BISIT

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Barcelona School of Design and Engineering

Projects I
Group 103

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INTRODUCTION

This project was demanding an appealing premise, to find a comfortable and viable solution to the problem of having to repair any accessory when someone is skiing / snowboarding, cycling, surfing / wind surfing or skateboarding. Therefore it was necessary to find a practical tool to fix whatever on the go, helping the user, as well as improving the practice of one of these sports in general.

From the outset we wanted to reconsider the project requirements. We have many kinds of repairing tools, and fixing things is tedious and takes time. Why not help the user to repair making this task more comfortable? We asked ourselves. But that's not all, why not helping someone to repair and also give them an application that can be used on another occasion? This is what we also asked ourselves.

So this is what we've done, we have developed a product that not only helps the user in cycling, it launched an idea that can change the cycling world in general, a tool that does not take any extra space, without being expensive and without adding extra weight. This is our purpose.

STORY 1: CALIFORNIA CHILLING

Henry is a 23 years old guy from Santa Cruz, California. He has a big crush on Megan. They didn't really talk yet but they know each other through common friends. Henry is learning to play guitar, he is not Paco de Lucia... But well he is learning... It's summer and next Friday three Henry's friends and three Camille's friends are going to hang out on the beach. Megan is going to be there and Henry thinks next Friday is the perfect time to show his new guitar skills hoping that will impress Megan.
It is Friday and Henry it's on his way to the beach, he is driving his bike and carries his guitar on his back, and all of a sudden… shut… he realizes he is not going to be sitting on anything, he is going to be laying on the sand and he doesn't know if he is going to perform well the guitar in that body position. Oh… but he remembers he can seat on bike seat that can be used as regular seat. Yes, no wonder he is going to impress Megan!

STORY 2: SUSHI STOP

Ayako it's an 18 years old girl from Japan. This past summer just graduated from High School. She is much exited because she decided next year she is going to travel all over the world with her friend Yuko. They both are looking forward to this adventure before university. So in order to raise money for this adventure this summer is working double shift on a delivery company. She delivers cards, packets and food with a bike. She works really hard, and even most of the days she has to eat her lunch on the go with not so much time. Usually she would eat anything standing but with the product concept we are presenting today she is going to find a quiet place and eat sitting without much of a rush.

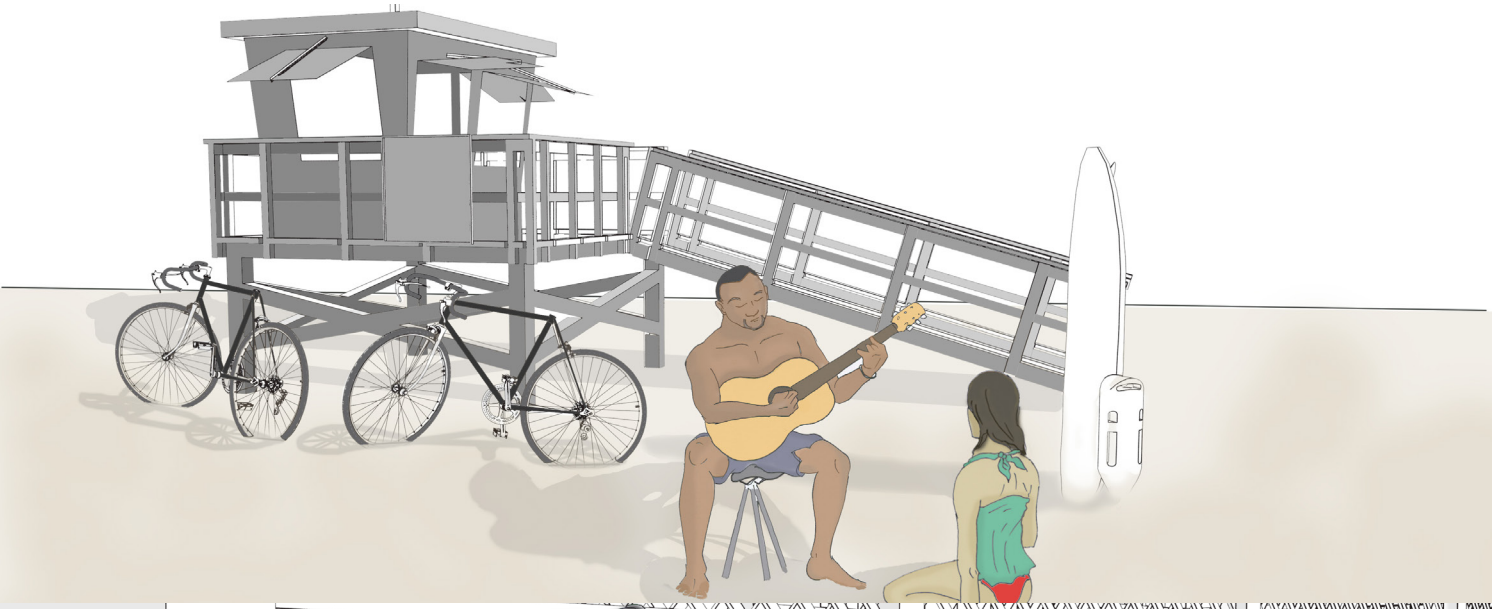
STORY 3: MOUNTAIN BIKE PASSION

James is a 33 years old guy from Sao Paulo, Brazil. He works on family business as an electrician. His passion is mountain bike and he is been saving money for his next vacations to go to Whistler Mountain Bike Park in Canada, the Mecca of downhill mountain bike. He is already there and first run he brakes the chain. Mannn…what a bother!… that can be repaired in place but it is going to take some time… No problem his bike seat can be used in more than one way so now he is repairing his chain comfortably and quickly can go back to ride his bike.

USER

THREE STORIES AROUND THE GLOBE

These three stories are about people we want to help, these are our users. But everyone in this world has its own story, and we want to reach them all. We don't want to discriminate any person because of their age, cycling is for everyone and this is our goal, a product for everyone. We don't want to focus on a particular profile, we want to focus in certain cases, in all possible cases.



A BIKE SEAT THAT TRANSFORMS TO A REGULAR SEAT

A UNIVERSAL PRODUCT

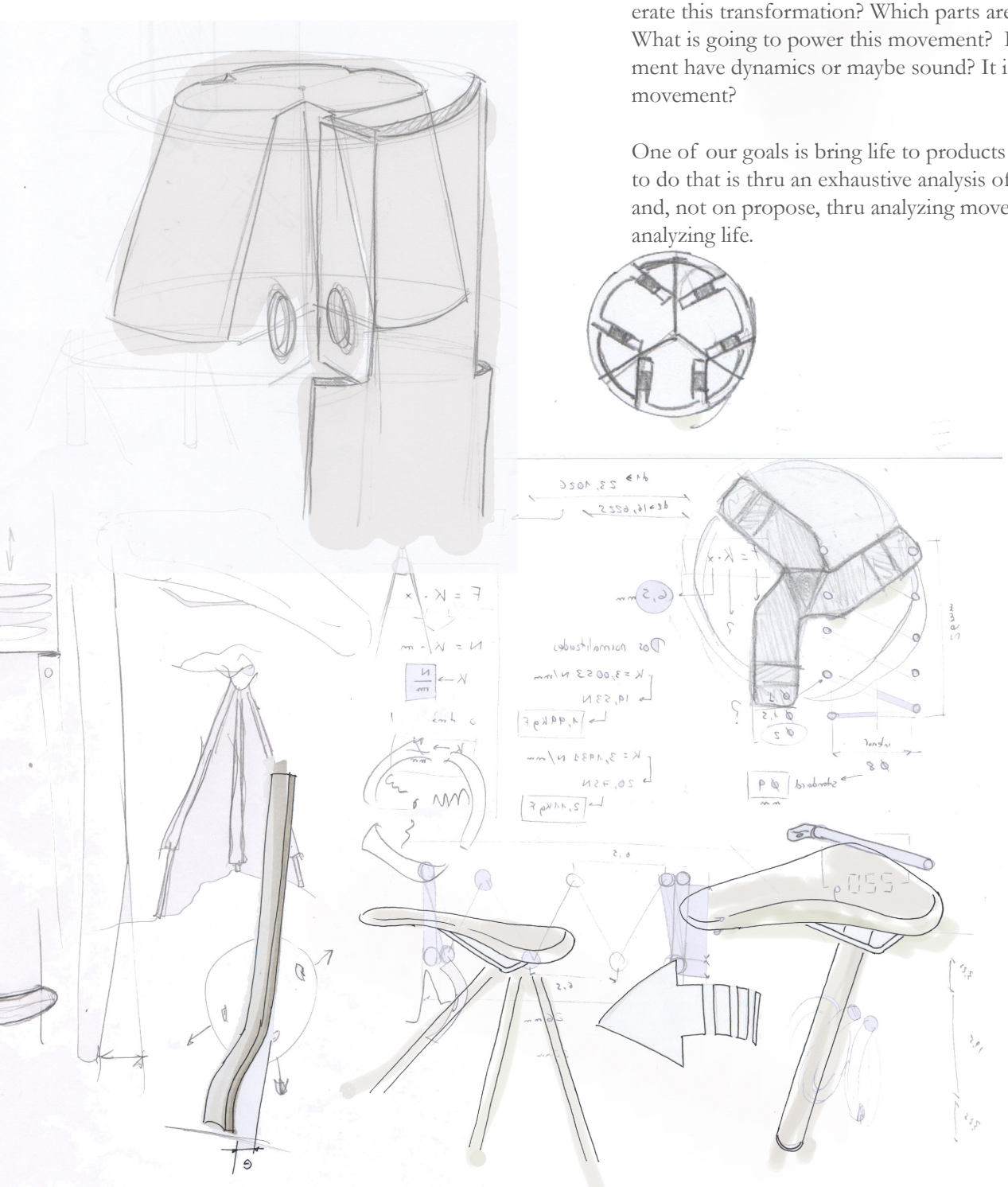
No matter what kind of bicycle, mountain bike, city bike, road bike, utility bike, etc. Nowadays, 95% of the bikes in the planet use a seat post to support the seat: a cylinder tube that gets into and it's supported by the bike frame.

So keeping this in mind, we aim to design a product that will adapt to this structure. The goal is that everyone who has a bike can use our product.

The movement as stating point. Where there is no movement there is no life. If René Descartes (1596 – 1650) justified existence with his famous quote "I think therefore I am". Life can be justified as "I move therefore I'm alive". The ultimate need of a human being is breath, without it in few minutes movement stops and the darkness, the only color that stops light movement, appears as an iconographic symbol of death.

The design we present it's the result of answering questions about movement. It Couldn't be another way since the main word on the project value proposal is "transform": How a bikeseat can transform? What movement it's going to generate this transformation? Which parts are going to move? What is going to power this movement? Does this movement have dynamics or maybe sound? It is a unidirectional movement?

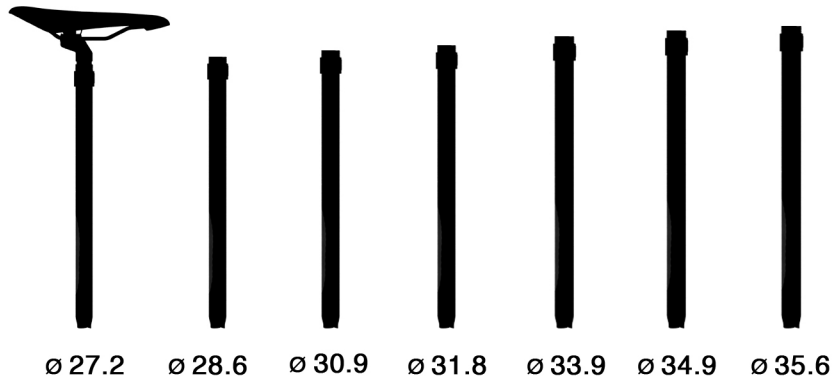
One of our goals is bring life to products and our strategy to do that is thru an exhaustive analysis of the movement and, not on propose, thru analyzing movement we end up analyzing life.



ADAPTING TO THE STRUCTURE

There are many sizes of seat posts on the market. The difference between them is the diameter of the tube. The ranges go from 25mm to 35.6mm. In this first stage of the project we propose a diameter of 27.2mm.

To adapt BISIT to other diameters the user will need an external adapter that can be found at any bike store.



BISIT is a very intuitive and easy to use product. We wanted a simple solution to a simple system, at least a priori. The automatic opening of the legs was the main purpose to achieve. But automatism sometimes implies less control, and therefore less security. BISIT works like any other conventional bike seat, just loosen up the seat post clamp located on the bike fream, grab the seat and pull it out away from the frame. The internal mecanism will make legs open automatically. Now the BISIT it's ready for you to seat. If you wish to have the BISIT out of the bike frame but with the three legs closed, screw down the top component of the seat post. This piece lock the three legs together and keeps them closed.

When BISIT it's on the bike, there is no difference between a regular seat post, performs and weights the same. Everything that allows the dual BISIT functions are hidden inside the structure so when you ride your bike you are not carrying anything extra.

HOW TO USE BISIT

Bisit incorporates a locker system to keep the aperture mechanism closed. If you wish to keep BISIT legs closed when the Bisit it's out of the bike frame. Screw down the looker ring.

To use BISIT as a regular seat, screw towards the top the top the looker ring. This will free the mechanism that will automatically open the legs.

PRODUCT PARTS

The BISIT it's composed of four main parts; the legs, the seat connector, the locking sistem and the automatic mechanism. This set has been designed to be as unobtrusive as possible, so that all these pieces are integrated and hidden in the design. Besides of the volume, we've also thought about the weight, making a product that isn't heavier than conventional seats, in order to make it an even more competitive product.

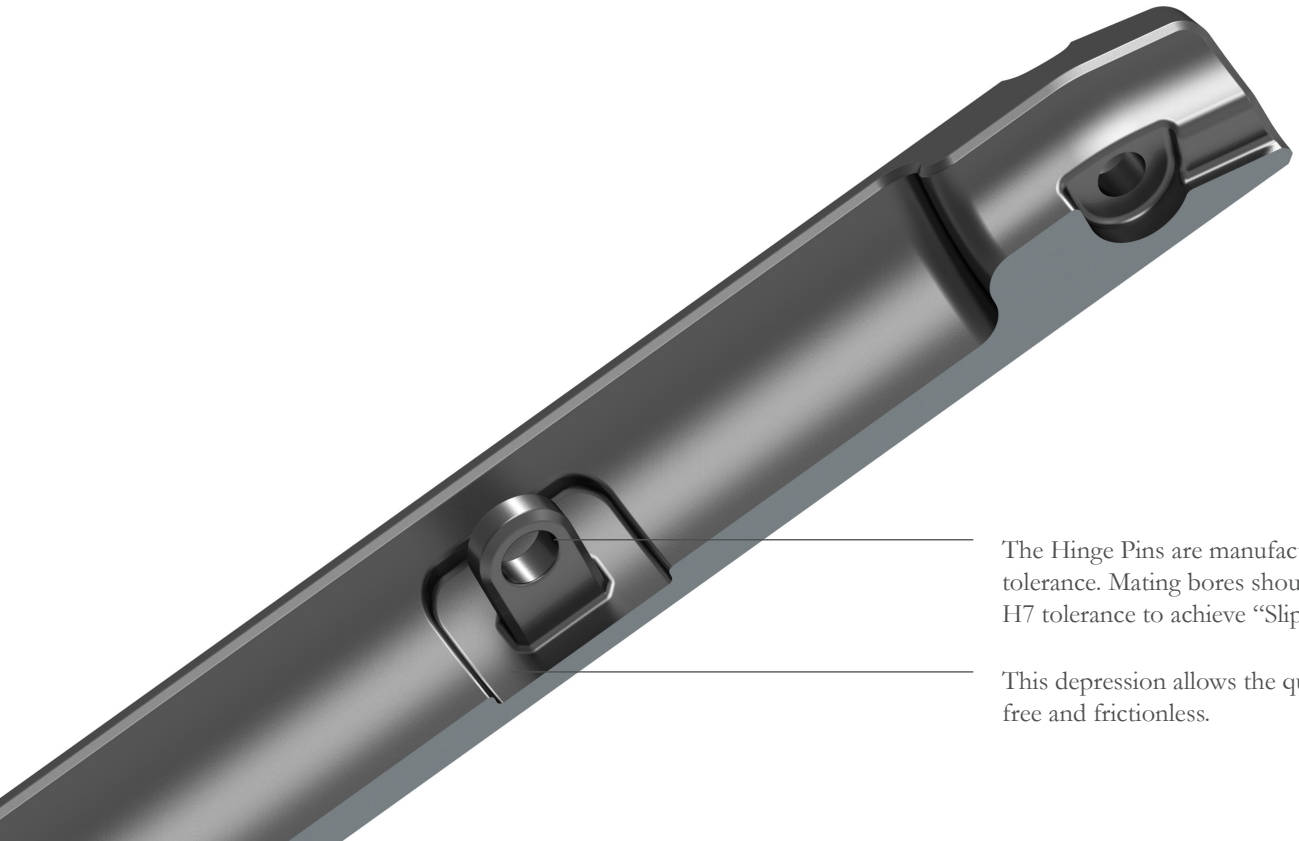
PRODUCT PARTS

LEG

Volume: 26152.5 mm^3
Weight: 70.6 g
Material: Anodizet Aluminium

The extreme part of the leg has a special shape to rigidize the whole structure and to help place the seat post into the bike frame. The 15 degree profile places the leg parallel to the fool when the BiSit is open.

400mm



The Hinge Pins are manufactured with “g6” tolerance. Mating bores should be made with H7 tolerance to achieve “Slip Fit” connections.

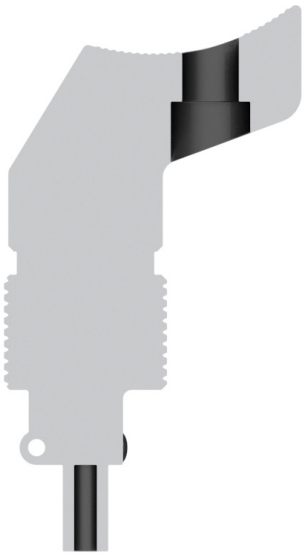
This depression allows the quick link to move free and frictionless.

As well, whe have the same holes as we have in the leg, with H7 and g6 (axis) tolerances.

SEAT CONNECTOR

Volume: 46263.2 mm^3
Weight: 125 g
Material: Anodizet Aluminium

88mm

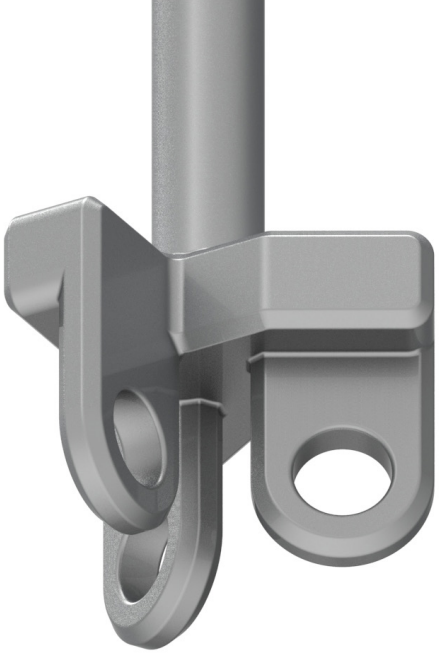


This roughness texture helps stabilize the sit connectors

PRODUCT PARTS

LOCKER RING

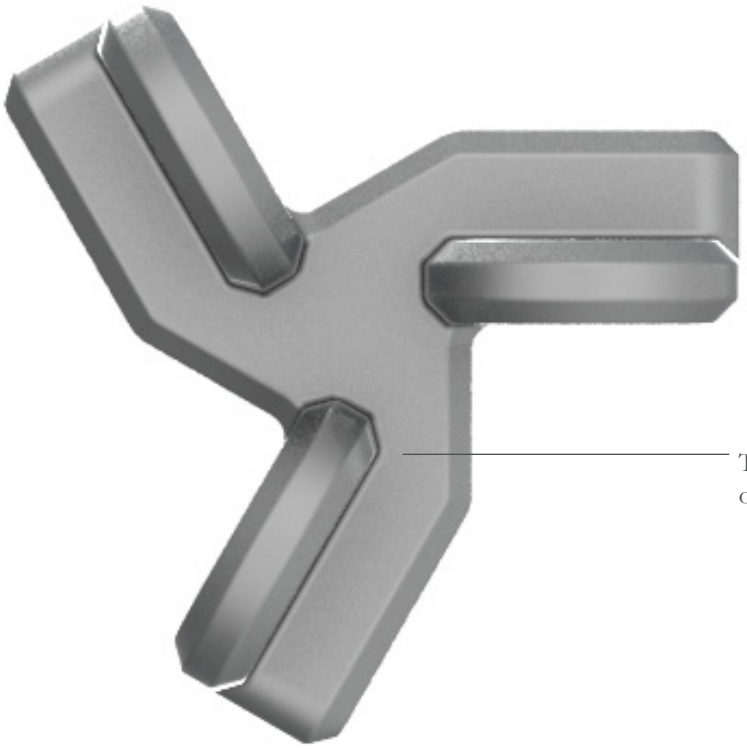
Volume: 5255.22 mm^3
Weight: 14.2 g
Material: Anodizet Aluminium



MECHANISM

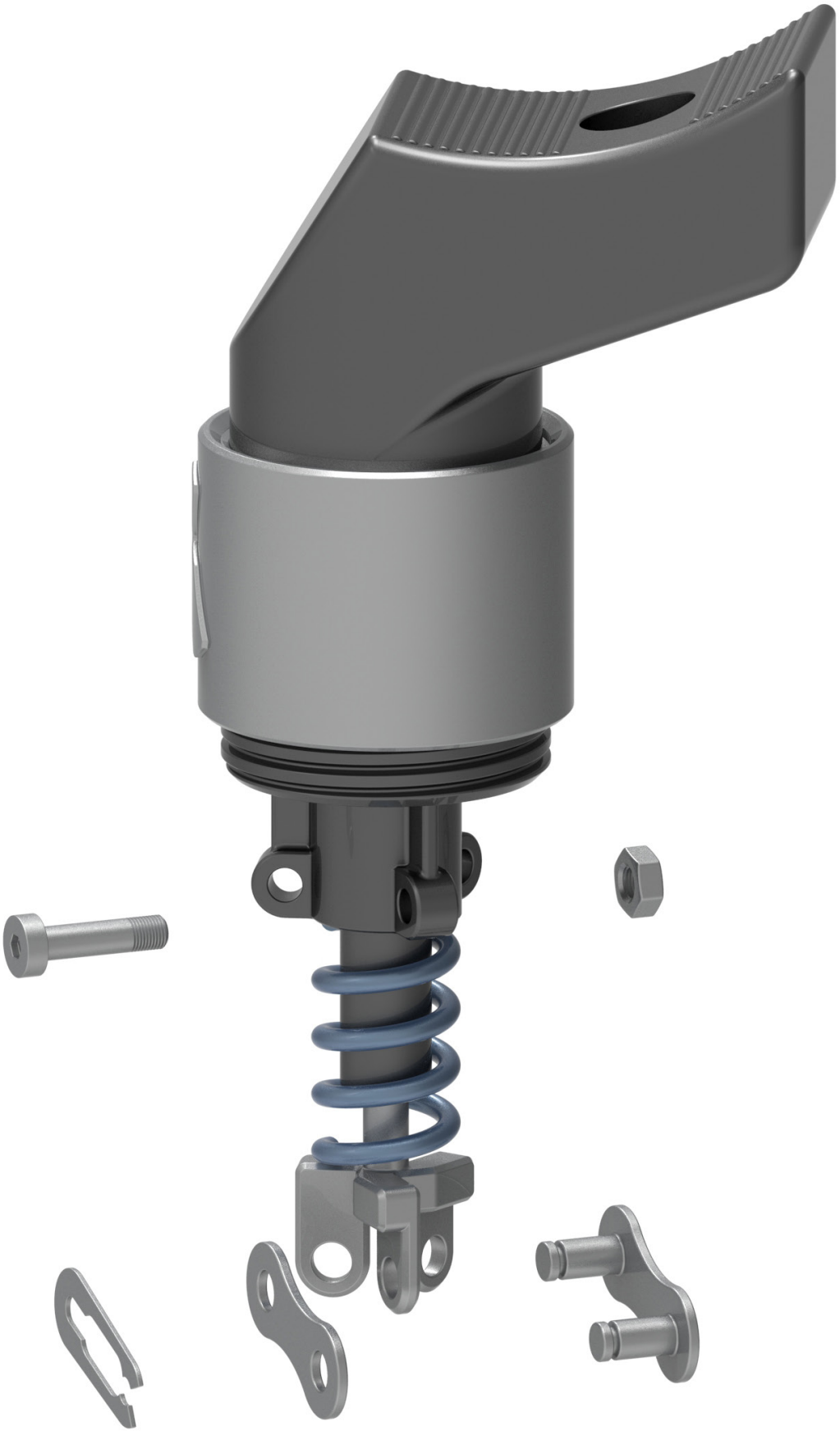
Volume: 748 mm^3
Weight: 2 g
Material: Anodizet Aluminium

27mm



This shape, inspired us for our logo

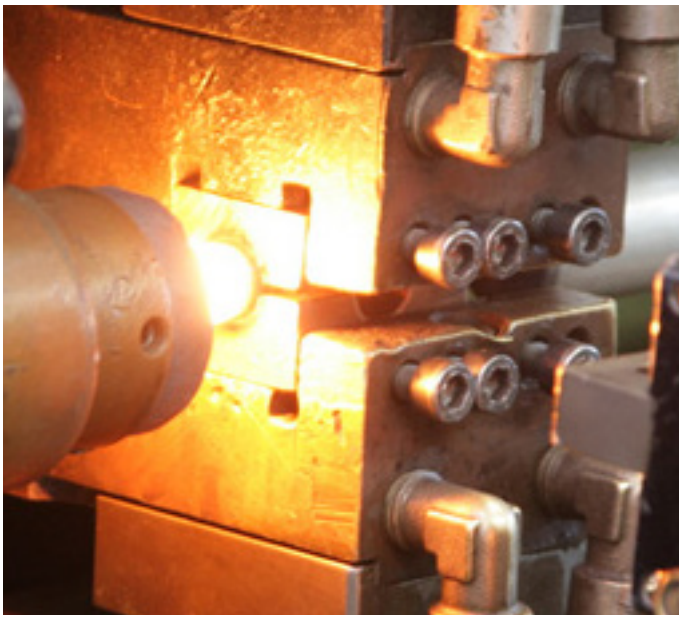
First we assemble the legs with the seat connector, then the spring and the mechanism are placed and assembled with the quick links through one of the pieces inside the shaft between the legs



HOW TO ASSEMBLE BISIT

We've disigned BISIT to match with standard bike seat parts. The top of our product has a curve shape to adapt to the standard bike parts before named

HOW TO ASSEMBLE BISIT 24



Stamped parts were used for mass-produced bicycles in the 1890s. Stamping replaced die forging and machining, resulting in greatly reduced cost. Although not as strong as die forged parts, they were of good enough quality.

We've used this process for the manufacture of the legs, basicly because of it's long and iregular shape.

Casting is the original and most widely used method of forming aluminum into products. Permanent mold casting involves molds and cores of steel or other metal. Molten aluminum is usually poured into the mold, although a vacuum is sometimes applied.

We've used this process for the manufacture the legs, basicly for it's long and iregular shape.

This Project represents the work of 10 week under “projects 1” class context. We already have set a big part of the project process. Next stage would we to bring the product to the market. In order to do that, from an engineering point of view more testing on the prototype would be required.
We want to thank with special affection Robert Thomson, our advisor for this project. We have learned beyond what we first thought. We really hope to work with Robert again.