

Project n°16: Wearable Screwdriver Tool

Proposed by:

PB Swiss Tools

Company description:

PB Swiss Tools has been developing and producing uncompromising Swiss quality since 1878: precise, innovative and reliable. Anybody who drives screws professionally will appreciate these excellent tools and medical devices. Work with the best.

Project description:

Want to be part of the team designing a wearable screwdriver with PB Swiss Tools? Our development department opens up its doors to EPFL engineering students with a curious, enthusiastic mindset and aiming at finding out how to design and manufacture the next generation wearable screwdriver. Technically speaking, the tool

- must be a wearable device for a human hand
- must have its driven shaft in place of the extension of the movable human index finger (in order to benefit from excellent finger mobility)
- must be able to generate a torque of 1 Nm while the produced reaction torque of the same magnitude needs to be transmitted to and absorbed by the human wrist
- needs to feature a ¼" hexagonal interface in order to drive standard bits clock- and counterclockwise (see figure below)
- may have a smart functionality such as screwhead-type and -size recognition



Position of driven shaft



Torx Bit size 20 with hexagonal interface