Bolting and Machining Solutions

BEST ON EARTH.
It started with one product and a dream. That first product, our NB Clamshell was to become an industry favorite and our dream was to become a World Leader in Field Machining Equipment. Our product line expands each day and now includes a whole line of patented Clamshells, Boring Bars, End Preps, Portable Milling Machines and much more.

As our product line has grown so has our stature and reputation as a World Leader in Field Machining and Heat Treating Equipment. We’re proud of that achievement but definitely not content. Each day we strive to meet and exceed our customers’ expectations with the finest equipment and people in the business.

Whether it’s Rental or Sales, Technical Field Support or Custom Equipment Design, Hydratight/D.L. Ricci Corp. stands ready to offer the Ultimate Solutions for your on-site machining problems.

To learn more about our World Class Products and Services, please feel free to contact one of our staff or check out our entire line on the web at www.dlricci.com or at www.hydratight.com.

In 2006 D.L. Ricci Corp. was purchased by Actuant Corp. and made part of the Hydratight family of products.

Thanks for your interest in Hydratight/D.L. Ricci Corp.
# Products
Portable Machining Solutions

# Tube Prepping
Tube Chamfering Tools

# Heat Treating
On-Site Induction and Resistance

# Technical Services
Creative Design, Training & On-Site Machining

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Learn more about Hydratight’s Torque and Tension tools at: [www.hydratight.com](http://www.hydratight.com)
The MC (Mini Clamshell) is designed for on-site severing, beveling and counterboring on small piping and valve systems. MC’s lightweight structure incorporates our world class, patented, low friction, bearing design. This design adds strength, accuracy and minimized wear to this small package.

The lightweight machine quickly splits and easily mounts on in-line piping systems and the super compact design sets-up painlessly in tight places. Our low profile tool slides provide an even feed rate and rigidity for cutting and beveling wall thickness up to .375" thick on all alloys. The MC will accommodate all tube sizes ranging from .5" to 2.5” O.D.

The tool package comes complete with a multi-position pneumatic angle drive and a deluxe storage case, containing all the necessary operating tools required for fast and easy use.

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<th>MODEL</th>
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* Dimension subject to change with different tooling. Contact your Sales Consultant for specifics.
The D.L. Ricci Corp. NB (Narrow Body) Clamshell series is the industry standard for narrow body, lightweight machines. These highly durable tools maintain a low profile requiring minimum operating clearance. Our unique patented bearing design produces excellent surface finish results on any alloy material being machined. The revolutionary NB Clamshells are capable of cutting all wall thickness and alloys with minimal time and effort. They may accommodate flange and pipe sizes varying from 3” to 43”.

Easy to set-up and operate, our NB Clamshell can be used in any environment making them perfect for under water, nuclear, or other hazardous conditions. Labor costs are reduced with this easy to set-up, lightweight machine. Severing, beveling, I.D. boring, facing and O.D. turning are just a few of the tasks that these remarkable machines can perform with ease.

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www.dlricci.com  651-388-8661
The MS or Mid-Size series is the latest addition to our patented line of Clamshell Products. Lighter than the HD and more rigid than the NB, the MS’s compact design delivers the power and accuracy to work on virtually all pipe diameters, (10”- 42”) materials and wall thicknesses.

The MS offers unsurpassed control and power and also includes many innovative design features. A new gear clamping feature and motor mount allow for faster, more secure set-ups and increased rigidity. Locator extensions are compatible with the NB Clamshells. The MS is also compatible for tool blocks/slides on the NB and HD series of Clamshells.

The patented fully adjustable bearing design, for ultimate longevity, is what puts all D.L. Ricci Corp. Clamshell products at the head of the pack. The MS Clamshell is designed for severing, I.D. boring, flange facing and O.D. turning. The MS is precise with excellent surface finishes and holds tight tolerances on all applications. Superior cutting strength, as well as fast set-up and ease of use make the MS Clamshell the perfect tool for a variety of machining operations.

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* Dimension subject to change with different tooling. Contact your sales consultant for specifics.
The HD (Heavy Duty) series Clamshells are designed for large diameter, heavy cutting applications. The machines accommodate flange and pipe sizes ranging from 28” to 110” O.D.

Utilizing our fully adjustable patented heavy duty bearing design, these machines are capable of severing, beveling, facing, boring and O.D. turning on all types of material and all wall thickness. The HD’s superior design and construction allow unparalleled control, power and accuracy.

With its 5” axial and 4.5” radial profile, the HD series machine can fit into tight work areas where other large machines cannot.

As a result of its superior strength the HD series is ideal for all machining applications in new construction, decommissioning, component replacement and fabrication projects.

<table>
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<tr>
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<th>UNIT OF MEASURE</th>
<th>MOUNTING MIN MAX</th>
<th>MACHINE ID</th>
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* Dimension subject to change with different tooling. Contact sales consultant for specifics.
In early 2004, D.L. Ricci Engineers were given the task of designing and creating a mammoth clamshell to cut and prep a giant steam generator surface. Within 5 months the new MM180 Clamshell debute to rave reviews. This World's Largest Gear Driven Clamshell Lathe can be mounted on a work piece with an OD range of 144" to 177". The MM180’s patented technology offers a variety of attachments for accurate severing, beveling and facing. The machine rotates on 72 precision ground bearings. It also has up to 28 locator pads that are all adjustable for concentricity. 8 of these locator pads are adjustable for flatness. Together this flexibility allows the machine to be quickly and easily adjusted for virtually any machining operation.

Powered by our quiet running high frequency hydraulic drive, the MM180 is able to operate smoothly at a variety of speeds and also can be operated remotely. The MM180 is portable to your site and along with our experienced D.L. Ricci Field Machinists, can be there quickly to offer flexible machining solutions.

For minimal downtime and precision machining, check out the MM180 in action at www.dlricci.com or request a MM180 CD-ROM for more footage of this unique machine.
Clamshell Casing Cutter

Cold Cut Well Head Casings
Available in Five Sizes
Ultra Compact & Lightweight

Our lightweight Clamshell Casing Cutters are the ultimate tool for cold cutting well head casings. Our compact, split frame design means ease of transport and set-up which translates into time and cost savings. These cutters also offer increased safety by operating “spark free” and eliminating the need for flame cutting.

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Our Casing Cutters mount directly onto the O.D. of the well casing, requiring minimal radial and axial clearance (just 4.5” from the back of the machine to the cutline). In most field applications, the set-up and cutting operations can be completed in less than a 1/2 hour by one man. Versatility is inherent with up to 5 different sizes available (3.5” to 26”). Plus, they offer the capability of using interchangeable tooling and machine parts throughout the 5 sizes. You may purchase the rings separately and share the tooling components or buy the complete package. After the main cut is completed, an optional internal cutting attachment is available from D.L. Ricci Corp. for deep bore cuts. Our powerful 3.5hp air motor is another available option. Our patented bearing design is a proven winner in a variety of machining products and we know you’ll see why when you rent or buy a D.L. Ricci Corp. Clamshell Casing Cutter.

www.dlricci.com 651-388-8661
The Axial Feed module is adaptable to the D.L. Ricci Corp. clamshell machine. This axial feed system is designed to meet crucial specifications of weld finishing and O.D. turning in limited space and hostile environments. Axial Feed modules are designed for applications within the highly exacting standards of the nuclear industry. The module is also used in some journal turning applications where certain areas of a shaft are worn and in need of repair.

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<td>2.83</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>184.2</td>
<td>279.4</td>
<td>161.3</td>
<td>71.9</td>
</tr>
<tr>
<td>5.25</td>
<td>Std. - In</td>
<td>5.25</td>
<td>9</td>
<td>6.35</td>
<td>2.83</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>133.4</td>
<td>228.6</td>
<td>161.3</td>
<td>71.9</td>
</tr>
</tbody>
</table>
Clamshell Accessories from D.L. Ricci Corp., are available to enhance the performance and expand the capabilities of our clamshells. Ask for your copy of our Clamshell Instructional CD.

**Drive Motors:**

Various configuration of drive motors are available for our NB, MS, and HD Clamshells and BU Facer, including front drives, back drives and angle drives. The power is provided by electric, pneumatic or hydraulic motors depending on your application.

**Single Point & Counterbore Modules:**

Flange facing, boring, counterboring, RTJ grooves and compound angle weld preps can be accomplished with one of these modules. They can be mounted on NB, MS, and HD clamshells and the BU Facer series. These modules help the operator hold exacting tolerances with minimal effort.

**Chipless Cutter:**

Chip free severing is accomplished with this pizza cutting wheel. With our Chipless Cutter, no cutting debris contaminates the inside of the piping system.

**Low Profile (LP) Tool Block Slide:**

The Low Profile Tool Block Slide allows cutting and beveling on as little as 2 1/2” to 3 1/2” of pipe depending on the prep. The LP brings the cutline closer to the back of the machine by reducing the axial clearance required for cutting.
Industry proven, our BU Flange Facers are **dependable and rugged**. The BU Facer series make flange facing easy and inexpensive. They can be used to re-face all size flanges ranging from 10” to 110” O.D. Our BU Facers are capable of beveling, counterboring, tube sheet and flange facing in minimal set-up time. The time tested **solid ring design and interchangeable drive system** provide a rigid machine capable of holding **tight tolerances** and **excellent surface finishes**.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit of Measure</th>
<th>Actual Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
</tr>
</thead>
<tbody>
<tr>
<td>BU21</td>
<td>Std. - in</td>
<td>10 - 21</td>
<td>28</td>
<td>21</td>
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<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>273.1 - 533.4</td>
<td>711.2</td>
<td>533.4</td>
<td>139.7</td>
<td>88.9</td>
</tr>
<tr>
<td>BU31</td>
<td>Std. - in</td>
<td>22 - 31</td>
<td>38</td>
<td>31</td>
<td>5.5</td>
<td>3.5</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>558.8 - 787.4</td>
<td>965.2</td>
<td>787.4</td>
<td>139.7</td>
<td>88.9</td>
</tr>
<tr>
<td>BU44</td>
<td>Std. - in</td>
<td>32 - 44</td>
<td>51</td>
<td>44</td>
<td>5.5</td>
<td>3.5</td>
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<tr>
<td></td>
<td>Metric - mm</td>
<td>812.8 - 1117.6</td>
<td>1295.4</td>
<td>1117.6</td>
<td>139.7</td>
<td>88.9</td>
</tr>
<tr>
<td>BU60</td>
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<td>67</td>
<td>60</td>
<td>5.5</td>
<td>3.5</td>
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<tr>
<td></td>
<td>Metric - mm</td>
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<td>1524</td>
<td>139.7</td>
<td>88.9</td>
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<tr>
<td>BU70</td>
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<td>77</td>
<td>70</td>
<td>5.5</td>
<td>3.5</td>
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<tr>
<td></td>
<td>Metric - mm</td>
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<td>1778</td>
<td>139.7</td>
<td>88.9</td>
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<tr>
<td>BU85</td>
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<tr>
<td></td>
<td>Metric - mm</td>
<td>1549.4 - 2159</td>
<td>2366.8</td>
<td>2159</td>
<td>139.7</td>
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</tr>
<tr>
<td>BU110</td>
<td>Std. - in</td>
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<td>117</td>
<td>110</td>
<td>5.5</td>
<td>3.5</td>
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<tr>
<td></td>
<td>Metric - mm</td>
<td>2082.8 - 2794</td>
<td>2971.8</td>
<td>2794</td>
<td>139.7</td>
<td>88.9</td>
</tr>
</tbody>
</table>
Introducing our “Generation Two Beveler” the GTB2. Simple to set-up and operate, this new ID mounted end prep machine delivers **exact surface finishes** on valves, flanges, fittings and more. Features on this innovative machine include a **Miter Mandrel** for ease of set-up, Internal Rotary Union for better air flow, Pneumatic air operations for less parts and more consistent feed, **no Tripper Mechanism** means safer and smoother operations, plus the GTB2 is safe for running in a **spark free environment**. Efficiently designed, the GTB2 offers a variety of user features that result in safe, rigid and accurate on-site machining. GTB2 applications include **Flange Facing**, **Beveling**, **Boring**, **OD turning**, **Single Point Beveling** and more. With up to **45 degrees of adjustability**, the GTB2 is user friendly and offers flexible operations for a variety of ID mounted end prepping.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit of Measure</th>
<th>A (Min. Clearance)</th>
<th>B (Facing Range)</th>
<th>C (Bevel Range)</th>
<th>D (Machine Length)</th>
</tr>
</thead>
<tbody>
<tr>
<td>GTB2</td>
<td>Std. - in</td>
<td>37</td>
<td>36.75 - 6.5</td>
<td>27 - 6.5</td>
<td>24</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>939.8</td>
<td>933.5 - 165.1</td>
<td>685.8 - 165.1</td>
<td>609.6</td>
</tr>
</tbody>
</table>

**GTB2**
The Model 314 Beveler is designed for quick set-ups and weld end preparations on pipe and tube diameters from 3” to 14” O.D. Mounting of the 314 Beveler is accomplished with an automatic 3 jaw locking system that centers the machine automatically to the bore of the piping to be machined. This results in reliable and torque-free operation. Using the automatic chuck system, installation of the mandrel can be accomplished in less than 1 minute, and less set-up time means more efficient machining. The 314 also has an optional miter mandrel system for mounting in valves, fittings and short perch applications. The cutting head of the 314 Beveler is made of 4140 steel for rigidity and long life. The 3 cutting tool slots accepts all configurations of high speed form tool blades for versatile operation. The 314 Beveler is capable of form tool beveling, facing and I.D. counter-boring in one operation. Machining can be performed on pipe and tube materials with any wall thickness. Motor options include pneumatic, hydraulic and electric drives in various configurations for insitu applications.
The new Tire Grinder is another innovative machining solution designed by our Ricci Engineers. Created for on-site repair of worn or damaged rotary kiln tires, paper dryer tires, printing tires and cast iron cylinders, the Tire Grinder provides a flexible and reliable grinding solution to use while your plant keeps running.

The D.L. Ricci Corp. Tire Grinder mounts to a structural support while the drum rotates and remains in service. Two axis movement (parallel & perpendicular), as well as a 60° adjustable contact angle, gives users greater flexibility in grinding operations.

Available for sale, rental or for use with our experienced D.L. Ricci Corp. field machinists, the Tire Grinder will save you time and money by doing your grinding in-place and keeping your plant running.

See video of the Tire Grinder and all our portable machining solutions IN-ACTION at www.dlricci.com.
Our new Trunnion Grinder provides portable, flexible grinding for trunnions and other large rollers. This patented technology offers **air cylinder controlled tracking rollers**. These rollers may be locked in a forward position to allow the grinding of Trunnion Roll.

Resurfacing your trunnions or rolls with the D.L. Ricci Corp. Trunnion Grinder will give them a new finish and help to reduce or eliminate excessive vibration, uneven wear and rolled over edges.

Our operator friendly portable grinding machine is available for sale, rental or we can provide on-site technical support. Our experienced Field Machinists can be there quickly to resurface your trunnions or rolls with minimal downtime.

Planned or unplanned, D.L. Ricci trained staff will be there anytime, anywhere with the finest portable machining equipment on the planet. For minimal downtime and precise grinding check out the Trunnion Grinder at www.dlricci.com.

**X & Y Travel**

\[
X = 33'' \\
Y = 9''
\]
The combination of speed, and ease of set-up allow this Hand Hole Grinder to outperform all other methods of repairing existing, worn, abraded and leaking hand hole sealing surfaces. The unique roller arrangement permits effortless contouring of “out-of-round” hand holes by following the existing shape. Truing the grinder to an existing hole is accomplished by turning the four adjusting screws, and aligning the stone to the adjacent sealing surface. The thumb wheel micro feed adjusts the proper depth-of-cut, so that a minimal amount of material is removed during the grinding process.

The grinding power originates from a quiet, light-weight pneumatic motor, with an operating spindle speed of 5200 RPM, delivering up to 2.4lb./ft. of torque.

The Hand Hole Grinder from D.L. Ricci Corp. packs high performance and rugged design in a small, easy to operate package.
Corroded, pitted, abraded and leaking manway gasket seat surfaces can be restored to like new condition in minutes, using the D.L. Ricci Corp. Oval Manway Seat Grinder. **Set-up is effortless** by virtue of the adjustable mounting fixture and swivel plate. The machine can be accurately dialed into an existing sealing surface quickly, with minimal material removal required for the re-seating operation. **Quick and easy set-up** assures a job well done.

A high speed motor with long life heavy duty bearings and a rugged swing arm design, allows **accurate cut control** which results in **ultimate surface flatness**.

The Manway Grinder comes complete and ready to operate, with the air hose, filter lubricator, wrenches and grinding wheel, conveniently packaged in a rugged carrying case.
The D.L. Ricci Corp. “3 axis” Portable Milling Machines are our most versatile and accurate machines, capable of traveling and machining in all axis (XYZ). They are ideal for machining large & small rectangular areas accurately and may be clamped or bolted directly onto the part being machined.

If clamping or bolting is impossible, fabricated set-up jigs and parallel mounting fixtures can be used to position the milling machines in place for milling operations. The Portable Milling Machines can be mounted in any position, even upside down and are simple to set-up and operate. When used with a facing mill, the Portable Milling Machines do a quick job of facing off pitted or misaligned surfaces, restoring the original condition of the part being machined. Servo power feeds are available for all axes, allowing the application of smooth and consistent power feed throughout the speed range, both in forward and reverse.

The Portable Milling Machines are the perfect tool for rugged on-site milling, drilling and boring applications.

<table>
<thead>
<tr>
<th>Portable Mill</th>
<th>Unit of Measure</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>W</th>
<th>Shank Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>4Z X 24</td>
<td>Std. - in</td>
<td>18</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>457.2</td>
<td>101.6</td>
<td>101.6</td>
<td>101.6</td>
<td>25.4</td>
</tr>
<tr>
<td>4Z X 36</td>
<td>Std. - in</td>
<td>30</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>762</td>
<td>101.6</td>
<td>101.6</td>
<td>101.6</td>
<td>25.4</td>
</tr>
<tr>
<td>6Z X 36</td>
<td>Std. - in</td>
<td>30</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
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<td>152.4</td>
<td>152.4</td>
<td>152.4</td>
<td>50.8</td>
</tr>
<tr>
<td>8Z X 44</td>
<td>Std. - in</td>
<td>36</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>914.4</td>
<td>203.2</td>
<td>203.2</td>
<td>203.2</td>
<td>50.8</td>
</tr>
<tr>
<td>8Z X 72</td>
<td>Std. - in</td>
<td>64</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
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<td>203.2</td>
<td>203.2</td>
<td>50.8</td>
</tr>
<tr>
<td>16Z X 96</td>
<td>Std. - in</td>
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<td>16</td>
<td>16</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>2032</td>
<td>406.4</td>
<td>406.4</td>
<td>406.4</td>
<td>50.8</td>
</tr>
</tbody>
</table>

The new TCM Machine

The new Turbine Coupling Milling Machine (TCM) was created for rigid and accurate in-place milling of turbine couplings.
The T-Mill line expands our milling capabilities with 4T, 6T and 8T 40 Taper Spindles for more tooling friendly versatility, plus increased accuracy and a more rigid tool performance. This precision mill is designed for minimum clearance with an adjustable gear box and two different motor mount locations.

Our Portable Milling Machines are our most versatile and accurate machines capable of traveling and machining in all axes (XYZ). They are ideal for machining large and small rectangular areas accurately, including milling, drilling and boring applications. The precision ground dovetails with adjustable gibs to provide smooth, accurate travel in all axes.

The T-Mill Milling Machine may be clamped or bolted directly onto the part being machined. If clamping or bolting is impossible, fabricated set-up jigs and parallel mounting fixtures can be used to position the milling machine.

This machine may be mounted in any position, even upside down. It is simple to set-up and operate. Servo power feeds are available for all axes, allowing the application of smooth and consistent power feed throughout the speed range, both in forward and reverse.

When used with a facing mill, the T-Mill Machine does a quick job of facing off pitted or mis-aligned surfaces, restoring them to the original condition of the part being machined.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit of Measure</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>W</th>
<th>Shank Diameter</th>
</tr>
</thead>
<tbody>
<tr>
<td>4T X 24</td>
<td>Std. - in</td>
<td>18</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Metric-mm</td>
<td>457.2</td>
<td>101.6</td>
<td>101.6</td>
<td>101.6</td>
<td>25.4</td>
</tr>
<tr>
<td>4T X 36</td>
<td>Std. - in</td>
<td>30</td>
<td>4.0</td>
<td>4.0</td>
<td>4.0</td>
<td>1.0</td>
</tr>
<tr>
<td></td>
<td>Metric-mm</td>
<td>762</td>
<td>101.6</td>
<td>101.6</td>
<td>101.6</td>
<td>25.4</td>
</tr>
<tr>
<td>6T X 36</td>
<td>Std. - in</td>
<td>30</td>
<td>6.0</td>
<td>6.0</td>
<td>6.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric-mm</td>
<td>762.0</td>
<td>152.4</td>
<td>152.4</td>
<td>152.4</td>
<td>50.8</td>
</tr>
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<td>8T X 44</td>
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<td>8.0</td>
<td>8.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric-mm</td>
<td>914.4</td>
<td>203.2</td>
<td>203.2</td>
<td>203.2</td>
<td>50.8</td>
</tr>
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<td>8T X 72</td>
<td>Std. - in</td>
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<td>8.0</td>
<td>8.0</td>
<td>2.0</td>
</tr>
<tr>
<td></td>
<td>Metric-mm</td>
<td>1625.6</td>
<td>203.2</td>
<td>203.2</td>
<td>203.2</td>
<td>50.8</td>
</tr>
</tbody>
</table>
The D.L. Ricci Corp. (Z) Axis Milling Machines are **single axis machines** that are designed for **precision boring** and drilling along that single axis. The machines are available in several sizes depending on the individual on-site application. Each milling machine can be fitted with pneumatic or hydraulic drive motors and an optional servo feed system.

**Rigidity and accuracy are maintained** through a pair of heavy duty spindle bearings and **precision ground, hand fit, dovetail slides**.

This is the ideal boring machine to use where disassembly of major equipment is too costly of an alternative.
The lightweight, economical and highly portable Mini-Mill from D.L. Ricci Corp. is ideal for on-site machining small areas accurately. Able to machine in all axis (XYZ) these portable mills may be clamped or bolted directly onto the part being machined or fabricated. Set-up jigs and parallel mounting fixtures can be used to position these Mini-Mills for difficult work area conditions. Any machinist familiar with machining practices will find the Mini-Mill simple to set-up and operate even upside down.

The Mini-Mill has 3” of “X” travel, 3.25” of “Y” travel and 2” of “Z” travel. It accepts end mill shanks of 3/4” in diameter.

The air motor powered Mini-Mill machine tool is designed for rugged on-site machining such as milling, drilling and boring applications on jobs that were previously thought to be impossible without extensive disassembly. The adjustable gibs provide smooth and accurate travel in all axes.

The mounting brackets consist of 3 major pieces for secure and flexible mounting. the Mini-Mill is customizable for a variety of applications. Portable, economical, and powerful, the new Mini-Mill from D.L. Ricci Corp. may be the mill you’ve been looking for.
The XYZ Keyway Cutter offers all the features of our standard D.L. Ricci Corp. Keyway Cutter plus the capability of 3 axis milling. This versatility in milling allows users a variety of creative machining options without costly dismantling. The XYZ feature assists in the machining of keyway grooves with more exacting specifications.

Our line of heavy duty Keyway Cutters are available in 6”, 12”, and 24” lengths and these models give us the range to cut keyways in shafts from 4” to 24” in diameter. Our Keyway Cutters can mount on the end or anyplace along the shaft, even upside down. With the “V” type mounting base the Keyway Cutter will self center onto an existing shaft once the machine is clamped into place. The flexibility of mounting options plus the XYZ axis rotation allows the recutting of worn keyways or machining of new keyways quickly and accurately. This versatile and cost savings tool is also useful for cutting motor mount slots and other milling operations.

Easy handling and operation are inherent in the compact modular design which allows set-up in confined work areas. The D.L. Ricci Corp. XYZ Keyway Cutter comes with an electric drive motor.
The Keyway Cutter is a small portable milling machine that can clamp on the end or anyplace along the shaft and re-cut worn keyways or cut new keyways in-place. With the “V” type mounting base, the Keyway Cutter will self center onto an existing shaft once the machine is clamped in place. The Keyway Cutter is capable of cutting keyways up to 1” wide. This compact modular design allows quick set-up in confined work areas. The Keyway Cutter can accommodate either a pneumatic or hydraulic spindle drive motor.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit of Measure</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>E</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keyway Cutter</td>
<td>Std. - in</td>
<td>14</td>
<td>4</td>
<td>18</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>355.6</td>
<td>101.6</td>
<td>457.2</td>
<td>25.4</td>
<td>101.6</td>
</tr>
</tbody>
</table>
The QD Bore Bar is a cost effective tool for align and blind boring plus offers an optional facing head. This versatile boring tool comes in a 2” or 1.25” diameter bar. Bar lengths of 4’, 6’ and 8’ are also available. Providing a portable, powerful and economical boring alternative, the QD Bore Bar is lightweight and easy to set-up. Setup is done quickly with set-up cones, many tool placement options, a variety of alignment mounts and only 2 feet of clearance required. Powered by a standard electric motor which provides smooth, trouble free cutting, the QD is an affordable boring bar with power to spare. Boring and facing applications are virtually limitless including: valve bodies, loaders, excavators, bulldozers, crushers and more. See the QD Bore Bar in action at www.dlricci.com or request an Operational QD CD for more footage of this unique machine.
The D.L. Ricci Corp. Portable Boring Bars are available in two different configurations, either, “Push-Pull” or “Feed Screw”. The Push-Pull design is available for all D.L. Ricci boring systems. Four inch diameter and larger boring bars accommodate the Feed Screw design.

Our modular design allows the drive unit and alignment mounts to attach anyplace along the boring bar, enhancing set-up capabilities. The mounting systems may consist of the two adjustable bearing end plates, or a combination of bearing end plate and the I.D. mount spider system. The bearing end plates are designed to adjust in any direction, and miter to compensate for any misalignment. Roller bearings are used in all set-up fixtures, to assure smooth, accurate cutting performance. The power feed unit for both types of Boring Bars (“Push-Pull” or “Feed Screw”), is a reversible, variable feed rate, servo drive.

The rotational drive unit of the Boring Bar is compact, with high power to weight performance. Powerful hydraulic or pneumatic motors, coupled with our heavy duty gear box, provide smooth and trouble free cutting.

These Boring Bars can be set-up for align boring, blind boring and facing operations. Set-up versatility is limitless. Our modular concept allows the operator creativity in solving difficult set-ups.
The Pedestal Valve Bore Bar is designed for on-site align boring and re-machining of seats and sealing areas of control valves. By mounting on the top of a valve, the machine achieves a total stroke of 23” and is suitable for cutting diameters up to 15”.

The machine consists of a geared head variable speed drive, with a mounting plate to accommodate either pneumatic or hydraulic drive motors. The powerful motor provides plenty of torque through a set of bevel gears that interconnect to the spindle. Automatic spindle feed is supplied by a reversible and variable rate, servo feed gear box. The spindle is made from a precision ground and polished chromed 4140 bar, assuring maximum strength. Precision ball bearings are used to insure smooth operation and precision cutting. In addition to the ball bearings, bronze dampener bearings give added stability to the design.

A fixture assembly can be provided to mount the machine on many different styles of valves. The valve mounting fixtures generally mount to the flange of a valve using the existing stud locations.

High pressure control valves often become corroded and worn in the sealing areas, and must be repaired or replaced. It is usually more cost effective to use our portable boring bar to repair them in-place. In most cases, customers save time and money when welded-in valves can remain in place and the repair can be completed without costly disassembly.

<table>
<thead>
<tr>
<th>Model</th>
<th>Unit of Measure</th>
<th>Bar Dia. A</th>
<th>6ft. Bar B</th>
<th>8ft. Bar B</th>
<th>Feed C</th>
<th>Max Bore Diameter</th>
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</thead>
<tbody>
<tr>
<td>Pedestal Valve Bore Bar</td>
<td>Std. - in</td>
<td>4</td>
<td>68.5</td>
<td>92.5</td>
<td>23</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>Metric - mm</td>
<td>101.6</td>
<td>1739.9</td>
<td>2349.5</td>
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The Pedestal Valve Bore Bar is designed for on-site align boring and re-machining of seats and sealing areas of control valves. By mounting on the top of a valve, the machine achieves a total stroke of 23” and is suitable for cutting diameters up to 15”.
The MS-JTL combines the best from our patented MS (Mid-Size) Clamshell, with our field proven and also patented Journal Turning Lathe (JTL), to give accurate and consistent machining of turning bearing journals and other round surfaces. The MS-JTL provides an affordable and portable alternative to major equipment disassembly. The MS-JTL can be positioned in tight areas and with it’s removable gear box, can be operated with minimal clearances. It’s lightweight and efficient design along with fully adjustable locators, allow for fast and accurate set-up.

The MS-JTL’s patented adjustable bearings provide for tighter tolerance machining and longer machine life while the dual feed screws help ensure tool rigidity. Exacting surface finishes are achieved with this portable machining dynamo.

NOW AVAILABLE... Our new Taper Turning Lathe or TTL is a taper cutting tool that works as a rigid, tight tolerance machine. The TTL offers flexible machining with adjustable taper angles (up to 7°) and a range of 67”. Primarily used in shipyard applications, the TTL turns tapers as well as cutting straight shafts. Call us for a free copy of our MS-JTL Training CD. To see video of the MS-JTL, the TTL and all our machining solutions IN-ACTION go to: www.dlricci.com.
Our D.L. Ricci Corp. Hydraulic Power Supply units (Frequency drives) are self-contained and capable of supplying hydraulic power to all of the hydraulic equipment in our product line. They are also well suited to provide hydraulic power for most portable machining equipment on the market today. These units are able to produce 3 to 18 gallons per minute flow and line pressure up to 2000 PSI. Another advantage of our Hydraulic Power Supplies is the remote pendant control which allows the operator full control of the unit up to 150 ft. away. Standard hose length is 50 ft.

For ease of mobility the units are equipped with smooth rolling industrial casters. Each unit comes complete with (set of two) 50 ft. lengths of hose with drip proof coupling. Our frequency drives are state-of-the-art, ready to meet virtually any power requirements.

<table>
<thead>
<tr>
<th>hydraulic Power Supplies</th>
<th>Unit of Measure</th>
<th>Power Required</th>
<th>Flow Rate</th>
<th>Pressure</th>
<th>Drive Motor Power</th>
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<tr>
<td>Freq. Drive 10 Standard Inches</td>
<td>30 Amp 3 Phase 440 Volt</td>
<td>3 - 9 Gal./Min.</td>
<td>0 - 2000 PSI</td>
<td>10HP</td>
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<tr>
<td>Metric Millimeter</td>
<td>30 Amp 3 Phase 440 Volt</td>
<td>11.4 - 34.2 Ltr./Min.</td>
<td>0 - 137.9 BAR.</td>
<td>7.45kw</td>
<td>1346.2 609.6 914.4</td>
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<td>Freq. Drive 20 Standard Inches</td>
<td>40 Amp 3 Phase 440 Volt</td>
<td>5.5 - 17.5 Gal./Min.</td>
<td>0 - 2000 PSI</td>
<td>20HP</td>
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<td>Metric Millimeter</td>
<td>40 Amp 3 Phase 440 Volt</td>
<td>20.9 - 66.5 Ltr./Min.</td>
<td>0 - 137.9 BAR.</td>
<td>14.9kw</td>
<td>1346.2 762 1016</td>
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</table>
This high purity line from D.L. Ricci Corp. includes the finest portable tube prepping and tube severing machines on the market today. Four FX Models are ready to deliver high quality weld-end preparations on a wide range of tube and light wall pipe. Cordless or corded models are available with our unique quick locking system which assures that each part is quickly and accurately held in place during the entire cutting operation.

FX1.5
Corded or cordless operation with the 1.5 and 3.0 FX tools. Interchangeable collets allow short grip lengths for machining all types of micro-fittings. The FX1.5 quickly and accurately covers an O.D. range from .187” to 1.5”.

FX3.0
The portable FX3.0 offers versatility and power with the capability of being hand-held or bench mounted. The incremental feed system allows controlled, smooth and constant feed rates. Accurate burr-free weld preparation is achieved with minimal effort. FX3.0 provides prepping ranges from .187” to 3.0” O.D.

FX4.0
The latest in our line-up of tube squaring tools is our FX4.0. The patented Easy-Latch clamp system and interchangeable collets, assures that each piece is quickly and accurately held in place throughout the cutting range. The FX4.0 can be used on O.D.'s from .187” to 4.5”.

FX6.0
Able to prep wall thickness up to .375”, the FX6.0 offers maximum gripping power throughout the cutting range. The variable speed settings give the operator optimum control for reducing scrap and minimizing job cost overruns. The FX6.0 covers an O.D. range from .187” to 6.625”.

Chamfering Champions
Clean-Room Ready
Tight Cutting Tolerances
Standard or Custom Collets
## Tube Squaring Solutions

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<tr>
<th>Product</th>
<th>Std. Collet Length</th>
<th>Micro Collet Length</th>
<th>Max. Wall Thk.</th>
<th>OD Range</th>
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<td>Model FX1.5</td>
<td>.500&quot; / 12.7mm</td>
<td>.187&quot; / 4.75mm</td>
<td>.125&quot; / 3.18mm</td>
<td>.197&quot; to 1.50&quot; 4.75 to 38.10 mm</td>
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<td>Model FX4.0</td>
<td>.625&quot; / 15.9mm</td>
<td>.187&quot; / 4.75mm</td>
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<td>Model FX4.0</td>
<td>1.0&quot; / 25.4mm</td>
<td>Available Upon Request</td>
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<td>Model FX6.0</td>
<td>1.0&quot; / 25.4mm</td>
<td>Available Upon Request</td>
<td>.375&quot; / 9.53mm</td>
<td>.197&quot; to 6.625&quot; 4.75 to 168.3 mm</td>
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<tr>
<th>Product</th>
<th>Power Requirement</th>
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<th>Torque</th>
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<td>0-450 RPM, 0-1400</td>
<td>330 in lbs / 37.3mm</td>
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<td>159 in lbs / 18.0mm</td>
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<td>3.0 Cordless</td>
<td>18 Volts</td>
<td>0-450 RPM, 0-1400</td>
<td>330 in lbs / 37.3mm</td>
<td>11.2 lbs / 5.1 kg</td>
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<td>3.0 Corded</td>
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<td>0-1000 RPM</td>
<td>159 in lbs / 18.0mm</td>
<td>13.0 lbs / 5.9 kg</td>
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<td>4.0 Corded</td>
<td>120VAC or 220VAC &quot;Opt.&quot;</td>
<td>0-80 RPM, 0-192 RPM</td>
<td>165.6 ft # = 224.5 Nm</td>
<td>55 lbs / 24.8 kg</td>
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<td>6.0 Corded</td>
<td>120VAC or 220VAC &quot;Opt.&quot;</td>
<td>0-80 RPM, 0-192 RPM</td>
<td>165.6 ft # = 224.5 Nm</td>
<td>55 lbs / 24.8 kg</td>
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</table>
D.L. Ricci Corp. Heat Treating Methods:

**Resistance:** Using ceramic pads, this flexible to set-up format, is a proven Heat Treating Technology and will work with all metal types

**Induction:** This Heat Treating method provides quicker “time to temp” and is more energy efficient, as the metals are heated uniformly from within, using a flexible liquid cooled heating coil

**Commitment to Customer Satisfaction:**
The D.L. Ricci Corp. Heat Treating Division is committed to ensuring that each Heat Treating job will be completed on schedule and performed to the highest industry safety standards. We are continually looking for new ways and opportunities to improve our performance and increase customer satisfaction. We are committed to building on our already strong reputation for quality service and fair pricing. D.L. Ricci Corp. has years of experience in offering sales, rental or on-site technical support in many process industries including:

- Nuclear Plants
- Fossil Plants
- Mechanical Contractors
- Pressure Vessel Fabricators
- Piping Fabricators
- Construction Projects
- Maintenance Projects
- Pulp and Paper Mills
- Petrochem
- Chemical Plants

**Safety & Quality:**
Our Heat Treating Team endeavors to achieve high standards of safety while delivering the highest quality product possible. Our range of equipment is constantly expanding and new technology is improving our ability to work safer and more efficiently. We can supply resistance or induction equipment and/or technicians to meet and exceed the most demanding work scope. Our field machinists are ready to mobilize for your outage, planned or unplanned.
Rentals & Sales:
D.L. Ricci Corp. has a **complete line-up of Resistance and Induction Heat Treating Supplies ready for sales or rental.** Flexible rental terms are available on a daily, weekly, or monthly basis. Resistance rental items include 6 and 9 way power supplies, recording and monitoring systems and related primary and secondary cables. Induction rental items include power supplies, coils, plus recording and monitoring equipment.

On-Site Technical Support:
Our Heat Treating **staff is constantly training** to be ready with equipment and educated staff when the time calls. Whether your outage is planned or unplanned, our staff and high tech equipment will be there anytime, anywhere to provide you with on-site Heat Treating services. Our Field Machining staff is cross trained to **bring machining and Heat Treating expertise to every job site.**

Heat Treating Training:
Our customers benefit with Heat Treating demos and training at our Red Wing Headquarters. Our Heat Treating customers also benefit from our free D.L. Ricci **Heat Treating CD-Rom** which has both Induction and Resistance video demos as well as other Heat Treating technical data on it.

Heat Treating Accessories
D.L. Ricci Corp. manufactures our Resistance heating pads to exacting national standards. Made from “Nickel Chromal” wire, which is then strung through “Hilox Alumina” insulators, these **heating pads are very durable** and able to withstand high temperatures over long durations. Special pads may be fabricated to meet exact requirements. Ask us about our **Pad-Rebuild Program** to bring new life to your old burnt-out pads. Other Resistance accessories include receptacles, connectors, cables, thermocouple wire and more. Induction Heat Treating accessories include insulation, extension power cords, liquid cooled coils and Kevlar protective preheat covers.

www.dlricci.com  651-388-8661
“ANYTIME. ANYWHERE.”

When challenging field applications arise during planned, or un-planned shutdowns, you know you can trust the D.L. Ricci Corp. engineering staff, and field technicians, for solutions to your immediate needs. Our highly trained staff can quickly and effectively respond to your specific application. Our technicians are factory trained, and in most cases have the added advantage of being the machinist who made the equipment that they use in the field.

Through equipment rental or technical support, our team will provide the experience to complete your project professionally and economically. D.L. Ricci Corp. is an OEM, and we have extensive inventory of all our latest designs of equipment and tooling, assuring fast response and quick delivery to your job site. Another added benefit of most D.L. Ricci Corp. technicians, is their ability to perform on-site stress relieving as well as machining. Try our value added tech support and rental program today; you’ll be glad you did.
Align Boring
Eleven inch diameter bores are align bored with the D.L. Ricci Corp. “Push-Pull” style boring bar.

Pipe Beveling
Beveling “Heavy” wall main steam piping with our NB Clamshell and single point attachment is quick and easy. After the severing operation is complete, the NB is fitted with the single point attachment, which allows compound beveling of any angle and I.D. counterboring.

Large pump bases are machined in-place with our large portable milling machine. Accuracy and close tolerance work is guaranteed with laser alignment and our highly accurate 16 X 96 portable milling machine.

Align Boring
Eleven inch diameter bores are align bored with the D.L. Ricci Corp. “Push-Pull” style boring bar.

Milling
Eleven inch diameter bores are align bored with the D.L. Ricci Corp. “Push-Pull” style boring bar. After the severing operation is complete, the NB is fitted with the single point attachment, which allows compound beveling of any angle and I.D. counterboring.

Valve Replacement
Weld bevels are machined to plant specifications with our 314 rapid End Prep Machine. Once the bevels are complete the new valve will be installed.

Valve Replacement
Weld bevels are machined to plant specifications with our 314 rapid End Prep Machine. Once the bevels are complete the new valve will be installed.

Hole Boring
Hole boring is accomplished in a very tight work area, (on-site and in-place) with our hydraulic 8Z Portable Milling Machine.
Custom Fabrication:
Utilizing the strength of our Engineering Department, we are constantly customizing our field machines for unique applications. Our in-house machining specialists are also field experienced to know what works best in various on-site conditions.

As an OEM, we manufacture all our D.L. Ricci Corp. equipment in our modern production facility located in Red Wing, Minnesota. Utilizing the latest in State-Of-The-Art CNC manufacturing technology we have the capabilities of turning up to 72” diameter in-house and our largest CNC has travel of 80”x40”x30. Attention to detail, customized machinery and quality control are the hallmarks of our manufacturing processes. Our customers demand close tolerance machining in the field, so we place those same demands on our in-house machinists. Our Surf-Cam Technology allows us to send programs to the CNC’s with faster turnaround time. We also manufacture our own tool bits and offer a regrind program with them. Whether we are performing job shop work, daily production runs for our equipment inventory, or custom machinery creation, you can count on D.L. Ricci Corp. to get the job done right and done on-time.

D.L. Ricci's Most Popular Tool Bits

- **Straight Sever**
  - Used for a straight cut of pipe

- **37°**
  - Used for prepping pipe with a 37° angle

- **37°/10°**
  - Used for Heavy-Wall Pipe
  - Gives a 37° - 10° bevel

- **Double Bevel**
  - Used to give a 37° bevel to both sides of pipe at same time

- **Counter Bore**
  - Used for ID counterboring pipe to size
D.L. Ricci Corp. has the **World's largest portable machine tool rental fleet**, making us the best company to meet your portable machine tool needs. With a diversified **network of rental warehouse locations** strategically placed around the World, we are able to respond quickly to your emergency equipment needs and in most cases, that same day.

Our experienced team of managers, maintenance professionals, and application specialists are dedicated to providing you with the right equipment for your job. The **strength of our support infrastructure** will work for you and expedite your order. Our staff can quickly and efficiently train your employees to operate our equipment in a safe and efficient manner.

We’ve invested millions of dollars in our rental fleet, which includes the latest portable equipment designs. All our equipment is kept in the best possible condition through our stringent **maintenance and repair program**.

Having the best equipment is not enough. We also provide **knowledgeable service, including 24 hour a day, 7 day a week emergency access**. D.L. Ricci Corp. is your total portable equipment source, not just for rentals, but for equipment purchase as well. We are an OEM and sell or rent all the equipment that we manufacture. If the purchase of capital equipment is not in your budget, then you will enjoy the flexibility of our **equipment rental program**. Our equipment is diverse and up to date, so we’re likely to have what you need for your project.
D.L. Ricci Corp. is dedicated to the design, development, and manufacturing of the finest on-site machining equipment in the industry. Our Engineering Department uses the latest design and CAM software to produce accurate, cost efficient parts, that are in turn reliable and cost effective to the customer. We will help find solutions to our customers' special applications through engineering consultation.

The Engineering Department’s ability to fulfill the customers’ needs are derived from their involvement in all aspects of the company. From project coordination for plant turnaround, to machining and heat treating on-site, our engineering team gains insight into customers needs on-site. Our familiarity with plant drawings and piping isometrics helps to reduce design time and minimize errors when dealing with customer problems on-site.

D.L. Ricci Corp. is an engineering driven company with great attention to detail and design concepts. The Engineering Department’s objective is the development of new products, and solving unique applications for our customers. Industry needs guide our cutting edge designs from concept, on through to finished product. This ensures our customers of the latest and greatest product possible.

The attention to detail while a new product is in development, allows us the ability to acquire many U.S. and worldwide patents on our unique designs. The Engineering Department further ensures that quality guidelines are met during the production process. Prototype Development is accelerated by this attention to detail and quality. Our Engineers’ background in machining, enable them to adequately test and re-test our products, in many different applications. As a result of attention to detail and vast experience, the end product is something that is reliable, feature rich and user friendly, providing not only good tools, but a method for machining with maximized performance.
Safe production and operation of our D.L. Ricci Corp. products is more than just words, it’s our ULTIMATE OBJECTIVE. We build safety into every one of our machining tools and train our staff constantly to use them in the safest manner possible. Our customers benefit from our safety first attitude with Safety Manuals, Operational CD’s, videos, training opportunities at our Ricci Training Center, and machining products that are portable, easy to use and safe.

Our D.L. Ricci Corp. Safety Program CD contains a large number of documents and graphics that outline our safety policies and procedures. It is comprehensive and up-to-date. Our Safety Consultant provides independent audits to our safety policies to make sure we adhere to the most current safety regulations and programs. They also offer specific safety training and offer testing of our facility for a variety of safety issues. Our Safety Consultant also advises our D.L. Ricci Corp. Safety Committee at their monthly meetings.

The Ricci Training Center offers staff and customers the opportunity to train on a variety of D.L. Ricci Corp. machines and applications. Machines mounted at a variety of angles simulate the real world of on-site machining. Training Center applications include valve machining, boring, drilling, pipe cutting, pipe beveling and more.

Improper usage of our machining equipment may result in serious injury. Always consult your D.L. Ricci Operational Manual for instructions on safe operation of our equipment. You may also call our customer service representatives with any questions about safe operation of our D.L. Ricci Corp. equipment.

Safety is our #1 priority! 651-388-8661
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<th>O.D.</th>
<th>Sched 50</th>
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