



Maintenance Management Order

SUBJECT: Preventive Maintenance (PM) Guidelines for
Automatic Flats Tray Unlifter (AFTU)

DATE: May 21, 2010

NO: MMO-022-10

TO: All AFTU Offices

FILE CODE: F17

same: mm09104ab

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

Online Change Record		
Change #	Date	Description of Change
1	8/23/2021	Attachment 3, Item 2, New Step 12: Close carriage doors.

This Maintenance Management Order (MMO) supersedes MMO-047-06. This MMO updates the Preventive Maintenance (PM) Guidelines and adds Infrared and Ultrasound monitoring procedures for the Automatic Flats Tray Unlifter (AFTU).

The minimum maintenance skill level to perform each task on the various checklists is included in the Minimum Skill Level column. This does not preclude higher level employees from performing any of this work.

The work hours represented in this MMO reflect the maximum work hours required to maintain the equipment. Given local conditions, management may modify task frequencies.

WARNING

Various products requiring Material Safety Data Sheets (MSDS) may be utilized during the performance of the procedures in this bulletin. Ensure the current MSDS for each product used is on file and available to all employees. When reordering such a product, it is suggested that current MSDS be requested. Refer to MSDS for appropriate personal protective equipment.

WARNING

The use of compressed or blown air is prohibited. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used only on optical equipment when other cleaning methods can not be used.

Maintenance Managers are to use these preventive maintenance guidelines when preparing the route sheets for local maintenance personnel. It is the responsibility of each Maintenance

Manager to ensure all WARNINGS, CAUTIONS, and NOTES are included with each applicable task as part of the preparation of any local route sheets.

For questions or comments concerning this bulletin contact the MTSC HelpDesk, either online at **MTSC>HELPDESK>Create/Update Tickets** or call (800) 366-4123.



Robert E. Albert
Manager
Maintenance Technical Support Center
Maintenance Policies and Programs

Attachments:

1. Summary Work Load Estimate
2. AFTU Master Checklist: 03-AFTU-AA-001-M: Daily
3. AFTU Master Checklist: 03-AFTU-AA-002-M: Weekly
4. AFTU Master Checklist: 03-AFTU-AA-003-M: Monthly
5. AFTU Master Checklist: 03-AFTU-AA-004-M: Quarterly
6. AFTU Master Checklist: 03-AFTU-AA-005-M: Semi-Annual
7. AFTU Master Checklist: 03-AFTU-AA-006-M: Annual

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ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR

AUTOMATIC FLATS TRAY UNLIDDER

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SUMMARY**WORKLOAD ESTIMATE
FOR
AUTOMATIC FLATS TRAY UNLIDDER**

Days	Routine Servicing (hrs/yr)	Repair* (hrs/yr)	Total Servicing and Repair Time (hrs/yr)	Nonproductive Time ** (hrs/yr)	Total Servicing Per Machine (hrs/yr)
5 Day	131.950	26.390	158.340	15.834	174.174
6 Day	144.083	28.817	172.900	17.290	190.190
7 Day	156.217	31.243	187.460	18.746	206.206

NOTES

*Repair estimates based on 20% of servicing.

**Based on 10% of total servicing and repair.

Service conditions are based on five, six, and seven day per week operations.

PM CHECKLIST TIME SUMMARY

Checklist	Checklist Times (per year) for 5 day PM week	Checklist Times (per year) for 6 day PM week	Checklist Times (per year) for 7 day PM week
03-AFTU-AA-001-M: Daily	3654 minutes	4382 minutes	5110 minutes
03-AFTU-AA-002-M: Weekly	3016 minutes	3016 minutes	3016 minutes
03-AFTU-AA-003-M: Monthly	636 minutes	636 minutes	636 minutes
03-AFTU-AA-004-M: Quarterly	512 minutes	512 minutes	512 minutes
03-AFTU-AA-005-M: Semi-Annual	44 minutes	44 minutes	44 minutes
03-AFTU-AA-006-M: Annual	69 minutes	69 minutes	69 minutes

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ATTACHMENT 2

AFTU MASTER CHECKLIST

03-AFTU-AA-001-M

Daily

Time Total: 14 Minutes

Refer to MS-245 if additional maintenance information is required.

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U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	A	F	T	U			A	A	0	0	1	M
Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model					Bulletin Filename MM09104AB			Occurrence Daily				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

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SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
		<div style="border: 1px solid black; padding: 5px; display: inline-block;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied.</p>					
CENTER ASSEMBLY AND DE-STRAPPER ASSEMBLY	2.	<p>Verify air supply. Verify as follows:</p> <ol style="list-style-type: none"> 1. No water/oil/debris in air preparation assembly filter/regulator polycarbonate bowl and filter. 2. Air pressure of 90 ± 5 PSI on the air preparation assembly air pressure gauge. 3. Main air valve assembly air pressure gauges. <ol style="list-style-type: none"> a. Air pressure of 50 +5/-0 PSI on the horizontal lift carriage slide pressure gauge. b. Air pressure of 40 +5/-0 PSI on the lid lift up and lid lift down air pressure gauges. c. Air pressure of 35 +5/-0 PSI on the tray clamp pressure gauge. 4. De-strapper air valve assembly pressure gauges. 	3	7			

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Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Daily			

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		a. Air pressure of 50 +5/-0 PSI on the horizontal gantry slide air pressure gauge. b. Air pressure of 12 +2/-0 PSI on the saw slide pressure gauge. 5. If any deficiencies are noted, notify supervisor.					
MAIL SEARCH	3.	Perform mail search of the AFTU. Perform mail search as follows: 1. Power down the machine and lock out air and electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures. 2. Open side access doors. 3. Search for mail pieces in and under machine. 4. Follow local procedures for returning mail to operations for processing. 5. Close side access doors.	2	7			
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">WARNING</div> Be cautious when working around or on equipment when power has been applied.					
SYSTEM	4.	Return AFTU to service. Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures. Return the AFTU to normal operation.	2	9			
CLEAN UP	5.	Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Clean up water that may be on the floor as the result of doing this procedure. Report all deficiencies to your supervisor.	2	All			

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ATTACHMENT 3

AFTU MASTER CHECKLIST

03-AFTU-AA-002-M

Weekly

Time Total: 58 Minutes

Refer to MS-245 if additional maintenance information is required.

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Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model					Bulletin Filename MM09104AB			Occurrence Weekly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied.</p>					
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">WARNING</div> <p>Use only rubber or neoprene gloves that are in good condition. Do not use cotton, latex, nitrile, or other gloves to do the following procedure.</p>					

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Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Weekly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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CENTER ASSEMBLY	2.	<p>Operate vacuum system.</p> <ol style="list-style-type: none"> 1. Remove lids from the lid conveyor. 2. Open the carriage doors and bypass the door interlocks on lid conveyor side of the AFTU. 3. Press MAINTENANCE MENU BUTTON on the Operator Menu screen to place the AFTU in the Maintenance Mode. 4. Press ENTER on graphic logic controller to initialize the cursor position. 5. Enter 4-Digit Maintenance PIN and press Enter. 6. The Maintenance Menu screen appears. 7. Press MAINTENANCE CONTROLS button to access the Maintenance Control Function. 8. Press HEAD TO LID LIFT to move the lift carriage slide assembly to the lid conveyor side of the AFTU. 9. Press maroon VACUUM OFF button on the Maintenance Control screen. 10. The button turns green, shows VACUUM ON, and the vacuum generators are turned ON. 11. While wearing rubber or neoprene gloves, use your finger to block output of each of 4 suction cup pump mufflers, one at a time. This re-routes air through the suction pump lines and suction cup cleaning out any debris. 12. Close carriage doors. 13. Place the AFTU back in the normal operating condition by selecting the Maintenance Menu, then the Operator Menu. 	3	9			
SYSTEM	3.	<p>Power down and lock out air and electrical power.</p> <p>Stop the AFTU. Power down the machine and lock out air and electrical power as prescribed by the current local lockout procedures.</p>	2	All			

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Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Weekly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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SYSTEM	4.	<p>Clean AFTU.</p> <p>Remove dust and debris from AFTU. Wipe faces of sensors and vacuum power distribution vent filter. Use care not to bump sensors out of alignment.</p> <ol style="list-style-type: none"> 1. Use a vacuum to clean inside and outside of AFTU, including power distribution vent filter. 2. Using a clean, dry, soft cloth, wipe dust off faces of all sensors: <ol style="list-style-type: none"> a. 5 Tray conveyor zone sensors. (emitter/receiver is one unit): <ol style="list-style-type: none"> 1) PE-1032-Tray in Zone 0 2) PE-205-Tray in Zone 1 3) PE-115-Tray in Zone 2 4) PE-208-Tray in Zone 3 5) PE-209-Tray in Zone 4 b. PE-1030-Gantry Clear c. 3 Lid conveyor sensors (emitter/ receiver is one unit): <ol style="list-style-type: none"> 1) PE-104-Lid in Load Position 2) PE-105-Lid in 2nd Position 3) PE-106-Lid in 3rd Position d. Lids on Lift - PR-107-PR Receiver Sensor, PT-107 Transmitter Sensor e. Lids Up Position PR-109 Receiver Sensor and PT-109 Transmitter Sensor f. PE-200-Lid Present g. Lid Present – Ultra-Sonic Sensor 1 – US502 and Ultra Sonic Sensor 2 – US503 	40	7			
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Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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VOLUME REDUCTION EQUIPMENT	5.	<p style="text-align: center;">WARNING</p> <p>Eye protection (goggles or face shield) must be worn.</p> <p>Check cyclone interior for residual material.</p> <ol style="list-style-type: none"> View interior of cyclone by looking upward through the material discharge opening. If material/obstruction is blocking discharge of cyclone, remove by agitating until cyclone discharge is clear of any obstructions. 	2	7			
CENTER ASSEMBLY	6.	<p>Check and clean lift carriage slide assembly suction cups.</p> <ol style="list-style-type: none"> Check lift carriage slide assembly suction cups for cracks or tears. Replace suction cups if cracks or tears are found. Using a soft clean cloth dampened with water, clean the suction cups. 	2	7			
		<p style="text-align: center;">WARNING</p> <p>Be cautious when working around or on equipment when power has been applied.</p>					
SYSTEM	7.	<p>Return AFTU to service.</p> <p>Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures. Return the AFTU to normal operation.</p>	2	9			
CLEAN UP	8.	<p>Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.</p>	2	All			

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Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model						Bulletin Filename MM09104AB			Occurrence Weekly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

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ATTACHMENT 4

AFTU MASTER CHECKLIST

03-AFTU-AA-003-M

Monthly

Time Total: 53 Minutes

Refer to MS-245 if additional maintenance information is required.

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U	A	A	0	0	3
Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Monthly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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MAINTENANCE MANAGEMENT ORDER

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SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
SYSTEM	2.	<p>Power down and lock out air and electrical power.</p> <p>Stop the AFTU. Power down machine and lock out air and electrical power as prescribed by the current local lockout procedures.</p>	2	All			
VOLUME REDUCTION EQUIPMENT	3.	<p>Clean interior of blower.</p> <ol style="list-style-type: none"> Open blower by turning access door bolt counter clockwise. Swing blower door open to view interior of blower. If banding or other material is present in blower housing, remove it. Close door. Turn blower access door bolt clockwise to secure door. 	5	7			
		<p style="text-align: center;">WARNING</p> <p>Be cautious when working around or on equipment when power has been applied.</p>					

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		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Monthly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

SYSTEM	4.	<p>Return AFTU to service.</p> <p>Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures. Return the AFTU to normal operation.</p>	2	9			
SYSTEM	5.	<p>Operate E-Stop push buttons, Stop switches, door interlock switches, blower switch, and cutter switch.</p> <p style="text-align: center;">NOTE</p> <p>The AFTU has 7 E-Stop switches, 8 access doors, a switch on the blower, a switch on the cutter, and two Stop switches.</p> <ol style="list-style-type: none"> 1. Check both Stop switches, one at a time with machine running. Check Graphic Logic Controller (GLC) Display Operator Menu screen for proper change of state for each Stop switch. Restart machine for second Stop switch. 2. Check each E-Stop switch, one at a time, while the machine is running and not processing flat trays. Restart the machine after each time the E-Stop switch is activated and the machine stops. <ol style="list-style-type: none"> a. Activate an E-Stop. <ol style="list-style-type: none"> 1) Machine stops. 2) Red stack light illuminates. 3) Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. b. De-activate the E-Stop. c. Start machine. Green stack light illuminates. Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. d. Repeat sub-steps a thru c until all E-Stops have been checked. 3. Check all access door interlock switches. <ol style="list-style-type: none"> a. Activate an access door interlock switch. 	25	7			

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Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model				Bulletin Filename MM09104AB			Occurrence Monthly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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MAINTENANCE MANAGEMENT ORDER

		<ol style="list-style-type: none"> 1) Machine stops. 2) Red stack light illuminates. 3) Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. <ol style="list-style-type: none"> b. De-activate access door interlock switch. c. Start machine. Green stack light illuminates. Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. d. Repeat sub-steps a thru c until all door interlock switches have been checked. 4. Check the blower interlock switch. <ol style="list-style-type: none"> a. Run a single flats tray. This starts blower and cutter motors. b. Check the blower interlock switch by removing the two switch mounting screws and the switch to check the blower interlock switch. <ol style="list-style-type: none"> 1) Machine stops. 2) Red stack light illuminates. 3) Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. c. De-activate the blower interlock switch and remount switch using removed screws. d. Start machine. Green stack light illuminates. Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. 5. Check the cutter interlock switch. <ol style="list-style-type: none"> a. Run a single flats tray. This starts blower and cutter motors. b. Check the cutter interlock switch by removing the two switch mounting screws and the switch to check the cutter interlock switch. 					
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		<ol style="list-style-type: none"> 1) Machine stops. 2) Red stack light illuminates. 3) Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. c. De-activate cutter interlock switch by remounting the cutter interlock switch using removed screws. d. Start machine. Green stack light illuminates. Observe the Graphic User Interface (GUI) Display Operator Menu screen for proper change of state. 6. Return machine to operating mode. 7. Report all deficiencies to supervisor. 					
PERFORMANCE CHECK	6.	<p>Run performance test to check AFTU operation.</p> <ol style="list-style-type: none"> 1. Manually activate all machine sub-functions to ensure proper operation. 2. Log in to Maintenance Mode and then enter the Maintenance Menu. Select Maintenance Control Function, and activate all sub-functions to ensure correct operation. 3. Use GLC AFTU Maintenance Control Screen to operate the following functions: <ol style="list-style-type: none"> a. HEAD TO TRAYS b. HEAD TO LID LIFT c. HEAD UP d. VACUUM OFF e. LIFT UP f. TRAY CLAMP g. TRAY STOP h. SQUARING RODS i. LIFT DOWN j. LIGHT TREE k. ROLLER CONVEYOR l. GANTRY DOWN m. GANTRY RETRACT n. GANTRY EXTENDED o. SAW EXTEND p. AIR KNIFE 	10	9			

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Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
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SYSTEM	7.	Return AFTU to service. Return the AFTU to normal operation.	2	9			
CLEAN UP	8.	Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.	2	All			

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ATTACHMENT 5

AFTU MASTER CHECKLIST

03-AFTU-AA-004-M

Quarterly

Time Total: 128 Minutes

Refer to MS-245 if additional maintenance information is required.

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SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
SYSTEM	2.	<p>Power down and lock out air and electrical power.</p> <p>Stop AFTU. Power down machine and lock out air and electrical power as prescribed by the current local lockout procedures.</p>	2	All			
AFTU CHECK	3.	<p>Check AFTU.</p> <ol style="list-style-type: none"> 1. Visually check entire machine. Check for loose bolts, air fittings, and other problems. Check all system hardware for tightness including: <ol style="list-style-type: none"> a. Blower b. Cutter c. Cyclone and its support stand d. Tubing and fitting couplings 2. Tighten or repair as necessary. 3. Adjust and align as necessary. 	30	9			

MAINTENANCE MANAGEMENT ORDER

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U	A	A	0	0	4
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

	4.	Check saw blade stop tip. Check saw blade stop tip for wear by measuring remaining material. Pull up on stop and slide a piece of cardboard between the saw blade stop tip and the top saw guard, and measure the length of the saw blade stop tip. Replace tip if a measurement of 0.44 inches (7/16 of an inch) or less is obtained.	1	7			
CYCLONIC SEPERATOR	5.	Remove and replace the cyclonic separator dust skirt that connects the cyclonic separator to the waste container.	3	7			
		<div style="border: 1px solid black; padding: 5px; display: inline-block;">WARNING</div> Be cautious when working around or on equipment when power has been applied.					
SYSTEM	6.	Restore air and electrical power. Restore power to the AFTU as prescribed by local lockout instructions providing lockout/restore procedures.	2	9			
DC POWER SUPPLIES	7.	Check DC power supplies. Check power supply outputs. Check PS-1, PS-2, and PS-1020 outputs for 24 (±0.2) VDC.	10	9			

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		0	3	A	F	T	U			A	A	0	0	4	M
Equipment Nomenclature Automatic Flats Tray Unladder		Equipment Model						Bulletin Filename MM09104AB			Occurrence Quarterly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

SENSORS	8.	<p>Sensor operation.</p> <p>Check that all sensors (14) are aligned and operating correctly.</p> <ol style="list-style-type: none"> 1. 5 Tray conveyor zone sensors (emitter/receiver is one unit): <ol style="list-style-type: none"> a. PE-1032–Tray in Zone 0 b. PE-205-Tray in Zone 1 c. PE-115-Tray in Zone 2 d. PE-208-Tray in Zone 3 e. PE-209-Tray in Zone 4 2. PE-1030-Gantry Clear 3. 3 Lid conveyor sensors (emitter/ receiver is one unit): <ol style="list-style-type: none"> a. PE-104-Lid in Load Position b. PE-105-Lid in 2nd Position c. PE-106-Lid in 3rd Position 4. Lids on Lift - PR-107-PR Receiver Sensor, PT-107 Transmitter Sensor 5. Lids Up Position PR-109 Receiver Sensor and PT-109 Transmitter Sensor 6. PE-200-Lid Present 7. Lid Present – Ultra-Sonic Sensor 1 – US502 and Ultra Sonic Sensor 2 – US503 	15	9			
TRAY CONVEYOR ROLLERS	9.	<p>Check tray conveyor DC power roller speeds.</p> <p>Check speed of the 5 tray conveyor DC power rollers. If required, adjust speed of tray conveyor DC power rollers to 175 Ft/min (± 10 Ft/min). The speed of the two opposing strap takeaway DC power rollers should be set at the maximum.</p>	25	9			

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

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		<div style="border: 1px solid black; display: inline-block; padding: 2px;">WARNING</div> Be cautious when working around or on equipment when power has been applied and the equipment is running. NOTE The machine must have been running for a minimum of 15 minutes and remain running when using the non-contact infrared to obtain a meaningful scan. Investigate the cause of an abnormal temperature. Report all deficiencies to your supervisor.					
POWER DISTRIBUTION BOX ASSEMBLY	10.	Infrared scan. Use non-contact infrared to monitor and scan the following for abnormal temperatures: <ol style="list-style-type: none"> 1. Facility input power connector 2. Power distribution box assembly electrical connections 3. Circuit breaker (CB100) 4. Filter (FL1) 5. Power supplies (PS1 and PS2) 6. Transformer (T1) 7. Circuit breakers (CB1-CB9) 8. Motor protector (OL1) 9. Fuses (F201-F206) 10. Relays (K1 and K2) 11. Analog to digital converter 12. Graphic logic controller 13. I/O modules (1, 2, and 3) 14. Light stack assembly 15. Terminal connections 16. Connectors 17. Jumpers 	2	9			

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	A	F	T	U			A	A	0	0	4	M
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model						Bulletin Filename MM09104AB			Occurrence Quarterly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

TRAY CONVEYOR ASSEMBLY	11.	<p>Infrared scan.</p> <p>Use non-contact infrared to monitor and scan the following for abnormal temperatures:</p> <ol style="list-style-type: none"> 1. Tray conveyor assembly electrical connections 2. Power rollers (4) 3. Terminal connections 4. Connectors 	1	9			
DESTRAPPER ASSEMBLY PLENUM/PINCH ROLLERS ASSEMBLY	12.	<p>Infrared scan.</p> <p>Use non-contact infrared to monitor and scan the following for abnormal temperatures:</p> <ol style="list-style-type: none"> 1. Destrapper assembly plenum/pinch roller assembly electrical connections 2. Power rollers (2) 3. Motor driver cards (2) 4. Terminal connections 5. Connectors 	1	9			

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	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	A	F	T	U			A	A	0	0	4	M
Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model					Bulletin Filename MM09104AB			Occurrence Quarterly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

DESTRAPPER ASSEMBLY POWER DISTRIBUTION BOX ASSEMBLY	13.	<p>Infrared scan.</p> <p>Use non-contact infrared to monitor and scan the following for abnormal temperatures:</p> <ol style="list-style-type: none"> 1. De-strapper assembly power distribution box assembly electrical connections 2. Circuit breakers (CB1020–1026, CB 1040-1047, and CB1060-1069) 3. Filter (FL1020), power supply (PS1020) 4. Terminal blocks (TB1 and B+TB2) 5. Control relays (CR 1020, CR1040-1048, and CR1067-71) 6. Motor contactor relays (K1020-1021) 7. Cutter motor protector (MP1020) 8. Blower motor protector (MP1021) 9. I/O modules 9 and 10 10. Terminal connections 11. Connectors 12. Jumpers 	2	9			
DESTRAPPER ASSEMBLY SAW SLIDE ASSEMBLY	14.	<p>Infrared scan.</p> <p>Use non-contact infrared to monitor and scan the following for abnormal temperatures:</p> <ol style="list-style-type: none"> 1. Destrapper assembly saw slide assembly electrical connections 2. Saw motor 3. Terminal connections 4. Connectors 	1	9			

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	A	F	T	U			A	A	0	0	4	M
Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model						Bulletin Filename MM09104AB			Occurrence Quarterly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

VOLUME REDUCTION EQUIPMENT CUTTER ASSEMBLY AND BLOWER ASSEMBLY	15.	<p>Infrared scan.</p> <p>Use non-contact infrared to monitor and scan the following for abnormal temperatures:</p> <ol style="list-style-type: none"> 1. Volume reduction equipment 2. Cutter 3. Coupler 4. Blower assemblies 5. Electrical connections 6. Cutter motor 7. Hinged blower motor 8. Terminal connections 9. Connectors 	2	9			
		<p style="text-align: center;">WARNING</p> <p>Be cautious when working around or on equipment when power has been applied and the equipment is running.</p> <p style="text-align: center;">NOTE</p> <p>Manually activate machine sub-functions to ensure the ultrasound scan of equipment is properly completed.</p>					

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

VOLUME REDUCTION EQUIPMENT	16.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> 1. Volume reduction equipment 2. Cutter motor 3. Cutter 4. Blower motor 5. Blower 6. Piping (4 inch) 7. Mufflers 8. Connection joints 9. Cyclonic separator for air leaks and wear through 10. Connectors 	3	9			
TRAY CONVEYOR ASSEMBLY	17.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> 1. Tray conveyor assembly 2. Pop up stop assembly 3. Tray clamp rotary motor 4. Air lines 5. Air cylinder 6. Rotary motor 7. Pneumatic lines 8. Connectors 	1	9			

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

MAINTENANCE MANAGEMENT ORDER

CENTER ASSEMBLY LIFT CARRIAGE SLIDE ASSEMBLY	18.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> Center assembly lift carriage slide assembly Suction cup pump Power block Horizontal band cylinder Air lines Connections Air equipment Pneumatic lines Connectors 	2	9			
DESTRAPPER ASSEMBLY SAW SLIDE ASSEMBLY	19.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> Destrapping assembly saw slide assembly Saw slide cylinder Air knife Air lines Connections Air valves Pneumatic lines Connectors 	3	9			
DESTRAPPER ASSEMBLY SLI DE SUPPORT ASSEMBLY	20.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> Destrapping assembly slide support assembly Tray pusher cylinder Horizontal band cylinder Air lines Connections Pneumatic lines Connectors 	2	9			

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Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model				Bulletin Filename MM09104AB			Occurrence Quarterly			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

MAINTENANCE MANAGEMENT ORDER

DESTRAPPER ASSEMBLY VALVE BAND ASSEMBLY	21.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> 1. De-strapper assembly 2. Valve band assembly 3. MAC connect air valves 4. Connections 5. Air lines 6. Pneumatic connections 	2	9			
LID UNLOADING CONVEYOR ASSEMBLY	22.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> 1. Lid unloading conveyor assembly 2. Squaring rod assembly 3. Lid lift assembly 4. H-slide assembly 5. Air lines 6. Connections 7. Pneumatic lines 8. Connectors 	3	9			
CENTER ASSEMBLY AIR VALVE ASSEMBLY	23.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> 1. Center assembly air valve assembly 2. MAC connect air valves 3. Connections 4. Air lines 5. Fittings 6. Connections 	3	9			

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U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	A	F	T	U			A	A	0	0	4	M
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model						Bulletin Filename MM09104AB			Occurrence Quarterly				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

CENTER ASSEMBLY AIR PREP ASSEMBLY	24.	<p>Ultrasound scan.</p> <p>Use ultrasonic detector to scan following:</p> <ol style="list-style-type: none"> Center assembly air prep assembly Soft start and dump valve Filter regulator Soft start pilot valve Connections Air lines 	3	9			
	25.	<p>Return AFTU to service.</p> <p>Return the AFTU to normal operation.</p>	2	9			
CLEAN UP	26.	<p>Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.</p>	2	All			

MAINTENANCE MANAGEMENT ORDER

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ATTACHMENT 6

AFTU MASTER CHECKLIST

03-AFTU-AA-005-M

Semi-Annual

Time Total: 22 Minutes

Refer to MS-245 if additional maintenance information is required.

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U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	A	F	T	U			A	A	0	0	5	M
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model					Bulletin Filename MM09104AB			Occurrence Semi-Annual				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

MAINTENANCE MANAGEMENT ORDER

SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
SYSTEM	2.	<p>Power down and lock out air and electrical power.</p> <p>Stop AFTU. Power down machine and lock out air and electrical power as prescribed by the current local lockout procedures.</p>	2	All			
TRAY CONVEYOR	3.	<p>Check Tray Conveyor flats guide rails.</p> <p>Check tray guide rails for cracks, missing guides or pieces of guides, loose or missing hardware, or broken supports.</p>	1	7			
	4.	<p>Check blower interior for wear.</p> <p>Visually check the interior of the blower for damage (chipped or cracked) or wear.</p> <ol style="list-style-type: none"> 1. Check blower impeller (fan blade) for excessive wear. The impeller thickness should not be thinner than 1/8" in any area. If impeller thickness is less than 1/8", replace impeller. 2. Install new impeller if chipped or cracked. 	5	7			

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U.S. Postal Service		IDENTIFICATION										
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model				Bulletin Filename MM09104AB			Occurrence Semi-Annual			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

	5.	<p>Check cyclone for wear.</p> <p>Visually check cyclone for wear.</p> <ol style="list-style-type: none"> Visually check exterior and interior of cyclone for perforated areas (holes) caused by material wear. If perforations through the cyclone walls exist, replace the cyclone accordingly. 	5	7			
		<div style="border: 1px solid black; padding: 5px; display: inline-block;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied.</p>					
SYSTEM	6.	<p>Return AFTU to service.</p> <p>Restore equipment to service as prescribed by the current local procedure providing lockout/restore procedures. Return the AFTU to normal operation.</p>	2	9			
CLEAN UP	7.	<p>Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.</p>	2	All			

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Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model						Bulletin Filename MM09104AB			Occurrence Semi-Annual				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

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ATTACHMENT 7

AFTU MASTER CHECKLIST

03-AFTU-AA-006-M

Annual

Time Total: 69 Minutes

Refer to MS-245 if additional maintenance information is required.

MAINTENANCE MANAGEMENT ORDER

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U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	A	F	T	U			A	A	0	0	6	M
Equipment Nomenclature Automatic Flats Tray Unlifter		Equipment Model						Bulletin Filename MM09104AB			Occurrence Annual				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

MAINTENANCE MANAGEMENT ORDER

SAFETY STATEMENT	1.	<p>COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shut down and lock out this machine. Open equipment and check dust conditions. Check for suspicious dust or unusual debris. If any unusual substance is found, notify supervisor prior to proceeding with any further action on the equipment.</p> <p>THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED.</p> <p>When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner or a damp rag must be used in place of compressed or blown air. A lint-free cloth or brush may be used on optical equipment only when other cleaning methods can not be used. Report safety deficiencies to your supervisor immediately upon detection.</p>	5	All			
SYSTEM	2.	<p>Power down and lock out air and electrical power.</p> <p>Stop AFTU. Power down machine and lock out air and electrical power as prescribed by the current local lockout procedures.</p>	2	All			
POWER DISTRIBUTION BOX	3.	<p>Replace power distribution box vent filter.</p> <p>The filter is on the lower left side of the power distribution box. Remove the four corner screws from the vent filter, remove the filter, and discard. Reverse process for replacement.</p>	5	7			
CENTER ASSY	4.	<p>Replace air prep assembly, air valve assembly, strapper valve bank assembly mufflers, and air prep assembly filter cartridge.</p>	15	9			
LID CONVEYOR	5.	<p>Check tension and condition of the lid conveyor belts.</p> <p>There are two lid conveyor belts (gray web belts) and a notch drive belt. Replace the damaged areas of the lid conveyor belts if needed and check tension. Also, check the condition and tension of the notched drive belt.</p>	10	9			

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Equipment Nomenclature Automatic Flats Tray Unlitter		Equipment Model					Bulletin Filename MM09104AB			Occurrence Annual				

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

VOLUME REDUCTION EQUIPMENT	6.	<p>Check blower tubing for wear leakage.</p> <ol style="list-style-type: none"> 1. Visually check exterior of all tubing and elbows for holes. 2. Replace components with holes. 	3	7			
VOLUME REDUCTION EQUIPMENT	7.	<p>Check cutter blades and cut straps.</p> <p style="text-align: center;">NOTE</p> <p>If the cut straps appear to be frayed when cut and the length of the strap pieces appear to be getting longer than normal, the cutter most likely needs replacement. Numerous jams in the cutter may also indicate that the cutter needs replacement.</p> <p>Check cutter blades and cut straps:</p> <ol style="list-style-type: none"> 1. Check the cut straps in the trash can under the cyclonic separator for frayed ends and being longer than 6 inches. 2. Remove cutter muffler from the exhaust side of the cutter assembly: <ol style="list-style-type: none"> a. Remove the three large nuts and bolts on the muffler compression fitting. b. Slide the compression fitting away from the cutter down the tubing. c. Support the end of the tubing. d. Remove the 6 – 7/16 inch hex head nuts from exhaust side of the cutter assembly. e. Support muffler while removing 6 - 7/16 inch hex head nuts and lock washers. f. Remove the muffler being careful not to damage the switch and its bracket. <div style="text-align: center; border: 1px solid black; padding: 2px; width: fit-content; margin: 10px auto;">WARNING</div> <p>Be cautious when checking these blades as they are very sharp and may cut you.</p> <ol style="list-style-type: none"> 3. Visually check stationary blade and 2 rotating blades. If any blade appears damaged, remove/ replace the cutter. 	20	9			

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		0	3	A	F	T	U		A	A	0	0
Equipment Nomenclature Automatic Flats Tray Unliddr		Equipment Model				Bulletin Filename MM09104AB			Occurrence Annual			

Part or Component	Item No	Task Statement and Instruction (Comply with all current safety precautions)	Est. Time Req (min)	Min. Skill Lev	Thresholds		
					Run Hours	Pieces Fed (000)	Freq.

		4. Remove any debris from the cutter assembly; take care not to cut yourself. 5. Reinstall the cutter muffler. <ul style="list-style-type: none"> a. While lining up the cutter muffler to the cutter, align the switch with the switch bracket and start all 6 – 7/16 inch hex head nuts and tighten them up. b. Slide compression fitting back into position over the muffler and the end of the tubing. Ensure grounding strap that is over the rubber sealer is grounded to the area where the paint has been removed. c. Install three large nuts and bolts on the muffler compression fitting and tighten. 					
VOLUME REDUCTION EQUIPMENT	8.	Replace cyclonic separator dust bag.	5	7			
		<div style="border: 1px solid black; padding: 2px; display: inline-block;">WARNING</div> Be cautious when working around or on equipment when power has been applied.					
SYSTEM	9.	Return AFTU to service. Return the AFTU to normal operation.	2	9			
CLEAN UP	10.	Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.	2	All			

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