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Canadian glassmaker Jay McDonell doing some “cold” working. (Photo: Bruce Gerus)



## Introduction

*Creative work is very much a dialogue between the physical and spiritual, the work providing the meeting point. Creating is the means for exploration, towards a greater understanding.*

*-Stephen Procter*

Webster's Collegiate Dictionary defines “joy” as “the emotion evoked by well being, success, or good fortune...a state of happiness or felicity: bliss...the source or cause of delight.” For many, joy is one of the primary emotions that motivates and sustains life. It's right up there with love. Joy is also very infectious to others -- many can pick up on it easily. Joy is meant for all. And there is joy to be found with almost everything, even coldworking.

“Coldworking” can be defined as the manipulation and alteration of glass without the addition of heat -- the changing of form and surface via some sort of mechanical or hand-manipulated method. Coldworking is often the last bit of work that is done to a piece of glass before it is considered “finished.” It is also sometimes considered anathema to joy to some. Truly, “coldworking” is not a very sweet-sounding term -- the combination of “cold” and

“work” into one word seems like a description of some ultimate form of misery. The good thing is that actually doing the coldworking does not need to be so dreadful at all. When given its full due, coldworking turns into an intriguing exercise dealing with form and surface. Soon the endeavor turns into a puzzle and a journey, a rejection and a redemption, a loss and a save. It's truly just a dance with the glass on a wet and a rotating dance floor.

“Grinding” and “sanding” are often used as synonyms to coldwork. Grinding refers to flat grinding on the lap wheel, while sanding is more associated with the belt sander. Hot and kiln-formed glass definitely have more compelling terms, such as “snorkle, high fire, overlay, Roll Up, reticello, hot torch, pot melt, slump, and trim.” These all sound like exciting ways to work with glass -- whereas “grind” does not. Perhaps the most concise term for coldworking is “finishing.” Coldworking is usually the process that completes the piece of glass since things are not done until they are finished. Whether it's grinding off a punt, reworking a surface, or smoothing out a rough area, coldworking is usually the final step in completing that piece of glass. That

## Care and Feeding

Most saws are fairly low maintenance. Always remove debris after each cut. Spray water on the tray to clean its surface, and wash around the splashguard of the blade. For trim saws, clean and replenish reservoirs with fresh water. On occasion, wipe exposed steel and metal nut and bolt heads, washers, spacers, etc., with a dab or two of machine oil. A light greasing (with bike grease such as Phil Wood's waterproof grease) of exposed parts will assist in the release of nuts and bolts for maintenance. Also lube any moving parts for the tray and for any adjustment knobs. Wipe down the whole machine at the end of the day.

## Blades

Good blades are an essential part of the saw. Most blades used in the coldshop are continuous-rim diamond blades, that have a full rim of cutting material on the edge of the blade. For cutting bricks, a serrated blade will be used, though these blades are not recommended for most glass cutting applications.

Have at least two blades available at all times. A rough-duty blade (often the one that comes with the saw) for general applications and for very rough cuts through materials other than glass, such as kiln shelves or bricks or for cutting up scrap glass.

And purchase a blade, such as a fine quality lapidary blade, made specifically for cutting cleanly through glass. A good example is the MK 303 Professional blade. Lapidary blades have thinner and cleaner cuts and produce less chipping on the bottom of the piece.

When selecting a high quality lapidary blade, choose the thickest one available, with the biggest kerf, if desiring to use it for long, straight cuts. For example, with a 10" (25 cm) blade, the .050" (1.25 mm) thick blade of the MK 303 Professional blade is the thickest and firmest blade of that product. It will not bend and warp during longer cuts. If only shorter cuts are to be done, then a narrower blade can be used.

When purchasing a new blade, take the time to mark an arrow to indicate the orientation of the blade so that it is always mounted the same way onto the machine. This practice will help to stabilize the sintered matrix of the metal rim which holds the diamonds in place on the saw blade. Keep the good blade stored safely in its originally packing when not in use.



*Using a carborundum dressing stick to clean and refresh the saw blade.*

# Hand Lapping

## *Where is the Joy?*

### **In grinding outside of the box.**

Hand lapping consists of grinding a piece of glass by hand -- most often with a diamond-embedded hand pad, a diamond file, or silicon carbide grit with some wet/dry sandpaper or with another piece of glass. Although hand lapping seems like a process that would take forever to do, or longer, in all actuality a well done session of hand lapping may get more done than expected -- and be an easy clean up to boot. Hand lapping is one of the great pleasures of coldworking, even if it doesn't sound like it should be.

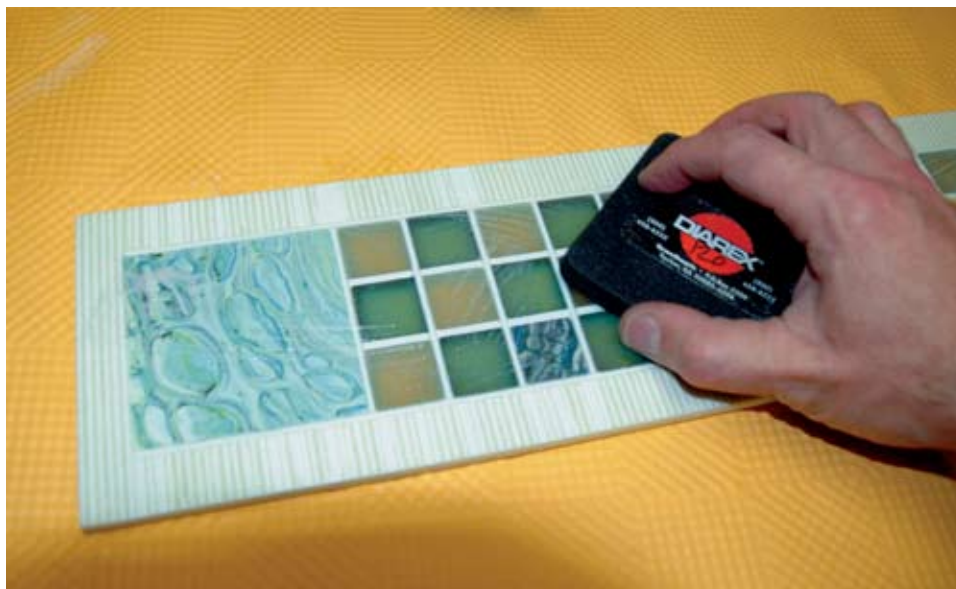
## **Uses**

Diamond pads are very good for grinding all accessible surfaces at all times, since all that is needed is the glass, the hand pad, some water, and some hands. The pad consists of an abrasive-rich plastic surface that is mounted on a sturdy sponge.

Some abrasives are mounted on plastic sticks, not unlike tooth brushes. Other abrasive surfaces are loose, being basically a plastic card with little dots of concentrated diamonds. Often the diamond grinding surface is more durable than the sponge pad it is stuck on. The grinding surface can be removed and mounted on some other tool or form if so desired.

Diamond pads can grind and smooth a small surface quickly and easily, mostly by pressing firmly while using a vigorous circular or back and forth motion with the pad. The diamond pad grinds by scratching, so be aware of how the surface of the glass will look after grinding. If a uniform surface is desired, it is recommended to move evenly and consistently when grinding with diamond pads. Many pieces of cast glass get a diamond hand pad treatment for finishing.

A coarse 70 or 120 pad will remove material quickly and leave a very noticeable, white surface. The 220 and the 400 pads will produce a surface that will be much finer than when rough grinding. Often this extra smoothing takes very little time or



*A 120 grit diamond hand pad being used to work on the surface of the glass. Be sure to use enough water to keep the glass well rinsed and clean. Note the clean paper under the glass, used for cushioning the glass and preventing scratches on the backside of the piece. This paper makes for easy clean up by being discarded later on. (Photo: Steve Immerman)*

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*A graal bowl by Laura Murdoch. (Photo: Laura Murdoch)*



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*"21st Century Bushland" by April Surgent. Cameo cut kilnformed glass. (Photo: Jeff Curtis)*



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