



Maintenance Management Order

SUBJECT: Operational and Production Based Maintenance Servicing (PM) Guidelines for Delivery Bar Code Sorter (DBCS) Model 990

DATE: May 2, 2008

NO: MMO-004-08

TO: Maintenance Manager DBCS Model 990 Offices

FILE CODE: D2

dcan:mm04074af

Changes from MMO-113-09 have been incorporated in this online version.

MAINTENANCE MANAGEMENT ORDER

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This Maintenance Management Order (MMO) provides Operational and Preventive Maintenance Servicing (PM) Guidelines based on pieces fed per production run (Production Thresholds), for the DBCS Model 990 machine. This MMO supersedes MMO-010-01.

This maintenance program is a production-based (throughput [pieces fed]) alignment of preventive, predictive, and operational maintenance.

The term Threshold Severity as used in this document will be defined as one of the three Production Thresholds based on pieces fed and issued on a daily basis. All other routes (Senior) will be issued at the Production Threshold determined for that route based on pieces fed; these routes are not divided into individual Threshold Severities.

Routes issued on a real-time daily basis are categorized by Threshold Severities One, Two, and Three. These are based on the following Production Thresholds: SEVERITY 1 (less than 90,000 pieces fed), SEVERITY 2 (between 90,000 and 180,000 pieces fed), or SEVERITY 3 (greater than 180,000 pieces fed), based on End-of-Run (EOR) report of daily pieces fed, and will be issued based on this data by Maintenance Operational Support or as locally designated. Presently in accordance with MMO-082-07, and until further notice, the Severity 3 (Attachment 5 of this MMO) will be issued exclusively as the daily route.

Local Maintenance Operational Support will also compile and be the custodian of the ongoing data used for determining when all other (Senior maintenance routes) routes will be issued based on pieces fed thresholds. However, until such time as these tasks can be automated through the eMARS System or comparable databases, the Senior routes will be issued on a calendar base as outlined in MMO-082-07.

PM checklists based on Threshold Severities 1, 2, and 3 are included in this bulletin. Additionally, all other checklists that will be issued based on their Production Thresholds (Senior) are included. The last attachment to this bulletin includes the tasks needed to accomplish Operational Maintenance on the DBCS.

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.

This is a PM guideline, any problems found that require adjustment or replacement of parts will require a work order. The PM tasks and cleaning sequence starts at Feeder and ends at last stacker. The local technician or mechanic may wish to use a different sequence, as long as all tasks are covered this is acceptable.

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.

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, which require 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 for reference by all employees. 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.

Direct any questions or comments concerning this bulletin to the HelpDesk, Maintenance Technical Support Center, P.O. Box 1600, Norman OK 73070-1600; telephone FTS 2000 (405) 573-2123 or toll free (800) 366-4123.



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Maintenance Technical Support Center
Maintenance Policies and Programs

Attachments:

1. Summary Workload Estimate
2. Workload Estimate Adjustments
3. DBCS Model 990 Master Checklist: 03-DBCS-AB-001-M: Threshold Severity 1
4. DBCS Model 990 Master Checklist: 03-DBCS-AB-002-M: Threshold Severity 2
5. DBCS Model 990 Master Checklist: 03-DBCS-AB-003-M: Threshold Severity 3
6. DBCS Model 990 Master Checklist: 03-DBCS-AB-004-M: Production Threshold of 1,300,000 Pieces Fed
7. DBCS Model 990 Master Checklist: 03-DBCS-AB-005-M: Production Threshold of 5,600,000 Pieces Fed
8. DBCS Model 990 Master Checklist: 03-DBCS-AB-006-M: Production Threshold of 16,900,000 Pieces Fed
9. DBCS Model 990 Master Checklist: 03-DBCS-AB-007-M: Production Threshold of 67,500,000 Fed
10. Operational Maintenance Procedures: DBCS Model 990: 09-DBCS-AB-001-M: Operational Tour

ATTACHMENT 1

SUMMARY

WORKLOAD ESTIMATE

FOR

DBCS MODEL 990

SUMMARY WORK LOAD ESTIMATES FOR PHASE-I DBCS

TIER ONE BASED ON UNDER 55,000,000 PIECES FED LAST FISCAL YEAR

Operation Days	Routine Servicing per Machine (Hrs/Yr)	Repair Time per Machine (Hrs/yr) *	Routine Servicing + Repair Time (Hrs/Yr)	Non-Productive Time per Machine (Hrs/yr) **	Total Servicing per DBCS (Hrs/Yr)	Operational Maint. Time (Hrs/Yr)	Operational Maintenance (OpMt) + Total Servicing		
							1 Tour Hrs/Yr OpMt x 1	2 Tours Hrs/Yr OpMt x 2	3 Tours Hrs/Yr OpMt x 3
5 Days	438.36	131.51	569.87	56.99	626.86	156.00	782.86	938.86	1094.86
6 Days	490.99	147.30	638.29	63.83	702.12	187.20	889.32	1076.52	1263.72
7 Days	543.62	163.09	706.71	70.67	777.38	218.40	995.78	1214.18	1432.58

*Repair maintenance estimates based on 30% of preventive maintenance.

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

PM TIME SUMMARY IN MINUTES	
Thresholds Pieces Fed	MIN.
Sev. 1 <90K	52
Sev. 2 90-180K	60
Sev. 3 >180K	65
1,300,000.00	180
5,600,000.00	198
16,900,000.00	247
67,500,000.00	183

PM HOURS PER YEAR			
Percentage of Utilization	5 Day Wk	6 Day Wk	7 Day Wk
Sev. 1-14%	31.55	37.86	44.17
Sev. 2-49%	127.40	152.88	178.36
Sev. 3-37%	104.22	125.06	145.90
Total	263.17	315.80	368.43

PM HOURS PER YEAR SENIOR		
Thresholds	# times Completed	Hours Yr per DBCS
1,300,000	42.31	126.93
5,600,000	9.82	32.41
16,900,000	3.25	13.38
67,500,000	0.81	2.47
Total		175.19

SUMMARY WORK LOAD ESTIMATES FOR PHASE-I DBCS									
TIER TWO BASED ON 55,000,000 - 80,000,000 PIECES FED LAST FISCAL YEAR									
Operation Days	Routine Servicing/ Machine (Hrs/Yr)	Repair Time per Machine (Hrs/yr) *	Routine Servicing + Repair Time (Hrs/Yr)	Non-Productive Time per Machine (Hrs/yr) **	Total Servicing/ Machine (Hrs/Yr)	Operational Maint. Time (Hrs/Yr)	Operational Maintenance (OpMt) + Total Servicing		
							1 Tour Hrs/Yr OpMt x 1	2 Tours Hrs/Yr OpMt x 2	3 Tours Hrs/Yr OpMt x 3
5 Days	484.37	145.31	629.68	62.97	692.65	156.00	848.65	1004.65	1160.65
6 Days	538.24	161.47	699.71	69.97	769.68	187.20	956.88	1144.08	1331.28
7 Days	592.12	177.64	769.76	76.98	846.74	218.40	1065.14	1283.54	1501.94
*Repair maintenance estimates based on 30% of preventive maintenance.									
**Based on 10% of total PM and repair.									
				PM TIME SUMMARY IN MINUTES					
				Thresholds Pieces Fed	MIN.				
				Sev. 1 <90K	52				
				Sev. 2 90-180K	60				
				Sev. 3 >180K	65				
				1,300,000.00	180				
				5,600,000.00	198				
				16,900,000.00	247				
				67,500,000.00	183				
PM HOURS PER YEAR						PM HOURS PER YEAR - SENIOR			
Percentage of Utilization	5 Day Wk	6 Day Wk	7 Day Wk			Thresholds	# times Completed	Hours Yr per DBCS	
Sev. 1- 8%	18.03	21.63	25.24			1300000	51.92	155.76	
Sev. 2- 36%	93.60	112.32	131.04			5600000	12.05	39.77	
Sev. 3- 56%	157.73	189.28	220.83			16900000	3.99	16.43	
Total	269.36	323.23	377.11			67500000	1.00	3.05	
							Total	215.01	

SUMMARY WORK LOAD ESTIMATES FOR PHASE-I DBCS									
TIER THREE BASED ON OVER 80,000,000 PIECES FED LAST FISCAL YEAR									
Operation Days	Routine Servicing/ Machine (Hrs/Yr)	Repair Time per Machine (Hrs/yr) *	Routine Servicing + Repair Time (Hrs/Yr)	Non-Productive Time per Machine (Hrs/yr) **	Total Servicing/ Machine (Hrs/Yr)	Operational Maint. Time (Hrs/Yr)	Operational Maintenance (OpMt) + Total Servicing		
							1 Tour Hrs/Yr OpMt x 1	2 Tours Hrs/Yr OpMt x 2	3 Tours Hrs/Yr OpMt x 3
5 Days	532.91	159.87	692.78	69.28	762.06	156.00	918.06	1074.06	1230.06
6 Days	588.51	176.55	765.06	76.51	841.57	187.20	1028.77	1215.97	1403.17
7 Days	644.11	193.23	837.34	83.73	921.07	218.40	1139.47	1357.87	1576.27
*Repair maintenance estimates based on 30% of preventive maintenance.									
**Based on 10% of total PM and repair.									
				PM TIME SUMMARY IN MINUTES					
				Thresholds Pieces Fed	MIN.				
				Sev. 1 <90K	52				
				Sev. 2 90-180K	60				
				Sev. 3 >180K	65				
				1,300,000.00	180				
				5,600,000.00	198				
				16,900,000.00	247				
				67,500,000.00	183				
PM HOURS PER YEAR							PM HOURS PER YEAR - SENIOR		
Percentage of Utilization	5 Day Wk	6 Day Wk	7 Day Wk				Thresholds	# times Completed	Hours Yr per DBCS
Sev. 1- 3%	6.76	8.11	9.46				1300000	61.54	184.62
Sev. 2-22%	57.20	68.64	80.08				5600000	14.29	47.16
Sev. 3-76%	214.07	256.88	299.69				16900000	4.73	19.47
Total	278.03	333.63	389.23				67500000	1.19	3.63
							Total	254.88	

TIER ONE HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non-Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
102 Stacker									
5 Days	438.36	131.51	569.87	56.99	626.86	156.00	782.86	938.86	1094.86
6 Days	490.99	147.30	638.29	63.83	702.12	187.20	889.32	1076.52	1263.72
7 Days	543.62	163.09	706.71	70.67	777.38	218.40	995.78	1214.18	1432.58
114 Stacker									
5 Days	463.87	139.16	603.03	60.30	663.33	156.00	819.33	975.33	1131.33
6 Days	518.24	155.47	673.71	67.37	741.08	187.20	928.28	1115.48	1302.68
7 Days	572.60	171.78	744.38	74.44	818.82	218.40	1037.22	1255.62	1474.02
126 Stacker									
5 Days	478.93	143.68	622.61	62.26	684.87	156.00	840.87	996.87	1152.87
6 Days	534.15	160.25	694.40	69.44	763.84	187.20	951.04	1138.24	1325.44
7 Days	589.39	176.82	766.21	76.62	842.83	218.40	1061.23	1279.63	1498.03
138 Stacker									
5 Days	494.54	148.36	642.90	64.29	707.19	156.00	863.19	1019.19	1175.19
6 Days	550.65	165.20	715.85	71.59	787.44	187.20	974.64	1161.84	1349.04
7 Days	606.74	182.02	788.76	78.88	867.64	218.40	1086.04	1304.44	1522.84
150 Stacker									
5 Days	510.13	153.04	663.17	66.32	729.49	156.00	885.49	1041.49	1197.49
6 Days	567.10	170.13	737.23	73.72	810.95	187.20	998.15	1185.35	1372.55
7 Days	624.06	187.22	811.28	81.13	892.41	218.40	1110.81	1329.21	1547.61
162 Stacker									
5 Days	531.53	159.46	690.99	69.10	760.09	156.00	916.09	1072.09	1228.09
6 Days	590.24	177.07	767.31	76.73	844.04	187.20	1031.24	1218.44	1405.64
7 Days	648.94	194.68	843.62	84.36	927.98	218.40	1146.38	1364.78	1583.18
174 Stacker									
5 Days	547.45	164.24	711.69	71.17	782.86	156.00	938.86	1094.86	1250.86
6 Days	607.01	182.10	789.11	78.91	868.02	187.20	1055.22	1242.42	1429.62
7 Days	666.58	199.97	866.55	86.66	953.21	218.40	1171.61	1390.01	1608.41
186 Stacker									
5 Days	563.41	169.02	732.43	73.24	805.67	156.00	961.67	1117.67	1273.67
6 Days	623.84	187.15	810.99	81.10	892.09	187.20	1079.29	1266.49	1453.69
7 Days	684.27	205.28	889.55	88.96	978.51	218.40	1196.91	1415.31	1633.71
198 Stacker									
5 Days	579.31	173.79	753.10	75.31	828.41	156.00	984.41	1140.41	1296.41
6 Days	640.62	192.19	832.81	83.28	916.09	187.20	1103.29	1290.49	1477.69
7 Days	701.92	210.58	912.50	91.25	1003.75	218.40	1222.15	1440.55	1658.95
210 Stacker									
5 Days	601.05	180.32	781.37	78.14	859.51	156.00	1015.51	1171.51	1327.51
6 Days	664.08	199.22	863.30	86.33	949.63	187.20	1136.83	1324.03	1511.23
7 Days	727.11	218.13	945.24	94.52	1039.76	218.40	1258.16	1476.56	1694.96
222 Stacker									
5 Days	616.94	185.08	802.02	80.20	882.22	156.00	1038.22	1194.22	1350.22
6 Days	680.84	204.25	885.09	88.51	973.60	187.20	1160.80	1348.00	1535.20
7 Days	744.74	223.42	968.16	96.82	1064.98	218.40	1283.38	1501.78	1720.18

TIER ONE HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non- Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
234 Stacker									
5 Days	632.92	189.88	822.80	82.28	905.08	156.00	1061.08	1217.08	1373.08
6 Days	697.69	209.31	907.00	90.70	997.70	187.20	1184.90	1372.10	1559.30
7 Days	762.46	228.74	991.20	99.12	1090.32	218.40	1308.72	1527.12	1745.52
246 Stacker									
5 Days	648.88	194.66	843.54	84.35	927.89	156.00	1083.89	1239.89	1395.89
6 Days	714.51	214.35	928.86	92.89	1021.75	187.20	1208.95	1396.15	1583.35
7 Days	780.14	234.04	1014.18	101.42	1115.60	218.40	1334.00	1552.40	1770.80
258 Stacker									
5 Days	670.61	201.18	871.79	87.18	958.97	156.00	1114.97	1270.97	1426.97
6 Days	737.98	221.39	959.37	95.94	1055.31	187.20	1242.51	1429.71	1616.91
7 Days	805.34	241.60	1046.94	104.69	1151.63	218.40	1370.03	1588.43	1806.83
270 Stacker									
5 Days	686.58	205.97	892.55	89.26	981.81	156.00	1137.81	1293.81	1449.81
6 Days	754.80	226.44	981.24	98.12	1079.36	187.20	1266.56	1453.76	1640.96
7 Days	823.04	246.91	1069.95	107.00	1176.95	218.40	1395.35	1613.75	1832.15
282 Stacker									
5 Days	702.52	210.76	913.28	91.33	1004.61	156.00	1160.61	1316.61	1472.61
6 Days	771.63	231.49	1003.12	100.31	1103.43	187.20	1290.63	1477.83	1665.03
7 Days	840.72	252.22	1092.94	109.29	1202.23	218.40	1420.63	1639.03	1857.43
294 Stacker									
5 Days	718.47	215.54	934.01	93.40	1027.41	156.00	1183.41	1339.41	1495.41
6 Days	788.44	236.53	1024.97	102.50	1127.47	187.20	1314.67	1501.87	1689.07
7 Days	858.40	257.52	1115.92	111.59	1227.51	218.40	1445.91	1664.31	1882.71
306 Stacker									
5 Days	740.28	222.08	962.36	96.24	1058.60	156.00	1214.60	1370.60	1526.60
6 Days	811.99	243.60	1055.59	105.56	1161.15	187.20	1348.35	1535.55	1722.75
7 Days	883.69	265.11	1148.80	114.88	1263.68	218.40	1482.08	1700.48	1918.88

TIER TWO HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non-Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
102 Stacker									
5 Days	484.37	145.31	629.68	62.97	692.65	156.00	848.65	1004.65	1160.65
6 Days	538.24	161.47	699.71	69.97	769.68	187.20	956.88	1144.08	1331.28
7 Days	592.12	177.64	769.76	76.98	846.74	218.40	1065.14	1283.54	1501.94
114 Stacker									
5 Days	513.72	154.12	667.84	66.78	734.62	156.00	890.62	1046.62	1202.62
6 Days	569.31	170.79	740.10	74.01	814.11	187.20	1001.31	1188.51	1375.71
7 Days	624.93	187.48	812.41	81.24	893.65	218.40	1112.05	1330.45	1548.85
126 Stacker									
5 Days	531.20	159.36	690.56	69.06	759.62	156.00	915.62	1071.62	1227.62
6 Days	587.68	176.30	763.98	76.40	840.38	187.20	1027.58	1214.78	1401.98
7 Days	644.14	193.24	837.38	83.74	921.12	218.40	1139.52	1357.92	1576.32
138 Stacker									
5 Days	549.40	164.82	714.22	71.42	785.64	156.00	941.64	1097.64	1253.64
6 Days	606.75	182.03	788.78	78.88	867.66	187.20	1054.86	1242.06	1429.26
7 Days	664.09	199.23	863.32	86.33	949.65	218.40	1168.05	1386.45	1604.85
150 Stacker									
5 Days	567.54	170.26	737.80	73.78	811.58	156.00	967.58	1123.58	1279.58
6 Days	625.74	187.72	813.46	81.35	894.81	187.20	1082.01	1269.21	1456.41
7 Days	683.94	205.18	889.12	88.91	978.03	218.40	1196.43	1414.83	1633.23
162 Stacker									
5 Days	591.83	177.55	769.38	76.94	846.32	156.00	1002.32	1158.32	1314.32
6 Days	651.76	195.53	847.29	84.73	932.02	187.20	1119.22	1306.42	1493.62
7 Days	711.71	213.51	925.22	92.52	1017.74	218.40	1236.14	1454.54	1672.94
174 Stacker									
5 Days	610.38	183.11	793.49	79.35	872.84	156.00	1028.84	1184.84	1340.84
6 Days	671.19	201.36	872.55	87.26	959.81	187.20	1147.01	1334.21	1521.41
7 Days	731.99	219.60	951.59	95.16	1046.75	218.40	1265.15	1483.55	1701.95
186 Stacker									
5 Days	628.97	188.69	817.66	81.77	899.43	156.00	1055.43	1211.43	1367.43
6 Days	690.65	207.20	897.85	89.79	987.64	187.20	1174.84	1362.04	1549.24
7 Days	752.32	225.70	978.02	97.80	1075.82	218.40	1294.22	1512.62	1731.02
198 Stacker									
5 Days	647.50	194.25	841.75	84.18	925.93	156.00	1081.93	1237.93	1393.93
6 Days	710.04	213.01	923.05	92.31	1015.36	187.20	1202.56	1389.76	1576.96
7 Days	772.58	231.77	1004.35	100.44	1104.79	218.40	1323.19	1541.59	1759.99
210 Stacker									
5 Days	672.22	201.67	873.89	87.39	961.28	156.00	1117.28	1273.28	1429.28
6 Days	736.48	220.94	957.42	95.74	1053.16	187.20	1240.36	1427.56	1614.76
7 Days	800.76	240.23	1040.99	104.10	1145.09	218.40	1363.49	1581.89	1800.29

TIER TWO HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non- Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
222 Stacker									
5 Days	690.74	207.22	897.96	89.80	987.76	156.00	1143.76	1299.76	1455.76
6 Days	755.89	226.77	982.66	98.27	1080.93	187.20	1268.13	1455.33	1642.53
7 Days	821.02	246.31	1067.33	106.73	1174.06	218.40	1392.46	1610.86	1829.26
234 Stacker									
5 Days	709.36	212.81	922.17	92.22	1014.39	156.00	1170.39	1326.39	1482.39
6 Days	775.37	232.61	1007.98	100.80	1108.78	187.20	1295.98	1483.18	1670.38
7 Days	841.37	252.41	1093.78	109.38	1203.16	218.40	1421.56	1639.96	1858.36
246 Stacker									
5 Days	727.96	218.39	946.35	94.64	1040.99	156.00	1196.99	1352.99	1508.99
6 Days	794.83	238.45	1033.28	103.33	1136.61	187.20	1323.81	1511.01	1698.21
7 Days	861.71	258.51	1120.22	112.02	1232.24	218.40	1450.64	1669.04	1887.44
258 Stacker									
5 Days	752.66	225.80	978.46	97.85	1076.31	156.00	1232.31	1388.31	1544.31
6 Days	821.25	246.38	1067.63	106.76	1174.39	187.20	1361.59	1548.79	1735.99
7 Days	889.87	266.96	1156.83	115.68	1272.51	218.40	1490.91	1709.31	1927.71
270 Stacker									
5 Days	771.27	231.38	1002.65	100.27	1102.92	156.00	1258.92	1414.92	1570.92
6 Days	840.75	252.23	1092.98	109.30	1202.28	187.20	1389.48	1576.68	1763.88
7 Days	910.21	273.06	1183.27	118.33	1301.60	218.40	1520.00	1738.40	1956.80
282 Stacker									
5 Days	789.87	236.96	1026.83	102.68	1129.51	156.00	1285.51	1441.51	1597.51
6 Days	860.22	258.07	1118.29	111.83	1230.12	187.20	1417.32	1604.52	1791.72
7 Days	930.56	279.17	1209.73	120.97	1330.70	218.40	1549.10	1767.50	1985.90
294 Stacker									
5 Days	808.46	242.54	1051.00	105.10	1156.10	156.00	1312.10	1468.10	1624.10
6 Days	879.66	263.90	1143.56	114.36	1257.92	187.20	1445.12	1632.32	1819.52
7 Days	950.86	285.26	1236.12	123.61	1359.73	218.40	1578.13	1796.53	2014.93
306 Stacker									
5 Days	833.25	249.98	1083.23	108.32	1191.55	156.00	1347.55	1503.55	1659.55
6 Days	906.18	271.85	1178.03	117.80	1295.83	187.20	1483.03	1670.23	1857.43
7 Days	979.13	293.74	1272.87	127.29	1400.16	218.40	1618.56	1836.96	2055.36

TIER THREE HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non-Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
102 Stacker									
5 Days	532.91	159.87	692.78	69.28	762.06	156.00	918.06	1074.06	1230.06
6 Days	588.51	176.55	765.06	76.51	841.57	187.20	1028.77	1215.97	1403.17
7 Days	644.11	193.23	837.34	83.73	921.07	218.40	1139.47	1357.87	1576.27
114 Stacker									
5 Days	566.20	169.86	736.06	73.61	809.67	156.00	965.67	1121.67	1277.67
6 Days	623.55	187.07	810.62	81.06	891.68	187.20	1078.88	1266.08	1453.28
7 Days	680.91	204.27	885.18	88.52	973.70	218.40	1192.10	1410.50	1628.90
126 Stacker									
5 Days	586.15	175.85	762.00	76.20	838.20	156.00	994.20	1150.20	1306.20
6 Days	644.38	193.31	837.69	83.77	921.46	187.20	1108.66	1295.86	1483.06
7 Days	702.61	210.78	913.39	91.34	1004.73	218.40	1223.13	1441.53	1659.93
138 Stacker									
5 Days	606.96	182.09	789.05	78.91	867.96	156.00	1023.96	1179.96	1335.96
6 Days	666.08	199.82	865.90	86.59	952.49	187.20	1139.69	1326.89	1514.09
7 Days	725.18	217.55	942.73	94.27	1037.00	218.40	1255.40	1473.80	1692.20
150 Stacker									
5 Days	627.71	188.31	816.02	81.60	897.62	156.00	1053.62	1209.62	1365.62
6 Days	687.69	206.31	894.00	89.40	983.40	187.20	1170.60	1357.80	1545.00
7 Days	747.67	224.30	971.97	97.20	1069.17	218.40	1287.57	1505.97	1724.37
162 Stacker									
5 Days	654.99	196.50	851.49	85.15	936.64	156.00	1092.64	1248.64	1404.64
6 Days	716.72	215.02	931.74	93.17	1024.91	187.20	1212.11	1399.31	1586.51
7 Days	778.46	233.54	1012.00	101.20	1113.20	218.40	1331.60	1550.00	1768.40
174 Stacker									
5 Days	676.22	202.87	879.09	87.91	967.00	156.00	1123.00	1279.00	1435.00
6 Days	738.83	221.65	960.48	96.05	1056.53	187.20	1243.73	1430.93	1618.13
7 Days	801.44	240.43	1041.87	104.19	1146.06	218.40	1364.46	1582.86	1801.26
186 Stacker									
5 Days	697.50	209.25	906.75	90.68	997.43	156.00	1153.43	1309.43	1465.43
6 Days	760.99	228.30	989.29	98.93	1088.22	187.20	1275.42	1462.62	1649.82
7 Days	824.46	247.34	1071.80	107.18	1178.98	218.40	1397.38	1615.78	1834.18
198 Stacker									
5 Days	718.70	215.61	934.31	93.43	1027.74	156.00	1183.74	1339.74	1495.74
6 Days	783.06	234.92	1017.98	101.80	1119.78	187.20	1306.98	1494.18	1681.38
7 Days	847.42	254.23	1101.65	110.17	1211.82	218.40	1430.22	1648.62	1867.02
210 Stacker									
5 Days	746.49	223.95	970.44	97.04	1067.48	156.00	1223.48	1379.48	1535.48
6 Days	812.59	243.78	1056.37	105.64	1162.01	187.20	1349.21	1536.41	1723.61
7 Days	878.71	263.61	1142.32	114.23	1256.55	218.40	1474.95	1693.35	1911.75

TIER THREE HOURS PER YEAR ACCORDING TO STACKER CONFIGURATION									
Op Day	Routine Service hr/yr	Repair time 30%	Routine + Repair time	Non- Productive Time 10%	Total Servicing	Operational Maint. hrs	Ops Maint. + Total Servicing		
							OpMt x 1	OpMt x 2	OpMt x 3
222 Stacker									
5 Days	767.70	230.31	998.01	99.80	1097.81	156.00	1253.81	1409.81	1565.81
6 Days	834.69	250.41	1085.10	108.51	1193.61	187.20	1380.81	1568.01	1755.21
7 Days	901.67	270.50	1172.17	117.22	1289.39	218.40	1507.79	1726.19	1944.59
234 Stacker									
5 Days	789.00	236.70	1025.70	102.57	1128.27	156.00	1284.27	1440.27	1596.27
6 Days	856.87	257.06	1113.93	111.39	1225.32	187.20	1412.52	1599.72	1786.92
7 Days	924.72	277.42	1202.14	120.21	1322.35	218.40	1540.75	1759.15	1977.55
246 Stacker									
5 Days	810.28	243.08	1053.36	105.34	1158.70	156.00	1314.70	1470.70	1626.70
6 Days	879.01	263.70	1142.71	114.27	1256.98	187.20	1444.18	1631.38	1818.58
7 Days	947.74	284.32	1232.06	123.21	1355.27	218.40	1573.67	1792.07	2010.47
258 Stacker Machine									
5 Days	838.06	251.42	1089.48	108.95	1198.43	156.00	1354.43	1510.43	1666.43
6 Days	908.54	272.56	1181.10	118.11	1299.21	187.20	1486.41	1673.61	1860.81
7 Days	979.03	293.71	1272.74	127.27	1400.01	218.40	1618.41	1836.81	2055.21
270 Stacker									
5 Days	859.35	257.81	1117.16	111.72	1228.88	156.00	1384.88	1540.88	1696.88
6 Days	930.71	279.21	1209.92	120.99	1330.91	187.20	1518.11	1705.31	1892.51
7 Days	1002.07	300.62	1302.69	130.27	1432.96	218.40	1651.36	1869.76	2088.16
282 Stacker									
5 Days	880.64	264.19	1144.83	114.48	1259.31	156.00	1415.31	1571.31	1727.31
6 Days	952.89	285.87	1238.76	123.88	1362.64	187.20	1549.84	1737.04	1924.24
7 Days	1025.12	307.54	1332.66	133.27	1465.93	218.40	1684.33	1902.73	2121.13
294 Stacker									
5 Days	901.93	270.58	1172.51	117.25	1289.76	156.00	1445.76	1601.76	1757.76
6 Days	975.04	292.51	1267.55	126.76	1394.31	187.20	1581.51	1768.71	1955.91
7 Days	1048.15	314.45	1362.60	136.26	1498.86	218.40	1717.26	1935.66	2154.06
306 Stacker									
5 Days	929.78	278.93	1208.71	120.87	1329.58	156.00	1485.58	1641.58	1797.58
6 Days	1004.64	301.39	1306.03	130.60	1436.63	187.20	1623.83	1811.03	1998.23
7 Days	1079.51	323.85	1403.36	140.34	1543.70	218.40	1762.10	1980.50	2198.90

ATTACHMENT 2
WORKLOAD ESTIMATE ADJUSTMENTS
FOR
DBCS MODEL 990
FOR
DIFFERENT STACKER CONFIGURATIONS

**WORKLOAD ESTIMATE ADJUSTMENTS
FOR DIFFERENT STACKER CONFIGURATIONS**

CHECKLIST 03-DBCS-AB-001-M
SEVERITY 1 (Less than 90,000)
Summary for Attachment 3

Number of Stackers	Time (min.) for Item 5	Time (min.) for Item 11	Total Severity 1 Time (min.)
102	10	4	52

Number of Stackers	Additional Time (min.) for Item 5	Additional Time (min.) for Item 11	Total Severity 1 Time (min.)
114	1	1	54
126	2	1	55
138	3	1	56
150	4	1	57
162	5	2	58
174	6	2	60
186	7	2	61
198	8	2	62
210	9	3	64
222	10	3	65
234	11	3	66
246	12	3	67
258	13	4	69
270	14	4	70
282	15	4	71
294	16	4	72
306	17	5	74

WORKLOAD ESTIMATE ADJUSTMENTS
FOR DIFFERENT STACKER CONFIGURATIONS

CHECKLIST 03-DBCS-AB-002-M
 SEVERITY 2 (Between 90,000 and 180,000)
 Summary for Attachment 4

Number of Stackers	Time (min.) for Item 5	Time (min.) for Item 11	Total Severity 2 Time (min.)
102	10	4	60

Number of Stackers	Additional Time (min.) for Item 5	Additional Time (min.) for Item 11	Total Severity 2 Time (min.)
114	1	1	62
126	2	1	63
138	3	1	64
150	4	1	65
162	5	2	67
174	6	2	68
186	7	2	69
198	8	2	70
210	9	3	72
222	10	3	73
234	11	3	74
246	12	3	75
258	13	4	77
270	14	4	78
282	15	4	79
294	16	4	80
306	17	5	82

WORKLOAD ESTIMATE ADJUSTMENTS
FOR DIFFERENT STACKER CONFIGURATIONS

CHECKLIST 03-DBCS-AB-003-M
 SEVERITY 3 (Greater than 180,000)
 Summary for Attachment 5

Number of Stackers	Time (min.) for Item 5	Time (min.) for Item 11	Total Severity 3 Time (min.)
102	10	4	65

Number of Stackers	Additional Time (min.) for Item 5	Additional Time (min.) for Item 11	Total Severity 3 Time (min.)
114	1	1	67
126	2	1	68
138	3	1	69
150	4	1	70
162	5	2	72
174	6	2	73
186	7	2	74
198	8	2	75
210	9	3	77
222	10	3	78
234	11	3	79
246	12	3	80
258	13	4	82
270	14	4	83
282	15	4	84
294	16	4	85
306	17	5	87

WORKLOAD ESTIMATE ADJUSTMENTS**FOR DIFFERENT STACKER CONFIGURATIONS**

CHECKLIST 03-DBCS-AB-004-M (1.3 Million Pieces Fed)
Summary for Attachment 6

Number of Stackers	Time (min.) for Item 4	Time (min.) For Item 5	Time (min.) for Item 9	Time (min.) for Item 10	Time (min.) for Item 16	Total 1.3 Million Time (min.)
102	6	70	20	8	15	180

Number of Stackers	Additional Time (min.) for Item 4	Additional Time (min) For Item 5	Additional Time (min.) for Item 9	Additional Time (min.) for Item 10	Additional Time (min.) for Item 16	Total 1.3 Million Time (min.)
114	1	10	3	1	2	197
126	1	15	6	1	4	207
138	1	20	9	1	6	217
150	1	25	12	1	8	227
162	2	30	15	2	10	239
174	2	35	18	2	12	249
186	2	40	21	2	14	259
198	2	45	24	2	16	269
210	3	50	27	3	18	281
222	3	55	30	3	20	291
234	3	60	33	3	22	301
246	3	65	36	3	24	311
258	4	70	39	4	26	323
270	4	75	42	4	28	333
282	4	80	45	4	30	343
294	4	85	48	4	32	353
306	5	90	51	5	34	365

WORKLOAD ESTIMATE ADJUSTMENTS**DIFFERENT STACKER CONFIGURATIONS**

CHECKLIST 03-DBCS-AB-005-M (5.6 Million Pieces Fed)
Summary for Attachment 7

Number of Stackers	Time (min.) for Item 4	Time (min.) for Item 9	Time (min.) for Item 11	Time (min.) for Item 13	Total 5.6 Million Time (min.)
102	21	95	12	21	198

Number of Stackers	Additional Time (min.) for Item 4	Additional Time (min.) for Item 9	Additional Time (min.) for Item 11	Additional Time (min.) for Item 13	Total 5.6 Million Time (min.)
114	3	13	2	3	219
126	6	20	4	6	234
138	9	30	6	9	252
150	12	40	8	12	270
162	15	50	10	15	288
174	19	60	12	19	308
186	23	70	14	23	328
198	27	80	16	27	348
210	31	90	18	31	368
222	35	100	20	35	388
234	39	110	22	39	408
246	43	120	24	43	438
258	47	130	26	47	447
270	51	140	28	51	468
282	55	150	30	55	488
294	59	160	32	59	508
306	63	170	34	63	528

WORKLOAD ESTIMATE ADJUSTMENTS**DIFFERENT STACKER CONFIGURATIONS**

CHECKLIST 03-DBCS-AB-006-M (16.9 Million Pieces Fed)
Summary for Attachment 8

Number of Stackers	Time (min.) for Item 4	Time (min.) for Item 5	Time (min.) for Item 6	Time (min.) for Item 8	Time (min.) for Item 15	Time (min.) for Item 19	Time (min.) for Item 22	Total 16.9 Million Time (min.)
102	23	14	14	14	16	56	23	247

Number of Stackers	Additional Time (min.) for Item 4	Additional Time (min.) for Item 5	Additional Time (min.) for Item 6	Additional Time (min.) for Item 8	Additional Time (min.) for Item 15	Additional Time (min.) for Item 19	Additional Time (min.) for Item 22	Total 16.9 Million Time (min.)
114	3	2	2	2	2	8	3	269
126	6	4	4	2	4	16	6	289
138	9	6	6	3	6	24	9	310
150	12	8	8	3	8	32	12	330
162	15	10	10	4	10	40	15	351
174	18	12	12	4	12	48	18	371
186	21	14	14	5	14	56	21	392
198	24	16	16	5	16	64	24	412
210	27	18	18	6	18	72	27	433
222	30	20	20	6	20	80	30	453
234	33	22	22	7	22	88	33	474
246	36	24	24	8	24	96	36	495
258	39	26	26	9	26	104	39	516
270	42	28	28	10	28	112	42	537
282	45	30	30	11	30	120	45	558
294	48	32	32	12	32	128	48	579
306	51	34	34	13	34	136	51	600

WORKLOAD ESTIMATE ADJUSTMENTS**FOR DIFFERENT STACKER CONFIGURATIONS**

CHECKLIST 03-DBCS-AB-007-M (67.5 Million Pieces Fed)
Summary for Attachment 9

Number of Stackers	Time (min.) for Item 3	Time (min.) for Item 4	Time (min.) for Item 5	Time (min) for Item 12	Time (min) for Item 13	Total 67.5 Million Time (min.)
102	18	40	16	42	16	183

Number of Stackers	Additional Time (min.) for Item 3	Additional Time (min.) for Item 4	Additional Time (min) for Item 5	Additional Time (min) for Item 12	Additional Time (min.) for Item 13	Total 67.5 Million Time (min)
114	2	6	2	6	2	201
126	1	12	1	12	1	210
138	1	18	1	18	1	222
150	1	24	1	24	1	234
162	2	30	2	30	2	249
174	2	36	2	36	2	261
186	2	42	2	42	2	273
198	2	48	2	48	2	285
210	3	54	3	54	3	300
222	3	60	3	60	3	312
234	3	66	3	66	3	324
246	3	72	3	72	3	336
258	4	78	4	78	4	351
270	4	84	4	84	4	363
282	4	90	4	90	4	375
294	4	96	4	96	4	387
306	5	104	5	104	5	406

ATTACHMENT 3

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-001-M

THRESHOLD SEVERITY 1

Less Than 90,000 Pieces Fed

Time Total: 52 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

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. 1 ALL MIN

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 can not be used. Report safety deficiencies to your supervisor immediately upon detection.

SYSTEM

2. **Generate and print or view an End Of Run Report.** Analyze data provided on this report to determine if any areas of machine are degrading or need attention. 3 10 MIN
Using the MKAT/ACE computer access MPEwatch.
Using the Daily summary reports for MOD day DBCS statistics, analyze Jam statistics looking for excessive HARD and SOFT jams, etc.

TRANSPORT MODULE

3. **Power down computer.** Power down computers as prescribed by local shutdown procedures. 1 9 MIN
4. **Lockout procedure.** Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures. 1 7 MIN

MACHINE

5. **Open machine, search for mail.** 10 7 MIN
 1. Open all necessary doors and panels, except for the diverter plate cover assemblies (Wimpy Panels).
 2. Search for and remove any mail pieces found in all sections of the machine, closing doors in the stacker section as the search progresses.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

3. Follow local procedures for returning mail to operations for processing.

VACUUM/CLEAN

6. Vacuum/clean the following.

3 7
MIN

WARNING

Edges of the spiral stacking auger may be sharp. Use extreme caution when working near the spiral-stacking auger.

WARNING

Use extreme caution in the area of the pocket assembly wear plate. On some machines, the wear plate extends past the edge of its base and into the stacker area, exposing sharp edges.

1. Feeder Module.
 - a. Clean outside surfaces of Feeder Module.
 - b. Clean internal areas of Feeder Module.
 - c. Clean outside surfaces of jogger assembly.
2. Reader Module. Clean interior of the Reader Module, including light barriers.
3. Stacker module 1 (only). Clean stacker light barriers.

FEEDER MODULE

7. Check Feeder Module.

2 9
MIN

1. Check the following:
 - a. Pickoff belts.
 - b. Compensator levers.
 - c. Stripper assemblies.
 - d. All feeder belts (transport and drive).
 - e. The P-SEN10 and P-LED10 assemblies.
2. Check Feeder for the following:
 - a. Teflon strips for wear.
 - b. Rubber stripper for wear.
 - c. Check pickoff belts for wear. Replace as required. (Ref MMO-029-08)

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

- d. Gap setting of 5 on STC board.
- e. Rubber strippers for proper wear and installation.

READER MODULE (cont.)

8. **Clean WFOV Assembly.** 6 9
MIN

WARNING

Use extreme caution when working around the WFOV aperture. The edges of the aperture may become extremely sharp during use of the DBCS.

1. Following safety precautions, remove the Aperture/Illumination assembly. Loosen the thumbscrew on top and pull straight up to remove. Check the aperture plates and sapphire glass for foreign objects.
2. Remove dust build-up on exterior of camera sapphire glass using dry cotton swabs. If adhesive build-up appears on the sapphire glass, use a swab or soft cloth wetted with an acceptable site approved cleaner.
3. If dust is found inside Aperture/Illumination assembly, clean as follows:
 - a. Grasp and hold the face of the Aperture/Illumination with one hand.
 - b. Insert an 8" long, 1/2" wide camel hair artist brush into the rear slot so the tip of the brush touches the top of the sapphire glass inside the assembly.
4. Replace the Aperture/Illumination assembly. Slide assembly straight down on front of camera head assembly and tighten thumbscrew.

TAG SCANNER MODULE

9. **Clean Identification Code Sorting (ICS-3) system (Verifier) read head.** 1 9
Clean Verifier read head as follows: MIN

1. Clean Verifier read head. Recommended cleaner is Riptide, NSN 6850-01-394-0164.
2. Clean read head reflector. Recommended cleaner is Riptide.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

2. Start machine. Verify when START switch is pressed, start-up warning indicators around sorter flash amber. At the same time, start-up warning horns sound. The horns sound for 5 seconds and go off, while warning indicators continue to flash for a total of 10 seconds.
3. Perform a visual and audible check of the machine to verify there are no problems with belt tracking, bearing noise, inappropriate bin gate activity, or any indications of impending or existing machine problems.
4. Proceed to the end stacker and press the Emergency Stop Button. Verify that the machine stops.
5. If machine fails to stop, refer to MMO-002-03, locate cause, seek technical assistance, or notify supervision.
6. De-activate E-Stop and turn Maintenance Mode switch back to NORMAL on operator control panel.

SYSTEM

16. **Run W Module test deck** (NSN 5210-01-371-4906). Load sort-plan and run 300 piece test deck. 2 9
MIN

NOTE

Ensure W Module test deck contains 5 cards with CMD test labels (PS Form 3800) attached.

Print or view an End of Run Report and verify 5 CMD test labels detected and 98% or higher MAR accept rate. If 98% or higher MAR acceptance rate is not achieved, locate cause, seek technical assistance or notify supervision.

17. **ICS test deck (NSN 3915-04-000-6902) test procedure.** 5 9
MIN
 1. Clear all mail from stacker.
 2. Select (Mail Processing>Load Run Information Header) from Main Menu Select.
 3. Enter 891 for Operation Number.

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

4. Press Return through all other entries.
5. Select sort plan icstst1.ebf.
6. Start mail processing and run test deck.

The test deck should sort 10 pieces to pocket 1, 30 pieces to pockets 2, 3, 4, 5, and 6, and 40 pieces to pocket 7. If test deck does not sort properly, take corrective action, seek technical assistance, or notify supervision.

CLEAN UP

18. **Clean up.** Ensure all tools, lubricants, rags, etc., 2 ALL are removed from the work area. Report all MIN deficiencies to your supervisor.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	1	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 1				

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 (<90k)	Weeks

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 4

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-002-M

THRESHOLD SEVERITY 2

Between 90,000 and 180,000 Pieces Fed

Time Total: 60 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION											
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER		TYPE
		0	3	D	B	C	S		A	B	0	0	2
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2			

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 90K to 180K	Weeks

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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.	1	ALL		
		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 can not be used. Report safety deficiencies to your supervisor immediately upon detection.	MIN			
SYSTEM	2.	Generate and print or view an End Of Run Report. Analyze data provided on this report to determine if any areas of machine are degrading or need attention.	3	10		
		Using the MKAT/ACE computer access MPEwatch. Using the Daily summary reports for MOD day DBCS statistics, analyze Jam statistics looking for excessive HARD and SOFT jams, etc.	MIN			
TRANSPORT MODULE	3.	Power down computer. Power down computers as prescribed by local shutdown procedures.	1	9		
		Lockout procedure. Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	MIN	7		
MACHINE	5.	Open machine, search for mail.	10	7		
		1. Open all machine doors. 2. Remove all machine panels except for diverter plate cover assemblies (Wimpy Panels).	MIN			

U.S. Postal Service		IDENTIFICATION										
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM				CLASS CODE		NUMBER		TYPE
		0	3	D	B	C	S		A	B	0	0
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990				Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2			

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 90K to 180K	Weeks

3. Search for and remove any mail pieces found in all sections of machine.
4. Follow local procedures for returning mail to operations for processing.

VACUUM/CLEAN

6. **Vacuum/clean the following.**

9 7
MIN

WARNING

Edges of the spiral stacking auger may be sharp. Use extreme caution when working near the spiral-stacking auger.

WARNING

Use extreme caution in the area of the pocket assembly wear plate. On some machines, the wear plate extends past the edge of its base and into the stacker area, exposing sharp edges.

1. Feeder Module.
 - a. Clean outside surfaces of Feeder Module.
 - b. Clean internal areas of Feeder Module.
 - c. Clean outside surfaces of jogger assembly.
 - d. Clean two power supplies.
2. Monitor - Keyboard - Printer. Clean exterior of monitor, keyboard, printer, and printer stand.
3. Transport Module.
 - a. Clean the transport area.
 - b. Ensure that transport cover gas springs are able to hold cover in uppermost position. Replace defective gas spring if cover does not stay open.
4. Reader Module.
 - a. Clean the elevator doors in Reader Module and check hinges for cracks, damage, or any other hazardous

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION												
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	2
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2				

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 90K to 180K	Weeks

condition. Refer to MMO-077-03 if problem found.

- b. Clean the letter transport area and interior of Reader Module, including the 5V power supply and the light barriers.
- 5. System computer & WFOV. Clean exterior of the system computer and WFOV processor
- 6. Stacker module 1 (only). Clean stacker light barriers.

FEEDER MODULE

- 7. **Visually check Feeder Module.** 1 9
MIN
 - 1. Visually check for broken jogger springs and loose cabling.
 - 2. Check the following items:
 - a. Pickoff belts.
 - b. Compensator levers.
 - c. Stripper assemblies.
 - d. All feeder belts (transport and drive).
 - e. The P-SEN10 and P-LED10 assemblies.
 - 3. Check Feeder. Check Feeder as follows:
 - a. Check Teflon strip for wear.
 - b. Check rubber strippers for proper wear and installation.
 - c. Check pickoff belts for wear.
 - d. Replace as required. (Ref MMO-029-08)
 - e. Check for gap setting of 5 on P-SFC board.

READER MODULE

- 8. **Visually check Reader Module.** Check for worn belts, misaligned photocells, cable wear, and damaged gates and gate stops. 1 9
MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION												
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	2
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2				

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 90K to 180K	Weeks

READER
MODULE (cont.)

9. **Clean WFOV Assembly.**

6 7
MIN

WARNING

Use extreme caution when working around the WFOV aperture. The edges of the aperture may become extremely sharp during use of the DBCS.

1. Following safety precautions, remove the Aperture/Illumination Assembly. Loosen the thumbscrew on top and pull straight up to remove. Check the aperture plates and sapphire glass for foreign objects.
2. Remove dust build-up on exterior of camera sapphire glass using dry cotton swabs. If adhesive build-up appears on the sapphire glass, use a swab or soft cloth wetted with an acceptable site approved cleaner.
3. If dust is found inside Aperture/Illumination Assembly, clean as follows:
 - a. Grasp and hold the face of the Aperture/Illumination with one hand.
 - b. Insert an 8" long, 1/2" wide camel hair artist brush into the rear slot so the tip of the brush touches the top of the sapphire glass inside the assembly.
4. Replace the Aperture/Illumination Assembly. Slide assembly straight down on the front of camera head assy. and tighten thumbscrew.

TAG SCANNER
MODULE

10. **Clean Identification Code Sorting (ICS-3) system (Verifier) read head.** Clean Verifier read head as follows:

1 7
MIN

1. Clean Verifier read head. Recommended cleaner is Riptide, NSN 6850-01-394-0164.
2. Clean read head reflector. Recommended cleaner is Riptide.

MACHINE

11. **Close panels.** Close all machine doors and machine panels.

4 7
MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION												
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	2
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2				

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 90K to 180K	Weeks

assistance, or notify supervision.

- De-activate E-Stop and turn Maintenance Mode switch back to NORMAL on operator control panel.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

SYSTEM

- Run W Module test deck** (NSN 5210-01-371-4906). Load sort-plan and run 300 piece test deck. 2 9
MIN

NOTE

Ensure W Module test deck contains 5 cards with CMD test labels (PS Form 3800) attached.

Print or view an End of Run Report and verify 5 CMD test labels detected and 98% or higher MAR accept rate. If 98% or higher MAR acceptance rate is not achieved, take correction action, seek technical assistance, or notify supervision.

- ICS test deck** (NSN 3915-04-000-6902) **test procedure.** 5 9
MIN
 - Clear all mail from stacker.
 - Select (Mail Processing>Load Run Information Header) from Main Menu Select.
 - Enter 891 for Operation Number.
 - Press Return through all other entries.
 - Select sort plan icstst1.ebf.
 - Start mail processing and run test deck.

The test deck should sort 10 pieces to pocket 1, 30 pieces to pockets 2, 3, 4, 5, and 6, and 40 pieces to pocket 7. If test deck does not sort properly, take corrective action, seek technical assistance, or notify supervision.

CLEAN UP

- Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor. 5 ALL
MIN

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	2	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 2				

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 90K to 180K	Weeks

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 5

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-003-M

THRESHOLD SEVERITY 3

Greater Than 180,000 Pieces Fed

Time Total: 65 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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.	1	ALL		
		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 can not be used. Report safety deficiencies to your supervisor immediately upon detection.				
SYSTEM	2.	Generate and print or view an End Of Run Report. Analyze data provided on this report to determine if any areas of machine are degrading or need attention. Using the MKAT/ACE computer access MPEwatch. Using the Daily summary reports for MOD day DBCS statistics analyze Jam statistics looking for excessive HARD and SOFT jams, etc.	3	10		
			MIN			
TRANSPORT MODULE	3.	Power down computer. Power down computers as prescribed by local shutdown procedures.	1	9		
			MIN			
MACHINE	4.	Lockout procedure. Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.	1	7		
			MIN			
	5.	Open machine, search for mail.	10	7		
		1. Open all machine doors.				
		2. Remove all machine panels, except for diverter plate cover assemblies (Wimpy Panels).				

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

3. Search for and remove any mail pieces found in all sections of the machine.
4. Follow local procedures for returning mail to operations for processing.

VACUUM/CLEAN

6. **Vacuum/clean the following.**

12 7
MIN

1. Feeder Module.
 - a. Clean outside surfaces of Feeder Module.
 - b. Clean the internal areas of the Feeder Module.
 - c. Clean the outside surfaces of the jogger assembly.
 - d. Clean two power supplies.
2. Monitor - Keyboard - Printer. Clean exterior of the monitor, keyboard, printer, and printer stand.
3. Transport Module.
 - a. Clean the transport area.
 - b. Ensure that transport cover gas springs are able to hold cover in uppermost position. Replace defective gas spring if cover does not stay open.
4. Reader Module.
 - a. Clean the elevator doors in Reader Module and check hinges for cracks, damage, or any other hazardous condition. Refer to MMO-077-03 if problem found.
 - b. Clean the letter transport area and interior of the Reader Module, including the 5V power supply and the light barriers.
5. System computer & WFOV. Clean exterior of the system computer and WFOV processor.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

WARNING

Edges of the spiral stacking auger may be sharp. Use extreme caution when working near the spiral-stacking auger.

WARNING

Use extreme caution in the area of the pocket assembly wear plate. On some machines, the wear plate extends past the edge of its base and into the stacker area, exposing sharp edges.

6. Stacker module 1 (only). Clean stacker transport area, interior, and pocket assemblies, including light barriers.
7. Label printers.
 - a. Clean interior and exterior of label printers, located on first and eighth stacker modules.
 - b. Ensure label printers are loaded with a sufficient supply of label material. Load label printer by:
 - 1) Insert the label stock between the guides into the back of the label printer.
 - 2) Place the wide end of the label stock into the label printer first, face down.
 - 3) Push the print head lever back.
 - 4) Push the label stock through until it comes out the front of the label printer.

FEEDER MODULE

7. Visually check Feeder Module.

2 9
MIN

1. Visually check the underside area of the jogger assembly for broken jogger springs and loose cabling while cleaning.
2. Visually check the following items:
 - a. Two power supplies.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

- b. Pickoff belts.
 - c. Compensator levers.
 - d. Stripper assemblies.
 - e. All feeder belts (transport and drive).
 - f. The P-SEN10 and P-LED10 assemblies.
3. Check feeder as follows:
- a. Check Teflon strip for wear.
 - b. Check rubber strippers for proper wear and installation.
 - c. Check pickoff belts for wear.
 - d. Replace as required. (Ref MMO-029-08)
 - e. Check for gap setting of 5 on P-SFC board.

READER MODULE

8. **Visually check Reader Module.** Check for worn belts, misaligned photocells, cable wear, and damaged gates and gate stops. 1 MIN 9

READER MODULE (cont.)

9. **Clean WFOV Assy.** 6 MIN 9

WARNING

Use extreme caution when working around the WFOV aperture. The edges of the aperture may become extremely sharp during use of the DBCS.

1. Following safety precautions, remove the Aperture/Illumination Assembly. Loosen the thumbscrew on top and pull straight up to remove. Check the aperture plates and sapphire glass for foreign objects.
2. Remove dust build-up on exterior of camera sapphire glass using dry cotton swabs. If adhesive build-up appears on the sapphire glass, use a swab or soft cloth wetted with an acceptable site approved cleaner.
3. If dust is found inside Aperture/Illumination Assembly clean as follows:
 - a. Grasp and hold face of Aperture /Illumination Assembly with one hand.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

b. Insert an 8" long, 1/2" wide camel hair artist brush into the rear slot, so the tip of the brush touches the top of the sapphire glass inside the assembly.

4. Replace the Aperture/Illumination Assembly. Slide assembly straight down on front of Camera Head Assembly and tighten thumbscrew.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

TAG SCANNER MODULE

10. **Clean Identification Code Sorting (ICS-3) system (Verifier) read head.** Clean Verifier read head as follows:
- 1. Clean interior of ICS-3 electronic enclosure and electronic enclosure filters.
 - 2. Clean Verifier read head. Recommended cleaner is Riptide, NSN 6850-01-394-0164.
 - 3. Clean read head reflector. Recommended cleaner is Riptide.

3 9
MIN

MACHINE

11. **Close panels.** Close all machine doors and panels.

4 7
MIN

AREA

12. **Clean up.** Ensure tools and materials are removed from the area.

1 ALL
MIN

WARNING

Be cautious when working around or on equipment when power has been applied.

SYSTEM

13. **Restore power to equipment.** Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen.

3 ALL
MIN

LABEL PRINTER

14. **Check label printer.** On label printer, press LINE FEED button one time. The label printer will print out a test label and automatically align the label at the perforation. Verify test label has good quality print (not blurred) and is clear readable print to the human eye.

2 7
MIN

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

MACHINE

15. **Check basic machine functions.**

4 9
MIN

1. Turn Maintenance Mode switch on operator control panel to maintenance mode position.
2. Start machine. Verify when START switch is pressed, start-up warning indicators around sorter flash amber. At the same time, start-up warning horns sound. The horns sound for 5 seconds and go off, while warning indicators continue to flash for a total of 10 seconds.
3. Perform a visual and audible check of the machine to verify there are no problems with belt tracking, bearing noise, inappropriate bin gate activity, or any indications of impending or existing machine problems.
4. Proceed to the end stacker and press the Emergency Stop Button. Verify that the machine stops.
5. If machine fails to stop, refer to MMO-002-03 for corrective action, seek technical assistance, or notify supervision.
6. De-activate E-Stop and turn Maintenance Mode switch back to NORMAL on Operator Control Panel.

WFOV

16. **WFOV AUTO Calibration. From Camera Maintenance Screen** (Note for detailed information and screen shots of procedure for calibration of WFOV refer to MS 212).

2 9
MIN

1. Make sure system is Off Line and WFOV Main Screen is displayed. (If system is not in off line mode, press F3.)
2. With WFOV Screen displayed, click the System Analysis button or press F5.
3. In WFOV System Analysis screen, click the Camera Maintenance button or press F5.
4. Place WFOV Illumination test card in front of read head assembly, ensuring the card bottom edge contacts the transport deck along the full length of the edge.
5. In the WFOV Camera Maintenance screen, click on the Tools menu.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

6. From Tools menu, select Auto Calibration.
7. The Auto Calibration process takes approximately 1.5 minutes. From the File menu, select Exit.
8. Click Close (or press F12) in the System Analysis screen.
9. Click Go On-Line (or press F4) in the WFOV Main Screen.
10. Remove the Illumination card.

SYSTEM

17. **Run W Module test deck** (NSN 5210-01-371-4906). Load sort-plan and run 300 piece test deck. 2 9
MIN

NOTE

Ensure W Module test deck contains 5 cards with CMD test labels (PS Form 3800) attached.

Print or view an End of Run Report and verify 5 CMD test labels detected and 98% or higher MAR accept rate. If 98% or higher MAR acceptance rate is not achieved, take corrective action, seek technical assistance, or notify supervision.

18. **ICS test deck** (NSN 3915-04-000-6902) **test procedure.** 5 9
MIN

1. Clear all mail from stacker.
2. Select (Mail Processing>Load Run Information Header) from Main Menu Select.
3. Enter 891 for Operation Number.
4. Press Return through all other entries.
5. Select sort plan icstst1.ebf.
6. Start mail processing and run test deck.

The test deck should sort 10 pieces to pocket 1, 30 pieces to pockets 2, 3, 4, 5, and 6, and 40 pieces to pocket 7. If test deck does not sort properly, take corrective action, seek technical assistance, or notify supervision.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

CLEAN UP

19. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor.

2 ALL

MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	3	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Threshold Severity SEVERITY 3				

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 (>180K)	Weeks

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 6

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-004-M

PRODUCTION THRESHOLD OF 1,300,000 PIECES FED

Time Total: 180 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	4	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (1.3 Million)	Weeks

FEED TABLE

6. **Check for wear.** 4 9
MIN
1. Check under feed table for transport belt drive chain and sprockets wear. If chain needs lubrication refer to MS 142, Vol. B, TL-2 at completion of this route.
 2. Check transport blade for wear and loose bolts.
 3. Check transport blade assembly for bearing wear.
 4. Check pawl for wear.

WARNING

Discard solvent soaked materials according to local procedures to prevent pollution or spontaneous combustion.

TRANSPORT MODULE

7. **Check Transport Module.** 2 9
MIN
1. Check all belts (drive and letter transport) for proper adjustment and indications of wear. Replace belts as necessary.
 2. Check all rollers (drive and idler) for proper adjustment and indications of wear. Replace and/or adjust rollers as required.
 3. Clean any dirt or glue buildup from rollers using cleaning solvent.

READER MODULE

8. **Check Reader Module.** 4 9
MIN
1. Check all belts (drive and letter transport) for proper adjustment and indications of wear. Replace belts as necessary. Check for broken and burred gate flags while checking belts.
 2. Check all rollers (drive and idler) for proper adjustment and indications of wear. Replace and adjust rollers as required.
 3. Clean any dirt or glue buildup from rollers.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	D	B	C	S		A	B	0	0	4	M	
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Frequency NONE				

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 (1.3 Million)	Weeks

STACKER
TRANSPORT
MODULES
1 - 7

9. **Service stacker transport modules.**

20 9
MIN

WARNING

The edges of the spiral stacking auger may be sharp. Use extreme caution when working near the spiral-stacking auger.

WARNING

Use extreme caution in the area of the pocket assembly wear plate. On some machines, the wear plate extends past the edge of its base and into the stacker area, exposing sharp edges.

1. Check all belts (drive and letter transport) for proper adjustment and indications of wear. Replace belts as necessary.
2. Check gate flags for cuts, nicks, and unusual wear.
3. Check all rollers (drive and idler) for proper adjustment and indications of wear. Replace rollers as necessary.

MACHINE

10. **Close panels.** Close all machine doors and machine panels.

8 7
MIN

11. **Clean up.** Remove tools and materials from the DBCS area.

1 ALL
MIN

WARNING

Be cautious when working around or on equipment when power has been applied.

12. **Restore power to equipment.** Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen.

3 ALL
MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	4	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (1.3 Million)	Weeks

FEEDER

13. **Check Feeder alignment.**

30 7
MIN

WARNING

All mechanical adjustments that do not require power to machine in order to perform the adjustments will be done with the machine locked out.

Check using latest Feeder Adjustment and Performance Alignment Guide (FAAPA); refer to MMO-029-08. Make adjustments as required.

14. **Run WFOV test deck (NSN 3915-06-000-8292).** 3 9
Load sort-plan and run 400 piece test deck. MIN

Print or view an End of Run Report and verify all pieces read.

If any problems are found, seek technical assistance or notify supervision.

UAA INTERCEPT
BAR CODE

15. **Verify that the OCR engine in the DBCS mode can intercept UAA mail.** 9 9
MIN

Using the Xanadu Test Deck, NSN 9310-08-000-3864, P/N 66.1026.034-00, do the following:

From the Main Menu:

1. Select Mode Select.
2. DBCS.
3. Load Run Information.
4. Enter Operation Number.
5. Select F2 to accept.
6. Load a sortplan that has a confirmed UAA pocket assigned.
7. Start mail processing and run UAA test deck.
8. Print the End of Run report.
9. Calculate the intercept rate (# confirmed UAA test pieces divided by the total # of test pieces fed, multiplied by 100).
10. Verify that at least 40% of the UAA test deck was intercepted.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	4	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (1.3 Million)	Weeks

11. Log off the system computer.

16. **Check bin switches.** Check all Bin 3/4 and Bin Full switches and stacker blades. 15 7 MIN

1. Verify there is a flashing bin light and audible chime at ¾ full and a constant bin light and audible chime at 100% full.

2. Verify stacker rides smoothly on stacker rod.

CLEAN UP

17. **Clean up.** Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor. 2 ALL MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 7

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-005-M

PRODUCTION THRESHOLD OF 5,600,000 PIECES FED

Time Total: 198 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION												
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM					CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S		A	B	0	0	5	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Frequency NONE				

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 (5.6 Million)	Weeks

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. 1 ALL
MIN

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 can not be used. Report safety deficiencies to your supervisor immediately upon detection.

TRANSPORT MODULE

2. **Power down computer.** Power down computers as prescribed by local shutdown procedures. 1 9
MIN
3. **Lockout procedure.** Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures. 1 7
MIN

MACHINE

4. **Open panels.** Open all machine doors. Open or remove all machine panels. This includes diverter plate cover assemblies (Wimpy panels). 21 7
MIN

FEEDER MODULE

5. **Vacuum/clean Feeder Module.** Clean all plates, covers, doors, framework, etc., including the vibrator assembly. Verify vibrator motor power cord is not rubbing against frame. 3 7
MIN

TRANSPORT MODULE

6. **Vacuum/clean Transport Module.** 8 7
MIN
 1. Remove and clean the two filters located in the knob of the air compressor.
 2. Re-install the two filters.
 3. Replace the filters if necessary.
 4. Clean all plates, covers, doors, framework, etc.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	5	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (5.6 Million)	Weeks

- | | | | | |
|-------------------------|----|---|-----------|---|
| READER MODULE | 7. | Vacuum/clean Reader Module. Clean all plates, covers, doors, framework, top of module, etc. | 10
MIN | 7 |
| SYSTEM COMPUTER & WFOV | 8. | Vacuum/clean system computer and WFOV. Remove covers from system computer and WFOV Processor and clean. Re-install covers. | 15
MIN | 9 |
| STACKER MODULE
1 - 7 | 9. | Vacuum/clean stacker module. Clean all plates, covers, doors, framework, top of stacker modules, stacker display panels back and front side, etc. Do a visual check of wiring harnesses, cabling and connectors for wear, loose connections, etc., while cleaning. | 95
MIN | 7 |

WARNING

Be cautious when working around or on equipment when power has been applied.

- | | | | | |
|---------|-----|--|-----------|-----|
| MACHINE | 10. | Restore power to equipment. Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen. | 3
MIN | ALL |
| MACHINE | 11. | Check E-Stops. Check all system interlocks and emergency stop switches. Requires two people. (Time is doubled for staffing purposes.) Verify light conditions and warning sounds for each E-Stop and interlock. | 12
MIN | 7 |

NOTE

Check only one emergency stop switch with machine running. Check all other emergency stop switches and interlocks with machine stopped.

1. Start the machine. Verify that when START switch is pressed, the start-up warning indicators around the sorter flash amber. At the same time, the start-up warning horns sound. The horns sound for 5 seconds and go off, while the warning indicators flash for a

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
	0	3	D	B	C	S		A	B	0	0	5	M	
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990					Bulletin Filename MM04074AF			Frequency NONE				

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 (5.6 Million)	Weeks

total of 10 seconds. Machine runs.

2. Press EMERG. STOP mushroom switch on Feeder control panel assembly and note that the following occurs:
 - a. Machine stops immediately.
 - b. Lamp lights in EMERG. STOP switch.
 - c. Red EMERG. STOP indicator lights on appropriate system control panel column.
 - d. READY lamp goes out on system control panel.
 - e. Pressing Start pushbutton does not start machine.
3. Reset EMERG. STOP mushroom switch and note that the following occurs:
 - a. System READY lamp illuminates on system control panel.
 - b. Red EMERG. STOP indicator goes out on appropriate system control panel column.
 - c. Lamp goes out in module control panel EMERG. STOP switch.
 - d. Machine can now be started.
4. Without starting and stopping the machine, check all remaining EMERG. STOP mushroom switches one at a time to ensure that each one causes actions as described in steps 2-b, c, and d above to occur when pressed and actions described in steps 3-a, b, and c above to occur when they are reset.
5. Without starting and stopping machine, check interlocks one at a time, by opening of panel or door, to ensure that each one causes actions described in steps 2-c and d above to occur when opened and actions described in steps 3-a and c occur when panel or door closed. When an interlock is activated in a stacker there will also be indication on stacker display panel. The red

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	5	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (5.6 Million)	Weeks

full bin lights will flash on top row of panel.
With interlock deactivated, lights will go out.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

- | | | | |
|--|--|-----------|-----|
| READER MODULE | 12. Power Supply PS1 (5VDC Reader) adjustment. | 2
MIN | 9 |
| | 1. Open Reader lower-left door. | | |
| | 2. Place multimeter leads with clips on connectors J14 and J15 of Reader card cage backplane. | | |
| | 3. A reading of 5.1 VDC should be present, if not adjust 5 VDC power supply potentiometer to obtain a reading of +5.0 VDC (+0.1/-0.0 VDC). | | |
| | 4. Close door. | | |
| MACHINE | 13. Close panels. Replace or close all machine panels, doors, and covers. | 21
MIN | 7 |
| AREA | 14. Clean up. Ensure tools and materials are removed from the area. | 1
MIN | ALL |
| SYSTEM | 15. Run W Module test deck (NSN 5210-01-371-4906). Load sort-plan and run 300 piece test deck. | 2
MIN | 9 |
| NOTE | | | |
| Ensure W Module Test Deck contains 5 cards with CMD (PS Form 3800) test labels attached. | | | |
| Print or view an End of Run Report and verify 5 CMD labels detected and 98% or higher MAR accept rate. If 98% or higher MAR acceptance rate is not achieved, take corrective action, seek technical assistance, or notify supervision. | | | |
| CLEAN UP | 16. Clean up. Ensure all tools, lubricants, rags, etc., are removed from the work area. Report all deficiencies to your supervisor. | 2
MIN | ALL |

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	5	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (5.6 Million)	Weeks		
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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 8

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-006-M

PRODUCTION THRESHOLD OF 16,900,000 PIECES FED

Time Total: 247 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	6	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (16.9 Million)	Weeks

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 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.

TRANSPORT MODULE

2. **Power down computer.** Power down computers as prescribed by local shutdown procedures. 1 MIN 9
3. **Lockout procedure.** Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures. 1 MIN 7

MACHINE

4. **Open panels.** Open/remove all machine panels and doors, including Main AC Power Panel, feeder distribution panel, motor distribution panel, and diverter plate cover assemblies (Wimpy panels). Override interlock switches. 23 MIN 7

STACKERS 1-7

5. **Vacuum/clean diverter plate cover assy.** 14 MIN 7

STACKERS 1-7

6. **Vacuum/clean power supplies.** Remove lower platform assemblies and lower panels from all stacker modules to gain access to VDC power supplies. Verify power supply has two fuse blocks (MSB-022-98). 14 MIN 7
 1. Clean power supplies.
 2. Do not replace covers.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	6	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (16.9 Million)	Weeks

WARNING

Be cautious when working around or on equipment when power has been applied.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

- | | | | | |
|-----------------|----|--|-----------|-----|
| MACHINE | 7. | Restore power to equipment. Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen. | 3
MIN | ALL |
| Stackers
1-7 | 8. | Power Supply Adjust PS1 5 volts (stackers).
1. Place multimeter leads with clips on connectors J10 and J11 of stacker backplane.
2. A reading of 5.1 VDC should be present, if not adjust, power supply potentiometer to obtain a reading of +5.0 VDC (+0.1/-0.0 VDC). | 14
MIN | 9 |

WARNING

Comply with local safety procedures for operating system with power panel door open.

NOTE

Machine must be running a minimum of 15 minutes before using non-contact infrared thermometer in items 9 through 15.

- | | | | | |
|----------------------------------|----|---|-----------|---|
| MAIN AC
POWER
DISTRIBUTION | 9. | Infrared thermometer scan. Use non-contact infrared thermometer to scan Main Power Unit front and rear (magnetic interlock on panel).
1. Start DBCS machine.
2. Scan all terminal connections and connector plugs.
3. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action. | 25
MIN | 9 |
|----------------------------------|----|---|-----------|---|

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	6	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (16.9 Million)	Weeks

FEEDER 10. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor the Feeder for abnormal temperature (machine should still be running from item 7).

1. Scan all motors, terminal connections, and connector plugs.
2. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action.

FEEDER POWER DISTRIBUTION 11. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor the Feeder distribution panel for abnormal temperature.

1. Scan all terminal connections and connection plugs.
2. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action.

TRANSPORT 12. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor the Transport for abnormal temperature.

1. Scan all motors, terminal connections, and connector plugs.
2. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action.

READER 13. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor the Reader for abnormal temperature.

1. Scan all motors, terminal connections, and connector plugs.
2. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action.

MOTOR POWER DISTRIBUTION 14. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor the motor distribution panel for abnormal temperature.

1. Scan all terminal connections and connector plugs.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	6	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (16.9 Million)	Weeks

2. Investigate cause of any abnormal temperature and notify supervisor of necessary corrective action.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

STACKERS 1-7
TIERS 1-3

15. **Infrared thermometer scan.** Use non-contact infrared thermometer to monitor Stacker Tiers 1-4 for abnormal temperature.

16 9
MIN

- Scan all motors, terminal connections, pusher assemblies, and connector plugs.
- Investigate cause of abnormal temperature and notify supervisor of necessary corrective action.

NOTE

Label and date all bad bearings/assemblies found and submit work order.

FEEDER

16. **Ultrasonic Scan.** Use ultrasonic detector to monitor all bearing assemblies, top and bottom of the Feeder, for excessive vibration and noise.

9 9
MIN

TRANSPORT

17. **Ultrasonic Scan.** Use ultrasonic detector to monitor all bearing assemblies, top and bottom of the Transport, for excessive vibration and noise.

5 9
MIN

READER

18. **Ultrasonic Scan.** Use ultrasonic detector to monitor all bearing assemblies, top and bottom of the Reader, for excessive vibration and noise.

10 9
MIN

STACKERS 1-7
TIERS 1-3

19. **Ultrasonic Scan.** Use ultrasonic detector to monitor all bearing assemblies, top and bottom of the stackers, for excessive vibration and noise.

56 9
MIN

SYSTEM

20. **Power down computer.** Power down computers as prescribed by local shutdown procedures.

1 9
MIN

21. **Lockout procedure.** Lock out power as prescribed by the current local lockout instructions providing lockout/restore procedures.

1 7
MIN

22. **Close panels.** Replace or close all machine panels, doors, and covers.

23 7
MIN

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	6	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (16.9 Million)	Weeks

WARNING

Be cautious when working around or on equipment when power has been applied.

23. **Restore power to equipment.** Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen. 3 ALL MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 9

DBCS MODEL 990 MASTER CHECKLIST

03-DBCS-AB-007-M

PRODUCTION THRESHOLD OF 67,500,000 PIECES FED

Time Total: 183 Minutes

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	7	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (67.5 Million)	Weeks

SAFETY STATEMENT

1. **COMPLY WITH ALL SAFETY PRECAUTIONS.** 1 All
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 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. 1 MIN

2. **Log off.** Log off and shut down the DBCS by performing the following steps. 1 9
 1. Exit to the DBCS Main Menu.
 2. Select LOGOFF.
 3. Are you sure you want to log off? Yes-No. Select yes.
 4. The LOGO screen is now displayed and the message DATA BASE CLOSED appears on the bottom of the screen to indicate that the LOGOFF is complete.
 5. Press CTRL key twice and then press 2.
 - a. From WFOV Main Screen click-on File.
 - b. Click on Shut Down.
 - c. Click on the Start Button and select Shut Down.
 - d. A Start Shut Down message displays, stating that the system is shutting down. A 10-second timer begins.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service		IDENTIFICATION													
Maintenance Checklist		WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
		0	3	D	B	C	S			A	B	0	0	7	M
Equipment Nomenclature Delivery Bar Code Sorter		Equipment Model 990						Bulletin Filename MM04074AF			Frequency NONE				

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 (67.5 Million)	Weeks

- e. After the timer ends, a Shut Down in Progress message displays stating the system is writing unsaved data to disk. Message displays for 15-20 seconds.
- f. A Shut Down Computer message displays stating that it is now safe to turn off computer.

WARNING

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 _____.

NOTE

The following lockout instructions do not refer to machine lockout knife switch (S1).

- 6. **De-energize the DBCS incoming power feed** at the facility power distribution panel and lock it out using the locally approved lockout procedure. Follow all safety precautions before proceeding.
- 3. **Check for mail under machine.** 18 7
MIN
 - 1. Flip down lower platform assembly on backside of machine.
 - 2. Remove foam strips from backside of machine and outer side of Feeder and Transport section.
 - 3. Using a flashlight, start at Transport section locating and removing any mail pieces from under machine. Continue until last stacker area is completed.
 - 4. Follow local procedures for returning mail to operations for processing.
- 4. **Clean under machine.** 40 7
MIN
 - 1. Clean any dust and debris found from under machine. Recommend start at backside of the last stacker and work back to Transport and Feeder sections.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

- | | | | | |
|----------------------------------|----|---|-----------|---|
| | 2. | Reinstall foam strips to outer side of Feeder and Transport section and backside of machine. | | |
| | 3. | Place backside platform assemblies in up-right position. | | |
| | 5. | Open panels. Open/remove all machine panels and doors, including Main AC Power Panel, feeder distribution panel, and motor distribution panel. Do not remove diverter plate cover assemblies (Wimpy panels). | 16
MIN | 7 |
| MAIN AC
POWER
DISTRIBUTION | 6. | Main AC power distribution. Check for loose connections and discoloration of cables due to heat. (front and backside) | 16
MIN | 9 |
| | 1. | Verify all terminal connections are tight. | | |
| | 2. | Verify all cable connections are properly seated. | | |
| | 3. | Look for any cable or wiring discoloration due to heat. | | |
| FEEDER | 7. | Feeder. Check for loose connections and discoloration of cables due to heat. | 2
MIN | 9 |
| | 1. | Verify all terminal connections are tight. | | |
| | 2. | Verify all cable connections are properly seated. | | |
| | 3. | Look for any cable or wiring discoloration due to heat. | | |
| FEEDER
POWER
DISTRIBUTION | 8. | Feeder power distribution. Check for loose connections and discoloration of cables due to heat. | 7
MIN | 9 |
| | 1. | Verify all terminal connections are tight. | | |
| | 2. | Verify all cable connections are properly seated. | | |
| | 3. | Look for any cable or wiring discoloration due to heat. | | |
| TRANSPORT | 9. | Transport. Check for loose connections and discoloration of cables due to heat. | 1
MIN | 9 |
| | 1. | Verify all terminal connections are tight. | | |

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

		2. Verify all cable connections are properly seated.				
		3. Look for any cable or wiring discoloration due to heat.				
READER	10.	Reader. Check for loose connections and discoloration of cables due to heat.	3 MIN	9		
		1. Verify all terminal connections are tight.				
		2. Verify all cable connections are properly seated.				
		3. Look for any cable or wiring discoloration due to heat.				
MOTOR POWER DISTRIBUTION	11.	Motor power distribution. Check for loose connections and discoloration of cables due to heat.	8 MIN	9		
		1. Verify all terminal connections are tight.				
		2. Verify all cable connections are properly seated.				
		3. Look for any cable or wiring discoloration due to heat.				
STACKERS 1-7	12.	Stackers. Check for loose connections and discoloration of cables due to heat.	42 MIN	9		
		1. Verify all terminal connections are tight.				
		2. Verify all cable connections are properly seated.				
		3. Look for any cable or wiring discoloration due to heat.				
		4. Remove cover from power distribution assembly.				
		5. Verify all terminal connections are tight.				
		6. Verify all cable connections are properly seated.				
		7. Look for any cable or wiring discoloration due to heat.				
		8. Place cover on power distribution assembly.				

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- 13. **Close panels.** Replace or close all machine panels, doors, and covers. 16 7 MIN
- 14. **Clean up.** Ensure tools and materials are removed from the area. 2 ALL MIN

WARNING

Be cautious when working around or on equipment when power has been applied.

- | | | | |
|----------------------------|--|----------|-----|
| SYSTEM | 15. Restore power to equipment. Restore power to equipment as prescribed by the current local procedures providing lockout/restore procedures. To restore power move the main disconnect switch to the ON position. Once system power is restored, the system computer automatically powers up to the logon screen. | 3
MIN | ALL |
| MAIN AC POWER DISTRIBUTION | 16. Power Factor Capacitors. Verify Power Factor Capacitors are functioning. | 5
MIN | 9 |

NOTE

Use inductive ampere test meter to check current in following steps.

1. Open main power panel door.
2. Attach amp probe to one of the 3 wires that feed capacitors.
3. Turn the Maintenance Mode switch on the operator control panel to Maintenance Mode position.
4. Start the machine.
5. Observe current reading, which varies with different stackers configurations, For example a three stacker machine averages 24 amps on each of three wires going to capacitor bank.
6. Repeat above steps with other two wires that feed to capacitors.
7. If no current detected, check for defective wire or capacitor and repair.
8. Close panel door and turn Maintenance Mode switch to normal mode.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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- Run W Module Test Deck** (NSN 5210-01-371-4906). Load sort-plan and run 300 piece test deck. 2 9
MIN

NOTE

Ensure W Module Test Deck contains 5 cards with CMD test labels (PS Form 3800) attached.

Print or view an End of Run Report and verify 5 CMD test labels detected and 98% or higher MAR accept rate. If 98% or higher MAR acceptance rate is not achieved, refer to supervisor for corrective action.

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

ATTACHMENT 10

OPERATIONAL MAINTENANCE PROCEDURES

DBCS MODEL 990

09-DBCS-AB-001-M

OPERATIONAL TOUR

Time: 36 Minutes

Total Time Per Item

ITEM	TOTAL TIME (MINUTES)
1	1
2	1
3	4
4	4
5	4
6	4
7	4
8	4
9	4
10	4
11	2
	36

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

U.S. Postal Service Maintenance Checklist	IDENTIFICATION													
	WORK CODE		EQUIPMENT ACRONYM						CLASS CODE		NUMBER			TYPE
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MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER

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. Tour 9
1
MIN

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 can not be used. Report safety deficiencies to your supervisor immediately upon detection.

NOTE

Operational checks must be made with machine processing mail in a normal operating mode.

MACHINE LOGBOOK

2. **Examine machine logbook.** Examine log and bring forward any unresolved problems from the previous tour. Begin 9
Tour
1
MIN

MACHINE SAFETY

3. **Be alert for unusual sounds or odors.** While performing listed operational maintenance tasks, be alert for unusual sounds, odors, or other indications of potential failure conditions in the machine. Every 9
2 Hrs
1
MIN

MACHINE SAFETY

4. **Observe warning horn and beacons.** Watch for proper operation of warning horn and beacons on Every 9
2 Hrs

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machine start-up. 1 MIN

MAINTENANCE MANAGEMENT ORDER

- | | | | | |
|---------------------|-----|--|----------------------|---|
| MACHINE SAFETY | 5. | Lamps. Watch for proper functionality of all indicator lamps during normal machine operations. Correct deficiencies as soon as practical. | Every 2 Hrs
1 MIN | 9 |
| OPERATORS | 6. | Observe feeder for proper operation, while checking to see if operators are having excessive processing problems and investigate as necessary. Initiate corrective action as appropriate. | Every 2 Hrs
1 MIN | 9 |
| COMPUTER MONITOR | 7. | Check mail processing screen. Check current GAR, MAR, Jams, mechanical rejects and fault indications and ensure all performance metrics are meeting their target. If MAR or GAR is below acceptable values. Check for dust/debris accumulations on WFOV faceplate. Check cooling fan filter for accumulated dust and debris on WFOV computer. Correct as necessary. | Every 2 Hrs
1 MIN | 9 |
| OVERFLOW STACKER | 8. | Check mail in last/overflow stackers on each tier. Check the type of mail present in the overflow stackers to determine which areas of the machine might be malfunctioning. | Every 2 Hrs
1 MIN | 9 |
| READER, ICS-3 | 9. | If excessive ID TAG ERROR messages are occurring:
1. Identify type by using online display and machine fault log.
2. Check ICS-3 ID tag reader exterior for accumulated dust, dirt and debris, or loose/worn belts.
3. Pay particular attention to the aperture and to the raised portion of the faceplate.
4. Clean/adjust/replace as necessary. | Every 2 Hrs
1 MIN | 9 |
| ACE/MKAT COMPUTER | 10. | Check MPEwatch computer files. Check jams and fault indications and ensure all performance metrics are meeting their target. | Every 2 Hrs
1 MIN | 9 |
| MACHINE LOGBOOK AND | 11. | Log problems discovered and work performed. Report unresolved problems at the end of tour to | Tour
2 | 9 |

MAINTENANCE MANAGEMENT ORDER

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					Run Hours	Pieces Fed (000)	Weeks

SMO

the SMO and generate appropriate work orders.

MIN

MAINTENANCE MANAGEMENT ORDER

MAINTENANCE MANAGEMENT ORDER