

OAK™

ORTHOTIC
KNEE JOINT

FABRICATION MANUAL

Fillauer LLC

US Patent: No. 6,540,709.B1
European Patent: No. 1115356
Swedish Patent: No. 99952861.5
German Patent: No. DE699131790



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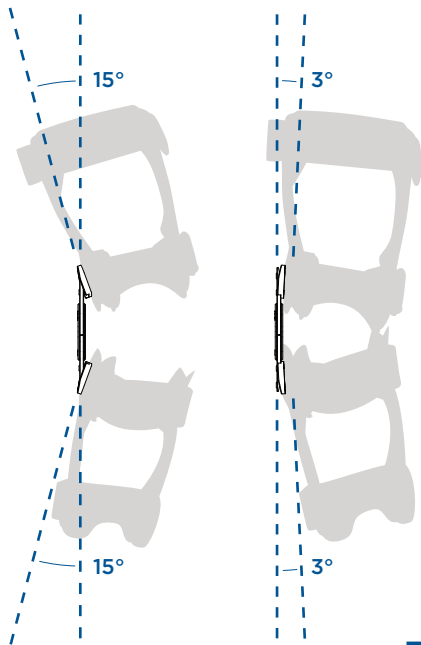
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THE OAK™ ORTHOTIC KNEE JOINT

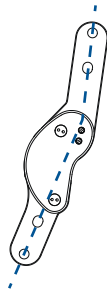
Feel the free-glide difference with the new OAK Orthotic Knee Joint from Fillauer! The OAK (Osteo-Arthritis Knee) polycentric orthotic knee joint has been engineered to provide motion that better approximates normal physiologic knee movement for use in a custom Osteoarthritic Knee Orthosis. Unlike simple pivot knee joints, the polycentric action of the OAK provides inherent stability at full extension and easy gliding during swing phase. This allows the patient to feel the “glide flex” stability during the first 5° of flexion.



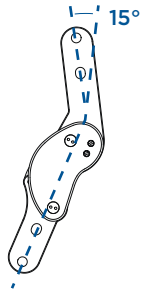
The laterally mounted OAK joint also incorporates novel proximal and distal mounting plates with an adjustable range of 6° of genu varum to 30° of genu valgum. This allows the orthotist to fine-tune the amount of medial compartment unloading, to help relieve pain in the knee joint.



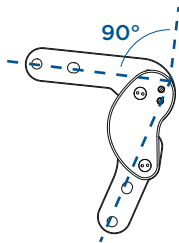
OAK features a full range of knee flexion from 12°-150° with a 15° extension stop and 90° flexion stop. The Scandinavian inspired OAK provides function in a thin, cosmetic, and streamlined package and is constructed of special high strength aluminum and stainless steel. You will feel the difference.



Full Extension



Extension Stop



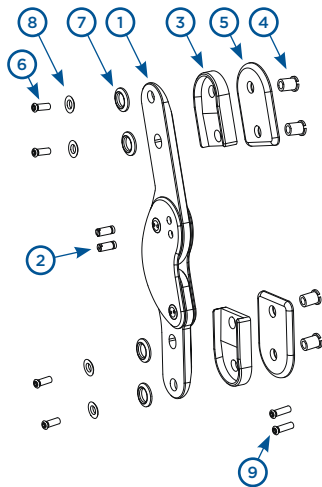
Flexion Stop



Full Flexion

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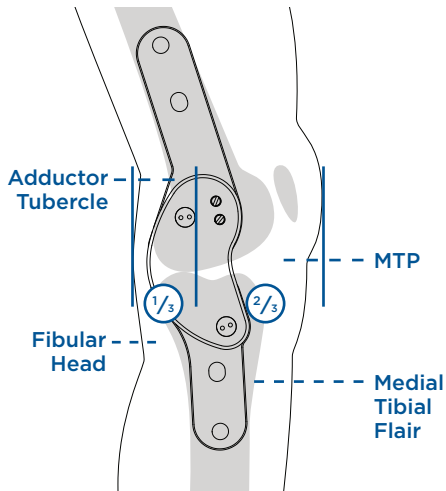
| | |
|--|---------------|
| OAK Orthotic Knee Joint Kit (Right) | 023990 |
| OAK Orthotic Knee Joint Kit (Left) | 023991 |
| 1 OAK Joint (Right) | 023900 |
| OAK Joint (Left) | 023901 |
| 2 (2) Flex/Ext Stop Pins | 023979 |
| Hex Key 1/8" | 885345 |
| Mounting Kit (Includes following) | 023980 |
| 3 (2) External Alignment Block | 023985 |
| 4 (4) Mounting Nut | 023987 |
| 5 (2) Internal Mounting Plate | 023984 |
| 6 (4) Mounting Screw 5/8" | 885901 |
| 7 (4) Alignment Washer | 023982 |
| 8 (4) Spherical Washer | 023981 |
| 9 (2) Mounting Screw 3/4" | 885903 |



FABRICATION

Step 1: Follow the standard impression procedure with a circumferential wrap 8" proximal and 8" distal to the MTP level. Indicate standard landmarks including the Adductor Tubercle, MTP, Medial Tibial Flair, and Fibular Head.

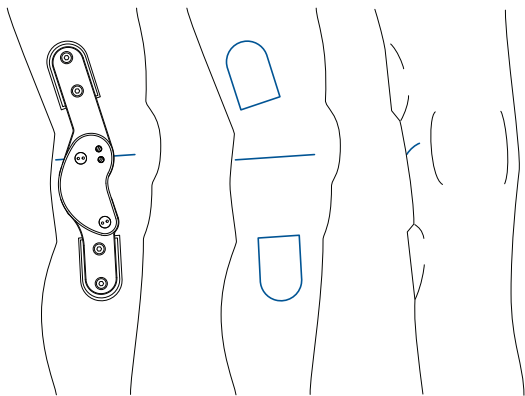
Step 2: Using the upper axis point, the knee joint should be placed midway between the Adductor Tubercle and MTP on the lateral side. It should be approximately $\frac{2}{3}$ posterior of the anterior patella or where minimal migration of the joint occurs during knee flexion.



Step 3: Once knee center and joint placement are determined mark joint mounting plate locations on plaster model.

Step 4: Place a small amount of plaster at mounting plate locations and press joint assembly firmly in place. Allow plaster to set. Remove joint assembly and smooth area around mounting plate location.

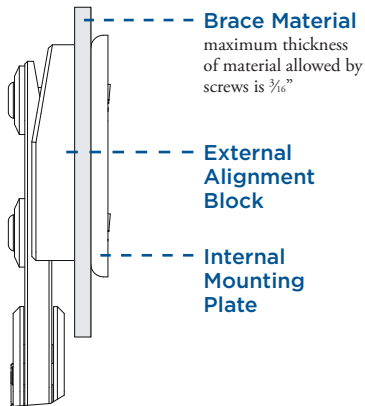
Step 5: Apply cast sealant (cellulose acetate) to mold and attach mounting plate with double sided tape. Apply nylon over cast and mounting plate. Vacuum form plastic as usual.



Step 6: Allow a minimum 6mm of soft tissue clearance between the joint and the knee. Extend proximal or distal padding to sufficiently protect the soft tissue and femoral condyles.

Step 7: Place the mounting plate on the inside of the brace and insert the threaded posts through the drilled holes.

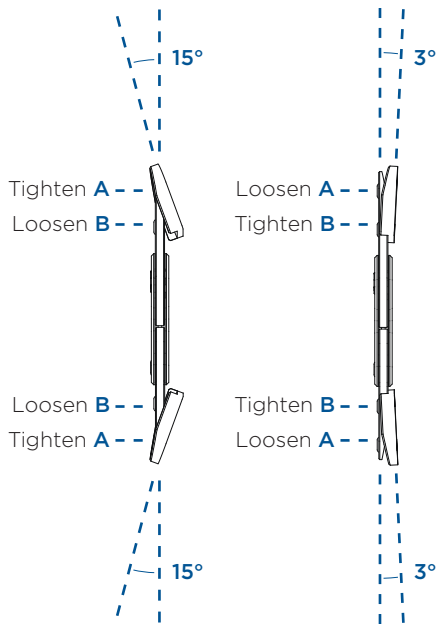
Step 8: Insert the screws with washers from the outside of the joint mounting plates. Attach the mounting plate by threading the screws into the corresponding threaded posts.



Finished Mounting Assembly

Step 9: The OAK Knee Joint features a fine tune adjustment for genu valgum/varum after the joint has been mounted on the brace. Adjust for genu valgum/varum with the 4 adjustment screws. The range of motion is from 30° genu valgum to 6° genu varum. Tightening the **A** screws and loosening **B** screws will result in greater genu valgum. Conversely, tightening the **B** screws and loosening the **A** screws will result in greater genu varum. In the case of extreme genu valgum adjustment, the **B** screws may need to be replaced with the longer mounting screws (included in package).

Step 10: Before delivery, secure adjusting screws with LocTite®. Inspect periodically for wear or debris that could impede normal function.



Fillauer LLC

2710 Amnicola Highway
Chattanooga, TN 37406
800.251.6398
www.fillauer.com

Hosmer

561 Division Street
Campbell, CA 95008
800.827.0070
www.hosmer.com

CENTRI

Kung Hans Väg 2
192 68 Sollentuna, Sweden
+46 8 505 332 00
www.centri.se

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