

BK750 UV Curing Station User's Guide

Published by:

Buskro Ltd.

1738 Orangebrook Court, Unit #1

Pickering, ON, L1W 3G8

Canada

Tel.: (905) 839-6018

Fax: (905) 839-6023

All Rights Reserved. No part of this book may be used or reproduced in any form or by any means, electronic or mechanical, or stored in a database or retrieval system, without prior written permission of Buskro Ltd. except in case of brief quotations embodied in critical articles or reviews. Making copies of any part of this book for any purpose other than your own personal use is a violation of copyright laws.

Copyright © 2011, Buskro Ltd.

First Edition, 2003

Printed in Canada

This manual is sold as is, without warranty of any kind, either express or implied, respecting the contents of this manual, including but not limited to implied warranties for the manual's quality, performance, merchantability, or fitness for any particular purpose. Neither Buskro Ltd. nor its dealers or distributors shall be liable to the purchaser nor any other person or entity with respect to any liability, loss, or damage caused or alleged to be caused directly or indirectly by this manual.

Manual History

Version	Date	Description	ECO No.
1.0	14-Sep-03	Manual Released.	N/A
2.0	16-Mar-09	Base height changes and wiring modifications.	1140
3.0	08-Oct-09	Mitsubishi PLC and wiring modifications.	1279
3.0	11-Feb-11	Assembly updates according to production model.	1279

1.0	General Information	1-0
1.1	Description	1-1
1.2	Operating Safety	1-2
1.2.1	Ultraviolet Radiation.....	1-2
1.2.2	Microwave radiation	1-3
1.2.3	Radio Interference.....	1-3
1.2.4	Ozone	1-3
1.2.5	Temperature	1-4
1.2.6	High Voltage.....	1-4
1.3	BK750 System Features	1-5
1.3.1	High speed production	1-5
1.3.2	Buskro Inkjet Base compatibility	1-5
1.3.3	PLC controlled functions	1-5
1.3.4	Construction and Maintenance	1-6
1.3.5	UV curing quality considerations	1-6
1.4	Safety features.....	1-7
1.5	BK750 UV Curing Base Specifications.....	1-8
1.6	Fusion UV lamp system specifications.....	1-9
1.7	System drawings	1-10
1.7.1	BK750 UV curing base dimensions.....	1-13
2.0	BK750 UV Curing Base	2-0
2.1	Installation Instructions.....	2-1
2.1.1	Installation requirements.....	2-1
2.1.2	Unpacking the lamps.....	2-1
2.1.3	Mounting the lamps to the light shield assembly	2-3
2.2	Instrument Panel Functions	2-4
2.2.1	Main Power Switches	2-4
2.2.1.1	Padlock Switch	2-4
2.2.1.2	Main Switch Escutcheon	2-5
2.2.2	Machine function pushbuttons and knobs	2-6
2.2.2.1	START pushbutton (green)	2-6
2.2.2.2	STOP pushbutton (red).....	2-6
2.2.2.3	Production speed regulation dial (Speed control knob).....	2-7
2.2.2.4	RESET pushbutton	2-7
2.2.3	Light indicators	2-7
2.2.3.1	Error light (RED).....	2-7
2.2.3.2	Standby Lamp Indicator (AMBER).....	2-8
2.2.3.3	Lamp ON Indicator (GREEN).....	2-8
2.3	Upstream and Downstream Installation Instructions.....	2-9
2.3.1	Physical alignment of upstream/downstream equipment	2-9
2.3.2	Electrical Connection to Upstream/Downstream Equipment	2-9

2.4	Product Setup Instructions	2-10
2.4.1	To adjust the base speed for smooth product transfer	2-10
2.4.2	UV lamp position adjustment	2-10
2.5	Product Tracking.....	2-11
2.6	Operating the BK750 UV Curing Base	2-12
2.6.1	Powering the BK750 UV Curing Base	2-12
2.6.2	Starting the transport belt.....	2-13
2.6.3	Turning the power supply to Standby mode	2-13
2.6.4	Emergency STOP.....	2-14
2.6.5	Fault error	2-14
2.6.6	Outfeed Jam Error.....	2-14
2.6.7	Tracking Error.....	2-15
2.6.8	Lamp out error	2-15
2.7	Factors that influence production rate	2-16
3.0	Maintenance.....	3-0
3.1	Maintenance	3-1
3.1.1	Maintenance schedule	3-1
3.1.2	Removing lamp assembly from the UV curing base	3-2

Appendix A – Assembly Drawings

Appendix B – Electrical Drawings

1.1 Description

The Buskro BK750 UV Curing Station was designed to work inline with Buskro bases equipped with Aurora printheads. As UV light is required in order to cure the specially formulated inks, the BK750 is equipped with one or two UV curing lamps that provide the required energy to cure high resolution print at relatively high transport speeds. A light shield assembly (on which the two UV lamps are attached) is mounted on top of the transport base in order to minimize UV light leaks. In addition, two microwave detectors mounted in the proximity of the UV lamps immediately stop the transport and shut off the UV lamps in case microwave leaks are detected.

Given the high power requirements for the two lamps and the amount of energy generated, the system was designed for safe and reliable operation. A Programmable Logic Controller (PLC) provides all the logic functions needed for safe operation of the curing base. The PLC prevents the lamps from reaching full intensity when the transport base is stopped, turns off the lamps when doors are opened, detects outfeed jams, tracks the product inside the light shield assembly (thus detecting when a piece jams inside the light shield assembly), controls the front panel lights, and provides all the upstream and downstream signals required for the base to run inline with most Buskro systems.

All the above features, in addition to the manufacturing quality, innovative product design, and low maintenance requirements add up to an extremely functional UV Curing system capable of years of reliable and trouble free operation.

1.2 Operating Safety

The BK750 UV Curing Base was designed to operate safely. However, like most industrial equipment, this equipment can present worker safety problems if care is not taken to operate it correctly.

IT IS EXTREMELY IMPORTANT THAT ALL PERSONNEL USING THE UV CURING BASE BECOME FAMILIAR WITH THE SAFETY INFORMATION!

1.2.1 Ultraviolet Radiation

Ultraviolet radiation, which is emitted during normal operation of the UV Lamp System can be dangerous to the eyes and skin of personnel. It is for that reason that the BK750 comes equipped with a light shield. However, it is critical that all covers and doors are on. For example, it is important not to operate the system without the brush holder assembly mounted on the downstream door assembly or without the reflecting inlet mounted on the infeed side cover (Reference Appendix A, 9101506A and 9101507A). In addition, do not remove the protective bellows from the adjustable cover assembly (9101510A).

Be aware that if unsafe levels of UV radiation are allowed to escape during operation (due to removal of the above safety components of the UV light shield assembly), then all personnel in the vicinity of the lamps must wear goggles with UV certified lenses, gloves, and long-sleeved shirts. Protection is needed for direct and indirect exposure. Discomfort from excessive eye exposure to ultraviolet radiation typically occurs about six hours after exposure. If eye pain is experienced after possible exposure to the UV light, a doctor must be consulted.

Note: Avoid looking directly at light. Ensure all covers are on and doors are closed during operation. It is unsafe to operate without adequate shielding around the units to prevent UV light leakage which can be harmful to skin and eyes.

1.2.2 Microwave radiation

The UV lamp systems are powered by high energy RF microwave power, identical in form with the energy used in home microwave ovens. This form of energy can be dangerous if misused or inadequately shielded. The shielding provided by the UV lamp is adequate as long as the lamp and the screen at the bottom of the lamp are intact. Any rip or large hole in the screen may lead to microwave radiation leakage in dangerous amounts. The power to the lamp is interlocked to shut off if the level of microwave radiation leakage exceeds 5 mW/cm^2 . The lamp system should never be turned on if the lamp housing and screen are not intact, or if the microwave leak detector and interlock are not functioning.

1.2.3 Radio Interference

The UV lamps operate at a fundamental frequency of 2.45 GHz. The unit may cause interference with some local area networks (LANs) that operate at the same frequency.

1.2.4 Ozone

Ozone is a naturally forming molecule created when oxygen interacts with ultraviolet light. It has a pungent odor and at high concentrations it can cause discomfort. In cases where the levels are sufficiently high, ozone can be dangerous. Although the UV lamps generate less ozone than a conventional arc lamp (about 0.02 parts per million or five times below the acceptable level for continuous exposure), the exhaust must still be connected to the outdoors.

1.2.5 Temperature

Since surface temperatures of the lamp during normal operation may exceed 120°F, the tabletop and the light shield assembly may also be hot. Before servicing the lamp, allow the system to run in STANDBY so that the lamp blower continues to run. The bulb will cool completely in less than one minute. The lamp bulb must be handled with cotton or surgical gloves at all times to avoid fingerprints from being etched into the quartz.

1.2.6 High Voltage

The insulated electrical cable carries power at 3900 Volts from the power supply located inside the UV curing base to the lamp. High voltages are exposed inside the power supply, which should never be operated without its cover in place.

WARNING: **Never touch the power supply/lamp cable connections while the system is ON or STANDBY. A faulty magnetron may cause 7000 Volts to appear on connector pins and may cause injury. Never troubleshoot the power supply without first disconnecting all external power and discharging the high capacitors with an insulated screwdriver.**

The power supply/lamp cables are high quality cables rated at 10,000 Volts.

1.3 BK750 System Features

1.3.1 High speed production

Although the curing time is a function of material substrate and print resolution, the BK750 UV Curing Station is capable of curing high-resolution UV print at relatively high production speeds on almost all substrates. The unit has been solidly constructed with electrical and mechanical components capable of delivering reliable, full-day production.

1.3.2 Buskro Inkjet Base compatibility

The BK750 is fully compatible with standard Buskro Inkjet Bases. Connection to an inkjet base is made through an upstream or downstream connector (located at the in-feed and out-feed of the base) providing all interface functions. Two more functions were added to the standard upstream downstream functions: stack and divert. A stack or divert signal generated by the upstream inkjet base, is transferred to the downstream at the appropriate moment, when the product exits the curing base.

1.3.3 PLC controlled functions

In order to add high reliability and safety to the system, all of the UV Curing Base functions are controlled by a PLC. The PLC:

1. Monitors the encoder signal generated when the transport base is on.
2. Monitors the upstream and downstream doors of the light shield assembly.
3. Controls the UV power supply interlocks.
4. Enables the upstream inkjet only when the lamps reach the minimum power level of 70% required for the ink to be cured.
5. Shuts off the lamps when the emergency button is pressed or errors are detected.
6. Delays the stop function on the BK750 to cure wet pieces while stopping the upstream system
7. Monitors every piece that enters the BK750 in order to detect missing pieces that can possibly result in a jam. This reduces the chance of starting a fire.

1.3.4 Construction and Maintenance

All mechanical and electrical system components in the UV Curing base have been designed for long-lasting and extensive use. Included, is a full safety package with feedback through the operator display, monitored by the PLC and a series of interlocking sensors. The system has been designed to facilitate maintenance, when required. The lamps, light shield assembly, transport assembly including conveying belts and the tabletops are all easily removable for complete mechanical and electrical component access. Little preventive maintenance is required, including UV lamp filter replacement, bulb, reflector, and screen cleaning. All controls are easily accessible on the front panel and all buttons and lights are labeled for the operator's convenience.

1.3.5 UV curing quality considerations

The UV Curing base has been specifically designed for the Aurora ink jetting process using UV inks and as such, incorporates a number of unique features to optimize print quality. Particular attention was paid to the light shield design that minimizes the product floating that can be caused by the lamp cooling blowers installed inside the lamp assembly. Two blowers (connected to the vacuum tray located underneath the tabletop), provides enough vacuum to the perforated transport belts (which transport the product) to create positive adhesion to the base and greatly reduce the jams inside the light shield.

1.4 Safety features

The UV curing station has been designed for safe operation. During normal operation, the UV lamps emit extremely intense ultraviolet radiation in the 200-400 nanometer spectrum. This is needed to cure the specially formulated UV ink. At the same time, microwave energy at 2450 MHz generated by the magnetrons is used to energize the UV lamps. Proper operation of the UV lamps require adequate cooling of the magnetron and the UV bulb, therefore an exhaust blower was installed inside the base. The exhaust blower keeps the heat level around the bulb and magnetron within the operating limits and at the same time exhausts the ozone generated by the UV light. At full power, the Fusion UV lamp system generates less ozone than conventional arc lamps, but when operated at low power or cycling the lamps generate a higher concentration of ozone that must be exhausted to the outdoors. For the UV lamp to operate properly, the power supply must generate voltages in the range of 5,000 Volts DC. The high voltage lines are high quality cables, rated at 10,000 Volts. The unique tracking system detects pieces that jam inside the base, shutting the lamps off the instant a tracking error is detected, reducing the potential fire hazard due to the high amount of energy generated by the lamps.

Some of the safety features include:

- Light screens that prevent the UV light leaks outside the curing station.
- Microwave radiation leak detectors that shut down the lamps if microwave radiation leaks are being detected outside the lamp perimeter.
- Special PLC logic that combines the encoder signal and the lamp interlocks to prevent the lamps from operating when the transport belts do not run.
Therefore, the belts cannot be damaged by the high-energy lamp output.
- Any opened lamp shield door triggers a fault that shuts down the power to the lamp immediately and stops the base. A fault error is displayed.
- An emergency STOP button conveniently located on the light shield assembly.
- Product tracking capability in order to detect jams inside the base.
- Outfeed photoeye jam detector that stops the base whenever a jam occurs.

1.5 BK750 UV Curing Base Specifications

Table 1-1: *BK750 UV Curing Base System Specifications*

Product handling		
Minimum	3.0" x 5.0"	76 mm x 127 mm
Maximum	16.0" x 17.0"	406 mm x 432mm
Thickness	Single Sheet to 1 1/8"	Up to 28 mm
Physical		
Overall Length	58.00"	1473 mm
Overall Height	56" to 60.5"	1422 to 1537 mm
Overall Width	33.75"	857 mm
Leveling Foot Length	47.00"	1194 mm
Distance Edge/Exhaust Duct	18.00"	457mm
Tabletop Height	32.6" to 37.0"	828 to 940 mm
Distance Ground Level/Exhaust Duct	19.50"	495 mm
Leveling Foot Width	27.50"	699 mm
Base Cabinet Width	31.50"	800 mm
Weight Dual Lamp System (Crated)	907 lbs	411 kg
Weight Single Lamp System (Crated)	812.5 lbs	368.5 kg
Production Rate		
Belt Speed	28 to 600 ft/min	0.14 to 3.00 m/s
Electrical Requirements		
Line Voltage	200 – 240 VAC, 1 phase	
Line Current	50 A	
Frequency	50 or 60 Hz (Location dependent)	
Base Motor	1/2 Hp, 180 VDC at 2.8A	1/3 H.P. DC controller
Blower Motor	1 ½ Hp, 208 – 230 VAC, 3450 rpm	
Interface Specifications		
JP1	Power Cable (220 VAC, 50A), NEMA 6-50P 2 pole, straight blade. Receptacle NEMA 6-50R	
JB1	Downstream Connector (23-57 CPC)	
JB2	Conveyor Connector (23-7 CPC), downstream	
JB3	Conveyor Connector (23-7 CPC), upstream	
JB4	Upstream Connector (23-7 CPC)	

1.6 Fusion UV lamp system specifications

Table 1-2: *Fusion UV Lamp system specifications*

System		
Ambient Operation Temperature	32-113°F	0-45°C
Relative Humidity	30-95%	
Physical - Power Supply P300MT		
Length	15.75"	400 mm
Height	7.07"	197.5 mm
Width	13.9"	353 mm
Weight	68 lbs	30.9 Kg
Physical - UV Lamp		
Length	10.25"	260.4 mm
Height	19.9"	505.5 mm
Width	6.6"	167.6 mm
Weight	26.5 lbs	12.0 Kg
Physical - RF Detector		
Length	4.28"	108 mm
Height	5.4"	137 mm
Width	2.94"	75 mm

1.7 System drawings

Figure 1-1: *BK750 UV Curing Base System Components*

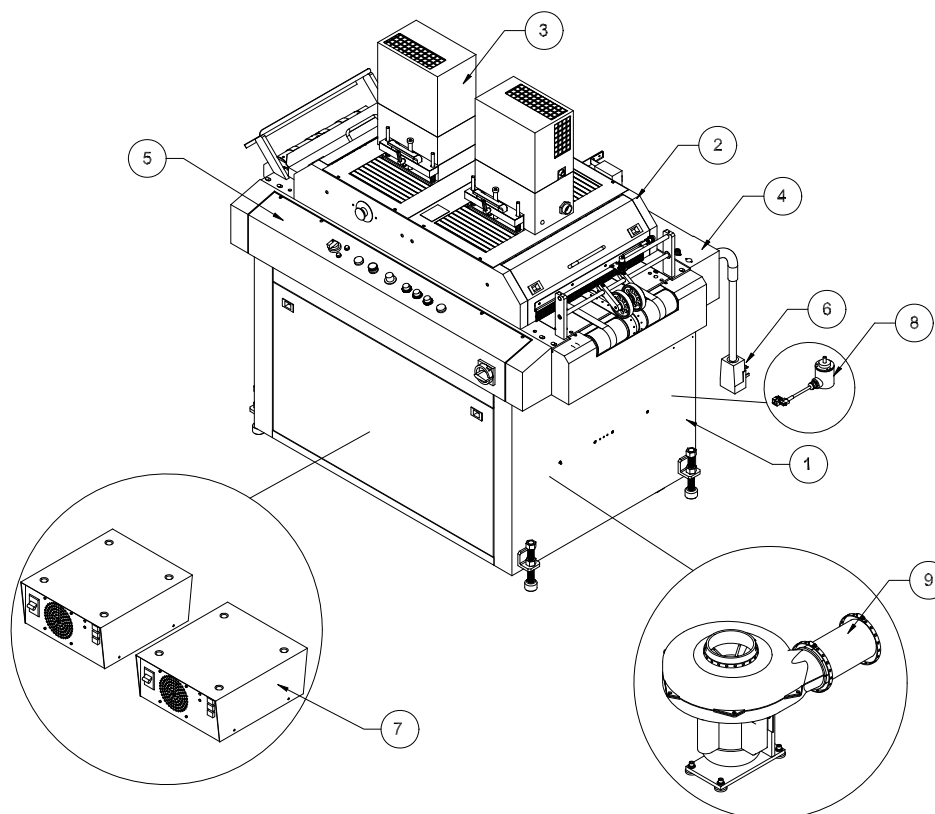


Table 1-3: *BK750 UV Curing Base System Components*

Item	Description	Reference
1	UV Curing Base North America (UVCBNA-2), UK (UVCBUK-2)	
2	Light Shield Assembly, Dual (9101509A)	
3	Lamp Assembly	
4	Rear Bracket Assembly (9101842A)	
5	Front Bracket Assembly (9101809A)	
6	Power Cable, 10', 6 AWG	
7	UV Power Supply	
8	Programmable Encoder Assembly	
9	Exhaust Blower Assembly 50 or 60 Hz	

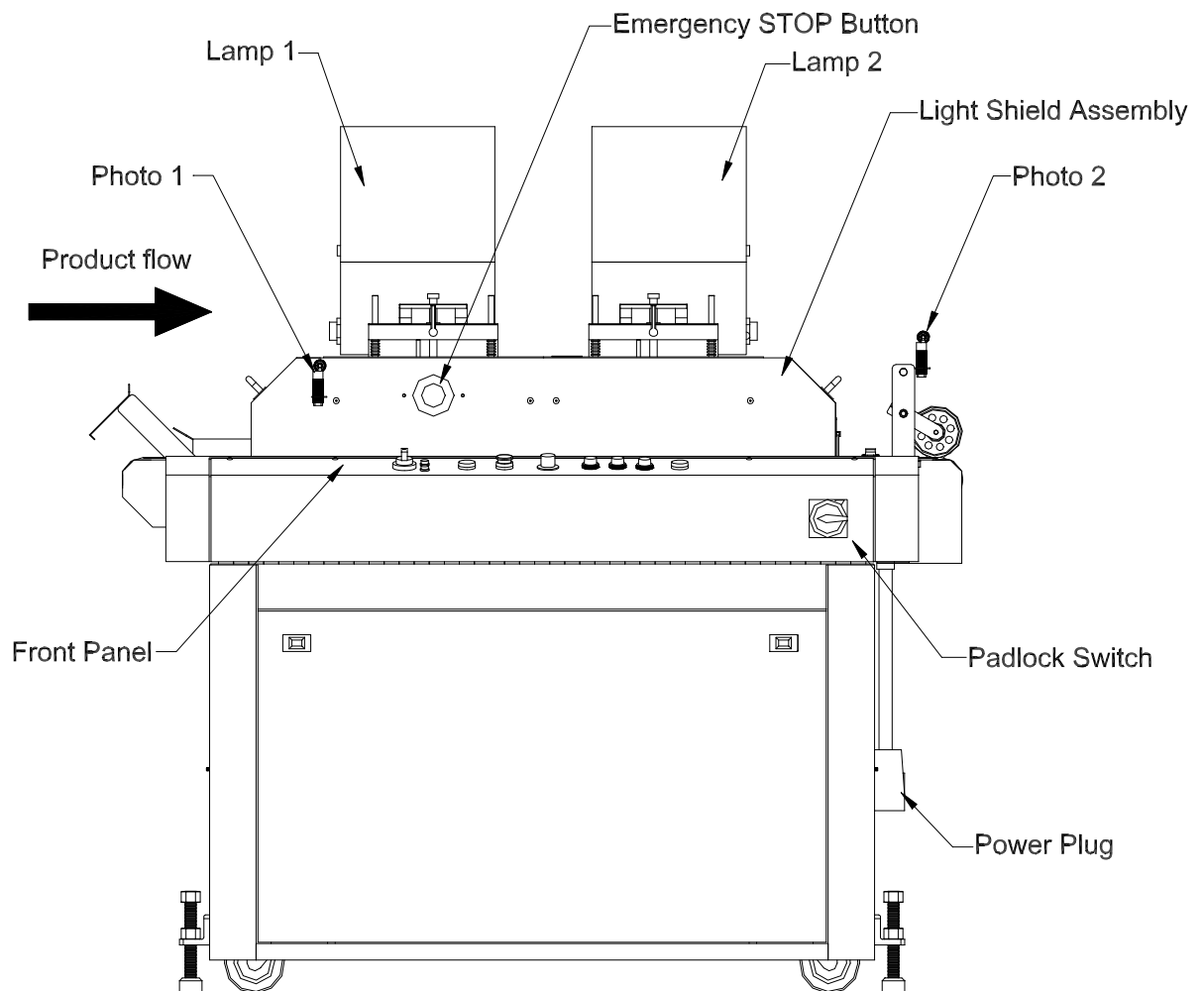
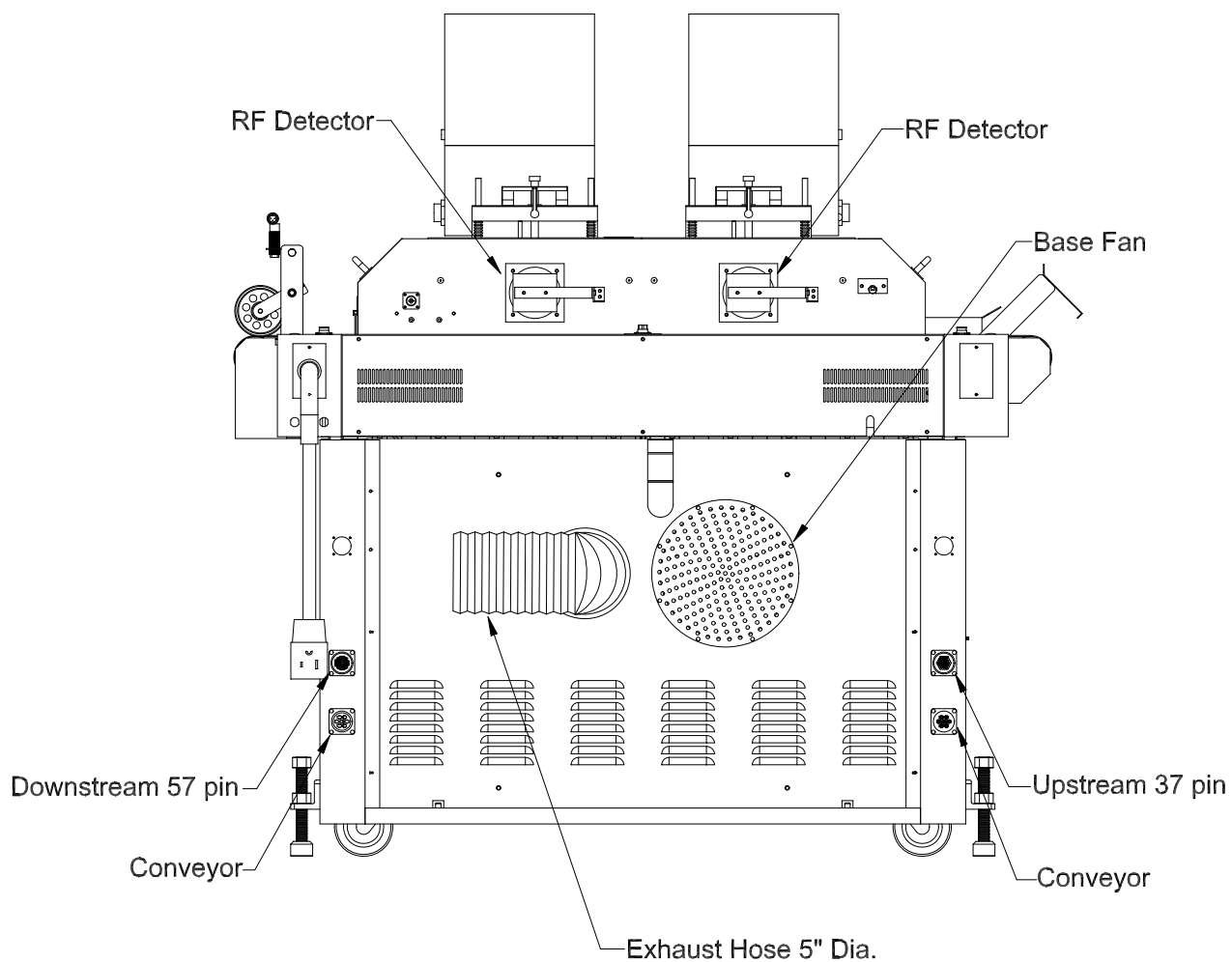
Figure 1-2: *BK750 UV Curing Base System Components – Front View*

Figure 1-3: *BK750 UV Curing Base System Components – Rear View*

1.7.1 BK750 UV curing base dimensions

Figure 1-4: *BK750 UV Curing Base Dimensions - Top View.*

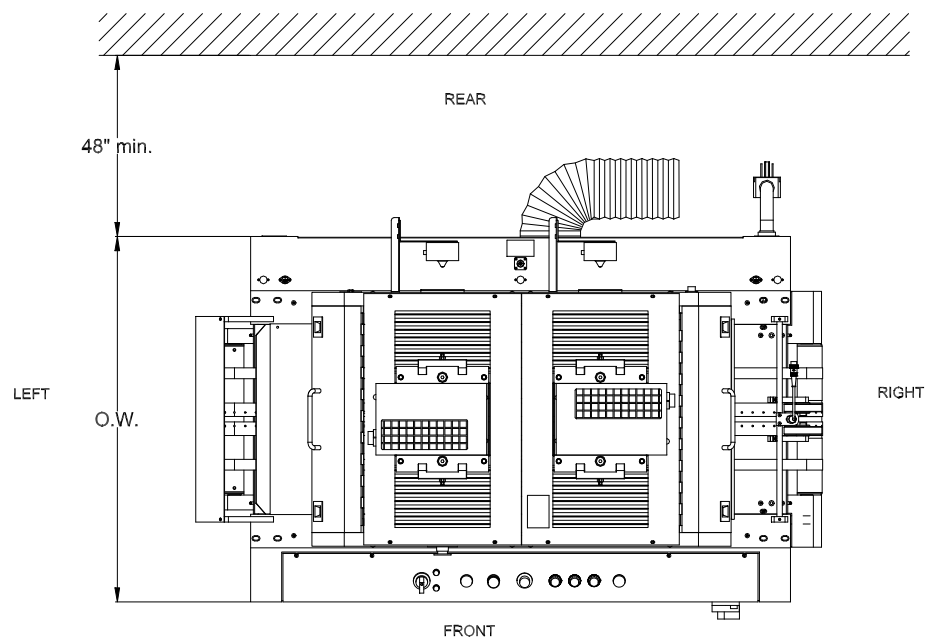


Figure 1-5: *BK750 UV Curing Base Dimensions - Front View.*

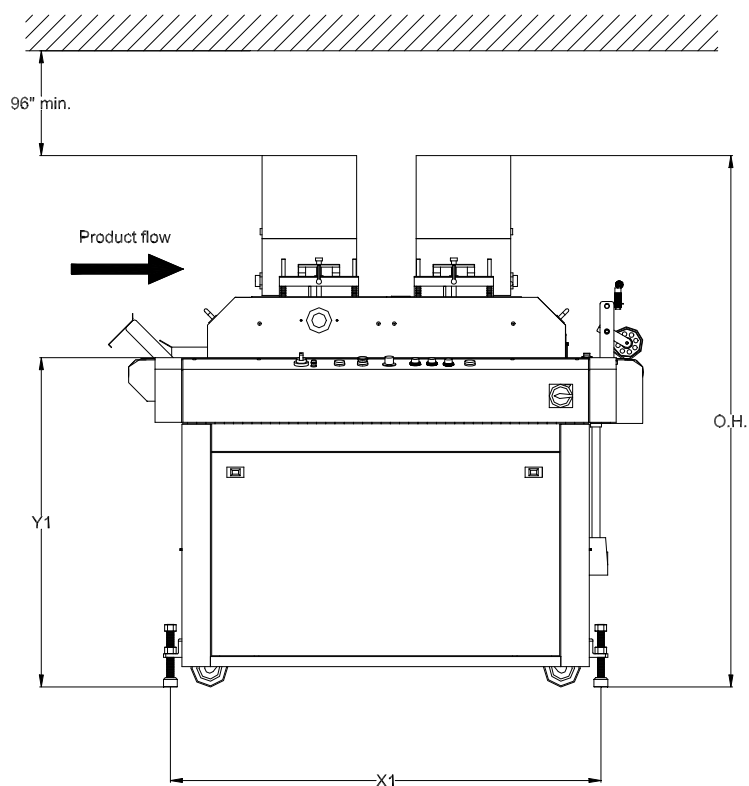


Figure 1-6: *BK750 UV Curing Base Dimensions - Right View.*

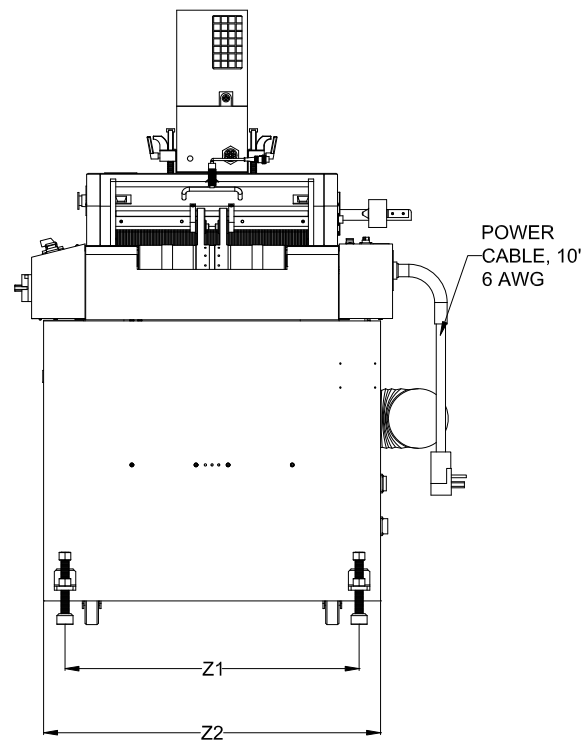


Figure 1-7: *BK750 UV Curing Base Dimensions - Rear View.*

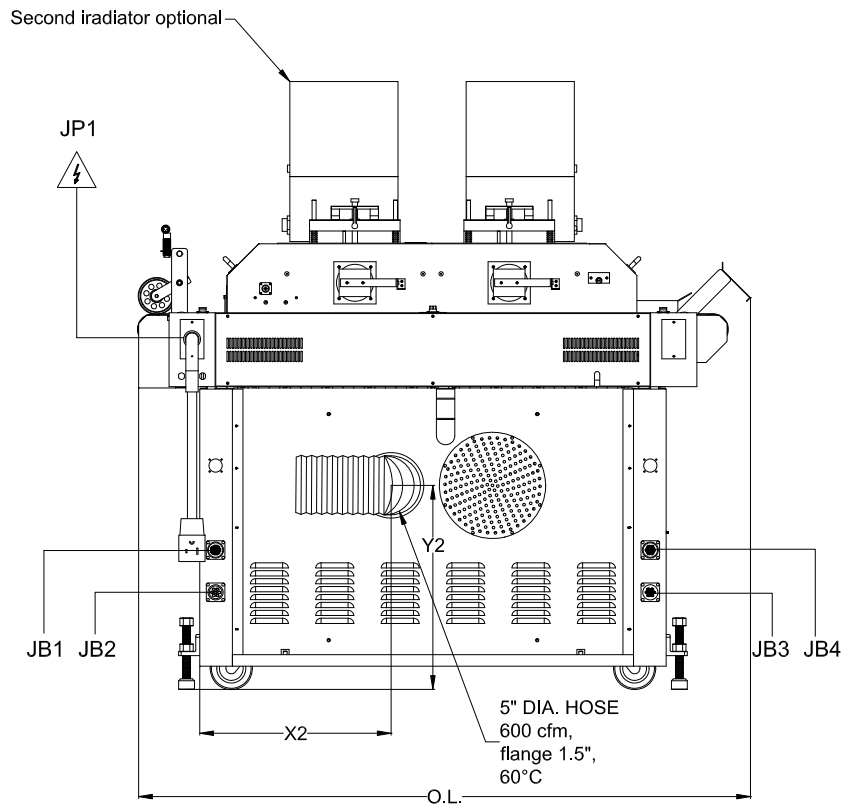


Table 1-4: *BK750 UV Curing Base Dimensions*

Symbol	Description	Dimensions	
O.W.	Overall Width	33.75"	857 mm
O.L.	Overall Length	58.00"	1473 mm
O.H.	Overall Height	56.0" to 60.5"	1422 to 1537 mm
X1	Leveling Foot Length	47.00"	119422 mm
X2	Distance, Edge/Exhaust Duct	18.00"	457 mm
Y1	Tabletop Height	32.60 to 37.00"	828 to 940 mm
Y2	Distance, Ground Level/Exhaust Duct	19.50"	495 mm
Z1	Leveling Foot Width	27.50"	699 mm
Z2	Base Cabinet Width	31.50"	800 mm

2.1 Installation Instructions

During installation, special care has to be paid to the lamps as they are particularly vulnerable to dust, dirt, metal chips and RF screen damage. They are shipped with a protective cardboard covering over the screen which should not be removed until just prior to installation. Save the packing materials in case the lamps are returned for service.

2.1.1 Installation requirements

The installation requirements for the UV Curing Base are:

1. A clearance of at least 48 inches should be allowed from the back of the system to the wall and at least 96 inches from the lamp top surface to the ceiling. See Figure 1-4 and Figure 1-5.
2. A 5-inch diameter hose should be attached to the back of the system and should be connected to the outdoors.
3. The curing base requires a 220 VAC single-phase power line rated 50 A.

2.1.2 Unpacking the lamps

During testing at the factory, the lamps are unpacked and mounted to the UV curing station light shield. For convenience, the lamp bracket assembly is not removed from the lamp. The two lever handles and the two shoulder bolts are removed from the assembly and packed separately in a plastic bag.

The lamps are packed individually in cardboard boxes together with the following items:

- Two lever handles and two shoulder bolts packed in the same plastic bag
- Fusion manual
- Fusion warranty and conformity cards



Figure 2-1: *Lamp package*

The lamp screen is protected by a cardboard covering, which has to be removed prior to the installation. Attention should be paid to the RF screen as it can be pinched easily, see

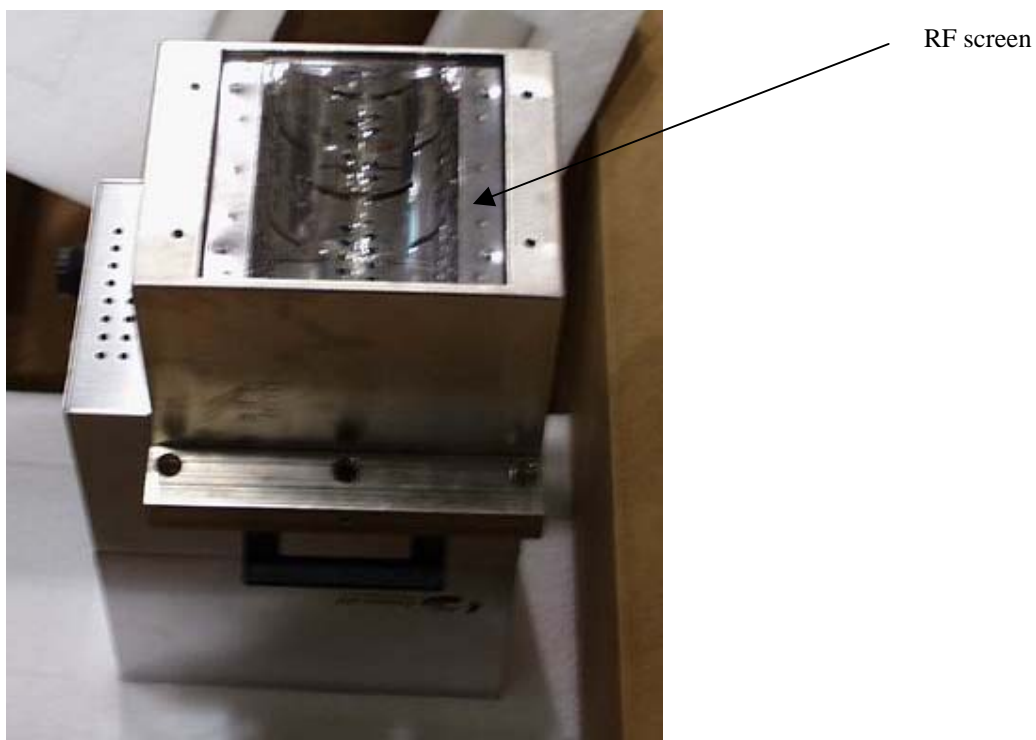


Figure 2-2: *RF screen*

2.1.3 Mounting the lamps to the light shield assembly

In order to mount the lamp assembly to the UV curing base, follow the procedure below:

1. Remove the lamp from the packing box and the RF screen protective cardboard.
Try to avoid all direct contact with the RF screen, located at the bottom surface of the lamp, as it punctures easily. Do not apply pressure to the screen.
2. Hold the lamp from the two handles and place it on the light shield assembly aligning the four holes on the lamp bracket with the four dowel pins attached to the lamp guide assembly (9101511A).
3. Insert the two shoulder bolts 3/8-16 x 4" (Figure 2-3).
4. Use a 1/4" Allen key to tighten the shoulder bolts.
5. Insert the two lever handles, adjust the lamp height, and tighten the lock levers.

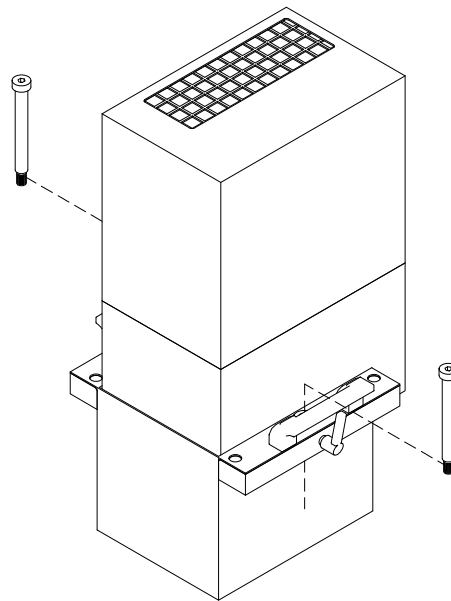


Figure 2-3: *Inserting the two shoulder bolts attaching the lamp assembly to the lamp guide*

2.2 Instrument Panel Functions

The BK750 UV Curing base is equipped with a centrally located instrument panel that displays all the necessary controls to operate the base. The controls can be subdivided into three distinct classes of functions:

- **Main Power Switches**
- **Machine Function Pushbuttons and Rotary Knobs**
- **Light indicators**

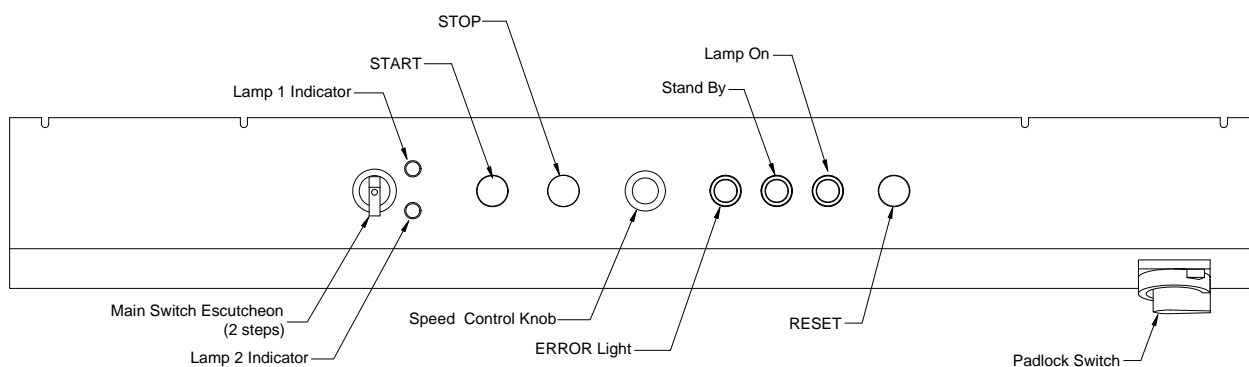


Figure 2-4: *Instrument Control Panel*

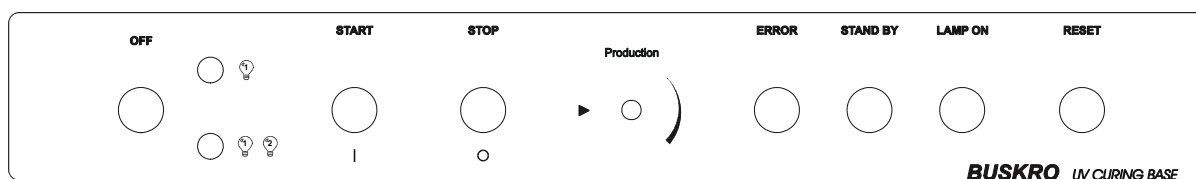
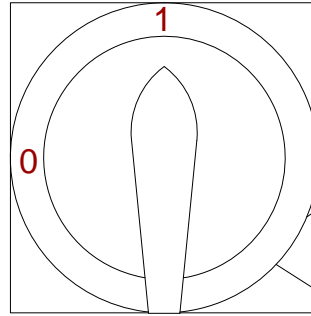


Figure 2-5: *Instrument Control Panel Silk Screen*

2.2.1 Main Power Switches

2.2.1.1 Padlock Switch

The **Padlock Switch**, located on the far right of the instrument panel (Figure 2-4) is a safety feature in itself. It prevents the front panel from being opened when the switch is in the lock (1) position (Figure 2-6). When in the unlock (0) position, the door can be opened but the switch cuts the power flow to the power distributor so that the system cannot be operated with the front panel open. This greatly reduces the risk of electric shock.



1 – lock - ON
2 – unlock - OFF

Figure 2-6: *Padlock Switch – ON/OFF positions*

2.2.1.2 Main Switch Escutcheon

The **Main Switch Escutcheon** is a two-step switch located to the far left of the instrument panel. When in the vertical position, the switch is OFF and the terminal blocks located at the rear of the base are not powered. The switch has to be turned clockwise to position 1 in order to supply power to the base and to the master power supply that controls the first lamp. If two lamps are required, the switch has to be turned clockwise to position 2.

Note : If the switch was turned first to position 1, in order to start the second lamp, the operator must turn the switch OFF first and then switch it to position 2.

When switched to position 1:

- 220 VAC is supplied to the machine terminal blocks
- The PLC is powered
- The exhaust and vacuum blowers are turned ON
- Master UV Fusion power supply is powered
- Lamp 1 front panel indicator illuminates

When switched to position 2:

- 220 VAC is supplied to the machine terminal blocks
- The PLC is powered
- The exhaust and vacuum blowers are turned ON
- Both master and slave UV Fusion power supplies are powered
- Both lamp 1 and 2 indicators illuminate

2.2.2 Machine function pushbuttons and knobs

The pushbuttons and knobs located on the front panel allow the user to control some of the machine parameters such as speed, start, stop and lamp reset. The **START** (green) and **STOP** (red) buttons allow for starting and stopping the system.

2.2.2.1 *START pushbutton (green)*

When the START pushbutton is pressed, the machine will cycle providing that the following conditions have been met:

- The padlock switch is in ON (Lock) position.
- The main switch escutcheon is switched ON to the first or second step.
- The machine STOP button is not pressed or locked.
- The EMERGENCY STOP button is not pressed or locked.
- The start is enabled by the downstream system. In case no downstream system is present (no interlock cable attached), a jumper plug must be connected (9102055A).
- All doors are closed and no fault error is detected by the PLC. Fault (red) light is off.

2.2.2.2 *STOP pushbutton (red)*

By pressing the STOP pushbutton, operation of the system is interrupted after a certain delay. At the same time, the lamps are set in reset mode. The delay allows the products that are already on the curing base to be cured and exit the transport. The instant the stop button is pressed, the upstream inkjet is disabled to stop the upstream system from feeding more product. The reset lamp (yellow) and lamp on indicator (green) will also flash once, indicating the stop button was pressed.

Note: The STOP pushbutton has a locking feature. When engaged, it will prevent the system from cycling. Should this condition occur, twist and release the locking mechanism to allow base operation. If the stop button stays locked for more than 30 seconds, the fault indicator (red) illuminates indicating the stop circuit is open.

2.2.2.3 *Production speed regulation dial (Speed control knob)*

The production speed regulation dial is the knob located to the right of the start and stop pushbuttons. This dial permits machine speed adjustment. A clockwise rotation of the speed dial corresponds to a speed increase. Conversely, a counter-clockwise rotation results in a speed decrease. The speed range is from zero to a linear belt speed of 600 ft/min (3.05 m/s).

2.2.2.4 *RESET pushbutton*

Located to the far right of the instrument panel, the reset pushbutton function is to turn the lamps from off mode, to standby mode. When in standby mode, the lamps only need a few seconds to reach the 70% power level required to cure the UV ink

2.2.3 Light indicators

2.2.3.1 *Error light (RED)*

If the red *Error Light* illuminates, one of the following errors is occurring:

- **Fault Error**
- **Outfeed Jam Error**
- **Tracking error**
- **Stop circuit open**

A **Fault Error** occurs when one of the light shield side doors are opened or the emergency stop button is pressed. The transport base is stopped immediately, the upstream is disabled and both UV power supplies are switched to standby mode the instant the fault is detected. The exhaust blower continues to run to cool down the UV lamps. The Error Light stays solid, until the side doors are closed or the emergency button is disengaged.

An **Outfeed Jam Error** occurs when the outfeed jam photoeye stays blocked for more than 6 seconds, due to a downstream paper jam. The lamp flashes, once per second and stops flashing when the jam is cleared. Once the outfeed error is triggered and the system is restarted, expect the first pieces exiting the transport to be uncured due to the fact that

the lamps need a few seconds to reach the minimum power level (70%) required to cure the UV ink.

A **Tracking Error** occurs when a piece which enters the UV curing base detected by the upstream photoeye, is not detected by the downstream photoeye at the appropriate moment. The error lamp flashes rapidly (5 times per second) indicating a possible jam inside the curing base.

Note: If a Tracking Error occurs, open both side doors of the light shield and ensure that all pieces inside the light shield are removed prior to restarting the system. Paper jams can be a potential fire hazard so care must be taken to remove all material.

The **Stop Circuit Open Error** occurs when the stop circuit of the system, which is a normally closed circuit, stays open for more than 30 seconds. This can occur when the start of the UV curing base is disabled by the downstream system, when the jumper plug is not attached to the downstream connector in the absence of the downstream system, or when the stop button on the front panel is locked. The error light stays solid until the condition generating the error is cleared.

2.2.3.2 Standby Lamp Indicator (AMBER)

The **Standby Lamp** indicates that the Fusion power supply is in standby mode. When in this mode, the UV lamp needs less time to get to full power than when powered for the first time. The base must be running in order for the lamps to be allowed to reach full power.

2.2.3.3 Lamp ON Indicator (GREEN)

The **Lamp On** indicates that the UV lamp is operating at full power. The transport base must be on and the reset button must be pressed momentarily in order for the lamps to turn on. Once the UV lamps operate at full power, the upstream system is enabled.

2.3 Upstream and Downstream Installation Instructions

The upstream and downstream installation instructions comprise all the information necessary to properly integrate the UV Curing Base with upstream and downstream equipment such as inkjet systems. Essentially there are two steps to successful installation. They are proper alignment of the base with the upstream and downstream equipment for smooth product flow, and integration of the electrical system to coordinate the control of all equipment embodied in the system. Note that the proper interconnect cable must be used.

2.3.1 Physical alignment of upstream/downstream equipment

These instructions describe the physical alignment of the curing system with upstream or downstream equipment:

1. Place the BK750 next to the upstream/downstream equipment. Try to align the centers of the systems together and move the systems as close as possible to each other (approximately ¼" or 5 mm from the infeed or outfeed rollers).
2. Raise the curing system by individually turning each of the four mounting legs in a clockwise manner using a 1-1/8" wrench. Ensure that the system is level and that the tabletop of the BK750 is equal to or slightly below the tabletop of the upstream equipment and equal to or slightly higher than the tabletop of the downstream equipment. Tighten the locking nuts on the legs when the system is correctly aligned.

2.3.2 Electrical Connection to Upstream/Downstream Equipment

In order to connect upstream and downstream equipment electrically to the BK750, the universal interconnect cable (P/N 9102803A) is required. The cable must be plugged into the proper receptacles on the BK750 and the upstream/downstream equipment. Note that the upstream and downstream bases connected to the BK750 may require a toggle switch or a dip switch to be set before another unit is interconnected with it. Reference each individual base manual for more details.

2.4 Product Setup Instructions

The product setup instructions encompass all those instructions necessary to ensure smooth product flow between the upstream inkjet and the BK750.

2.4.1 To adjust the base speed for smooth product transfer

In order to prevent product jamming at the entry of the BK750 transport, it is important that the BK750 speed be slightly faster than the upstream inkjet. As a result, set the BK750 transport base so that it is slightly faster than the transport speed of the upstream equipment. In addition, ensure that the gap between the product pieces on the transport base is between 1 to 2 inches (25 to 50 mm). If the gap is too small, it may result in a higher risk of product jamming.

2.4.2 UV lamp position adjustment

Proper adjustment of the UV lamp position with respect to the printed text will ensure high quality print by fully curing the UV inks. This will directly influence the maximum transport speed at which a certain job can be completed. The UV lamp has to be positioned so that the bulb is right on top of the middle axes of the printed text so that the print would absorb the maximum amount of energy available.

To align the lamp to the print, follow the steps below:

- Feed one product and observe the print location with respect to the center of the lamp.
- Locate the two handles on the lamp bracket assembly and manually push or pull the lamp so that the center axis of the lamp aligns with the center axis of the print. See Figure 2-7.

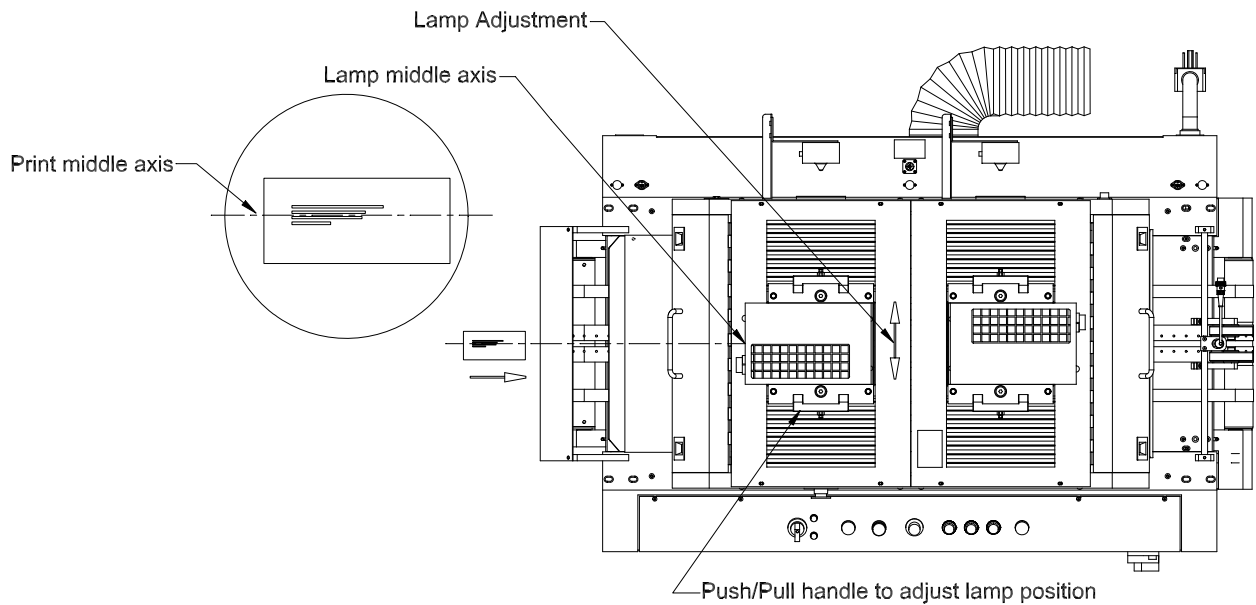


Figure 2-7: *UV Lamp and Print Alignment*

2.5 Product Tracking

The product tracking feature was implemented in order to prevent jammed pieces from building up in the light shield assembly and catching fire from the lamps. This is done by tracking each individual piece traveling through the light shield. If a piece that enters the light shield does not exit at the proper time, a tracking error will occur which will set the lamps to standby mode and stop the transport base. Although it is highly unlikely to have an open flame due to the high amount of air flow from the blowers, this feature adds a second level of safety to the system.

Note: If a Tracking Error occurs, open both side doors of the light shield and ensure that all pieces inside the light shield are removed prior to restarting the system. Paper jams can be a potential fire hazard so care must be taken to remove all material.

2.6 Operating the BK750 UV Curing Base

2.6.1 Powering the BK750 UV Curing Base

Before operating the main power switch escutcheon (Figure 2-4), ensure that the main power plug is properly attached to the power receptacle and that the padlock switch is on. Note that the BK750 comes in two main models, a 60 Hz system used mainly in North America (BK750-FUS1NA or BK750-FUS2NA) and a 50 Hz system use for most other locations (BK750-FUS1UK and BK750-FUS2UK).

In the case of dual lamp systems, evaluate the required number of lamps for a given job before operating the main switch. Once the switch is set to the first position (for one lamp) and the lamp is enabled, it is not possible to turn on the second lamp by switching to the second position. Instead, the switch must be turned off and then set to the second position (two lamp position). This is because both power supplies for the lamps are interlocked and the slave power supply is initiated by the master supply.

- To activate the first lamp only, rotate the main switch escutcheon clockwise to the first position (Figure 2-8). Note that lamp 1 is the lamp closest to the upstream equipment. The single lamp indicator will illuminate and stay on as long as the switch remains in the first position. The PLC and the blowers will be on at this point.

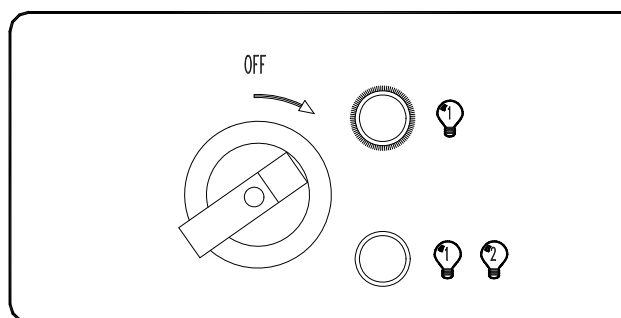


Figure 2-8: *Turning on the UV base enabling first lamp only*

- To activate both lamps, rotate the main switch escutcheon clockwise to the second position from the Off position. The dual lamp indicator illuminates and will stay on as long as the switch remains in the second position. The PLC, the exhaust and vacuum blowers are turned on at this point.

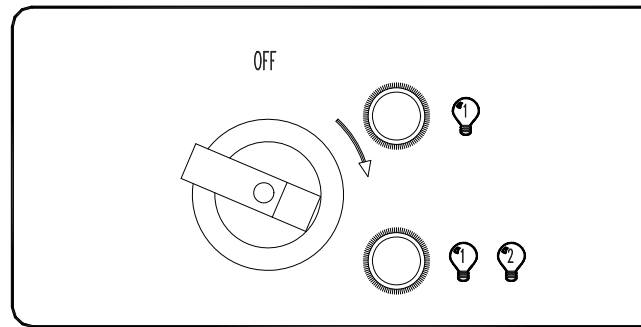


Figure 2-9: *Turning on the UV base enabling both lamps*

2.6.2 Starting the transport belt

Once the base is powered, to start the transport base, simply press the start pushbutton. Once the transport is on, the programmable encoder, mounted on the motor shaft generates a pulse signal. As long as the signal is detected by the PLC input, the belt is running and the lamps can reach full power. The moment the signal is not detected, the PLC shuts down both lamps, preventing the transport belts from overheating.

2.6.3 Turning the power supply to Standby mode

Press the reset pushbutton to turn the power supply to standby mode. The standby light will illuminate when this mode is reached. Note that the lamps will not reach full power unless the transport belts are running. The instant the green light indicator illuminates, the yellow standby light will turn off.

2.6.4 Emergency STOP

The red emergency stop button is located on the light shield assembly for easy access. It has a larger diameter than the regular stop button. Once pressed, the base will stop immediately (as opposed to the delayed stop for the instrument panel stop button), the upstream is disabled, and the lamps are turned off. The blower keeps on running to cool the lamps.

When the emergency stop button is pressed, it will immediately lock in place. As a result, it must be turned counterclockwise in order to unlock it before the base can be started again. The red fault light will remain solid until the button is unlocked.

2.6.5 Fault error

The red ERROR indicator illuminates any time a fault error is detected. A fault error is triggered if any of the side doors of the light shield are opened or the emergency button is pressed. The red light remains solid until the error is cleared. Once the fault is triggered, the transport base is stopped, the lamps are turned off, and the upstream disabled. The blowers remain on to cool down the lamps.

Note: When the start button is pressed after a fault is detected and cleared, the transport starts, but it will take a few seconds for the lamps to reach the power level needed to cure the ink. As a result, the pieces that were in the curing process when the fault was detected would not be properly cured.

2.6.6 Outfeed Jam Error

If the outfeed jam photoeye stays blocked for more than 6 seconds, a jam error is triggered. The base stops, the lamps turn to reset mode, and the fault red light indicator flashes once per second. Once the jam is cleared and the photoeye is unblocked, the error resets and the transport base can be started. The lamps will get to full power mode in approximately 10 seconds after the start button is pressed.

In some situations, the outfeed jam photoeye can be falsely triggered. This can occur for large pieces traveling at low transport speeds. For this particular situation, a toggle switch in the front panel enclosure can be turned off to disable the outfeed jam detection. The switch is located on the left side of the base inside the enclosure. As a result, the padlock switch must be unlocked and the front panel door opened in order to access this switch. Note that this toggle switch will not disable the downstream photoeye, only the jam detection.

2.6.7 Tracking Error

The UV curing base is equipped with two sensors used mainly for tracking purposes. The first one (used to detect the leading edge of the product) is mounted inside the light shield assembly as shown in Figure 1-2. The second one is mounted on the outfeed roller assembly downstream and detects the piece exiting the base. Every piece that enters the UV curing base is expected to exit after a certain number of encoder pulses. If the piece is delayed and gets to the second photoeye late, a tracking error is triggered. At this point, the PLC turns the lamps to standby mode, transport stops, and the ERROR lamp flashes rapidly (4 times per second). When this occurs, the operator must open the side doors and check for jammed pieces inside the light shield assembly. It is very important to remove all pieces that jam inside the base to avoid potential fire hazards.

2.6.8 Lamp out error

This is an internal UV power supply error. When the error is triggered, the lamps cannot reach the 70% power level and all three buttons on the power supply flash. The lamp out error LED on the UV power supply illuminates. There is no error indication on the front panel of the UV curing base except that the lamps would not reach full power. Check Fusion's Installation, operation and maintenance manual for troubleshooting procedures.

2.7 Factors that influence production rate

The UV ink does not dry unless exposed to a certain quantity of UV light. The curing speed limits the maximum transport speed that can be reached at which the ink can be completely cured. As a result, this affects the production rate. The following factors influence the curing rate:

- **Print resolution.** The higher the print resolution (DPI), the more energy required to fully cure the print. For the print to absorb more energy, the surface speed must be reduced.
- **Surface speed.** The higher the product speed under the lamp, the less time the print is exposed to the UV light. If the print is not fully cured, the print can smear.
- **Substrate.** A non-porous substrate would not allow the ink to bleed into the surface. The amount of energy needed for a text printed on a non-porous surface in order to fully cure the ink is greater than the amount of energy needed in case of a porous surface (assuming that the print resolution and surface speed are the same in both situations). As the lamp intensity is a fixed parameter, in order to increase the amount of energy absorbed by the ink, the surface speed must be reduced.
- **Lamp position with regards to the print.** The position of the lamp should be properly set as described in **Section 2.4.2**.
- **The amount of energy available.** Use two lamps to double the available amount of energy.

With this in mind, the following can be considered to increase the production rate:

- Align the lamp with the text
- Choose a lower DPI rather than high DPI if acceptable
- Minimize the gap between pieces to keep the transport speed as low as possible
- Whenever is possible, use two lamps to increase the available amount of energy

3.1 Maintenance

3.1.1 Maintenance schedule

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

Table 3-1: *Maintenance Schedule Table*

Period	Maintenance Function
Daily	Open the light assembly side doors and remove all the paper inside. Wipe the table surface clean of paper, dust, and other accumulated debris. Do not touch the lamp screen as the fine screen wires can be easily damaged. Never apply pressure to the screen. Examine the table belts and rollers for wear. Replace if necessary.
Every 500 hours of operation	Remove the lamp and clean the UV bulb, the reflector and screen as described in the UV Fusion Operation and maintenance manual. For details on how to remove the lamp assembly from the light shield assembly, see Section 3.1.2 .
Annually	Remove the tabletop and examine all mechanical drive components including belts, shafts, bearings, and rollers for wear. Replace if necessary.

3.1.2 Removing lamp assembly from the UV curing base

In order to remove the lamp assembly from the UV curing base, follow the procedure below:

1. Locate the two shoulder bolts 3/8-16 x 4" (PN 417197) that mount the lamp assembly to the lamp guide assembly.
2. Use a 1/4" Allen key to loosen the two shoulder bolts (Figure 3-1).

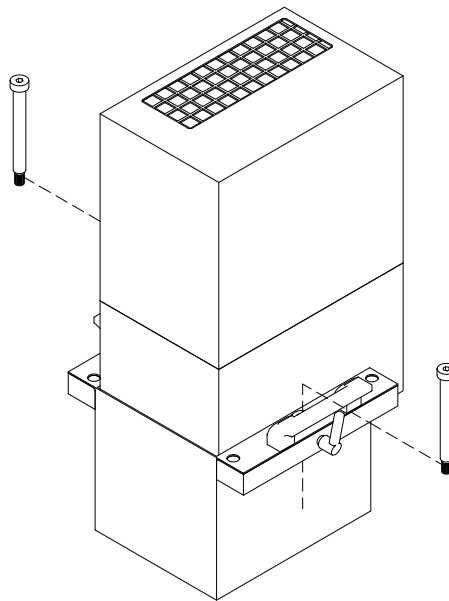


Figure 3-1: *Removing the shoulder bolts attaching the lamp assembly to the lamp guide*

3. Use the two handles to remove the lamp from the UV Curing base. Try to avoid all direct contact with the RF screen, located at the bottom surface of the lamp, as it punctures easily. Do not apply pressure to the screen.

Assembly Drawings

Appendix A

List of Tables

L Table A-1: (BK750-1LP), System, Curing Station, Single Lamp.....	A-1
Table A-2: (BK750-2LP), System, BK750 Curing Station, Dual Lamps	A-3
Table A-3: (9105646A), Base, BK750 UV Curing	A-5
Table A-4: (9105664A), Cable, Fan, Caravel, Tubeaxial.....	A-6
Table A-5: (9105689A), Cable, Conveyor Receptacle.....	A-7
Table A-6: (9105687A), Cable, Programmable Encoder/PLC.....	A-8
Table A-7: (9105682A), Cable, Upstream, BK750	A-9
Table A-8: (614116A), Cable, Interlock, UV.....	A-10
Table A-9: (9105683A), Cable, Interlock Panel Mount	A-11
Table A-10: (614139A), Cable, UV Master/Slave Interconnect	A-12
Table A-11: (9105680A), Cable, Master Interlock, BK750.....	A-13
Table A-12: (614530A), Cable, Conveyor Interconnect	A-14
Table A-13: (9100409A), Lamp Assembly, UV I300MB	A-15
Table A-14: (9100722A), Cable, Jam/Cycle/Photo Receptacle	A-16
Table A-15: (9100727A), Photocue Assembly.....	A-17
Table A-16: (9105685A), Cable, Downstream Receptacle.....	A-18
Table A-17: (9100829A), Blower Assembly, 40 CFM	A-19
Table A-18: (9101038A), Take-Up Roller Assembly	A-20
Table A-19: (9101298A), Cable, Proximity Sensor, Interlock	A-21
Table A-20: (9101492A), Mount Slide Assembly.....	A-22
Table A-21: (9105606A), Instrument Panel Assembly, BK750.....	A-23
Table A-22: (9101502A), Light Shield Assembly, Single	A-25
Table A-23: (9101505A), Crossbar Assembly	A-27
Table A-24: (9101506A), Upstream Door Assembly.....	A-28
Table A-25: (9101507A), Downstream Door Assembly	A-29
Table A-26: (9101509A), Light Shield Assembly, Dual.....	A-30
Table A-27: (9101510A), Adjustable Cover Assembly	A-32
Table A-28: (9101511A), Lamp Guide Assembly	A-33
Table A-29: (9101512A), Lamp Bracket Assembly, UV I300MB	A-34
Table A-30: (9101518A), Support Frame Assembly.....	A-35
Table A-31: (9101585A), Side Support Assembly - Left.....	A-36
Table A-32: (9101586A), Side Support Assembly, Right.....	A-37
Table A-33: (9101705A), Encoder Assembly, Programmable.....	A-38
Table A-34: (9101789A), Brush Holder Assembly.....	A-39
Table A-35: (9101807A), Rear Cover Assembly, BK750.....	A-40
Table A-36: (9105637A), Front Panel Assembly, BK750	A-41
Table A-37: (9105628A), Rear Panel Assembly, BK750.....	A-43
Table A-38: (9101845A), Cable, Main Power, 230 VAC, 50 A	A-45
Table A-39: (9105642A), UV Base Cabinet Assembly, NA.....	A-46

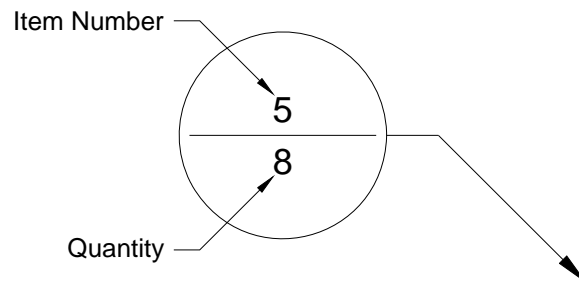
Table A-40: 9104637RA, Inline AC Motor Assembly, Right.....	A-48
Table A-41: (9101876A), Fan Assembly, Caravel Tubeaxial, 230 VAC.....	A-49
Table A-42: (9101880A), Outfeed Roller Assembly, Downstream	A-50
Table A-43: (9102055A), Plug, Jumper, 23-57	A-51
Table A-44: (9102122A), Cable, RF Detector, Slave.....	A-52
Table A-45: (9105607A), Tabletop Assembly, BK750.....	A-53
Table A-46: (9102230A), Tabletop Assembly, Side, BK750.....	A-55
Table A-47: (9102243A), Cable, RF Detector, Master	A-56
Table A-48: (9105528A), Kit, Sled Strap, V Shape	A-57
Table A-49: (9105596A), Blower Assembly, Exhaust, 50 /60 Hz	A-58
Table A-50: (9105635A), Terminal Block Assembly, Rear, BK750	A-59
Table A-51: (9105636A), Terminal Block Assembly, Front, BK750	A-60

List of Figures

Figure A-1: (BK750-1LP), System, Curing Station, Single Lamp.....	A-2
Figure A-2: (BK750 – 2LP), System, BK750 Curing Station, Dual Lamps	A-4
Figure A-3: (9105646A), Base, BK750 UV Curing.....	A-5
Figure A-4: (9105664A), Cable, Fan, Caravel Tubeaxial	A-6
Figure A-5: (9105689A), Cable, Conveyor Receptacle	A-7
Figure A-6: (9105687A), Cable, Programmable Encoder/PLC.....	A-8
Figure A-7: (9105682A), Cable, Upstream, BK750.....	A-9
Figure A-8: (614116A), Cable, Interlock, UV.....	A-10
Figure A-9: (9105683A), Cable, Interlock Panel Mount	A-11
Figure A-10: (614139A), Cable, UV Master/Slave Interconnect.....	A-12
Figure A-11: (9105680A), Cable, Master Interlock, BK750.....	A-13
Figure A-12: (614530A), Cable, Conveyor Interconnect	A-14
Figure A-13: (9100409A), Lamp Assembly, UV I300MB.....	A-15
Figure A-14: (9100722A), Cable, Jam/Cycle/Photo Receptacle.....	A-16
Figure A-15: (9100727A), Photocue Assembly	A-17
Figure A-16: (9105685A), Cable, Downstream Receptacle.....	A-18
Figure A-17: (9100829A), Blower Assembly, 40 CFM	A-19
Figure A-18: (9101038A), Take-Up Roller Assembly	A-20
Figure A-19: (9101298A), Cable, Proximity Sensor, Interlock	A-21
Figure A-20: (9101492A), Mount Slide Assembly	A-22
Figure A-21: (9105606A), Instrument Panel Assembly, BK750	A-24
Figure A-22: (9101502A), Light Shield Assembly, Single	A-26
Figure A-23: (9101505A), Crossbar Assembly.....	A-27
Figure A-24: (9101506A), Upstream Door Assembly	A-28
Figure A-25: (9101507A), Downstream Door Assembly.....	A-29
Figure A-26: (9101509A), Light Shield Assembly, Dual	A-31
Figure A-27: (9101510A), Adjustable Cover Assembly	A-32
Figure A-28: (9101511A), Lamp Guide Assembly	A-33
Figure A-29: (9101512A), Lamp Bracket Assembly, UV I300MB	A-34
Figure A-30: (9101518A), Support Frame Assembly	A-35
Figure A-31: (9101585A), Side Support Assembly - Left	A-36

Figure A-32: (9101586A), Side Support Assembly, Right	A-37
Figure A-33: (9101705A), Encoder Assembly, Programmable	A-38
Figure A-34: (9101789A), Brush Holder Assembly	A-39
Figure A-35: (9101807A), Rear Cover Assembly, BK750	A-40
Figure A-36: (9105637A), Front Panel Assembly, BK750	A-42
Figure A-37: (9105628A), Rear Panel Assembly, BK750	A-44
Figure A-38: (9101845A), Cable, Main Power, 230 VAC, 50 A.....	A-45
Figure A-39: (9105642A), UV Base Cabinet Assembly	A-47
Figure A-40: 9104637RA, Inline AC Motor Assembly, Right	A-48
Figure A-41: (9101876A), Fan Assembly, Caravel Tubeaxial, 230 VAC	A-49
Figure A-42: (9101880A), Outfeed Roller Assembly, Downstream.....	A-50
Figure A-43: (9102055A), Plug, Jumper, 23-57	A-51
Figure A-44: (9102122A), Cable, RF Detector, Slave	A-52
Figure A-45: (9105607A), Tabletop Assembly, BK750	A-54
Figure A-46: (9102230A), Tabletop Assembly, Side, BK750	A-55
Figure A-47: (9102243A), Cable, RF Detector, Master	A-56
Figure A-48: (9105528A), Kit, Sled Strap, V Shape.....	A-57
Figure A-49: (9105596A), Blower Assembly, Exhaust, 50/60 Hz.....	A-58
Figure A-50: (9105635A), Terminal Block Assembly, Rear, BK750.....	A-59
Figure A-51: (9105636A), Terminal Block Assembly, Front, BK750.....	A-60

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.

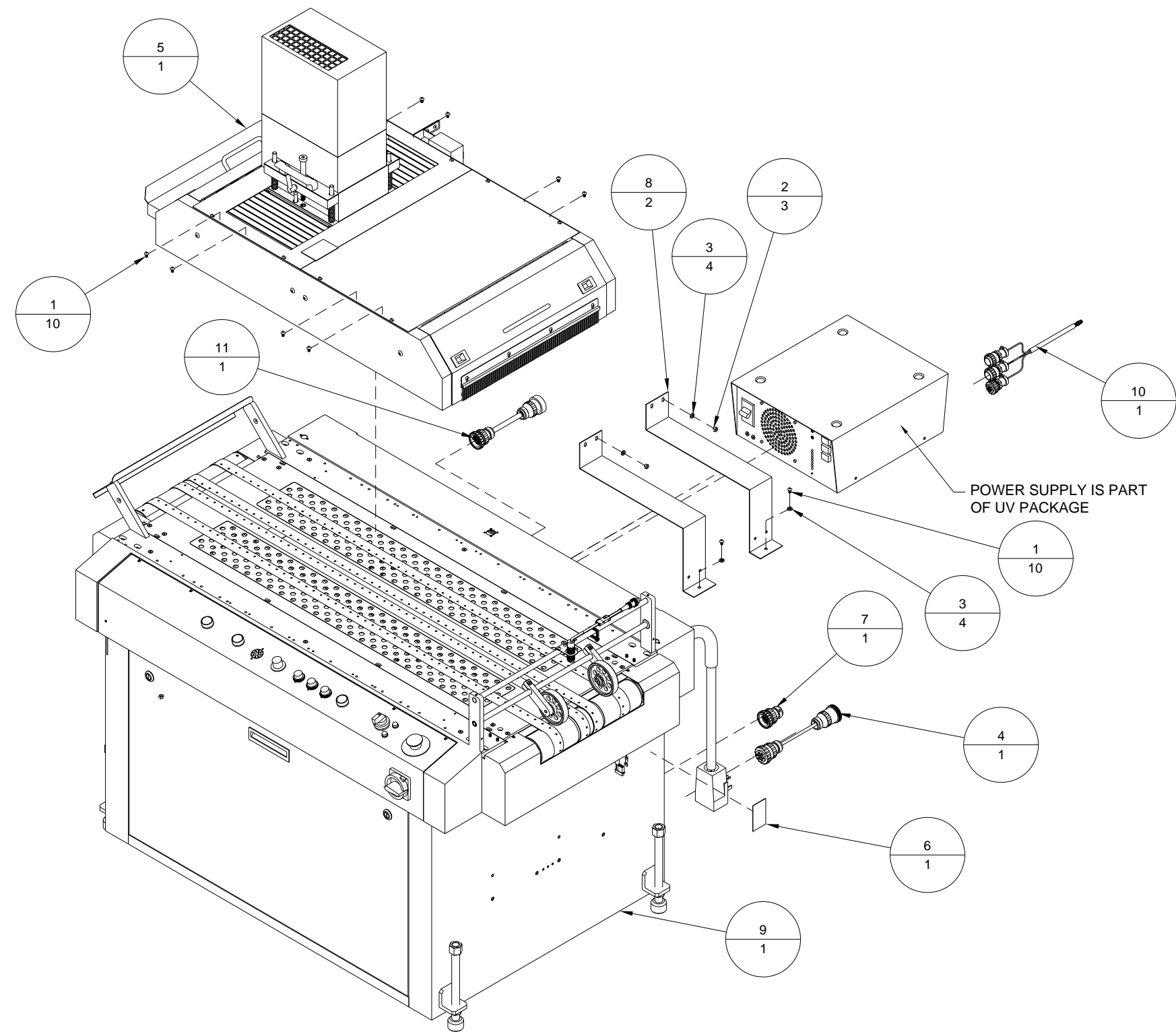
Reference:

This column indicates the page location for sub-assemblies.

Table A-1: (BK750-1LP), System, Curing Station, Single Lamp

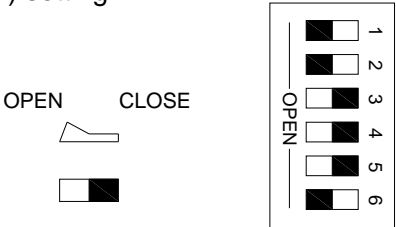
Item	Part Number	Quantity	Description	Reference
1	405520	10	Screw, BHCS, 1/4-20 UNC, 3/8"	
2	420010	3	Nut, 1/4-20 UNC	
3	439010	4	Lockwasher, 1/4" I.D.	
4	614530A	1	Cable, Conveyor Interconnect	Page A-14
5	9101502A	1	Light Shield Assembly - Single	Page A-26
6	9101918	1	Label, Warning Disconnect	
7	9102055A	1	Plug, Jumper, 23-57	Page A-51
8	9104792	2	Bracket, UV Power Supply	
9	9105646A	1	Base, BK750 UV Curing	
10	9105680A	1	Cable, Master Interlock, BK750	Page A-13
11	BK-CAB-UNI	1	Cable, Universal Interconnect	

Figure A-1: (BK750-1LP), System, Curing Station, Single Lamp



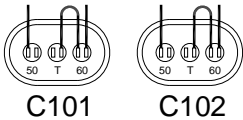
Additional requirements for power supply settings for North American system:

1) DIP switch (S1) setting:



2) Jumper J7 preinstalled,

3) Capacitors C101, C102 jumpered for 60 Hz (60 - T).



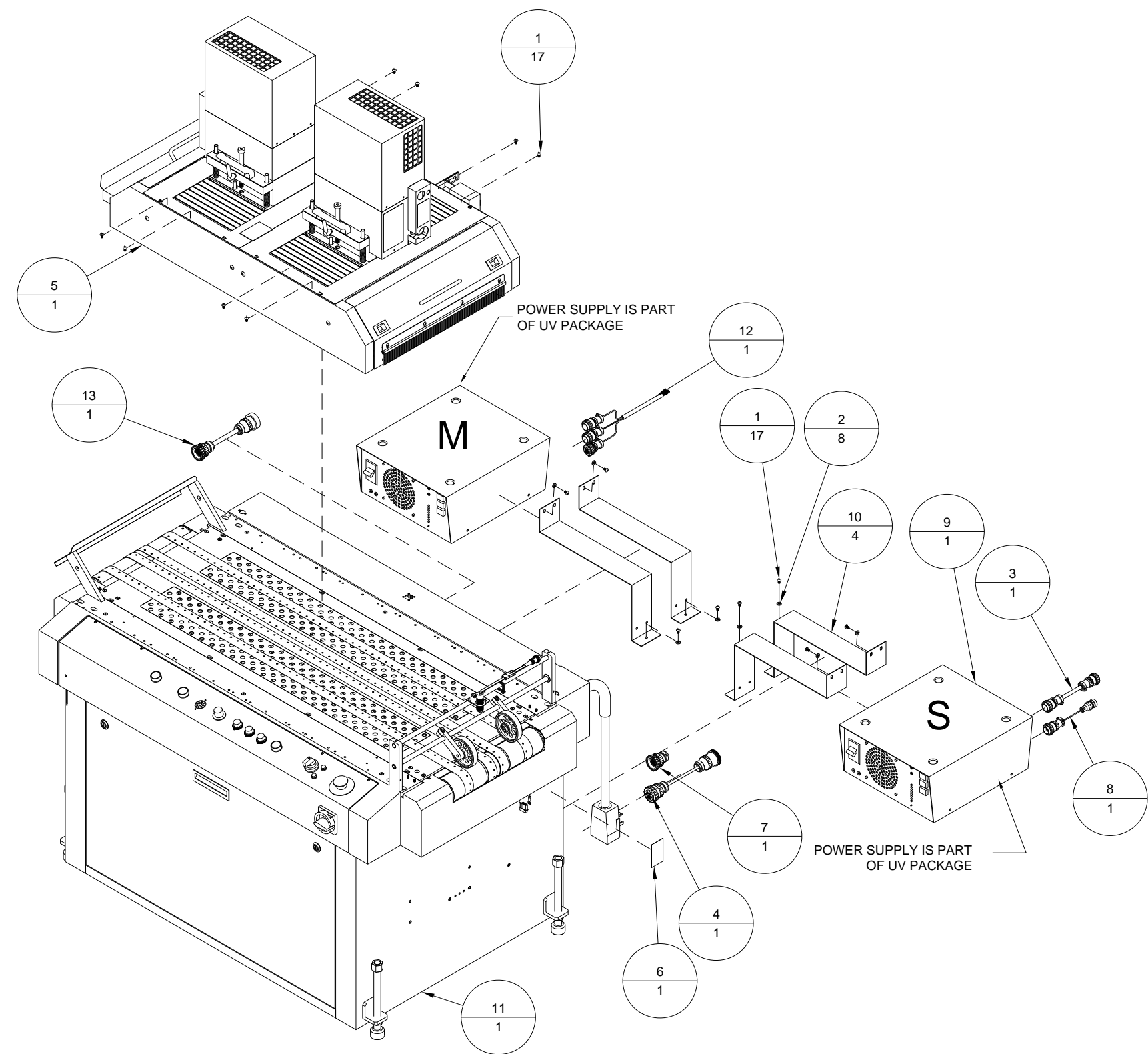
4) HV transformers T101, T102 as follows:

INPUT POWER	T101/T102 TAP
200/208/220 V	200
240 V	220/240

Table A-2: (BK750-2LP), System, BK750 Curing Station, Dual Lamps

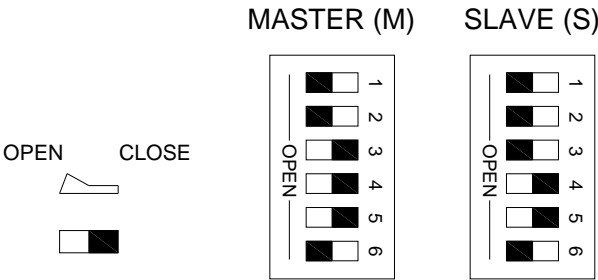
Item	Part Number	Quantity	Description	Reference
1	405520	17	Screw, BHCS, 1/4-20 UNC, 3/8"	
2	439010	8	Lockwasher, 1/4" I.D.	
3	614139A	1	Cable, UV Master/Slave Interconnect	Page A-12
4	614530A	1	Cable, Conveyor Interconnect	Page A-14
5	9101509A	1	Light Shield Assembly, Dual	Page A-31
6	9101918	1	Label, Warning Disconnect	
7	9102055A	1	Plug, Jumper, 23-57	
8	9102122A	1	Power Supply (Part of UV Package)	
9	9102266	1	RF Detector Cable (Part of UV Package)	
10	9104792	4	Bracket, UV Power Supply REV 2	
11	9105646A	1	Base, BK750 UV Curing	
12	9105680A	1	Cable, Master Interlock, BK750	Page A-13
13	BK-CAB-UNI	1	Cable, Universal Interconnect	

Figure A-2: (BK750 – 2LP), System, BK750 Curing Station, Dual Lamps



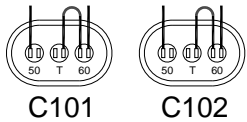
Additional requirements for power supply settings for North American system:

1) DIP switch (S1) setting:



2) Jumper J7 preinstalled,

3) Capacitors C101, C102 jumpered for 60 Hz (60 - T).



4) HV transformers T101, T102 as follows:

INPUT POWER	T101/T102 TAP
200/208/220 V	200
240 V	220/240

Table A-3: (9105646A), Base, BK750 UV Curing

Item	Part Number	Quantity	Description	Reference
1	404510	6	Screw, BHCS, 10-32 UNF x 1/4"	
2	9100775	1	Inline Outfeed Shelf End Cover	
3	9100780	1	Inline Outfeed Roller Cover	
4	9102230A	1	Tabletop Assembly, Side, BK750	
5	9104790	1	Rear Cover, Curing Station	
6	9105607A	1	Tabletop Assembly, BK750	Page A-54
7	9105642A	1	UV Base Cabinet Assembly	Page A-47

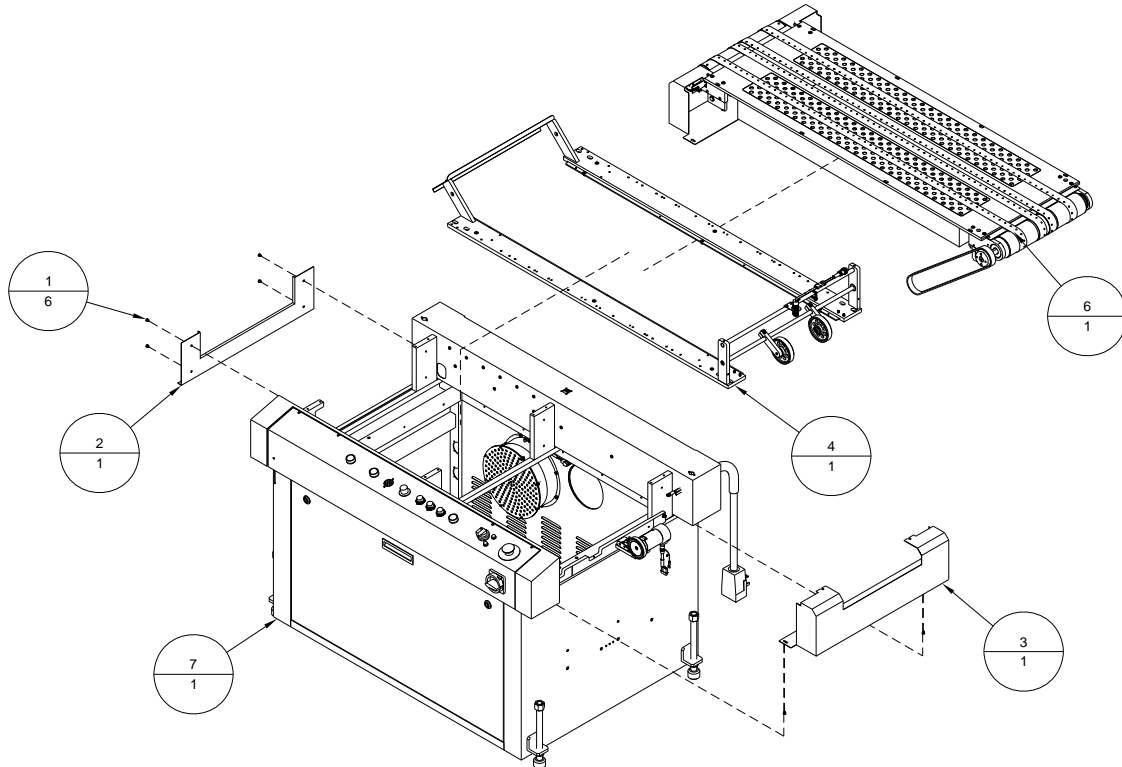
Figure A-3: (9105646A), Base, BK750 UV Curing,

Table A-4: (9105664A), Cable, Fan, Caravel, Tubeaxial

Item	Part Number	Quantity	Description	Reference
1	606034	1	Cable, #16-3, SJOW-A, 65"	
2	9100715	1	Plug, Mate-n-Lok, 3-Pin	
3	9100738	3	Socket, Contact Brass, Pre-Tin	

Figure A-4: (9105664A), Cable, Fan, Caravel Tubeaxial

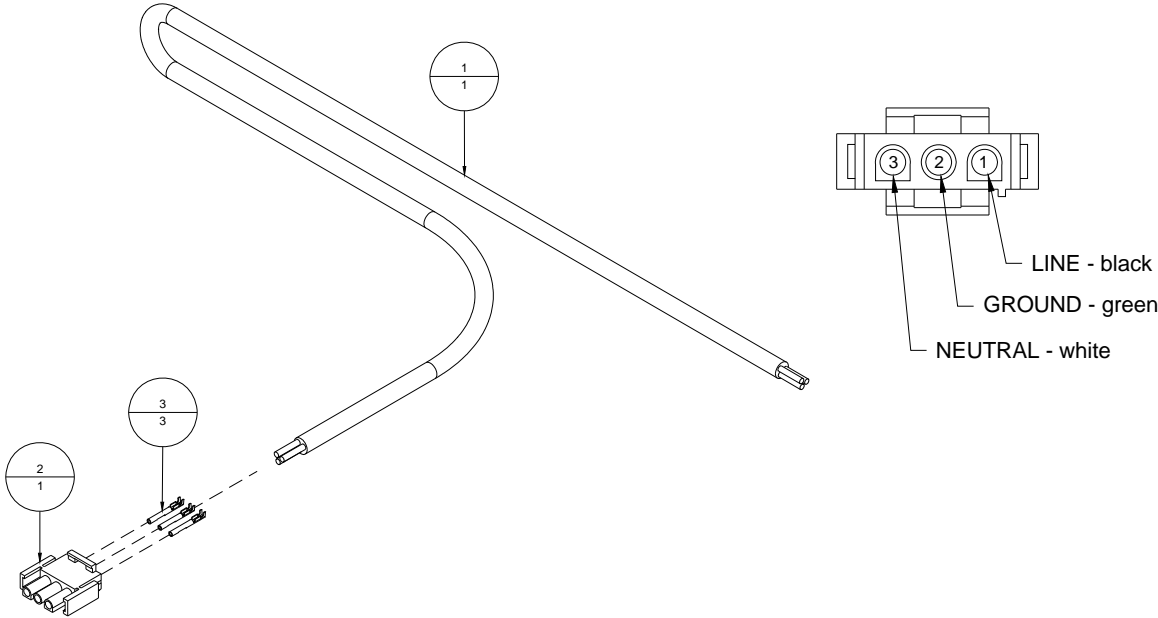


Table A-5: (9105689A), Cable, Conveyor Receptacle

Item	Part Number	Quantity	Description	Reference
1	606052	1	Cable, #14-7, Unshielded (96" Long)	
2	614106	1	Receptacle, 23-7	
3	614110	7	Socket, Power Contact	

Figure A-5: (9105689A), Cable, Conveyor Receptacle

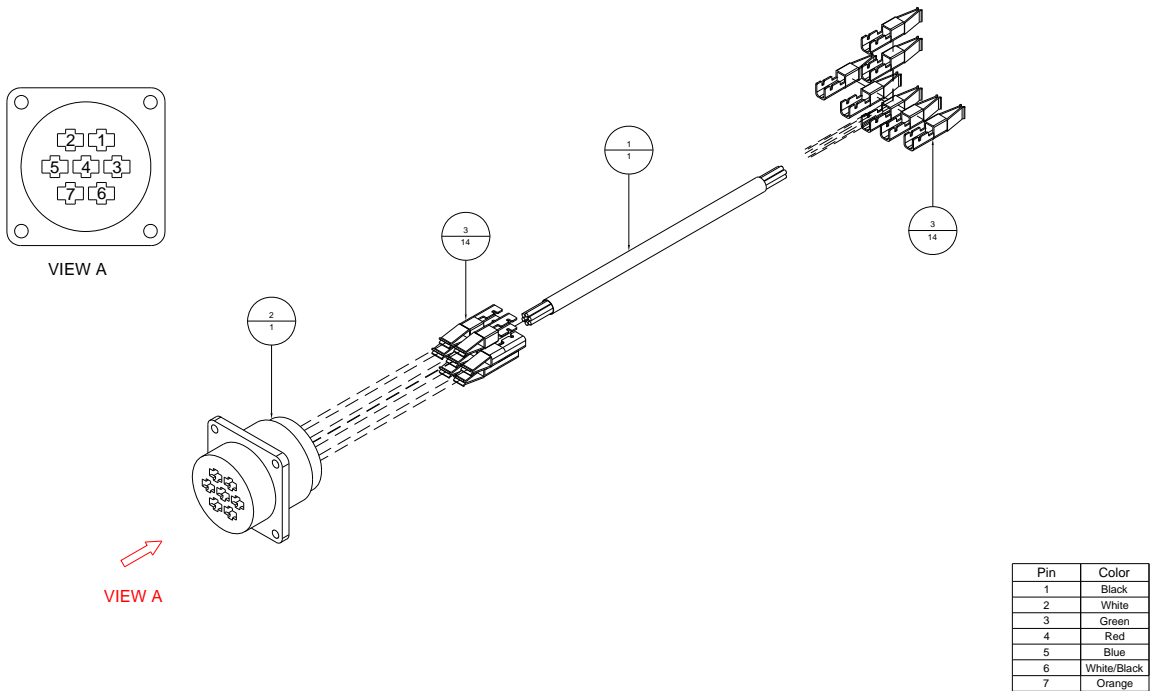


Table A-6: (9105687A), Cable, Programmable Encoder/PLC

Item	Part Number	Quantity	Description	Reference
1	606013	1	Cable, #22-3, Unshielded, 50", Lg	
2	614006	3	Contact, Female, 24-18 AWG, Mate-n-lok	
3	614007	1	Connector, 4-Pin, Socket Housing, Mate-n-lok	
4	9103468	3	Ferrule, #22 AWG, Turquoise	

Figure A-6: (9105687A), Cable, Programmable Encoder/PLC

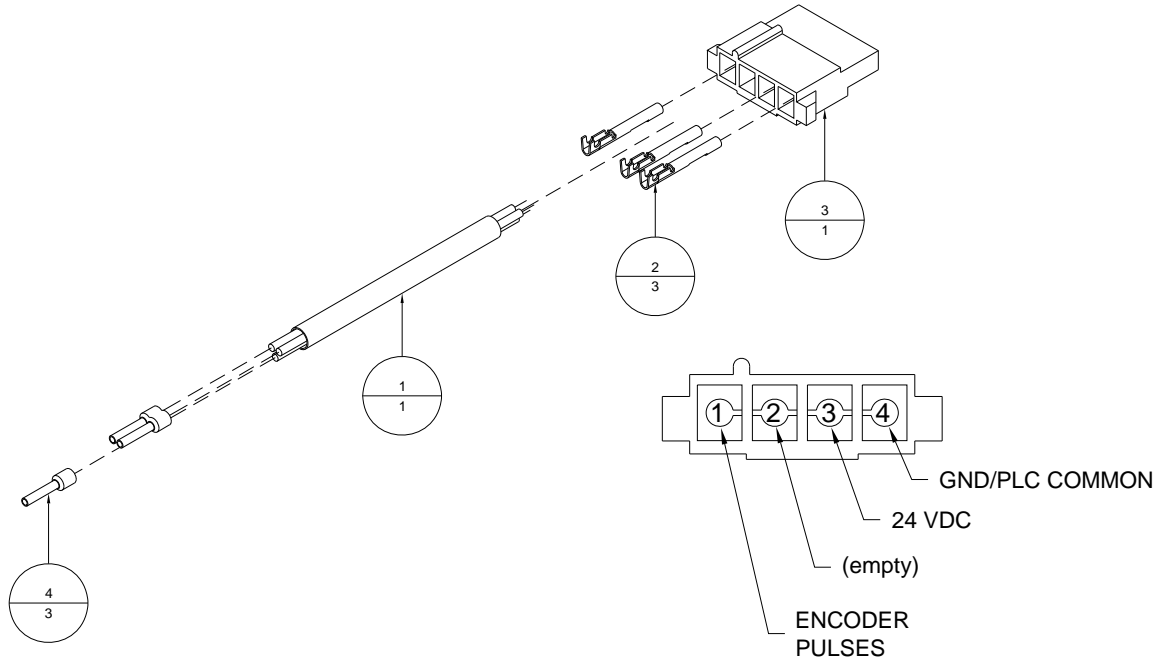


Table A-7: (9105682A), Cable, Upstream, BK750

Item	Part Number	Quantity	Description	Reference
1	606016	1	Cable, #22-15, Shielded (40" Long)	
2	609003	1	Shrink Wrap, 3/8" ID (1" Long)	
3	614108	5	Contact, Female, 24-40 AWG, Yellow	
4	614135	1	Receptacle, Female, 23-37	

Figure A-7: (9105682A), Cable, Upstream, BK750

Upstream Cable, 9105682A	
Pin No.	Colour
11	BK
12	WH
19	RD
20	GN
31	OG
32	BU
33	WH/BK
34	RD/BK
35	GN/BK

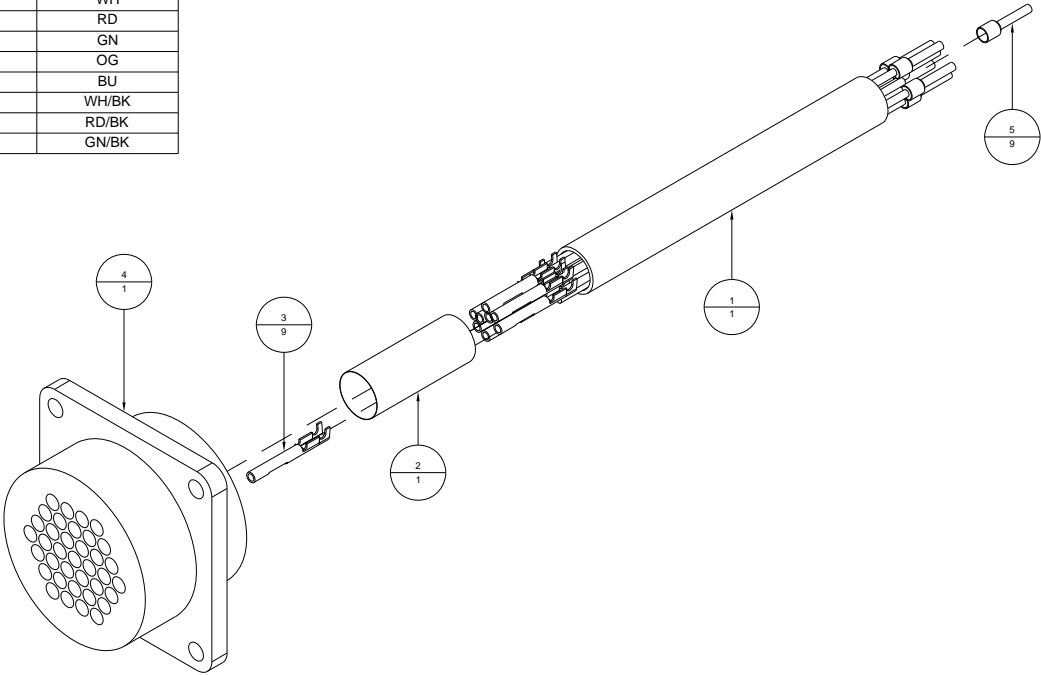


Table A-8: (614116A), Cable, Interlock, UV

Item	Part Number	Quantity	Description	Reference
1	606531	1	Cable, #22-2, Shielded, 26"	
2	614107	2	Contact, Male, 24-20 AWG, Yellow	
3	614108	2	Contact, Female, 24-20 AWG, Yellow	
4	614115	1	Plug, Female, 11-4	
5	614116	1	Plug, Male, 11-4	
6	9102122	2	Cable Clamp, Shell 11, CPC	

Figure A-8: (614116A), Cable, Interlock, UV

PIN ASSIGNMENT:

1 - black - 1 (both sides)

2 - white - 2 (both sides)

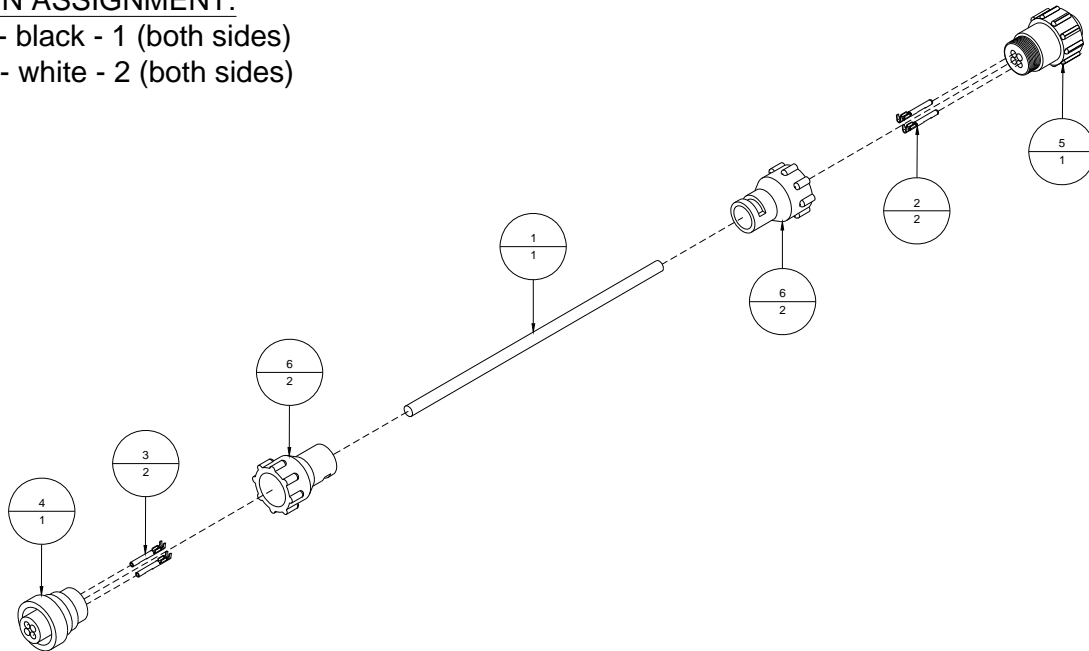


Table A-9: (9105683A), Cable, Interlock Panel Mount

Item	Part Number	Quantity	Description	Reference
1	606531	1	Cable, #22-2, Shielded, 32" Lg	
2	609107	1	Terminal, Fork, 22-16 AWG, #4, Red	
3	614108	2	Contact, Female, 24-20 AWG, Yellow	
4	614119	1	Receptacle, 11-4, Female	
5	9103468	1	Ferrule, #22 AWG, Turquoise	

Figure A-9: (9105683A), Cable, Interlock Panel Mount

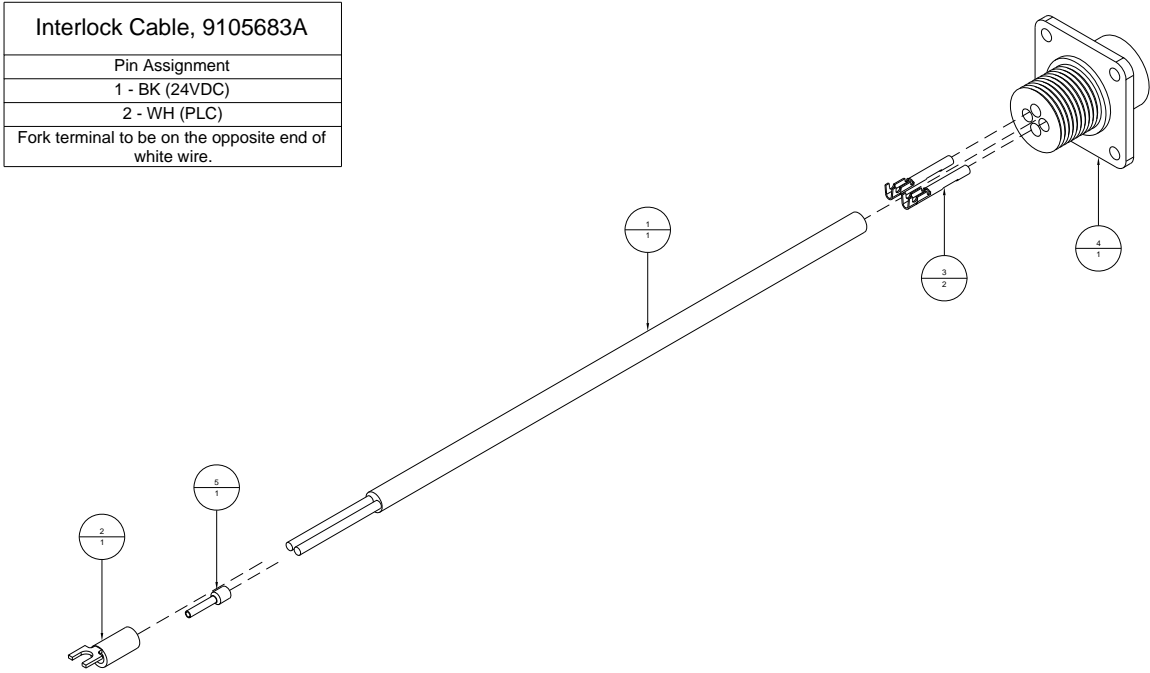


Table A-10: (614139A), Cable, UV Master/Slave Interconnect

Item	Part Number	Quantity	Description	Reference
1	606016	1	Cable, #22-15, Shielded (40" Long)	
2	614107	18	Contact, Male, 24-20 AWG, Yellow	
3	614139	2	Plug, Male, CPC 17-14	
4	614140	2	Cable Clamp, Shell 17	

Figure A-10: (614139A), Cable, UV Master/Slave Interconnect

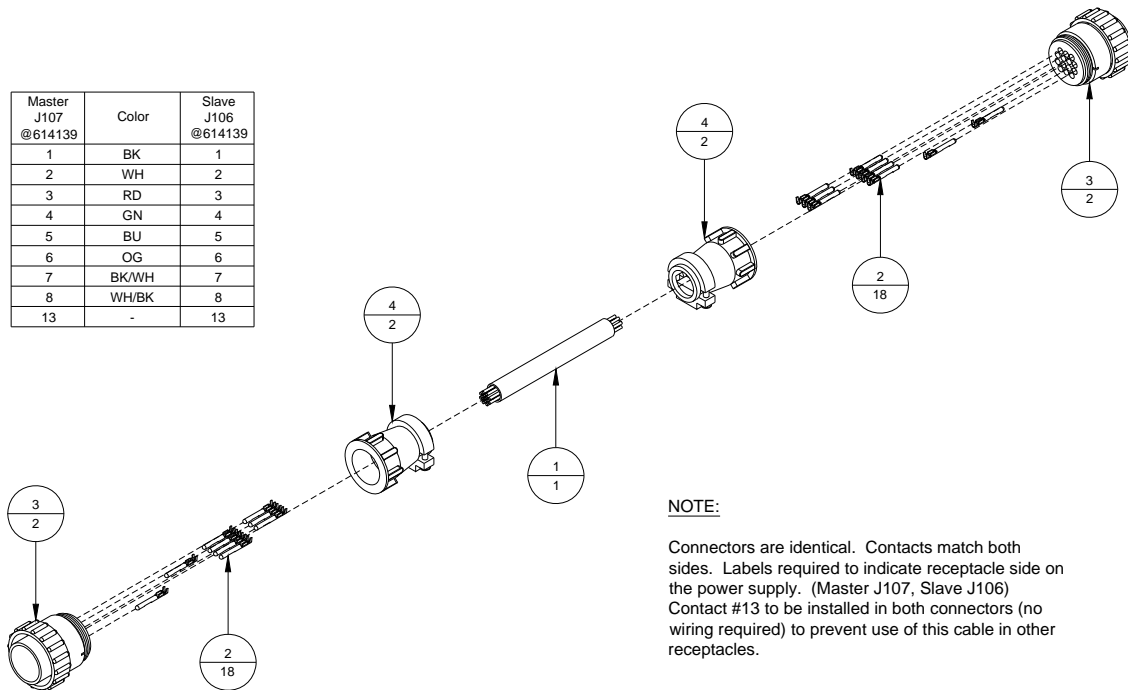


Table A-11: (9105680A), Cable, Master Interlock, BK750

Item	Part Number	Quantity	Description	Reference
1	606016	1	Cable, #22-15, Shielded (67" Long)	
2	609000	3	Shrink Wrap, 3/16" I.D. (5" Long)	
3	609003	1	Shrink Wrap, 3/8" I.D. (2" Long)	
4	614103	1	Plug, Female, 17-16	
5	614107	17	Contact, Male, 24-20 AWG, Yellow	
6	614108	4	Contact, Female, 24-20 AWG, Yellow	
7	614139	2	Plug, Male, CPC 17-14	
8	614140	3	Cable Clamp, Shell 17	
9	9103468	15	Ferrule, #22 AWG, Turquoise	

Figure A-11: (9105680A), Cable, Master Interlock, BK750

NOTE:

Use 3/16" shrink wrap for three groups of wires and 3/8" for the cable.

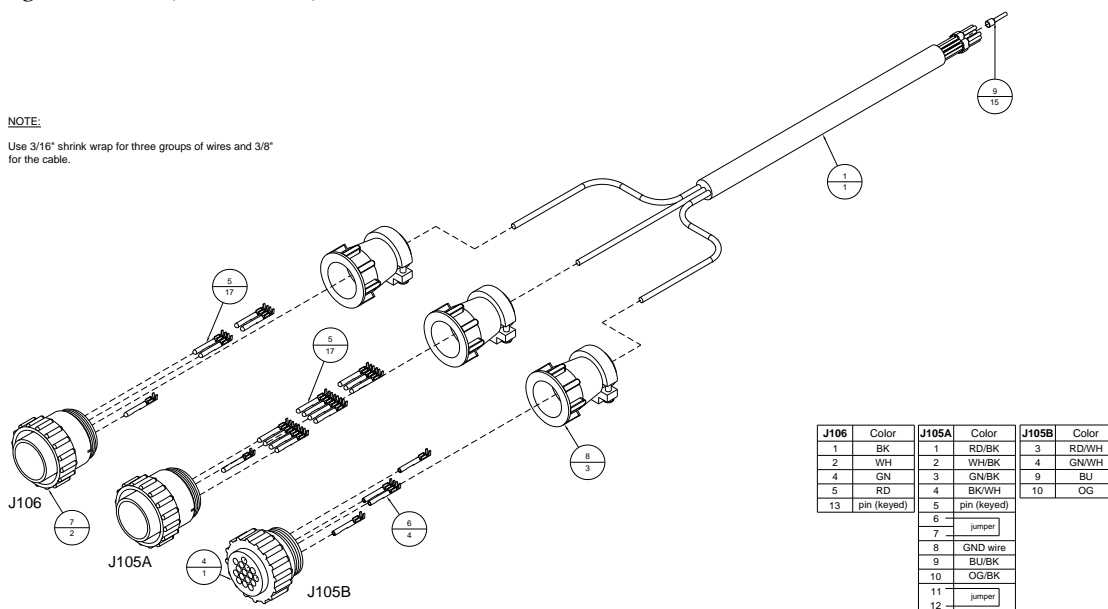


Table A-13: (9100409A), Lamp Assembly, UV I300MB

Item	Part Number	Quantity	Description	Reference
1	404530	4	Screw, BHCS, 10-32 UNF x 1/2"	
2	9100409	1	Lamp, UV w/Power Supply (I300MB & P300MT)	
3	9101512A	1	Lamp Bracket Assembly, UV I300MB	Page A-34
4	9105154	1	Cover, UV lamp connection	
5	9105166	1	Label, Warning, UV light connection	

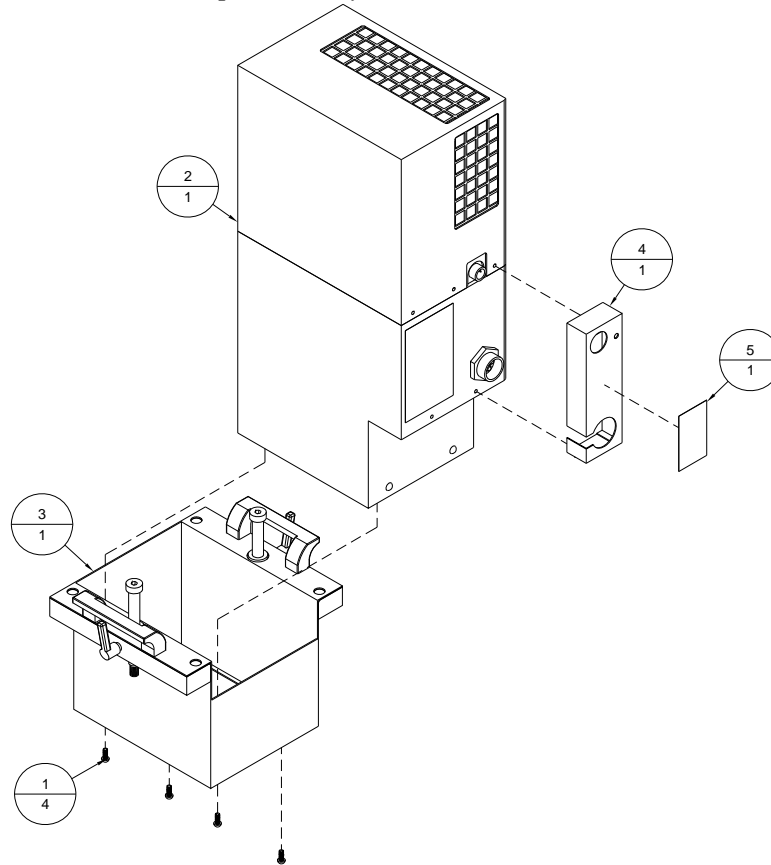
Figure A-13: (9100409A), Lamp Assembly, UV I300MB

Table A-14: (9100722A), Cable, Jam/Cycle/Photo Receptacle

Item	Part Number	Quantity	Description	Reference
1	606014	1	Cable, #22-4, Unshielded (50" Long)	
2	609000	3	Shrink Wrap, 3/16" I.D. (0.5" Long)	
3	609001	1	Shrink Wrap, 1/4" I.D. (1" Long)	
4	9100722	1	Receptacle, Preh, Locking, 3-Pin	

Figure A-14: (9100722A), Cable, Jam/Cycle/Photo Receptacle

Pin No.	Color
1	White
2	Red
3	Black

NOTE:

Solder shield ground to 9100722.

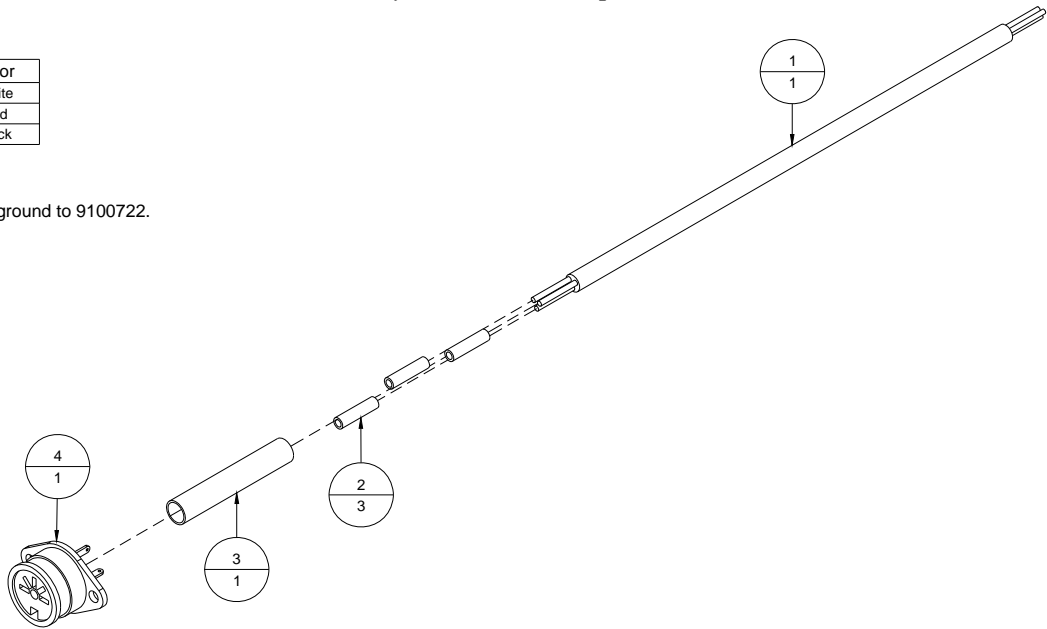


Table A-15: (9100727A), Photocue Assembly

Item	Part Number	Quantity	Description	Reference
1	630002	1	Photoelectric Switch (30" Long)	
2	9100724	1	Plug, Preh, Locking, 3 Pin	

Figure A-15: (9100727A), Photocue Assembly

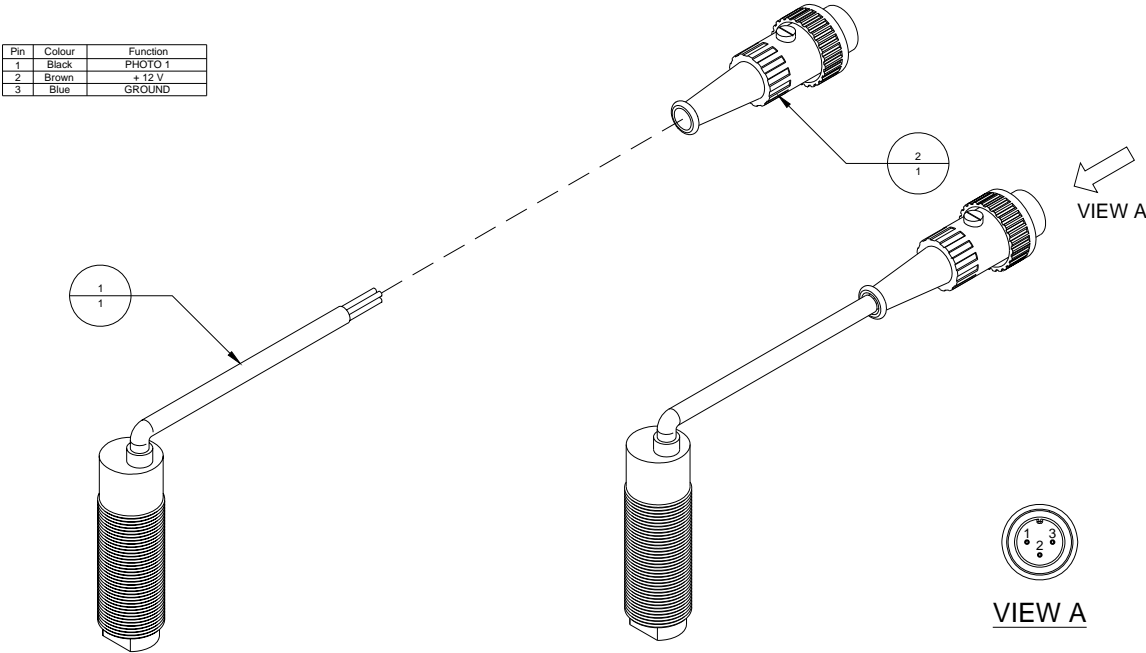


Table A-16: (9105685A), Cable, Downstream Receptacle

Item	Part Number	Quantity	Description	Reference
1	606016	1	Cable, #22-15, Shielded (68" Long)	
2	609003	1	Shrink Wrap, 3/8" ID (2" Long)	
3	9100785	11	Contact, Female, 24-20 AWG, Size 20 DF	
4	9102054	1	Receptacle, Female, 23-57	

Figure A-16: (9105685A), Cable, Downstream Receptacle

Downstream Cable, 9105685A	
Pin No.	Colour
9	BK
10	WH
11	RD
12	GN
13	OG
14	BU
19	WH/BK
20	RD/BK
29	GN/BK
30	OG/BK
31	BU/BK
32	BK/WH
33	RD/WH
34	GN/WH
35	BU/WH

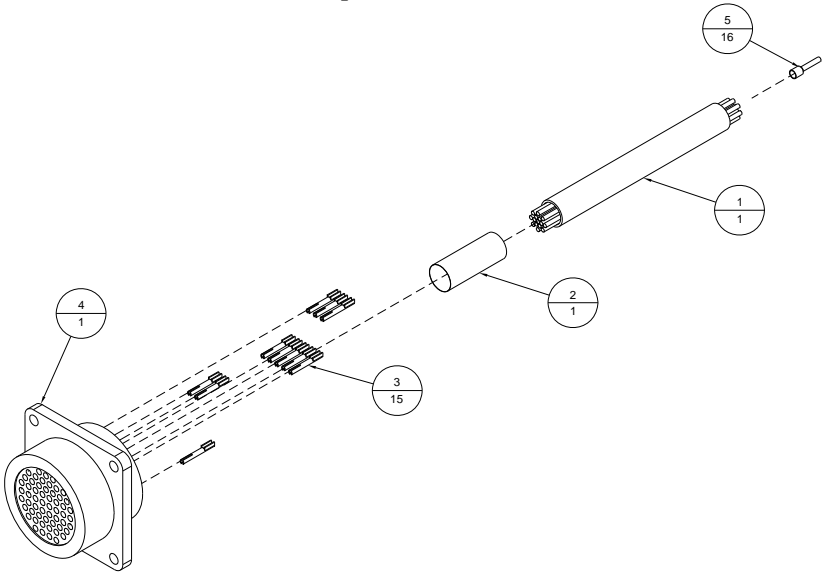


Table A-17: (9100829A), Blower Assembly, 40 CFM

Item	Part Number	Quantity	Description	Reference
1	407670	4	Screw, HHMS, 3/8-16 UNC x 1"	
2	439020	4	Lockwasher, 3/8" I.D.	
3	440020	4	Washer, 3/8" I.D.	
4	606034	1	Cable, #16-3 SJOW-A (65" Long)	
5	609101	2	Marette, Orange, 14-22	
6	609111	1	Terminal, Ring, #10, 14-16 AWG, Blue	
7	615131	1	Cable Clamp, 3/8", Metal	
8	802111	1	Hose Barb, 1" x 1", Plastic	
9	9100749	4	Rubber Washer, 3/8" x 1" x 1/8"	
10	9100829	1	Regenerative Blower, 42 CFM	

Figure A-17: (9100829A), Blower Assembly, 40 CFM

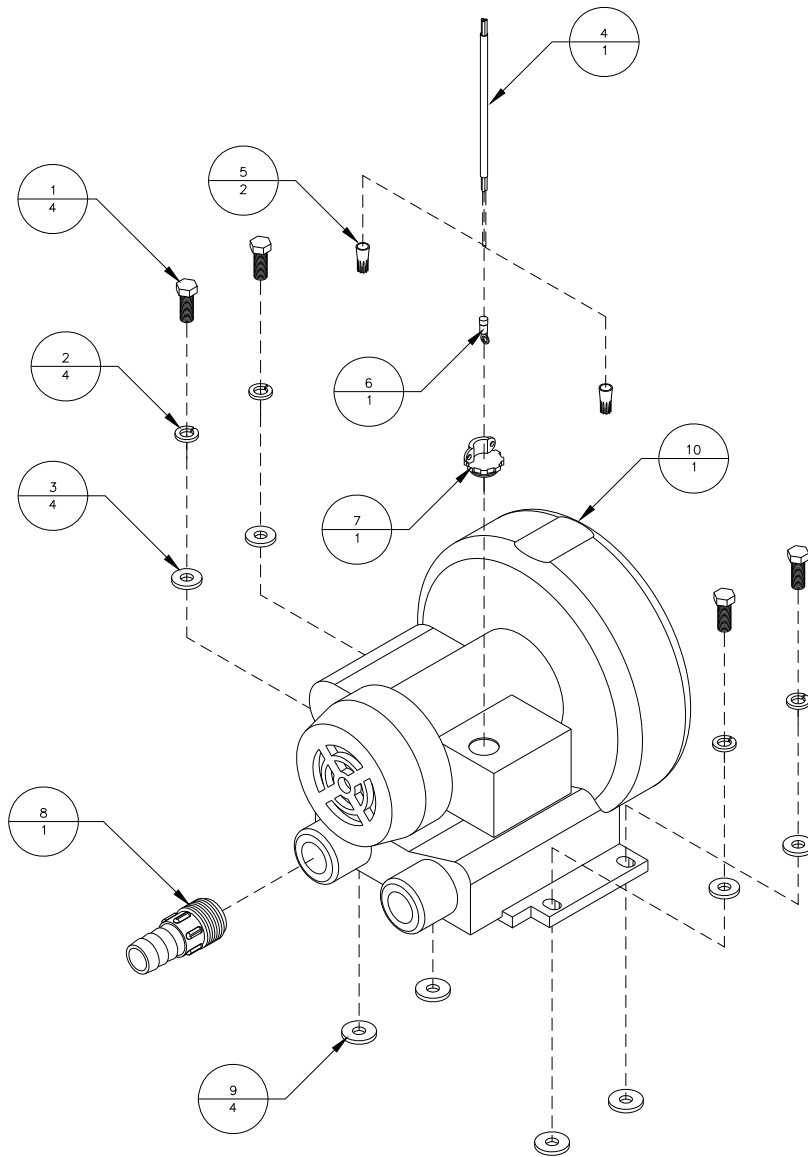


Table A-18: (9101038A), Take-Up Roller Assembly

Item	Part Number	Quantity	Description	Reference
1	500055	2	Bearing, UBR-204-12S, 3/4" I.D.	
2	9100316	1	Transport Roller	
3	9101038	1	Take-Up Shaft	

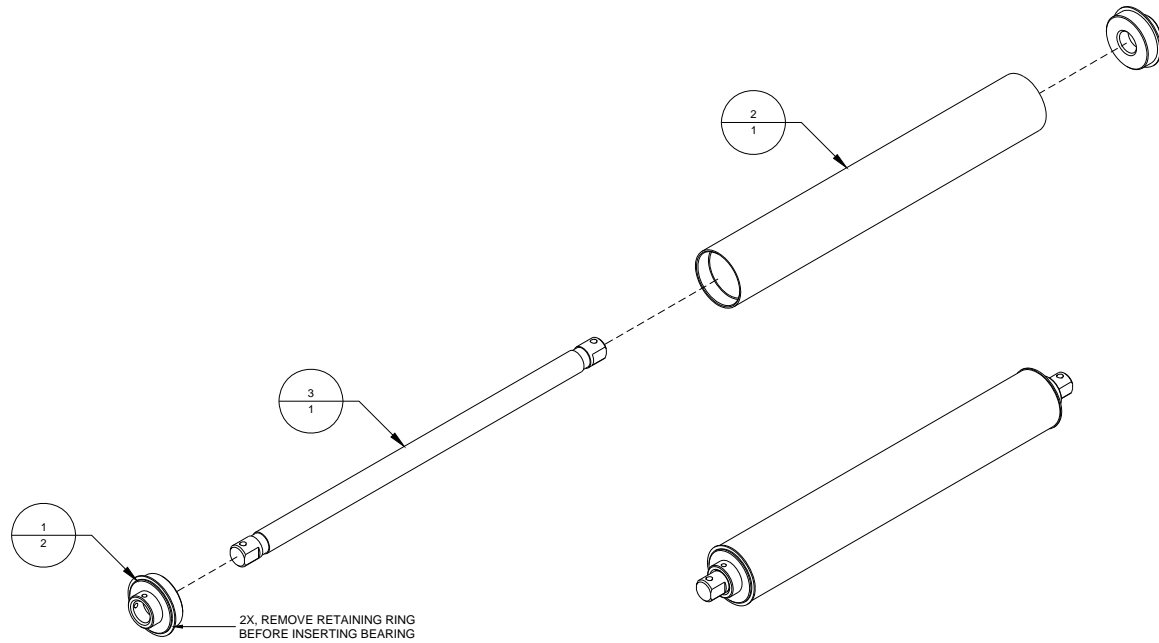
Figure A-18: (9101038A), Take-Up Roller Assembly

Table A-19: (9101298A), Cable, Proximity Sensor, Interlock

Item	Part Number	Quantity	Description	Reference
1	606531	1	Cable, #22-2, Unshielded (43" Long)	
2	609000	1	Shrink Wrap, 3/16" I.D. (1" Long)	
3	9100202	2	Contact, Female, 24-22 AWG, 70058 Series	
4	9101298	1	Female Connector, 2-Pin	

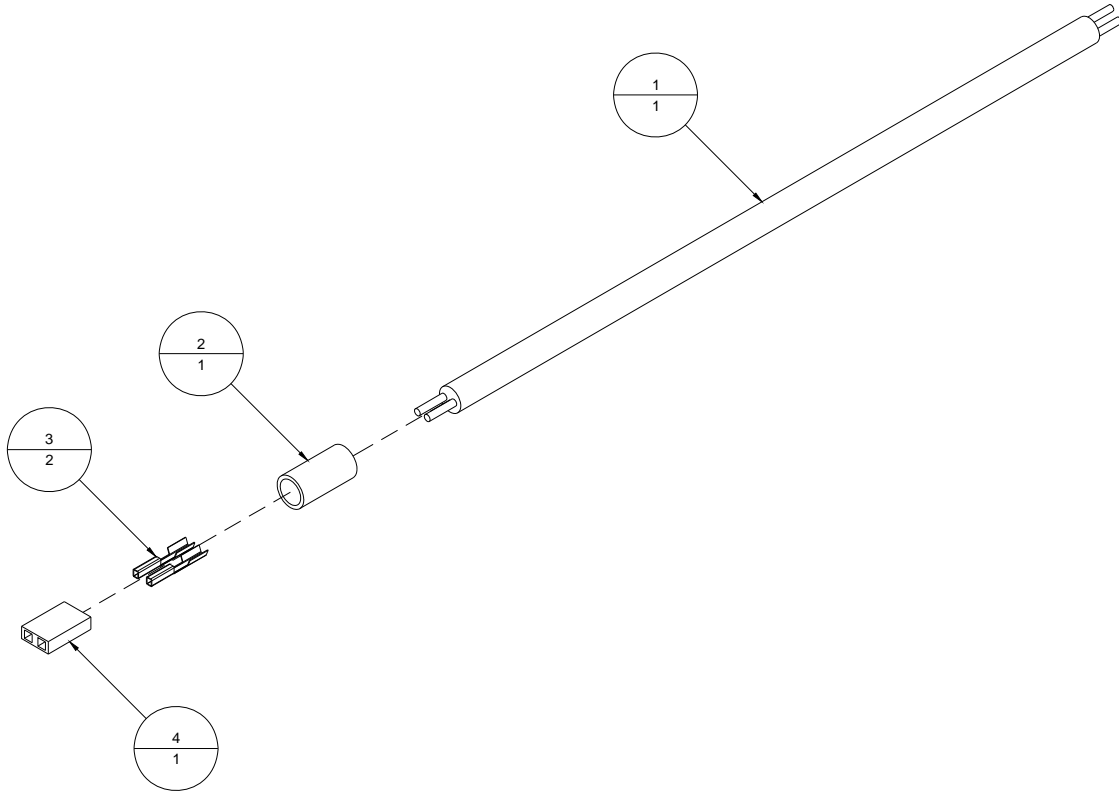
Figure A-19: (9101298A), Cable, Proximity Sensor, Interlock

Table A-20: (9101492A), Mount Slide Assembly

Item	Part Number	Quantity	Description	Reference
1	404030	8	Screw, FHCS, 10-32 UNF x 1/2"	
2	404040	4	Screw, FHCS, 10-32 UNF x 5/8"	
3	9101492	1	Mounting Slide, AL	
4	9101493	6	Mount Slide	

Figure A-20: (9101492A), Mount Slide Assembly

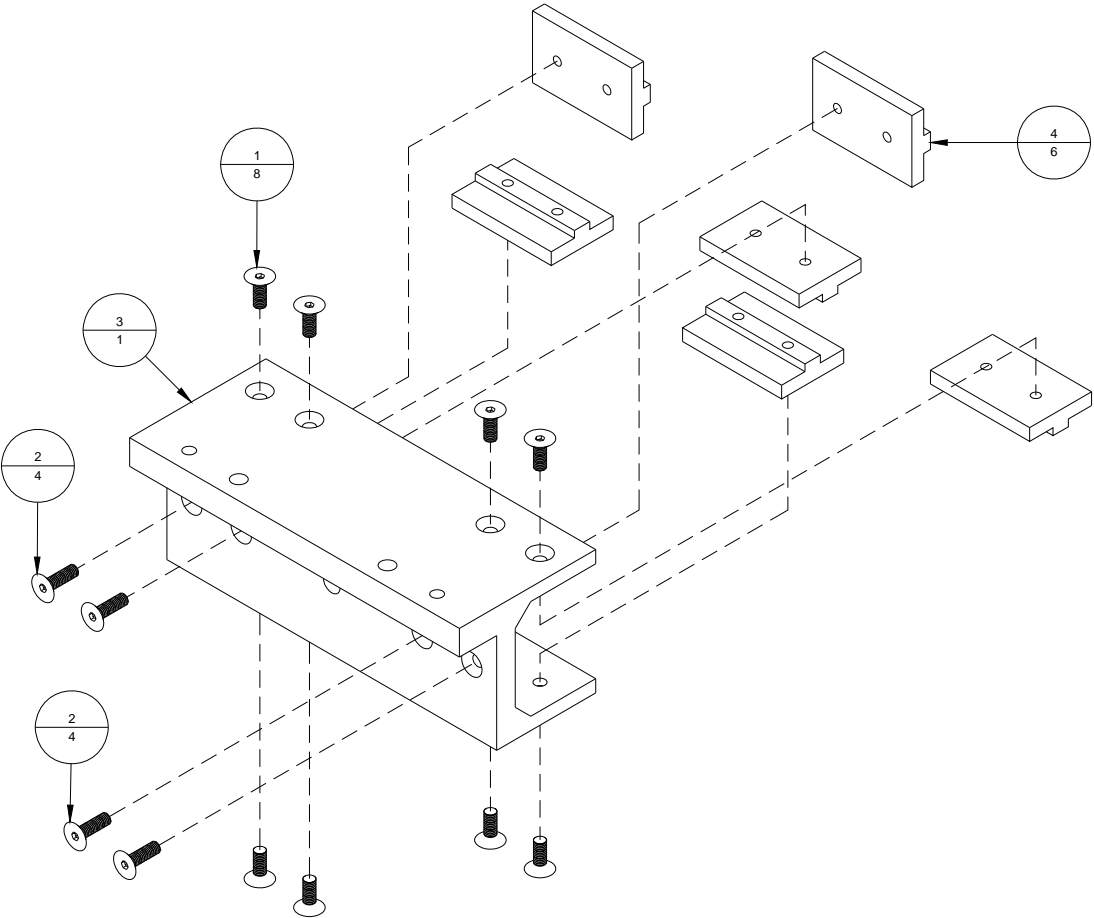


Table A-21: (9105606A), Instrument Panel Assembly, BK750

Item	Part Number	Quantity	Description	Reference
1	420006	2	Nut, 6-32 UNC	
2	420008	1	Nut, 10-32 UNF	
3	439008	2	Lockwasher, No.10, External Tooth	
4	440005	2	Washer, #6, I.D.	
5	600011	1	Potentiometer, 5k Ohm, 1/4 Watt	
6	603125	4	Switch Locking Collar	
7	603127	1	Block, N.C. Contact, Red	
8	606005	1	Wire, #16, Green, Hookup, 7"	
9	606020	2	Wire, #18, Black, Hookup, 4"	
10	606022	2	Wire, #18, Red, Hookup, 4"	
11	609111	1	Terminal, Ring, #10, 16-14 AWG, Blue	
12	609530	4	Connector, Push-On, 22-18 AWG, Red, 187 Tab	
13	612202	3	Lamp holder	
14	613002	1	Knob, 36mm Skirted	
15	9101518	1	Switch, Emergency Stop	
16	9101801	1	Lens Cap, Red	
17	9101802	3	Lamp, Filament, 12 VDC	
18	9101803	1		
19	9101804	1	Lens Cap, Green	
20	9101805	1	Lens Cap, Yellow	
21	9101809	1	Switch, Escutcheon	
22	9101850	2	Light, Pilot, Amber	
23	9103967	1	Connector, 8-Octal, Standard Socket, Type S	
24	9104878	12	Sleeve, Insulation, For Flat Receptacle 31-946	
25	9104879	12	Receptacle, Flat, For Universal Terminal	
26	9104978A	1	PushButton, Start, Momentary, Green Illumination Assembly	
27	9104980A	1	Push Button, Momentary, NO, Assembly	
28	9105615A	1	PushButton, Reset, Momentary, Yellow Illumination Assembly	
29	9105843	1	Door, Front Panel Curing Station	

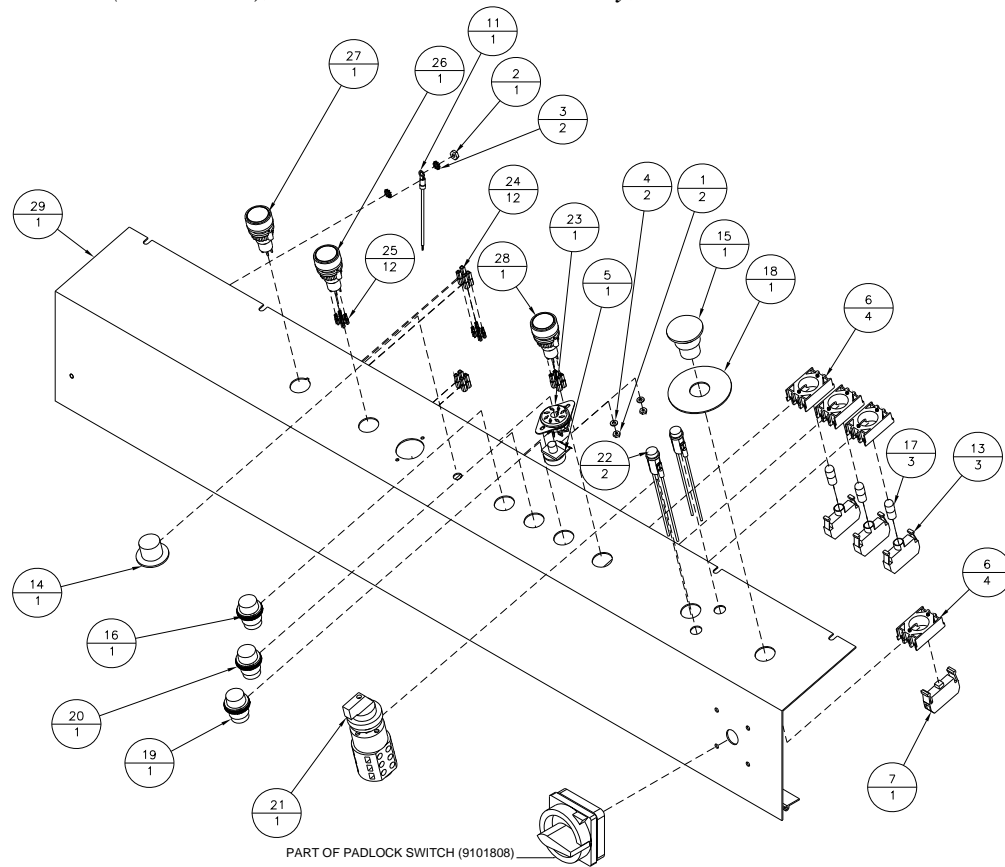
Figure A-21: (9105606A), Instrument Panel Assembly, BK750

Table A-22: (9101502A), Light Shield Assembly, Single

Item	Part Number	Quantity	Description	Reference
1	403510	5	Screw, BHCS, 8-32 UNC x 1/4"	
2	404040	4	Screw, FHCS, 10-32 UNF x 5/8"	
3	404510	20	Screw, BHCS, 10-32 UNF x 1/4"	
4	404520	6	Screw, BHCS, 10-32 UNC x 3/8"	
5	405520	4	Screw, BHCS, 1/4-32 UNC x 3/8"	
6	615102	1	Tie Mount	
7	615141	1	Lashing Tie	
8	9100409A	1	Lamp Assembly	Page A-15
9	9100727A	1	Photocue Assembly	Page A-17
10	9101486	1	Warning Label, UV/Microwave Light Source	
11	9101502	1	Arm, RF	
12	9101506A	1	Upstream Door Assembly	Page A-28
13	9101507	1	Cover, Overall Blind	
14	9101507A	1	Downstream Door Assembly	Page A-29
15	9101510A	1	Adjustable Cover Assembly	Page A-32
16	9101511A	1	Lamp Guide Assembly	Page A-33
17	9101516	2	Crossbar, Bellow Clamp	
18	9101518A	1	Support Frame Assembly	Page A-35
19	9101720	1	Sensor Bracket	
20	9102135	1	Shield, UV Air Flow Reductor	
21	9102136	2	Shield Holder	
22	9102137	4	Spring, Extension	

Figure A-22: (9101502A), Light Shield Assembly, Single

NOTE 1: Frame assembly to be bolted to tabletops prior to the installation of upstream door assembly, downstream door assembly, cover assembly w/lamp assembly, and blind cover.

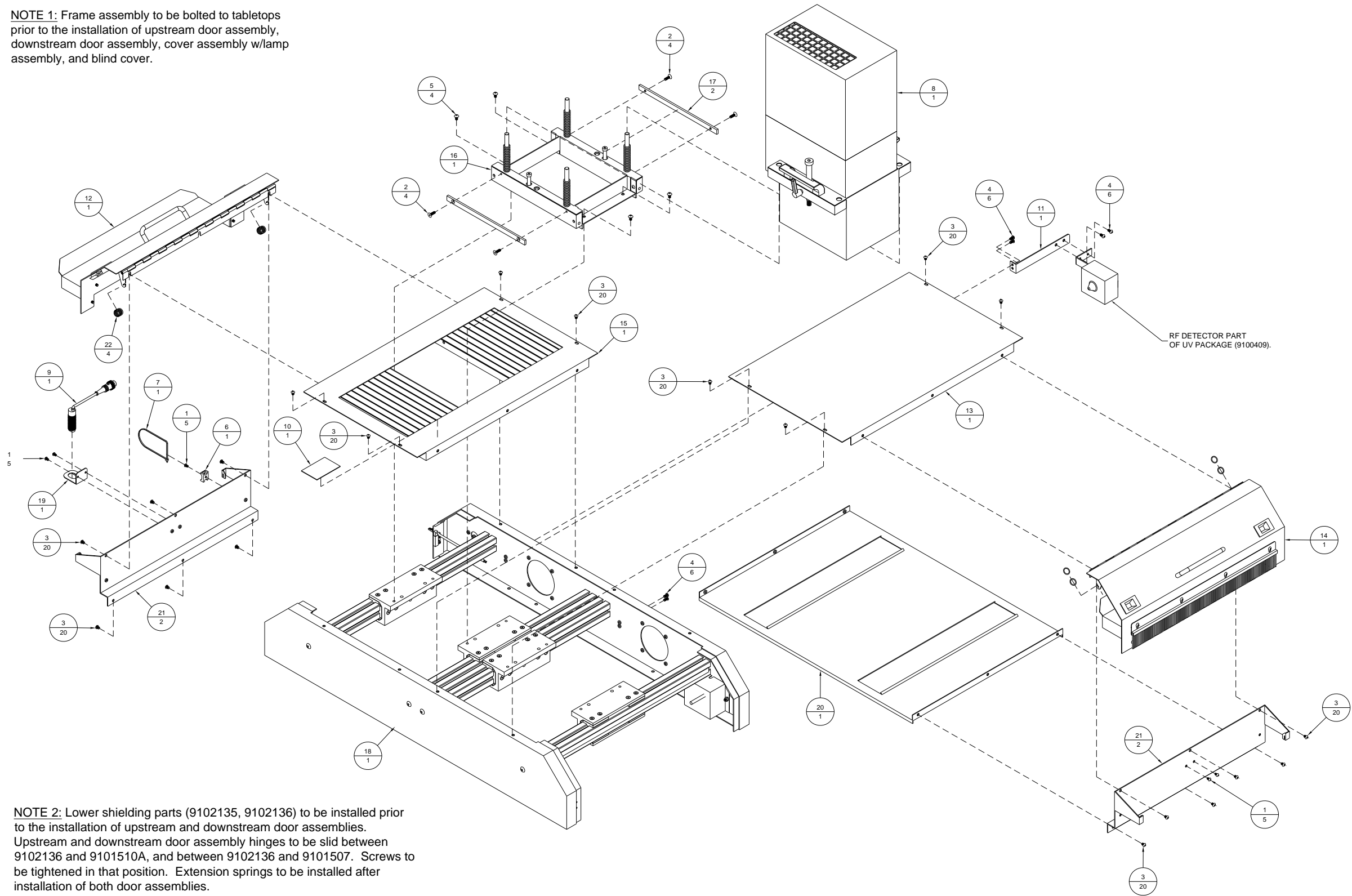


Table A-23: (9101505A), Crossbar Assembly

Item	Part Number	Quantity	Description	Reference
1	9101492A	1	Mount Slide Assembly	Page A-22
2	9101505	1	Frame Support, AL. Extrusion	

Figure A-23: (9101505A), Crossbar Assembly

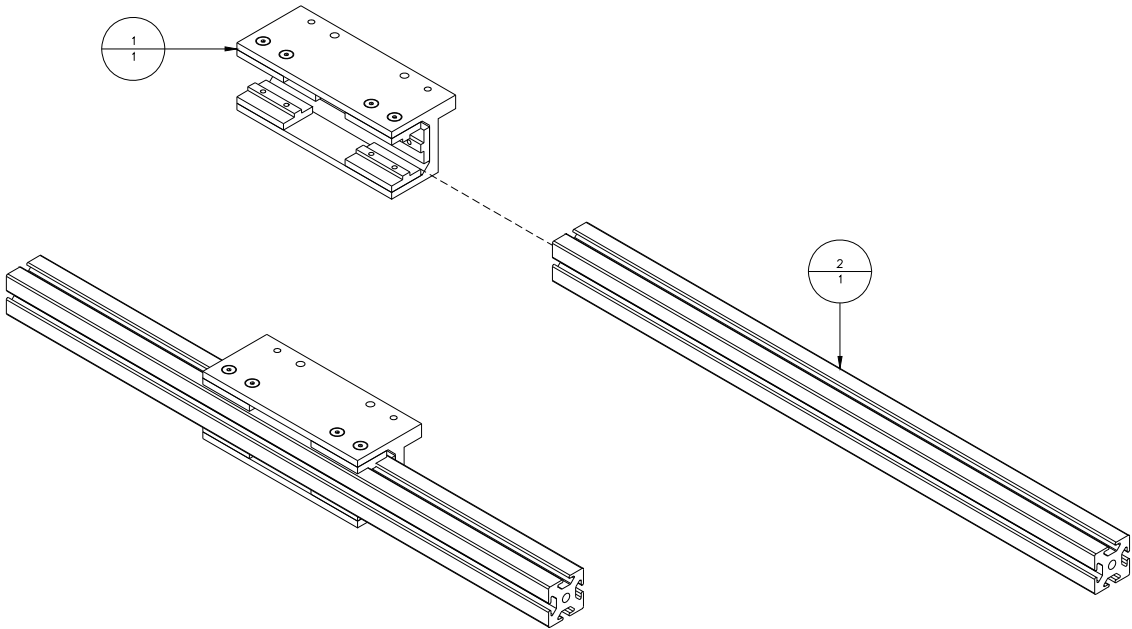


Table A-24: (9101506A), Upstream Door Assembly

Item	Part Number	Quantity	Description	Reference
1	404520	8	Screw, BHCS, 10-32 UNF x 3/8"	
2	420004	2	Nut, 4-40 UNC	
3	438313	1	Inkwell Container Handle	
4	446000	2	Side Latch – A3	
5	615533	1	Actuator, Magnetic	
6	9101491	1	Reflecting Inlet	
7	9101506	1	Side Cover	

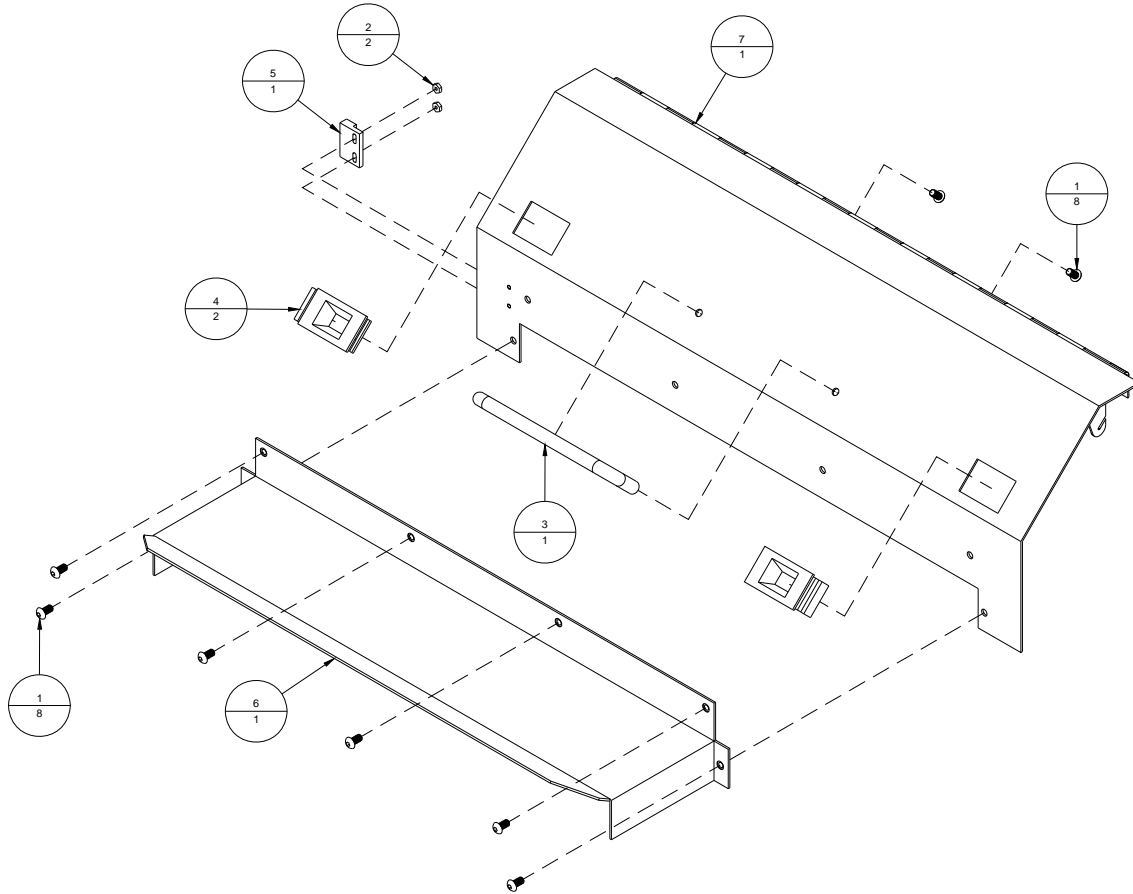
Figure A-24: (9101506A), Upstream Door Assembly

Table A-25: (9101507A), Downstream Door Assembly

Item	Part Number	Quantity	Description	Reference
1	404520	8	Screw, BHCS, 10-32 UNF x 3/8"	
2	420004	2	Nut, 4-40 UNC	
3	438313	1	Inkwell Container Handle	
4	446000	2	Side Latch – A3	
5	615533	1	Actuator, Magnetic	
6	9101491	1	Reflecting Inlet	
7	9101506	1	Side Cover	
8	9101789A	1	Brush Holder Assembly	Page A-39

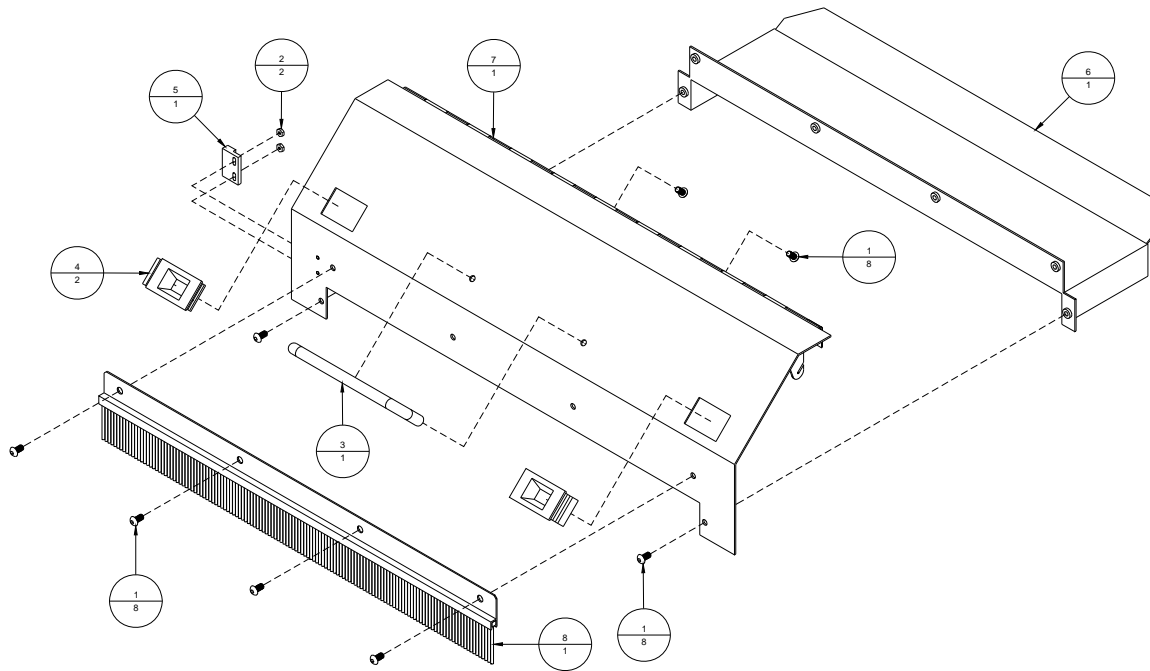
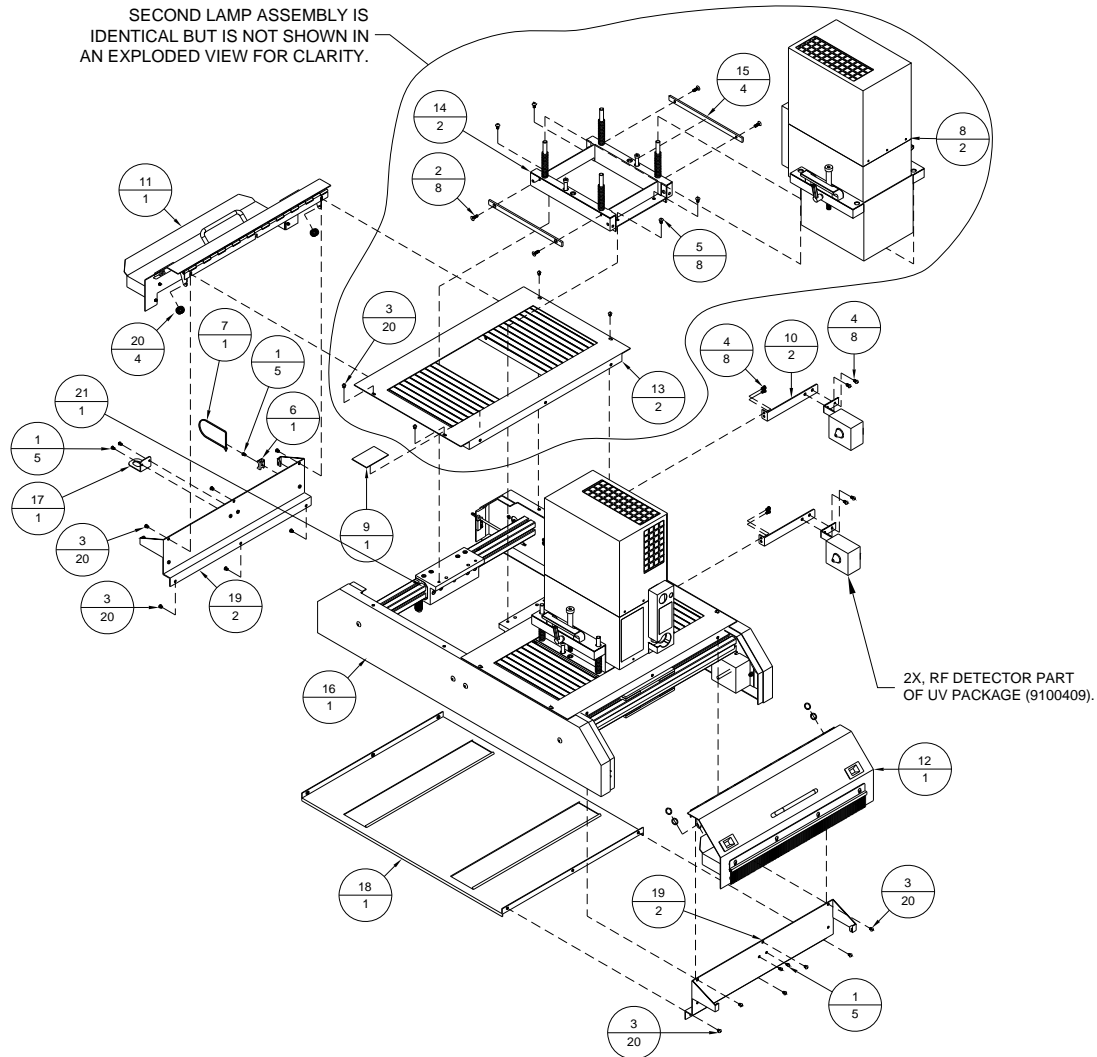
Figure A-25: (9101507A), Downstream Door Assembly

Table A-26: (9101509A), Light Shield Assembly, Dual

Item	Part Number	Quantity	Description	Reference
1	403510	5	Screw, BHCS, 8-32 UNC x 1/4"	
2	404040	8	Screw, FHCS, 10-32 UNF x 5/8"	
3	404510	20	Screw, BHCS, 10-32 UNF x 1/4"	
4	404520	8	Screw, BHCS, 10-32 UNF x 3/8"	
5	405520	8	Screw, BHCS, 1/4-20 UNC, 3/8"	
6	615102	1	Tie Mount	
7	615141	1	Lashing Tie	
8	9100409A	2	Lamp Assembly, UV I300MB	Page A-15
9	9101486	1	Warning Label, UV/Microwave Light Source	
10	9101502	2	Arm, RF	
11	9101506A	1	Upstream Door Assembly	Page A-28
12	9101507A	1	Downstream Door Assembly	Page A-29
13	9101510A	2	Adjustable Cover Assembly	Page A-32
14	9101511A	2	Lamp Guide Assembly	Page A-33
15	9101516	4	Crossbar, Bellow Clamp	
16	9101518A	1	Support Frame Assembly	Page A-35
17	9101720	1	Bracket, Photo Sensor	
18	9102135	1	Shield, UV Air Flow Reductor	
19	9102136	2	Shield Holder	
20	9102137	4	Spring, Extension	
21	BK-PHOTO-UNIV	1	Kit, Print Photocue Universal	

Figure A-26: (9101509A), Light Shield Assembly, Dual



NOTE:

1. Frame assembly to be bolted to tabletops prior to the installation of upstream door assembly, downstream door assembly, cover assembly w/lamp assembly, and blind cover.
2. Lower shielding parts (9102135, 9102136) to be installed prior to the installation of upstream and downstream door assemblies. Upstream and downstream door assembly hinges to be slid between 9102136 and 9101510A, and between 9102136 and 9101507. Screws to be tightened in that position. Extension springs to be installed after installation of both door assemblies.

Table A-27: (9101510A), Adjustable Cover Assembly

Item	Part Number	Quantity	Description	Reference
1	404520	4	Screw, BHCS, 10-32 UNF x 3/8"	
2	440008	4	Washer, #10 I.D.	
3	9101485	2	Bellow, Thermic Weld	
4	9101510	1	Cover, Overall	

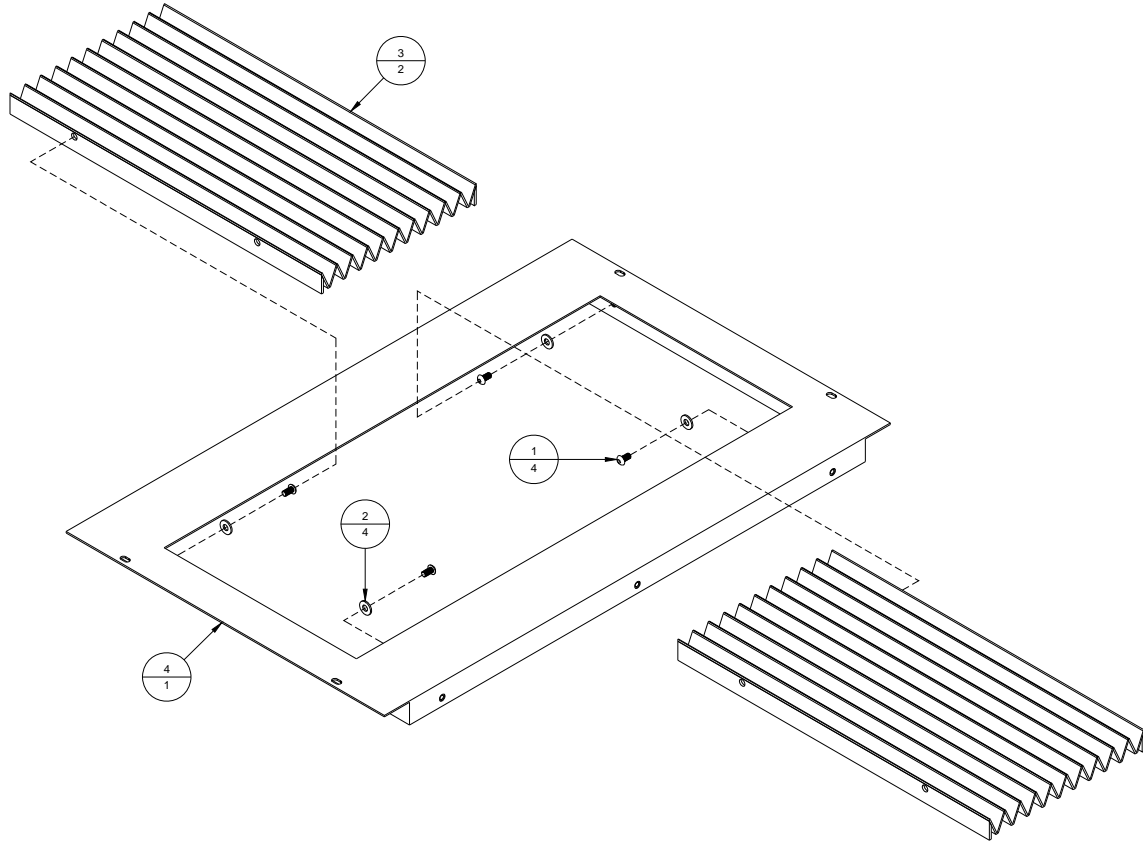
Figure A-27: (9101510A), Adjustable Cover Assembly

Table A-28: (9101511A), Lamp Guide Assembly

Item	Part Number	Quantity	Description	Reference
1	404550	4	Screw, BHCS, 10-32 UNF x 3/4"	
2	404875	4	Screw, SHCS, 10-32 UNF x 1 1/4"	
3	436348	2	Dowel Pin, 1/4" DIA x 2"	
4	9101489	4	Spring, Compression	
5	9101490	4	Pin, 0.375" Dia.	
6	9101511	1	Sleeve Holder, 300	
7	9101513	2	Pin Holder, 300	

Figure A-28: (9101511A), Lamp Guide Assembly

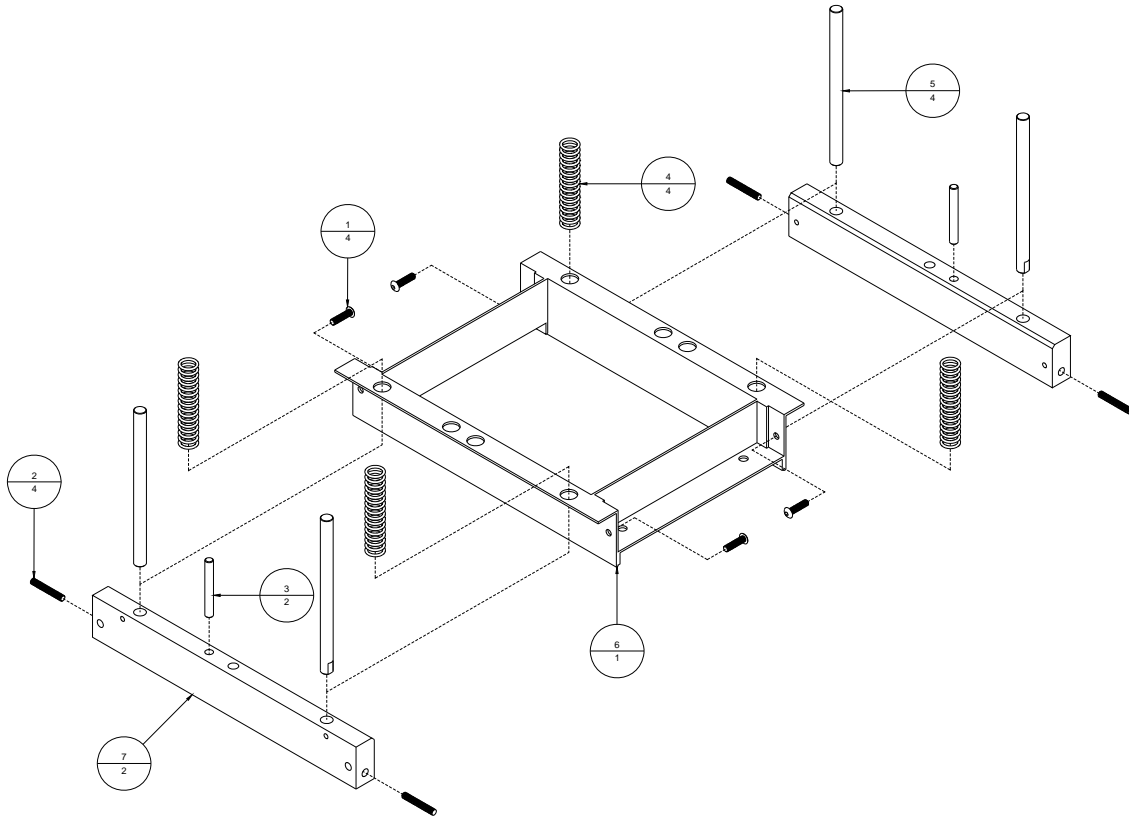


Table A-29: (9101512A), Lamp Bracket Assembly, UV I300MB

Item	Part Number	Quantity	Description	Reference
1	206010	2	Lever Handle, 1/4-20 UNC x 3/4"	
2	405240	4	Screw, SHCS, 1/4-20 UNC x 5/8"	
3	417197	2	Shoulder Bolt, 3/8-16 x 4"	
4	505001	2	Bushing, Flange	
5	9101512	1	Sleeve, UV Lamp 300	
6	9101514	2	Guide Block, 300	
7	9101581	2	Handle, Machine Guard	

Figure A-29: (9101512A), Lamp Bracket Assembly, UV I300MB

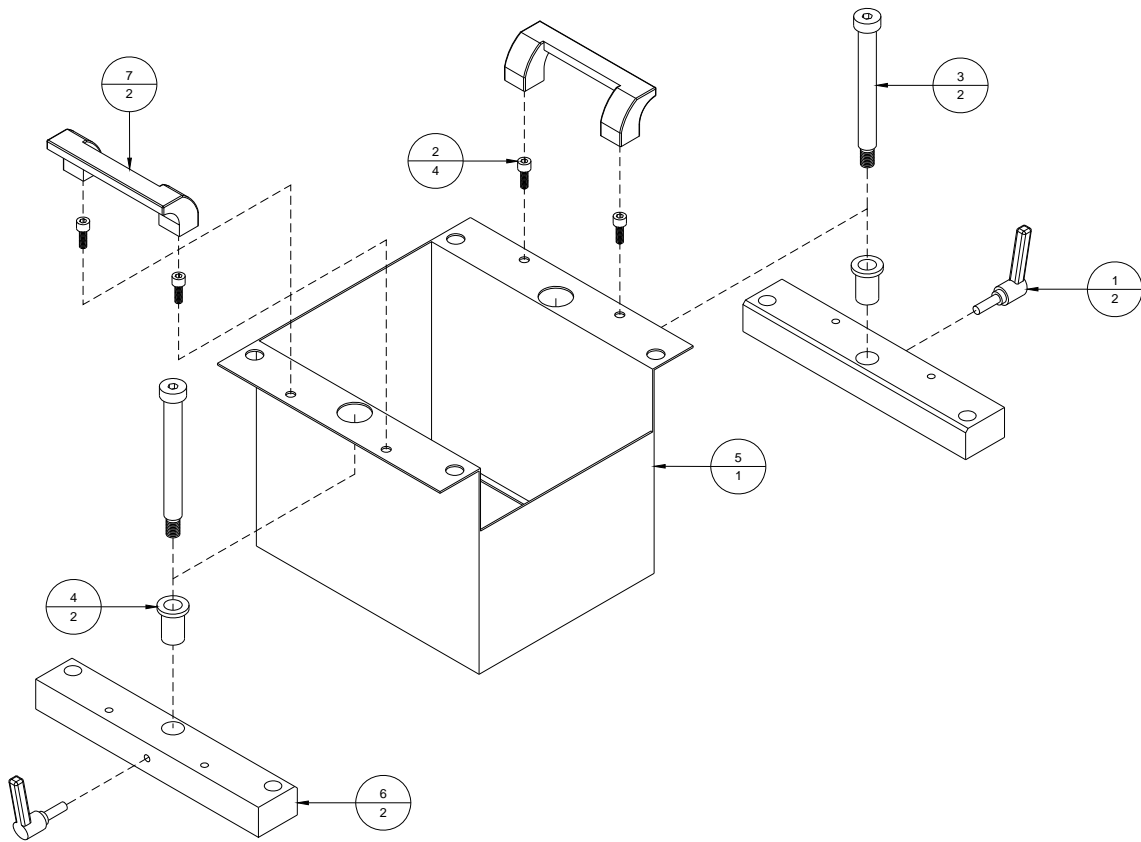


Table A-30: (9101518A), Support Frame Assembly

Item	Part Number	Quantity	Description	Reference
1	406530	8	Screw, BHCS, 5/16-18 UNC x 1/2"	
2	9101505A	4	Crossbar Assembly	Page A-27
3	9101585A	1	Side Support Assembly, Rear	Page A-36
4	9101586A	1	Side Support Assembly, Front	Page A-37
5	9101723	2	Gray T-Slot Cover 15 Series (23" Long)	

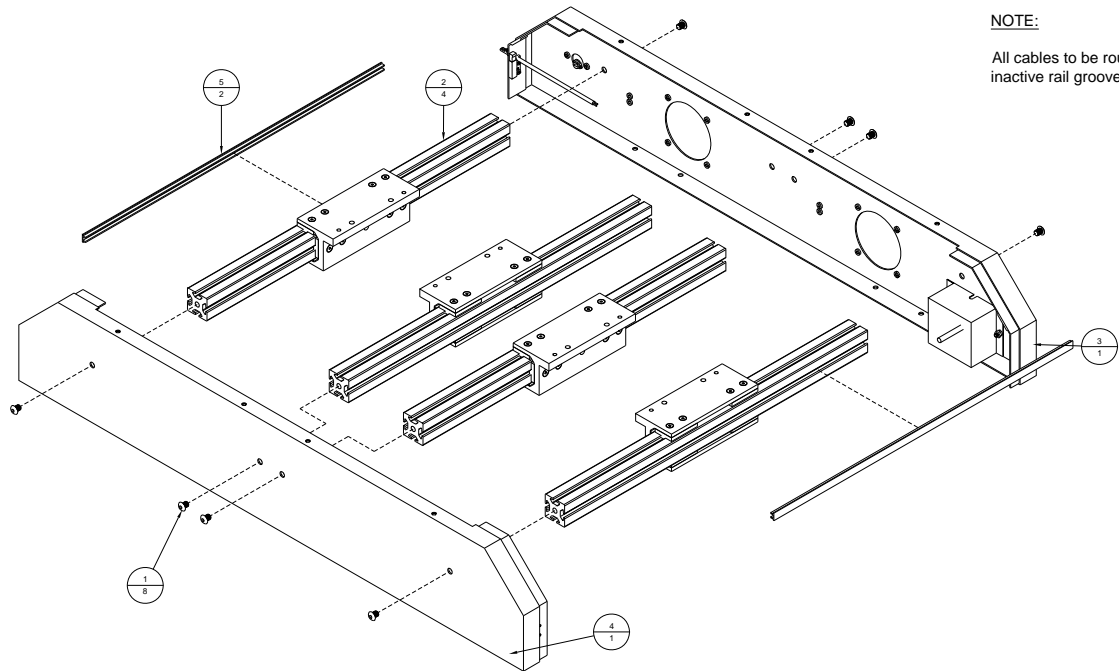
Figure A-30: (9101518A), Support Frame Assembly

Table A-31: (9101585A), Side Support Assembly - Left

Item	Part Number	Quantity	Description	Reference
1	401310	4	Screw, PHMS, 4-40 UNC x 1/4"	
2	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
3	404520	10	Screw, BHCS, 10-32 UNF x 3/8"	
4	420004	2	Nut, 4-40 UNC	
5	420008	2	Nut, 10-32 UNF	
6	439009	2	Lockwasher, No. 10	
7	606531	1	Cable, #22-2, Shielded, 4"	
8	614107	2	Contact, Male, 24-20 AWG, Yellow	
9	614114	1	Receptacle, Female, 11-4	
10	615002	4	Terminal Block, M4/6, Grey, 6mm	
11	615021	1	T-Rail, 3.1"	
12	615534	1	Sensor, Proximity, Magnetic, NO	
13	9100424	2	Cover, RF Port	
14	9100425	2	RF Port Rubber	
15	9101270	1	Strain Relief Bushing, SR 5M-3	
16	9101298A	1	Cable, Proximity Sensor, Interlock	Page A-21
17	9101585	1	Support Side, Long – Left	
18	9102160	1	Cover, Terminal Blocks	
19	9102238	1	Cover, Photocue Cable	

Figure A-31: (9101585A), Side Support Assembly - Left

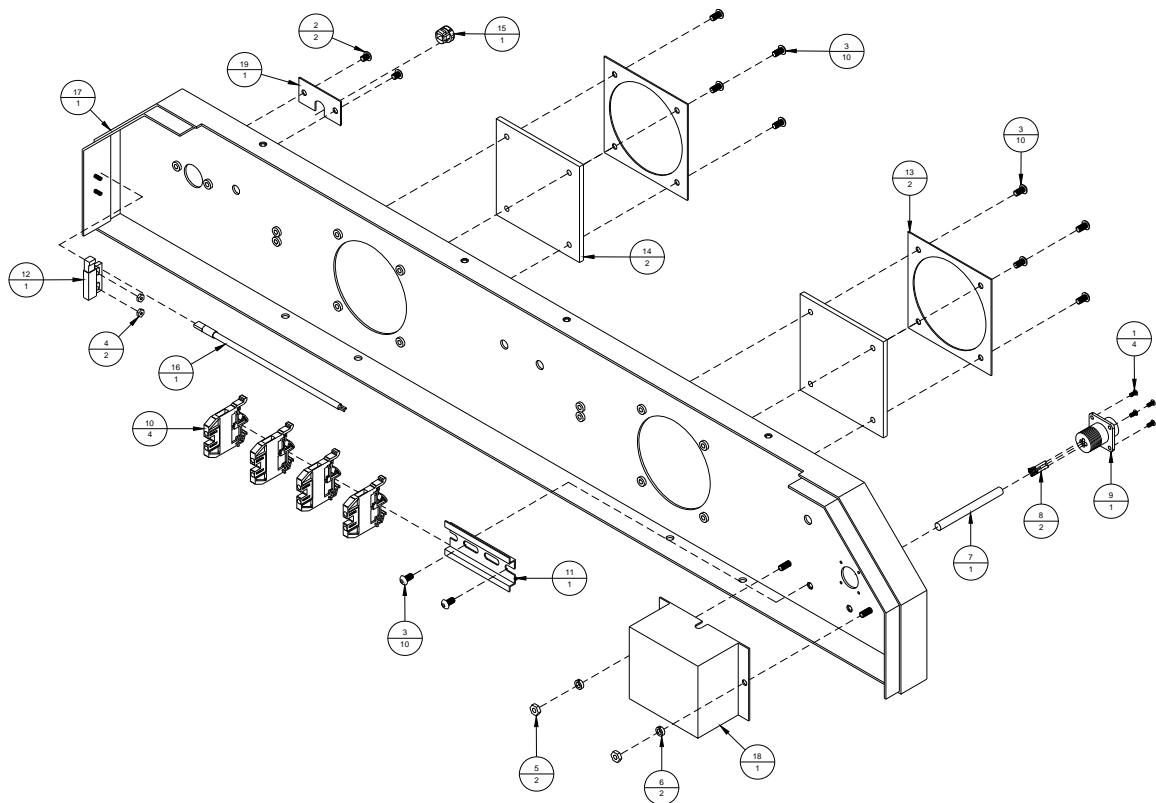


Table A-32: (9101586A), Side Support Assembly, Right

Item	Part Number	Quantity	Description	Reference
1	420004	2	Nut, 4-40 UNC	
2	615534	1	Sensor, Proximity, Magnetic, NO	
3	9101298A	1	Cable, Proximity Sensor, Interlock	Page A-21
4	9101586	1	Support Side, Long - Right	

Figure A-32: (9101586A), Side Support Assembly, Right

NOTE:

ROUTE CABLES THROUGH THE RAILS.

REFERENCE ELECTRICAL SCHEMATIC (BK750AE) FOR WIRING.

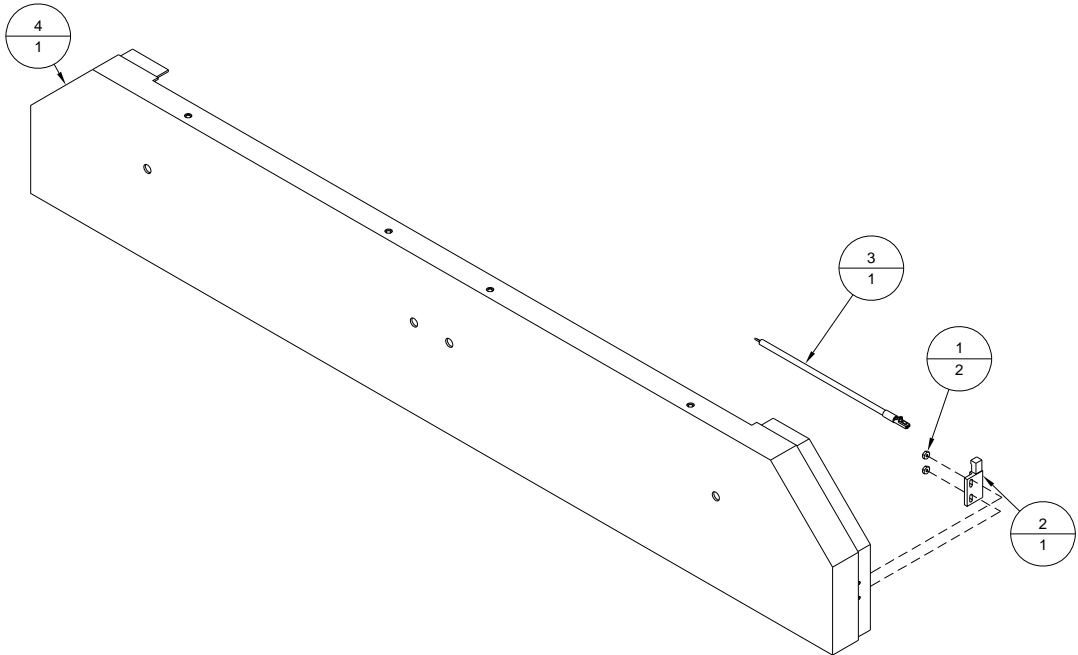


Table A-33: (9101705A), Encoder Assembly, Programmable

Item	Part Number	Quantity	Description	Reference
1	609003	1	Shrink Wrap, 3/8" I.D. (2" Long)	
2	614008	10	Contact, Male, 24-18 AWG, Mate-n-lok	
3	614009	1	Connector, 4-Pin, Socket Housing, Mate-n-lok	
4	9101646	1	Connector, 6-Pin, Pin Housing, Mate-n-lok	
5	9101705	1	Encoder, Programmable	

Figure A-33: (9101705A), Encoder Assembly, Programmable

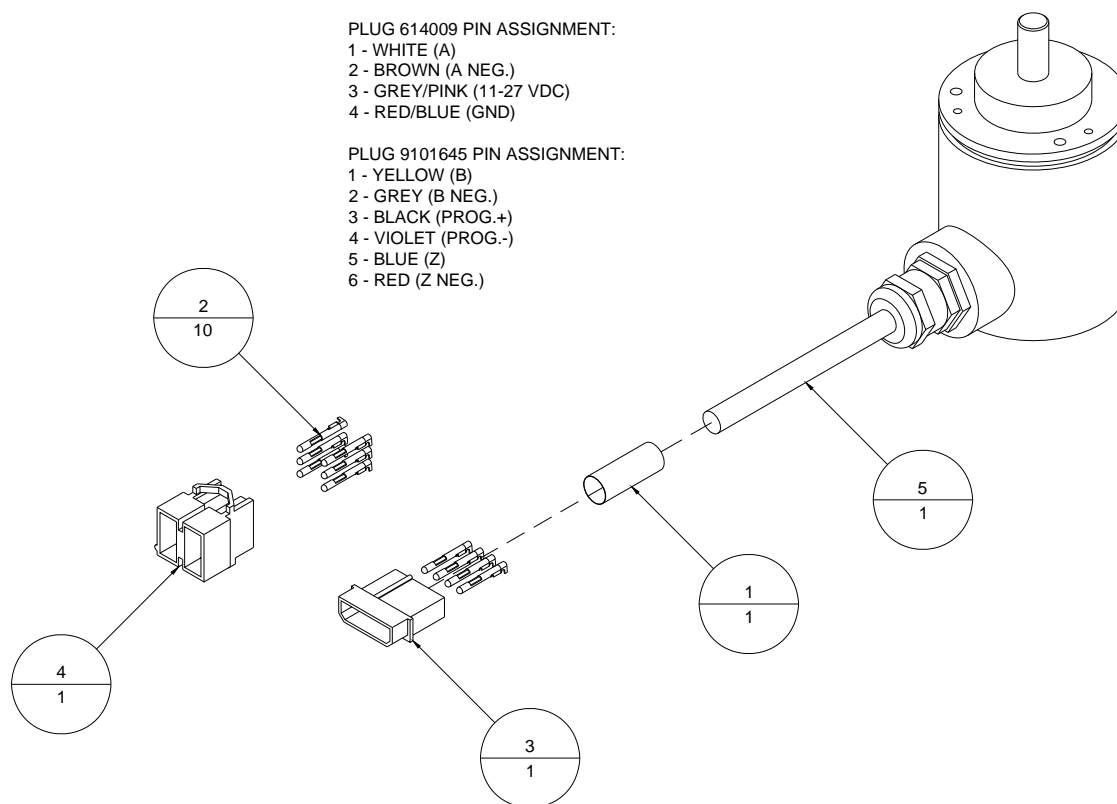


Table A-34: (9101789A), Brush Holder Assembly

Item	Part Number	Quantity	Description	Reference
1	9100995	1	Nylon Brush, Black, 1.75" x 18.5" Lg	
2	9101789	1	Brush Holder	

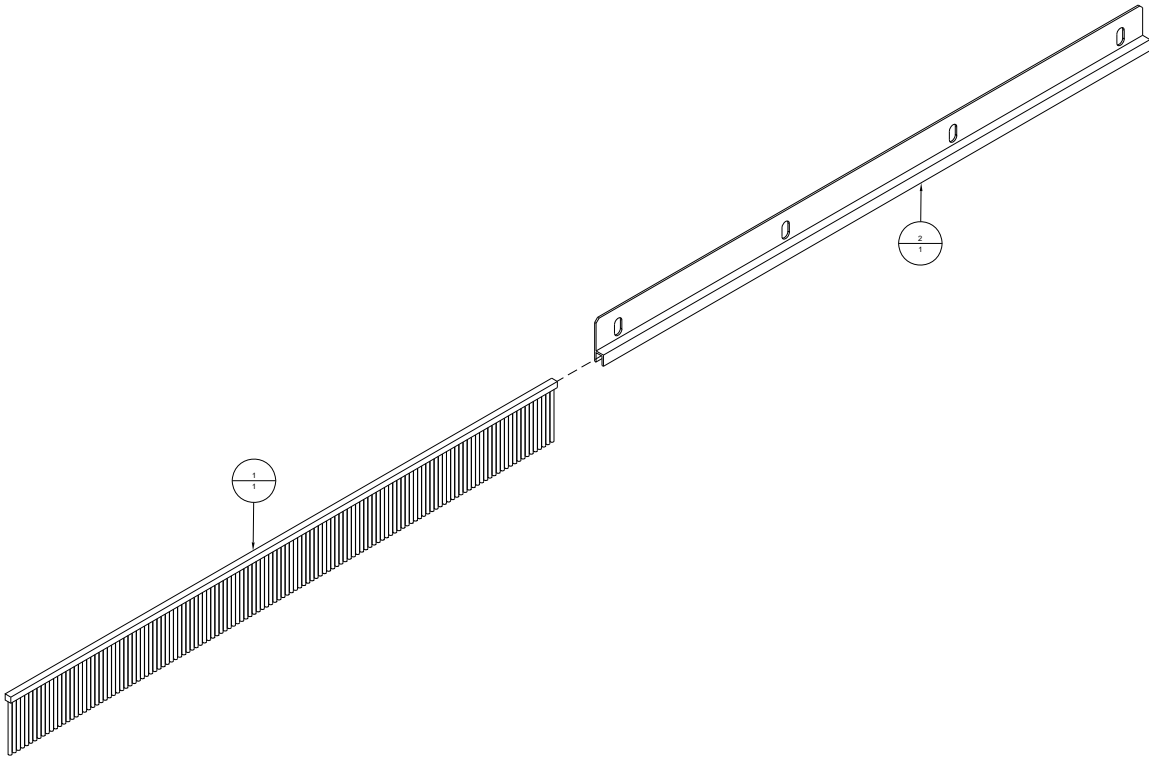
Figure A-34: (9101789A), Brush Holder Assembly

Table A-35: (9101807A), Rear Cover Assembly, BK750

Item	Part Number	Quantity	Description	Reference
1	403520	8	Screw, BHCS, 8-32 UNC x 3/8"	
2	420007	8	Nut, 8-32 UNC	
3	439009	8	Lockwasher, No. 10	
4	9101807	1	Cover, Rear UV	
5	9101876A	1	Fan Assembly	Page A-49
6	9101879	1	Bracket, Perforated, Fan	

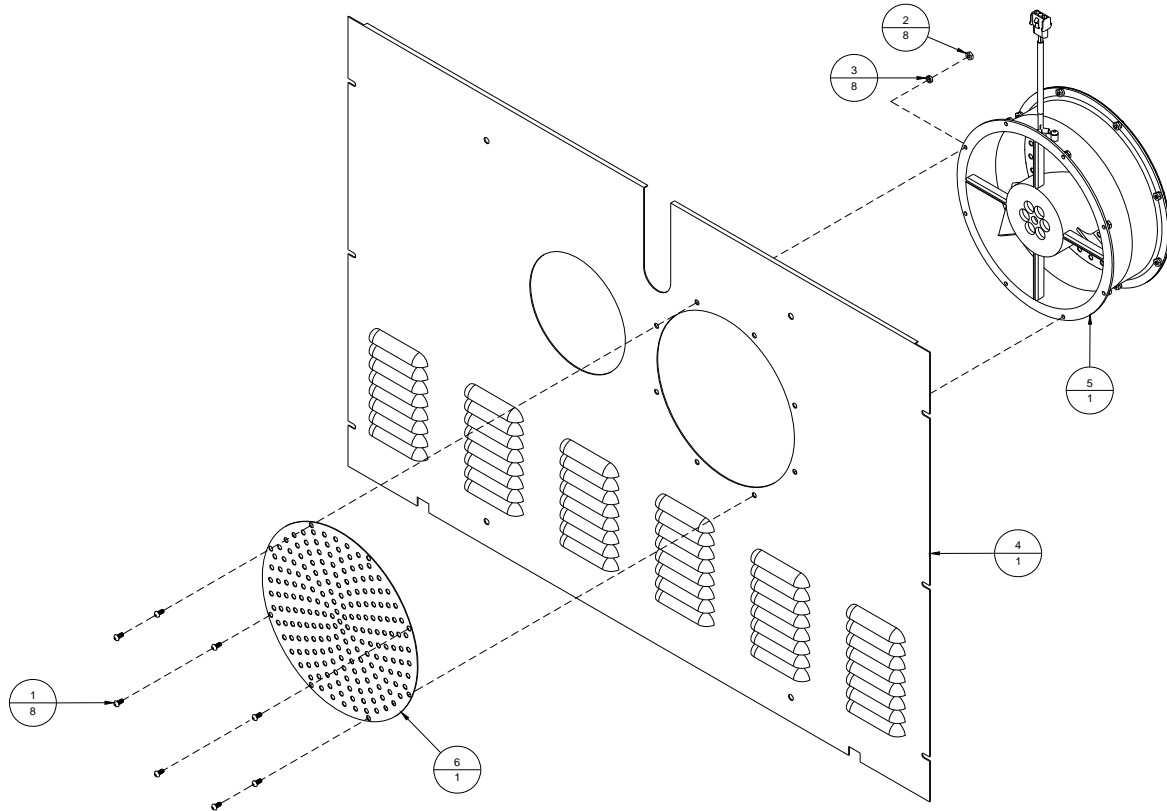
Figure A-35: (9101807A), Rear Cover Assembly, BK750

Table A-36: (9105637A), Front Panel Assembly, BK750

Item	Part Number	Quantity	Description	Reference
1	404510	8	Screw, BHCS, 10-32 UNF x 1/4"	
2	615016	2	End Stop, BAM, 9.1mm	
3	615021-3	2	T-rail 3"	
4	615021-5	1	T-rail 5"	
5	9101808	1	Switch Padlock	
6	9101871	1	Power Distribution Block	
7	9102422	1	Switch, Rocker, 125VAC/4A, 250VAC/2A	
8	9103436	2	Terminal block, Z-roofstyle, ZDU 4-2/4AN	
9	9103437	1	Terminal block, Z-roofstyle, ground, ZPE 4-2/4AN	
10	9103442	2	End bracket, EW 35	
11	9103465	1	Power Supply, Switching, 12V	
12	9103875	1	Board, Dummy for Speed Control Board	
13	9104121	1	AC Drive Controller, 230V, 1.5 Amps	
14	9105606A	1	Instrument Panel Assembly, BK750-2	Page A-23
15	9105636A	1	Terminal Block Assembly - Front - BK750-2	Page A-60
16	9105637	1	Inline Front Panel	

Figure A-36: (9105637A), Front Panel Assembly, BK750

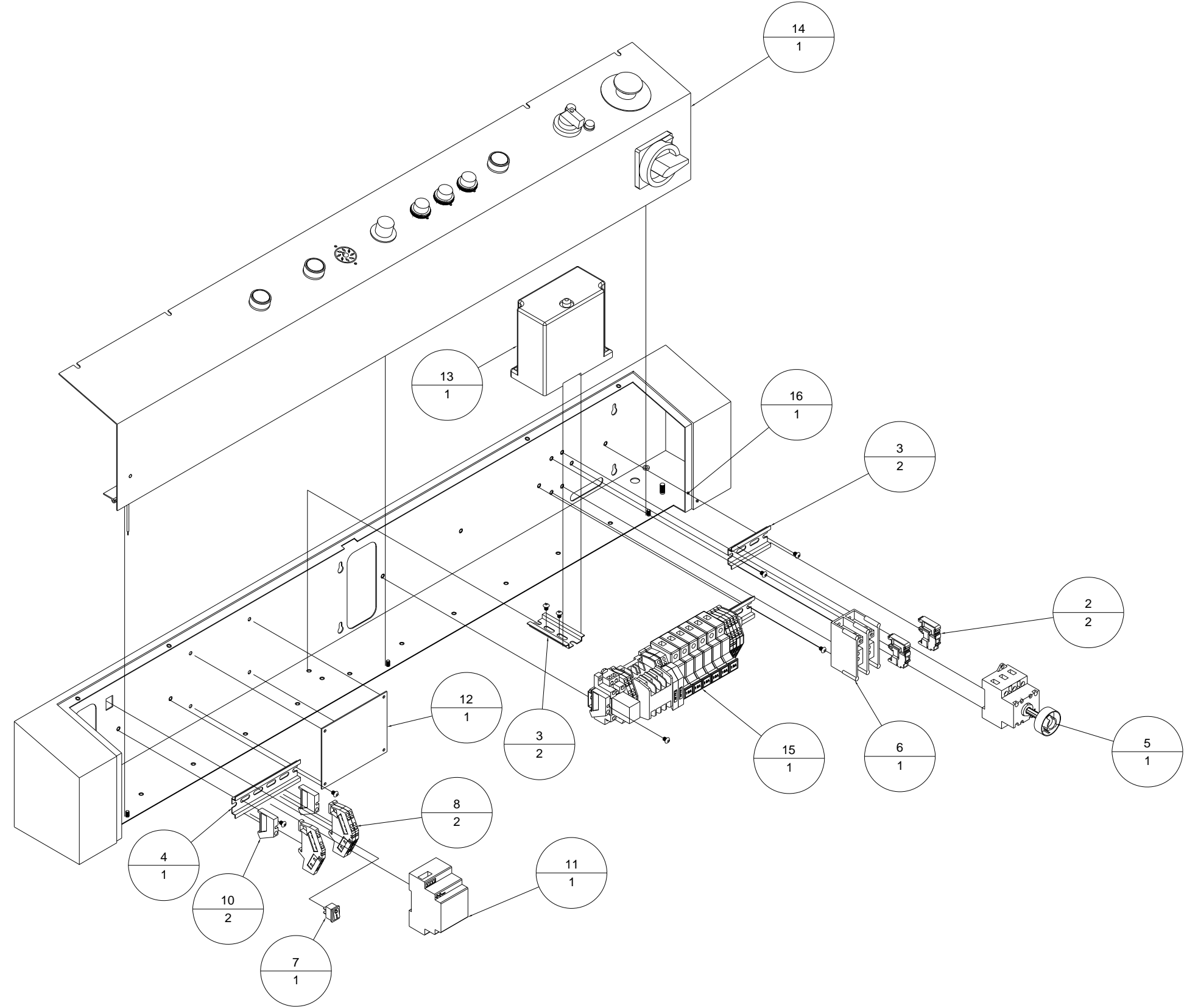


Table A-37: (9105628A), Rear Panel Assembly, BK750

Item	Part Number	Quantity	Description	Reference
1	404510	25	Screw, BHCS, 10-32 UNF x 1/4"	
2	615021-8	1	T-rail, 8"Lg	
3	615220-17	1	Wiring Duct, 1" x 1" (17" Long)	
4	615220-41	1	Wiring Duct, 1" x 1" (41" Long)	
5	9101842	1	Cover, Rear Panel, BK7IB/BK750	
6	9101845A	1	Cable, Main Power, 230 VAC, 50 A	
7	9103436	2	Terminal block, Z-roofstyle, ZDU 4-2/4AN	
8	9103440	2	Fuse terminal, ZSI 2.5/2, 1/4 X 1 1/4, 10A	
9	9103442	4	End bracket, EW 35	
10	9105170	1	Circuit Breaker, 40A	
11	9105628	1	Inline Rear Panel	
12	9105634	1	Contactor, High Power	
13	9105635A	1	Terminal Assembly Block, Rear, BK750-2	Page A-59

Figure A-37: (9105628A), Rear Panel Assembly, BK750

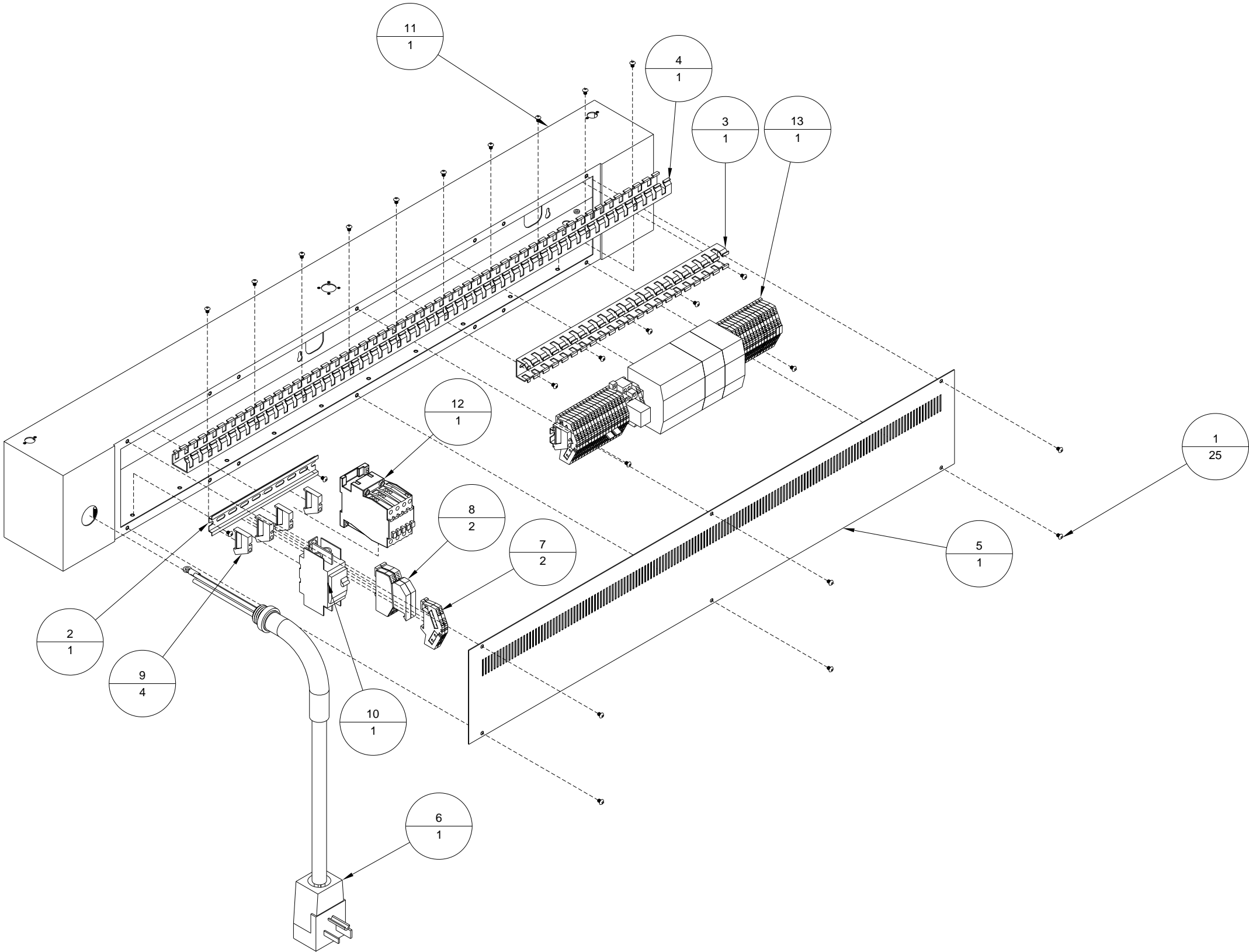


Table A-38: (9101845A), Cable, Main Power, 230 VAC, 50 A

Item	Part Number	Quantity	Description	Reference
1	615134	1	Strain Relief Grip	
2	9101845	1	Plug, 50A, 250V	
3	9101847	1	Cable, 6AWG, 3 Conductors, 13'	
4	9102239	1	Terminal, Ring, 1/2", 6 AWG, Non-Insulated	

Figure A-38: (9101845A), Cable, Main Power, 230 VAC, 50 A

NOTE:

Strip off 12" of the cable main insulation at strain relief side.
Ring tongue terminal to green (GND) wire to base ground stud.
Colours to meet electrical standards at assembly plug side.

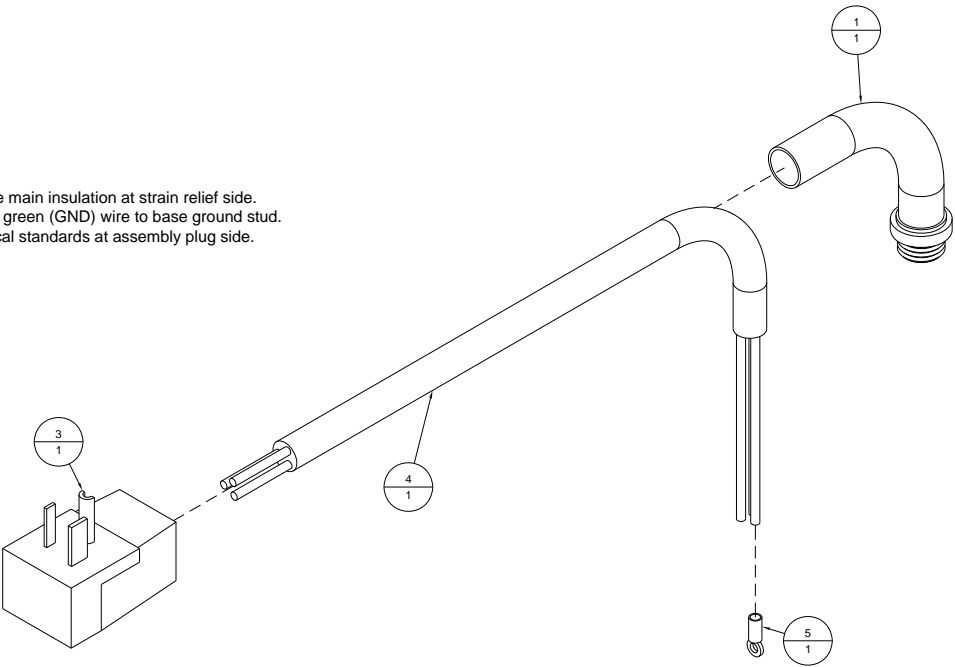


Table A-39: (9105642A), UV Base Cabinet Assembly, NA

Item	Part Number	Quantity	Description	Reference
1	402320	16	Screw, PHMS, 6-32 UNC x 3/8"	
2	404331	13	Screw, PHMS, 10-32 x 1/2" Rolling Thread	
3	404510	12	Screw, BHCS, 10-32 UNF x 1/4"	
4	404520	12	Screw, BHCS, 10-32 UNF x 3/8"	
5	404530	2	Screw, BHCS, 10-32 UNF x 1/2"	
6	405275	12	Screw, SHCS, 1/4-20 UNC x 1 1/4"	
7	405530	4	Screw, BHCS, 1/4-20 UNC x 1/2"	
8	407250	6	Screw, SHCS, 3/8-16 UNC x 3/4"	
9	407270	4	Screw, SHCS, 3/8-16 UNC x 1"	
10	440510	2	Rubber Washer, 1/4" I.D.	
11	606531A	1	Cable, Conveyor Receptacle	
12	614108A	1	Cable, Upstream Interconnection	
13	614109	7	Pin, Power Contact	
14	614127	1	Receptacle, 23-7 AMP	
15	615102	13	Tie Mount	
16	615141	13	Lashing Tie	
17	9100371	3	Inline mounting bar	
18	9100372	2	Inline Tabletop Support	
19	9100392	4	Inline main tabletop support	
20	9100785A	1	Cable, Downstream Receptacle	
21	9100829A	1	Blower Assembly, 40 CFM	
22	9101478	2	Hole Plug, Dome, 1.25"	
23	9101640	1	Handle, Panel Snap Style	
24	9101644	2	Sponge Rubber WeatherStripping	
25	9101847	1	Cable, 6AWG, 3 Conductors, 48"	
26	9102239	1	Terminal, Ring, 1/2", 6 AWG, Non-Insulated	
27	9103789	2	Latch, Quarter turn, 51 mm	
28	9103792	1	Door, Base Cabinet	
29	9104637RA	1	Inline AC Motor Assembly (Right)	
30	9104757A	1	Base, Inline, BK7IB/BK750	
31	9104767	2	Door Catch	
32	9104790A	1	Rear Cover Assembly, BK750	
34	9104834A	4	Levelling Leg Assembly	
35	9105596A	1	Blower Mount Assembly	Page A-58
36	9105605	1	Duct Joint	
37	9105628A	1	Rear Panel Assembly BK750-2	
38	9105637A	1	Inline Front Panel Assembly	

Figure A-39: (9105642A), UV Base Cabinet Assembly

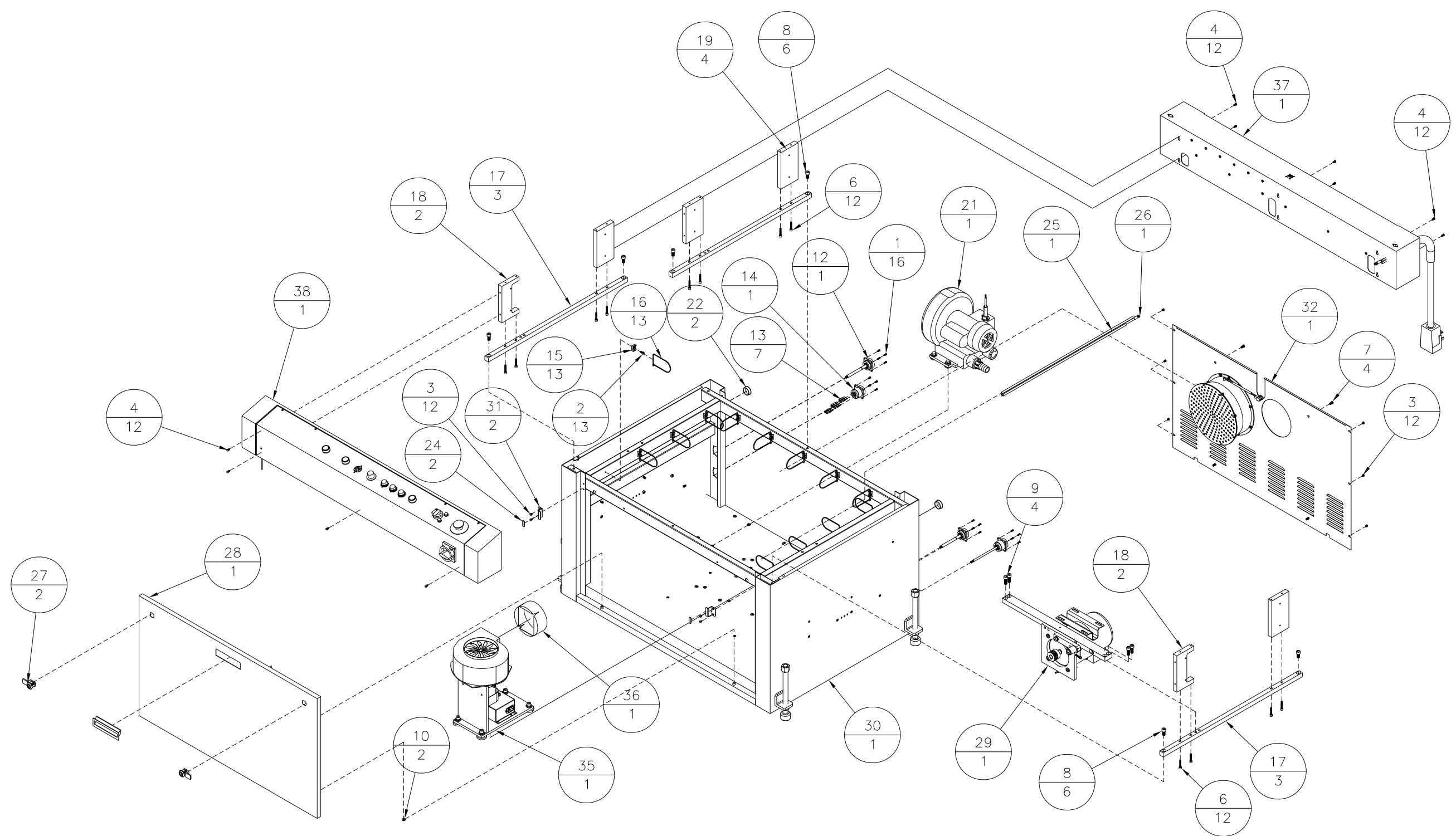


Table A-40: 9104637RA, Inline AC Motor Assembly, Right

Item	Part Number	Quantity	Description	Reference
1	404275	1	Screw, SHCS, 10-32 UNF x 1 1/4	
2	407230	4	Screw, SHCS, 3/8-16 UNC x 1/2"	
3	407280	2	Screw, SHCS, 3/8-16 UNC x 1 1/2"	
4	433160	1	Keystock, 3/16 X 1"	
5	609101	4	Marrette, #16	
6	615131	1	Cable Clamp, 3/8", Metal	
7	9100394	1	Inline Motor Mounting Bar	
8	9101665	1	Encoder Wheel Extension Spring	
9	9102247	1	Shrink Wrap, 1/2" I.D.	
10	9103435	4	Ferrule, #16 AWG, Red	
11	9103993	1	Dowel pin, 1/4" DIA., 0.625" long.	
12	9104122	1	AC Drive Motor, 0.5 Hp	
13	9104346	1	Cable, #16-4, Unshielded, 46.5", Total	
14	9104600	1	Inline Motor Mounting Plate	
15	9104601A	1	Tensioner, Inline Motor Assembly	
16	9104633	1	Pulley, 1.5" OD. 3/4" ID.	

Figure A-40: 9104637RA, Inline AC Motor Assembly, Right

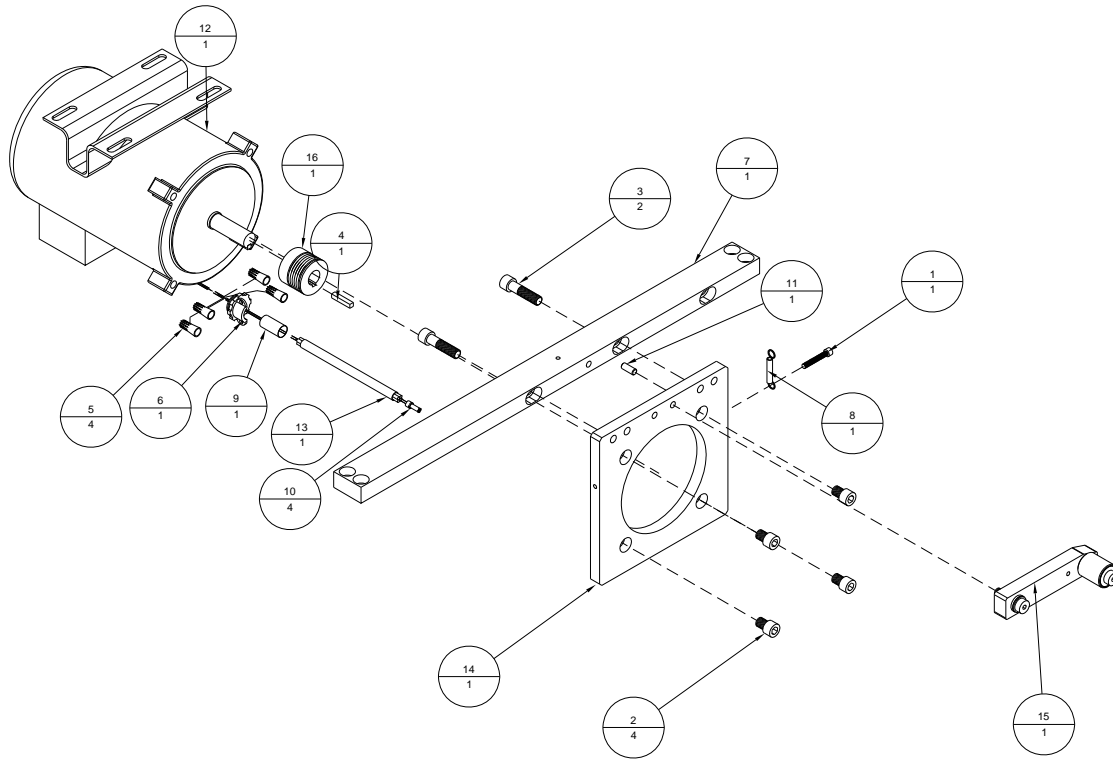


Table A-41: (9101876A), Fan Assembly, Caravel Tubeaxial, 230 VAC

Item	Part Number	Quantity	Description	Reference
1	403520	8	Screw, BHCS, 8-32 UNC x 3/8"	
2	404520	1	Screw, BHCS, 10-32 UNF x 3/8"	
3	420007	8	Nut, 8-32 UNC	
4	439009	8	Lockwasher, No. 10	
5	606034	1	Cable, #16-3, SJOW-A, 4"	
6	609000	3	Shrink Wrap, 3/6" I.D., 1"	
7	609111	1	Terminal, Ring, #10, 14-16 AWG, Blue	
8	9100716	1	Receptacle, 3 Pin, Mate-n-lok	
9	9100737	3	Contact, Male, 24-18 AWG, Mate-n-lok	
10	9101876	1	Fan, Caravel Tubeaxial, 230 VAC	
11	9101879	1	Bracket, Perforated Fan	

Figure A-41: (9101876A), Fan Assembly, Caravel Tubeaxial, 230 VAC

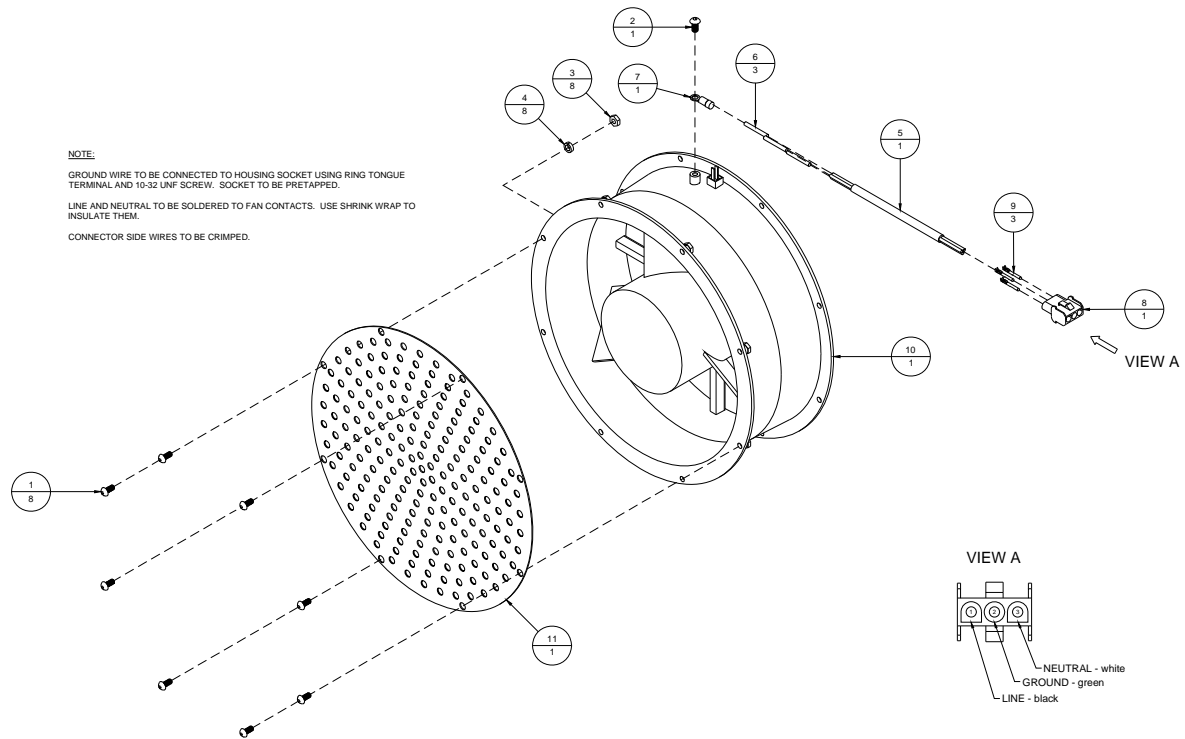


Table A-42: (9101880A), Outfeed Roller Assembly, Downstream

Item	Part Number	Quantity	Description	Reference
1	100314	1	Outfeed Roller Shaft	
2	106182	2	Pressure Roller	
3	203302	2	Outfeed Roller Arm	
4	403510	2	Screw, BHCS, 8-32 UNC x 1/4"	
5	404810	2	Screw, SHSS, 10-32 UNF x 1/4"	
6	405250	2	Screw, SHCS, 1/4-20 UNC x 3/4"	
7	416170	2	Shoulder Bolt 3/8" x 1" (5/16-18)	
8	500020	6	Bearing, R6, 3/8 ID	
9	615140	3	Lashing Tie, Small	
10	9100727A	1	Photocue Assembly	Page A-17
11	9101880	2	Outfeed Roller Bracket, Downstream UV	
12	9101951	1	Outfeed Roller Shaft, Upper, Downstream UV	
13	9101952	1	Bracket, Photocue, Downstream UV	

Figure A-42: (9101880A), Outfeed Roller Assembly, Downstream

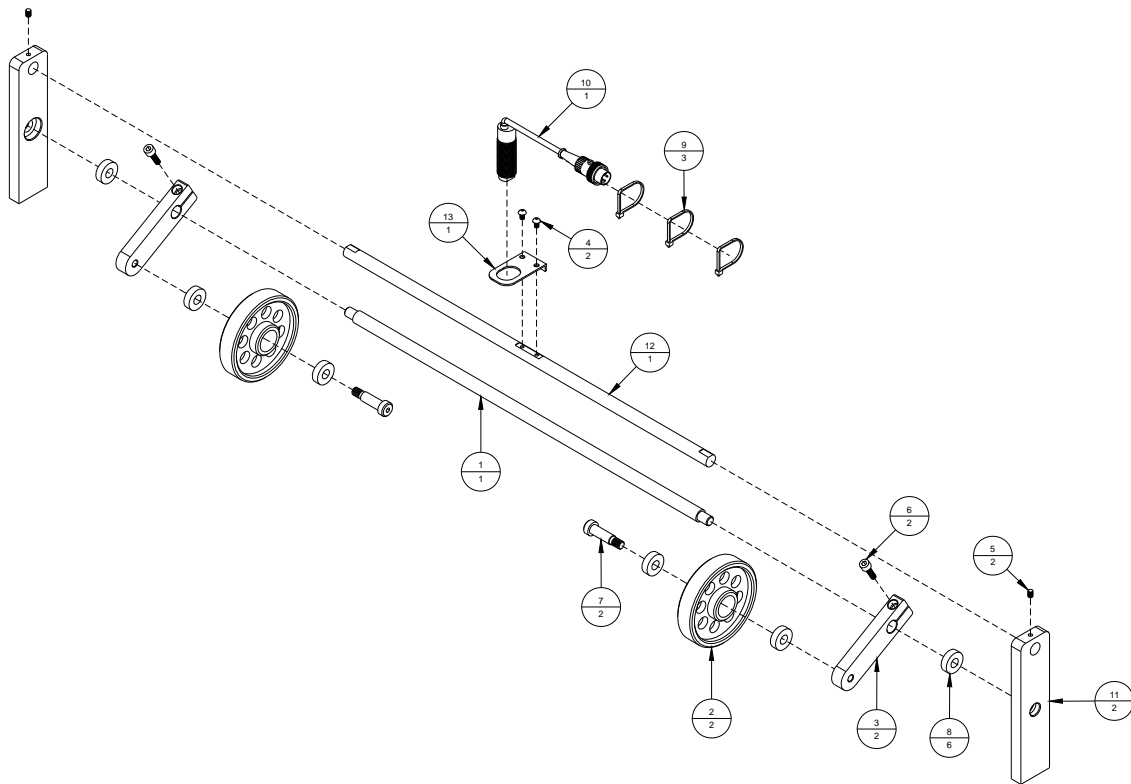


Table A-43: (9102055A), Plug, Jumper, 23-57

Item	Part Number	Quantity	Description	Reference
1	606022	1	Wire, #17, Red, Hookup (2" Long)	
2	614113	1	Cable Clamp	
3	9100784	2	Contact, Male, 24-20 AWG, Size 20 DF	
4	9102055	1	Plug, 23-57, Reverse Sex	

Figure A-43: (9102055A), Plug, Jumper, 23-57

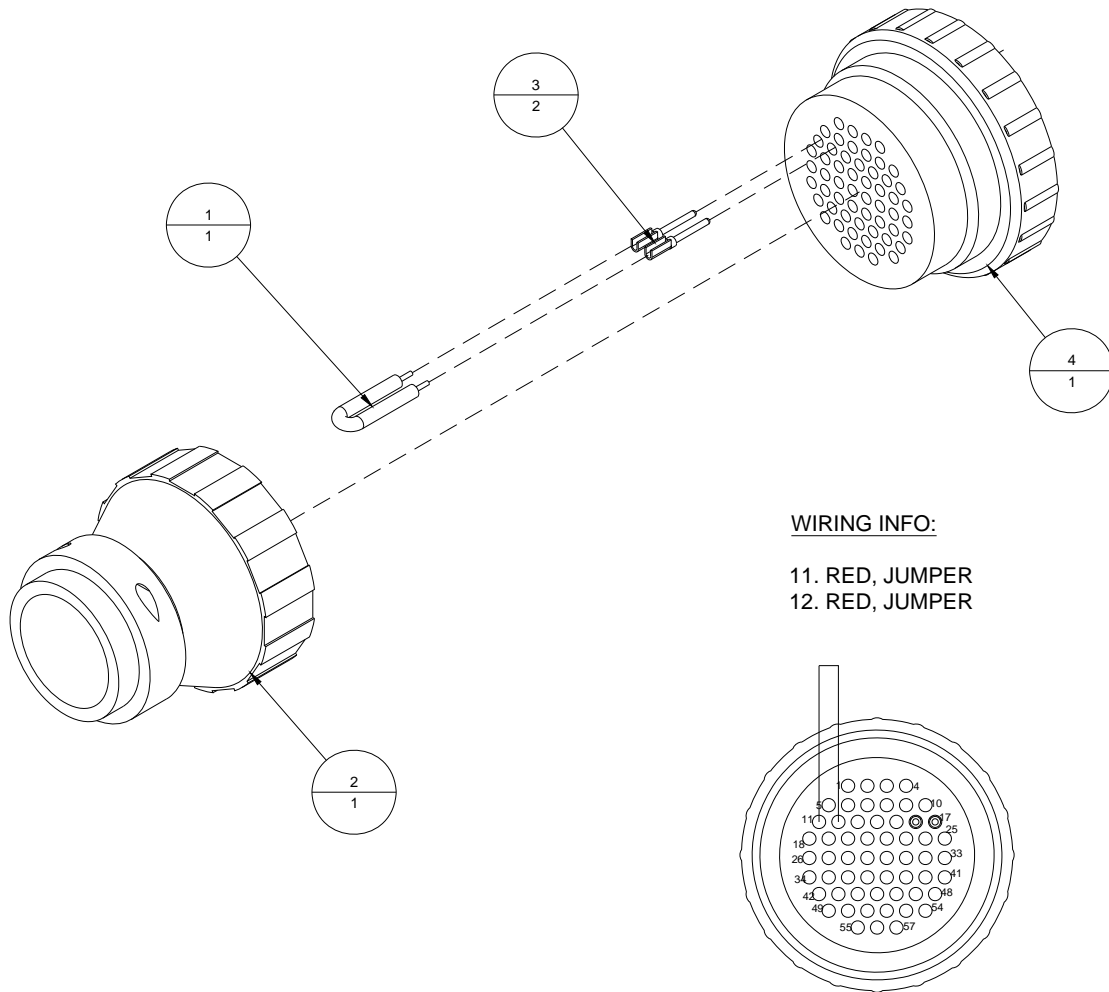


Table A-44: (9102122A), Cable, RF Detector, Slave

Item	Part Number	Quantity	Description	Reference
1	606012	1	Cable, #22-4 Shielded (60" Long)	
2	606037	3	Wire, #22, Black Hook-Up (2" Long)	
3	614107	12	Contact, Male, 24-20 AWG, Yellow	
4	614139	1	Plug, Male, CPC, 17-14	
5	614140	1	Cable Clamp, Shell 17	
6	910785	5	Contact, Female, 24-20 AWG, Size 20 DF	
7	9102122	1	Cable Clamp, Shell 11, CPC	
8	9102243	1	Plug, Female, CPC 11-8	

Figure A-44: (9102122A), Cable, RF Detector, Slave

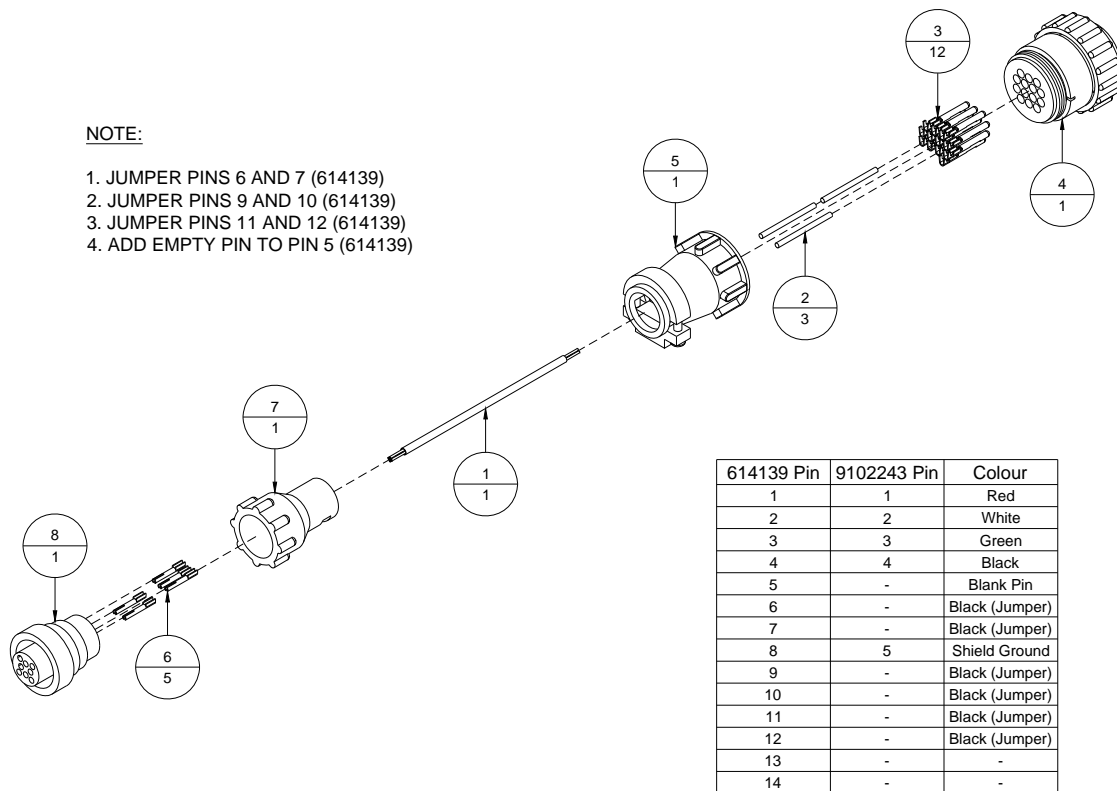


Table A-45: (9105607A), Tabletop Assembly, BK750

Item	Part Number	Quantity	Description	Reference
1	401510	2	Screw, BHCS, 4-40 UNC x 1/4"	
2	403510	2	Screw, BHCS, 8-32 UNC x 1/4"	
3	403520	2	Screw, BHCS, 8-32 UNC x 3/8"	
4	404050	8	Screw, FHCS, 10-32 UNF x 3/4"	
5	404510	44	Screw, BHCS, 10-32 UNF x 1/4"	
6	404520	5	Screw, BHCS, 10-32 UNF x 3/8"	
7	404570	4	Screw, BHCS, 10-32 UNF x 1"	
8	404820	1	Screw, SHSS, 10-32 UNF x 3/8"	
9	405230	4	Screw, SHCS, 1/4-20 UNC x 1/2"	
10	405250	4	Screw, SHCS, 1/4-20 UNC x 3/4"	
11	405530	1	Screw, BHCS, 1/4-20 UNC x 1/2"	
12	405830	4	Screw, SHSS, 1/4-20 UNC x 1/2"	
13	405997	2	Screw, RHMS, 1/4-20 UNC X 4"	
14	414130	8	Shoulder Bolt, 1/4" x 1/2" (10-24)	
15	430250	1	Woodruff Key, #606, 3/16 X 3/4	
16	438505	4	Tee Knob, Black plastic, 1/4" Screw	
17	439009	44	Lockwasher, No. 10	
18	444004	2	Clamp, Hose, Gear Type, 9/16 x 1 1/4"	
19	615425	1	Hole Plug, 7/8"	
20	630006	2	Reflective Tape, 1"	
21	802601	1	Tubing, Vacuum, Grey PVC (48" Long)	
22	9100780	1	Inline Outfeed Roller Cover	
23	9101031A	1	Inline Roller	
24	9101033	4	Inline Drive Roller Mounting Block	
25	9101034	2	Inline Drive Shaft	
26	9101037	2	Take-up Shaft Guide Block	
27	9101038A	1	Take-Up Roller Assembly	
28	9101040	1	Inline Belt Alignment Shaft	
29	9101042	2	Roller Finger Guard	
30	9101414	1	Vacuum Hose Flanged Fitting	
31	9102163	1	Vacuum Tray	
32	9102228A	1	Roller, UV Curing Base	
33	9104318	1	Encoder Disc	
34	9104320	1	Encoder Sensor Mount	
35	9104322	1	Optoswitch, Transmissive	
36	9104635	1	Belt, Poly-V 6-Groove	
37	9104882A	1	Multi-V Pulley	
38	9105565	1	Tabletop, UV, Vacuum	
39	9105566	1	Main Chamber	
40	9105567	2	Cover, Perforated, UV	
41	9105613A	1	Belt Set, 114.5" Lg., Set of 4 Belts Perforated, 500F	
42	9106149	8	Bushing, Belt Guide	
43	9106155	4	Belt Guide Block	

Figure A-45: (9105607A), Tabletop Assembly, BK750

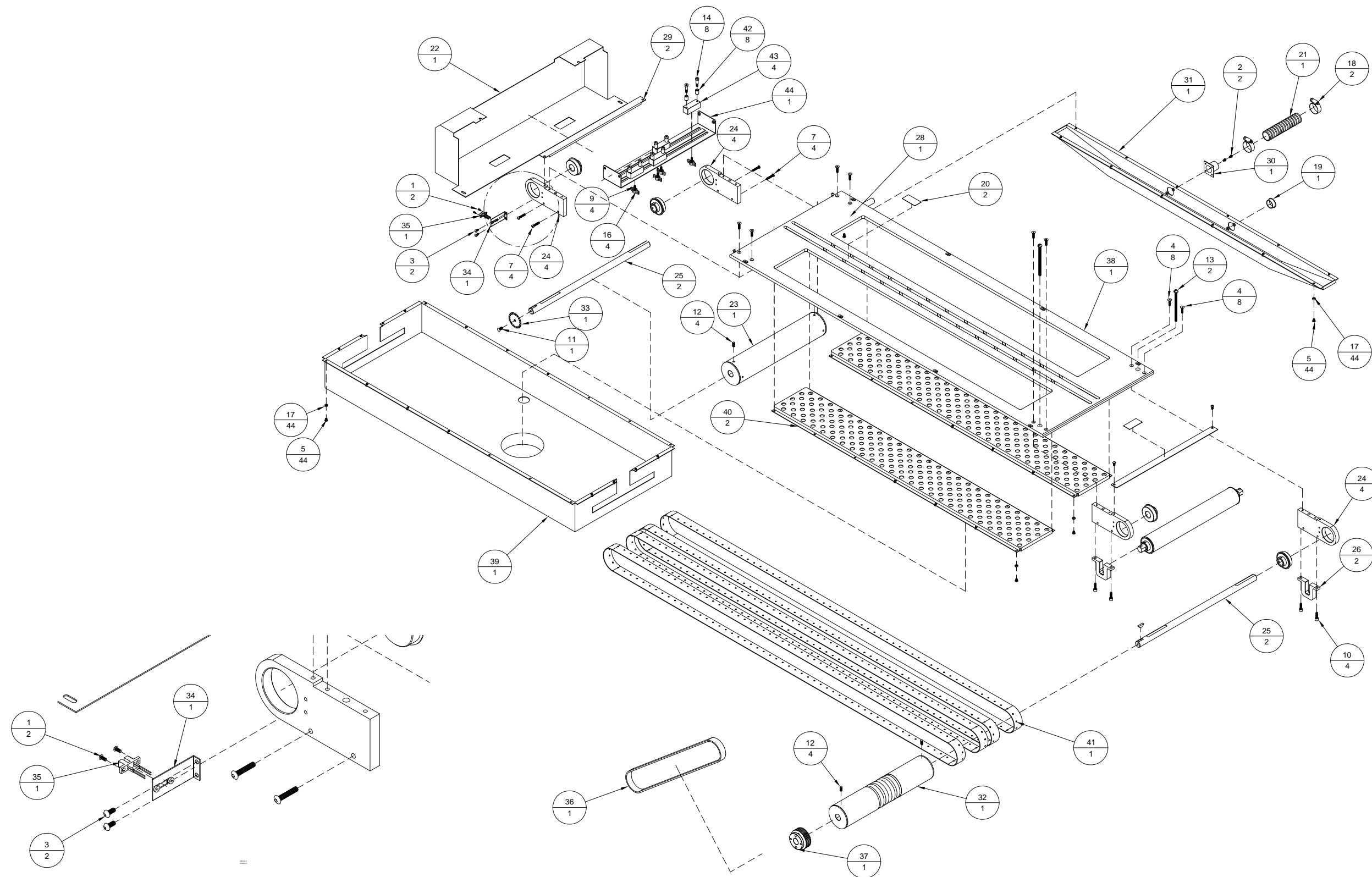


Table A-46: (9102230A), Tabletop Assembly, Side, BK750

Item	Part Number	Quantity	Description	Reference
1	404020	6	Screw, FHCS, 10-32 UNF x 3/8"	
2	404050	14	Screw, FHCS, 10-32 UNF x 3/4"	
3	404510	2	Screw, BHCS, 10-32 UNF x 1/4"	
4	9101778	1	Shield, Upstream	
5	9101880A	1	Outfeed Roller Assembly, Downstream	Page A-50
6	9102229	2	Side Tabletop, UV	
7	9102230	2	Bracket, Upstream Shield Holder	

Figure A-46: (9102230A), Tabletop Assembly, Side, BK750

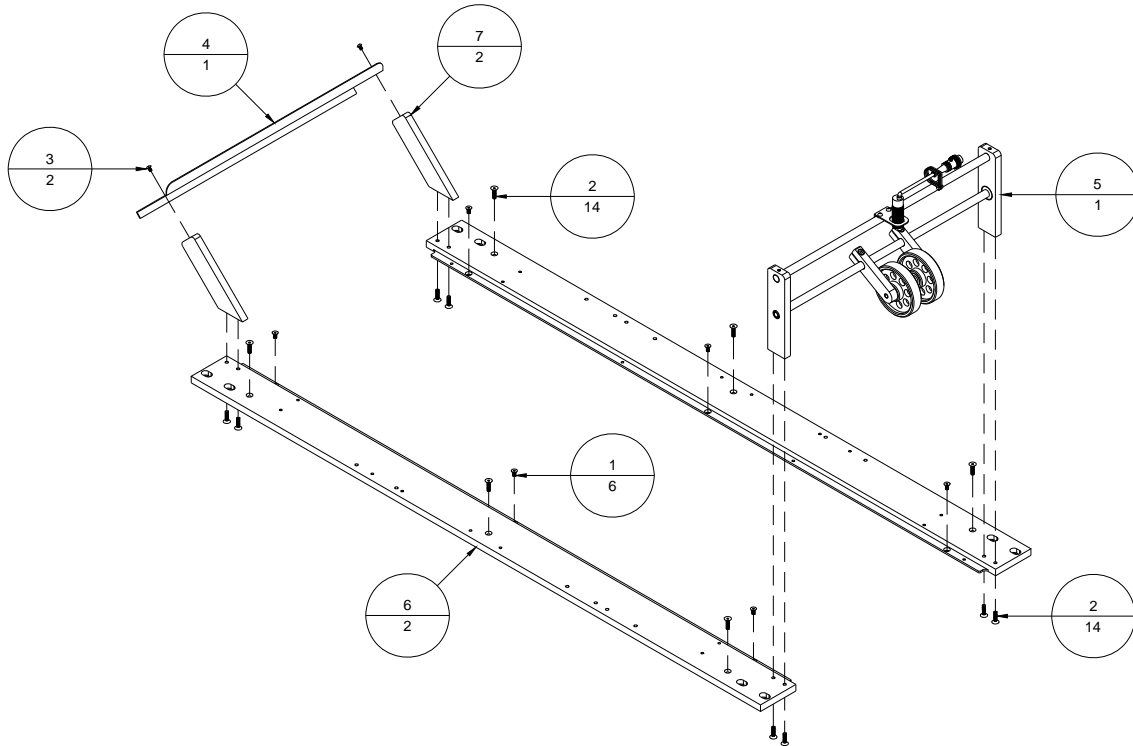


Table A-47: (9102243A), Cable, RF Detector, Master

Item	Part Number	Quantity	Description	Reference
1	606014	1	Cable, #22-4, Shielded (35" Long)	
2	9100785	5	Contact, Female, 24-20 AWG, Size 20 DF	
3	9102122	1	Cable Clamp, Shell 11, CPC	
4	9102243	1	Plug, Female, CPC 11-8	

Figure A-47: (9102243A), Cable, RF Detector, Master

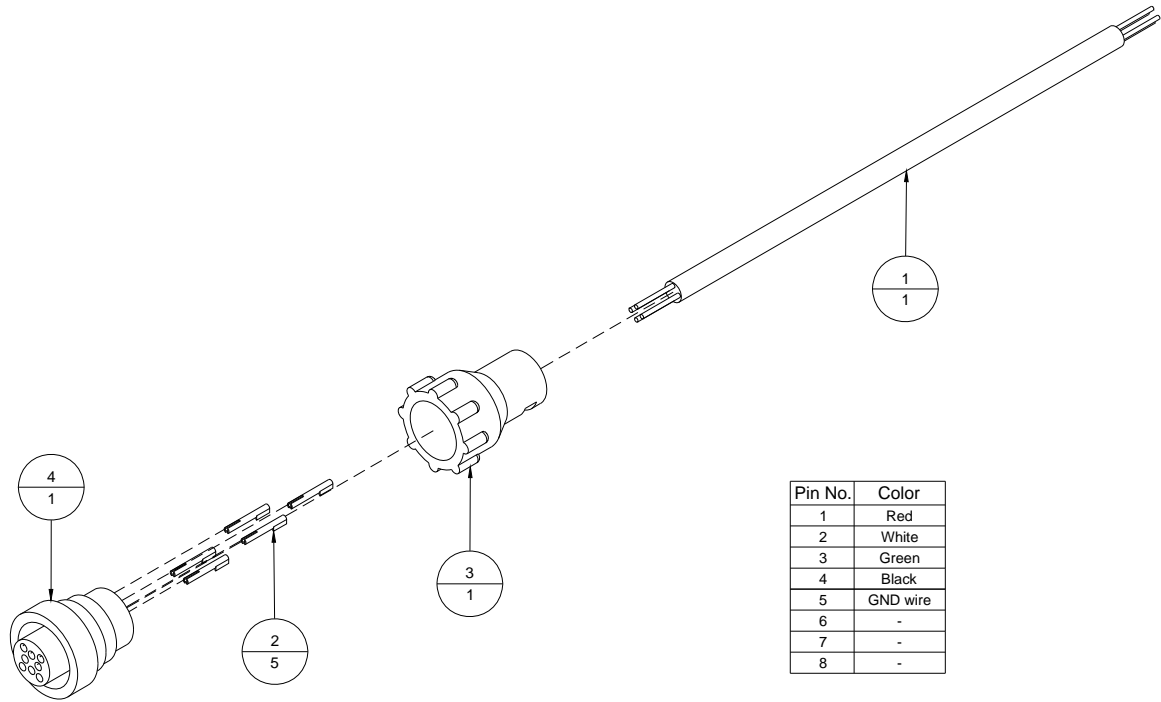


Table A-48: (9105528A), Kit, Sled Strap, V Shape

Item	Part Number	Quantity	Description	Reference
1	404810	2	Screw, SHSS, 10-32 UNF x 1/4"	
2	405820	2	Screw, SHSS, 1/4-20 UNC x 3/8"	
3	438115A	2	T" Knob, Assembly, 3/4"	
4	9100853	2	Strip Clamp, 1/2 in ID	
6	9101951	1	Outfeed Roller Shaft,Upper, Downstream UV	
7	9102230	2	Bracket, Upstream Shield Holder	
8	9105228	2	Sled Strap, V-shaped, BK750	

Figure A-48: (9105528A), Kit, Sled Strap, V Shape

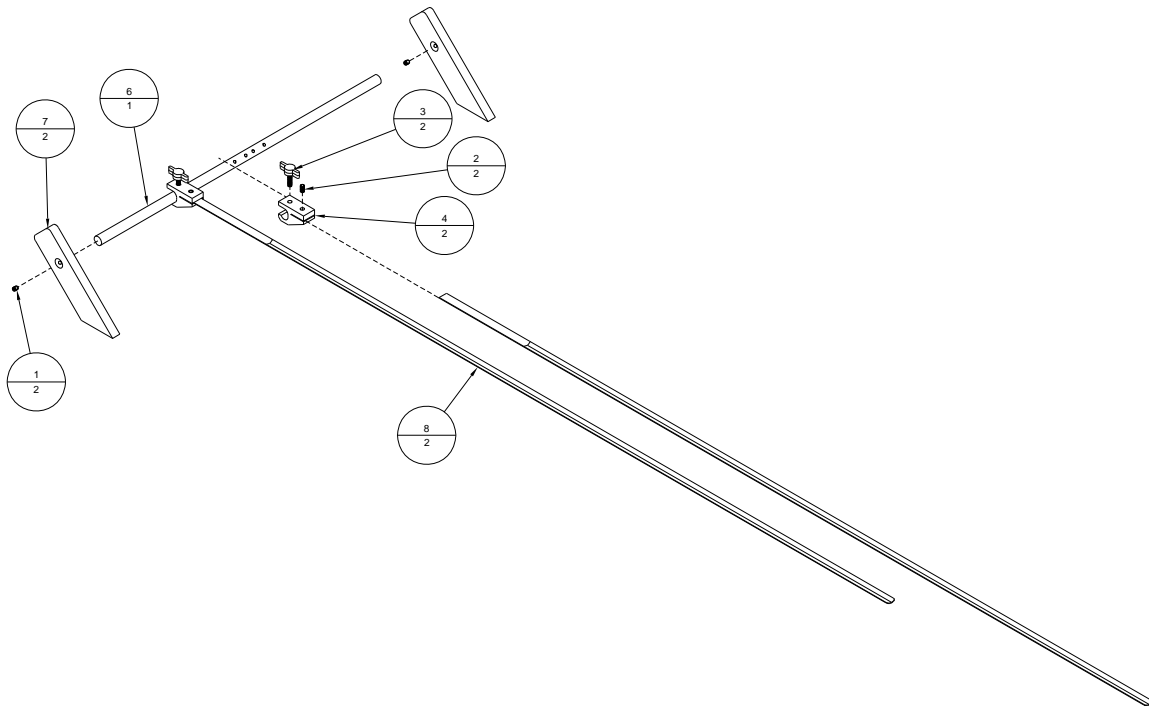


Table A-49: (9105596A), Blower Assembly, Exhaust, 50 /60 Hz

Item	Part Number	Quantity	Description	Reference
1	401010	2	Screw, FHCS, 4-40 UNC x 1/4"	
2	403530	1	Screw, BHCS, 8-32 UNC X 1/2 in	
3	404520	3	Screw, BHCS, 10-32 UNF x 3/8"	
4	405230	4	Screw, SHCS, 1/4-20 UNC x 1/2"	
5	407270	4	Screw, SHCS, 3/8-16 UNC x 1"	
6	439010	4	Lockwasher, 1/4" I.D.	
7	439020	4	Lockwasher, 3/8 in I.D.	
8	440020	4	Washer, 3/8" ID	
9	440511	4	Rubber Washer, 5/16" x 1 1/2 x 1/4	
10	9100783	1	Strain Relief, Round Cable, SR6N3-4	
11	9102862	1	Receptacle, Male, 250VAC/10A, IEC	
12	9105568	1	Cover, Motor/Capacitor	
13	9105590	1	Motor Mount, Blower Vacuum, BK750-2	
14	9105597	1	Motor Clamp	
15	9105598	1	ORIX Blower Motor	
16	9105599	1	Capacitor, Motor	

Figure A-49: (9105596A), Blower Assembly, Exhaust, 50/60 Hz

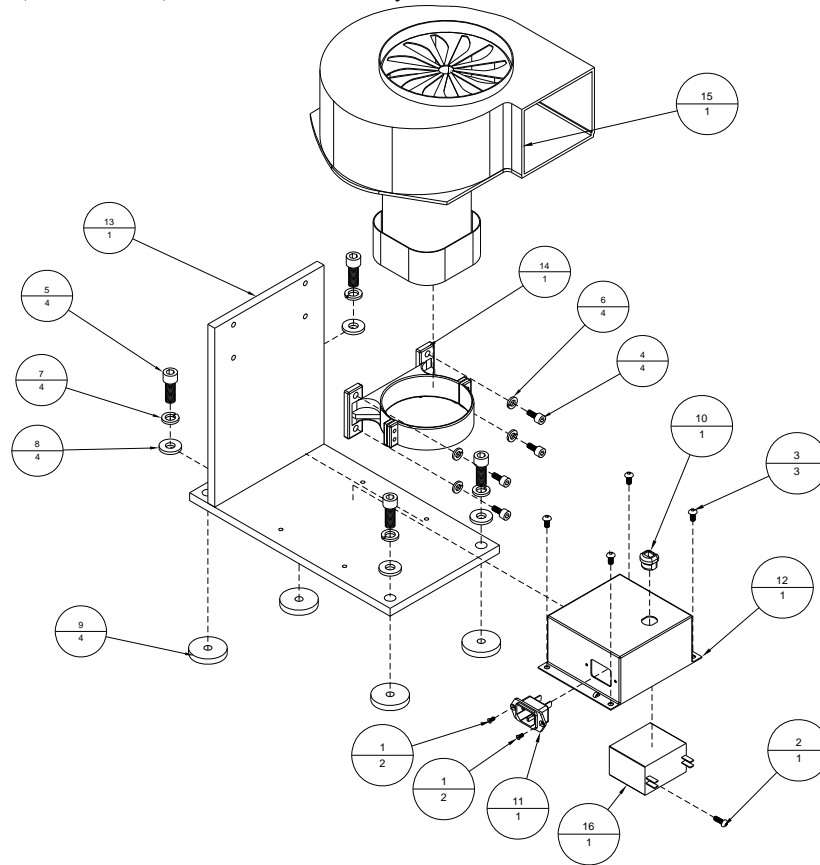


Table A-50: (9105635A), Terminal Block Assembly, Rear, BK750

Item	Part Number	Quantity	Description	Reference
1	610102	1	Relay, 12 VDC	
2	615004	1	Relay Base	
3	615021-17	1	T-Rail Din 17"	
4	640301	1	Diode	
5	9102248	1	Resistor, 1.5 k Ω m, 1 watt	
6	9103436	29	Terminal block, Z-roofstyle, ZDU 4-2/4AN	
7	9103437	7	Terminal block, Z-roofstyle, ground, ZPE 4-2/4AN	
8	9103438	3	End plate, ZAP ZDU 4-2/4AN	
9	9103439	2	Cross-connection, ZQV 4/2	
10	9103442	4	End bracket, EW 35	
11	9105477	1	Mitsubishi, PLC	
12	9105478	1	Mitsubishi, Expansion Input Module	
13	9105479	1	Mitsubishi, Expansion Output Module	

Figure A-50: (9105635A), Terminal Block Assembly, Rear, BK750

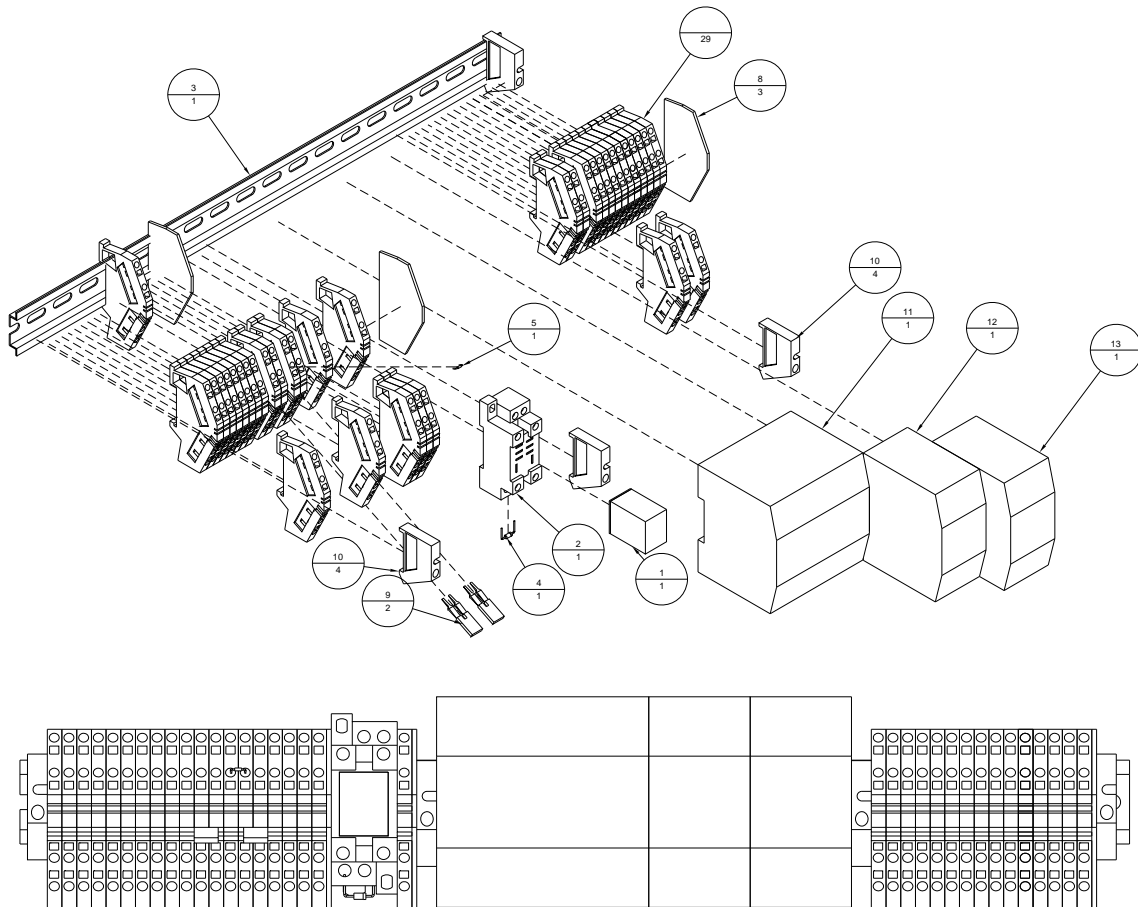
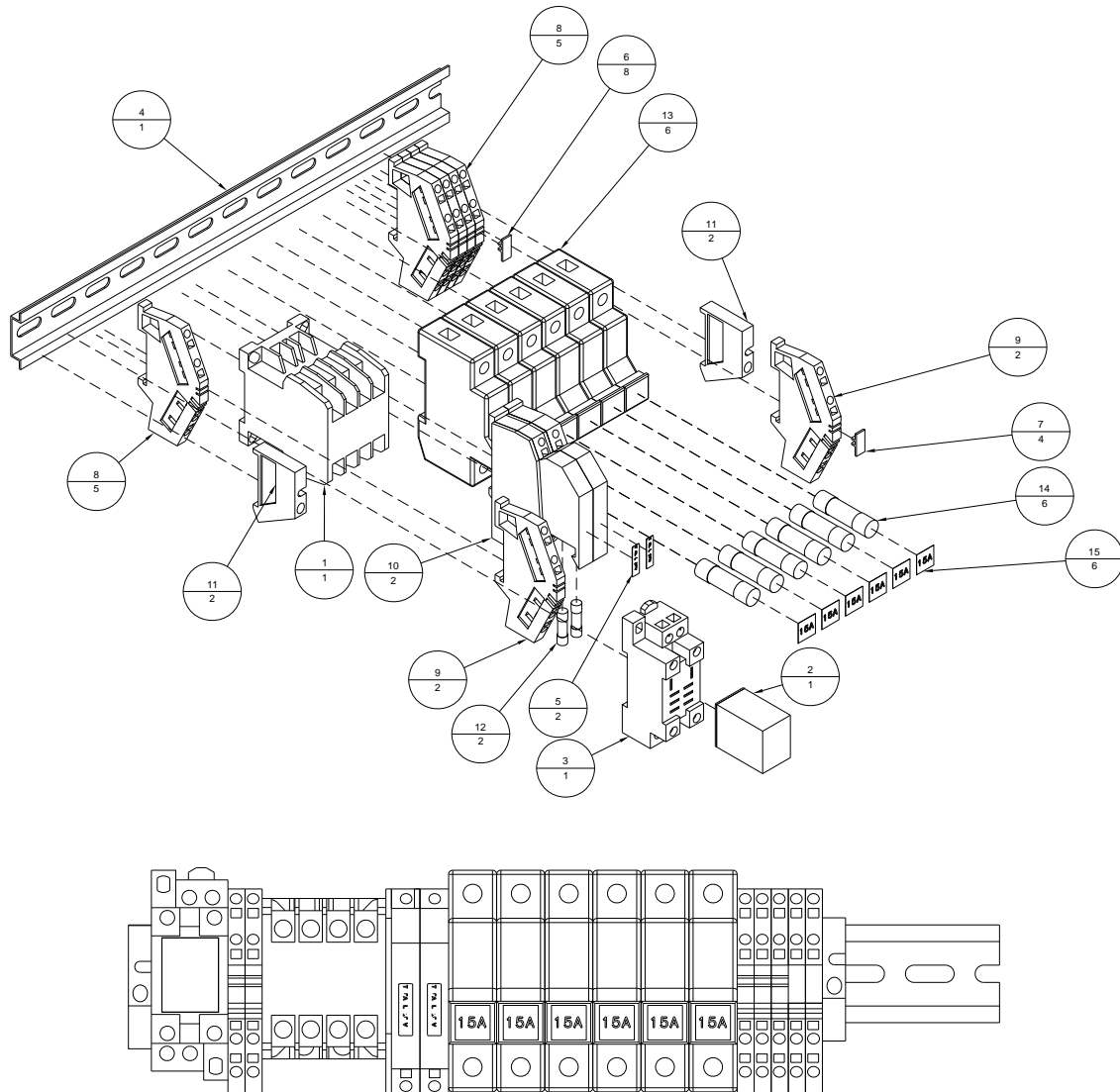


Table A-51: (9105636A), Terminal Block Assembly, Front, BK750

Item	Part Number	Quantity	Description	Reference
1	610004	1	Contactor, 3 Pole, 25A, 220V, 3 kW	
2	610102	1	Relay, 12 VDC	
3	615004	1	Relay Base	
4	615021-12	1	T-Rail, 12.5"	
5	9101903	2	Label, Fuse, T 5A L 250V	
6	9102050	8	Terminal Marker, WS 12/6, L	
7	9102299	4	Terminal Marker, WS 12/6, GND	
8	9103436	5	Terminal block, Z-roofstyle, ZDU 4-2/4AN	
9	9103437	2	Terminal block, Z-roofstyle, ground, ZPE 4-2/4AN	
10	9103440	2	Fuse terminal, ZSI 2.5/2, 1/4 X 1 1/4, 10A	
11	9103442	2	End bracket, EW 35	
12	9103446	2	Fuse, 5A, 1/4" x 1-1/4"	
13	9103447	6	Fuse holder, 13/32" dia.	
14	9103448	6	Fuse, 15A, 250V, 13/32 x 1-1/2", Slo-blo	
15	9105226	6	Label, CSA, 15A, 0.05 x 0.05	

Figure A-51: (9105636A), Terminal Block Assembly, Front, BK750



List of Schematics

Figure B-1: Power Flow Schematic Wiring B-1

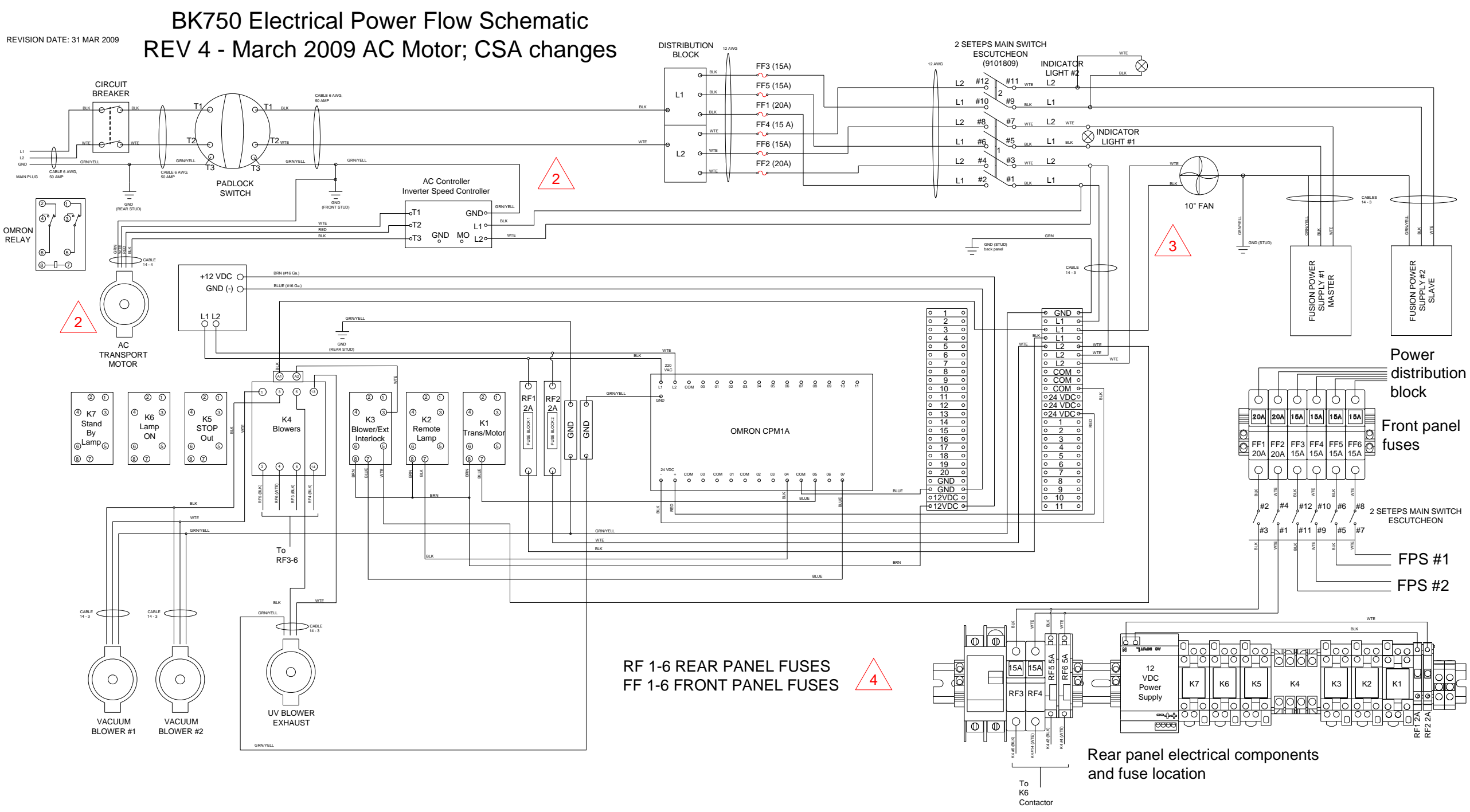
Figure B-2: Front Panel Wiring B-2

Figure B-3: UV Power Supply Wiring B-2

Figure B-4: Photocues, Encoder, Interlock, and Toggle Switch Wiring B-3

Figure B-5: Upstream/Downstream Wiring B-4

Figure B-1: Power Flow Schematic Wiring (BK750AE – Page 1)



BK750 - Electrical Front Panel
REV 4 - Mar 2009 AC Motor CSA

Revision Date: 19-Mar-2009

WWTP

2 SETEPS MAIN SWITCH ESCUTCHEON (9101809)

OMRON RELAY

UPSTREAM STOP (11)

UPSTREAM STOP (12)

INDICATOR LIGHT #1

INDICATOR LIGHT #2

START

STOP

AC Controller Inverter Speed Controller

SPEED CONTROL POT

ERROR (RED)

STAND BY (YELLOW)

LAMP ON (GREEN)

RESET

OMRON CPM1A

1 TB

2 TB

K7 Stand By Lamp

K6 Lamp ON

K5 STOP Out

K4 Blower

K3 Blower/Ext Interlock

K2 Remote Lamp

K1 Trans/Motor

24 VDC

COM

00

01

02

03

04

05

06

07

WTE/BLK

WTE

12VDC

12VDC

1

2

3

4

5

6

7

8

9

10

11

GND

L1

L2

L3

COM

COM

24 VDC

24 VDC

1

2

3

4

5

6

7

8

9

10

11

GND

GND

12VDC

12VDC

[illegible]

Figure B-4: Photocues, Encoder, Interlock, and Toggle Switch Wiring (BK750AE – Page 4)

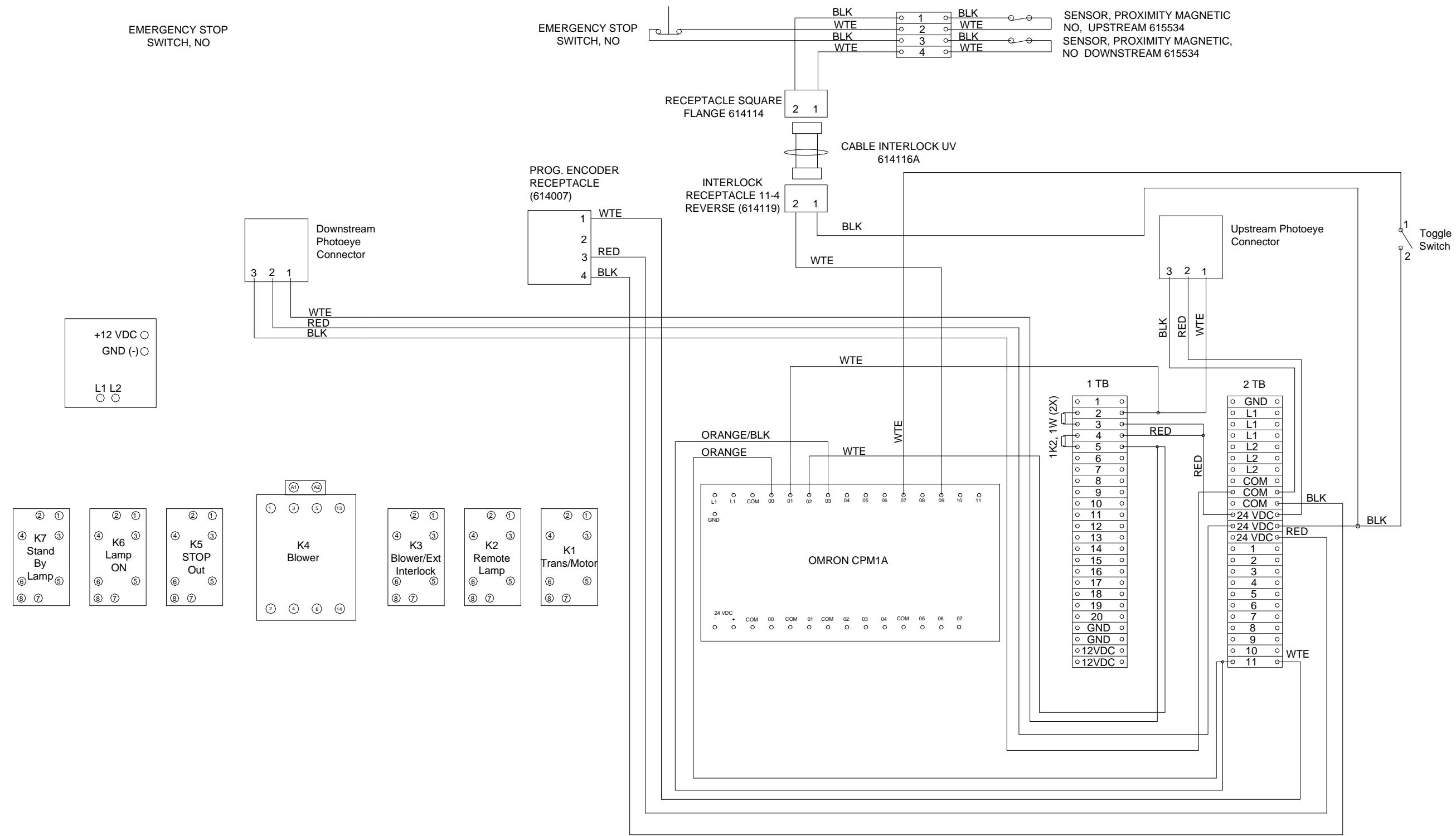


Figure B-5: Upstream/Downstream Wiring (BK750AE – Page 5)

