Platforms: parts list

1 Mechanical parts

Table 1 comprises all the parts that are shared by the two types of platforms.

Item No.	Description	Qty.	Remarks
1	MDF lower frame basis	1	3mm MDF
2	MDF upper frame basis	1	3mm MDF
3	MDF motor slide	2	3mm MDF
4	MDF rear slide	2	3mm MDF
5	MDF fork	2	3mm MDF, to lock MDF rear slide
6	Spacer	6	M3x30mm
7	Screw	24	M3x10mm; 12 for spacers, 4 for motors, 2 for number plate, 4 for Arduino, 2 for IR sensor
8	Nut	8	M3; 2 for number plate, 4 for Arduino, 2 for IR sensor
9	DC motor + gearbox + encoder	2	6V, 210rpm
10	Motor terminal connector	2	
11	Zip tie	2	100mm, to fix the motors to the lower frame
12	Wheel hub	2	4mm drill, 12mm hexagon
13	Set screw for wheel hub	2	
14	RC wheel	2	⌀65mm x 25mm
15	Screw	2	M4x10mm; to fix the wheel to the hub
16	Washer	2	M4; between wheel and M4 screw
17	IR sensor	1	Sharp GP2Y0A41SK0F, 4-30cm
18	IR sensor mounting bracket	1	
19	IR sensor terminal connector	1	
20	MDF IR sensor support	1	
21	MDF number plate	1	
22	Arduino MEGA 2560	1	
23	MEGA MECO breakout board	1	for details see Table 4
24	Power supply	1	6V, 12W
25	USB cable	1	male USB-1.0 type B to male USB-2.0 type A

Table 1: Shared parts

Table 2 comprises the parts that are additionally needed to build a swivel platform.

Item No.	Description	Qty.	Remarks
101	Screw	6	M3x10mm; 2 for IR sensor, 4 for swivel caster wheel
102	Nut	6	M3; 2 for IR sensor, 4 for swivel caster wheel
103	Swivel caster wheel	1	⌀25mm, overall height approx. 30mm
104	IR sensor	1	Sharp GP2Y0A41SK0F, 4-30cm
105	IR sensor mounting bracket	1	90° angle
106	IR sensor terminal connector	1	
107	MDF IR sensor support	1	

Table 2: Additional parts for swivel version

Table 3 comprises the parts that are additionally needed to build a pendulum platform.

Item No.	Description	Qty.	Remarks
201	MDF pendulum rack	1	2 A-shaped slides and a connecting plate
202	MDF pendulum	1	5mm MDF
203	MDF fork	6	3mm MDF, to lock the pendulum rack
204	Potentiometer	1	Vishay 157B503MX
205	Potentiometer terminal connector	1	
206	Rear axle	1	⌀4mm, 150mm
207	Bearing	2	4x7x2mm, fitted into bore of MDF rear slide
208	Wheel hub	2	4mm drill to 12mm hexagon
209	Set screw	2	M4x6mm; for wheel hub
210	RC wheel	2	⌀65mm x 25mm
211	Screw	2	M4x10mm; to fix the wheel to the hub
212	Washer	2	M4; between wheel and screw

Table 3: Additional parts for pendulum version

2 MEGA MECO parts

Table 4 comprises the parts that are needed to build a MEGA MECO breakout board. Tolerances or voltage ratings are omitted if of no importance.

Item No.	Description	Qty.	Remarks
301	Printed circuit board	1	98x52mm, 2 layers
302	DIL socket	1	2x8 pins, 2.54mm grid
303	Tactile switch	1	6x6mm
304	LED	1	5mm, 20mA, green, power indicator
305	LED	2	3mm, 10mA, red, status/debug LEDs
306	LED	2	3mm, 10mA, red, status/debug LEDs
307	Capacitor	1	5mm electrolytic, 47µF, 25V
308	Capacitor	1	5mm electrolytic, 100µF, 16V
309	Capacitor	1	2.5mm multilayer ceramic, 0.1µF, 50V
310	Resistor	1	1kΩ, 250mW
311	Resistor	2	330Ω, 250mW
312	Header	2	1x6 pins, 2.54mm grid, for motor connection
313	Receptacle set	1	set for Arduino breakout boards: 1x 2x18, 5x 1x8, 1x 1x6 pins, 2.54mm grid
314	Receptacle	1	1x4 pins, 2.54mm grid, for bluetooth socket
315	Pin header	11	1x3 pins, 2.54mm grid
316	Pin header	2	1x4 pins, 2.54mm grid
317	Pin header	1	1x2 pins, 2.54mm grid
318	Quadruple half-H driver	1	L293D, DIL package, from ST or TI
319	Jumper	6	2.54mm grid

Table 4: Parts for the MEGA MECO breakout board