This task is about how to make the decision for choosing our motor in Poppy Robot joint between the links.

We have two options and based on the datasheet of both and observing the market. This comparison has been made.

	LOBOT LD-260MG	MG995
		
Weight	136 g	55 g
Price	$35	$10
Stall Torque	58 kg-cm	13 kg-cm
Angle	180	0-180
Voltage	6-8.4 V	4.8 V to 7.2 V

To select the motor there are several characteristics that we need to pay attention to for example, voltage, current, torque, velocity and the price!

Torque:

You should always look at the required operating torque, but some applications will require you to know how far you can push the motor. For example, with a wheeled robot, good torque equals good acceleration, but you must make sure the stall torque is strong enough to lift the weight of the robot. In this instance, torque is more important than speed. In our situation it can be seen that 260MG has higher Torque and can carry almost 58 kg. However, the opposite is true for the other motor.

Voltage:

As we know the higher the voltage, the higher the torque. Be sure to apply the recommended voltage. If we apply too few volts, the motor will not work. Based on the information above, the range is almost similar, but it is higher in 260MG with 8.4 V.

Weight:

In our Robot we seek to use a lightweight motor which will help us move the link easily and in more efficient way. It is clear that MG995 is lighter than the other which has 136 g. The different is significant!

Price:

Money is a critical factor in our decision and as it is shown above MG995 is cheaper than 260MG.

To sum up, for our purpose I think 260MG is the perfect one as it has a high torque and can carry 58kg so the links are able to carry heavy weights and move perfectly.

References:

1- https://ar.banggood.com/LOBOT-LD-260MG-180-60KG-Large-Torque-Metal-Gear-Digital-Servo-For-RC-Robot-p-1516607.html?akmClientCountry=SA&&cur_warehouse=CN

2- https://www.amazon.com/Hiwonder-Waterproof-Rotation-Torque-Aluminium/dp/B07NW9JKTH

3- https://www.teknistore.com/en/rc-helicopter-parts/52333-lobot-ld-260mg-180-60kg-large-torque-metal-gear-digital-servo-for-rc-robot.html?mobile_theme_ok

4- https://www.jameco.com/Jameco/workshop/ProductNews/motor-buyers-guide.html

5- https://forum.arduino.cc/index.php?topic=393647.0