

Tire Air Valve Redesign

Problem

It's cold and dark. You have thick gloves on. Your car tires are running low on air and the closest gas station is going to charge by the minute. This is going to be painful!

Dust caps are tiny and often tightly wound. Screwing and unscrewing the cap is hard and time consuming.

Air pumps are often in badly lit areas and pressure from the pump gauge needs to be checked against ranges from car manual. This presents an opportunity to give valuable feedback to the user.

Users need to keep track of the caps and they can be lost easily or forgotten.



Solution

Screw mechanism is unnecessary. Cap can stay on air valve using a strong magnet. Ridges and rubber grip on cap provide **affordance** to pull cap off. Magnetic forces and fit of cap provide **feed-forward** to put it back.

Red LED is connected to internal pressure sensor to provide **visual feedback** that lights up when air pressure is outside safe range.

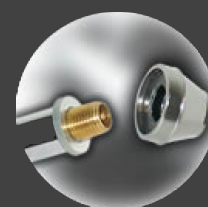
String keeps cap attached to valve and prevents it from getting lost. It also provides a **visual reminder** to put it back on.



Similar Controls:



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