ENGLISH // EDITION 8

# RUD CONVEYOR SYSTEMS

## FOR HORIZONTAL, VERTICAL AND INCLINED CONVEYORS



# DO YOU EXPERIENCE ANY OF THESE CONVEYOR ISSUES?



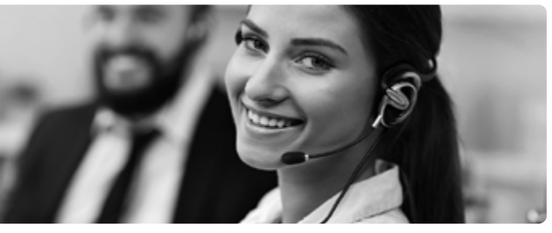
**Is your chain equipment wearing out too quickly?**
The new RUD chain grades offer optimal wear resistance.
**More on page 10**



**Are your chains or the teeth of the gears suddenly breaking? Is your system coming to a standstill due to this? How much is the damage if you have to shut down the system as a result of this?**
The new chain grades offer up to 28 % improvement in breaking force. Your system will run safer and the risk of breaking will be minimised. **More on page 11**



**Are you experiencing difficulties when installing components?**
Then try our installation-friendly innovations such as Duomount or 2win. **More on page 26 und 42**



**Are you missing an on-site contact person?**
Then contact our nearest branch.
**More at www.rud.com (units & locations)**



**Do you wish for more technical consultation and assistance?**
Then simply ask us. directly contact our engineers and send us your challenges related to the conveyor system. **conveyor@rud.com // Technical questionnaires from page 64**

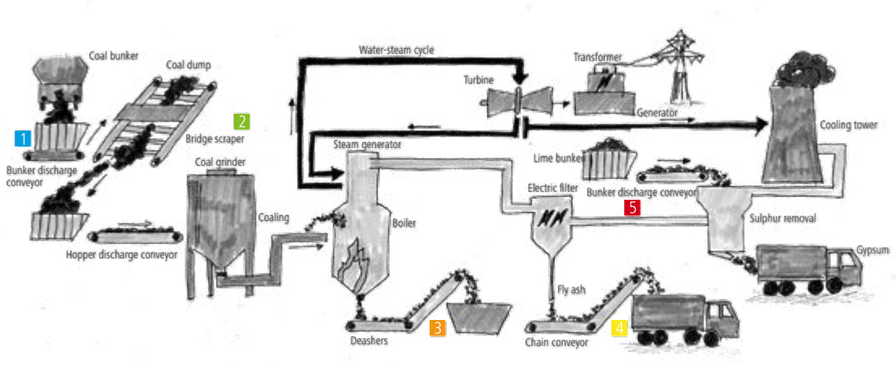
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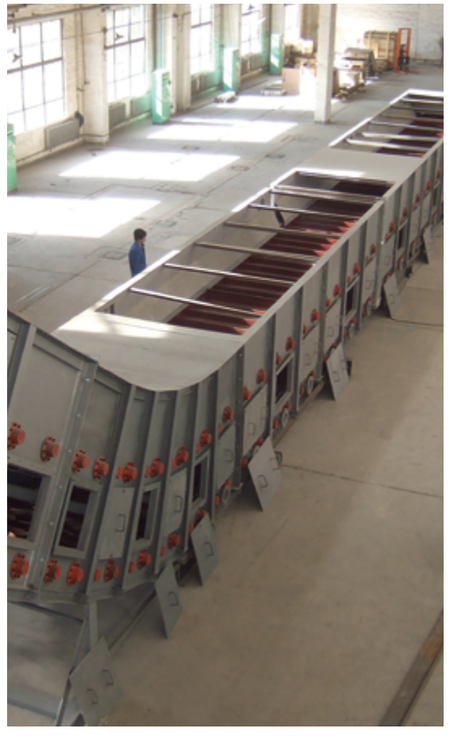
# RUD SERVICE RANGE AND MILESTONES

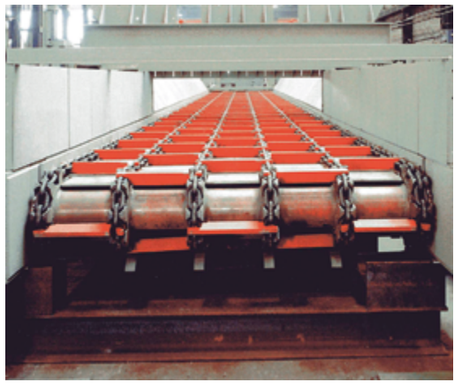
## RUD CONVEYOR TECHNOLOGY IN THE POWER STATION




1 Bunker discharge
2 Bridge scraper
3 De-asher
4 Chain conveyor
5 Components

Fossil fuel power stations are an important contributor to the global energy supply. For decades, RUD has ensured the high availability of coaling and ash remover plants through conveyor chains. Due to our extensive experience in ash removal from large power plant boilers, biomass combustion, as well as waste incineration and recycling, all our system components are coordinated and work consistently and reliably.





1875 RUD as the foundation of ERLAU AG
1951 First RUD global case hardened round link steel chain
1957 First RUD chain for de-ashing
1965 First round link steel chain in RUD 40 cG material
1985 First round link steel chain with RUD super 35 quality
1992 First RUD apron conveyor
2006 Attachment DUOMOUNT
2007 RUD forked link chain FORKY
2008 First dry ash remover with RUD chains
2012 First bio gas substrate feeder
2015 Conveyor chain R160
2019 UKS chain connector

OUR REFERENCES IN THE POWER STATION AMONG OTHERS, WE ARE SYSTEM PARTNERS OF:

MITSUBISHI HITACHI POWER SYSTEMS EUROPE
B&W loibl
GE Power
BILFINGER
CLYDE BERGEMANN

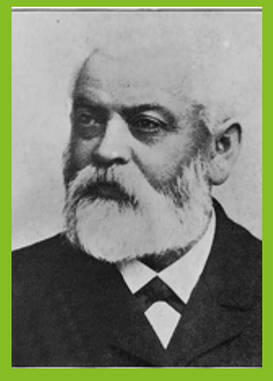


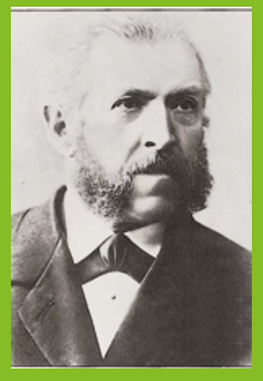
# MILESTONES FOR CONVEYOR SYSTEM FOR BULK MATERIALS

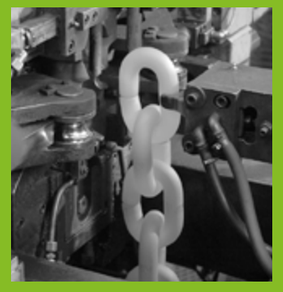
## OVER 200 YEARS OF COMPTENCE

Whether it is a complete bucket conveyor, trough chain conveyor or spare parts for chain conveyors or maintenance and service, the RUD group is a reliable partner. Whether it be transporting limestone from the mill to the bulk tank or conveying salts from the mine to the surface, our conveyor systems are robust and are optimally designed for these conditions. Thanks to our extensive experience in bulk conveyance of fertilisers, potassium & salt, cement and other special bulk materials, all our system components always work reliably.

1875 Foundation of RUD Ketten Rieger & Dietz GmbH u. Co. KG
1906 As the first company, RUD introduces electric welding of chain links
1945 Foundation of business area of conveyor systems by Werner Rieger
1961 Introduction of double-pitch case-hardened round link steel chains for high-capacity bucket elevators
1965 Introduction of round link steel chain in 40cG material / market introduction of two-link bucket attachment system 65
1985 Round link steel chain with RUD super 35 quality
1992 RUD apron conveyor
1994 RUD central chain installed in high-capacity bucket elevators
2001 Market introduction of RUD SWA side-wall attachment
2004 Integration of H & E in RUD group
2006 Market introduction of RUD 2win two-link bucket attachment
2007 RUD forked link chain FORKY
2008 Central chain bucket elevator for 800 t / h
2009 First trough chain conveyor with RUD forked link chain FORKY
2011 1st tandem central chain bucket elevator for 1500 t / h
2011 Introduction of brand name BULKOS
2015 Conveyor chain R160
2017 Market introduction RUD RUca single-link attachment short assembly and disassembly times, without special tools



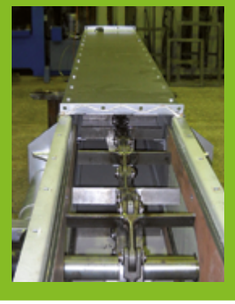












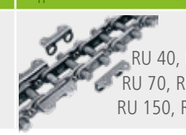
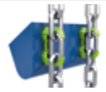
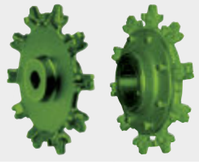
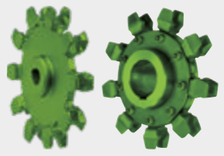
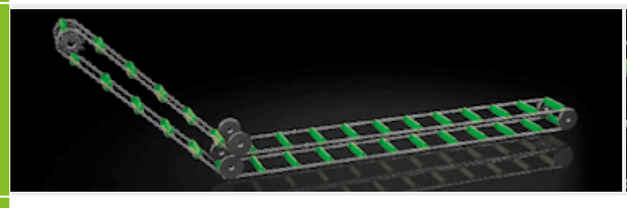
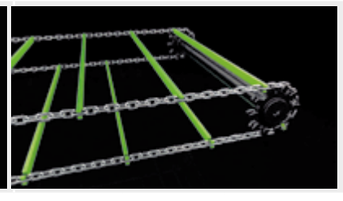
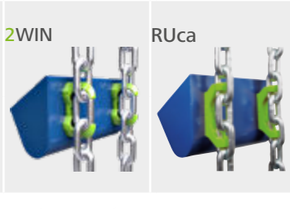
## MILESTONE OF H + E HERFURTH & ENGELKE CONVEYOR SYSTEM TECHNOLOGY

Braunschweig / Germany

1932 Foundation of engineering office for conveyor systems
1933 Creation of 1st continuous flow conveyor for bulk materials
1940 Beginning of own production of 1st chain bucket elevator, 1st screw conveyor, 1st apron conveyor
1945 Foundation of machine factory Herfurth & Engelke
1960 1st belt bucket elevator
1969 1st chain bucket elevator for 300 t / h
1970 1st trough chain conveyor for 600 t / h
1972 Transport of 1000 t / h (band conveyor)
1973 1st screw conveyor for 300 t / h
1981 1st vertical screw conveyor
1985 Development of high-capacity bucket elevator, 1st usage of steel cord belt in bucket elevators
1988 Development of parallel weight tensioning station for bucket elevators, transport of 3000 t / h (band conveyor)
1998 1st central chain bucket elevator, 1st chain bucket elevator for 1100 t / h
2001 1st central chain bucket elevator for 600 t / h
2025 Merger with RUD System - now RUD H&E GmbH

# OUR RUD CONVEYOR CHAIN SYSTEMS

## AT A GLANCE

| | HORIZONTAL CONVEYOR | | | | VERTICAL CONVEYOR | | | |
|---|---|---|---|---|---|---|---|---|
| **RUD-System** | **Sprocket wheel system** | **System pocket wheel** | | | **System 65** | **2win System / RUca** | **SWA System** | **Central chain system** |
| **Chain** |  Size 8 × 31 ... 38 × 144, Grade R80, R100, R140, R160 | | | |  Size 14 × 50 ... 34 × 126, F R80, R100, (R140) | | |  RU 40, RU 55, RU 70, RU 100, RU 150, RU 200 |
| **Connectors** |  **FL** 38 × 144, 26x92, 30x108 , 34x126<br> **RSP** 8 × 31 ... 10x38, 14 × 64<br> **VK** 19 × 120 |  **UKS** 14 x 50 ... 34 x 136 | | |  **UKS** 14 x 50 ... 34 x 136 | |  **FL** 38 x 144 | Coupling strand; rarely necessary, if the tensioning distance is long enough |
| **Attachment type** | **Multiple link attachment** | **Single link attachment** | **Single link attachment** | | **Multiple link mounting** | | | **Mounting angle** |
| **Attachment** |  **Duomount** 26 × 100...<br> **SSRF** 14 × 50... 38 × 144<br> **SSR** 10 × 38... 30 × 120 |  **F** 18 × 64... 22 × 86<br> **MEZZ** 10 × 31 ... 38 × 144<br> **FM** 8 × 31... 30 × 120 |  **MEET (K)** 10 × 38... 38 × 144<br> **F** 18 × 64... 22 × 86<br> **MEZT** 10 × 38... 30 × 120 | |  **System 65** 14 × 50 ... 34 × 136<br> **2win** 14 × 50 ...34 × 136<br> **RUca** 26 × 100<br> **SWA** 16 × 64 ...30 × 120 |  is a separate part of the chain |
| **Drive wheels** | Drive sprocket (internal) interlocked.<br> Above size 14 × 50 mostly multi-part, locks always run vertically across the gears |  Drive pocket wheels (external) interlocked, mostly multi-part at the drive, rarely single, locks always run vertically as well as horizontally across the gears; preferred installation type vertical. Reversing wheels – very often also pocket wheels, rarely pulley blocks of type B for attachment F and type C for MEET(K) or MEZT. | | |  Driving wheel toothed with individual teeth |  Driving wheel not toothed, hardened segments, toothed drive such as in system 65 even in difficult applications |  Drive wheel toothed with individual teeth, rarely not toothed |  Drive not toothed, hardened |
| **Reversing wheels** |  Type A with rim often at the tensioning station and as SOI, type B without rim for all the remaining deflections, rarely single gear wheels.<br> Type C for attachment mezz and FI, alternative is single gear wheels. | | | |  Reversing section always used with smooth sprocket, unhardened segments and flanged wheel |  Reversing section always used with grooved sprocket, unhardened segments, special cases and with flanged wheel |  Reversing section always used with grooved sprocket, unhardened segments and constriction wheel with hardened segments |  Reversing section toothed (from 800 bucket width) / without teeth (up to 710 bucket width), hardened |
| **Applications** |  |  | | |  |   |  |  |
| **Comments** | The sprocket wheel system is advantageous for conveyors that have an angled line profile (several times) (reversing wheels help this type of conveyors in association with the attachment) and have a sharp increase (>20°). Scraper height depending on the chain width, material to be transported and the gradient of the conveyor as well as the conveyance capacity must be calculated. Usual conveyance speed of 0.02 m/s to approximately 0.15 m/s depending on the service life to be projected. Typical example: de-ashing systems in power stations. | | Universally applicable as cleaning scraper conveyor, bunker discharge conveyor (multi-belt conveyor) as well as apron conveyor. Usual speed of 0.05 m/s to 0.2 m/s depending on the material to be transported. Straight line profile preferred, slightly inclined (up to 20°) installations possible. Scraper height normally not greater than 0H = 1.5 × ba. | | System 65 for sticky, coarse-grained bulk materials, when using high-capacity bucket conveyors and speed 1.35 … 1.5 m/s. | 2win-System for DIN bucket elevators (DIN bucket without gear teeth, hl and special bucket toothed), low granulation (up to 40 mm without gear teeth, toothed after that), speed of 1.0 … 1.4 m/s; | SWA System for small conveyance capacities and low speed (…0.8 m/s), highly abrasive materials to be transported that are difficult to empty (central discharge with technical consultation). | Central chain bucket elevators for large conveyance capacities, coarse dry bulk materials (clinker, gravel, circulating goods and cement granules) and high speed (up to 1.7 m/s); steel chain bucket elevators. |

# RUD CHAIN TECHNOLOGY

## SPECIAL PRODUCTS – WHAT HAS IMPROVED IN OUR NEW CHAIN GRADES?

### 1 100% CONSISTENTLY INDUCTIVELY HEATED RODS



This results in: Accurate link geometry · Highly calibrated links Customer benefit: · Optimised running geometry with components and wheels · Better interlink contact to extend chain life

### 2 100% FULLY AUTOMATIC WELDING CONTROLLER WITH PRECISE LINK



This results in: Optimal process control Customer benefit: Longer life · Increased breaking force · Safer operation

RUD is a benchmark company in providing quality products with advantages in wear resistance and performance ahead of all competing companies

### 3 100% FULLY AUTOMATIC CONTROL AND REGULATION OF CALIBRATION





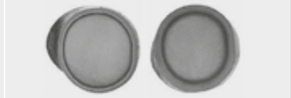
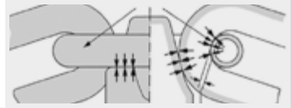
This results in: Highly calibrated chain strands · More accurate chain properties for multi-strand applications Customer benefit: Optimised run-in behaviour · Lower wear · Lower maintenance costs

### 4 100% WORLD FIRST! RUD CONVEYOR CHAIN R160 MADE OF SPECIALLY SMELTED SPECIAL STEEL



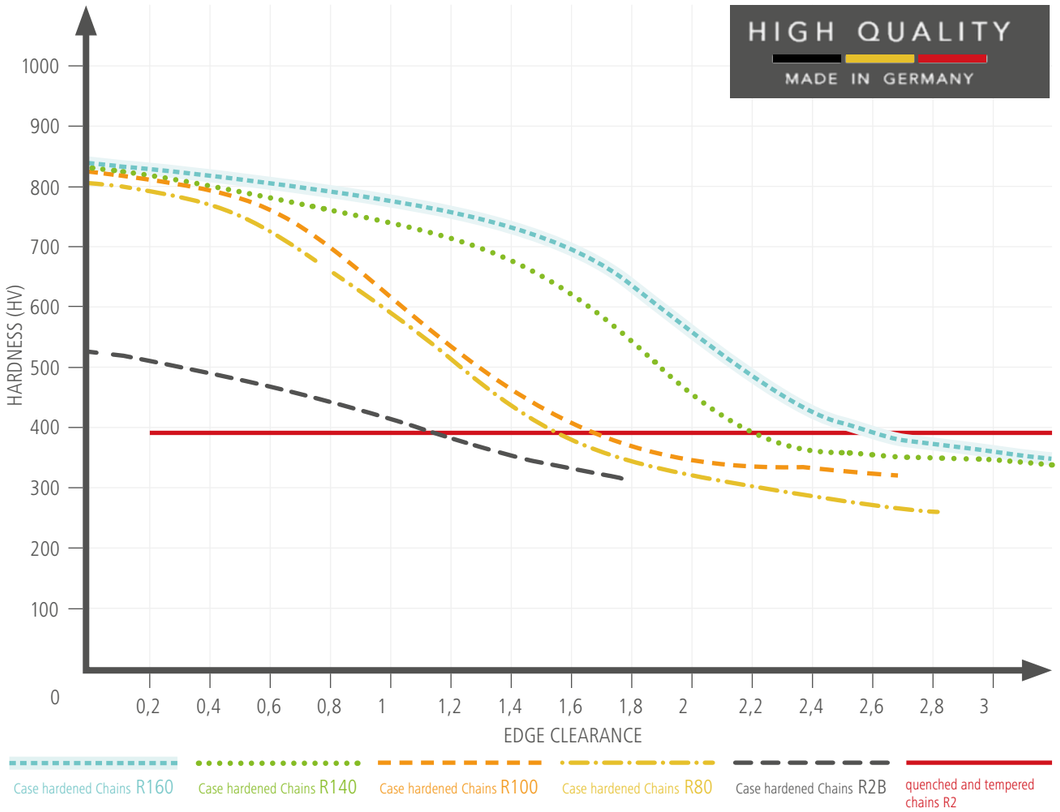
This results in: New options in heat treatment Customer benefit: Improved wear characteristics in case of equal breaking force

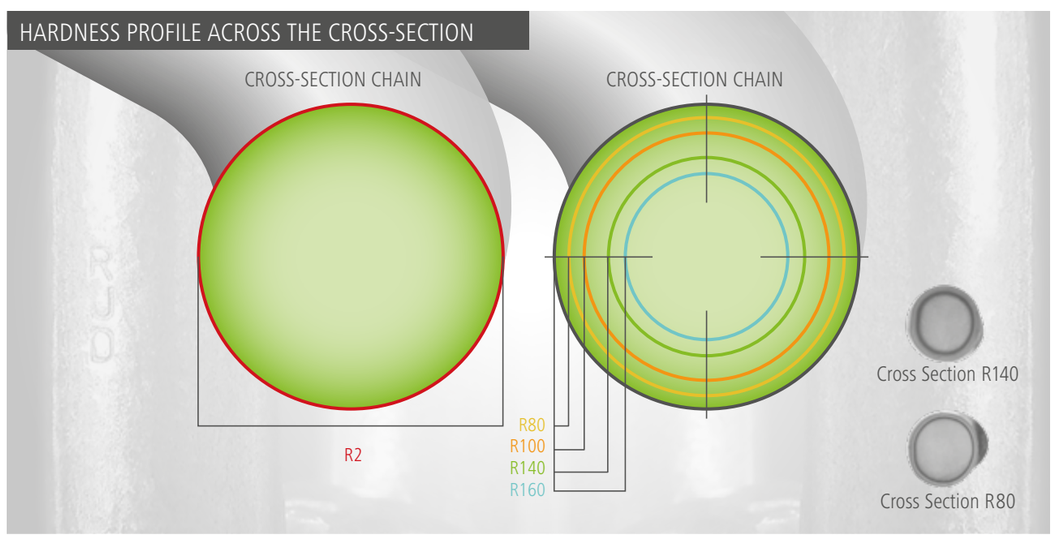
## BENEFIT FROM OUR HIGH PERFORMANCE

| Performance | | RUD Special grades | | | | |
|---|---|---|---|---|---|---|
| Property | RUD | R80 | R100 | R140 | R160 | |
| Wear | Carburising depths in the link after macro etching (HTÄ) (... × d) | 0,10 | 0,10 | 0,14 | ≥0,16 |  |
| | Surface hardness in the link (HV) | 800 | 800 - 820 | ≥820 | ≥820 |  |
| | System components (compatible with each other) | +++ | +++ | +++ | +++ |  |
| Operational safety | 100% calibrated / reproducibility | +++ | +++ | +++ | +++ |  |
| | Special fused metal for chain steel with special alloy proportions | + | ++ | ++ | +++ |  |
| | Crack retention capacity | + | +++ | +++ | +++ |  |
| Simple assembly / Traceability | Matching | +++ | +++ | +++ | +++ |  |
| | Labelling on every component and chain link | +++ | +++ | +++ | +++ |  |
| | Labelling of suitable pair using colours | +++ | +++ | +++ | +++ |  |
| Downsizing | Tensile stress up to (N / mm²) | 340 | 450 | 400 | 400 |  |

# RUD ROUND LINK STEEL CHAINS

## RUD SPECIFICATIONS, HARDNESS CURVES




# RUD ROUND STEEL CHAIN R160

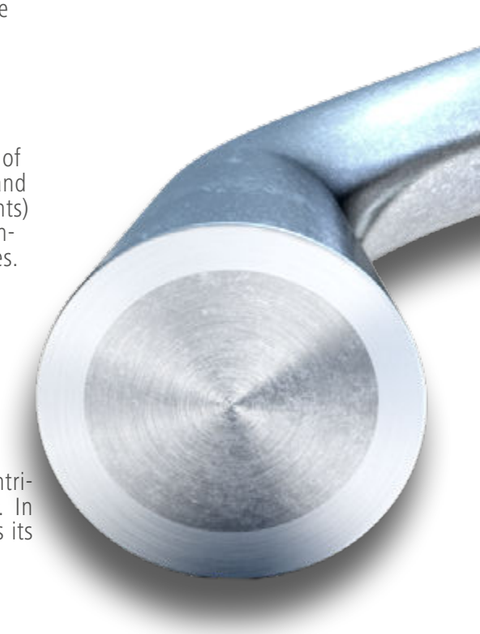
## TOUGH AND 30% MORE RUNNING TIME

RUD offers its customers nothing less than double the service life in the use of bucket elevators and ash removal systems – the new round steel chain R160 has been optimised for a longer service life.

Our special chain steel improves the wear behaviour significantly without any loss of breaking force. Its breaking stress of up to 400 N/mm² provides especially for particularly rough and heavy duty operating conditions (e.g. in coal fired powerplants) a better performance in relation to other chain grades and therefore an increase of the revision time frame up to two times. The operating time of the whole facility will be significantly increased.

The R160 is currently available in the following sizes:
- 22 x 86 mm
- 26 x 100 mm
- 30 x 120 mm
- 34 x 136 mm
- 38 x 144 mm

The RUD R160 offers improved technical features that contribute to higher economic efficiency and operational safety. In combination with other products in the portfolio, RUD offers its customers the most innovative tailor-made solutions.



## MORE THAN YOU EXPECT - FULL OPERATION IN ROUGH CONDITIONS





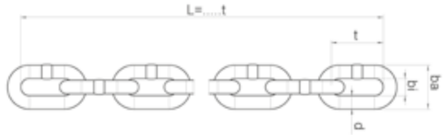

RUD stands for innovation and quality. With the R160, RUD's think tank launched a product on the market that can clearly extend the service life of our bucket elevator. The R160 acquisition costs were certainly higher, but considering the TCO (Total Cost of Ownership), the investment has definitely been worth it. All plant owners will certainly be keen to increase their production capacity levels while reducing costs at the same time. This goal can indeed be achieved with the R160."

Robert Ott
Head of Maintenance

LafargeHolcim
www.lafargeholcim.com

# RUD ROUND STEEL CHAIN

## RUD SPECIFICATION




Properties
- Highly wear-resistant for a long time
- Self-cleaning
- Simple assembly and disassembly of RUD components in the chain belt
- High-strength, as optimally heat-treated
- Low-maintenance when compared to other systems

ROUND STEEL LINK CHAINS IN SPECIAL GRADES – HIGHLY WEAR-RESISTANT

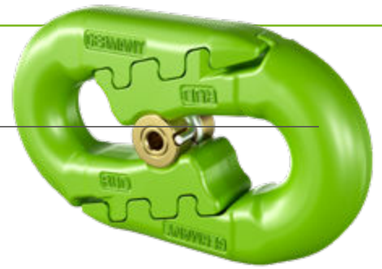
ROUND STEEL LINK CHAINS IN SPECIAL GRADES – HIGHLY WEAR-RESISTANT*3)

| Chain d × t in [mm] | Chain width bi (min.) [mm] | Chain width ba (max.) [mm] | Weight [kg/m] | Strand length (m/link)*1) | Attachment distance [Links] | R2 Breaking Force [kN] | R2 RUD Part number | R2B Breaking Force [kN] | R2B RUD Part number | R80 Breaking Force [kN] | R80 RUD Part number | R100 Breaking Force [kN] | R100 RUD Part number | R140 Breaking Force [kN] | R140 RUD Part number | R160 Breaking Force [kN] | R160 RUD Part number | Chain d × t in [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8 × 31 | 10,3 | 28 | 1,3 | **50,0/1613** | variable | 80 | 51697 | | | | | | | | | | | 8 × 31 |
| | | | | Fitting strand | | | 7983021 | | | | | | | | | | | |
| | | | | **24,893/803** | | | | | | | | 50 | 7905630 | | | | | |
| | | | | Fitting strand | | | | | | | | | 7905631 | | | | | |
| 10 × 38 | 12,5 | 34 | 2,1 | **50,0/1315** | variable | 125 | 7987062 | | | | | | | | | | | 10 × 38 |
| | | | | Fitting strand | | | 7983022 | | | | | | | | | | | |
| | | | | **20,026/527** | | | | | | | | 75 | 7905633 | | | | | |
| | | | | Fitting strand | | | | | | | | | 7905634 | | | | | |
| 14 × 50 | 16,3 | 47 | 4,0 | **19,95/399** | variable | 250 | 8504309*2) | | | | | 140 | 7905636 | | | | | 14 × 50 |
| | | | | Fitting strand | | | | | | | | | 7905638 | | | | | |
| 14 × 64 | 16,3 | 47 | 3,7 | **10,176/159** | | | | | | | | 128*4) | 7900548 | | | | | 14 × 64 |
| | | | | Fitting strand | | | | | | | | | 7982305 | | | | | |
| 16 × 64 | 20 | 55 | 5,1 | **19,9/311** | variable | | | 240 | 7988920 | | | 180 | 7905640 | | | | | 16 × 64 |
| | | | | Fitting strand | | | | | 7989510 | | | | 7905641 | | | | | |
| 18 × 64 | 21 | 60 | 6,9 | **15,296/239** | variable | | | | | | | 225 | 7905643 | | | | | 18 × 64 |
| | | | | Fitting strand | | | | | | | | | 7905644 | | | | | |
| 19 × 75 | 22 | 63 | 7,7 | **10,725/143** | variable | | | 340 | 7904795 | | | 260 | 7905646 | 230 | 7905862 | 230 | 7909280 | 19 × 75 |
| | | | | Fitting strand | | | | | 7904540 | | | | 7905648 | | 7905863 | | 7909283 | |
| 19 × 120 | 23 | 65 | 6,3 | **3,0/25** | 2 | | | | | | | 260 | 7905650 | | | | | 19 × 120 |
| | | | | **5,16/43** | | | | | | | | | 7905651 | | | | | |
| | | | | Fitting strand | | | | | | | | | 7905652 | | | | | |
| 22 × 86 *5) | 26 | 74 (73) | 9,7 (9,5) | **10,234/119** | variable | | | 450 | 7101775 | 260 | 7905474 | 350 | 7905654 | | | 310 | 7905719 | 22 × 86 *5) |
| | | | | Fitting strand | | 610 | 8504310*2) | | 1701774 | | 7905475 | | 7905655 | | | | 7905720 | |
| 25 × 95 | 34 | 90 | 12,5 | **8,265/87** | 4 | | | | | | | 400 | 7905657 | | | | | 25 × 95 |
| | | | | Fitting strand | | | | | | | | | 7905658 | | | | | |
| 26 × 92 | 30 | 85 | 13,7 | **14,444/157** | variable | | | | | 370 | 7905480 | | | | | | | 26 × 92 |
| | | | | Fitting strand | | 850 | 7906999*2) | | | | 7905477 | | | | | | | |
| 26 × 100 | 31 | 87 | 13,3 | **7,9/79** | 4/8/10/16 | | | | | 370 | 7905491 | 430 | 7905660 | 370 | | 430 | 7905722 | 26 × 100 |
| | | | | **8,1/81** | nx4 + 1x6 | | | | | | | | | | 7909277 | | | |
| | | | | **8,3/83** | 4/6/12/14 | | | | | | 7905492 | | 7905661 | | | | 7905723 | |
| | | | | Fitting strand | – | | | | | | 7905493 | | 7905662 | | 7909278 | | 7905724 | |
| 30 × 108 | 34 | 97 | 18,0 | **10,692/99** | variable | | | | | 470 | 7905497 | | | | | | | 30 × 108 |
| | | | | Fitting strand | | 1130 | 7907002*2) | | | | 7905496 | | | | | | | |
| 30 × 120 | 36 | 102 | 17,5 | **5,640/47** | 4/6/8/12/16 | | | | | 470 | 7905498 | 640 | 7905664 | | | | 7905727 | 30 × 120 |
| | | | | **5,88/49** | 10 | | | | | | 7905499 | | 7905666 | | | 580 | 7905728 | |
| | | | | Fitting strand | – | | | | | | 7905500 | | 7905667 | | | | 7905729 | |
| 34 × 126 | 38 | 109 | 22,7 | **8,694/69** | variable | | | | | 615 | 7905502 | 720 | 7905670 | | | | | 34 × 126 |
| | | | | Fitting strand | | 1450 | 7907005*2) | | | | 7905503 | | 7905672 | | | | | |
| 34 × 136 | 39 | 113 | 23,8 | **4,760/35** | 4/6/12/18 | | | | | 615 | 7905521 | 720 | 7905675 | 630 | 7905865 | 670 | 7908694 | 34 × 136 |
| | | | | **5,304/39** | 4/8/10 | | | | | | 7905522 | | 7905676 | | 7905866 | | 7908692 | |
| | | | | Fitting strand | – | | | | | | 7905506 | | 7905678 | | 7905868 | | 7908695 | |
| 38 × 144 | 44 | 127 | 30,0 | **3,312/23** | 8/12 | | | | | | | 920 | 7905680 | | | 850 | 7908697 | 38 × 144 |
| | | | | **4,176/29** | 4/6/10 | | | | | | | | 7905681 | | | | 7908698 | |
| | | | | Fitting strand | – | | | | | | | | 7905683 | | | | 7908699 | |

*1) Maximal variable length: no longer than the standard belt length (in bold print)
*2) Length in compliance with ordering specifications
*3) Allowed tolerance of breaking tension +/- 10%
*4) RUD materials R40c-G/s3
*5) Bracketed values for chain material R2

# RUD CHAIN CONNECTORS

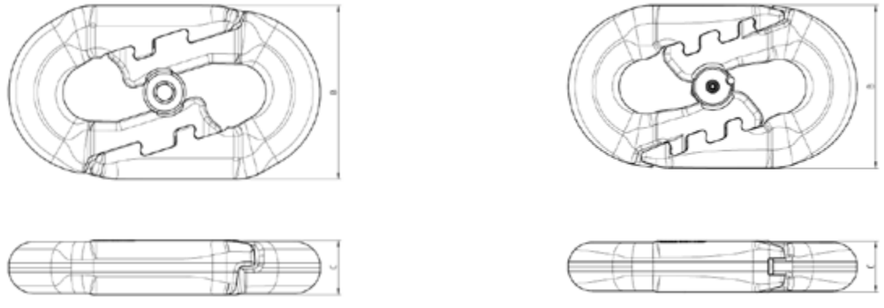
## UKS // CONNECTING LINK



### UNIVERSAL CHAIN CONNECTOR UKS

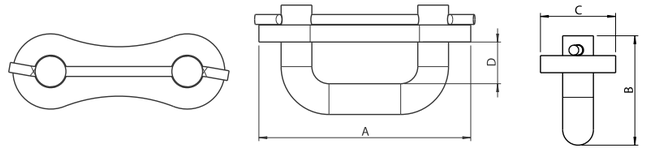
Advantages of the UKS chain lock
· Quick and easy installation by one person
· Case hardening corresponds to the qualities R80-R160
· Fits RUD pocket and chain wheels
· Improved design of the teeth to prevent breakage
· It is no longer necessary to observe a tightening torque
· One connector for all transport tasks with round steel chains/link chains in conveyor technology. This means less stockholding & fewer order numbers in purchasing
· Easier and faster installation. This means less downtime for installation and repair of all types of conveyors
· No binding installation direction, as the UKS universal chain lock runs over pocket and chain wheels
· Reduces your total cost of ownership

| RUD PART NO. | Chain d × t in mm | replaces VK | replaces RSP | replaces FL | A | B | kg / piece | |
|---|---|---|---|---|---|---|---|---|
| 7909021 | 14x50 | 54970 | 53900 | | 48 | 14 | 0,26 | 2 teeth |
| 7909532 | 16x64 / 18x64 | 61326 | 57947 / 52694 | | 57 | 17 | 0,46 | 2 teeth |
| 7910081 | 19x75 | 55021 | 55196 | | 64 | 20 | 0,70 | 2 teeth |
| 7914777 | 22x86 | 55035 | | 55578 | 74 | 23 | 1,10 | 3 teeth |
| 7913639 | 26x100 | 51487 | | 62113 | 87 | 27 | 1,78 | 3 teeth |
| 7914240 | 30x120 | 60551 | | 53280 | 102 | 30 | 2,78 | 3 teeth |
| 7914769 | 34x136 | 7991616 | | 55357 | 113 | 35 | 4,00 | 3 teeth |



### CONNECTING LINK FOR CHAIN GRADE R2

Runs preferably vertical over pocket wheels




| RUD Part no. | Breaking force (kN) | For chain d × t in mm | A | B | C | D | Weight (kg) |
|---|---|---|---|---|---|---|---|
| 7986777 | 80 | 8 × 31 | 62 | 32 | 22 | 12 | 0,08 |
| 58594 | 125 | 10 × 38 | 77 | 36 | 28 | 13 | 0,14 |
| 7987640 / 8500097 | 246 | 14 × 50 | 96 | 46 | 32 | 17 | 0,8 / 0,9 |

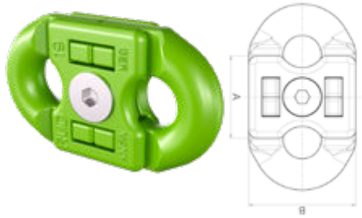


# RUD CHAIN CONNECTORS

## RSP // VK // FL

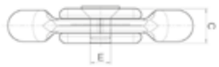
### CHAIN CONNECTOR RSP (SPACE-SAVING)

**Properties**
· For using in single and multi-strand conveyors
· Highly wear-resistant· Installation dimension corresponding to chain link dimension
· Run over sprocket wheels, grooved wheels and flat wheels - vertical
· Run over pocket wheels vertical; In special cases horizontal run possible – see picture underneath
· For medium operating conditions



| RUD Part no. | chain d × t in mm | A | B | C | E | kg / piece |
|---|---|---|---|---|---|---|
| 58571* | 8 × 31 | 22 | 29 | 10 | M 5 | 0,05 |
| 54959* | 10 × 38 | 27 | 35 | 12 | M 6 | 0,1 |

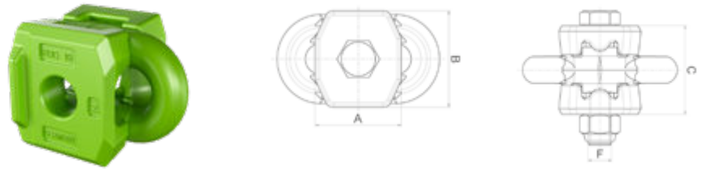
* Zinc-coated



### CHAIN CONNECTOR VK

**Properties**
· For using in single and multi-strand conveyors,extremely robust and high wear volume
· Run only over sprocket wheels and flat wheels
· For difficult operating conditions

| RUD Part no. | For chain d × t in mm | A | B | C | F | kg / piece |
|---|---|---|---|---|---|---|
| 50039 | 19 × 120 | 61 | 70 | 67 | M 20 | 2,3 |



### FLAT CONNECTOR FL

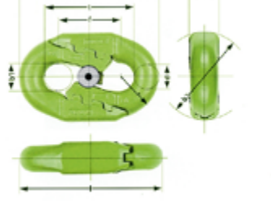
**Properties**
· For using in single and multi-strand conveyors
· Highly wear-resistant
· Run over sprocket wheels and pocket wheels, grooved wheels and flat wheels
· Installation dimension corresponding to approximate chain link dimension
· Simple hammer assembly
· For medium to difficult operating conditions



| RUD Part no. | chain d × t in mm | A | B | C | kg / piece |
|---|---|---|---|---|---|
| 7990647 | 38 × 144 | 95 | 113 | 45 | 5,8 |



### MINING CONNECTOR



| chain d × t in mm | b1 | b2 | c | f | l | r | Breaking-load kN* | Breaking strenght N/mm²* | Cycles** |
|---|---|---|---|---|---|---|---|---|---|
| 26 x 92 | 28 | 95 | 33 | 62 | 146 | 40 | 900 | 850 | 90.000 |
| 30 x 108 | 32 | 109 | 36 | 70 | 170 | 47 | 1200 | 850 | 150.000 |
| 34 x 126 | 36 | 120 | 40 | 76 | 196 | 52 | 1540 | 580 | 150.000 |

# RUD SPROCKET WHEELS

MULTI-PART // SINGLE-PART

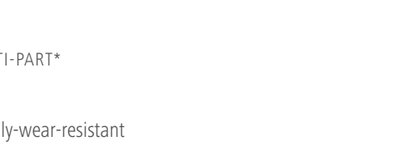
SPROCKET WHEEL MULTI-PART*

**Properties:**
· With replaceable, highly-wear-resistant tooth discs
· For difficult operating conditions



| chain d × t in mm | No. of teeth | TK Ø | A | B | Standard Dimension C | $E_{max.}$ | $F_{max.}$ = Hole Ø in mm | Complete wheel approximately kg / piece |
|---|---|---|---|---|---|---|---|---|
| 10 × 38 | 8 | 194 | 31 | 95 | 27,0 | 80 | 60 | 6,3 |
| | 12 | 291 | 31 | 140 | 27,0 | 80 | 80 | 15,5 |
| | 16 | 388 | 31 | 130 | 30,0 | 85 | 80 | 25,5 |
| 14 × 50 | 6 | 193 | 42 | 95 | 9,0 | 70 | 75 | 7,5 |
| | 8 | 256 | 42 | 120 | 25,0 | 75 | 85 | 11,6 |
| | 9 | 288 | 42 | 140 | 45,0 | 90 | 100 | 13,1 |
| | 10 | 319 | 42 | 160 | 45,0 | 90 | 100 | 20,6 |
| | 12 | 383 | 42 | 155 | 50,0 | 100 | 100 | 33,0 |
| | 13 | 415 | 42 | 155 | 50,0 | 100 | 100 | 38,0 |
| | 16 | 510 | 42 | 165 | 60,0 | 120 | 100 | 66,5 |
| 14 × 64 | 7 | 287 | 42 | 140 | 45,0 | 90 | 100 | 16,0 |
| | 8 | 328 | 42 | 160 | 45,0 | 90 | 100 | 21,5 |
| 16 × 64 | 8 | 328 | 50 | 160 | 45,0 | 90 | 100 | 23,5 |
| | 9 | 368 | 50 | 185 | 45,0 | 135 | 120 | 41,5 |
| | 10 | 409 | 50 | 200 | 45,0 | 120 | 135 | 49,5 |
| 19 × 75 | 8 | 384 | 55 | 185 | 40,0 | 135 | 125 | 41,5 |
| | 10 | 479 | 55 | 220 | 45,0 | 120 | 140 | 71,5 |
| 22 × 86 | 8 | 440 | 55 | 185 | 40,0 | 135 | 120 | 76,5 |
| | 9 | 495 | 65 | 230 | 80,0 | 160 | 140 | 88,5 |
| | 10 | 549 | 65 | 270 | 80,0 | 160 | 170 | 95,5 |
| 26 × 100 | 8 | 512 | 78 | 270 | 100,0 | 200 | 180 | 110,0 |
| | 9 | 575 | 78 | 300 | 45,0 | 170 | 220 | 141,0 |
| | 10 | 639 | 78 | 340 | 80,0 | 160 | 210 | 155,0 |

* With tooth disc




Sprocket wheel multi-part*




Sprocket wheel multi-part **

## SPROCKET WHEEL MULTI-PART**

| chain d × t in mm | No. of teeth | TK Ø | A | B | Standard Dimension C | $E_{max.}$ | $F_{max.}$ = Hole Ø in mm | Complete wheel approximately kg / piece |
|---|---|---|---|---|---|---|---|---|
| 30 × 120** | 8 | 614 | 98 | 320 | 90,0 | 180 | 220 | 140,0 |
| | 9 | 690 | 98 | 320 | 90,0 | 180 | 230 | 170,0 |
| | 10 | 766 | 98 | 320 | 60,0 | 190 | 200 | 216,0 |
| 34 × 136** | 8 | 697 | 107 | 320 | 110,0 | 220 | 200 | 195,0 |
| | 9 | 783 | 107 | 380 | 110,0 | 220 | 240 | 262,0 |
| 38 × 144** | 8 | 738 | 108 | 365 | 110,0 | 220 | 220 | 270,0 |

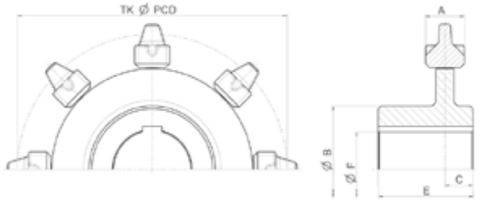
** With replaceable, highly wear-resistant individual teeth

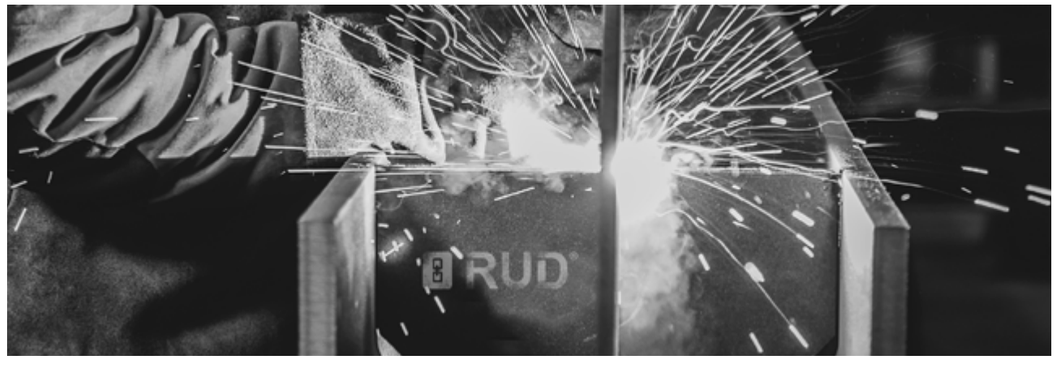
## SPROCKET WHEEL SINGLE-PART

**Properties:**
· Highly wear-resistant for difficult operating conditions
· Unhardened for easy operating conditions

| chain d × t in mm | No. of teeth | TK Ø | A | B | Standard Dimension C | $E_{max.}$ | $F_{max.}$ = hole Ø in mm | Complete wheel approximately kg / piece |
|---|---|---|---|---|---|---|---|---|
| 8 × 31 | 5 | 100 | 25 | 52 | 25,0 | 60 | 40 | 1,0 |
| | 7 | 139 | 25 | 92 | 27,5 | 55 | 65 | 2,6 |
| | 8 | 159 | 25 | 80 | 30,0 | 60 | 50 | 3,0 |
| | 10 | 198 | 25 | 95 | 17,0 | 47 | 65 | 3,6 |
| | 14 | 277 | 25 | 110 | 27,0 | 80 | 70 | 7,5 |
| | 16 | 316 | 25 | 120 | 27,0 | 80 | 80 | 9,2 |
| | 22 | 434 | 25 | 120 | 45,0 | 90 | 80 | 16,1 |
| 10 × 38 | 6 | 147 | 31 | 89 | 30,0 | 60 | 60 | 4,0 |
| | 7 | 170 | 31 | 114 | 25,0 | 75 | 85 | 3,3 |
| | 8 | 194 | 31 | 95 | 25,0 | 75 | 55 | 6,3 |
| | 10 | 243 | 31 | 90 | 20,0 | 60 | 50 | 6,5 |
| | 12 | 291 | 31 | 140 | 27,0 | 80 | 90 | 15,5 |
| | 16 | 388 | 31 | 130 | 30,0 | 85 | 80 | 28,5 |
| 14 × 50 | 6 | 193 | 42 | 92 | 40,0 | 80 | 50 | 7,5 |
| | 8 | 256 | 42 | 120 | 30,0 | 90 | 100 | 13,7 |
| | 10 | 319 | 42 | 160 | 45,0 | 90 | 110 | 20,0 |
| | 16 | 510 | 42 | 160 | 60,0 | 120 | 100 | 31,5 |
| 16 × 64 | 6 | 246 | 50 | 160 | 25,0 | 68 | 115 | 8,5 |
| | 8 | 327 | 50 | 145 | 45,0 | 90 | 100 | 18,0 |
| | 9 | 368 | 50 | 160 | 30,0 | 125 | 110 | 26,5 |
| | 10 | 409 | 50 | 175 | 45,0 | 120 | 110 | 34,5 |
| 18 × 64 | 6 | 247 | 55 | 150 | 28,0 | 75 | 100 | 9,5 |
| 19 × 75 | 8 | 384 | 55 | 180 | 40,0 | 135 | 110 | 40,5 |
| | 9 | 575 | 78 | 220 | 45,0 | 120 | 120 | 85,0 |
| 22 × 86 | 6 | 331 | 65 | 190 | 35,0 | 200 | 140,0 | 64,0 |



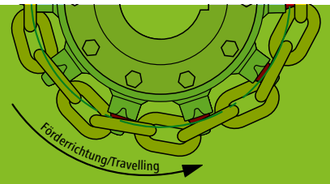


# OUR TIP

TOOTHED SEGMENTS WITH INCREASED PITCH CIRCLE DIAMETER

Tooth discs and individual teeth, optimally adapted to the proportional chain extension given at the time of replacement. Available in dimensions 14×50 to 38×144 for all multi-part sprocket wheels. Prices on request!

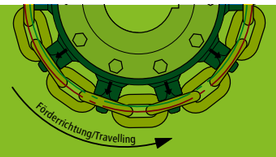


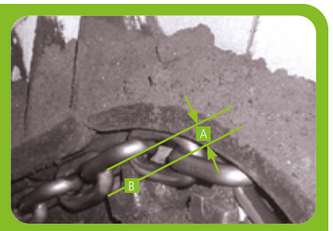

## PREVIOUS – CHAIN RUNS AGROUND!

Indications of too heavily worked chain:
· Uneven run
· Hook formation at rear tooth flank
· Flank clearance used up
· Strong vibration at the drive
· Chain falls only after several teeth on chain link support of the teeth

P.C.D. of standard sprocket wheel

The chain suited enlarged p.c.d. of the teeth



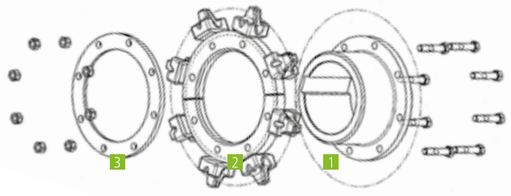




## LATER – THE CHAIN WEAR IS COMPENSATED FOR BY USING A NEW TOOTH SEGMENT WITH LARGER TOOTH FLANK.

· The solution: sprocket wheels with increased pitch circle diameter.
· Replaceable tooth segments / individual teeth increase the life cycle of the complete sprocket wheel Run-in behaviour of worn chain at the driving gear

A. Distance of horizontal chain link – horizontal link support at the tooth (approx. 30 – 35 mm)
B. Synchronisation of vertical link at the outermost tip of the tooth

## STRUCTURE OF SPROCKET WHEEL – MULTI-PART




1. Hub disc
2. Tooth wheel segment
3. Counter disc

**IN CASE OF NEW CHAINS, NEW TOOTH DISCS / INDIVIDUAL CHAINS SHOULD ALWAYS BE USED.**

With new chain components, the horizontal link stays on the link support of the tooth. When chain elongation occurs due to wear and tear, the horizontal links do not sit on the support but rest on the sprocket tooth tip. This leads to both the horizontal and vertical links sitting on the sprocket tooth which can cause chain derailment and damage

**Tip:** By inserting new single teeth with enlarged pitch circle diameter, the chain wear is compensated and the service life will be extended

# RUD REVERSION WHEELS

TYPE A // TYPE B // TYPE C



## TYPE A




Properties:
· Grooved wheels with rim
· For using at tensioning stations

| For chain d × t in mm | Corr. teeth number | TK Ø | C* | E* (Typ A or C) |
|---|---|---|---|---|
| 10 × 38 | 8<br>10<br>12 | 194<br>243<br>291 | 15,5<br>15,5<br>15,5 | 45<br>45<br>45 |
| 14 × 50 | 8<br>10<br>12 | 256<br>319<br>383 | 21<br>21<br>21 | 60<br>60<br>60 |
| 16 × 64 | 8<br>10<br>12 | 327<br>409<br>490 | 25<br>25<br>25 | 70<br>70<br>70 |
| 18 × 64 | 8<br>10 | 323<br>402 | 27,5<br>27,5 | 80<br>80 |
| 19 × 75 | 8<br>10<br>12 | 384<br>479<br>574 | 27,5<br>27,5<br>27,5 | 80<br>80<br>80 |
| 22 × 86 | 8<br>10<br>12 | 440<br>549<br>658 | 32,5<br>32,5<br>32,5 | 90<br>90<br>90 |

Other sizes on request.



## TYPE B




Properties:
· Grooved wheels without rim
· For using in loose side of the belt under the trough

| For chain d × t in mm | Corr. teeth number | TK Ø | C* | E=2C* (only Typ B) |
|---|---|---|---|---|
| 10 × 38 | 8<br>10 | 194<br>243 | 15,5<br>15,5 | 31<br>31 |
| 14 × 50 | 8<br>10 | 256<br>319 | 21<br>21 | 42<br>42 |
| 16 × 64 | 8<br>10 | 327<br>409 | 25<br>25 | 50<br>50 |
| 18 × 64 | 8 | 323 | 27,5 | 55 |
| 19 × 75 | 8<br>10 | 384<br>479 | 27,5<br>27,5 | 55<br>55 |
| 22 × 86 | 8<br>10<br>12 | 440<br>549<br>658 | 32,5<br>32,5<br>32,5 | 65<br>65<br>65 |

Other sizes on request.



## TYPE C




Properties:
· Plain wheels with rim
· For both the use cases, however only possible when using flange attachments and very short scraper distances

| For chain d × t in mm | Corr. teeth number | TK Ø | C* | E* (Typ A or C) |
|---|---|---|---|---|
| 10 × 38 | 8<br>10<br>12 | 194<br>243<br>291 | 15,5<br>15,5<br>15,5 | 45<br>45<br>45 |
| 14 × 50 | 8<br>10<br>12 | 256<br>319<br>383 | 21<br>21<br>21 | 60<br>60<br>60 |
| 16 × 64 | 8<br>10<br>12 | 327<br>409<br>490 | 25<br>25<br>25 | 70<br>70<br>70 |
| 18 × 64 | 8<br>10<br>12 | 323<br>402<br>482 | 27,5<br>27,5<br>27,5 | 80<br>80<br>80 |
| 19 × 75 | 8<br>10<br>12 | 384<br>479<br>574 | 27,5<br>27,5<br>27,5 | 80<br>80<br>80 |
| 22 × 86 | 8<br>10 | 440<br>549 | 32,5<br>32,5 | 90<br>90 |

Other sizes on request.

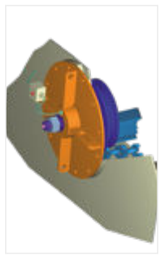
* To order, please use the questionnaire on page 70 and / or pages 68/69.

# RUD SUBMERGED OVERHUNG IDLER

(SOI - SUBMERGED OVERHUNG IDLER)



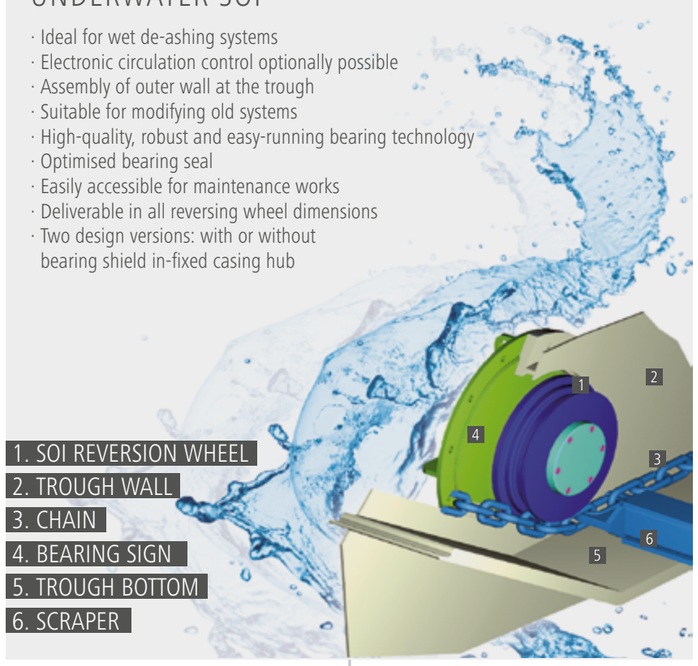




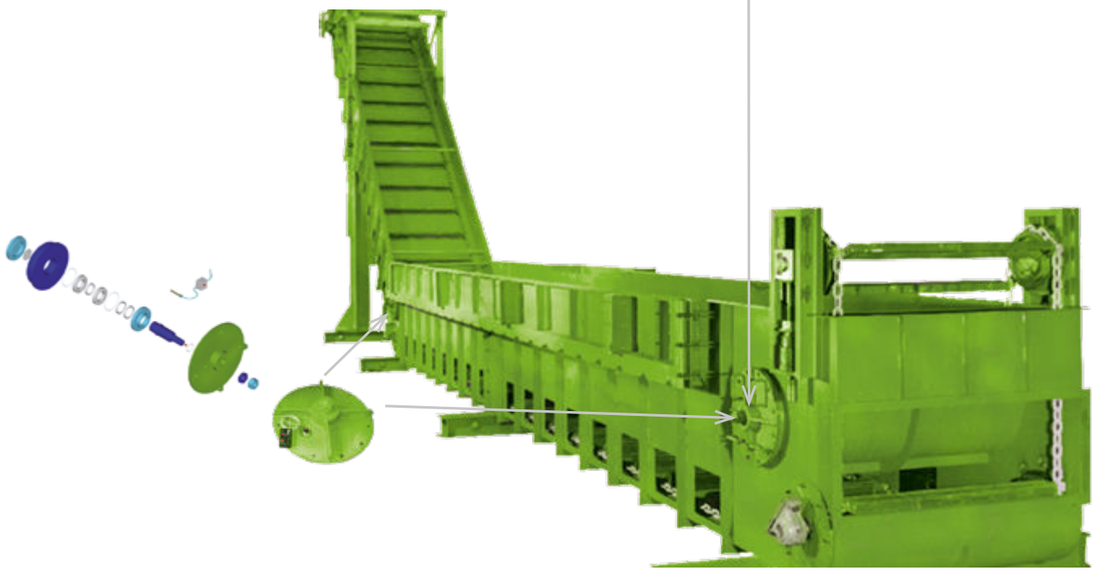
- Grooved wheels with rim for use in the hoistway
- Underwater sprockets vary from the normal reversion wheel only in the design of the "flying" shaft bearing, which are optimally designed by RUD for even these case studies. Numerous use cases all over the world prove their high availability.

## UNDERWATER SOI

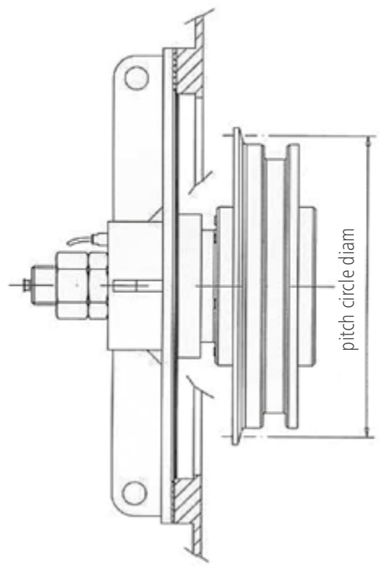
- Ideal for wet de-ashing systems
- Electronic circulation control optionally possible
- Assembly of outer wall at the trough
- Suitable for modifying old systems
- High-quality, robust and easy-running bearing technology
- Optimised bearing seal
- Easily accessible for maintenance works
- Deliverable in all reversing wheel dimensions
- Two design versions: with or without bearing shield in-fixed casing hub




1. SOI REVERSION WHEEL
2. TROUGH WALL
3. CHAIN
4. BEARING SIGN
5. TROUGH BOTTOM
6. SCRAPER

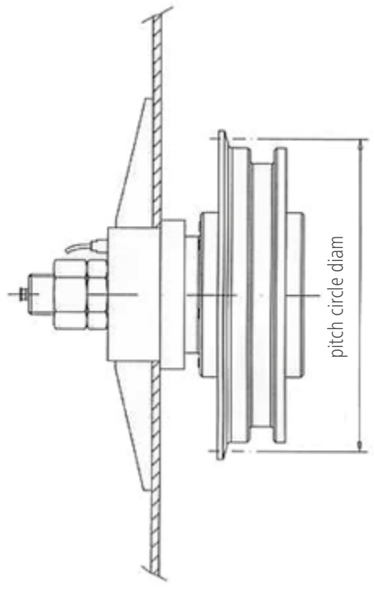


## DESIGN SOI 1




| For chain d × t in mm | PCD Ø | Corresponding to the number of teeth |
|---|---|---|
| 19 × 75 | 290<br>384 | 6<br>8 |
| 22 × 86 | 331<br>440<br>549 | 6<br>8<br>10 |
| 26 × 100 | 386<br>512<br>639 | 6<br>8<br>10 |
| 30 × 120 | 426<br>614<br>766 | 6<br>8<br>10 |

## DESIGN SOI 2




| For chain d × t in mm | PCD Ø | Corresponding to the number of teeth |
|---|---|---|
| 19 × 75 | 290<br>384<br>479 | 6<br>8<br>10 |
| 22 × 86 | 331<br>440<br>549 | 6<br>8<br>10 |

For ordering, please use the questionnaire on page 68 / 69. Other designs and sizes available on request.

# RUD ATTACHMENT SYSTEM SPROCKET WHEEL

## ATTACHMENT FM

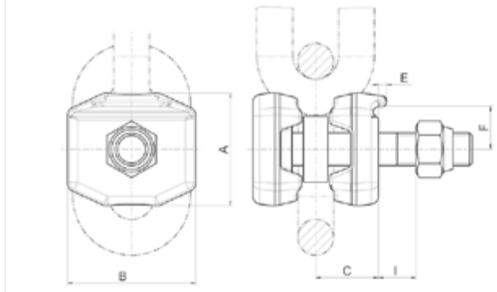




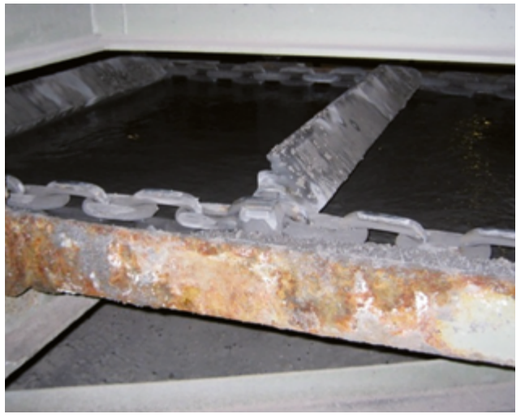


| RUD Part No.. | For chain d × t in mm | A | B | C | E | F | G | H | I | kg/piece |
|---|---|---|---|---|---|---|---|---|---|---|
| 52744<br>52745<br>52746 | 14 × 50 | 39 | 47 | 24,5 | 3 | 15,5 | M 12 | 65<br>70<br>75 | 10<br>15<br>20 | 0,4<br>0,4<br>0,4 |
| 52747<br>52748<br>52749 | 16 × 64 | 51 | 57 | 28,5 | 4 | 20 | M 16 | 80<br>90<br>110 | 15<br>25<br>45 | 0,8<br>0,8<br>0,8 |
| 52751<br>52752<br>52755 | 19 × 75 | 61 | 70 | 33,5 | 5 | 22,5 | M 20 | 110<br>120<br>130 | 30<br>40<br>50 | 1,4<br>1,4<br>1,4 |
| 52756<br>52757<br>52758 | 22 × 86 | 70 | 79 | 38,5 | 5 | 26 | M 20 | 110<br>120<br>130 | 20<br>30<br>40 | 1,9<br>1,9<br>1,9 |
| 52759<br>7989190 | 26 × 100 | 80 | 93 | 43 | 6 | 30 | M 24 | 130<br>160 | 30<br>60 | 3,0 |
| 52760 | 30 × 120 | 100 | 105 | 52,5 | 7 | 37 | M 30 | 160 | 40 | 5,2 |

H = screw length
I = clamp length





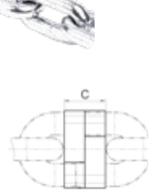
## MEZ-Z // F

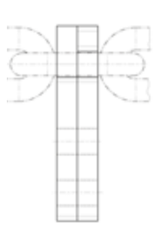
### ATTACHMENT MEZ-Z

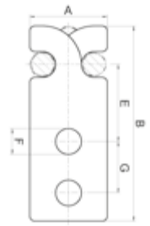


**Properties:**
- For medium to difficult operating conditions
- For scraper height up to 1.5 times the outer chain link width
- Assembly and disassembly in case of tensioned chain possible
- Run across sprocket wheels and flat wheels








| RUD Part No. | For chain d × t in mm | A | B | C | E | F | G | kg/pair |
|---|---|---|---|---|---|---|---|---|
| 61629 | 10 × 38 | 35 | 100 | 12 | 37 | 11 | 30 | 0,3 |
| 61630 | 14 × 50 | 50 | 130 | 30 | 52 | 13,5 | 36 | 1,25 |
| 61635 | 22 × 86 | 75 | 190 | 36 | 75 | 22 | 50 | 3,2 |

### ATTACHMENT F

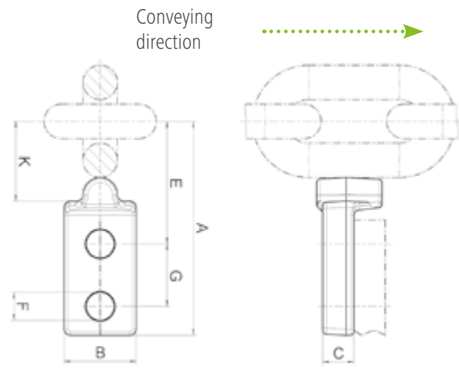




**Properties:**
- For medium and difficult operating conditions
- Directly welded
- For scraper height up to 1.5 times the outer chain link width
- Assembly and disassembly of scraper bars in case of tensioned chain loops
- Replacement for chain ends and chain brackets
- Run across sprocket wheels, pocket wheels and grooved wheels

| RUD Part No. | For chain d × t in mm | A | B | C | E | F | G | $K_{max}$ | kg/pair |
|---|---|---|---|---|---|---|---|---|---|
| 53215 | 18 × 64 | 126 | 35 | 30 | 65 | 17 | 40 | 45 | 0,64 |
| 55039 | 19 × 75 | 134 | 46 | 20 | 75 | 18 | 40 | 37 | 0,71 |
| 53065 | 22 × 86 | 139 | 46 | 20 | 80 | 18 | 40 | 51 | 0,71 |

Attachment F can also be used in pocket wheel system.





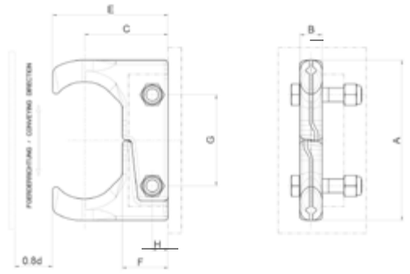

# RUD ATTACHMENT SYSTEM SPROCKET WHEEL

DUOMOUNT // SSR

## ATTACHMENT DUOMOUNT®

**Properties:**
- For very high conveyance capacities up to 50 t/h
- For scraper height up to 2.5 times the outer chain link width
- Scraper profiles of any shapes possible
- Highly wear-resistant
- Multiple link attachment
- Can be tensioned in the tensioned chain belt
- Variable scraper distance possible
- Runs over sprocket wheels and grooved wheels





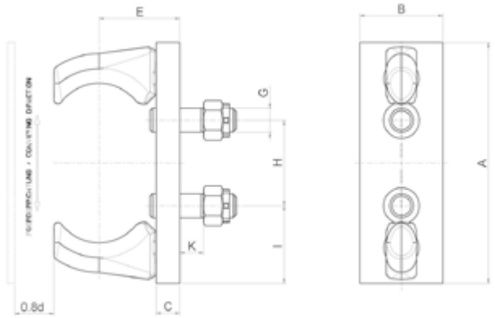

| RUD Part no. | For chain d × t in mm | A | B | C | E | F | G | H | I | kg / piece |
|---|---|---|---|---|---|---|---|---|---|---|
| 7995852* | 26 × 100 | 214 | 30 | 112 | 155 | 65 | 120 | 25 | 20,5 | 5,2 |

* Distribution without screw!

## ATTACHMENT SELF-LOCKING – REVERSIBLE SSR

**Properties:**
- For difficult operating conditions
- For double-strand conveyors
- Reverse operation possible
- Robust and easy
- Run across sprocket wheels and grooved wheels





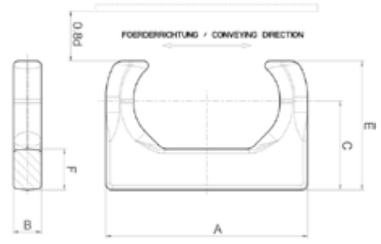

| RUD Part no. | for chain d × t in mm | A | B | C | E | H | G | I | K | kg / piece |
|---|---|---|---|---|---|---|---|---|---|---|
| 55333 | 10 × 38 | 82 | 24 | 10 | 30 | 58 | M 10 | 12 | 10 | 0,3 |
| 60812 | 19 × 75 | 175 | 60 | 20 | 58 | 65 | M 20 | 62,5 | 20 | 2,5 |
| 60343 | 22 × 86 | 200 | 70 | 20 | 68 | 71 | M 20 | 72,5 | 20 | 3,4 |
| 59991 | 26 × 100 | 235 | 80 | 20 | 72 | 85 | M 20 | 75 | 20 | 4,8 |
| 62331 | 30 × 120 | 280 | 90 | 25 | 85 | 98 | M 24 | 100 | 24 | 7,5 |

SSRF

## ATTACHMENT SELF-LOCKING – REVERSIBLE FLAT SSRF

**Properties:**
- For very high conveyance capacities
- For scraper height up to 2.5 times the outer chain link width
- Variable scraper distance possible
- Run over sprocket wheels and grooved wheels
- Multiple link attachment
- Weldable at scraper profiles of any shapes
- Highly wear-resistant





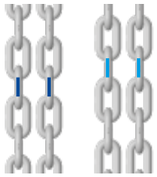

| RUD Part no. | For chain d × t in mm | A | B | C | E | F | kg / piece |
|---|---|---|---|---|---|---|---|
| 7102723 | 14 × 50 | 110 | 16 | 50 | 73 | 25 | 0,5 |
| 7990392 | 16 × 64 | 135 | 19 | 59 | 83 | 30 | 0,8 |
| 63734 | 19 × 75 | 156 | 21 | 69 | 100 | 36 | 1,2 |
| 51297 | 22 × 86 | 182 | 25 | 80 | 116 | 37 | 2,0 |
| 63735 | 26 × 100 | 214 | 30 | 92 | 135 | 45 | 3,3 |
| 7102491 | 30 × 120 | 252 | 35 | 110 | 160 | 56 | 5,3 |
| 7102490 | 34 × 136 | 282 | 38 | 122 | 177 | 60 | 7,2 |
| 7992608 | 38 × 144 | 309 | 43 | 137 | 199 | 68 | 10,0 |



# RUD SCRAPER BARS

SAFER SCRAPER OPERATION WITH MATCHED RUD STRANDS



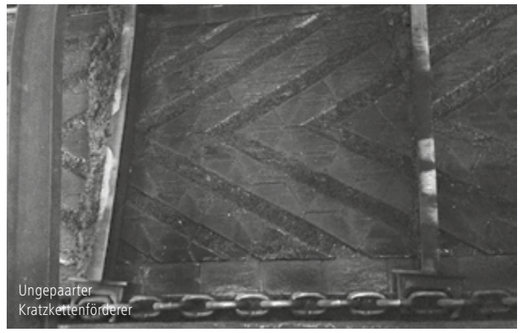




RUD PRODUCT ADVANTAGE:
LABELLING OF SUITABLE PAIR
USING COLOURS!

## OUR SCRAPER BARS AND ATTACHMENTS FORM THE PERFECT SYSTEM IN ASSOCIATION WITH OUR PAIRED CHAIN STRANDS:

- Simplest assembly and disassembly
- Optimal run across the pocket and sprocket wheels
- The suitable scraper design for every material to be transported
- Lower wear
- No scraper tilting
- Everything from a single source chains, connectors, scraper bars and wheels



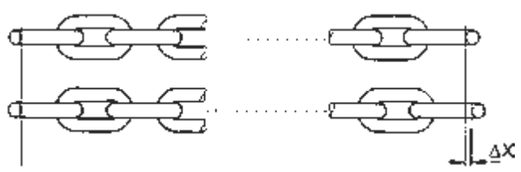
Ungepaarter
Kratzkettenförderer



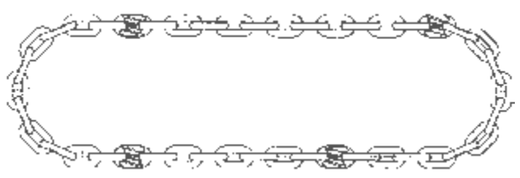
Gepaarter RUD
Doppelstrangförderer

Strand lengths, production tolerance:
+ 0.4 %
– 0.15 % = 0,55 % max.
i.e. for 10 m length, max. difference 55 mm

length tolerance $\Delta X$ of matched chain left
(Multiple-belt-conveyor)
$\Delta X$ = 0.05 % max., i. e. for e. g. 10 m long belts the max. difference is. 5.0 mm. if the length of the belt is < 8 m, the largest pair tolerance = 4 mm.




Strand series



Pass strand

When ordering chain loops in millimetres, we require the precise scraper distance for distributing into individual chain strand lengths.

# RUD SCRAPER BARS

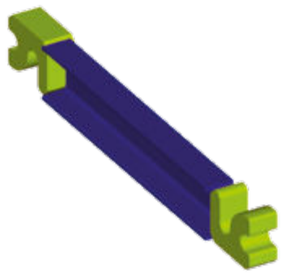
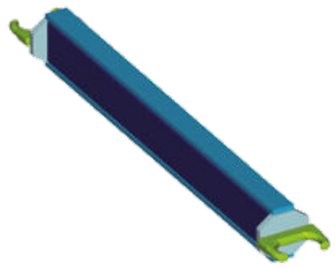
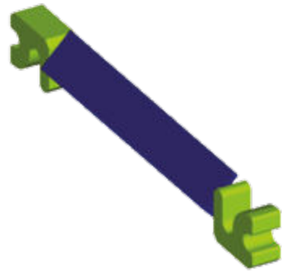
THE CORRECT SCRAPER BAR FOR YOUR REQUIREMENTS

RUD scraper bars are always optimally adapted to the requirements and operating conditions specified to us by the customer. We produce scraper bars as per the specifications of the customers, provided that no consultation or support is necessary. Alternatively, we suggest an optimal scraper version based on an intensive consultation, which is developed in the briefing.

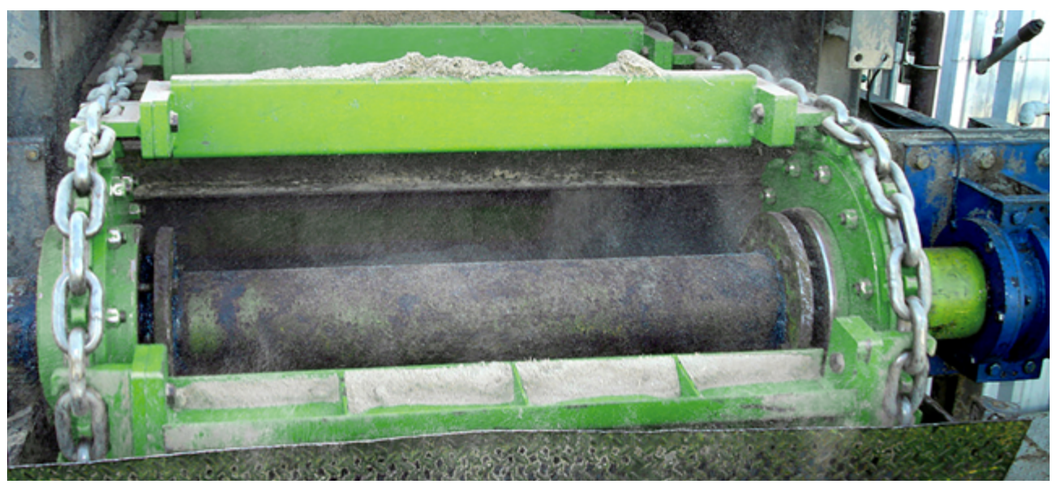
**The following information is hence necessary and evaluated by us:**

- Clear trough width of the conveyor as well as its exact line profile
- Trough bottom material and design
- Chain centre distance

## USAGE EXAMPLES* – SCRAPER BARS AND ATTACHMENTS

| Standard U profile with MEE-T attachment | Standard scraper bar design for difficult conditions with SSRF or DUOMOUNT | Standard angle profile with MEE-T attachment |
|---|---|---|
|  |  |  |
| **Typical usage options:**<br>Cleaning scraper conveyor | **Typical usage options:**<br>Wet de-ashing systems | **Typical usage options:**<br>Coaling systems / coal feeders<br>Bunker discharge conveyor |

* Other scraper designs on request; if necessary, use the sketch on page 67

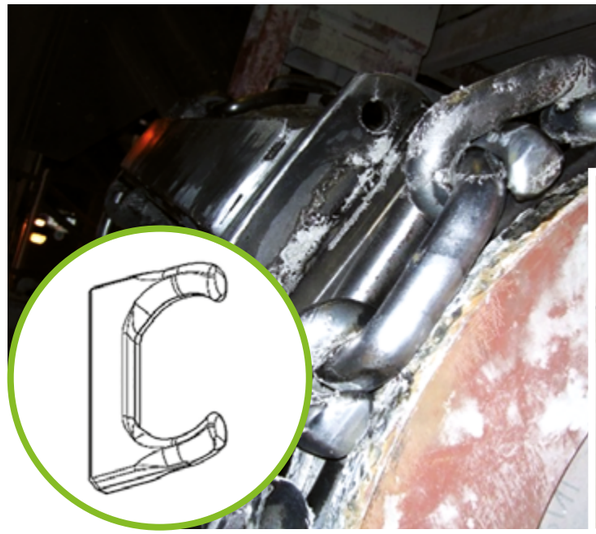


# RUD SCRAPER BARS

AREAS OF APPLICATIONS

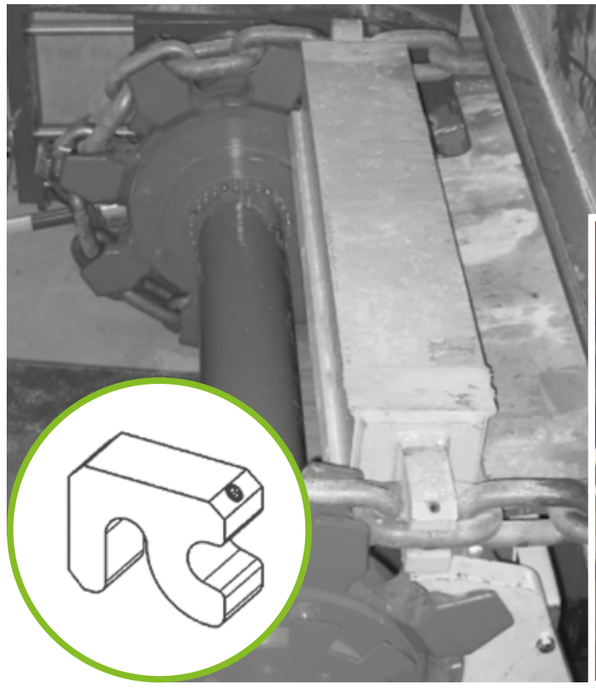


## DE-ASHER WITH SSRF ATTACHMENT



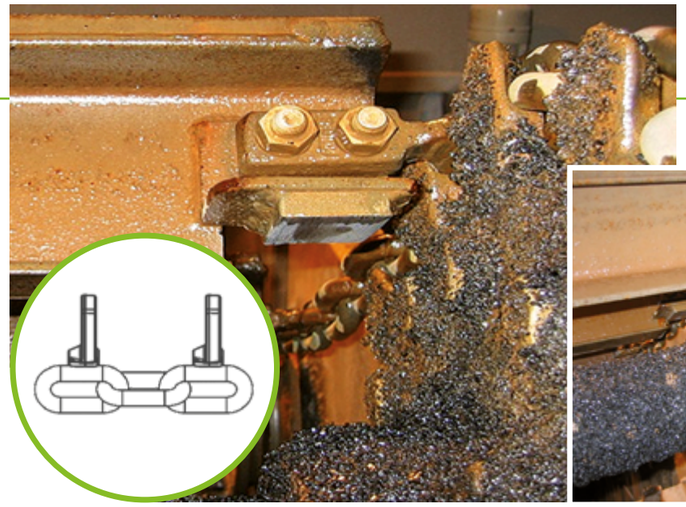


## LANDFILL WASTE BUNKER DISCHARGE WITH MEE-T ATTACHMENT





## DE-ASHER WITH F ATTACHMENT

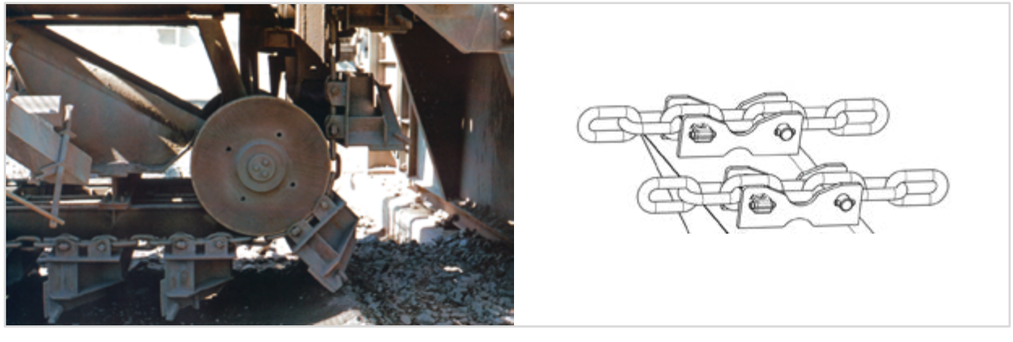




## DE-ASHER WITH FM ATTACHMENT



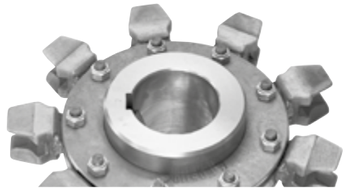

## RECLAIMER SCRAPER BARS WITH SYSTEM 65



# RUD SYSTEM POCKET WHEELS

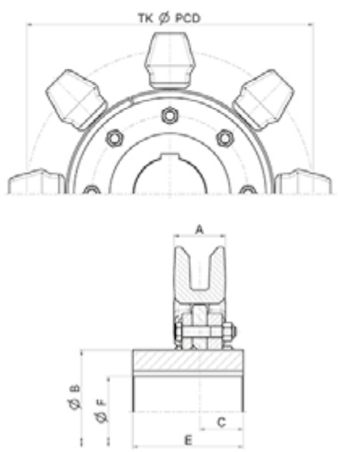
## MULTI-PART POCKET WHEEL SYSTEM

**Properties:**
- With replaceable, highly wear-resistant pocket wheel discs
- For difficult operating conditions
- Preferably used as driving gear



| For chain d × t in mm | Z | PCD Ø | A | B | C | $E_{max.}$ | $F_{max.}$ = Hole Ø in mm | Complete sprocket wheel approx. kg / piece |
|---|---|---|---|---|---|---|---|---|
| 10 × 38 | 8 | 195 | 35,0 | 80 | 30 | 80 | 45,0 | 6,5 |
| 14 × 50 | 8 | 256 | 49 | 120 | 35 | 100 | 80,0 | 13,1 |
| | 9 | 288 | 49 | 140 | 45 | 90 | 100,0 | 15,2 |
| | 10 | 320 | 49 | 155 | 40 | 105 | 100,0 | 23,8 |
| | 12 | 384 | 49 | 155 | 40 | 105 | 100,0 | 37,4 |
| 16 × 64 | 8 | 327 | 56 | 160 | 45 | 125 | 110 | 27,2 |
| | 10 | 409 | 56 | 195 | 45 | 125 | 140 | 45,4 |
| 18 × 64 | 8 | 328 | 64 | 150 | 45 | 125 | 90 | 30,5 |
| 19 × 75 | 8 | 384 | 66 | 185 | 45 | 145 | 130 | 40,5 |
| | 10 | 479 | 66 | 225 | 45 | 145 | 150 | 68,0 |
| 22 × 86 | 7 | 387 | 77 | 155 | 65 | 165 | 90 | 45,0 |
| | 8 | 440 | 77 | 200 | 65 | 165 | 120 | 59,5 |
| | 10 | 549 | 77 | 225 | 65 | 165 | 140 | 106,0 |
| 26 × 100 | 8 | 512 | 91 | 235 | 75 | 175 | 150 | 89,0 |
| | 10 | 639 | 91 | 335 | 75 | 175 | 230 | 215,0 |
| 30 × 120 | 9 | 690 | 108 | 320 | 80 | 170 | 180 | 189,0 |
| | 10 | 766 | 108 | 360 | 90 | 180 | 240 | 243,0 |
| 34 × 136 | 9 | 783,0 | 122,0 | 380 | 90,0 | 240 | 260,0 | 335,0 |
| 38 × 144 | 8 | 738,0 | 130,0 | 355 | 125,0 | 250 | 240,0 | 316,0 |

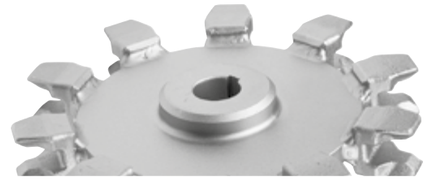





# RUD SYSTEM POCKET WHEELS

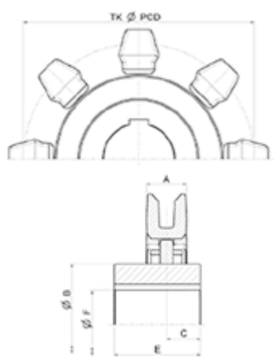
## SINGLE-PART POCKET WHEEL SYSTEM

**Properties:**
- Highly wear-resistant
- For medium and difficult operating conditions
- Especially suitable as guide wheel



| For chain d × t in mm | Z | PCD Ø | A | B | C | $E_{max.}$ | $F_{max.}$ = Hole Ø in mm | Complete sprocket wheel approx. kg / piece |
|---|---|---|---|---|---|---|---|---|
| 8 × 31 | 5* | 100,3 | 40 | 62 | 25,0 | 68 | 45,0 | 4,5 |
| | 6 | 119,7 | 45 | – | 22,5 | 45 | 40,0 | 2,9 |
| | 7 | 139,3 | 40 | 70 | 27,5 | 55 | 40,0 | 4,5 |
| | 10* | 198,1 | 43 | 80 | 25,0 | 50 | 48,0 | 6,5 |
| 10 × 38 | 5* | 123,0 | 55,0 | 75 | 32,0 | 80 | 45,0 | 3,5 |
| | 6 | 147,0 | 35,0 | 85 | 30,0 | 80 | 55,0 | 3,5 |
| | 8 | 194,7 | 35,0 | 100 | 25,0 | 80 | 65,0 | 11,5 |
| | 10* | 243,0 | 35,0 | 100 | 30,0 | 80 | 65,0 | 21,0 |
| | 12 | 291,0 | 35,0 | 100 | 30,0 | 80 | 65,0 | 22,0 |
| 14 × 50 | 6 | 193,0 | 49 | 105 | 30 | 75 | 70,0 | 7,5 |
| | 7 | 225,0 | 49 | 135 | 30 | 65 | 85,0 | 12,0 |
| | 8 | 256,0 | 49 | 120 | 30 | 100 | 80,0 | 13,5 |
| | 10 | 319,0 | 49 | - | 30 | 70 | 120,0 | 29,0 |
| | 12 | 383,0 | 49 | 160 | 30 | 100 | 120,0 | 23,5 |
| 16 × 64 | 6 | 247,0 | 56 | 140 | 45 | 120 | 85,0 | 15,1 |
| | 8 | 328,0 | 56 | 160 | 45 | 125 | 120,0 | 21,5 |
| | 10 | 409,0 | 56 | 195 | 45 | 125 | 140,0 | 35,4 |
| 18 × 64 | 6 | 247 | 63,5 | 140 | 45 | 120 | 95,0 | 20,1 |
| | 8 | 328 | 63,5 | 150 | 45 | 125 | 110,0 | 25,5 |
| 19 × 75 | 8 | 385 | 66,0 | 185 | 45 | 130 | 125,0 | 40,0 |
| | 10 | 479 | 66,0 | 225 | 45 | 145 | 150,0 | 50,0 |
| 22 × 86 | 6 | 332,0 | 77,0 | – | 50,0 | 100 | 140,0 | 27,0 |
| | 7 | 386,0 | 77,0 | 265 | 65,0 | 165 | 150,0 | 50,0 |
| | 8 | 440,0 | 77,0 | 185 | 65,0 | 165 | 135,0 | 50,5 |
| | 10 | 549,0 | 77,0 | 300 | 65,0 | 165 | 180,0 | 100,0 |
| 26 × 100 | 8 | 512,0 | 91,0 | 235 | 75,0 | 175 | 150,0 | 90,0 |
| | 10 | 639,0 | 91,0 | 335 | 75,0 | 175 | 250,0 | 110,0 |
| 30 × 120 | 8 | 614,0 | 108,0 | 320 | 55,0 | 210 | 220,0 | 180,0 |

* without heat treatment





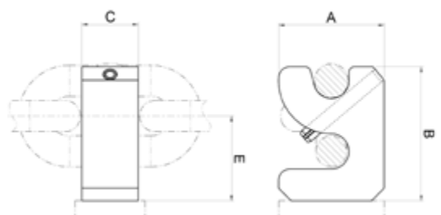



# RUD SYSTEM POCKET WHEELS

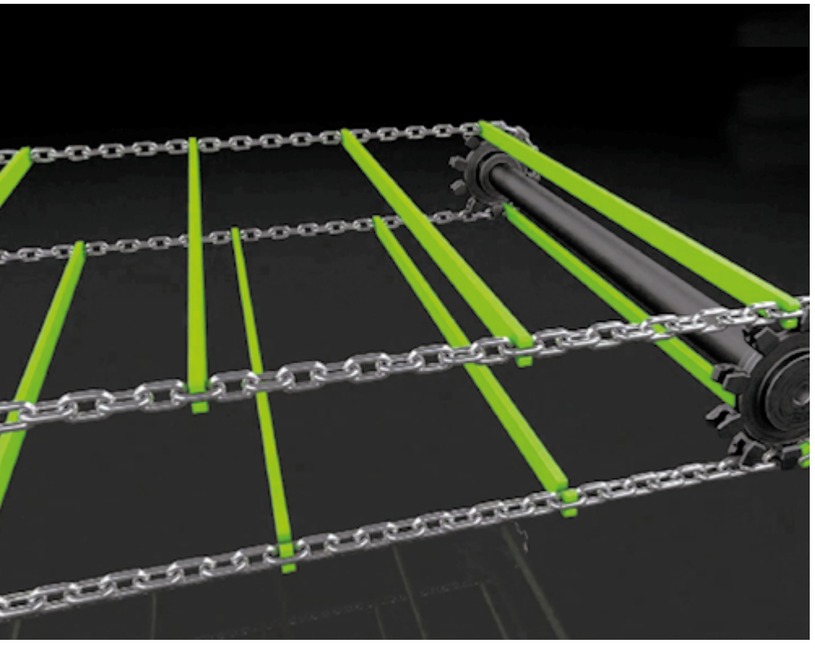
## ATTACHMENT MEE-T

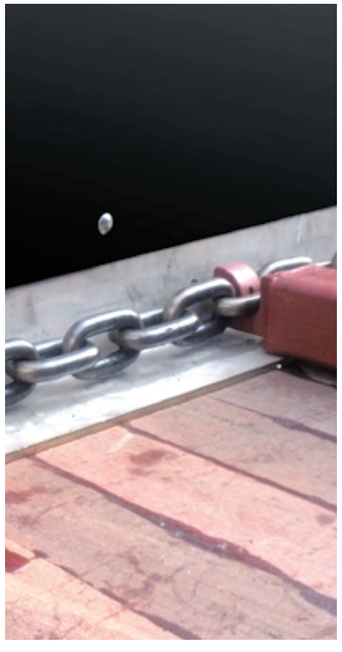
## MEE-T IN ONE PART FOR SYSTEM POCKET WHEEL

**Properties**:
· For difficult operating conditions
· Scraper height up to 1.5 times the chain link width
· Double-strand conveyor and multiple-strand conveyor systems
· Can be welded to anything
· Securing with locking pin if necessary
· Run over pocket wheels and plain wheels
· Deliverable with and without locking pin.




| RUD Part no. with locking pin | RUD Part no. with locking pin | For chain d × t in mm | A | B | C | E | kg / piece |
|---|---|---|---|---|---|---|---|
| 62930 | 62929 | 10 × 38 | 35 | 43 | 16 | 27 | 0,2 |
| 55158 | 50380 | 14 × 50 | 50 | 60 | 20 | 38 | 0,4 |
| 62676 | 50383 | 16 × 64 | 56 | 70 | 28 | 44 | 0,6 |
| 62677 | 50417 | 18 × 64 | 62 | 78 | 25 | 49 | 0,6 |
| 62678 | 50418 | 19 × 75 | 65 | 80 | 35 | 50 | 1,0 |
| 62680 | 50419 | 22 × 86 | 75 | 95 | 40 | 60 | 1,6 |
| 62681 | 50423 | 26 × 100 | 90 | 111 | 45 | 70 | 2,5 |
| 62683 | 50424 | 30 × 120 | 105 | 128 | 55 | 81 | 4,6 |
| 62685 | 50425 | 34 × 136 | 115 | 144 | 65 | 91 | 6,0 |
| 7992593 | – | 38 × 144 | 128 | 160 | 65 | 101 | 7,3 |





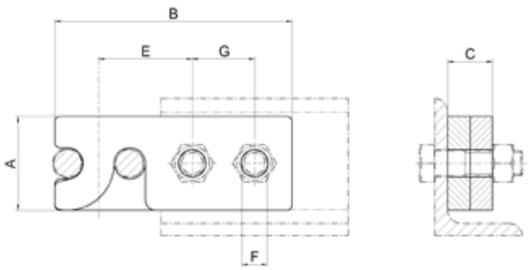


# RUD SYSTEM POCKET WHEELS

## ATTACHMENT MEZ-T

## PIVOT FITTING ATTACHMENT MEZ-T IN TWO PARTS-POCKET WHEEL

**Properties:**
· For medium to difficult operating conditions
· For scraper height up to 1.5 times the outer chain link width
· Assembly and disassembly of tensioned chain is possible
· Double-strand conveyor and multiple-strand conveyor systems
· Run over pocket wheels and plain wheels




| RUD Part no. | For chain d × t in mm | A | B | C | E | F | G | kg / Pair |
|---|---|---|---|---|---|---|---|---|
| 7102680 | 10 × 38 | 35 | 100 | 12 | 37 | 11,0 | 30 | 0,3 |
| 62686 | 14 × 50 | 50 | 130 | 16 | 52 | 13,5 | 36 | 0,7 |
| 62687 | 16 × 64 | 56 | 150 | 24 | 58 | 17,5 | 40 | 1,3 |
| 63039 | 18 × 64 | 62 | 155 | 24 | 63 | 17,5 | 40 | 1,5 |
| 63040 | 19 × 75 | 65 | 165 | 30 | 65 | 17,5 | 46 | 2,0 |
| 62688 | 22 × 86 | 75 | 190 | 36 | 75 | 22,0 | 50 | 3,2 |
| 62689 | 26 × 100 | 90 | 220 | 44 | 86 | 22 | 60 | 5,5 |
| 62690 | 30 × 120 | 105 | 250 | 56 | 96 | 26 | 70 | 9,3 |



# RUD BUCKET ATTACHMENT SYSTEMS

## AT A GLANCE



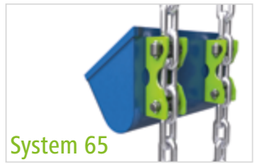
**Problems of the DIN-Systems**
- Chain bracket has a double function
- Transmission of tension of the chain loop
- Fixing the bucket to the chain loop and absorbing bucket strain
- Weak point double-function may lead to fatigue fractures
- Additional consequences may be loose screw fittings
- Even over-dimensioning in heavy conveyor operations does not solve these problems

**Solution RUD multi-link-fastenings 2win and System 65**
- Assembly over several chain links
- No transmission of tension from the chain to the attachment
- Gentle introduction of the scooping force into the chain strand
- Minimising wear in the chain joints

| | Bucket width [mm] | Max. conveyance capacity [$m^3/h$] | Max. dimension between axles [m] | | Max. conveyance speed [m/s] | Recommended granulation [mm] | Max. temperature of material to be conveyed [°C] | Recommended material to be conveyed |
|---|---|---|---|---|---|---|---|---|
| RUD Central chain | | | Recommended traction mechanism: | | RU50, RU80, RU150, RU200; Breaking force 570 – 2000 kN | | | |
|  | 250 – 1100<br>einfach 2 × 250 –<br>2 × 1000 tandem | 600<br>1200 | 70 | | 1,7 | 120 | 250 | Cement, limestone, gravel, coke, slag, clinker |
| RUD System 65 | | | Recommended traction mechanism: | | Round link steel chain 14 × 50 – 34 × 136; Breaking force 140 – 720kN | | | |
|  | 250 – 1600 | 1100 | 65 | | 1,5 | 120 | 200 | Cement, limestone, gravel, coal, sugar beets, clinker, potassium, rock, salt, fertiliser, soda |
| RUD System 2win* | | | Recommended traction mechanism: | | Round link steel chain 14 × 50 – 34 × 136; Breaking force 140 – 720 kN | | | |
|  | 250 – 1250 | 700 | 60 | | 1,5 | 100 | 200 | Cement, limestone, lump lime, soda, gypsum, fertiliser, filter dust |
| RUD System RUca | | | Recommended traction mechanism: | | Round link steel chain 16 × 64 – 26 × 100; Breaking force 100 – 265 kN | | | |
|  | 250 – 630 | 20 – 210 | 35 | | 0,9...1,4 | Chain diameter x 0.5 to chain diameter x 1.2 depending on the application | 200 | Building materials, potash and salt, sugar, lime, gypsum, REA gypsum, filter dust, cement |
| RUD System SWA | | | Recommended traction mechanism: | | Round link steel chain 16 × 64 – 30 × 120; Breaking force 180 – 640 kN | | | |
|  | 400 – 1250 | 30...275 | 40 | | 0,6...0,8 | 100 | 200 | Fertiliser, difficult to unload conveyed goods, for gentle transport of conveyed material |
| RUD fabric belt | | | Recommended traction mechanism: | | Fabric belts are available with 4 – 6 EP 630 – EP 1600 inserts | | | |
|  | 160 – 1250 | 700 | 45 | | 1,7 | 40 | 120 | Cement, limestone, gypsum, sugar, coal, aluminium oxide, sand, potassium, rock salt, slag, filter dust |
| RUD steel cord belt | | | Recommended traction mechanism: | | Steel cord belts are available with a breaking force of 800... 3150 N/mm belt width | | | |
|  | 315 – 1600 | 1200 | 120 | | 1,7 | 80 | 120 | Cement, limestone, coal, potassium, rocksalt slag |

# RUD CHAIN ELEVATORS

AT A GLANCE


System 65

These are specially designed for the dust free, vertical conveyance of powdery, granular, lumpy and high temperature bulk materials.


2WIN


RUca


SWA

Highly wear-resistant chains, traction wheels or sprockets ensure that even abrasive materials are transported reliably. Specially designed chain type bucket elevators are available in either centrifugal / gravity, positive or central discharge designs dependent on the application

## CONVEYING CAPACITIES, REFERENCE VALUES FOR APPROX. 75% FILLING



| Bucket DIN 15233 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Width [mm] | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Conveyance speed [m/s] | 1,05 | 1,05 | 1,15 | 1,15 | 1,20 | 1,20 | 1,34 | 1,34 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m3/h] | 9 | 11 | 20 | 25 | 44 | 61 | 94 | 129 | 196 | 305 | 391 |



| Bucket DIN 15234 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Width [mm] | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Conveyance speed [m/s] | 1,05 | 1,05 | 1,15 | 1,15 | 1,20 | 1,20 | 1,34 | 1,34 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m3/h] | 14 | 17 | 31 | 39 | 70 | 98 | 151 | 207 | 304 | 473 | 605 |



| Special bucket | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Width [mm] | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Conveyance speed [m/s] | 1,15 | 1,15 | 1,25 | 1,25 | 1,28 | 1,33 | 1,49 | 1,49 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m3/h] | 18 | 23 | 41 | 52 | 91 | 133 | 209 | 287 | 353 | 558 | 715 |



| High-capacity bucket conveyor | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Width [mm] | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
| Conveyance speed [m/s] | 1,15 | 1,15 | 1,25 | 1,25 | 1,28 | 1,33 | 1,49 | 1,49 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m3/h] | 27 | 34 | 59 | 75 | 129 | 185 | 288 | 397 | 499 | 789 | 1010 |

## DIMENSIONS *

| Bucket width | b | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head | a | 724 | 724 | 904 | 904 | 1004 | 1160 | 1264 | 1460 | 1673 | 1747 | 1747 |
| | c | 560 | 560 | 695 | 695 | 785 | 885 | 955 | 1160 | 1320 | 1340 | 1340 |
| | h | 850 | 850 | 1050 | 1050 | 1250 | 1450 | 1600 | 1800 | 2100 | 2300 | 2300 |
| Funnel | e | 1000 | 1000 | 1250 | 1250 | 1400 | 1650 | 1800 | 2100 | 2450 | 2550 | 2550 |
| | f | 280 | 355 | 450 | 545 | 660 | 770 | 900 | 1110 | 1300 | 1600 | 2000 |
| Foot | a | 724 | 724 | 904 | 904 | 1004 | 1160 | 1264 | 1460 | 1673 | 1747 | 1747 |
| | g | 1220 | 1220 | 1350 | 1350 | 1500 | 1700 | 1900 | 2100 | 2450 | 2500 | 2500 |
| | t | 670 | 670 | 800 | 800 | 880 | 970 | 1080 | 1300 | 1550 | 1550 | 1550 |
| | s | 1320 | 1320 | 1450 | 1450 | 1600 | 1800 | 2000 | 2200 | 2750 | 2750 | 2750 |
| Expansion Distance | E | 900 | 1000 | 1200 | 1300 | 1500 | 1600 | 1800 | 2100 | 2500 | 2900 | 3500 |

Not permitted for snub roller & mid-discharge bucket elevators.

The bucket elevator casings are self supporting, but they require horizontal guides at least every 15 meters and below the elevator head. The bucket elevator head comprises a lower section with doors to access the adjustable discharge plate, and braced bearing mountings, for the pedestal bearings which support the drive shaft, the shaft exit points use grease filled radial shaft seals. The upper sections comprise a multipart removable hood with an inspection door. A drive platform is mounted on the side of the lower part of the head for supporting a wide variety of commercially available drives. If required a maintenance platform and or an overhead support/ service beam can be fitted if required. An elevator drive normally consists of a geared motor unit, which is normally connected to a frequency controller for maintenance purposes. For higher power requirements, we recommend a drive unit with a bevel spur gearbox, and standard motor optionally with ancillary drive. Starting characteristics can be optmised by a hydraulic clutch or an electric soft start.

The double or single leg casing is torsionally rigid sheet metal housing, constructed of standard section lengths with flange connectors. The maintenance and assembly door position should preferably be located in the elevators raising casing leg, approximately 0.8 m above a platform.

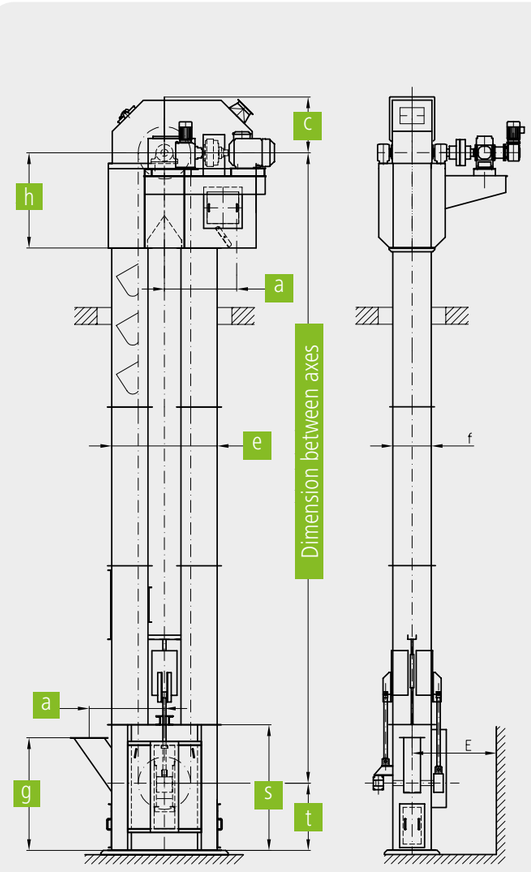
The elevator boot is optionally designed with either internal, oil-filled bearings or external pedestal bearings. With external bearings, the shaft exit points are sealed by gray cast-iron stuffi ng boxes. There are large assembly doors and cleaning doors on both sides. The chain takeup tension is generated by a weight or spring-loaded spindle take-up device.

Depending on the type of chain used, RUD driving wheels are either non-toothed chain pulleys with replaceable, highly wear-resistant segments, or toothed sprocket wheels with replaceable, highly wear-resistant teeth. The RUD return wheels have replaceable, highly wear-resistant segments which in certain designs incorporate guide discs.

Buckets are manufactured according to DIN or our works standard. The materials used are steel, stainless steel, or rubber.

Buckets are attached by chain shackles, bolted clamping clips, plug-in attachments or angle brackets.

The chains are either hardened, round link chains to DIN Standard or works standard chain designs made of special, highly wear-resistant alloy steel. Engineering style chains are also used, as either double or single central chains.




Standard safety devices such as speed governors and level indicators, to monitor the operating status of the bucket elevator are incorporated. Additional accessories are available.

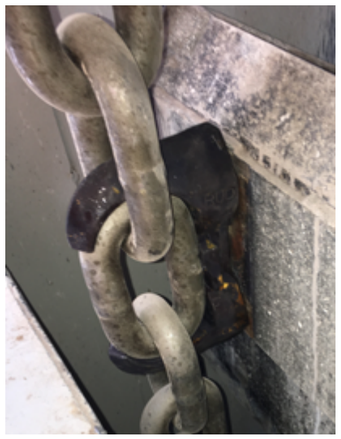
# RUD RUca BACK-WALL BUCKET ATTACHMENT



## SYSTEM COMPARISON

| | | DIN | RUca | |
|---|---|---|---|---|
| | | Single link-mounting | Single link-mounting | Multiple link mounting |
| | Brace support in the chain strand | + | + | +++ |
| | Suitability for coar-se-grained materials | + | + | +++ |
| | Suitability for high capacity buckets | | | +++ |
| | Wear and tear on attachments | ++ | + | + |
| | Wear and tear on chain | + | ++ | ++ |
| | Component break resistance | + | ++ | +++ |
| | Soggy / viscous materials | + | + | ++ |
| | System reliability / availability | + | ++ | +++ |
| | System / Chain, Safety | – | + | + |

**RUca – The RUD alternative to DIN system**
RUca only available as a system in conjunction with RUD chains and RUD chain connectors.



## BUCKET REAR MOUNTING RUca

**Properties:**
- RUD endless chain strands must be used
- Short assembly and disassembly times, without special tools
- Travel over plain wheels
- Higher component break resistance
- Suitable for replacing all the DIN bucket attachments in round steel link chain bucket elevators except side-wall attachments
- Less wear and tear on chain
- No oversized components

| RUD Part no. RUca | RUD Part no. Testset *2) | RUDca Size | Chain d x t | Min. Brea-king force | RUca dimensions | | | | | | | | Usual DIN bucket DIN 15 233 DIN 15 234 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | A | B | G | H | I | J | K*1) | weight | |
| [--] | [--] | [--] | [mm] | [kN] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [mm] | [kg] | [mm] |
| 7908918 | 7908536 | **26** | 26 × 100 | 265 | 190 | 53 | M24 | 52 | 105 | 113 | **65** (105 / 60 / 50) | 2.35 | 630 x 280 |

*1) in brackets: usual shackle acc. to DIN 5699 / DIN 745 and their dimension „a" (shackle pitch / „a" DIN 5699 / „a" DIN 745)
*2) includes 2 chain strands and RUca attachments for minimum 3 buckets

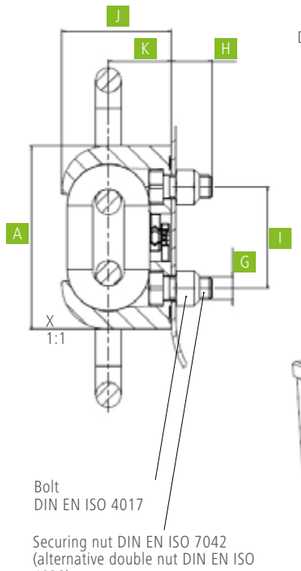
## MOUNTING SEQUENCE

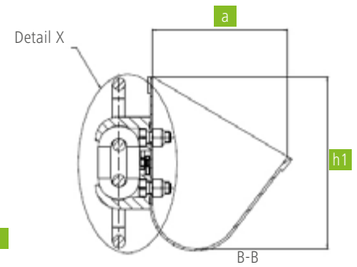
| 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|
| Insert the bolts | Pivoting the upper RUca half into the chain | Pivoting the lower RUca half into the chain. | Insert the safety spring | Fix the bucket |

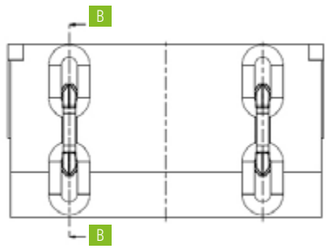


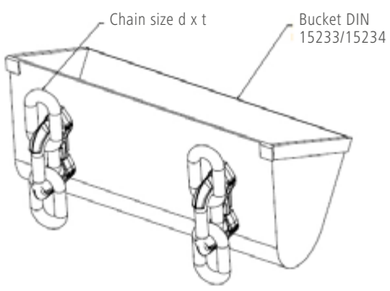


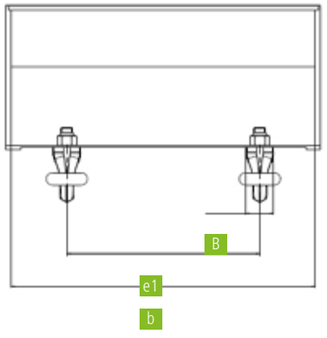
## BACK-WALL BUCKET ATTACHEMENT RUca



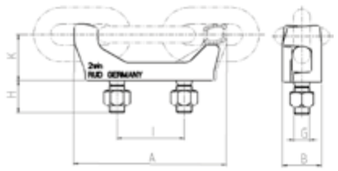



# RUD 2WIN BACK-WALL BUCKET ATTACHMENT

**Properties:**
- For use bucket conveyors with up to 60m height
- Endless chain strands can be used
- Short assembly and disassembly times, without special tools
- Bucket attachments run over sprocket wheels and plain wheels
- Suitable for replacing all the DIN bucket attachments in round steel link chain bucket elevators except side-wall



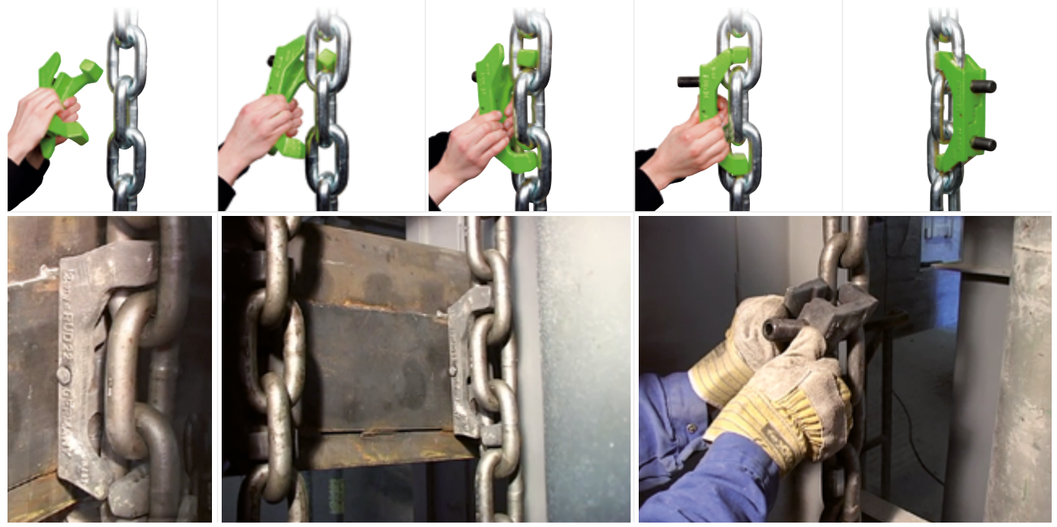
| RUD Part no. | chain d × t in mm | A | B | G | H | I | K *1) | weight [kg] |
|---|---|---|---|---|---|---|---|---|
| 7998699 | **14 × 50** | 124 | 40 | M14 | 30 | 56 | **39** (56 / 34 / 25) | 0,85 |
| 7998700 | **16 × 64** | 156 | 43 | M16 | 35 | 63 | **45** (70 / 42 / 34) | 1,15 |
| 8503775 | **19 × 75** | 180 | 50 | M20 | 40 | 80 | **53** (80 / 47 / 37) | 1,7 |
| 8503776 | **22 × 86** | 207 | 58 | M24 | 50 | 91 | **62** (91 / 52 / 43) | 2,7 |
| 8503777 | **26 × 100** | 240 | 60 | M24 | 50 | 105 | **71** (105 / 60 / 50) | 3,4 |
| 7996145 | **30 × 120** | 288 | 75 | M30 | 60 | 126 | **84** (126 / 71 / 59) | 6,5 |
| 7993608 | **34 × 136** | 327 | 92 | M36 | 70 | 147 | **96** (147 / 81 / 68) | 10,2 |




*1) in brackets: usual shackle acc. to DIN 5699 / DIN 745 and their dimension „a“
(shackle pitch / „a“ DIN 5699 / „a“ DIN 745)

## ASSEMBLY SEQUENCE

| 1 | 2.1 | 2.2 | 3 | 4 |
|---|---|---|---|---|
| Rotate the brackets against each other | Thread 2win in the chain | Close 2win | Mount the brackets | Mount the buckets |



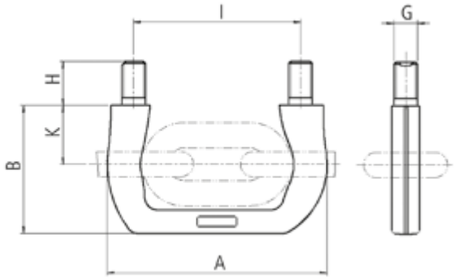
# RUD SWA SIDE-WALL ATTACHMENT

**Properties:**
- For use in slow-running bucket elevators with gravity drain, central discharge bucket conveyors and return-feed bucket conveyors
- Endless chain strands can be used
- Easy assembly in case of variable bucket

distance
- Two-link bucket attachment for a smooth run across the sprocket wheels



| RUD Part no. | chain d × t in mm | A | B | G | H | I | K | weight [kg] |
|---|---|---|---|---|---|---|---|---|
| 7992042 | 16 × 64 | 140 | 81 | M16 | 35 | 105 | 37 | 0,6 |
| 7982949 | 19 × 75 | 164,4 | 98,5 | M20 | 40 | 124 | 47 | 1,3 |
| 7992040 | 22 × 86 | 190 | 112 | M20 | 40 | 145 | 51 | 1,4 |
| 7987910 | 26 × 100 | 224 | 130,5 | M24 | 45 | 170 | 60 | 2,8 |
| 7990871 | 30 × 120 | 258,5 | 153,5 | M30 | 55 | 198,5 | 71 | 3,5 |

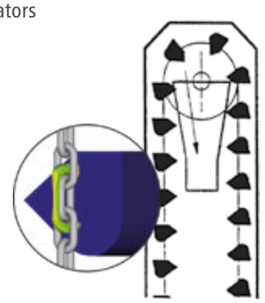



## ASSEMBLY SEQUENCE

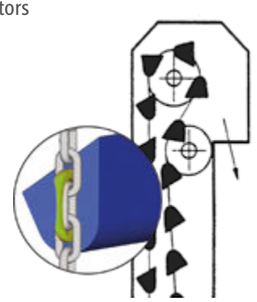
| 1 | 2 | 3 | 4 |
|---|---|---|---|




For central discharge bucket elevators



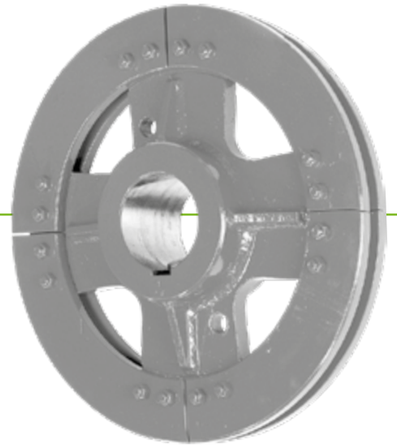
Positive discharge bucket elevators





# RUD CHAIN WHEEL

FOR BUCKET ELEVATORS 2WIN, RUCA, SWA

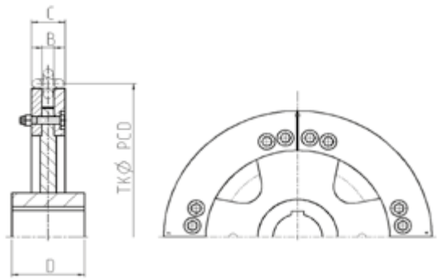


Special grooved wheels and guide wheels on request.

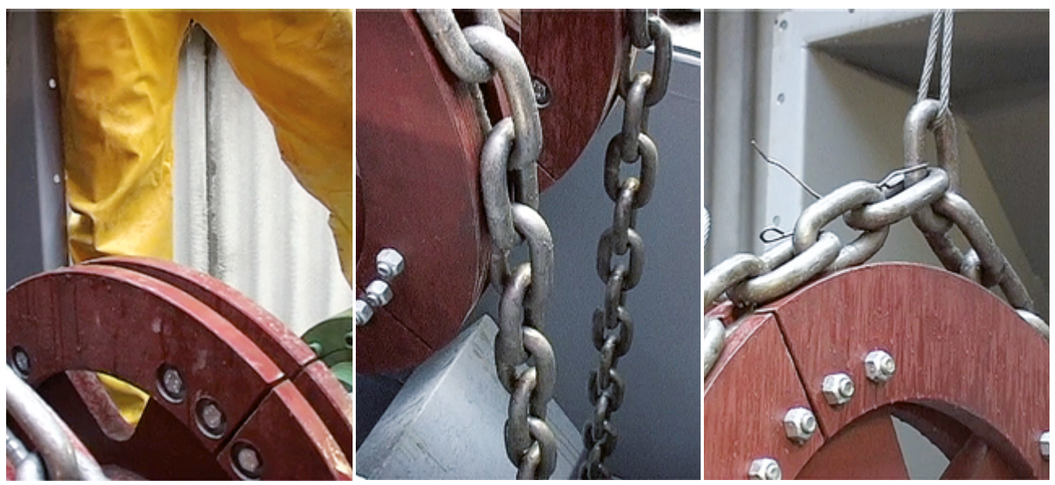
Spare parts:
Per chain roller a set of segments

Properties:
· Especially suitable for RUD systems 2win and SWA
· Finish-drilled and grooved as per customer requirement
· Robust welded construction with replaceable bearing ring segments
· Hardened bearing ring segments for the drive
· Unhardened bearing ring segments for deflection

| Chain d × t in mm | TK Ø | B | C | D | Weight of the complete sprocket approx. kg / piece |
|---|---|---|---|---|---|
| 14 × 50 | 500 | 19 | 55 | 120 | 70 |
| 16 × 64 | 630 | 22 | 62 | 140 | 135 |
| 19 × 75 | 710 | 27 | 71 | 160 | 170 |
| 22 × 86 | 800 | 29 | 79 | 170 | 250 |
| 26 × 100 | 900 | 33 | 93 | 200 | 350 |
| 30 × 120 | 1000 | 40 | 110 | 200 | 450 |
| 34 × 136 | 1250 | 44 | 114 | 220 | 500 |




## ASSEMBLY OF CHAINS ACROSS THE SMOOTH DRIVE CHAIN WHEELS IN THE BUCKET ELEVATOR



# RUD BUCKET ATTACHMENT

SYSTEM 65



System 65 – RUD bucket attachment: NEW with integrated wear mark

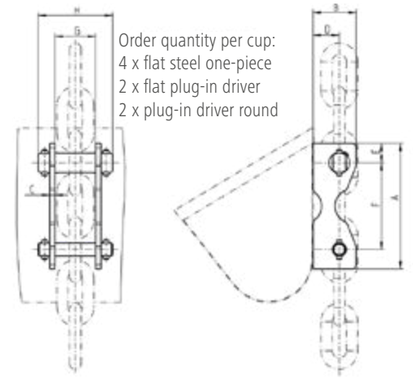
| Chain d × t in mm | Flat steel single part | Plug in attachment flat | Plug in attachment round | A | B | C | D | E | F | G | H | Complete weight [kg] |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14 × 50 | 7908368 | 61160 | 61162 | 150 | 55 | 8 | 33 | 25 | 100 | 49 | 93 | 1.0 |
| 16 × 64 | 7908380 | 61163 | 61165 | 190 | 65 | 10 | 40 | 31 | 128 | 58 | 110 | 1.9 |
| 19 × 75 | 7908381 | 61166 | 61168 | 230 | 75 | 12 | 45 | 40 | 150 | 68 | 130 | 3.0 |
| 22 × 86 | 7908382 | 61169 | 61171 | 260 | 85 | 12 | 50 | 44 | 172 | 80 | 158 | 4.6 |
| 26 × 100 | 7908383 | 61172 | 61173 | 290 | 100 | 12 | 61 | 45 | 200 | 94 | 172 | 6.4 |
| 30 × 120 | 7908384 | 61174 | 61175 | 340 | 125 | 12 | 75 | 50 | 240 | 109 | 190 | 9.7 |
| 34 × 136 | 7908386 | 54713 | 54714 | 380 | 130 | 15 | 80 | 54 | 272 | 122 | 210 | 12.8 |

Properties:
· For heavy operating conditions in the bucket elevator area
· Robust and highly wear-resistant
· Easy assembly and disassembly of buckets on the chain

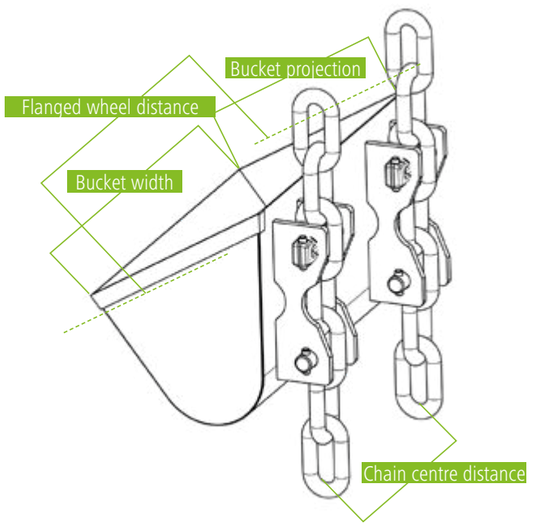
The complete version includes the following components:

· 4 × flat steel part with wear mark and wear-resistant steel
· 1 × plug-in attachment round
· 1 × plug-in attachment flat

A repeat order for individual parts such as flat steels and plug-in attachments can also be placed separately



Order quantity per cup:
4 x flat steel one-piece
2 x flat plug-in driver
2 x plug-in driver round





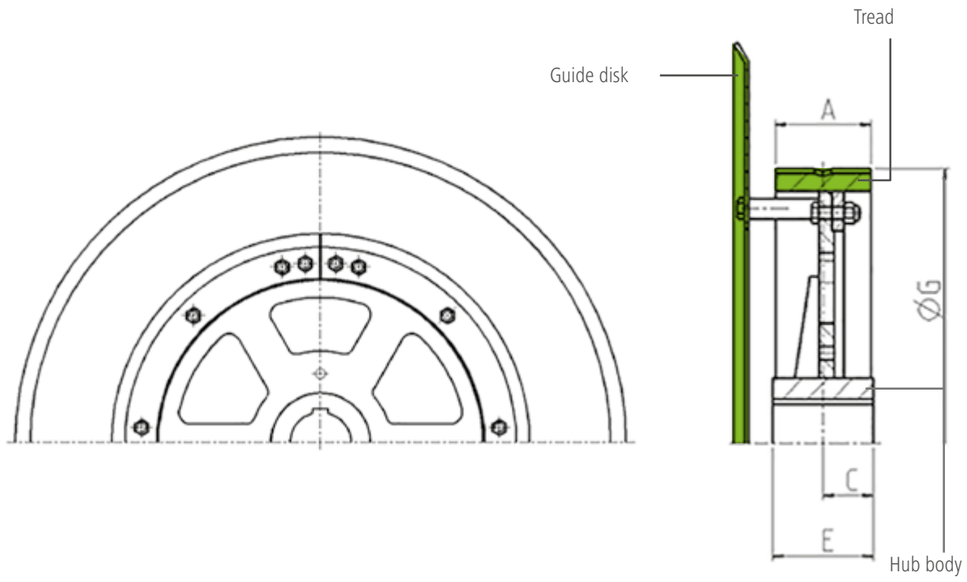

# RUD REVERSING WHEEL FOR BUCKET ELEVATORS

SYSTEM 65



Properties:
· The bearing ring and the hub plate are stable welded constructions
· Weight-loaded initial tensioning is not required at the deflection due to the interlocked drive. The chain is redirected into uncompressed condition
→reduction in wear

| | | | | | Order numbers | | |
|---|---|---|---|---|---|---|---|
| Support Ø G | A | C | E | Weight kg / Piece | Tread | Guide disk | Reversing wheel |
| **540** | 110 | 70 | 140 | 120 | 55148 | 58287 | 59846 |
| **575** | 100 | 70 | 140 | 125 | 57571 | 58153 | 59847 |
| **630** | 100 | 70 | 140 | 135 | 57567 | 58104 | 59848 |
| **730** | 120 | 70 | 140 | 185 | 57599 | 58163 | 59849 |
| **800** | 120 | 80 | 160 | 210 | 57615 | 58204 | 59851 |
| **870** | 140 | 80 | 160 | 250 | 57618 | 58284 | 59867 |
| **980** | 190 | 80 | 160 | 420 | 57642 | 58285 | 59875 |
| **1095** | 190 | 80 | 160 | 510 | 57638 | 58192 | 59918 |
| **1180** | 195 | 100 | 200 | 620 | 59810 | 58280 | 59929 |
| **1280** | 195 | 70 | 140 | 560 | 59839 | 58296 | 60001 |




# RUD SPROCKET WHEEL

SYSTEM 65

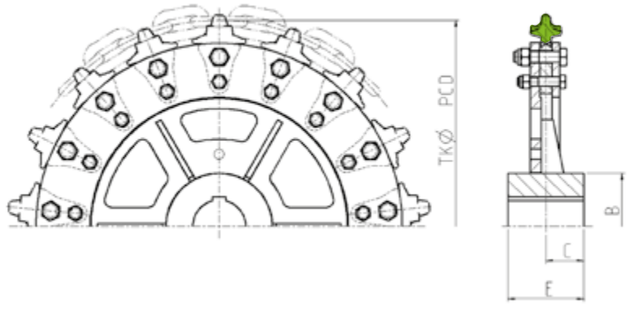
## SPROCKET WHEEL WITH REPLACEABLE INDIVIDUAL TEETH [1]

**Properties:**
· Replaceable individual teeth are made of MnCr special steel
· The teeth are highly wear-resistant
· Surface hardened
· Hub and secondary sheaves are welded construction

| Chain d × t in mm | Teeth | PCD Ø | B | C | E | weight kg / piece |
|---|---|---|---|---|---|---|
| **14 × 50** | 16 | 510 | 160 | 50 | 110 | 71 |
| | 20 | 637 | 200 | 85 | 170 | 115 |
| **16 × 64** | 15* | 612 | 200 | 85 | 170 | 125 |
| | 17 | 694 | 201 | 75 | 150 | 148 |
| | 18 | 734 | 200 | 75 | 150 | 121 |
| | 20 | 816 | 210 | 90 | 180 | 148 |
| **19 × 75** | 15* | 718 | 240 | 75 | 150 | 132 |
| | 17 | 813 | 280 | 75 | 150 | 209 |
| | 19 | 908 | 270 | 90 | 180 | 289 |
| **22 × 86** | 15* | 823 | 275 | 90 | 180 | 238 |
| | 16 | 878 | 275 | 90 | 180 | 242 |
| | 17 | 932 | 270 | 90 | 180 | 299 |
| | 18 | 986 | 300 | 100 | 200 | 350 |
| **26 × 100** | 14* | 894 | 300 | 100 | 200 | 270 |
| | 15 | 956 | 300 | 100 | 200 | 290 |
| | 16 | 1020 | 300 | 100 | 200 | 403 |
| | 17 | 1084 | 300 | 100 | 200 | 410 |
| **30 × 120** | 14* | 1072 | 300 | 100 | 200 | 409 |
| | 15 | 1148 | 380 | 100 | 200 | 371 |
| | 16 | 1225 | 300 | 100 | 200 | 446 |
| | 17 | 1300 | 325 | 125 | 250 | 501 |
| **34 × 136** | 14* | 1214 | 370 | 100 | 200 | 489 |
| | 15 | 1301 | 370 | 100 | 200 | 488 |
| | 16 | 1387 | 390 | 110 | 220 | 677 |

1 Other dimensions on request

TEETH WITH INCREASED LINK SUPPORT ALSO AVAILABLE.
REFER TO PAGE 20.





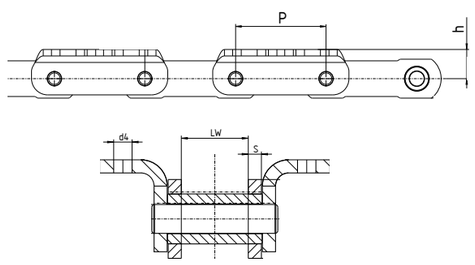

# RUD CENTRAL CHAIN
# INTEGRATED MOUNTING BRACKET

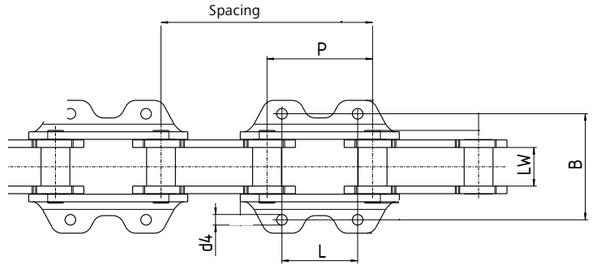
RUD central chains are ideal for use in high-performance bucket elevators and elevators in conveyor technology. For vertical conveying of powdery, granular, lumpy and temperature-loaded materials, the RUD central/link chain is a robust traction device.



| Chain size | Part No. | P | LW | B¹ | L¹ | Weight ² [kg/m] | Strand length [mm] | Breaking force [kN] | h | d4 | Usual bucket width [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RU 40 | 8505869 | 140 | 51 | 140 | 100 | 20,3 | 2800 | 400 | 45 | 14 | 200...400 |
| RU 55 | 8505874 | 152,4 | 66 | 200 | 130 | 31,3 | 3048 | 550 | 50 | 18 | 250...450 |
| RU 70 | 8505876 | 152,4 | 71 | 250 | 150 | 40 | 3048 | 700 | 55 | 18 | 300...630 |

¹ customisable
² incl. mounting bracket



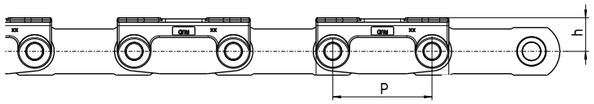


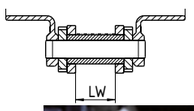

# RUD CENTRAL CHAIN
# WITH SEPARATE MOUNTING BRACKET

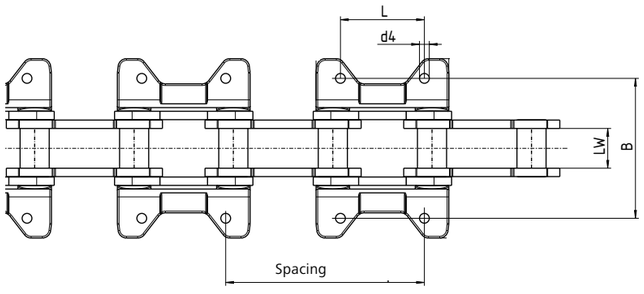


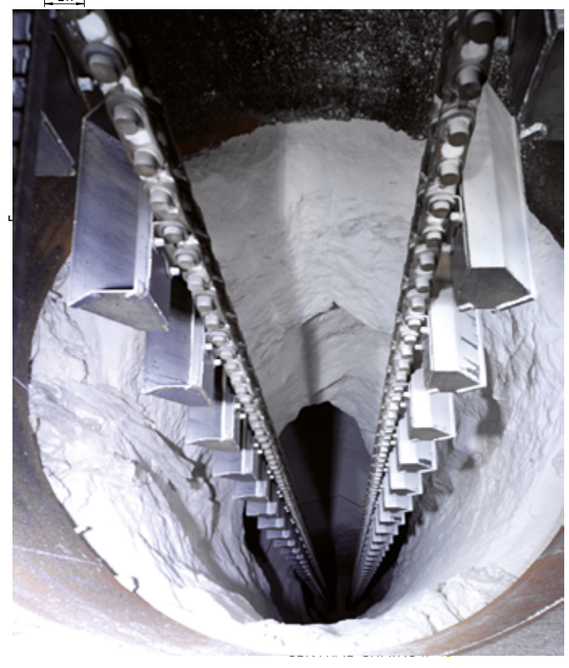
| Chain size | Part No. | P | LW | B¹ | L¹ | Weight ² [kg/m] | Strand length [mm] | Breaking force [kN] | h | d4 | Usual bucket width [mm] |
|---|---|---|---|---|---|---|---|---|---|---|---|
| RU 80 | on request | 177,8 | 71 | 283 / 250 | 200 / 150 | 45,2 | 3556 | 1000 | 60 | 17,5 | 400...800 |
| RU 100 | 8505878 | 177,8 | 71 | 283 / 250 | 200 / 150 | 45,2 | 3556 | 1000 | 60 | 17,5 | 400...800 |
| RU 120 | 8506164 | 177,8 | 75 | 250 | 150 | 55,7 | 3556 | 1250 | 60 | 17,5 | 400...900 |

¹ customisable
² incl. mounting bracket



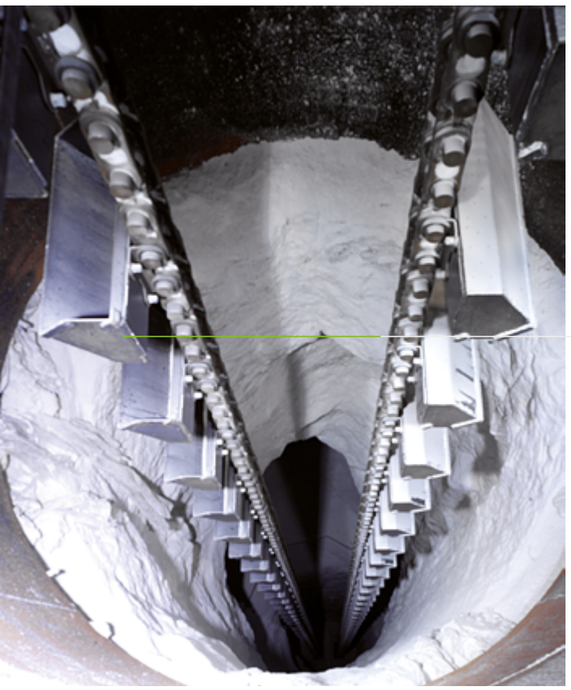
# RUD CENTRAL CHAINS

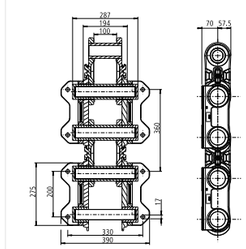
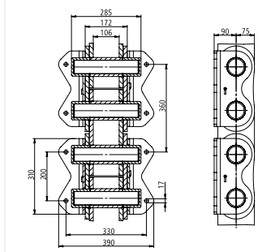
RU50 // RU80 // RU150 // RU200

## CENTRAL CHAINS

| Part number chain | Order number Angle | Chain size | Strand length [mm] | Pitch [mm] | Breaking force [kN] | Possible bucket distance [mm] | Usual bucket width [mm] |
|---|---|---|---|---|---|---|---|
| 7905523 | 6 × 8504351 | RU150 | 1080 | 180 | 1500 | 360 | 400 – 1000 |
| 7992038 | Chain incl. bracket | RU200 | 1080 | 180 | 2000 | 360 | 600 – 1100 |





| RU150 | RU200 |
|---|---|
|  |  |
|  |  |

## DRIVE WHEEL

## TENSION SPROCKET

| Drive wheel PCD Ø [mm] | B max [mm] | E max [mm] | Weight approx. [kg] | B max [mm] | E max [mm] | Weight approx. [kg] | Usual chain size |
|---|---|---|---|---|---|---|---|
| 645 | 300 | 200 | 172 | 200 | 120 | 127 | RU40 / RU55 |
| 700 | 300 | 200 | 195 | 200 | 120 | 147 | RU40 / RU55 / RU70 |
| 800 | 400 | 360 | 480 | 220 | 200 | 300 | RU70 / RU80 / RU100 /RU150 |
| 900 | 400 | 360 | 570 | 220 | 200 | 360 | RU80 / RU100 /RU150 |
| 960 | 370 | 220 | 390 | 220 | 200 | 460 | RU80 / RU100 /RU150 |
| 1000 | 400 | 300 | 740 | 220 | 200 | 550 | RU80 / RU100 /RU150 |
| 1170 | 420 | 300 | 880 | 220 | 200 | 700 | RU150 / RU200 |
| 1300 | 450 | 300 | 970 | 220 | 200 | 765 | RU150 / RU200 |

**Properties:**
· Running threads made of Cr-Mo steel
· Running surface inductively hardened

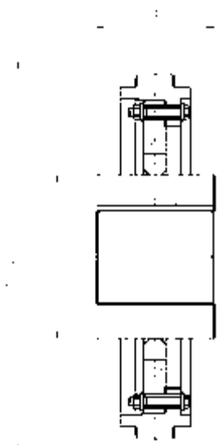
### RUD Drive Wheel

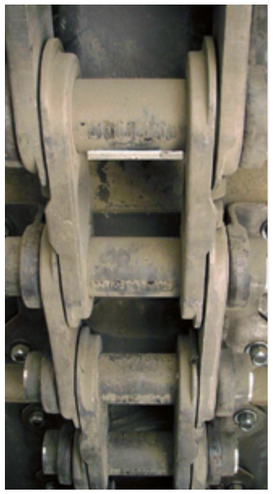


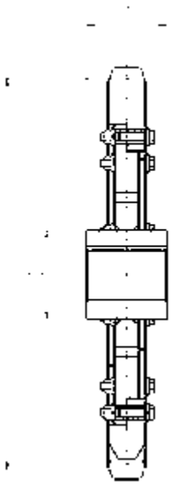
### RUD Tension sprocket

RUD Tension sprocket can be toothed and non-toothed











# RUD BELT TYPE BUCKET ELEVATORS



Belt type bucket elevator designs using textile or steel reinforced belts transport materials dust-free without difficulty, even to great heights and are especially suitable for the continuous vertical conveyance of free flowing bulk materials. Suitable adaptations are made to handle coarse-grained or higher temperature materials.

## CONVEYING CAPACITIES, REFERENCE VALUES FOR APPROX. 75% FILLING

| Bucket DIN 15233 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Width [mm]** | **160** | **200** | **250** | **315** | **400** | **500** | **630** | **800** | **1000** | **1250** | **1600** |
| Conveyance speed [m/s] | 1,05 | 1,05 | 1,15 | 1,15 | 1,20 | 1,20 | 1,34 | 1,34 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m3/h] | 10 | 12 | 25 | 31 | 45 | 63 | 99 | 140 | 224 | 316 | 405 |

| Bucket DIN 15234 | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Width [mm]** | **160** | **200** | **250** | **315** | **400** | **500** | **630** | **800** | **1000** | **1250** | **1600** |
| Conveyance speed [m/s] | 1,05 | 1,05 | 1,15 | 1,15 | 1,20 | 1,20 | 1,34 | 1,34 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m³/h] | 16 | 20 | 38 | 48 | 71 | 101 | 160 | 225 | 348 | 490 | 627 |

| Special bucket | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Width [mm]** | **160** | **200** | **250** | **315** | **400** | **500** | **630** | **800** | **1000** | **1250** | **1600** |
| Conveyance speed [m/s] | 1,15 | 1,15 | 1,25 | 1,25 | 1,28 | 1,33 | 1,49 | 1,49 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m³/h] | 25 | 32 | 56 | 70 | 105 | 154 | 246 | 353 | 512 | 726 | 930 |

| High-capacity bucket conveyor | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Width [mm]** | **160** | **200** | **250** | **315** | **400** | **500** | **630** | **800** | **1000** | **1250** | **1600** |
| Conveyance speed [m/s] | 1,15 | 1,15 | 1,25 | 1,25 | 1,28 | 1,33 | 1,49 | 1,49 | 1,48 | 1,48 | 1,48 |
| Conveyance capacity [m³/h] | 27 | 34 | 64 | 81 | 134 | 198 | 321 | 480 | 652 | 850 | 1088 |

## DIMENSIONS

| Bucket width | b | 160 | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 | 1600 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Head | a | 724 | 724 | 904 | 904 | 1004 | 1160 | 1264 | 1460 | 1673 | 1747 | 1747 |
| | c | 560 | 560 | 695 | 695 | 785 | 885 | 955 | 1160 | 1320 | 1340 | 1340 |
| | h | 850 | 850 | 1050 | 1050 | 1250 | 1450 | 1600 | 1800 | 2100 | 2300 | 2300 |
| Funnel | e | 1000 | 1000 | 1250 | 1250 | 1400 | 1650 | 1800 | 2100 | 2450 | 2550 | 2550 |
| | f | 280 | 355 | 450 | 545 | 660 | 770 | 900 | 1110 | 1300 | 1600 | 2000 |
| Foot | a | 724 | 724 | 904 | 904 | 1004 | 1160 | 1264 | 1460 | 1673 | 1747 | 1747 |
| | g | 1220 | 1220 | 1350 | 1350 | 1500 | 1700 | 1900 | 2100 | 2450 | 2500 | 2500 |
| | t | 670 | 670 | 800 | 800 | 880 | 970 | 1080 | 1300 | 1550 | 1550 | 1550 |
| | s | 1320 | 1320 | 1450 | 1450 | 1600 | 1800 | 2000 | 2200 | 2750 | 2750 | 2750 |
| Expansion distance | E | 900 | 1000 | 1200 | 1300 | 1500 | 1600 | 1800 | 2100 | 2500 | 2900 | 3500 |

The bucket elevator casings are self supporting, but they require horizontal guides at least every 15 meters and below the elevator head. The bucket elevator head comprises a lower section with doors to access the adjustable discharge plate, and braced bearing mountings, for the pedestal bearings which support the drive shaft, the shaft exit points use grease filled radial shaft seals. The upper sections comprise a multipart removable hood with an inspection door. A drive platform is mounted on the side of the lower part of the head for supporting a wide variety of commercially available drives. If required a maintenance platform and or an overhead support / service beam can be fitted if required. An elevator drive normally consists of a geared motor unit, which is normally connected to a frequency controller for maintenance purposes.

For higher power requirements, we recommend a drive unit with a bevel spur gearbox, and standard motor optionally with ancillary drive. Starting characteristics can be optimised by a hydraulic clutch or an electric soft start.

The double or single leg casing is a torsionally rigid, sheet metal housing constructed of standard section lengths with flange connectors. The maintenance and assembly door position should preferably be located in the elevators raising casing leg, approximately 0.8 m above a platform.

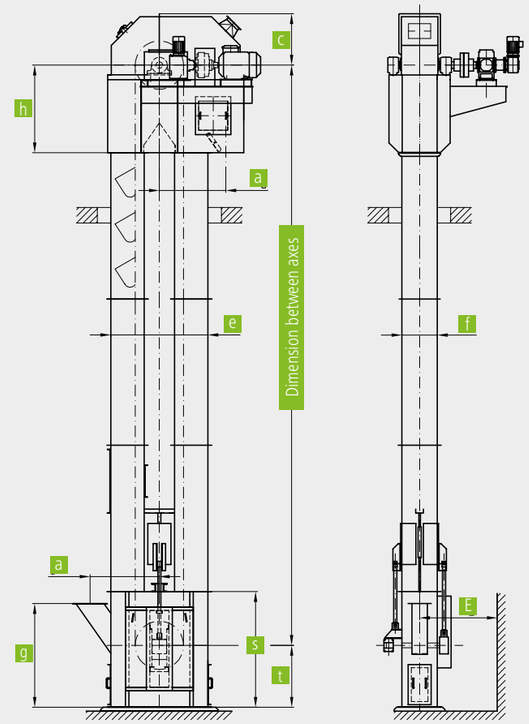
The elevator boot is optionally designed with either internal, oil filled bearings or external pedestal bearings. With external bearings, the shaft exit points are sealed by gray cast-iron stuffing boxes. There are large assembly doors and cleaning doors on both sides. The belt take-up tension is generated by a parallel weight or spindle take-up device.

Whereas the parallel weight take-up automatically compensates for belt stretch, the spindle take-up requires manual readjustment. The driving pulley has a structured rubber covering. Easy to replace, bolt-on, dished rubberised segments are available upon request.

The take-up pulley is designed as a cage drum. internal cones guide any material that enters the drum out to the sides.

The buckets are manufactured according to din or our works standard. The materials used are steel, stainless steel, aluminum, plastic or rubber. The bucket attachments are selected according to the loads to be handled. Rubber strips are fitted between the belt and the backs of the buckets. The buckets are attached by means of belting bolts, spherical or half round segments with countersunk bolts. The belts are available with textile or wire-cable reinforcement. Hot-material rubber compounds are used for transporting high-temperature materials. The belt is jointed by mechanical connecting brackets or claw connectors. Belts with a low linear expansion can be continuously vulcanised.

Standard safety devices, comprising off-track governors, speed governors and level indicators, to monitor the operating status of the bucket elevator are incorporated.




Additional accessories are available brackets or claw connectors. Belts with a low linear expansion can be continuously vulcanised.

# RUD BELT TYPE BUCKET ELEVATORS



## THE RUD DRIVE DRUM DESIGN, WITH A CYLINDRICAL CENTRAL SECTION AND LATERALLY DECREASING DIAMETER

· Uniform load distribution across the width of the belt
· Low wear on the friction lining
· Stable running of the belt
· A longer service life for the belt



## THE RUD DRIVE DRUM DESIGN WITH INTERCHANGEABLE FRICTION LINING:

· The friction lining is easily exchangeable when worn
· It can be exchanged without removing the drum or opening the belt
· This makes it easier to maintain
· Reduces down times
· The segments can be re-used after replacing the rubber



## THE RUD PARALLEL TENSION UNIT:

· Automatic extension compensation of the belt
· A low pretension force and hence low loading
· Stable running of the belt
· A maintenance-free design

# RUD BUCKET ATTACHMENTS // STEEL-CABLE BELTS

## RUD STEEL-CABLE BELTS HAVE:

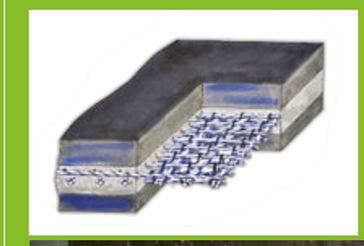
· A tensile strength of 800-3150 n / mm belt width and a low linear elongation of maximally 0.3%. This means that the belt never needs shortening during its entire service life.
· Steel cross-bracing on both sides to give high transverse rigidity, and so optimal straight running and high tear out strength of the buckets.
· Hot material rubber compositions for conveying material at a continuous temperature of up to 130°C, and temperature resistance up to a maximum 10° C peak load.
· 5 mm thick cover plates on both sides and solid rubber edge protection for a long service life, even when handling highly abrasive materials.
· Bucket attachment holes cut by water jet to ensure the highest quality.
· Belt ends prepared in the works for endless connection with mechanical belt connectors. Endless closure can also be achieved by hot vulcanisation.





## RUD BUCKET ATTACHMENTS:

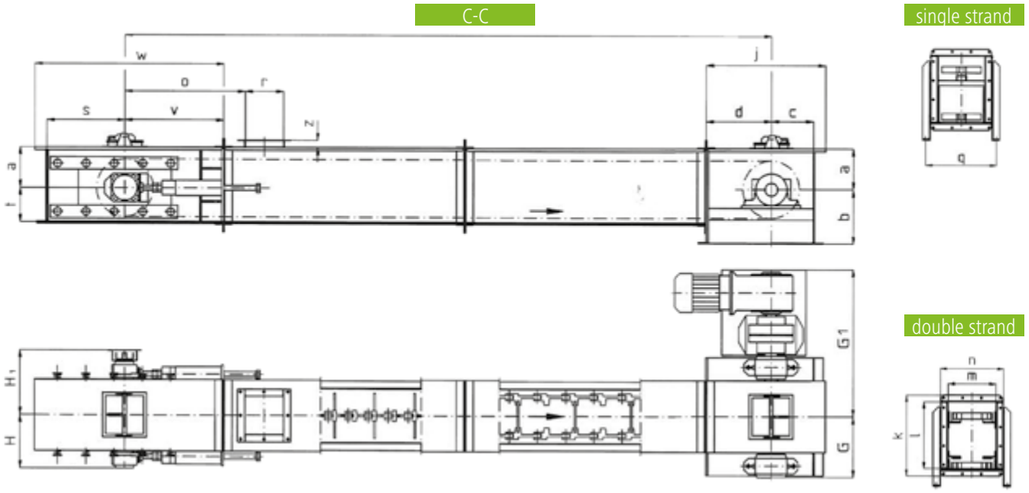
· Have soft rubber inserts between the backwalls of the buckets and the belt, which prevent the material jamming and reduce the effects of heat on the belt.
· Can optimally adapt to the convexity of the drums.
· Always have the optimal fastening element for the particular load.
· Have extremely high tear-off strength when used with steelrope belts, even in the coarse grain range.





# RUD TROUGH CHAIN CONVEYOR

Trough chain conveyors are especially suitable for the dust-free, horizontal and moderately inclined transport and metering of bulk materials, including coarser type material. Trough chain conveyors combine high wear and heat resistance with the option of multiple inlets and outlets. We also supply a special version with cleaning scrapers.

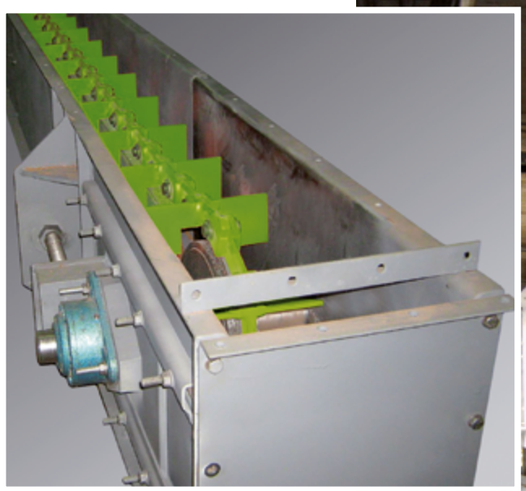



## CONVEYANCE CAPACITY IN CASE OF HORIZONTAL CONVEYOR / REFERENCE VALUES

| Types | B | 200 | 250 | 315 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Chain** | | Single strand | | | Double strand | | | | | | |
| Conveyance speed [m/s] | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 | 0,25 |
| **Conveyance capacity [m3/h]** | | | | | | | | | | | |
| With chain guide | $m^3/h$ | – | – | – | 21 | 45 | 83 | 128 | 244 | 316 | 406 |
| Without chain guide | $m^3/h$ | 23 | 36 | 45 | 56 | 92 | 126 | 158 | 288 | 360 | 450 |

## DIMENSIONS

| Types | B | 200 | 250 | 315 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Drive station | a | 210 | 210 | 210 | 298 | 298 | 298 | 298 | 405 | 405 | 405 |
| | b | 340 | 340 | 340 | 450 | 450 | 450 | 450 | 610 | 610 | 610 |
| | c | 230 | 230 | 230 | 300 | 300 | 300 | 300 | 400 | 400 | 400 |
| Trough | d | 370 | 370 | 370 | 450 | 450 | 450 | 450 | 600 | 600 | 600 |
| | l | 405 | 405 | 405 | 528 | 528 | 528 | 528 | 730 | 730 | 730 |
| Tensioning station | m | 260 | 310 | 375 | 375 | 460 | 560 | 690 | 860 | 1060 | 1310 |
| | o | 910 | 910 | 935 | 935 | 1020 | 1065 | 1115 | 1290 | 1385 | 1490 |
| | z | 53 | 53 | 53 | 53 | 53 | 53 | 53 | 64 | 74 | 74 |
| | t | 195 | 195 | 195 | 230 | 230 | 230 | 230 | 325 | 325 | 325 |
| | s | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 | 550 |





The drive station has flange or pedestal bearings for the drive shaft, depending on the size. Sealing is provided by grease filled, double radial shaft seals. The entire drive station together with the inspection door can be dismounted for easy maintenance. The drive consists of a standard geared motor unit mounted on the bracket attached to the side. Suitable safety clutches can be provided to prevent overloads.

The trough consists of individual, standard- length sections with connecting flanges. Hold-down rails are recommended or most of the materials to be conveyed. These prevent the material from building up and thus the chain climbing. For moderately abrasive materials, the side walls and base plate are protected by manganese alloy steel against wear. Fusion-cast basalt linings or liner plates with hard surface welding are recommended for use with highly abrasive materials. In special cases, the trough floor can be designed to act as a material pad.

The take-up station has flange bearings to hold the take up shaft. The shaft exit points in the housing are equipped with grease filled, double radial shaft seals. The entire station together with the inspection door can be dismounted for easy maintenance. The chain take-up is generated and set by spring-loaded pressure screws.

The driving and return sprockets are highly wear-resistant and have interchangeable, hardened toothed segments.

The standard conveyor chains used are forged, fork-sprocket chains that have been heat-treated or case-hardened.

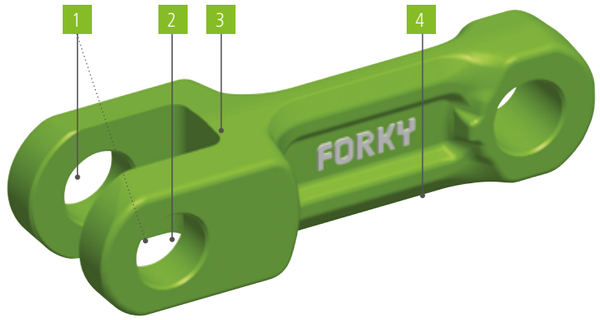
The resistance to wear can be further increased by hard surface welding. Available options are: highly wear resistant RUD round steel chains, bushed transporting chains according to DIN 8165 and block chains.

Standard safety devices, comprising speed governors and take-up screw monitors, detect the operating status of the trough chain conveyor.

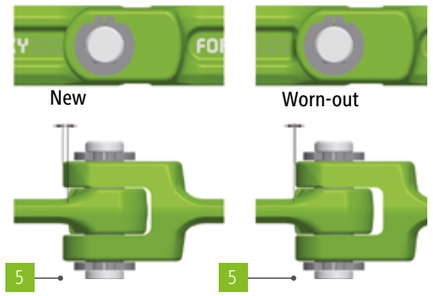
Additional accessories are available.

# RUD FORKED-LINK CHAINS

## SINGLE // DOUBLE STRAND




**High quality and safety**




**1**
Bores parallel to the axle with higher graduation accuracy
· For smoother running and hence
· For minimum wear

**2**
Deburred bores
· Even inside the fork for highest endurance strength and reliability

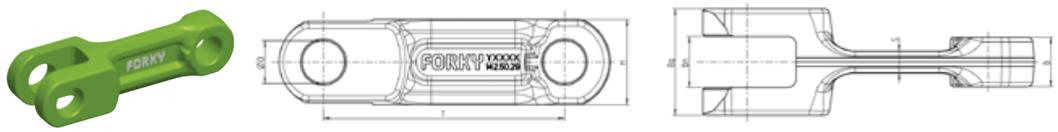
**3**
Extra large radii
· For more stability of the fork

**4**
Tensioning-optimised bar form
· For high lateral stiffness

**5**
Optical wear indicator
· The wear condition can be recorded at a glance at every individual chain link

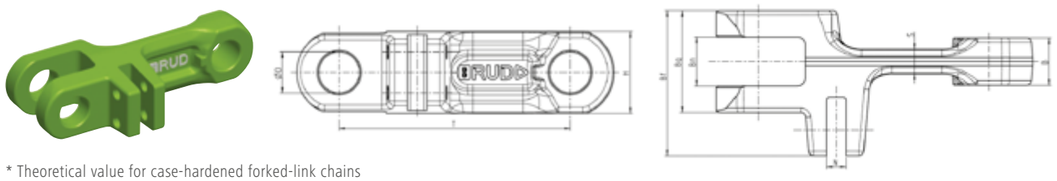
### FORKY – SINGLE STRAND

| Size | Weight (kg) | Breaking force*[kN] | T (mm) | H (mm) | B (mm) | $B_g$ (mm) | $B_n$ (mm) | S (mm) | D (mm) |
|---|---|---|---|---|---|---|---|---|---|
| 142 × 50 × 19 | 1,4 | 300 | 142 | 50 | 19 | 42 | 20 | 13 | 25 |
| 142 × 50 × 29 | 2,0 | 480 | 142 | 50 | 29 | 62,5 | 30 | 15 | 25 |
| 260 × 75 × 31 | 5,3 | 700 | 260 | 75 | 31 | 70 | 32 | 18 | 32 |




### FORKY – DOUBLE STRAND

| Size | Weight (kg) | Breaking force*[kN] | T (mm) | H (mm) | B (mm) | $B_g$ (mm) | $B_n$ (mm) | S (mm) | D (mm) | N (mm) |
|---|---|---|---|---|---|---|---|---|---|---|
| 142 × 50 × 19 | 1,7 | 300 | 142 | 50 | 19 | 42 | 20 | 13 | 25 | 12,5 |
| 142 × 50 × 29 | 2,3 | 480 | 142 | 50 | 29 | 62,5 | 30 | 15 | 25 | 12,5 |
| 200 × 50 × 25 | 2,7 | 350 | 200 | 50 | 25 | 58 | 26 | 17 | 25 | 12,5 |
| 250 × 60 × 30 | 4,7 | 520 | 250 | 60 | 30 | 70 | 31 | 20 | 30 | 12,5 |




* Theoretical value for case-hardened forked-link chains

# RUD ATTACHMENTS COMPONENTS

## WHEELS // SPROCKETS

**Attachments for single strand forked-link chains FORKY– types of attachments ***



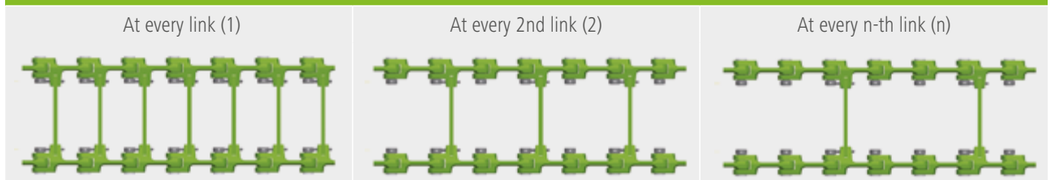

**Attachments classification**




**Attachments for double strand forked-link chains FORKY– types of attachments ***




**Attachments classification**




* All the attachment types can also be delivered with welded plates as per your specification! All types on request!

Forked-link chains are suitable for transporting powdered, flaky, grainy and fragmentary bulk materials, but not for sticky or baking bulk materials.

Examples:
Flour, cement, grains, sugar, chemicals, chipped wood, chips, foodstuff, animal feed etc.

Advantages:
· Simple and robust construction, high operational safety
· Lower space requirement
· Horizontal, inclined and vertical conveyor possible
· Explosion safety through slow conveyance without recirculating the material

Disadvantages:
· Limitation of use regarding suitable conveyance materials
· No chunky, fibrous or sticky bulk materials

**Drive wheels for forked-link chain FORKY**

Properties:
· Multi-part design
· Tooth flanks inductively hardened
· The sprocket elements can be swapped at the hubs fitted



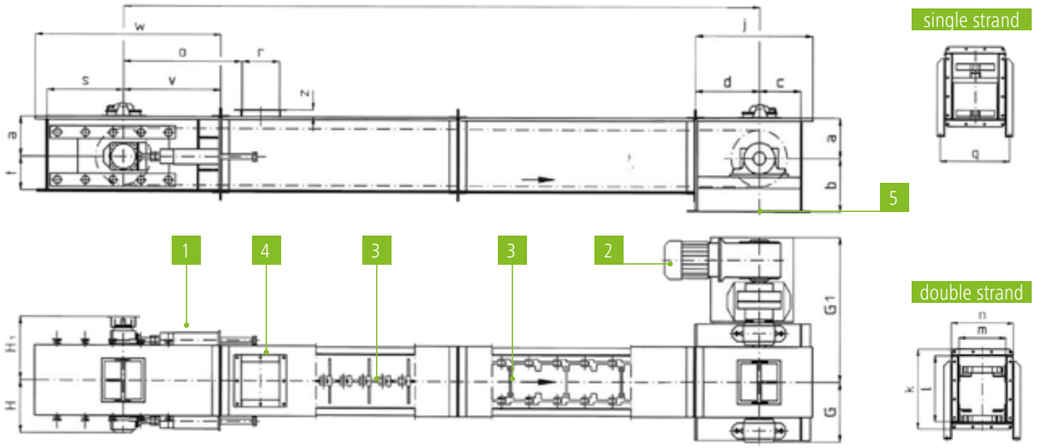
**Reversion wheels for forked-link chain FORKY**

Properties:
· Single-part design
· Contact surface inductively hardened



# RUD TROUGH CHAIN CONVEYOR

## WITH RUD FORK LINK CHAIN FORKY




**Trough chain conveyor**

1 **Tensioning station**

2 **Drive station**

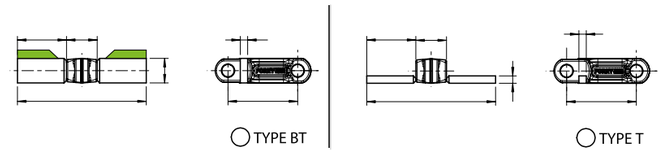
3 **Conveyor chains**

4 **Feeding**

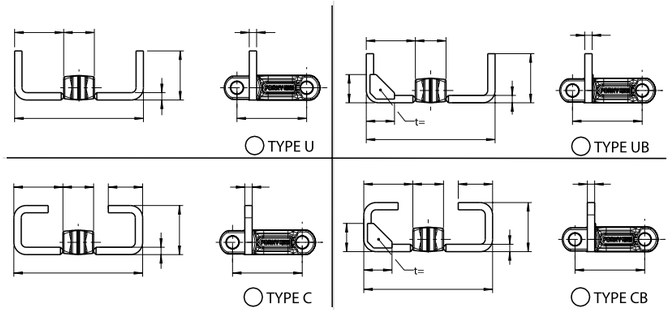
5 **Discharge**



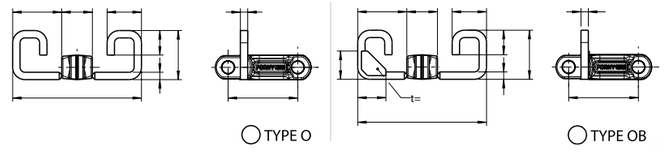
## AVAILABLE TYPES:



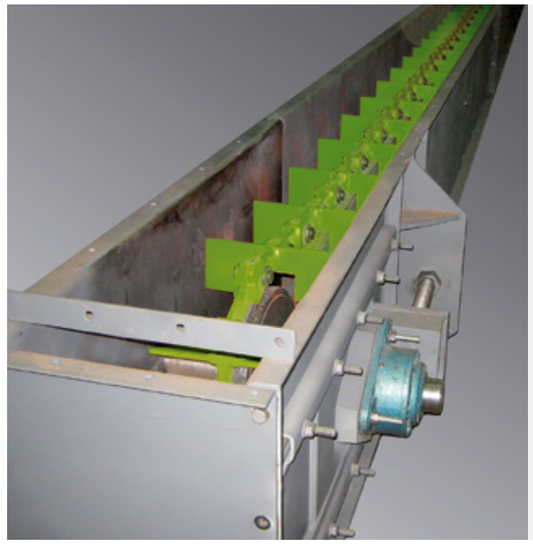

Type T for horizontal and low ascending transport max 10°
Type BT for horizontal and low ascending transport, dusty, free flowing material
Type BT special (height up to 1,75 × fork link height), also for high ascending transport max 30°




Type U and UB (UB is custom-made) for high ascending transport, 10° up to 25°
Type C and CB (CB is custom-made) for high ascending transport and dusty material, 10° up to 25°




Type O and OB (OB is custom-made) for very high ascending transport, 25° up to 90°
Type C, CB, O and OB primarily for vertical transport



## APPLICATIONS FOR RUD FORK LINK CHAINS:

**Condition of conveyed goods:**
RUD fork link chains are ideally suited for transporting powdery, grainy, flaky, dusty or fragmentary material

**Application:**
**Construction, wood, paper, plastic, food and feed industry, chemical industry, mills, port cargo handling, agriculture and recycling industry**

**Examples of transported material:**
Cement, clinker, ash, wood chips, wood shavings, food and animal feed, recycled municipal waste fertiliser, gypsum, coke

## CONVEYING SPEEDS [M/S] (MAX. VALUES)

| Material | Speed |
|---|---|
| Grain | 1,10 |
| Granulated material | 0,80 |
| Coal, chips, soda | 0,50 |
| Cement, phosphate, gypsum | 0,25 |
| Clinker, petrol coke, potash | 0,20 |
| Filter dust, pyrite | 0,10 |
| Ash, coke, sand, quartz | 0,05 |

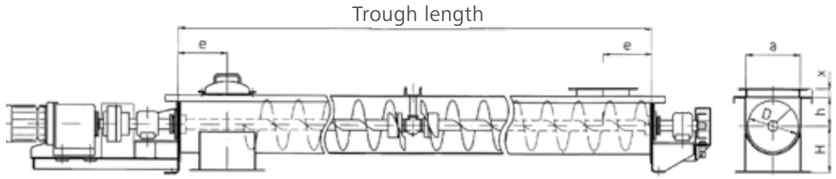


# RUD SCREW CONVEYOR

## TROUGH SCREW CONVEYOR // TUBULAR SCREW CONVEYOR

Long-lasting, easy to maintain screw conveyors are used for the dust-free, horizontal, inclined and vertical transport of fine grained and floury materials. Suitable adaptations are made to handle coarse-grained, higher temperature, abrasive or poorly flowing materials. Screw conveyors also offer the option of multiple inlets and outlets. Various versions handle not only the transport of bulk materials but also emptying, metering, loading, screening and mixing.

### TROUGH SCREW CONVEYOR



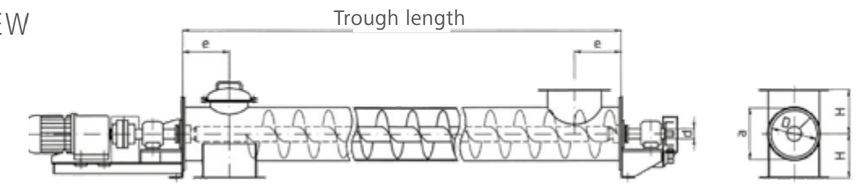

Conveying capacities for horizontal conveyors, reference values for approx. 35% filling

| Diameter [mm] | D | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 |
|---|---|---|---|---|---|---|---|---|---|---|
| Speed | [U/min] | 100 | 90 | 80 | 71 | 63 | 50 | 40 | 32 | 25 |
| Conveyance capacity | [m³/h] | 9 | 17 | 34 | 59 | 93 | 136 | 195 | 281 | 393 |

Dimensions

| Diameter [mm] | D | 200 | 250 | 315 | 400 | 500 | 630 | 800 | 1000 | 1250 |
|---|---|---|---|---|---|---|---|---|---|---|
| Trough | a | 220 | 270 | 335 | 425 | 525 | 660 | 830 | 1040 | 1290 |
| | h | 112 | 140 | 180 | 224 | 280 | 355 | 450 | 560 | 710 |
| | x | 52 | 52 | 52 | 53 | 53 | 63 | 74 | 74 | 84 |
| | H | 190 | 225 | 265 | 315 | 375 | 450 | 560 | 670 | 800 |
| | e | 200 | 240 | 280 | 330 | 390 | 470 | 560 | 680 | 820 |

### TUBULAR SCREW CONVEYOR

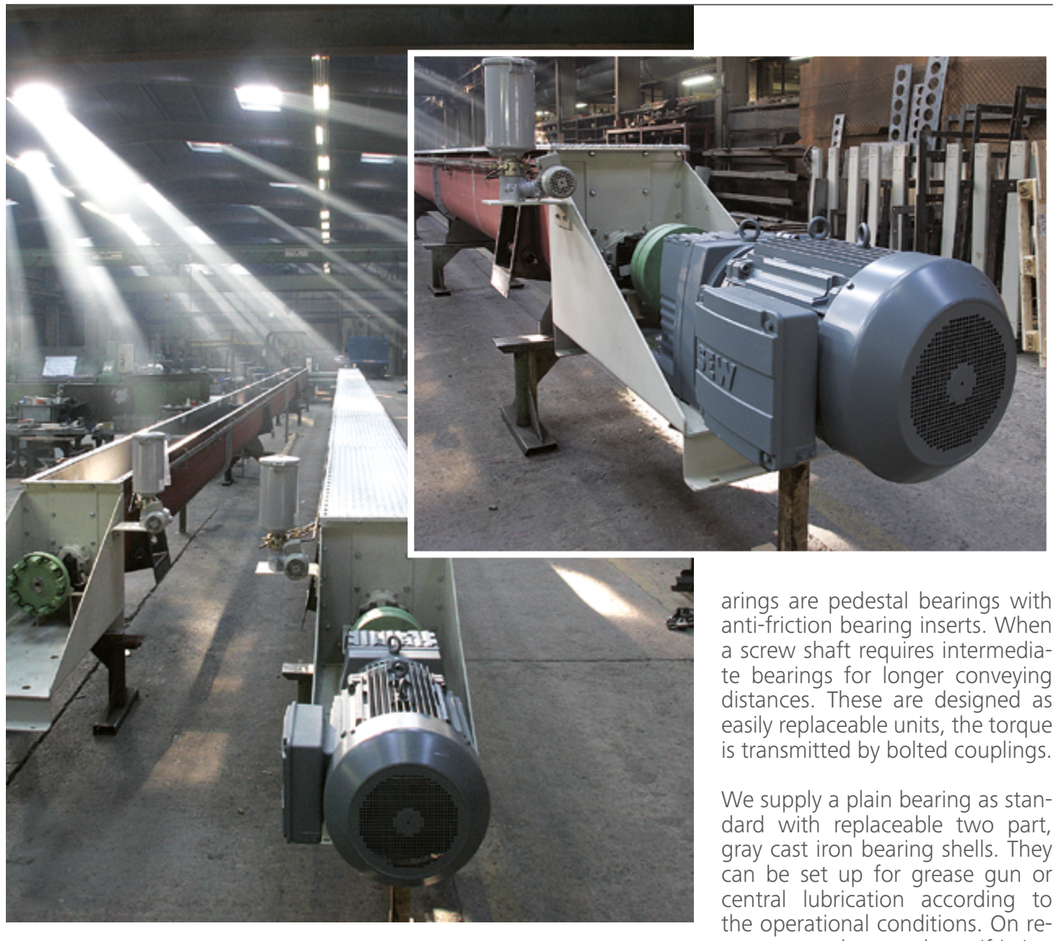



Conveying capacities for horizontal conveyors, reference values for approx. 50% filling

| Diameter [mm] | D | 140 | 190 | 240 | 290 | 370 | 470 | 570 |
|---|---|---|---|---|---|---|---|---|
| Speed | [U/min] | 112 | 100 | 90 | 80 | 71 | 63 | 50 |
| Conveyance capacity | [m³/h] | 5 | 13 | 23 | 45 | 81 | 131 | 195 |

Dimensions

| Diameter [mm] | D | 140 | 190 | 240 | 290 | 370 | 470 | 570 |
|---|---|---|---|---|---|---|---|---|
| Tube-shaped trough | a | 160,3 | 210,1 | 263 | 312,7 | 393,8 | 495,4 | 595,4 |
| | h | 160 | 190 | 225 | 265 | 315 | 375 | 450 |
| | e | 170 | 200 | 240 | 280 | 330 | 390 | 470 |



The conveyor trough in trough screw conveyors is manufactured as a torsionally rigid sheet metal housing made of standard section lengths with connecting flanges, to which are bolted sturdy cover plates, there is also an inspection door above the outlet. Abrasive materials can be handled by using manganese alloy steel, hard surface welding, fusion cast basalt linings or material padding. Split end walls are bolted to the ends of the trough. This makes it easy to dismount the screw shaft once the metal cover plates have been removed.

The conveyor trough in tubular screw conveyors consists of a stable tube with an inspection door above the outlet. One-piece end walls are bolted to the ends of the trough. These are suitable for supporting the conveyor. Intermediate supports are only required about every 6 meters. They are supplied loose for mounting during assembly. The shaft exit points are usually sealed by gray cast iron stuffing boxes.

The screw shaft is designed as a solid shaft or a rigid tubular shaft with integrated end journals and a welded-on screw thread. The end bearings are pedestal bearings with anti-friction bearing inserts. When a screw shaft requires intermediate bearings for longer conveying distances. These are designed as easily replaceable units, the torque is transmitted by bolted couplings.

We supply a plain bearing as standard with replaceable two part, gray cast iron bearing shells. They can be set up for grease gun or central lubrication according to the operational conditions. On request, we also supply antifriction bearings with split roller bearings in a sealed, grease-filled suspended housing. The drive comprises a standard geared motor unit.

As a safety device, a speed governor detects the operational status of the screw conveyor.

Additional accessories are available.

# GENERAL INSTRUCTIONS

## INSTALLATION AND OPERATION

The adjustability of the deflection should at least be 3 link divisions (compensation of the setting process when running the chain or when chain abrasion takes place).

The usable tensioning distance should be determined after taking into account the length of the loop and the aggressive strain, which affects the chain. Securing the round link steel chains against excess strain or getting blocked by coarse or foreign bodies by means of suitable safety coupling, shear pin or on the drive.

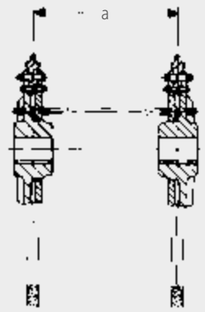
When assembling the sprocket wheels or pulley blocks as well as when manufacturing buckets / bucket attachment and when attaching insertion rails at the return station, accurate adherence to installation dimension and tolerances specified in the respective installation drawings is the prerequisite of proper functioning.

Adhere to the constant initial tension using springs or weights in adjustable tensioning devices, where the size of the chain pretensioning force must be coordinated as per the specifications of the respective conveyor. During their complete service life, the chains must be under the correct initial tension. Loose chains give rise to difficulties.

During all the system constructions, the corresponding accident prevention regulations must be considered.

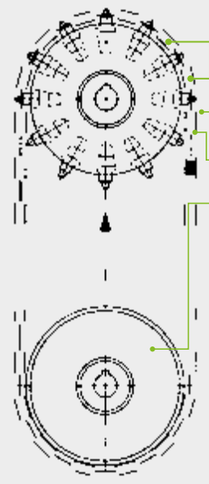
The bulk material to be transported must be supplied in such a way that equal distribution is ensured across the width of the buckets / scraper bar width and all the chain loops are equally tensioned through the bulk material and the tractive force. In case of lateral feed, corresponding precautions must be taken.

Unequal loop stress leads to unequal increase in division due to the wear of individual chain loops; this results in the slanting of the buckets / scraper bars, which in turn results to faults at the return station.




Leave distance “a” by means of 2 limiting screws during assembly! (corresponding bores at the wheels available, no RUD delivery for limiting screws).

Wheels that are grooved pair-wise and marked using colours must be put on a shaft together.



The welded joints of the (vertical) chain links must point at the wheel centre.

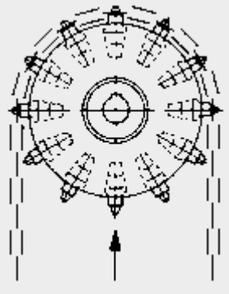
Vertical chain link

Welded joint

Deflection

In case of toothed drive, chains should lightly touch the sprockets when circulating.

In case of un-toothed drive provide initial tension to the chain.



In case of replacements: replace individual teeth without taking off the chain.

When replacing the chains (setting up a replacement), the chain locks and the individual teeth must also be replaced.

The wear state of the chains is reached in case of permissible increase in division due to wear of about 3.5%.

After an abrasion of 1.5%... 2.0%, teeth should be used with increased link support.

# MAINTENANCE & MONITORING

## ASSEMBLY INSTRUCTIONS FOR RUD CONVEYOR SYSTEMS

RUD conveyor chains – highly wear-resistant– are hard-wearing due to their simple structure assembly and hence require very little maintenance. The following points must be observed with regard to high operational safety:

**Lubrication:** RUD conveyor chains – highly wear-resistant – do not normally require lubrication. Such chains may however be lubricated with standard engine oil (not grease), which do not come in contact with the bulk material or aggressive dusts etc. and hence formation of lubrication gel paste in the joints cannot be safely ruled out. Dirty chains should be cleaned before re-lubrication.

**Initial tension:** The chain tensioning must be checked periodically, especially during the start-up phase of new chains and / or in case of large loop lengths. It must be tensioned only to the extent necessary for the proper functioning of the chain and carriers during normal operating conditions. In case of multi-belt conveyors, the initial tensioning force of all the chain loops must be equal. Unnecessary high initial tensioning force reduces the service life.

**Monitoring:** Chains, locks, wheels, sprockets and flange parts must be checked at periodic intervals for damages, corrosion and unusual wearing parts, and the conveyor elements for defl ection and the like. While doing so, attention must be paid to the state of the wearing and safety parts. Damages detected must be immediately rectified.

**Wear:** Round link steel chains and wheel gearing wear out together up to the wear state under normal conditions. This is reached if the chain links at the driving gear run jerkily under stress due to the abrasion to the chain and simultaneous normal chain tensioning or come off suddenly. If the distances between the axis is large, the bulk material is heavily worn out or corroded, in case of high speed, heat influence etc., the chain can run jerkily at the driving gear although the measured increased division due to abrasion is still less than approximately 1.5%. in this case, the wheel gearing is worn out due to the especially high stress and only this must be replaced - but simultaneously at all the driving gears. In principle, the new round link steel chains must only be used along with the new wheel gearing. Round link steel chains, whose average link thickness at any location has reduced by more than 10% of the nominal thickness, must be removed. (average link thickness = mean of 2 dimensions taken perpendicular to each other at the maximum weakened cross-section).

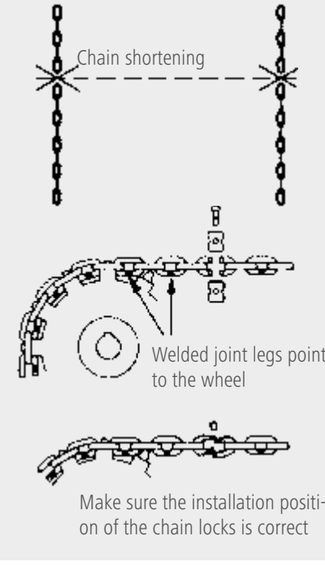
In case of necessary chain reductions, level links must be cut out at the belts to be shortened. Shorten chain belts to odd number of links only, in order to get level starting and final links. The chain links must be carefully cut using cutting discs and without damaging the neighbouring links. Avoid heat influences on links not affected by the cutting at all costs.

**Welding works:** In principle, welding processes should not be carried out at the round link steel chains, chain locks or deeply case-hardened components. It is not permissible to use the chain as earthing connection for electro-welding work at the steel construction.

**In case of single and multi-belt conveyors:** The welded joints of the chain links at the level of the gear must point at the driving gear; the position of the other links is arbitrary. Make sure that the installation position of the chain locks for the sprocket wheels is correct – coach bolt parallel to the sprocket wheel axis (also applicable for pocket wheels and striation sprockets). Install carefully and tighten the screws (strength class 8.8) using torque spanners. After a specific period, re-tighten the screws once again. Assembly for Fa flat lock: link U brackets, hammer in locking bolts and secure with a locking pin

| Thread dimension | Tightening torque | |
|---|---|---|
| | (Nm) | (Lbf ft) |
| M 6 | 10 | 7 |
| M 8 | 25 | 18 |
| M 10 | 49 | 35 |
| M 12 | 85 | 62 |
| M 14 | 135 | 98 |
| M 16 | 210 | 152 |
| M 18 | 300 | 217 |
| M 20 | 425 | 307 |
| M 22 | 580 | 420 |
| M 24 | 730 | 528 |
| M 27 | 1100 | 796 |
| M 30 | 1450 | 1049 |
| M 33 | 1900 | 1374 |
| M 36 | 2450 | 1772 |

Permissible screw tightening torques for screw quality class 8.8 with total drive value µges. = 0.14.




Make sure the installation position of the chain locks is correct

TECHNICAL QUESTIONNAIRE FOR

# CONVEYOR SYSTEMS

TEL.: +49 (0) 7361 504-1457
CONVEYOR@RUD.COM

Company: * | Name: *

Street: * | E-Mail: *

Post Code: * | City: *

Telephone: *

Project: ☐ New construction ☐ Reconstruction

Bulk material: *

Bulk material bulk density [t/m³]: *

| Bulk material properties | | | | |
|---|---|---|---|---|
| | Corrosion: | ☐ high | ☐ medium | ☐ none |
| | Abrasion: | ☐ high | ☐ medium | ☐ none |

Granularity / dimension: mm max. mm min.

Moisture content: Temperature [°C]:

Conveyance capacity max. [t/h]:* Speed [m/s]:

Daily operating hours [h]: Annual operating hours [h]:

Dimension between axes [m]: * Trough width [mm]: * or conveyor width [mm]: *

Conveyor:
☐ on lower run
☐ on upper run

Assignment of material to be transported:
☐ regular
☐ irregular

FType of conveyor:
☐ Ash remover ☐ Coaling
☐ Trough conveyor ☐ Bunker discharge

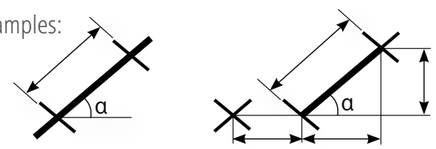
Chain centre distance [mm]: Drive power requirement [kW]:

Chain sprocket diameters [mm]: Max. operating force / chain strand [kN]:

Scraper bars: ☐ ja ☐ nein
(Scraper bar outline on the following page 67)

Line profile: *
Please add detailed drawing
with the necessary dimensions!

Profile examples:




Additional specifications /Additions:

Annexes / Drawings / Pictures:

# SKETCHES

FOR SCRAPER BARS

Clear through width of the conveyor [mm]:

Chain centre distance [mm]:

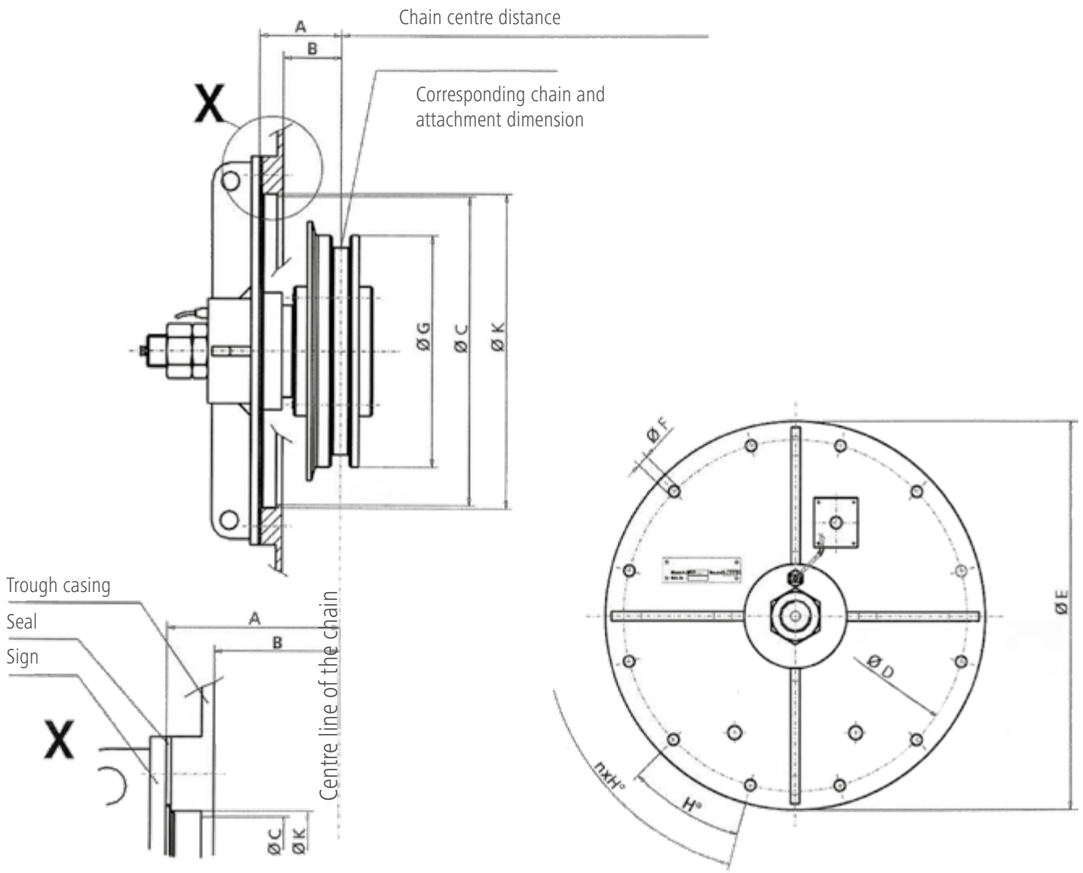
Through bottom material
☐ Granite / Basalt ☐ Hardox ☐ Wearing rails

Additional information / additions to questionnaire conveyors (Page 66)

TEL.: +49 (0) 7361 504-1457
CONVEYOR@RUD.COM

# SOI 1/2

DIMENSION SHEET

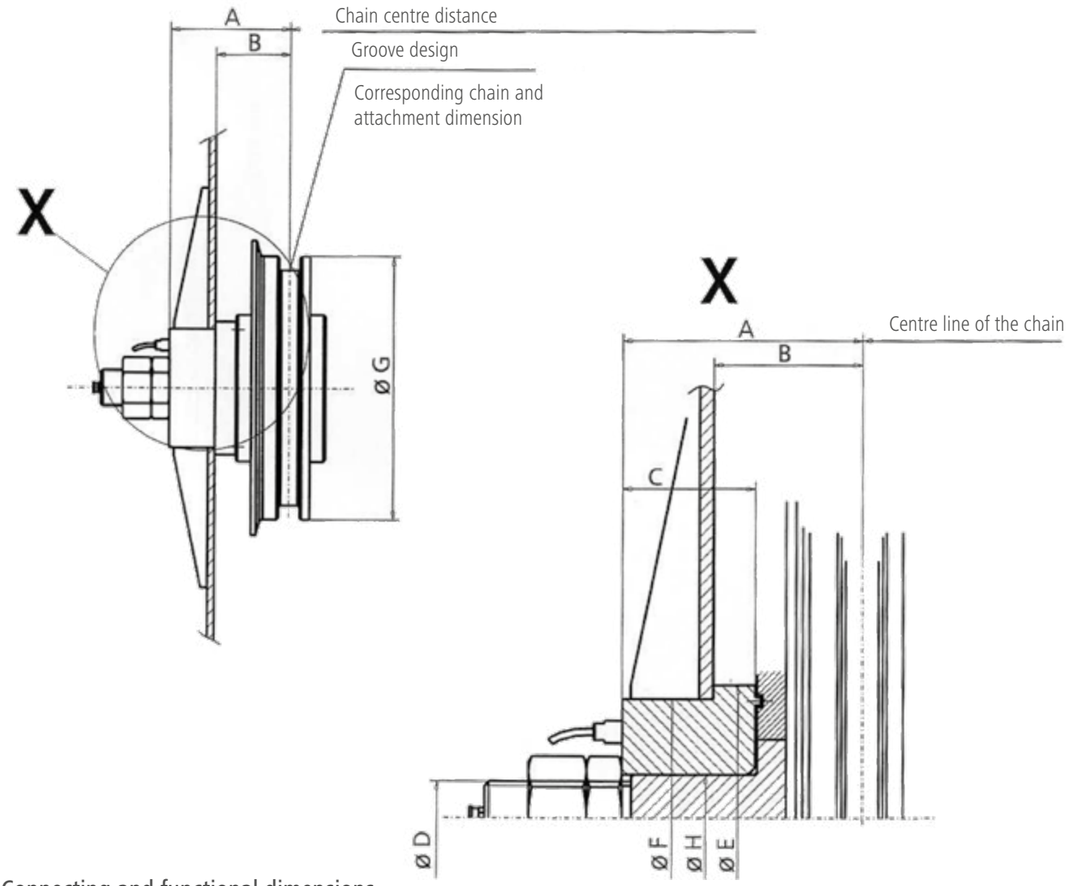



## Connecting and functional dimensions

| | Dimension mm | |
|---|---|---|
| A | | n (number of bores in the plate): |
| B | | |
| Ø C | | Chain type and dimension: |
| Ø D | | |
| Ø E | | |
| Ø F | | Attachment type and dimension: |
| Ø G | | |
| H° | | |
| Ø K | | |

# SOI 2/2

DIMENSION SHEET

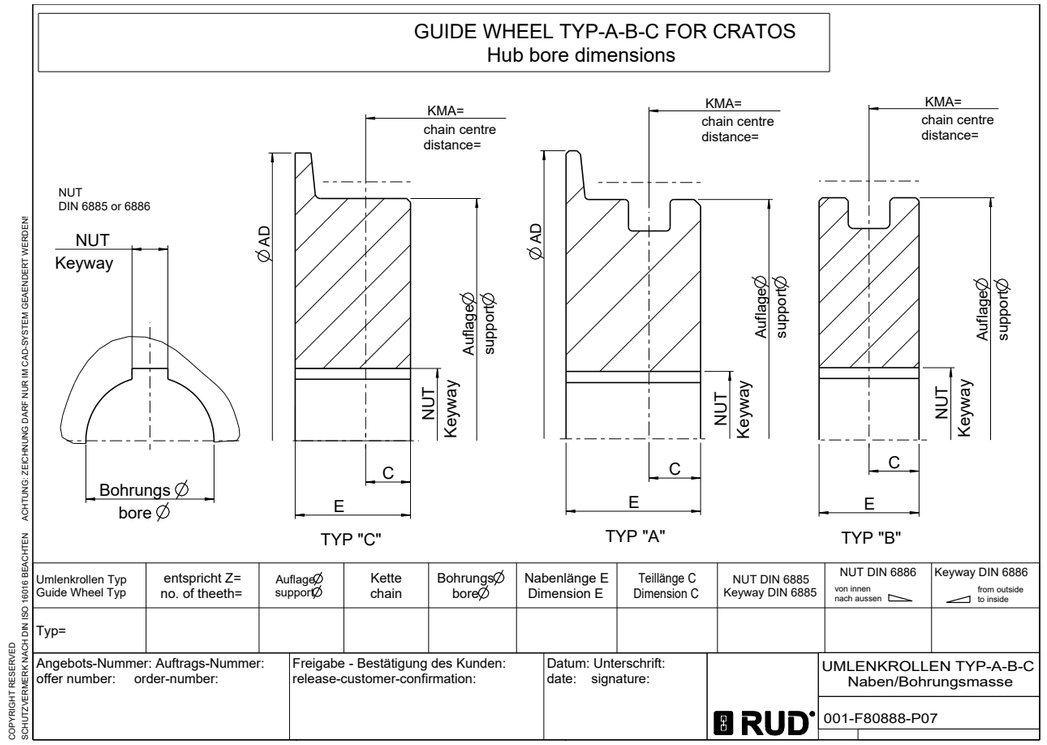



## Connecting and functional dimensions

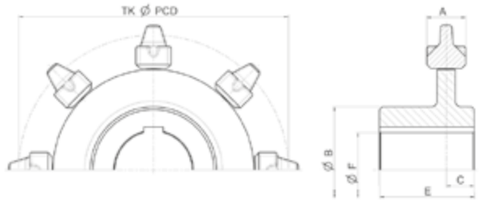
| | Dimension mm | |
|---|---|---|
| A | | Chain type and dimension: |
| B | | |
| C | | |
| Ø D | | |
| Ø E | | Attachment type and dimension: |
| Ø F | | |
| Ø G | | |
| Ø H | | |
| | | |

# REVERSING WHEEL TYPE A-B-C

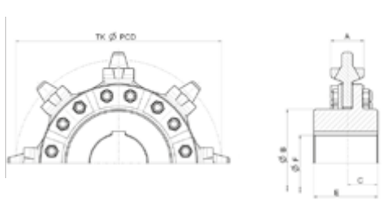
## HUBS / BORE DIMENSIONS




☐ Sprocket wheel single-part:




☐ Sprocket wheel multi-part:




RUD

BUCKET CONVEYORS:TEL.:
+49 (0) 531 23 729-14
VERTRIEB@RUD-HE.DE
COMPONENTS:
TEL.: +49 (0) 7361 504-1457
CONVEYOR@RUD.COM

TECHNICAL QUESTIONNAIRE FOR

## BUCKET ELEVATOR & COMPONENTS

Company: * Name: *

Street: * E-Mail: *

Post code: * City: *

Telephone: *

Project: ☐ New construction ☐ Reconstruction

Bulk material designation: *

Bulk material bulk density [T/dm³]: *

Granularity / dimension: * mm max. mm min.

Moisture content: Temperature [°C]:

Conveyance capacity max. [t/h]: * Speed [m/s]:

Daily operating hours [h]: Annual operating hours [h]:

Dimension between axes [m]: * Mounting of buckets: * ☐ shouldered ☐ lateral Bucket designation:

Bucket designation: *

Bucket content [l]: * Bucket weight [kg]: *

Axle drive shaft rotation [U/min]: Diameter drive shaft [mm]:

Diameter of sprocket wheels [mm]: Diameter expansion shaft [mm]:

Please add the drawing of the bucket conveyor and the bucket.

Bucket attachment:

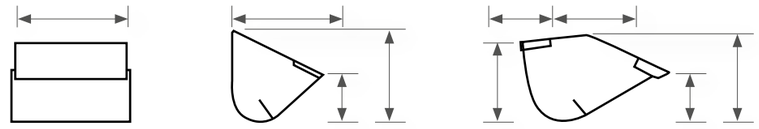


☐ RUca ☐ System 65 ☐ System2win ☐ System SWA ☐ System Central Chain

☐ other bucket attachment (e. g. DIN)

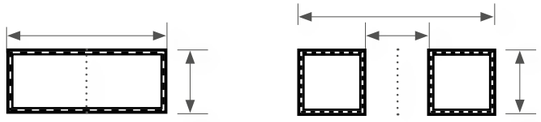
Supplier / Manufacture actual chain:

Bucket specification (please add the dimensioning)



Bucket width ☐ Bucket type 1 ☐ Bucket type 2

Casing dimension: (please add the dimensioning)



☐ Case cavity ☐ Double cavity

Additional specifications / drawings / pictures / additions (f. e. customer issues, target, project, extended settings)

TECHNICAL QUESTIONNAIRE FOR

# TROUGH CHAIN CONVEYOR / SCREW CONVEYOR

TEL.: +49 (0) 531 23 729-14
VERTRIEB@RUD-HE.DE

| | | | | |
|---|---|---|---|---|
| Company: * | | Name: * | | |
| Street: * | | E-Mail: * | | |
| Post code: * | | City: * | | |
| Telephone: * | | | | |
| Project | | | | |
| Conveyed material: * | | | | |
| Conveyed material properties: | | | | |
| | Corrosion: | ☐ strong | ☐ medium | ☐ none |
| | Abrasion: | ☐ strong | ☐ medium | ☐ none |
| Grain size / dimension: * | | mm | | |
| Bulk weight [t/m³]: * | | Temperature [°C]: | | |
| Moisture %: | | Required conveying capacity [t/h]: * | | |
| Conveying speed [m/s]: | | | | |
| Total daily running time [h]: | | Per year [h]: | | |
| Center distance [m]: * | | Pitch angle [degrees]: * | | |
| Trough width [mm]: | | | | |
| Conveying in lower run | | Conveying in upper run | | |
| Conveyed material feed? | Regular: | | Irregular | |

a) Line course with indication of the position of the material feed and discharge with dimensions
b) Bunker discharge (enclose dimensioned drawing)

| | |
|---|---|
| Sprocket diameter [mm]: | |
| Drive power requirement [kW]: | |
| Max. Operating force per chain strand [kN]: | |

☐ New construction ☐ Conversion (specify existing housing dimensions)

**For special requirements, please enclose specification or sketch.**

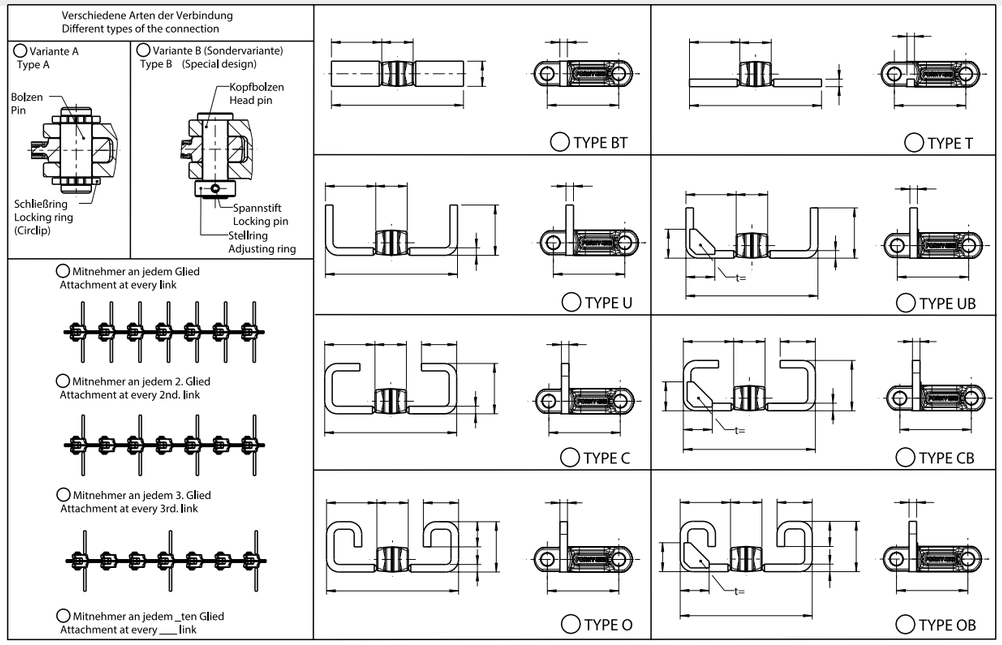
Note: This form contains mandatory fields that must be completed. Mandatory fields are marked with a * sign.

TECHNICAL QUESTIONNAIRE FOR

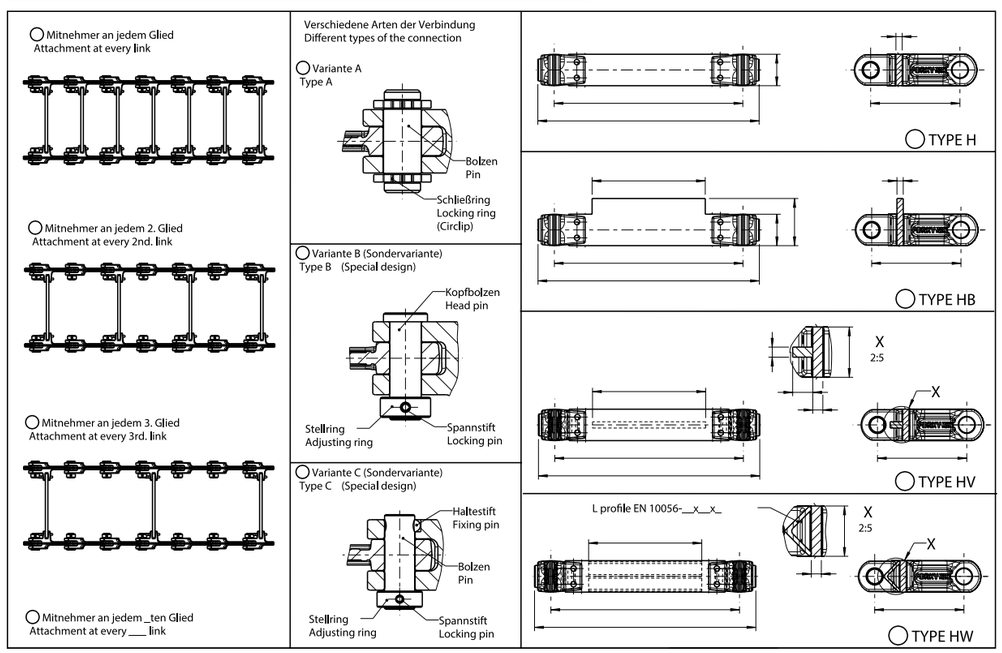
# FORKEDLINK CHAINS

TEL.: +49 (0) 7361 504-145
CONVEYOR@RUD.COM

Single strand

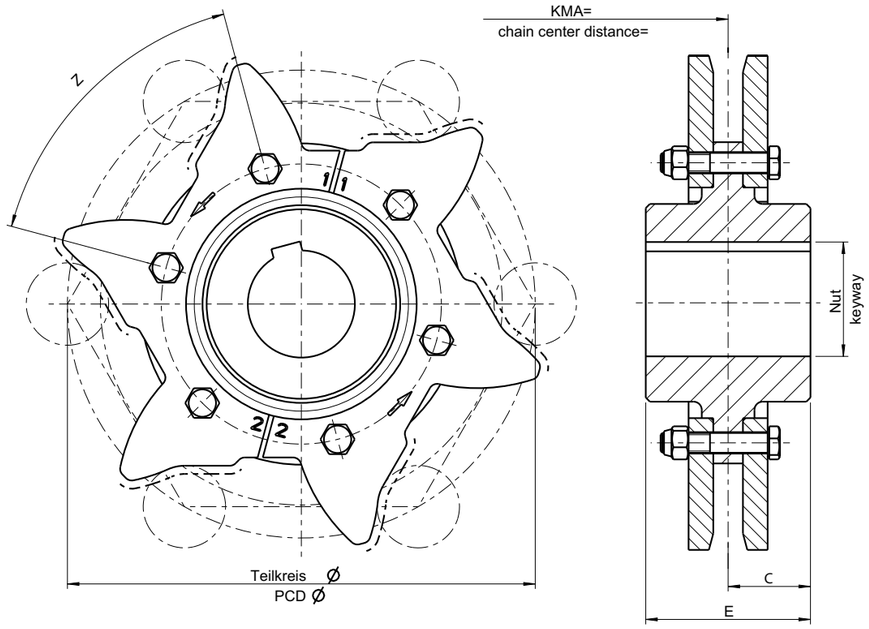



Multiple strand

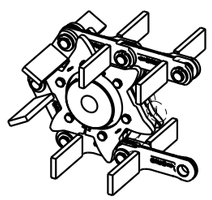


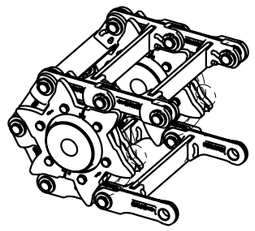
TEL.: +49 (0) 7361 504-1457
CONVEYOR@RUD.COM

| RUD-ANTRIEBSRAD FORKY | RUD-DRIVING WHEEL FORKY |
|---|---|
| Naben/Bohrungsmasse | Hub bore dimensions |

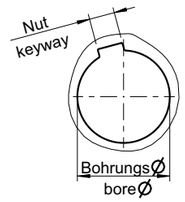



○ FORKY Einstrang/FORKY SINGLE STRAND ○ FORKY Doppelstrang /FORKY DOUBLE STRAND





Nut/keyway
DIN 6885 or 6886




| Zahnkettenrad Sprocket wheel | Zähnezahl no. of theeth | Teilkreisdurch-messer Ø PCD Ø | Kette chain | Bohrungs Ø bore Ø | Nabenlänge E Dimension E | Teillänge C Dimension C | Nut DIN 6885 Keyway DIN 6885 | Nut DIN 6886 von innen nach aussen | Keyway DIN 6886 from outside to inside | Stellschraube adjusting screw |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | | | | | |

| Angebots-Nummer: Auftrags-Nummer: offer number: order-number: | Freigabe - Bestätigung des Kunden: release-customer-confirmation: | Datum: Unterschrift: date: signature: | erstellt:12.04.13/JJU<br>geprüft: | FORKY RÄDER/FORKY WHEELS<br>NABEN BOHRUNGSMASSE/HUB BORE DIMENSIONS<br>RUD-CRATOS |
|---|---|---|---|---|
| | | | RUD | 001-F80888-P23 |

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Tel. +49 7361 504-1457
**Email: conveyor@rud.com · www.rud.com**

## RUD Conveyor & Drives



### RUD TECDOS Mould Handling Solution

Efficient and safe handling of moulds in the injection moulding industry, We have different solutions for turning, opening and closing that optimise your processes.



### RUD TECDOS Drive Technology

Rotating, lifting, moving or telescoping - with our drive systems RUD TECDOS OMEGA and RUD TECDOS PI-GAMMA, we offer maximum efficiency and reliability.



### RUD Conveyor Technology

Combinable components & individual parts for conveyor technology, conveyor systems and mining. RUD offers you perfectly coordinated systems and components for horizontal, vertical and inclined conveyors.



### RUD Industrial Chains

RUD components are the first choice worldwide for leading hoisting equipment manufacturers. We also offer a wide range of round link chains for different industries and areas, such as food, fishing and awnings.

10/2026