Southern Machinery Sales and Service Co., Ltd.

Operational manual about AGV Robot S-AGV60C

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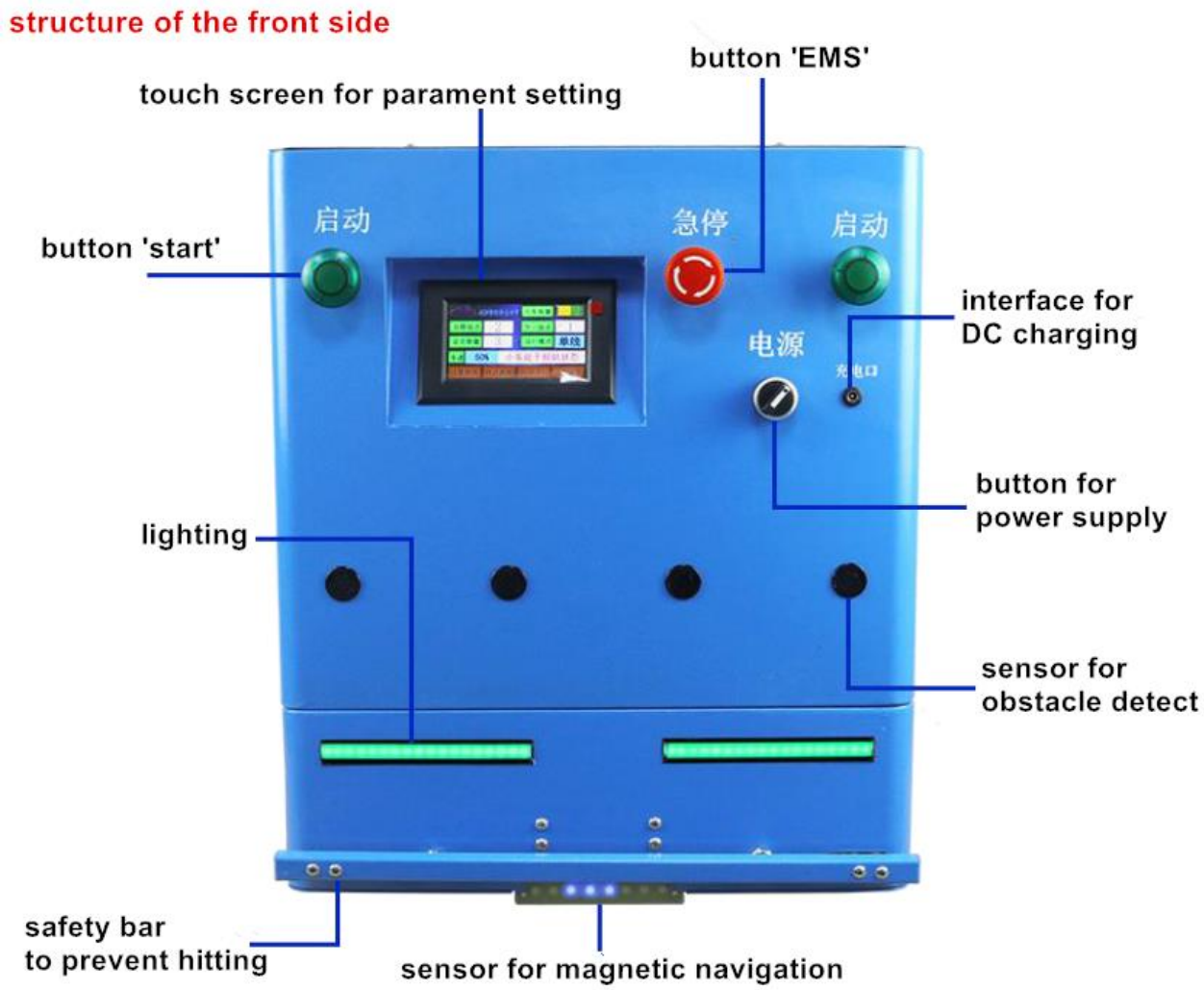
1. Product Presentation

Comments: All button and screen display will be in English when it is sent to customers from abroad.



structure at the back

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2. Specification

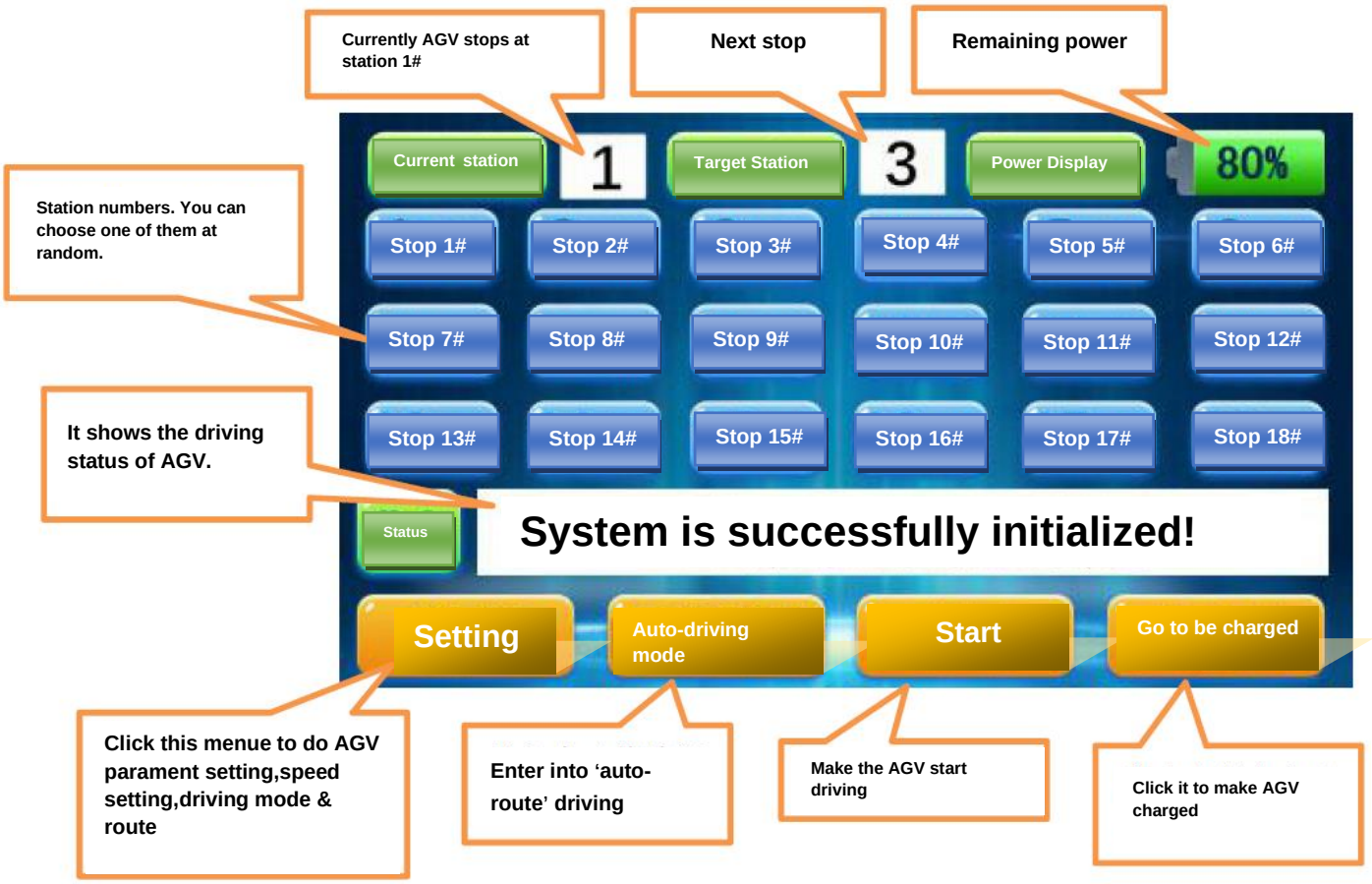
Brand/model	**Southern Machinery: S-AGV60C**
Navigation method	Magnetic strips; forward and backward
2 driving modes of standard configuration	Straight-line driving + Turn circle driving
1 driving mode of optional configuration	Branch route driving
Max. loading capacity	60KG
Max. speed rate	20-45m/minute, adjustable (about 0.4 minutes to drive 17m for SANMINA)
Min. RADIUS OF TURNING CIRCLE	0.8m or 90-degree turning
Accuracy for stopping	2cm
Power supply in 2 ways available	Lithium Battery 24V20AH replacement and DC charging

Power life	Can drive more than 15 hours if fully charged
Standby time without any loading and driving	200 hours
Charging time	5 hours
AGV outer dimension	LxWxH=550x450x550mm
Plate dimension	LxWxH=520x430x50mm(where soldering pallet is placed)
AGV net weight	about 35KG
Parament setting	touch screen LCD or remote control
Drive	Brushless Motor Differential ratio
Sensors for obstacles detect	ultrasound 8 sensors in total
Remote control	with 2 controls in the package
Station choice	AGV can stop at Max.20 target stations; RFID
Remaining power display	it is shown at the touch screen; alarm when lack of electricity
Spare parts included in the package	navigation strips 20m + 1x charger + 20 RFID cards+ 10 decelerating cards when turning
Warranty	AGV-1 year; Battery and charger-1 year

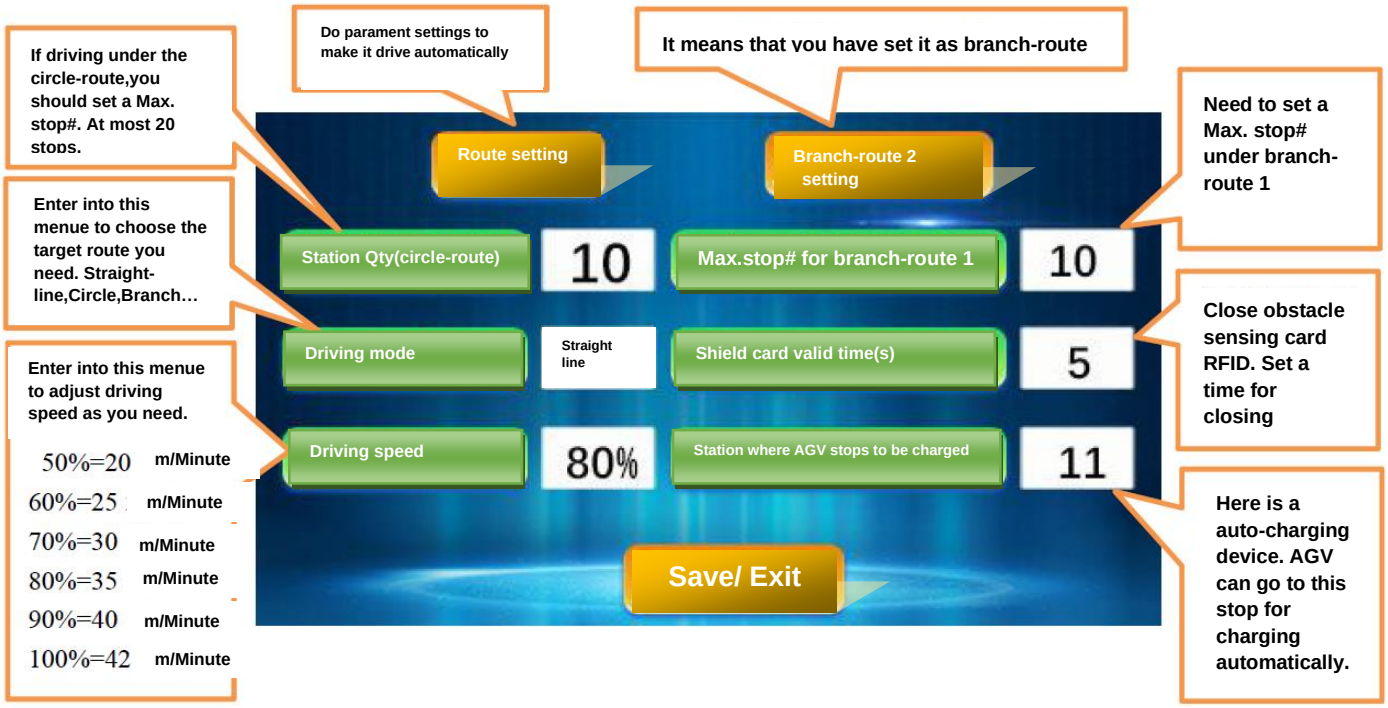
3. How to do target route parament setting

Screen interface: high-definition touch 4.3-inch display.

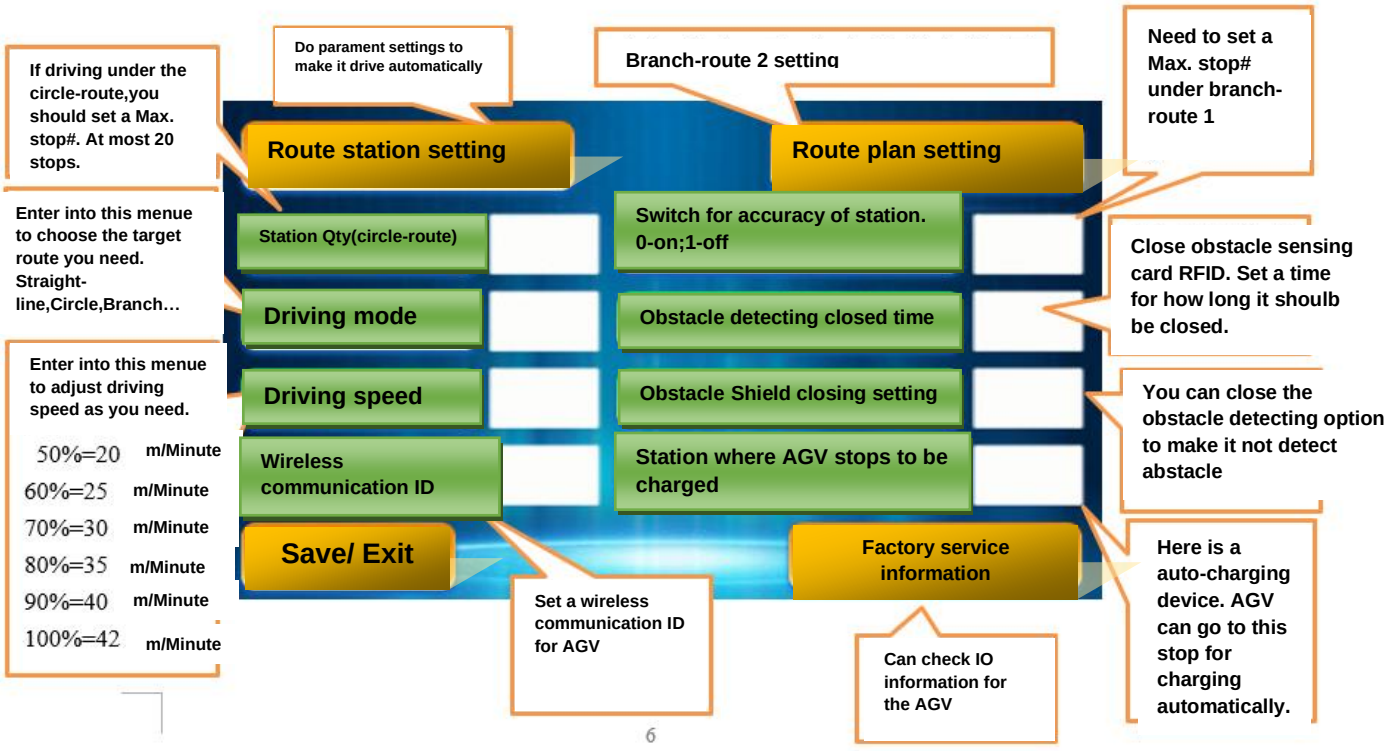
3.1 Presentation about main display

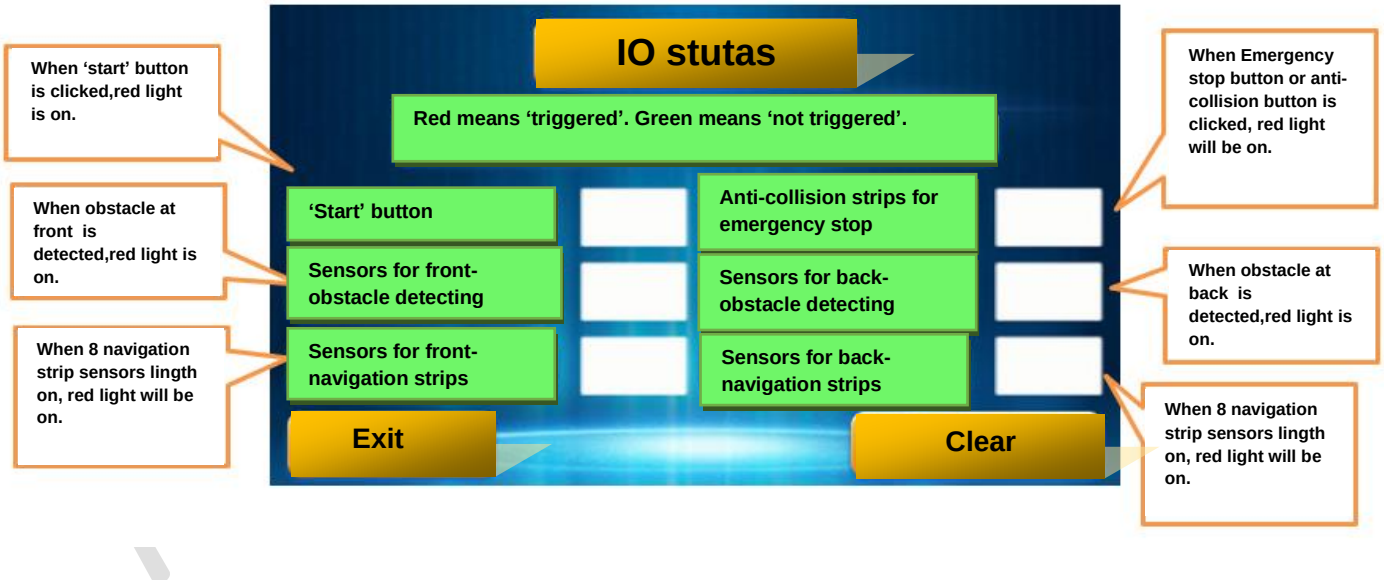


3.2 Interface of parament setting



3.2、设置界面介绍：





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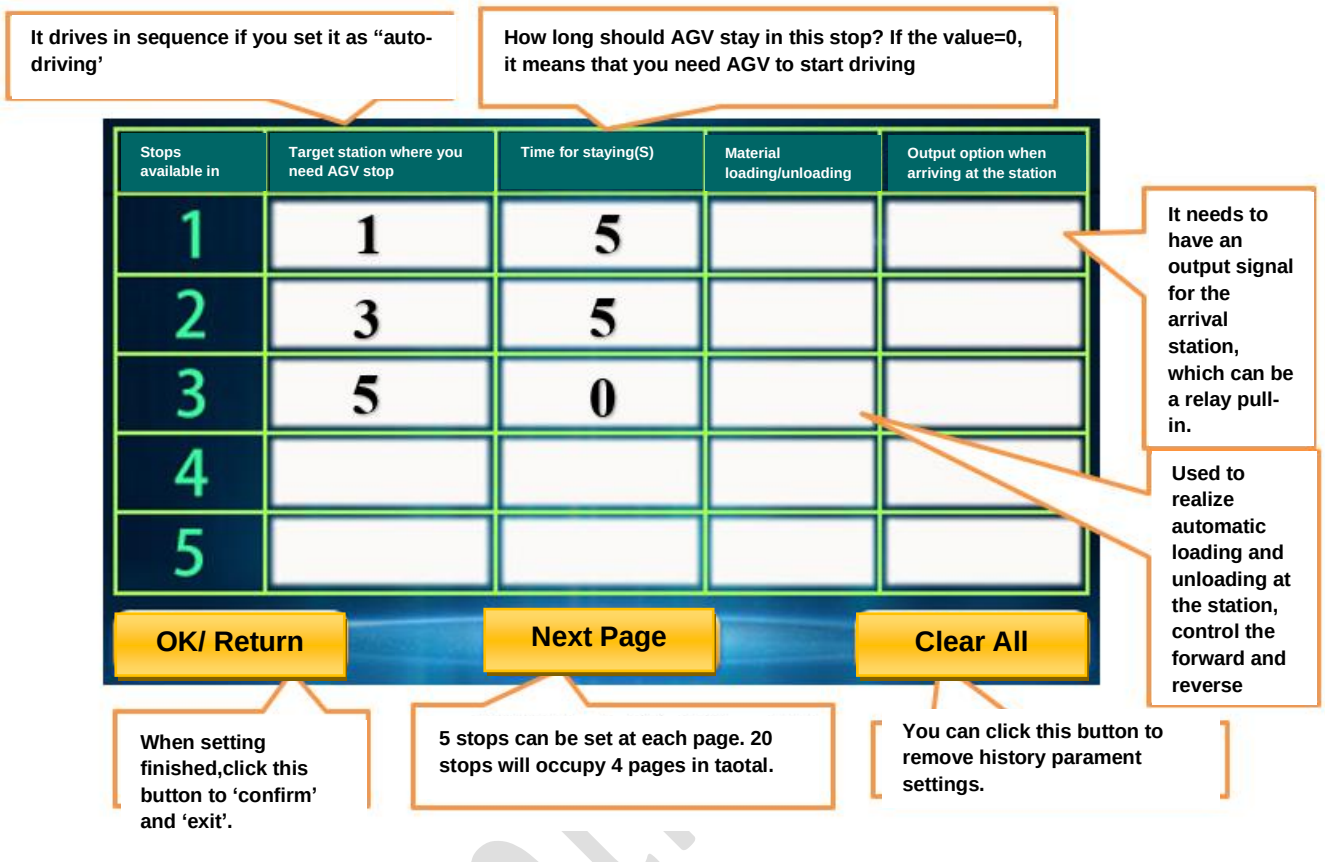
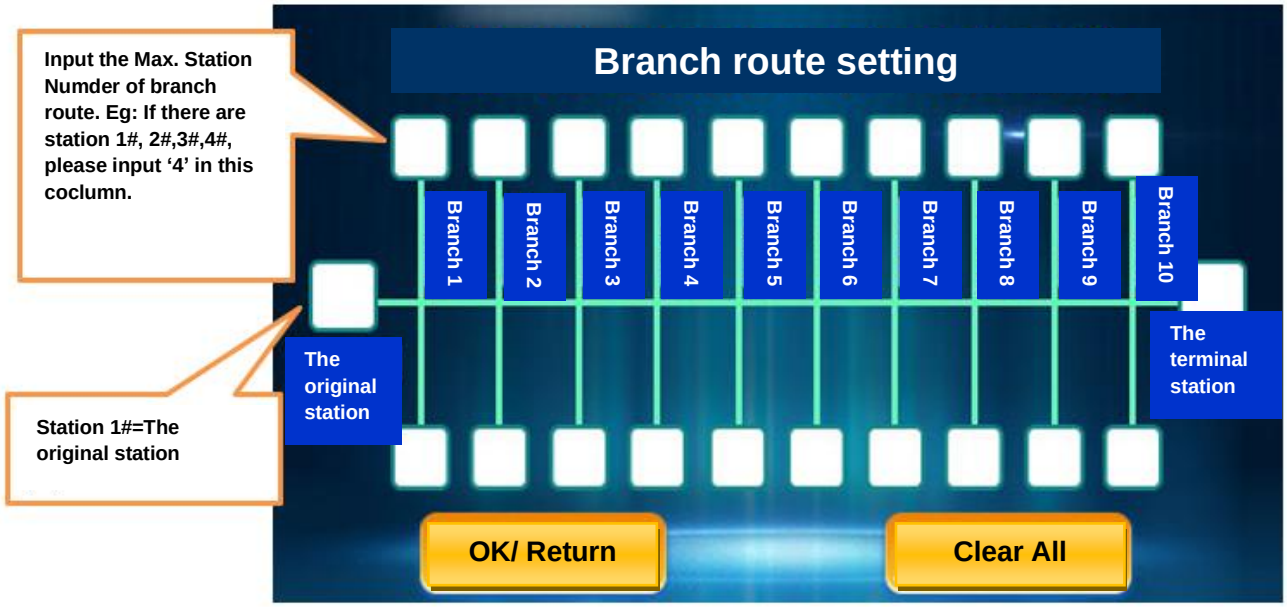
3.3 Automatically driving route setting interface.

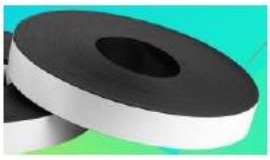




What will be included in the package?

AGV Robot x1

Remote control x2



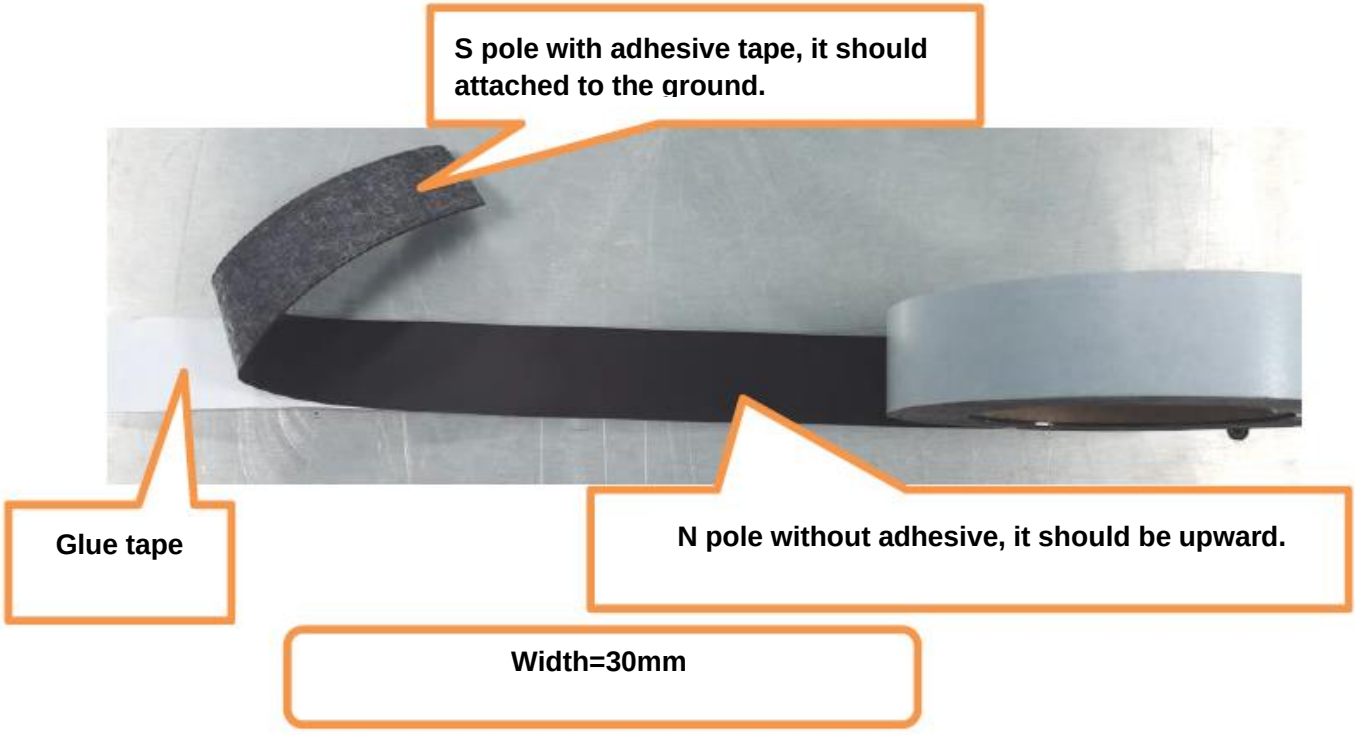
Meganetic Navigation stripsx20m

RIFD station card x20pcs

4. How to install and use the Meganetic Navigation Strips?

4.1 Introduction about Meganetic Navigation Strip

The AGV can automatically run back and forth on the ground because magnetic strips are attached on the floor to guide the vehicle. The AGV automatically calibrates the running direction of the vehicle by reading the signal of the magnetic stripe, and the algorithm of the software.Finally, the AGV trolley runs stably on the magnetic strip.



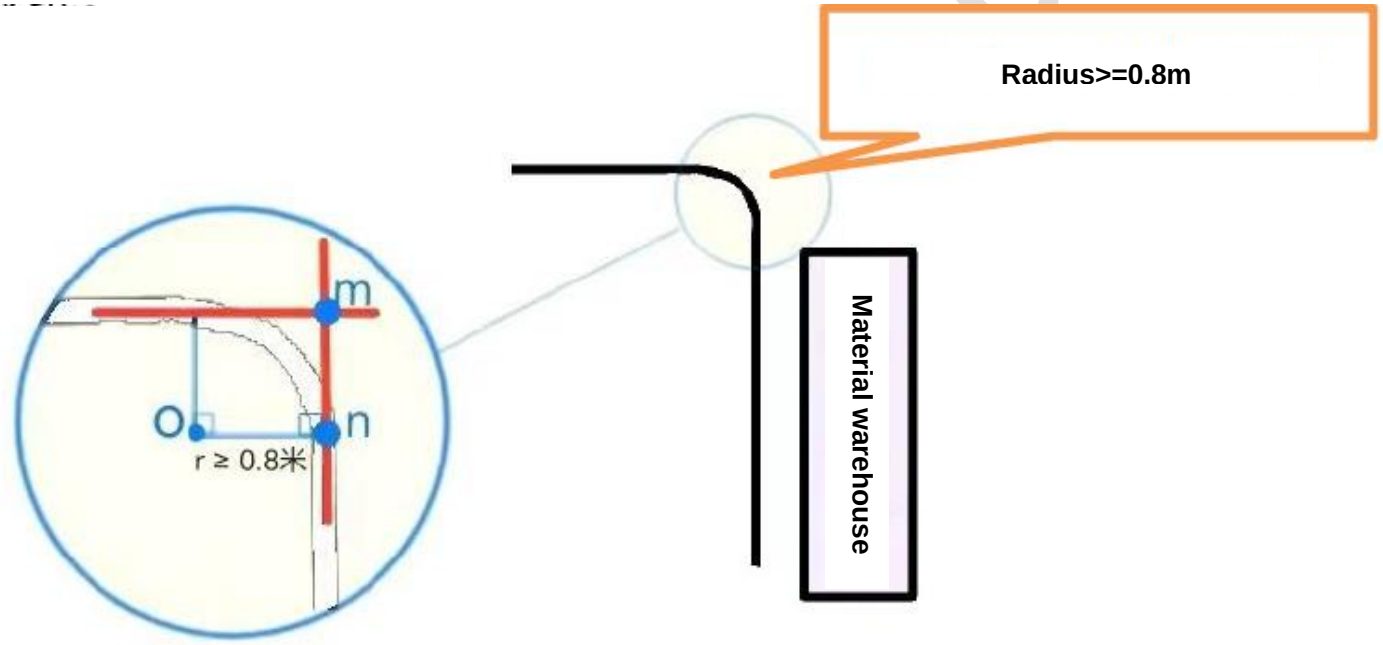
4.2. How to install the magetic navigation strip?

4.2.1 Firstly please confirm which route the AGV should drive? And then clean the position(with a dry rag)where will attached with strips. Please make sure there is no oil/grease in the ground.

4.2.2 Tear off the backing paper of the magnetic strip. The back side of the S pole is on the ground, and the smooth side of the N pole is upward.

4.2.3 How to attach strips into a straight-line: Two people. Stick it at one end first.One person is straightening the magnetic strip vigorously, while the other is tearing the back paper off. Please make it as straight as possible.

4.2.4 How to make Circular navigation line: Firstly you can use a pen to draw a circular arc on the ground (the radius cannot be less than 0.8 meters, the larger the space, the larger the arc), and then tear off the back glue of the magnetic strip, follow the drawing A good arc is attached and the adhesive paper is torn off at the same time.



5. How to install and use the AGV?

5.1 Firstly let us know the AGV direction.

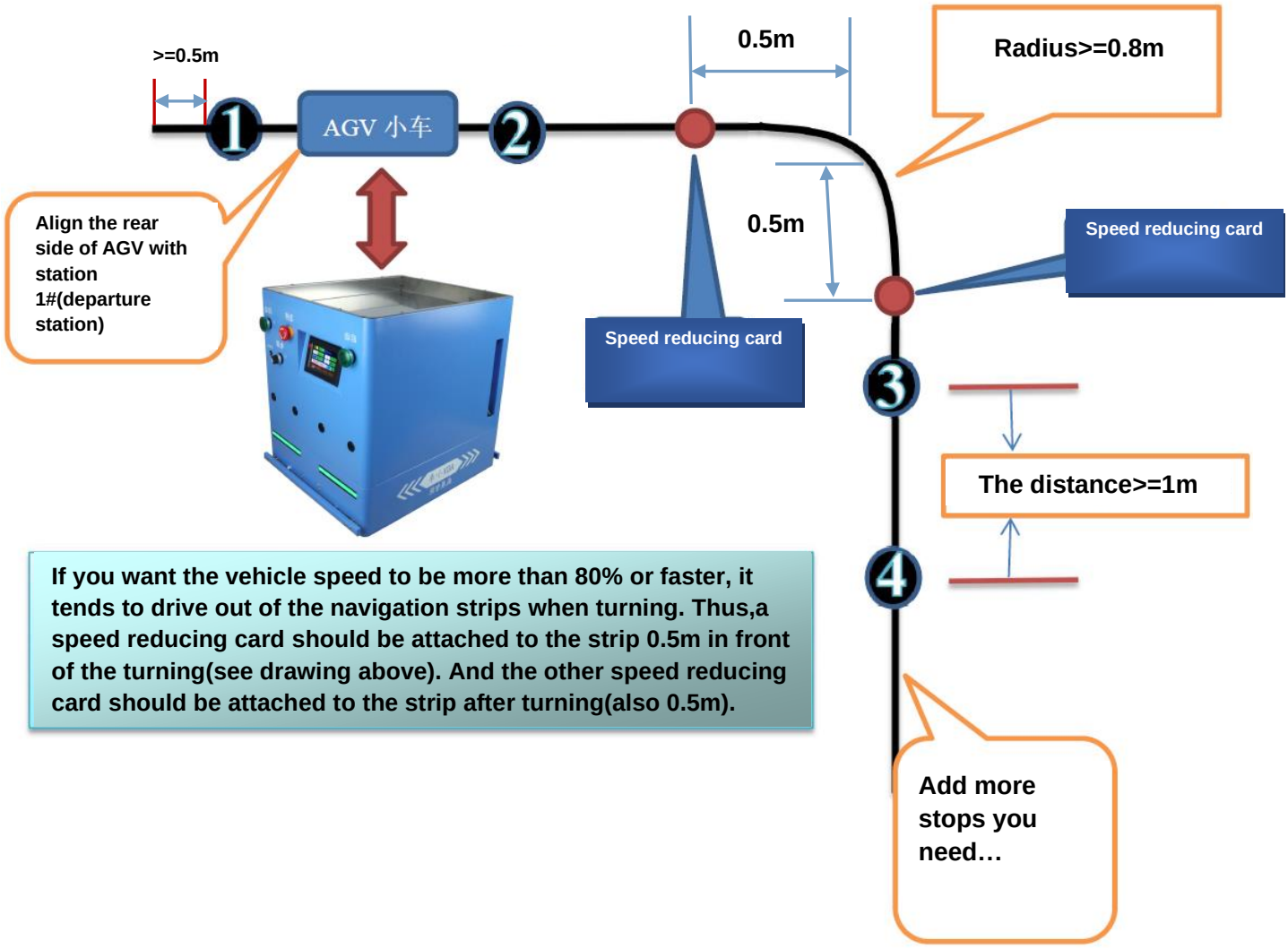
The rear of AGV

The front of AGV

5.2 How to make AGV drive in a signal line?

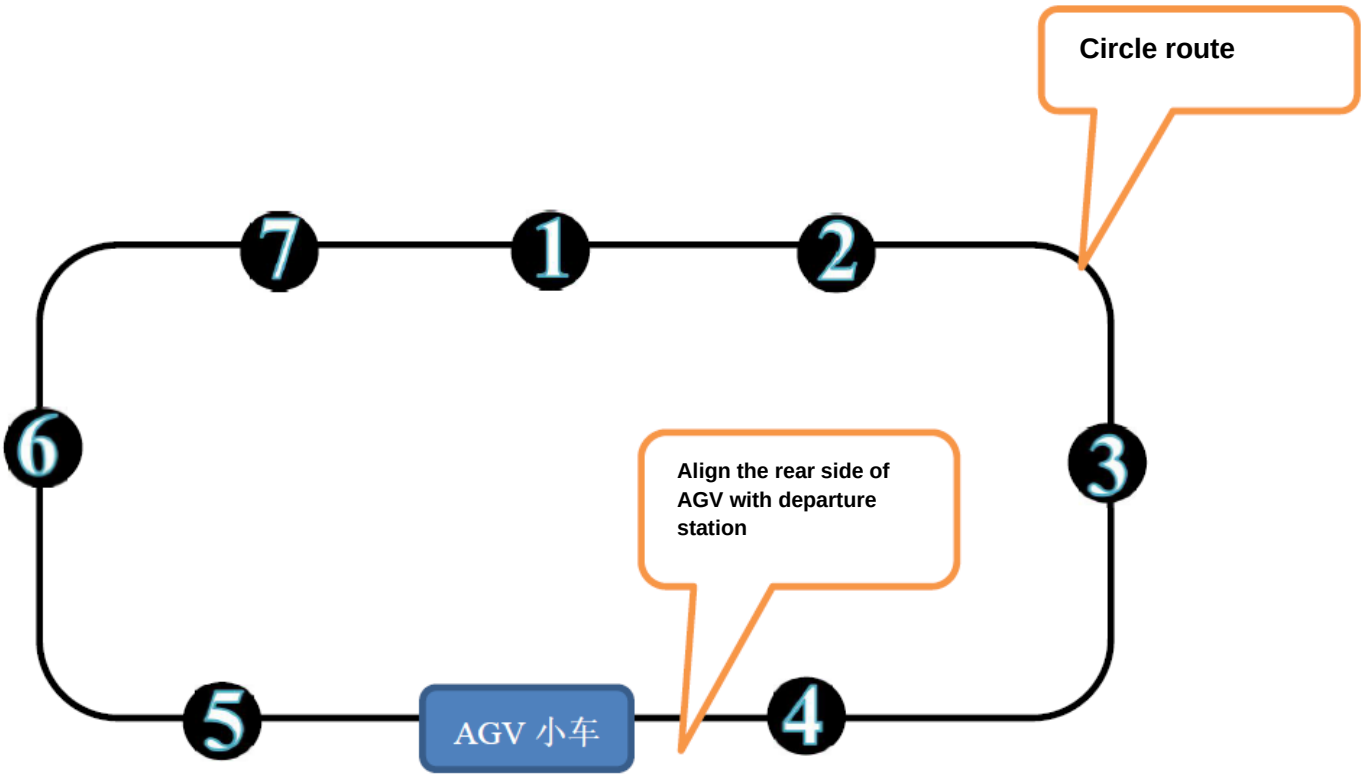
Put the RFID site card on the installation navigation magnetic strip, and place the site card in sequence.

The distance between the site and the previous site is not less than 1 meter.



5.3 How to make AGV drive in a circle loop?

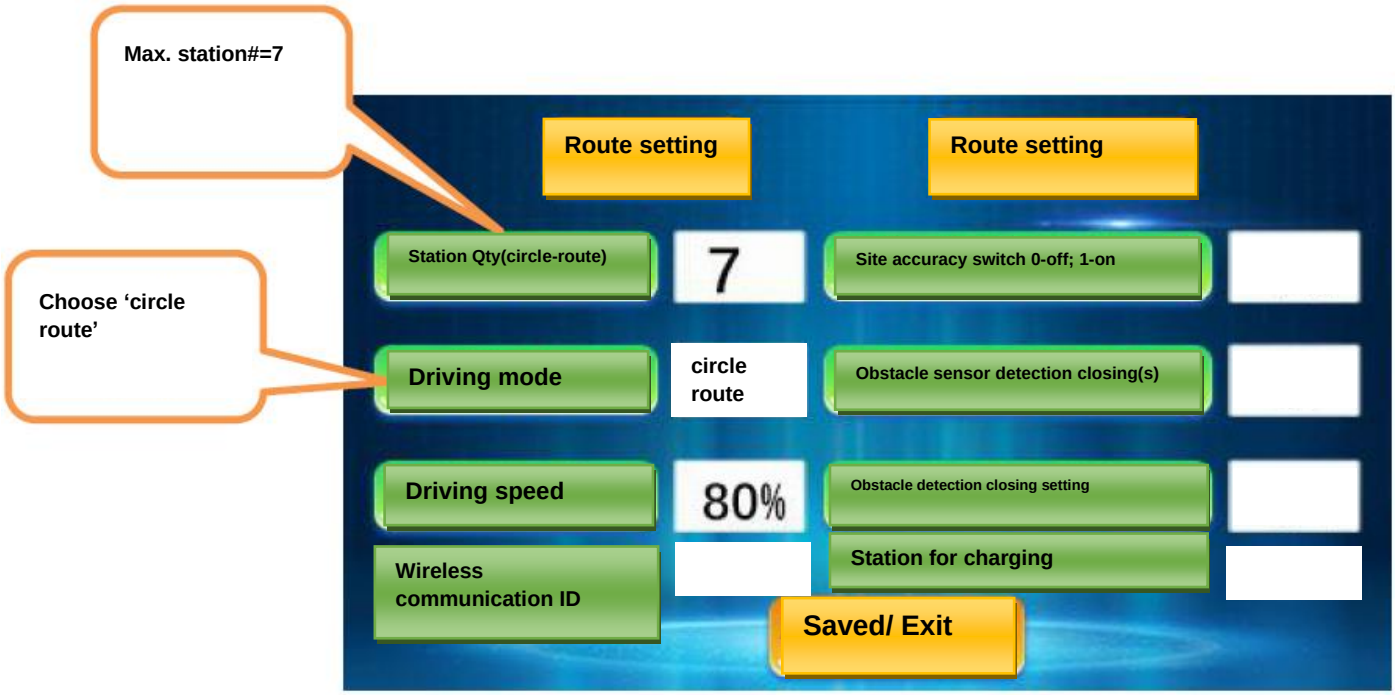
Paste the magnetic strip into a closed-loop circuit, the AGV runs in the closed circuit. Put the RFID station card on the installation navigation magnetic strip. The site cards need to be placed in order from low value to high value. The distance between the neighboring stations is not less than 1 meter.



In the circle route, the AGV automatically calculates about what is the nearest station, and automatically judges that it is going forward go or go back.

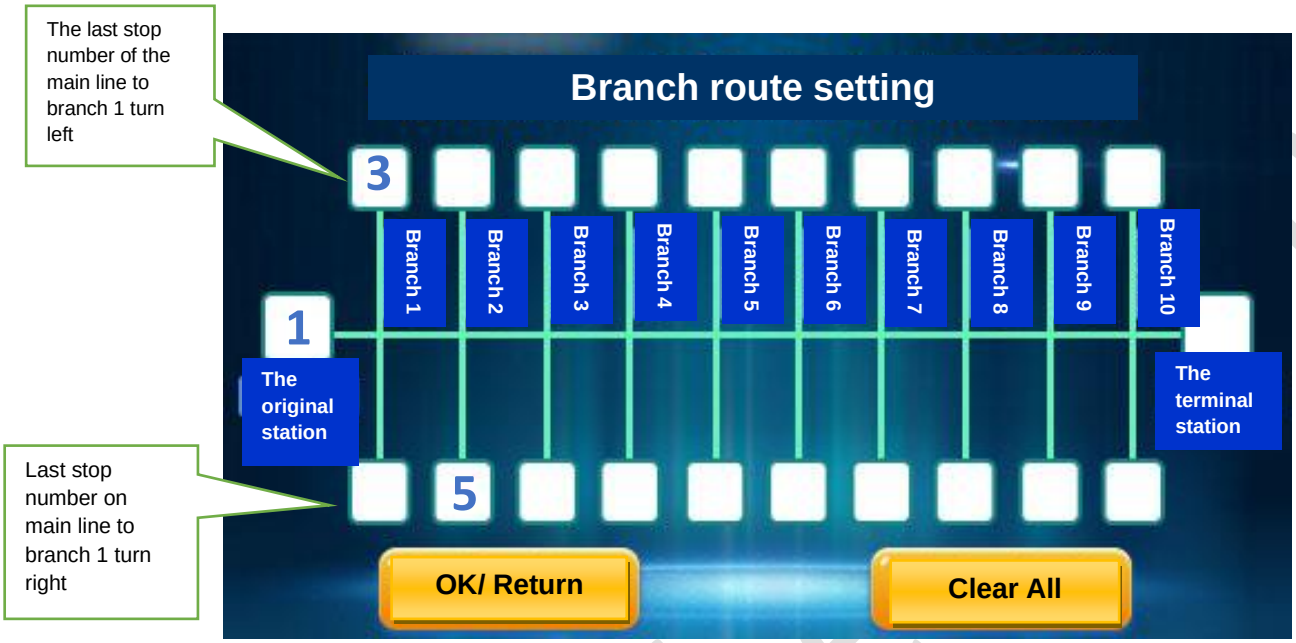
eg: The current station of the AGV is at station 4#, and if your target station is at station 2#, it will go backwards.

The current station of the AGV is at station 6#, and if your target station is 1#, it will move forward.



5.4 How to make AGV drive in a branch-route type 1?

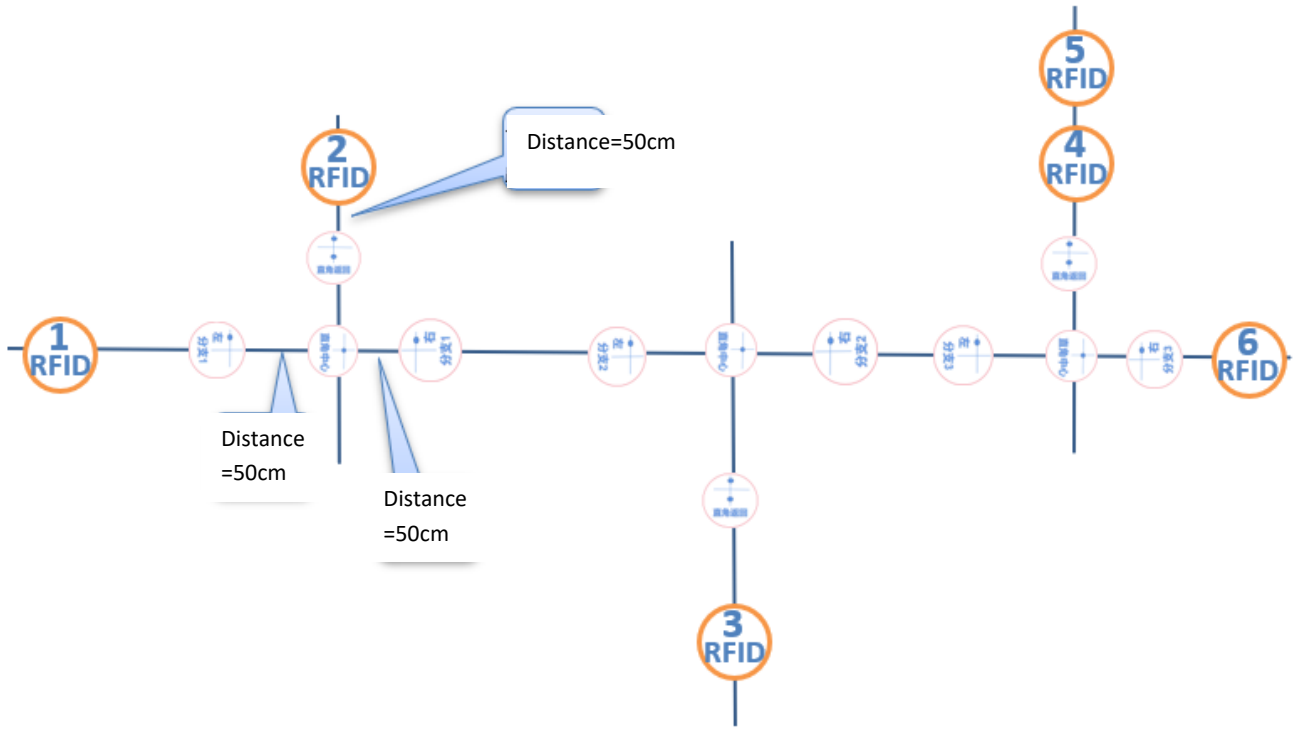
Interface Introduction:



The functions shown in the parameters set in the above figure are:

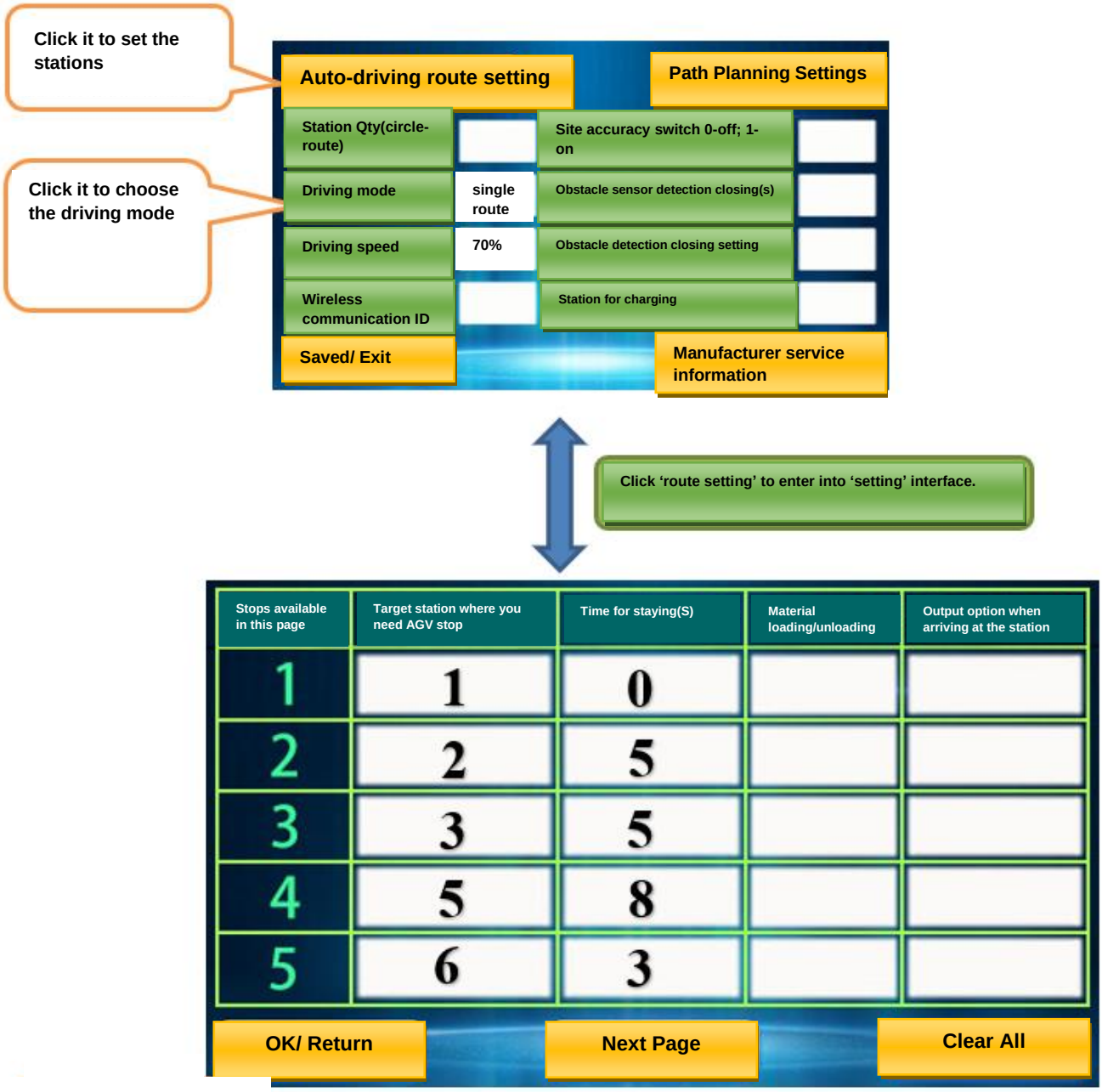
The starting point of the main line is station No. 1, and the maximum number of stations for the first branch line of the main line turning left is 3, indicating that the stations turning left are station numbers 2-3. Every two branches of the main line turn right and the maximum number of stations is 5, indicating that the stations that turn right are stations No. 4-5, and so on. The setting method of other station numbers is the same. run.

5.5 How to make AGV drive in a branch-route type? How to install RFID tags?



Set the AGV trolley branch line according to the above operation line

Set the car to run automatically according to the above bifurcation line diagram



After the line specifications and settings are completed, the AGV trolley operates as follows:

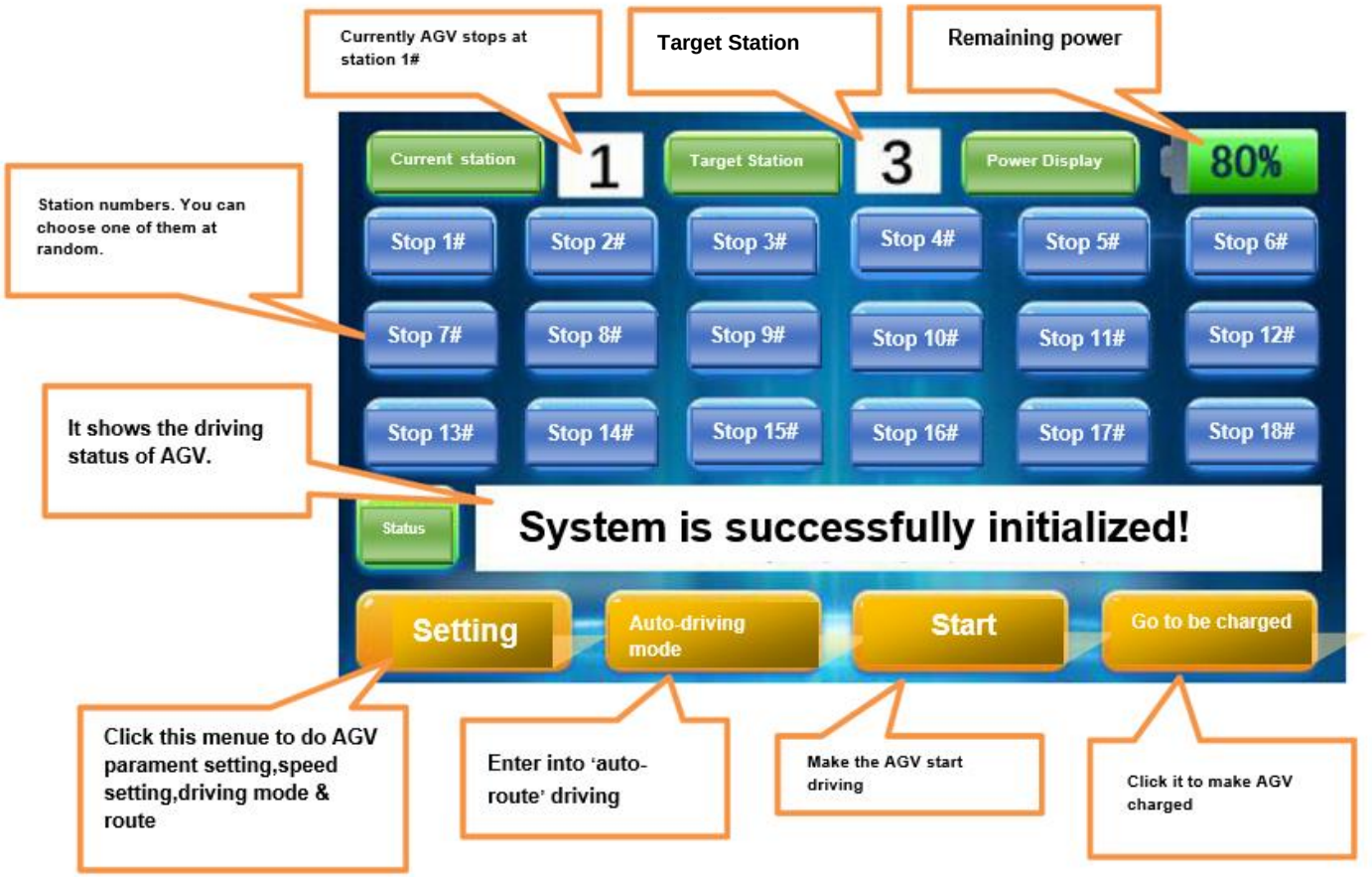
The trolley waits at station No. 1 to manually start the trolley (when the dwell time is set to 0, the start switch needs to be manually pressed for permanent stop).

Depart from station 1 --- turn left 90 degrees --- arrive at station 2 (stay for 5 seconds) --- come out and turn left 90 degrees --- go forward --- turn right 90 degrees --- arrive at No. 3 Station (stay for 5 seconds) --- come out and turn right 90 degrees --- forward and run --- turn left 90 degrees to reach station No. 5 (stay for 8 seconds) --- come out and turn left 90 degrees --- go forward and arrive Station No. 6 (stay for 3 seconds) --- Return directly to Station No. 1 (waiting for the car to be started manually)

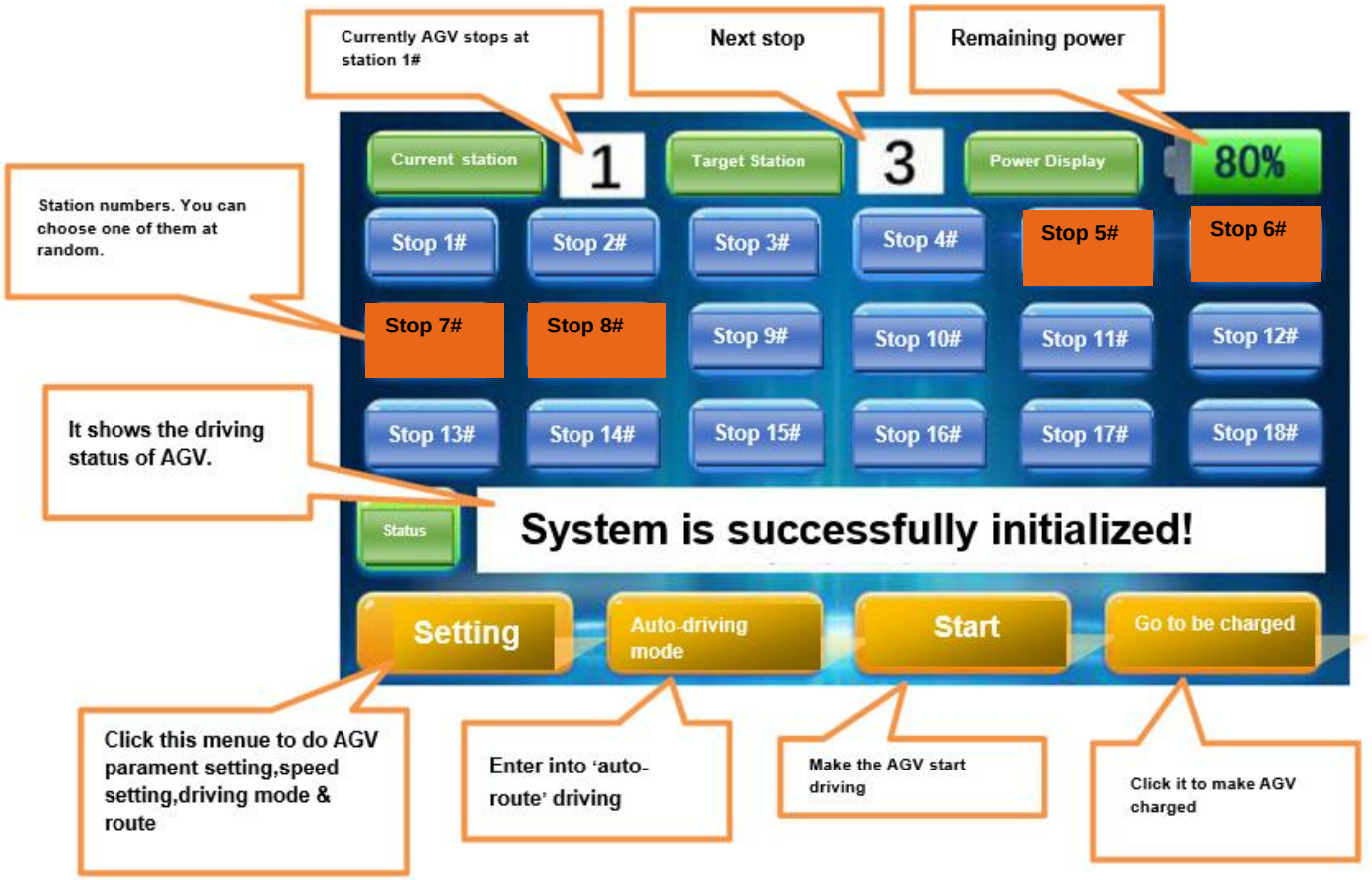
6. How to drive the AGV by manual?

6.1 Input your target stop# in the touch-screen to make AGV drive

Notes: Current station should be different from target station.



6.2 Click the station number on the display screen to select multiple target stations, and the trolley will reach the target stations in sequence. After reaching the target station, the car needs to manually press the start switch to go to the next station. As shown in the figure below: Click on No. 5--No. 6--No. 7--No. 8 to select the station, and the selected station number will change from blue to orange. Press the start switch at this time, and the trolley will run from the current station 1 to No. 5 site



6.3 Press the start button on the touch screen or the physical start button on the AGV body, and the AGV can run to station No. 5

7. Remote Site Selection

When the trolley is in the manual state, use the 10-key remote control to control the trolley station to select stations 1-8. Just press the number keys on the remote control, and the trolley will automatically run to the corresponding station, which is convenient for active operations. Personnel complete the handling work.

7.1 How to use the car to run under the magnetic strip navigation

When the trolley is in the manual state, use the 15-key remote control to control the trolley station to select stations 1-13. Just press the number keys on the remote control, and the trolley will automatically run to the corresponding station, which is convenient for active operations. Personnel complete the handling work.

When the trolley is running on the automatic line, the start button on the trolley can be used instead of the start switch on the trolley, and the trolley can also be stopped by pressing the slow stop button during running.

Remote control antenna. It can be lengthened,which can extend the signal distance. The max. control distance=1000m

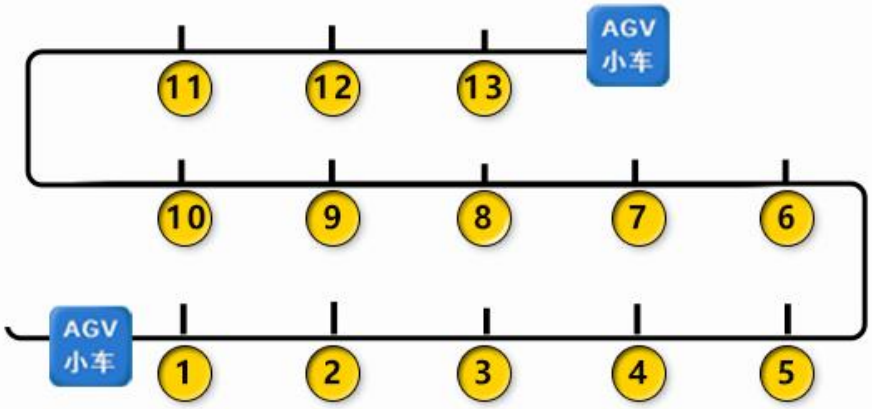
In the navigation state: 1-13 number keys, indicating the station number 1-13

In derailed state:

The car does not need magnetic strip guidance, it can control the car's forward, backward, left turn, right turn stop function

'Suspend': When you push this button,AGV will stop driving.Meanwhile you can also input other station#,and it will drive towards the new target station that you input. When you push 'start' button,it continues to drive.

Navigated by magnetic strip



You can choose the target station on the remote control.

Click the number 1-13 on the remote control and then AGV will drive towards station 1-13#.

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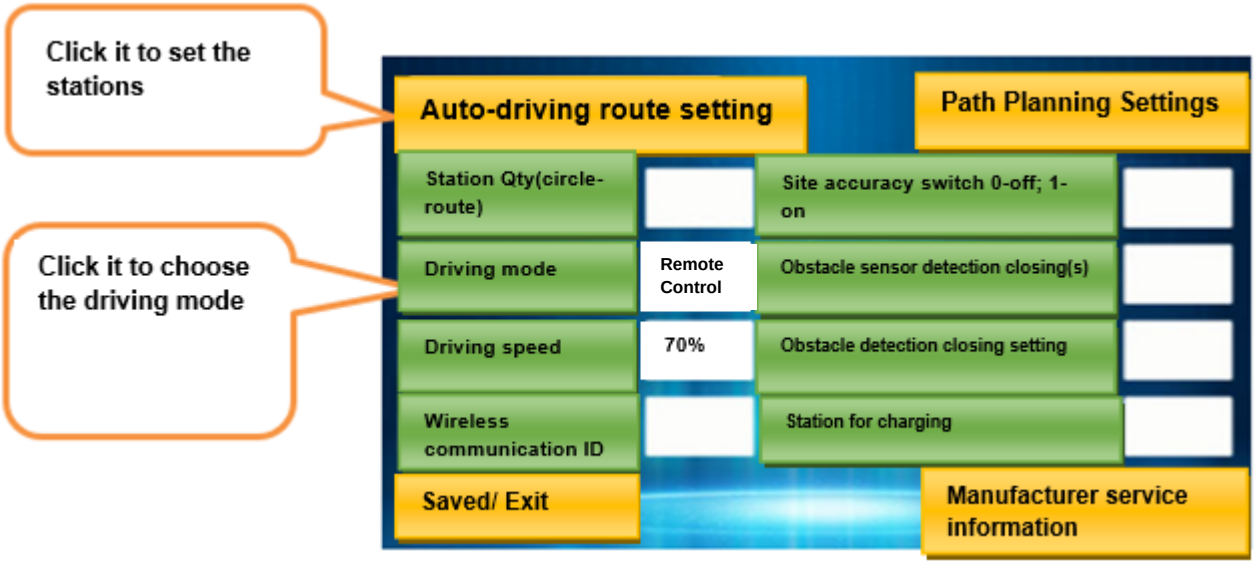
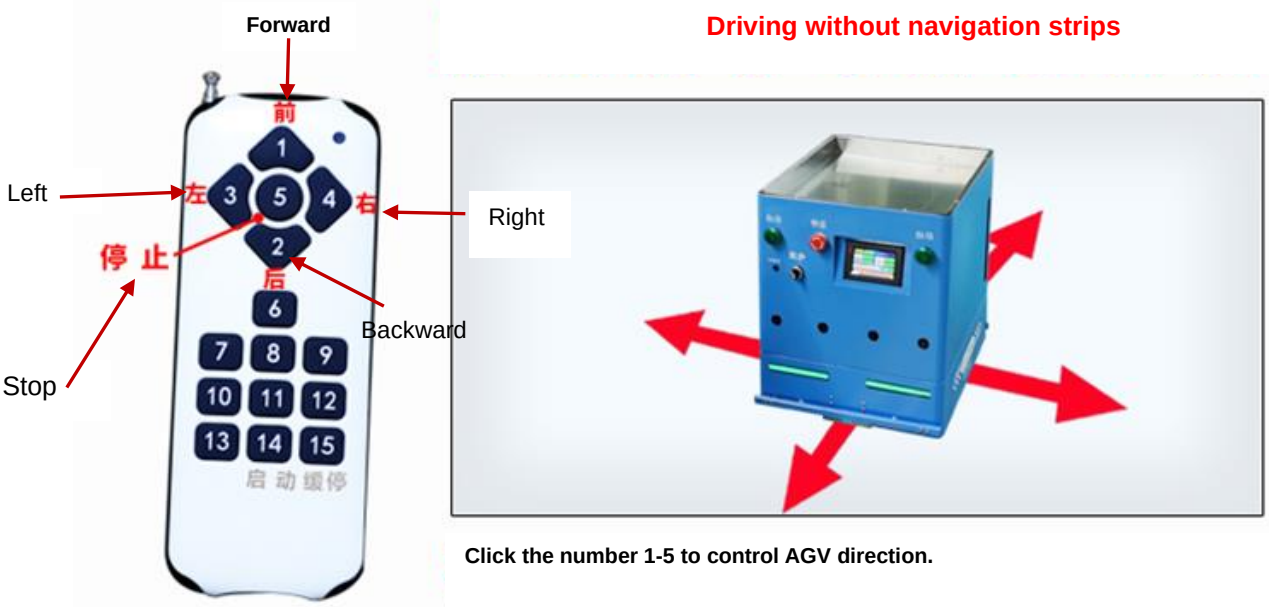
If you need to control the AGV without navigation strips,please choose the driving mode ‘Remote Control’. Save it and exit.



Driving without navigation strips



Click the number 1-5 to control AGV direction.

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8. How to do the settings to make AGV drive automatically?

When the AGV needs to run according to the station we set, just set the running sequence of the AGV and the staying time at the station.

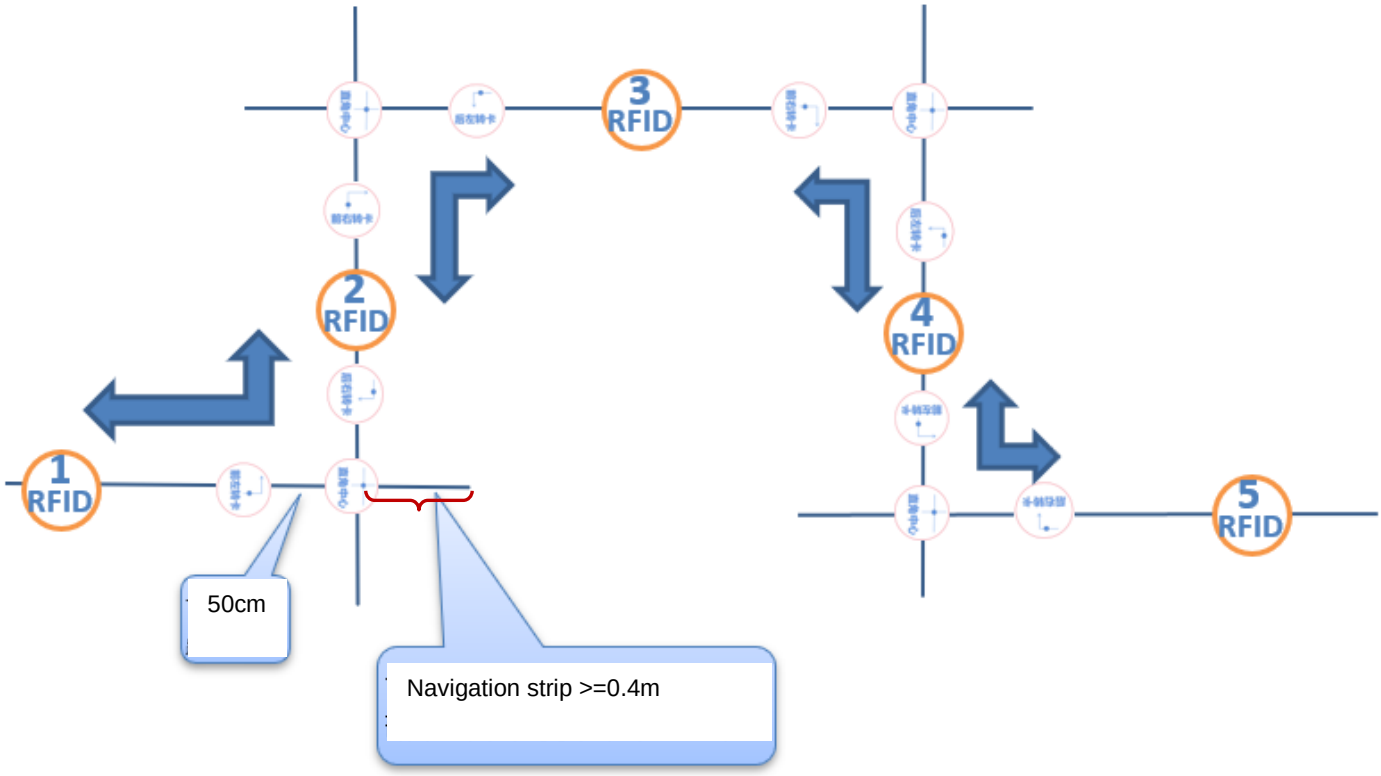
For example: In single-line mode, there are 1-5 stations, the operation requirements are as follows.

'Start driving' by manual at station 1# 》》》 Drive to station 3# and stay for 10 seconds》》》 Drive to station 5# and Stay for 5 seconds》》》 Run to station No. 2 and wait for manual start switch》》》 Run to station No. 4 and stay for 10 seconds》》》 Return to station 1# Set is as a cycle.

Finish the settings on the screen display as follws.

Saty at station 1# for 0 S. It is waiting for a person to start it.

9. How to make AGV drive in 90° turning (L type turning)?



When the AGV turns 90 degrees, it first reads the left or right RFID card, then automatically decelerates and runs directly to read the right-angle center card, then automatically rotates 90 degrees on the spot, and then continues to run.

10. How to supply power to AGV?

2 methods. 1.Charge AGV directly. 2.Take out the battery and supply power to the batter off-line.

The power display ranges from 10% to 100%. When the power is lower than 10%, the car display will automatically pop up a dialog prompt box, and there will be an alarm sound to remind the staff to charge the car. It is recommended to charge the car when the power of the car is less than 20%.

Be sure to pay attention when charging, the AGV car should be turned off (shut down) first, then plug the DC plug of the charger into the car, and then plug in the 220V power supply after the DC plug is plugged in.

There is an LED light on the charger, and the red light is: charging
Green light means: charging is complete

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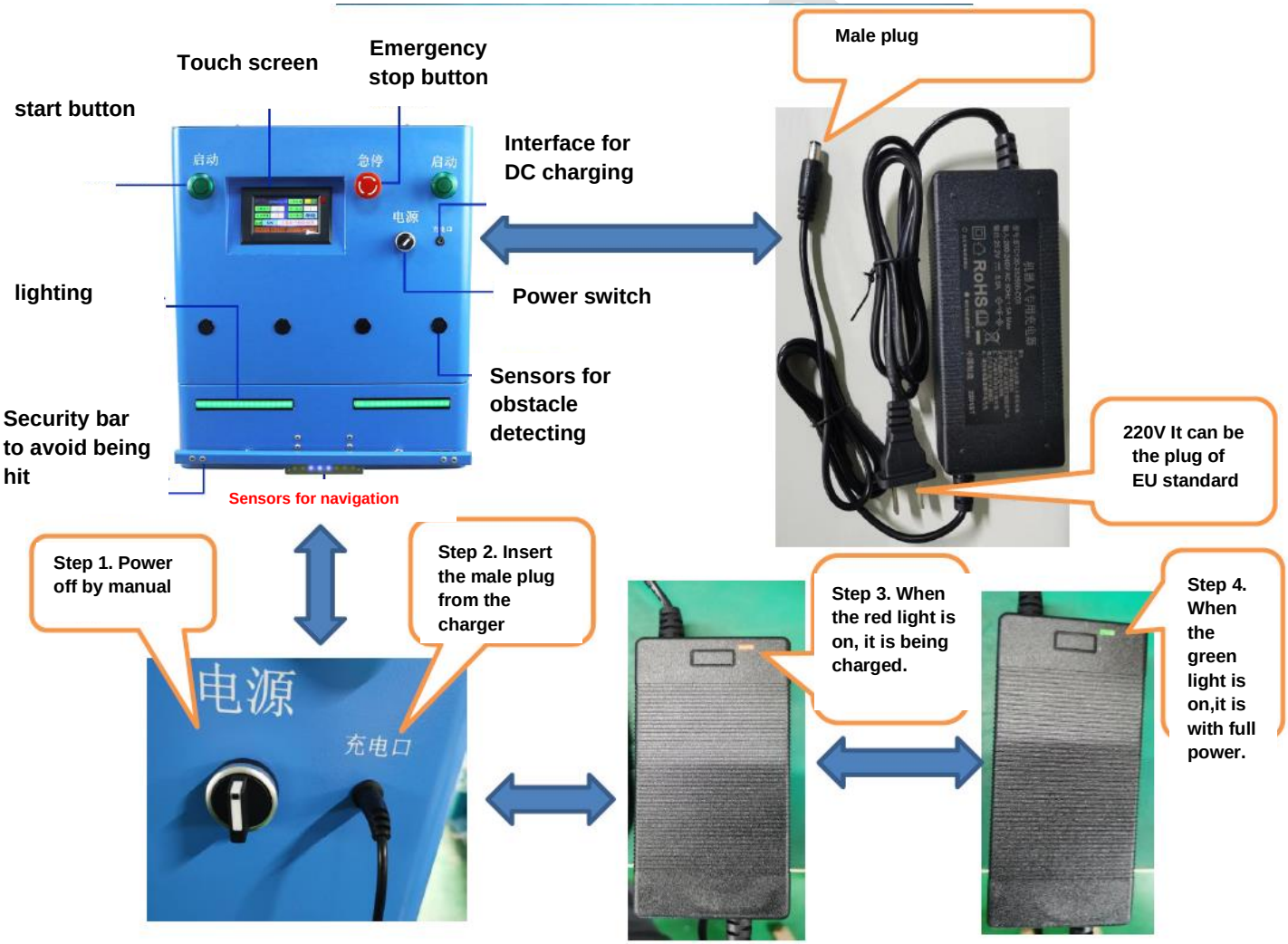

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