Modular Transport System

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User's Guide V1.0

Modular Transport System User's Guide

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Modular Transport System

Table Of Contents

General Information

Chapter 1

1.1 Description

The Modular Transport System (MTS) is a Transport Base made up of different modules. Some example modules include:

- Transport Tabletops for printing, encoding, drying, or UV curing.
- Flip Over for turning over material (e.g. for Duplex printing).
- Divert Gate for diverting waste material (e.g. items that failed verification).
- Exit Conveyor to collect material.

The MTS design has been optimized to meet the demands of high quality printing and card encoding. The MTS can be paired with other equipment such as Feeders, Controllers, Printheads, Magnetic Read-Write Encoding Heads, Barcode Scanners, and UV Curing Lamps to satisfy a wide range of applications.

The MTS is also capable of being joined with an additional MTS frame to create a single, larger transport base. This allows for the ability to add additional modules to a single line such as an additional print region for duplex printing. This makes the MTS flexible and configurable.

1.2 System Drawing

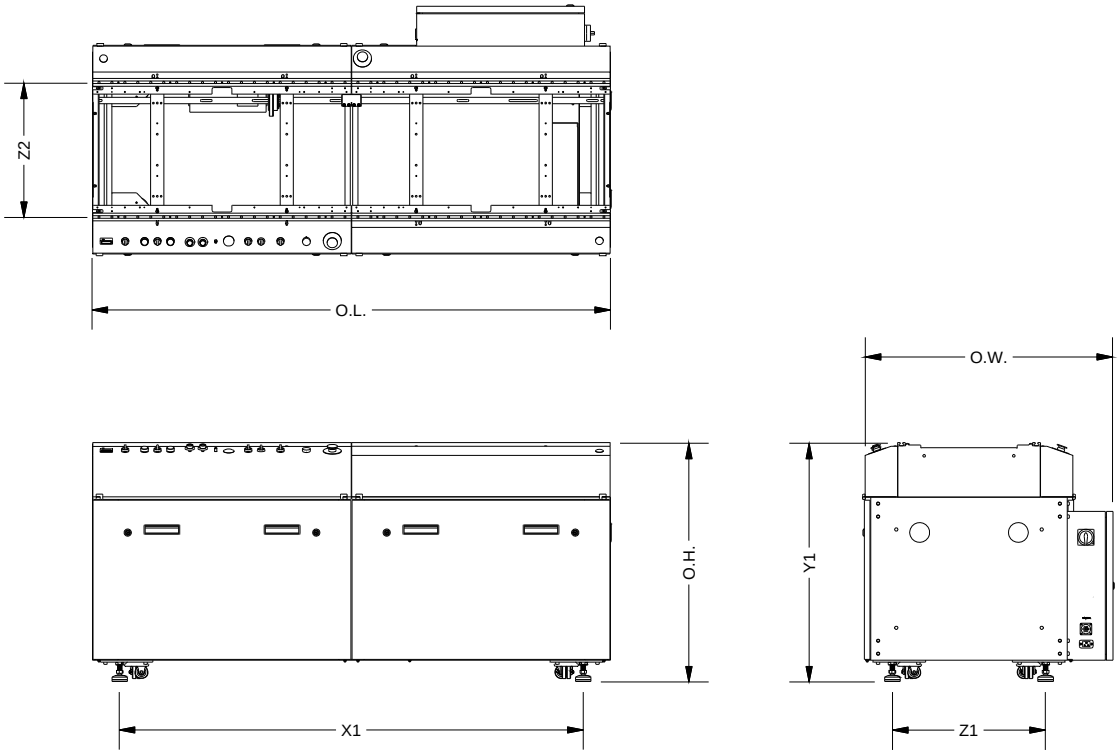


Table 1-1: MTS Overall Dimensions (2m Module Shown)

Symbol	Description	Dimensions	
O.W.	Overall Width	37.56”	954 mm
O.L.	Overall Length	78.74”	2000 mm
O.H.	Overall Height	36.38”	924 mm
X1	Leveling Foot Distance (Length)	46.42”	1179 mm
Y1	Tabletop Height	36.38”	924 mm
Z1	Leveling Foot Distance (Width)	23.23”	590 mm
Z2	Bridge Mounting Width	20.47”	520 mm

1.3 Specifications

General	
Belt Speed	0 to 236 fpm (0 to 1.2 m/s)
Line Voltage	200 or 230, 50 or 60 Hz
Line Current	6.2A at 230 VAC

Operating Instructions

Chapter 2

2.1 Instrument Panel Functions

Figure 2-1: Instrument Panel

The MTS instrument panel provides all the necessary controls to operate the base. The functions are as follows:

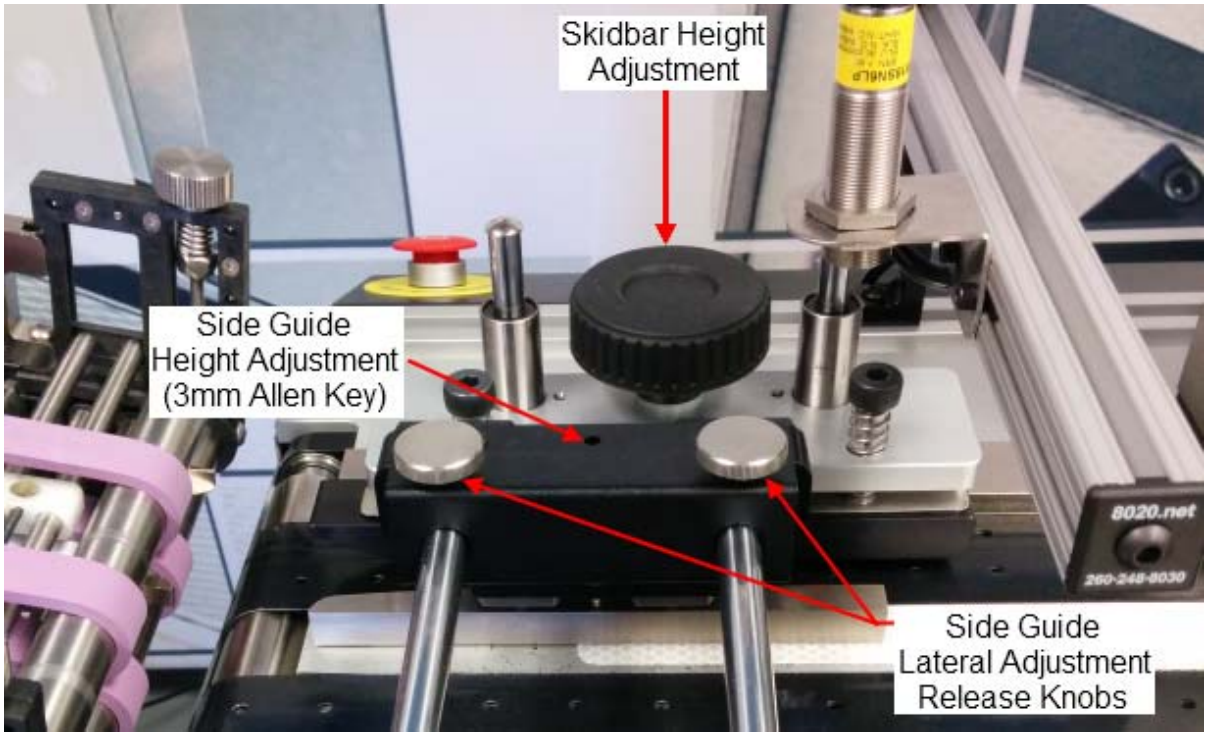
1. **UV Lamp ON / OFF** – Optional switch turns ON and OFF UV lamp(s).
2. **Counter** – Counts the number of pieces detected by the Photo sensor. Only works if the photo sensor is connected through the base.
3. **Feed Enable / Disable** – Enables / Disables Feeder (available for select feeders).
4. **Start** – Press to start the base and move the transport belts.
5. **Jog / Run Selector** – Jog mode runs the base only when the Start Button is held. Run mode continuously runs the base once the Start Button is pressed momentarily.
6. **Stop** – Press to stop the base. Also illuminates if a stop signal is sent to the base (e.g. from other equipment) which can prevent the base from starting.
7. **Production Dial** – Control the speed of the base transport belts.
8. **Conveyor Dial** – Control the speed of the Conveyor belts.
9. **Stack** – Sets the increased speed value on the conveyor during a stack operation.
10. **Speed Control Connection –** Not used in the MTS.
11. **Conveyor Selector** – Selects Conveyor Mode:

    Auto turns on and off the conveyor based on the base starting and stopping.

    O Turns off Conveyor and **I** turns on the Conveyor continuously.
12. **Vacuum ON / OFF** – Turns on and off vacuum to the transport belts. Should be on while conveying material, especially when printing or encoding.
13. **Power ON / OFF** – Turns on and off the transport base.
14. **Power Light** – Indicates if the transport base is on or off (illuminated if on).
15. **Emergency Stop** – Emergency Stop button shuts down the base. Twist to release. Depending on the size of the machine, multiple emergency stops may be present.

2.2 Material Side Guide and Skidbar

Figure 2-2: Material Side Guides and Skidbar Assembly



Proper adjustment of the material side guides and the skidbar assembly are important to ensure accurate feeding of material into critical points such as encoding or printing sections. The side guides and the skidbar should only touch the material with minimal pressure. This helps to straighten out material that is fed in with a slight skew.

Note: Ensure that the transport base is not running while adjusting the guides to avoid damaging the belts. Ensure that the side guides are not touching the belts before starting the base.

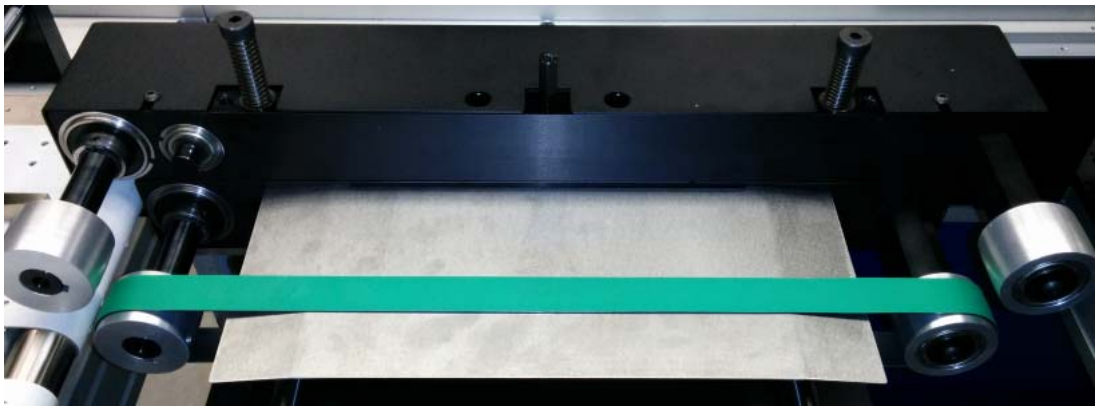
Ensure that the skidbar height is just enough to contact the material. Excessive pressure can slow the belts and affect encoding or printing which may be exhibited as wasted pieces or poorer print quality.

2.3 Flip-Over Module Setup

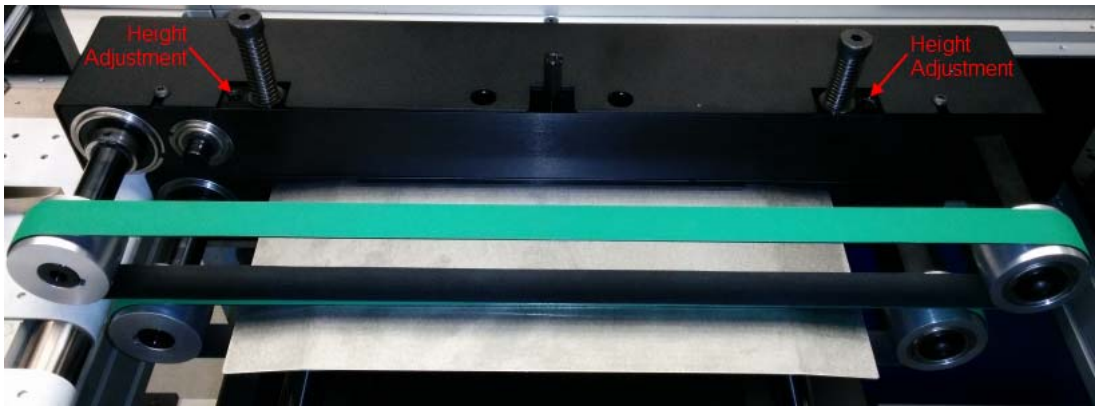
2.3.1 Straight Through Setup

1. Turn off the base and prevent the system from running.
2. Drop the sheet metal support onto the thumbscrews and tighten the thumbscrews.

3. Add shorter belt to the bottom rollers. The support plate should just touch the belt.



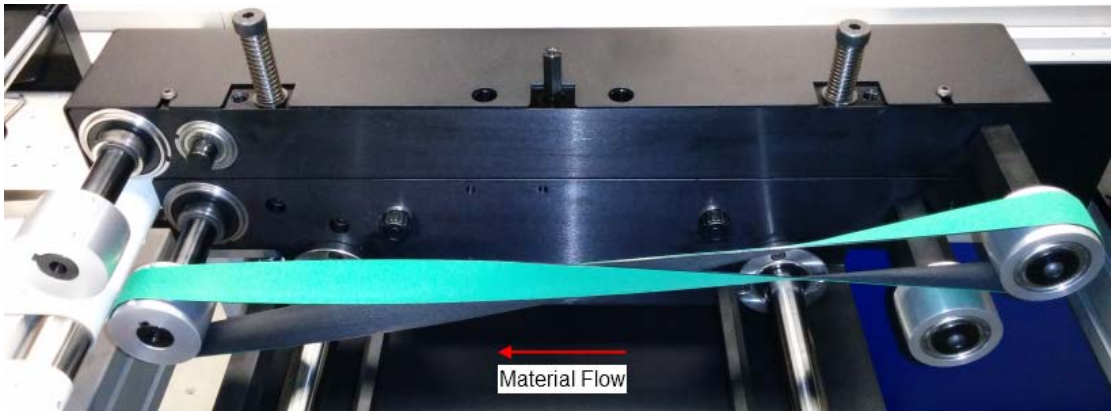
4. Add the longer belt to the top rollers.



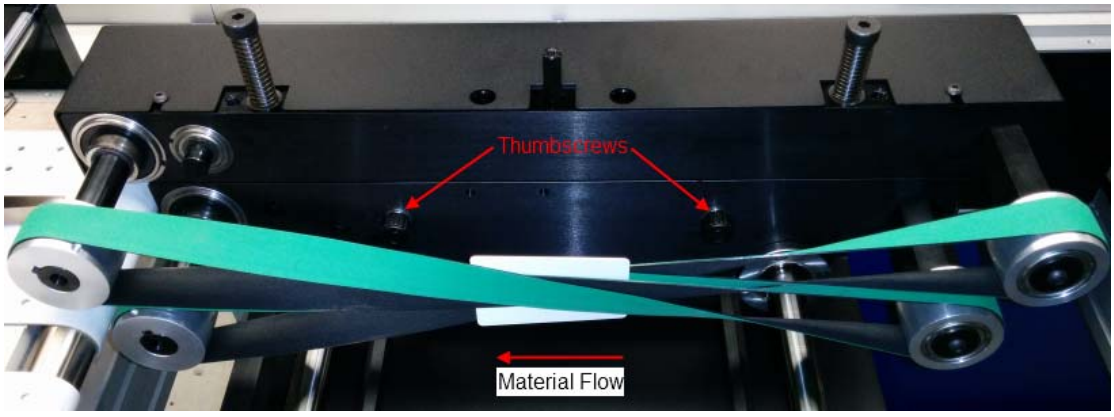
5. Adjust the belt separation based on the material thickness using the height adjustment screws.

2.3.2 Flip-Over Setup

1. Turn off the base and prevent the system from running.
2. Remove the straight through belts and the sheet metal support. The thumbscrews can remain in place but should be tightened after removing the sheet metal support.
3. Attach the flip-over belt to the infeed top roller and twist the belt once and attach the other end to the bottom exit roller as shown below.



4. Attach the second flip-over belt to the bottom infeed roller and twist the belt once and attach the other end to the top exit roller as shown below. Ensure that the two belts twist in the same direction. Feed one piece through to ensure it is turning over material properly.



2.4 Maintenance Schedule

The maintenance schedule table presented below applies to equipment, which is operated daily on an 8-hour basis. If the equipment is used more frequently, the maintenance schedule must be adjusted accordingly.

Table 2-1: Maintenance Schedule Table

Period	Maintenance Function
Daily	Wipe table surface clean of paper dust and other accumulated debris. Wipe away any ink, which may have settled on the tabletops, belts, and rollers. Clean under the belts as well.
Monthly	Examine all mechanical drive components, belts, and rollers for wear. Replace if necessary.

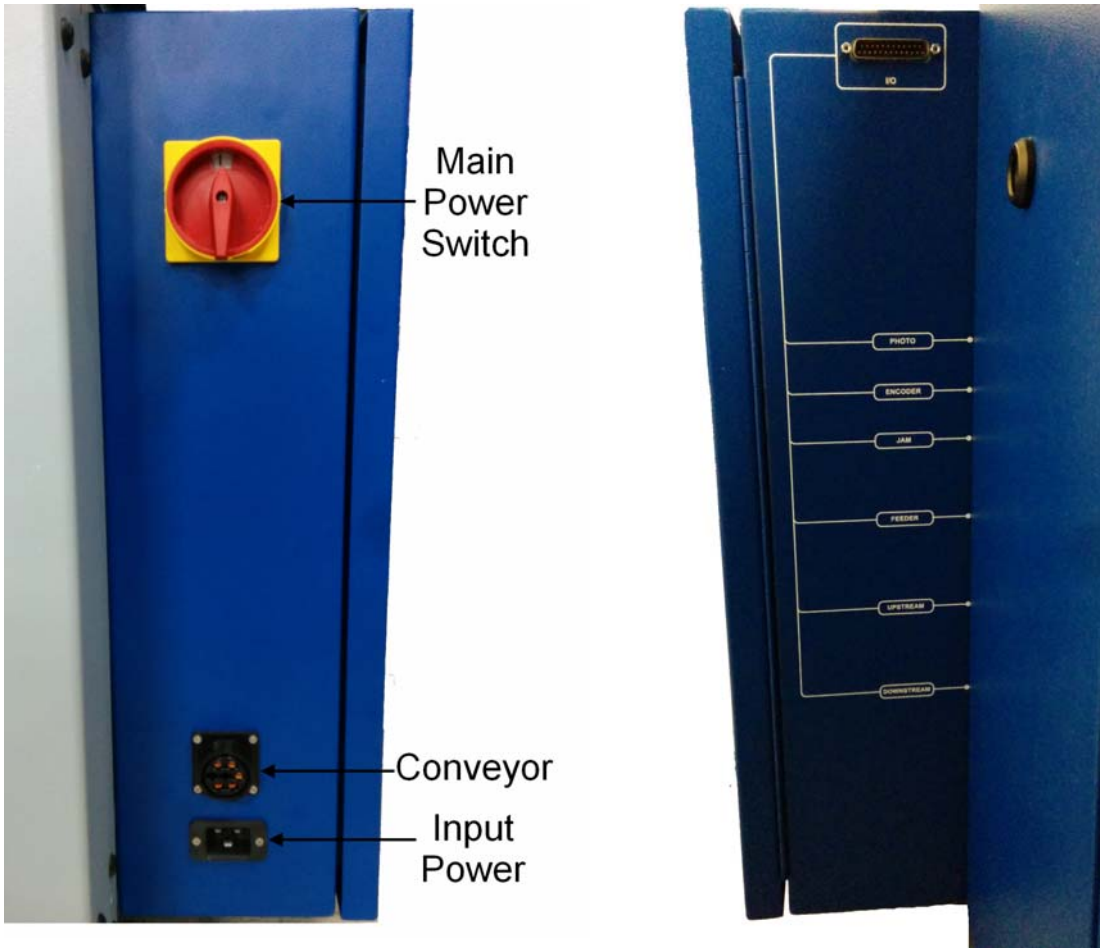
Electrical System

Chapter 3

3.1 Electrical Box

The Electrical Box is situated on the rear of the machine and houses the primary electrical and electronic components. Figure 3-1 shows the side of the Electrical Box which includes the Main Power Switch for the entire Transport Base, Conveyor connection to connect a Buskro conveyor, and the Input Power for the primary power cable. The other side includes an I/O connection to a Buskro Controller.

Figure 3-1: Sides of Electrical Box



Note: The Input Power cable should be disconnected before servicing the system.

The Electrical Box also includes panel mount connectors to attach the following items:

1. **I/O** – Cable connects to Buskro controller.
2. **Photo** (Inside Base) – Connects to primary photo sensor in simple print applications. The Photo sensors may also be connected directly to the Buskro Controller.
3. **Encoder** (Inside Base) – Connects to the primary encoder sensor.
4. **Jam** (Inside Base) – Connects to optional product jam switch.
5. **Feeder** (Inside Base) – Connects to select Feeders.
6. **Upstream** (Inside Base) – Connects to additional upstream equipment.
7. **Downstream** (Inside Base) – Connects to additional downstream equipment.

3.2 The Base Control Board

The Base Control Board is the central electrical component of the base and understanding its functions and configuration is essential for a successful installation or troubleshooting session. The board is located inside the Electrical Box. The Base Control Board was designed as a universal control board for all Buskro machines. Therefore it has a number of features which may or may not be used in all machines and/or configurations.

It is important to remember that the board requires “dry-contact” inputs and provides “dry-contact” outputs (except for Heater control). Start inputs require a contact closure, while Stop inputs require a contact opening. Start and Run outputs will close when activated, while Stop outputs will open when they send a Stop signal. Keeping this in mind is also crucial when trying to interface Buskro equipment with that of other manufacturers.

Note also, that the board will reset to the rest position and also send out Stop pulses to any connected upstream and downstream equipment to make sure the entire system is initialized, when power is first applied.

The S1 configuration switches allow the unit to eliminate the need for Stop inputs in those machines and/or configurations where they may not be used.

Any external STOP input can be disabled, except the front panel STOP switch.

A red “STOP INPUT” light on the board (and in the Stop button on the front panel) means that it is receiving a STOP input (i.e. the input sees an open contact). The machine cannot start and it will not send a START signal to other equipment as long as it sees a STOP input. If there is a constant STOP light, disable the 5 STOP inputs on the control board (DIP switch S1) one by one until the red light goes off; then you have found the input which causes the stop condition. The “Rule of Thumb” for the board is: If a STOP input closure is not supplied (i.e. there is no equipment to supply it), then the input must be disabled, otherwise it should be enabled.

Note that the 5 STOP Enable/Disable sections of DIP switch S1 will only disable the STOP inputs and **NOT** the START inputs. The board is looking for a contact closure on a START input and a contact opening on a STOP input. This is in keeping with “fail-safe” philosophy which dictates that a disconnect or a power failure in any part of the system will stop the entire system.

All START inputs need a contact to close to activate a “Start”, while all STOP inputs need a closed contact to open to sense a “Stop”. Thus, a lack of input for a start means no start action, while the lack of a closed contact for a STOP input means that there is a problem and the system should stop. Therefore non-existent STOP inputs must be disabled for proper operation.

Note that all input signals used in the unit are at a 12 VDC level, looking for a dry contact (STOP and START **from** other machines), while the unit provides dry contacts for those signals coming from other machines (STOP and START **to** other machines). The only exception is the drive output to the heater control which supplies a switched +12 VDC and Ground to activate the relay in the Heater Units.

There is also a choice of how a JAM input is handled. This is selected by jumper JP1.

There is also a configuration switch (S2) which determines the way a Stop input is handled: either a Stop pulse is sent to upstream equipment, or there is a steady Stop signal sent to the upstream equipment, as long as there is a Stop input. Each input can be configured separately to allow for maximum operational flexibility.

The following tables show the options and explain the implications:

1. S1:

Configuration	Settings	Explanation
S1-1 (CONV)	On = disabled Off = enabled	Enables or disables a STOP signal from the conveyor. If no conveyor is used in the system, the switch should be set to “disabled”.
S1-2 (UPSTR)	On = disabled Off = enabled	Enables or disables a STOP signal from an upstream machine. If no upstream equipment is used in the system, the switch should be set to “disabled”.
S1-3 (DNSTR)	On = disabled Off = enabled	Enables or disables a STOP signal from a downstream machine. If no downstream equipment is used in the system, the switch should be set to “disabled”.
S1-4 (JAM)	On = disabled Off = enabled	Enables or disables a STOP signal from the JAM sensor. If no JAM sensor is used in the machine, the switch should be set to “disabled”.
S1-5 (CONTR)	On = disabled Off = enabled	Enables or disables a STOP signal from the control computer. If no computer is used with the machine, the switch should be set to “disabled”.
S1-6 (RUN)	On = disabled Off = enabled	This switch is connected in parallel to the Feeder Enable/Disable switch on the front panel. The switch enables or suppresses the START signal to upstream equipment and the RUN signal to a feeder. The function would be used for testing when the operator wishes to start the machine, without starting the upstream section of the system. For machines which have a front panel switch, S1-6 should be open (=enabled) to enable the operation of the front panel switch, otherwise it should be open or closed (=disabled), as desired.

2. S2:

Configuration	Settings	Explanation
S2-1 (CONV)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the conveyor. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the conveyor.
S2-2 (UPSTR)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the upstream machine. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the upstream machine.
S2-3 (DNSTR)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the downstream machine. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the downstream machine.
S2-4 (FPSTOP)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the front panel ***Stop*** button. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the front panel ***Stop*** button.
S2-5 (CONTR)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the control computer. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the control computer.
S2-6 (JAM)	Off = disabled On = enabled	"Off" means that a 1 second ***Stop*** pulse will be sent upstream in response to a ***Stop*** input from the Jam Detector. "On" means that the ***Stop*** sent upstream will be in effect as long as a ***Stop*** input is received from the Jam Detector.

3. JP1:

JP1	1 – 2: Jam signal is ignored by the board, but still passed on to the control computer. 2 – 3: Jam signal is ignored by the board, and not passed on to the control computer.	Determines how the board handles a JAM input and the effect of S1-4. For some applications it is desirable to suppress the STOP signal from the JAM sensor, but to still report the condition to the control computer. In this case, selection 1-2 should be used. If no control computer is connected, either position may be used, with 1-2 preferred. **Caution** – connecting 2 to 3 will cause a short circuit condition on the Jam input when the input is disabled (i.e., S1-4 is closed). However, diode D42 would prevent a positive input voltage from seeing this short circuit.

Note: If a Stop input is disabled using S1, then the corresponding setting of S2 no longer matters, since no output is generated in either case.

In "normal" operation, enabling the S2-2 will produce a lock-up condition between the 2 machines. S2-2 should therefore always be disabled (= Off). The function was only included on this channel for special installations. Usually all other positions of S2 are set to the "enabled" position, to make sure that no machine can start while a downstream machine has a problem. In the case of S2-2, no harm will be done if a downstream machine is started while an upstream machine has a problem.

3.2.1 Troubleshooting the Base Control Board and Peripheral Circuitry

Six LEDs are included on the board to help in troubleshooting the equipment:

"12V OK". This green LED indicates that 12 VDC is applied to the board. Note that this indicator is ahead of the fuse (F1) and will still be lit, even if the fuse is burned out. As long as the LED is lit, the technician will know that the 12 VDC supply in the base is operating properly.

"START I/P". This amber LED indicates that the board is receiving a Start signal (either from upstream or downstream equipment, or from the front panel START switch).

"STOP I/P". This red LED indicates that the board is receiving a STOP signal on any one of the 6 Stop inputs. The LED is also duplicated in the front panel STOP switch. As long as

these LEDs are lit, the machine cannot be started and the source of the signal should be determined and the condition has to be corrected to enable the system to start again.

If it is not obvious which input is causing the condition, simply disable the enabled inputs on S1, one after the other. When the LED goes off, you have found the source of the Stop input.

“START O/P”. This amber LED will light for about 1 second when a Start signal is received, indicating that the board is sending start signals to upstream (unless disabled by the front panel Feeder Enable switch) and downstream equipment.

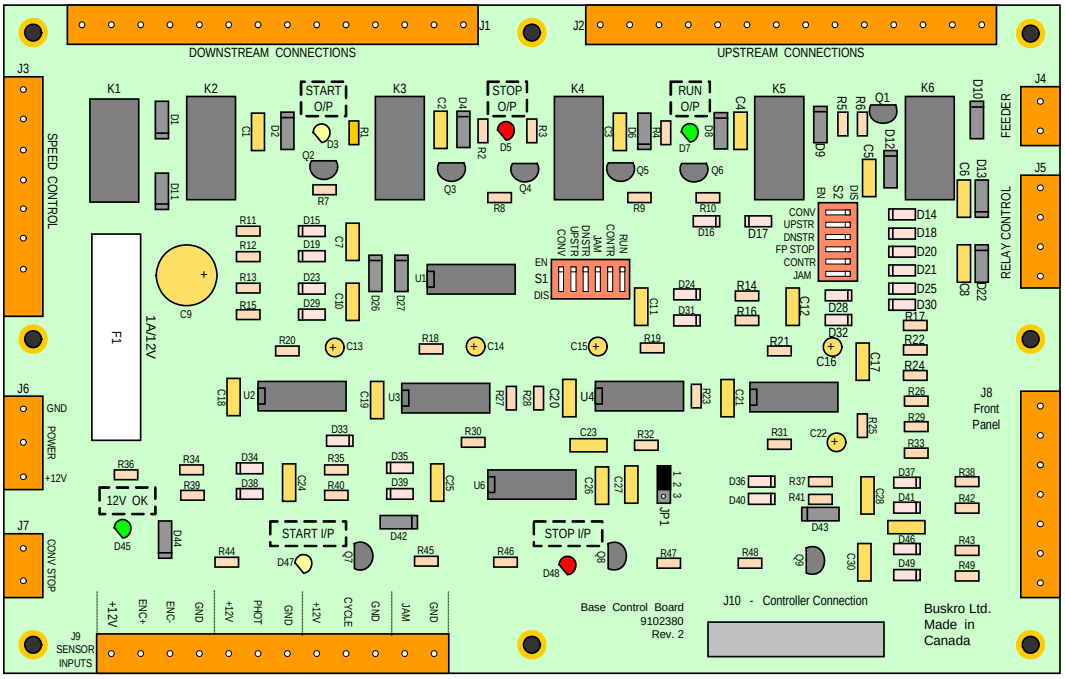
“STOP O/P”. This red LED will light for about 1 second when a Stop signal is received, indicating that the board is sending stop signals to upstream and downstream equipment. The LED is connected to the pulse generator circuit and will only light up for one second, even if the pulse circuit is bypassed by S2.

“RUN O/P”. This green LED is lit as long as the board is in a “Run” condition. It is also duplicated in the Start button on the front panel. If it is lit, the board is activating the Run relays for the base transport and conveyor motors, closes the Run contact for the feeder and sends +12 VDC and ground to the downstream heaters. The lights will be extinguished when a STOP signal is received, or the power to the board is removed.

Using these lights and understanding what activates them, it is fairly easy to determine the source of any electrical problem in the machine. This, of course, assumes that the board itself is functioning properly. If it is not, and the problem is something other than simply a burned-out fuse, then the board should be replaced and returned to the factory for repair.

If the board itself is operating properly and all configuration switches are set as required by the application, then the problem must be in one of the peripheral components, such as the Run relays for the base and conveyor motors, the respective speed control units or the motors themselves, or there could be a loose wire or bad contact.

Figure 3-2: Base Control Board, showing the Indicator Lights and Switches S1 and S2



3.3 AC Controller Setup

The following describes the setup for the Delta VFD-B. Press PROG/DATA and the arrow keys to select and change the settings. The base must be stopped during setup. This should only be adjusted by a trained Buskro technician.

1. Press **PROG/DATA**.
2. Select **00-02** and enter **09** for 50 Hz (most countries) and **10** for 60 Hz (eg. North America, parts of Japan). This resets to the factory default. 50 or 60 Hz refers to the utility frequency for the country the MTS is installed in.
3. Select **00-03** and enter **01** (Display the actual output frequency).
4. Select **01-00** and set the Maximum output frequency to **50** or **60** Hz (depends on the utility frequency for the country the MTS is installed in).
5. Select **01-01** and set the maximum voltage frequency to **50** or **60** Hz (depends on the utility frequency for the country the MTS is installed in).
6. Select **01-02** and set the Maximum output voltage to **220** (0.1V to 255.0V).
7. Select **01-03** and set the midpoint frequency to **3.00** Hz.

8. Select **01-04** and set the midpoint voltage to **20** V (increased for higher low speed torque).
9. Select **01-05** and set the minimum output frequency to **3.0** Hz.
10. Select **01-06** and set the minimum output voltage to **3.0** V (increased for higher low speed torque).
11. Select **01-07** and set the output frequency upper limit to **43**%. This sets the maximum belt speed to approximately 1.20 m/s. This value should only be changed by a trained technician as increasing this value could overload the motor.
12. Select **01-08** and set the output frequency lower limit to **11**%. This sets the minimum belt speed to approximately 0.3 m/s.
13. Select **01-09** and set the acceleration time to **1.0** seconds.
14. Select **01-10** and set the deceleration time to **1.0** seconds.
15. Select **02-00** and set the source of first master frequency command to **01** (0 to +10V from AVI).
16. Select **02-01** and set the source of first operation command to **01** (external terminals, keypad STOP/RESET enabled).
17. Select **02-10** and set the source of the master frequency command to **01** (0 to +10V from AVI).
18. Select **04-00** and set the AVI analog input bias to **0.05**.

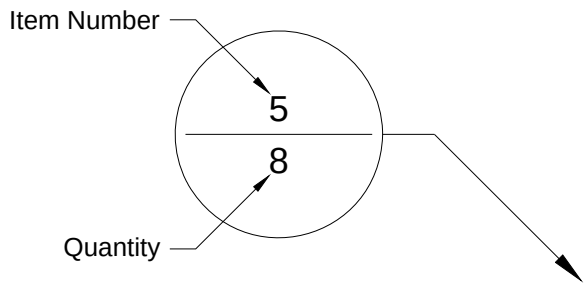
Note: Unless specified, use the default settings for all other parameters. For more details, refer to the Delta VFD-B manual.

These parameters should only be changed by a trained Buskro technician. Unauthorized changes can result in performance issues and could potentially overload the motor.

Assembly Drawings

Appendix **A**

Balloon Annotation and Parts Listing



Item	Part Number	Quantity	Description	Reference
1				
2				

The following is a description of how to interpret the information in this section:

Item:

This column indicates the item number used for each unique part in an assembly drawing. It is matched with the top number in the balloon pointing at the associated part.

Part Number:

This column represents the Buskro part number.

Quantity:

This represents the total number of a given part in an assembly. It is matched with the bottom number in the balloon pointing at the associated part.

Description:

This column contains a brief description of the part.

Reference:

This column indicates the page location for sub-assemblies.

Table A-1: BKMTS – Modular Transport System (Example Setup)

Item	Part Number	Quantity	Description	Reference
1	9105090A	3	Tabletop Assembly, 1m	Page A-2
2	9108016A	1	Divert Finger Assembly, 0.5m	Page A-7
3	9108368AL	1	Encoder Assembly, MTS, Left	Page A-15
4	9108368AR	1	Encoder Assembly, MTS, Right	Page A-16
5	9108720A	1	Divert Table Assembly, 0.5m	Page A-19
6	9108760A	1	Base, MTS Drive Unit, 2m	Page A-22
7	9108761A	1	Base, MTS Driven Unit, 2m	Page A-23
8	9108882A	1	Flip Over, Convertible, 0.5m	Page A-38

Figure A-1: BKMTS – Modular Transport System (Example Setup)

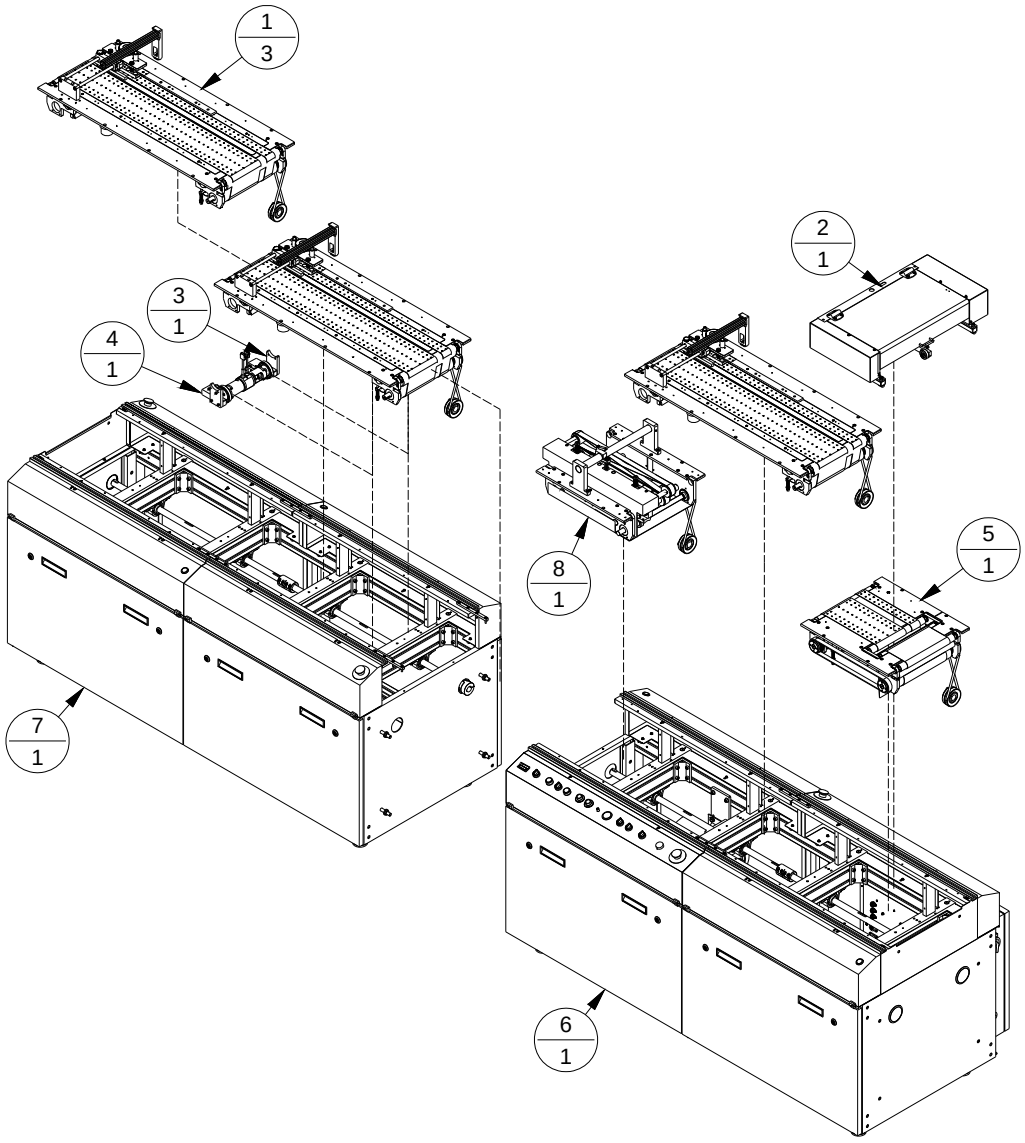


Table A-2: 9105090A – Tabletop Assembly, 1m Table

Item	Part Number	Quantity	Description	Reference
1	400005020	8	Screw, FHCS, M5x20	
2	402004010LS	10	Screw, SHCS, M4x10, Low head, SS	
3	402006080	2	Screw, SHCS, M6 x 1mm, 80mm lg.	
4	403005010	1	Screw, PHMS, M5x10	
5	405005025	2	Screw, BHCS, M5x25	
6	410006020	4	Shoulder Bolt, D8x20	
7	433000	1	Square Key, 3/16in x 3/4"	
8	440006040	4	Washer, Flat, M6, Large OD, SS	
9	500055	2	Bearing, UBR204-12S, 3/4 ID	
10	630006	1	Tape, Reflective, 882mm	
11	9105055A	1	Belt set, 1m section	
12	9105090	1	Tabletop, Cardline, 1m section	
13	9105093	2	Guide, Continuous	
14	9105094A	2	Vacuum tray assembly, 1m section	
15	9106453	6	Deep Groove Ball Bearing	
16	9106725	3	Pin, Locating, M3x0.5mm pitch	
17	9106916	3	Tabletop Roller, 30 mm	
18	9106937	2	Compression Spring	
19	9107230A	1	Skidbar Card Bracket Assembly	
20	9107584	4	Bearing Block, 30 mm Roller	
21	9107588A	2	A2 Takeup Roller Assembly	
22	9107589	1	Bar, Belt Guide, 800mm	
23	9108141	1	Table Roller, 2.84" OD X 420 mm lg	
24	9108506	6	Collar, 10mmID	
25	9108621	1	Driven Pulley	
26	9108622	1	Driving Pulley, 25mm Bore	
27	9108745	1	Alignment guide	
28	9108771A	1	Side guide assembly	
29	9108776A	1	Photoeye console assembly	
30	9108854	1	V Belt, 3LTYPE, 28-1/2" L, 3.8" wide	
31	9108977	1	Alignment guide, Short	
32	9108982	2	Nut, Double Locking, M6 x 1mm	

Figure A-2: 9105090A – Tabletop Assembly, 1m Table

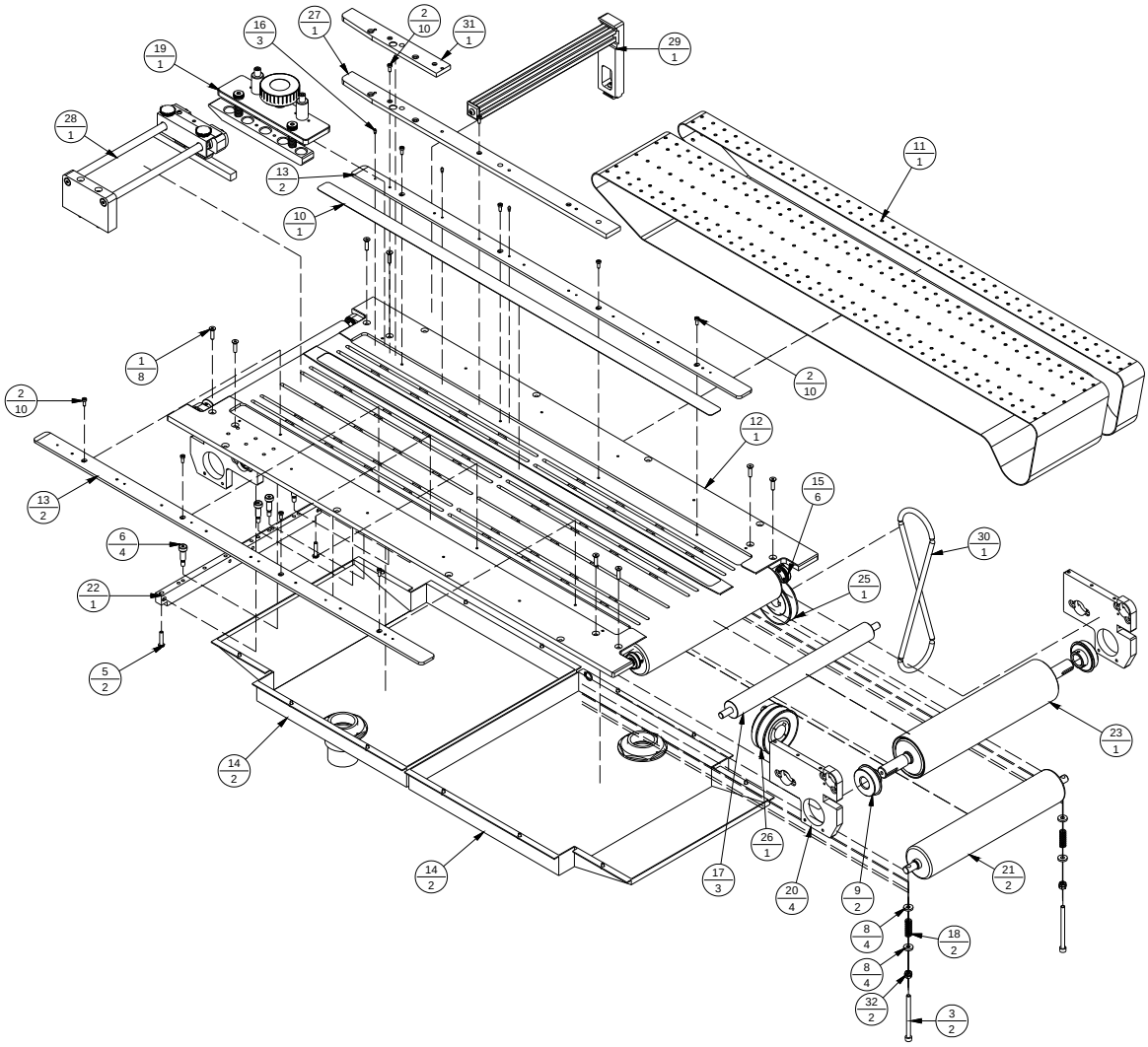


Table A-3: 9105094A – Vacuum Tray Assembly, 1m Tabletop

Item	Part Number	Quantity	Description	Reference
1	403004006	6	Screw, PHMS, M4 x 0.7, 6 mm Lg.	
2	9105094	1	Vacuum tray, 1m section	
3	9107274	1	Nut, 1.5" NPT Nylon	
4	9108624	1	1-1/2" Male Adapter	
5	9108626	1	Nipple, ABS, 1-1/2"x 2"	

Figure A-3: 9105094A – Vacuum Tray Assembly, 1m Tabletop

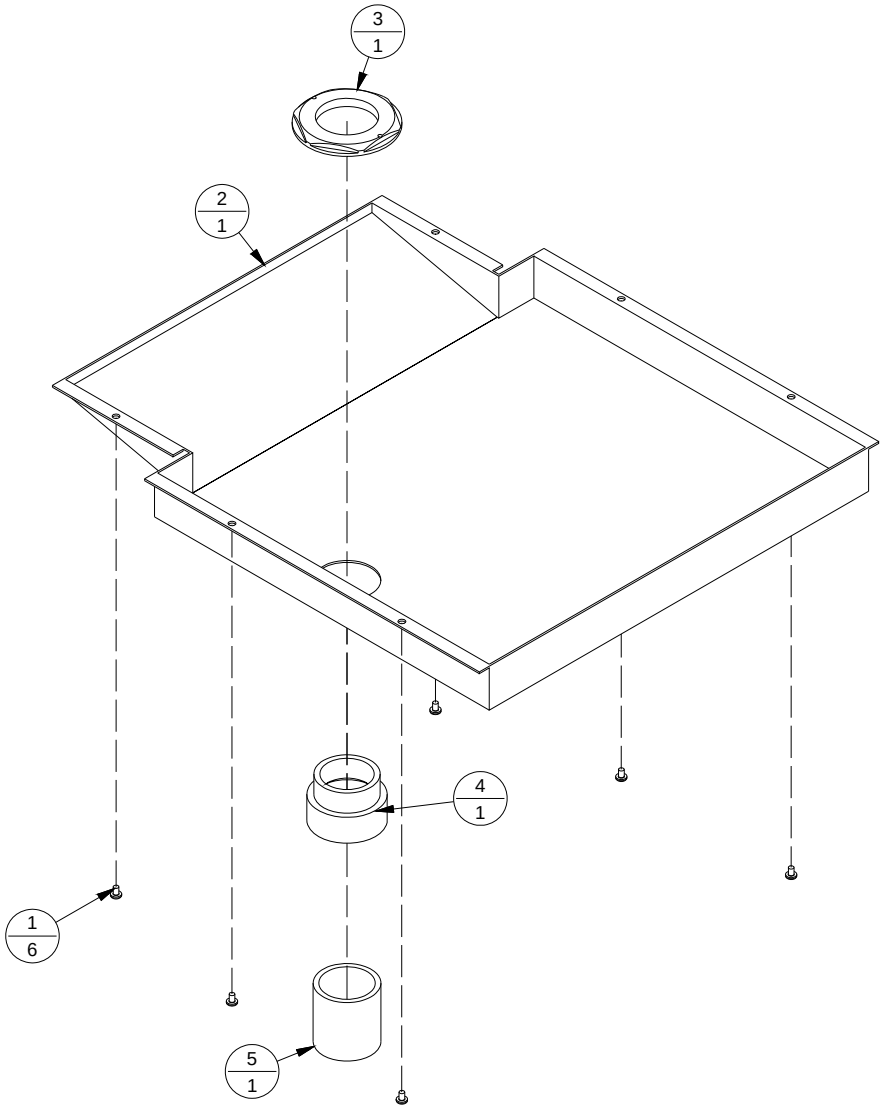


Table A-4: 9107174A – Spring Collar Assembly

Item	Part Number	Quantity	Description	Reference
1	405005012	2	Screw, BHCS, M5x12	
2	410005050	1	Shoulder Bolt, D6.5x50	
3	436004008	1	Pin - Slotted Spring (Metric)	
4	9107069	1	Post for Tension Spring	
5	9107174	1	Collar, Spring, Skidbar/Table Roller	
6	9107175	1	Collar Disk, Skidbar/Table Roller	
7	9107176	1	Shaft Collar, split, 10 mm ID X 12 mm lg	
8	9107184	1	Spring, 6 mm OD X 40 mm lg	

Figure A-4: 9107174A – Spring Collar Assembly

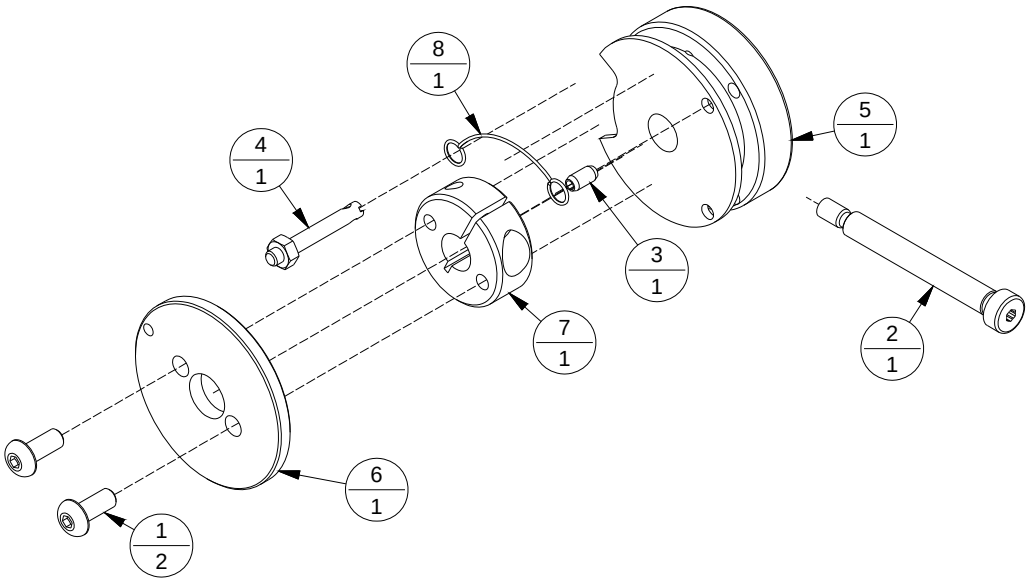


Table A-5: 9107588A – Take-up Roller Assembly

Item	Part Number	Quantity	Description	Reference
1	437002	2	Retaining Rings - C - External	
2	9107587	1	Roller, Table Belt Idler	
3	9107588	1	Shaft, Table Belt Tensioner	

Figure A-5: 9107588A – Take-up Roller Assembly

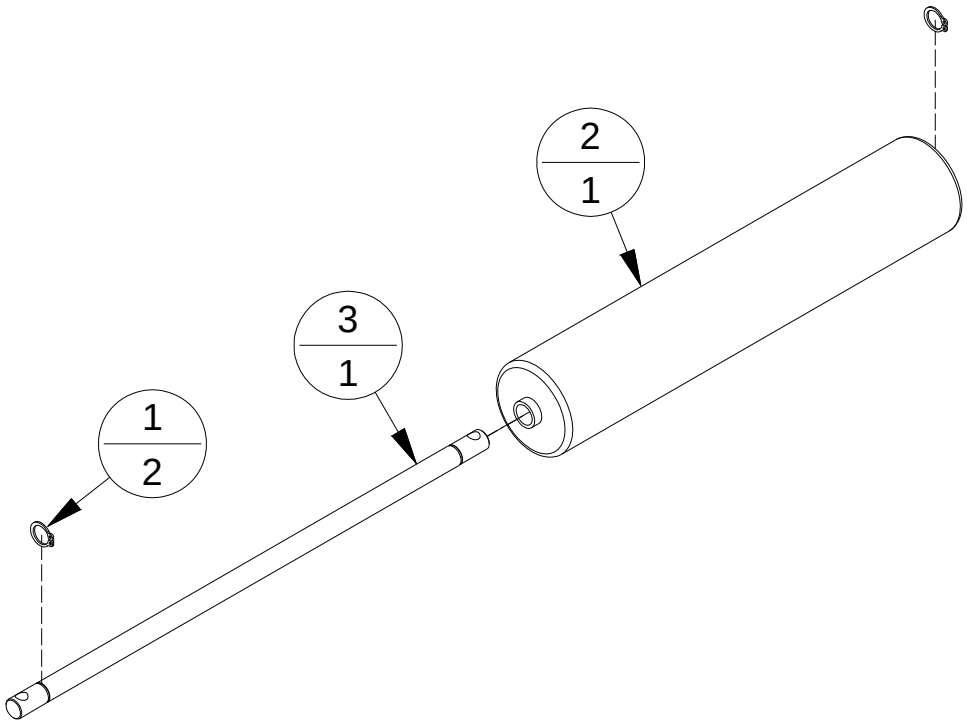


Table A-6: 9108016A – Divert Finger Assembly, 0.5m

Item	Part Number	Quantity	Description	Reference
1	403003006	2	Screw, PHMS, M3x6	
2	405005005	14	Screw, BHCS, M5x5	
3	405005012	4	Screw, BHCS, M5x12	
4	410006020	2	Shoulder Bolt, D8x20	
5	420005027	4	Hex Jam Nut, M5	
6	440005010	4	Flat Washer, M5	
7	9101577	1	Sensor, Magnetic	
8	9107174A	1	Spring Collar Assy, Skidbar/Table Roller	
9	9107176	3	Shaft Collar, split, 10 mm ID X 12 mm lg	
10	9107524A	1	Divert Skidbar Frame Assembly	
11	9107524AR	1	Divert Skidbar Frame Assembly	
12	9107529A	2	Arm, Skidbar Assembly	
13	9107530	1	Cover, Divert Skidbar Frame	
14	9108016	1	Cover Frame, A2 Divert Section	
15	9108017	3	Shaft, A2 Hex Spring	
16	9108018A	1	A2 Divert Section Safety Cover Assembly	
17	9108019A	1	Card Divert Section Skidbar Assembly	
18	9108909	1	Cover, DG, Back	

Figure A-6: 9108016A – Divert Finger Assembly, 0.5m

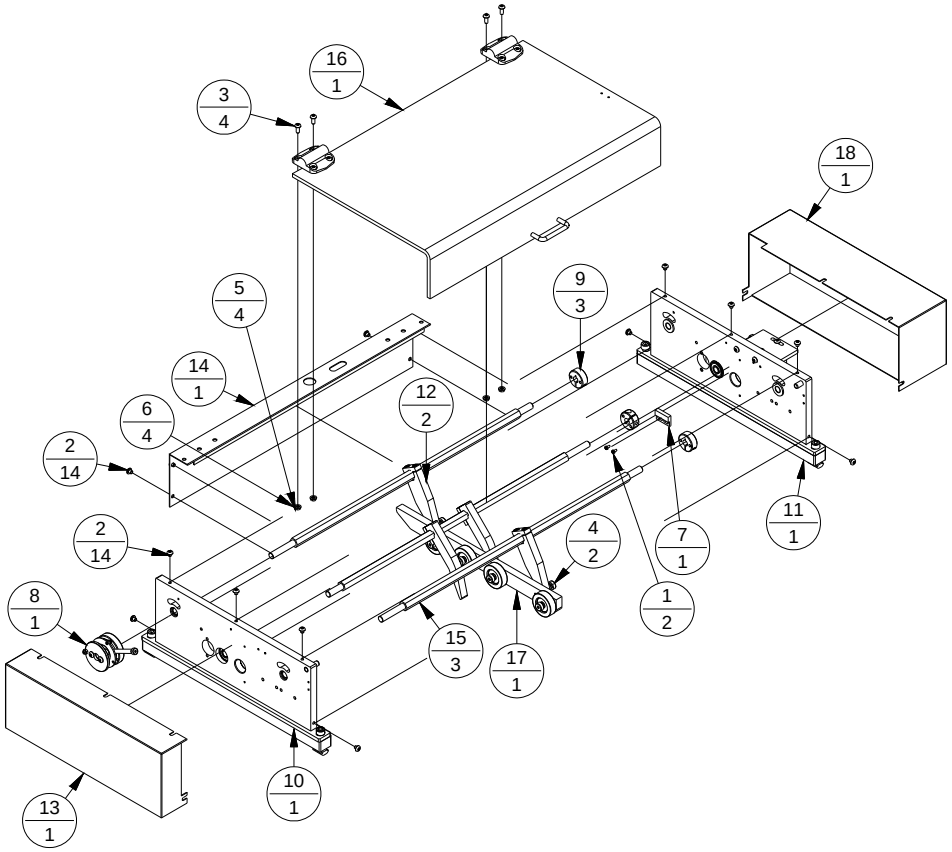


Table A-7: 9108279A – Reject Card Chute Assembly

Item	Part Number	Quantity	Description	Reference
1	405005008	2	Screw, BHCS, M5x8	
2	9107885	1	Handle	
3	9108279	1	Chute Hanger	
4	9108280	1	Chute, Rejected Cards	

Figure A-7: 9108279A – Reject Card Chute Assembly

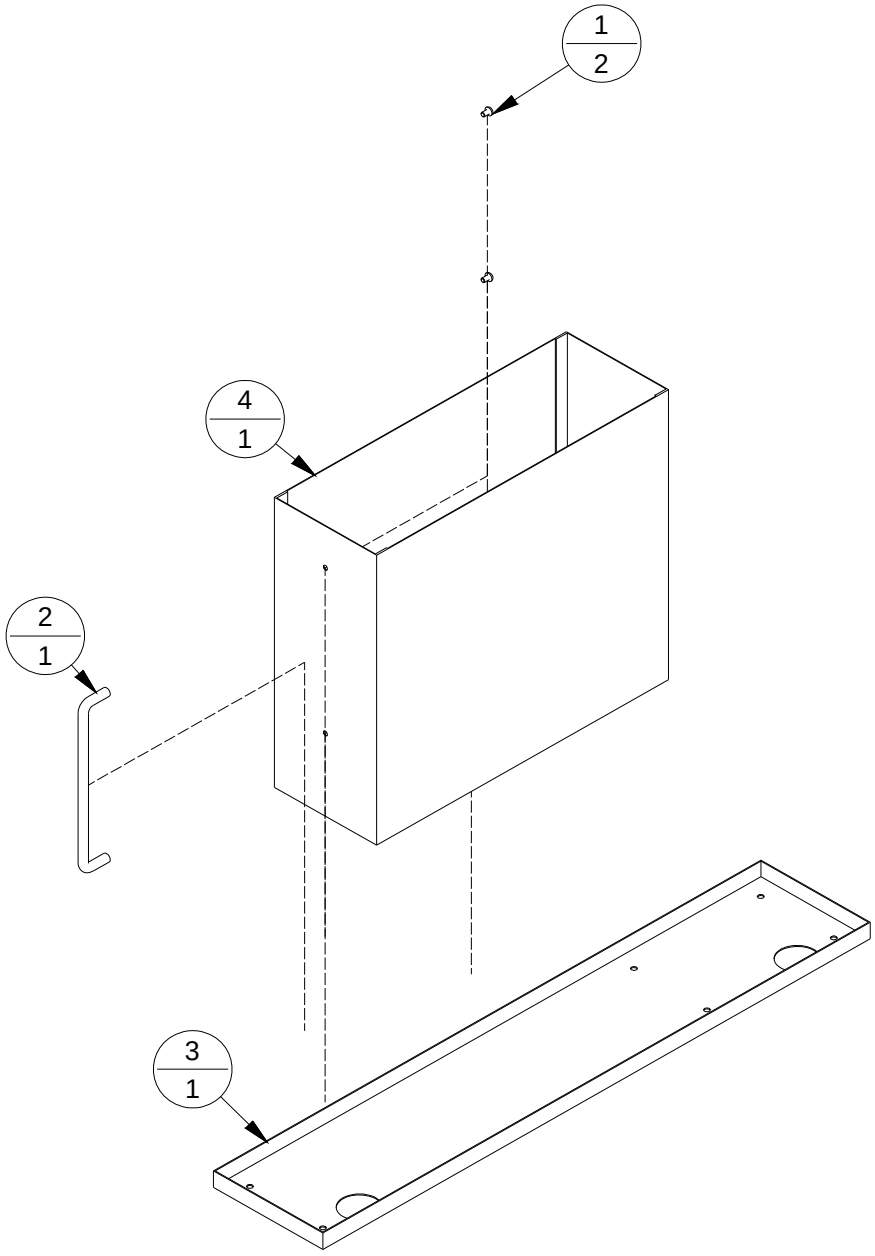


Table A-8: 9108282A – Front Control Panel, 1m

Item	Part Number	Quantity	Description	Reference
1	405004006	4	BHCS, M4x6	
2	600011	2	POT, 5K	
3	613002	2	Knob, 36mm Skirted	
4	9101518	1	Switch, Emergency Stop	
5	9101803	1	Marking, E-Stop, Round	
6	9104063	1	Counter	
7	9104636	1	Potentiometer, Stack	
8	9104873	4	Switch, 2-way	
9	9104874	1	Selector, 3-way	
10	9104875	1	PB Contact, NO	
11	9104876	1	PB Locking Collar	
12	9104883	1	PB Contact, NC	
13	9104978A	1	Push Button, Start, Momentary NO	
14	9104979A	1	PB, Stop, Red Illumination	
15	9107247	1	Mini Hinge, lift-off	
16	9107248	1	Mini Hinge, lift-off	
17	910805A	1	Yellow Light	
18	9108282	1	Electrical Panel, Controls, 1m	
19	9108484A	5	M6 Nut Assembly	
20	9108706	1	Control Panel Base, 1 M section	
21	9108792	1	Hole Plug, 1-1/4" ID	
22	96-141	2	Hinge, Mini-Lift, Pin	

Figure A-8: 9108282A – Front Control Panel, 1m

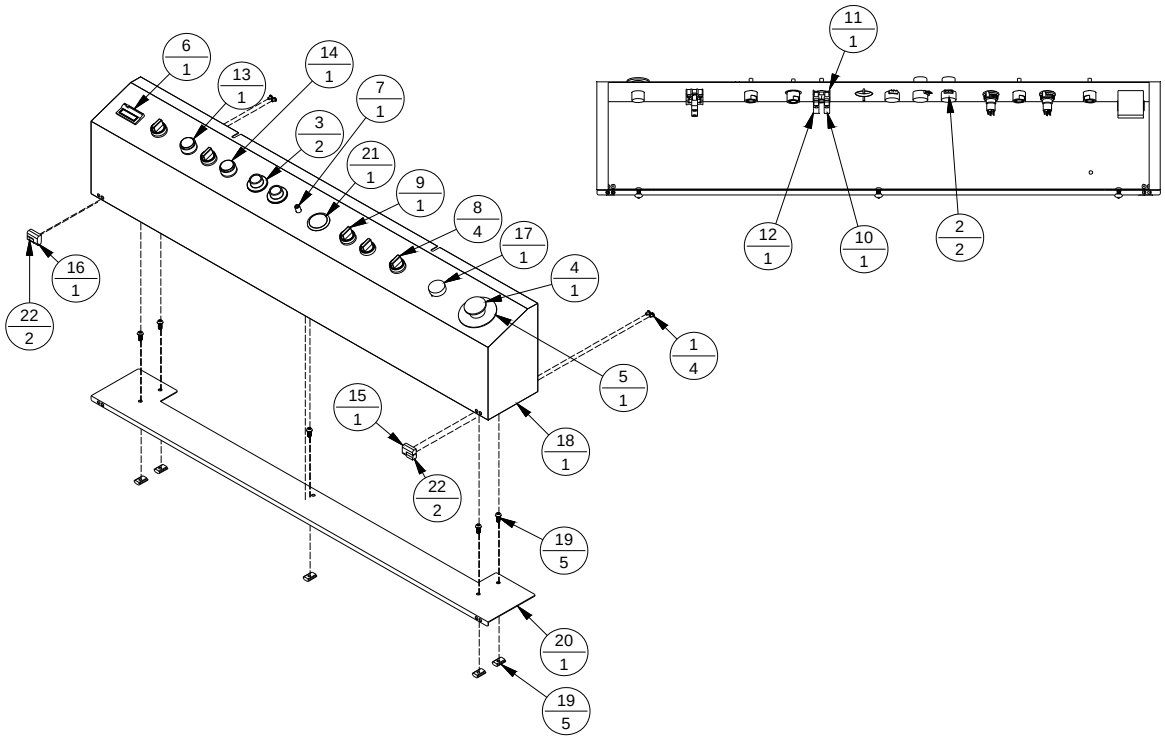


Table A-9: 9108288A – Dummy Control Panel, 1m

Item	Part Number	Quantity	Description	Reference
1	9107247	1	Mini Hinge, lift-off	
2	9107248	1	Mini Hinge, lift-off	
3	9108288	1	Electrical Panel Door, Rear, 1m	
4	9108484A	5	M6 Nut Assembly	
5	9108706	1	Control Panel Base, 1 M section	
6	9108767	1	Hole Plug, 22mm	
7	96-141	2	Hinge, Mini-Lift, Pin	

Figure A-9: 9108288A – Dummy Control Panel, 1m

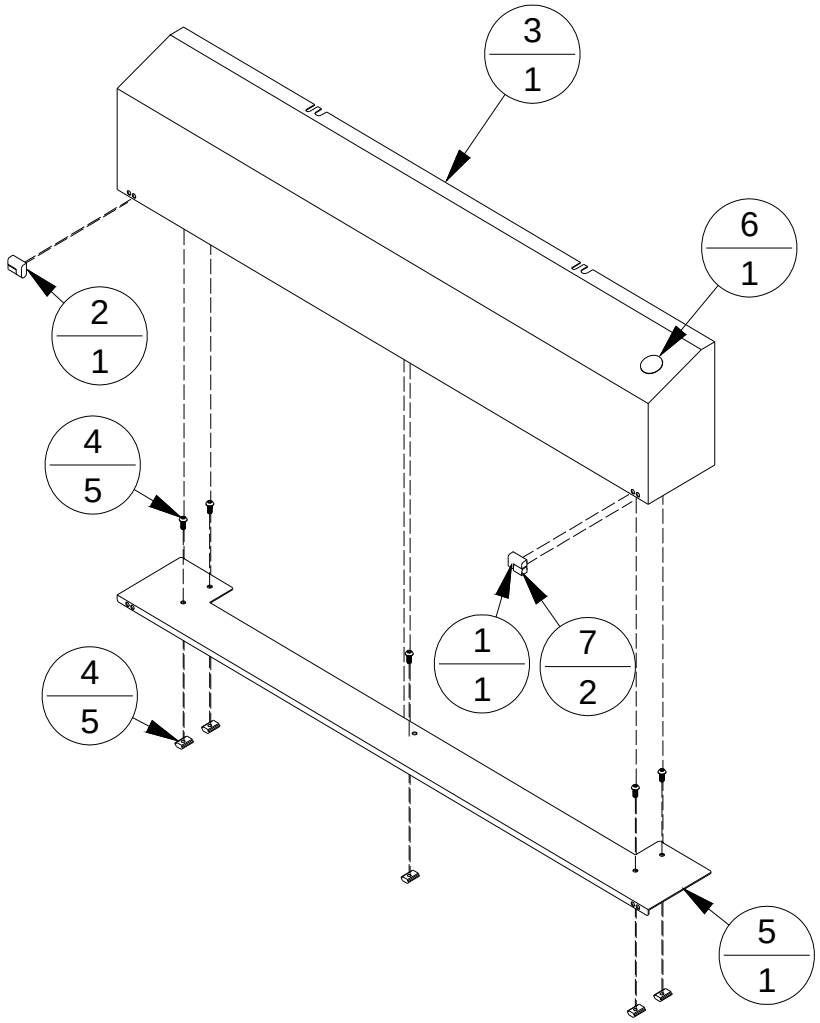


Table A-10: 9108340A – Vacuum Pump Assembly

Item	Part Number	Quantity	Description	Reference
1	405005010	10	BHCS, M5x10	
2	4209200	4	Nut, 2" NPT Nylon	
3	9106985	2	Fitting, 2 in. NPT, hose	
4	9108007	1	Motor, Blower,	
5	9108340	1	Vacuum System Base	
6	9108341	1	Cover, Vacuum System	
7	9108624	4	1-1/2" Male Adapter	
8	9108626	2	Nipple, ABS, 1-1/2"x 2"	
9	9108856A	2	Fitting Assembly	
10	9108859	2	Valve, Ball, 1-1/2", Molded	

Figure A-10: 9108340A – Vacuum Pump Assembly

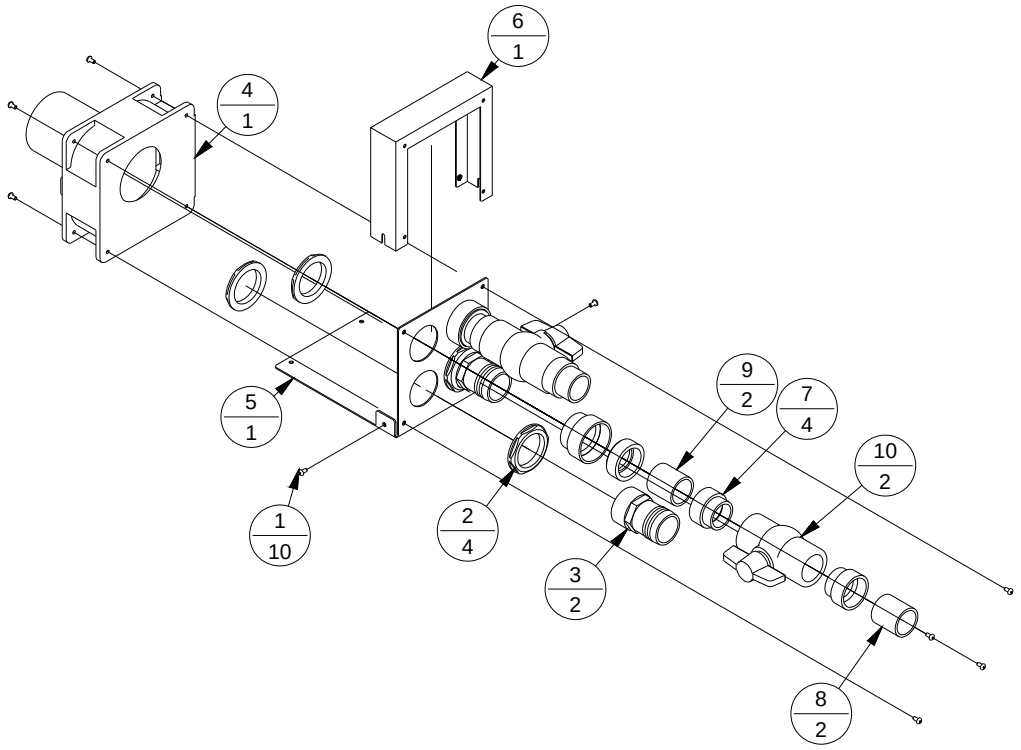


Table A-11: 9108346A – Electrical Enclosure Box

Item	Part Number	Quantity	Description	Reference
1	400003010SS	2	Screw, FHCS, M3 x 0.5mm, 10mm lg. SS	
2	403003006	25	PHMS, M3x6	
3	405004006	11	BHCS, M4x6	
4	405005008	30	BHCS, M5x8	
5	600005	1	Controller, DC, 90/180 VDC	
6	614106	1	Receptacle, Female, 23-7	
7	614135	1	Receptacle, Female, 23-37	
8	614138	1	Receptacle, Female, 17-14	
9	614325	1	Connector, 25-Pin, Male, Ribbon, HDF-20	
10	615210-10	4	Wiring Duct Cover, 1" X 1" X 10"	
11	615210-22	4	Wiring Duct Cover, 1" X 1" X 22"	
12	615210-8	2	Wiring Duct Cover, 1" X 1" X 8"	
13	615220-10	4	Wiring Duct, 1" X 1" X 10"	
14	615220-22	4	Wiring Duct, 1" X 1" X 22"	
15	615220-8	2	Wiring Duct, 1" X 1" X 8"	
16	9100722	2	Receptacle, Locking, 3-pin	
17	9100723	1	Receptacle, Locking, 4-pin	
18	9102054	1	Receptacle, Female, 23-57	
19	9102358	1	Receptacle, Male, 250VAC, 16A, IEC	
20	9102380	1	Board, Base Control	
21	9103187	1	Switch, Padlock, 25A	
22	9108144	1	Inverter, AC Drive, 1-Phase, 230V, 1.0 Hp	
23	9108173	1	Ferrite, Clamp-On, 9.91mm	
24	9108178	1	EMI Filter, 2-Stage, 12A	
25	9108346	1	Electrical Enclosure	
26	9108596	1	Strain Relief Bushing, 16mm Cable	
27	9108597	1	Strain Relief Bushing, 10mm Cable	
28	9108831A	1	High Voltage Terminal block assembly	
29	9108832A	1	Low Voltage Terminal block assembly	
30	9108853A	1	Terminal block Assembly PLC Mount	
31	9108987	1	Line-Reactor 1hp	

Figure A-11: 9108346A – Electrical Enclosure Box

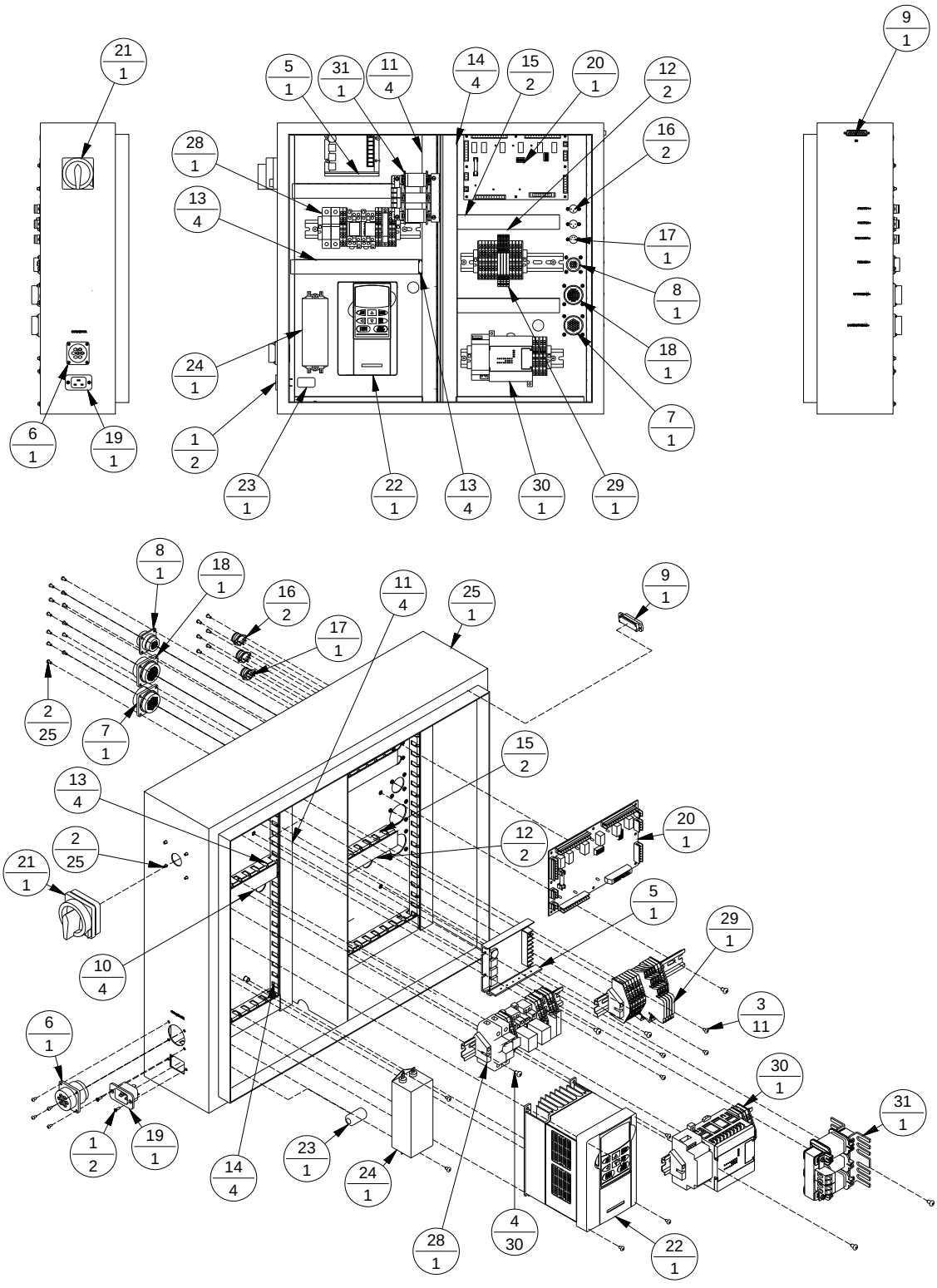


Figure A-11: 9108346A – Electrical Enclosure Box (Cont'd)

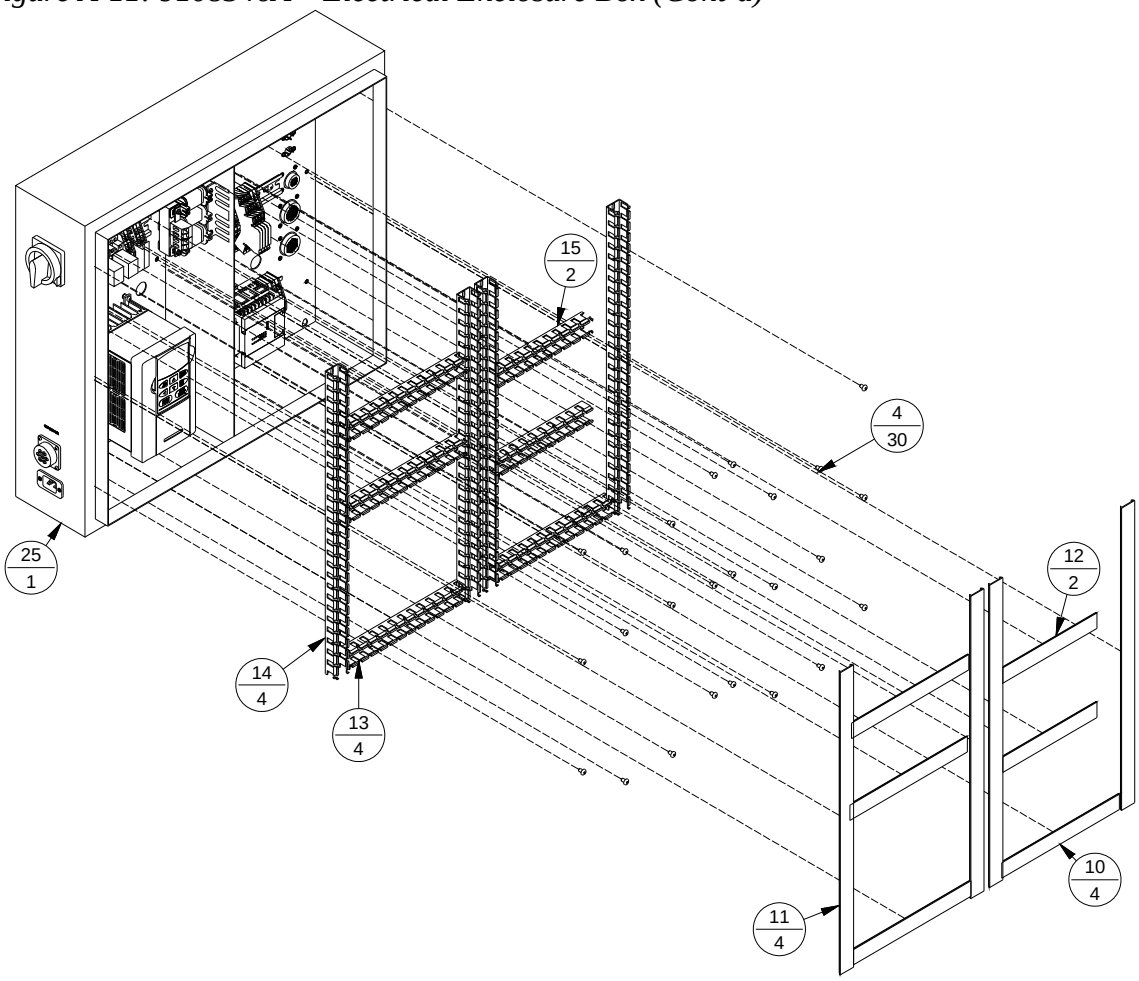


Table A-12: 9108368AL – Wheel Encoder Assembly, Left

Item	Part Number	Quantity	Description	Reference
1	402005025	4	SHCS, M5x25	
2	403020	2	Screw, FHCS, 8-32 x 3/8"	
3	404550	1	Screw, BHCS, 10-32 x 3/4"	
4	405005012	1	BHCS, M5x12	
5	416160	1	Shoulder Bolt, 3/8 in x 7/8 in	
6	420005027	1	Hex Jam Nut, M5	
7	420008	1	Nut, 10-32 UNF SS	
8	443815	2	Spacer Washer, 3/8 ID x .015 THK	
9	443830	2	Spacer Washer, 3/8 ID x .031 THK	
10	9100188A	1	Encoder Assembly, 6000 ppr	
11	9103592A	1	Encoder Wheel Mount Assembly	
12	9103618	1	Encoder Arm	
13	9103633	2	Bushing, Brass, 3/8 in ID	
14	9108368	1	Bracket, Encoder Extension	
15	9108380	1	Mount, Encoder Spring Base	
16	9108449	1	Spring, Torsion, LH	

Figure A-12: 9108368AL – Wheel Encoder Assembly, Left

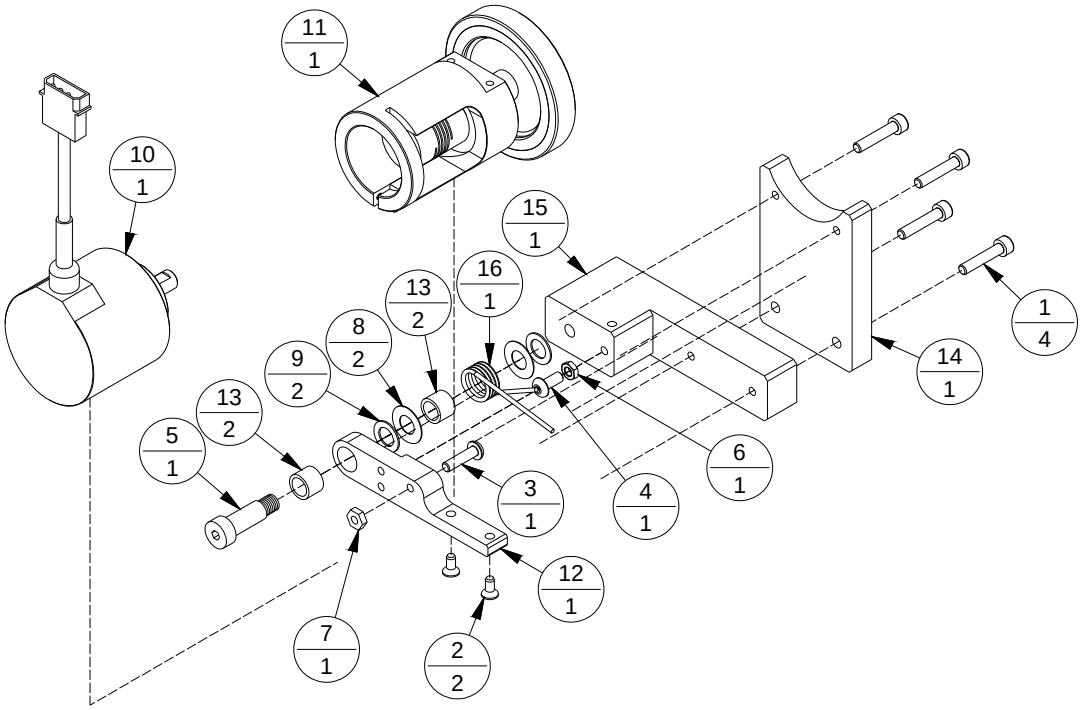


Table A-13: 9108368AR – Wheel Encoder Assembly, Right

Item	Part Number	Quantity	Description	Reference
1	402005025	4	SHCS, M5x25	
2	403020	2	Screw, FHCS, 8-32 x 3/8"	
3	404550	1	Screw, BHCS, 10-32 x 3/4"	
4	405005012	1	BHCS, M5x12	
5	416160	1	Shoulder Bolt, 3/8 in x 7/8 in	
6	420005027	1	Hex Jam Nut, M5	
7	420008	1	Nut, 10-32 UNF SS	
8	443815	2	Spacer Washer, 3/8 ID x .015 THK	
9	443830	2	Spacer Washer, 3/8 ID x .031 THK	
10	9100188A	1	Encoder Assembly, 6000 ppr	
11	9103592A	1	Encoder Wheel Mount Assembly	
12	9103618	1	Encoder Arm	
13	9103633	2	Bushing, Brass, 3/8 in ID	
14	9108368	1	Bracket, Encoder Extension	
15	9108380	1	Mount, Encoder Spring Base	
16	9108448	1	Spring, Torsion, RH	

Figure A-13: 9108368AR – Wheel Encoder Assembly, Right

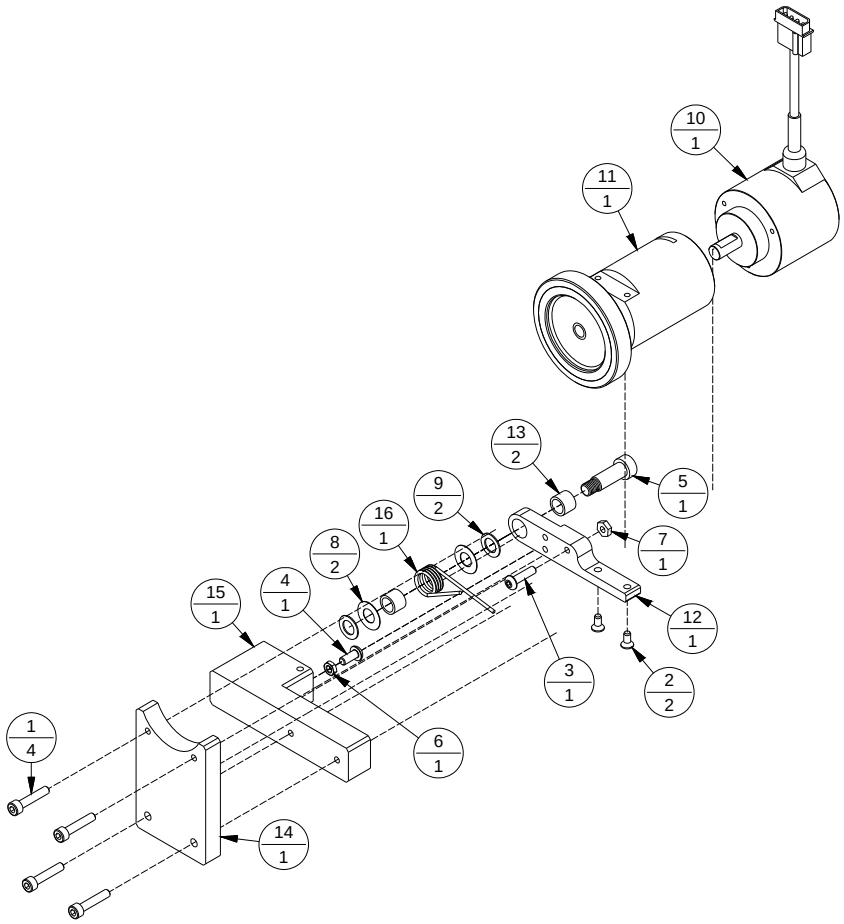


Table A-14: 9108686A – Door, Base Cabinet MTS, 1m

Item	Part Number	Quantity	Description	Reference
1	402006010	2	SHCS, M6 x 10	
2	420006032	2	Hex Nut, M6	
3	9101640	2	Door Handle	
4	9107196A	2	Door Latch Assembly	
5	9108374	2	Latch Locking Bar	
6	9108686	1	Cabinet Door, 1 m	

Figure A-14: 9108686A – Door, Base Cabinet MTS, 1m

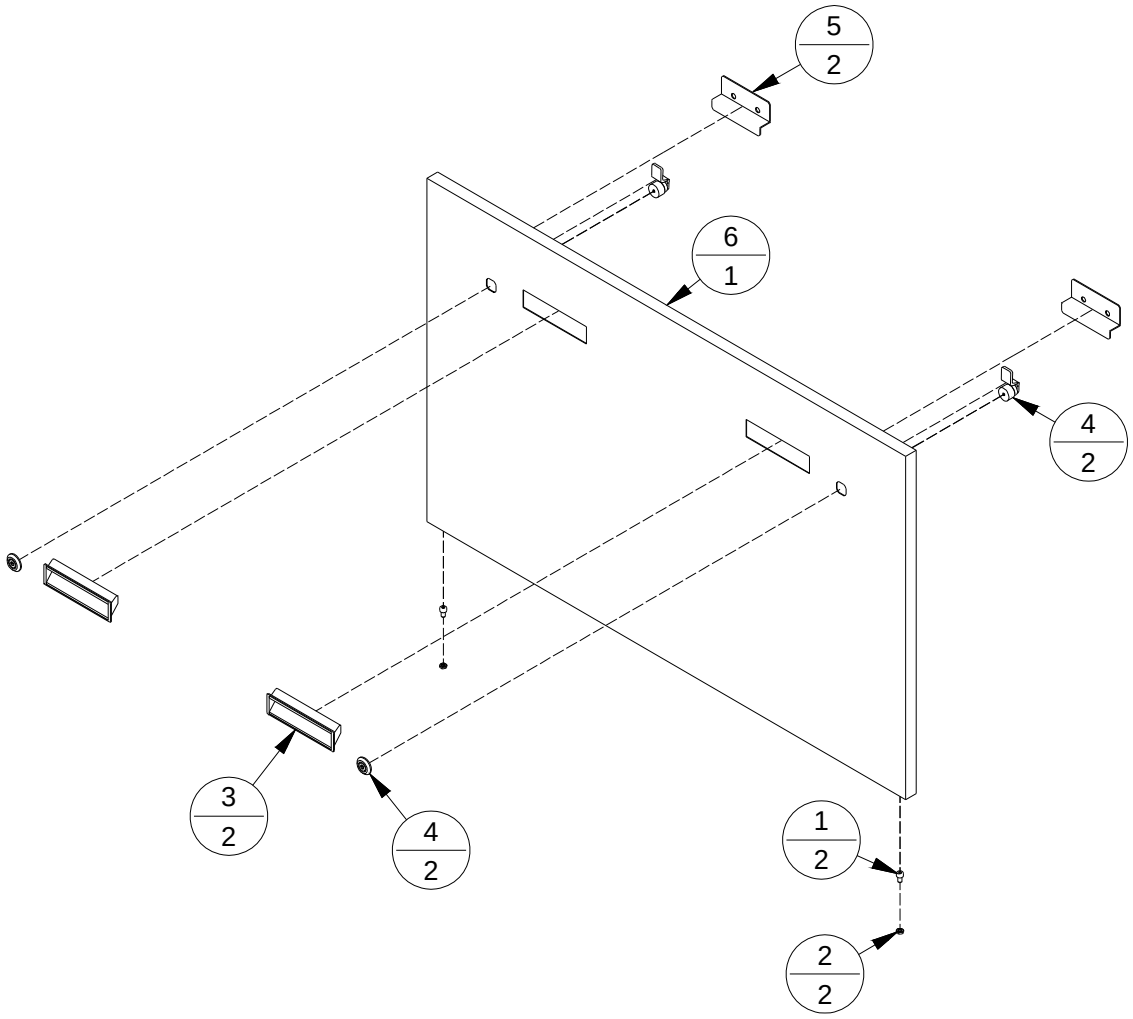


Table A-15: 9108687A – Tabletop Skirt Assembly, 1m

Item	Part Number	Quantity	Description	Reference
1	400005016	14	Screw, FHCS, M5 x 0.8, 16mm lg.	
2	400005025	4	FHCS, M5x25	
3	405005010	12	BHCS, M5x10	
4	9107059	2	Mounting Rail 1M Section	
5	9108683A	2	Cross member Assembly	
6	9108687	2	Skirt, Tabletop, 1m	
7	9108704	4	Bracket, Hook	

Figure A-15: 9108687A – Tabletop Skirt Assembly, 1m

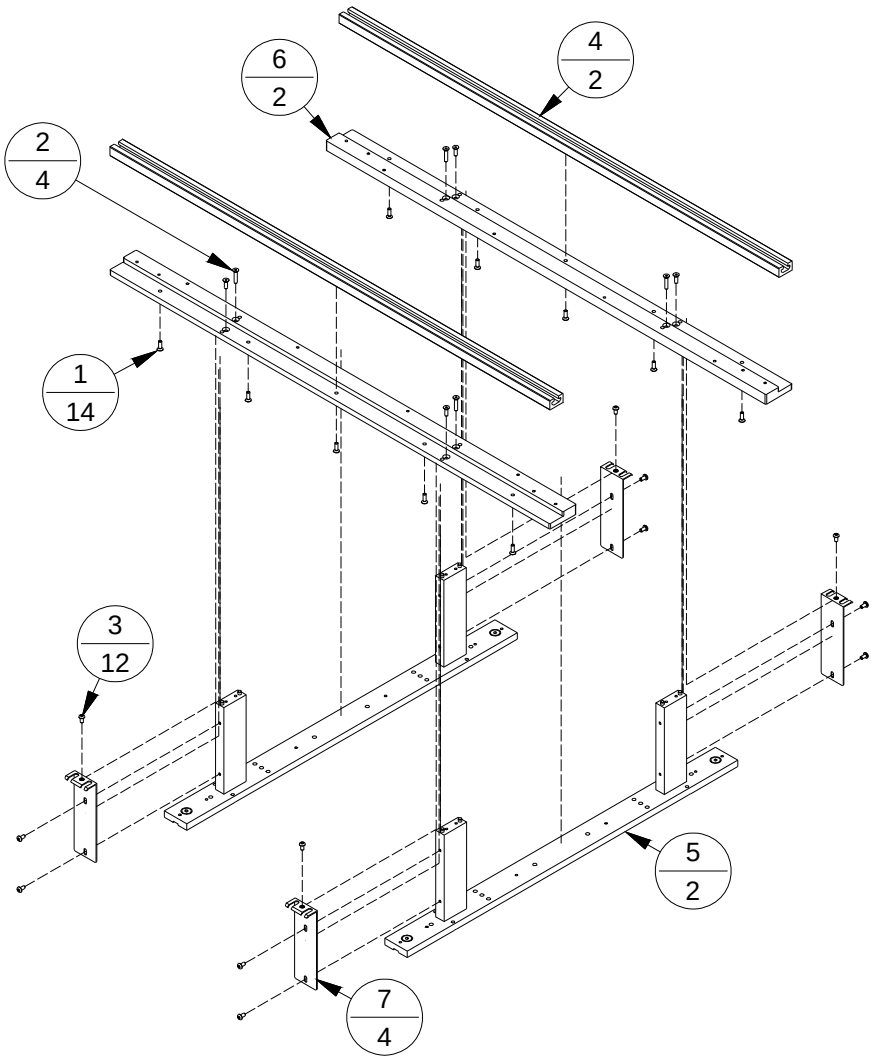


Table A-16: 9108720A – Divert Table Assembly, 0.5m

Item	Part Number	Quantity	Description	Reference
1	400005020	14	FHCS, M5x20	
2	402005020	2	SHCS, M5x20	
3	402005040	2	SHCS, M5x40	
4	402006080	2	Screw, SHCS, M6 x 1mm, 80mm lg.	
5	403004006	4	Screw, PHMS, M4 x 0.7, 6 mm Lg.	
6	405005020	4	BHCS, M5x20	
7	405005025	2	BHCS, M5x25	
8	410006010	4	Shoulder Screw. Dia8x10L	
9	410006040	2	Shoulder bolt, M6x1mm, 40mm Lg.	
10	433000	1	3/16 x 3/16 Key Stock	
11	440006040	4	Washer, Flat, M6, Large OD, SS	
12	500055	4	Bearing, UBR204-12S, 3/4 ID	
13	9104634	2	Pulley, Poly-V 6-Groove, 2.36 in OD	
14	9104882	2	Bushing, Lock Taper, 3/4" Bore	
15	9106453	8	Deep Groove Ball Bearing	
16	9106916	4	Tabletop Roller, 30 mm	
17	9106937	2	Compression Spring	
18	9107235	2	Bearing Block, Divert, 30 mm Roller	
19	9107238A	1	Divert Section Vacuum Channel Assembly	
20	9107239	1	Divert Gate Chute Plate	
21	9107584	2	Bearing Block, 30 mm Roller	
22	9107588A	1	A2 Takeup Roller Assembly	
23	9107589	2	Bar, Belt Guide, 800mm	
24	9108014	1	Divert Drive Belt, Poly-V, 38" J6	
25	9108141	2	Table Roller, 2.84" OD X 420 mm lg	
26	9108506	6	Collar, 10mmID	
27	9108621	1	Driven Pulley	
28	9108622	1	Driving Pulley, 25mm Bore	
29	9108720	1	A2 Divert Section Card Tabletop	
30	9108721A	1	Belt set, Divert gate, Incoming	
31	9108722	1	Belt, Card Divert Section Exit	
32	9108854	1	V Belt, 3LTYPE, 28-1/2" L, 3.8" wide	
33	9108967A	1	Tracking kit for LED UV Lamp	
34	9108968	1	Roller -Bearing Type	
35	9108969	1	Rotary Shaft - For Tension	
36	9108982	2	Nut, Double Locking, M6 x 1mm	

Figure A-16: 9108720A – Divert Table Assembly, 0.5m

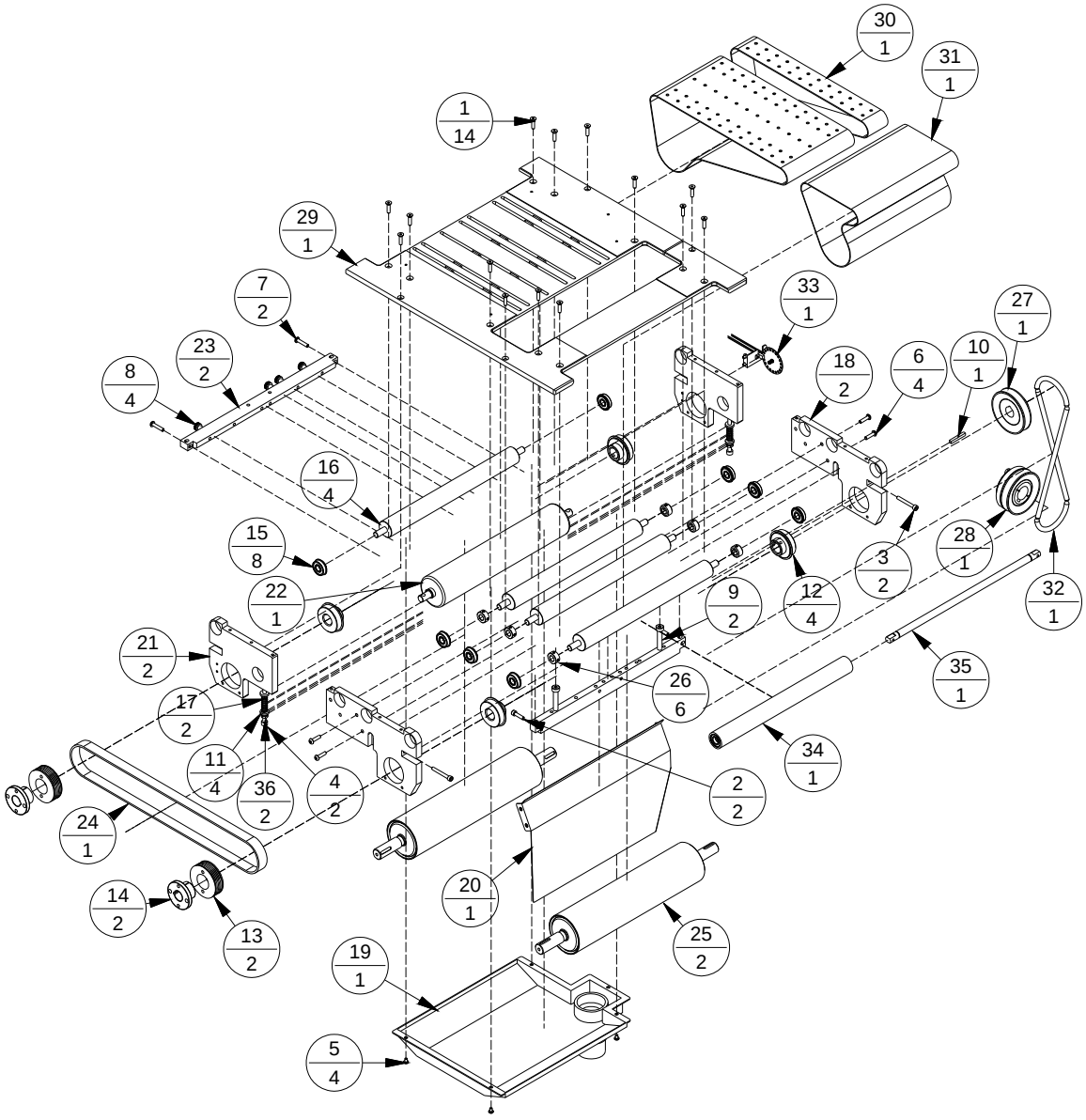


Table A-17: 9108723A – Safety Cover

Item	Part Number	Quantity	Description	Reference
1	405005010	4	BHCS, M5x10	
2	9108723	1	Safety Cover	

Figure A-17: 9108723A – Safety Cover

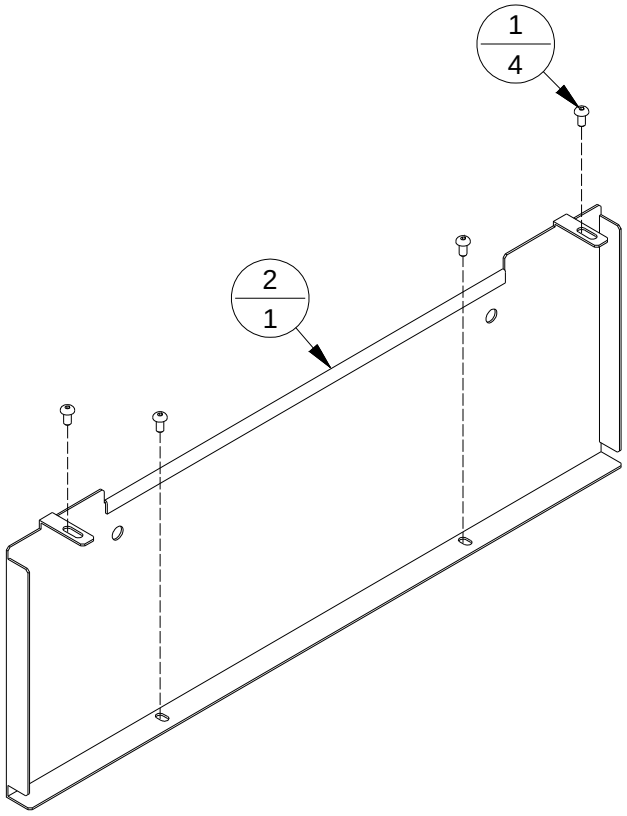


Table A-18: 9108760A – Base, MTS, Driving Unit, 2m

Item	Part Number	Quantity	Description	Reference
1	400005025	8	FHCS, M5x25	
2	9101518	1	Switch, Emergency Stop	
3	9101803	1	Marking, E-Stop, Round	
4	9104119A	1	Cable, Controller I/O Receptacle, 18 in	
5	9104142AR	1	Cable, #31, Rear Panel Feeder to BCB	
6	9104144A	1	Cable, #10, Downstream to BCB	
7	9104352AR	1	Cable # 16, Conveyor Speed Control	
8	9107257	1	Pulley, 4L Pitch Dia. 4.5" X 1 groove	
9	9108073	1	Motor Drive V Belt, A21	
10	9108279A	1	Reject Card Chute Assembly	
11	9108282A	1	Front Control Panel, 1 M	
12	9108288A	3	Dummy Control Panel, 1 M	
13	9108296	1	Bushing, H x 25 mm	
14	9108686A	3	Door, Side, 1 M	
15	9108687A	2	Skirt Assembly 1 m	
16	9108708	2	Tabletop Bracket, joining	
17	9108723A	2	Safety Cover	
18	9108757	2	Hole Plug, 2.5 in	
19	9108762A	1	Line Shaft Assembly, 2M	
20	9108764A	1	Extrusion Frame Assembly, 2 M	
21	9108766A	1	Door, Rear, 2M Section	
22	9108850A	1	Electrical Enclosure	
23	9108985A	1	Drive Motor Assembly, MTS	

Figure A-18: 9108760A – Base, MTS, Driving Unit, 2m

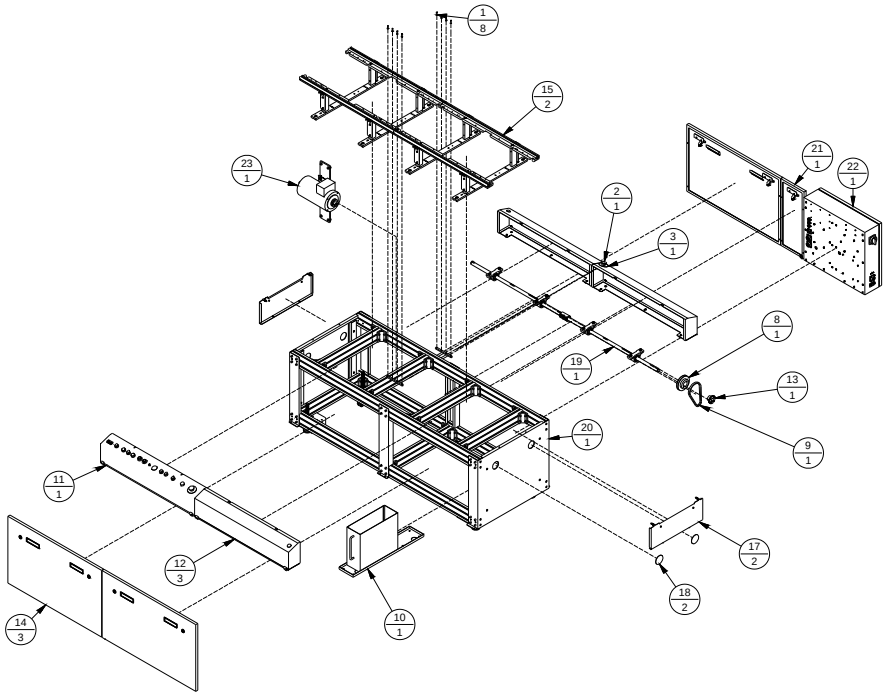


Table A-19: 9108761A – Base, MTS, Driven Unit, 2m

Item	Part Number	Quantity	Description	Reference
1	400005025	16	FHCS, M5x25	
2	402012080	4	SHCS, M12x80	
3	420012060	4	Hex Jam Nut, M12	
4	440012028	8	Flat Washer, M12, Black	
5	9101518	2	Switch, Emergency Stop	
6	9101803	2	Marking, E-Stop, Round	
7	9108288A	4	Dummy Control Panel, 1 M	
8	9108322	1	Coupling, Oldham, 25 mm	
9	9108686A	4	Door, Base Cabinet MTS, 1m	
10	9108687A	2	Tabletop Skirt Assembly, 1m	
11	9108708	4	Tabletop Bracket, joining	
12	9108723A	1	Safety Cover	
13	9108757	2	Hole Plug, 2.5 in	
14	9108762A	1	Line Shaft Assembly, 2M	
15	9108764A	1	Extrusion Frame Assembly, 2 M	

Figure A-19: 9108761A – Base, MTS, Driven Unit, 2m

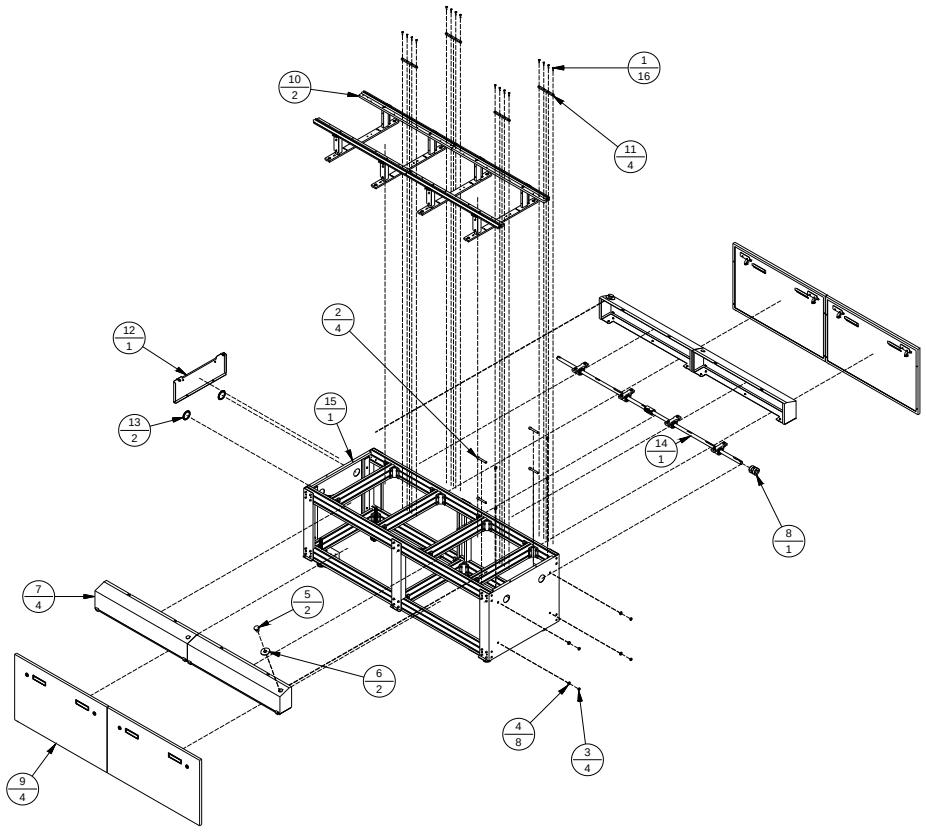


Table A-20: 9108762A – Line Shaft Assembly, 2m

Item	Part Number	Quantity	Description	Reference
1	402008030A	8	Screw/T-nut assembly, M8, 30mm lg.	
2	9108324	4	Pillow Block, 25mm	
3	9108762	2	Line Shaft, 2 M frame	
4	9108787	1	Shaft Coupling, Rigid, 25mm	
5	9108838-110	1	Square Key 8x8x108mm	
6	9108838-25	4	Square Key 8x8x77mm	
7	9108838-45	1	Square Key 8x8x58mm	

Figure A-20: 9108762A – Line Shaft Assembly, 2m

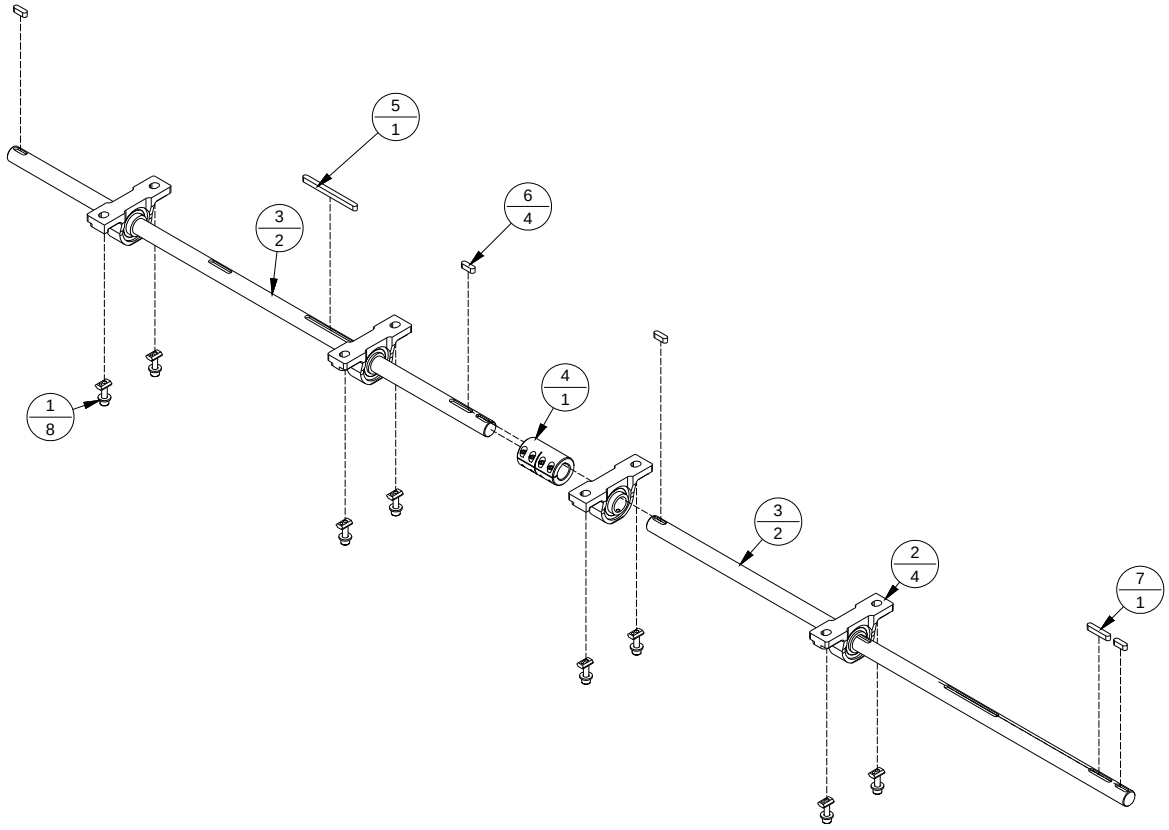


Table A-21: 9108764A – Extrusion Frame Assembly, 2m

Item	Part Number	Quantity	Description	Reference
1	4020820A	48	Profile Nut and Screw Assembly	
2	436008024	16	Spring Pin, M6x24	
3	9108024	7	Frame, End, Aluminum Extrusion	
4	9108142A	24	Corner Bracket Assembly	
5	9108731	2	Centre Column	
6	9108732	2	End Cap	
7	9108737A	4	Caster Plate Assembly	
8	9108764	4	Frame, 2M Side	

Figure A-21: 9108764A – Extrusion Frame Assembly, 2m

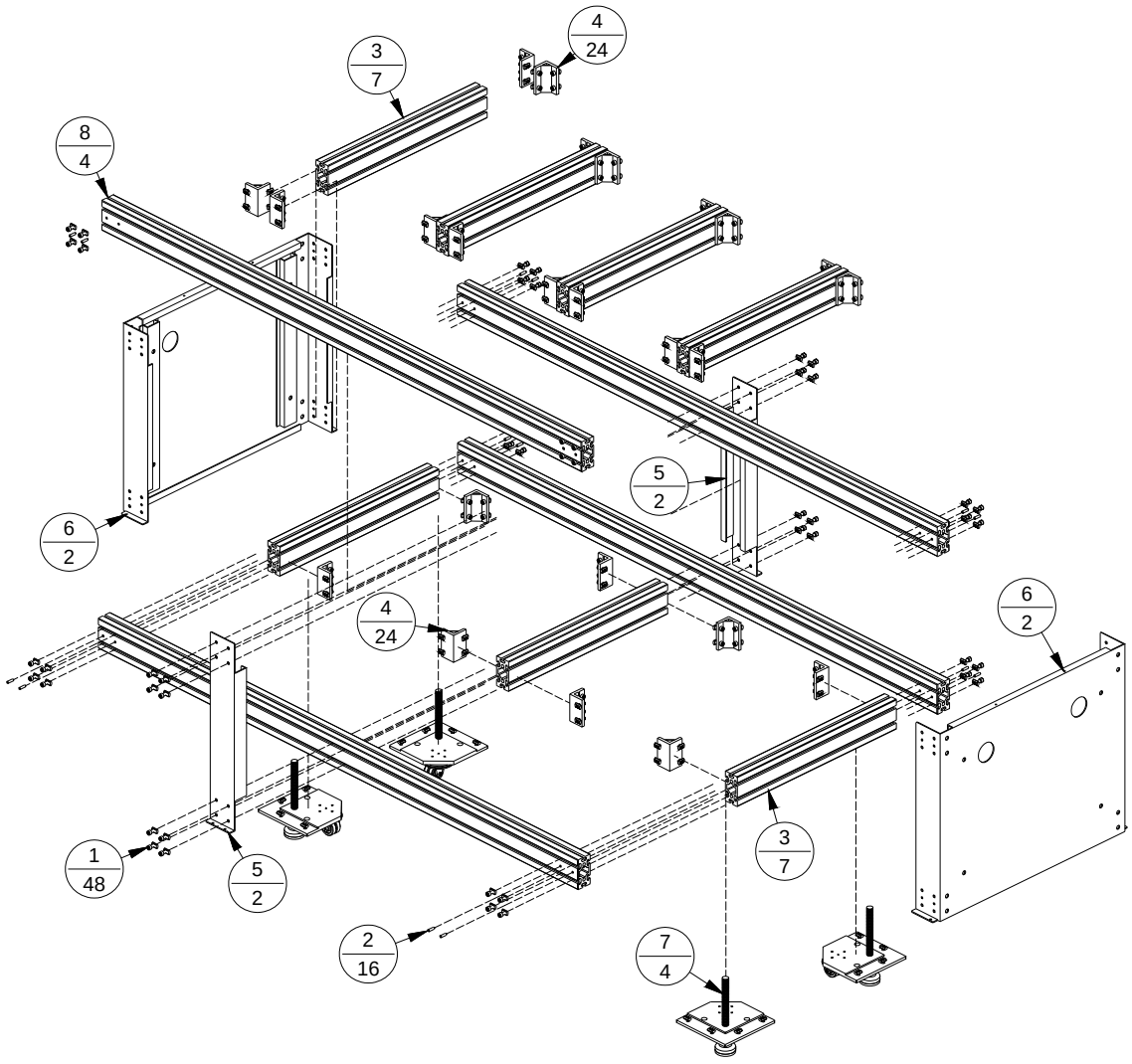


Table A-22: 9108766A – Rear Door, 2m Frame

Item	Part Number	Quantity	Description	Reference
1	9107196A	1	Door Latch Assembly	
2	9108342A	1	Door Holder Nut Assembly	
3	9108374	1	Latch Locking Bar	
4	9108766	1	Cabinet Door, Rear, 2 M Section	

Figure A-22: 9108766A – Rear Door, 2m Frame

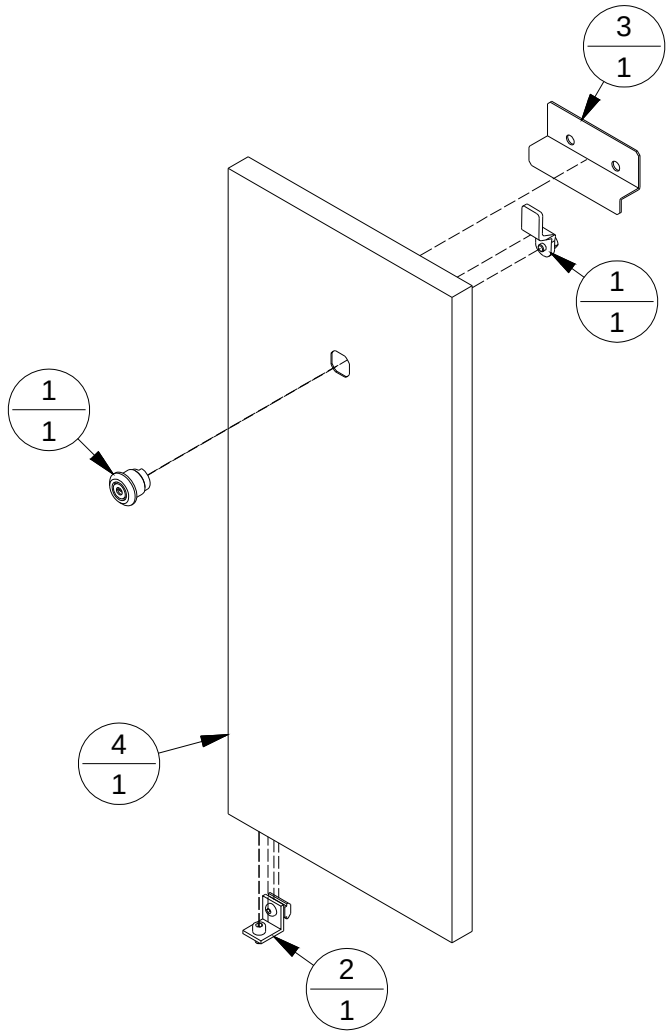


Table A-23: 9108771A – Side Guide Assembly

Item	Part Number	Quantity	Description	Reference
1	400006025	2	Screw, FHCS, M6 x 1mm, 25mm lg.	
2	401006010SS	2	Screw, BHMS, M6 x 1, 10mm lg, Truss, SS	
3	402003010SS	4	Screw, SHCS, M3x0.5, 10mm lg., SS	
4	402004006	4	SHCS, M4, 6mm lg.	
5	402006060	2	SHCS, M6x60	
6	405004006	3	BHCS, M4x6	
7	408006030P	1	Screw, SHSS, Brass Tip, M6 x 1, 30mm lg.	
8	9105098	1	Shoe, Adjustable guide	
9	9105099	2	Bearing, Flanged, Linear, 6mm	
10	9105101	2	Knurled knob w/pad, M6, 12mm lg.	
11	9105102	2	Bearing, Flanged, Linear, 12mm	
12	9105518	2	Spring, Compression, 0.36" O.D.	
13	9108237	2	Precision pivot pin, 6mm dia., M5	
14	9108771	1	Bracket, Shaft support, Half bridge	
15	9108772	1	Bracket, Locking	
16	9108773	1	Slider block, Side guide	
17	9108775	2	Linear shaft, 12mm x 251mm long	

Figure A-23: 9108771A – Side Guide Assembly

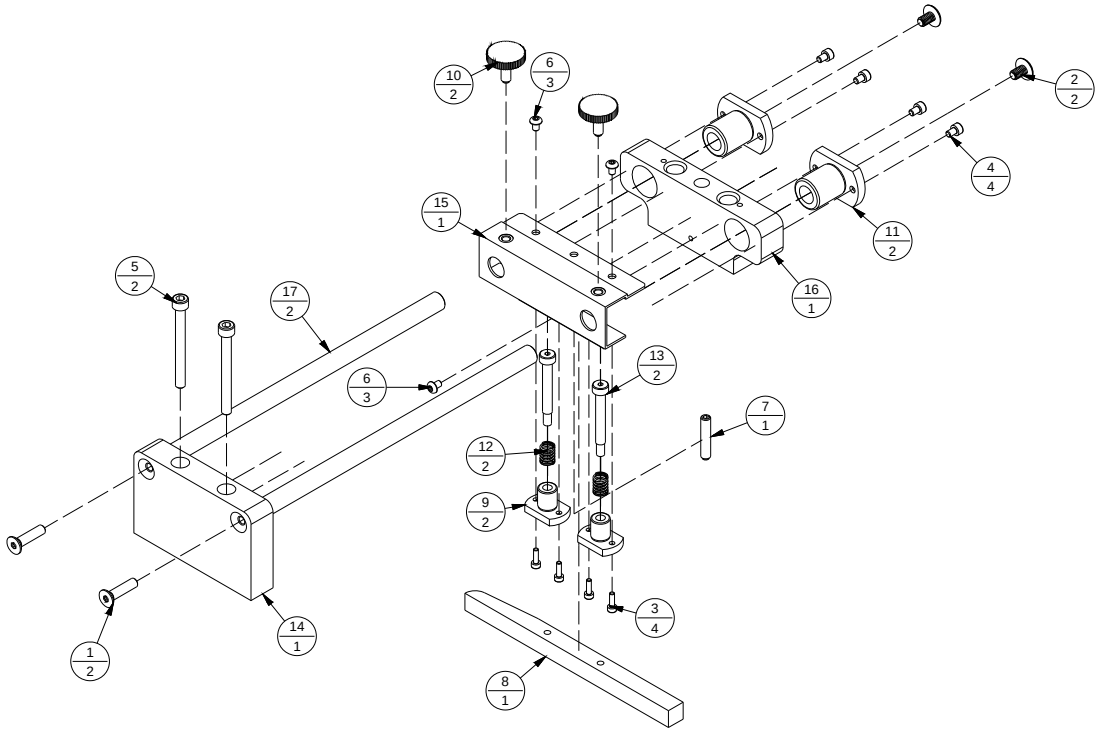


Table A-24: 9108776A – Photo Eye Console Assembly

Item	Part Number	Quantity	Description	Reference
1	405006020	1	Screw, BHCS, M6 x 1.0, 20mm lg.	
2	405230	1	Screw, SHCS, 1/4-20 UNC x 1/2 in	
3	405530	1	Screw, BHCS, 1/4-20 UNC X 1/2 in	
4	9100360	1	End Cap 1"x1"	
5	9108191	1	Extrusion Rail, 1 x 1 x 12"	
6	9108392	1	Post Insertion Nut, M6	
7	9108776	1	Stand, Photoeye, 1"x1", 1.5"x1.5"	

Figure A-24: 9108776A – Photo Eye Console Assembly

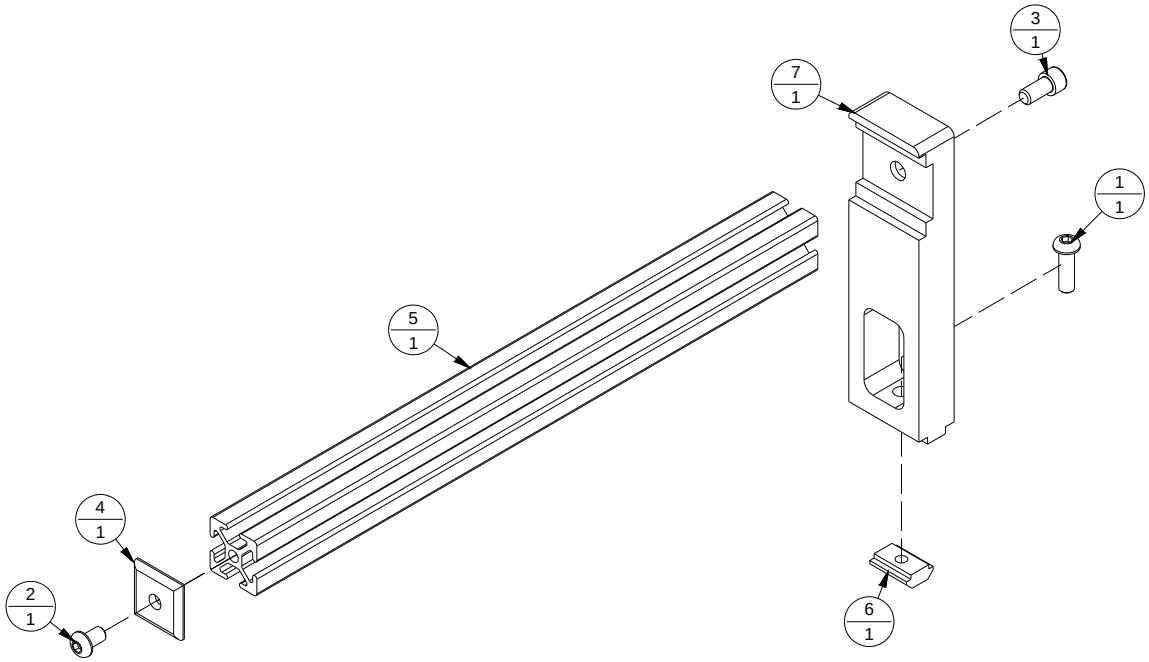


Table A-25: 9108831A – Terminal Block Assembly, High Voltage

Item	Part Number	Quantity	Description	Reference
1	610102	2	Relay, 12 VDC	
2	615004	2	Relay Base	
3	615021	9”	DIN Rail	
4	9103436	6	Terminal Block, Z-roofstyle, ZDU 4-2/4AN	
5	9103438	3	End plate, ZAP ZDU 4-2/4AN	
6	9103440	1	Terminal Block, Fuse, ZSI 2.5, 10A	
7	9103442	2	End bracket, EW 35	
8	9103447	2	Fuse Holder, 3/8 in dia.	

Figure A-25: 9108831A – Terminal Block Assembly, High Voltage

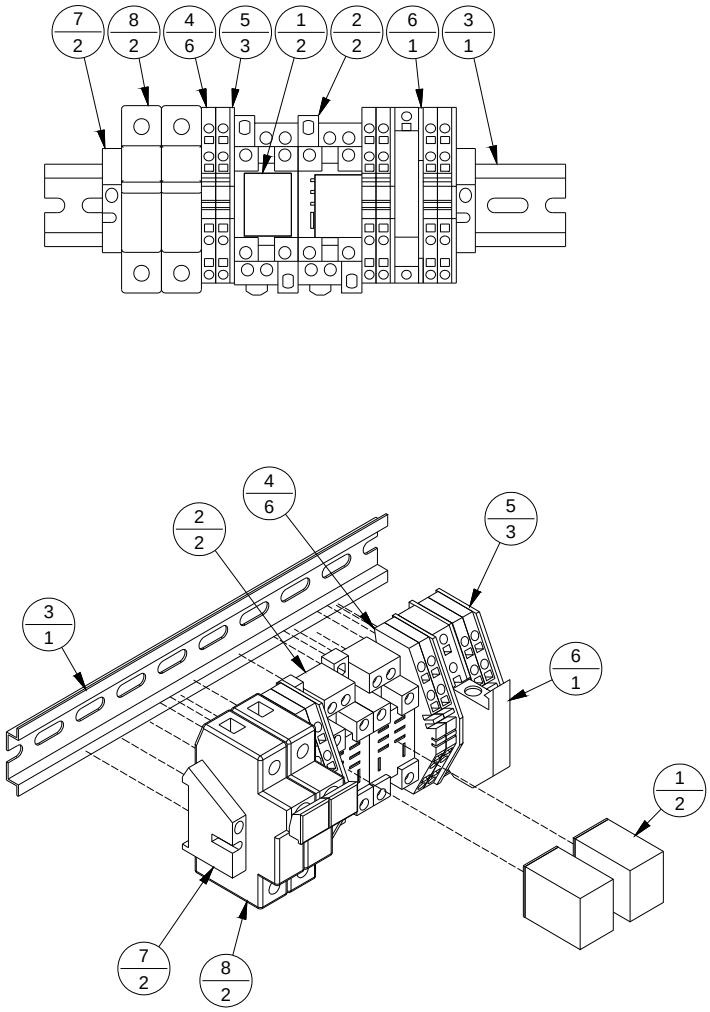
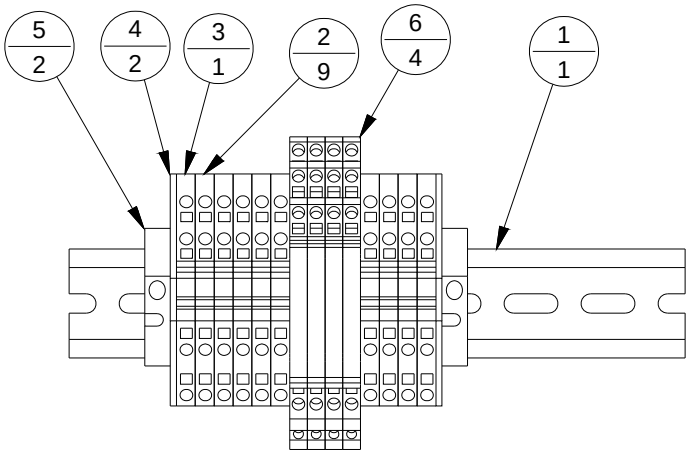


Table A-26: 9108832A – Terminal Block Assembly, Low Voltage

Item	Part Number	Quantity	Description	Reference
1	615021	8”	DIN Rail	
2	9103436	9	Terminal Block, Z-roofstyle, ZDU 4-2/4AN	
3	9103437	1	Terminal Block, Z-roofstyle, ZPE 4-2/4AN	
4	9103438	2	End plate, ZAP ZDU 4-2/4AN	
5	9103442	2	End bracket, EW 35	
6	9103685	4	Relay, 12 VDC, SPDT, Din Rail Mounting	

Figure A-26: 9108832A – Terminal Block Assembly, Low Voltage



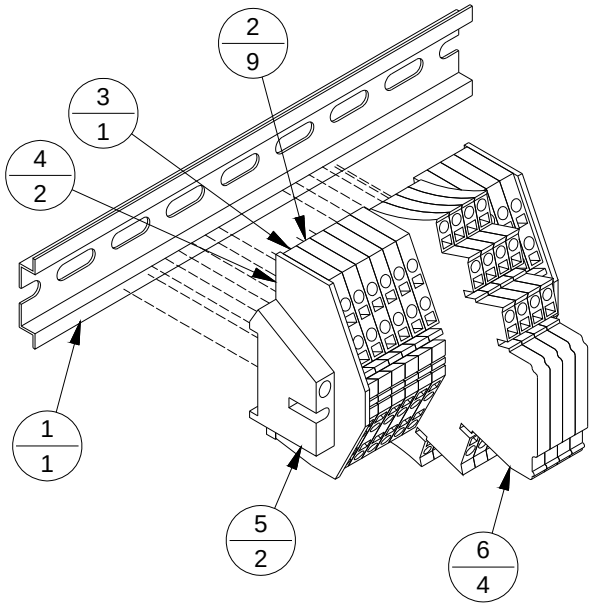


Table A-27: 9108837A – Electrical Enclosure Door

Item	Part Number	Quantity	Description	Reference
1	9107196A	1	Door Latch Assembly	
2	9108837	1	Enclosure Door	

Figure A-27: 9108837A – Electrical Enclosure Door

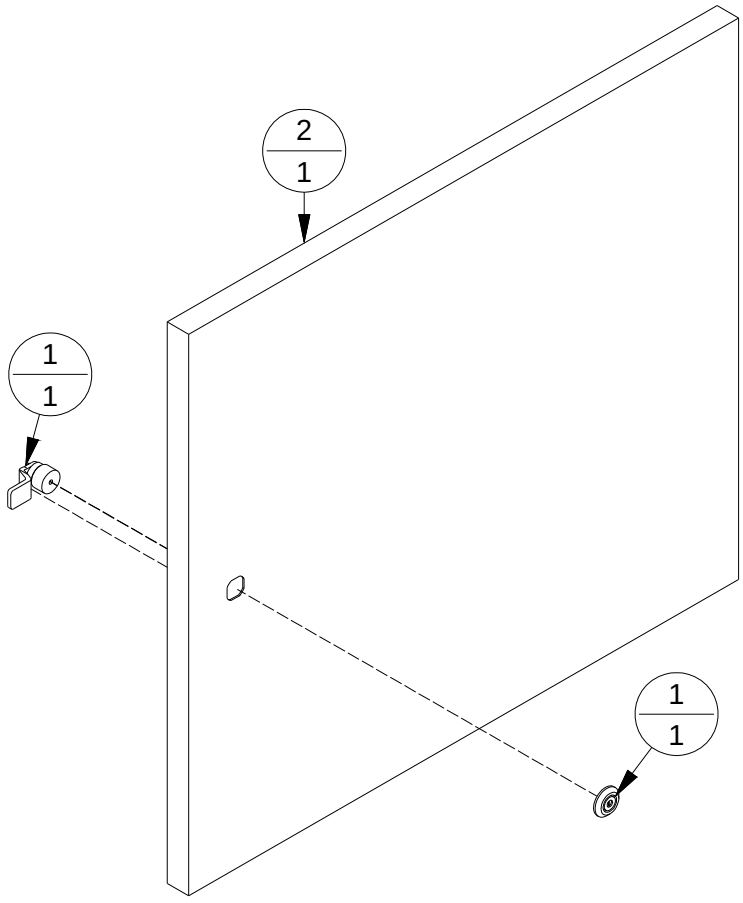


Table A-28: 9108850A – Electrical Enclosure

Item	Part Number	Quantity	Description	Reference
1	9108346A	1	Electrical Enclosure Box	
2	9108837A	1	Door, Electrical Enclosure	

Figure A-28: 9108850A – Electrical Enclosure

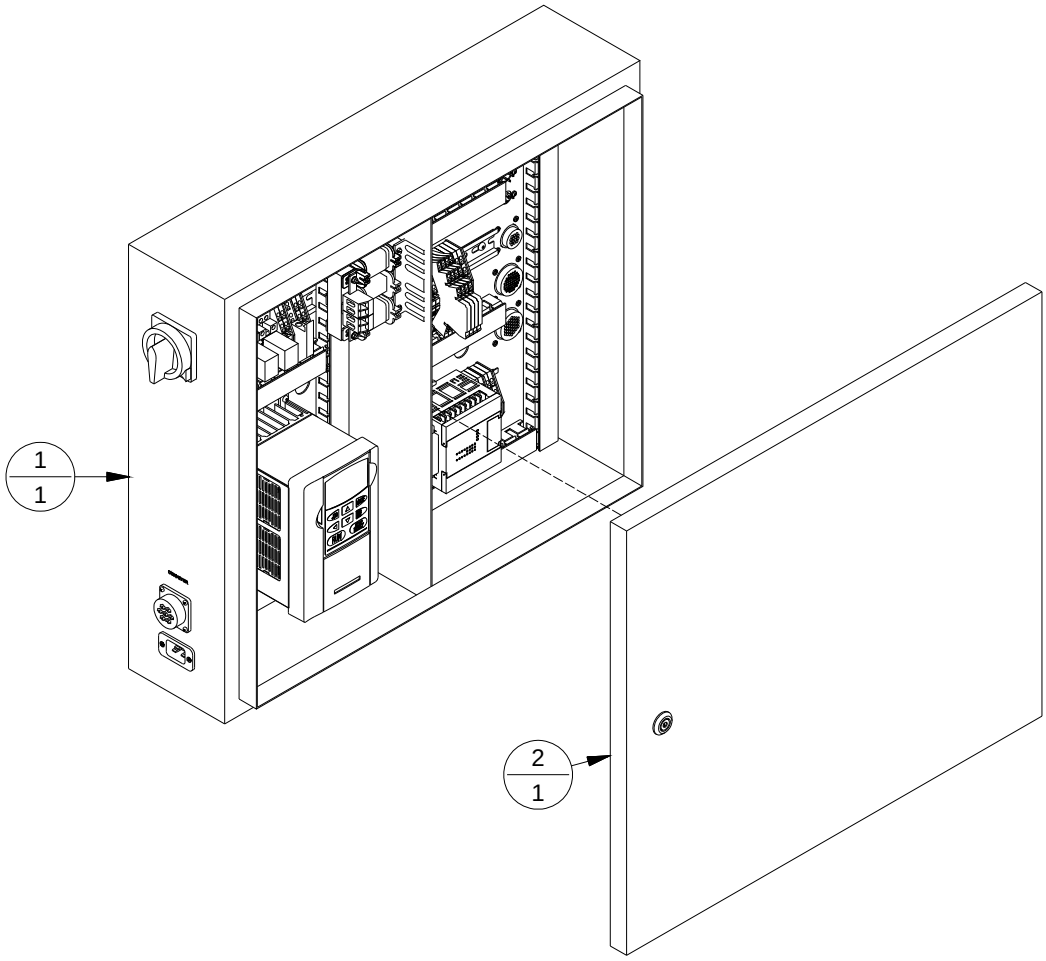


Table A-29: 9108853A – Terminal Block Assembly, PLC Mount

Item	Part Number	Quantity	Description	Reference
1	615021	8”	DIN Rail	
2	9101836	1	PLC, OMRON	
3	9103436	4	Terminal Block, ZDU 4-2/4AN	
4	9103438	2	End plate, ZAP ZDU 4-2/4AN	
5	9103442	2	End bracket, EW 35	
6	9103465	1	Power Supply, Switching, 12VDC/1.5A	

Figure A-29: 9108853A – Terminal Block Assembly, PLC Mount

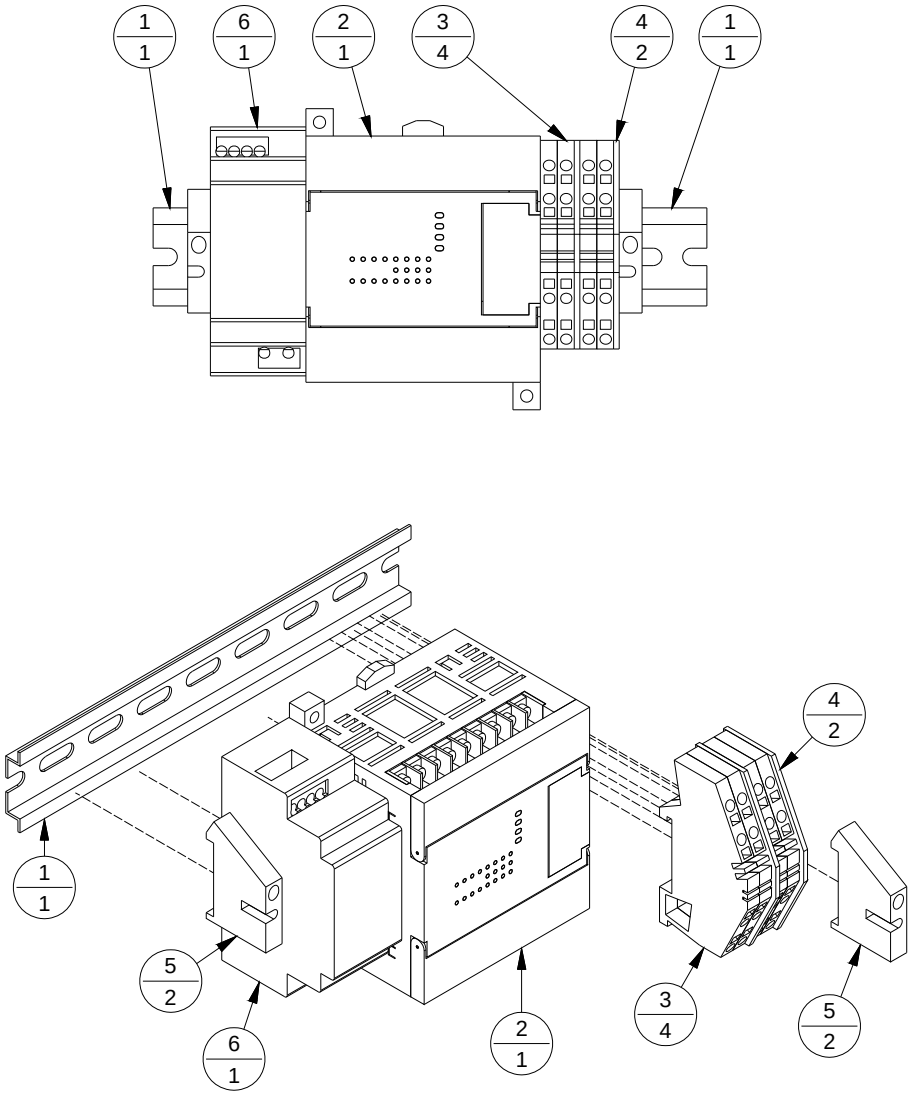


Table A-30: 9108864A – Conveyor Assembly, Flip Over

Item	Part Number	Quantity	Description	Reference
1	410010090	2	Shoulder Bolt, D12 x 90mm L	
2	9108424	1	Conveyor Belt, Long, Straight Through	
3	9108425	1	Conveyor Belt, Short, Straight Through	
4	9108426	2	Compression Spring	
5	9108427	2	Conveyor Belt, Turnover	
6	9108880A	1	Conveyor Frame Assembly	
7	9108881A	1	Floating Bar Assembly	

Figure A-30: 9108864A – Conveyor Assembly, Flip Over

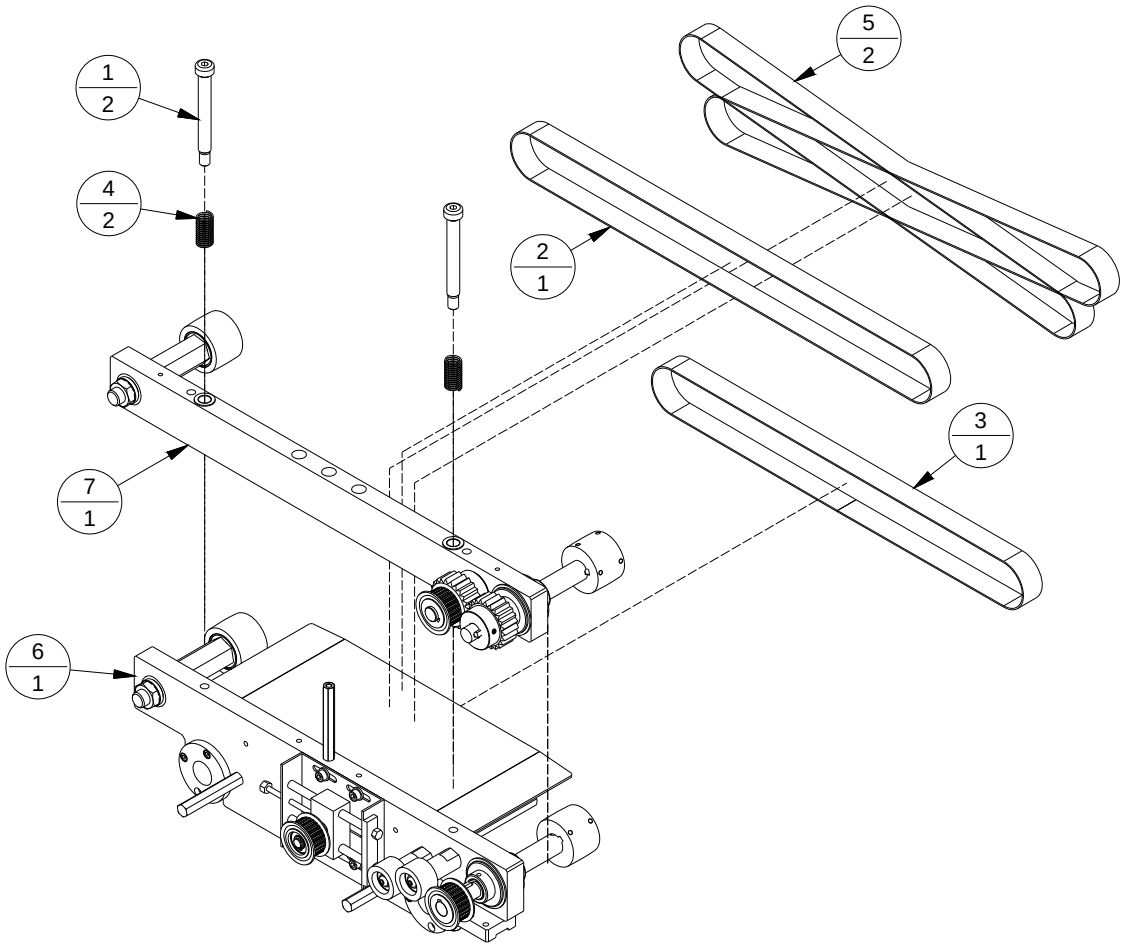


Table A-31: 9108880A – Conveyor Frame Assembly, Flip Over

Item	Part Number	Quantity	Description	Reference
1	402005012	6	SHCS, M5x12	
2	402005016	2	SHCS, M5x16	
3	402006016	6	SHCS, M6x16	
4	405006010	2	BHCS, M6x10	
5	432006	29mm	Square Key, 6x6mm	
6	439006018	2	Lock Washer, M6	
7	440006017	6	Flat Washer, M6	
8	9106454	1	Retaining Ring, External, 10mm	
9	9107965	1	Retaining Ring, External, 20mm	
10	9108055	2	Bearing, 20 mm ID	
11	9108394	1	Conveyor Belt Drive Pulley	
12	9108395	2	Idler, Backside Tension Type	
13	9108863	35mm	Square Key, 5x5mm	
14	9108864	2	Cantilever Shaft	
15	9108865	2	Hexagonal Post	
16	9108866	2	Knurled Knob Screws	
17	9108867	1	Drive Shaft, Conveyor	
18	9108880	1	Sliding Base	
19	9108883	1	Bracket, Belt Push	
20	9108888A	1	Idler Roller Assembly	
21	9108892A	1	Roller Guide Bracket Assembly	
22	9108911	2	Hexagonal Post	
23	9108912	1	Timing Pulley, S5M, 24t, 15mm bore	
24	9108913	1	Hexagonal Post	
25	9108914	2	Flanged Linear Bushing, 25mm	
26	9108915	1	Idler Pulley, S5M, 24Teeth	
27	9108916	1	Rotary Shaft	
28	9108917	1	Belt Tensioner, Spring Loaded	

Figure A-31: 9108880A – Conveyor Frame Assembly, Flip Over

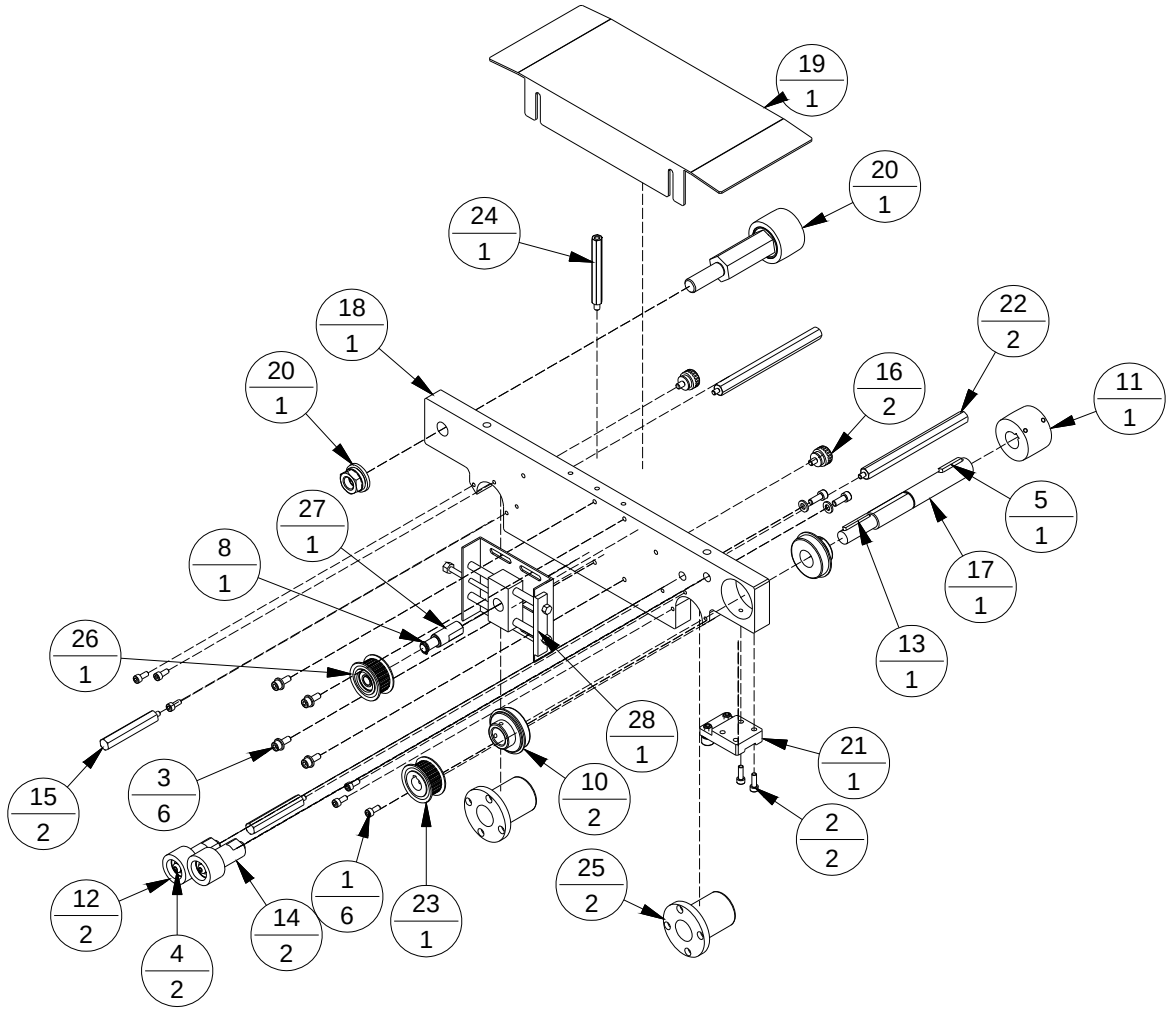


Table A-32: 9108881A – Floating Bar Assembly, Flip Over

Item	Part Number	Quantity	Description	Reference
1	408010012	2	Screw, SHSS, M10x1.5 x 12mm Lg.	
2	432006	29mm	Square Key, 6x6mm	
3	9107965	1	Retaining Ring, External, 20mm	
4	9108055	2	Bearing, 20 mm ID	
5	9108394	1	Conveyor Belt Drive Pulley	
6	9108433	4	Oil Free Bushing	
7	9108863	35mm	Square Key, 5x5x35mm	
8	9108863	45mm	Square Key, 5x5x45mm	
9	9108867	1	Drive Shaft, Conveyor	
10	9108881	1	Floating Bar	
11	9108885	1	Reverse Mechanism Shaft	
12	9108888A	1	Idler Roller Assembly	
13	9108912	1	Timing Pulley, S5M, 24t, 15mm bore	
14	9108921	2	Deep Groove Ball Bearings	
15	9108922	1	Spur Gears M2.0, Z24, Steel	
16	9108923	1	Spur Gears M2.0, Z24, Nylon	

Figure A-32: 9108881A – Floating Bar Assembly, Flip Over

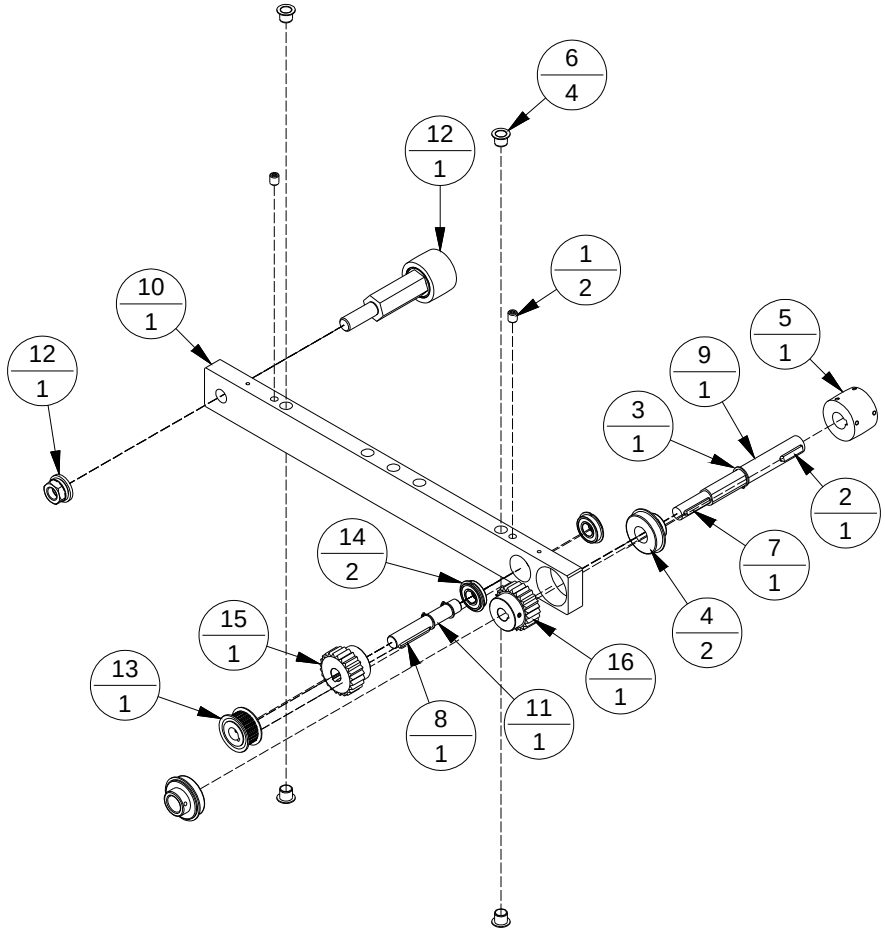


Table A-33: 9108882A – Flip Over Unit, Convertible

Item	Part Number	Quantity	Description	Reference
1	405005008	6	Screw, BHCS, M5x8	
2	410006010	1	Shoulder Screw. Dia8x10L	
3	9108621	1	Driven Pulley	
4	9108622	1	Driving Pulley, 25mm Bore	
5	9108854	1	V Belt, 3LTYPE, 28-1/2" L, 3.8" wide	
6	9108864A	1	Conveyor Assembly	
7	9108884A	1	Turnover Table Assembly	
8	9108890	1	Safety Cover	
9	9108891	1	Bottom Cover	
10	9108918	1	Stepped Spacers	
11	9108919	1	Spacer for Bolt	

Figure A-33: 9108882A – Flip Over Unit, Convertible

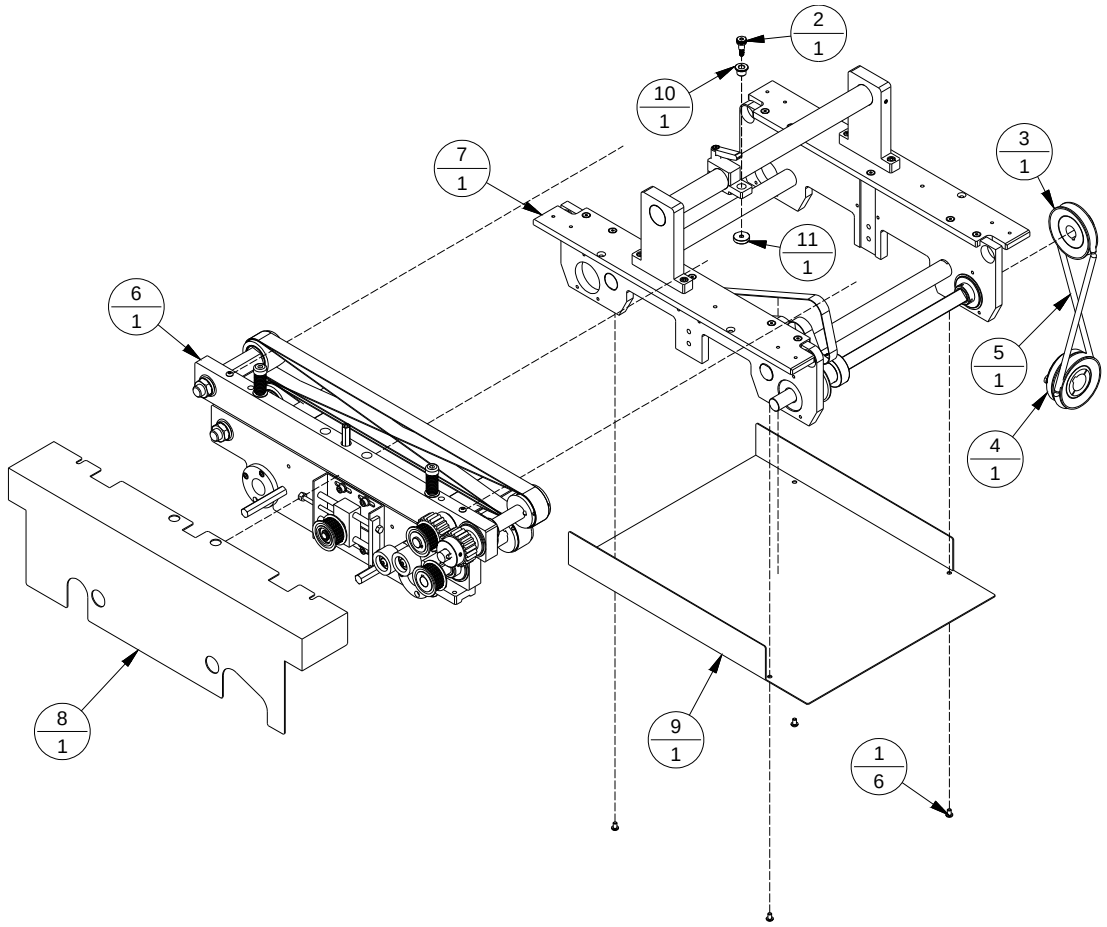


Table A-34: 9108884A – Flip Over Table Assembly

Item	Part Number	Quantity	Description	Reference
1	400005020	10	Screw, FHCS, M5x20	
2	402006016	4	Screw, SHCS, M6x16	
3	408005010	4	Screw, SHSS, M5x10	
4	408006012P	2	Screw, SHSS, M6x12, Brass Tip	
5	433160	1	Parallel Key, 3/16 x 3/16 inx0.75in	
6	500055	2	Flange Bearing, 3/4 ID	
7	9108025	2	Sideframe, Turnover Device	
8	9108027	2	Bridge Shaft, 25 mm OD X 358 mm lg	
9	9108393	2	Tabletop, Turnover Device	
10	9108421	2	Bridge Stand	
11	9108422	1	Cross Bar	
12	9108423	1	Registration Block	
13	9108637A	1	Splined Bush Assembly	
14	9108640	1	Splined Shaft	
15	9108896	1	Drive Belt, S5M	
16	9108920	1	Clamp Lever	

Figure A-34: 9108884A – Flip Over Table Assembly

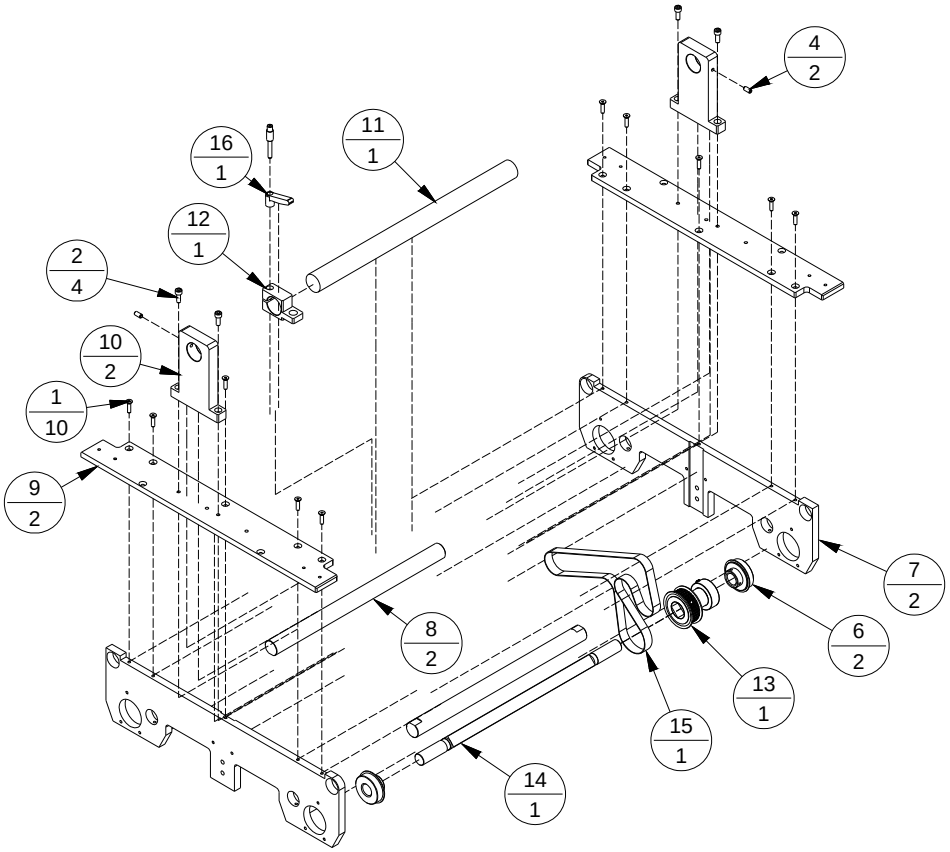


Table A-35: 9108888A – Idler Roller Assembly

Item	Part Number	Quantity	Description	Reference
1	405006010	1	Screw, BHCS, M6x10	
2	420016008	1	Hex Jam Nut	
3	439016035	1	Spring washer M16	
4	440016035	1	M16 Flat Washers, SS	
5	9108888	1	Cantilever Shaft	
6	9108926	1	Roller Washer	
7	9108928	1	Idler for Flat Belt	

Figure A-35: 9108888A – Idler Roller Assembly

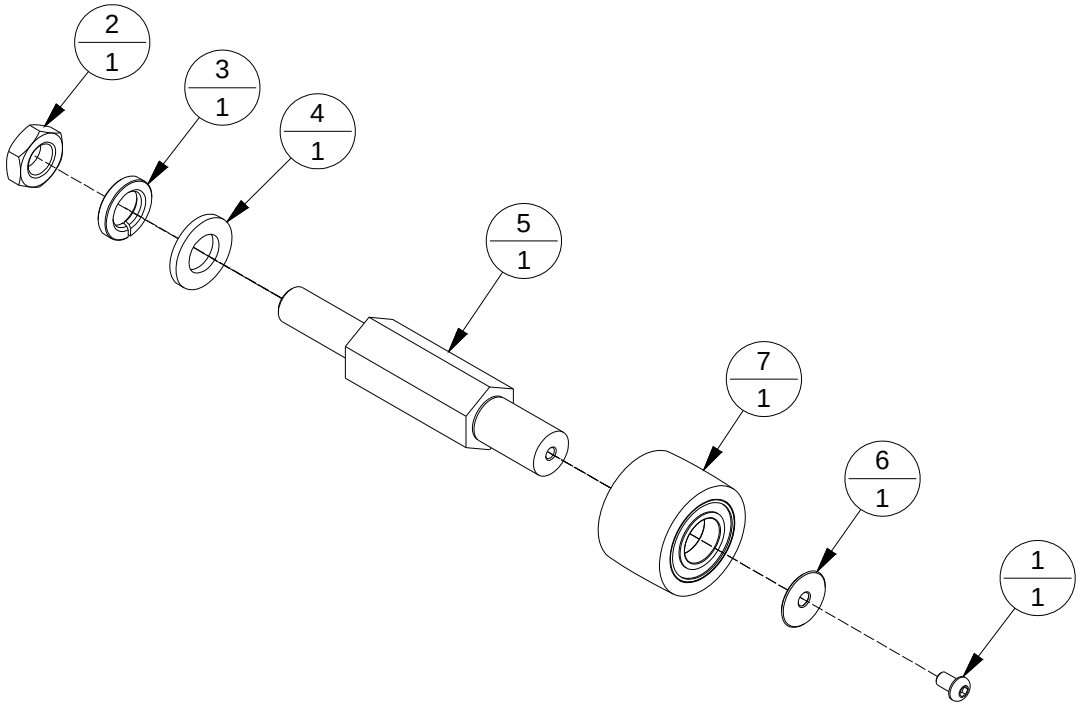


Table A-36: 9108892A – Roller Guide Bracket Assembly

Item	Part Number	Quantity	Description	Reference
1	9108796	2	Cam Roller	
2	9108892	1	Roller Guide Bracket	

Figure A-36: 9108892A – Roller Guide Bracket Assembly

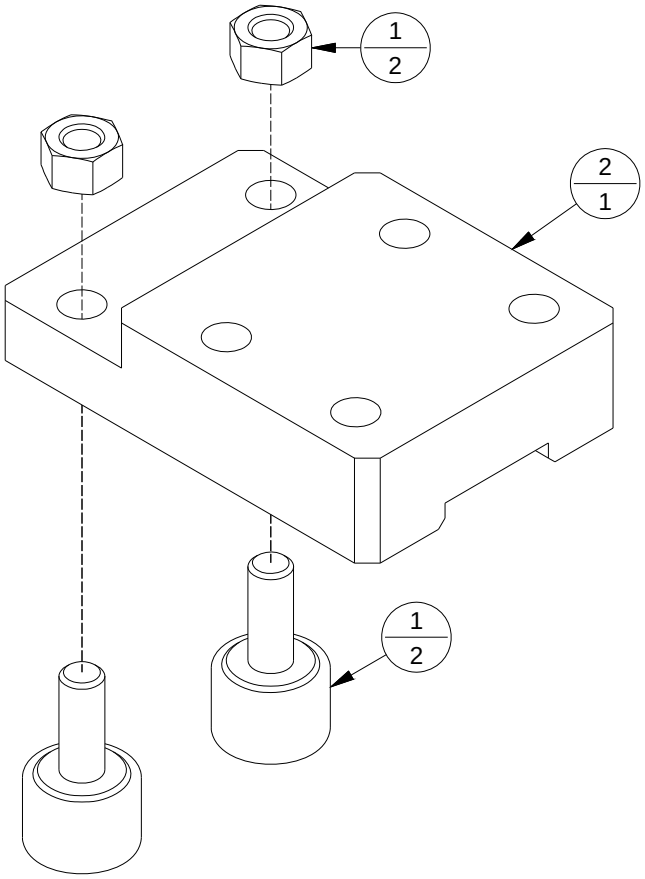
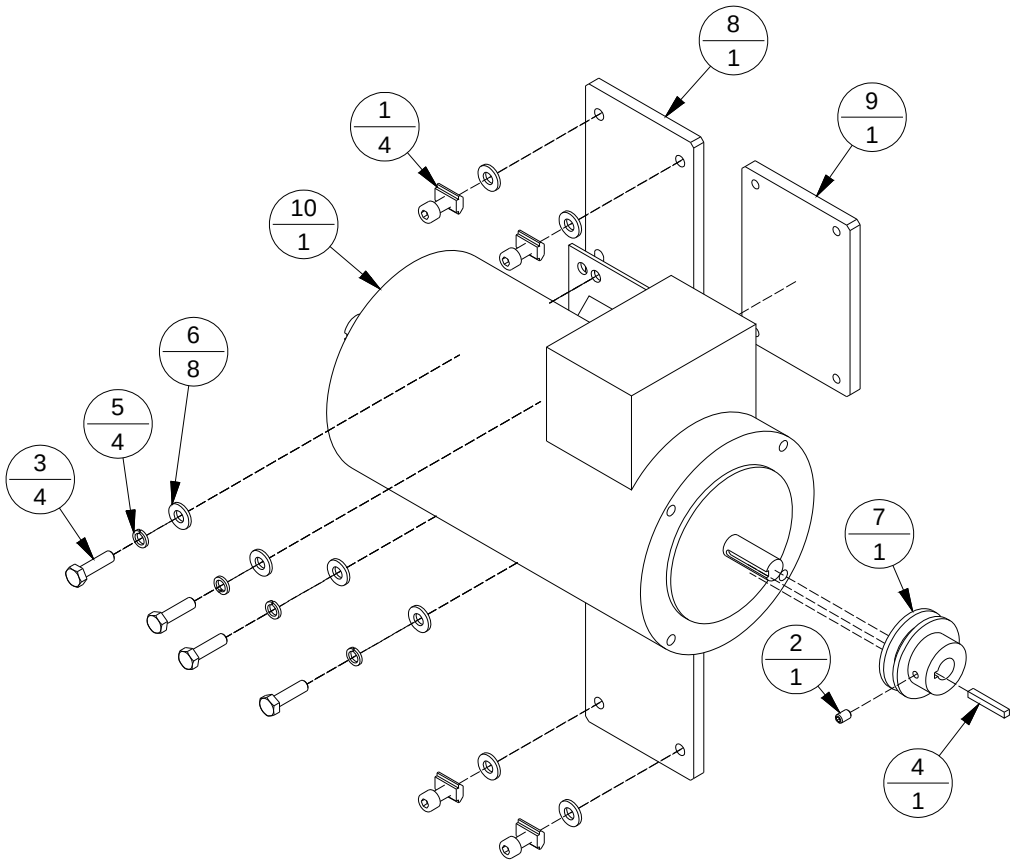


Table A-37: 9108985A – Drive Motor Assembly

Item	Part Number	Quantity	Description	Reference
1	4020820A	4	Profile Nut and Screw Assembly	
2	405820	1	Screw, SHSS, 1/4-20 UNC X 3/8 in	
3	406008030	4	Screw, HHMS, M8x30	
4	433000	1	3/16 x 3/16 Key Stock	
5	439008020	4	Spring Washer, M8, SS	
6	440008023	8	Flat Washer, M8 bolt, SS	
7	9107256	1	Pulley, Motor, V	
8	9108278	1	Motor Mount Bracket	
9	9108299	1	Square Nut, Motor Mount	
10	9108985	1	Motor, 1.5hp Marathon	

Figure A-37: 9108985A – Drive Motor Assembly



Electrical Drawings

Appendix **B**

List of Schematics

Figure B-1: BKMTS-C – Electrical Box, 220VAC Line-Line, ABB AC Controller

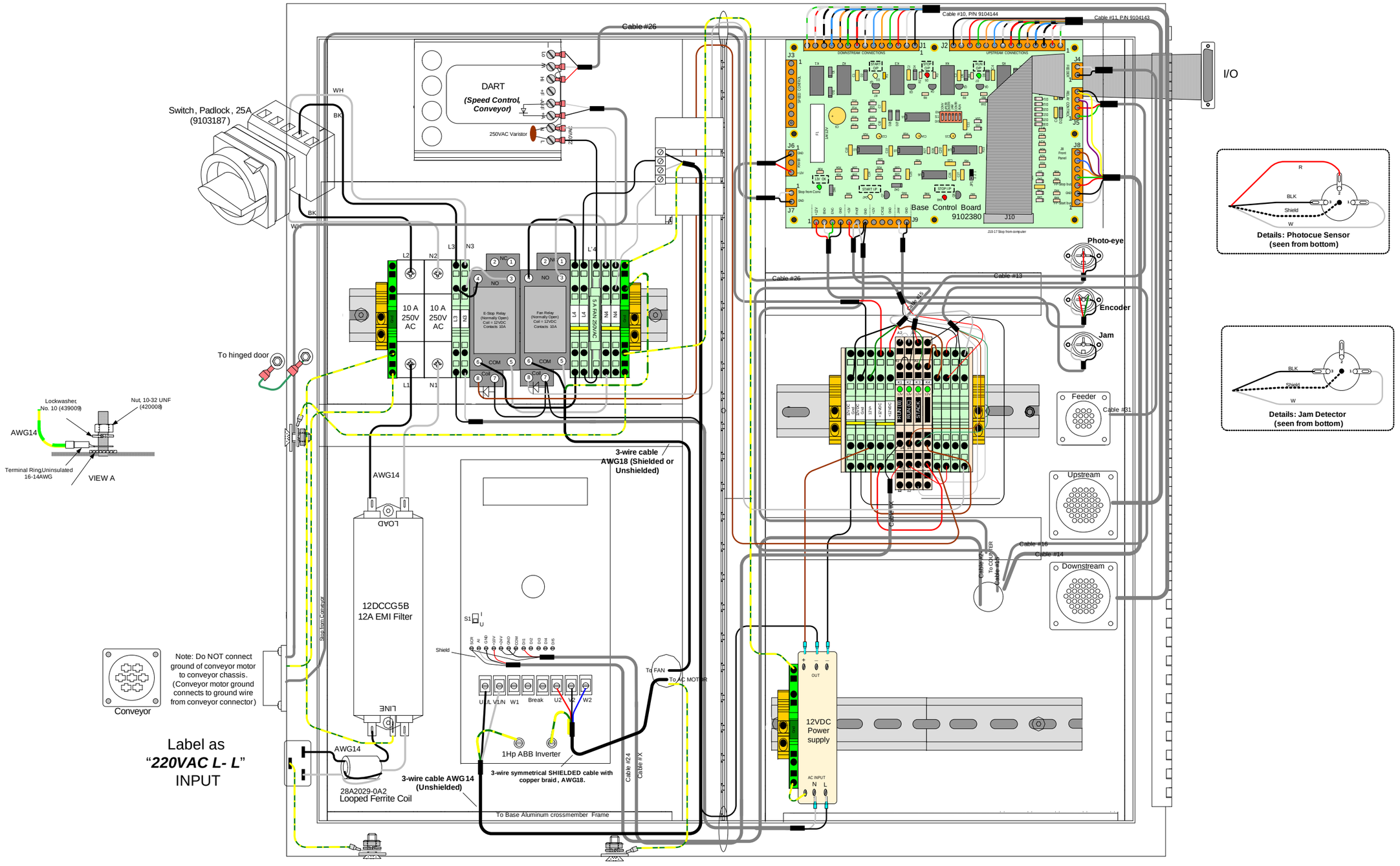


Figure B-2: BKMTS-C – Electrical Box, 220VAC Line-Line, Delta AC Controller

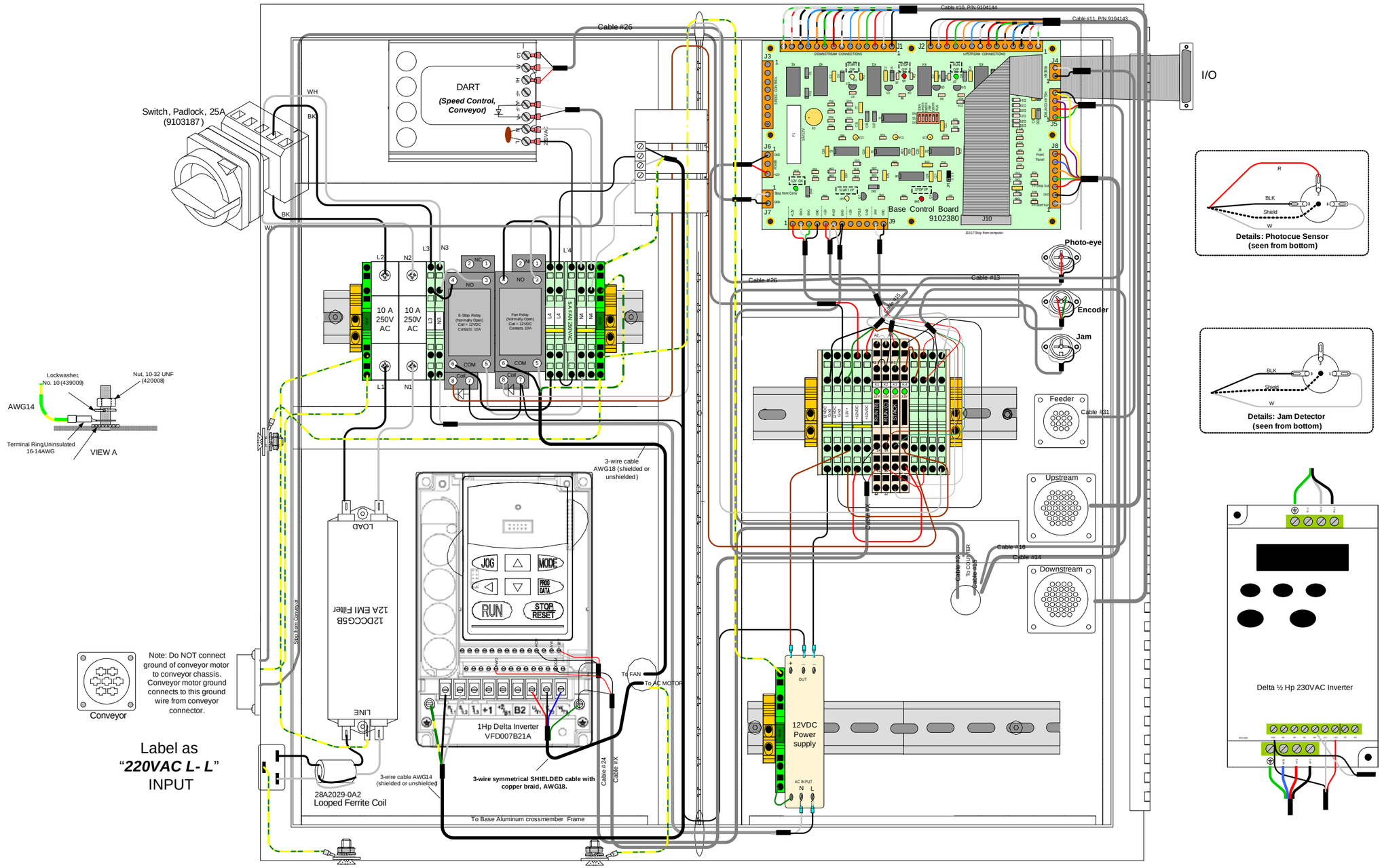


Figure B-3: BKMTS-C – Electrical Box, Divert Gate Wiring

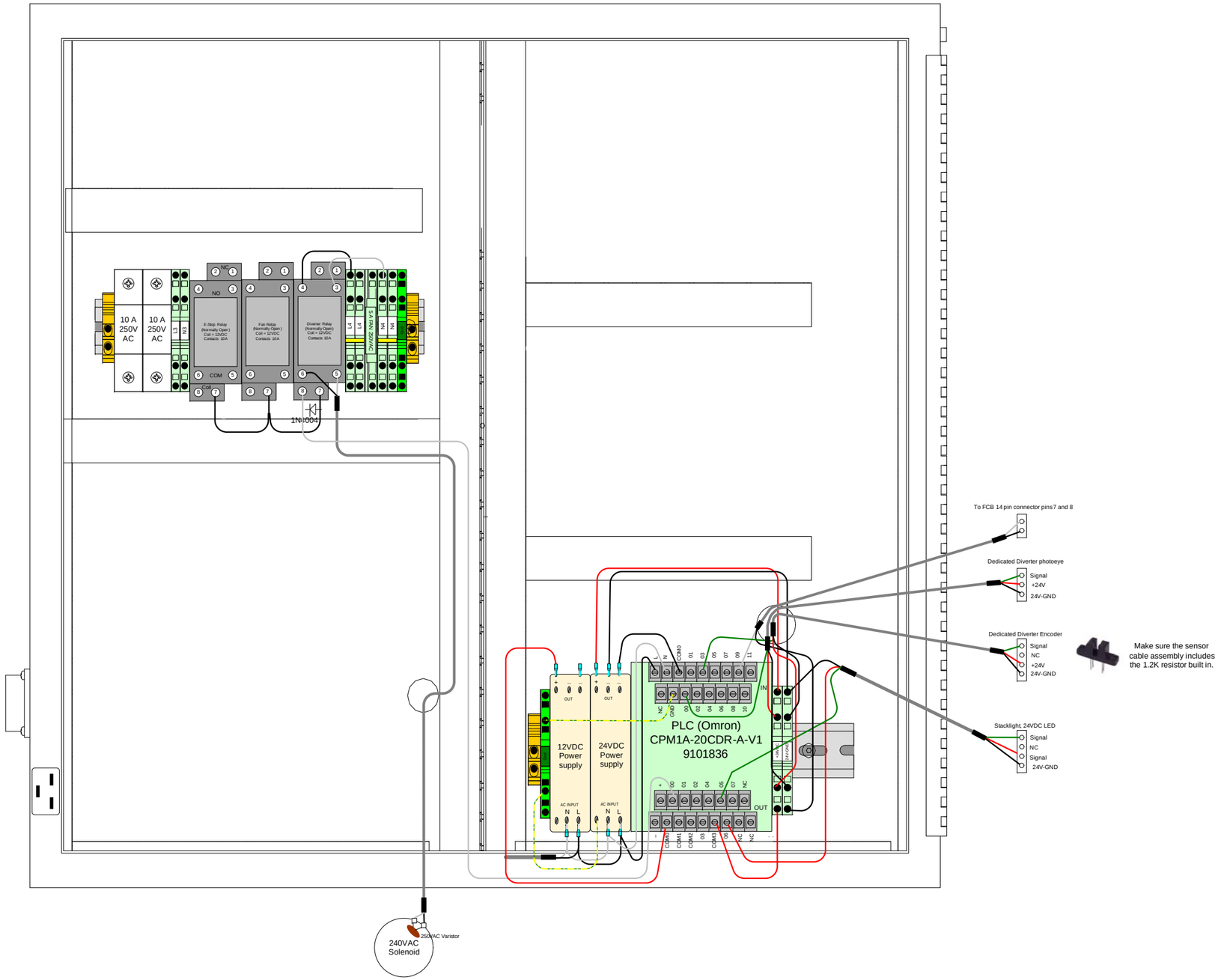


Figure B-4: BKMTS-C – Electrical Box, UV LED Cure Wiring

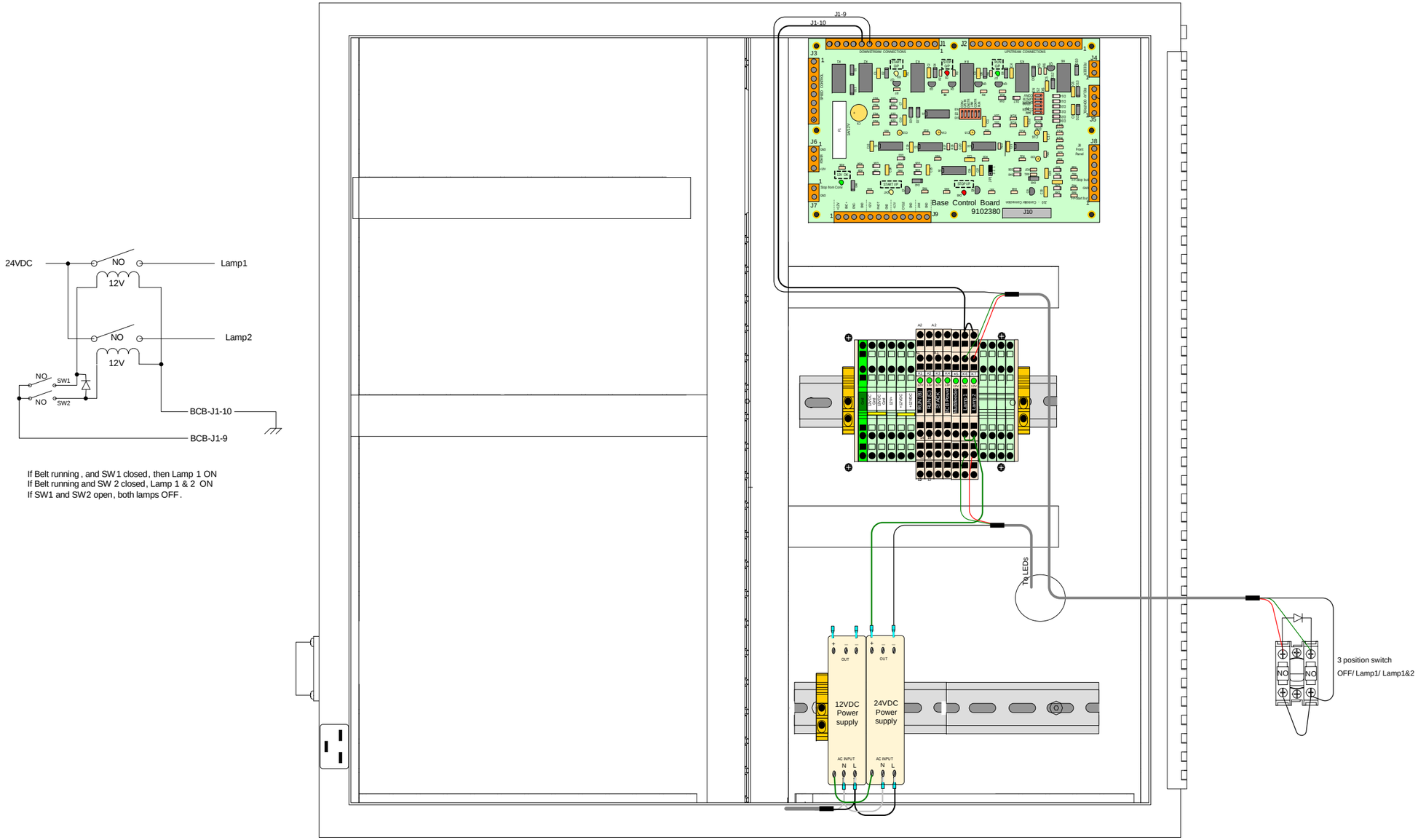
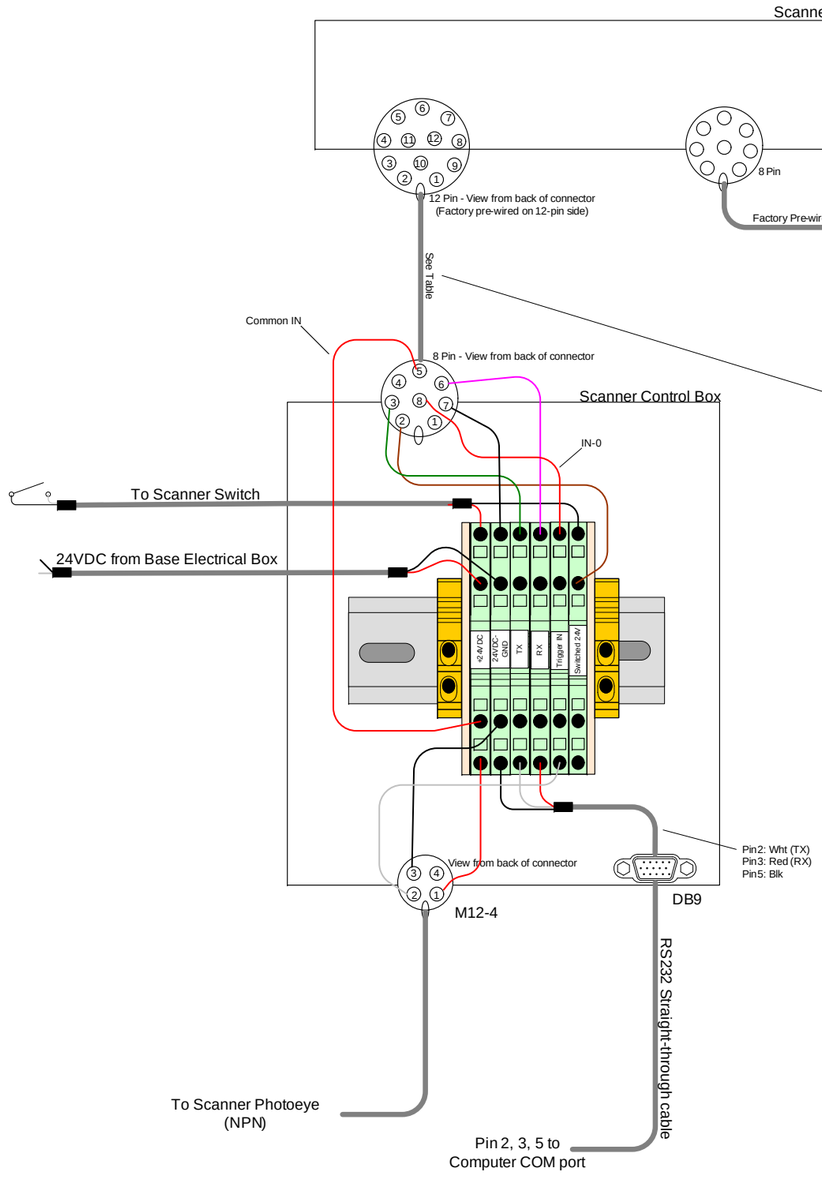


Figure B-5: BKMTS-C – Barcode Scanner Wiring



	8-pin	12-Pin		
NC	1	X		
Switched 24V	2	7	BRN	
TX (Pin2 of RS232)	3	2	GRN	
NC	4	X		
Common-IN	5	6	BLK	(For NPN photoeye, Common-IN to +24V)
RX(Pin3 of RS232)	6	3	Pink	
GND	7	8	BLU	
IN-0	8	10	RED	(For NPN photoeye, IN-0 to Trigger)

Figure B-6: BKMTS-C - Instrument Panel Wiring