Reclaimer Chains

CHANGE® for Success
THIELE quality philosophy

- customer satisfaction
- our products are designed to the highest quality, environmental and safety standards
- continuous and sustainable process improvements
- QA system to ISO 9001 standard
- environmental management system to ISO 14001
- energy management system to ISO 50001
- our CIP (continuous improvement process) stands guarantee for the durability and high quality of our products
The THIELE company

The THIELE company was founded more than 80 years ago and is now one of the world’s foremost chain manufacturers. THIELE’s product line includes round-link chains, bush conveyor chains, forged conveyor chains and a full range of fittings and accessories. THIELE’s know-how has been built up over many years of designing and producing complete chain systems and our highly skilled workforce and modern, high-performance production facilities stand guarantee for products of the finest quality.

Consulting and product development

THIELE specialises in chain systems for conveying and lifting. THIELE engineers provide an on-site consulting service and work alongside the client to analyse the technical requirements before planning and sizing up the moving chain assembly. Customised solutions are then worked out in detail in THIELE’s own design department.

Chain production

All our chains and components are manufactured in-house. Our production facilities include equipment for welding, laser-, plasma- and gas-cutting, solid forming, heat treatment and mechanical processing using the latest CNC lathes and multi-spindle milling machines.

Quality

High-integrity production methods are used to ensure that all products leaving the THIELE factory are of the finest quality, as confirmed by continuous monitoring in our laboratory and testing house. THIELE was one of the world’s first chain making companies to meet the DIN EN ISO 9001 quality management standard.

THIELE can supply a wide range of standard reclaimer chains. An in-house engineering design department ensures that all interfaces can be adapted to meet the technical requirements of the job at hand. This means that individual customer needs can be met to the letter.

The individual components are finished on CNC machining centres.

The latest plasma and laser cutting machines turn out products of the very highest quality.
Reclaimer Chains

THIELE HDR-I
Heavy Duty Reclaimer Chain
– Inside Roller

THIELE HDR-O
Heavy Duty Reclaimer Chain
– Outside Roller

THIELE HDR-BO
Heavy Duty Reclaimer Chain
– Box Profile
Selection factors

Overview of THIELE reclaimer chains

<table>
<thead>
<tr>
<th>pitch p [mm]</th>
<th>HDR-I (inboard roller)</th>
<th>HDR-O (outboard roller)</th>
<th>HDR-BO (box profile, outboard roller)</th>
<th>F_{Br} [kN]</th>
<th>h x t [mm]</th>
<th>d [mm]</th>
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<tbody>
<tr>
<td>250</td>
<td>25</td>
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<td>175 / 160 x 30</td>
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</tbody>
</table>

F_{Br} = breaking strength  h x t = plate section  d = pin diameter

Subdivision of design types

HDR-I
inside roller
with slide bearing
Standard chain for applications with external lubrication of the rollers. Integrated wearing plates provide lateral chain guidance.

HDR-O
outside roller
with anti-friction bearings
Standard chain with maintenance-free, dust-tight rollers for abrasive materials. The lateral forces are absorbed by separate central guide rollers.

HDR-BO
Box profile, outside rollers, anti-friction bearings
Strengthened version of standard chain with type HDR-O characteristics, intended for highly-stressed applications.

Chain wheels

Design recommendation

<table>
<thead>
<tr>
<th>Standard design</th>
<th>Optional designs</th>
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<tbody>
<tr>
<td>Toothed drive wheel</td>
<td>Smooth return wheel</td>
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<tr>
<td>Toothed return wheel</td>
<td>Noise-reduced return wheel</td>
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</table>

Replaceable, machined ring segments
Inductive surface hardening of tooth flanks / wheel outer diameter
Other options available as an alternative to THIELE-recommended designs
The experience acquired from numerous client reference projects has been put to good use in producing standardised THIELE reclaimer chains.

Accurately machined link holes mated with rotation-locked pins and bushes reflect the quality workmanship of the THIELE HDR chains.

The bucket connector links can be designed as angle-plates to provide also the possibility of horizontal mounting.

<table>
<thead>
<tr>
<th>Chain</th>
<th>$F_{Br}$ [kN]</th>
<th>$p$ [mm]</th>
<th>LW [mm]</th>
<th>h x t [mm]</th>
<th>d [mm]</th>
<th>Dr [mm]</th>
<th>Weight [kg/m]</th>
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<tr>
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</table>

$F_{Br}$ = breaking strength  
$p$ = pitch  
h x t = plate section  
d = pin diameter  
Dr = roller diameter  

Dimensions A1 to A3 can be tailored to customer requirements.

$F_{Br}$ = breaking strength  
$p$ = pitch  
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Weight indication for one strand
Type THIELE HDR-O

The THIELE HDR-O chain features outside rollers that are fitted as fully assembled units. The antifriction rollers reduce the amount of force required at the chain drive.

THIELE’s own fully-sealed, maintenance-free standard components are also used as centre guide rollers for the chain.

The bucket connector links can be designed as angle-plates to provide also the possibility of horizontal mounting.

<table>
<thead>
<tr>
<th>Chain</th>
<th>$F_{br}$ [kN]</th>
<th>p [mm]</th>
<th>LW [mm]</th>
<th>h x t [mm]</th>
<th>d [mm]</th>
<th>Dr [mm]</th>
<th>Lr [mm]</th>
<th>L [mm]</th>
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</table>

$F_{br}$ = breaking strength  
$\text{p} = \text{pitch}$  
$\text{LW} = \text{clearance}$  
$h x t = \text{plate section}$  
$d = \text{pin diameter}$  
$Dr = \text{roller diameter}$  
$Lr = \text{roller width}$  
$L = \text{distance between centres}$  
weight indication for one strand
Type THIELE HDR-BO

The weld-connected outer link forms the box profile of the THIELE HDR-BO chain. Highly fluctuating external forces, which include frequent load peaks, are effectively induced into the chain thanks to the robust design of the bucket connections.

The buckets are mounted horizontally. THIELE’s extensive HDR range is entirely produced in-house to the most stringent quality standards.

This is a product well deserving of the ‘Made in Germany’ label.

<table>
<thead>
<tr>
<th>Chain</th>
<th>$F_{Br}$ [kN]</th>
<th>$p$ [mm]</th>
<th>LW [mm]</th>
<th>$h \times t$ [mm]</th>
<th>d [mm]</th>
<th>Dr [mm]</th>
<th>Lr [mm]</th>
<th>L [mm]</th>
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</table>

$F_{Br}$ = breaking strength, $p$ = pitch, LW = clearance, $h \times t$ = plate section, d = pin diameter, Dr = roller diameter, Lr = roller width, L = distance between centres.

Dimensions A1 to A3 can be tailored to customer requirements.
THIELE Assembly Master

The Assembly Master is an assembly device specially designed for THIELE chains.

This tool ensures that the chain strands are connected according workshop standards. Interchangeable adapter plates can be fitted to enable the tool to be used for a wide range of chain types.
THIELE standard roller

The THIELE roller is a fully pre-assembled, maintenance-free unit. Experience from numerous client reference projects has been put to good use in its design and production.

The sealing elements offer reliable protection against intrusions no matter what the application.

Standardised material specifications and high-end components underlie the consistent high quality of THIELE rollers.

Using identical rollers for a range of applications greatly simplifies the spare-part stocking

THIELE roller installed as an outside unit on a chain assembly.

THIELE roller installed as a central guide unit on a threaded bolt.
Inside roller - special solutions

Modern production facilities combined with an in-house design department enable the company to address individual customer needs.

The contact seals can withstand highly abrasive material, resulting in a maintenance-free chain with an extended operating life.

Converting from rollers with slide bearings to sealed, antifriction rollers increases chain reliability and reduces the driving power requirement.

The design of a fully sealed chain with regreaseable rollers results in a longer service life under heavy-duty operating conditions.
Reclaimer chains - special solutions

We can plan and design tailor made solutions for your individual requirements based on THIELE’s tried and tested quality standards.

Bush link chain with outside rollers and lateral guiding rollers for a portal reclaimer. Welded profiles are used to connect the chain strands and to transfer the lateral forces.

Bushed block link chain with lateral wearing plates used for a reclaimer application.
Reclaimer chains - special solutions

Bush link chain with inside, maintenance-free rollers for reclaiming abrasive bulk material (bauxite).

Reinforced bush link chain for a bucket reclaimer used for handling solidified bulk material at low temperatures.
THIELE services: upgrades, repairs and inspections

As well as producing chains and components THIELE also offers a complete support service for system operators. This includes:

- wear measurements and inspections
- maintenance and repair work
- technical support during assembly
- complete installation and assembly
- plant commissioning
- technical consultation
- personnel training
Rigorous monitoring and control of the production process plays a crucial role in the high quality of our products. Modern laboratory facilities and 3D measuring technology provide a fast route to the scientific data needed for quality assessment purposes.

Services available:

- certified technicians for non-destructive testing work (VT, MT, PT)
- test track facilities for complete component inspection to 5000 kN
- dynamic component testing to 700 kN
- macroscopic and microscopic examinations
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