

MetaLIFT™

CROWN & BRIDGE REMOVAL & REPAIR SYSTEM

by  HAGER
WORLDWIDE



Instructions for Removing a Crown



Figure 1 - expose the metal

Anesthetize the tooth or teeth that support the crown or fixed bridge that will be removed. Determine the most ideal location to remove the crown. Then follow the basic sequence below. Information on other variables appears in later sections, including information on the removal of fixed bridges.

Step 1: Expose the Metal

This step is for porcelain occlusals only. For metal occlusals, begin with STEP 2. Remove enough porcelain with a D-2 Coarse Diamond (supplied) to expose the metal substructure. (See Fig. 1.) Try to make your entrance to the metal fairly neat. A new diamond goes through the porcelain easily, but if this diamond gets dulled or misplaced, substitute another diamond of approximately the same size. D-2 coarse diamonds are the shape and size of #560 burs. An inverted cone diamond works well, as does a round #4 diamond, especially if the porcelain layer is thin.

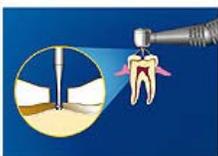


Figure 2a - For porcelain occlusal

Step 2: Make a Pilot Hole

If you are starting with this step, determine the most ideal location to remove the crown. On molars this is usually the central fossa. However in 2nd molars that are hard to reach it is usually much easier to go through the mesial triangular fossa. Using a sharp #1 High Speed Bur (supplied), lay the bur down sideways on the metal to index this location. This is done sideways because the bur running at high speed will “skate”, which makes it difficult to put your channel in the exact location you want. Sometimes it is helpful to place this “dot” without the water spray so you can control its exact location. Now place the #1 High Speed Bur vertically and with water spray, penetrate through the metal of the crown only. It is easy to tell when you are completely through the metal because you can feel a sudden lack of resistance to the high-speed bur. (See Figs. 2a and 2b.) Make sure not to penetrate deeply into tooth structure, amalgam or post and core material. The reason for placing a pilot hole with the #1 High Speed Bur is to save wear and tear on the Metalift™ Burs you will use. Making a proper pilot hole is the first step to success in removing a crown.



Figure 2b - For metal occlusal



Figure 3a - For porcelain occlusal

Step 3: Make a Precision Channel

Make a precision channel in the entire length of the pilot hole with a Metalift™ Bur (supplied). Use very low speed and carefully penetrate through the metal. Make sure you use a sharp bur. A dull bur makes the job difficult. (See Figs. 3a and 3b.) You may see cement/dentin power “augered” out of the channel. If the metal is precious or semi-precious, use only the Regular Metalift™ Bur to make this precise channel. For very hard, ceramic alloys, non-precious alloys, or if your Regular Metalift™ Bur has gotten dull, then start with an 1157 high speed bur or the Small Non Precious Metalift™ Bur, work up to the Medium Non Precious Metalift™ Bur and then graduate to the Regular Metalift™ Bur. It is important the diameter of the channel be no wider than the diameter of the Regular Metalift™ Bur, as this diameter precisely matches the diameter of the instrument you will be using. Using Mineral Oil on the bur makes this process easier and helps extend the life of the burs. Remove the metal filings from the crown with air and vacuum prior to starting the next step.



Figure 3b - For metal occlusal



Figure 4a - For porcelain

Step 4: Undermine the Metal

At this point you do two things, one; verify that you are all the way through the metal. Two, you undermine the metal with the Metalift™ # 14 bur. This prevents threading and bolting the metal and the tooth structure together. This step only takes a few seconds. With the dentin and or cement undermined from under the metal, you are now ready to remove the crown with the Metalift™ instrument.



Figure 4b - For metal

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Figure 5a - Porcelain Occlusal



Figure 5b - Metal Occlusal

Step 5: Thread the Metal

The handle should have a bend of about 20 degrees so it is out of the way of the fingers. When working on the mandibular arch, the handle is bent in an upward or superior angle. (See Figs. 4a and 4b.) On the upper maxillary arch you can leave the handle straight or bend it upward in a superior angle, whichever will get it out of the way so your fingers can reach the Metalift Instrument easily.

The Regular Crown Removal Instrument is set in the prepared channel and turned with finger pressure in a clockwise direction. You will feel the self-taping instrument thread into the metal. Continue turning it with mild to moderate finger pressure until you feel the resistance of the cement layer or tooth structure. At this point on, the instrument becomes slightly harder to turn, as it pushes against the dentin. Continue turning a few more times, and you will feel the cement layer break. Usually at this point, the crown will loosen and lift from the tooth easily. (See Fig. 4a) In the most posterior areas of the mouth, a cheek retractor is quite helpful in gaining access, and if the handle of the Metalift is bent superiorly, the handle of the instrument is out of the way of the operator's hand when working on both the upper and lower. The handle can be gently bent close to the head of the instrument while holding it in your hand. On upper second and third molars where it is hard to get your fingers in enough to comfortably turn the Metalift Instrument, it is O.K. to use a hemostat to moderately turn the instrument as long as you have not threaded it into the dentin.

During the threading of the crown, make sure you do not apply lateral force to the Crown Removal Instrument, nor let the patient bite down on it. Do not try to pry the crown off with your fingers on the handle, as this will cause instrument breakage. It can take a great deal of force, if threaded correctly by rotating it around the long axis rather than by pushing it from the side.

If you have difficulty getting the Metalift™ Instrument to start threading into the metal you are most likely dealing with a very hard ceramic metal or non-precious alloy. If this occurs you can facilitate the process by using an 1157 bur and very lightly “brush” off two sides of the channel, such as the buccal or lingual sides! This will allow the channel to be threaded much easier by the Metalift™ Instrument. See the section on “Preserving Instrument Life”.

If the occlusal metal is 4-6 mm thick, or if it is a non-precious metal, the Metalift™ may become much harder to turn. Most likely, however, you have a non-precious alloy. It is generally helpful to coat the tip or shank of the instrument with mineral oil, wax or soap to make the threading process easier. If you feel the instrument “bottom out” onto something solid and it gets very difficult to turn with finger pressure only, you are probably threading the dentin. Usually it is easy to judge how thick the occlusal metal is. However, if the occlusal metal is very thick (three or more millimeters), it is harder to judge if you are completely through the metal or if you are through the cement layer. You should see some dentin and or cement particles which will be light in color and in contrast to the metal particles. You can tell whether or not you are all the way through by using the #14 slow speed bur in the bottom of the channel. If you are not all the way through you will be able to sense that you are still in the metal. Should this be the case you must make sure you penetrate all the way through it before using the Metalift™. If you are not completely through the metal, the instrument will go down a certain depth and will not budge further. If the instrument is still threading after you pass through the cement layer, you will be threading a metal post and core or the dentin. You would know you had gone beyond the cement layer and into other material because you would be threading 4 or 5 more millimeters deep and still be going deeper. So, if you realize you are past the cement layer, do not use excessive force or go too deep. The remedy in these cases is stated in the above points. Back the Crown Removal Instrument out by unscrewing it.