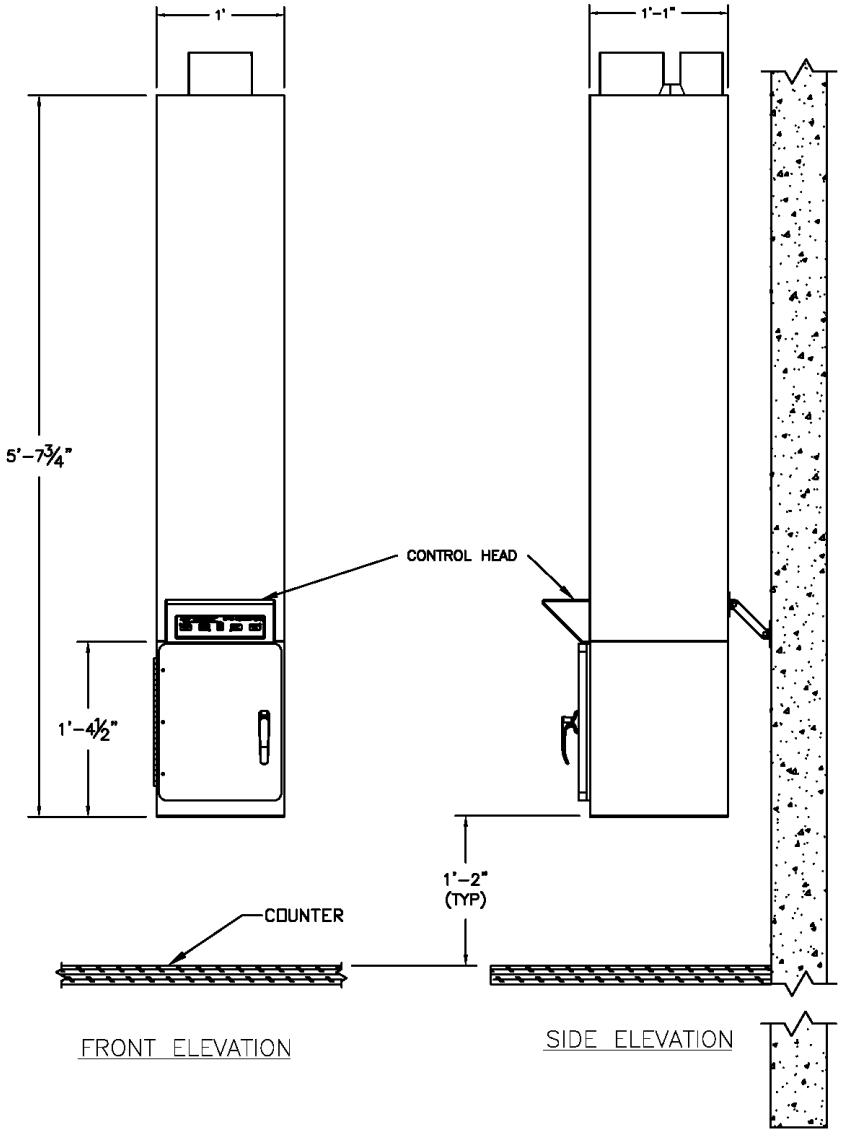
1. Technician inserts carrier into Operator Unit
2. Technician closes Operator Unit door and presses SEND
3. Send cycle begins
4. Pressure blower activates
5. The valve in the Operator Unit Check Valve closes and the valve in the Operator Unit opens, sending air pressure to Operator Unit
6. Carrier is propelled from Operator Unit into transmission tubing, towards Customer Unit
7. Carrier passes Deceleration Switch Tube over Customer Unit
8. Pressure blower deactivates
9. Carrier decelerates due to Solenoid engaging
10. Solenoid timer waits for Carrier to land.
11. Send cycle ends; System is now in ready state

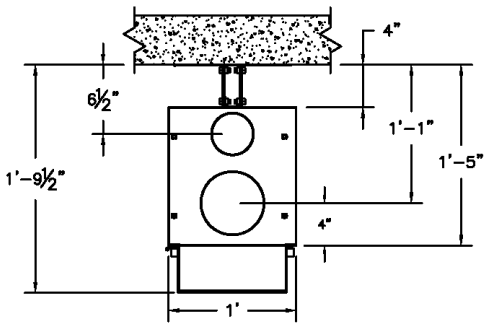
Recall cycle

1. Customer inserts carrier into Customer unit
2. Customer presses SEND
3. Recall cycle begins
4. Vacuum blower activates
5. The valve in the Operator Unit Check Valve opens, sending vacuum to the Customer Unit
6. Carrier is pulled from Customer Unit into transmission tubing towards Operator Unit
7. Carrier passes Operator Check Valve
8. Carrier is decelerated by pressure ahead of carrier *(valve in Check Valve blocks pressure from Operator Unit)*
9. Carrier arrives at Operator Unit.
10. Cycle timer times out
11. Recall cycle ends – system is now in ready state

Cut Sheets

NOTE:





NOTES:
TELLER UNIT RECEIVES LOW VOLTAGE POWER FROM BLOWERS LOCATED REMOTLY.
STANDARD UNIT COVER ACCOMODATES 40" COUNTER TOP WITH 9 FOOT CEILINGS. DIFFERENT COUNTERTOP OR CEILING HEIGHT WILL REQUIRE A DIFFERENT COVER.
COMCO MUST BE NOTIFIED OF DIFFERENT HEIGHTS.

621 MANUAL TELLER UNIT

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

THIRD ANGLE PROJECTION

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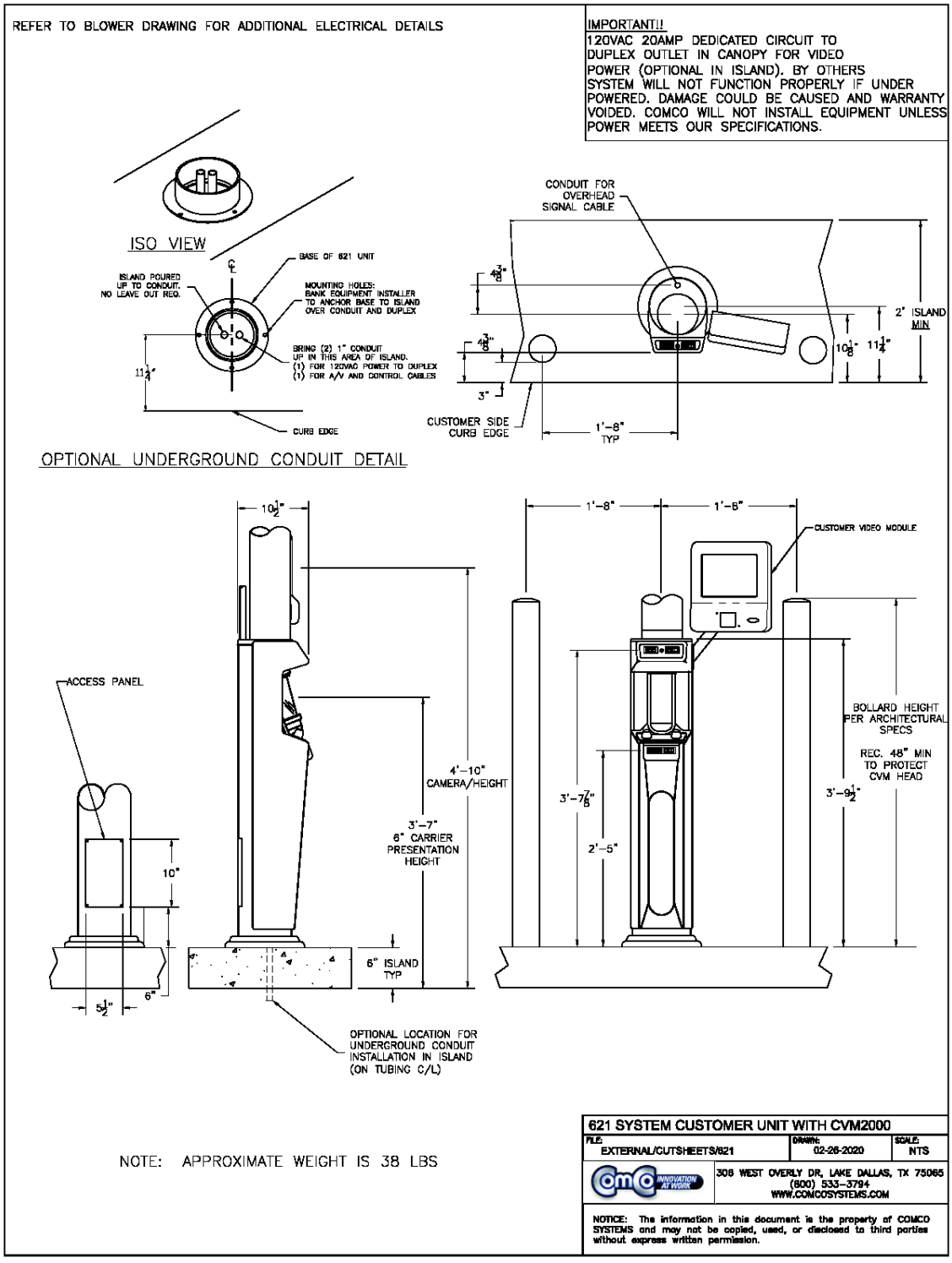
Cut Sheets

NOTE:



Cut Sheets

NOTE:

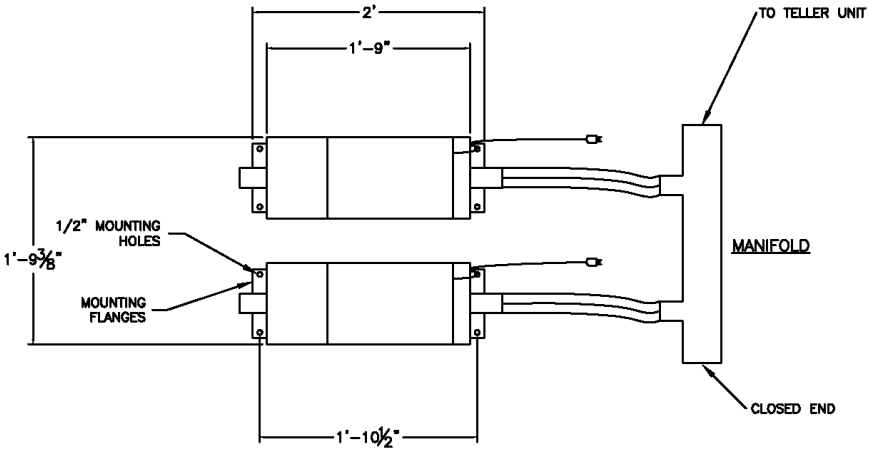
PRESSURE/VACUUM BLOWER SYSTEM

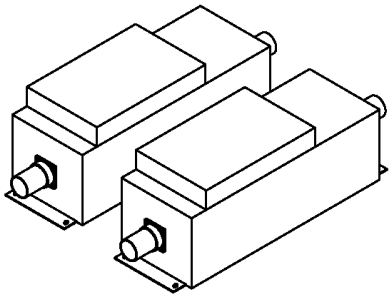
REVISIONS

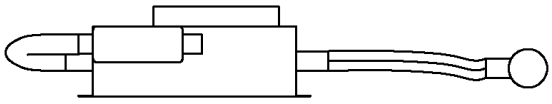
REV	DESCRIPTION / REFERENCE	DATE:	BY:

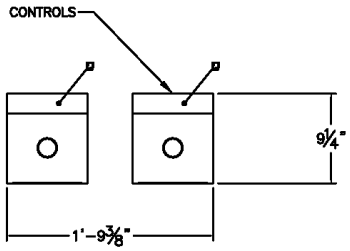
- USES 120VAC 20 AMP SERVICE TO STANDARD DUPLEX OUTLET PER BLOWER (WITHIN 3' OF UNIT)
- UL CERTIFIED
- INTEGRAL BYPASS VALVE INCREASES BLOWER EFFICIENCY AND REDUCES WEAR
- GALVANIZED 14 GUAGE STEEL HOUSING
- 2.0" AIRLINE IS STANDARD
- SUPPLIED WITH 124 CFM – 60" H20

MODEL 521 DUAL BYPASS BLOWER DETAILS
TOTAL GROSS WEIGHT: 80lbs









NOTE:
(2) BLOWERS PER LANE USED – REQUIRES
(2) 120VAC 20 AMP DEDICATED CIRCUITS PER LANE REQ
(2) TOTAL CIRCUITS AND DUPLEX'S

IMPORTANT!!

EACH BLOWER MUST HAVE ITS OWN 120VAC 20AMP DEDICATED CIRCUIT TO FUNTION PROPERLY. ANY LESS WILL CAUSE EQUIPMENT FAILURE AND VOID WARRANTY.

PLEASE SEE CUSTOMER UNIT DRAWING FOR CUSTOMER UNIT POWER REQUIREMENTS

ITEM	M/F	DESCRIPTION / REFERENCE	QTY	P/N

MATERIAL/FINISH SCHEDULE

DUAL BYPASS UL BLOWER ASSEMBLY

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TOLERANCES
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THIRD ANGLE PROJECTION

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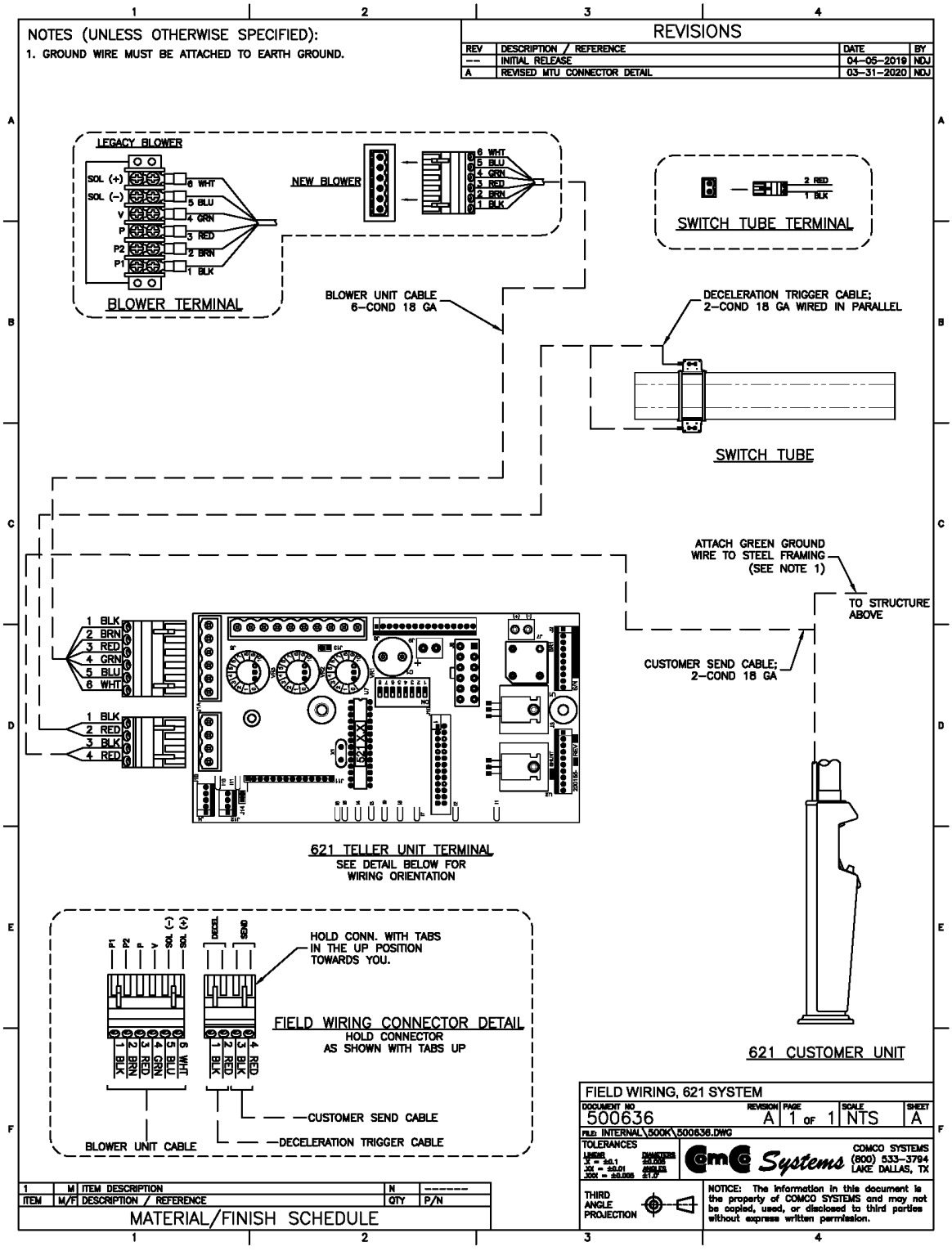
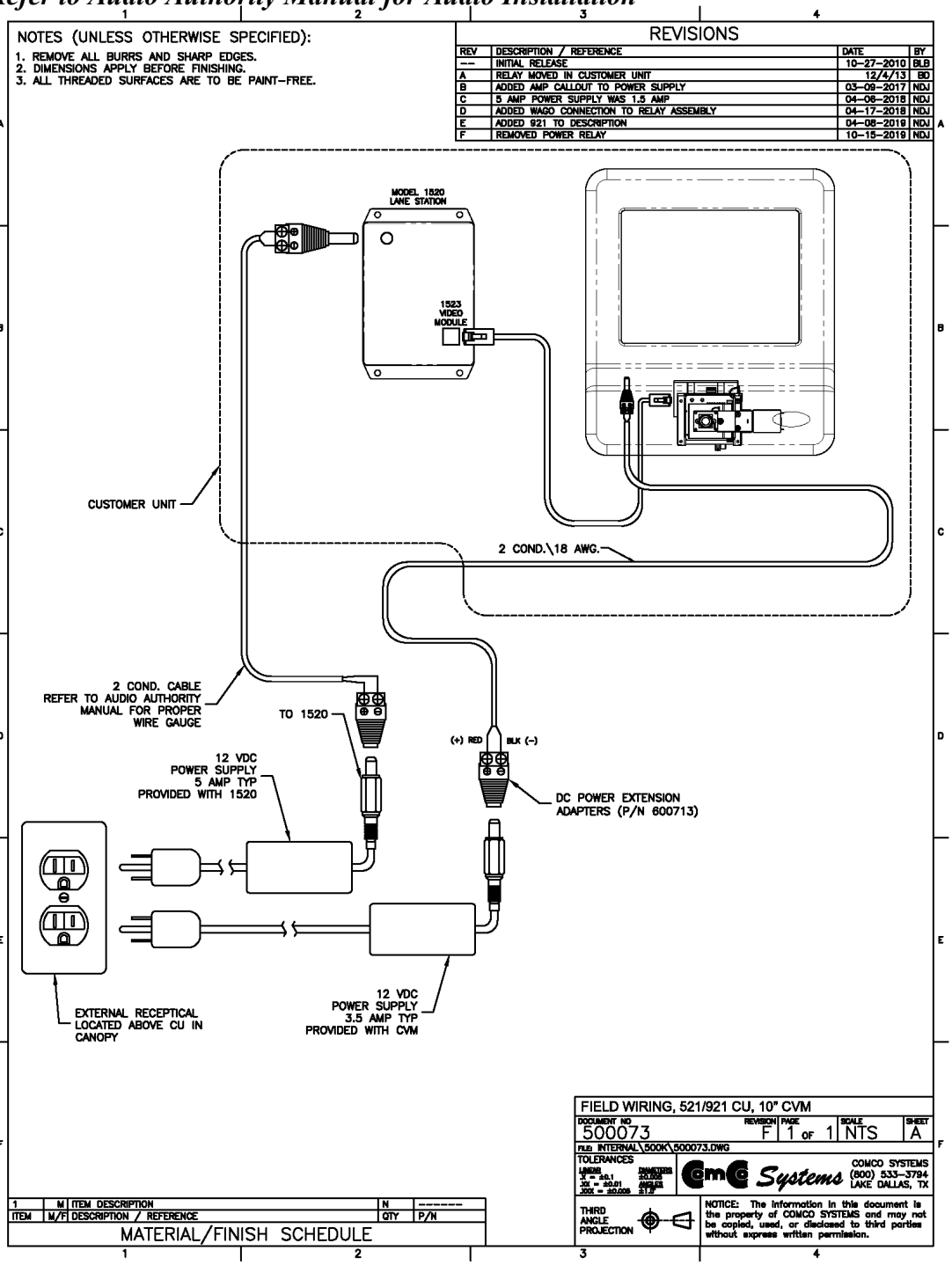
Field Wiring Diagram (D/N: 5006)

NOTE: ***Deceleration switches MUST be wired in Parallel***



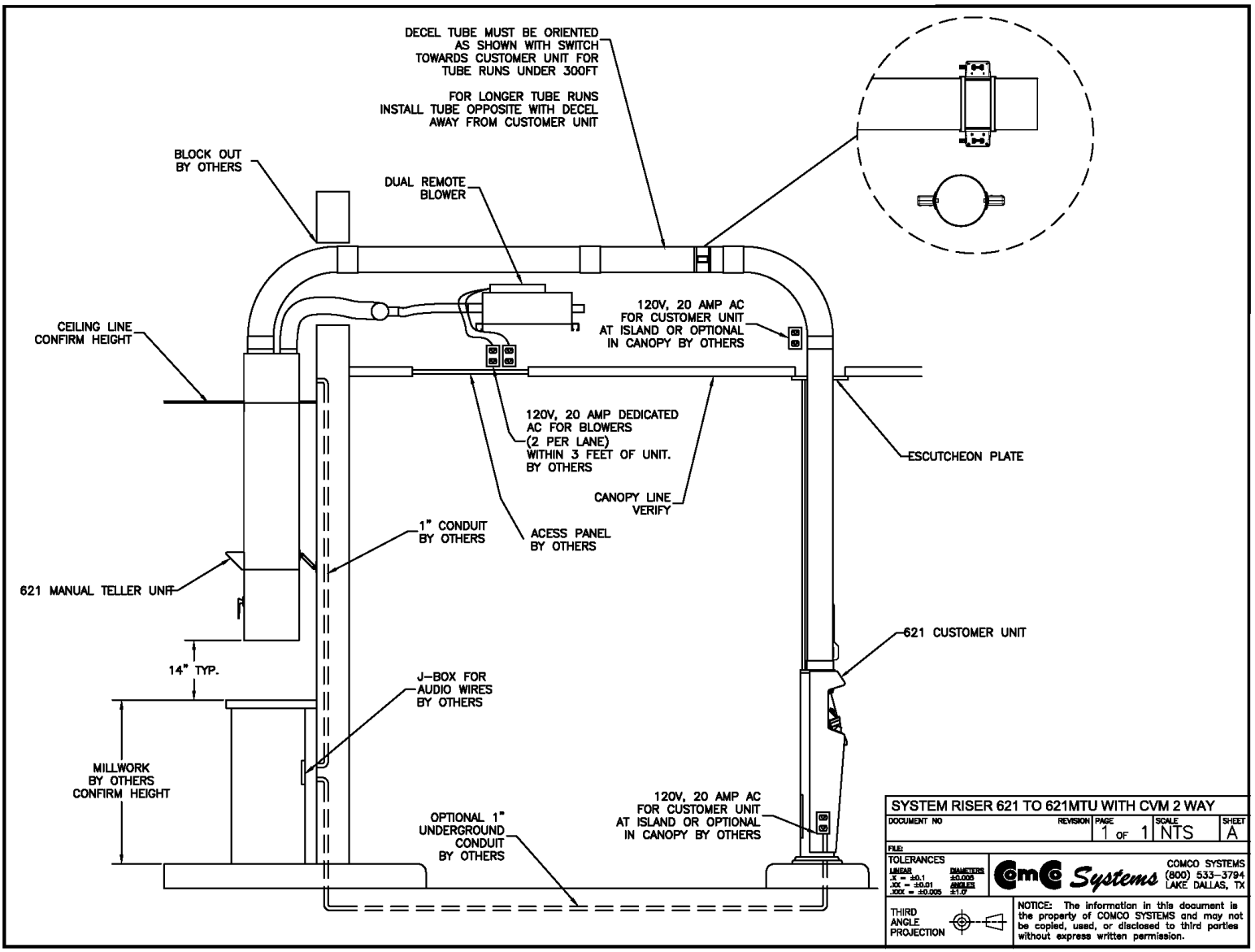
Control/Audio Field Wiring Diagram (D/N: 500073)

NOTE: ***Refer to Audio Authority Manual for Audio Installation***



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.

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.

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

Customer Unit & Operator

The carrier deceleration switches are required for proper operation. If they are inoperable, the carrier will land hard at the customer unit.

Cleaning

Carriers

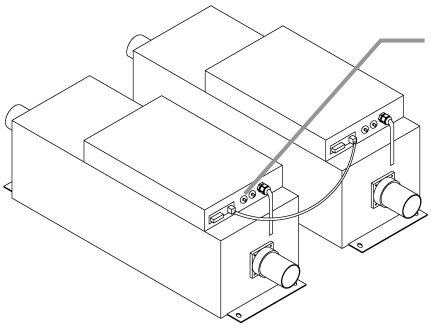
The carrier is to be cleaned with alcohol wipes containing no more than 75% Isopropyl Alcohol.

Customer Unit & Operator

The Operator and Customer unit are to be cleaned with alcohol wipes containing no more than 75% Isopropyl Alcohol.

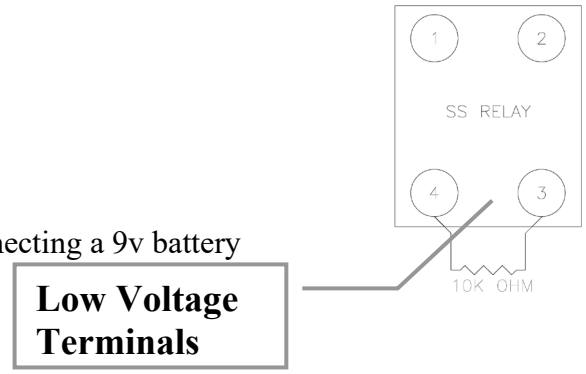
No System Power

- Check main outlet breakers.
- Check low voltage control breakers on front of blower pack.



Weak or Loss of Suction/Pressure

- Check blower motors for function.
  Blower motors can be tested individually by connecting a 9v battery to pins 3(+) and 4(-) of Solid-State Relay.
- To replace blower motors, see video link below.
  Blower Replacement Video



Carrier Arrives Hard at Customer Unit

- Verify carriers are in good condition.
- Ensure that the solenoid is engaging at end of cycle.
  Check that I7 LED is turning on at end of cycle.
  Refer to Appendix A for LED details.

Replacement Parts

621 Manual Teller Unit

Description	Part Number	Usage per Lane
Keypad	201292	1
Keypad Interface Cable	200967	1
Power Switch Assembly	200391-3	1
Control Board	200155K	1
Door Handle Assembly	201140	1
Brass Keeper	400178	1
Door Assembly	200027-1	1
Membrane Valve for Receiver Box	401468	1
Membrane Valve for Check Valve	400116-1	1

621 Customer Unit

Description	Part Number	Usage per Lane
Upper Switch Plate	201327	1
Lower Switch Plate	201328	1
Rubber Bumpers	605204	2
Microphone Assembly	200746	1
Speaker Assembly	200067	1
Main Harness	200665	1
1520 Interface Harness	200880	1

Replacement Parts Cont.

Blowers

Description	Part Number	Usage per Lane
Blower Motor	601003	4
Blower Motor Assembly	200785	4
Blower Interface Board	200717	2
Dual Blower Interface Harness	200748	1
Solid State Relay	609819	4
Transformer Assembly	201170	2
.5 Amp Circuit Breaker	604414	2
1.5 Amp Circuit Breaker	604435	2
10 Amp Circuit Breaker	604412	4
Solenoid Assembly	200282	2

Carriers

Description	Part Number	Usage per Lane
6” Single End Opening Carrier	602124	1

Misc.

Description	Part Number	Usage per Lane
Deceleration Switch	200599	2

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.

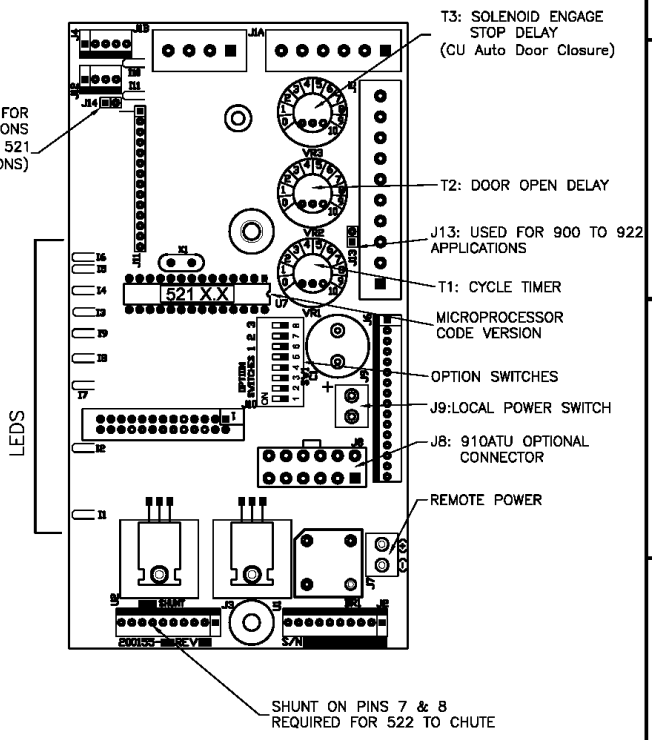
(RLY4) VACUUM: CONTROLS VACUUM BLOWER. LED INDICATES VACUUM SIGNAL ACTIVE.

(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
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TOLERANCES
LINEAR .X = ±0.1 .XX = ±0.01 .XXX = ±0.005
DIAMETERS ±0.005
ANGLES ±1.0°

THIRD ANGLE PROJECTION

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