

Criteria	PBHE's Pattern Grinding	Freehand Grinding
Grinding Style	PBHE machines follow patterns that precisely guide the blade, eliminating human error. Master patterns are required for each blade type and special patterns can be made on request.	Operator moves the boot and blade by hand across a table allowing the blade to come in contact with a grinding stone. There is no guide to ensure the grinding of an accurate blade curve.
Consistency and Control	Accurately ground blade curves that do not vary from sharpening to sharpening. The blade curve can be changed by using a different pattern upon request. This technique ensures no heel rounding.	Each sharpening is different; the blade curve becomes more distorted with each sharpening. Results vary depending on pressure, consistency, and arch of operator's movement.
Material Removed	Given normal wear, very little material is removed on a general sharpening. Blades are sharpened with four to six passes along the grinding wheel, with each pass taking off less than 1/1000 of an inch.	Excess material is removed with each sharpening with no consistency. Undercutting is very noticeable along the blade edge.
Blade Life	Extended blade life due to the small amount of material taken off with each sharpening. Many competitive skaters have sharpened their blades over 30 times and are still well within the side grind area, resulting in major cost savings.	Limited blade life depending on freehand pressure and the number of passes of the blade across the grinding wheel. Due to inconsistency, an operator can destroy a blade with only one sharpening if they take off too much material in one area of the blade, distorting the blade curve.
Grinding Wheel Radius	Diamond wheel dresser is set by height gauges accurate to .001", allowing the grinding wheel to grind an accurate root radius on the blade every time.	Diamond wheel dresser is set by marks on a rod, very crude given today's technology.
Blade Records	Engineering specific reports are produced and filed for each blade according to serial number.	Generally no records kept.
Manufacturer's Specifications	Always sharpened to Manufacturer's specifications unless skater requests otherwise.	Blades are not measured to manufacturer's specifications when freehand ground because they cannot sharpen to that accuracy. Blades that have been freehand ground three or four times are usually beyond re-profiling to manufacturer's specifications.
Operator Training	Requires skilled operators to set up equipment and work with precision tools	Limited training required.
Sharpening Time	Set up time is 20 minutes per blade with record keeping and blade four point check. Total maintenance time: 60 minutes per pair of skates.	Total sharpening time is generally less than 15 minutes per pair.
Blade Material	Equipment designed specifically to sharpen high quality blades. High Carbon Steel blades machine well to produce a keen edge for competitive skaters.	No restrictions but stainless steel blades will not produce a keen edge due to chromium content.
Blade Design	Equipment designed specifically to sharpen different blade designs including tapered, hollow ground blades	No restrictions but limited ability to properly secure tapered hollow ground blades.
Capacity of Clients	Limited number of clients due to the sharpening time.	No restrictions.
Client	By appointment only. Initially requires a one hour session on process/equipment technology.	No restrictions.
Client Feedback	Feedback is required and appreciated on a regular basis. This helps ensure that PBHE is doing the most for their clients and can aid in solving any future equipment problems.	No requirements.
Cost	Cost is \$34.50 due to the skilled labour and time.	Cost is approximately \$10.00 to \$20.00.