NEW

ELEKTOR OSPV1

An open source vehicle project

The Elektor Wheelie, which we launched a while ago, has been adopted by schools and private individuals who want to gain a thorough understanding of the technology behind self-balancing vehicles.

Our new Elektor OSPV1 is based on the same concept, but with the difference that it's for indoors, it's easy to steer, it's light and foldable, it's open source, and it looks smart.

It's for indoors

Ultimately it's up to you (subject to local regulations) to decide where you want to travel with the OSPV1, but it is intended to be used indoors. It's not especially well suited to negotiating bumps or uneven surfaces, since it has a ground clearance of just two centimetres.

The two wheels, which have a diameter of 14 centimetres, are far enough apart to keep you well balanced, but they do not provide much clearance for driving over thresholds or other types of bump.

However, it drives like a charm on any sort of flat floor – including factory floors, school corridors, and the corridors of our office building. The rider stands with both feet outside the wheels. Stepping onto the OSPV1 takes a bit of practice, but thanks to the low centre of gravity it feels very stable.

It's easy to steer

Once you have your feet positioned properly, all you have to do to get the OSPV1 rolling is to lean forwards or backwards. With the Elektor Wheelie you move the steering column to the left or the right to negotiate curves, but with the OSPV1 you use a small joystick for this. The vehicle responds immediately to joystick movements, so it's easy to perform pirouettes and other elegant manoeuvres. In fact, it would be right at home in a ballroom. The attitude of the OSPV1 is saved when it is switched on and is subsequently used as a reference, so you should ensure that the steps are level (horizontal) during this process.

It's light and foldable

The OSPV1 is designed to be taken apart easily, so it can be stowed conveniently in the boot of a car. It's also relatively light. It weighs just 25 kg, so you don't have to be a muscleman to pick it up. The pivot and fixing point is on the steering column, which comes apart after you loosen two wing nuts. I'm willing to bet that many of you will be inspired to apply your creativity to this and perhaps come up with a smarter and easier solution. You're welcome to do so – the OSPV1 is very amenable to simple modifications.

OSPV1 specifications

Weight:	25 kg (55 lbs)	Ground clearance (under steps):	20 mm (0.8 inch)
Height:	120 cm (47.2 inch)	Foot height (on steps):	5.6 cm (2.2 inch)
Width:	47 cm (18.5 inch)	Width between steps:	29.5 cm (11.6 inch)
Depth:	47 cm (18.5 inch)	Range:	8 km (5 miles)
Maximum load:	90 kg (200 lbs)	Turning circle:	0 m

We're all looking for balance in our lives. With a bit of modern electronics, that's actually not so difficult. Last year we launched the Elektor Wheelie, a self-balancing personal transport device. In this issue we take you for a spin with the new Open Source People Vehicle 1 (OSPV1).

It's open source

The nice thing about the OSPV1 is that you can configure or modify it to suit your wishes. The electronics are the same as in the Elektor Wheelie, the software is freely available, and you can even modify the software to alter the handling characteristics. Everyone who has been involved in developing extensions for the Elektor Wheelie can also use them with the OSPV1. The schematic diagrams, PCB design and source code listing are all available on the Elektor website. The OSPV1 is supplied with a charger for the two 12-V rechargeable batteries, which have a capacity of 9 Ah.

It looks smart

Of course tastes vary, but up to now the OSPV1 has drawn only positive responses. During our test runs we heard comments like "hey, that's neat", "nice device", or simply oohs and aahs. The structure is open and intentionally light, with clean lines.

What you can do with it

The OSPV1 is primarily intended for moving people, but it doesn't have to be limited to that. A variety of other uses are conceivable, ranging from an electric wheelbarrow to a handy motorised shopping cart. This is where the advantages of the open source approach come to the fore. Everyone is free to work on the design and turn it into something special. As already mentioned, it is intended for indoor use, which also includes factory buildings, terminals, school corridors, and so on – as long as the floor is flat, the OSPV1 can run on it.

As for street use, we should point out that using vehicles such as this on the street is subject to rules and regulations, which may vary from country to country. There's also an upper limit on the rider's weight; anything up to 85 kg is perfectly OK. Finally, you should give some thought to body protection – after all, you're riding on a moving vehicle.

Where to get it

The OSPV1 is exclusively available from the Elektor Shop.
Visit www.elektor.com/ospv1 for full information.

Max. speed:	15 km/h (9.3 mph)	Batteries:	2x lead-acid gel-cell CTM ct0-12L, 9 Ah 12 V
Wheels:	Polyurethane, 14 cm dia. (5.5 inch)	Charger:	Suitable for Europe (230 V) and North America (110 V)
Motors:	DC, 2 x 250 W		
Drive train:	HDT toothed belt	Charging time:	2.5 hours