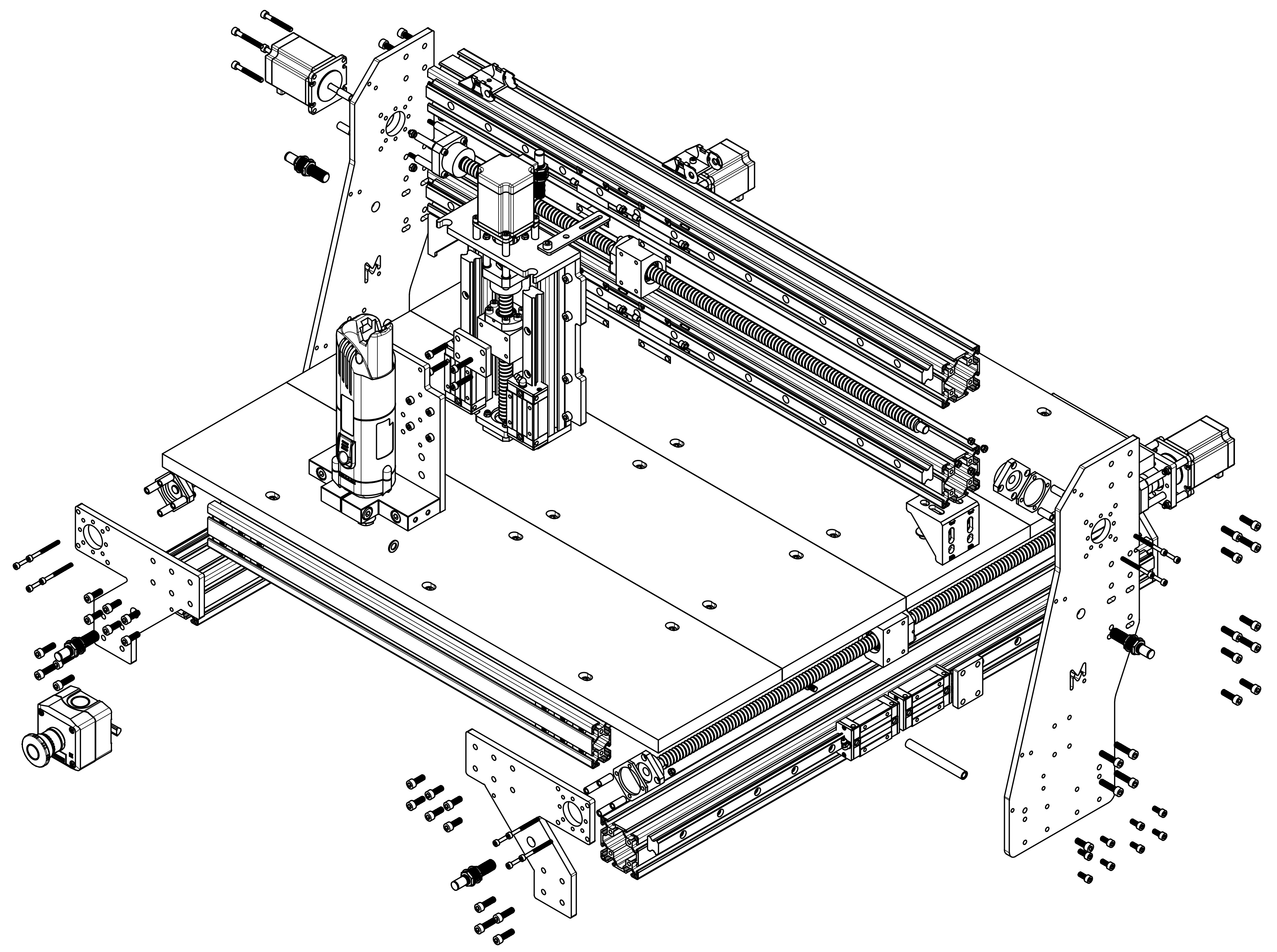


# PROPOSAL DESIGN METHODOLOGY FOR OPEN-SOURCE MACHINES

## 1 DESIGN FOR DISASSEMBLY

Principle that calls for rational design decisions and sustainable material selection, defining how the product and its materials are joined together, and how they are layered in a way that is accessible and reversible.

DfD makes it easier for your product to be repaired or upgraded, prolonging its useful life. It can also help ensure your product is recycled and enable whole components to be reused.

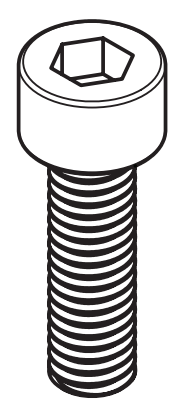


## 2 80% STANDARD

WHAT DOES **STANDARD** MEAN?

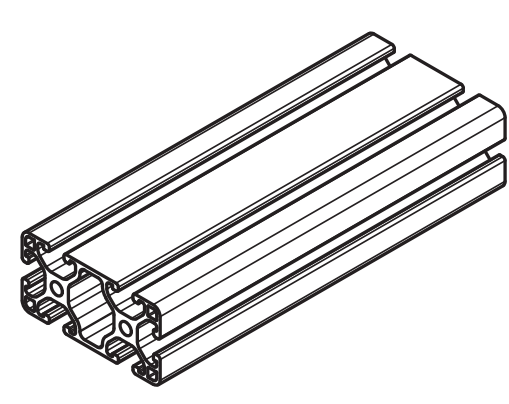
A standard component is a part that is **industrially produced** and **easily available from global suppliers**. Those components can be separated in three major categories:

### FASTENERS



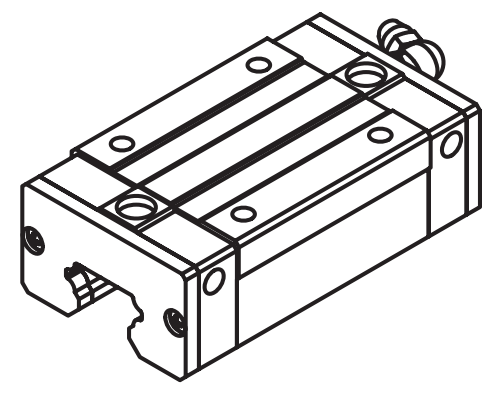
Screws, bolts or any components that are used to bind structural parts.

### ALUMINIUM PROFILES & ACCESSORIES

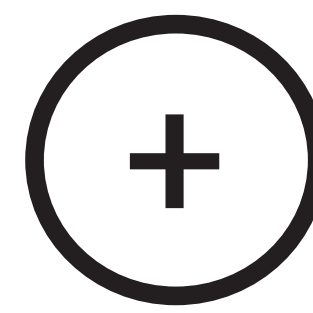


The famous T-slot profile, used as the base of modular design.

### MECHATRONICS



Belts, pulleys, motors or any components that create motion in an assembly.

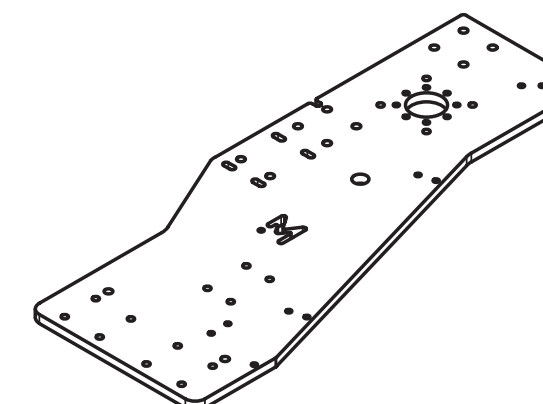


## 20% SPECIFIC

WHAT DOES **SPECIFIC** MEAN?

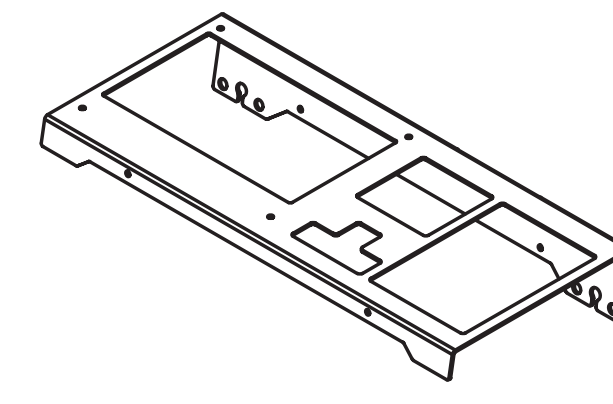
A specific component is a part that **has to be manufactured** and **can not be found in any existing catalogs**. They can be separated according to their production processes:

### CUTTING TECHNIQUES



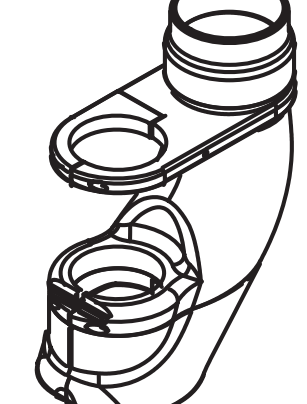
Those parts are mainly used to connect components. Easy and cheap to produce, those type of specific parts should be privileged.

### SHEET BENDING



Bended metal sheets are an efficient solution to create boxes and casings. They can also be used to create special brackets.

### 3D PRINTING



For small but complex shapes, 3D-printing can be a very cost-efficient process. In any cases, avoid injection molding.

## 3 GOOD PRACTICE

### USER EXPERIENCE

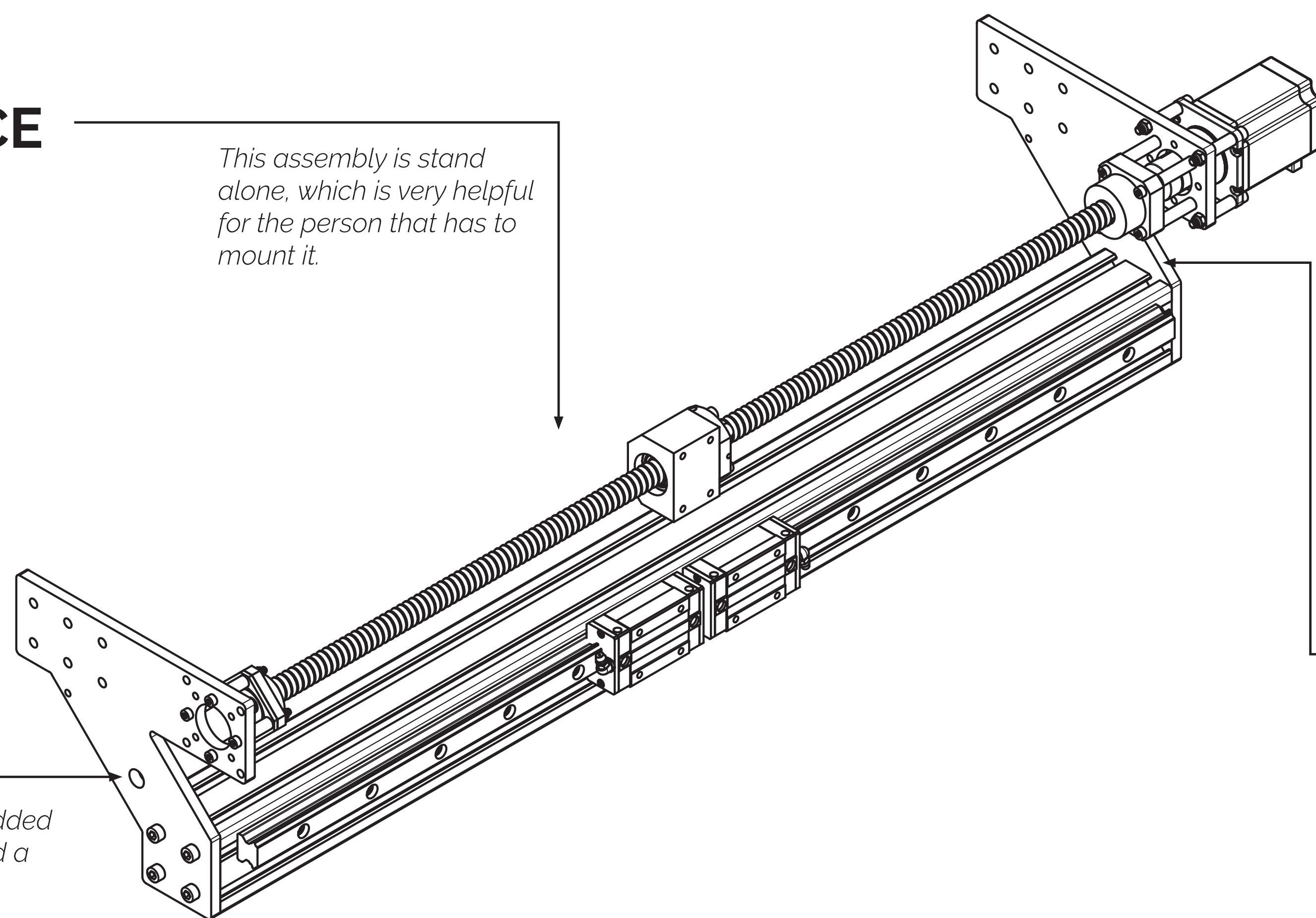
Keep in mind how users will mount and use your machine, put yourself in their place.

This assembly is stand alone, which is very helpful for the person that has to mount it.

### DESIGN ITERATIONS

Don't try to design the «full option» machine at once. Focus on the basics to create a first functional version of the machine, then iterate to add features.

This hole was added on the V2 to hold a proximity sensor.



Those specific parts are identical even though some holes are left unused on the other side.

### LESS IS MORE

Design identical parts as much as possible, similar parts will create confusion for production and for the end-user.

Do not complexify parts when it is not needed. The simple aesthetic will come out from the rationalized design.



DESIGN GLOBAL  
MANUFACTURE LOCAL