

Electric Vehicle Charging Cable Management, Version 1.0

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Some Electric Vehicle charging stations have a retractable cable that helps to support the charging cable.

I liked this idea and wanted to duplicated it in my garage.



My version employs a rope, a pulley, and a weight.

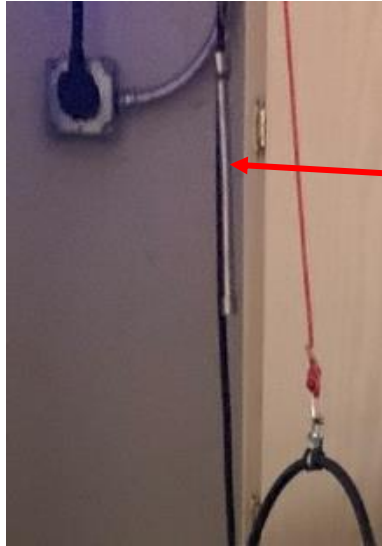
Here you see the rope lifting the cable off of the garage floor.



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When not in use, the cable lifts the cable off the floor and out of the way of the car.



The weight is a slender steel bar that does not tangle with the power cable.



An insulated clamp goes around the charging cable and is supported by the rope. The clamp is just tight enough not to slide.



The charging cable exits the top of the Charging Station, loops around a piece of 6-inch diameter ABS pipe twice, and then drapes towards the floor. The ABS pipe ensures the cable's minimum bend radius of 3 inches is not violated.

The plug (SAE-J1772) rests in a homemade plastic C-shaped holder for easy access.

The Charging Station is positioned right-side-up with the charging cable exiting the top. This required a bit of planning so the electrician would install the 220-volt outlet (Hubble 14-50R) in the correct orientation.

The Charging Station hangs by its keyholes on two screws set into a wood block. This wood is secured to the wall using drywall anchors.

My 220V breaker is rated at 60 amperes and is located in my main breaker box. Stranded 6-gage wire runs approximately 200 feet through ridged or flexible conduits, depending on exposure². The outlet is rated at 50 amperes, and the maximum draw from the car is 32 amperes. This provides adequate safety margins.

Installation was performed by a licensed electrician and approved by the City of Phoenix.

I welcome your comments and questions.

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² Conduit was used outside and in my garage. Flexible conduit was used in the attic. Due to thermal limitations, the cable in not passed through both ridged *and* flexible conduit at any point in the cable run.