

# THE E-S4 SKATE SHARPENING SYSTEM

The ELITE S4 Skate Sharpening System is a revolutionary machine that has redesigned and re-engineered the critical materials, practices and processes of skate sharpening to deliver blade performance like no other system in use today. It is the most precise, the most efficient, and the only skate sharpening system capable of preserving the profile of the blade throughout its useful life.

## Key Features & Benefits

### Blade Profile Integrity

Unlike all other sharpening machines on the market today, the E-S4 sharpener's revolutionary technology maintains the integrity of the blade profile and its performance characteristics from one sharpening to the next, for the life of the blade. Preserving the blade profile requires a precision and adaptability that constant-pressure mechanical systems (spring-loaded or counterweighted) simply cannot provide.

It is also impossible to achieve consistently by traditional hand sharpening, no matter how experienced the operator.

To maintain a blade's profile during the sharpening process, changes in blade geometry require the simultaneous and continuous regulating of speed and pressure throughout the sharpening pass. Now equipped with the latest Siemens digital drives and servo motors, the E-S4 uses a sophisticated computer program to digitally choreograph the sharpening process.

Prior to sharpening, the E-S4 first scans and registers the blade shape. Once the sharpening begins, the system detects changes in blade angle and position at every millimeter and adjusts speed and pressure to remove exactly the same amount of material along the length of the blade.

In real time, the E-S4 system uses sophisticated algorithms to react to hundreds of data points in order to accurately reproduce the existing blade profile throughout the sharpening process.

The ELITE sharpening system is the only machine on the market today that can maintain blade profile integrity with precision and consistency. Every time.

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**"Elite takes Blade Performance to another level ... this is the best system in the world today."**

*Pierre Gervais  
Head Equipment Manager, Montreal Canadiens*

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## Material Innovation

### Diamond Coated

Unlike traditional resin-stone sharpening wheels in common use, ELITE wheels are made of an advanced steel alloy with a synthetic diamond coating. The steel core maintains dimensional accuracy and stability, while the coating provides superior durability and cutting power.



### Durable

In traditional sharpening systems, the familiar sparks flying off the blade are in fact fragments of the resin-stone grinding wheel disintegrating and burning as it comes into contact with the higher density steel blade. With each sharpening pass, the integrity of the resin wheel is degraded, leading to inconsistent radius hollows and ultimately compromised results.

By contrast, ELITE's synthetic diamond coated wheels are harder than steel blades, and not subject to the performance degradation typical of resin-stone wheels.

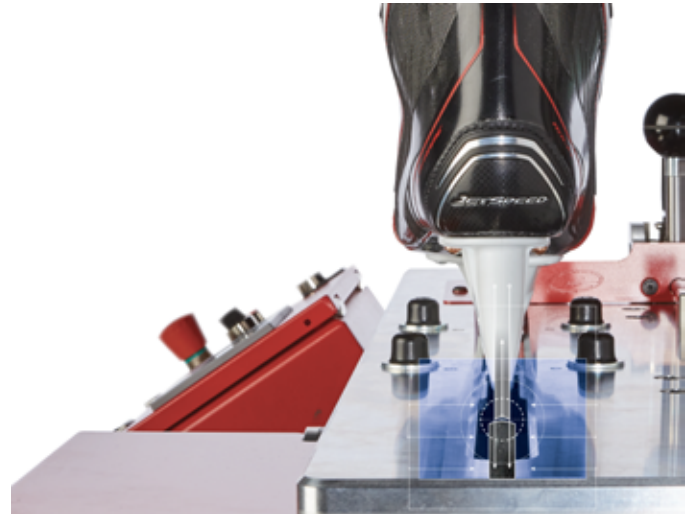
Drawing from manufacturing standards used in the aerospace and other high technology industries, the durability and precision of the ELITE diamond coated wheel represents a dramatic advancement in the science of skate blade performance.

### Quick and Easy

With the E-S4 there is never a need to "dress" the wheel. Operators simply select the desired radius wheels and installation is quick and easy. Each ELITE wheel is factory-formed to hollow radiuses ranging from 3/8" to 1 1/4". Custom radius hollows are available upon request.

## Clean Technology

The E-S4 does not produce the offensive resin-stone debris and airborne particles typical of traditional sharpeners' work environment. The small amount of residual material produced by the E-S4 is managed by an integrated vacuum system.



## Precise Blade-to-Wheel Positioning

Blade performance consistency cannot be achieved by hand. Through engineering innovation, ELITE has developed a self-centering mount system that ensures the exact center of the blade meets the exact apex of the grinding wheel, every time.

The importance of blade-to-wheel positioning cannot be overstated. Inaccurate blade-to-wheel positioning can result in a serious compromise of blade performance. Even a few thousandths of an inch offset can result in a perceptible difference in blade edge characteristics. ELITE's innovative center mount system overcomes this common problem of traditional systems, automatically and instantly.

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**"There are other machines out there that are automatic, but this is so precise ... Everything is dead on. The edges are dead on, the sharpening is dead on."**

*Kasey La Morre  
Head Equipment Manager, Hamilton Bulldogs*

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## Center Mount Clamp

The E-S4 clamping mechanism uses two symmetrical plates, which move in parallel to each other, to center the blade over the wheel, regardless of blade width. If the two blades have different widths, it doesn't matter.

The E-S4 ensures the blade is fixed into the optimal position regardless of variations in blade width. The centering mount clamp exerts corresponding symmetrical inward pressure in excess of 1500 psi, which helps straighten any blade which has become a little curved through hard use.

ELITE's blade-to-wheel precision means equipment operators can confidently and measurably "push the envelope" of blade performance characteristics, while consistently meeting player preferences for sharpening feel.

The accuracy of the self-centering clamping mechanism, combined with the precision of the steel alloy wheels, means the E-S4 delivers a perfect hollow every time.

## Time Saving

The E-S4 brings an unparalleled level of precision and consistency to sharpening, but it is also by far the most efficient system available today. Sharpening two skates at a time, the hands-free system quickly puts a perfect edge on the blades while allowing the operator to perform other tasks.

Sharpening times can vary, depending, for example, on how damaged a blade is, but on average the E-S4 can sharpen a pair of skates in approximately two minutes. Over the course of many pairs, this efficiency adds up to huge time savings.

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**"I figure the system saves me 40-50% of the time I spend sharpening skates. That makes me more available to respond to the needs of our players."**

*Eric Levesque  
Head Equipment Manager, Laval Rocket*

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