Pipe Bending Machine  BM 36-48

Engine output:  180 kW / 241 HP
Operating weight:  59.500 kg
                   131,175 lb
Range:  36” - 48”
**Basic machine**

### Engine

- **Diesel engine**: Liebherr D934-L-A6, Emission regulations according to 97/68/EG, 2004/26/EG stage IIIA and EPACARB Tier 3
- **Rating (ISO9249)**: 180 kW / 241 HP
- **Rating (SAE J1349)**: 176 kW / 237 HP
- **Rated speed**: 1,800 rpm
- **Displacement**: 7.0 l / 426 cu. In.
- **Design**: 4-cylinder-in-line engine, water cooled, turbo-charged, air-to-air intercooler
- **Injection system**: Direct injection, pump-line-nozzle system, electronic engine management
- **Engine lubrication**: Pressurised lube system, engine lubrication guaranteed for inclinations up to 45 degrees
- **Operating voltage**: 24 V
- **Alternator**: 80 A
- **Starter**: 5.4 kW
- **Batteries**: 2 x 110 Ah / 12V
- **Air cleaner**: Dual stage dry type with safety element, precleaner, service gauge at operator stand
- **Cooling system**: Combi radiator, comprising radiators for water, hydraulic fluid and charge air. Hydrostatic driven.

### Refill capacities

- **Fuel tank**: 450 l
- **Cooling system**: 30 l
- **Engine oil with filters**: 29 l
- **Hydraulic oil tank**: 750 l

### Noise emission

- **Exterior sound pressure (2000/14/EC)**: LpA = 72-86 dB(A) (distance @ 1 m.)

### Hydraulic system

- **System**: Load sensing proportional pump flow control
- **Pump type**: Swash plate, variable displacement piston pump
- **Pump flow max.**: 387 l/min / 85.1 gpm
- **Pressure limitation**: 350 bar / 5,075 PSI
- **Control valve**: 7 segments, hydraulic actuated
- **Filter system**: Return filter with magnetic rod in the hydraulic tank
- **Control**: 5 hydraulic actuated levers for all functions

### Hydraulic cylinders

- **Outboard cylinder**: 4x Liebherr, 320 x 500
- **Inboard cylinder**: 4x Liebherr, 220 x 175
- **Wedge cylinder**: 1x Liebherr, 170 x 1400
- **Clamp cylinder**: 1x Liebherr, 140 x 400

### Undercarriage

- **Chains**: Lubricated, single grouser shoes; track chain tensioning by bolts
- **Track links**: 29 (each side)
- **Track rollers/carrier rollers**: 5 / 2 (each side)
- **Track shoes standard**: 711 mm / 28"
- **Track shoes option**: 762 mm / 30"

### Winch

- **Rated line pull**: 9.080 kg / 20,000 lbs
- **Gearing**: Dual stage planetary differential
- **Gear ratio**: 36 : 1
- **Maximum oil pressure**: 172,41 bar / 2,500 PSI
- **Maximum oil flow**: 23/75 l/min / 6/20 gpm
- **Cable length**: 25 m / 82.02 ft
- **Cable diameter**: 16 mm / 0.63"

### Bending data

<table>
<thead>
<tr>
<th>Pipe size</th>
<th>X52 Inch / mm</th>
<th>X60 Inch / mm</th>
<th>X70 Inch / mm</th>
<th>X80 Inch / mm</th>
<th>X100 Inch / mm</th>
<th>Radius feet / meter</th>
<th>Max. degree per 40 feet /12 meter joint</th>
</tr>
</thead>
<tbody>
<tr>
<td>36 / 914</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>1.937 / 49,2</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>38 / 965</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>1.750 / 44,5</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>40 / 1016</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>1.937 / 49,2</td>
<td>1.500 / 38,1</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>42 / 1067</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>1.750 / 44,5</td>
<td>1.312 / 33,3</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>44 / 1118</td>
<td>2.000 / 50,8</td>
<td>2.000 / 50,8</td>
<td>1.812 / 46,0</td>
<td>1.562 / 39,7</td>
<td>1.187 / 30,2</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>46 / 1168</td>
<td>2.000 / 50,8</td>
<td>1.875 / 47,6</td>
<td>1.625 / 41,3</td>
<td>1.375 / 34,9</td>
<td>1.090 / 27,7</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
<tr>
<td>48 / 1219</td>
<td>2.000 / 50,8</td>
<td>1.750 / 44,5</td>
<td>1.437 / 36,5</td>
<td>1.260 / 32,0</td>
<td>1.000 / 25,4</td>
<td>115 / 35,1</td>
<td>12,5</td>
</tr>
</tbody>
</table>

These figures are recommended only and do not constitute a warranty.

All bends shown are based on the use of Maats bending mandrels and bending dies. The figures given are “average”, they will vary due to:
- The wall thickness of the pipe
- The actual (as opposed to the nominal) yield of the pipe
- Skill of the operator in handling the bending machine and the mandrel
- The origin of the pipe (pipe mill, plate mill, etc.) and quality of the pipe
- The type of pipe, spiral seam pipe will normally accept 75% of the recommended bend
- The type of die and or bending set being used (eg. polyurethane lining or special radius dies)

An unbent end (tangent) is produced at each end of the pipe where the pipe contacts the stiff back and the pin up. Normal unbent tangents are approx. 16 feet / 5 meters.
Dimensions and weights

**Dimensions**
- Height over winch: 3.501 mm / 11.5 ft
- Overall length: 9.980 mm / 32.74 ft
- Width: 3.651 mm / 12.0 ft
- Max. shipping width: 3.651 mm / 12.0 ft

**Weights**
- Operating weight: 59.500 kg / 131,175 lb
- Weight bending set (avg.): 5.000 kg / 11,000 lb

**Bending sets**
- Standard sizes: 36", 38", 40", 42", 44", 46", 48"
- Special sizes are available on request
- Standard sets are bare. Coated sets are available on request
## Equipment

### Basic machine
- Towing lug front
- Battery compartment, lockable
- Cold start device
- Radiator guard
- Engine doors, hinged, lockable
- Lugs for crane lifting
- Fuel water separator
- Air filter, dry-type, dual step
- Toolkit

### Electrical system
- Starter motor 5.4 kW
- Working lights
- Battery main switch, mechanical
- On-board system 24 V
- Alternator 80 A
- Beacon
- Hydraulic oil automatic preheat system

### Control and warning lights
- Hydraulic system pressure (analog)
- Engine RPM (digital)
- Machine hours (digital)
- % Engine load at current RPM (digital)
- Coolant temperature (digital)
- Oil pressure (digital)
- Fuel economy (digital)
- Active service codes (digital)

### Winch
- High torque motor
- Dual stage planetary differential gearing
- Load control valve
- Spring engaged freespooling clutch
- Cable 16 mm x 25 m
- Cable 16 mm x 55 m
- Cable 18 mm x 35 m
- Cable 20 mm x 30 m

### Undercarriage
- Track frame, closed
- Sprocket segments, bolted
- Tracks oil lubricated
- Track frame, rigid
- Track shoes 711 mm
- Track shoes 762 mm
- Special track sizes (width / length)

### Attachments
- Hydraulic PTO for mandrel
- Compressor for mandrel

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* = Standard, + = Option

Subject to change

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Options and / or special attachments, supplied by vendors other than Maats, are only to be installed with the knowledge and approval of Maats to retain warranty.

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