Click Medical Material Data Sheet (MDS)

Technical Data, Best Practices and Material Suggestions

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Kit Tech Specs

Click Medical products are patent protected.

For the full list see www.clickmedical.co/patents

ClickFit™ System Information

ClickFit™ System with C2 Duo Reel™ SKU# CF-C2D
ClickFit™ System with C2 Power Reel™ SKU# CF-C2P
ClickFit™ System Fabricators 10-Pack with C2 Duo Reel SKU CF-C2D-10

Build Height of Duo Reel™:
15mm visible profile, 22mm total
Reel Diameter: 40mm
Reel Weight: 59g
Collar Diameter: 42mm
Tube/Sheath Length: 1.8m
Tube Outer Diameter: 3.2mm
Lace: 2m HD (High Durability) Lace
HCPCS Code: L5783
User Weight Limit: 300 lbs/135kg



Build Height of Power Reel™:
10mm visible profile, 17mm total
Reel Diameter: 40mm
Reel Weight: 49g
Collar Diameter: 42mm
Tube/Sheath Length: 1.8m
Tube Outer Diameter: 3.2mm
Lace: 2m HD (High Durability) Lace
HCPCS Code: L5783
User Weight Limit: 300 lbs/135kg



Material Safety Data Sheet (MSDS) :

Materials and chemicals used in the following products:

C2 Reels (Duo and Power)

- Polycarbonate
- ABS
- Nylon
- Stainless Steel

Collars

- Aluminum
- Stainless Steel
- Nitrile Butadiene Rubber

Lamination Materials

Lamination Base

- EPDM Rubber
- ABS
- POM
- Stainless Steel
- EVA Foam

Lamination Adhesive

- Fabtech Systems BondTek 30-Second Adhesive

Tubing

- PTFE
- Polyester

Other Products

Lace

- Polyethylene

Grips

- Polycarbonate
- ABS
- 3M Adhesive Tape

Surface Guides

- POM

Insert Material Options:

Plastic materials should have a finished thickness of approximately 3-5mm in order to allow for movement to occur.

If the insert is:

< 3mm = too thin and will deform over time

> 5mm = too thick/rigid to effectively move

Flexible Plastic (EVA):

Blister or Drape Form - Finished plastic thickness = 3mm

- Blister Form plastic thickness = 8mm (TT small), 10mm (TT med), 12mm (TT lg)
- Drape Form plastic thickness = 4mm (TF small), 6mm (TF med), 8mm (TF lg)

Suggested Manufacturers:

- Curbell OP-TEK® Flex Comfort
- ProFlex
- Orfitrans: Orfitrans® Medium soft & Extra soft
- Thermolyn Supra Soft - OttoBock
- WillowWood Extremity Flexible Insert

Foam Inserts:

Polyethylene & EVA Foam

- Medium Density - Durometer - Shore ~35

Manufacturers:

- Keasey Cone - 10mm thickness
- Puff, Pelite®, Bocklite
- Multi-durometer manufacturers

Silicone Insert Materials:

Custom Rolled Silicone Manufacturers:

- 14ELMT – Austin, TX
- Ortiz International - Mexico
- OttoBock - Canada
- SPS - Orlando
- ST&G - California

Other:

- Multiple Sock Interface (no insert)
- Gel Liner Interface (no insert)
- Skin-Fit Suction (use flexible plastic or Keasey Cone)

3D Printing an adjustable device:

Refer to RevoSurface Instructions. Click Academy: RevoSurface Build It course contains CAD files.
Any questions? Please contact Mike Marten at Click Medical: mike@clickmedical.co

Lamination Layup Suggestions:

Refer to ClickMedical.co/clickfit for videos and detailed instructions.

Single-stage Lamination:

Kit components are placed between layers of material. Since they are not fixed to a rigid surface, we recommend using simple lace patterns. To decrease tube and collar migration during the lamination process, position components between layers of non-stretch fabric.

1. Inner Layers: 2 Finish Nylon + 2 Glass + 1 Bi-Directional Carbon + 1 Perlon (tight)
2. Place collar and tube in desired locations (cloth tape or light spray glue on the sheath and collar can help secure in place).
3. Outer Layers: 1 Perlon (tight) + 2 Glass + 1-2 Bi-Directional Carbon + 2 Finish Nylon
4. Laminate (Use 10-20% more resin than normal)

Double-stage Lamination:

Kit components are securely fixed to the rigid first lamination layer.
This allows for more precise and complex lace patterns.

1. Inner Layers (1st lamination): 2 Finish Nylon + 2 Glass + 1 Bi-Directional Carbon + 2 Finish Nylon
2. Perform 1st lamination: Use resin of choice
3. Bond collar with 60 second adhesive, bond tube w/super glue (lightly sand surface for better adhesion)
4. Outer Layers (2nd lamination): 2 Glass + 1-2 Bi-Directional Carbon + 2 Finish Nylon (Use 10-20% more resin than normal)

Note:

- Heavy duty laminations may require more layers of Bi-Directional Carbon
- Reinforce narrow areas of frame that are less than 5cm with additional unidirectional carbon
- To decrease bridging around collar, cut hole in outer layers and expose the collar dummy



Pad Material Options:

Padding is used on the inside of panels, and/or parts of the frame, to provide compression for the user. We use pad thickness and shape to fine tune the pressure and fit. Flat or convex pad shapes help deflect the socket insert material and create more compressive forces.

Pad Materials:

- Average pad material thickness: 6 mm – 10mm
- Thickness will vary depending on the amount of compression needed
- **Use pad thickness and shape to fine tune pressure and fit**

Types of Foam Pad Used:

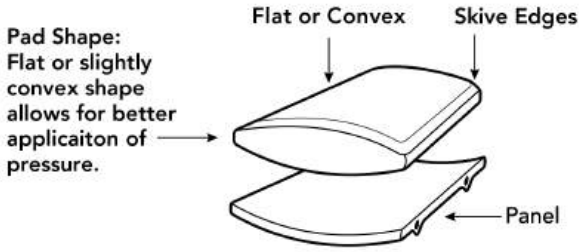
- Polyethylene - medium density - durometer - shore ~35
- EVA - medium density - durometer - shore ~35
- Other Medium density foams Manufacturers: Puff, Pelite, Bocklite

Pro-tip: It is easier to grind down a thick pad than to add more padding to a thin pad when optimizing fit.

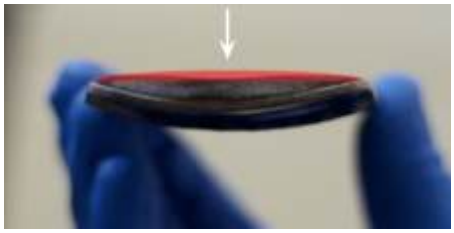
Pad Thickness :

Note:

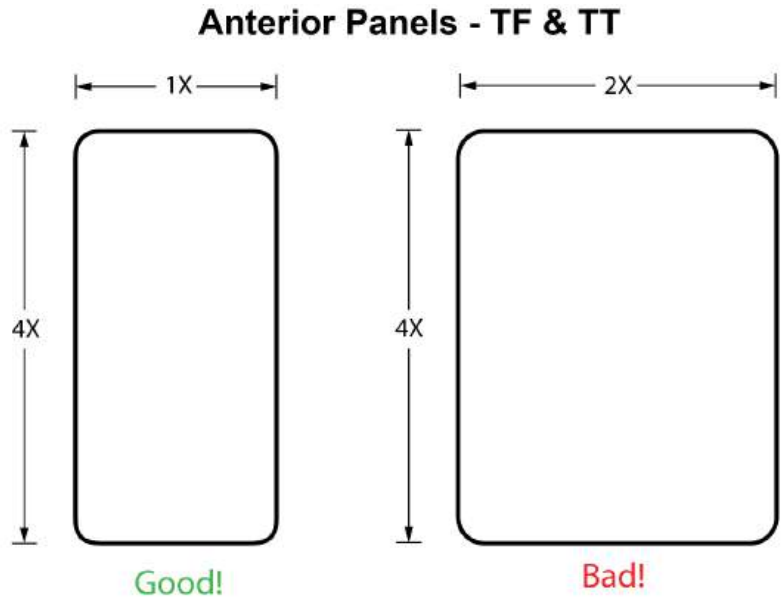
- If the panel has a large radius, add more padding in the deepest part of the radii, and skive edges.

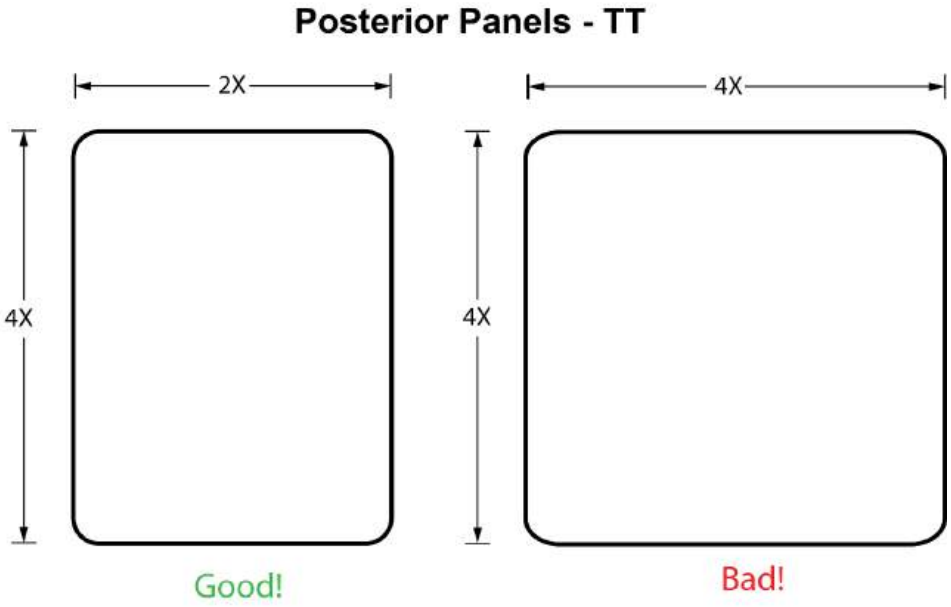


Flat Pad Shape



Panel Best Practices:





Cutting and Finishing Tools:

It's important to make sure any edge that the lace crosses over is perfectly smooth. Use 1000-grit wet/dry sandpaper to smooth edges. Any sharp edges will fray the lace and cause it to break prematurely. Make sure to hand-check all edges for smoothness before delivering the device to the user.

Cutting Tools:

There are two options:

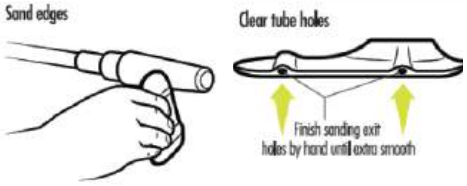
1. Use an oscillating cast saw with a segmented blade to cut tight radius turns.
2. A jigsaw with a pad over the skid plate to protect the device may also work.
3. High-speed dental handpiece, recommended minimum of 50K RPM.

We strongly discourage using a Dremel or Roto-Zip tool.

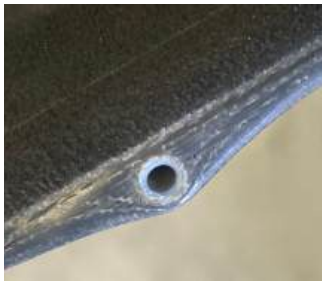


Finishing Tools:

- Buff edges on the grinder until smooth.
- For each panel, clear debris out of the tube and trim flush to the panel with a fresh razor blade.



- Use **1000 grit sandpaper** and hand sand socket edges around tube ports.
- Use the buffing wheel and buffing compound for an extra smooth finish.



Suspension Options:

Mechanical locks, knee sleeves, suction, seal-in and vacuum suspension systems can all be used with Revo products. Fabrication techniques will vary when using a knee sleeve.

- Compatible Locks
  - Mechanical Locks:
    - RevoLock® 4-Hole (SKU RL-300-07-01) RevoLock® Align (SKU RL-301-07-01)
    - Most pin and clutch lock systems
    - Straps, lanyards, etc...

- Valves:
  - Suction Suspension Valves
    - Lynn Flex-connect valves
    - Cyprus Adaptive Aria valves
  - Elevated Vacuum Systems
    - WillowWood One System
      - WillowWood Alignment Posts to secure insert to frame
    - OttoBock Harmony E2
    - Ossur Unity
    - 5280

- Knee Sleeves:
  - To create suction or EV with a knee sleeve, the sleeve needs to be positioned between the flexible insert and frame
  - A void is created under the PVA bag for the knee sleeve to live
  - Use a suction or EV valve (above) to connect insert to frame
  - Can use WillowWood Alignment Posts to secure insert to frame
  - Secure knee sleeve to insert with tape or strap

- Seal-in Systems:
  - Compatible with single or multi-seal systems
  - Areas of adjustment can span across gasket areas
  - Use a suction or EV valve (above to connect insert to frame)
  - Can use WillowWood Alignment Posts to secure insert to frame

- Bone Lock:
  - Use the system to create an adjustable bone lock (Symes, KD, PF, etc..)
  - Use the system to create a hinged Supracondylar panel