

ASL
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LAZIO

PROT. N° 28820

VITERBO, 07/04/2017

A TUTTE LE DITTE INTERESSATE

Oggetto: Indagine di mercato. Servizio di manutenzione ed assistenza tecnica di tipo "full-risk" relativo ad apparecchiature elettromedicali di produzione Siemens per l'Azienda Sanitaria Locale di Viterbo.

Con riferimento al servizio di manutenzione indicato in oggetto, si informa che questa Azienda, con pubblicazione sul sito internet aziendale www.asl.vt.it – intende avviare un'indagine di mercato volta alla conoscenza di operatori tecnici in grado di effettuare il servizio di manutenzione ed assistenza tecnica di tipo "full-risk" relativo all'apparecchiatura elettromedicale Acceleratore Lineare "Oncor Impression Plus" di produzione Siemens, con le seguenti modalità:

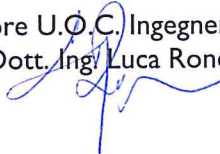
- ✓ esecuzione delle manutenzioni preventive comprensive dei controlli di sicurezza elettrica secondo le norme CEI e secondo la periodicità e i protocolli indicati nel manuale delle apparecchiature (vedasi check-list allegate);
- ✓ esecuzione, almeno due volte all'anno, del controllo di qualità di ogni singola attrezzatura comprovato da un documento che ne accerti lo standard qualitativo della medesima;
- ✓ esecuzione di tutte le azioni conseguenti a eventuali avvisi di sicurezza e procedure di Field Maintenance Instructions in ambito di sicurezza e/o funzionalità emessi dal produttore;
- ✓ numero illimitato di chiamate per la manutenzione correttiva nonché tutte le operazioni necessarie al ripristino del funzionamento della apparecchiatura e relative componenti, in seguito a segnalazione di malfunzionamenti o rotture avvenute durante il normale utilizzo, esclusi i danni derivanti da incuria e/o uso impropri. Gli interventi di riparazione dovranno avvenire almeno entro le 8 ore lavorative dall'ora di segnalazione del guasto da parte dell'U.O. utilizzatrice dell'apparecchiatura. Il singolo tempo di fermo macchina non potrà superare i 10gg. lavorativi complessivi consecutivi (comprensivi delle manutenzioni preventive, dei controlli di qualità e delle verifiche di sicurezza);
- ✓ dovranno essere previsti interventi su chiamata per assistenza applicativa clinica nella misura di almeno **1 giorno all'anno** per apparecchiatura;
- ✓ fornitura, a titolo gratuito, dell'aggiornamento hardware e software per evitare problemi di obsolescenza, secondo le indicazioni del produttore;
- ✓ ogni necessaria assistenza, compresa la eventuale messa a disposizione di mezzi tecnici necessari, per la esecuzione congiunta con i responsabili della ASL di Viterbo (Servizio di Ingegneria Clinica e Fisica Sanitaria) alle prove di accettazione di cui all'art. 8 del D.Lgs. n. 187/2000 e relativo allegatoV;
- ✓ nel corso dell'esecuzione del servizio, deve essere svolto anche un servizio di teleassistenza tramite connessione remota via Wan per l'esecuzione di controllo proattivi, diagnosi remota dei guasti e riparazione di eventuali problemi del software, se prevista dal costruttore;
- ✓ tutti i ricambi saranno inclusi, così come saranno inclusi tutti gli eventuali materiali usurabili (filtri, batterie, lampade, parti non monouso, kit di manutenzione, cavi, eventuale materiale di calibrazione, etc...); le parti di ricambio dovranno essere originali e marchiate CE;
- ✓ sarà inclusa ogni spesa per il personale tecnico dedicato, che dovrà essere qualificato e formato specialisticamente, presso strutture od organizzazioni di formazione riconosciute dal relativo costruttore, per operare sulle apparecchiature oggetto della presente indagine, al fine di garantire la

- massima affidabilità ed il mantenimento dei requisiti essenziali per quanto attiene le caratteristiche di sicurezza e di prestazione (secondo la direttiva CEE 93/42 e s.m.i);
- ✓ sarà inclusa ogni spesa per l'aggiornamento al personale utilizzatore e al personale tecnico della ASL di Viterbo.

Gli operatori economici in grado di garantire almeno quanto sopra indicato sono invitati a darne comunicazione **entro il giorno Venerdì 28 Aprile 2017** a mezzo fax al numero 0761/237803 oppure via e.mail agli indirizzi: luca.ronca@asl.vt.it e giorgia.mindel@asl.vt.it

Cordiali Saluti

Il Direttore U.O.C. Ingegneria Clinica
Dott. Ing. Luca Ronca



ONCOR Linear Accelerator

Maintenance Protocol System

ONCOR Linear Accelerator - Maintenance Protocol

Customer:

Address:

Fax / E-Mail:

Fax / E-Mail:

Department:

Room:

Material-No.:

Serial-No.:

Contract-No.:

Expire date:

Order-No.:

System - ID:

The instructions T2-030.831.01.06.XX are required for this protocol

Evaluating the Condition of the System

The system has no deficiencies. *	<input type="checkbox"/>
The system has slight deficiencies that have no effect on continued operation of the system. The deficiencies should be corrected preventively. *	<input type="checkbox"/>
The system has serious deficiencies. For safety reasons, continued operation of the system is permitted only after successfully correcting the deficiencies.	<input type="checkbox"/>

*) For imaging systems: The result of the image quality check shows no deviation from the reference values.

The evaluation was performed after completing all work steps.

Signature: _____

Date: _____ Name: _____

If required by country-specific regulations:
The customer or a representative has taken note of the result of the evaluation of the system condition.

Signature: _____

Date: _____ Name: _____

Remarks:

Remarks Regarding the Protocol

The chapter numbers refer to the chapters in the instruction, which is referenced on the cover page.

All pages have to have the serial number of the system and the date of maintenance in the page header.

The assignment n.a. (not applicable) indicates that the checkpoint or measured value is not used for this system.

On page 2 the completeness and the results of the maintenance work is confirmed.

Explanation of Abbreviations in the Protocol

Abbrev.	Explanation	Abbrev.	Explanation
SI	Safety Inspection	PMF	Preventive Maintenance, Operating Value Check, Function Check
SIE	Electrical Safety Inspection	Q	System Quality, Image Quality
SIM	Mechanical Safety Inspection	QIQ	Image Quality
PM	Preventive Maintenance	QSQ	System Quality Check
PMP	Periodic Preventive Maintenance	SW	Software Maintenance
PMA	Preventive Maintenance Adjustments	CSE	Customer Service Engineer

- 1 Oncor General
 - 1.1 Scope of Documents
 - 1.1.1 Applicability restrictions
 - 1.1.1.1 Sites with CTVision configuration
 - 1.4 Parts to be replaced during maintenance
 - 1.5 MLC replacement scheme
 - 1.5.1 58 MLC - 3D-MLC / 58 MLC - 3D-MLC with HPC
 - 1.5.2 82 MLC
 - 1.5.3 160MLC PCB replacement scheme
 - 1.6 OPTIVUE/MVCB
 - 1.8 Abbreviations
 - 1.9 General Hints
 - 1.9.5 "Check all electrical connections ..."
 - 1.9.6 Note for 160 MLC
 - 1.10 Grounding
- 3 3-Month Maintenance
 - 3.1 General Information
 - 3.1.1 Required parts
 - 3.1.2 Time estimation
 - 3.2 Cleaning & Electrical Connection Checks
 - 3.2.1 M31 Modulator Assembly (if present)
 - PM Cleaned and inspected (if present)
 - 3.2.2 S31 Power Distribution Panel Assembly
 - PM Cleaned and inspected
 - 3.2.3 S33/S34 Card Cage Assembly
 - PM Cleaned and inspected
 - 3.2.4 S35 Magnetron Filament Power Supply (if present)
 - PM Cleaned (if present)
 - 3.2.5 S38 Electromagnetic Terminal Block Assembly (if present)
 - PM Cleaned and inspected (if present)

		OK	not OK	n.a.
3.2.6	S41 Current Control Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.7	S42 Electromagnet Power Supply (if present)			
	PM Cleaned and inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.8	S44 Power Supply (if present)			
	PM Cleaned and inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.9	S45 Rotation Drive			
	PM Drive chain and gearbox inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.10	K1 Power Distribution			
	PM Contactors cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.11	S40A Timer Assembly			
	PM Turn-on timer inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.12	S40B Vacuum Power Supply Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.13	S40C Chamber High Voltage Power Supply Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.14	Gantry angle encoder and potentiometer			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.15	Bending Magnet and Klystron Power Supplies Rack			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.16	H33 Accessory Holder (if present)			
	PM Cleaned, inspected, and lubricated (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Accessories lock securely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.17	K2 Auxiliary Interlock Chassis Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.18	K8 Pulse Transformer/Tank Assembly			
	PM Pulse tank cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.19	K10 Klystron Area and Solenoid Assemblies			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.20	RF15 Charge System Drawer			
	PM Charge drawer inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.21	SF6 system			
	PM SF6 pressure within range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.22	Oil Pump Assembly			
	PM Oil pump inspected, no leaks	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		OK	not OK	n.a.
3.2.23	Cooler Assy			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.24	H31/H43 Primary Collimating System (if present)			
	PM Inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.25	Control Console Cabinet (if installed)			
	PM Inside of CCC cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.26	Control Console			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.27	CC Node			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.28	Control Console Keyboard			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.29	Control Console Monitor			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.2.30	Older Console versions			
	PM Batteries replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4	Electrical Checks			
3.4.1	M31 Modulator Assembly (if present)			
	PM Voltage checked (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.2	S35 Magnetron Filament Power Supply (if present)			
	PM Operation verified (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.3	S36 Pump Stand Assembly			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.4	S37 Bending Magnet Power Supply			
	PM Operation verified (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.5	S38 Electromagnet Terminal Block (if present)			
	PM Calibration checked (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.6	S42 Electromagnet Power Supply (if present)			
	PM Cleaned and inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.7	Gantry Bearing Lubrication			
	PM Lubricated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.8	Bending magnet and klystron power supplies rack			
	PM Power supplies functional	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3.4.9	S40B Vacuum Power Supply Assembly			
	PM Current and voltage normal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not OK n.a.

- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

3.5.2.2 Electrical Checks

- PM Power supply inspected and voltage verified
- PM Collimator head power supply inspected and voltage verified

3.5.2.3 Calibration and Functional Checks

- PM Radiation to light field accuracy verified
- PM Pot linearity verified
- PM Calibration and backlash checked
- PM X leaf light field range inspected
- PM X leaf reproducibility and overtravel checked

3.5.2.4 System verification

- PM Covers correctly installed
- PMF System tested
- SI Warning lights and door interlock tested

3.5.2.5 Completion

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

3.5.3 82 MLC - OPTIFOCUS (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

3.5.3.1 Setup

3.5.3.2 Inspection and cleaning

- PM Cable connections verified
- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

3.5.4 160 MLC (if installed)

Option present: Yes: No:

Signature: _____

Date: Name:

3.5.4.2 Calibration

PM Calibration blocks set inspected
 PM Position and linearity adjusted

3.5.4.3 Reticle

PM Reticle is clean and intact
 PM Reticle is centered

3.5.4.4 ODI (Rangefinder) Assembly

PM Calibration checked/adjusted

3.5.4.5 Accessory holder

PM Cleaned and inspected

Maintenance of this section was performed by:

Signature: _____

Date: Name:

3.6 OPTIVUE

PM Check 2D gain calibration
 PM Check 3D MVCB gain calibration, if applicable
 PM Clean brakes with compressed air
 PM Check power cables for wear
 PM Dead pixel map evaluation

3.7 Treatment table

3.7.1 General functions

PM Tested

3.7.2 Z IV Table

PM Cleaned and inspected

3.7.3 ZXT - table bearings

PM Cleaned and inspected

OK not OK n.a.

3.7.4 550 TXT - Table bearings
PM Cleaned and inspected

3.7.5 Tabletops

3.7.5.1 Acrylic plates, treatment table
PM Inspected (if present)

3.7.5.2 Carbon fiber tabletop
PM Inspected (if present)

3.8 Inspection finalization

3.8.1 System verification

PM Covers correctly installed

PMF System tested in Treatment mode

SI Motion Stop override functionality and light indication tested

SI Warning lights and door interlock tested

3.8.2 Completion

Discrepancy Log	No problems	<input type="checkbox"/>	

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

4 6-Month Maintenance

4.1 General Information

4.1.2 Time estimation

4.2 Cleaning & Electrical Connection Checks

4.2.1	TEAL Power Conditioner			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.2	S36 Pump Stand Assembly			
4.2.2.1	Lytron Pump Stand			
	PM Cleaned and inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Deionizer cartridge replaced (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.3	G43 beamshield assembly			
	PM Cleaned, inspected, and lubricated (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Lamp replaced (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.4	G53 Counterweight Assembly			
	PM Cleaned and inspected (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.5	G45 injector Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.6	Gantry Hub Area			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.7	G49 Gantry Power Supply and Interconnect Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.8	G56 +24 V Dosimetry Power Supply			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.9	G55 Steering Coil Reversal Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.10	G46 Relay Control Interface Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.11	G47TB1 Lens/Steering Terminals			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.12	G57 Dosimetry Power Supply Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.13	G37 Water Flow PCB Assembly and Flow Sensors			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.14	Gantry control			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.15	Lasers / Patient Setup Devices			
	PM Cleaned and inspected (if part of SIEMENS installation)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.2.16	Hand Control Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.2.17 Hand Control Overhead Suspension

PM Cleaned and inspected

4.2.18 Oil Cooling System

PM Cleaned and inspected

PM Oil filter replaced (if due)

4.2.19 H31/H43 primary collimating system & water lines

PM Cleaned and inspected

4.3 Electrical Setup

4.3.1 Emergency-off, -stop and Shunt Trip Push-buttons

SIE Emergency Power Off circuits tested

4.4 Electrical Checks

4.4.1 S41 Current Control Assembly

PM Calibration checked

4.4.2 S45 rotation drive assembly

PM Limit switches tested

PM Drive Chain inspected

PM Gearbox inspected

4.4.3 S36 Pump Stand Assembly

PM Inspected

4.4.4 S35 Magnetron Filament Power Supply

PM Operation verified (if present)

4.4.5 G42 Dosimetry

PM Offsets are in range

4.4.6 Non-unified G42 assembly

PM Inspected (if present)

PM Voltage verified (if present)

4.4.7 K7 RF Driver Assembly (nRFD)

PM Operation verified

4.4.8 Old RF driver

PM Operation verified (if present)

4.4.9 K9 klystron filament power supply

PM Power supply functional (if present)

OK not
OK

4.4.10 K2 auxiliary interlock chassis assembly

4.4.10.1 Klystron vacuum

PM Voltage normal (if present)

Measured value:

4.4.10.2 Filament voltage "FIL V"

PM Voltages within range (if present)

Measured value:

Measured value:

Measured value:

4.4.10.3 Filament current "FIL I"

PM Voltages within range (if present)

Measured value:

Measured value:

Measured value:

4.4.10.4 Solenoid current "SOL I"

PM Voltages within range (if present)

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

Measured value:

4.4.10.5 Core bias

PM Voltage within range (if present)

Measured value:

4.4.11 K5 solenoid power supplies

PM Power supply functional (if present)

4.4.12 AFC

PM Function tested

PM Pre-positioning adjusted

4.4.13 G31 Motor control

PM Inspected

PM Battery tested (if applicable)

4.4.14 Control Console

PM All modes and energies in use are operational

PM Keyswitches are intact

PM Dose servo tested

OK not OK n.a.

- PM Parameter sheet is available
- PM Current softpots downloaded as backup

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5 Multi Leaf Collimator

4.5.1 58 MLC - 3D-MLC (if present)

4.5.1.1 6-Month Inspection

4.5.1.2 6/12-Month Inspection

4.5.2 58 MLC - 3D-MLC with HPC (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

4.5.2.1 Inspection, cleaning, and electrical connection checks

- PM Labels are intact
- PM Controller cleaned and inspected
- PM Cable connections verified
- PM Fuse operation verified
- PM Battery voltage checked
- PM Mylar film inspected
- PM Collimator mounting bolts inspected
- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5.2.2 Electrical Checks

- PM Power supply inspected and voltage verified
- PM Collimator head power supply inspected and voltage verified
- PM Controller input voltage tested
- PM Controller terminal-to-ground voltage tested
- PM Protective grounding resistance tested

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5.2.3 Mechanical Checks

- PM Collimator rotation inspected
- PM Digital display of collimator angle verified

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

4.5.2.4 Calibration and Functional Checks

- PM Upper jaw aperture and light field verified
- PM Radiation to light field accuracy verified
- PM Pot linearity verified
- PM Calibration and backlash checked
- PM Y jaw light field range inspected
- PM X leaf light field range inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not OK n.a.

- PM Y jaw reproducibility and overtravel checked
- PM X leaf reproducibility and overtravel checked
- 4.5.2.5 Motion stop
 - PM Motion stop tested
- 4.5.2.6 Interlock Checks
 - PM Interlocks actuated when controller power is turned off
 - PM Interlocks actuated by controller reset status
- 4.5.2.7 Inspection finalization
 - PM Covers correctly-installed
 - PMF System tested
 - SI Warning lights and door interlock tested

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

4.5.3 82 MLC - OPT IFOCUS (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

4.5.3.1 Inspection, cleaning, and electrical connection checks

- PM Labels are intact
- PM Controller cleaned and inspected
- PM Cable connections verified
- PM Fuse operation verified
- PM Battery voltage checked
- PM Mylar film inspected
- PM Collimator mounting bolts inspected
- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

4.5.3.2 Electrical checks

- PM Power supply inspected and voltage verified
- PM Collimator head power supply inspected and voltage verified
- PM Controller input voltage tested
- PM Protective grounding resistance tested

OK not OK n.a.

4.5.3.3 Mechanical Checks

- PM Collimator rotation inspected
- PM Digital display of collimator angle verified

4.5.3.4 Calibration and Functional Checks

- PM Upper jaw aperture and light field verified
- PM Radiation to light field accuracy verified
- PM Pot linearity verified
- PM Calibration and backlash checked
- PM Y jaw light field range inspected
- PM X leaf light field range inspected
- PM Y jaw reproducibility and overtravel checked
- PM X leaf reproducibility and overtravel checked

4.5.3.5 Motion stop

- PM Motion stop tested

4.5.3.6 Interlock Checks

- PM Interlocks actuated when controller power is turned off
- PM Interlocks actuated by controller reset status

4.5.3.7 Inspection finalization

- PM Covers correctly installed
- PMF System tested
- SI Warning lights and door interlock tested

Maintenance of this section was performed by:

Signature: _____

Date:

Name:

4.6 OPTIVUE

- PM Inspect MCVB Geometry Cal Phantom
- PM Inspect MCVB Image Quality Phantom
- PM Bearing Alignment
- PM Alignment correction
- PM MCVB Geometry Calibration, if applicable
- PM All ATP Image Quality Checks, if applicable

4.7 Table maintenance

4.8	Treatment table			
4.8.1	Functional test			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8.2	ZIV treatment table			
	PM Cleaned, inspected, and lubricated (if present)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8.3	550 TXT - Table Maintenance			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8.3.1	CF memory card			
	PM Replaced (if due)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.8.4	ZXT - table maintenance			
	PM inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.9	Protective Earth (PE) Ground			
	SIE PE ground tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.10	Inspection finalization			
4.10.1	System verification			
	PM Covers correctly installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM System tested in Treatment mode	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SI Motion Stop override functionality and light indication tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	SI Warning lights and door interlock tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not OK n.a.

4.10.2 Completion

Discrepancy Log	No problems	<input type="checkbox"/>	

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

4.11 Interlock Checks

- 4.11.1 Interlocks #15 and #24 -- Mode (SW) and Mode (HW)
 PM Tested □ □ □
- 4.11.2 Interlocks #21 and #22 -- Hi Rate 1 and Hi Rate 2
 PM Tested □ □ □
- 4.11.3 Interlock #36 -- Chamber High Voltage
 PM Tested □ □ □
- 4.11.4 Interlock #37 -- Gantry Limit Switch
 PM Tested □ □ □
- 4.11.5 Interlock #39 -- Motion Stop
 PM Tested □ □ □
- 4.11.6 Interlock #42 -- Water Flow
 PM Tested □ □ □
- 4.11.7 Interlock #47 -- Bending Magnet (HW)
 PM Tested □ □ □
- 4.11.8 Interlocks #7 and #8 -- Flatness and Symmetry
 PM Tested □ □ □

OK not OK n.a.

4.11.9	Interlock #53 -- Monitor Sync (HW)			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11.10	Interlock #54 -- Dose Rate 2 (HW)			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11.11	Interlock #55 -- Interlock Circuits			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11.12	Interlock #94 -- pre-high rate			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4.11.13	Interlock #98 -- Dose Simulation			
	PM Tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5 9-Month Maintenance

5.1 General Information

5.2 Cleaning & Electrical Connection

5.2.1	Accessory Holder			
5.2.1.1	H33 Accessory Holder			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.1.2	Accessory holder (160 MLC)			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.2	Lower Defining Head			
5.2.3	Primary Collimating System			
	PM Cleaned and inspected (if due)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Mode switches inspected (if due)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Target area inspected (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.3.1	Field Light			
	PM Bulb replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Mirror cleaned	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.3.2	G41 Assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.3.3	G52 Interconnect Assembly and Chambers			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.3.4	Lead shielding			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5.2.3.5	Reinstall the 160MLC and replace PCBs			
	PM Electronic components replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not OK n.a.

5.2.3.6 Collimator rotation

- PM Collimator rotation range tested
- PM Collimator play tested

5.3 Electrical Checks and Adjustment

5.3.1 Collimator Encoder

- PM Angle adjusted

5.3.2 G42 Temperature and Pressure Compensation

- PM Inspected
- PMA Adjustment performed (if required)

5.3.3 Light field

- PM Illumination uniform
- PM Coincident with radiation

5.3.4 Accessory holder

- PM Tested

5.3.5 Reticle

- PM Reticle is intact
- PM Reticle is centered

5.3.6 ODI

- PM Calibration verified
- PM Tested for mechanical tightness

5.4 Multi Leaf Collimator

5.4.1 58 MLC - 3D-MLC (if present)

5.4.2 58 MLC - 3D-MLC with HPC (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

5.4.2.1 Inspection, cleaning, and electrical connection checks

- PM Cable connections verified
- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

5.4.2.2 Electrical Checks

- PM Power supply inspected and voltage verified
- PM Collimator head power supply inspected and voltage verified

OK not OK n.a.

5.4.2.3 Calibration and Functional Checks

- PM Radiation to light field accuracy verified
- PM Pot linearity verified
- PM Calibration and backlash checked
- PM X leaf light field range inspected
- PM X leaf reproducibility and overtravel checked

5.4.2.4 Inspection finalization

- PM Covers correctly installed
- PMF System tested
- SI Warning lights and door interlock tested

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

5.4.3 82 MLC - OPTIFOCUS (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

5.4.3.1 Inspection, cleaning, and electrical connection checks

- PM Cable connections verified
- PM Collimator cleaned and inspected
- PM Leaf track cleaned and inspected

5.4.3.2 Electrical Checks

- PM Power supply inspected and voltage verified
- PM Collimator head power supply inspected and voltage verified

5.4.3.3 Calibration and Functional Checks

- PM Radiation to light field accuracy verified
- PM Pot linearity verified
- PM Calibration and backlash checked
- PM X leaf light field range inspected
- PM X leaf reproducibility and overtravel checked

5.4.3.4 Inspection finalization

- PM Covers correctly installed
- PMF System tested

OK not n.a.

OK

not OK

n.a.

SI Warning lights and door interlock tested

Maintenance of this section was performed by:

Signature: _____

Date: Name:

5.4.4 160 MLC

5.4.4.1 160 MLC

Option present: Yes: No:

Signature: _____

Date: Name:

PM Position and linearity adjusted

Maintenance of this section was performed by:

Signature: _____

Date: Name:

5.5 Treatment table

5.5.1 Functional test

PM Tested

5.5.2 ZXT - table bearings

PM Cleaned and inspected

5.5.3 550 TXT Table Maintenance

PM Cleaned and inspected

5.5.4 Tabletops

5.5.4.1 Acrylic plates, treatment table

PM Inspected (if present)

5.5.4.2 Carbon fiber tabletop

PM Inspected (if present)

5.6 Inspection finalization

5.6.1 System verification

PM Covers correctly installed

OK not OK n.a.

- PM System tested in Treatment mode
- SI Motion Stop override functionality and light indication tested
- SI Warning lights and door interlock tested

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5.6.2 Completion

Discrepancy Log	No problems	<input type="checkbox"/>	

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

6 12-Month Maintenance

6.1 General Information

6.2 Cleaning & electrical connection checks

6.2.1 S36 Pump Stand Assembly

PM Water filter replaced

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

PM Deionizer replaced

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

6.2.2 K1 Power Distribution

PM Cleaned and inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

6.2.3 G39 AFC Assembly

PM Cleaned and inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

6.2.4 G38 Ion Pump Assembly

PM Cleaned and inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

6.2.5 G31/G32 Card Cage Assembly

PM Cleaned and inspected

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
--------------------------	--------------------------	--------------------------

OK not OK n.a.

6.2.6	G41 assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2.7	G42 assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2.8	G52 chamber interconnect assembly			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2.9	Gantry control			
	PM Inspected, contactor replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.2.10	Oil Pump Assembly			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3	Electrical checks			
6.3.1	S36 Pump Stand Assembly			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.2	S45 Rotation Drive Assembly			
	PM Limit switches tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Chain and torque limiter inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.3	Accessories, E-Applicators and Wedges			
	PM Accessories labeling is correct	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Accessories without damage	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.4	ODI (Rangefinder 160 MLC) Assembly			
	PM Calibration checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.5	G40 Frontpointer and Rangefinder Assembly (58 MLC and 82 MLC)			
	PM Cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Lamps replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.6	G42 Dosimetry			
	PM Offsets are in range	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.7	Backpointer Assembly (160 MLC)			
	PM Calibration checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.8	G40 Frontpointer and Rangefinder Assembly (58 MLC and 82 MLC)			
	PM Calibration verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.9	Mechanical Frontpointer (if applicable)			
	PM Calibration checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.3.10	G31 Motor control			
	PM Inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Battery tested (if applicable)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not OK n.a.

6.4.1.9 Leaf Track Cleaning

PM Leaf track cleaned and inspected

6.4.1.10 PROM and RAM Replacement

PM PROMs and RAMs replaced

6.4.1.11 Y Jaw Reproducibility & Overtravel

PM Y Jaw reproducibility & overtravel checked

6.4.1.12 X Leaf Reproducibility & Overtravel

PM X leaf reproducibility & overtravel checked

Maintenance of this section was performed by:

Signature: _____

Date:

Name:

6.4.2 58 MLC - 3D-MLC with HPC (if present)

Option present: Yes: No:

Signature: _____

Date:

Name:

6.4.2.1 12-Month Maintenance

6.4.2.2 Inspection, cleaning, and electrical connection checks

PM Labels are intact

PM Controller cleaned and inspected

PM Cable connections verified

PM Fuse operation verified

PM Battery voltage checked

PM Mylar film inspected

PM Collimator mounting bolts inspected

PM Collimator cleaned and inspected

PM Leaf track cleaned and inspected

6.4.2.3 Electrical Checks

PM Power supply inspected and voltage verified

PM Collimator head power supply inspected and voltage verified

PM Controller input voltage tested

PM Controller terminal-to-ground voltage tested

PM Protective grounding resistance tested

OK not OK n.a.

6.4.2.4 Mechanical Checks

PM	Collimator rotation inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Collimator rotation center is accurate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Gantry rotation center is accurate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Digital display of collimator angle verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6.4.2.5 Calibration and Functional Checks

PM	Upper jaw aperture and light field verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Radiation to light field accuracy verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Pot linearity verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Calibration and backlash checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Y jaw light field range inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	X leaf light field range inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Y jaw reproducibility and overtravel checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	X leaf reproducibility and overtravel checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Motion stop tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Interlocks actuated when controller power is turned off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Interlocks actuated by controller reset status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6.4.2.6 Part Replacement

PM	EPROMs and SRAMs replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
----	---------------------------	--------------------------	--------------------------	--------------------------

6.4.2.7 Inspection finalization

PM	Covers correctly installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PMF	System tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
SI	Warning lights and door interlock tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Maintenance of this section was performed by:

Signature: _____

Date: _____ Name: _____

6.4.3 82 MLC - OPTIFOCUS (if present)

Option present: Yes: No:

Signature: _____

Date: _____ Name: _____

6.4.3.1 Inspection, cleaning, and electrical connection checks

PM	Labels are intact	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Controller cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
PM	Cable connections verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

		OK	not OK	n.a.
	PM Fuse operation verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Battery voltage checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Mylar film inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Collimator mounting bolts inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Collimator cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Leaf track cleaned and inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.3.2	Electrical checks			
	PM Power supply inspected and voltage verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Collimator head power supply inspected and voltage verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Controller input voltage tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Protective grounding resistance tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.3.3	Mechanical Checks			
	PM Collimator rotation inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Collimator rotation center is accurate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Gantry rotation center is accurate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Digital display of collimator angle verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.3.4	Calibration and Functional Checks			
	PM Upper jaw aperture and light field verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Radiation to light field accuracy verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Pot linearity verified	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Calibration and backlash checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Y jaw light field range inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM X leaf light field range inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Leaf speed inspected	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Y jaw reproducibility and overtravel checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM X leaf reproducibility and overtravel checked	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Motion stop tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Interlocks actuated when controller power is turned off	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PM Interlocks actuated by controller reset status	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.3.5	Part Replacement			
	PM EPROMs and SRAMs replaced	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6.4.3.6	Inspection finalization			
	PM Covers correctly installed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	PMF System tested	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

OK not
OK OK n.a.

SI Warning lights and door interlock tested

Maintenance of this section was performed by:

Signature: _____

Date:

Name:

6.5 OPTIVUE

6.5.1 12 Month

PM Check vertical ball screw belts

PM Lubricate ball screws

PM Lubricate all 6 grease nipples

PM Lubricate longitudinal bearing

PM Inspect collision bumpers, if applicable

PM Inspect the window shade

6.5.2 36 Month

PM Replace vertical ball screw belts

PM Replace the Perkin Elmer power cable and trigger cables

6.5.3 48 Month

PM Replace Lambda Power Supply

6.6 Treatment table

6.6.1 ZXT treatment table

PM Cleaned and inspected

PM Free movement verified

6.6.2 ZXT base plate checks

6.6.2.1 Wheel track wear

PM Cleaned and inspected

6.6.2.2 Wheel parallelism check

PM Checked

6.6.2.3 Float switch check

PM Float switch checked

6.6.3 550 TxT Table Maintenance

PM Cleaned, inspected, and lubricated

PM Float switch tested

PM Inspect vertical push chain mounting

6.6.4 550 TxT Vertical Brakes

PM Inspected

OK not OK n.a.

6.6.5 Carbon Fiber Tabletop

PM Inspected

6.6.6 General functions

PM Tested

6.7 Protective Earth (PE) Ground

SIE PE ground tested

6.8 Inspection finalization

6.8.1 System verification

PM Covers correctly installed

PM System tested in Treatment mode

SI Motion Stop override functionality and light indication tested

SI Warning lights and door interlock tested

6.8.2 Completion

Discrepancy Log	No problems	<input type="checkbox"/>

Maintenance of this section was performed by:

Signature: _____

Date:

Name:

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