

UV Conveyor System

With Fusion UV Lamp

TECHNICAL REFERENCE MANUAL

ONLY FROM

AUV/LESCO

A Division of American Ultraviolet Company

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3/29/2012

AUV/LESCO WARRANTY POLICY

EQUIPMENT WARRANTY:

New equipment manufactured by **American Ultraviolet West, Inc. (AUV/LESCO)** is warranted to be free from defects in material and workmanship under normal and proper use for one (1) full year from date of original shipment. AUV/LESCO will repair or replace at its option, any defective parts when returned to AUV/LESCO by the purchaser, all transportation paid by the purchaser, within one year from date of original shipment. Equipment may not be returned, whether for warranty or other purposes, without a RMA (Return Material Authorization) number.

AUV/LESCO will assume no expense or liability for repairs made outside its plant without written consent by AUV/LESCO, nor for any labor costs, which are so incurred.

For equipment manufactured by manufacturers other than AUV/LESCO, AUV/LESCO will extend to the purchaser any warranty it receives from them, and AUV/LESCO will not be responsible for any incurred expenses outside of such warranty.

AUV/LESCO will not be liable for any consequential costs or damages of any kind.

If repair of equipment is required but return of such equipment to AUV/LESCO is not feasible, then by mutual consent between AUV/LESCO and the purchaser, an authorized AUV/LESCO service representative will be sent to the purchaser's plant to make necessary repairs and the purchaser will be charged for the representative's expenses. Warranty period for any/all equipment repaired while under original equipment warranty will remain one (1) full year from date of original shipment plus any time said equipment was in AUV/LESCO's possession. Warranty period for any repairs made after the original equipment warranty period has expired shall be ninety (90) days.

SPARE PARTS WARRANTY (Excludes Bulbs and Lightguides):

AUV/LESCO will warrant all spare parts to be free from defects in material and workmanship under normal and proper use for a period of 60 days. Bulbs and

lightguides are covered by separate warranties. Consumable parts, such as fuses and air filters, are NOT covered.

CONDITIONS OF WARRANTY:

For above warranty on AUV/LESCO equipment to be enforceable, the purchaser must:

1. Return any parts claimed to be defective for inspection and action by AUV/LESCO. All returns must be pre-authorized, correctly packaged and shipped, and accompanied by a RMA (Returned Material Authorization) number.
2. Keep accurate records of elapsed time, time of installation or removal in sufficient detail, to determine the running time and environment of components/system in question. The purchaser will allow AUV/LESCO to verify such records if necessary.

The following will void AUV/LESCO's warranty:

1. Defects resulting from improper installation or use,
2. Tampering with equipment,
3. Lack of maintenance,
4. Service not in accordance with AUV/LESCO *Technical Reference Manual*,
5. Acts of God, or
6. Other circumstances beyond AUV/LESCO's control.

There are no warranties, expressed or implied, except as stated above or provided in writing by an authorized AUV/LESCO representative.

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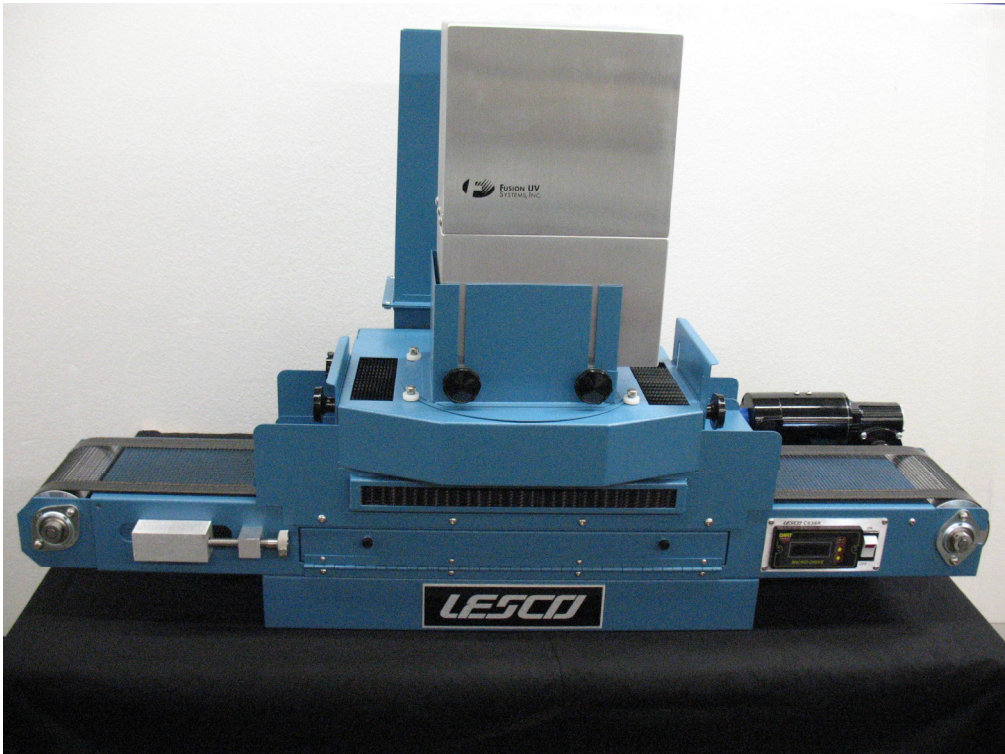
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C636 CONVEYOR

1.0. POWER SUPPLY INSTALLATION

Unpack the conveyor carefully. Check for and report any damage to the freight company immediately.

(Instructions for all units except the C636 conveyor)

1.1. Fusion F300 Lamp System

Thoroughly read the manual provided by FUSION Systems. The Fusion F300 UV Irradiator system consists of an I300 six (6) inch irradiator module with a power rating of 300 watts per inch and a P300 power supply module. It provides a continuous beam of uniform curing six (6) inches wide. A separate FUSION manual is provided for the description, installation, maintenance and troubleshooting of these modules.

This system is very similar to the F450T lamp system only smaller. When one or two F300 systems are used on the C612 conveyor, the power supplies will be mounted on shelves supplied with the conveyor. They will bolt in just like the F450T power supplies. For the C636 conveyor, the mounting of the power supply is at the discretion of the owner because the C636 is a tabletop conveyor. Please make sure that the On/Off switch is accessible and the filter is not obstructed.

1.2. Fusion F450T-10 Lamp System

Thoroughly read the manual provided by FUSION Systems. Remove the power supply from its outer case (like a cabinet drawer). The outer case has four mounting holes. Bolt the outer case to the appropriate shelf of the conveyor with the 1/4-20 screws removed from the sides of the Fusion power supply. Check that the S1 dipswitches are in their proper positions (refer to section 2-8 of the Fusion manual). S1-1 and S1-5 should be closed (yes) and all others open (no) on the master. Program the slave units according to instructions in the Fusion manual. Note that the left side of the switch is depressed to open the switch and the right side is depressed to close the switch. Be sure K523 blower fuses are installed in the left corner of each power supply (see Fusion manual page 2-11). Re-install the power supply in outer case and install one retaining screw in rear.

1.3. Arc Lamp System

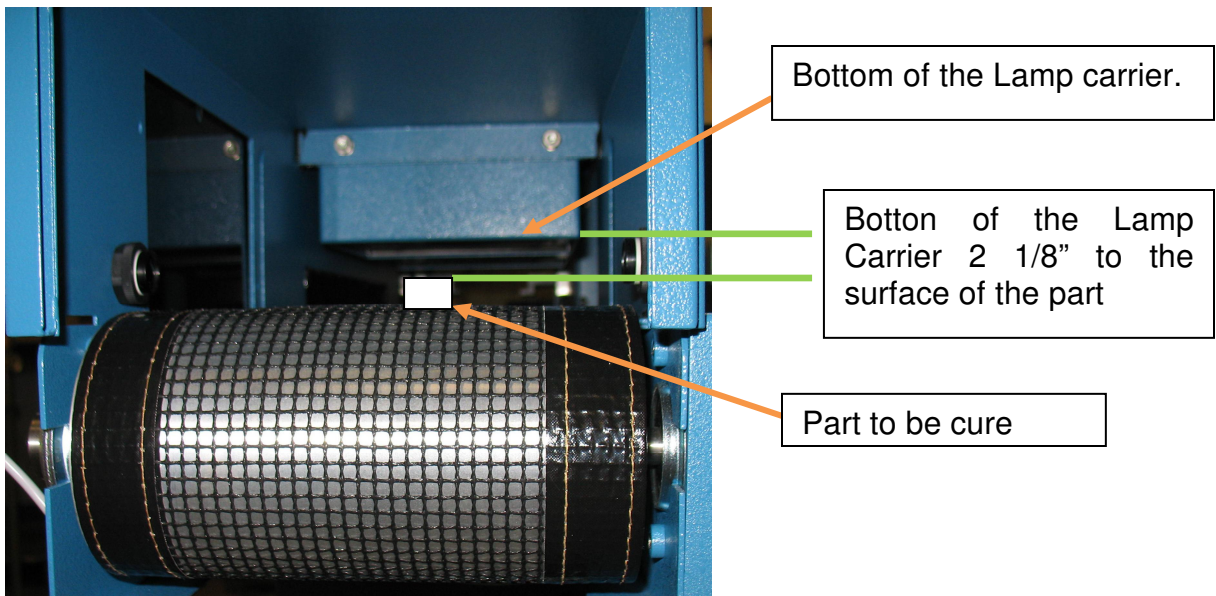
Thoroughly read the manual provided by AUV/LESCO. Remove the unit(s) from its shipping case. Install the irradiator(s) in the lamp carrier(s) and the Power Supply Module(s) PCM. Follow the wiring instructions and connect the power cords between the lamp housing(s) and the PCM(s). Install the LAMP ON interlock between the conveyor and the PCM. Before applying power to the system, verify all connections are made according with the information supplied with the unit.

2.0. LAMP INSTALLATION

To install the lamp, place the irradiator (lamp module) in the carrier, making sure that the micro switch on the lamp face (F450T only) is depressed. Install the appropriate lamp adapter(s) provided (if needed).

2.1. Lamp Height

Remove lamp(s) from carrier. Place the parts to be cured in the center of the belt and under the lamp carrier. Measure from height of the surface to be cured and set the bottom of the lamp carrier 2 1/8" above that surface by loosening the carrier. Tighten the knobs and re-check the distance at the center and both sides.



2.2. Harness Connection

1. Connect the appropriate harnesses as described in the Fusion or AUV/LESCO manual.
2. The wires marked Remote on/off are installed if the lamp is supplied by AUV/LESCO.

2.3. Power Connection

1. Supply standard 117 VAC power to the three-prong ground plug provided on the conveyor.
2. For Fusion systems, supply appropriate power to power supplies as described in the Fusion manual on page 2-11 for F450T-10 and page 1-5 for F300-6. The Fusion master power supply lamp control switch must be ON for either lamp to light.
3. For AUV/LESCO lamps supply appropriate power to the PCM as per its manual and/or name plate. Pay close attention to the phase and current required by the system(s). Appropriate fuseable disconnect must be installed between the PCM and the main incoming power lines to provide adequate protection for operating personnel.

2.4. Interlocks

1. The AUV/LESCO conveyor is interlocked with the Fusion power supply or AUV/LESCO PCM. If the power switch on the conveyor is turned OFF, the lamp(s) will automatically be turned OFF. In case of an internal or external interlock, the AUV/LESCO PCM or Fusion power supply will shut itself down but displaying the proper indicator to help troubleshooting. To restart the power supply, consult Section 4 of the Fusion or the PCM operations manual.
2. The Fusion UV lamp system is powered by high energy RF microwave power. The Fusion equipment used in the AUV/LESCO conveyor system is interlocked to shut down if microwave leakage in excess of 5 mW/cm² is detected.

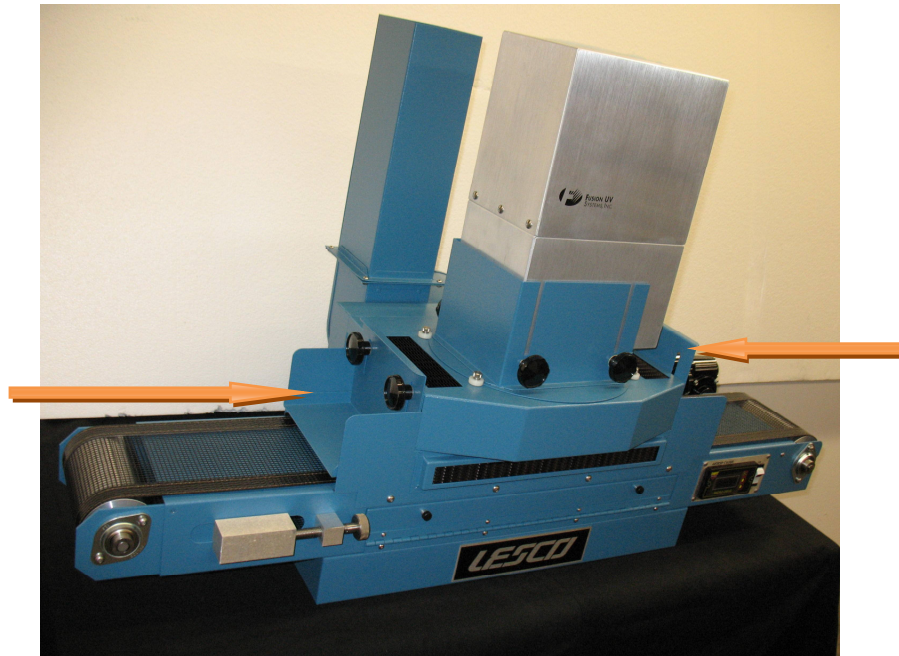
3.0. EXHAUST SYSTEM

1. Install the exhaust stack with the fasteners provided on the conveyor. Out of the room exhausting is recommended. Use adequate diameter ducting and keep the length to the minimum required. If additional exhaust ducting is added, a supplemental blower is required. This is the responsibility of the user. If elbows or bends are necessary, it is recommended to use large radius (2 to 3 times ducting diameter) bends.

Consult an airflow specialist for duct size and the blower recommendations for the users' specific environment.

2. All AUV/LESCO conveyors (except C612 and C636) are provided with multi-speed blowers, allowing for accurate vacuum hold down variations for your application. The blower speed may be adjusted by rotating the knob located on the rear of the conveyor. The amount of vacuum hold-down needed may vary depending on the substrate size.

4.0. INLET/OUTLET ADJUSTMENT



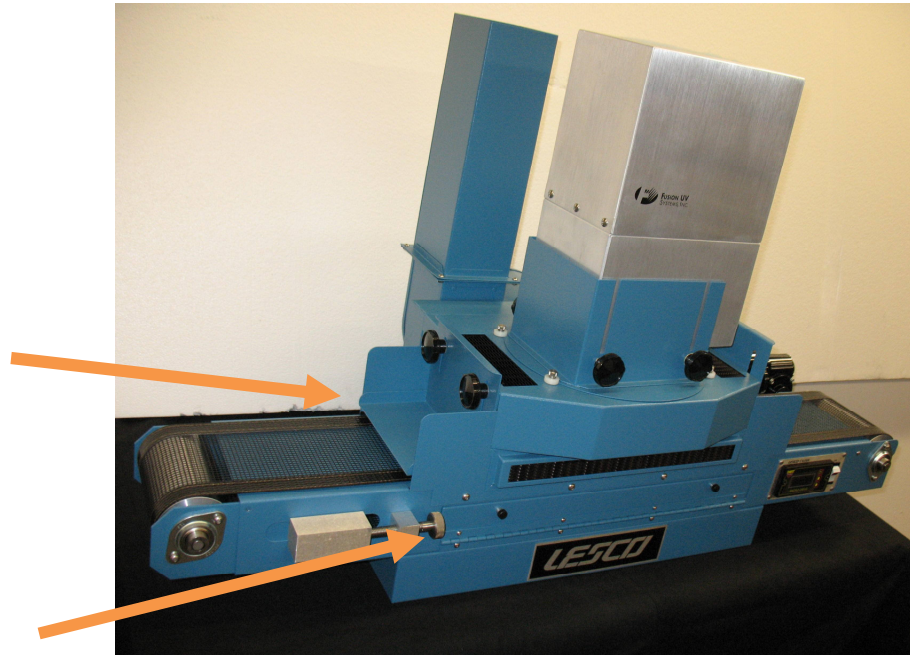
Adjust the inlet and outlet shields to the lowest practical position, which will not interfere with the substrates traveling through the light shield. Light exiting from these tunnels is reflected visible light generally safe. However, **WE STRONGLY WARN ALL PERSONNEL AGAINST LOOKING INTO THE ENTRANCE OR EXIT OF TUNNELS.** If this is necessary, use a #9 welder helmet or goggles.

See the Fusion manual for further operating safety information. Under normal operating conditions, safety glasses are not needed.

5.0. START UP

Follow initial start-up procedures for new installation as described in Section 4 of the Fusion manual or the PCM operation instructions.

5.1. Belt Tracking



The proper break-in of a new belt is of great importance to obtain full service life. Please follow these three steps carefully: (Steps 1 and 2 are performed at AUV/LESCO on new systems).

1. Start conveyor with belt tension reduced. Slowly adjust tension with belt tracking adjusters until belt runs smoothly at lowest tension possible.
2. Track the belt. Adjust the roller with adjusters on infeed end to track belt. Be sure to adjust from both sides. Add tension on side to which the belt is moving, release the tension from the opposite side.
3. Continue to track belt by tension adjustment while gradually increasing speed to maximum. Run belt for time needed (usually 1-2 hours), until the belt tracks with no further adjustments.

5.2. Maintenance

5.2.1. Filters

The P300 power supply has an air filter (Fusion part #066397 - set of 20 filters), which is located on the front of the power supply. The filter requires periodic replacement depending on the operating environment. Refer to section 8 of the Fusion F300 maintenance manual.

5.2.2. Irradiator

The irradiator should be removed from the lamp assembly and inspected approximately every 500 hours. See section 6 of the Fusion F300 manual.

5.2.3. Power Supply

The only inspection necessary for the Fusion or PCM power supply is the filter.

6.0. TROUBLESHOOTING

For Fusion systems, refer to Section 5 of the operations manual. Please see the attached information for the PCM units or call AUV/LESCO for assistance.

6.1. Safety

The AUV/LESCO UV conveyor system has been designed to be operated safely. However, this equipment can present worker safety problems if some care are not taken to install and operate it correctly.

**IT IS VERY IMPORTANT THAT ALL PERSONNEL USING THE EQUIPMENT
BECOME FAMILIAR WITH THIS SAFETY INFORMATION.**

The following information is provided concerning various aspects of worker safety with this equipment. Please refer to the Fusion F300 manual for additional information regarding safety requirements while operating this equipment.

6.1.1. **Ultraviolet Radiation**

There are no present US government standards on worker exposure to UV light. However, there is a NIOSH document, "Criteria for a Recommended Standard - Occupational Exposure to Ultraviolet Radiation" (No. HSM 73-11009).

6.1.2. **Microwave Radiation**

The Fusion UV lamp system is powered by high energy RF microwave power. The Fusion equipment used in the C636R curing system is interlocked to shut down if microwave leakage in excess of 5 mW/cm² is detected.

6.1.3. **Personnel Effects**

OSHA (US Department of Labor, Occupational Safety and Health Administration, Standard 29CFR 1910.97) and ANSI (American National Standards Institute, Standard C95.1-1-1982) are the only major organizations with voluntary guidelines for safe limits of occupational microwave radiation exposure. This equipment meets or exceeds the applicable standards set forth in these documents.

7.0. SPARE PARTS LIST

FUSION F300 SPARE PARTS KIT AND BULBS:

PART NO.	DESCRIPTION	REQ'D
XNB1001	"D" BULB	1
XNB2001	"H" BULB, MERCURY	1
X9B1004	MAGNETRON KIT	1
X7B1001	SCREEN ASSEMBLY	1
XMB1004	FILTERS, K300 (SET OF 20)	1
XNB4001	IGNITOR BULB	1
XLB2002	PHOTOCELL ASSEMBLY	1
XBB1011	CAPACITOR	1
XVB2003	PRESSURE SWITCH	1
XCB5002	DIODE BLOCK	1

CONVEYOR SPARE PARTS LIST:

PART NO.	DESCRIPTION	REQ'D
EEB1007	Speed control board	1
EEB1005	MD-10 Closed loop speed control	1
EEB1002	MD-20 Closed loop speed control	1
E7B2001	Pickup PU-2E	1
E7B2003	Pickup PU-20E	1
FVB2022	Power switch	1
EPB1023	Blower Assembly	1
BMB0601	Teflon coated mesh belt	1
BSB0602	Solid Teflon coated belt (Black)	1
BSB0605	Solid white silicone belt	1
SQM1030	Communication cable assy (Optional)	1

8.0. NITROGEN PURGE KIT (Optional)

An oxygen-free atmosphere can be achieved with this kit. Nitrogen or any oxygen free gas can be connected to the two inlet ports. Regulators and any external plumbing are to be provided by the user.

Contents:

1. Cure chamber with inerting ports.
2. Inerting Coanda air knife at entrance.
3. Adjustable outlet door, installed.
4. Quartz window.
5. Solid conductive belt.

8.1. Installation

1. Disconnect AC power.
2. Remove inlet and outlet shields or tunnels.
3. Loosen belt-tracking adjusters. Remove lace pin on belt and disconnect the belt but do not remove it.
4. Remove the lamp(s).
5. Move variable vacuum panel to zero hold-down (toward entrance). Visually check that exhaust ports are open in the upper one half of the air plenum.
6. Slide cure chamber under the belt and into light shield until it overlaps both ends of the conveyor bed. The ends are bent down at both ends to prevent any movement. Install flat head screws at each end to hold flat.
7. Attach the solid belt (provided) to the mesh belt that you are replacing using the lace pin. Pull the new belt through the bottom, using the mesh belt as a lead. Remove the lace pin and pass one end of the new belt through the cure chamber and lace the end of the solid belt with the new pin. Adjust the belt as described above. After a belt has been "run in", it will not be necessary to repeat the entire break-in procedure when it is re-installed.
8. Connect inert gas hose(s) with connector(s) provided and push the excess hose away from the window.
9. Re-install lamp(s), lamp adapter(s) and inlet and outlet shields or tunnels.
10. Connect inert gas source and adjust the outlet doors to the lowest practical height for the product to be cured.

Electrical Schematics

KTM2255 Electrical Schematic Conveyor C612-12 SS

APPENDIX I

FOR:

SPARE PARTS,
SALES, OR
SERVICE

CALL:

AUV/LESCO

A Division of American Ultraviolet Company

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