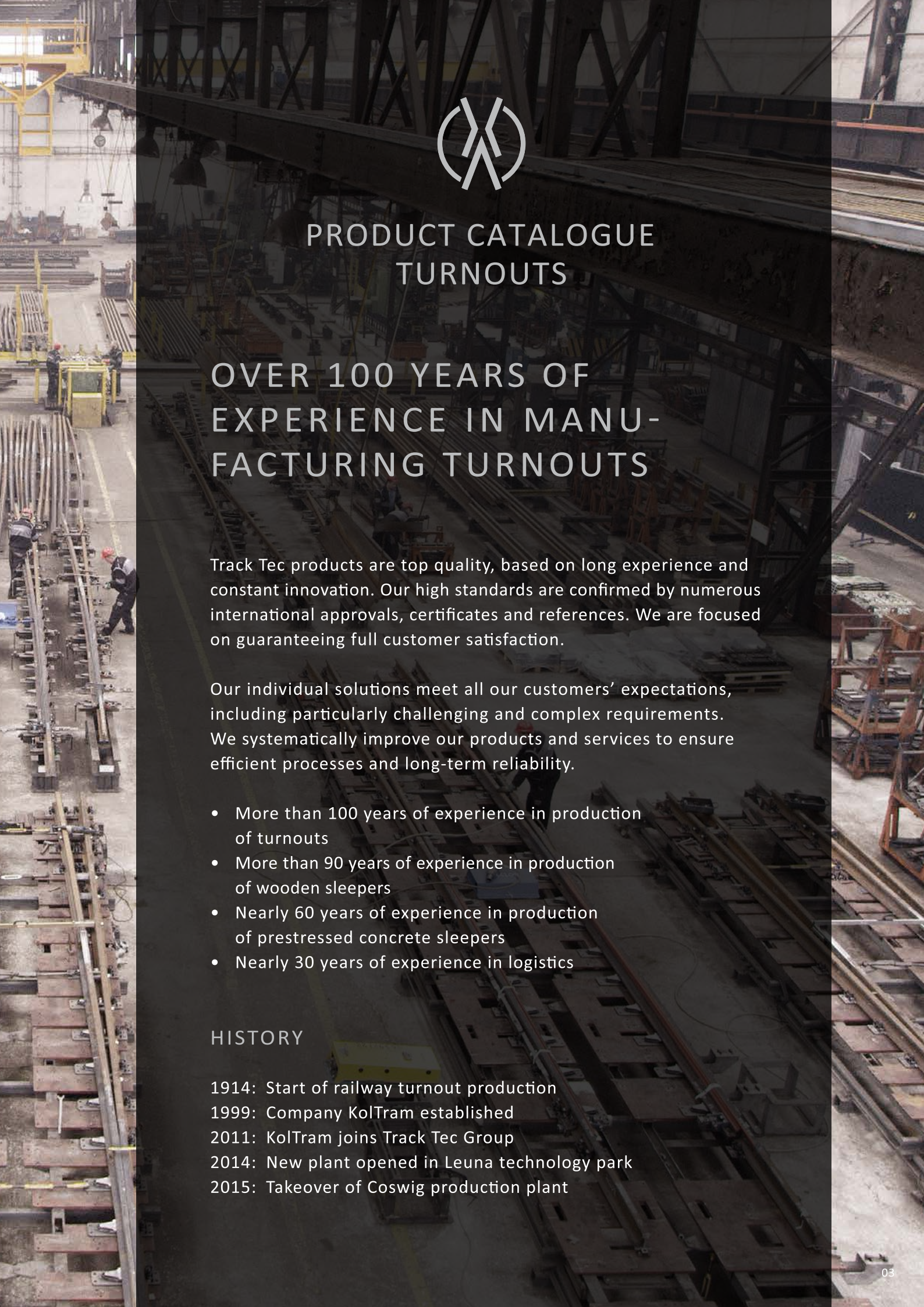




# PRODUCT CATALOGUE TURNOUTS

## OVER 100 YEARS OF EXPERIENCE IN MANU-FACTURING TURNOUTS

Track Tec products are top quality, based on long experience and constant innovation. Our high standards are confirmed by numerous international approvals, certificates and references. We are focused on guaranteeing full customer satisfaction.

Our individual solutions meet all our customers' expectations, including particularly challenging and complex requirements. We systematically improve our products and services to ensure efficient processes and long-term reliability.

- More than 100 years of experience in production of turnouts
- More than 90 years of experience in production of wooden sleepers
- Nearly 60 years of experience in production of prestressed concrete sleepers
- Nearly 30 years of experience in logistics

### HISTORY

1914: Start of railway turnout production
1999: Company KolTram established
2011: KolTram joins Track Tec Group
2014: New plant opened in Leuna technology park
2015: Takeover of Coswig production plant

# TURNOUTS – DESIGN, MANUFACTURE, DELIVERY AND SERVICE

Drawing on over 100 years of experience, we produce railway and tram turnouts meeting customers' specific requirements. We also make bearers for various speeds, radii, geometries and turnouts. We use the very latest manufacturing technologies to comply with quality standards. Track Tec Group provides design expertise and services in addition to manufacturing and delivering products.

## DESIGN STAGE:

- Qualified engineering team
- Individual approach
- Adaptation of product to meet the requirements of the most demanding customers
- Use of extensive documentation
- Use of modern equipment and software (with CAD/CAM support)

## MANUFACTURING STAGE:

- Production facilities
- Specialized machines (for heat treatment and electric flash butt welding)
- Modern NC and CNC milling machines
- Qualified personnel
- Many years of production experience

## DELIVERY STAGE:

- Delivery of individual parts and components by road and rail
- Turnouts preassembled in plant (on bearers)
- Delivery of turnout blocks
- Worldwide delivery by air

## INNOVATIVE TURNOUT INSTALLATION TRAIN

Track Tec provides comprehensive logistical support for the transport and installation of preassembled turnout blocks, using its innovative turnout installation train, comprising wagons fitted with specialized loading equipment, a crane and special wagons, e.g. ballast wagons. Construction work is performed without disassembly of overhead lines.

We deliver everything you need for your track project: new turnouts and equipment or a low-cost alternative in the form of reconditioned elements in various standards. All turnouts are made of the highest quality materials. Depending on customer requirements, turnouts are produced for normal, broad or narrow gauge railways with all rail profiles (both train and tram). Our customer service also provides delivery of turnout spare parts.

## SERVICE ACTIVITIES:

- Inspection during operation
- Diagnostic and maintenance tests
- Provision of thermite welds
- Installation of turnouts on tracks
- Ongoing maintenance of turnouts during operation

## CERTIFICATION

Our products comply with European standards. We also hold the ISO 9001 and ISO 14001 certificates for the design, manufacture and delivery of railway superstructure, especially for turnouts/crossovers and cast iron products.









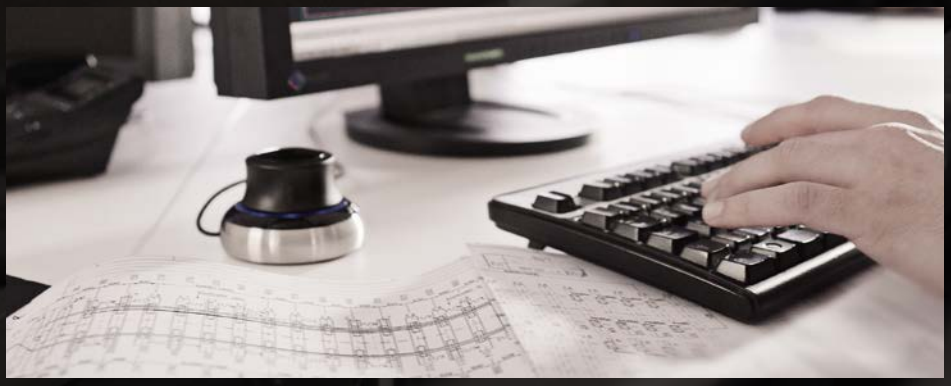
# NEW OR USED TURNOUTS – ALWAYS OF THE HIGHEST QUALITY

All Track Tec Group plants cooperate closely when producing new turnouts, in order to maximize customer benefit and optimize costs. Our products are thus reasonably priced and of consistently high quality.

Used turnouts are fully disassembled, cleaned and tested with ultrasound to identify any defects. Each usable element then undergoes welding and grinding before the turnout is installed on new bearers. We always use new bolts and other securing components.









# ENGINEERING SERVICES. HIGH QUALITY, PRECISE, COST-EFFECTIVE

Our customers' local and functional requirements for specific turnout systems usually vary very considerably.

To determine the required turnout geometry, we thus make all measurements on site as basis for the design documentation for manufacturing a precisely fitting element. At the customer's request, we also take other route parameters into account for line planning or rail division and bending plans. This involves studying different variants to find the most cost-effective solution for the customer.

## WE PRODUCE OUR TRACK SYSTEMS IN COMPLIANCE WITH STRICT QUALITY STANDARDS.

The customer thus always receives a new or used product in top quality. After installation and commissioning of the items, we obviously perform maintenance or repair work.

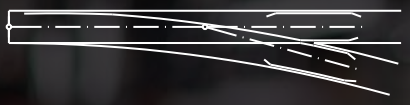
# TRACK TEC GROUP‘S PRODUCT RANGE IN STEEL SEGMENT

- Standard geometry turnouts
- Turnouts produced to meet individual customer‘s requirements:
  1. Vignole rail turnouts (including standard, single and double slip or curved turnouts, crossovers)
  2. Tram turnouts with grooved rails (custom designed for specific nodes)
  3. High-speed turnouts (with movable point frog)
  4. Turnouts for heavy haul application
  5. Turnout components
  6. Preassembly on bearers in plant
  7. Delivery of turnout blocks
  8. Tongue rails with transition forging to standard rails
  9. Other railway superstructure elements:
     - Turnout locking devices
     - Spring setting devices
     - Hollow steel sleepers
     - Guard rails
     - Manual setting mechanisms
     - Expansion devices
     - Steel components of buffer stops
     - Transition rails

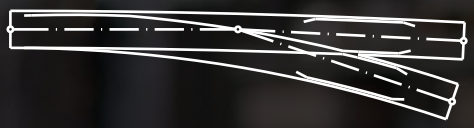
# COMPLETE VIGNOLE RAIL TURNOUTS

| Standard gauge (1435 mm) | | Narrow gauge (1000 mm) and other | | Broad gauge (1520 mm) and other |
|---|---|---|---|---|
| 70-1:5 | 190-1:9 | 50-1:4 | 140-1:7 | 190-1:9 |
| 100-1:5 | 300-1:9 | 60-1:6 | 140-1:9 | 300-1:9 |
| 100-1:6 | 500-1:12 | 100-1:6 | 190-1:8 | 300-1:11 |
| 140-1:6 | 760-1:14 | 100-1:7 | Other* | Other* |
| 140-1:7 | 1200-1:18,5 | | | |
| 151-1:7 | 2500-1:26,5 | | | |
| 190-1:7 | Other* | | | |

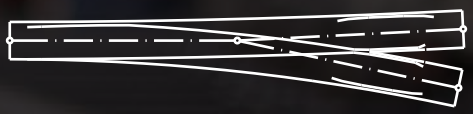
Standard turnout



Curved turnout*



Equilateral turnout*



Symmetrical equilateral turnout*



Two-sided double turnout*



One-sided double turnout*



Diamond crossing*/ Standard gauge (1435 mm)
Broad gauge (1520 mm) and others



Single slip turnout*



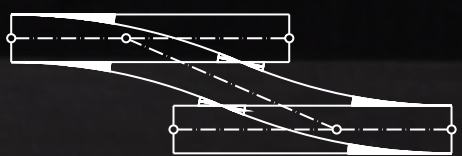
Double slip turnout*



Dual gauge turnout*



Single crossover*



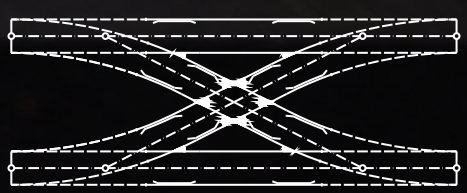
Double crossover*



Anfractuous track*



Inner components*



* acc. to geometry agreed with customer

# COMPLETE GROOVED RAIL TURNOUTS

## Standard gauge (1435 mm) | Narrow gauge (1000 mm) and other

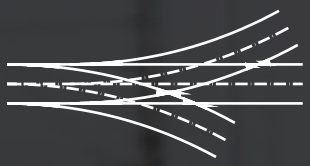
**Single one-track turnout:**

| | | | |
|---|---|---|---|
| **20** | **100** | **Rz 25-1:4** | **Rz 100-1:7** |
| **25** | **150** | **Rz 50-1:6** | **Rz 150-1:9** |
| **50** | **Other*** | | |

### Single one-track turnout



### Two-sided turnout*



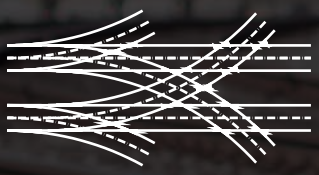
### Two-track partial turnout*



### Standard two-track turnout*



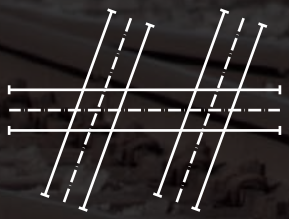
### Double two-track turnout*



### Diamond crossing*



### Double diamond crossing*

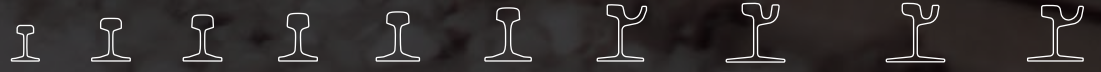


### Quadruple diamond crossing*



# VARIOUS RAIL PROFILES

## Vignole rails and grooved rails



S 24 | 41 E1 (S 41) | 49 E1 (S 49) | 54 E3 (S 54) | 54 E1 (UIC 54) | 60 E1 (UIC 60) | 57 Ri1 (Ri Ph 37) | 60 Ri1 (Ri60-10, Ri60) | 60 Ri2 (Ri60-13, Ri60N) | 67 Ri1 (Ri Ph 37a)

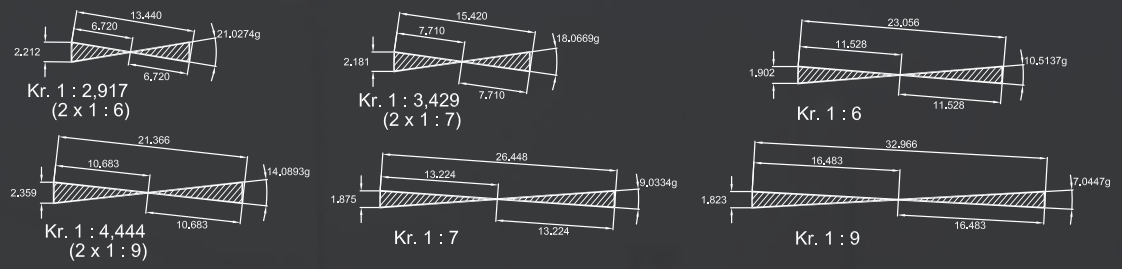
## Cross sections



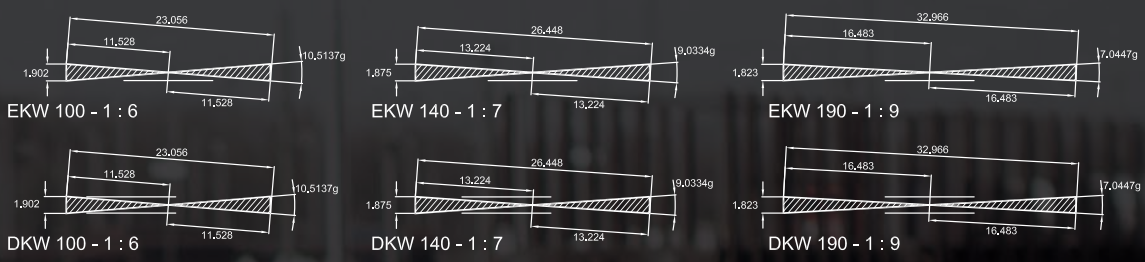
33 C1 (UIC 33) | 310 C1 (BL 180/260) | 105 C1 (D 180/105) | 48 C1 (Ri 1-54) | 49 E1F1 (Vo 1-49) | 60 E1F1 (Vo 1-60) | 60 E1A1 (Zu 1-60) | 49 E1A1 (Zu 2-49) | 54 E1A2 (Zu 1-54) | 49E1A3 (I49)

* acc. to geometry agreed with customer

## Geometry of normal gauge junctions

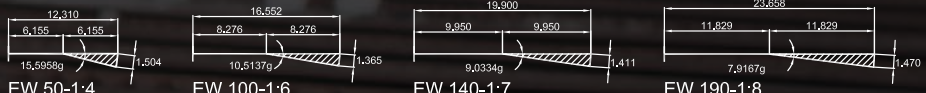



## Geometry of single and double slip turnouts

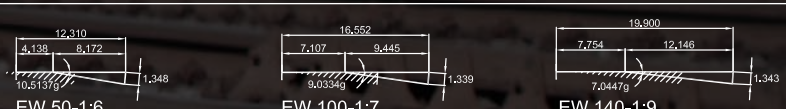



## Geometry of narrow gauge turnouts (gauge 1000) with Vignole or grooved rails

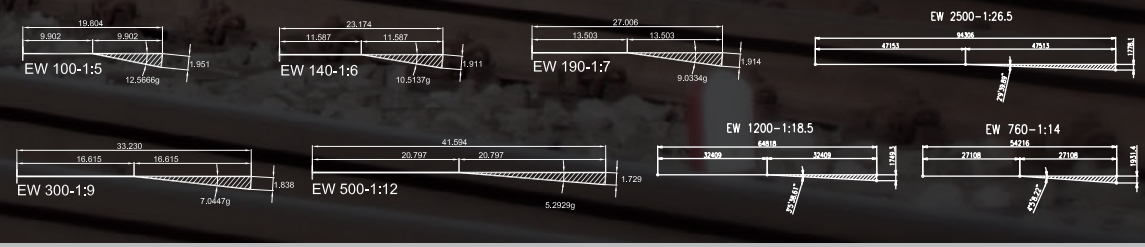
**With continuous curve**



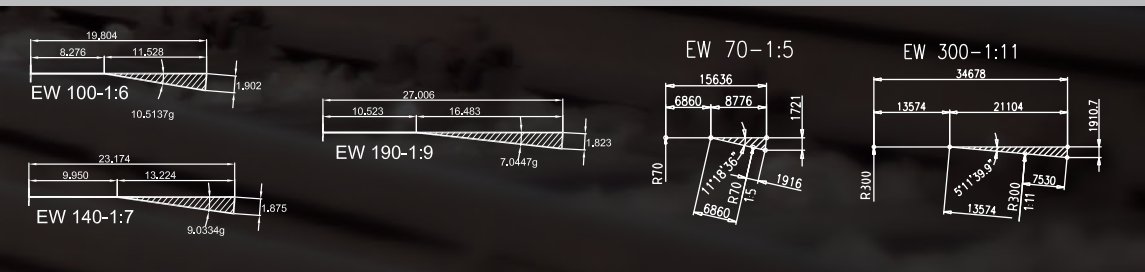

**Curve ends before frog**



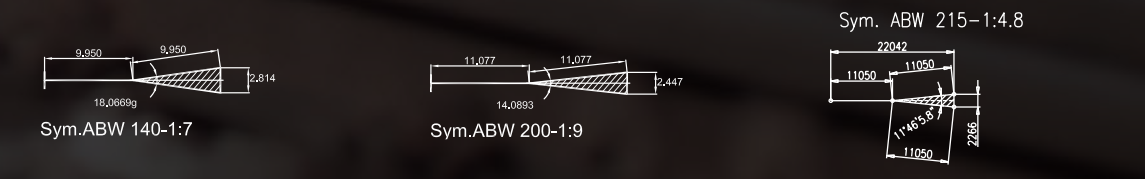

## Standard turnouts with continuous curve




## Standard turnouts with straight frog




## Symmetrical equilateral turnouts




The above drawings represent just a small selection of standard geometries. Our range also includes other turnouts with overlapping switches or configurations specific for a given country, as well as all types of customized design.



## TURNOUT COMPONENTS

Sets of switches, half sets of switches, frogs, guard rail equipment, turnout locking devices, spring setting devices, guard rails, manual setting mechanisms.

Turnout components are produced in the configuration meeting customer‘s requirements.

## SWITCH POINT REFORGING

We provide a switch point reforging service based on our proprietary forging technology. Profiles produced in the forging process comply with European standards.

We also carry out full processing of the forged area on modern CNC machines. We fully monitor all relevant forging process parameters at every process stage. We also reforge high-tensile steel rail profiles.

The thermal treatment procedure performed after the forging process ensures that running surface hardness parameters remain unaltered.

We offer serial switch point reforging of standard parameters:

- 60E1A1/60E1
- 54E1A2/54E3 (54E4)
- 60E1A6/60E1
- 49E1A3/49E1

If profiles other than those listed above have to be reforged, we will gladly determine whether the process is technologically feasible and if this is the case we will initiate the process for reforging a new switch point profile type.





# TRACK TEC GROUP

Track Tec Group is a leading international provider of systemic solutions for rail infrastructure. Apart from products used for construction of track superstructure, we offer a wide range of services related to construction projects for railways. The Group possesses several manufacturing plants with long tradition and an established position on the market. We guarantee superior product and service quality. We commit ourselves to supporting our customers in reaching their goals, accompanying them as a competent partner from design through construction, until the maintenance phase.

A strong manufacturing base of Track Tec in Europe (eight plants – in Poland, Germany and Serbia), is underpinned by over 100 years expertise. References are reflected in contracts to around 30 countries worldwide.

## REFERENCES

Austria | Belarus | Canada | Croatia | Czech Republic | Denmark | Estonia | Germany | Hungary | India | Indonesia | Latvia | Lithuania | Malaysia | Montenegro | Norway | Pakistan | Poland | Romania | Russia | Saudi Arabia | Serbia | Slovakia | Sweden | Switzerland | The Netherlands | Turkey | United Kingdom | USA |



tracktec

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