

Planned Maintenance Program

In order to obtain continued safe performance of this X-Ray equipment, a planned maintenance program must be established. It is the owner's responsibility to supply or arrange for this service.

A yearly PM schedule is defined for the product. The schedule is divided in 12 modules allowing planning the PM on a monthly, quarterly or biyearly regular basis. Customer and Service are free to select one of the 3 programs defined in the table below.

Count of PM visits per year and count of PM modules to execute at each visit are adapted to the periodicity chosen for the site.

Each time a PM module is performed, the Field engineer shall manually acknowledge task completion through specific SUIF pages. This tracking allows for the following of PM status and helps the scheduling of the next PM operations.

Periodicity	Month	Quarter	6 Month
#Visits per year	12	4	2
PM Program	Visit #1: module 1	Visit #1 Modules 1 to 3	Visit #1 Modules 1 to 6
	Visit #2: module 2		
	Visit #3: module 3		
	Visit #4: module 4	Visit #2 Modules 4 to 6	
	Visit #5: module 5		
	Visit #6: module 6		
	Visit #7: module 7	Visit #3 Modules 7 to 9	Visit #2 Modules 7 to 12
	Visit #8: module 8		
	Visit #9: module 9		
	Visit #10: module 10	Visit #4 Modules 10 to 12	
	Visit #11: module 11		
	Visit #12: module 12		

 **NOTE**

It is under the service engineer responsibility to ensure the system is 100% operational after each PM intervention.

For information the Planned Maintenance requirements are listed in the following table.

 **NOTE**

Duration times in **Labor** column (see table below) are not always execution times of the procedures. Each value corresponds to average execution time, depending of the frequency of execution in a one year period. Actual execution time for each procedure is given inside the job card or in the SUIF. It can also vary from a system to another depending on the options configured.

Module	#	Operation	Job card	Labor (mns)	Month (h)	6 Month (h)
1	1	Emergency Back Out check	CHK0087	5	1.8	12.4
	2	(For 8 kVA UPS) 8 kVA UPS functional check	CHK0232	10		
	3	(For 20 kVA UPS) Fluoro UPS CE Service key	CNF0279	5		
	4	(For 20 kVA UPS) Fluoro UPS CE by GE trained personnel or qualified UPS service provider	Fluoro UPS CE Periodic Maintenance	85		
		(For 20 kVA UPS) Fluoro UPS UL by GE trained personnel or qualified UPS service provider	Fluoro UPS UL Periodic Maintenance			
	5	Check the patient Table to ensure no cracks or cuts are present: Patient Table Top on both sides in fully longitudinal position and mattress.	-	5		
	6	(For Innova IQ OR Table) Check that there is no detachment initiation of hook and loop tapes from mattress cover and from tabletop.	-	4		
	7	(For Innova IQ OR Table) Check that hook and loop tapes insure correct fixation of mattress to the table top. In case of failure, order FRU 5309976 (standard mattress) or FRU 5398884 (mattress for wide table top) and install new mattress.	-	5		
	8	(For Innova IQ OR Table) Check the sealant at the base of the Gantry and table for integrity, and rework/redo as necessary (starting at 1.5 years, then every 6 months)	-	10		
	9	Record the Multimeter type	-	-		
	10	Record the Multimeter S/N	-	-		
2	11	Record the Multimeter calibration due date	-	-	2.2	
	12	Pixel gain	SUIF	10		
	13	Conversion factor	SUIF	10		
	14	mR mAs	SUIF	15		
	15	Fluoro tapers	SUIF	20		
	16	ABC Stabilization point check	CHK0024	15		
	17	IQST/QAP	SUIF	50		
	18	System backup	SW0350 (Windows 10) , see sections DL Backup and RTAC Backup	10		
	19	Record the Dosimeter type	-	-		
	20	Record the Dosimeter S/N	-	-		
	21	Record the Dosimeter calibration due date	-	-		
	22	Record the Dosimeter Chamber type	-	-		
	23	Record the Dosimeter Chamber S/N	-	-		
	24	Record the Dosimeter Chamber calibration due date	-	-		

Module	#	Operation	Job card	Labor (mns)	Month (h)	6 Month (h)
3	25	LC calibration check (starting at 1.5 years, then every year)	CHK0268	10	2	
	26	Omega Table calibration check	CHK0266	10		
		Or Innova ^{IQ} OR Table calibration check	CHK0260 , see section Table Top Motion Checks			
	27	Mavig Suspension check	CHK0094	20		
	28	Table moving protective earth cables check (at 5 years and 8 years)	CHK0196	60		
	29	Table moving protective earth cables replacement (every 10 years)	DR1204	-		
	30	Monitor Suspension Rail Cleaning	PM0069	20		
4	31	3D spin calibration	CAL0104	60	3.3	
	32	Augmented calibration	CAL0129	120		
	33	Quick 3D check	CHK0241 , section 3D CT functional check	15		
5	34	QA check	SUIF	60	1.8	
	35	Large Display Option functional check	(For LDP 10 inputs) CHK0191	15		
			(For LDP 27 inputs) CHK0134	15		
	36	(For Allia IGS 5 via Upgrade Kit, 58" BARCO Monitor) Large Display Monitor Luminance Alignment	CAL0197	30		
		Large Display Monitor Lmax Check (starting at 2 years, then every year)	(For LDP 10 inputs) CHK0253	30		
			(For LDP 27 inputs) CHK0254			
6	37	Thermocon Conditioner Flush & Fill	PM0051	30	1.3	
	38	Tube chiller check	PM0110	30		
	39	Quick Application check	CHK0095	15		

Module	#	Operation	Job card	Labor (mns)	Month (h)	6 Month (h)
7	40	70 °C Security check (every 5 years)	CHK0037	10	1	12.6
	41	Collimator fan check (starting at 5 years, 8 years, then every 2 years)	PM0036	10		
	42	Emergency Back Out check	CHK0087	5		
	43	Emergency Power off (EPO) check	CHK0230	10		
	44	PDU Differential Circuit Breakers Trigger Check	PM0106	10		
	45	Quick Application check	CHK0095	15		
	46	(For Innova IQ OR Table) Check the sealant at the base of the Gantry and table for integrity, and rework/redo as necessary (starting at 1.5 years, then every 6 months)	-	1		
	47	Record the Multimeter type	-	-		
	48	Record the Multimeter S/N	-	-		
	49	Record the Multimeter calibration due date	-	-		
8	50	Bad Pixel	SUIF	20	1.9	
	51	Pixel gain	SUIF	10		
	52	Conversion factor	SUIF	10		
	53	mR mAs	SUIF	15		
	54	Fluoro tapers	SUIF	20		
	55	ABC Stabilization point check	CHK0024	15		
	56	Quick monitor calibrations check	CHK0096	10		
	57	System backup	SW0350 (Windows 10) , see sections DL Backup and RTAC Backup	10		
	58	Perform a disk optimization	PM0115	5		
	59	Record the Dosimeter type	-	-		
	60	Record the Dosimeter S/N	-	-		
	61	Record the Dosimeter calibration due date	-	-		
	62	Record the Dosimeter Chamber type	-	-		
	63	Record the Dosimeter Chamber S/N	-	-		
	64	Record the Dosimeter Chamber calibration due date	-	-		

Module	#	Operation	Job card	Labor (mns)	Month (h)	6 Month (h)
9	65	DL10/A-PC/ImBox fan cleaning (every 2 years)	PM0114	30	4.8	
	66	DL10 battery replacement (every 5 years)	PM0112	20		
	67	A-PC battery replacement (every 5 years)	PM0113	20		
	68	Tigerpaw battery replacement (every 2 years)	PM0100	20		
	69	Cabinets filters cleaning and fan check (starting at 5 years, 8 years, then every 2 years)	PM0033	10		
	70	Jedi fan diagnostic (starting at 5 years, 8 years, then every 2 years)	PM0037	10		
	71	Jedi battery On KVCTL board replacement (every 8 years)	PM0119	15		
	72	Quick Application check	CHK0095	15		
	73	Monitor Suspension Rail Cleaning	PM0069	20		
	74	Large Monitor Manager Fan Cleaning (every 2 years)	PM0072	60		
	75	Large Display Option functional check	(For LDP 10 inputs) CHK0191	15		
			(For LDP 27 inputs) CHK0134	15		
	76	1 kVA UPS Battery Replacement (Refer to 1 kVA, 3 kVA and 8 kVA UPS batteries PM Schedule for frequency)	DR0994	20		
		8 kVA UPS Battery Replacement (Refer to 1 kVA, 3 kVA and 8 kVA UPS batteries PM Schedule for frequency)	DR1167			
	77	(For Allia IGS 5 via Upgrade Kit, 58" BARCO Monitor) Large Display Monitor Luminance Alignment	CAL0197	30		
10	78	3D spin calibration	CAL0104	60	3.3	
	79	Augmented calibration	CAL0129	120		
	80	Quick 3D check	CHK0241 , section 3D CT functional check	15		
11	81	KV accuracy	PM0038	30	0.8	
	82	Quick Application check	CHK0095	15		
	83	Record the Multimeter type	-	-		
	84	Record the Multimeter S/N	-	-		
	85	Record the Multimeter calibration due date	-	-		
12	86	Tube chiller check	PM0110	30	0.8	
	87	Quick Application check	CHK0095	15		
TOTAL					25 h	25 h

Module	#	Operation	Job card	Labor (mns)	Month (h)	6 Month (h)
Options	88	OPTION - KENEX X-Ray Shield and Lamp Suspension				
		Operation	Job Card			
		Record Suspension model nbr	Read label on column			
		Record Suspension serial nbr	Read label on column			
		Annual maintenance	DOC1578419 - \$13 DOC1578439			
	89	OPTION - MAVIG X-Ray Shield, Lamp Suspension and Monitors Suspensions				
		Operation	Job Card			
		Record Suspension model nbr	Read label on column			
		Record Suspension serial nbr	Read label on column			
		Biannual maintenance (every 6 months)	DOC1393439			
	90	OPTION - AADCO X-Ray Shield and Lamp Suspension				
		Operation	Job Card			
		Record Suspension model nbr	Read label on column			
		Record Suspension serial nbr	Read label on column			
		Annual maintenance	DOC1617734			
	91	OPTION - X-Ray Shield and Lamp Suspension OTHER Vendor than KENEX, MAVIG, AADCO				
		Operation	Job Card			
		Record Manufacturer name	Read label			
		Record Suspension model nbr	Read label			
		Record Suspension serial nbr	Read label			
		Planned Maintenance	Vendor			
	92	(For M4-KDK only) Diamantor calibration - Option (every 2 years)  NOTE For other models, refer to manufacturer documentation.	CAL0052			
	93	Record the Dosimeter type	-			
	94	Record the Dosimeter S/N	-			
	95	Record the Dosimeter calibration due date	-			
	96	Record the Dosimeter Chamber type	-			
	97	Record the Dosimeter Chamber S/N	-			
	98	Record the Dosimeter Chamber calibration due date	-			

NOTICE

If applicable, after each completion of Planned Maintenance Module, open the SUIF and go to **Calibration Home Page > PM Procedures:**

1. Planned Maintenance Program for System PM

- 2. PM for optional components for Fluoro UPS or Rad Shield PM
- 3. Select the PM Modules you performed and click on the [Submit] button.



NOTE

Several PM Modules can be selected.

- 4. Verify that the corresponding status in the SUIF Calib Home Page is "successful" with present date/time.



NOTE

Refer to [CHK0122 - Calibration Monitoring Consistency Check](#) for more details.