## Custom Orthotic Lab Cheat Sheet: ORTHOTICS

### ORTHOTIC DEVICE TYPES

#### FUNCTIONAL

<table>
<thead>
<tr>
<th><strong>FM Functional</strong></th>
<th><strong>Motion Soft</strong></th>
<th><strong>Dress Elite</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigid PRX graphite for control. Good for plantar fasciitis and heel pain. Meta length top cover makes easy to switch between different shoe types.</td>
<td>Semi-flexible RX shell with poron arch reinforcement. Standard full length neoprene top cover with 1/8” poron padding. Good for RA patients requiring a soft device with mild control.</td>
<td>Semi-rigid RX shell. Narrow grind, 10mm heel cup for low volume shoe fit. Hole is filled with poron to provide cushioning. Good for dress flats with heels up to 1 inch. Sulcus length top covers for good toe box fit.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FM Integrated</strong></th>
<th><strong>Comfort Soft</strong></th>
<th><strong>Dress High Heel</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>3/16” polypropylene shell with extrinsic heel post made from polypropylene. Very durable and controlling, but more bulky due to shell material thickness.</td>
<td>Mid-durometer EVA shell. Comfortable and supportive device. Layers of EVA, Poron, and Neoprene create soft padding to ease discomfort.</td>
<td>Semi-rigid RX shell. Narrow grind. No shell in heel, replaced with a 1/16” flexible korex heel seat. For women’s high heel shoes. Suede bottom cover added to prevent squeaking.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FM Support</strong></th>
<th><strong>Diabetic Medium</strong></th>
<th><strong>UCBL</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-rigid RX shell, standard sulcus length. Corex arch reinforcement for firmer support.</td>
<td>High durometer thermocork shell. Pliable and yet firm support. Good for patients requiring in shell pockets such as charcot deformities and plantar ulcers.</td>
<td>High medial and lateral flanges extending to the distal edge of the shell. 20mm deep heel cup for maximum control.</td>
</tr>
</tbody>
</table>

#### ACCOMMODATIVE

<table>
<thead>
<tr>
<th><strong>Glider</strong></th>
<th><strong>Diabetic Soft</strong></th>
<th><strong>Whitman Roberts</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-rigid shell for support and mild flexibility. Runners wedge (3˚ extrinsic long post to sulcus.) 1/8” poron padding on the entire device provides good cushioning. Good for sports where tennis shoes are worn and also good for foot fatigue from being on your feet all day.</td>
<td>Mid-durometer EVA shell. Good for neuropathic patients requiring a soft device.</td>
<td>High medial flange and lateral heel cup flange. 20mm deep heel cup. Good for pronation control. Less bulky than the UCBL device.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FM Sport</strong></th>
<th><strong>3x Diabetic</strong></th>
<th><strong>Gait Plates</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Semi-rigid PRX graphite shell for support and mild flexibility. Athletic design. Breathable perforated Ucolite top cover. First ray cut out promotes motion in the first ray. Slim, low profile and highly durable.</td>
<td>Semi-flexible shell for mild support. Designed for Medicare program.</td>
<td>Used to correct in-toe or out-toe gait. 20mm deep heel cup for control.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>FM Trainer</strong></th>
<th><strong>Semi-rigid RX shell with poron arch reinforcement. Standard full length neoprene top cover with 1/16” poron padding. Good for RA patients requiring a soft device with mild control.</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigid RX shell. Crepe runners wedge (3 extrinsic long post to sulcus.) Good control for forefoot pronation. Made especially for runners to provide pronation control through gait cycle.</td>
<td>All diabetic devices are standard full length plastazote/poron top covers with 1/16” EVA bottom covers.</td>
</tr>
</tbody>
</table>

#### DRESS

<table>
<thead>
<tr>
<th><strong>DynaFlange</strong></th>
<th><strong>PT Controller</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineered nylon shell with a DynaFlange heel attachment for dynamic energy return, reduced impact force, and postural efficiency. Poron padding and microsilver top cover for additional antimicrobial comfort.</td>
<td>Aggressive device designed for PTTD and flexible flat foot. 6˚ inverted heel in cast to provide varus control and subtalar support without adding motion to the device. Medial flanges to control midfoot. Pocket in shell available to accommodate prominent navicular. Lateral flange to the distal edge of the shell to prevent the foot supination. Slight lateral wedge to stabilize due to high varus correction.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Smart Basic</strong></th>
<th><strong>SPECIALTY DEVICES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Rigid RX shell for firm support. Standard extrinsic rearfoot post and full length EVA top cover. Economic device, limited material options available.</td>
<td></td>
</tr>
</tbody>
</table>

* All Devices are posted intrinsically in the forefoot to neutral unless otherwise requested. Rearfoot is posted to vertical unless otherwise requested.
### SHELL MATERIAL

#### PERFORMANCE RX

- **Semi-Flex**
  Flexible shell similar to 2.0 subortholin. Best for accommodative devices.

- **Semi-Rigid**
  Medium control similar to 1/8” polypropylene.

- **Rigid**
  Rigid control. Similar to 3/16” polypropylene.

- **Ultra-Rigid + Carbon**
  Extremely rigid but still as thin as the most flexible device.

#### PRX GRAPHITE

- **Semi-Rigid**
  Rigid control. Similar to Performance RX semi-rigid and rigid. Good for heavier patients or bigger shoe sizes.

- **Rigid**
  Rigid control. Good for plantar fasciitis.

- **Ultra-Rigid**
  Extra firm control. Good for heavier patients.

*The Performance RX and PRX Graphite are made by Forward Motion and are available at no extra cost. Much thinner than polypropylene for easier shoe fit.*

#### POLYPROPYLENE

- **1/8”**
  Medium control, most common. Material offers support with some flex.

- **3/16”**
  Rigid Control. Offers about twice the rigidity as 1/8” poly.

#### OTHER

- **Cork**
  Does not offer functional control. Good for offloading wounds on the plantar surface of foot.

### COVERING

#### TOP COVER MATERIALS

- **EVA**
  Soft foam that is not slick. Great for grip and forms to foot.

- **Vinyl**
  Marine grade with anti-fungi additives. Long lasting and thin.

- **Neoprene**

- **Perforated Ucolite**
  Perforated polyethylene foam. Breathable, soft and durable.

- **Leather**
  Garment leather made from cow hide. Good for dress devices. Not recommended for sweaty feet, high activity patients, or wet environments.

- **Diabetic**
  Plastazote/poron laminate. Standard on Diabetic devices.

- **3mm MicroSilver**
  Foam similar to neoprene with a silver infused fabric. Anti-microbial.

#### TOP COVER LENGTH

- **Shell Only**
  Meta length. Standard on Functional.

- **Sulcus**
  Extension ends behind toes.

- **Full Length**
  Extension to end of toes.

#### PORON PADDING

- **What is Poron?**
  Poron is a premium offloading and padding material. It offers rebound with grip and durability.

#### THICKNESS OPTIONS

- **1/8”**
- **1/16”**

#### PADDING LENGTH

- **Forefoot Only**
  Padding from the distal edge of the shell to the end of extension.

- **Shell Only**
  Padding on shell only.

- **Entire Device**
  Padding from the heels to end of extension.
# Custom Orthotic Lab Cheat Sheet: ORTHOTIC BUILD

## CAST & GRIND

<table>
<thead>
<tr>
<th>ARCH HEIGHT</th>
<th>ORTHOTIC WIDTH</th>
<th>HEEL CUP</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low</strong></td>
<td>Narrow</td>
<td>Shallow (10mm)</td>
</tr>
<tr>
<td>Arch is lowered by 6mm.</td>
<td>Medial width is 3mm more narrow than bisection of the first meta head. Medical shell is ground 5mm more narrow in the medial arch and 3mm along the lateral side.</td>
<td>Low heel height for good shoe fit in narrow shoes. Dress device standard.</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>Normal</td>
<td>Regular (12mm)</td>
</tr>
<tr>
<td>Arch is lowered by 4mm. This is the lab standard.</td>
<td>Medial width is to the bisection of the first meta head and lateral to the edge of the foot.</td>
<td>Standard heel depth for most devices.</td>
</tr>
<tr>
<td><strong>High</strong></td>
<td>Wide/Athletic Cut</td>
<td>Deep (16mm)</td>
</tr>
<tr>
<td>Arch is lowered by 2mm.</td>
<td>Medial width is set between the bisection of the first meta head and medial edge of the foot.</td>
<td>Deeper heel cup for more rearfoot control.</td>
</tr>
<tr>
<td><strong>No Arch Fill</strong></td>
<td></td>
<td>Other</td>
</tr>
<tr>
<td>Total contact. Arch is made to each foot.</td>
<td></td>
<td>Specify how deep you would like. 25mm max for RX, and 20mm max for PRX Graphite.</td>
</tr>
</tbody>
</table>

* All arch heights and grind widths are determined based on cast measurements.

## FLANGES

- **Medial**
  - The shell extends up the medial side of the foot to just below the navicular. Good for pronation control and support.
- **Medial - Mild**
  - Shell extends to medial side of the foot approximately 1cm. Good control with less bulk.
- **Lateral**
  - Designed to support entire lateral aspect of foot from supination.
- **Lateral - Mild**
  - Extends from the heel cup to proximal of the 5th metabase.
- **Lateral - Full Distal**
  - Extends from heel cup to the distal edge of the shell.
- **Lateral - Heel Cup**
  - Extends from heel cup to the distal of rearfoot post.

## POSTING

### FOREFOOT

- **Extrinsic**
  - Forefoot is posted with crepe on the plantar surface of the shell to the amount of degrees that the cast measures or the amount specified by the doctor.
- **Intrinsic**
  - Casts are corrected to neutral or to an amount specified by the doctor.

### VARUS / VALGUS

- **L or R Varus/Valgus**
  - Added to intrinsic or extrinsic forefoot or rear foot post to help with correction.

### REAR FOOT

- **Extrinsic**
  - Material added to the heel for stability and control. Devices standard with arch reinforcement the heel will be made from the same material.
- **Modified Intrinsic**
  - Flat grind on heel. No extrinsic heel. Good for dress shoes or cleats.
- **No Post**
  - No extrinsic or flat grind.
- **Kirby Skive**
  - The cast is modified by grinding into the heel, usually on the medial side. Recommended posting for PTTD and flexible flat feet. Good STJ control without adding rocking motion to the shell.
- **Heel Lift**
  - Millimeters added to an extrinsic rear foot post to elevate the heel.
- **Pronation Skive**
  - The extrinsic heel is ground on the medial side to allow pronation.

* The standard for all Forward Motion devices is intrinsic forefoot post to neutral. Children devices are no post.
## Custom Orthotic Lab Cheat Sheet: ACCOMMODATIONS

<table>
<thead>
<tr>
<th>ACCOMMODATIONS</th>
<th>MET PAD</th>
<th>MORTON’S EXTENSION</th>
<th>REVERSE MORTON’S</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Made of poron - designed to be placed proximal of meta heads to offload peak pressure at ball of foot. Thicknesses: 3/16”, 1/16”, 1/18”</td>
<td>3mm cork build-up from distal end of shell to sulcus - only under 1st met to raise ground up to an unflexible 1st ray.</td>
<td>3mm cork build-up from distal end of shell under meta heads 2-5 to better help 1st ray to drop.</td>
</tr>
<tr>
<td>1ST RAY CUT OUT</td>
<td>1” x 1” top medial corner of shell removed in order to allow 1st ray to drop.</td>
<td>Same as 1st ray cut out but further proximal up the shell in order to allow further drop/flexion of 1st ray.</td>
<td>Same as met pads but with a larger medial-to-lateral surface area to more aggressively offload meta heads 1-5.</td>
</tr>
<tr>
<td>HORSESHOE PAD</td>
<td>3mm poron added to heel region of shell. However, the central part of the pad is removed to allow accommodation for peak heel pressure.</td>
<td>3mm poron pad added to top of shell in order to raise/pad the arch of the shell.</td>
<td></td>
</tr>
<tr>
<td>1ST RAY CUNEIFORM</td>
<td>Same as 1st ray cut out but further proximal up the shell in order to allow further drop/flexion of 1st ray.</td>
<td>Forefoot pad used to off-load the ball of the foot. Increases weight bearing to lesser metatarsal heads while decreasing load bearing to the sesamoids and big toe joint.</td>
<td></td>
</tr>
<tr>
<td>HOLE IN HEEL</td>
<td>1” diameter hole cut out of the shell and back filled with 3mm poron to relieve peak heel pressure.</td>
<td>3mm poron added to the heel area of the shell.</td>
<td>Pocket in shell under heel or hole cut out of shell under heel to allow relief of pressure to painful areas caused by bone spurs.</td>
</tr>
<tr>
<td>ARCH REINFORCEMENT</td>
<td>Material added under the shell to reinforce the firmness of the arch within the shell.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Corex</td>
<td>Firm with rubber-like rebound.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poron</td>
<td>Same as cork but not as durable but lighter weight.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Crepe</td>
<td>Same as EVA but about twice as dense</td>
<td></td>
<td></td>
</tr>
<tr>
<td>EVA</td>
<td>Light weight fill that will conform to the shoe</td>
<td></td>
<td></td>
</tr>
<tr>
<td>METATARSAL</td>
<td>Extra 2mm material added to distal end of shell to sulcus region with a cutout, or relief, for the specific problem meta head(s).</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>STANDARD BRACES</strong></td>
<td><strong>CONTROLLERS</strong></td>
<td><strong>SPECIALTY</strong></td>
<td></td>
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<tr>
<td>---------------------</td>
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<td></td>
</tr>
<tr>
<td><strong>GAUNTLET</strong></td>
<td><strong>TAMARACK CONTROLLER</strong></td>
<td><strong>FLEXION LIMITER</strong></td>
<td></td>
</tr>
</tbody>
</table>
| - Helps Limit Movement in the Mid-Foot  
- Alternative to Surgery for Sever PTTD  
- Best Option for Instability of Subtalar Joint | - Designed to “Spring” Foot into Neutral During Swing-Phase of Gait  
- Helps Patients Maintain an Active Lifestyle | - Best to Limit Plantar Flexion  
- Limit Toe-Walking  
- For Patients Who Require Tall Posterior Control for Hyper-Extension of the Knee |
| **BALANCE BRACE**   | **DORSI-ASSIST TAMARACK** | **SMO** |
| - Designed to Reduce Fall Risk  
- Increases Balance & Postural Stability  
- Reduces Postural Sway | - Designed to “Spring” Foot into Dorsi-Flexed Position During Swing-Phase of Gait | - Total Contact Support for Foot & Ankle  
- More Support than a Foot Orthotic but Lower Profile than a Standard AFO |
| **FOOT DROP BRACE** |                 | **CROW WALKER** |
| - Stabilizes Foot and Ankle  
- Low Profile to Fit in Most Shoes  
- Helps Reduce Catching of the Toe During Swing Phase of Gait | | - Rigid Support  
- Improves Wound Off-Loading  
- Helps Patient Treat Wounded Foot with Extra Care  
- Improves Mobility |

*Also Available in Children's Sizes*
These orthotics are designed to give doctors the ability to create a custom orthotic device in the office. They can be molded directly to the patient’s foot using a heat gun and a molding pillow. By using specially engineered materials these orthotics are thin, strong, and very low profile. Each shell can be heated and readjusted repeatedly guaranteeing a perfect fit.

### HEAT MOLDABLE SHELLS

<table>
<thead>
<tr>
<th>Model</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>720</td>
<td>Rigid shell. High arch and slight met raise. Primarily for wide feet.</td>
</tr>
<tr>
<td>722</td>
<td>Rigid shell. High arch and slight met raise. Slim profile for dress shoes.</td>
</tr>
<tr>
<td>722-M</td>
<td>Rigid shell. Medium arch and slight met raise. Slim profile for dress shoes.</td>
</tr>
<tr>
<td>724</td>
<td>Semi-rigid shell. Medium arch and 12mm heel cup. Best for wide athletic feet.</td>
</tr>
<tr>
<td>726</td>
<td>Semi-rigid shell. Medium arch. Heel posted 3° varus.</td>
</tr>
<tr>
<td>729</td>
<td>Rigid shell. Low arch and 8mm heel cup.</td>
</tr>
</tbody>
</table>

### SUMMIT PRO SERIES

**Summit Pro**
- Semi-rigid shell. MicroSilver top cover. 1/8” High-rebound EVA padding. Posted Extrinsically 3° varus. 12mm heel cup for support. Hole in heel filled with poron. Also available in 3/4 length and non-posted style.

**Summit Pro Premium**
- Marine-grade vinyl top cover. Increased durability. Decreased friction.

**Summit Pro Open**
- Peel & stick backing. MicroSilver top cover. Easy to add modifications. For hands-on doctors.

**Summit Pro XP**
- 3/16” padding added. MicroSilver top cover. Doesn’t flatten over time. Also available as non-posted.

### ACCOMMODATIVE

**Cloud Walker**
- For long days on your feet. High rebound material. Soft and won’t flatten out over time.

**Diabetic Insole**
- Bi-laminate top cover. Compliant with Medicare shoe program.

**Ultra**
- EVA shell, nylon top cover. High Medial flange for better arch and pronation support. Comfortable and compliant.

**Ultra MP**
- EVA shell, nylon top cover. Met pad accommodation. High Medial flange for better arch and pronation support. Comfortable and compliant.

### MISCELLANEOUS

**Slim Power**

**Kiddie Tek UCBL**
- Offers excellent control of the pediatric foot. Can be adjusted with a heat gun.

### ACCESSORIES

#### PEEL & STICK ACCESSORIES

**Posting Wedges**
- 3° & 5° peel and stick posting wedges.

**Posting Strips**
- 3° & 5° peel and stick posting strips.

**Heel Lift**
- 1/4” peel and stick heel lift strip.

**Soft Top Cover**
- 1/8” peel and stick fabric covered poron.

**Arch Pad**
- Peel and stick arch shaped poron pad.

#### PEEL & STICK ACCESSORIES

**Heat Molding Pillow**
- For heat molding orthotics. Made from 2” molding foam. Pushes against the arch to create a cast of the foot.

**Hot Top Cover**
- Protects the foot while molding an orthotic. Reflective material inside directs heat away from the foot.