

1 Robot Specification

Figure.1 is our **prototype** robot design. We **plan to upgrade** the hardware lighter and more robust. You can find more detail from the spec.

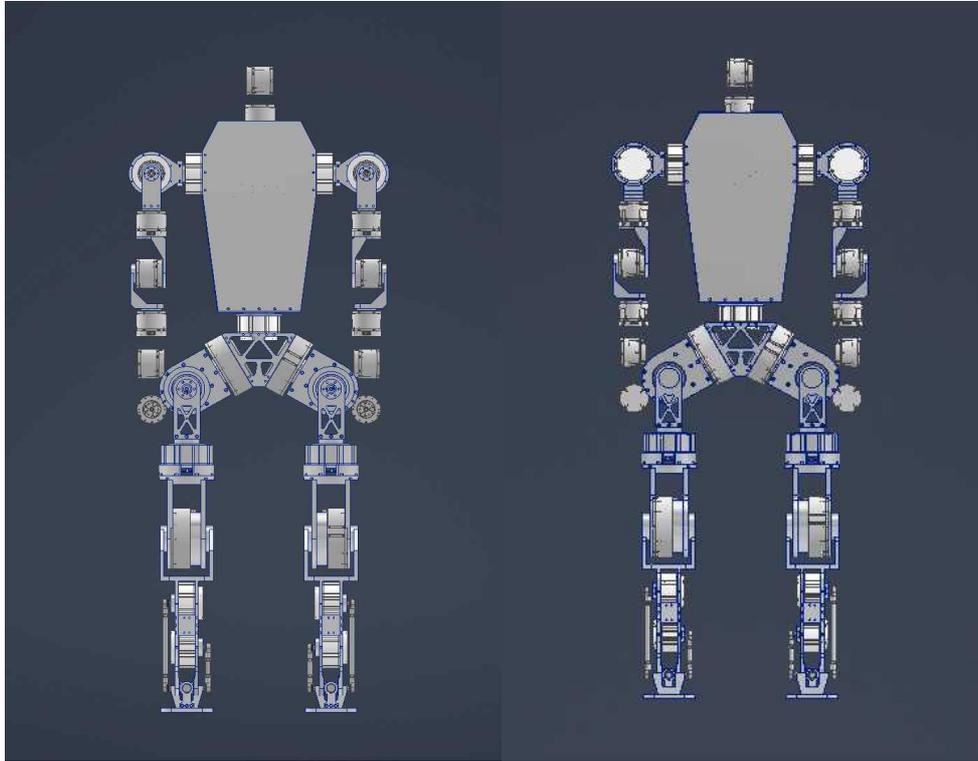


Figure.1 Unfinished Robot

ROBOT NAME	Ro:α	
SIZE	Weight Height	30 kg 1300mm
Walking speed	1.0 m/s	
Actuators	ROBSTRIDE (00, 03,04, 06)	
Number of degrees of freedom and type of motors on each kinematic chain of the robot	All DOF	25 DOF
	HEAD	2 DOF (All 00)
	LEG	12 DOF (Hip Yaw: 06, Hip Roll: 04, HIP Pitch: 03, Knee Pitch: 04, ankle:06)
	ARM	10 DOF (Shoulder: 06, others: 00)
	Waist	1 DOF (All 06)
Computing units	Jetson Orin NX 16GB (8-core A78AE and Ampere GPU with 1024 CUDA cores and 32 Tensor cores) with a 256GB SSD ARM Cortex M4 STM32F446RE MCU 180MHz	
Camera	ZED mini	
Sensors	BNO085	
Battery	Inspire 2 TB50 smart battery (22.8V 4280 mAh)	
OS/Development Platform	Linux Ubuntu 22.04/C,C++/ROS2	

Table 1 Specification of the Robot