

Maintenance Procedures

Clearly display the "Inspection in Progress" sign before starting the inspections below.

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
1. Installation conditions check							
(1)	Check the [X-ray ON] lamp	Check that the [X-ray ON] lamp functions normally. If defective, report to the facility manager.	Visual	*	*	☉	
(2)	Measure temperature and humidity	Measure the temperature and humidity. (Allowable range is as follows.) Operation room temperature: 10-30 °C Relative humidity: 15-75%RH Examination room temperature: 20-27 °C Relative humidity: 15-75%RH Machine room temperature: 10-30 °C Relative humidity: 15-75%RH	Instrument	*	*		
2. Power supply and ground check							
(1)	Measure the insulation resistance	Turn OFF the main circuit breaker and the power supply. Measure the insulation resistance across the primary power supply line and the ground terminal (2 MΩ min. at 500 V DC applied voltage). Measurement point: (1) U-E (2) V-E (3) W-E (4)L100-E, (5) L0-E	Instrument		*	☉	
(2)	Measure the supply voltage	Measure the supply voltage for each instrument (100 V single-phase, 200 V/400 V 3-phase) with a digital multimeter.	Instrument	*	*		
(3)	Check the earth cable	Check for changes to grounding equipment or loosening or corrosion of ground wires or ground terminals.	Visual	*	*	☉	
3. Instrument status check							
(1)	External appearance	Check that there is no significant contamination or damage on each unit.	Visual	*	*		
(2)	Check name plate	Check the name plate, caution labels, warning labels, and range-of-motion tape for each instrument.	Visual	*	*	☉	
(3)	Clean	Clean all units with a cleaner.	Visual	*	*		
(4)	Check cable connections	Check the connection of the cable terminals and connectors on each unit.	Visual	*	*		
(5)	Check cables	Check the cables between the units for rubbing, twisting, and pulling.	Visual	*	*		
(6)	Instrument fixing	Check the instrument mounting on the floor. Ensure all nuts and bolts are tight.	Visual	*	*	☉	
(7)	Around the instrument	Check that there are no obstacles around the instrument.	Visual	*	*	☉	
(8)	Interphone function	Check that connectors are connected properly and sound is transmitted properly.	Function, visual	*	*		

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4. X-ray tube unit						
(1)	Tube unit status	Check the appearance of the X-ray tube housing. Also check for oil leakage and abnormal rotation sound.	Visual	*	*	☉
(2)	X-ray tube attachment	Check the X-ray tube attachment area.	Visual	*	*	
(3)	Cooling water	Check the cooling water fill level, flow rate, and contamination level.	Visual, replace	*	*	Replace water at 12 months.
(4)	Recirculation water filter	Clean the recirculation water filter.	Clean	*	*	
(5)	Cooler pump	Check that operation sound is normal.	Function	*	*	
(6)	Cooling fan	Check that operation sound is normal. Clean air intake and outlet ports.	Function, clean	*	*	
5. X-ray generator						
(1)	Fluoroscopy operation	Check that operation is normal.	Function		*	☉
(2)	Starter operation	Check that operation is normal.	Function	*	*	
(3)	Radiography operation	Check that operation is normal.	Function			☉
(4)	Tube voltage accuracy and reproducibility	Measure the tube voltage.	Instrument			Refer to Inspection Data Measurement Procedures.
(5)	Tube current accuracy and reproducibility	Measure the tube current.	Instrument			
(6)	Radiography time accuracy and reproducibility	Measure the radiography time.	Instrument			
(7)	High-voltage cable, bushing	Remove bushing and check for discharge marks or anything unusual with packing, etc. Wipe off any old grease, replace packing, and reapply grease.	Visual, replace			
(8)	Max. fluoroscopy dose	Confirm that the maximum dose in each fluoroscopy mode does not exceed applicable regulations.	Instrument		*	☉
(9)	Automatic exposure	Record data in IBS automatic fluoroscopy and radiography modes.	Function			Image Quality Adjustment Manual
(10)	Checking the contactor's cable fastening screw.	Check the screws that fasten the cable(MG-L, MG-RS, MG-C, MG-D, MG-F)	Fasten screw	*	*	☉
6. X-ray image processor						
(1)	Image capture	Check that operation is normal. (Check the image capture operation when capturing the image quality adjustment data.)	Function	*	*	
(2)	Image processing functions	Check that operation is normal.	Function	*	*	
(3)	Reading/writing images	Check that operation is normal.	Function	*	*	
(4)	Printing	Check that printing operations are normal to the laser imager, etc.	Function	*	*	
(5)	Time	Check that the time on the MPC is correct and reset if necessary.	Function	*	*	
(6)	Area dosimeter	Confirm that the displayed dose is ±25% of the measured value of the dosimeter	Instrument	*		DAR-9500f Installation Manual
(7)	Image quality evaluation	Assess image quality according to the image quality adjustment manual.	Function	*	*	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
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7. Other relevant equipment (FPD water cooler)							
(1)	Cooling water	Check the cooling water fill level, pressure, and contamination level.	Visual	*	*		
(2)	Strainer	Clean the unit.	Visual	*	*		
(3)	Filter cartridge	Check contamination.	Visual, replace	*	*		Replace at 12 months.
(4)	Condenser (radiator)	Check contamination and clean.	Clean	*	*		
(5)	Cooler pump	Check that operation sound is normal.	Function	*	*		
(6)	Cooling fan	Check that operation sound is normal. Clean air intake and outlet ports.	Function, clean	*	*		
(7)	Water temperature setting	Check temperature setting (23 °C)	Function	*	*		

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-1. X-ray mechanical system (MH-200S)							
(1)	Ceiling travel (longitudinal movement)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	
		b. Stopping accuracy (potentiometer/encoder function)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		j. Brake function and wear or damage to magnets	Check for abnormalities. Replace if worn or damaged.	*	*		
(2)	Ceiling travel (lateral movement)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer/encoder function)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		j. Brake function and wear or damage to magnets	Check for abnormalities. Replace if worn or damaged.	*	*		

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-1. X-ray mechanical system (MH-200S)							
(3)	Ceiling pivot operation	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
(4)	C-arm sagittal rotation (rotation along body axis when C-arm is inserted from the side)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
(5)	C-arm oblique rotation (rotation around body axis when C-arm is inserted from the side)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Timing belt damage and tension	Check for abnormalities. Replace if worn or damaged.		*	⊙	
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
	i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙		

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6	12		
				months	months		
8-1. X-ray mechanical system (MH-200S)							
(6)	Collimator rotation	a. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		b. Check for abnormal noise.	Check for abnormalities.	*	*		
		c. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		d. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		e. Check the tightness of the motor and mechanical unit mounting screws.	Check for abnormalities.	*	*	⊙	
(7)	Collimator front-panel switches	a. Safety switch operation	Check the operation. Check for abnormalities.	*	*	⊙	
		b. Check operation of front-cover open/close check switch.	Check the operation. Check for abnormalities.		*		
(8)	Collimator leaf open/close operation	a. Check for abnormal noise.	Check for abnormalities.		*		
		b. Wire rope damage and attachment	Check for abnormalities. Apply grease after inspection.		*		★
(9)	Collimator effective irradiation field dimensions	Check the dimensions.	Check the operation.		*		See the Installation Manual.
(10)	BH filter switching	Check the operation.	Check for abnormalities.		*		
(11)	Collimator control circuits	Check the contact of terminals and connectors.	Check for abnormalities.		*		
(12)	Collimator attachment	Check the tightness of the mounting screws.	Check for abnormalities.	*	*	⊙	
		a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
(13)	FPD backward/forward movement	e. Threaded rod wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
8-1. X-ray mechanical system (MH-200S)							
(14)	FPD rotation	a. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		b. Check for abnormal noise.	Check for abnormalities.	*	*		
		c. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		☆
		d. Check the tightness of the motor and mechanical unit mounting screws.	Check for abnormalities.	*	*	◎	
(15)	FPD front-panel switches	Safety switch operation	Check the operation. Check for abnormalities.	*	*	◎	
(16)	FPD non-contact sensor	Non-contact sensor operation	Check the operation. Check for abnormalities.	*	*	◎	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-2. X-ray mechanical system (MH-300)							
(1)	Floor pivot operation (base)	a. Overrun limit switch operation	Check for abnormalities.	*	*	☉	
		b. Stopping accuracy (potentiometer/encoder function)	Check for abnormalities.		*	☉	
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	☉	
(2)	Support rotation (middle base)	a. Overrun limit switch operation	Check for abnormalities.	*	*	☉	★
		b. Stopping accuracy (potentiometer/encoder operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		a. Overrun limit switch operation	Check for abnormalities.	*	*	☉	★
(3)	Support rotation (horizontal axis)	b. Stopping accuracy (potentiometer/encoder operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		a. Overrun limit switch operation	Check for abnormalities.	*	*	☉	★
		b. Stopping accuracy (potentiometer/encoder operation)	Check for abnormalities.		*		

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-2. X-ray mechanical system (MH-300)							
(4)	C-arm rotation (rotation around body axis at home position)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
(5)	C-arm sliding (rotation along body axis at home position)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Timing belt damage and tension	Check for abnormalities. Replace if worn or damaged.		*	⊙	
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
(6)	Collimator rotation	i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		a. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		b. Check for abnormal noise.	Check for abnormalities.	*	*		
		c. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		d. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		e. Check the tightness of the motor and mechanical unit mounting screws.	Check for abnormalities.	*	*	⊙	
			Check for abnormalities.				
			Check for abnormalities.				

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-2. X-ray mechanical system (MH-300)							
(7)	Collimator front-panel switches	a. Safety switch operation b. Check operation of front-cover open/close check switch.	Check the operation. Check for abnormalities. Check the operation. Check for abnormalities.	*	*	☉	
(8)	Collimator leaf open/dose operation	a. Check for abnormal noise. b. Wire rope damage and attachment	Check for abnormalities. Check for abnormalities. Apply grease after inspection.		*		★
(9)	Collimator effective irradiation field dimensions	Check the dimensions.	Check the operation.		*		See the Installation Manual.
(10)	BH filter switching	Check the operation.	Check for abnormalities.		*		
(11)	Collimator control circuits	Check the contact of terminals and connectors.	Check for abnormalities.		*		
(12)	Collimator attachment	Check the tightness of the mounting screws.	Check for abnormalities.	*	*	☉	
(13)	FPD backward/forward movement	a. Overrun limit switch operation	Check for abnormalities.	*	*	☉	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Threaded rod wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	☉	
		a. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
(14)	FPD rotation	b. Check for abnormal noise.	Check for abnormalities.	*	*		
		c. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		d. Check the tightness of the motor and mechanical unit mounting screws.	Check for abnormalities.	*	*	☉	
		Safety switch operation	Check the operation. Check for abnormalities.	*	*	☉	
(15)	FPD front-panel switches	Non-contact sensor operation	Check the operation. Check for abnormalities.	*	*	☉	
(16)	FPD non-contact sensor		Check the operation. Check for abnormalities.	*	*	☉	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-3. X-ray mechanical system (MH-400)							
(1)	Ceiling travel (longitudinal movement)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	
		b. Stopping accuracy (encoder operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*		
		j. Brake function and wear or damage to magnets	Check for abnormalities. Replace if worn or damaged.	*	*	⊙	
(2)	Ceiling pivot operation	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-3. X-ray mechanical system (MH-400)							
(3)	C-arm rotation (rotation around body axis)	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Timing belt damage and tension	Check for abnormalities. Replace if worn or damaged.		*	⊙	
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		j. End switch function (toward X-ray tube and FPD)	Check for abnormalities.	*	*	⊙	
(4)	X-ray tube vertical movement	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Rail wear and attachment	Check for abnormalities.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
(5)	FPD vertical movement	c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Rail wear and attachment	Check for abnormalities.		*		★
		f. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		g. Check the pulley attachment.	Check for abnormalities.	*	*		
		h. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-3. X-ray mechanical system (MH-400)							
(6)	Collimator front-panel switches	a. Safety switch operation	Check the operation. Check for abnormalities.	*	*	◎	
		b. Check operation of front-cover open/close check switch	Check the operation. Check for abnormalities.		*		
(7)	Collimator leaf open/close operation	a. Check for abnormal noise.	Check for abnormalities.		*		
		b. Wire rope damage and attachment	Check for abnormalities. Apply grease after inspection.		*		★
(8)	Collimator effective irradiation field dimensions	Check the dimensions.	Check the operation.		*		See the Installation Manual.
(9)	BF filter switching	Check the operation.	Check for abnormalities.		*		
(10)	Collimator control circuits	Check the contact of terminals and connectors.	Check for abnormalities.		*		
(11)	Collimator attachment	Check the tightness of the mounting screws.	Check for abnormalities.	*	*	◎	
		a. Overrun limit switch operation	Check for abnormalities.	*	*	◎	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
(12)	FPD backward/forward movement	d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Threaded rod wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	◎	
		Safety switch operation	Check the operation. Check for abnormalities.	*	*	◎	
(13)	FPD front-panel switches						

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-4. X-ray mechanical system (support unit control, connection, and attachment)							
(1)	Control circuits	a. Check the control relay operation. b. Check power supply voltages at the PCB.	Check for abnormalities. See the Installation Manual.	*	*	⊙	
(2)	Local console (including CyberGrip)	a. Check the emergency stop operation. b. Check the operation switch operation. c. Check for display errors. d. Check the contact of terminals and connectors.	Check for abnormalities. Check for abnormalities. Check for abnormalities. Check for abnormalities.	*	*	⊙	
(3)	Remote console (option)	a. Check the emergency stop operation. b. Check the operation switch operation. c. Check for display errors. d. Check the contact of terminals and connectors.	Check for abnormalities. Check for abnormalities. Check for abnormalities. Check for abnormalities.	*	*	⊙	
(4)	Console cart (option)	a. Check the emergency stop operation. b. Check the footswitch operation. c. Check for display errors. d. Check the contact of terminals and connectors.	Check for abnormalities. Check for abnormalities. Check for abnormalities. Check for abnormalities.	*	*	⊙	
(5)	Monitor support	a. Check operation. b. Check the brake operation. c. Rail wear and attachment d. Bearing abnormal noise and attachment e. Check the tightness of the support unit mounting screws. f. Monitor attachment	Check for abnormalities. Check for abnormalities. Replace if worn or damaged. Check for abnormalities. Check for abnormalities. Check for abnormalities. Check for abnormalities.	*	*		
(6)	Display	Check for display errors.	Check for abnormalities.		*		
(7)	Cable connections	a. Check for cable damage. b. Check the contact of terminals and connectors.	Check for abnormalities. Check for abnormalities.	*	*	⊙	
(8)	Nuts and bolts: floor and ceiling attachment	Check the tightness of the mounting screws.	Check for abnormalities.	*	*	⊙	

	Inspection Item	Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-5. X-ray mechanical system (table)							
(1)	Tabletop lateral and transverse movement	a. Check the operation of the microswitch to confirm tabletop extension at the head end.	Check for abnormalities.	*	*	⊙	
		b. Check the lateral and transverse movement.	Check for abnormalities.	*	*		
		c. Check the brake operation.	Check for abnormalities. Replace if worn or damaged.	*	*		
		d. Rail wear and attachment	Check for abnormalities.	*	*		★
		e. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		f. Check the tightness of the tabletop mounting screws.	Check for abnormalities.	*	*	⊙	
(2)	Tabletop vertical movement	a. Overrun limit switch operation	Check for abnormalities.	*	*	⊙	★
		b. Stopping accuracy (potentiometer operation)	Check for abnormalities.		*		
		c. Check for abnormal noise.	Check for abnormalities.	*	*		
		d. Belt damage and tension	Check for abnormalities. Replace if worn or damaged.	*	*		
		e. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		f. Rail wear and attachment	Check for abnormalities.		*		★
		g. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		h. Check the pulley and sprocket attachment.	Check for abnormalities.	*	*		
		i. Check the tightness of the motor and gearbox mounting screws.	Check for abnormalities.	*	*	⊙	
		a. Stopping accuracy (switch and sensor operation)	Check for abnormalities.		*		
(3)	Tabletop pivot operation	b. Check the brake operation.	Check for abnormalities. Replace if worn or damaged.	*	*		
		c. Check for abnormal noise	Check for abnormalities.	*	*		
		d. Gear wear and lubricating oil	Check for abnormalities. Apply grease after inspection.		*		★
		e. Bearing abnormal noise and attachment	Check for abnormalities.	*	*		
		f. Check the tightness of the clutch mounting screws.	Check for abnormalities.	*	*	⊙	
			Check for abnormalities.				

Inspection Item		Inspection Details	Measurement and Inspection Methods	Timing		Safety	Comments
				6 months	12 months		
8-5. X-ray mechanical system (table)							
(4)	Control circuits	a. Check the control relay operation.	Check for abnormalities.	*	*	◎	
		b. Check the emergency stop operation.	Check for abnormalities.	*	*	◎	
		c. Check the footswitch operation.	Check for abnormalities.		*	◎	
		d. Check the operation switch operation on the side of the main unit.	Check for abnormalities.		*		
(5)	Cable Connections	a. Check for cable damage.	Check for abnormalities.	*	*	◎	
		b. Check the contact of terminals and connectors.	Check for abnormalities.	*	*		
(6)	Attachment of accessories	Attachment status of accessories attached to tabletop side rail.	Check attachment status.		*		