Roller hemming head
Rolling ahead of the rest

The ABB robotic hemming solution replaces traditional tabletop hemming, bringing high flexibility, low investment cost and improved quality output with excellent cycle time performance.

The ABB roller hemming head is mounted on an ABB robot and rolls along the edge of the part, fixed on a hemming die, to produce the bent flange.

**High quality output**
The design of the hemming head uses a high speed proportional valve to deliver a stable force between the roller and the hemming die. This results in higher quality than even table top machines. The system is tolerant to programming path not perfectly following the part, part tolerance deviations, and hemming die wear. This makes the system easier to setup, faster to achieve a good quality during startup, and stable to deliver consistently high quality parts over time.

**Low investment and high flexibility**
Roller hemming is ideal for small to large production. The use of a programmable robot allows hemming to be performed on different parts by simply reprogramming the robot. This is ideal for mixed part production, and allows a high carry-over of the initial robot investment between car models.

**Roller hemming software package**
Roller hemming requires the generation of multiple paths along the hemming die at different angles. The ABB Roller hemming software only requires the programming of an initial path, from which the subsequent paths are automatically generated. The package also includes simple tools and step-by-step routines making the setup and maintenance of the hemming station simple.

**Offline programming in robot studio**
The hemming path can be quickly programmed offline in the ABB virtual simulation software, Robot Studio. With ABB TrueMove, the simulated path matches that of the real robot, allowing the programmer to directly direct transfer from the offline program into the real world without modification.
Main characteristics
- Programmable hemming force during the path, controlled by a high speed valve
- Hemming on steel and aluminum
- Compatible with tool changers
- Roller hemming software that enables minimum programming time and rapid adjustment of hemming parameters: teach or load the first path only, the others will be processed from it.

Specifications

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Details</th>
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<tbody>
<tr>
<td>Hemming force (typical)</td>
<td>60 to 100 daN for 0.8 mm panel</td>
</tr>
<tr>
<td>Hemming force (maximum)</td>
<td>300 daN at air supply; 5 bars minimum 160 daN for C-push head</td>
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<tr>
<td>Force variation speed</td>
<td>600 daN/s</td>
</tr>
<tr>
<td>Flange angle</td>
<td>Up to 130°</td>
</tr>
<tr>
<td>Hemming stroke</td>
<td>Up to 20 mm</td>
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<tr>
<td>Roll-in</td>
<td>0.20 mm</td>
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<tr>
<td>Embedded rollers</td>
<td>2 rollers plus additional roller, blade, or pointer</td>
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<tr>
<td>Hemmed part material</td>
<td>Steel or aluminum</td>
</tr>
<tr>
<td>Hemming head weight</td>
<td>39.5 kg (push) to 45 kg (push-pull)</td>
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<tr>
<td>Compatible robots</td>
<td>IRB 6700, IRB 6600, IRB 7600</td>
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</tbody>
</table>

* Data and dimensions may be changed without notice

Types
- The roller hemming head is available in 4 versions
  - Push type roller hemming head
  - C-push type roller hemming head
  - Large c-push type roller hemming head
  - Push-pull type roller hemming headonly, the others will be processed from it.

The Push-Pull type roller hemming head, equipped with a double action cylinder, offers the possibility to pull on normally inaccessible flanges of complex parts such as wheel arches, sunroofs, lids, etc.

Options
- Roller hemming dresspack, with floor cables and proportional valve
- Roller hemming software
- RobotStudio robot simulation environment
- Choice of standard rollers

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**Push type (side view)**

**C-push type (front view)**