



# AHEAD.IO

## Stanley Kit:

- It contains all tools, mechanical and electronic parts to fully assemble Stanley.
- It contains front Cameras Payload.
- It contains an Ipad Mini Holder Payload (Ipad not included).
- It contains a handle Payload.
- It contains spare parts for easy repair.
- It allows installation of new payloads and control and development through API.
- It contains a printed and online GUIDE.
- Parts assembly are divided by chapters and packaged in cardboard boxes
- It requires an average of 60 hours to be fully assembled.
- The colour of the kit can be customized. (Please view page 3).

## Stanley Kit Key characteristic:

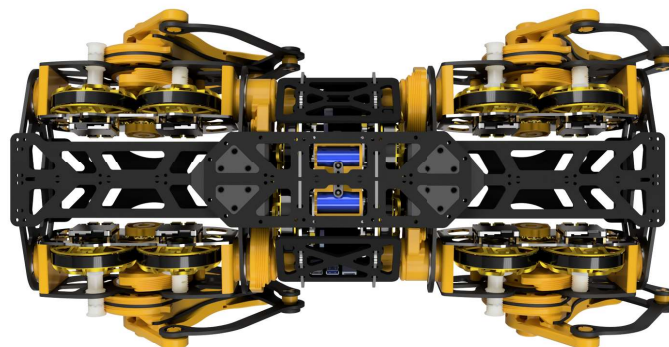
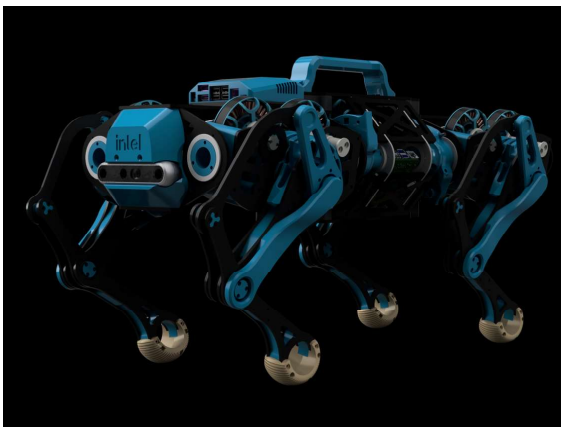
- 12 degrees of freedom. To allow for four legs to have three degrees of freedom so that the pointy end of the feet can achieve any commanded positions in Cartesian coordinates
- Capstan drives on all axis of Stanley to create a 1:6 reduction ratio while maintaining low mass, low inertia, high torque bandwidth, great torque transparency and efficiency as well as zero backlash. An 18 and 108mm drums are utilized alongside with 1.5 mm<sup>2</sup> stainless steel cable.
- All degrees of freedom are actuated by 8308 90KV BLDC motors. Each one of them weighs in at 320g and is capable of 3 Nm of torque. This, with the reduction ratio, allows each Joint of Stanley to exert 18 Nm of torque.
- Each BLDC motor is controlled by a driver which provides up to 100A of phase current and a 40 kHz internal control loop. The drivers are connected into 4 individual CAN-FD networks which allow up to 250 Hz of commands and feedback to and from each of the actuators.
- Stanley's legs utilize a parallel rigid link mechanism to actuate the knee joints which minimizes inertia and maximizes mechanical rigidity.
- Stanley parts are either 3D printed or CNC 2D routed in FR4 plates.
- Stanley is capable of about 2.5 kg of load and weighs 15 kg
- Free mounting holes all around the robot will allow future users to mount accessories.

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## Customizations:

- The colour of any of the 3d printed parts can be changed. The main carbon fiber frame is currently available only in black.
- The logo on the puck in front of Stanley can be customized. A vector design is required.

## Customizations examples:



ROOM 604-5, 6/F., EASEY COMMERCIAL BUILDING, NOS. 253-261 ,  
WANCHAI, HONG KONG.