CLAIMS

1. An underwater intelligent cleaning robot comprising:

a frame;

a buoyant device installed in the middle of the frame;

a plurality of main thruster motors installed at the corners of the frame;

a plurality of vertical thruster motors arranged on a top of the frame through a rotatable mechanism;

a drive device installed at a bottom of the frame through a mounting base;

a cleaning brush disk installed on an output shaft of the drive device;

an acoustic speedometer and an inertial navigator positioned in a front portion of the frame; and

a main control module installed on the frame, wherein the acoustic speedometer and the inertial navigator are electrically connected with the main control module, and the main control module is electrically connected with the plurality of main thruster motors, the plurality of vertical thruster motors and the drive device.

2. The underwater intelligent cleaning robot according to claim 1, wherein each of the plurality of main thruster motors is installed on the frame through a motor fixed base, and each main thruster motor is movable between an angle of 0-90° from the front direction.

3. The underwater intelligent cleaning robot according to claim 1, wherein the rotatable mechanism comprises:

four rotatable support seats fixed on the frame comprising two front rotatable support seats and two rear rotatable support seats,

two first rotatable connectors rotatably connected to the two rear rotatable support seats;

two second rotatable connectors rotatably connected to the two front rotatable support seats;

a first rotatable connector shaft and a second rotatable connector shaft wherein both ends of the first rotatable connector shaft are respectively rotatably connected with the two first rotatable connectors and both ends of the second rotatable connector shaft are respectively rotatably connected with the two second rotatable connectors;

a deceleration motor fixed on the frame;

a first chain drive assembly and a second chain drive assembly;

wherein the plurality of vertical thruster motors are respectively fixed on the extension ends of the two first rotatable connectors and the two second rotatable connectors;

wherein an output shaft of the deceleration motor is connected with the first rotatable connector shaft through the first chain drive assembly and the first rotatable connector shaft is connected with the second rotatable connector shaft through the second chain drive assembly.

4. The underwater intelligent cleaning robot according to claim 1, wherein the mounting base comprises a connecting frame, a fixed frame and a lifting hook,

wherein the connecting frame is fixed with a bottom of the fixed frame,

wherein the drive device is installed on the fixed frame and the connecting frame,

wherein one end of the lifting hook is installed at the bottom of the fixed frame, and the other end of the lifting hook is connected with the connecting frame through a connecting pin.

5. The underwater intelligent cleaning robot according to claim 4, further comprising an elastic buffer device installed between the fixed frame and the frame.

6. The underwater intelligent cleaning robot according to claim 1, wherein each side of the frame is equipped with a light and a camera, wherein the light and the camera are in electrical communication with the main control module, wherein each corner of the frame is provided with wheels through a wheel fixing frame.

7. The underwater intelligent cleaning robot according to claim 1 or 2, wherein a filter cover is installed on each of the plurality of main thruster motors and each of the plurality of vertical thruster motors.

8. The underwater intelligent cleaning robot according to claim 1, further comprising a lifting hook extending out of the buoyancy device on top of the frame.

9. The underwater intelligent cleaning robot according to claim 1, further comprising device distribution boxes installed on the center of the left and right sides of the frame.

10. The underwater intelligent cleaning robot according to claim 1, wherein the buoyancy device comprises a bottom buoyancy device, a top buoyancy device, a rear buoyancy device and a front buoyancy device,

wherein the bottom buoyancy device is installed in the middle position of the bottom of the frame, the top buoyancy device is installed in the middle position of the top of the frame, the rear buoyancy device is installed in the middle position of the rear side of the frame, and the front buoyancy device is installed in the middle position of the front side of the frame.

11. The underwater intelligent cleaning robot according to claim 10, further comprising cover plates arranged between the left side of the bottom buoyancy device and the left side of the top buoyancy device, and between the right side of the bottom buoyancy device and the right side of the top buoyancy device.

12. The underwater intelligent cleaning robot according to claim 1, wherein the acoustic speedometer is installed on the front side of the bottom of the frame through a fixed plate, and the inertial navigator is fixed on the fixed plate through an inertial navigator fixed base.

13. An underwater intelligent cleaning system comprising a ground station and an underwater intelligent cleaning robot as described in any one of the claims 1-12, wherein

the underwater intelligent cleaning robot is electrically connected with the ground station through a power supply device.