We will provide tooling and technical support for heat exchangers, chillers, coolers, water tube boilers, fire tube boilers, and your mechanical maintenance staff.

THERMAL SOLUTIONS, INC.

2525 Interchange Road • Lehighton, PA 18235

610-379-5446
Fax: 610-379-9581
www.tubeandpipetools.com

Sales • Rental • Service • Repair • Training • 24 Hour Service
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CONTACT INFO

Thermal Solutions, Inc.
Sales • Rental • Service • Training • 24 Hour Service
Tooling for Exchangers, Boilers, Tube & Pipe
2525 Interchange Road • Lehighton, PA 18235
Office Phone: 610-379-5446
Fax: 610-379-9581
www.tubeandpipetools.com

David Bradley
cell phone: 215-906-7432
e-mail: Dave@tubeandpipetools.com

Jeff Davis
cell phone: 410-920-2169
e-mail: Jeff@tubeandpipetools.com

Joe Main
cell phone: 610-547-3443
e-mail: Joe@tubeandpipetools.com

COMPANY MISSION

Founded on the goal that we would allow our customers to ask us today what they needed yesterday and still have them get it before tomorrow.
Tools for cleaning, testing, plugging, retubing, and manufacturing of heat exchangers, chillers and boilers. Power utility to package boiler, surface condensers to lube oil coolers. Field Demonstrations available. Purchase or rentals available.

**CLEANING**

1. **Jiffy Gun Cleaners**
   - Air/water projectile gun.
   - Relief valve for clogged tubes.
   - Nozzle or grommet tips only 3.5 lbs.

2. **Nylon Brush**
   - A

3. **35 lb. Roto Jet Cleaner**
   - Air / pneumatic variable speed, flexible cable cleaner with forward & reverse.
   - Wet/dry shafts for chillers & boilers respectively.

4. **Break-away technology**
   - Saves shaft repairs
   - Saves time
   - Saves frustration
   - Fits competitors units

5. **Soot Buster**
   - Pneumatic tube punch 100 psi 25 cfm
   - For 2", 2-1/2", and 3" Vacuum attachments.
   - Cleans a tube in 30 seconds.

6. **Turbine Tube/Pipe Cleaners**
   - Straight or curved tubes 1/2" to 18" Diameters
   - Catalyst, sulphur pipes, boilers, air heaters.

**HOW TO ORDER**

Call 610-379-5446 and Specify “Cleaning”

- Tube (ID, OD, Gage)
- # tubes to be cleaned or tested
- Length of tube
- Straight or U-tube bundle
- Tube Material, finned or prime surface
- Channel box / Channel head length
- Obstruction to tube sheet face
- Deposit to be cleaned
- Electric, Air, Water powered
Tools for cleaning, testing, plugging, retubing, and manufacturing of heat exchangers, chillers and boilers. Power utility to package boiler, surface condensers to lube oil coolers. Field Demonstrations available. Purchase or rentals available.

**Testing**

1. **Tube Tester**
   - Air activated
   - 1/2" - 3" tubes
   - Pressure test 40 - 100 psi
   - Channel rods and seals

2. **Manifold Seal**
   - Seal
   - Manifold

3. **Joint Tester**
   - Air and hand activated
   - Test tube to tube sheet joints in seconds.
   - Seals on face of sheet & pulls a vacuum on joint.

4. **Vacuum Tube Tester**
   - .280" - 3" tubes Vacuum test tubes
   - Gauge has check valve for easy testing

**Plugs**

1. **Tapered Tube Plugs**
   - Brass, Steel, 316, 304, 416
   - Aluminum, Monel, High chrome, rubber, Inconel, titanium, CuNi, Hastelloy
   - Material certifications available upon request.

2. **The “Elliott” Plug**
   - Two piece tube plug
   - Greater sealing area
   - Less stress on tube sheet
   - Available in all materials

3. **High Pressure Plugs**
   - Installs by hand in seconds using a simple torque wrench. Install through the tube on solid drive rod.

**How to Order**

Call **610-379-5446** and Specify “Testing”

- Tube (ID, OD, Gage)
- # Tubes
- Straight or U-tube
- Vacuum or Pressure
- Tube or Joint Test
Tools for cleaning, testing, plugging, retubing, and manufacturing of heat exchangers, chillers and boilers. Power utility to package boiler, surface condensers to lube oil coolers. Field Demonstrations available. Purchase or rentals available.

**CUTTING AND PULLING**

1. **Tube Cutters**
   - Tube venting tools. One revolution cutter
   - Fly cutters. Push drive and automatic

2. **Tube Pullers**
   - Collet style condenser puller.
   - Electric 6 ton puller.
   - Control of collet pressure allows for smooth pull by novice operators.

3. **Tube Tugger**
   - Spear type puller with continuous pulling ability
   - 1/2" - 2" tubes

4. **Tube Buster**
   - Knockout tubes in seconds.
   - Exchangers & boilers

5. **Retube Tools**
   - A - Sheet Hole Brushes
   - B - Tube Gages
   - C - Tube Pilots
   - D - Grooving Tools
   - E - End Facers

**HOW TO ORDER**

Call **610-379-5446** and Specify “Cutting and Pulling”

- Tube (ID, OD, Gage)
- Tube Sheet Thickness
- # of tube sheet grooves, size and position
- # tubes to be pulled (Partial or complete re-tube)
- Length of tube
- Straight or U-tube bundle
- Tube Material, finned or prime surface
- Channel box / Channel head length
- Obstructions to tube sheet face
- # of Supports sheets
- Are tubes rolled or loose in support sheet
- Tube joint straight roll, flare, welded
EXPANDING

Flare Boiler Expanders

Boiler Tube Expander

Exchanger Expanders

Deep Rolling Expanders

Roll Bead Tool

NEW Hydraulic Baffle Expander

Cap Expanders

9040 Series
Push pull
1/2" - 1-1/4" tubes

9050 Series
T-Style roll throttle
1/2" - 1-1/4" tubes

447100
Dual Speed Electric
175 rpm + 230 rpm
1" - 4" tubes
Roll Bead motor

445L1752 Series
Right Angle Motor
2" - 4" Boiler tubes
Drum Motor, Torque controlled

Tube Gage Kit

M5700 Series
Digital Torque control box for electric motors.
Torque shut off to auto reverse.

Elliott Expander Lubricant

HOW TO ORDER

Call 610-379-5446 and Specify “Expanding”

- Tube (ID, OD, Gage)
- # tubes to be rolled
- Tube sheet or Drum Thicknesses
- Length of roll joint
- Straight, Flare, Beaded, projection
- Tube material, finned or prime surface
- Channel box / Channel head length
- Obstruction to tube sheet face
- Electric, Air powered
- Exchanger supports to be rolled
- Torque controlled or size rolling
- Header dimensions on print

Tools for cleaning, testing, plugging, retubing, and manufacturing of heat exchangers, chillers and boilers. Power utility to package boiler, surface condensers to lube oil coolers. Field Demonstrations available. Purchase or rentals available.
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Lehighton, PA 18235
610-379-9581 Fax
www.tubeandpipetools.com
dave@tubeandpipetools.com
610-379-5446

Leading manufacturer of tube and pipe end prep machines. Tools that bevel, face, counterbore, remove seal welds, spot face, and trim tubes. Carbon to P91 cuts without cutting fluid with patented thick chip blade design. Field demonstrations available.

TUBE AND PIPE END PREP TOOLS

Ground Millhog
1/2” ID—2-1/4” OD
90 psi—25 cfm Air
1-1/2” wide 14” long
9# working/40# shipping

Mongoose
.625” ID—3” OD
90 psi—25 cfm Air
2-1/4” wide 15” long
13# working/30# shipping

Wart Millhog—Air/elec
3/4” ID—4 1/2” OD
90 psi—40 cfm Air
2-5/8” wide 14-1/2” long
19# working/63# shipping

Mini Millhog
1-1/4” ID—6 5/8” OD
90 psi—40 cfm
5-1/4” wide 13” long
25# working/65# shipping

Prepzilla
1.575” ID—8.625” OD
90 psi—80 cfm
8-3/4” wide 19-3/4” long
140# working/90# shipping

Commander Millhog
3-3/4” ID—14” OD
90 psi—95 cfm
12-3/4” wide 19-3/4” long
85# working/145# shipping

Dictator Millhog
4-1/2” ID—18” OD
90 psi—95 cfm
19” wide 19-3/4” long
14# working/370# shipping

HHB-5000 High Speed
450” ID—4” OD
90 psi—80 cfm
1.5” wide 6” dutchman

Panel Hog
4-3/8” depth of cut
90 psi / 80 cfm
7.5”-13.5” radial clear
28# working/65# shipping

SPECIALTY APPLICATIONS

• Inconnell overlay removal
• Fish mouth cutters
• Stub removal
• Electric drives
• Seal weld removal
• Speed “air clamp”
• Wrap track pipe cutter
• Membrane cutter
• Panel replacement system
• Compound bevels
• Fin fan tubes
• Cuts without coolant
• Reduces cleanup

HOW TO ORDER

Call 610-379-5446 and Specify “Tube”

• Tube (ID, OD, Wall)
• # preps, Material
• Membrane / tangent / clearance issues
• 37 1/2’, J-prep, Land, Counterbore
• # of machines for each size
• Date needed on site / approx. duration

or Specify “Pipe”

• Pipe Dia. & Schedule / wall
• # preps, material
• Radial / head clearance issues
• 37 1/2’, J-prep, Land, Counterbore
• Date needed on site / approx. duration
Firesight® high-temperature remote viewing equipment for process control boilers, furnaces, kilns and incinerators. First quality borescopes, fiberscopes and specialized visual inspection equipment. 80 years of quality manufacturing in the Philadelphia area.

**Why Lenox should be your camera supplier . . .**

- A FireSight system can reduce pollution by as much as 20%.
- It can also reduce fuel consumption by as much as 2%.
- FireSight will speed up boiler light off.
- The system comes with a three-year warranty, which is not pro-rated.
- Thousands of FireSight systems are installed worldwide.
- Save up to $3,500/year in compressed air versus competitive systems.
- The only high temperature video system with quartz lenses that out lasts the glass lenses used in other systems. And we have the data to prove it.
- An exclusive light volume control for a sharp, clear image under all operating conditions.
- Only 1/2 the cost of other high temperature replacement video cameras.
- 230 designs to meet specific requirements.
- Spare parts available for every FireSight system ever built.

**HOW TO GET A FREE DEMO**

Call 610-379-5446 and Specify “High Temperature Applications”

- Proposed subject description
- Size of access for periscope lens tube
- Operating temp. of unit to be inspected
- Is area illuminated with combustion or dark?
- Schedule a 30 minute live demo using our portable diagnostic cart on your vessel.

OR specify “Borescope Applications”

- Diameter of access
- Length to inspection point
- Subject to be inspected
- Requirements for video copy, digital copy.

**View-a-pipe AR**

Four way articulation and Remote focus. .433” Dia. up to 33” long. Saves inspection frustration with remote focus.

**Mini-Video package**

- Battery operated
- Scan dome head
- Digital image
- Low cost alternative

---

**A. Wall Box**

**B. Furnace Lens**

**C. High Temperature, Air-Cooled CCTV Housing**

**D. Light Volume Control**

**E. Compact CCD Camera**

**F. Video Monitor**

**G. High Efficiency Compressed Air Filter**
Provides temperature reading of your control room from the most hostile environments. Infra-View® Remote Infrared Thermometers are remote sensing infrared detectors that are permanently flange mounted on any port, door or penetration into the boiler or furnace. The Infra-View patented design is supplied with a rugged protective cooling jacket that is factory assembled and pre-piped with an air-cooler, purging and filtering system designed to work in most severe service environments. The NIST CERTIFIED Infra-View infrared “non-contact” sensor monitors flue gas temperatures in the boiler or furnace ranging from 250 °F to 3,000 °F (higher end temperatures available).

**Temperature Monitoring**

1. Infra-View® Infrared Boiler/Furnace Thermometer mounted on boiler with an air actuated valve held open with cooling/purge air and spring to close on loss of plant air.

2. Infra-View® Boiler Thermometer maintenance and customization being performed with a laptop computer in the field. Sensor programming can be accomplished anywhere along (2) wire loop or at DCS.

3. Infra-View® GB/IS Generation Bus Temperature


The Infra-View® GB/IS Generator Bus Temperature Monitor is a remote infrared sensor designed with intrinsically safe encapsulated components that are able to withstand the considerable EMF generated by the isolated-phase bus bars.

**Performance and control applications:**

- Specifically designed for older generators uprated to run at higher power levels
- Different iso-phase bus temperatures indicate unbalanced loads between phases
- Measures bus temperature remotely and annunciates alarm conditions
- Eliminates bus failure from heat build-up generated from loose arcing connections.
- Saves the effort of a manual reading.
Machine prep pipe for welding, maintain pre-heating during the welding process and stress relieve the joint when welding.
• Pre Heat and Post Weld heat treating
• Precision Severing / Beveling of in-line Piping
• Specialized Machining for valves, pumps, and turbines.

FIELD MACHINING TOOLS

1. Split Frame Lathes
   2" - 60" OD

2. End Prep Lathes and Flange Facers
   2" - 36" ID mount

3. Portable Mills
   12" - 96" mills, 6" - 66" travel

4. Exchanger and Boiler Machining

5. Line Boring

6. Stress Tech
We have the turbine tools used by maintenance crews throughout the world to reduce down time during an outage or turnaround. Every major utility system in the country has depended on our turbine maintenance tools, including our portable power units to transform higher voltages down to safer GFI protected lower voltages.

**BOLTING TOOLS**

1. **Castellated Sockets**
   - 1½": 2¼” – 4”
   - 2¼": 2¾” – 7”
   - 3½": 5” – 7”

2. **Impact Sockets**
   - 1½": 2” – 6¼”
   - 2½": 2” – 7¼”
   - 2½": 7¼” – 10¼”
   - 3½": 5” – 9½”

3. **Model SS**
   - sizes 1” – 5”
   - Stack Socket
   - Hex to Hex Drive

4. **Castellated Busters®**
   - compatible with slugging, impact, & hydraulic wrenches

5. **Castellated Slugging Wrench**
   - 2½” – 6”

6. **Industrial Slugging Wrench**
   - 1½” – 4½”

**STUD HEATING**

1. **Power Flex®**
   - Flexible bolt heater for heating hard to reach studs safely.

2. **Bolt Heater**
   - Silver-soldered Brass header for quick change. Longer-lasting than tack welded competitors.

3. **Gas Bolt Heater**
   - Kit Complete with ¼”, ⅝”, ¾” bushings & air valve.
   - Order separately: ⅛”, ¼”, ½”
   - Stainless steel pipe standard 18”
   - Others available.

4. **Speed Heater**
   - High Density Heats 4X faster.
   - Reduces outage by days. (Measure stud hole diameter & make sure heater is within .015.)

5. **Induction Heater**
   - Portable power supply (electric & water connection) heats components rapidly by replaceable induction coils.
   - Cools rapidly.
   - Remote control.

6. **Porta-Safe®**
   - Portable, electrical power in customized self-contained carts.
   - Transforms power into power you can use.

**TURBINE TOOLING**

1. **Turbine Tap**
   - High Speed 8 thread every ¼” from 1” – 4”
   - every ½” from 4” – 7”

2. **Turbine Die**
   - High Speed 8 thread every ¼” from 1” – 4”
   - every ½” from 4” – 7”

3. **Hex Bits**

4. **Hex Long Arm Wrench**
Power House Tool, Inc. has the turbine tools used by maintenance crews throughout the world to reduce down time during an outage or turnaround. Every major utility system in the country has depended on our turbine maintenance tools, including our portable power units to transform higher voltages down to safer GFI protected lower voltages.

TURBINE TOOLING

1. **Extensometer**
   Measures stud elongation (ie: stretch) on large diameter steam GE & Westinghouse bolting applications. Model # E1000

2. **Radius Taper Gauge**
   Clearance readings axially (X&Y) between packing & packing gland on rotor.
   - #RXY25100: .025 – .100
   - #RXY50300: .050 – .300
   - #RXY275500: .275 – .500
   - #RXY450650: .450 – .650

3. **Tightwire Brackets**
   4 Starret micrometer heads provide windage & elevation alignments readings on casings, shells, packing & diaphragms in turbine assembly. 2 brackets each.
   - A Heavy Duty: TWB1
   - B Light Duty: TWB2

4. **Bridge Micrometer**
   Reads elevation differences between 2 joints, heights of welds, crush pins, diaphragm keys, & diaphragm springs.
   - 1” Starret mike head included.
   - #BM06: 4” L body 2” L bridge
   - #BM06: 4” L body 4” L bridge
   - #BM12: 6” L body 6” L bridge

5. **Chain Indicator Holder**
   Checks alignment on just about any size diameter shaft by adding chain.24” chain included. Start 1/2” diameter shafts. Model # CIH

6. **Stud Protractor**
   Ease in bolt tightening. Open to desired degree. Use 1 measuring arm to mark casing & 1 to mark nut. Tighten nut until it aligns with casing. Extra nipple for larger diameters supplied. Model # CG18

7. **Packing Tooth Scraper**
   Run over teeth to reestablish tapered edges. Adjustable tool bits. Knurl black oxidized handle.
   - #PTS01  B Extra bits available. #SE2

8. **Head Set Alignment Kit**
   Quality headphones for clear contact tone. Kit includes:
   - micrometer
   - 2 heads (1 1/2” & 1”)
   - insulator
   - 1-6” rods
   - tubing adapter
   - battery
   - tight wire
   - #SCZ01

*New vibrator pack also available.*
Innovative tube and pipe fit up tooling. Saving outage and turnaround time for over 20 years. A staple product in every boilermaker’s arsenal of tube repair.

TUBE AND PIPE ALIGNMENT TOOLS

1. WALLBANGER™
   Waterfall tool fits tubes in seconds. \(\frac{3}{4}\)”, 1”, 1\(\frac{1}{8}\)”, 1\(\frac{3}{16}\)”
   1\(\frac{3}{8}\)” on common centers

2. WALLBANGER™
   Fits single tubes in seconds
   1\(\frac{1}{16}\)”, 2", 2\(\frac{1}{16}\)”, 2\(\frac{3}{16}\)
   3”, 2\(\frac{1}{8}\)”, 3”, 3\(\frac{1}{8}\)”

3. BOOMER
   Aligns tubes and holds material used with chill rings.
   1\(\frac{1}{16}\)”, 1\(\frac{3}{16}\)”, 2", 2\(\frac{1}{16}\)”, 2\(\frac{3}{16}\)”, 2\(\frac{3}{8}\)”, 3”

4. BUCK
   Tool is used for positioning and retaining boiler tube sections in alignment for Heliarc welds

5. GRIPPER™
   Tool fastens quickly to tube for hoisting, quick and hassle free.
   1-1/2”, 1-3/4”, 2”, 2-1/8”, 2-1/4”, 2-1/2”

6. Pipe Banger
   Steel, Stainless and P91 insert shoes available. Fits pipe gap and high low.

7. Removable tack feet
   Allow for changes in material and easy replacement of used feet. Steel, Stainless, P91.

8. Turnbuckle style attachment
   Sets gap and drive screw sets high low.

Walhonde Pipefitter™ - Pipe to Pipe
   Allows pipe fit for out of round pipe, sets gap, sets high low all from a light weight clamp. Mechanical clamp allows for complete control of joint.

Walhonde Pipefitter™ - Pipe to Elbow
   Interchangeable rings allow for fitting pipes to elbow easily without special tooling. Pipe sizes 4” - 24”

HOW TO ORDER

Call 610-379-5446
and specify “Tube Fitting Tools”
- Tube OD
- Tube on centers of _____”
- # Tools required for work area

or specify “Pipe Fitting Tools”
- Diameter of Pipe and schedule
- Pipe to pipe, pipe to elbow, or 3 ring combination clamp.
- # of Banger Clamps (6/box)
Full-service supplier of louver dampers and expansion joints. The Fox name has been synonymous with quality in the manufacturing of dampers and expansion joints since 1970.

### DAMPERS / LOUVERS

1. **Louver Dampers**
   - Parallel Louvers
   - Opposed Louvers
   - Double Louvers

2. **Divers/Flap Dampers**

3. **Wafer/Butterfly Dampers**

4. **Radial Vane Dampers**

5. **Slide Gates/Guillotine Dampers**
   - Low Leak Slide Gates
   - Zero Leak Slide Gates

6. **Stack Dampers**

7. **Fabric Expansion Joints**

---

**HOW TO ORDER**

Call **610-379-5446** and Specify the following:

- Application
- Type of Damper
- Primary Function (Isolation or Control)
- Operating / Design Conditions (Temp., Pressure, Gas Flow)
- Size (w x h or diameter)
- Flange to Flange
- Material Specs (housing, blades, shaft, seals, liners)
- Design Criteria (Leakage %, Pressure Drop %)
- Accessories (Operator, Positioner, Transmitter, Limit switches, Seal Air Fan)
HYDRAULIC BOLTING SOLUTIONS - Square Drives

1 Hydraulic Wrench Square Drive
200 to 60,000 ft. lbs.

2 The Guts to show you the Guts
Lower maintenance on fewer parts

3 Pneumatic Wrench
Speed torque wrench.
Air driven torque multiplier.

HYDRAULIC BOLTING SOLUTIONS - Hex Drives

4 Hydraulic Wrench & Link Cassette Tools
200 to 40,000 ft. lbs.

5 Hydraulic Wrench
Link Cassette Tools
Lower maintenance on fewer parts.

HYDRAULIC BOLTING SOLUTIONS - Pumps

7 Electric Hydraulic Pumps
4000 rpm quad pump
18 amp service

Air Filter Regulation Lubricator
for pneumatic wrench

HOW TO ORDER

Call 610-379-5446 and Specify “Hydraulic Bolting Solutions”

- Nut size across the flat (ATF)
- Clearance above, around the nut
- Point to point distance
- Stud size / material
- Torque to apply
- Air or electric pump
- Pump to nut distance for hose length

Try a Link Cassette Tool.
THERMAL SOLUTIONS, INC.

Tooling for Exchangers, Boilers, Tube & Pipe
Sales • Rental • Service • Training • 24 Hour Service
Emergency access is available 24/7. Call: 215-906-7432

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www.tubeandpipetools.com
dave@tubeandpipetools.com
610-379-5446

Full-service tube and pipe tooling provider offering sales, service and often rent and rent-to-own options.

TUBE AND PIPE PLUGS

1. Wing Nut Plug
   Size: 1/8" – 24"

2. Rim Bolt Test Plug
   Size: 14" – 36"

3. Medium Pressure Inflatable Plug
   Size: 4" – 36"
   Max. Test Pressure: <150 psig
   Size: 36" – 54"
   Max. Test Pressure: <105 psig

4. Single Size Disc Plugs
   Size: 4" – 96"
   Max. Test Pressure: <15

5. Thaxton Plugs
   High Pressure Test Plugs
   Size: 1/8" – 36"
   Max. Test Pressure: up to 10,000 psig
   ID and OD options

6. Ported Bypass Plugs

7. Multi-Size Domeheads
   Front and back tethered plugs for leak detection

8. All Rubber Plug
   Low cost alternative plugs.
   Max. Test Pressure: <15

9. Cylinder-Bag Plug
   Foreign Material Exclusion Plug

10. Flange Weld
    Tests weld neck flanges in minutes.
    Specify line size, pound class flange and pipe schedule.

11. Tube Sponges
    FME

HOW TO ORDER

Call 610-379-5446
and Specify “Tube and Pipe Plugs”

- Tube (OD, Gage)
- Pipe size & schedule
- Tube/pipe material
- Test pressure
- Test medium
- # tests
Full-service tube and pipe tooling provider offering sales, service and often rent and rent-to-own options.

**PETRO CHEMICAL PIPE EQUIPMENT - Orifice Plates**

1. Universal Orifice Plates
   Ready to drill

2. Restriction Orifice Unions
   Ready to drill

All blinds are designed to the pressure / temperature combinations specified for a flange according to ANSI B16.5. Thickness is calculated using Formula 16 page 23 Section 304.5.3 Petroleum Refinery Piping ANSI B31.3—1973 ASME.

**PETRO CHEMICAL PIPE EQUIPMENT - Blinds**

4. Bleed Rings
   Stock for most sizes and configurations.

5. Paddle Blinds
   516 grade 70 material
   Ground edges, drilled, stamped with line size and pound rating, painted.

6. Paddle Blinds
   Large sale and rental inventory

7. Specticle Blinds
   Custom manufactured to your specifications.

**PETRO CHEMICAL PIPE EQUIPMENT - Plugs**

8. Isolation Plugs

9. Shoulder Plug
   Shoulder plugs and gaskets for fin fan coolers and exchangers.

10. Flange Weld Test Plugs
    For weld purges and fully rated for ANSI-hydro test.

**HOW TO ORDER**

Call 610-379-5446 for personal care.
ATP professional tools feature alloy steel hammer cases that are machined from solid bar not drawn or cast. The model number is stamped in the motor housing under the name plate for permanent identification. There is a high power to weight ratio, plus 100% parts interchangeability to the equivalent tool. Your replacement parts inventory will work for any tool you purchase. 100% American Made.
SPECIALTY TOOLING FOR FIELD REPAIR - Mathey Dearman

1. Chain Clamp
2. Torch Beveler
3. MagnaCut II
4. Rim Clamp

SPECIALTY TOOLING FOR FIELD REPAIR - Problem Solvers

1. Plate Beveling Machine
2. Vacuum Leak Detector
3. Magnetic Drilling Machines
4. Valve Changing Tool
5. Tube Insert
6. Air Heater Tube Insert
7. Condenser Plugs
8. Torque Limiting Nut
9. Rod For Plugs
10. Tube Brush

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www.tubeandpipetools.com
dave@tubeandpipetools.com

610-379-5446

Full-service tube and pipe tooling provider offering sales, service and often rent and rent-to-own options.
<table>
<thead>
<tr>
<th>Schedule No.</th>
<th>Wall Thickness (inches)</th>
<th>Inside Diameter (inches)</th>
<th>Schedule No.</th>
<th>Wall Thickness (inches)</th>
<th>Inside Diameter (inches)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/16</td>
<td>0.065</td>
<td>0.138</td>
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</tr>
<tr>
<td>1/64</td>
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<td>0.032</td>
<td>1/64</td>
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<td>0.032</td>
</tr>
<tr>
<td>1/128</td>
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<td>0.016</td>
<td>1/128</td>
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<td>0.016</td>
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</table>

**Pipe Chart**

<table>
<thead>
<tr>
<th>Nom. Pipe Size (inches)</th>
<th>Schedule No.</th>
<th>Wall Thickness (inches)</th>
<th>Inside Diameter (inches)</th>
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<tbody>
<tr>
<td>1/8</td>
<td>10S</td>
<td>0.083</td>
<td>0.312</td>
</tr>
<tr>
<td>(0.405)</td>
<td>40ST, 40S</td>
<td>0.157</td>
<td>0.884</td>
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<tr>
<td>1/4</td>
<td>10S</td>
<td>0.120</td>
<td>0.622</td>
</tr>
<tr>
<td>40ST, 40S</td>
<td>0.200</td>
<td>0.984</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>5S</td>
<td>0.150</td>
<td>1.406</td>
</tr>
<tr>
<td>(0.625)</td>
<td>20S</td>
<td>0.250</td>
<td>2.400</td>
</tr>
<tr>
<td>3/4</td>
<td>5S</td>
<td>0.220</td>
<td>2.976</td>
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<tr>
<td>(1.000)</td>
<td>20S</td>
<td>0.320</td>
<td>4.376</td>
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<tr>
<td>1</td>
<td>5S</td>
<td>0.300</td>
<td>5.000</td>
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<td>(1.250)</td>
<td>20S</td>
<td>0.400</td>
<td>6.376</td>
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<tr>
<td>11/4</td>
<td>5S</td>
<td>0.375</td>
<td>7.938</td>
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<tr>
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<td>9.876</td>
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<tr>
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<td>5S</td>
<td>0.469</td>
<td>11.938</td>
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<tr>
<td>(2.438)</td>
<td>20S</td>
<td>0.600</td>
<td>14.126</td>
</tr>
</tbody>
</table>

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