

3140-1 Fabrication Dummy

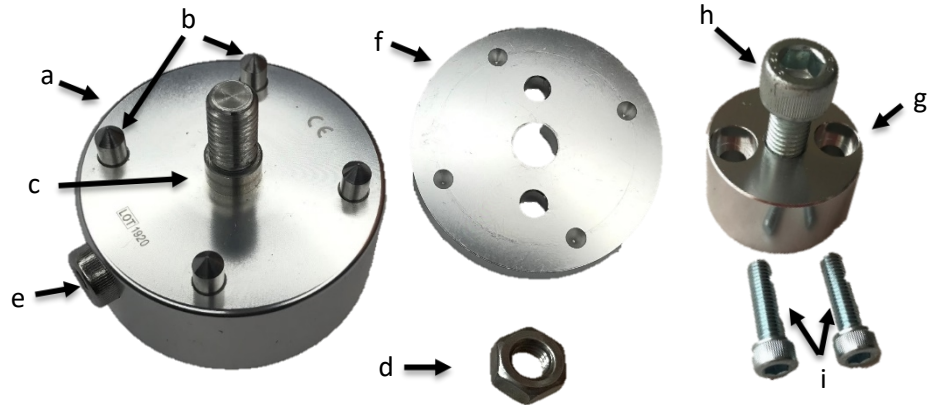
Instructions For Use



The 3140-1 Fabrication Dummy is used to make the cavity necessary for the 3140 Base Shuttle. The kit provides a lamination plate for a finished flat outer surface, and the puller necessary to remove the plate after lamination.

Dummy includes:

- Main body of dummy
- 4 pointed studs
- Double threaded central stud
- Hold down nut
- Push button bolt insert
- Lamination plate
- Puller attachment cap
- Puller center bolt
- 2 Puller mounting bolts



Casting for shuttle lock

- A shuttle lock does not draw in a limb into the socket, the clinician should be aware of this when doing the cast and modifying for their socket.
- During the casting, it is up to the clinician if they wish to distend the limb during casting or not. Also, cast modification should be in accordance to total contact and even weight distribution for good results, not a tight A-P style, as this can lead to excessive movement in the socket depending on limb type.
- Mold reduction is to be determined by the clinician for the limb type being fitted.

Dummy preparation

- Coat the threads of the 4 pointed studs, and the Center stud with petroleum jelly to prevent resin from entering and aid in ease of screw removal
- Screw all studs into the flat side of Dummy body. Center stud is screwed in with hex head first. Flat end of center stud is showing from flat side (do not insert center stud, or plug inner hole with putty at this time if using M10 bolt to locate the dummy)
- Plug domed side of the 4-holes, as well as the center hole where the stud is, with putty so plaster does not enter (unless using an M10 bolt to locate dummy) (fig 1)

fig 1



Fill and strip cast

- Pour and strip cast to get mold as usual, if not using M10 bolt to locate dummy on the mold

If using an M10 bolt to locate dummy, add additional steps below:

- Use an M10 bolt long enough to use when filling the cast – this will help to locate the dummy, and insert through bottom of cast where pin was
- Thoroughly coat the M10 bolt with petroleum jelly, and take care to accurately place the M10 bolt into the cast during filling to preserve alignment.
- Fill and strip cast to get your mold as usual.

Warning: The Clinician is responsible to gauge an appropriate lamination layup to suit the requirements of their given patient for this shuttle lock system in regards to activity level and associated activities they engage in, including body weight and foreseeable additional weight they may carry.

Read Instructions carefully prior to fabrication

Dummy Assembly Overview



1

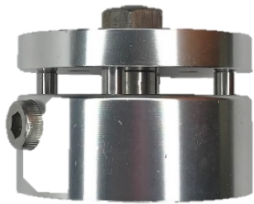


2



3

1. Main dummy body with side hole dummy bolt, center stud, 4 hole pointed studs, and nut
2. Lamination plate (Note that the spiked ends fit into the plate.)
3. Puller attachment with Center bolt and the 2 outer bolts



4



5

4. Dummy assembled for lamination with hold down nut on center stud. This assembly helps provide a flat bottomed socket and provides consistent socket thickness.

⚠ NOTE: Do not over tighten nut as it can cause lack of good wet out/saturation of layup materials!

5. Puller attachment with Center bolt and the 2 outer bolts loosely started. This puller assembly helps to remove lamination plate from lamination



6



7

6. Side view of puller assembled onto lamination plate to remove plate from lamination

7. Different view of puller assembled onto lamination plate



8



8. Side view of puller with the center bolt tightened to separate the lamination plate from the lamination (without and with socket in photos)

Mold Prep for dummy placement

- Smooth and modify mold as usual for total contact pin lock method. Take care not to disturb the M10 bolt area as you remove the bolt from the mold (if you placed a bolt in the cast before pouring), and do not modify liner umbrella area of the mold
- Be sure to mark 4 alignment lines to verify good pin placement, and to maintain good pin angle. Visually verify dummy on the mold against alignment lines (pictured to the right)

⚠ Important: Severe offset, or angle could prematurely wear plastic lock body, and/or induce pin binding!



Dummy placement onto the mold

(If not using M10 bolt method)

- Apply plaster into the dished end of the dummy, then quickly place the molding dummy on the mold where you want it located, taking care to orientate the push button location on the medial side of the mold (as pictured in sequence a – e)

- Blend in the dummy to the distal end of the mold to avoid any undercut

- Carefully clean the dummy of unwanted debris

(If using M10 bolt method)

- Thread the bolt into the dummy with enough thread showing to be able to locate dummy on the mold
- Carefully thread the dummy and the bolt onto the mold. When dummy is positioned, fill in the gap and blend in smoothly taking care to not have any undercuts between mold and the dummy

- Allow plaster to set before carefully removing M10 bolt.

- Apply petroleum jelly to the Center stud threads on hex head side and insert into dummy

- Carefully clean the dummy of unwanted debris



Thermoforming

- Insert the side dummy bolt and apply foam over the head to facilitate a sanding gauge for bolt removal
- Heat and pull plastic as normal
- Cut hole where center stud is so that plastic can be pushed in toward the dummy top, then the lamination plate can be used to squeeze the plastic down with the Center nut to get an even 6mm / 1/4" thick socket floor
- Be sure there is adequate vacuum to avoid any space around the 4-hole studs or lock dummy



Lamination with dummy

- Pull PVA bag over mold and dummy
- Cut and tape off PVA bag at the level of the just below the button release dummy bolt hole on the side
- Tape an additional layer around the top of the first tape, overlapping 50%
- Splice the hole where the side dummy bolt goes and insert the bolt after applying petroleum jelly to the threads and tighten
- Plug hex head with putty so resin does not fill in the space and apply foam over the head to facilitate a sanding gauge for bolt removal





Lamination with dummy (Continued)

- Apply layup materials as usual, being sure to use adequate layers of reinforcement braid and unidirectional tape that is appropriate for that application. Be sure that the 4 pointed studs are puncturing through the material

- Prior to applying the Lamination Plate, be sure to plug the 2 threaded holes for the Puller screws so that resin does not intrude into those holes (as seen in photo right)

- Apply petroleum jelly to center stud, then put on lamination plate with the nut

⚠ Important: Do not have excess bunching of material under the Lamination plate or overly tighten the nut as this can prevent thorough saturation of the layup materials!

⚠ Important: Be sure that the laminating holes in the Lamination plate are not blocked or obstructed!

- Apply outer PVA bag, ensuring that it is snug around the area of the dummy. Use a heat gun under vacuum if needed.

- Tightly tape off around the Lamination plate to ensure that the lamination is drawn through the lamination holes under vacuum to thoroughly saturate the layup materials



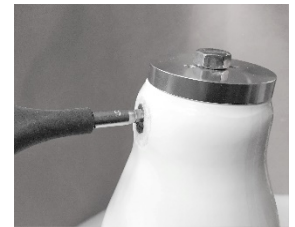
After Resin Has Cured

- After lamination has cured, carefully remove unwanted excess resin from the Lamination plate to expose the Hold Down Nut

- Locate and carefully sand down to the Side hole dummy bolt, clean out the hex hole, and remove with 6mm wrench

- Remove the Hold Down Nut

- Clean out the 2 Puller Adapter screw holes



Dummy Removal

- Apply the Puller adapter by inserting the 2 securing screws (photo sequence right)

- Insert, and tighten center bolt with an 8mm hex wrench to pull off Lamination plate

- After Lamination plate comes off, mark and trim socket brim as usual and remove socket

- Reapply the Hold Down Nut, and use a non-marring hammer (below) to tap out the dummy, then remove nut

- Finish socket as usual, and clean up side button release hole



Lock assembly

- Insert Base lock into socket

- Insert button release, and cut to length, but not more than 12.7mm / 1/2" and clean out threads with M3mm tap and install with thread locker snugly, but not overly tight

- Install 4-hole adapter with 4 screws. (Be sure to apply with thread locker and torque 7-8Nm)

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