Case Studies & News from E.H. Wachs

E.H. WACHS® A Division of ITW
Superior Equipment. Complete Support.™

APPLICATION REPORT

Cutting, Beveling – and Drilling LCSF Split Frames Used for Trepanning

Volume 2 ▸ Issue 1

Figure 1 - LCSF split frames have multiple applications in many industries

The Project

During renovation of the Lake Erie Works facility, replacement jam doors were fabricated that required drilling of bearing pockets used for the hinge mechanisms. Aecon Industrial partnered with E.H. Wachs and Wachs Canada to machine these pockets onsite, rather than drilling them pre or post fabrication. This is preferred to achieve the exact size and position of the pockets for a precise door fit (figure 2). In another trepanning application Nova Scotia Power looked to Wachs Canada to create an 8" (203mm) circular opening on an 18" (DN 450) heavy wall steam pipe in situ, or in machinist's parlance taking an "8 off an 18" (figure 4).

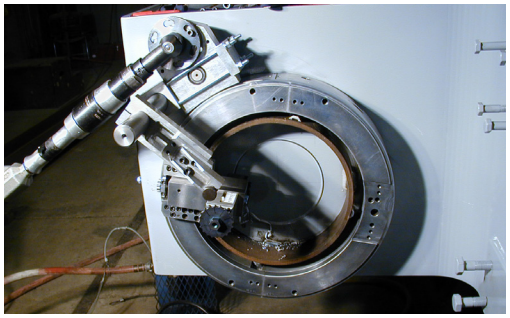


Figure 2 - Wachs LCSF used for onsite trepanning of bearing pockets

Figure 3 -Diameters are variable within the machine range

The Challenge

When a large assembly such as a jam door is fabricated for an existing opening, it's necessary to achieve great accuracy in the positioning of the hinge mechanism. Contractors will typically wait until assembly, welding and in some cases transport is complete before any holes are made. Often the hole, in this case a bearing pocket, may require a custom diameter for optimal fit up (figure 3). In the power plant application it was highly undesirable that any hot torch slag or machining chips enter the high pressure steam pipe, to prevent them migrating to the turbines. This project required a precision opening in heavy wall typically unavailable with torching.

The Solution

E.H. Wachs LCSF split frames make highly effective trepanning devices. Trepanning is defined as "a type of boring where an annular cut is made into a solid material with the coincidental formation of a plug or solid cylinder". For this application E.H. Wachs LCSF offers distinct advantages over drilling. Unlike ordinary drills the hole diameters are infinitely variable within the machine's range, which eliminates the need for expensive custom drill bits that may have long lead times. Unlike magnetic Lamina drills, the LCSF is highly portable and does not require a large, bulky power unit (figure 5).

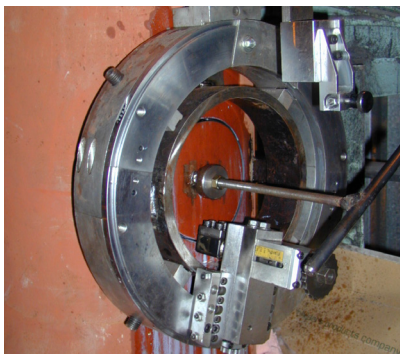


Figure 4 -LCSF trepanning an "8 off an 18" on heavy wall pipe

The Technology

Wachs LCSF has been used successfully for trepanning access holes, manholes, stub-ins, bearing pockets and more. Unlike ordinary drills the LCSF is not a single purpose machine. When the project is complete the LCSF reverts to a rugged pipe cutter and beveler, part of the worlds most complete weld prep machining system.

- Portable, lightweight low clearance design
- Rugged steel and aluminum construction
- Pneumatic, Hydraulic and Electric Servo Drive options
- Standard sizes for 2" to 48" (50.8 to 1219mm) outside diameters
- Multiple applications including cutting, beveling, counterboring, and flange facing

Figure 5 - LCSF is highly portable, ideal for difficult locations

Worldwide Headquarters | 600 Knightsbridge Parkway | Lincolnshire, Illinois 60069 | T: +1.847.537.8800 | F: +1.847.520.1147 | **ehwachs.com**

Executive Summary


Split frame trepanning heavy wall pipe

E.H. Wachs split frame machine tools are typically thought of as inline pipe cutters and bevelers. While excellent for these applications they're also ideal for trepanning, which is cutting and removing "plugs" much like drilling. Unlike ordinary drills the LCSF can infinitely vary the diameter of the hole being cut, limited only by the range of the machine.

An additional benefit of trepanning is the ability to control chip debris. Ordinary drilling creates fine chips, and torch cutting produces slag metal. Split frame trepanning allows the operator to control swarf and prevent its introduction into piping systems. This is a critical consideration where uncontrolled debris can damage or destroy highly valuable assets such as bearings, valves, and turbines.

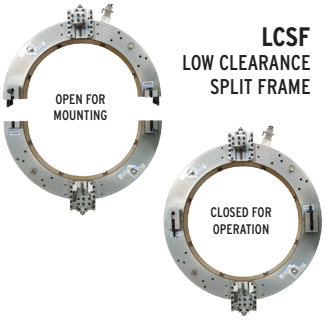
E.H. Wachs LCSF line of Low Clearance Split Frames are part of the most versatile machining system in the business. To learn the "hole" story about the LCSF and all its applications contact your E.H. Wachs representative, email us at info@ehwachs.com or visit us online at ehwachs.com.

Wachs China Sales Center - Now Open

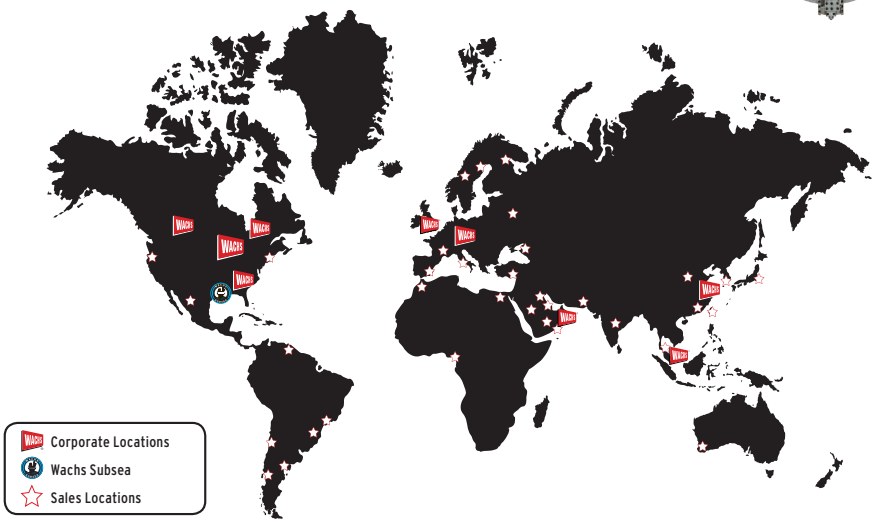
E.H. Wachs is pleased to announce the opening of its newest Sales Center in Shanghai. Centrally located, Wachs China joins other ITW Welding Group companies and our valued dealer partners in the region to further strengthen our position as the market leaders in weld prep and welding technology.

E.H. Wachs® Industrial Division

- Industrial Pipe Cutting and Beveling Machine Tools
- Portable Weld Prep Machine Tools, Sales and Rentals
- Split Frames, Guillotine® Pipe Saws, Trav-L-Cutter®
- End Prep Machines, Flange Facers, Hydraulic Power Units
- Onsite Technicians, Factory Training, Engineered Products



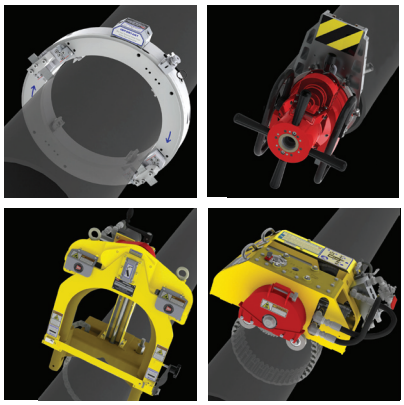
LCSF
LOW CLEARANCE SPLIT FRAME



Quality & Innovation Since 1883

E.H. Wachs® has a long history of quality manufacturing and product innovation dating back to 1883. Today our Industrial division builds the finest portable weld prep machine tools including I.D. mounted end prep and O.D. mounted split frame pipe cutters and bevelers, flange facers, the Trav-L-Cutter®, Guillotine® pipe saws, boiler tube bevelers and handheld valve operators.

Our products are renowned for their engineering excellence, precision manufacturing and rugged reliability. They're sold and serviced worldwide through our international dealer network and Wachs Sales and Service Centers located in Illinois, Texas, Canada, the UK, Germany, the UAE, Singapore, and China.



Clockwise:
LCSF Low Clearance Split Frame • EP 424 Speed Prep Guillotine® Pipe Saw • Trav-L-Cutter®

Contact Us

E.H. Wachs Worldwide Headquarters
600 Knightsbridge Parkway
Lincolnshire, Illinois 60069 USA
T: +1.847.537.8800

Wachs Canada Ltd® - Eastern Canada
1166 Gorham Street Unit 8
Newmarket, Ontario L3Y 8W4 Canada
T: +1.905.830.8888
E-mail: sales@ehwachs.com

In the US & Canada: 1.800.323.8185