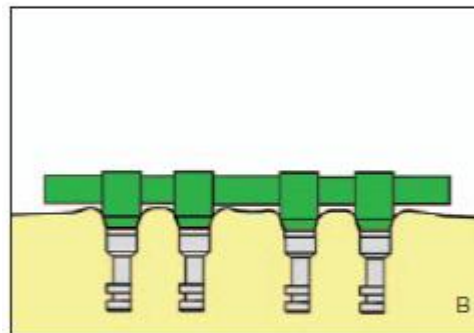
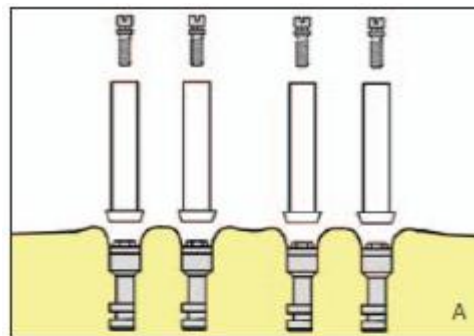


Placement of the KERATOR Bar Attachment

The KERATOR Bar Attachment can be placed by choosing any of the three following techniques used by a Dental Laboratory to fabricate a bar with Locator attachments.

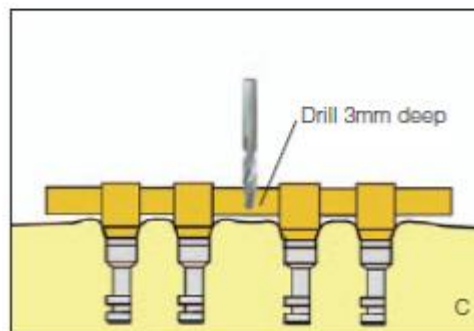
CAUTION: The most critical consideration in the proper placement of the KERATOR Bar Attachment on a milled or cast bar is that a minimum of 1.0mm of bar material remains between the edge of a UCLA type screw retaining the bar and the KERATOR Bar Female, or a minimum of 5.0mm between the edges of multiple placed KERATOR Bar Females that is required to avoid interference of the KERATOR Titanium Denture Caps. (KERATOR Bar Female = 4.0mm Ø, KERATOR Denture Cap (male housing) = 5.5mm Ø). Preliminary set-ups and silicone matrixes should be fabricated before the bar is constructed.

1. The model is made with the appropriate implant or abutment analogs. Plastic or combination gold/plastic cylinders are attached to the analogs. (A)
2. The primary framework is waxed to desired contours. **At least 6mm** mesial/distal distance is required to allow clearance for the KERATOR male seated on the KERATOR female element. (B)



1. Thread Females — Drilling and Tapping the Bar

1. Cast bar pattern in a in a hard precious alloy.
2. The 1.7mm Bar Drill (# BKD1) and a 2.0mm Bar Tap (# BKT1) are used for creating the threaded site in a cast gold alloy bar. First use a round bur to create a dimple into the top of the bar at the exact site of the planned preparation.

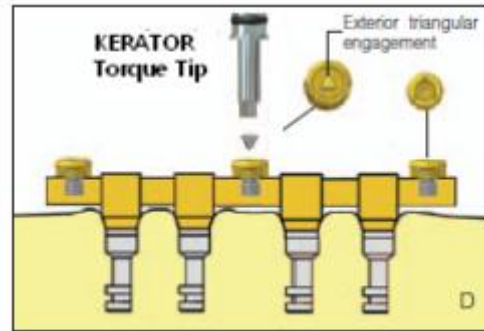


3. Use the 1.7mm Bar Drill in a precision drilling device to create the exact size diameter hole to a depth of 3mm that is needed for the female threads. The hole is then tapped with the 2mm tap. The use of tapping oil while cutting the threads is required to reduce the chance of breaking the tap off in the preparation. (C).

4. Place the 2.0mm Tap into the tap handle to create internal threads within the drilled site. Gradually cut the threads into the hole using an in and out motion.

5. The KERATOR Torque Tip (# KMD619) is designed to engage the internal triangle of the threaded KERATOR Bar Female (# TBA01) and thread it into the bar. (D)

6. Tighten KERATOR screw-in female. While Seating Tool is still engaged, insert 20N/cm Bio-Torq Wrench.

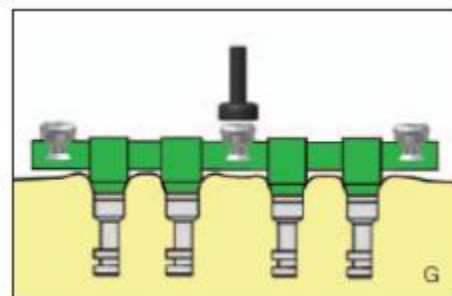


2. *Cast-To Female* — *Casting into a Gold Alloy Bar*

1. Use the plastic Carrier or the metal KERATOR Paralleling Mandrel (# KPM1) in a surveyor to place the Cast-To Bar Females (# CBA01) into the waxed bar in a position that is parallel with the other KERATOR Bar attachments. Insert the split end of the Paralleling Mandrel into the socket of the Cast-To Bar Female and tighten the knurled set screw to spread the split portion of the mandrel that will secure the Cast-To Bar Female to the mandrel. Cantilever extensions should be at least 6mm in length.

2. Wax the Cast-to Bar Female directly into the bar pattern. The wax should be built up to the bottom outside corner on the base of the female, leaving the majority of the outer surface on the base above the top level of the bar. (G)

Note: Use only precious or semi-precious alloys for casting the titanium alloy female into the bar, **do not use non-precious.**



Cast the bar using recommended temperatures of the alloy manufacturer. The stainless steel Cast-To Bar Female can be cast up to 2000° F. **Do not cast above 2000° F - the stainless steel Bar Female will melt!**

3. **Divesting** - After casting, allow the casting to bench cool for 20 minutes. Be careful to push out the casting and investment with proper tools. It is not recommended to hammer

or bang on rings that may distort the castings. To remove the investment material from the Cast-To Bar Female without damage to the titanium alloy, **use an acid-free investment and porcelain remover solution** in an ultrasonic unit for a period of 30-45 minutes. (Do not use a bur to remove investment, sandblasting with aluminum oxide, or an acid pickling solution, all of which can damage the retention surfaces of the Bar Female attachment.) Clean bar containing KERATOR Cast-To attachment in an ultrasonic cleaner solution.

4. **Finishing and Polishing** – When polishing with a rubber wheel, use caution not to damage the Cast-To Bar Female attachment.

Polish the surface of the bar to make a smooth surface. The KERATOR Parallel Post can be placed on the female to protect the attachment while polishing. (If additional polishing of the female attachment is required, it is recommended to only use glass beads at a low pressure (40 PSI) or a fiberglass or bristle polishing brush.)

5. After polishing the bar, place a KERATOR Processing Cap Male onto each Cast-To Bar Female and check for proper fit. Clean again in an ultrasonic **non-acidic solution** and deliver to the dental office.

3. Laser Bar Female — Laser welding to a Titanium Bar or a Cast Gold Alloy Bar

1. Use the plastic Carrier or the metal KERATOR Paralleling Mandrel

(# KPM1) in a surveyor to place the Laser Bar Female(# LBA01&02) into position. Insert the split end of the Paralleling Mandrel into the socket of the Laser Bar Female and tighten the knurled set screw to spread the split portion of the mandrel that will secure the Laser Bar Female to the mandrel.

2. Tack the Laser Bar Female into place on top of the bar by placing a spot of laser weld on opposite sides of the female.

3. Remove the Paralleling Mandrel by loosening the knurled set screw. Form a bead of weld around the entire base circumference of the Laser Bar Female, welding the attachment to the top of the bar.

4. Snap a Kerator male processing cap onto the welded Laser Bar Female to make sure the laser weld does not interfere with the seating of the Locator Denture Cap Male.