

MAINTENANCE TECHNICAL SUPPORT CENTER
HEADQUARTERS MAINTENANCE OPERATIONS
UNITED STATES POSTAL SERVICE



Maintenance Management Order

SUBJECT: Operational and Preventive Maintenance
Guidelines for High Speed Tray Sorters
(HSTS)

DATE: March 23, 2016

TO: All HSTS Sites

NO: MMO-025-16
FILE CODE: B1
pmur:mm14155ad

Online Change Record		
Change #	Date	Description of Change
1	4/9/2024	Inserted new Attachment 6, Master Checklist 03-HSTS-AA-006-M – Annual PM. Previous attachment 6 is now Attachment 7.

This Maintenance Management Order (MMO) provides Operational and Preventive Maintenance Guidelines for the HSTS. This MMO **supersedes MMO-045-14 and MMO-118-13**. This bulletin applies to Acronym HSTS, Class Code AA.

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

Preventive Maintenance (PM) guidelines provide maintenance employees with the recommended task based recommended maintenance activities. The complete master PM checklist should be accessible to all maintenance employees when performing PM activities.

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.

WARNING

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

WARNING

The use of compressed or blown air is prohibited. An alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp rag, lint-free cloth, or brush must be used in place of compressed or blown air.

WARNING

Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.

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



Kevin Couch
Manager
Maintenance Technical Support Center
HQ Maintenance Operations

- Attachments
1. Summary of Workload Estimate
 2. Master Checklist 03-HSTS-AA-002-M – Weekly PM
 3. Master Checklist 03-HSTS-AA-003-M – Monthly PM
 4. Master Checklist 03-HSTS-AA-004-M – Quarterly PM
 5. Master Checklist 03-HSTS-AA-005-M – Bi-Annual PM
 6. Master Checklist 03-HSTS-AA-006-M – Annual PM
 7. Master Checklist 09-HSTS-AA-001-M – Operational Maintenance

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR HIGH SPEED TRAY SORTER

SUMMARY**WORKLOAD ESTIMATE
FOR HIGH SPEED TRAY SORTER****NOTE**

Because this equipment may vary in size, the workload estimate cannot be provided in a traditional roll-up table. For this guideline, the annual work hours are derived from local site specific entries made in an electronic Work Hour Estimator Program (eWHEP) worksheet. Refer to eWHEP for further guidance.

ATTACHMENT 2
HIGH SPEED TRAY SORTER
MASTER CHECKLIST

03-HSTS-AA-002-M

Weekly Time Total: 22 Minutes

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	2	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

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 inspect 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, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.</p> <p>WARNING FOR EWP/PPE:</p> <p>Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.</p>	1	All			
		<div style="border: 1px solid black; padding: 5px; text-align: center;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied.</p>					
SYSTEM	2.	<p>System Computer.</p> <p>Observe operator screen for any fault messages or abnormal indications.</p>	1	9			
START UP	3.	<p>Observe Warning Horn and Beacons.</p> <ol style="list-style-type: none"> 1. Activate E-Stop. Ensure motors stop and proper visual and audible notifications are observed. Reset E-Stop. 2. Restart system, watch for proper operation of warning horn and beacons on system start-up. 	4	9			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE	
		0	3	H	S	T	S			A	A	0	0	2	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

LOCK OUT	4.	Power Down and Lock Out Power. <div style="border: 1px solid black; padding: 2px; text-align: center;">WARNING</div> <p>Electrical power will always be present at the input of the disconnect device unless the circuit is disabled at the facility power distribution panel located at _____.</p> <p>Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.</p>	10	7			
BARCODE READERS	5.	Barcode Readers. <div style="border: 1px solid black; padding: 2px; text-align: center;">WARNING</div> <p>Shut down the camera system before performing this maintenance task. Do not stare into the camera's window at the laser / LED light. Avoid direct eye exposure. The laser / LED light level does not constitute a health hazard, however staring at the laser / LED light for prolonged periods could result in eye damage.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">CAUTION</div> <p>Do not use any chemical on the camera that is unsafe for plastics, such as benzene, acetone, or similar products.</p> <p>Using a dry, soft, lint-free cloth, remove any dust from the camera window.</p>	2	7			
RETURN TO SERVICE	6.	Power Up HSTS System. 1. Power up preparation. <ul style="list-style-type: none"> a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. 	3	9			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	2	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

		<div style="border: 1px solid black; padding: 5px; text-align: center;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts.</p> <ol style="list-style-type: none"> Restore power to equipment as prescribed by current local procedure providing lockout/restore procedures. Restart System in accordance with manufacturer's guideline. 					
CLEAN UP	7.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	1	All			

ATTACHMENT 3
HIGH SPEED TRAY SORTER
MASTER CHECKLIST

03-HSTS-AA-003-M

Monthly Time Total: 135 Minutes + 5.7 Minutes per Transfer Assembly

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	3	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

SAFETY STATEMENT	1.	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 inspect 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. THE USE OF COMPRESSED OR BLOWN AIR IS PROHIBITED. When cleaning is required, an alternative cleaning method such as a HEPA filtered vacuum cleaner, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.	1	All			
HIGH SPEED MERGE	2.	High Speed Merge. 1. Observe High Speed Merge sections for proper operation. 2. Observe tray movement for any abnormal indications such as jumps or stalls.	3	9			
SPIRAL CONVEYOR	3.	Spirals. 1. Observe Spiral Conveyor sections for proper operation. 2. Observe tray movement for any abnormal indications such as jumps or stalls.	4	9			
RETURN BELT	4.	Return Belt. 1. Observe return belt for proper operation. 2. Observe tray movement for any abnormal indications such as jumps or stalls.	4	9			
AIR SYSTEM	5.	Air System.	6	7			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	3	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period
		1. Check main air pressure to ensure it is 80 psi. Drain water in bowl (if equipped). 2. Check the belt take-up air pressure to ensure it is 55-60 psi. Drain water in bowl (if equipped). 3. Check each Transfer Assembly (TA) air pressure to ensure it is 50-60 psi. Drain water in bowls (if equipped). (2 minutes per TA)	+ 2 per TA				
CONVEYORS	6.	Clean Runout Photocells and Verify Operation. Using a lint-free cloth, clean the 80% and 100% full photocells and reflectors. Verify the proper operation of the 80% and 100% full photocells by ensuring the sensor light changes state as it is blocked and unblocked.	2 (per TA)	7			
	7.	Check Narrow Belt Conveyor Operation. Confirm conveyor and pop-ups are performing properly. Load a test sort plan and send a tray to each lane. If you don't have a test sort plan utilize the Sequential Discharge Unit Test.	11	9			
	8.	Backups. 1. Backup MRC decoder to Flash drive. Refer to Accusort MRC Decoder Manual Appendix B (KCMO) 2. Backup FMPCS site data. Refer to MS-158 Volume A, Section 7.2.1.	18	10			
COMPUTERS	9.	Power Down and Lock Out Power. <div style="border: 1px solid black; padding: 5px; text-align: center;">WARNING</div> Electrical power will always be present at the input of the disconnect device unless the circuit is disabled at the facility power distribution panel located at _____. Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.	10	7			
ROLLER O-RINGS	10.	O-Rings.	74	7			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	3	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

		<ol style="list-style-type: none"> 1. Check for cracks, damage, foreign objects, or missing O-rings. 2. Check tension by pressing against them. O-rings should be pliable but not loose. 					
NARROW BELT SORTER	11.	<p>Check the NBS Belt for Wear or Damage.</p> <ol style="list-style-type: none"> 1. Check the NBS belt splice for wear or damage. <ol style="list-style-type: none"> a. Examine lower belt guide wheels. b. Look for wear. c. Ensure proper tracking. 2. Examine end pulley and end pulley snubber. <ol style="list-style-type: none"> a. Look for wear. b. Ensure proper tracking. 3. Examine Rollers. <ol style="list-style-type: none"> a. Look for foreign objects or dirt build up. 4. Chains and Sprockets. <ol style="list-style-type: none"> a. Look for wear. b. Ensure proper tracking. 5. Gear boxes. <ol style="list-style-type: none"> a. Check for leaks or dirt build up. 6. Main Drive Bearings. <ol style="list-style-type: none"> a. Check bearings, grease if necessary. 7. Gear motor. <ol style="list-style-type: none"> a. Check oil seals for leaks. b. Check oil level. c. Check for dirt build up. 8. Sorter Transfer Module. <ol style="list-style-type: none"> a. Inspect housings for debris. b. Check timing belt tension (Drive and Jump belts). c. Verify all tires are still on divert wheels and in good condition. d. Check to see that all divert wheel O-rings are in place and in good condition. There 	1.7 Per TA	9			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
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		0	3	H	S	T	S			A	A	0	0	3	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

		<p>are two O-rings used to drive each divert wheel. One clear O-ring which transmits power from drive roller to lower idler, and one black O-ring which transmits power from lower idler to divert wheel.</p> <p>e. Check to verify NBS belts are properly tracked through lower belt guide wheels and wheels are in good condition.</p> <p>f. Check diverter snubbers and drive rollers for residue and condition.</p>					
RETURN TO SERVICE	12.	<p>Power Up HSTS System.</p> <p>1. Power up preparation.</p> <p>a. Ensure tools and materials are removed from work area.</p> <p>b. Replace all machine panels.</p> <p>c. Close all machine doors and covers.</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts.</p> <p>2. Restore power to equipment as prescribed by current local procedure providing lockout/restore procedures.</p> <p>3. Restart Systems in accordance with manufacturer's guideline.</p>	3	9			
CLEAN UP	13.	<p>Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.</p>	1	All			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S				A	A	0	0	3
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period

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ATTACHMENT 4
HIGH SPEED TRAY SORTER
MASTER CHECKLIST

03-HSTS-AA-004-M

Quarterly Time Total: 55 Minutes

U.S. Postal Service Maintenance Checklist		IDENTIFICATION												
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
		0	3	H	S	T	S			A	A	0	0	4 M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

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 inspect 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, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.</p> <p>WARNING FOR EWP/PPE:</p> <p>Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.</p>	1	All			
SYSTEM	2.	<p>System.</p> <ol style="list-style-type: none"> Listen for abnormal noise using airborne ultrasound detection (UE 10,000 with Long Range Module (LRM)) Ensure all covers and guards are in place. 	20	9			
LOCK OUT	3.	<p>Power Down and Lock Out Power at the Facility Power Distribution Panel.</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> <p>The following steps include work in the motor controls box. In order to remove all power from the controls box including the input of the disconnect device, the system must be locked out at the facility power distribution panel located at _____.</p>	10	7			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE	
		0	3	H	S	T	S			A	A	0	0	4	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

		Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.					
MOTOR CONTROL	4.	Motor Controls. As soon as possible after power down, perform an electrical infrared thermography inspection of motor control cabinets to ensure there are no abnormal heat conditions. 1. Open motor control cabinets 2. Check for overheated (discolored components). 3. Inspect seal. 4. Clean air filter (if present). 5. Ensure contacts are snug. 6. Vacuum if necessary. 7. Secure motor control cabinet panels.	20	9			
RETURN TO SERVICE	5.	Power Up HSTS System. 1. Power up preparation. a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts. 2. Restore power to equipment as prescribed by current local procedure providing lockout/restore procedures. 3. Restart Systems in accordance with manufacturer's guideline.	3	9			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S				A	A	0	0	4
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period
CLEAN UP	6.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	1	All			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S				A	A	0	0	5
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period

ATTACHMENT 5**HIGH SPEED TRAY SORTER****MASTER CHECKLIST**

03-HSTS-AA-005-M

Bi-Annual Time Total: 54 minutes

U.S. Postal Service Maintenance Checklist		IDENTIFICATION												
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
		0	3	H	S	T	S			A	A	0	0	6 M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

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 inspect 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, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.</p> <p>WARNING FOR EWP/PPE:</p> <p>Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.</p>	1	All			
LOCK OUT	2.	<p>Power Down and Lock Out Power.</p> <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> <p>Electrical power will always be present at the input of the disconnect device unless the circuit is disabled at the facility power distribution panel located at _____.</p> <p>Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.</p>	10	7			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	6	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period

		<div style="border: 1px solid black; padding: 5px; text-align: center;">WARNING</div> <p>Discard or dispose of chemical soaked materials according to SDS and in accordance with local procedures.</p>					
MAIN DRIVE	3.	<p>Check Main Drive.</p> <ol style="list-style-type: none"> 1. Grease bearings if necessary. 2. Change gear case oil, 3.1 quarts capacity in each gear box. <ol style="list-style-type: none"> a. Drain and properly dispose of old oil. b. Install new oil. <ol style="list-style-type: none"> 1) Mineral Oil based lubrication, Viscosity VG220 (Mobilgear 630, Shell Omala 220 or equivalent) <p style="text-align: center;">or</p> <ol style="list-style-type: none"> 2) Synthetic lube (Mobilgear SHC630 or equivalent) 	37	9			
RETURN TO SERVICE	4.	<p>Power Up HSTS System.</p> <ol style="list-style-type: none"> 1. Power up preparation. <ol style="list-style-type: none"> a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> <p>Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts.</p> <ol style="list-style-type: none"> 2. Restore power to equipment as prescribed by current local procedure providing lockout/restore procedures. 3. Restart Systems in accordance with manufacturer's guideline. 	3	9			

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S				A	A	0	0	6
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period
CLEAN UP	5.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	3	All			

ATTACHMENT 6
HIGH SPEED TRAY SORTER
MASTER CHECKLIST
PREVENTIVE MAINTENANCE

03-HSTS-AA-006-M

Time Total: 37 Minutes

U.S. Postal Service Maintenance Checklist		IDENTIFICATION												
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER		TYPE
		0	3	H	S	T	S			A	A	0	0	6 M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period

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 inspect 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, a damp cloth, lint-free cloth, or brush, must be used in place of compressed or blown air. Report safety deficiencies to your supervisor immediately upon detection.</p> <p>WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.</p>	1	All			
LOCK OUT	2.	<p>Power Down and Lock Out Power.</p> <div style="border: 1px solid black; padding: 2px; text-align: center;">WARNING</div> <p>Electrical power will always be present at the input of the disconnect device unless the circuit is disabled at the facility power distribution panel located at _____.</p> <p>Power down the machine and lock out its electrical power as prescribed by the current local lockout instructions providing lockout/restore procedures.</p>	10	7			
		<div style="border: 1px solid black; padding: 2px; text-align: center;">WARNING</div> <p>Discard or dispose of chemical soaked materials according to SDS and in accordance with local procedures.</p>					

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	H	S	T	S			A	A	0	0	6	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			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)	Time Period
Sorter Computer Cabinet	3.	Clean Cabinet. 1. Vacuum the interior of cabinet. 2. Clean exterior of all cabinets with mild detergent and water.	20	7			
RETURN TO SERVICE	4.	Power Up HSTS System. 1. Power up preparation. a. Ensure tools and materials are removed from work area. b. Replace all machine panels. c. Close all machine doors and covers. <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> Be cautious when working around or on equipment when power has been applied. Take precautions to prevent hair, clothing, tools, and test equipment from being caught in moving parts. 2. Restore power to equipment as prescribed by current local procedure providing lockout/restore procedures. 3. Restart Systems in accordance with manufacturer's guideline.	3	9			
CLEAN UP	5.	Clean Up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Notify supervisor of any deficiencies.	3	All			

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		0	3	H	S	T	S				A	A	0	0	6
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				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)	Time Period

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ATTACHMENT 7
HIGH SPEED TRAY SORTER
MASTER CHECKLIST
OPERATIONAL MAINTENANCE

09-HSTS-AA-001-M

Time Total: 68.5 Minutes

U.S. Postal Service Maintenance Checklist		IDENTIFICATION													
		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	9	H	S	T	S			A	A	0	0	1	M
Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			Tourly				

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)	Time Period

SAFETY STATEMENT	1.	COMPLY WITH ALL SAFETY PRECAUTIONS. Disconnect power and apply lockouts when required by this instruction. Refer to current local lockout procedures to properly shutdown and lockout this machine. Open equipment and inspect 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. 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 on optical equipment only when other cleaning methods cannot be used. Report safety deficiencies to your supervisor immediately upon detection. WARNING FOR EWP/PPE: Steps contained in this bulletin may require the use of Electrical Work Plan (EWP) Personal Protective Equipment (PPE). Refer to the current EWP MMO for appropriate EWP PPE and barricade requirements.	1	All			
SYSTEM	2.	Observe Warning Horn and Beacons. During normal start-up, watch for proper operation of warning horn and beacons.	2	7			
HSTS COMPUTER	3.	System Computer. During normal operation 1. Ensure proper operation of the CPU fan. 2. Observe operator screen for any fault messages or abnormal indications.	2.5	9			

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Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155			Tourly				

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)	Time Period

CAMERAS	4.	Cameras. <div style="border: 1px solid black; padding: 5px; text-align: center; margin: 10px 0;">WARNING</div> <p>Do not stare into the camera's window at the laser / LED light. Avoid direct eye exposure. The laser / LED light level does not constitute a health hazard, however staring at the laser / LED light for prolonged periods could result in eye damage.</p> <p>During normal operation:</p> <ol style="list-style-type: none"> Observe cameras as trays/tubs are presented to the system. Ensure proper camera operation and read rate. 	3	10			
SYSTEM	5.	Check System Operation and ULX Transmission. <ol style="list-style-type: none"> With system operating and sortplan loaded run one tray or scan a tray label. Verify that the camera reads the barcode. Check ULX Transmission in MPEWatch. <ol style="list-style-type: none"> Log into MPEWatch on an ACE computer. Select MPEwatch Site List. Select your facility from the list of sites. Select mhe monitor from the menu options at the top of the screen. Find the HSTS in the chart at the bottom of the page. Ensure it has "OK" under ULX Details. Review all other information on this report and notify supervisor of any problems. 	15	10			
CONVEYOR	6.	Motorized Drive Rollers. <p>During normal operation:</p> <ol style="list-style-type: none"> With equipment running, observe drive rollers for proper operation. Look and listen for evidence of damage to roller or loose mounting hardware. 	8	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		
					Run Hours	Pieces Fed (000)	Time Period

CONVEYOR	7.	Driven Rollers. During normal operation: <ol style="list-style-type: none"> With equipment operating, listen for abnormal noise from rollers. Look for damaged or missing O-rings. Look for frozen or inoperative rollers. 	11	9			
HIGH SPEED MERGE	8.	High Speed Merges. During normal operation: <ol style="list-style-type: none"> Observe High Speed Merge sections for proper operation. Observe tray movement for any abnormal indications such as jumps or stalls. 	4	9			
SPIRAL CONVEYORS	9.	Spirals. During normal operation: <ol style="list-style-type: none"> Observe Spiral Conveyor sections for proper operation. Observe tray movement for any abnormal indications such as jumps or stalls. 	6	9			
PULLEYS	10.	Head, Tail, Take-Up & Snub. During normal operation: <ol style="list-style-type: none"> With equipment operating, listen to pulley bearing for abnormal noise. Feel bearing housings for excessive vibrations. Examine pulleys for eccentricity or other indications of a bent shaft. 	2	9			
CONVEYOR	11.	Narrow Belt Sorter & Return Belt. During normal operation: <ol style="list-style-type: none"> With equipment operating, observe belts to determine proper operation. Look and listen for evidence of belt slippage on Motorized drive pulley. Look for excessive belt sag between idler rolls. Observe tracking of belts over tail, head, and take-up pulleys. 	10	9			

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Equipment Nomenclature High Speed Tray Sorter		Equipment Model HSTS						Bulletin Filename MM14155				Tourly			

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)	Time Period

		5. Look for belt run-out along carrying and return runs of conveyor. 6. Look for tracking problems or damaged belts. 7. Watch trays/tubs; look for any stalls or jumps as the piece moves. 8. Check pneumatic take-ups for proper operation.					
TRANSFER ASSEMBLY	12.	Observe Operation of Transfer Assemblies. During normal operation: 1. Ensure Transfer Assemblies are activating on the center of the tray or tub. 2. Ensure the tray/tub does not twist or turn when leaving the Transfer Assembly, indicating a problem with the belts. 3. Listen/watch for excessive noise or vibration during Transfer Assembly cycle.	3	9			
SYSTEM	13.	Notify Supervisor. Notify supervisor of any deficiencies found.	1	ALL			