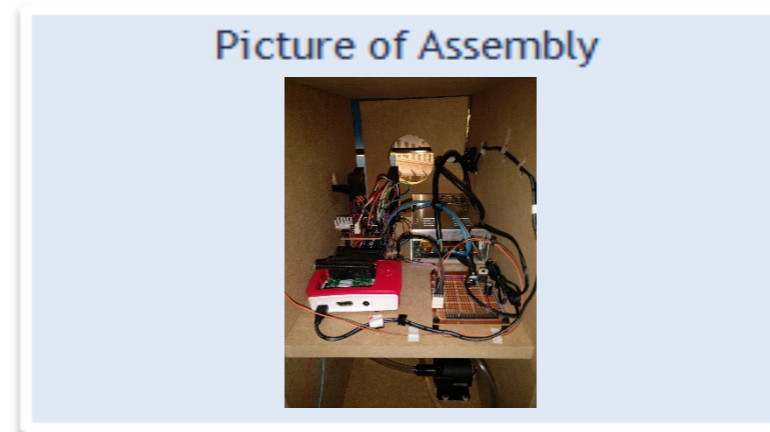


CLASS: 1NMCT3
NAME: De Leersnijder
FIRSTNAME: Yentl
Assembly Name : MiControl
Assembly Revision: _____
Approval Date: _____
Part Count: 28
Total Cost: €204



Part #	Part Name	Description	Revision	Qty	Supplier	also available from	Units	Unit Cost	Max Cost	Real Cost
1	Aluminum Water Cooling Block	Cooling block for heating and cooling the water		1	https://www.aliexpress.com/	https://www.amazon.com/		3,41 €	3,41 €	3,41 €
2	DS18B20 Waterproof Temperature Sensor	Temperature sensor		4	https://www.aliexpress.com/	https://www.amazon.com/		1,17 €	4,68 €	4,68 €
3	IRF530 Mosfet	Mosfet to control the pump		1	https://www.aliexpress.com/	https://www.amazon.com/		0,23 €	0,23 €	0,23 €
4	Peltier element TEC1-12706	Peltier element to heat and cool the water		1	https://www.aliexpress.com/	https://www.amazon.com/		1,69 €	1,69 €	1,69 €
5	12V 30A 360W Switching Power Supply	PSU to power the components		1	https://www.aliexpress.com/	https://www.amazon.com/		18,98 €	18,98 €	18,98 €
6	12V DC Water Pump 500 L/H	Water pump to create a water flow through the cooling block.		1	https://www.aliexpress.com/	https://www.amazon.com/		16,02 €	16,02 €	16,02 €
7	G1/4" Fittings	Fittings to connect the tubes to the pump		2	https://www.highflow.nl	https://www.amazon.com/		4,50 €	9,00 €	9,00 €
8	Tubing	Tubes for the water to flow through		1	https://www.aliexpress.com/	https://www.amazon.com/		8,00 €	8,00 €	8,00 €
9	Heatsink: Cooler Master Hyper 212 Evo	Heatsink to place on top of the peltier element, so it can get rid of the heat		1	https://www.coolblue.be/	https://www.amazon.com/		30,00 €	30,00 €	30,00 €
10	Raspberry Pi 3	Raspberry Pi to control everything		1	My own Raspberry Pi	https://www.aliexpress.com/		36,00 €	36,00 €	36,00 €
11	H-Bridge 10A	Pre-built H-Bridge rated 10A. This is safer than building your own H-Bridge		1	https://www.amazon.co.uk/	https://www.aliexpress.com/		20,00 €	20,00 €	20,00 €

12	Mosfet heatsink	Cool the h-bridge mosfets	2	https://www.amazon.co.uk/	https://www.aliexpress.com/	10,00 €	20,00 €	20,00 €
13	Heat Insulation Cotton	Heat insulation for the peltier element	1	https://www.aliexpress.com/	https://www.banggood.com/	0,61 €	0,61 €	0,61 €
14	Stripboard	Stripboard to solder all components on	2	https://www.aliexpress.com/	https://www.banggood.com/	0,35 €	0,70 €	0,70 €
15	Adhesive Thermal Conductive Tape	Double sided tape that conducts heat is always handy to mount heatsinks	1	https://www.aliexpress.com/	https://www.amazon.com/	0,18 €	0,18 €	0,18 €
16	PC Case Fans	Fans to cool the heatsink	2	My own fans from a PC-build	https://www.amazon.com/	6,00 €	12,00 €	12,00 €
17	Nylon standoffs	standoffs to mount heatsink	1	https://www.aliexpress.com/	https://www.banggood.com/	5,00 €	5,00 €	5,00 €
18	IEC320 C14 power plug	power plug to mount in case	1	https://www.aliexpress.com/	https://www.banggood.com/	0,50 €	0,50 €	0,50 €
19	MDF	MDF to create a case	1	Local DIY shop	-	15,00 €	15,00 €	15,00 €
20	L293D	Driver IC to make sure the RPI outputs don't pull too much current	2	https://www.aliexpress.com/	https://www.banggood.com/	1,00 €	2,00 €	2,00 €
Total			28				204,00 €	204,00 €