

 **ValveSoftware / IndexHardware** Public

<> Code

Issues 7

Pull requests

Security and quality

Insights

Commit 7734a70

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 **Plagman** committed on Jun 25, 2019

initial commit

 master

0 parents commit 7734a70

26 files changed +174

Filter files...

Basestation

3base.png

3iso.png

index_base_quickmount.stp.zip

index_basestation.stl

index_basestation.stp.zip

index_basestation_ref_drawing.pdf

Controller

3control.png

capsense_surfaces.jpg

index_controller.stl

index_controller.stp.zip

index_controller_example.stl

- index_controller_example.stp.zip
- index_controller_sensor_inclusion.stp.zip
- sensor_exclusion.jpg
- sensor_exclusion_sm.jpg
- ▼

Headset

3hmd.png

frunk_ref_drawing.pdf

index_hmd_accessory_inclusion_zone.stp.zip

index_hmd_assembly.stl

index_hmd_assembly.stp.zip

index_hmd_facegasket.stp.zip

Q

Search within code

▼

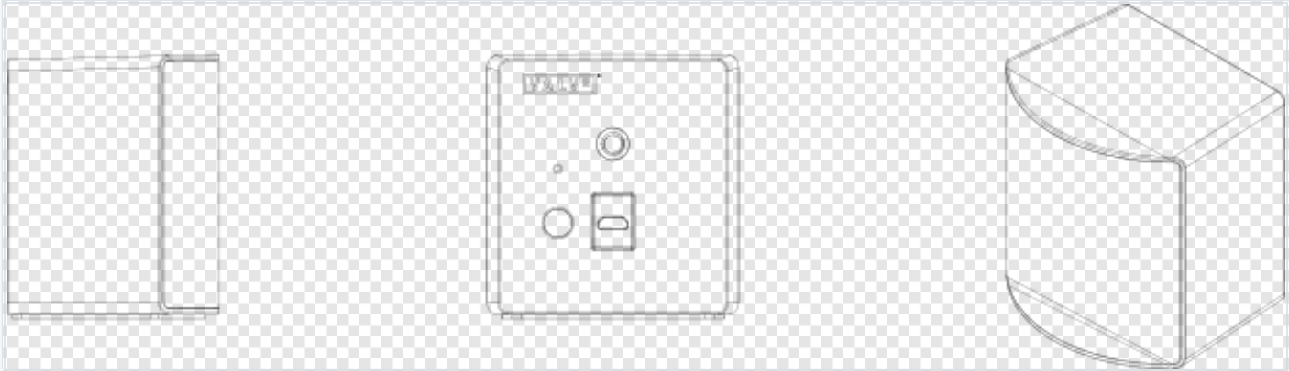
Basestation/3base.png

11

KB

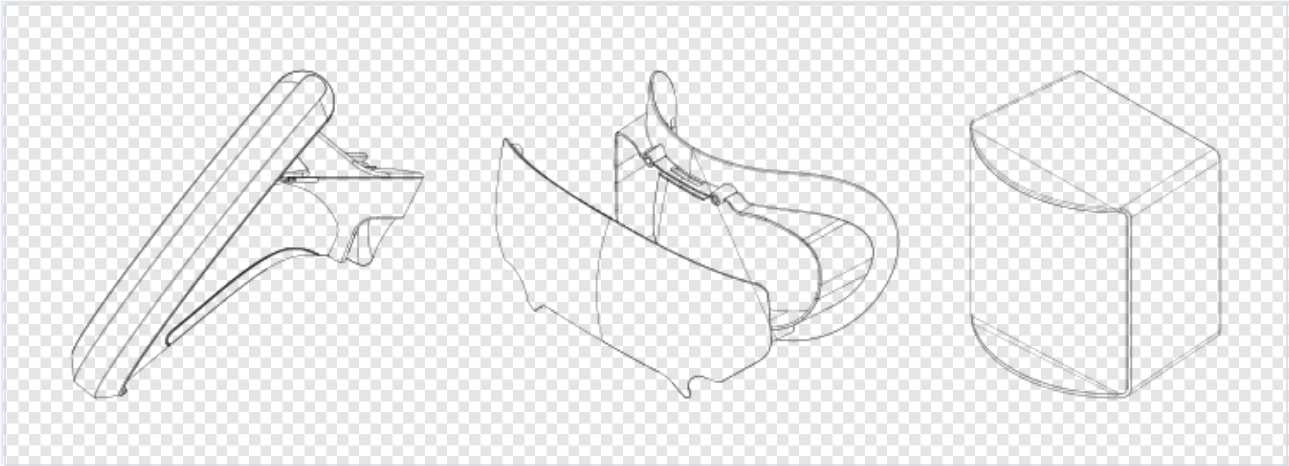
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Basestation/3iso.png

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Basestation/index_basestation.stl

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Basestation/index_basestation.stp.zip

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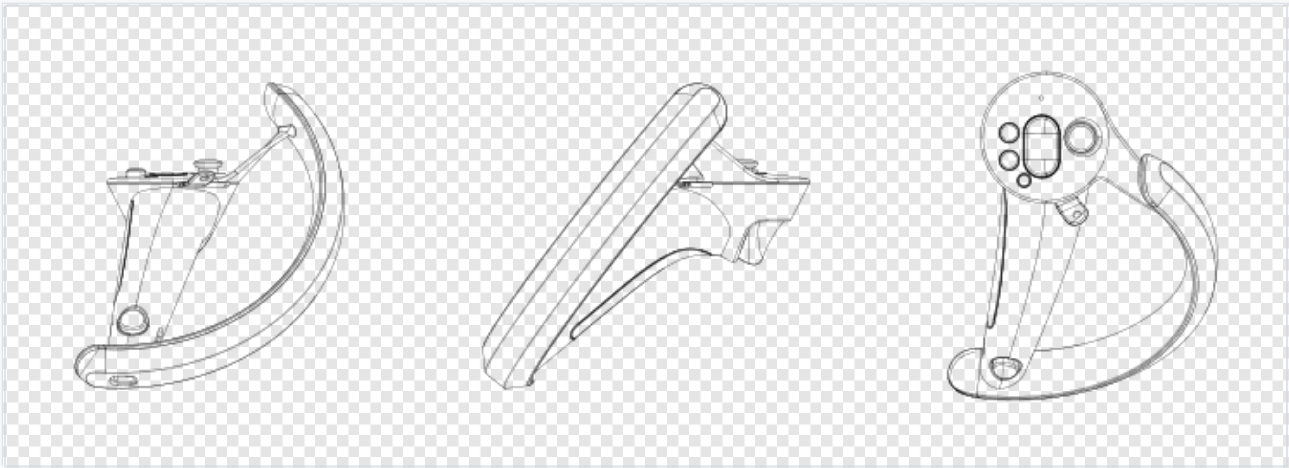
▼ ...on/index_basestation_ref_drawing.pdf 

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▼ Controller/3control.png 

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▼ Controller/capsense_surfaces.jpg 

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Controller/index_controller.stl

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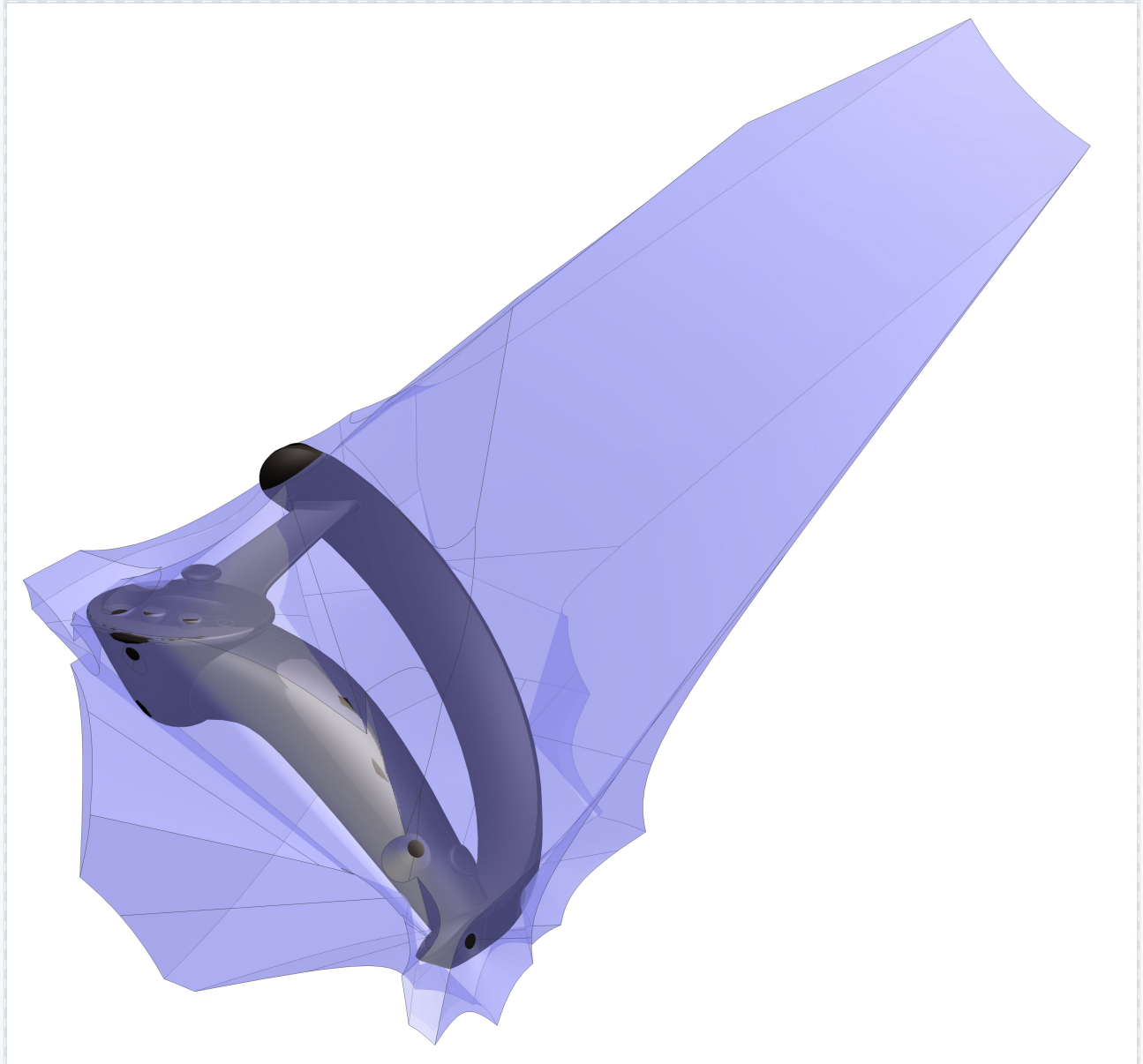
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Controller/sensor_exclusion.jpg

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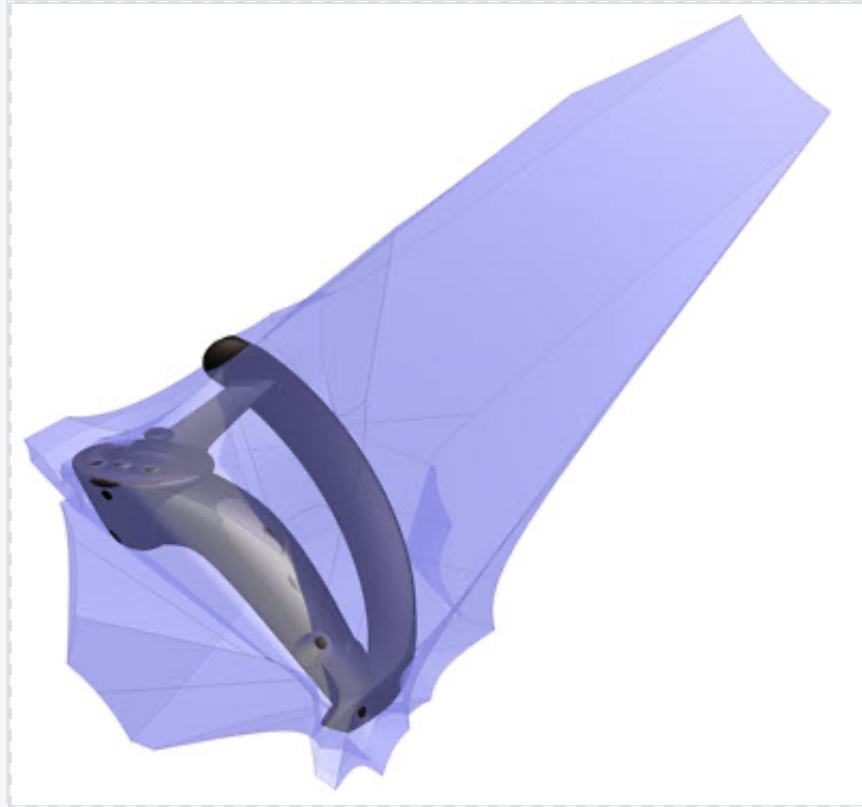
...



▼ Controller/sensor_exclusion_sm.jpg 

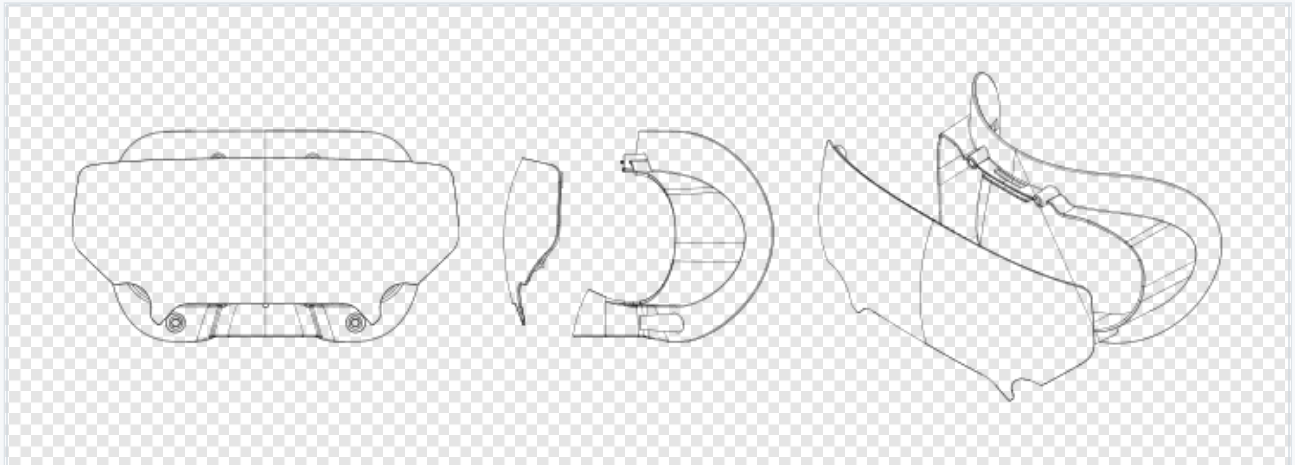
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Headset/3hmd.png

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Headset/frunk_ref_drawing.pdf

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▼ Headset/index_hmd_assembly.stl 

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▼ Headset/index_hmd_frunk.stp.zip 

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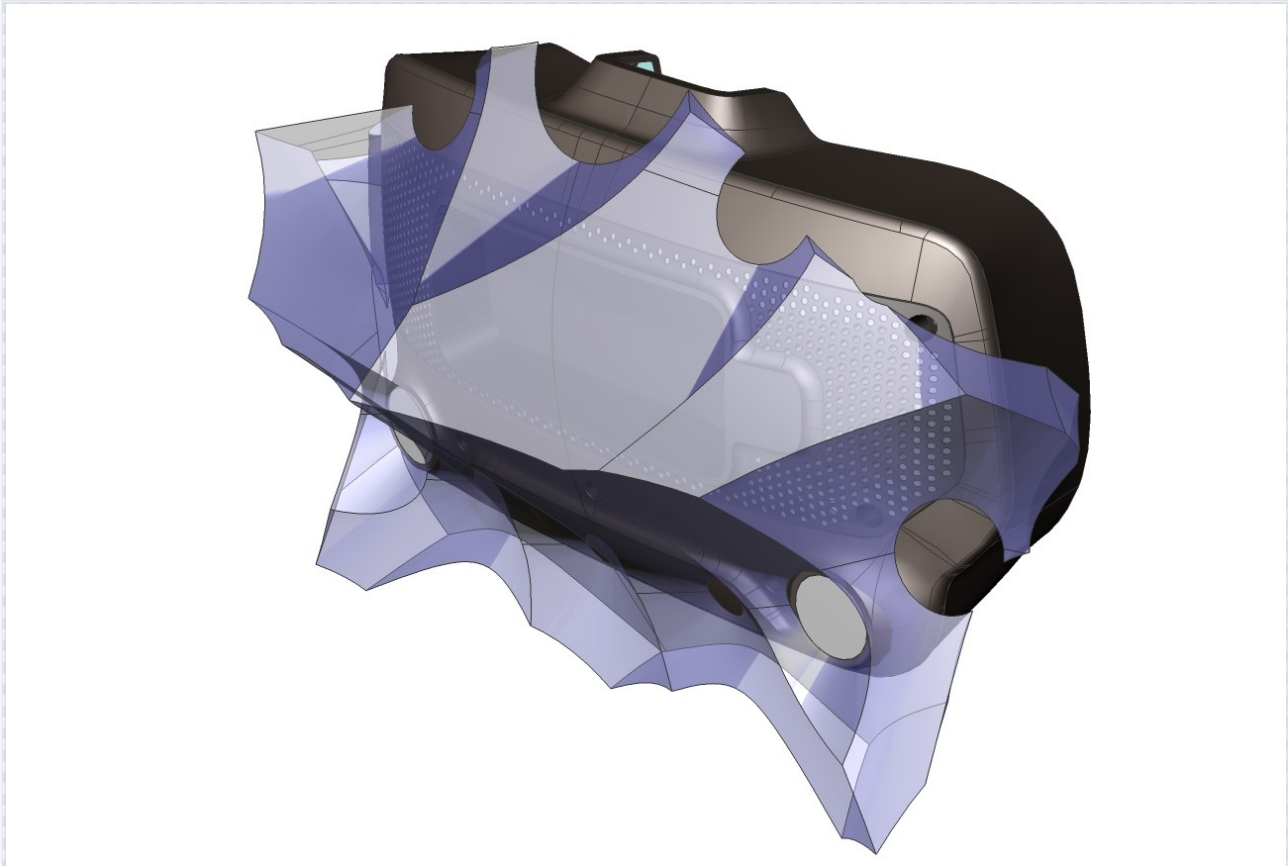
▼ Headset/index_hmd_visor.stp.zip 

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▼ Headset/sensor_exclusion.jpg 

122 KB   ...



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+101 ...

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```

▼ README.md 

+73 



```

... @@ -0,0 +1,73 @@
1 + # Index Hardware CAD
2 +
3 + ![3 isometric](Basestation/3iso.png)
4 +
5 + This repository contains the mechanical CAD for components of all three
    primary products in the [Valve Index VR system]
    (https://www.valvesoftware.com/en/index) (controller, headset, and base
    station), under a Creative Commons license. We're looking forward to
    seeing what the community creates! Please reach out to us at
    SteamHardwareFeedback@valvesoftware.com with any questions, feedback,
    requests, and most importantly, interesting creations.
6 +
7 + Each folder contains high resolution step models. We've also provided
    drawings and low resolution STL models for documentation and reference.

```

```
8 +
9 + ## Headset
10 + ![3 isometric](Headset/3hmd.png)
11 +
12 + ### Frunk
13 +
14 + The [Frunk](Headset/frunk_ref_drawing.pdf) is the volume in the front of
    the headset meant to host accessories. It has a USB 3 type A port capable
    of 1A@5V piped back to the host computer.
15 +
16 +
17 + For larger creations, please see the [sensor inclusion zone model]
    (Headset/index_hmd_accessory_inclusion_zone.stp). This model represents
    the volume that your design can occupy without occluding cameras or
    sensors.
18 +
19 + ![sensor exclusion image](Headset/sensor_exclusion.jpg)
20 +
21 + If your creation attaches elsewhere, we recommend routing the USB cable
    directly out the side towards the eye-relief adjustment knob in order to
    minimize the chance of occlusion.
22 +
23 + We strongly recommend against removing the frunk plastic, as it can impact
    your sensor calibration and will void a warranty you may otherwise enjoy.
    Anything that requires a T5 or smaller is not user serviceable.
24 +
25 + ### Visor
26 +
27 + The [Visor](Headset/index_hmd_visor.stp) is held in place with 4 magnets
    for easy removal and replacement. Although the shipping visor is
    translucent, you can customize this without fear of occlusion – no sensors
    or cameras look "through" the visor.
28 +
29 +
30 + ### Face Gasket
```

```
31 +
32 + The [Face Gasket](Headset/index\_hmd\_facegasket.stp) also is held in place
    by magnets for easy removal and replacement. The CAD will allow you to
    recreate the surface and features to attach to the HMD, allowing you to
    create your own personalized face gasket.
33 +
34 + ### Head Strap & Audio
35 +
36 + The head strap has several degrees of freedom in order to accomodate a wide
    range of sizes and shapes.
37 +
38 + Removing the audio drivers can be accomplished with a T6 Torx driver. Hold
    the support arm in place while loosening the screw, and pull straight out.
    The pogo pins that carry the audio signal are not designed for lateral
    loads.
39 +
40 + To reattach an audio driver, first align the pogo pins with the gold
    contacts. Hold the contacting surface against the head strap while gently
    tightening the screw.
41 +
42 + Removing the headstrap is not recommended. To do so, first adjust the eye
    relief to its furthest out position. Then pull the eye relief adjustment
    knob straight off, taking care not to torque it. This reveals two T6
    screws and an alignment post. The left side is removed by undoing another
    T6 accessible by a small port adjacent to the eye tube. This is a captured
    screw, do not attempt to fully remove it. Also, do not attempt access
    through the apparently symmetric port on the right side, as this does not
    contain accessible components.
43 +
44 + To reattach the headstrap, take care to align the alignment posts and avoid
    excessive force. Place the left side on the support post and gently press
    in while rotating to align to the alignment post. This should smoothly
    glide in when done correctly. Screw in the two T6. The right side is
    slightly harder because the alignment post is not visible. Use the same
    gentle push and rotation method, and secure via the captured screw.
```

```
45 +
46 + ## Controller
47 + ![3 isometric](Controller/3control.png)
48 +
49 + The left and right hand controllers are mirror symmetric with each other.
    All of the provided models are of the right hand variant.
50 +
51 + Every input of the controller has capacitive sensing: the thumbstick,
    trackbutton, trigger, grip, and buttons. We recommend keeping these
    surfaces clear.
52 +
53 + ![capsense surfaces](Controller/capsense_surfaces.jpg)
54 +
55 + The [sensor inclusion zone model]
    (Controller/index_controller_inclusion_zone.stp) shows the available volume
    to work with to not occlude any of the tracking sensors. Unsurprisingly,
    it looks a bit like a forearm and hand.
56 +
57 + Some large accessories will exceed this volume. During your design process
    for these:
58 + 1. Consider what positions are important for your gameplay.
59 + 3. Avoid shiny or reflective surfaces outside the inclusion zone.
60 + 3. Experiment.
61 +
62 + ![sensor exclusion image](Controller/sensor_exclusion.jpg)
63 +
64 + The [accessory example](Controller/index_controller_example.stp) is a
    "Booster" for the Index Controller. The Booster is essentially a shell that
    wraps around the grip portion of the Index Controller. It serves two
    primary functions:
65 +
66 + 1. For people with longer thumbs, the handle booster shifts the hand
    backwards a bit to place the buttons and thumb stick closer to the thumb
    tip. It may also make the grip more comfortable for those with larger
    hands, particularly during longer play sessions.
```

```
67 + 2. The handle booster provides a reference design for anyone wishing to
    + create a mechanically mounted accessory to the Index controller in a way
    + that doesn't directly interfere with or occlude any of the optical tracking
    + sensors, finger sensors, or input controls. This is valuable because any
    + given controller design must trade-off between tool vs hand presence, and
    + an accessory allows a user to quickly adapt it to any number of
    + applications.
68 +
69 +
70 + ## Basestation
71 + ![3 isometric](Basestation/3base.png)
72 +
73 + The Basestation has a pair of 1/4-20 UNC x_____ threaded holes for
    + mounting - this is the same standard many cameras use, so you may find off-
    + the-shelf devices that already fit your need.
```

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