

MIPBOT

The micro-brain programming robot can directly realize the programming and control of the robot, which is convenient and efficient, and what you see is what you get.

User 's manual

(Model: 609)



Micro-brain
programming



Key-screen
interaction


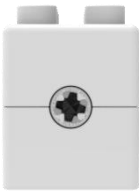
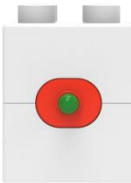




MPC Chip



Core patents

1. Core parts parameter

	<p>MPC controller</p> <p>Support three modes of real-time control, key-screen programming and bluetooth connection.</p> <p>1 display screen, pixel 128*64, support page turning display;</p> <p>1 buzzer, support 7 audio frequencies;</p> <p>1 mode switch, support 3 kinds of switching;</p> <p>22 programming control buttons, support motor speed regulation and commutation, support page turning display, support sensor judgment and actuator on-off, support loop logic, etc.</p> <p>Built-in Bluetooth module;</p> <p>4-way USB Type-c interface, support 2-way motor (A, B), 2-way sensor input and output (C, D);</p> <p>1-way USB Type-C charging interface, support 5V1A charging, built-in charging status indicator;</p> <p>The shell is compatible with both LASY and LEGO building systems.</p>
	<p>Motor</p> <p>Support forward and reverse control to provide the power output of the robot.</p> <p>The maximum rated speed is 110RPM±10% (full power)</p>
	<p>Color Light</p> <p>Provides two color schemes of red light and green light, and supports two modes of on and off.</p> <p>The working voltage is 5v, and the lighting angle is 120°.</p>
	<p>Infrared Sensor</p> <p>Working voltage 5v, detection range 5~15cm, detection accuracy ±2cm (white surface reflection).</p> <p><i>*Pay attention to avoid direct sunlight during use, otherwise it may affect its use.</i></p>
	<p>Sound Sensor</p> <p>Working voltage 5v, detection range 20~90dB.</p>

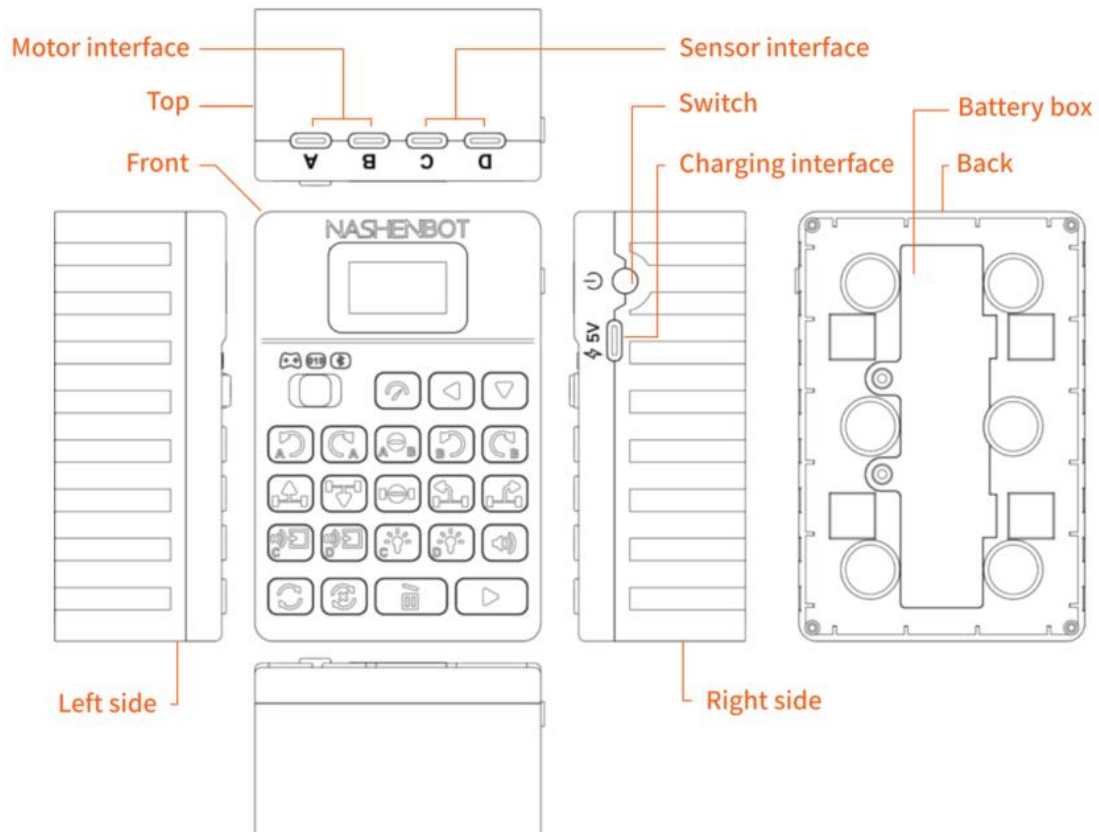
*The specific product configuration is subject to the actual product model released.



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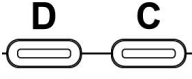
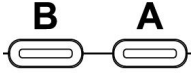
2. Micro-brain programming controller function description

The palm-sized Micro-brain programming controller adopts the interactive programming method by the combination of key and screen. When the user manipulates the key, the programming only needs to be pressed lightly, and the program runs one by one, so that the execution of the MPBOT robot program can be seen step by step.


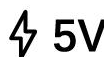


Schematic plan view


2.1 Top surface

Icon		
Name	Sensor interface (Shared by input and output)	Motor interface
Parameter	USB Type-C; Support infrared obstacle avoidance, sound intensity detection, one-way follow, collision switch and other sensor input control; Support red light, green light and other actuator output control	USB Type-C; Support control of motors

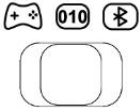








2.2 Right side








Icon		
Name	Switch	Charging interface
Parameter	Press and hold for about 1 second to turn on or off	USB Type-C interface; Support 5V1A charging; Built-in charging status indicator






2.3 Back side



Icon	
Name	Battery compartment
Parameter	3.7V lithium battery; Support charging through the interface ⚡ 5V








2.4 Front side






Icon				
Name	Mode switch	Power switch	Caret	Turn pages
Parameter	<p>Three modes are supported:</p> <ol style="list-style-type: none">  Real-time manipulation  Key screen programming  Bluetooth connection 	<p>Supports two powers:</p> <ol style="list-style-type: none"> High speed low speed <p>All three modes are valid</p>	<p>Support for inserting program modules;</p> <p>Only valid in  key screen programming mode</p>	<p>Support page down;</p> <p>Only valid in  key screen programming mode</p>

Icon					
Name	A motor reverses	A motor rotates forward	A or B motor stops	B motor reverses	B motor rotates forward
Parameter	Control A motor to rotate in reverse	Control A motor to rotate forward	Control A or B motor to stop	Control B motor to rotate in reverse	Control B motor to rotate forward
	 Key screen programming mode: short press to set 1~9 seconds and unlimited time		-	 Key screen programming mode: Short press to set 1~9 seconds and unlimited time	

Icon					
Name	Forward	Back	Stop	Turn left	Turn right
Parameter	Control the A motor to reverse and the B motor to forward at	Control the A motor to rotate forward and the B motor	Control A and B motors to stop at the same time	control the A motor and the B motor to rotate forward at	control the A motor to reverse and the B motor to reverse at

	the same time	to rotate reversely at the same time		the same time	the same time
	 Key screen programming mode: short press to set 1~9 seconds and unlimited time		-	 Key screen programming mode: short press to set 1~9 seconds and unlimited time	

Icon					
Name	C interface sensor detection	D interface sensor detection	C interface light switch	D interface light switch	Turn on the buzzer
Parameter	Short press to select infrared or sound sensor for logical judgment Only valid in  key screen programming mode		Short press to turn on or off the C interface lights	Short press to turn on or off the D interface lights	 key screen programming mode: short press to set 1~7 audio

Icon				
Name	Start loop	End loop	Delete program	Run the program
Parameter	Short press to set infinite and 2~9 cycles	-	Short press to delete the currently selected program	Short press to run or stop the program
	Only valid in  key screen programming mode			

3. Micro-brain system

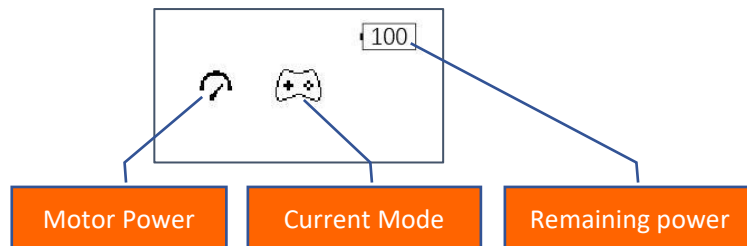
MPC is equipped with the original micro-brain programming instruction system of NASHENBOT, a micro-brain system that integrates robot programming and control, making MPBOT robot easier to use by getting rid of the dependence on computers and tablets, so that programming becomes more convenient.



3.1 Boot









It is currently inoperable, and it will automatically enter the first-level interface after 1 second of booting.

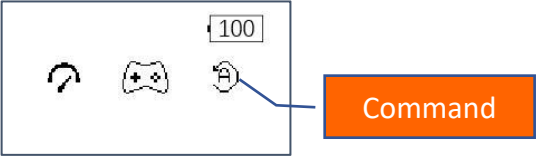
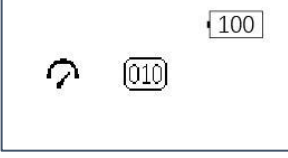
3.2 User-interface





The motor power is a global command, divided into two types: high speed  and low speed . It can be used to control the rotational power of A and B motors.

The mode is radio:   

 Real-time Mode	  All the above keys are valid;
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	 <p>Display the currently pressed key in the command area.</p>						
<p>010</p> <p>Key screen programming</p>	 <p>In this mode, the first-level interface is displayed for one second and automatically enters the second-level interface (the key screen programming state);</p> <p>All buttons on the front are valid;</p> <p>The program example is as follows:</p> <table border="1" data-bbox="469 1115 1343 1272"> <tr> <td>01</td> <td>01 1 7</td> <td>03 1 7</td> </tr> <tr> <td></td> <td>02 9 </td> <td>04 9 2</td> </tr> </table> <p>01 The number here represents the number of program lines, and the program capacity of different lines is supported according to the robot model;</p> <p> 1 This number represents the parameter of the program (seconds or times);</p> <p> The letters here represent the parameters (ports) of the program;</p> <p> The horizontal bar here indicates that the program is selected (you can delete it or insert a new program backwards).</p>	01	01 1 7	03 1 7		02 9	04 9 2
01	01 1 7	03 1 7					
	02 9	04 9 2					

 Bluetooth connection	This is the Bluetooth connection mode, which supports the interconnection of two Micro-brain programming controllers (follow the NASHENBOT Official Account for detailed usage methods). 
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The power is relative value: 0~100% corresponds to a voltage of $3.5\sim 4.2V \pm 0.2V$.


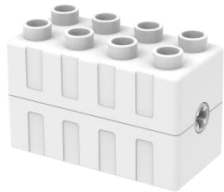

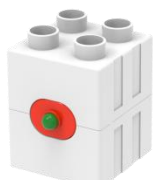


When the power is lower than 5%, the buzzer will send out a low-battery alarm prompt of "Di Di Di Di", and at the same time, it will automatically stop the motor and other program modules, and automatically shut down after 5 seconds. At this time, you need to use the charging cable that comes standard with the product for compliance charging (5V1A).

During charging, the charging status light is red, and the microcomputer automatically turns into the shutdown state; the theoretical charging time is about 2 hours.

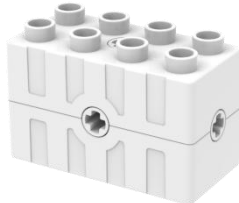







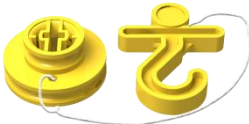



4. Product list

The pictures are for reference only, the actual delivery shall prevail.




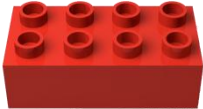
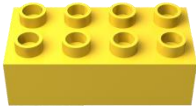
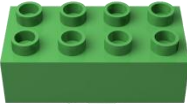
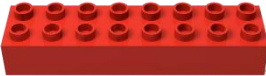
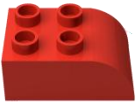
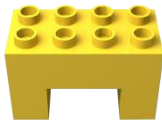
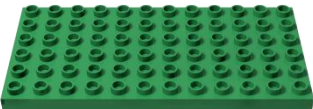



4.1 Electronic Module Configuration List

No.	Parts	Image	Quantity
1	Micro-brain programming controller (including rechargeable battery)		1
2	Motor		2
3	Red light		1
4	Green light		1
5	Infrared Sensor		1
6	Sound Sensor		1
7	Sensor cable (30cm)		4
8	Charging cable (USB Type-C)		1

4.2 Block list

No	Image	Name	Quantity
1		Spindle box	2
2		Beam, 7 holes, yellow	2
3		Beam, 11 holes, yellow	4
4		Axle, 8 times cross, green	5
5		Axle, 6 times cross, grey	7
6		Axle with gear, 8 times cross, blue	2
7		Axle with gear, 5 times cross, blue	4
8		Pulley wheel, yellow	15
9		Pulley wheel with hook, yellow	2
10		Hand crank, yellow	6
11		Tyre, black	4
12		Belt, blue	2

No	Image	Name	Quantity
13		Gear, 24-tooth crown, blue	2
14		Gear, 24-tooth crown, red	2
15		Gear, 40-tooth crown, yellow	2
16		Worm gear, blue	1
17		Gear block, transparent	1
18		Plastic forms sheet, green	1
19		Brick with eyes, oval, 2x4x2, yellow	1
20		Brick with holes, 2x4, red	4
21		Brick with holes, 2x10, red	2
22		Brick, 2x2, red	2

No	Image	Name	Quantity
23		Brick, 2x2, yellow	3
24		Brick, 2x2, green	3
25		Plate, 2x4, yellow	4
26		Brick, 2x4, red	4
27		Brick, 2x4, yellow	5
28		Brick, 2x4, green	3
29		Brick, 2x8, red	2
30		Brick with arch, 2x3, red	4
31		Bridge element, 2x4x2, yellow	2
32		Panel, 6x12, green	1
33		Axle, 3 times cross, blue	2
34		Panel, 2x6, red	2
35		Panel, 4x8, green	1
	Total		109

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