Lesson 2 Manual Coding

1. Purpose

Through manual coding, program an action to make MaxArm to suck the bloak and place it to the front.

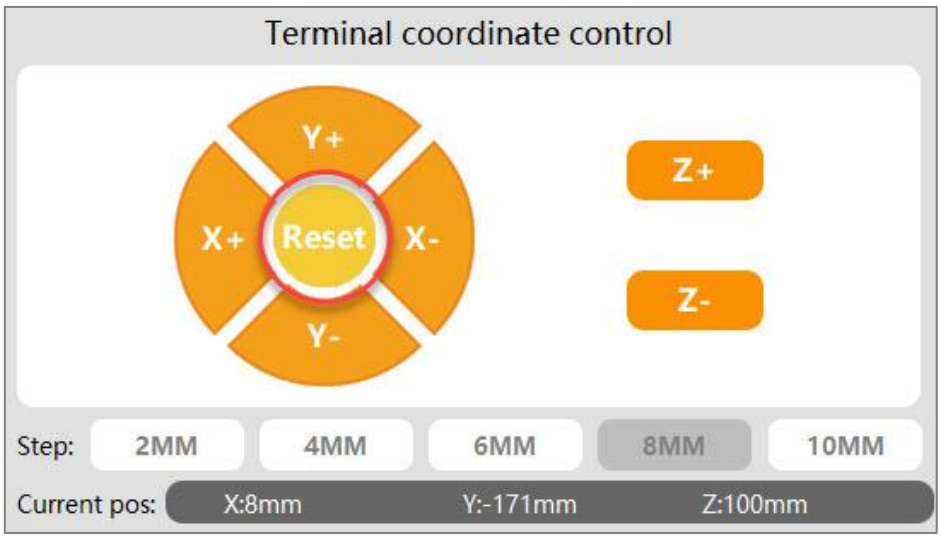
This lesson aims to help you master how to program action. If want to refer to the standard action, please view the provided action group file in folder “Appendix/3.MaxArm Action Group File”.

2. Action Realization

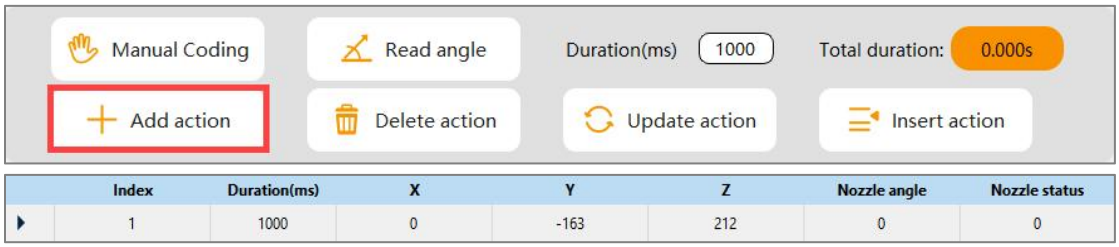
2.1 Action Design

1) Turn on MaxArm and connect it to computer with USB cable. Then open PC software.

2) Click “Reset” to make MaxArm return to the initial posture.



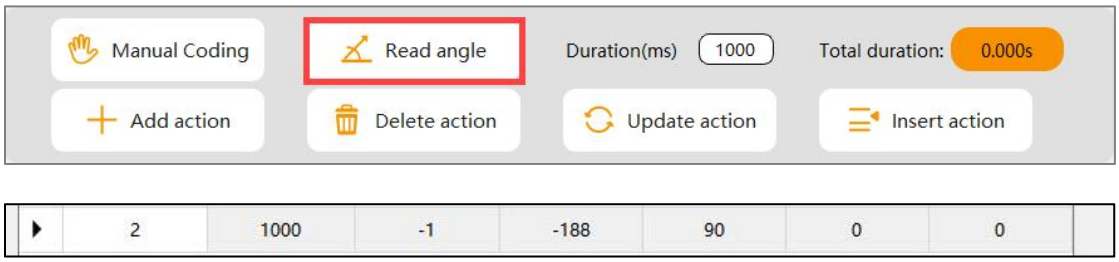
3) Click “Add action” to add the initial posture of robotic arm as the first action.



Index	Duration(ms)	X	Y	Z	Nozzle angle	Nozzle status
1	1000	0	-163	212	0	0

4) Click “Manual coding” to starting editing action. (If the servo can’t be twisted, please click “Manual coding” again. Do not twist it violently!) Here takes a simple action as example.

5) Manually lower robotic Arm until the suction nozzle stops at the top of the block. Then click “Read angle”.

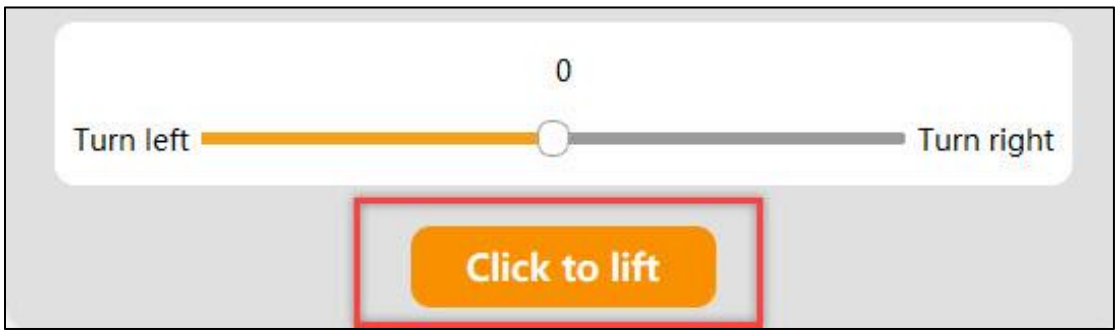


2	1000	-1	-188	90	0	0

6) Set the running time to 200ms and click “Read angle” to add a transition action.

3	200	0	-188	90	0	0

7) Click “Suck” in the suction nozzle control area. Then set the running time to 500ms and click “Read angle”.



	4	500	0	-189	90	0	1

8) Manually lift the robotic arm and set the running time to 800ms. Then click “Read angle”.

	5	800	-1	-186	197	0	1

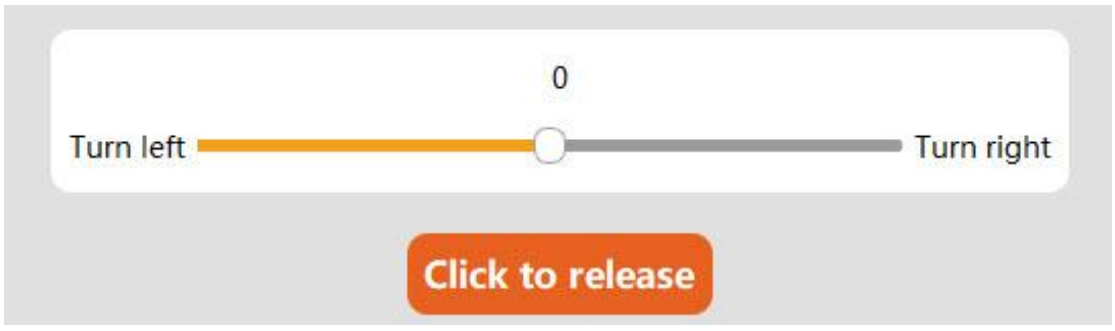
9) Manually stretch the robotic arm to the front. Set the running time to 800ms and click “Read angle”.

	6	800	-1	-284	108	0	1

10) Set the running time to 200ms and click “Read angle” to add a transition action.

	7	200	-1	-284	108	0	1

11) Click “Release” in the suction nozzle control area to put down the block. Then set running time to 200ms and click “Read angle”.



	8	200	-1	-284	108	0	0

12) Click “Reset” to add the initial posture of robotic arm as the ending action

and set the running time to 1000ms. Then click “Read angle”.

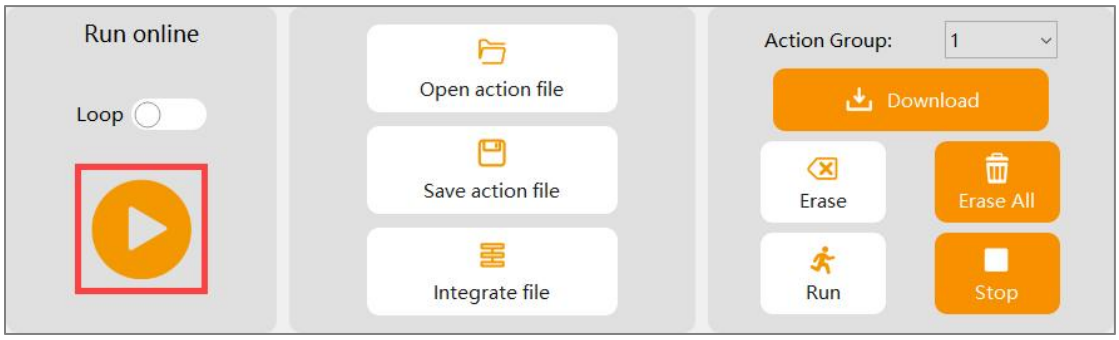
▶	9	1000	0	-163	212	0	0

13) The following table are the compete data of action group. If want to adjust an individual action, you can directly double click the corresponding parameters to modify.

	Index	Duration(ms)	X	Y	Z	Nozzle angle	Nozzle status
	1	1000	0	-163	212	0	0
	2	1000	-1	-188	90	0	0
	3	200	0	-188	90	0	0
	4	500	0	-189	90	0	0
	5	800	0	-186	197	0	0
	6	800	0	-284	108	0	0
	7	200	0	-284	108	0	0
	8	200	0	-284	108	0	0
▶	9	1000	0	-163	212	0	0

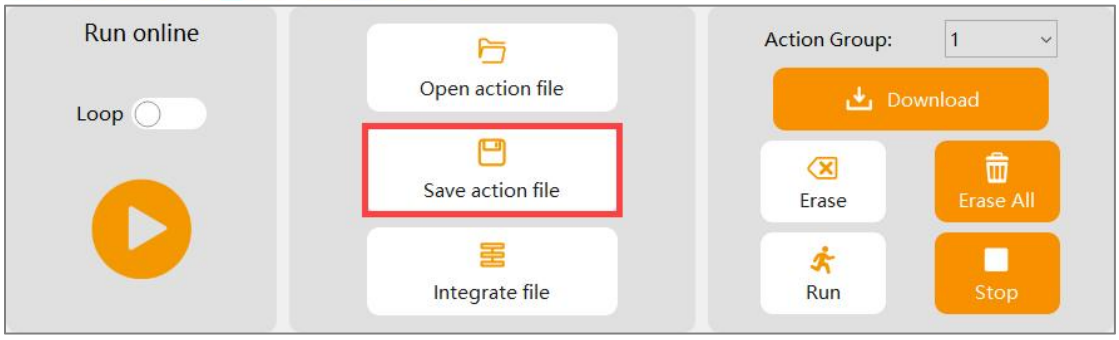
2.2 Run Action Group

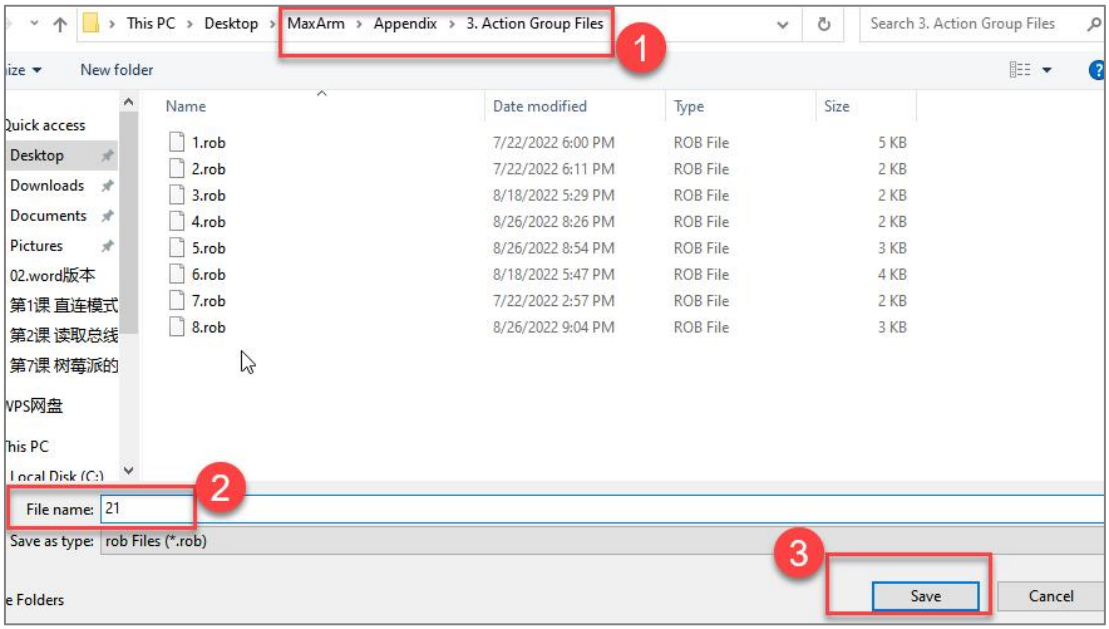
After action programming, click on running icon, as shown in the image below, to check the running effect of action group.



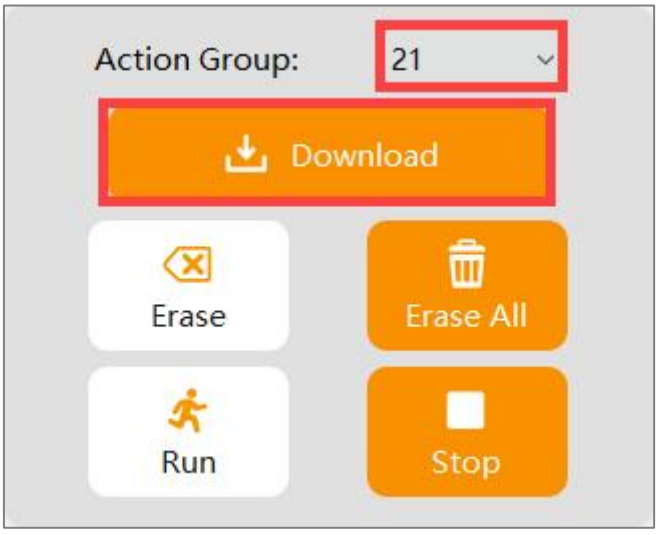
2.3 Save and Download Action

1) Click “Save action file” to save the action file for later debugging. Here the action group file is named with “21”.





2) After saving the action file, download action group to the corresponding action group number. Select “21” in action group selection box and click “Download”.



After downloading, the prompt “Action group is downloaded” will pop up.