Berco Product Line
The Widest Choice

The n. 1 in Undercarriage
5,000,000 Track Shoes
1,100,000 Rollers
100,000 Track Chains
320,000 Idlers and Sprockets
220,000 Tons of product
12,000 Containers of product

Berco Product Line
The Widest Choice

A Company of ThyssenKrupp BERCO S.p.A.
CONTENTS

MOVING YOUR BUSINESS AHEAD

THE WIDEST CHOICE

 MAKING A SUPERIOR PRODUCT

STATE OF THE ART PRODUCTION

BMP
Berco Mining Products

BMR
Berco Medium Range

BMU
Berco Mini Undercarriage

BTS
Berco Track Systems

BSD
Berco Special Devices

YOUR BEST UNDERCARRIAGE VALUE
Since 1920 Berco has offered an innovative, reliable and economical solution to any undercarriage need. Whether for the original equipment manufacturers (OEM) or the aftermarket, for a special machine or a mini-excavator, for a bulldozer or a mining excavator, Berco can offer you the right answer to your specific requirement.

Superior engineering, innovative technology, comprehensive know how and state-of-the-art manufacturing guarantee the total quality of the products and services offered to you.

“Original Equipment Quality, Aftermarket Value”

THE COMPETENT PARTNER YOU CAN RELY ON
Custom made solutions and project engineering support is available upon request. Our team of engineers can help you choose or design the most effective and efficient solution to your specific undercarriage need.

They can help you reduce development and engineering time, tooling expenses and facility costs, while adding value to your business.

“Berco, The choice of the leading OEMs”
THE WIDEST CHOICE
OF UNDERCARRIAGE COMPONENTS
AND SYSTEMS FOR TRACK TYPE MACHINES

TRACK SHOES
• More than 66 different profiles
• Hot rolled, cast and hot forged shoes
• More than 5,000 configurations
• Variable width, mud holes, clipped corners, chamfered holes

IDLERS
• Cast, forged and fabricated types
• More than 500 configurations
• Low temperature (-50°C) version available

ROLLERS
• Single flange, double flange and inner flange rollers
• More than 1,000 configurations
• Low temperature (-50°C) version available

TRACK CHAINS
• Dry, sealed & greased, sealed & lubricated chains
• Heavy Duty version
• More than 11,000 configurations
• Suitable for XR, XL, LGP and TSK undercarriages

SPROCKETS & SEGMENTS
• Weld-on rim, bolt-on rim, full hub and segmented type
• 3, 4, 5 and 6 teeth segments
• More than 130 segment configurations
• More than 1,100 sprocket configurations

SPECIAL APPLICATIONS
• Undercarriage for special applications: large conveyor, pipeline handling, pavers, milling machines, logging equipment, directional drills, mining equipment, etc.
ADDING VALUE TO YOUR BUSINESS

State-of-the-art 3D modeling, Finite Element Analysis (FEM) and Rapid Prototyping enables to design, optimize and evaluate a component before it is built.

Artificial Intelligence techniques are currently being developed to automatically inspect 100% of components. Reliability Test on components are carried out to determine life and performance in a variety of field applications.

Berco Metallurgy Laboratory employs advanced machines such as an electron microscope with microanalysis, a spectrophotometer, tribometers for wear tests, MTS presses for static and fatigue tests (also at extreme temperatures -70°C ÷ 250°C) on materials and components.

Huge efforts are also devoted to the development of New Materials and improvement of the Heat Treating Processes, to guarantee longer product life and superior products.

Photo-elasticity and Strain Gauge techniques are commonly used for stress and fatigue analysis on individual and assembled components.

Berco adds value not only to the products but also to Your Business.
The entire production process is fully automated and computer controlled via Computer Manufacturing Technology systems. This guarantees a highly reliable process and constant quality of the products.

**THE RIGHT PRODUCT AT THE RIGHT TIME**

A vast variety of raw materials and flexible manufacturing give the competitive advantage of short lead times while matching your specific need. That’s what we also call Customer Satisfaction.

**HEAT TREATED TO TREAT YOU EVEN BETTER**

Quality materials and state-of-the-art manufacturing are not enough to guarantee the quality of the finished products. That’s why the heat treating processes are carried out making sure that all process parameters (temperature gradients, time, quenching temperature, etc.) are constantly monitored online. Hardening and tempering upgrade mechanical properties for superior wear resistance, stress relieving guarantees perfect geometry and excellent resistance for longer product life.
Berco Mining Products offers an efficient, reliable and economical range of solutions for mining operations, catering for the undercarriage needs of open pit mining, quarrying or earthmoving in large-scale land reclamation.

Superior engineering and technology, comprehensive know-how and state-of-the-art manufacturing ensure the total quality of the products and services offered. Our team of engineers is available to help you choose or design the most effective and efficient solution to your specific undercarriage needs.

THE WIDEST CHOICE

- A complete line of undercarriage components for track-type machine classes ranging from 50 to 400 ton and 215.9-350 mm (8 1/2”-13.78”) pitch
- Dry, greased, sealed & lubricated chain versions.
- Arctic (-50°C) version and track chains with lifetime seal groups upon request
- Forged shoes for heavy duty applications
- Track chains for special applications: large conveyor systems, pipeline handling, etc.

THE WIDEST CHOICE OF UNDERCARRIAGE FOR EXCAVATORS

- Components for: CAT345, 350, 375, 390, 5080; Demag H65, H85, H95, H121; Case CX800; Hitachi EX550, EX600, EX700, EX750, EX800, EX1000, EX1100, EX1800, EX2500; Komatsu PC650, PC710, PC750, PC800, PC1100, PC1800, PC3000, PC4000; Liebherr R954, R964, R974, R984, R984; Link Belt LS7400; Terex O&K RH30, RH40, RH60, RH90, RH120C; Poclain 300, 400, 600, 1000; Sumitomo SH800 and other machines
- Chain pitch from 215.9 to 350 mm (8 1/2”-13.78”)

FORGED SHOES

Forged shoes for extreme applications, where greatest mechanical and wear resistance properties are needed.

RH 120C

- Greased unsealed track chain
- Chain pitch 350 mm (13.78”)
- Double grouser forged shoe, width 800 mm (31”)
- Track roller assembly, single flange with oil fill plug on collars and locking pins, reinforced shaft dimensions

CLASS 8K - D155
Pitch: 228.6 mm - 9"

CLASS 9N/R - D275
Pitch: 240 mm - 9.44"

CLASS 10N/R
Pitch: 260 mm - 10 1/4"

CLASS 375
Pitch: 280 mm - 11"
TRACK CHAINS WITH BPR
• For D9L, D9N, D9R, D10N, D10R, D11N, D11R, D275, D375, D455 and D475 machines
• Lubricated track chains with snap rings in all joints (BPR)
• BPR - Berco Pin Retention - improves operating life of components. The snap rings on the pin ends provide a perfect sealability of the track chains. Side loads can be partially supported by this device
• D10 and D11 lubricated track chains with new seal
  • Oversized pin: a new design for D11 track chain also available

THE WIDEST CHOICE OF UNDERCARRIAGE FOR DOZERS
• Components for: CAT D6, D9, D10, D11 classes; Dresser TD25, TD40; Fiatalls FD30, FD40, FD50; Deere 1050C; Komatsu D135, D155, D275, D355, D375, D455, D475; Liebherr PR751, PR752 and other machines
• Chain pitch from 215.9 to 317.5 mm (8 1/2" - 12 1/2")
• Track links are forged, quenched and tempered, rail surface induction hardened to increase the wear resistance (HRC>45)
• Extreme service single grouser shoes available

LIEBHERR R984C (BMP 280)
• Track group, greased, sealed, chain pitch 280 mm (11")
• Double grouser shoes, open center, clipped corner, shoe width 750 mm (29 1/2")
• Track roller assembly, single flange
• Bolt-on 12 teeth sprocket rim, diameter 1131 mm (44 1/2")

CLASS D11N/R - D475
Pitch 317.5 mm - 12 1/2"

300 TON CLASS EXCAVATOR
Pitch 350 mm - 13.78"
The Berco Medium Range offers an innovative, reliable and economical set of solutions to your undercarriage needs, catering for Original Equipment Manufacturers (OEMs), the Aftermarket, bulldozers, excavators, old machines or special designs and providing you with the right answer to your specific requirements.

**THE WIDEST CHOICE**
- A complete line of undercarriage components for track-type machine classes ranging from 7 to 50 ton and 140-228.6 mm (5.51”-9”) chain pitch
- Dry, greased, sealed or lubricated chain versions, heavy duty chains, more than 11,000 configurations
- Any configuration available with single, double, triple grousers
- Cast, forged or fabricated idler types, more than 500 configurations
- Single flange, double flange or inner flange rollers, more than 1,500 configurations
- More than 600 configurations of sprockets and segments
- Low and high temperature versions for extreme applications
- Undercarriage for special applications: conveyor, pipeline handling, milling machines, forest machines, etc...

**TRACK SHOES**
- Cast steel shoes for special applications: swamp type (1), flat type (2), bent ends shoes, polyurethane track shoes (3) and more
- Through hardened and stress relieved to guarantee excellent wear, high strength and resistance to bending and breakage, resulting in longer life

**SPROCKETS AND SEGMENTS**
- Sprockets for 7-50 ton class excavators and segments for D3-D8 class dozers
- Nine chain pitch versions from 140 to 228.6 mm (5.51”-9”)
- Single shot induction hardened on entire tooth profile or with differential quenching for excellent resistance to wear and fatigue
- Through hardened segments for high surface hardness (HRC>50) and tough care (HRC 45)

**IDLERS**
- Fabricated idlers with hot rolled rim for 7-50 ton class excavators and for D3-D8 class dozers
  - Induction hardened rail surface for excellent resistance to wear and fatigue
  - Heavier components for improved stability
  - Forged idlers for heavy duty applications

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Undercarriage for sugarcane harvester

**CLASS D3 - D4 B/C**
Pitch: 155.5 mm - 6½"

**CLASS D5M**
Pitch: 171.5 mm - 6½"

**CLASS D6M**
Pitch: 190 mm - 7½"
BERCO HEAVY DUTY TRACK CHAINS FOR D4-D7 CLASS MACHINES

Heavy duty, sealed & lubricated track chains have been specifically designed for increased pin & bushing retention. Track link incorporates greater pin-to-link and bushing-to-link contact areas while additional link wear material increases component life.

ROBUSTUS™, THE NEW ROTATING BUSHING TRACK SYSTEM

In the new system ROBUSTUS™ the bushing rotates when in contact with the sprocket, reducing the bushing and sprocket friction and wear and thus enabling longer life. As a consequence, it is not necessary to turn bushings and pins and replace sprocket segments during the whole life of the undercarriage.

• Wider track link rail, provides an extended running surface area
• Wear perfectly balanced through all components
• Berco Pin Retention
• Reinforced hardware to improve joint stability
• New concept of seal design

The new system is fully compatible with existing frames and standard components (D6H and D5H machines), older machines can be easily upgraded to increase their productivity and the life of the undercarriage. In the same way ROBUSTUS™ is forward-compatible with the new generation undercarriages equipped with parallel or twin links.

Berco field tests proved that the new system increases the track life of 35 percent, with a maximum of 6,000 hours of operation without maintenance; and this means cutting operating costs up to 25 percent.

BERCO HEAVY DUTY TRACK CHAINS FOR EXCAVATORS AND HEAVY DUTY APPLICATIONS

A completely new sealing system, consisting of a W shape polyurethane seal, especially designed to keep grease in joints and abrasive particles out of them.

• Internal pin & bushing wear reduction, with consequent life extension for 20% and more if compared with the standard sealed chains on the same application
• Reduction of sneaky tracks phenomenon, as result of more laterally stable chains, thus reducing wear of related parts, such as links, rollers, guides
• Improved rebuildability of the track chain
• Noise and maintenance costs reduction and less machine fuel consumption: improved travelling performances

CLASS D8N/R/T
Pitch: 215.9 mm - 8½"

CLASS D7N/R
Pitch: 215.9 mm - 8½"

CLASS D6R/T
Pitch: 203.2 mm - 8"
The Berco Mini Undercarriage program offers an innovative, reliable and economical set of mini undercarriage solutions, catering for mini excavators, horizontal drilling machines, small dozers or paving machines and providing you with the right answer to your specific requirements. Berco can supply a complete range of interchangeable components for rubber track belts or traditional steel track chains, guaranteeing the best possible value for money. Superior engineering, innovative technology (e.g. patented monoblock cast iron chains), comprehensive know-how and state-of-the-art manufacturing ensure the total quality of the products and services offered.

**THE WIDEST CHOICE**
- A complete line of undercarriage components for mini excavators, class machines ranging from 1 to 6 ton, Compact Track Loader (CTL) and other Compact Utilities
- Track chains with 90-140 mm pitch (3.54”-5.51”)
- Traditional steel chains with welded or bolt-on shoes
- Interchangeability from steel to rubber and vice versa
- Clamp-on rubber pads or rubberized shoes available

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**F25C - HEAVY DUTY TRACK CHAIN**

Specially designed for paving machines.

Sealed and greased track chain pitch 125 mm (4.92”), with w-shaped polyurethane seals, reinforced track link with strut for extremely heavy-duty applications and heavy vehicles, four different shoes:
- Flat, hot forged, 300 mm (11.81”)
- Rubberized (polyurethane) shoe, 300 mm
- Triple grouser shoe, 300 mm, open center upon request
- Single grouser shoe, 300 mm, open center upon request

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**CLASS T150**

Pitch: 90 mm - 3.54”

**CLASS T300**

Pitch: 101.6 mm - 4”
NEW STEEL UNDERCARRIAGE COMPONENTS

Recent evolutions in the market of Mini Excavators have led Berco to develop new undercarriage components for this range of machines. In particular, for 3 and 5-ton class machine components, it was possible to engineer new parts suitable to guarantee more resistance to wear and better performances. The first big advantage of chains, rollers, idlers consists in the raw material choice: instead of using austempered cast iron (ADI) it has been used a special steel alloy. As a consequence, the manufacturing process can benefit of both forging technique and faster and more efficient machining operations. Moreover, it is also possible to apply induction hardening to undercarriage parts more subject to wear thus increasing wear life and performances during operation.

UNDERCARRIAGE COMPONENTS FOR COMPACT TRACK LOADERS

Berco has developed a new solution based on a tracked undercarriage, available in both rubber tracks and traditional steel track chain. The range, which already featured two versions rubber tracks and traditional steel track chain. In cooperation with his partners Berco can offer:
- Track Frames
- Front Idlers
- Rear Idlers
- Track Rollers
- Sprocket & Final Drive
- Rubber Tracks

RUBBER TRACKS

The rubber track belts, strengthened with steel cables, have metal inserts, giving a maximum cruising speed of about 14 km/h. The rubber track solution provide good grip in a great variety of working conditions and ensure great mobility even in difficult situations like muddy soils, great slopes, etc. All this make the rubber tracked skid steer a much more versatile and productive machine compared to the traditional wheeled version.

STEEL TRACK CHAINS

The steel track chains, compared to the rubber tracks, provide a much higher wear resistance, higher grip (traction) and longer durability (up to 4 times higher). It is the recommended solution for heavy-duty operations, harsh environment (steel scrap yards, demolishing sites, etc.) and anytime it is not necessary to change often the worksite.
The Berco Complete Track Systems division is the ideal solution for all OEMs that now, more than ever, are expressing the need for complete 'turnkey' undercarriage systems.

Berco is able to supply complete track systems (undercarriage components, hydraulics, frames and gearboxes), finished and ready for installation on machines directly on manufacturers’ own assembly lines.

Berco has a vast range of products and, when requested for special applications, develops sets of components specifically tailored to customers’ needs.

All this makes Berco a supplier with a level of reliability and skill that clearly distinguishes them from other systems integrators, who merely find general components on the market and ‘put them together’.

Berco Complete Track Systems is able to supply safe, reliable systems, soundly based on the hallmark characteristics of the Berco brand: extensive know-how, flexible design responding rapidly and effectively to customers’ needs and, finally, the ability to support the customer at every stage, from design right through to installation.

Berco’s great competence and flexibility in engineering and production allow them to develop, design and supply undercarriage systems for a wide range of applications, such as pavers, rock boring machines, rice and sugar-cane combine harvesters, mini-excavators, etc.

The Berco Complete Track Systems engineering staff use the same calculation methods in the development of new machines in co-engineering projects with OEMs as in the design and verification of the welded structures in their own production systems. These methods include FEM analysis on frames, dynamic and vibrational analysis, CAD-3D design and construction drawings for production. All this guarantees high quality standards and the ability to satisfy even the most exacting and complex needs of the customer.

These solid engineering skills are combined with a remarkable production capability, now spread over five factories and characterised by leading edge technology and highly automated production lines.

This production capability guarantees the quality demanded by the customer, on schedule.

Finally, a continuously expanding network of branches, strategically located all over the world, is able to supply on a just-in-time basis and guarantee a speedy and efficient after-sales service.

**GENERIC UNDERCARRIAGE FRAMES**
- Standard layout dimensions are presented
- Custom-tailored design on request
- Sideframe or carbody supply
- Wide choice of gear-boxes and hydraulic motors is available
- Optional swing bearing plate and swivel joints are available

**MOBILE CRUSHING PLANT FRAMES**
- Standard layout dimensions are shown
- Custom-tailored design on request
- Wide choice of gear-boxes and hydraulic motors is available
MINI EXCAVATORS

- Mini excavators, utility-use or special application machines
- Standard layout dimensions are presented
- Metal track chains with 2-grousers, 3-grousers, rubber pads or rubber belt options
- Custom-tailored design on request
- Sideframe only or the whole carbody supply.
- Wide choice of gear-boxes and hydraulic motors is available
- Optional swing bearing plate and swivel joints are available

ROAD MILLING MACHINES

ASPHALT PAVERS

RICE COMBINE HARVESTER

DRILLING RIG FRAMES
The Berco Special Devices offers a complete solution to your undercarriage maintenance needs, with a range of specific operations including pin & bushing turning, roller lubrication, track shoe fastening or on-site machine servicing. Superior engineering and technology, comprehensive know-how and state-of-the-art manufacturing ensure the total quality of the equipment offered.

Berco offers turnkey solutions, custom-made design and supply of complete workshop and repair facilities, training and technical support.

THE WIDEST CHOICE
- PT350 stationary hydraulic press for the assembly/disassembly of medium and large-size track chains (e.g. Komatsu D575, O&K RH120C, Liebherr R994B and Caterpillar D11 track chains)
- PT250 stationary hydraulic press for medium and small-size chains
- PP50 and PP100 portable presses powerful and versatile tools for assembly and disassembly of track chains, sprockets, rollers, shafts, transmission components, etc...
- Complete line of tools for servicing various undercarriage sizes, available upon request
- DCL and DCL-D track control and lubricating devices for checking the vacuum in oil seals and injecting oil into lubricated chains, rollers and idlers (DCL-D model)
- CEM7000 electromechanical track shoe wrench for screwing and unscrewing the shoe bolts on tracked vehicle chains, both large and small. The electronic “torque-turn” control ensures highly reliable and consistent bolt torquing results. The high torque developed facilitates bolt removal even in the most difficult situations (e.g. rust)
- The ACC and ACC/S-SP track winder are designed for winding medium and small-size chains, whereas the ACC/S-SP is specifically designed for the larger sizes

BERCO BSD
SPECIAL DEVICES

DCL/DCL-D Lubrication Device

<table>
<thead>
<tr>
<th>OPERATING SPECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. vacuum</td>
</tr>
<tr>
<td>29.88&quot;Hg</td>
</tr>
<tr>
<td>Vacuum pump capacity at atm. pressure</td>
</tr>
<tr>
<td>2,3 ft³/min</td>
</tr>
<tr>
<td>Oil pump max. delivery</td>
</tr>
<tr>
<td>183 in³/min</td>
</tr>
<tr>
<td>Pressure setting</td>
</tr>
<tr>
<td>43 lbf/in²</td>
</tr>
<tr>
<td>Oil tank capacity</td>
</tr>
<tr>
<td>2.6 ft³</td>
</tr>
</tbody>
</table>

CEM7000 Electromechanical Wrench

<table>
<thead>
<tr>
<th>OPERATING SPECS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. torque on socket shaft</td>
</tr>
<tr>
<td>5,160 lbf•ft</td>
</tr>
<tr>
<td>Max. final tightening angle</td>
</tr>
<tr>
<td>Socket shaft rotation speeds (2-speed), in either direction</td>
</tr>
<tr>
<td>Socket shaft motor power</td>
</tr>
<tr>
<td>4.5 kW</td>
</tr>
<tr>
<td>Max. admitted width</td>
</tr>
<tr>
<td>47&quot;</td>
</tr>
<tr>
<td>Max. admitted height</td>
</tr>
<tr>
<td>47&quot;</td>
</tr>
</tbody>
</table>
PT250-PT350 Hydraulic Track Presses

<table>
<thead>
<tr>
<th>OPERATING SPECS</th>
<th>PT250</th>
<th>PT350</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max ram force</td>
<td>1,803 kN (184 tf)</td>
<td>3,185 kN (325 tf)</td>
</tr>
<tr>
<td>Max operating pressure</td>
<td>35.5 Mpa (515 bar)</td>
<td>35 Mpa (500 bar)</td>
</tr>
<tr>
<td>Ram rod diameter</td>
<td>230 mm</td>
<td>270 mm</td>
</tr>
<tr>
<td>Max ram stroke</td>
<td>160 mm</td>
<td>190 mm</td>
</tr>
</tbody>
</table>

PP100-PP50 Portable Hydraulic Track Presses

<table>
<thead>
<tr>
<th>OPERATING SPECS</th>
<th>PP100 B/S</th>
<th>PP50 B/S</th>
</tr>
</thead>
<tbody>
<tr>
<td>Max. ram force</td>
<td>911.4 kN (93 tf)</td>
<td>490 kN (50 tf)</td>
</tr>
<tr>
<td>Max. traction of rams</td>
<td>715.4 kN (73 tf)</td>
<td>323.4 kN (33 tf)</td>
</tr>
<tr>
<td>Max. operating pressure</td>
<td>70 Mpa (700 bar)</td>
<td>70 Mpa (700 bar)</td>
</tr>
<tr>
<td>Max. ram stroke</td>
<td>350 mm</td>
<td>280 mm</td>
</tr>
<tr>
<td>Oil capacity</td>
<td>4.64 dm³ (283 in³)</td>
<td>2 dm³ (122 in³)</td>
</tr>
</tbody>
</table>

ACC - ACC/S-SP Track Winders

<table>
<thead>
<tr>
<th>OPERATING SPECS</th>
<th>ACC</th>
<th>ACC/S-SP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rotation speed in both directions</td>
<td>3 giri/min</td>
<td>1.7 giri/min</td>
</tr>
<tr>
<td>Motor rating</td>
<td>4 HP</td>
<td>4 HP</td>
</tr>
<tr>
<td>Max. mass admitted onto spindle</td>
<td>3,600 kg (8,200 lb)</td>
<td>18,040 lb</td>
</tr>
<tr>
<td>Max track shoe width admitted (with optional device)</td>
<td>762 (1,000) mm</td>
<td>1,460 mm</td>
</tr>
<tr>
<td>ACC ACC/S-SP</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Motor rating | 4 HP | 4 HP |
Max. mass admitted onto spindle | 3,600 kg (8,200 lb) | 18,040 lb |
Max track shoe width admitted (with optional device) | 762 (1,000) mm | 1,460 mm | 57 1/2” |
Published by Berco Communications Dept.

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