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<td>D10-32</td>
<td>D6-22</td>
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<td>Length of the lead system (m)</td>
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<td>8 - 28</td>
<td>10 - 30</td>
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<tr>
<td>Usable length (with max. size hammer) (m)</td>
<td>2 - 14</td>
<td>2 - 22</td>
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<td>Weight of lead system at max. length, without hammer (kg)</td>
<td>2000</td>
<td>4000</td>
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- MS 3003: 8 - 28
- MS 6204: 10 - 30

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**Weight of lead system at max. length, without hammer (kg)**
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**Swinging Leads**

DELMAG “MS-type” swinging leads are mainly used for “back-driving” of interlocking sheet piles and single piles.

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Today DELMAG manufactures diesel pile hammers from sizes D 6 (600 kg piston weight) up to D 200 with a piston weight of 20,000 kg. DELMAG also builds a variety of hanging, swinging or offshore leads fitting any size of hammer and any jobsite situation. Additionally DELMAG offers different types of lead and hammer accessories like hydraulic starting devices, power packs, drive caps, etc.

**Swinging Lead MS 3003 with DELMAG diesel pile hammer D25-32 in Germany**

**Swinging Lead MU 6200 with DELMAG diesel pile hammer D36-32 in the USA**

**DELMAG diesel pile hammer D200-42 driving 84”pipe piles in Caspian Sea**

**DELMAG diesel pile hammer D62-32 on hanging lead MH 8007 in Belgium**

**DELMAG diesel pile hammer D46-32 on piling rig BANUT 655 in Slovenia**

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Suitable diesel pile hammer (max. size)

<table>
<thead>
<tr>
<th>Leads</th>
<th>MAS 3000</th>
<th>MAS 4600</th>
<th>MAS 6200</th>
</tr>
</thead>
<tbody>
<tr>
<td>D25-32</td>
<td>D30-32</td>
<td>D36-32</td>
<td>D46-32</td>
</tr>
</tbody>
</table>

Max. pile diameter (mm)

<table>
<thead>
<tr>
<th>Leads</th>
<th>EU 62-36</th>
<th>EU 62-42</th>
<th>EU 100-48</th>
<th>EU 100-60</th>
<th>EU 150-60</th>
<th>EU 200-60</th>
<th>EU 200-84</th>
</tr>
</thead>
<tbody>
<tr>
<td>D62-22</td>
<td>915</td>
<td>1076</td>
<td>1220</td>
<td>1524</td>
<td>1524</td>
<td>2135</td>
<td></td>
</tr>
<tr>
<td>D36-22</td>
<td>1067</td>
<td>1140</td>
<td>1700</td>
<td>28500</td>
<td>40200</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Weight of lead system without hammer (kg)

<table>
<thead>
<tr>
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<th>EU 62-42</th>
<th>EU 100-48</th>
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</tr>
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<tbody>
<tr>
<td>D62-22</td>
<td>7300</td>
<td>8200</td>
<td>9300</td>
<td>11400</td>
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<td>28500</td>
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</table>

DELMAG „MAS-type“ rope suspended leads are designed to drive various types of vertical piles, such as interlocking sheet piles and single piles.

DELMAG diesel pile hammers are single acting free fall hammers utilizing the principle of impact atomization.

The diesel pile hammer consists of upper and lower cylinder in which the piston is led. The hammer is equipped with a rope controlled adjustable fuel pump with 4 settings. This serves to regulate the stroke of the piston and therefore the impact energy. This is a particular advantage when soil formations change. Optionally a hydraulically actuated fuel pump with infinite settings is available. The maximum stroke of a piston is up to 3.7 m, depending on soil conditions.

The diesel pile hammer utilizes a tripping device to lift the piston and start the hammer. Usually the tripping device is lifted with a wire rope. In any case where no wire rope is present a hydraulic tripping device is available.

Since diesel pile hammers do not have any piston rods, crankshafts, cams or bearings they do have little wear and are very reliable. They are almost maintenance free and can be used on different pile types like concrete piles, H-beams, sheet piles, etc.

Other advantages are the unmatched ratio of total weight to impact energy (which allows the use of lighter rigs) and the extremely low fuel consumption.

The rugged design, the reliability and the low maintenance and operating costs have convinced thousands of customers around the world that a DELMAG diesel pile hammer is always the right choice.
How the diesel pile hammer works?

1. **Lifting of the piston (starting)**
   To start the diesel pile hammer the piston is lifted by means of a mechanical or hydraulic tripping device and is automatically released at a given height.

2. **Injection of diesel fuel and compression**
   While dropping, the piston actuates the pump lever, so that a certain quantity of diesel fuel is sprayed on top of the impact block. After passing the exhaust ports, the piston starts compressing the air in the combustion chamber.

3. **Impact and Combustion**
   The impact of the piston on the impact block atomizes the diesel fuel in the combustion chamber. The atomized fuel ignites in the highly compressed air. The combustion energy moves the piston upwards.

4. **Exhaust**
   While moving upwards, the piston passes and thus opens the exhaust ports. The exhaust gases escape and the pressure in the cylinder is equalized with the atmosphere.

5. **Flushing**
   As the piston continues to move upwards, fresh air is drawn through the exhaust/intake ports for flushing the cylinder while also releasing the pump lever. The pump lever returns to its starting position and the pump is charged with fuel again.

Delmag diesel pile hammers operate on the principle of impact atomization. Three different energies are acting on the pile:

**Compression + Impact + Combustion**

which are united to an effective cumulative energy. The compression energy will force the impact block with the helmet tightly against the butt of the pile. The next blow will then encounter a preloaded pile. Thus the pile head is protected and the impact energy is effectively transmitted onto the entire pile. On piles sensitive to stress, the risk of cracks will be reduced, since the tension imposed on the pile relaxes in upward direction and is retarded by the pressure of the expanding gases.

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<th>MH 8007</th>
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<tr>
<td>Suitable diesel pile hammer (max. size)</td>
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<td>D30-32</td>
<td>D62-22</td>
<td>D80-23</td>
</tr>
<tr>
<td>Max. length of the lead system (m)</td>
<td>20</td>
<td>28</td>
<td>32</td>
<td>30</td>
</tr>
<tr>
<td>Max. usable length (with max. size hammer) (m)</td>
<td>14</td>
<td>22</td>
<td>26</td>
<td>22</td>
</tr>
<tr>
<td>Weight cpl. in kg*</td>
<td>3000</td>
<td>6000</td>
<td>8000</td>
<td>12000</td>
</tr>
<tr>
<td>Recommended carrier (lifting capacity) (t)</td>
<td>40</td>
<td>50</td>
<td>100</td>
<td>120</td>
</tr>
</tbody>
</table>

* at max. length, without hammer and without slewing device and a lowering system

DELMAG hanging leads can easily be attached to the boom point of crawler cranes. Usually a spotter, which connects the lower part of the Lead with the upper carriage of the crane, is used to control the mast inclinations to the front, rear or side. Optionally a hydraulic mast slewing device and a hydraulic mast lowering system are available.
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<td>1076</td>
<td>1220</td>
<td>1524</td>
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<th>MU 3000</th>
<th>MU 6200</th>
</tr>
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<tbody>
<tr>
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<td>D19-42</td>
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