

TATTOO ARTIST ERGONOMIC SITTING AID

Bachelor Thesis project

Partner: Eikon Device Inc.

Brief: Create a device to improve ergonomics for tattoo artists and provide a better working posture, while taking into consideration the hygiene aspects as well as appealing to different individuals

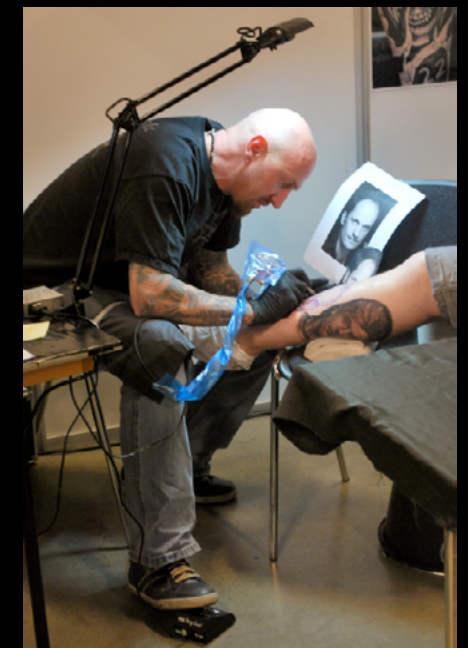
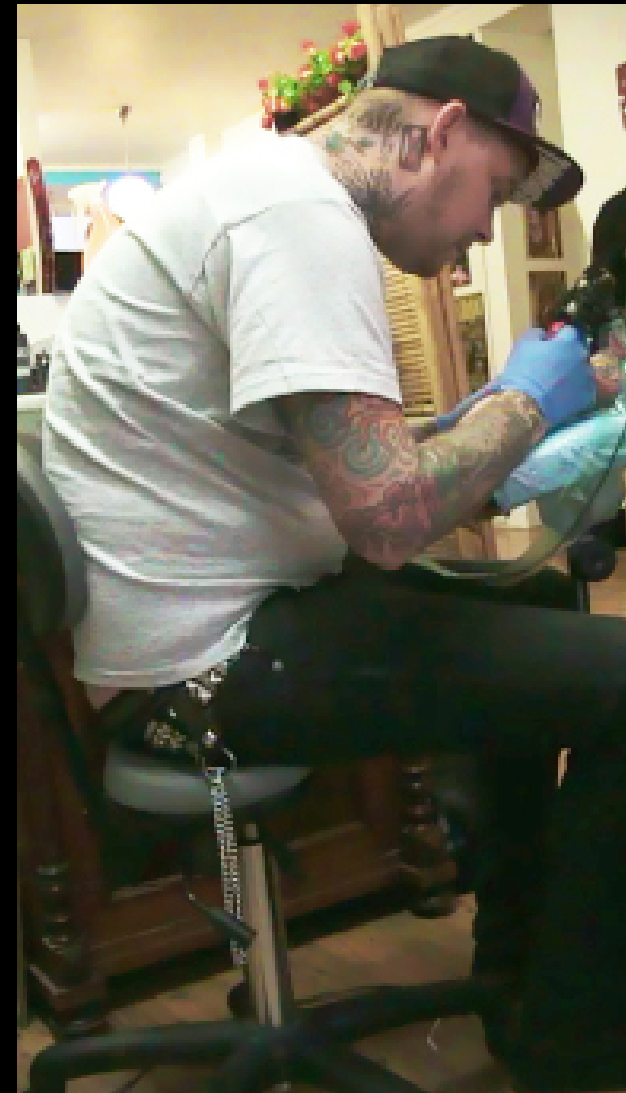
Length: 10 weeks

EIKON[®]
TATTOO EQUIPMENT & SUPPLIES

Background

A majority of tattoo artists today suffer from very **poor work ergonomics**, sometimes resulting in chronic injuries - around **80% of tattoo artists suffer from back problems**. In a steadily growing and increasingly more professional industry, it seems a little intriguing that there is not yet any thoroughly designed work chair for the tattoo artist.

This project is making an attempt to tackle this problem.



Research summary & focus points

Workplace aspects

- Hygiene aspects - design surfaces for easy cleaning and wiping, as well as consider potential cross-contamination risks
- Consideration of varying size of work station - must work in small areas
- Need for versatility, and flexibility during work - responsive to repeatedly adjusting of upper body and arms
- Production and retail price range - balance between financial accessibility and functionality



Ergonomic aspects

- S-shaped curve in spine desirable to prevent disk injuries
- Pressure on buttocks and thighs affects blood circulation - can cause fatigue and affect bowels
- Open hip angle improves posture and circulation
- Bent and twisted back hard to avoid during work, yet greatest cause of injuries
- Quick access and flawless

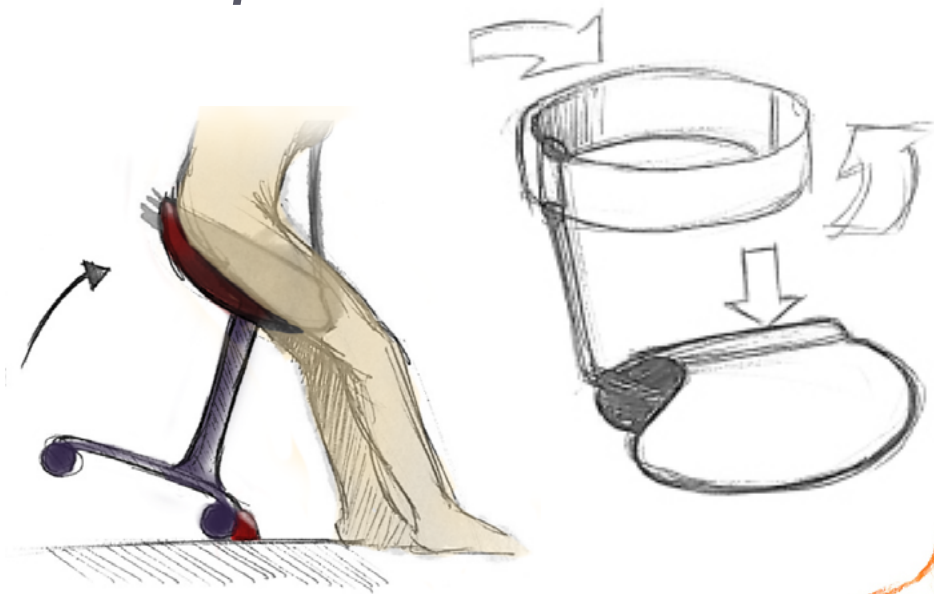


Open hip angle

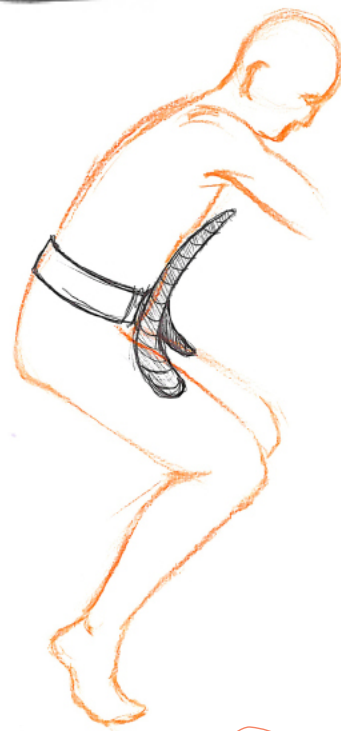


Pressure chart comparison for buttocks and thighs

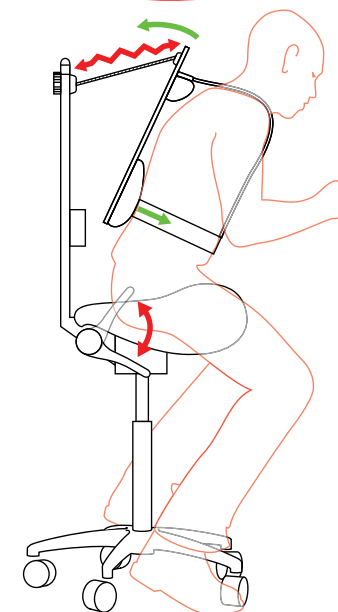
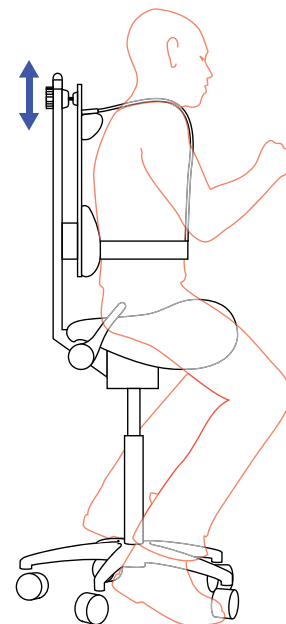
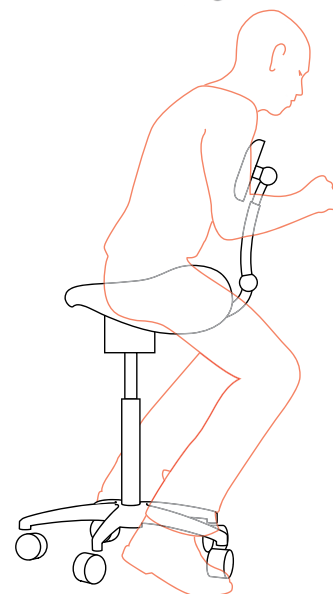
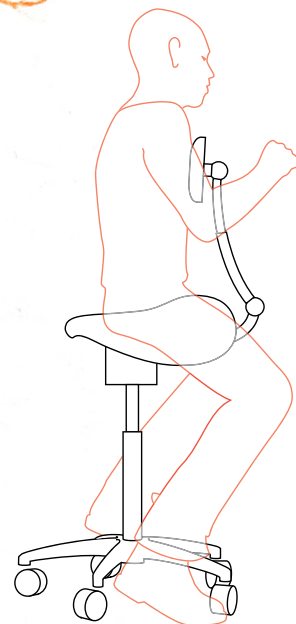
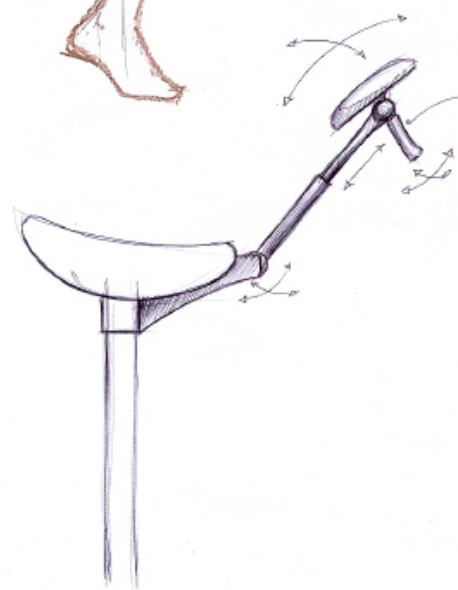
Concept ideation, evaluation & development



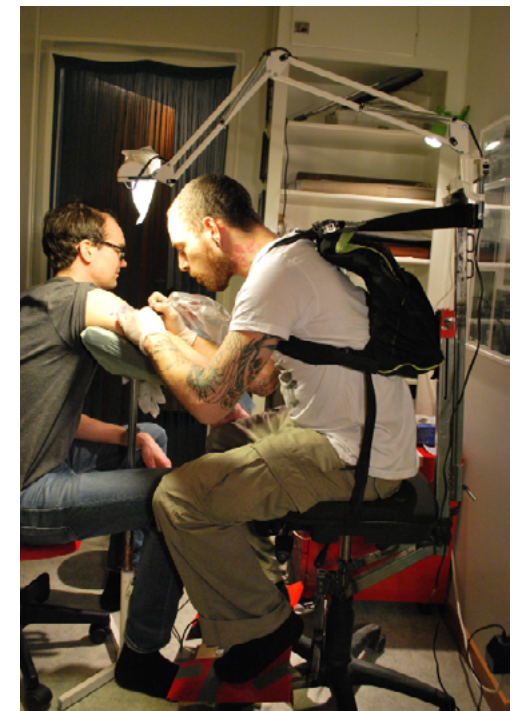
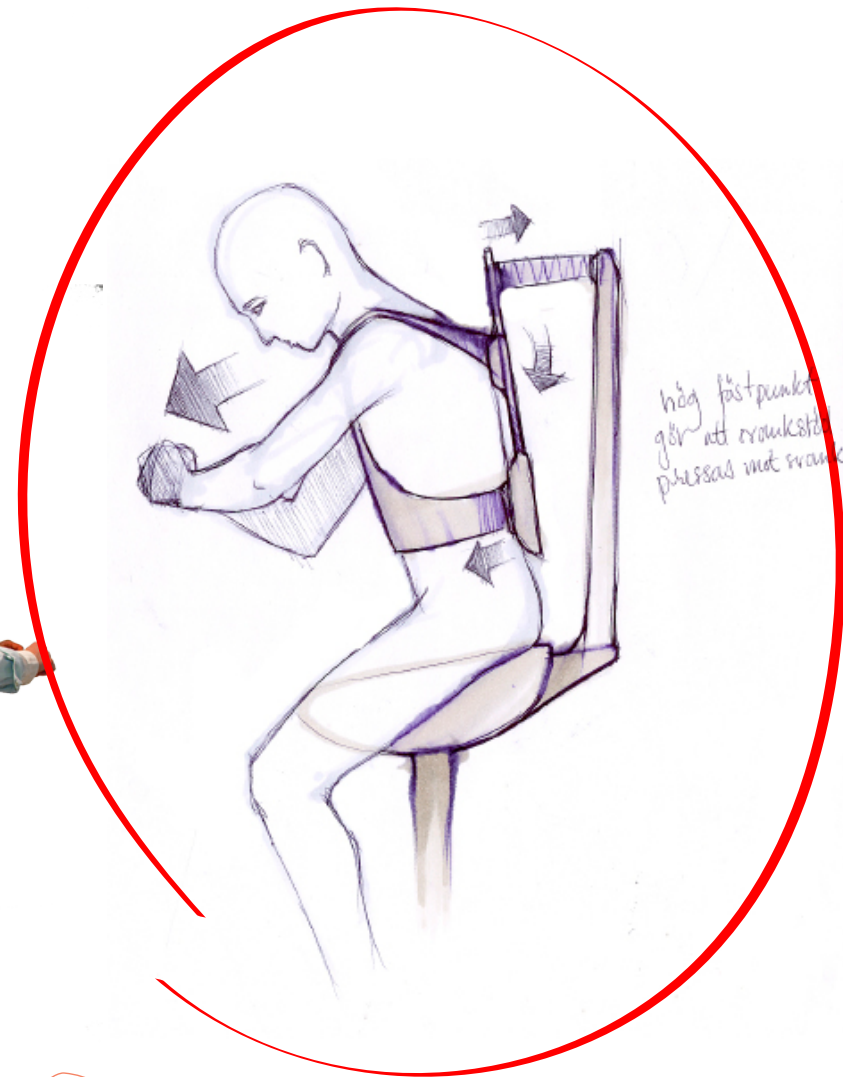
elastiskt band/gjerd
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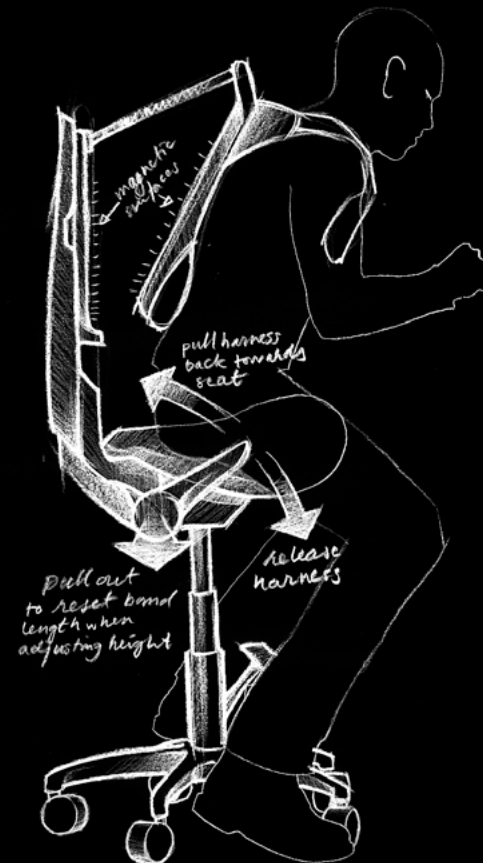
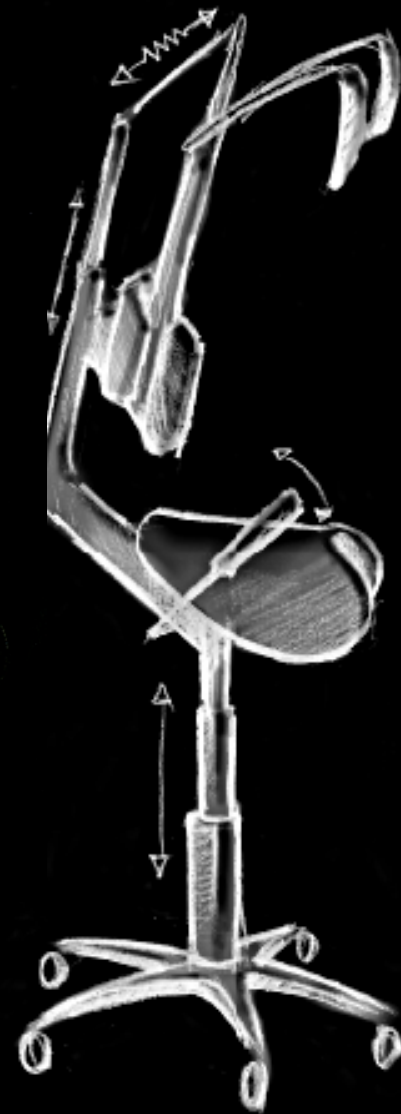
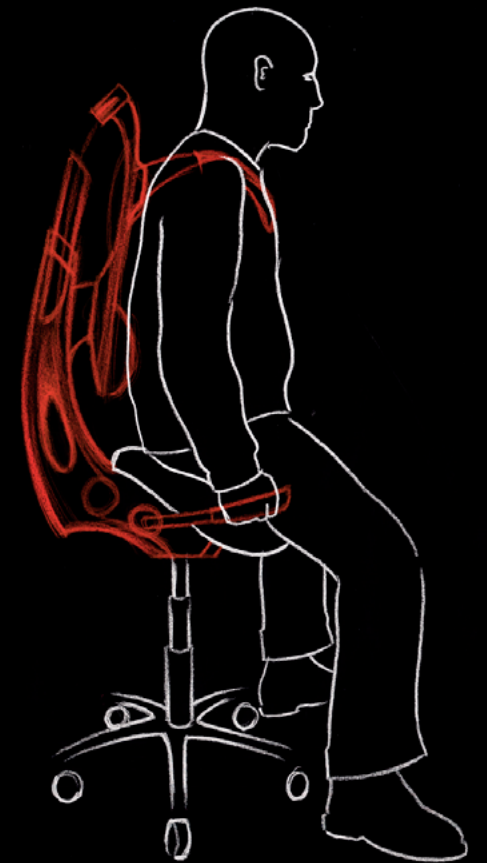
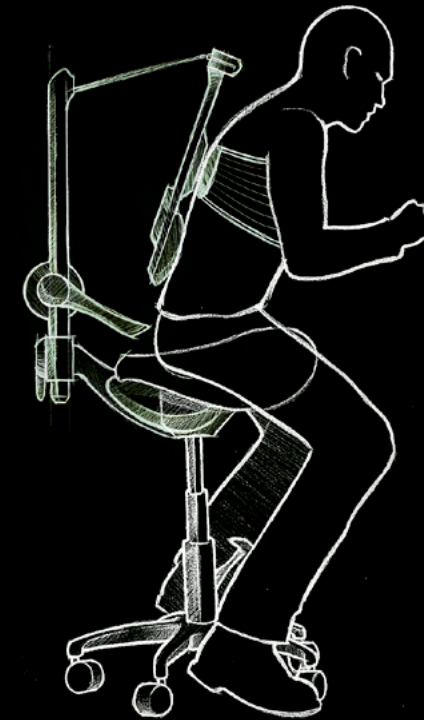
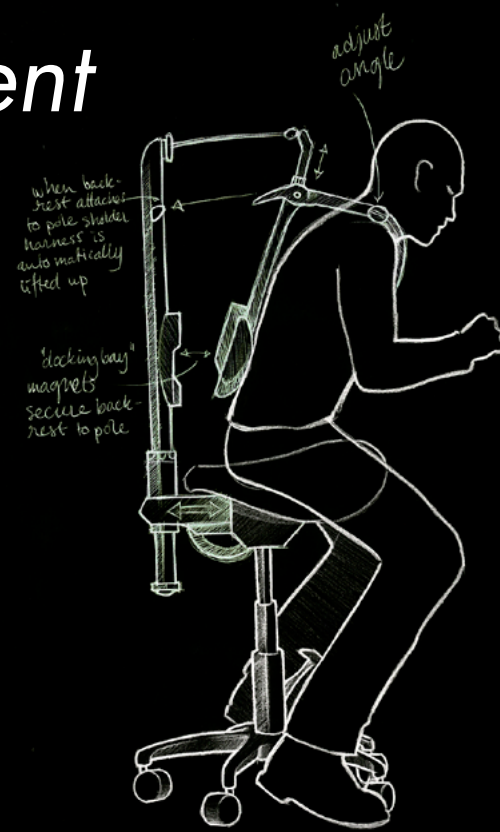
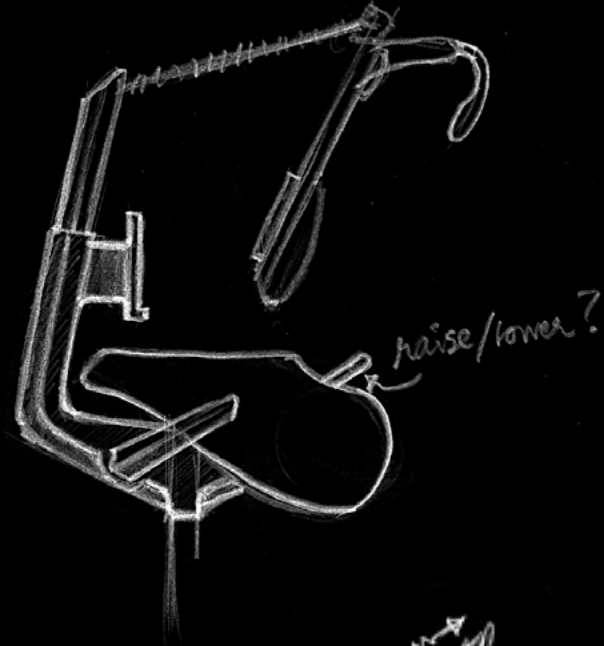
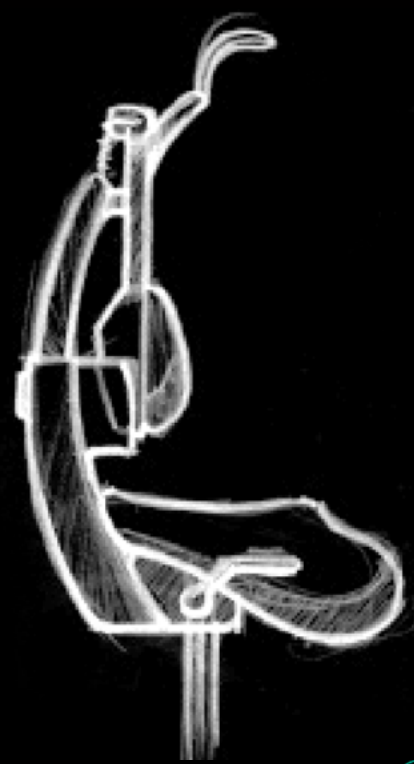
lock/unlock
position up/down
(twist/push/pull)



Picked concept:
**Chest harness with flexible wire
to support discs and muscles
and maintain s-curve in spine**



Refinement & form development

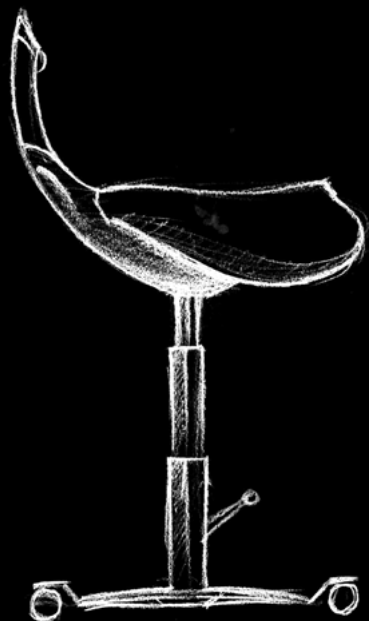


Tapered shape for sleek feeling

Arch expresses resilience

Opening to lighten up form and counter bulkiness

Robust base conveys stability and trust



Proposal

A new chair concept, where the beneficial features of the adjustable chair have been complemented by a suspended support for upper body and lower back.

Thanks to the flexible adjustments of length and support wire springiness the user can be supported and relieved in most occurring working positions. This support minimizes the risk of work related injuries and back strains - potentially significantly prolonging the career of the user.



scale 1:1 physical model



typical working position...



...new and improved position!

Features

Adjustable height of wire post and lower back rest to accomodate different body types and different styles of working

Harness pads gently grasps user and supports weight of upper body

Lower back support provides desired s-shaped posture in spine

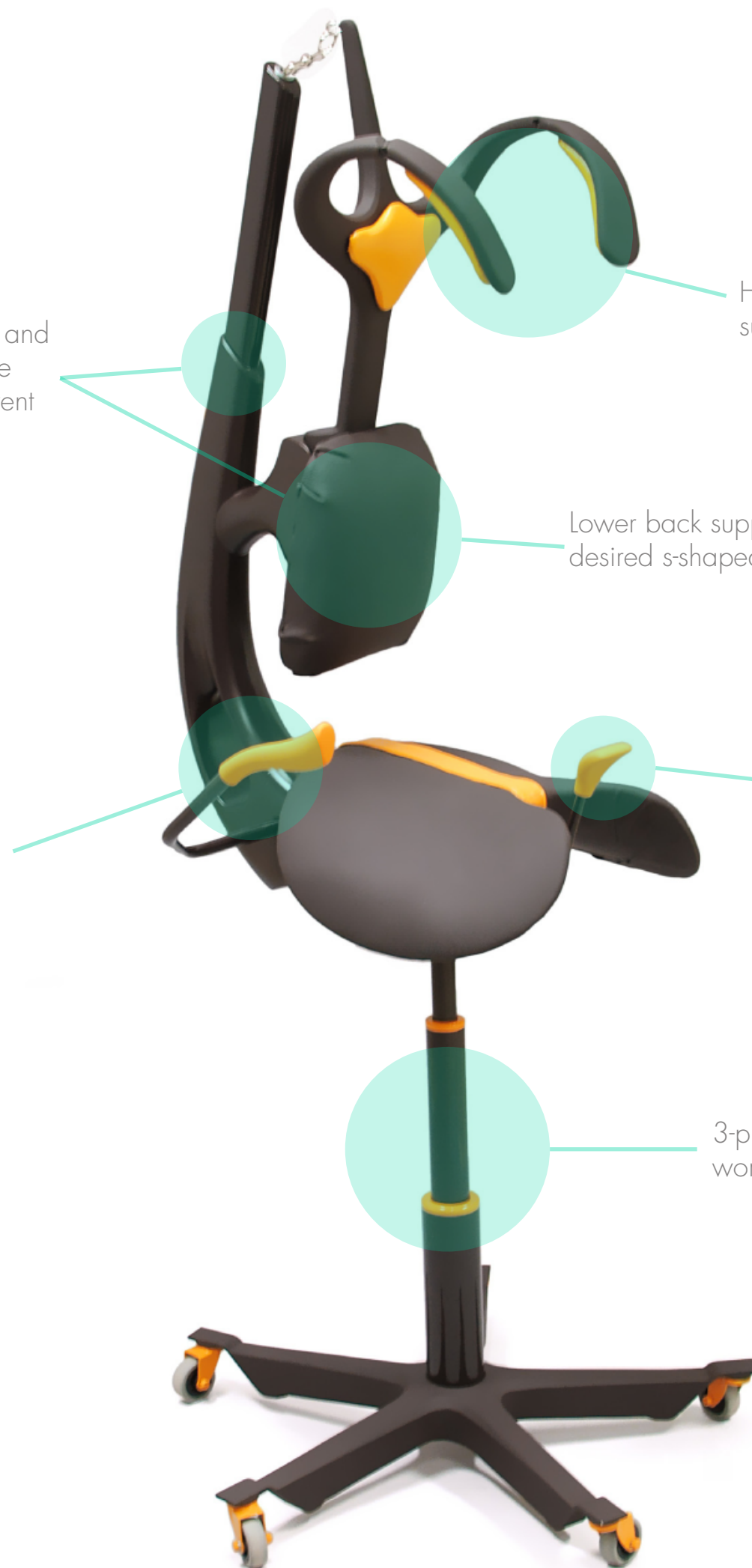
Easy-to-reach adjustment of wire tension and lenght

Easy-to-reach lever for height adjustment of chair

Allows for protective plastic wrapping to prevent cross-contamination

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3-piece gas damper for extra working height range

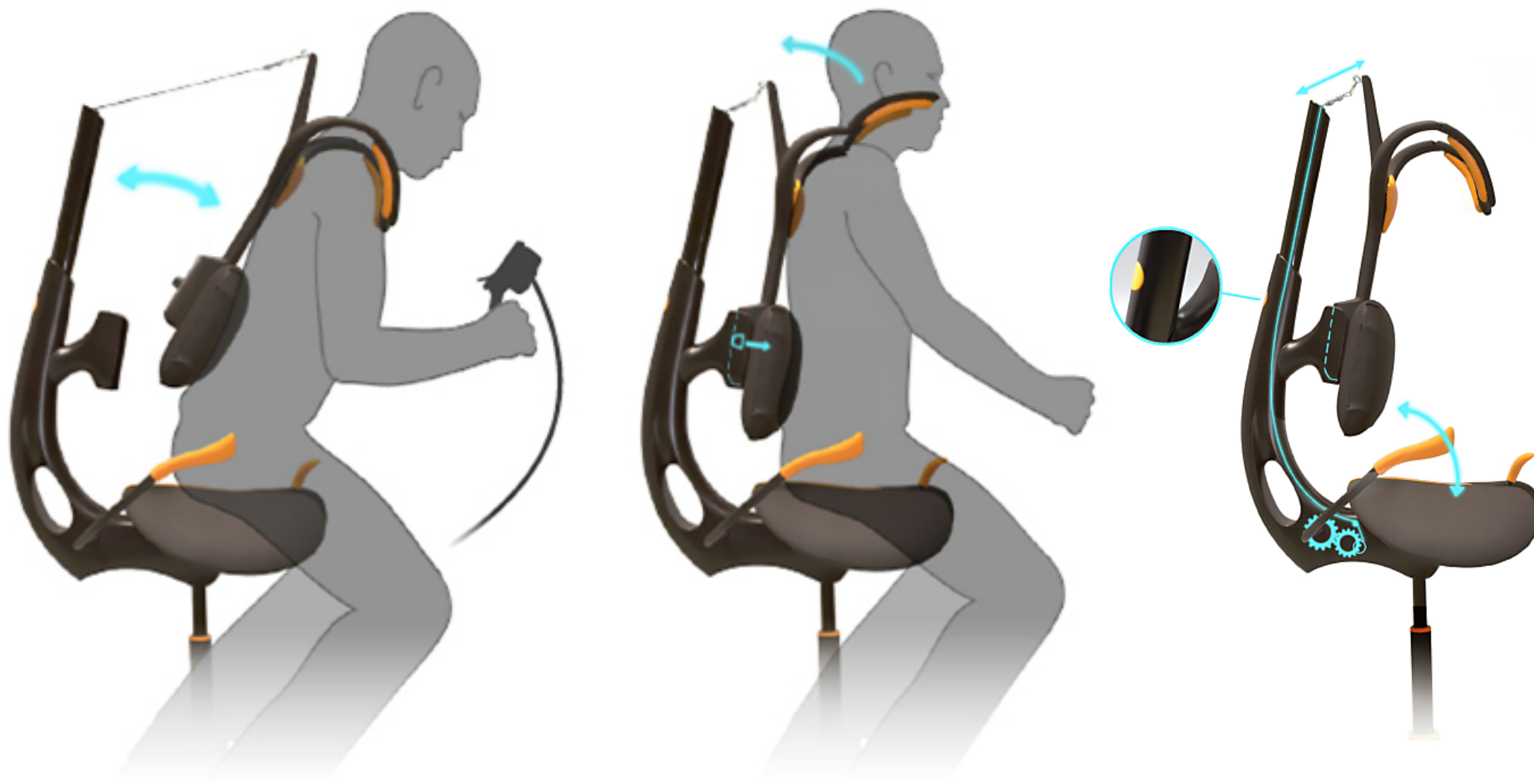


Use

Surface and interaction design that minimizes risk of cross contamination (including placement of levers) and is easy to disinfect. Hygiene is an extremely important factor in the tattoo industry, given the potential risk of cross-contamination of bloodborne pathogenes.

Extremely flexible and adjustable, enabling harness to support back in a variety of working positions, adaptable to people of varied weight, height and body types.

Quick to step into and out of to avoid interference with the normal workflow.



*Automatic quick release function of harness when leaning back.
Magnetic fitting of harness against back post enables quick exit*

*Harness wire tension and length is easily
adjusted with easy acces side lever*

