Flanging on Wheel House Flanges

for sheet metal and profiles
Flanging on wheel house flanges

Example for application

In the automotive industry flanging is employed as a chipless forming process, for example for forming of chassis parts. Eckold offers you highly functional and high-quality tools and devices for forming work on two and/or single-layer sheet metal flanges in the wheel house area. Intelligent adaptations for various handling options enable us to offer you a number of design possibilities for small-, medium- and large-serial lot production processes.

Eckold Flanging Technique: For precise contour forming of the wheel house for optimised margins.

Eckold Flanging Technique: universal, precise, economical and unique

- Increasing of the wheel house volume for ample wheel sizes and to accommodate snow chains
- Enhancement of driving stability and vehicle appearance by greater track width
- Optimisation of chassis stability in the wheel house region

Procedure

Benefits and advantages
<table>
<thead>
<tr>
<th>Flanging step 1</th>
<th>Flanging step 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>initial position</td>
<td>initial position</td>
</tr>
<tr>
<td>clamping position</td>
<td>end position</td>
</tr>
<tr>
<td>end position</td>
<td>end position</td>
</tr>
</tbody>
</table>

**Wheel house flange, double-layer**

**Wheel house flange, single-layer**
Manual handling

Handling options and adaptations

Handling by industrial robot

Flanging unit with suspension and spring for
- Pre-production
- Small- and medium-lot production
- Production back-up for large serial production

Flanging unit with floating mounting (rubber mounting), can also be expanded to include robot coupling for
- Medium-lot and large serial production

Flanging unit with floating mounting (rubber mounting combined with linear sets) for
- Medium-lot and large serial production

Handling by feeding unit with linear and/or swivelling module
Forming by flanging of two-layer, chiefly spot-weld sheet flanges for prototype and/or small-lot production using BDB (flanging frame) type devices.

Features

- manually guided, hydraulically driven units
- pulsating closing movement
- partial forming
- unit advance dictated by user
- forming tools specific for components

Connecting by flanging in devices for prototype and small-lot production with manually guided MVZ (mobile fixture pliers) type devices.

Features

- manually guided, hydraulically driven units
- pulsating closing movement
- partial forming
- unit advance dictated by user
- forming tools and fixtures specific for components
### Parameters

<table>
<thead>
<tr>
<th>Symbol</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>$t_1$</td>
<td>Sheet thickness, inner panel</td>
</tr>
<tr>
<td>$t_2$</td>
<td>Sheet thickness, outer panel</td>
</tr>
<tr>
<td>$L$</td>
<td>Flange length</td>
</tr>
<tr>
<td>$R_1$</td>
<td>Folding radius</td>
</tr>
<tr>
<td>$R_2$</td>
<td>Flanging radius</td>
</tr>
<tr>
<td>$\alpha_1$</td>
<td>Folding angle</td>
</tr>
<tr>
<td>$\alpha_2$</td>
<td>Flanging angle</td>
</tr>
<tr>
<td>$h$</td>
<td>Rope seam height</td>
</tr>
<tr>
<td>$B$</td>
<td>Flanging area</td>
</tr>
</tbody>
</table>

#### Services

- Competent advice
- Preparation of flanging analyses on the basis of existing chassis data
  - defining of requisite flanging areas and angles
  - initial dimensioning for requisite flanging devices
  - collision analyses, establishment of advance/feed movements
- On-site service
  - commissioning support and training
- After-sales service

As a partner of vehicle engineering we can offer you:
Hydraulic drive units

Eckold offers you the optimal hydraulic drive units for all of the BDG, BDB and MVZ type flanging devices described previously. Our product program includes portable, mobile and stationary hydraulic drive units for the most varying applications.

Examples and applications

Manual handling

Handling by feeding unit with linear and/or swivelling module

Handling by industrial robot