

RICOH

Form 3: Risk Estimation, Assessment, and Reduction

J0937030A

Risk Estimation, Risk Assessment, and Risk Reduction																											
No		Topic	Subtopic	Initial Risk Assessment				Risk Reduction												Risk Assessment after Risk Reduction						Is further risk reduction required?	No
				S	F	A	O	RI	PLr	Notes	Measures	Protective Measures Classification			Risk Reduction Target Parameter				S	F	A	O	RI	PL	Notes		
				S1 S2	F1 F2	A1 A2	O1 O2 O3					Safe Design Measure	Safety Protection	Information	S	F	A	O	S1 S2	F1 F2	A1 A2	O1 O2 O3					
1	No.1	Trapping under the packing case (unpacking)	S2	F1	A2	O2	3			- The sales representative deploys specialized carriers to check accident scenes and prevent accidents. - Label the place to put the fork in the packing specifications.			○					S2	F1	A2	O2	3			N		
2	No.2	Collapse of the packing case (unpacking)	S2	F1	A1	O2	2			Specify the unpacking procedure for the wooden box and the position of the setscrew in the installation procedure document			○					S2	F1	A1	O2	2			N		
3	No.3	Nails, thorns of wood (unpacking)	S1	F1	A1	O2	1			The sales representative confirms the notes on the waste material processing at a preliminary meeting with the carrier			○					S1	F1	A1	O2	1			N		
4	No.4	Sharp edges of the body and the gantry (installation/assembly)	S1	F1	A1	O2	1			Specify the burr treatment also in the range to be touched during transportation in the drawing		○						S1	F1	A1	O2	1			N		
5	No.5	Gantry dropping (installation/assembly)	S2	F1	A2	O2	3			Label the place to put the fork on the gantry.			○					S2	F1	A2	O2	3			N		
6	No.6	Edges and protrusions at joints (installation/assembly)	S1	F1	A1	O2	1			- Specify in the drawing the burr processing in the range to be touched when harness is connected. - Use connectors bundled with wires to increase workability		○						S1	F1	A1	O2	1			N		
7	No.7	Electric shock (installation/assembly)	S2	F1	A2	O2	3			Replace the power cord to the connection with the IEC 60309 certified connector		○	○			○		S2	F1	A1	O2	2			N		
8	No.8	Ink problems (installation/assembly)	S2	F1	A2	O2	3			- In the safety information or decal display, specify instructions for wearing goggles and gloves when using ink. - Specify ink filling in the instruction manual			○			○		S2	F1	A1	O2	2			N		
9	No.9	Incorrect carriage drive (operational check)	S2	F1	A2	O2	3	d		- Specify the prohibited area in the safety information - Equip the device end with the emergency stop button - Equip the human body detection sensor in the vicinity of the carriage and prevent the motor of the carriage and gantry from starting when detected		○				○		S2	F1	A1	O2	2	e		N		
10	No.10	Ink problems (operational check)	S2	F1	A2	O2	3	d		- In the safety information or decal display, specify instructions for wearing goggles and gloves when using ink. - Equip the human body detection sensor in the vicinity of the carriage and prevent printing when detected		○				○		S2	F1	A1	O2	2	e		N		
11	No.11	UV radiation (operational check)	S2	F1	A2	O2	3			In the safety information or decal display, specify instructions for wearing goggles and gloves when using ink.			○			○		S2	F1	A1	O2	2			N		
12	No.12	Ink problems (adjustment)	S2	F1	A2	O2	3			- In the safety information, decal display, specify instructions for wearing goggles and gloves when using ink - Specify how to handle gloves and protective equipment when handling ink in the instruction manual.			○			○		S2	F1	A1	O2	2			N		
13	No.13	Contact with high temperature parts (adjustment)	S1	F1	A1	O2	1			In the safety information or decal display, specify where the high temperature section is.			○					S1	F1	A1	O2	1			N		
14	No.14	Incorrect approach to the device (normal operation/print)	S2	F1	A2	O2	3			- Specify the prohibited area in the safety information - Display the warning decal and call for attention. - Equip the device end with the emergency stop button			○					S2	F1	A2	O2	3			N		
15	No.15	Insufficient ventilation (normal operation/print)	S2	F1	A2	O2	3			Specify how to ventilate in the safety information			○			○		S2	F1	A1	O2	2			N		
16	No.16	Media height setting problem (normal operation/print)	S2	F1	A2	O2	3			- In the safety information or decal display, specify instructions for wearing goggles and gloves when using ink. - Specify notes on the gap between the media and the carriage in the instruction manual			○			○		S2	F1	A1	O2	2			N		
17	No.17	Temperature sensor defects in the subtank (normal operation/print)	S2	F1	A1	O2	2			In the safety information or decal display, specify where the high temperature section is.			○					S2	F1	A1	O2	2			N		
18	No.18	Ink leakage (normal operation/print)	S2	F1	A2	O2	3			- In the safety information or decal display, specify instructions for wearing goggles and gloves when using ink. - Use parts with sufficient margin for leakage from ink tubes and ink pumps. - Review the layout, make sure that there is no contact between the tubing and the high temperature part			○			○		S2	F1	A1	O2	2			N		
19	No.19	Lack of noise recognition (normal operation/print)	S2	F1	A1	O2	2			Specify the noise information of the equipment in the safety information			○					S2	F1	A1	O2	2			N		
20	No.20	Misoperation for waste tank processing (normal operation/maintenance)	S2	F1	A2	O2	3			In the instruction manual, specify how to operate the waste liquid tank using diagrams			○					S2	F1	A2	O2	3			N		
21	No.21	Injuries due to unexpected driving (normal operation/maintenance)	S2	F1	A2	O2	3	d		Operate human body detection sensor of the carriage also in maintenance mode, and do not drive the carriage		○				○		S2	F1	A1	O2	2	d		N		

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22	No.22	Injuries caused by inserting hands into the device (normal operation/maintenance)	S1	F1	A1	O2	1			• Design gap of the opening of the maintenance unit so that the hand do not enter the interior		○				S1	F1	A1	O2	1			N			
23	No.23	Electrical shock when checking abnormality of the electrical equipment temperature (normal operation/repair)	S2	F1	A2	O2	3			• On doors near the AC wiring, equip the interlock switches that disconnect from the main power supply. • In the safety information, specify instructions for disconnecting the power cord when opening the door		○	○		○	S2	F1	A1	O2	2			N			
24	No.24	Injuries when checking abnormality of the equipment temperature (normal operation/repair)	S2	F1	A2	O2	3	d		• Use the emergency stop buttons when reproducing abnormalities		○	○		○	S2	F1	A1	O2	2	d		N			
25	No.25	Injuries due to work misoperation for dismantling and moving (disposing)	S2	F1	A2	O2	3			• In the safety information, specify instructions for contacting the dealer also for disposing of the machine. • Deploy a specialized carrier who knows the details of the equipment.			○		○	S2	F1	A2	O2	3			N			
26	No.26	Ink problems (disposing)	S2	F1	A2	O2	3			• In the safety information, specify instructions for contacting the dealer also for disposing of the machine. • Remove excess ink on the main body to prevent it from scattering.			○		○	S2	F1	A1	O2	2			N			