Large Diameter Pipe Bursting

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What is Pipe Bursting?

- trenchless rehabilitation and replacement technology
- fracture or split existing pipeline while simultaneously installing new “factory manufactured” pipe
- replace aging or capacity deficient mainline and lateral systems with same size or larger diameter pipe
- 4 inches to 36 inches in diameter
Pneumatic Pipe Bursting System

Diagram showing the Pneumatic Pipe Bursting System:
- GRUNDOWINCH®
- Compressor
- Old Pipe
- Winch Line
- Expander Cone
- GRUNDOCRACK® Pneumatic Pipe Bursting Tool
- New PE Pipe
Large Diameter Pipe Bursting Projects

• 30” VCP to 42” HDPE
• 36” Hobas to 36” HDPE
• 36” CMP to 42” HDPE
• 24” Existing Steel, Cast Iron, and PVC Common
• Limited demand for larger diameter pipe bursting
• Can be developed and accomplished with investment
### Savings by Water Agencies...

<table>
<thead>
<tr>
<th></th>
<th>City of Billings, MT</th>
<th>Consolidated Water, CO</th>
<th>Cheyenne Water, WY</th>
<th>Lee's Summit, MO</th>
<th>Greensboro, NC</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Approx. Footage thru 2014</strong></td>
<td>18,215</td>
<td>167,740</td>
<td>20,990</td>
<td>43,100</td>
<td>38,080</td>
</tr>
<tr>
<td><strong>Existing Pipe Diameter</strong></td>
<td>4-8&quot;</td>
<td>4-8&quot;</td>
<td>4-8&quot;</td>
<td>4-8&quot;</td>
<td>2-8&quot;</td>
</tr>
<tr>
<td><strong>New Pipe Diameter</strong></td>
<td>8-12&quot;</td>
<td>4-8&quot;</td>
<td>8-12&quot;</td>
<td>6-8&quot;</td>
<td>6-8&quot;</td>
</tr>
<tr>
<td><strong>Savings over Open Cut</strong></td>
<td>50%</td>
<td>50%</td>
<td>20%</td>
<td>23%</td>
<td>20% +</td>
</tr>
</tbody>
</table>

Nationally – Savings between 20-50% using pipe bursting over traditional open cut.
Process and Systems

Two Main Types or Classes of Pipe Bursting Systems

- **Pneumatic**

- **Static**
How to Insert your logo or company name:

Go to View; Slide Master Slide 1 (Master slide, which is on the very top) Delete this text box by clicking on outer edge of text box and hit delete button.

Insert Logo or type your company name (max size 2" W by .75" H).
Capabilities – Pneumatic Systems

• Pipe Burst Existing Fracturable pipes only (Cast Iron, PVC, Concrete, and Asbestos Cement “Transite”)

• New Pipe - only HDPE
Static Pipe Bursting System - Step 1

(most commonly used system in water pipeline bursting)
Static Pipe Bursting System - Step 3

New Pipe

Expander

Rolling Blade Cutting Rod

Quicklock Bursting Rods

Hyd Power

Grundoburst®

Pipe Bursting
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Insert Logo or type your company name (max size 2” W by .75” H)
Special Tooling to Split Steel, Ductile Iron, and Certain Fittings
Capabilties – Static Systems

• Pipe Burst Not Only Existing Fracturable Pipe but, also Non-Fracturable Pipe (HDPE, Ductile Iron, Steel)

• Accessories used to help split fittings & repairs

• New Pipe - All types (FPVC, HDPE, Restrained Joint PVC, Restrained Joint Ductile Iron)
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2. Delete this text box by clicking on outer edge of text box and hit delete button
3. Insert Logo or type your company name (max size 2" W by .75" H)

Fused HDPE
Fusible PVC
Restrained Joint PVC
Restrained Joint
Ductile Iron
Pipe Bursting of existing 36” Diameter Hobas Pipe Pulling in 36” HDPE Pipe
Pneumatic Pipe Burst Project

20 ton Constant Tension Winch and Taurus 24” Hammer
Pneumatic Pipe Burst Project

Launch and Receiving Excavations
Pneumatic Pipe Burst Project

HDPE Pipe Fusing
Pneumatic Pipe Burst Project

Pipe Bursting Operation
Pneumatic Pipe Burst Project

Pipe Closure Sections

36” PE MJ Adapter
36” PE Pipe
36” MJ DIP Sleeve
Megalug Restraint (Typ)
36” DIP Spool
Pneumatic Pipe Burst Project

Restoration
Pipe Bursting vs. Open Cut

“Direct Costs”

- Less material removed and replaced
- Less Dewatering
- Less equipment and labor
- Utilizes existing utility corridor and ROW
- Lower cost overall
Pipe Bursting vs. Open Cut

“Indirect Costs”

- Smaller work zone or “footprint”
- Less disturbance to traffic
- Less time
- Less Impact to businesses & residents
- Less emissions – lower carbon footprint “Green Benefits”
Bursting vs. other rehabilitation options (Slip-lining, CIPP, etc.)

- No reduction in inside diameter (improved hydraulic capacity)
- Same size or Increased pipe diameters
- Factory Manufactured Pipe (vs. “field manufactured” CIPP, epoxy, and CML, etc.)
- Hard service reconnects (not simply “reinstated”)
- Better return on investment - engineering economic life (new pipe)
In Summary, Pipe Bursting is...

- Proven, has history, and widely used (not new, you will not be the first!)
- Effective (it works!)
- Costs less
- Lower impact to all
- New factory manufactured pipe
- “Green Technology” – environmentally friendly
Questions?

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Pneumatic Pipe Burst Project

Failed existing
36” Diameter Hobas Pipe