

PREVENTIVE MAINTENANCE INFORMATION

N° AP: _____	Date: __/__/____	Engineer: _____	Company: _____
Country: _____	Site: _____	Address: _____	

0. MODULES IDENTIFICATION

0.1 MODULE					0.2 TABLE TYPE				0.3 IMAGE INTENSIFIER SIZE		
SERIAL N° _____	STANDARD ☐	AUPS ☐	VISIO TRACK ☐	IHMD ☐	SERIAL N° _____	I-Sys ☐	KARBON F ☐	KARBON S ☐	32cm (12") ☐	21cm (9") ☐	
0.4 U/S SCANNER				0.5 PROBE TYPE		0.6 U/S Com. Cable		0.7 WINDOWS VERSION		0.8 VT SPHERE VERSION	
INTERNAL ☐	EXTERNAL ☐	TYPE _____	S/N (if external) _____	Probe Type _____	S/N _____	Serial DB9 ☐	RJ-45 ☐	XP ☐	SEVEN ☐ 64bit ☐ 32bit	NDI ☐	RADIX ☐

SOFTWARE IDENTIFICATION

GLOBAL VERSION: _____

0.9 ESWL	0.10 BDD	0.10 MEP	0.12 TABLE	0.13 AUPS	0.14 U/S SCANNER INTERFACE	0.15 X-RAY (Dunlee)	0.16 X-RAY (PLC)

X RAY IDENTIFICATION

☐ NA

0.17	X-Ray rack serial number		0.18	X-Ray rack monoblock number	
X-Ray Setting Default		Tick active configuration			
0.19	DAP system	Calculated DAP ☐		Measured DAP ☐	
0.20	Operating Curve	Fluoro ☐		IsoWatt ☐	
0.21	Default fluoroscopy	Continuous fluoro ☐	Continuous fluoro Low ☐	Pulsed 12 ☐	Pulsed 9 ☐
0.22	Default filament	Small ☐	Large ☐	No large ☐	
0.23	Pulsed Mode Large Filament High Dose	30 ☐	60 ☐	120 ☐	
0.24	Pulsed Mode Large Filament Low Dose	30 ☐	60 ☐	120 ☐	
0.25	Pulsed Mode Small Filament High Dose	10 ☐	15 ☐	30 ☐	60 ☐
0.26	Pulsed Mode Small Filament Low Dose	10 ☐	15 ☐	30 ☐	60 ☐
0.27	Continuous Fluoroscopy dose mode	Normal ☐		Double ☐	
0.28	Pulsed Fluoroscopy dose mode	Normal ☐		Half dose ☐	

1. CONTROL TOOLS						
TEST EQUIPEMENT		SERIAL NUMBER	VALIDITY		COMMENTS N°	
1.1	Digital Multi-Meter	_____	_/_/_			
1.2	kV Meter. Type : _____	_____	_/_/_			
1.3	Dose Meter. Type : _____	_____	_/_/_			
TOOLS			OK	NOT OK	N/A	COMMENTS N°
1.5	U/S accuracy and fragmentation test tool TMS233020		☐	☐	☐	
1.6	AUPS second focus simulator TMS230290		☐	☐	☐	
1.7	USB peripherals:					
	USB QWERTY/AZERTY Keyboard TMS230257/TMS230166		☐	☐		
	USB Mouse TMS 223340		☐	☐		
1.8	F2 Simulators:					
	F2 peak with protection TMS 234624		☐	☐	☐	
	Membrane F2 phantom (crown) TMS229949		☐	☐		
1.9	Visio-track calibration tools:					
	Visio track calibration tool plate TMS238255		☐	☐	☐	
	Visio track V2 calibration tool TMS237415		☐	☐	☐	
1.10	Table accessories:					
	Calibration plate TMS230847		☐	☐	☐	
	Dummy plug TMS230961		☐	☐	☐	
1.11	X-ray tank alignment tool (brass cylinder) TMS 229030		☐	☐		
1.12	Fragmentation test tool TMS229799		☐	☐	☐	

2. REMOTE CONTROLLERS (Table and Module)						
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°
2.1	Module control panel buttons		☐	☐		
2.2	Module remote controller buttons		☐	☐		
2.3	Table remote controller buttons.		☐	☐		
2.4	Cables		☐	☐		
2.5	LEDs and backlights.		☐	☐		

3. PARTS TO REPLACE						☐ NA
Kit of Regular visit (234335)						
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°
3.1	Electrode Socket (TMS229095).		☐	☐		
3.2	Membrane holder clips kit (TMS 233058).		☐	☐		
3.3	Patient Membrane (TMS228258).		☐	☐		
3.4	Purge screw O-ring (PM0645).		☐	☐		
3.5	One way valve. (4x TMS221294)		☐	☐		

4. INSPECTIONS						☐ NA
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°
4.1	Crimping of the high voltage harness.		☐	☐		
4.2	Insulation and contact of the electrode socket base.		☐	☐		

5. WATER TREATMENT						
CONTROL	Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
5.1	Tank cleaned and rinsed		☐	☐		
5.2	Water filters cleaning		☐	☐		
5.3	Tank filling.		☐	☐		
5.4	Air bubbles.		☐	☐		
5.5	Flat membrane.		☐	☐		
5.6	Leakage.		☐	☐		
5.7	Generator filling time.	_____				

6. ELECTRODE WARM UP (using new electrode)						
CONTROL	Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
6.1	Electrode insertion		☐	☐		
6.2	Treatment position detection		☐	☐		
6.3	Electrode Running in		☐	☐		
6.4	Running in value.	_____	☐	☐		
6.5	KV Stability	_____	☐	☐		
6.6	Electrode presence		☐	☐	☐	

7. CONNECTIONS						
CONTROL	Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
7.1	Input voltage.	_____	☐	☐		
7.2	Output voltage.	_____	☐	☐		
7.3	Module emergency stop.		☐	☐		
7.4	Remote console emergency stop.		☐	☐		
7.5	Table emergency stop.		☐	☐		

8. MECHANICAL STRUCTURE						
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°
8.1	C-Arm bearings		☐	☐		
8.2	Generator bearings		☐	☐		
8.3	Carriage movements		☐	☐		
8.4	Carriage unlocking lever		☐	☐		
8.5	2 video monitor screens rotation		☐	☐		
8.6	2 video monitor screens screw		☐	☐	☐	
8.7	Wheel wedges are firmly in place		☐	☐		
8.8	Generator is clean		☐	☐		
8.9	Generator chain screw		☐	☐		
8.10	Generator rotation		☐	☐		

9. TABLE							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
9.1	Origin position.			☐	☐		
9.2	Cushions			☐	☐		
9.3	Table centering			☐	☐		
9.4	Movement's software			☐	☐		
9.5	Table collision			☐	☐		
9.6	Trendelenburg movement			☐	☐		
9.7	Steel rails			☐	☐		
9.8	Torx screws (I-Sys Table only)			☐	☐	☐	
9.9	Table clamping (I-Sys Mobile Table only)			☐	☐	☐	

10. TABLE MOVEMENT ACCURACY							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
10.1	Movement X-axis.	_____	50mm ±2	☐	☐		
10.2	Movement Y-axis.	_____	40mm ±2	☐	☐		
10.3	Movement Z-axis.	_____	100mm ±2	☐	☐		

11. LOCALIZATION ACCURACY (X-RAY)								
CONTROL		Value		Tolerance	OK	NOT OK	NA	COMMENTS N°
11.1	Computer cross centration			512±12	☐	☐		
11.2	Isocenter orbital rotation stability				☐	☐		
11.3	Isocenter cranio-caudal rotation stability				☐	☐		
11.4	Isocenter combined rotation stability				☐	☐		
11.5	F2 point alignment				☐	☐		
11.6	Laser cross alignment			<5mm	☐	☐		
11.7	Laser lines intersection				☐	☐		
11.10	Localization accuracy	X= mm		<2mm	☐	☐		
		Y= mm		<2mm				
		Z= mm		<2mm				

12. VISIO TRACK LOCALIZATION SYSTEM							☐ N/A
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
12.1	Camera support			☐	☐		
12.2	Radix sphere cleaning			☐	☐		
12.3	Visio Track Calibration			☐	☐		
12.4	X-ray cross and Visio-track cross superposition			☐	☐		
12.5	VisioTrack localization accuracy	X= mm Y= mm Z= mm	<2mm <2mm <2mm	☐ ☐ ☐	☐ ☐ ☐		
12.6	Locating pins and holes			☐	☐		
12.7	Table tool spheres visibility			☐	☐		
12.8	Generator tool spheres visibility			☐	☐		

13. AUPS LOCALIZATION SYSTEM							☐ NA
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
13.1	AUPS alignment.			☐	☐		
13.2	AUPS fixation			☐	☐		
13.3	AUPS movements			☐	☐		
13.4	DF2 Check	_____	2mm	☐	☐		
13.5	U/S localization accuracy			☐	☐		
13.6	2 patient positions detection			☐	☐		

14. X-RAY SYSTEM (Every 6 months)							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
14.1	Seasoning X-ray parameters.			☐	☐	☐	
14.2	4 squares X-ray image			☐	☐		
14.3	X-ray emission warning			☐	☐		
14.4	Image intensifier safety device			☐	☐		
14.5	Iris collimator			☐	☐		
14.6	Blade collimator			☐	☐		
14.7	PSM05 Voltage TP2		±10%	☐	☐		
14.8	PSM05 Voltage TP3		4.5Vdc±0.2	☐	☐		
14.9	Autodose (ABC) - 1mm Cu - 2mm Cu - 3mm Cu	_____ _____ _____	58kV ±4kV 66kV ±4kV 74kV ±4kV	☐	☐		
14.10	PLC back-up battery	_____	>2.91Vdc	☐	☐		
14.11	X-ray footswitch			☐	☐		
14.12	Spatial resolution	_____		☐	☐		
14.13	Timer and DAP			☐	☐		
14.14	X-ray parameters			☐	☐		
14.17	Operating hours	_____		☐	☐		

15. X-RAY SYSTEM (Yearly tests) – Refer to Procedure TMS 510013										☐ N/A	
CONTROL (kV Accuracy)				Value	Tolerance	OK	NOT OK	COMMENTS N°			
15.1	kV accuracy : 60kV			_____	10%	☐	☐				
	kV accuracy : 70kV			_____	10%	☐	☐				
	kV accuracy : 90kV			_____	10%	☐	☐				
	kV accuracy : 110kV			_____	10%	☐	☐				
CONTROL (Half Value Layer)											
15.2	Aluminum thickness			_____	>2.5mm Al	☐	☐				
CONTROL (Timer)											
15.3	Continuous fluoroscopy timer accuracy			_____	3 sec	☐	☐				
CONTROL (DAP MEASUREMENT)					Tolerance	OK	NOT OK	COMMENTS N°			
15.4 N	Radius (cm)		Area (cm²)		Measured Dose (mGy)						
	_____		_____		_____						
	Real DAP (mGy x cm²)	_____	Isys DAP (mGy x cm²)	_____	Relative Error	_____	25%	☐	☐		
Z1	Radius (cm)		Area (cm²)		Measured Dose (mGy)						
	_____		_____		_____						
	Real DAP (mGy x cm²)	_____	Isys DAP (mGy x cm²)	_____	Relative Error	_____	25%	☐	☐		
Z2	Radius (cm)		Area (cm²)		Measured Dose (mGy)						
	_____		_____		_____						
	Real DAP (mGy x cm²)	_____	Isys DAP (mGy x cm²)	_____	Relative Error	_____	25%	☐	☐		
CONTROL (MAX DOSE RATE)				Value	Tolerance	OK	NOT OK	COMMENTS N°			
15.5	Normal mode dose meter measure (in mGy/min.)			_____	<100mGy/min	☐	☐				
15.6	Double mA mode dose meter measure (in mGy/min.)			_____	<200mGy/min	☐	☐				
CONTROL (LOW CONTRAST TEST)		Nb last visible circle		Value	Tolerance	OK	NOT OK	COMMENTS N°			
15.7	Field 1		_____	_____	4.5%	☐	☐				
	Field 2		_____	_____		☐	☐				
	Field 3		_____	_____		☐	☐				
CONTROL (SPACIAL RESOLUTION) normal and double mA				Value	Tolerance	OK	NOT OK	NA	COMMENTS N°		
15.8 N	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			
Z1	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			
Z2	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			
15.9 N	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			
Z1	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			
Z2	- Image screen			_____		☐	☐	☐			
	- Remote console			_____		☐	☐	☐			

16. COMPUTER							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
16.1	PC screen image			☐	☐		
16.2	Touch screen			☐	☐		
16.3	Printer			☐	☐	☐	
16.4	Ink cartridges			☐	☐	☐	
16.5	Motherboard battery	_____		☐	☐	☐	
16.6	Hospital name			☐	☐		
16.7	Automatic data base back up	_____		☐	☐		
16.8	MDB back up of the data base			☐	☐	☐	
16.9	Database files backup			☐	☐	☐	
16.10	Free space on hard drive C:\ D:\	_____		☐	☐	☐	
		_____		☐	☐	☐	
16.11	Defragmentation			☐	☐	☐	
16.12	Dust filter			☐	☐		

17. SUBREPORTING DATA							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
17.1	Number of treatment	_____		☐	☐		
17.2	Counter report			☐	☐		
	- A_NB_GENERATOR	_____					
	- A_NB_EMBASE	_____					
	- A_NB_MODULE	_____					
17.3	Files backup			☐	☐		
17.7	Check logs			☐	☐		

18. TREATMENT SIMULATION							
CONTROL		Value	Tolerance	OK	NOT OK	NA	COMMENTS N°
18.1	Fragmentation test with TMS229799 tool	_____		☐	☐	☐	
18.2	Fragmentation test with TMS233020 tool			☐	☐	☐	
18.3	Touchscreen interference (X-Rays side)			☐	☐		
18.4	Touchscreen interference (U/S side)			☐	☐		
18.5	Power feedback		90%-110%	☐	☐		
18.6	Report details			☐	☐		
18.7	Test stone inspection			☐	☐	☐	

19. ECG							☐ NA
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°	
21.1	ECG synchronization.		☐	☐			
21.2	Cables.		☐	☐			

20. APPEARANCE						
CONTROL		Tolerance	OK	NOT OK	NA	COMMENTS N°
20.1	Panels condition					
	- I-sys treatment module.		☐	☐		
	- I.I. covers		☐	☐		
	- AUPS covers		☐	☐	☐	
	- Remote console		☐	☐	☐	
20.2	Cable condition					
	- 16A treatment module		☐	☐		
	- 32A X-ray system		☐	☐		
	- Treatment table		☐	☐		
	- Remote console		☐	☐		
	- X-ray footswitches		☐	☐		
	- DICOM		☐	☐	☐	
	- U/S scanner		☐	☐	☐	
19.3	Labels		☐	☐		
19.4	Panels and screens clean		☐	☐	☐	
19.5	PM sticker (only for France)		☐	☐	☐	

21. ELECTRODE STORAGE UNIT						
CONTROL		Value	Tolerance	OK	NOT OK	NA
21.1	Blue LED.			☐	☐	
21.2	Pressure.		<-0.90	☐	☐	
21.3	Vacuum pressure time.	_____	< 1 min	☐	☐	☐
21.4	OFF button.			☐	☐	
21.5	Electric cord.			☐	☐	
21.6	Electrobox			☐	☐	☐

22. ELECTRICAL SAFETY TEST						☐ NA
N°	CONTROL	VALUE	OK	NOK	NA	COMMENTS N°
22	All item passed in electrical safety test.		☐	☐		

23. SYSTEM READY						
N°	CONTROL	VALUE	OK	NOK	NA	COMMENTS N°
23	System is ready for usage.		☐	☐		



List any documents left with customer or local distributor.

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