



e-drill

EDM Fastener Removal System

A revolutionary solution to a long-established problem – aircraft fastener removal. E-Drill will change the way industry removes fasteners.

E-Drill from Perfect Point uses its patented forceless Electro-Discharge-Machining (EDM) process to quickly and accurately remove aerospace fasteners without risk of damage to underlying components.

METHOD OF OPERATION AND BENEFITS

Fastener removal is achieved by virtue of Perfect Point's proprietary EDM technology, a patented Electro-Discharge-Machining process. Without applying force, the electrode machines a circular cut of desired diameter and depth in the fastener. A closed-loop stream of dielectric fluid flushes the cut and removes the cut debris. Because of the aggressive flushing during the cut, virtually no heat is transferred to the surrounding area, i.e., no recast or heat affect zone (HAZ).

The forceless nature of the cutting process significantly reduces the risk of damage to underlying airframe. Reduction of operator fatigue reduces operator errors. Without "push" force to the drill, "slip" during cutting is eliminated. "Off center drift" at the start of the cut is also eliminated — even on convex button-head fasteners.

Panel damage from "over drilling" is eliminated with an innovative sensing technology that automatically terminates the cutting process when the precise depth is achieved.

The new E-drill from Perfect Point addresses every aspect of the fastener removal process. Enabled by patented hand-held EDM technology, the new E-Drill removes fastener locking components allowing for their removal via the head-flange or rear collar. The process is fast, requiring only seconds to remove most fasteners. Surgically accurate, the E-Drill virtually eliminates aircraft damage and is ergonomically easy on the operator.

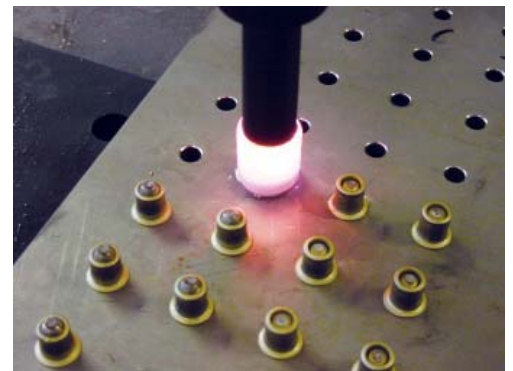
E-Drill is fast. Quarter-inch aluminum fasteners can be de-flanged in approximately three seconds; Titanium in approximately eight seconds.

E-Drill is aircraft safe. Risk of damage to underlying panels is dramatically reduced by E-Drill's cut depth control, accurate to 0.005". The cutting process is forceless, eliminating drill drift and drill slip damage.

E-Drill is accurate. Cuts are clean and free of crowns and burrs that can damage the airframe when the pin is driven out.

E-Drill is versatile. The E-Drill works with any metal fastener (e.g., Titanium, Aluminum, Stainless, etc.) and in sizes ranging from 5/32" to 5/16". Removal may be either from front-flange or rear collar, button-head or flush.

E-Drill is easy to use. It's designed for use with minimal training or experience. After selecting the appropriate size cutting-tip, the operator centers the cutting-tip on the fastener and depresses the trigger. No force is necessary to advance the cutting process; the operator simply holds the tool in place during the short cutting process. The system automatically stops when the preset cut depth is achieved.



E-Drill is ergonomically friendly. Since the process is effectively forceless, the operator need only hold the tool in place during the cut period, dramatically reducing the causes of stress and repetitive motion injuries. And since the system does not produce drill-shards, eye injuries are also eliminated.

E-Drill is environmentally friendly. The E-Drill fastener removal system is a closed loop system that vacuums away debris and collects it to be disposed of appropriately.



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FEATURES AND BENEFITS



Compact E-Drill hand tool

PRODUCTIVITY

- ⊕ Reduce fastener removal time by up to 80%
- ⊕ Remove titanium fasteners in eight seconds, aluminum in three seconds
- ⊕ Easily remove fasteners from difficult locations
- ⊕ Eliminate airframe damage repair time and MRB activities

VERSATILITY

- ⊕ Flange or collar removal
- ⊕ Cuts any conductive metal regardless of hardness — aluminum, Titanium, stainless, Inconel, etc.
- ⊕ Most fastener sizes and oversized
- ⊕ Most fastener types — Hi-Lok, Huck, Jo-blot, Eddy-bolt, etc.

REDUCE DAMAGE COSTS

- ⊕ Eliminate drill-slip damage — E-Drill's forceless EDM process eliminates lateral drill forces that cause slip and slip-damage
- ⊕ Automatic depth control to 0.005" eliminates overdrill damage
- ⊕ Eliminate drive through damage — Inside-pin-cutting assures a clean pin free of burrs and crowns
- ⊕ Eliminate most MRB events

ERGONOMICS

- ⊕ Reduce operator fatigue
- ⊕ Dramatically reduce the causes of stress and repetitive motion injuries
- ⊕ Eliminates drill-shard eye injuries

OPERATOR

- ⊕ Reduce operator training, skill and strength requirements
- ⊕ Dramatically reduce disassembly costs

WORKPLACE

- ⊕ Eliminate drill-shard F.O.D.
- ⊕ Closed system captures all cut debris



E-Drill utility cabinet

SPECIFICATIONS

Head Flange Removal

Fastener Pin diameter
5/32" to 5/16"

Flange removal time*

Aluminum	3 sec.
Titanium	10 sec.
Inconel	12 sec.

*Approx. based on 1/4" pin diameter

Material

Aluminum, Stainless, Titanium, Inconel, etc.
(any conductive material regardless of hardness)

Physical

Utility Cabinet

Dimensions: 19W" x 38H" x 16D"
Weight: 148 lbs.
Umbilical cable: 30 ft. long

Hand Tool

Dimensions: 7.5L" x 5H"
Weight: 1.5 lbs.

Power

220–240v, Single Phase, 15 amp

All specifications subject to change without notice.

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