

U2 Series Hybrid Balaman Inspection Item List(1/2)

No.	Inspection Items	Method of inspection	Implementation Period	Verdict	Action Taken	Date of inspection	Remarks
1	Check air set drain level.	Drain piping	A				
2	Clean air set element.	Disassemble and clean	B				
3	Replace air set element.	Disassemble and replace	C				
4	Check air piping hoses, joints, etc, for damage and leaks.	Visually inspect and feel	A				
5	Check to make sure nuts and bolts are tight. Tighten if necessary.	Visually inspect and tighten					
	(1) Installation base (main unit mount and base mount)		B				
	(2) Body and arm (especially parallel rod / support arm and mechanical stopper)		B				
	(3) End effector and end effector mounts		A				
	(4) Terminal blocks and connectors in the control panel		B				
	(5) Terminal block of switching power supply in control panel		B				
6	Check wiring for damage, and check wiring connectors.	Visually inspect and feel					
	(1) Check for damage to cables connecting the controls box and the operation panel. Check points: Arm joints, C-arm to operation panel, operation panel to A-arm entry		B				
	(2) Check for damage to the wiring inside the operation panel and check wire connectors. Connections should not be defective, loose, corroded, etc.		C				
	(3) Check for damage to the wiring inside the operation panel and check wire connectors. Connections should not be defective, loose, corroded, etc.		C				
	④ Check for damages or disconnection of the power cables.		B				
7	Check for abnormalities in bearings.	Visually inspect	B				
8	Check for abnormal wear or damage to moving parts.	Visually inspect	C				
9	Check and adjust brake on swivel mount.	Operate and adjust	B				
10	Check for abnormal wear or damage to guide rail sections, etc.	Visually inspect	C				
11	Check for abnormalities and cracks in welds, etc.	Visually inspect	C				
12	Inspect or replace hooks on the chain and mounting bolts.	Disassemble/ visually inspect	C				With hook
13	Check for abnormal movement in horizontal operation (main unit, B-arm, C-arm)	Confirm operation	C				
14	Lubrication of ball splines, linear guides, etc.	Grease	C				Refer the User Manual
15	Check the jump prevention unit						
	(1) Check operation (confirm that the arm moves up and down, and the jump locks in place).	Confirm operation	A				
	(2) Check for oil leaks.	Visually inspect	A				
	(3) Check for loose screws.	Visually inspect and tighten	A				
	(4) Check for deformation and damage of the shaft.	Visually inspect	A				

Implementation timing: A: daily inspection, B: 1-month inspection (all items including daily inspection), C: 6-month inspection (however, 1-year inspection is possible depending on the frequency of use. This inspection includes all items including daily and monthly inspections.)

U2 Series Hybrid Balaman Inspection Item List (2/2)

TOYO KOKEN K.K.

No.	Inspection Items	Method of inspection	Implementation Period	Verdict	Action Taken	Date of inspection	Remarks
End effectors	1	Check vacuum pads for wear, damage, etc.	Visually inspect, feel and replace	B			With vacuum pad
	2	Check for wear and damage to claws, etc.	Visually inspect	B			Clamp, fork type
	3	Check air cylinder for air leaks and proper operation.	Confirm operation	C			With air cylinder
	4	Check for abnormal wear or damage to moving parts.	Visually inspect	C			
	5	Check for breakage or damage to the wiring around the end effector.	Visually inspect and feel	B			
	6	Check outer appearance of switches, and their operation.	Visual check /operation check	B			
	7	Check outer appearance of sensors, installation and operation.	Visual check /operation check	B			
	8	Check the gap at the stopper on the bottom of the load cell. (Tolerance: 1.5 to 2.5 mm)	Measure	C			With balancing function
Controls	1	Check display on touch panel (1) After the power is turned on, the initial setting ("CAL in progress" is displayed) should be completed and the normal screen should appear. (2) On the normal screen, the "A" and "M" lamps on the right side of the screen should blink.	Visually confirm	A			
	2	Checking the operation of pushbutton switches, indicator lamps, etc. (only when end effectors are installed) (1) The end effector operates normally when operated by switch. (2) The indicator lamp lights normally when end effector is operated.	Visually inspect Confirm operation	A			
	3	Checking the operation of the end effector changeover switch (only if switch is equipped) (1) Able to replace end effectors according to the procedure.	Confirm operation	A			
	4	Checking the operation of limit switches (only when limit switches are installed) (1) The switches and sensors provided on the operating handle for limiting operation must operate correctly. (2) The brake switches on the arm and body work properly.	Confirm operation	A			
	5	Check Balance Function (1) It must be possible to hold the workpiece and operate it in the vertical direction in a balanced state.	Confirm operation	A			
	6	Check for unusual noise and vibration during operation.	Confirm operation	A			
	7	Saving data such as parameters to the SD card (1) After completing the work, back up data to the internal SD card.		C			

Implementation timing: A: daily inspection, B: 1-month inspection (all items including daily inspection), C: 6-month inspection (however, 1-year inspection is possible depending on the frequency of use. This inspection includes all items including daily and monthly inspections.)