From Planning to Maintenance
All-in-One Service
From Production to Maintenance – We are Familiar with Every Detail

The reliability and availability of turnouts and crossings are an essential element for the profitability of tracks.

As an experienced “manufacturer of turnouts” and “system provider”, voestalpine BWG is constantly striving to offer our customers innovative concepts around their turnout needs. Our concepts are subjected to a modular system, exactly tailored to the customer’s specific needs. We look after the turnout along its entire life cycle. In this respect we are focusing on the integral maintenance of the turnout, including the component of signaling and the scheduled maintenance of rails. Therefore voestalpine BWG has expanded its expertise in the area of service to include the mechanical grinding of turnouts.

Our committed and highly qualified personnel provides services for all your turnout needs – from engineering consultancy and monitoring of installation to maintenance.
Who is More Familiar with the Turnout than the Company that Manufactured it Itself?

All of our employees possess many years of experience in the production of turnouts and every one of them has passed through each relevant center of expertise within our organization. There is not a single component within our portfolio that each of our employees has not assembled individually.

The knowledge acquired throughout 100 years of turnout development provides the foundational know-how for our service. We maintain practically oriented contact with our customers through seminars and training sessions at our company’s own Communication Center Brandenburg (CCB).
In addition to a lively exchange with our customers, we are also constantly passing on the knowledge gained from there within our own organization. Only the one who is actively implementing the experience gained from practical applications, can be in the position to offer innovative applications and solutions that are in line with actual requirements.
For All Around Your Turnout Needs – We Will Support You Wherever needed

Our services at a glance

**Inspection**
- Assessment of existing turnout infrastructure (geometric and visual inspections)
- Documentation of current condition
- Comparison with desired condition
- Development of maintenance concepts

**Preventive maintenance**
- Servicing of turnout systems, including technical signaling components
- Adjustment of hydraulic hold-down devices

**Corrective maintenance**
- Grinding and welding repairs
- Component and major part replacement
- Adjustment of locking devices and signaling systems
- Tongue alignment
- Rail gauge, flangeway gap and guiding distance corrections
- Mechanical turnout grinding
- Integral maintenance by PRINS TEAM

**Turnout grinding**
- Grinding machines especially designed for turnout grinding
- Cleaning machine for tracks and turnouts
Installation Services

- Pre-assembling/assembling services for signaling components such as locking devices and transmission elements
- Start-up and start-up assistance
- Return-mode adjustments
- Shut-down of turnouts in accordance with Iow 5492011

Technical Engineering Services

- Wheel-rail analysis
- Track-guidance analysis/cross-dimensions tables
- Supervision of logistics, installation, and – if required – adjustment as well as start-up and quality assurance
- Start-up check
- Development of turnout maintenance concepts

Training/Continuing Education

- Basic training sessions
- Product- and expertise-related training sessions
- In-house training sessions and training sessions at our company’s own CCB Communications Center
- Education and Training
- Symposia

Technical Engineering Services

- Wheel-rail analysis
- Track-guidance analysis/cross-dimensions tables
- Supervision of logistics, installation, and – if required – adjustment as well as start-up and quality assurance
- Start-up check
- Development of turnout maintenance concepts

Crisis Management

- 24 hour on-call duty service
- Rapid access to spare parts
- Rapid availability of qualified personnel due to local service stations
voestalpine BWG – Our Areas of Expertise
For All Your Turnout Needs – Comprehensive Services Across the Globe

DB Netz AG
Reconditioning of 132 turnouts for the extension of the high-speed-line Hamburg-Berlin, Germany
Our scope of supply:
• Conversion of 40 turnouts from rigid- to elastic ribbed base plate support ERL30
• Monitoring of installation and replacement of big segments
• Installation of locking devices
• Installation of transmission/connecting parts

DB Netz AG
For ESW Angermuende pre-assembling of 21 turnouts in terms of signaling components
Our scope of supply:
• Supply and installation of all locking-devices and transmission parts
• Installation of all supports for point machines
• Supply and installation of reversing devices and signaling components
• Installation of derrailer
Frame contract
• Turnout mechanic works production execution Dresden
Deutsche Bahn AG
Frame contract
•  Delivery of cover plate for locking devices
•  Supply of spare parts for maintenance of locking devices and rail expansion joints for high speed turnouts for 2014

Light Rail
Leonrodplatz in Munich
Double-tracked quadrangles
Our scope of supply:
•  Monitoring of installation and quality assurance
•  Technical support for customer and general contractor
•  Assistance for installation and assembling
•  Final inspection and documentation

International
Light rail traffic projects in Reims, Dijon, Besancon & Grenoble (France), Shenyang (China), Constantine (Algier), Gold Coast (Australia)
Our scope of supply:
•  Monitoring of installation and quality assurance
•  Technical support for customer and general contractor
•  Assistance for installation and assembling
•  Final inspection and documentation
•  Training sessions
•  Maintenance of turnouts and crossings in co-operation with our subsidiary LASA Schienen-technik GmbH

DB Bahnbau Gruppe GmbH
Frame contract
•  Maintenance of locking devices and rail expansion joints as well as grinding of rail expansion joints, built by BWG

Light Rail
Staedtische Verkehrsbetriebe Zwickau GmbH
Frame contract for services
•  Assessment of existing turnout infrastructure (geometric and visual inspections)
•  Documentation
•  Corrective maintenance
•  Reconditioning by welding and grinding

International
High Speed Project Beijing-Tianjin, PR China
Our scope of supply:
•  Supervision of installation, measuring and welding of all turnouts
•  Complete fine-tuning of the turnouts, adjustment of the locking devices and functional check
•  Start-up of the turnout systems
•  Consultancy for installation process
•  Training sessions

Rail systems for industry and harbor operations
HPA- Hamburg Port Authority
Frame contract for preventive and corrective maintenance
•  Assessment of existing turnout infrastructure (Inspection and survey)
•  Preventive maintenance
•  Reconditioning by welding and grinding
•  Alignment of tongues
•  Day-to-day track maintenance
Grinding Turnouts – Reducing Costs
Mechanical Turnout-Grinding as Part of Maintenance

For more than 50 years now technical experts have been in agreement that machining the rails can provide broad benefits by considerably lengthening the life cycle and work-through cycles of the tracks, noticeably improving the running smoothness of the trains, and greatly curbing travel noise. In short: **Grinding has been proven to reduce Life Cycle Costs**

**Our Services include**
- Mechanical grinding of new rails
- Evening out of travel surfaces
- Elimination/prevention of rolling contact fatigue
- Elimination of gauge narrowing/burring
- Restoration of the optimal cross-section
- Mechanical creation of special profiles (asymmetrical profiles)

**Our Technology**
- Machines especially designed for grinding turnouts
- Elimination of unevenness on running face
- Not necessary to remove any track switching equipment
- Each grinding head can be controlled individually
- Grinding angle between 45° (outside) and 75° (inside)
- Cup and dish wheels in use
- Dust suction system
Our Machines

- 4 machines, model: RGH 20 c, manufactured by Harsco Rail

- 1 machine, model: SCG 23, manufactured by Pandrol Jackson

- 1 track and turnout vacuum for the removal of all grinding residue; specially designed for slab track systems

Reference Projects

<table>
<thead>
<tr>
<th>Client</th>
<th>Country</th>
<th>Year/s</th>
</tr>
</thead>
<tbody>
<tr>
<td>DB Netz AG</td>
<td>Germany</td>
<td>1998–2012</td>
</tr>
<tr>
<td>ProRail</td>
<td>The Netherlands</td>
<td>2006</td>
</tr>
<tr>
<td>CFL</td>
<td>Luxembourg</td>
<td>2008–2010</td>
</tr>
<tr>
<td>TCDD</td>
<td>Turkey</td>
<td>2008</td>
</tr>
<tr>
<td>VÚŽ</td>
<td>Czech Republic</td>
<td>2012</td>
</tr>
<tr>
<td>MÁV</td>
<td>Hungary</td>
<td>2012</td>
</tr>
<tr>
<td>Germany</td>
<td>Brandenburg</td>
<td>Dresden</td>
</tr>
<tr>
<td>---------</td>
<td>-------------</td>
<td>---------</td>
</tr>
<tr>
<td>Butzbach&lt;br&gt;Alte Wetzlarer Straße 55&lt;br&gt;35510 Butzbach&lt;br&gt;Germany&lt;br&gt;T. +49/6033/892-0&lt;br&gt;F. +49/6033/892-113&lt;br&gt;<a href="mailto:info.bwg@voestalpine.com">info.bwg@voestalpine.com</a></td>
<td>Brandenburger Straße 97&lt;br&gt;14774 Brandenburg&lt;br&gt;Germany&lt;br&gt;T. +49/3381/810-0&lt;br&gt;F. +49/3381/810-107&lt;br&gt;<a href="mailto:info.bwg@voestalpine.com">info.bwg@voestalpine.com</a></td>
<td>Emerich-Ambros-Ufer 52&lt;br&gt;01159 Dresden&lt;br&gt;Germany&lt;br&gt;T. +49/351/461295-0&lt;br&gt;F. +49/351/461295-9&lt;br&gt;<a href="mailto:info.bwg@voestalpine.com">info.bwg@voestalpine.com</a></td>
</tr>
</tbody>
</table>

| Asia | voestalpine BWG Ltd.<br>Room 807, Tower 7<br>Central Park, No. 6, Chaowai Street<br>Chaoyang District, Beijing 100020<br>P.R. China<br>T. +86/10/6533-6071<br>F. +86/10/6533-6486<br>info.bwg-china@voestalpine.com | voestalpine BWG GmbH<br>Representative Office Korea<br>Gwangung Bldg., 4F<br>20, Bangbaeigungang-ro, Seocho-gu<br>Seoul, Korea<br>137-843<br>T. +82/2634/250-35<br>F. +82/2634/105-2<br>info.bwg-korea@voestalpine.com | voestalpine BWG GmbH<br>Taiwan Branch<br>15F, No. 87, Sung Chiang Road<br>Taipei, 104 - Taiwan, R.O.C.<br>T. +886/2/25066792<br>F. +886/2/25063999<br>info.bwg-taiwan@voestalpine.com |

<table>
<thead>
<tr>
<th>Affiliated and related companies</th>
<th>Germany</th>
<th>The Netherlands</th>
<th>P.R. China</th>
</tr>
</thead>
<tbody>
<tr>
<td>voestalpine BWG GmbH&lt;br&gt;Alte Wetzlarer Straße 55&lt;br&gt;35510 Butzbach&lt;br&gt;Germany&lt;br&gt;T. +49/6033/892-0&lt;br&gt;F. +49/6033/892-113&lt;br&gt;www.voestalpine.com/bwg</td>
<td>voestalpine WBN BV&lt;br&gt;Nieuwe Crailoseweg 8&lt;br&gt;Postbus 205&lt;br&gt;1200 AE Hilversum&lt;br&gt;T. +31/35/7000-100&lt;br&gt;F. +31/35/7000-150&lt;br&gt;<a href="mailto:info.wbn@voestalpine.com">info.wbn@voestalpine.com</a>&lt;br&gt;www.voestalpine.com/wbn</td>
<td>voestalpine WBN BV&lt;br&gt;Nieuwe Crailoseweg 8&lt;br&gt;Postbus 205&lt;br&gt;1200 AE Hilversum&lt;br&gt;T. +31/35/7000-100&lt;br&gt;F. +31/35/7000-150&lt;br&gt;<a href="mailto:info.wbn@voestalpine.com">info.wbn@voestalpine.com</a>&lt;br&gt;www.voestalpine.com/wbn</td>
<td>CNTT Chinese New Turnout Technology Co. Ltd.&lt;br&gt;No.29-1 Nanhai Road&lt;br&gt;Shanhaiguan, Qinhuangdao Hebei&lt;br&gt;P.R. China&lt;br&gt;Post code 066205&lt;br&gt;T. +86/335/5171790&lt;br&gt;F. +86/335/5168169&lt;br&gt;<a href="mailto:lifen.yin@cntt-jv.com">lifen.yin@cntt-jv.com</a></td>
</tr>
</tbody>
</table>

© Copyright 2014 voestalpine BWG GmbH | Concept & Creation: www.189east.com