**Video tutorial: <https://www.56dz.com/p/3640.html>**

**D2-1 Patrol Trolley Manual**

**1.1 Preface**

Thank you for purchasing the type D2-1 patrol trolley kit. This kit allows you to initially understand the principles and techniques of automatic control.

We hope that you can learn useful knowledge and skills from this product, and lay a good foundation for in-depth study in the future. When using the product, please assemble it according to the instructions to use the product correctly.

**2.1 List and table**

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| List of electronic components | | | | | | | List of mechanical parts and components | | | |
| No. | Grade | Name | Specifications | Quantity |  | No. | Grade | Name | Specifications | Quantity |
| 1 | IC1 | integrated circuit | LM393 | 1 | 1 | M1 | Reduced motor | JD3-100 | 1 |
| 2 |  | Integrated circuit seat | 8 Foot | 1 | 2 | M2 | 1 |
| 3 | C1 | electrolytic capacitor | 100 uF | 1 | 3 |  | wheel |  | 2 |
| 4 | C2 | 100uF | 1 | 4 |  | Silicone tires | 25x2.5 | 2 |
| 5 | R1 | adjustable resistor | 10K | 1 | 5 |  | Wheel screw | M2.2x7 | 2 |
| 6 | R2 | 10K | 1 | 6 |  | Universal wheel screws | M5×30 | 1 |
| 7 | R3 | Color ring resistance | 3.3K | 1 | 7 |  | Universal wheel nut | M5 | 1 |
| 8 | R4 | 3.3K | 1 | 8 |  | Omni-directional wheel | M5 | 1 |
| 9 | R5 | 51 | 1 |  | | | | | |
| 10 | R6 | 51 | 1 |  | | List of other spare parts | | | |
| 11 | R7 | 1K | 1 |  | No. | Grade | Name | Specifications | Quantity |
| 12 | R8 | 1K | 1 | 1 |  | circuit board | D2-1 | 1 |
| 13 | R9 | 10 | 1 | 2 |  | connecting lead | red | 1 |
| 14 | R10 | 10 | 1 | 3 |  | black | 1 |
| 15 | R11 | 51 | 1 | 4 |  | Rubber bottom battery box | AAx2 | 1 |
| 16 | R12 | 51 | 1 | 5 |  | instructions | A4 | 1 |
| 17 | R13 | light dependent resistors | CDS5 | 1 | 6 | / | external packing | 10×16 | 1 |
| 18 | R14 | CDS5 | 1 |  | | | | | |
| 19 | D1 | φ3.0 LED | LED | 1 |
| 20 | D2 | LED | 1 |
| 21 | D4 | φ5.0 LED | LED1 | 1 |
| 22 | D5 | LED2 | 1 |
| 23 | Q1 | dynatron | 8550 | 1 |
| 24 | Q2 | 8550 | 1 |
| 25 | S1 | switch | SEITCH | 1 |

**3.1 Schematic diagram**



**4.1 Assembly instructions**

**4.1.1 Circuit assembly**

(1) According to the circuit diagram and the identifier on the circuit board, the color ring resistance, 8 pin IC seat, switch, potentiometer, triode, electrolytic capacitor, Φ 3.0 luminous diode is welded on the circuit board, pay attention to the direction of the IC seat, do not weld wrong. In addition, for convenient debugging, the chip is temporarily not installed.

(2) Install the battery box on the circuit board according to the position of the thread hole and identifier on the circuit board. Pay attention to the polarity of the power welding pad do not weld back. Usually the red wire is the positive electrode of the power supply.

(3) Put the circuit board front up, through the universal wheel screw into the hole, and spin into the universal wheel nut and universal wheel, tighten.

(4) Put the bottom of the circuit board up and weld the Φ 5.0 light emitting diode and resistor on the board according to the identifier on the board, requiring the light emitting diode and resistor to be about 5mm away from the universal wheel sphere.

(5) Install 2 AA batteries in the battery box, switch in the "ON" position, at this time the two light-emitting diodes of the sensor should shine, if not light, you may be Φ 5.0 light-emitting diode positive and negative electrode welding back, then please polarity, after successful debugging, switch in the "OFF" position power for use.

**4.1.2 Assembly of mechanical parts**

(1) Put the silicone tire on the wheels.

(2) fix the wheel on the deceleration motor shaft with the hub screws.

(3) divide the connecting wire into 2 sections and then add tin, and weld them on two deceleration motors for use.

(4) To paste the motor on the circuit board according to the identifier on the circuit board.

(5) Weld the leads on the motor on the motor board according to the identifier.

**4.1.3 Vehicle Commissioning**

(1) Test the drive circuit, dial the switch in the "ON" position, connect the first, seventh and fourth feet of the 8 feet IC, at this time the deceleration motor should turn toward the front, otherwise the lead position of the corresponding motor can be changed. If the motor does not turn, check for the correct revert and the base resistance (10 ohm).

(2) After the power off, insert the LM393 chip into the 8-foot IC seat, and adjust the corresponding potentiometer so that the car can walk normally on the black line and will not run out of the range of the black line. The instructions is attached with the test runway, request an electronic version, or use 1.5-2.0CM wide black tape as the runway.

**5.1 Technical support and special statement**

If you have any misunderstandings or questions, please contact your local dealer.

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