**DC GEARED MOTORS, ENCODER MOTOR 6MM D SHAFT 15.5MM SHAFT DIAMETER DC12V WITH BRACKET WHEEL FOR DIY SMART CAR**

**Specification:**

Item Type: Encoder Motor Set

Model: JGB37-520

Power: 7-15W

Material: Brass, Copper, Tile

Purpose: Balance Car, DIY Smart Car

Operating Voltage: DC 12V

Shaft Diameter: Approx. 6mm / 0.2in D Shaft

Shaft Length: Approx. 15.5mm / 0.6in

**How to Use:**

Encoder Connection:

Red: Motor power + (can be CW CCW when by swapping with white)

Black: Encoder power supply‑

Yellow: The signal line motor has 11 pulses per circle (A)

Green: signal line resolution 11 x reduction ratio = resolution (B)

Blue: Encoder power supply+

White: Motor power‑(can be CW CCW by swapping with red)

**Data from testing**

Output Shaft PPR = 3950

**GIT COMMAND**

|  |
| --- |
| git remote add origin https://github.com/kingdiaw/trainer-robotic-2025.git  git branch -M main  git push -u origin main |

**ROBOT PARAMETERS**

const double WHEEL\_DIAMETER = 0.067; // Wheel diameter in meters (updated)

const int ENCODER\_RESOLUTION = 3950; // Encoder ticks per revolution

const double PID\_INTERVAL = 0.033; // PID control loop interval in seconds (30 Hz)

const int GEAR\_REDUCTION = 1; // Gear ratio (1 if no gearbox)