

Rotating, inverted pendulum with LEGO® Mindstorms®

Construction manual

Copyright 2015 The MathWorks, Inc.

In addition to a handful of standard LEGO® parts the pendulum requires:

- 1 NXT or 1 EV3 brick
- 1 Wi-Fi dongle or 1 ethernet USB adapter
- 1 [PF XL motor](#)
- 2 [GlideWheel-M encoders](#)

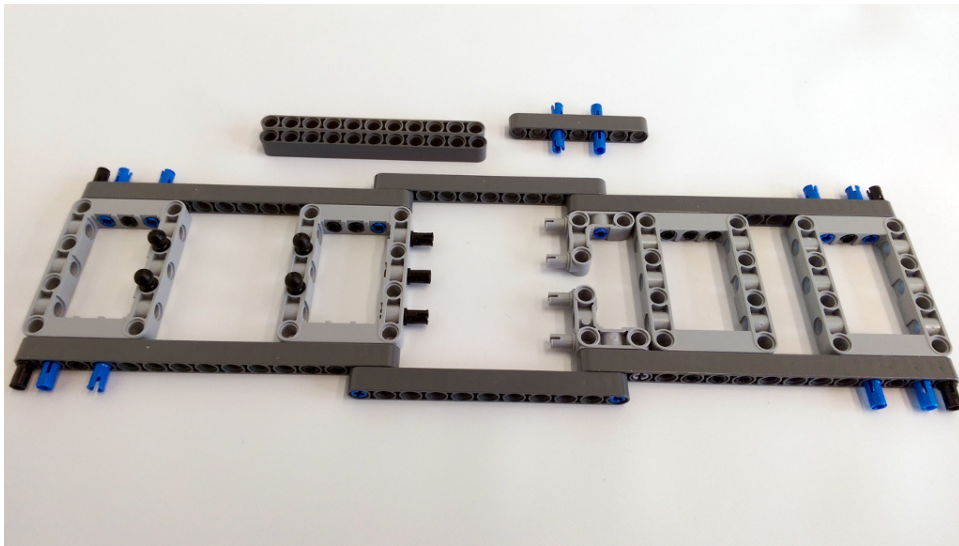


Figure 1: Structure, bottom part.

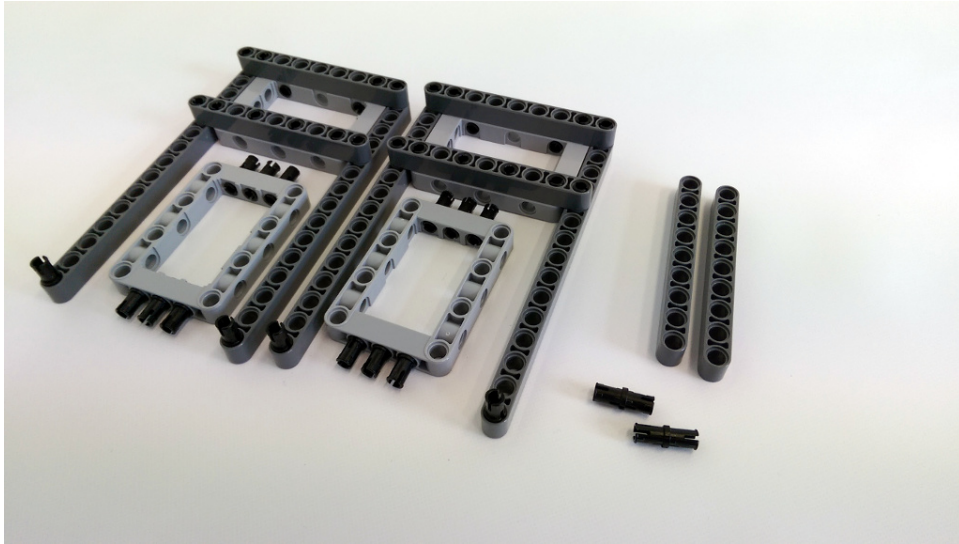


Figure 2: Structure, top part.

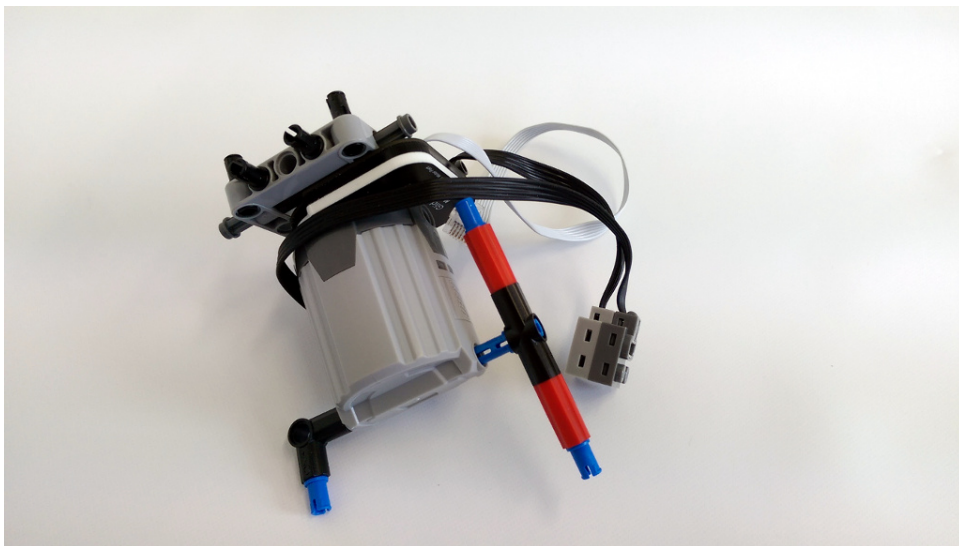


Figure 3: Motor-encoder assembly, bottom view.

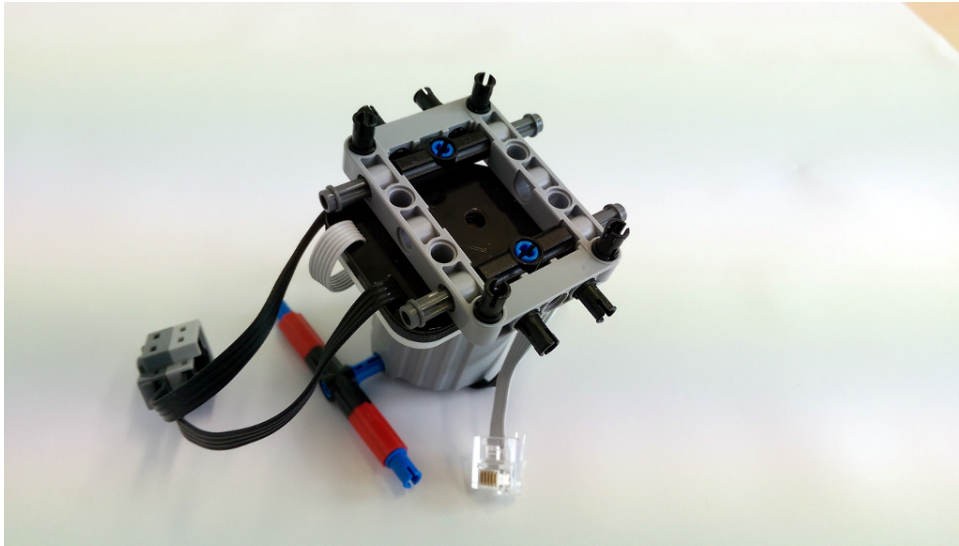


Figure 4: Motor-encoder assembly, top view.

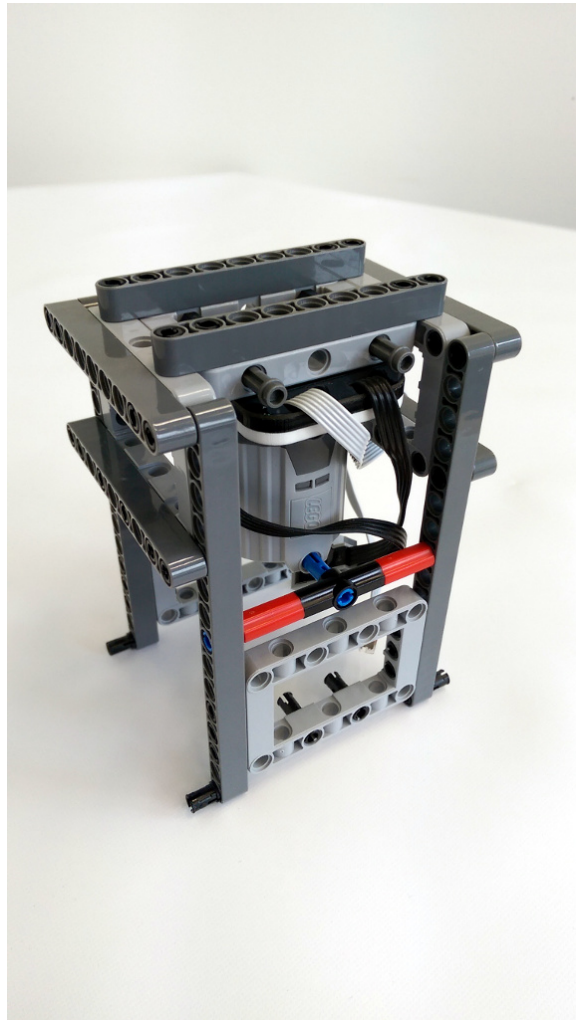


Figure 5: Integrated motor.



Figure 6: Structure.

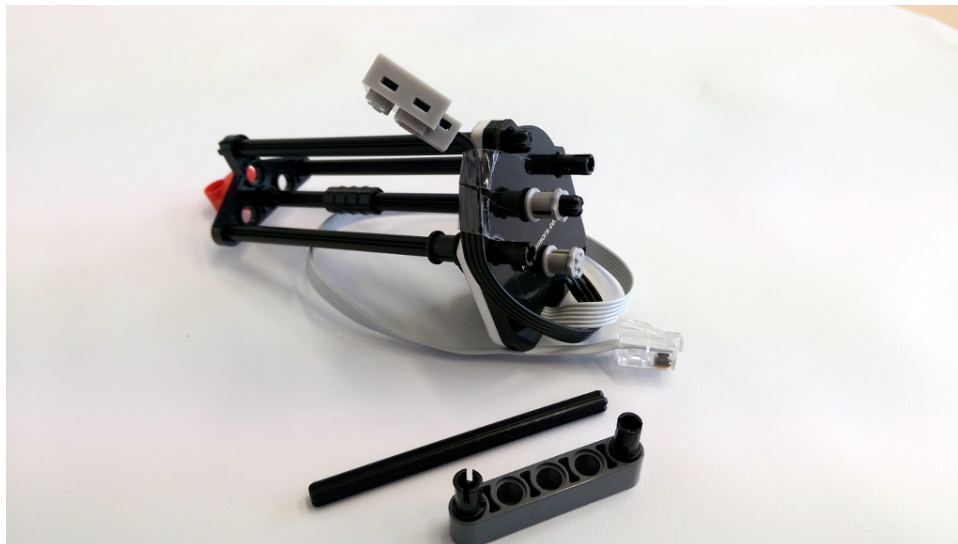


Figure 7: Arm and encoder, back view.



Figure 8: Arm and encoder, bottom view.

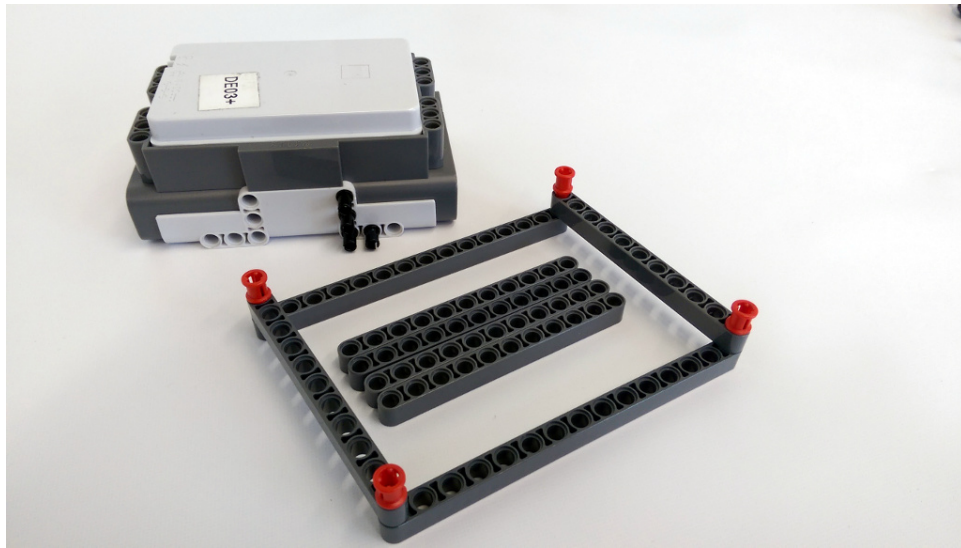


Figure 9: Base and brick.

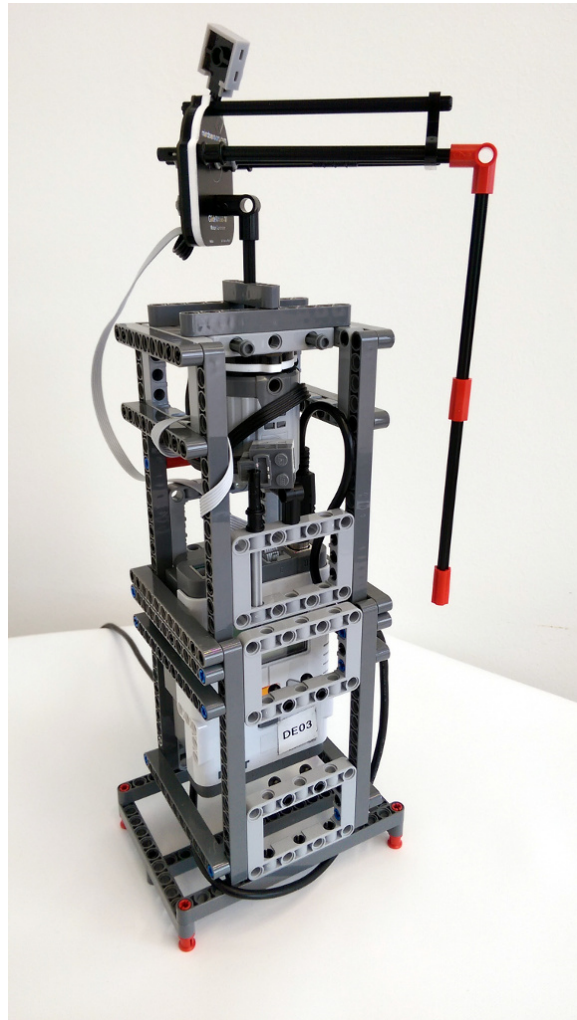


Figure 10: Completed pendulum.

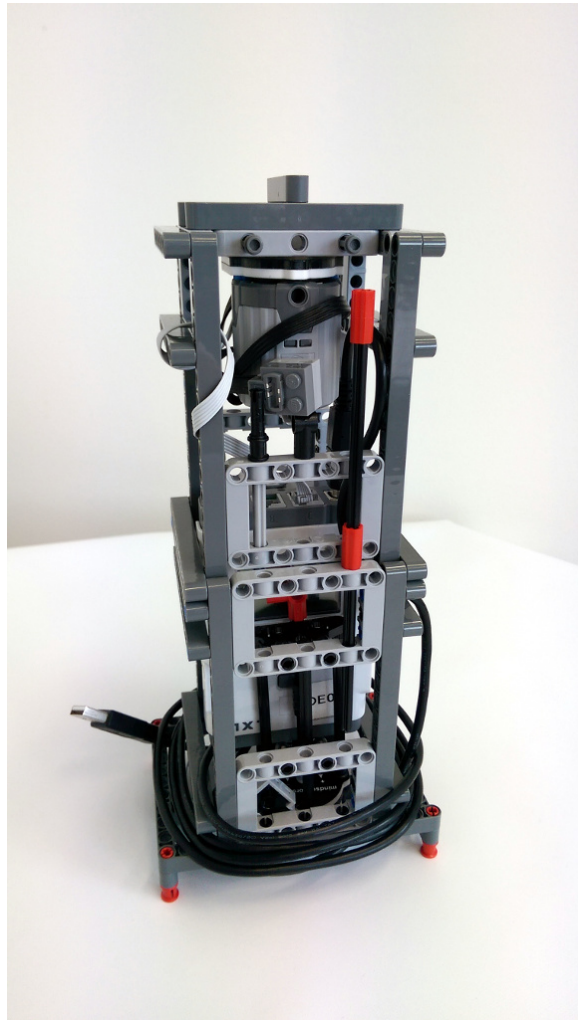


Figure 11: Pendulum, travel configuration.