



Notes:

1. The naming convention follows that from the manufacturer's electrical print package.
2. This document progresses as the machine was unwired, from the outside in, and from upstream to downstream as the lamination moves. It is suggested to work backwards for reassembly.
3. Any untrimmed black wire ties were added during disassembly and will need to be removed.
4. Wire will be needed to connect the corona treatment controllers, depending on their install placement.
5. The following items will be needed for reassembly:

- Various zip ties to reinstall wiring
- Wago lever-nuts, both 2 and 3 position
- #10 ring terminals for ground points
- 1" sticky zip tie mounts
- 1x M12 4 pin, a male and female field wireable connector

6. Conventions used:

**1234** Cable conductor imprinted number

**1234** Wire label added to wire or cable

1234 Terminal block label

1234 References connections marked with painter's tape

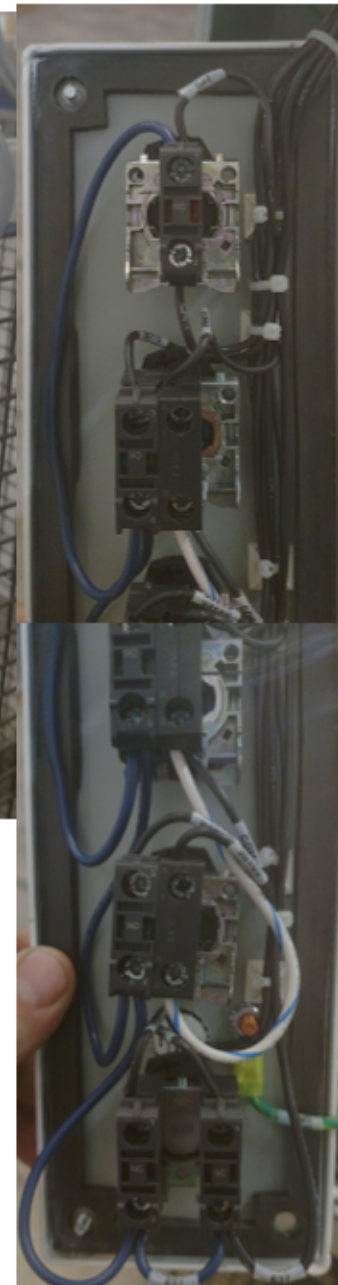
during disassembly

"Line Stop PB" Manufacturer's labelling of a button or box

NO = normally open      NC = normally closed      pilot = light

Wire colors: BLK = black, RED = red, ORG = orange,  
YEL = yellow, GRN = green, BLU = blue, VIO = violet,  
WHT = white, BRN = brown, GRY = gray.  
striping PRIMARY/SECONDARY, eg BLK/WHT

- I. Light curtain and pushbutton stations
  - A. "UFNOSLB" Unwind fence left rear
    - 1. Light curtain cable
    - 2. Light curtain cable
    - 3. Sharpie-labeled cable
      - 637** ESTOP contact bottom right
      - 34903** wire nut to I.A.4
      - 34905** wire nut to I.A.4
      - GND** stud in junction box
    - 4. UFNOSLB cable
      - GND** stud in junction box
      - 34903** wire nut to I.A.3
      - 34905** wire nut to I.A.3
      - 637** "Line Stop" PB top
      - 35711** "Line Stop" PB bottom
      - 35713** "Safety Zone Reset" PB NO top
      - 36017** "Safety Zone Reset" PB pilot top
      - COM** "Safety Zone Reset" PB pilot bottom
      - 3571** "Unwind 1 Web Clamp" PB NO top
      - 36103** "Unwind 1 Web Clamp" PB pilot top
      - 34909** "ESTOP" PB left NC
      - 34907** "ESTOP" PB right NC



B. "UFNOSRB" Unwind fence right rear

- 1. Light curtain cable
- 2. Light curtain cable
- 3. UFNORSB cable

**GND** stud in junction box  
**SPR01** no connection  
**367** jumped to bottom of both ESTOP terminals  
terminals  
**34903** "ESTOP" PB left NC top  
**34905** "ESTOP" PB right NC top



C. "UFNOSRF" Unwind fence right front

1. Light curtain cable
2. Light curtain cable
3. UFNOSRF cable

**GND** stud in junction box

**35511** "Line Stop" PB NC bottom

**35515** "Treater Electrode Nip Roll" PB NC bottom

**COM** "Treater Electrode Nip Roll" PB pilot top

**35907** "Treater Electrode Nip Roll" PB pilot bottom

**367** "Laminator 1 Nip" PB NO top

**35913** "Laminator 1 Nip" PB pilot bottom

**35605** "Laminator 1 Nip" PB NO bottom

**35517** "Unwind 2 Web Clamp" PB NO bottom

**35909** "Unwind 2 Web Clamp" PB pilot bottom

**35513** "Line Jog" PB NO bottom

**367** "ESTOP" PB NC top right

**34805** "ESTOP" PB NC bottom left

**34803** "ESTOP" PB NC bottom right

**35603** "Unwind 3 Web Clamp" PB NO bottom

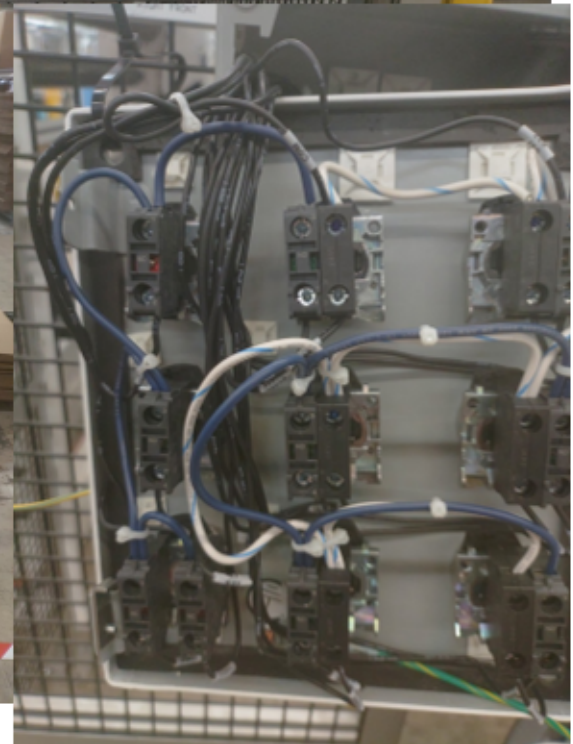
**35911** "Unwind 3 Web Clamp" PB NO bottom

**35917** "Safety Zone Reset" PB pilot bottom

**35609** "Safety Zone Reset" PB NO bottom

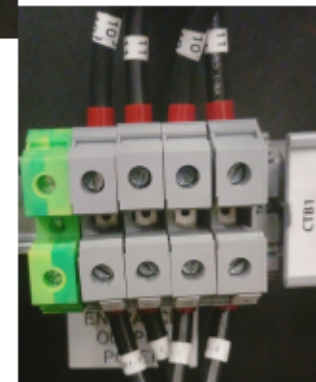
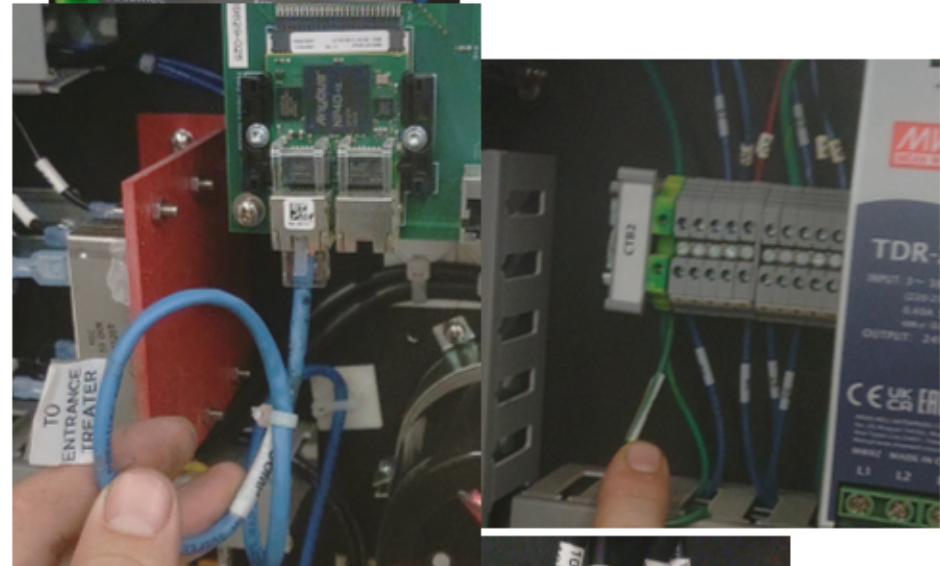
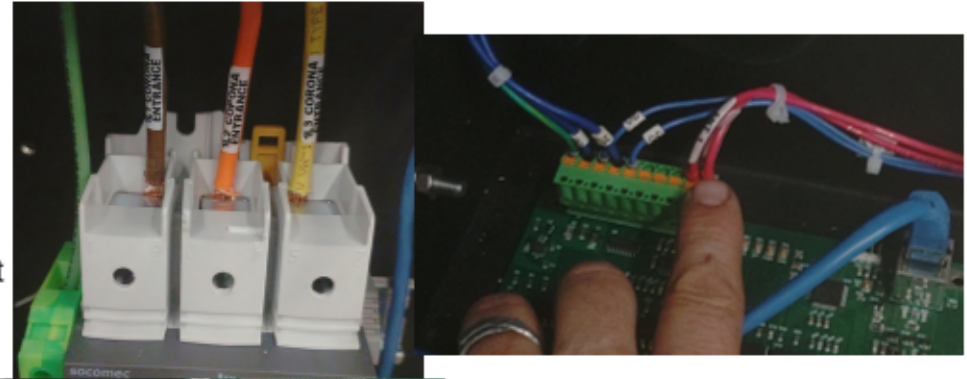
**35605** "Laminator #2 Nip" PB NO bottom

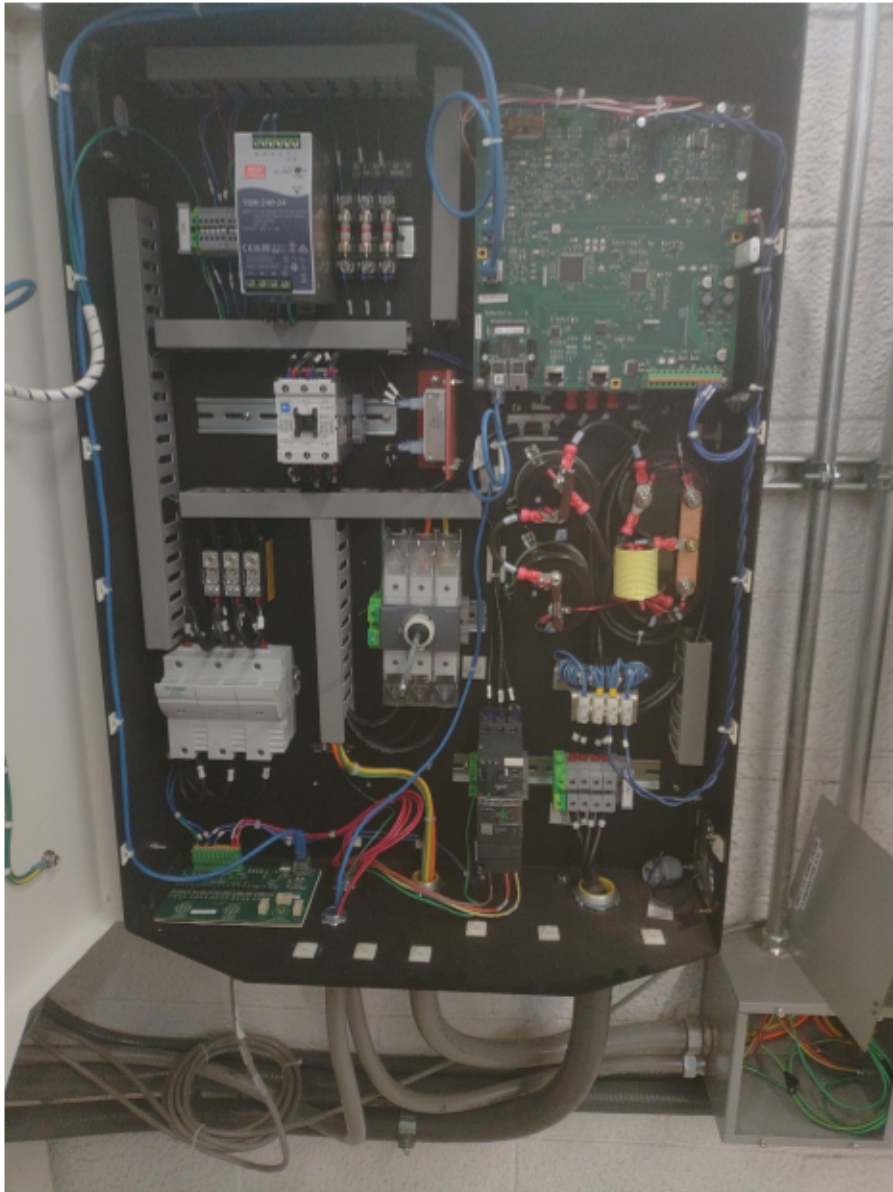
**35915** "Laminator #2 Nip" PB pilot bottom



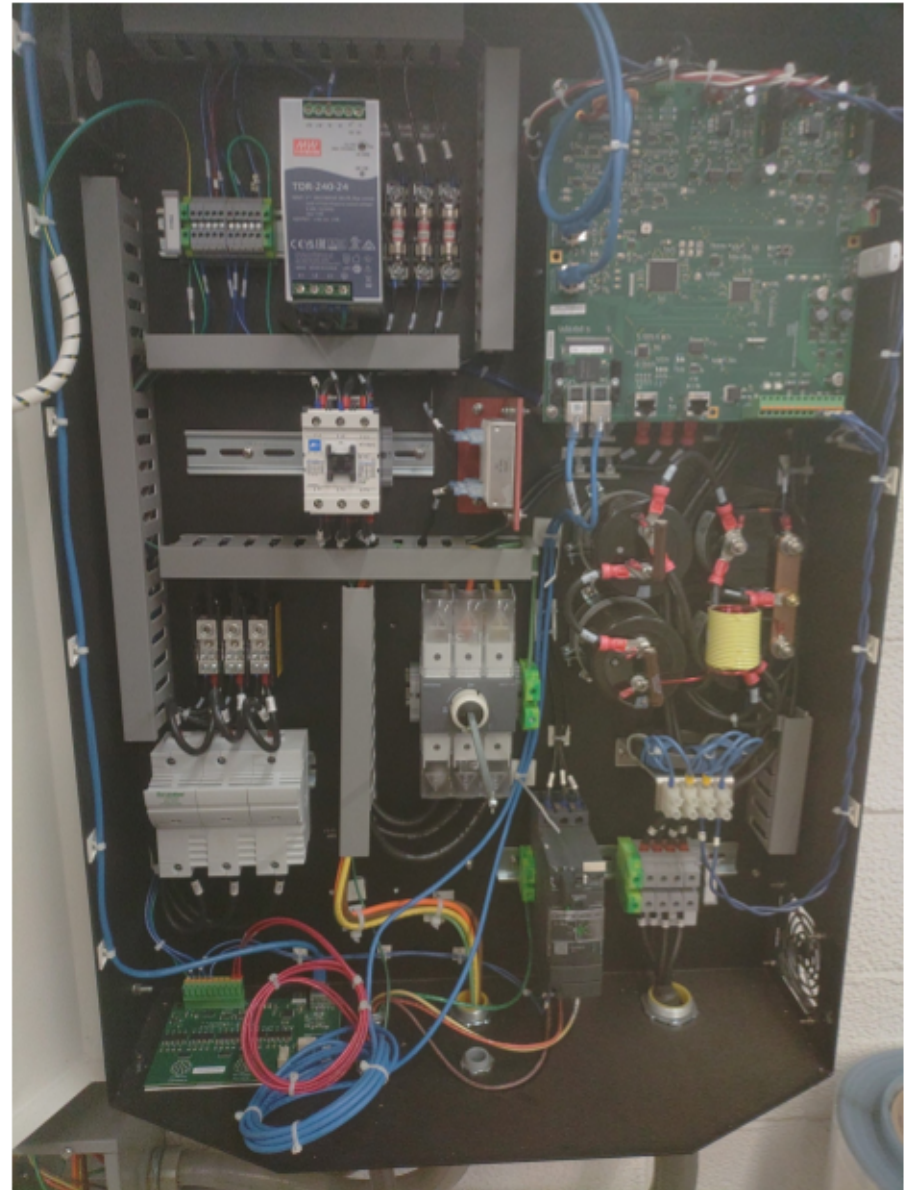
- D. "UFNOSLF" Unwind fence left front
  - 1. Light curtain cable
  - 2. Light curtain cable
    - a. Wire nut connections inside of PB box
      - 922** BRN and YELLOW
      - 928** ORG
      - 929** ORG/BLK
      - COM** BLU
      - GRY** stud in junction box
  - 3. UFNOSRF cable
    - GND** stud in junction box
    - 35611** "Line Stop" PB NC bottom
    - 35615** "Treater Electrode Nip Roll" PB NO bottom
    - 36003** "Treater Electrode Nip Roll" PB pilot bottom
    - 36009** "Laminator #1 Nip" PB pilot top
    - 637** "Laminator #1 Nip" PB NO top
    - 35705** "Laminator #1 Nip" PB NO bottom
    - 35613** "Line Jog" PB NO bottom
    - 36005** "Unwind 2 Web Clamp" PB pilot top
    - 35617** " Unwind 2 Web Clamp" NO bottom
    - 36011** "Laminator #2 Nip" PB pilot top
    - 35707** "Laminator #2 Nip" PB NO bottom
    - 34807** "ESTOP" PB left NC bottom
    - 34809** "ESTOP" PB right NC bottom
    - 35703** "Unwind 3 Web Clamp" PB NO bottom
    - COM** "Unwind 3 Web Clamp" PB pilot bottom
    - 36013** "Safety Zone Reset" PB pilot top
    - 35709** "Safety Zone Reset" PB NO bottom

- II. "Unit #1 Corona Treater Entrance" controller
  - A. Main Power 480V 8AWG into main circuit breaker
  - B. Pair of red wires
    - 1. ENT1 **33127** TB1, 2<sup>nd</sup> from right
    - 2. ENT2 **33127A** TB1, right
    - 3. Ethernet cable to top right PCB
    - 4. Green to top GND terminal block
    - 5. "Entrance Station I/O" cable, black CPC connector to left bottom of cabinet
    - 6. "Entrance Blower Motor" 12AWG 3PH in conduit from LUB12 to blower motor on roof
    - 7. "Entrance Power Output" 8AWG 3PH in conduit to machine
      - a. **10** TB1-1 (Left → Right, no GND)
      - b. **11** TB1-2
      - c. **10** TB1-3
      - d. **11** TB1-4





*Figure 1: Entrance Controller*



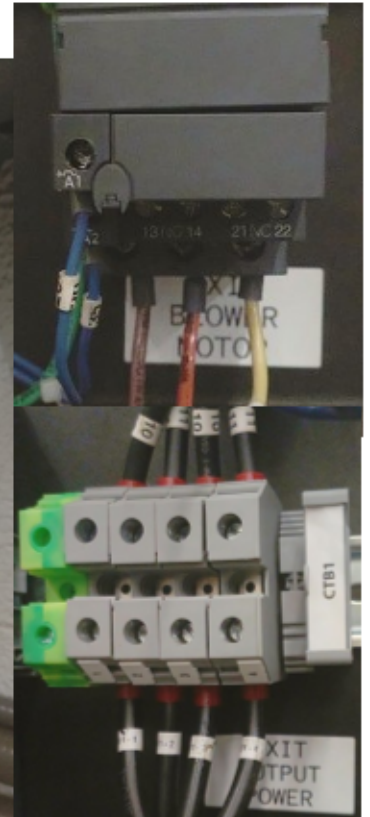
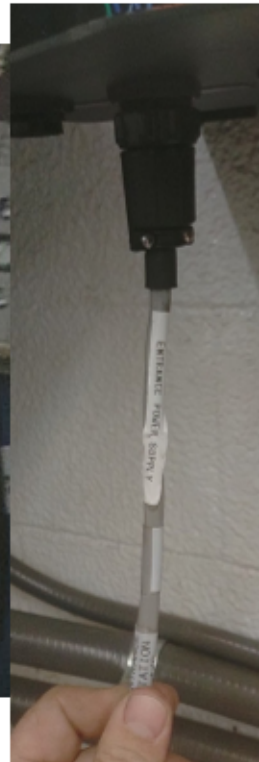
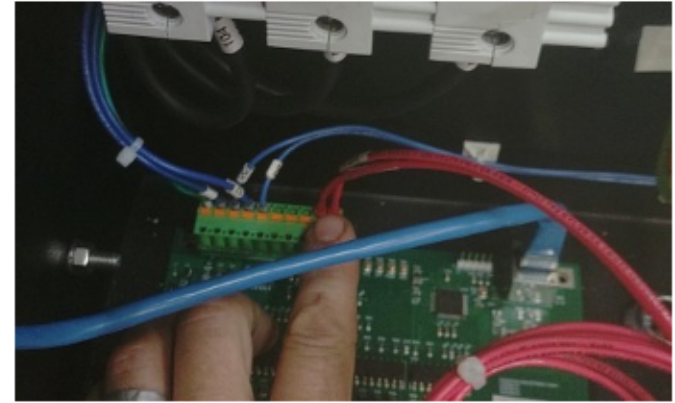
*Figure 2: Exit Controller*

III. "Unit #2 Corona Treater Exit" controller

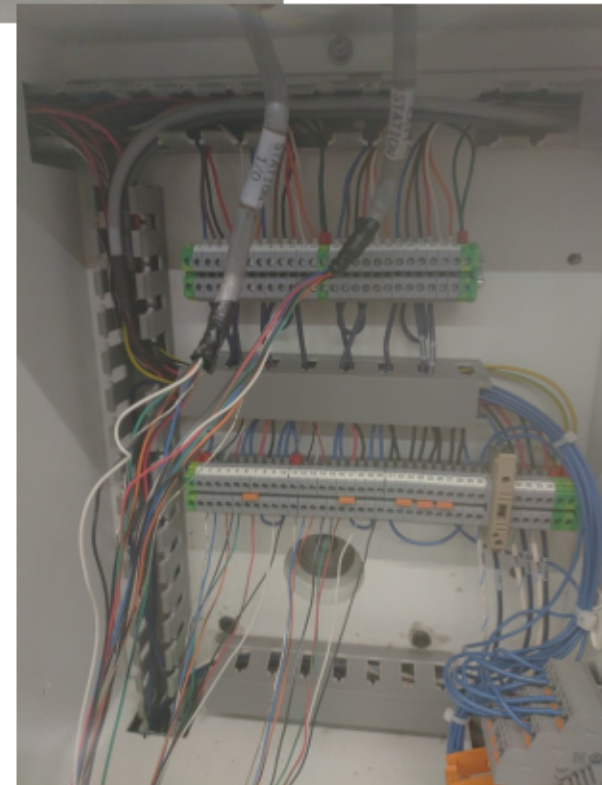
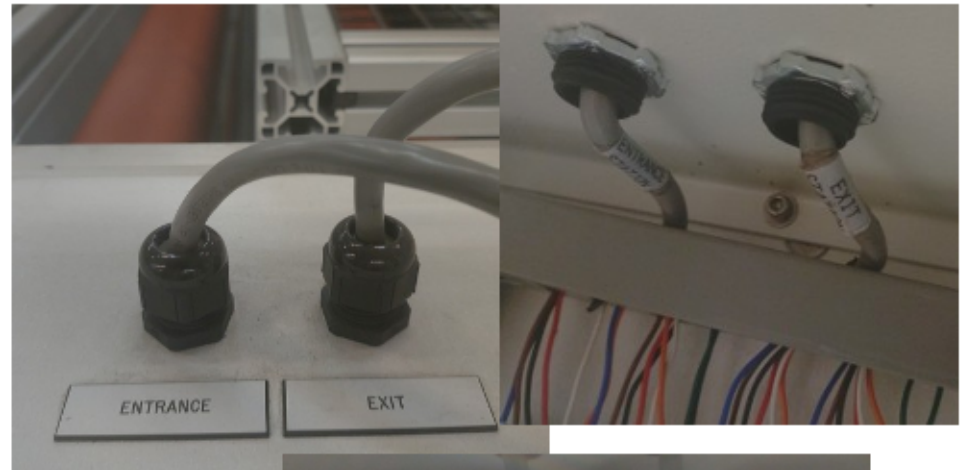
A. Main Power 480V 8AWG into main circuit breaker

B. Pair of red wires

1. ENT1 **33127A**      TB1, 2<sup>nd</sup> from right
2. ENT2 **33127**      TB1, right
3. Ethernet cable to top right PCB, jumped to #1 controller
4. Green to top GND terminal block
5. "Entrance Station I/O" cable, black CPC connector to left bottom of cabinet
6. "Entrance Blower Motor" 12AWG 3PH in conduit from LUB12 to blower motor on roof
7. "Entrance Power Output" 8AWG 3PH in conduit to machine
  - a. **10**    TB1-1      (Left → Right, no GND)
  - b. **11**    TB1-2
  - c. **10**    TB1-3
  - d. **11**    TB1-4



#### IV. Corona Treater, connections on right side of line



##### A. Entrance Station I/O Cable, control voltage connection

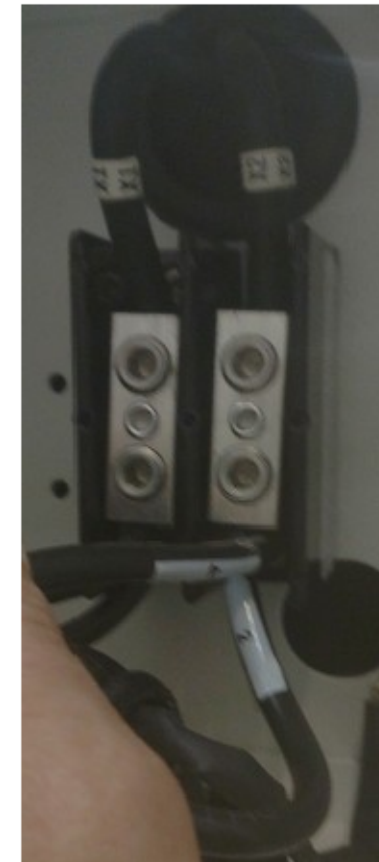
- |            |           |                         |
|------------|-----------|-------------------------|
| 1. SHIELD  | <u>1</u>  |                         |
| 2. BLU/WHT | <u>2</u>  |                         |
| 3. ORG/BLK | <u>3</u>  |                         |
| 4. BLK/WHT | <u>4</u>  |                         |
| 5. GRN/BLK | <u>5</u>  |                         |
| 6. RED/GRN | <u>6</u>  |                         |
| 7. WHT     | <u>7</u>  | <u>7/8/9</u> are jumped |
| 8. WHT     | <u>8</u>  |                         |
| 9. WHT     | <u>9</u>  |                         |
| 10. BLK    | <u>10</u> |                         |

B. Exit Station I/O Cable, control voltage connection

- 1. SHIELD 11
- 2. BLU/WHT 12
- 3. ORG/BLK 13
- 4. BLK/WHT 14
- 5. GRN/BLK 15
- 6. RED/GRN 16
- 7. WHT 17     17/18/19 are jumped
- 8. WHT 18
- 9. WHT 19
- 10. BLK 20

C. Entrance High Voltage Primary Transformer Connections

- 1. X1 (no label) and (no label)
- 2. X2 **2** and **4**
- 3. SHIELD to ground stud



D. Exit High Voltage Primary Transformer Connections

1. X1 (no label) and (no label)
2. X2 2 and 4
3. SHIELD to ground stud

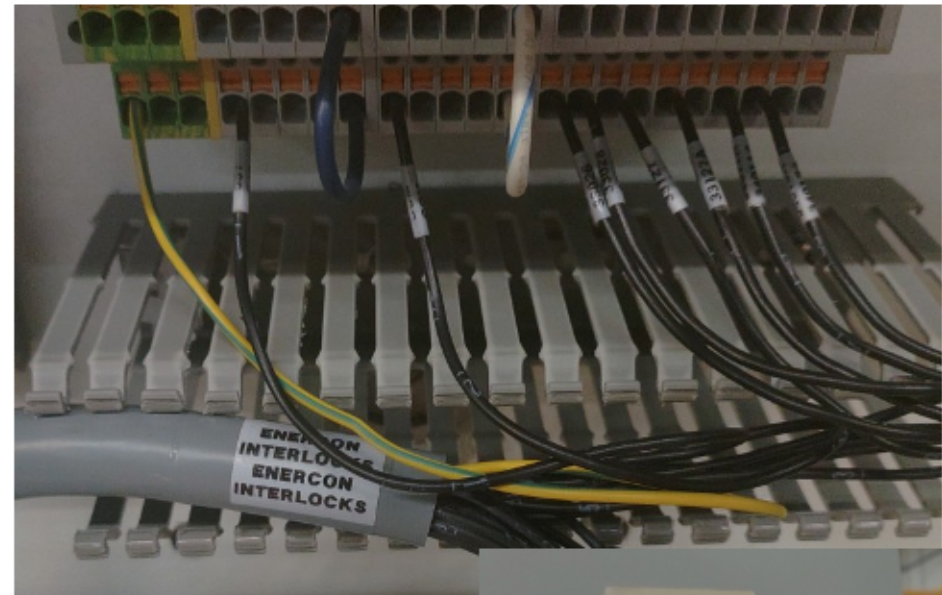


E. Large ground conductor, disconnected from inside of frame, ends at B support on right side.



F. Large 18AWG 25 conductor, wired to unlabeled TBs behind control panels. Travels through horizontal member **B-6** to **B-15**

- |            |                   |                        |
|------------|-------------------|------------------------|
| 1. GRN/YEL | <u>GND</u>        |                        |
| 2. 637     | <u>+24V</u>       |                        |
| 3. COM     | <u>24V Common</u> |                        |
| 4. 33026   | <u>1</u>          | TBs from left to right |
| 5. 33028   | <u>2</u>          |                        |
| 6. 33127   | <u>3</u>          |                        |
| 7. 33127A  | <u>5</u>          |                        |
| 8. 34011A  | <u>7</u>          |                        |
| 9. 34013A  | <u>8</u>          |                        |



V. Corona treatment junction box, right of line, on **B** pillar, 4 cables exit bottom of box to corona machine, 2 are control voltage connections, 2 are ESTOP connections. Conduit on right side of box go to the 2 corona controllers on the wall. Yes, the numbering is the same.

- |               | Machine Side      | Controller Side   |
|---------------|-------------------|-------------------|
| A. "Entrance" |                   | "CT2ESR"          |
| 1.            | <b>33127</b> BLK  | <b>33127</b> RED  |
| 2.            | <b>33127A</b> BLK | <b>33127A</b> RED |
| 3.            | GRN/YEL           | GRN               |
| 4.            | (2 spare wires)   |                   |
| B. "Exit"     |                   | "CT1ESR"          |
| 1.            | <b>33127</b> BLK  | <b>33127A</b> RED |
| 2.            | <b>33127A</b> BLK | <b>33127A</b> RED |
| 3.            | GRN/YEL           | GRN               |
| 4.            | (2 spare wires)   |                   |



VI. Lower B pillar, left side

A. Air hose to "Enercon Regulator"

B. Motor M0836 and M340

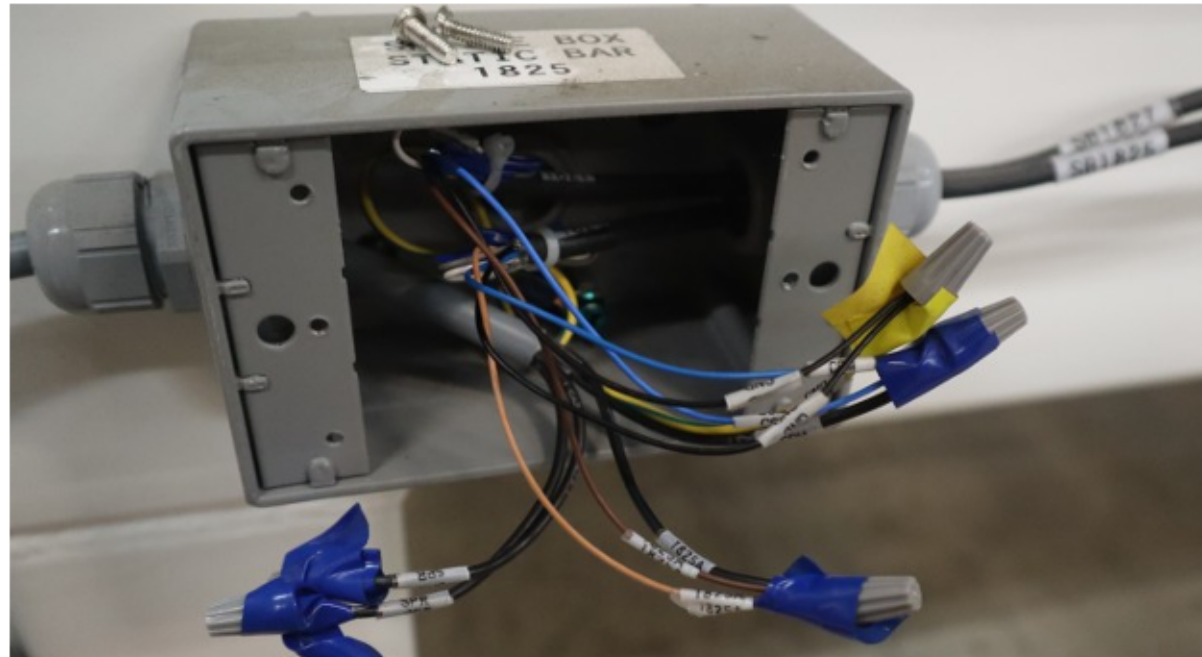
1. 334A
2. 334B
3. GND



VII. Splice Box 1825

A. Left side SB1825, right side SB1825, SB1827

1. **GND**: BLK, BLK, GRN/YEL to box, box to left cable
2. **COM**: BLU, BLU, BLK #2
3. **1825A**: BRN, BRN, BLK #1



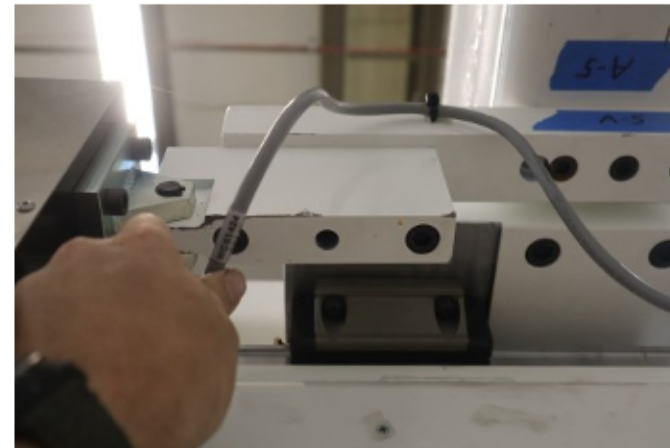
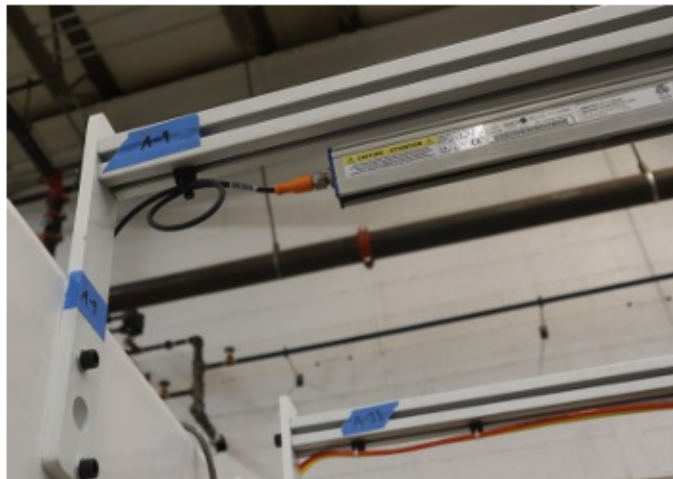
VIII. Cables exiting at A-6

- A. 2 ethernet
- B. B edge guide
- C. 2 black and 1 gray from fence LCT1124

IX. Accuweb motor A-5 "WCS1424"

X. Accuweb motor near B-1, "WCS1504"

- XI. Edge B edge detector cable A-12, A-6
- XII. Edge A edge detector cable A-13
- XIII. Air cylinder, both to Roll-1A, A-11
  - A. 39205C orange tubing, extend
  - B. 39205B yellow tubing, retract
- XIV. Static Bar "SB1829" A-9



- XV. RECEPT429
  - A. Power Cable
  - B. Sensor



XVI. A pillar "WCS1424" edge guide, cables enter from left to right

A. B & A

- 1. YEL 1
- 2. WHT/RED 2
- 3. ORG/WHT 3
- 4. WHT/GRN 4
- 5. GRN/WHT 5
- 6. WHT/BLU 6
- 7. BLU/WHT 7

B. "1422"

- 1. GND 1
- 2. COM #2 2
- 3. 1422 #1 3

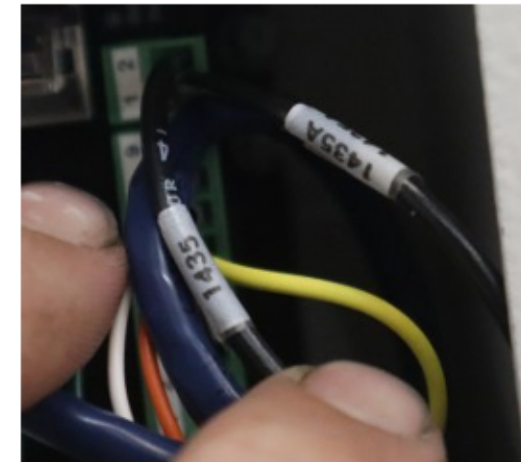
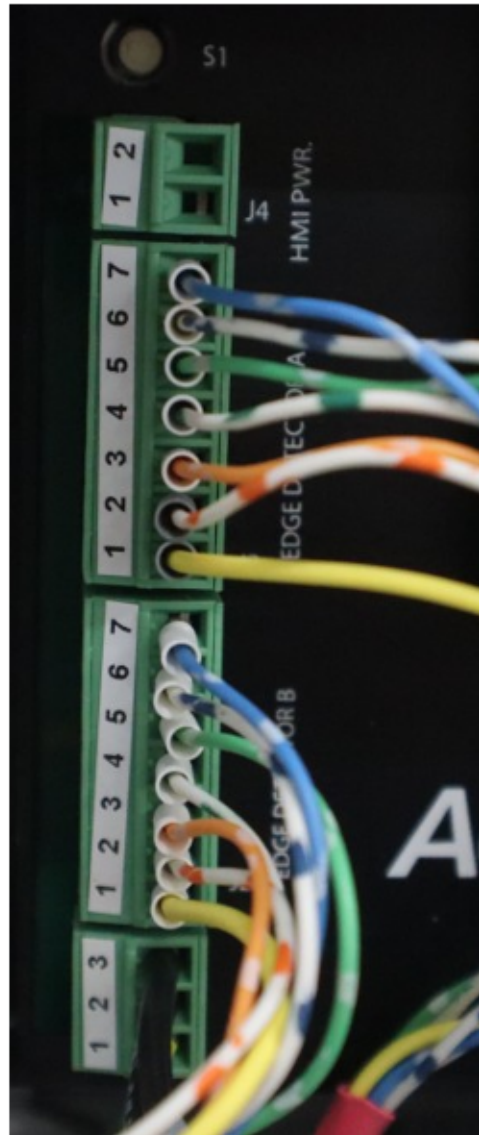
C. Inhibit J8

- 1. 1435A #3 1
- 2. 1435 #4 2

D. WCS1504 Motor

- 1. RED 1
- 2. BLK 2
- 3. YEL 4
- 4. YEL 6
- 5. GRN 7
- 6. WHT 8
- 7. ORG 9

B J2, pin 2 damaged





XVII. **B** pillar "WCS1424" edge guide, cables enter from left to right

A. B & A, same colors and pin#s

- 1. YEL 1
- 2. WHT/RED 2
- 3. ORG/WHT 3
- 4. WHT/GRN 4
- 5. GRN/WHT 5
- 6. WHT/BLU 6
- 7. BLU/WHT 7

B. "1502"

- 1. GND 1
- 2. COM 3 #2 2
- 3. 1502 #1 3

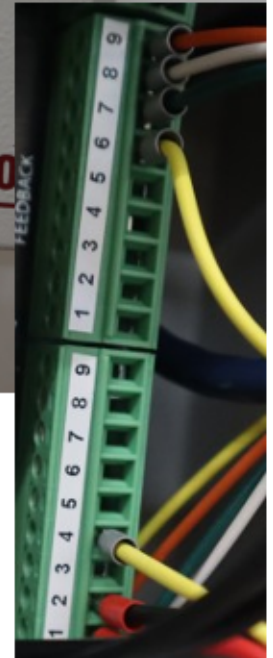
C. Inhibit J8

- 1. 1515A #3 1
- 2. 1515 #4 2

D. WCS1504 Motor

- 1. RED 1
- 2. BLK 2
- 3. YEL 4
- 4. YEL 6
- 5. GRN 7
- 6. WHT 8
- 7. ORG 9

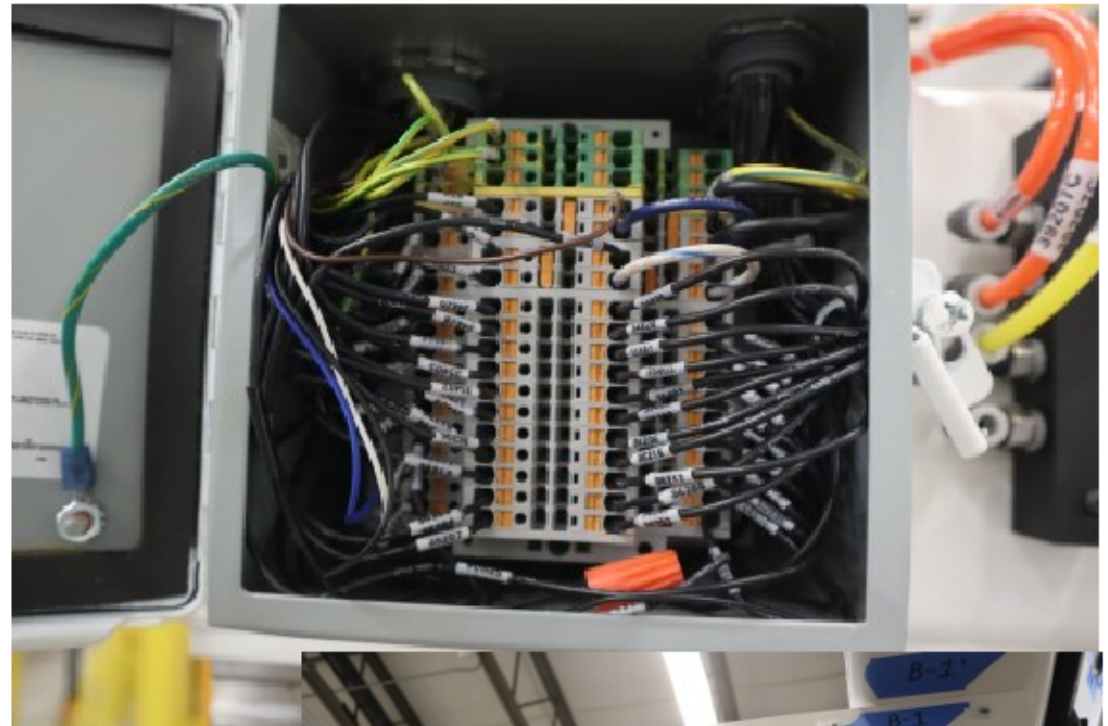
XVIII. **JT36603** sensor cut @ **B-15**



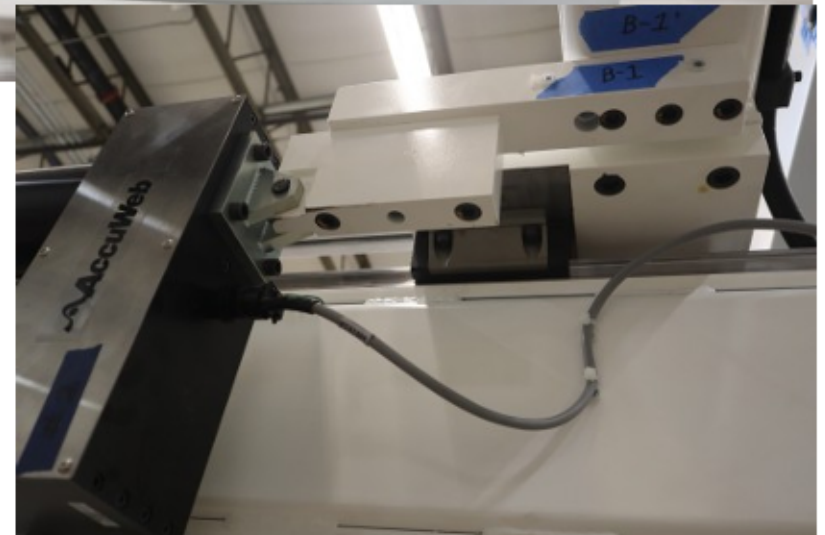
- XIX. Air hose pulled out to right
- XX. ENERCON interlocks pulled to left
- XXI. Hydraulic Motor M123
- XXII. Unroller Assembly **B** pillar
- XXIII. 3 air hoses pulled to **B** right
  - A. **39207B**
  - B. **39207C**
  - C. **39221B**
- Errata: **35313** 7<sup>th</sup> from bottom **353113**  
BLUE 3<sup>rd</sup> from bottom **36605**
- XXIV. Recept432 and sensor



- XXV. Splice box, 2 cables to terminals  
A. Laminator box signal  
B. Laminator box feed



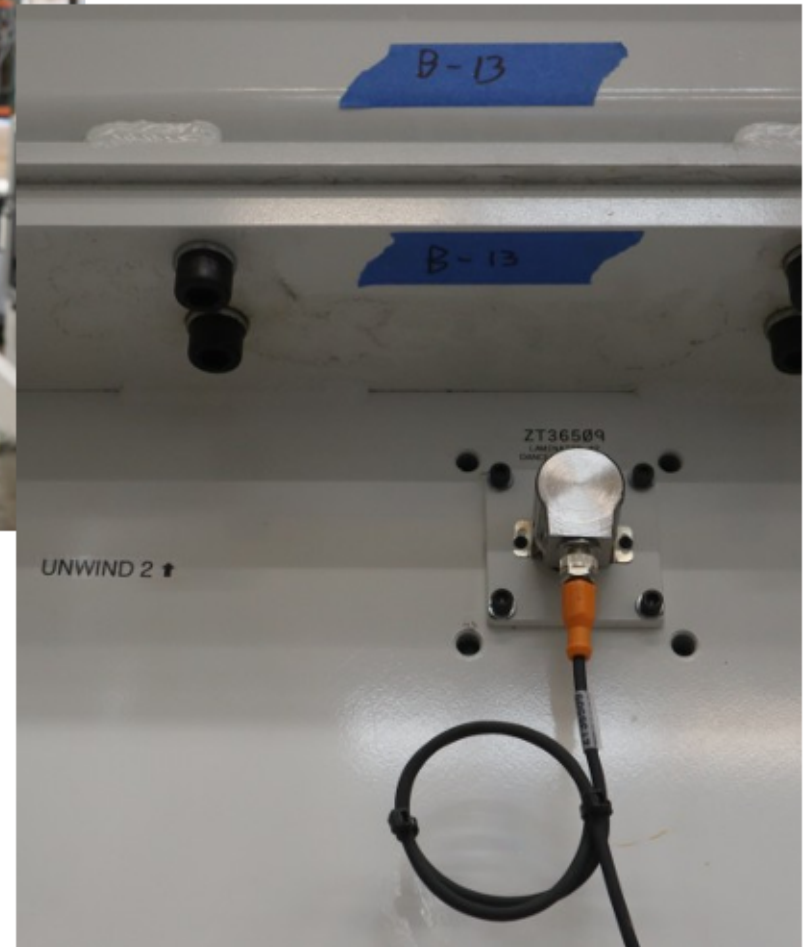
- XXVI. Accuweb motor "WCS1504" at B-1



XXVII. Splice motor M10936, M338



XXVIII. Beam B-13 to B-16, left to right  
A. "ZT36509" Lamintor #2 Dancer Position



B. Left

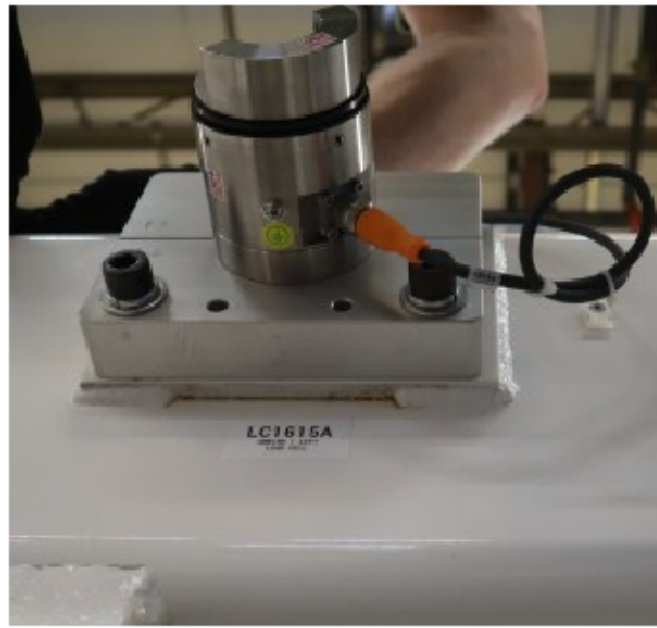
1. **39323** left side air cylinder tubing
2. Edge "A" edge detector
3. Edge "B" edge detector

C. Right

1. **39323** right side air cylinder tubing



- XXIX. Load cell, above roll 5, near C-2 "LC1615B"  
XXX. Load cell, above roll 5, near C-7 "LC1615A"  
Both load cells had ½ of the coupler reward, it was rotated for shipping

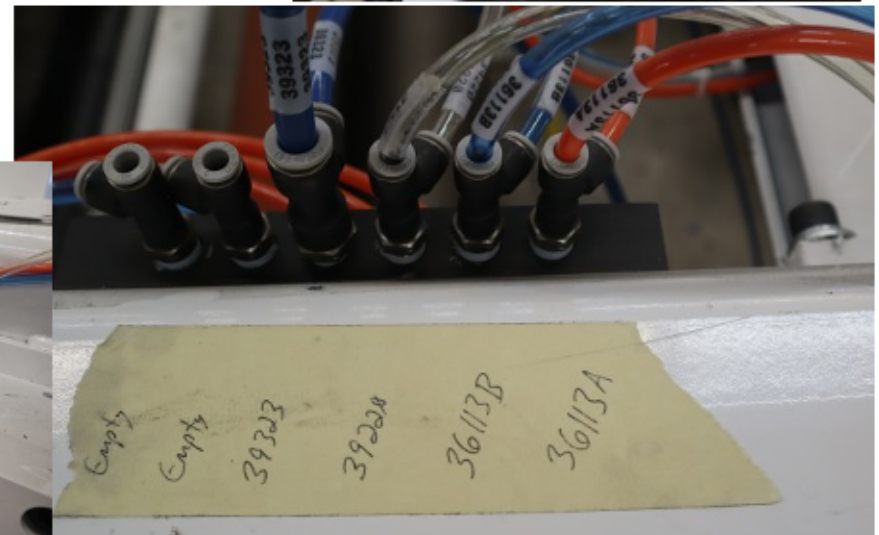


XXXI. Laminator #2 servo motor "M10636" and "M334"



XXXII. Pneumatic junction at rear of C-5, line left, direction up to downstream

- A. Empty
- B. Empty
- C. 39323
- D. 39220
- E. 36113B
- F. 36113A

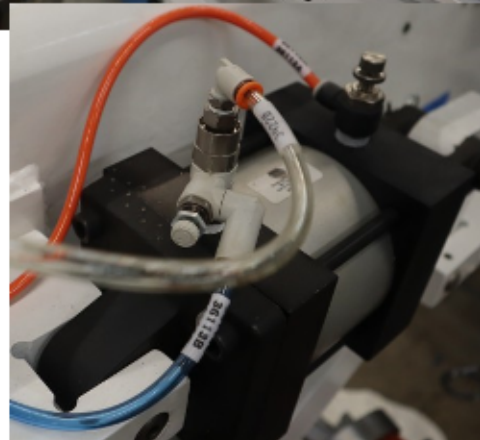


XXXIII. Air cylinder near C-5

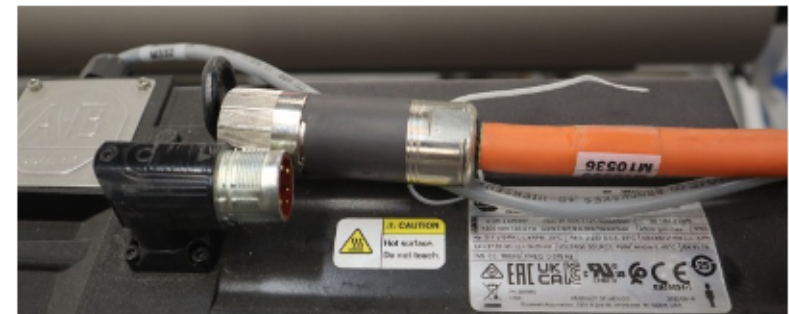
- A. 36113A
- B. 36113B and 39220

XXXIV. Air cylinder near C-4

- A. 36113A
- B. 36113B and 39220



XXXV. Motor "M103536" and "M332"

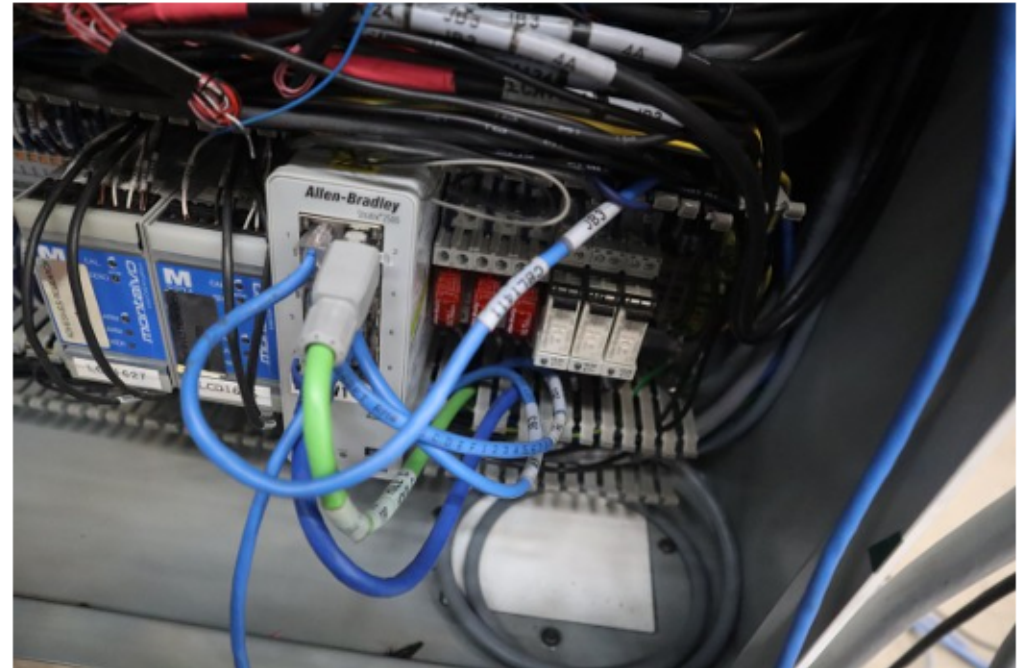
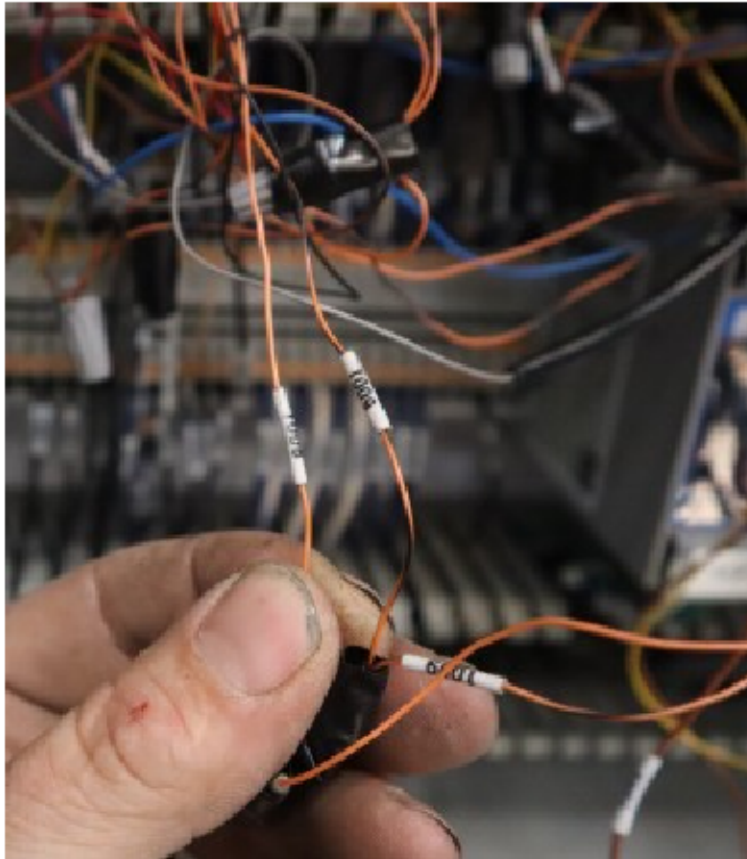


XXXVI. JB 3, 4 cables feeding from main cabinet

A. "CBL1411" ethernet

B. "LCT1004"

1. GRY earth
2. BLU dc com
3. BRN 1002
4. ORG 1008
5. ORG/BLK 1009



C. 4 conductor

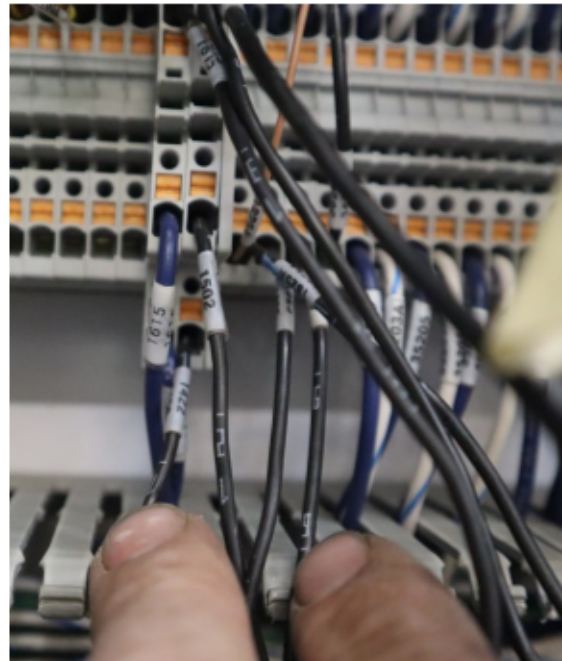
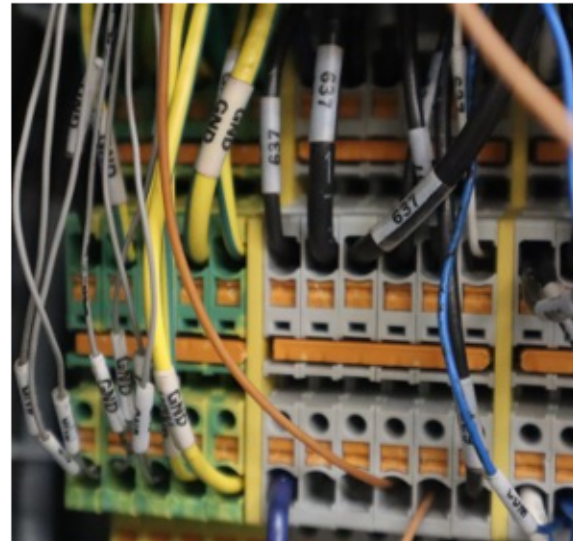
- 1. 637
- 2. 510A
- 3. X2

- 1 TB on left
- 2 TB on right
- 3 TB on right

D. 18 conductor

- 1. GRN/YEL
- 2. COM
- 3. 633
- 4. 1407
- 5. 1122
- 6. 1102
- 7. 1022
- 8. 1002
- 9. 922
- 10. 928
- 11. 929
- 12. 1422
- 13. 1502
- 14. 1825
- 15. 1835
- 16. 1326
- 17. 1615
- 18. 1627

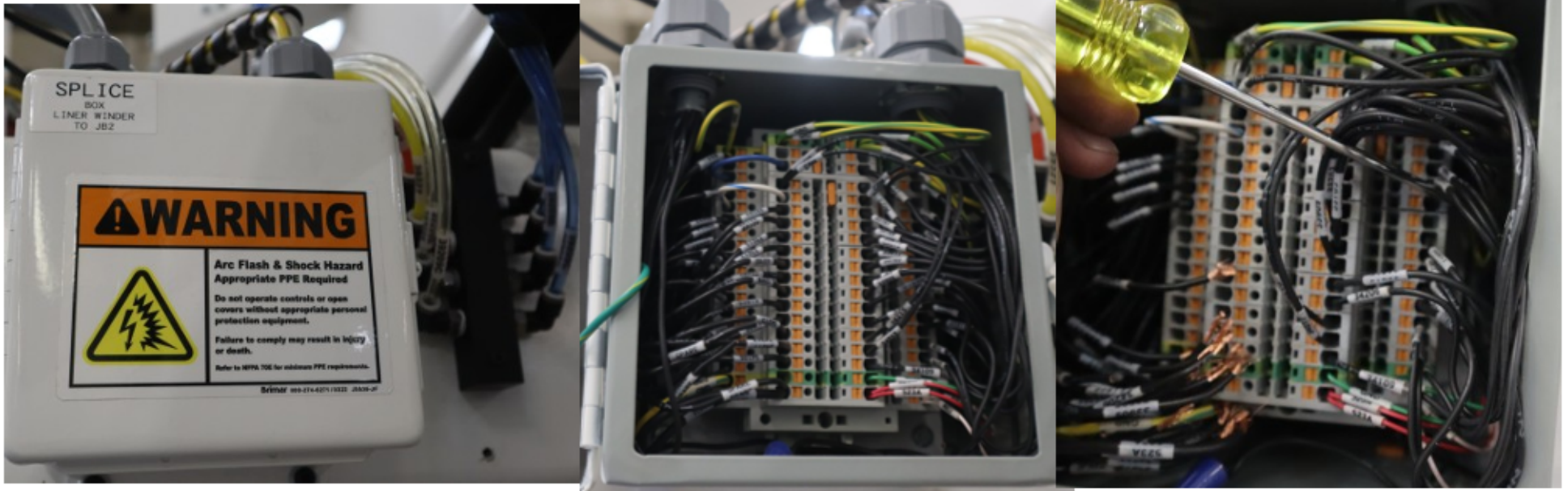
- GND
- DC COM
- #1 1<sup>st</sup> TB
- #2 4<sup>th</sup> TB
- #3 6<sup>th</sup> TB
- #6 7<sup>th</sup> TB
- #5 8<sup>th</sup> TB
- #4 9<sup>th</sup> TB
- #15 10<sup>th</sup> TB
- #16 11<sup>th</sup> TB
- #17 12<sup>th</sup> TB
- #11 14<sup>th</sup> TB, bottom
- #12 14<sup>th</sup> TB, top
- #8 16<sup>th</sup> TB
- #9 17<sup>th</sup> TB
- #10 30<sup>th</sup> TB
- #13 13<sup>th</sup> TB, top
- #14 13<sup>th</sup> TB, bottom



XXXVII. Splice box Liner Winder to JB2

- A. Liner box feed
- B. Liner box signal
- C. Splice box JB2

Errata: left side 33609, right side no wire, 11TBs from bottom



XXXVIII. Edge "A" and "B" detector, both to C-14, then to WCS1524, mounted to D-4 pillar

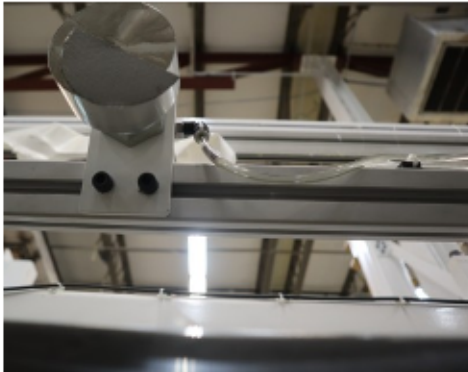


XXXIX. 39209B air cylinder retract

XL. 39209C air cylinder extend

XLI. LC1603A load cell at left, upstream from D-1

XLII. LC1603B load cell at right, upstream from D-2



XLIII. air tubing junction 39225B, exits at D-4, to lone air cyl 39225C

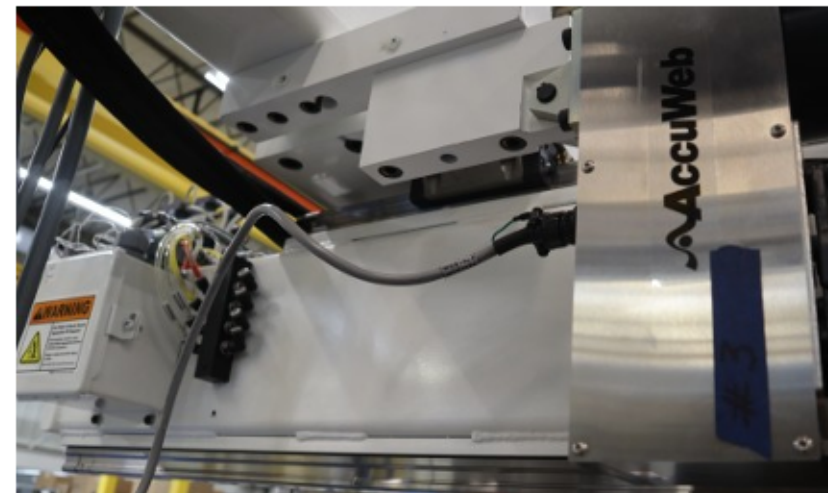


- XLIV. 4 air tubing to junction at splice box liner winder, all through **D-1** to **D-2**
- A. **39327**
  - B. **39327**
  - C. **39209B**
  - D. **39209**

- XLV. Pneumatic junction block at **D-4**, top to bottom
- A. **39211B, 39211C, 39213B, 36703A, 39217, 39223B, 39321, 39215C, 39213C, 36703B, 39215B, 39223C, 39223B**



- XLVI. Accuweb motor "WCS1524" on **D-5**



- XLVII. Left crane  
A. Power feed cable  
B. "PRS33813"



- XLVIII. Right crane  
A. Power feed cable



- XLIX. Motor above JB2, M10436, no overload



- L. JB2 camera, originally unlabeled, under left crane
- LI. "RECEPT435" power and sensor
- LII. Hydraulic Pump Motor "M128"
- LIII. 2 air hoses mounted at **D-13**, "B" and "B"
- LIV. "Unwind 3" camera ethernet



- LV. Vacuum pump "M138" right side, inside fence by unload
  - A. 1 **3T1**
  - B. 2 **3T2**
  - C. 3 **3T3**

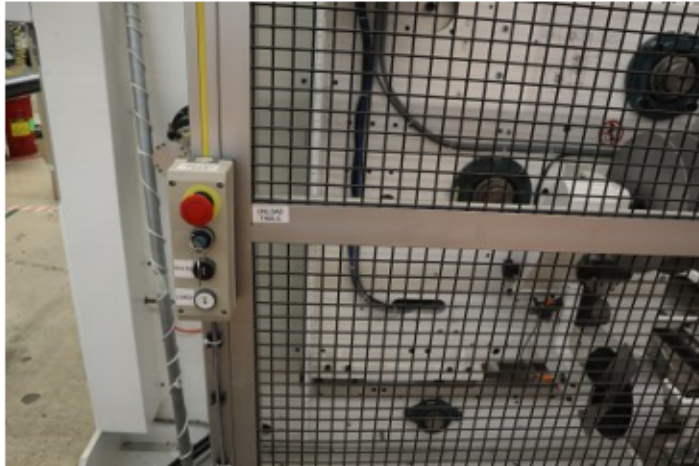
- LVI. Right fence around machine near unload
  - A. "LCT1004"



B. "WFNOSRB" Winder fence right back PB stations



C. Unload table pb box removed from fence



LVII. Larger lift table in unload area

- A. "426" cable
  1. 426 BLK
  2. X2 WHT
  3. GRN/YEL GRN



LVIII. UP Ender Station, junction box underneath smaller angled unload table

- |           |              |
|-----------|--------------|
| A. PB Box | Feed cable   |
| GRN       | GRN/YEL      |
| RED       | <b>637</b>   |
| YEL       | <b>33809</b> |
| BLK       | <b>33811</b> |

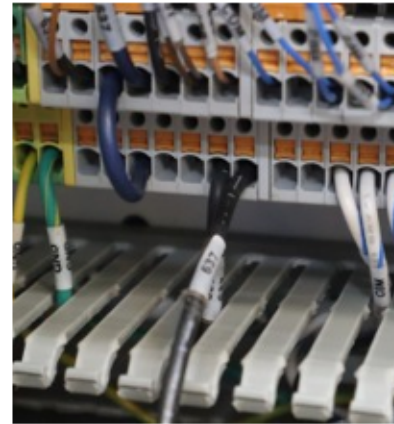
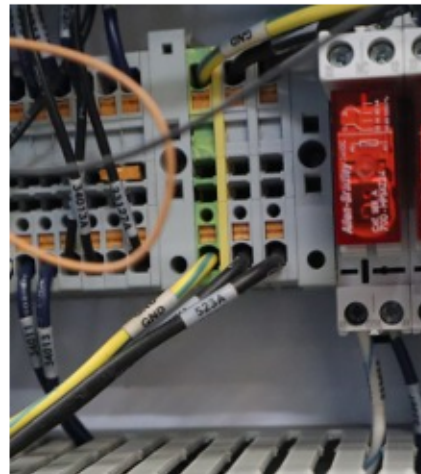
- 1
- 2
- 3





- LIX. Junction Box 2 (JB2)
- A. **CBL1402** ethernet to remote I/O top
  - B. "24 VDC feed" "To JB2"
    - 1. GND
    - 2. NEU
    - 3. 523A
    - 4. 637 to DC+
  - C. JB2 Box Signal
 

1. GRN/YEL	GND
2. <b>1</b>	COM Common
3. <b>2</b>	633 <u>1</u>
4. <b>3</b>	1402 <u>3</u>
5. <b>4</b>	1522 <u>5</u>
6. <b>5</b>	1603 <u>6</u>
7. <b>6</b>	1815 <u>8</u>



LX. Main Cabinet

- A. 3 phase 3/0 cable feeding CB104 + ground
- B. FU210 output to corona entrance controller
- C. FU214 output to corona exit controller
- D. 2 ethernet cables going to plant



LXI. HMI

- A. USB "A" to mouse
- B. USB "B" to keyboard
- C. white USB to HMI touchscreen interface
- D. DVI to HMI
- E. HMI power
  - 1. **1303** +
  - 2. COM -
  - 3. GND (ground symbol)
  - 4. GRN/YEL to ground stud in upper right of box
  - 5. Pushbuttons from rear opening view, top row
    - a. **31011** pilot, **30503** NO
    - b. **30503** NO
    - c. **31013** pilot, **30511** NO
    - d. **30515** NO
    - e. **30607** NO
  - 6. Pushbuttons from rear opening view, bottom row
    - a. **30105** NC, **30103** NC
    - b. **30507** NC
    - c. **30509** NO
    - d. **31015** pilot, **30517** NO
    - e. **30513** NO
    - f. **31103** pilot, **COM** on bottom of pilot, jumped to rest
    - g. **30605** NO, **637** on bottom of NO, jumped to rest



LXII. Monitor and IP camera DVR



LXIII. Hydraulic hoses

A. Echo connection at unwind 1



B. Delta connection at Corona treater supply, B-11

C. Charlie and Bravo at left of machine, crane pillar

D. Alpha supplies unload angled plate, pulled back under unload crane

