



# ZERO CONTACT

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# BACKGROUND AND RESEARCH



Owing to the growing number of coronavirus cases worldwide, it has been made mandatory to wear a face mask and glove in all public places to keep oneself protected. Maintaining six feet distance and practising proper hand hygiene, especially after touching a contaminated surface and a few other things we can do to ensure safety. Considering the rampant spread of COVID19, it is obvious to wonder what else we can do to avoid coming in contact with the virus when visiting public places like local grocery shops and pharmacy. We might even come across people wearing gloves and wonder if that's a good precautionary measure.

The trickiest part of wearing a pair of gloves is while removing it. If we are not cautious, the germs may get transferred to our hands and other parts of our body. While removing the gloves, they should be disposed off properly and then we must wash our hands with soap and water.

Many people don't know the proper way to take off gloves and can contaminate their hands when taking off gloves. For example, after you take off your left glove with your right gloved hand, your left hand is at that point virus free. But if you take off your right glove by touching the outside of it, you've potentially contaminated your left hand. You need to reach inside your right glove and peel it inside out without touching the outside, which can take some skill.

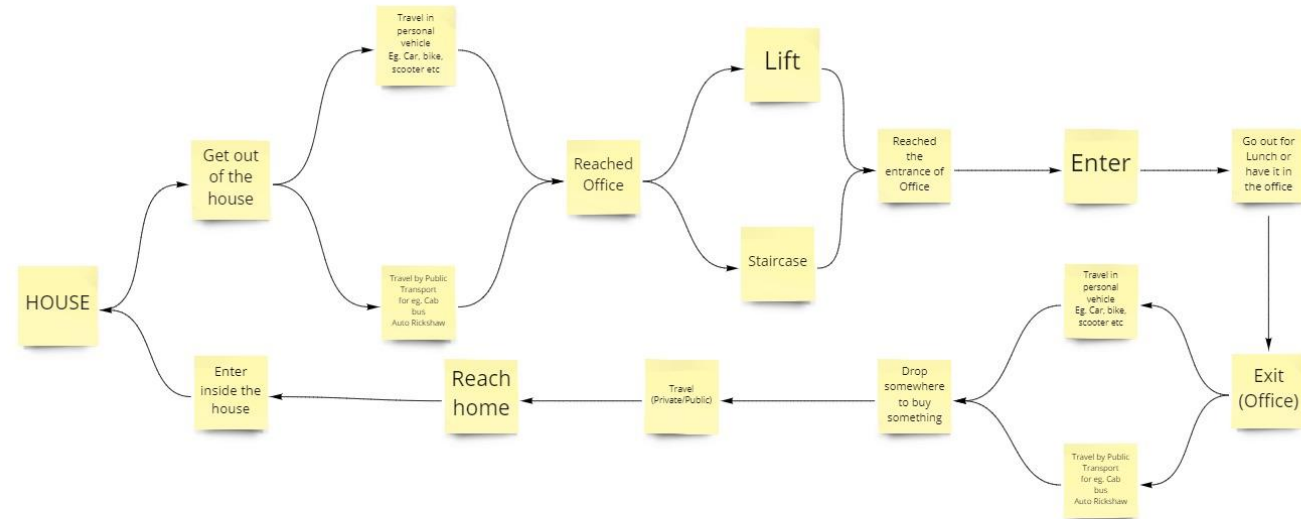
Gloves reduces the risk of coming in contact with the virus or save you from frequent hand washing. You are vulnerable to infection while working with naked hands.

# PROBLEM AREAS AND THE BRIEF

- Easily wearable and removable
- Breathable
- Waterproof
- Reusable
- Able to interact with touch screen devices
- Safe and Comfortable
- Should fit in hands easily
- Gentle to the skin
- Light, thin and strong but resistant to temperature
- Longer cuff and gripping capability

**“To design/develop a rapid deployable glove that can be used easily while protecting and shielding the user’s hand.”**

# TOUCHPOINTS MAP

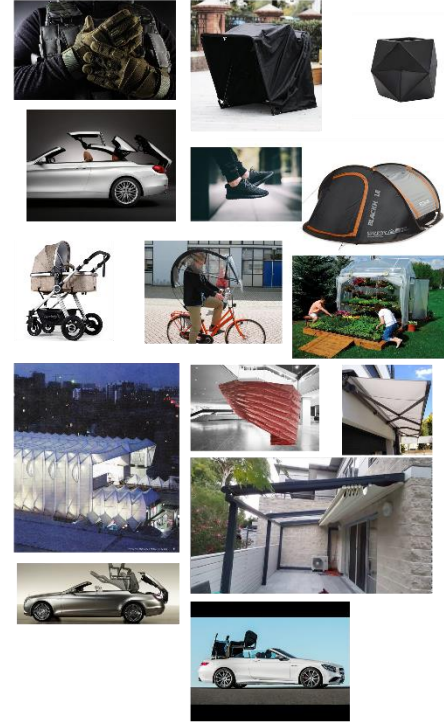
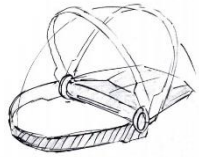
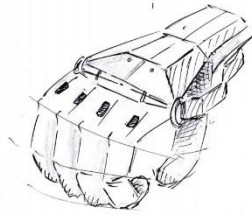
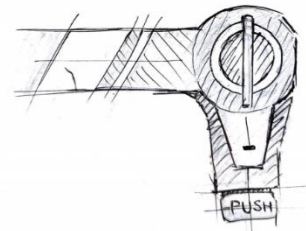
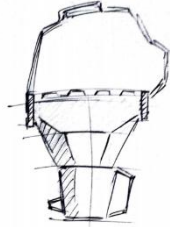
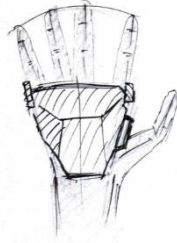
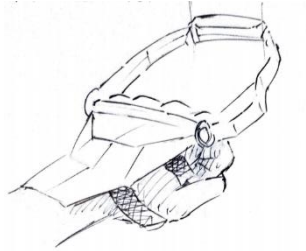


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## Common Touchpoints:

- Touching the door handle
- Touching the holder in Public Vehicles
- Touching the Elevator Buttons
- Exchange of Cash

# CONCEPT SKETCHES AND MOODBOARD



# ABOUT THE PRODUCT



Zero Contact is a rapid deployable general purpose glove that a user can quickly wear and take off without much hassle. Unlike a regular glove, Zero Contact can be worn at the press of a button and when not needed, it can be folded up providing greater versatility.

With the world under the threat of a viral pandemic, necessary measures are of utmost importance. Such measures include wearing of masks, gloves and maintaining the necessary hygiene and social distancing. But due to the hassle and annoyance of constantly wearing and taking off gloves most people refuse to wear gloves. Zero Contact solves this problem by making the gloves easier to wear and take off.

Zero Contact glove comes in two variants, a Cost Efficient variant that uses spring assist to deploy the glove and an electronic variant, that uses Electro Assist in which servo motors are used to deploy and fold up the glove. The Electro Assist also comes with a UV (Ultra Violet) led to sanitize surfaces in a small scale.

# FEATURES AND FUNCTIONS

- Can be worn and retracted easily at the press of a button
- Folds up when not in use, providing greater versatility than standard gloves
- Can be carried easily
- Washable
- Eco-Friendly and resistant to Environmental elements
- Can be used with touch screen devices
- UV (c) Illuminator



## COST EFFECTIVE VARIANT



**RETRACTED**



**DEPLOYED**

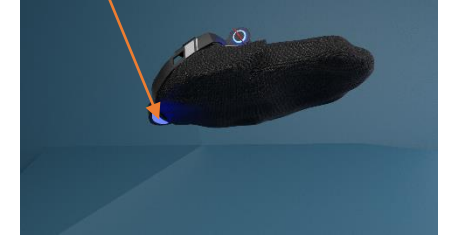
The Cost Effective variant includes a spring assisted deployable glove that can be deployed by pressing the red button. The foldable glove is wrapped around a rotating arc that can rotate to fully enclose the hand. The arc consists of a latch which then slips on to a notch on the frame that locks it. The press of the button lifts the latch and releases it from the notch, deploying the glove. To fold it back, the red handle on the rotating arc can be rotated to lock the latch back on its position.

## ELECTRO ASSIST VARIANT

Li-ion Battery    Servo Motor



UV Led



The Electro Assist variant consists of an servo motor that deploys the glove when the button is pressed. The frame of the glove consists of the servo, and the Lithium ion battery module. To fold it back, simply pressing the red button will initiate the servo to rotate the arc backwards, retracting the glove. It also includes a high density UV Led to disinfect surface at a small scale, which can be activated with the press of a button.



# HOW TO USE

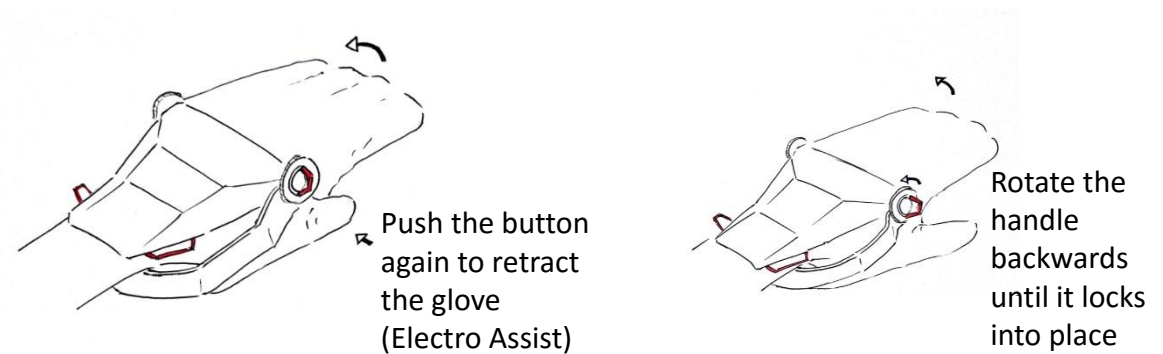
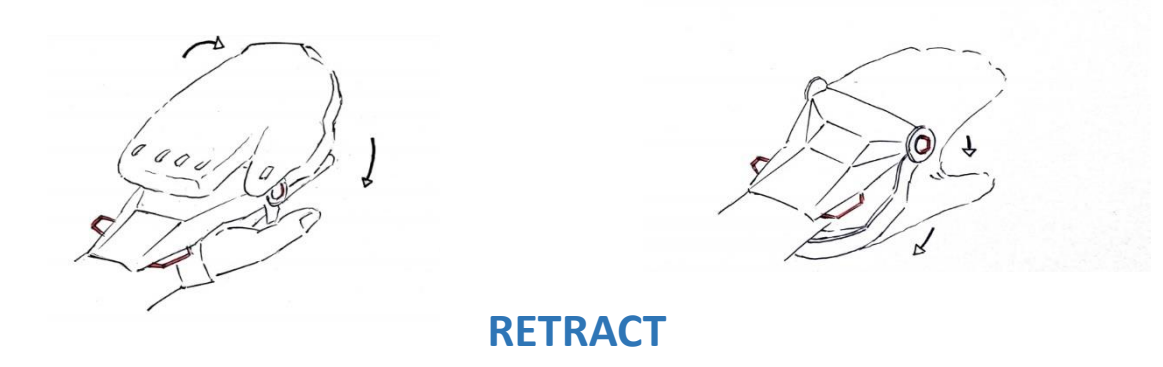
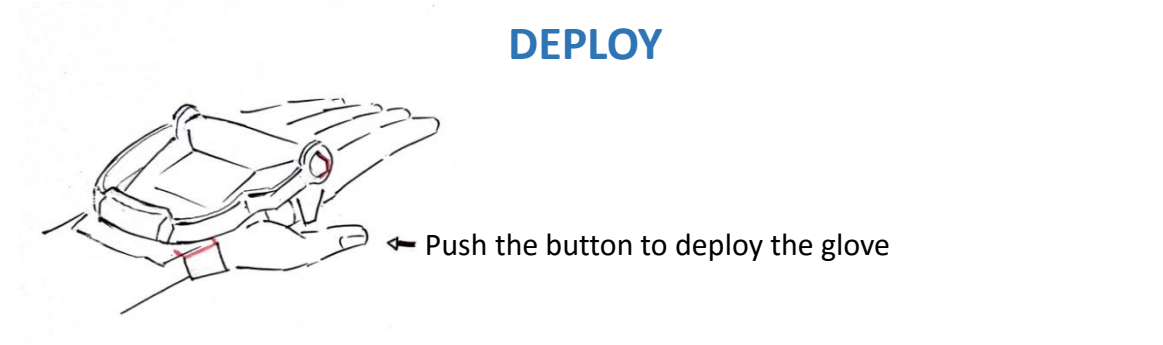


**COST EFFECTIVE VARIANT**

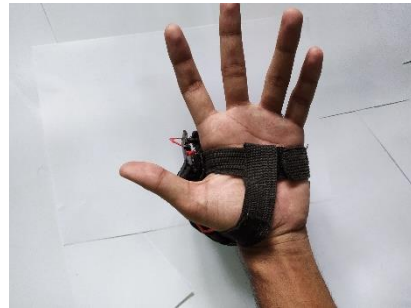


**ELECTRO ASSIST VARIANT**

The Cost Effective variant includes a button that uses a spring loader lever to deploy the glove. The Electro Assist variant has a button that activates the servo for deployment and retraction. It also includes a button that is used to switch on/off the UV Led.



# MOCKUP



Materials used for the Mockup consisted of Cardboard, Plastic tubes, Nylon straps with Velcro, Metal wires and Cotton fabric.

The frame of the glove is made with paper and shaped with metal wire.

Rotating joints are made with Plastic tubes and the glove is made up of Cotton fabric.

# MATERIALS TO BE USED



The actual product can be made of:

High Density Polyethylene (HDPE) or Biodegradable HDPE, for an Eco friendly alternative can be used for the frame.

The glove coated fabrics such as Silicon coated Cotton can be used for general gloves and Kevlar can be used for heavy duty Industrial gloves.

# CAUTION

Wearing these gloves or any gloves does not provide complete protection from the spread of microorganisms, including COVID-19. The gloves only reduces the spread of the virus by creating a mechanical barrier between the infected surfaces and skin.

Therefore, maintaining personal hygiene practises such as washing hands, not touching the face or nose, disinfecting surfaces etc. and maintaining social distancing is advised.