KISS Technologies LLC
keep it simple suspension
www.kiss-suspension.com

Fabrication Guide For KISS®

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CREATE WITH INGENUITY.

In this guide you will find instructions, tips and methods for fabricating KISS.

Fabrication is split between Socket Fabrication and Liner Application.

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KISS® SOCKET FABRICATION

Preparing The Plaster Model: Steps 1-12

STEP 1

Orient the socket. Draw a line along the long axis of the model. This line should correspond to your desired KISS® strap orientation (anterior or lateral, or anterior-lateral, etc.)

STEP 2

Fill the deepest area of the concave surface of the distal base with molding putty.

STEP 3

Cover the concave surface of the distal base with masking tape.

STEP 4

Trim the tape to the edge of the distal base.

STEP 5

Drill a ¼" hole in the distal model, about 1" deep.

STEP 6

Rough up the distal area around the hole that was drilled in Step 5.

STEP 7

Apply a thick plaster mix to the taped surface of the distal base.

STEP 8

Apply a little plaster mix to model around the hole drilled in Step 5.

STEP 9

Press distal base onto Model with strap exit slot in desired orientation (anterior or lateral, or anterior-lateral, etc). Clean away excess plaster. Let set until dry.

STEP 10

Remove screw from tab & apply spacer tab into slot on distal base.

STEP 11

Locate and mark the proximal exit hole in line with the distal base exit slot at ischial tuberosity level or up to 1” below. NEVER mark the proximal exit higher than the lowest cut portion of the liner.

STEP 12

Drive a rivet into the model on the marked proximal exit hole or attach the KISS® Proximal Dummy (CMP25/A). This will serve to retain the location of the proximal exit.

Thermoforming: Step 13

STEP 13

For Diagnostic Socket Application:
After molding the plastic over the model and base, grind away the plastic at the tab to expose the threaded hole. Insert the screw, pull out the tab and break out the model. Drill a proximal hole through the plastic at the impression left by the proximal rivet or grind away to expose proximal dummy and remove dummy. For adult version drill a 1.25” hole. For pediatric version drill a 1” hole.

For Flexible Inner Socket Application: Do not remove the tab. If using a **4-Hole Distal Base** or an **Angled Offset Base** with a flexible inner socket, cut away the flexible inner socket plastic around the 4-Hole Distal Base to expose the entire 4-Hole Base.

Laminating: Steps 14-27

STEP 14

For Delrin Distal Base Application: Fill in all under-cuts with putty, including under the tab to create a channel for easy removal of the flexible inner socket from the laminated frame. (To keep the flexible inner socket from being locked into the frame). Also fill the threaded hole in the tab with putty, in case of leakage while laminating.

STEP 15

Apply stocking over flexible inner.

STEP 16

For Delrin Base Application: Apply PVA bag, cap end and laminate over the flexible inner socket. For 4-Hole Base see Step 17.

STEP 17

For 4-Hole Base and Angled Offset Base Application with or without Flexible Inner: Pull a stocking over the model and distal base. Apply tape around the distal base and stocking and trim away the stocking on the flat surface of the base.

STEP 18

Thoroughly lubricate all threaded holes and strap exit slot with thick silicone lube/mold release. Be sure to lubricate the slot on the distal base.

STEP 19

Pull PVA bag over base and model, cap base with PVA, tape around base (to ease removal of the base from laminated socket). Trim away excess PVA and apply another layer of tape.

STEP 20

Pin prick holes in the center of each threaded hole through the PVA cap.

STEP 21

Disassemble the KISS® Lamination Kit (CMP14/A or PCMP14/A). Use a 3mm allen key for the black screws and a 4mm allen key for the stainless steel spacer screws.

STEP 22

Thoroughly lubricate all of the screws including the stainless steel spacer screws inside and out. Insert each lubricated stainless steel spacer screw into the threaded 4-Hole base.

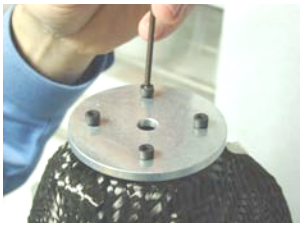
STEP 23

Cut away tape to locate strap exit in base. Lubricate the tab and insert it into the slot and remove the screw. Fill the screw threaded hole with lube/putty.

STEP 24

Apply your choice of layup, exposing all of the 4 stainless spacer screws.

STEP 25



Apply silicone sprayed or tape covered flat lamination plate with the lubricated black 3mm screws to the stainless steel spacer screws and fill each black allen screw top with molding putty.

STEP 26

Laminate as desired – after the lamination is cured, grind laminate to expose the strap exit slot tab. Insert screw and pull out the tab. It may be necessary to heat the area lightly with a heat gun. The lamination plate and spacer screws can now also be removed. Heating may be necessary.

STEP 27

Break out the model. The 4-Hole base can be removed by inserting 6mm screws into the 4-Hole pattern and tapping evenly with a hammer.

Creating the Proximal Exit: Step 28

STEP 28

Drill a proximal exit hole at the proximal rivet location or smooth hole created with proximal dummy.

For Adult Application drill a 1.25” hole.

For Pediatric Application drill a 1” hole. Note: Proximal dummy is not for Pediatric use.

KISS® LINER APPLICATION

Velcro & Adhesive Applications

Placards are applied to the liner. Each kit includes four placards:
· Two low profile Velcro™ proximal placards (built in nut & screw)
· Two adhesive-ready placards (use loose nut in bag and screw attached to Velcro™ placard)
The low profile Velcro™ placards will adhere to many brands of liners. The Velcro™ placards can be removed before liner donning and reapplied after. These placards can also be used to determine proper placement for adhesive applications.
To attach the adhesive-ready placards to the straps, unscrew the screws that are attached to the Velcro™ placards and use with the loose nuts in the bag. Proximal nut & screw set CMP4/A and PCMP4/A can be purchased separately if extras are needed.

Mounting with Velcro™: Steps 29-31

STEP 29

To locate the position of the proximal placard attach the long distal strap to the locking liner. Apply the liner to the patient. Pull the patient into the socket and ensure that the residual limb is fully inserted Into the socket and the socket is in the proper orientation. Then mark the center of the proximal hole on the liner with a Sharpie® pen. You can repeat this procedure to ensure proper orientation. This mark will be a reference point for attaching the Velcro™ placard.

STEP 30

Apply the Velcro™ backed placard to the liner on the spot marked in Step 29.

STEP 31

Pull the patient into the socket using the distal strap. Ensure that the proximal strap and D-Ring exit the proximal socket aperture. Thread the distal strap through the D-Ring and back onto itself. Re-adjust the placard placement if necessary.

Mounting with Adhesive: Steps 32-40

STEP 32

To locate the position of the proximal placard, attach the long distal strap to the liner. Apply the liner to the patient. Pull the patient into the socket and ensure that the residual limb is fully inserted into the socket and the socket is in the proper orientation. Then mark the center of the proximal hole on the liner with a Sharpie® pen. You can repeat this procedure to ensure proper orientation.

STEP 33

Remove the liner, take it to the lab and roll it on to a clean, disinfected plastic sheet to give the liner rigidity.

STEP 34

Place the threaded nut into the hole on the rough side of the plain placard. Place the nut & placard on the liner with the black Sharpie® mark visible through the threaded nut. Teardrop oriented distally.

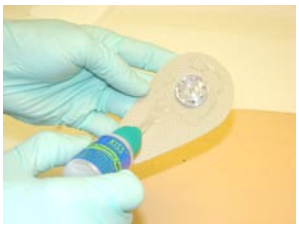
STEP 35

You can trace the placard with a pencil to retain proper orientation and placement while mounting.

Placard Surface Adhesion

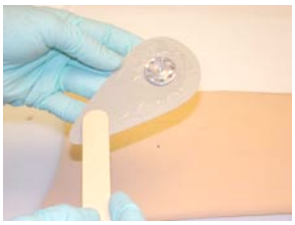
The (rough) gluing surface of the placard and the gluing surface of the threaded nut should be wiped with a clean cloth and fresh acetone.

STEP 36



Apply KISS® Adhesive to the placard in a light circular fashion and apply adhesive to the small circular holes in the threaded nut. DO NOT allow adhesive to run into the center hole.

STEP 37

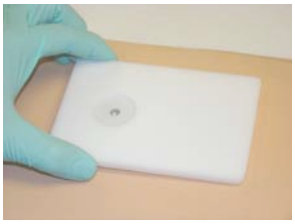


Spread adhesive with tongue blade to cover entire surface of placard. Add more adhesive if necessary for full coverage of placard.

STEP 38

Place the placard glue side down onto the liner within the tracing marked in Step 35. to ensure proper adhesion, and to prevent the placard from peeling off the liner, continue with steps 39-40 below.

STEP 39



Pre-spray a KISS® Press Plate with silicone or cover plate with Saran® type plastic wrap and place it on the placard with the nut extension protruding through the press plate hole.

STEP 40

Apply pressure to the press plate by placing a 5-10 pound anvil/weight on the press plate for 5 minutes.

Trimming The Straps To Fit: Steps 41-43

STEP 41

Cut proximal straps just above where the distal strap exits the socket.

STEP 42

Thread the distal strap through the proximal D-Ring attached to the end of the proximal strap. Fold it over onto itself, and cut the strap at the distal socket.

STEP 43

Apply blue loctite to the proximal and distal nut and screw assembly.

ADDITIONAL INSTRUCTIONS

Eliminating Occasional Excess Air Noise: Steps 44-45

STEP 44

Remove the distal strap. Apply self adhesive felt muffler CMP9/A to the Velcro side of the strap with the edge touching the hole in the strap.

STEP 45

Pull strap and muffler completely through the base once, then stitch Muffler in place. (Silicone sprayed on sewing machine needle keeps the needle and thread free from adhesive).

KISS® Anti Fray Sock Iron-Ons: Step 46

STEP 46

When using a sock with KISS®, it is necessary to cut a proximal hole in the sock, to allow the proximal strap to exit through the socket. The iron-ons prevent fraying after hole is cut. See instructions included with iron-ons (CMP17/A).