

R o u n d T r a c k [®]



STROTHMANN

Machines & Handling

Innovation in Motion



Innovation in Motion

Since the foundation of the company in 1976 W. Strothmann GmbH has become a synonym for innovations in transportation and material handling equipment. Over the years Strothmann has gained vast experiences in press shop automation and is well known as specialist supplier of press to press transfer systems, blank destackers, sophisticated centring units and highly dynamic loading and unloading feeders; including gripper and tooling systems.

Our patented stationary and linear inductive drives for high speed shuttles show that the linear feeder exceeds the known borders. Many branches of industry, including automotive, machine tool manufacturers and the timber processing, trust our expertise and experience.

The patented RoundTrack® floor rail system allows new approaches in manufacturing system engineering (flow- and pulse assembly lines). The rails are easy to install, and due to the low rolling resistance heavy loads like aeroplane body sections and big electrical transformers can easily be moved.

RoundTrack®

An innovation to move

The patented Strothmann RoundTrack® is designed to move extreme heavy machines and loads with a minimal force. The very low friction (friction coefficient 0.01) is caused by the specially shaped, quality roller bearings and the hardened and polished round bar (60-64 HRC). The special aluminium base profile to support the track and a clamping profile to fix the bar, are the integral components of the RoundTrack® System. For outdoor applications and other areas with corrosive surroundings the bar can be delivered in stainless steel or a special chrome plated surface protection. The RoundTrack® is available in two diameters 25 mm and 40 mm and in most applications it is recessed flush with the floor level. Using special clamps the RoundTrack® can also be floor mounted or fixed to steel beams or channels.

Successful in pulse assembly and heavy load transportation

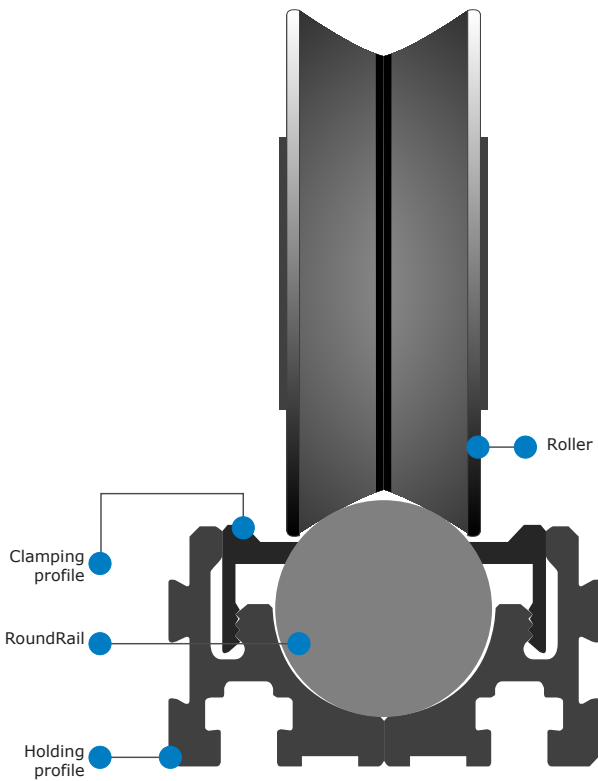
World class companies rely on the technical and commercial advantages of the RoundTrack® System in their production. Having to move assembled machine tools, heavy crane bridges, construction machinery or aircraft body sections; the RoundTrack® transports precisely from work station to work station within their production lines. In a special application for example the RoundTrack® carts are production vehicles to move up to 30 tons tailored pipes within an integrated welding and testing application; but in all case absolute high on track and position accuracy.

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Convincing benefits and no fear of comparisons



The Strothmann RoundTrack® has been reviewed in every detail. The very low rolling resistance enables people to move a 10 ton machine by hand. The special design of the Gothic arch in the wheels in combination with the RoundTrack® is responsible for smoothness of the system. All carts stay exactly in line. The surface can easily be cleaned because there are no gaps between floor and rail where dirt and debris can cumulate.






The track exposes only minimal above the floor level which does not cause any danger.

Also vehicles with very low wheel diameters like pallet lifters can easily cross the rail system.

These are a few reasons why the RoundTrack® sets new industrial standards and is the better solution in comparison with other systems.

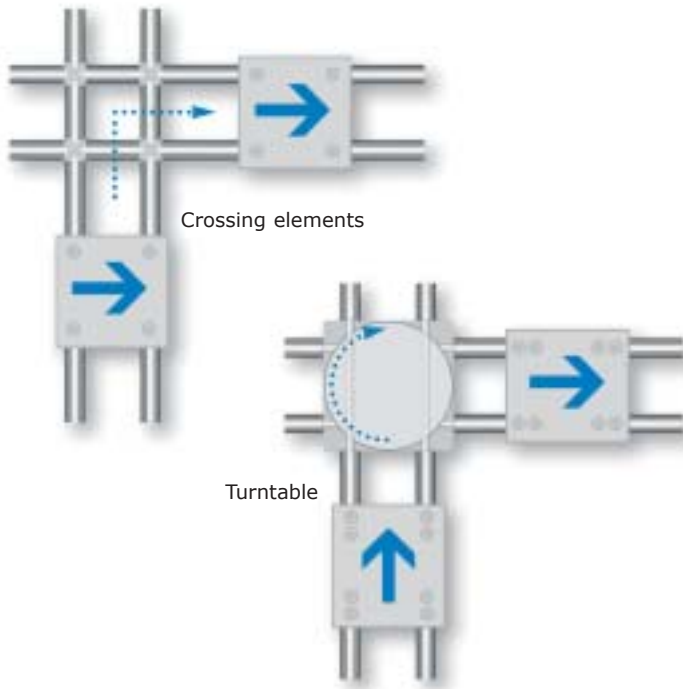
Advantages at a glance

- Low rolling resistance (friction coefficient 0.01)
- High positioning accuracy
- Economic solution
- Flush with floor level
- No stumble danger
- Smooth run system
- Only micro gaps in the floor
- Easy to clean

| 1=very good 6=unsatisfactory |  |  |  |  |  |
|--|---|---|---|---|---|
| based on an assessment by TEG-s (Fraunhofer) | Crane track | Crane track with rubber guide | Railway track | Tram track | STROTHMANN RoundTrack |
| Protection against dirt | 2 | 1 | 2 | 5 | 2 |
| Ease of cleaning | 4 | 1 | 4 | 5 | 2 |
| Avoidance of edge loads | 5 | 5 | 4 | 4 | 1 |
| Track precision | 4 | 4 | 5 | 5 | 1 |
| Rolling resistance | 4 | 6 | 3 | 4 | 1 |
| Accident prevention | 6 | 1 | 6 | 4 | 1 |
| Reduction in wear | 3 | 6 | 4 | 4 | 1 |
| Load-bearing capacity | 2 | 2 | 3 | 3 | 2 |
| Interchangeability | 6 | 6 | 5 | 6 | 1 |

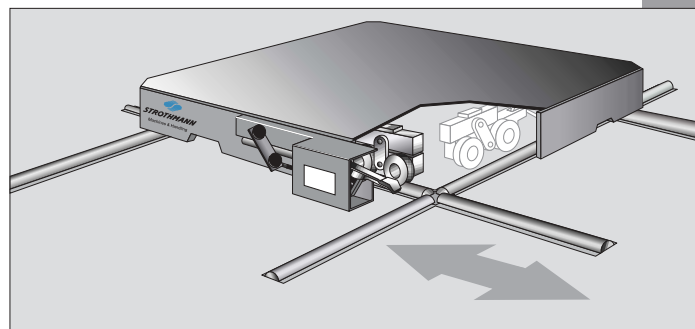
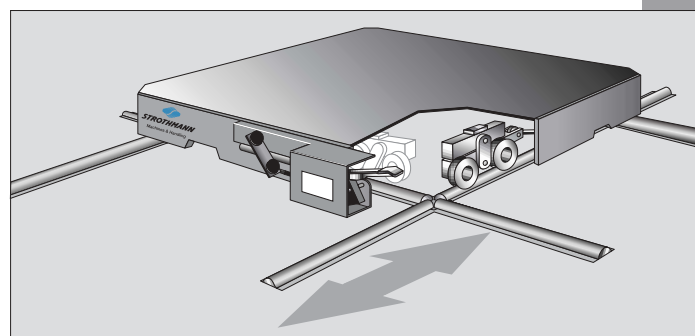


Always the right direction



Turntables and crossover sections (cross conveying)

All modules of the RoundTrack® System are designed and coordinated to allow carts and assembly platforms to reach any position of the factory via turnstiles and crossover mechanism inside the carts for cross conveying. These crossover carriages are actuated by using lever mechanisms, pneumatics or hydraulics which allow an easy change of drive direction; manually or fully automated.



R o u n d T r a c k ®



RoundTrack® „Production in pulse or flow“

Since Henry Ford used flow production in the automotive industry more and more industrial goods are produced with this technology.

Also within the machine tool industry this production technology has a long tradition.

Caused by the surrounding conditions and high weight of the parts, different solutions have to be evaluated.

- Long assembly time per unit, low quantity production figures, high variety in modules, weights of 25 tons per machine and more, forcing new solutions to the complicated assembly process in comparison, for example the automotive industry.
- Especially designed platforms for easy access to the machine, no trip hazards and free access for logistics and material handling.
- Pulse or flow production is only a question of the assembly philosophy of the specific company.
Strothmann will provide you with the suitable drive technology.



Injection moulding machines in pulse production. Central drive unit with push or drag lever bar.



Advantages of pulse production in comparison to stationary assembly

- Machine to people - no idle time due to changing work places
- Design changes in components or assembly methods only need to be implemented at one assembly point - not parallel at all work stations
- Improved production planning due to designated assembly steps
- Just In Time delivery of material due to dedicated assembly index
- Improved logistics because assembly groups or components are only needed at the specific station
- Assembly and test equipment is only required at one station
- The assembly index highlights problems and forces solutions
- Specialisation of personnel will improve quality in work
- Continues improvement of the assembly process
- Magnificent improvement of quality within the whole supply chain



Deckel MAHO at Seebach (Germany). Flow production on high precision assembly platforms. During indexing between the stations the skid platforms will be lifted by air cushions, transferred and afterwards rested and levelled at 4 centring units. A big challenge was to constantly provide the machines with compressed air and electricity; both during the transportation process and at their assembly position.



Heavy loads - Moved with ease



It does not matter what parts are moved, or what shape or dimension it has.

Strothmann delivers the adequate carriage for your requirements; from standardized dollies or any customized cart solution.

Many examples around the industry show numerous applications where RoundTrack® proved its commercial benefits in rail based intra-logistics.

Transport cart in press shop.

Bergrohr, Siegen - Germany

Tailored pipes with a weight up to 25 tons in a welding line with 40 special carriages with pipe rotating unit. Inductive power supply (pickup and floor recessed power cable). Data connection via W-LAN communication.





20 tons Milling Machine in pulse production. Drive cart powered and data connected via inductive power supply. Tailored follower cart with hydraulic power pump.

Carriage (21 m) for transportation of aircraft tail units into a riveting machine.

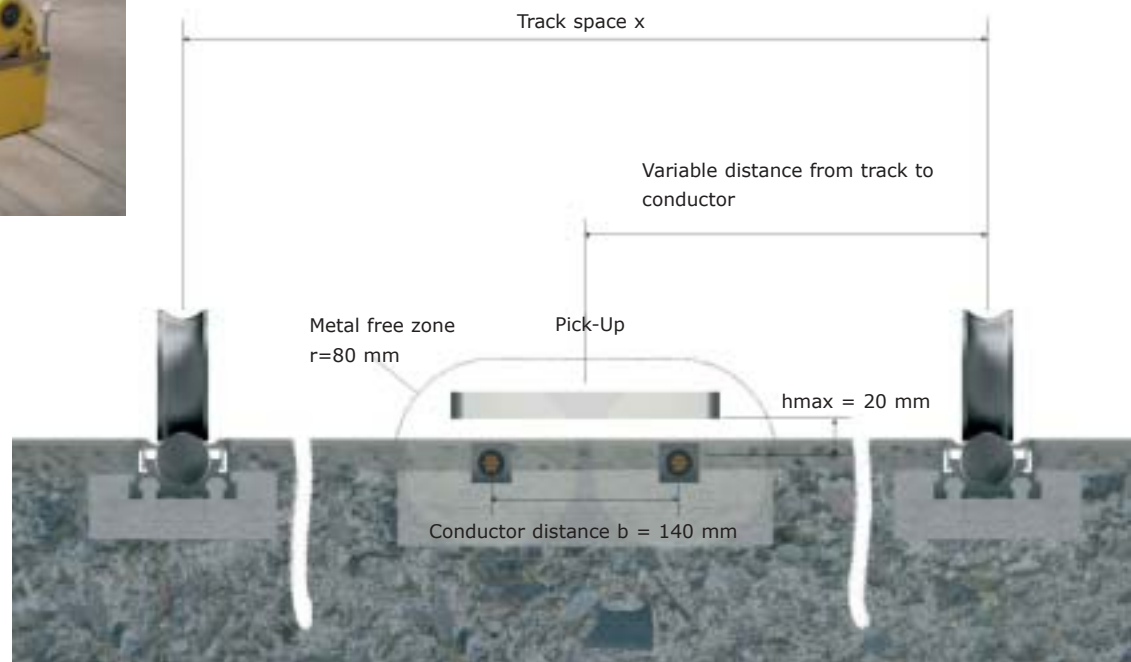


Driving solutions for all applications



Standard batteries packs as used in trucks are a sufficient drive concept to power heavy carts due to the low friction of the track drive assembly. They are charged during downtimes. If higher energy consumption is requested, Strothmann provides the adequate systems like cable rollers, cable tracks, bus bars, or inductive power supply.

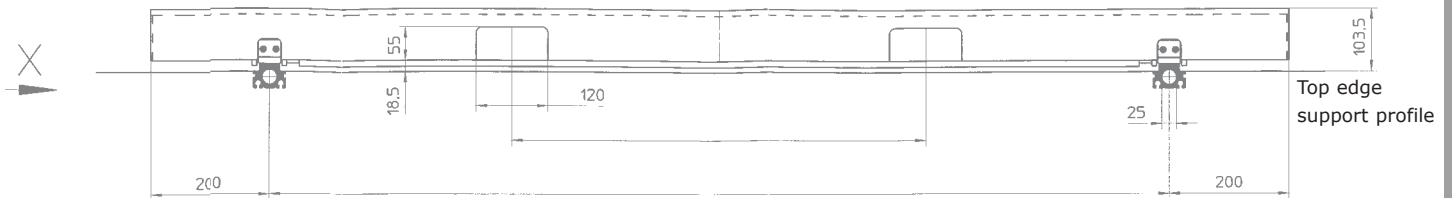
For long driving distances and independent power supply, brushless inductive power supply, with integrated data transfer is the best choice. The conductor cables are recessed into floor screed. The electric power is transferred to the carriage via Pick Ups. The magnetic connection is generated via an air gap and results into a no wear and maintenance free solution.



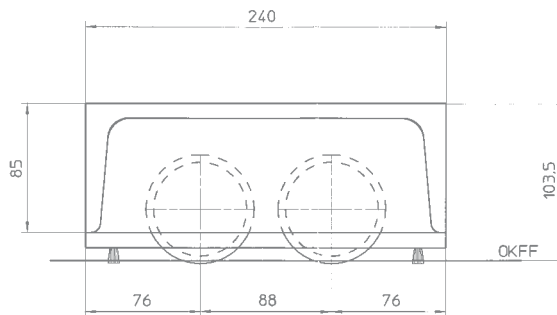
Flexible on track and independent from cranes and fork lifts



Standardized dollies for various applications and loads



Example: Dolly Payload 5 t



| Payload* up to (tons) | RoundTrack® Type | Frame | total height (mm) top of holding profile top of dolly | Track Centers mm (X) | Fork Lift centres mm (Y) | Weight (kg) | Ident - No. |
|--------------------------|---------------------|-----------|---|-------------------------|-----------------------------|----------------|-------------|
| 1 | 25 | 235 x 90 | 98 | 600 | non | 24 | 1200.00022 |
| 1 | 25 | 235 x 90 | 98 | 800 | non | 27 | 1200.00023 |
| 1 | 25 | 235 x 90 | 98 | 1000 | non | 30 | 1200.00024 |
| 1 | 25 | 235 x 90 | 98 | 1200 | non | 34 | 1200.00025 |
| 5 | 25 | 240 x 85 | 103,5 | 600 | 300 | 61 | 1210.00050 |
| 5 | 25 | 240 x 85 | 103,5 | 800 | 500 | 73 | 1210.00051 |
| 5 | 25 | 240 x 85 | 103,5 | 1000 | 500 | 85 | 1210.00052 |
| 5 | 25 | 240 x 85 | 103,5 | 1200 | 700 | 97 | 1210.00053 |
| 5 | 25 | 240 x 85 | 103,5 | 1500 | 700 | 115 | 1210.00054 |
| 5 | 25 | 240 x 85 | 103,5 | 1800 | 700 | 133 | 1210.00055 |
| 5 | 25 | 240 x 85 | 103,5 | 2000 | 700 | 145 | 1210.00056 |
| 10 | 40 | 320 x 100 | 134 | 600 | 300 | 94 | 1220.00023 |
| 10 | 40 | 320 x 100 | 134 | 800 | 500 | 114 | 1220.00024 |
| 10 | 40 | 320 x 100 | 134 | 1000 | 500 | 135 | 1220.00025 |
| 10 | 40 | 320 x 100 | 134 | 1200 | 700 | 155 | 1220.00026 |
| 10 | 40 | 320 x 100 | 134 | 1500 | 700 | 186 | 1220.00027 |
| 10 | 40 | 320 x 100 | 134 | 1800 | 700 | 216 | 1220.00028 |
| 10 | 40 | 320 x 100 | 134 | 2000 | 700 | 237 | 1220.00029 |

* The payload values are the maximum permissible load symmetrically positioned on the Dolly. Impact and specific working conditions have not been considered and should be evaluated by the user for each application.

Easily installed and ready to use



The installation of the RoundTrack® can be carried out by the customer or by Strothmann site engineers.

The floor screed in existing or new buildings will be cut by means of high precision diamond disc cutters and prepared for the installation of the track. Special mounting jigs ensure a fast, precise and clean mounting of the RoundTrack®. The remaining cavity around the rail will be filled with non shrinking mortar. All work can be carried out during production or over weekends.

Based on the layout the installation should be carried out in the following sequence:

- Agree and confirm location of track lines with the client.
- Cut the slots in accordance with Strothmann drawing (width and depth), clean from rubble, dust and water.
- Set the datum line at the highest point of the floor level (track should not be installed below floor level). This could mean that the track will be exposed and the floor has to be filled in (by others) to recess the aluminium profile.
- Assemble the track next to the slot by joining the sections. Allow staggered (overlapping) joints of the three profiles (aluminium, round bar and clip profile).
- Assemble the jigs as shown in drawing.
- Move the whole track line over the slots and start to level the jigs to the required position (horizontal and vertical).



- Minimum tolerance allowance: Height +/- 1,0 mm over the length of 5000 mm.
- Centre / Centre of track between jigs +/- 0,5 mm.
- Cover the track with a suitable fabric reinforced tape to protect the surface for filling the cavity.



- After levelling fill slots with the non shrinking, quick dry (approx. 2 hrs) grout (approx. 1 mm below floor level, make good of finished floor possibly by others).



- After the grout has settled disassemble the jigs and cut the steel clamps at floor level with an angle grinder.

- After removing the tape and cleaning of the round bar with lubrication spray (WD40 or equal) the RoundTrack® is ready to use. Before loading the track it needs to be ensured that the specified settling time of the mortar has been considered.



R o u n d T r a c k [®]



Choice of components

To make applications easier for our costumers Strothmann provides special roller assemblies with single and double wheels for easy adoption. Different wipers like brushes, felt stripper and metal stripper are available to protect the system against dirt and micro damages. For automated applications drive wheel sets and gear drives will be used.

A big catalogue of different components including special centering / index pins and stopper are completing the program.

Specifications concerning the quality and usability of the products do not constitute a warranty of properties. They are intended to serve informative purposes only. Solely the respective contract of sale shall be binding in regards to the extent of our supplies and services.

RoundTrack® 25

Ball bearing roller 72/25
hardened and polished



Clamping profile

FFL

Round bar
hardened and
polished

Holding profile

Single idle wheel set RoundTrack® 25 (Ident-No. 11.00747)



Shim plate (STROTHMANN supply)
Ident-No.: 20.01009

Mounting depth M8 nuts are standard (STROTHMANN supply)

FFL

RoundTrack® is not part of delivery

Double idle wheel set RoundTrack® 25 (Ident-No. 11.00748)



Shim plate (STROTHMANN supply)
Ident-No.: 20.01011

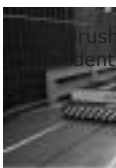
Mounting depth M8 nuts are standard (STROTHMANN supply)

FFL

RoundTrack® is not part of delivery

| | max. radial load | |
|--------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| single | 16,4 | 23,1 |
| dual | 32,8 | 46,2 |

The wheel sets are supplied with brush wipers. Optional scrapers according to spec. below.



Brush wiper
Ident-No.: 27.00140

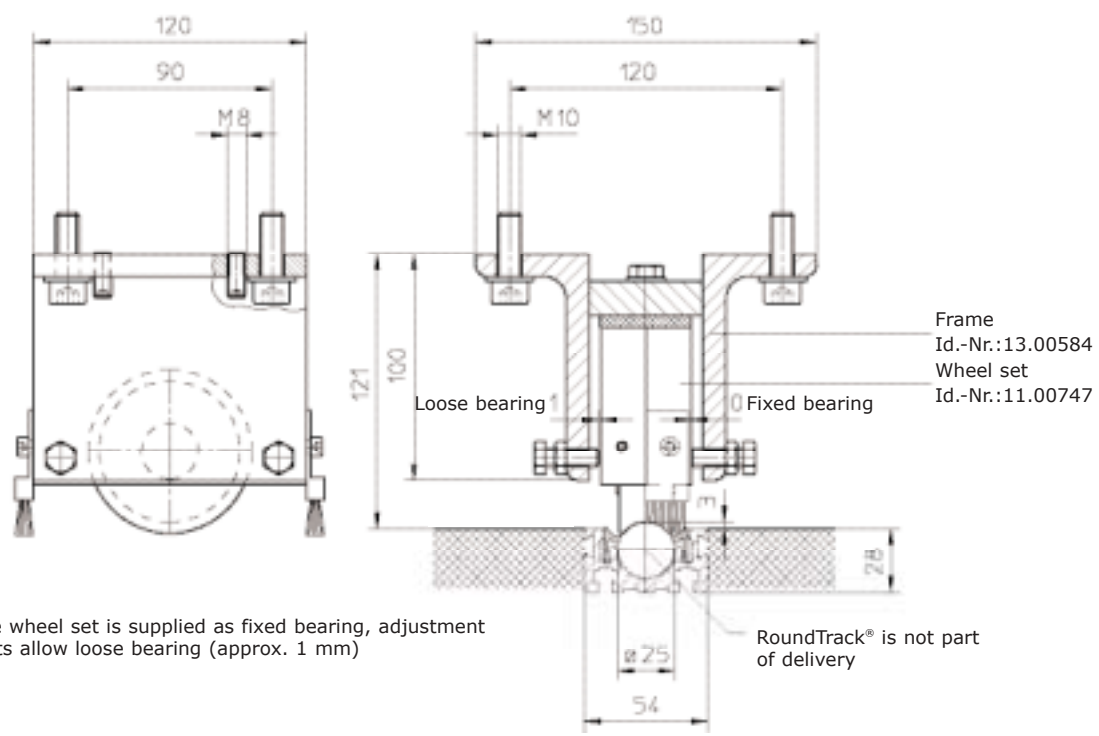


Metal stripper
Ident-No.: 20.01001



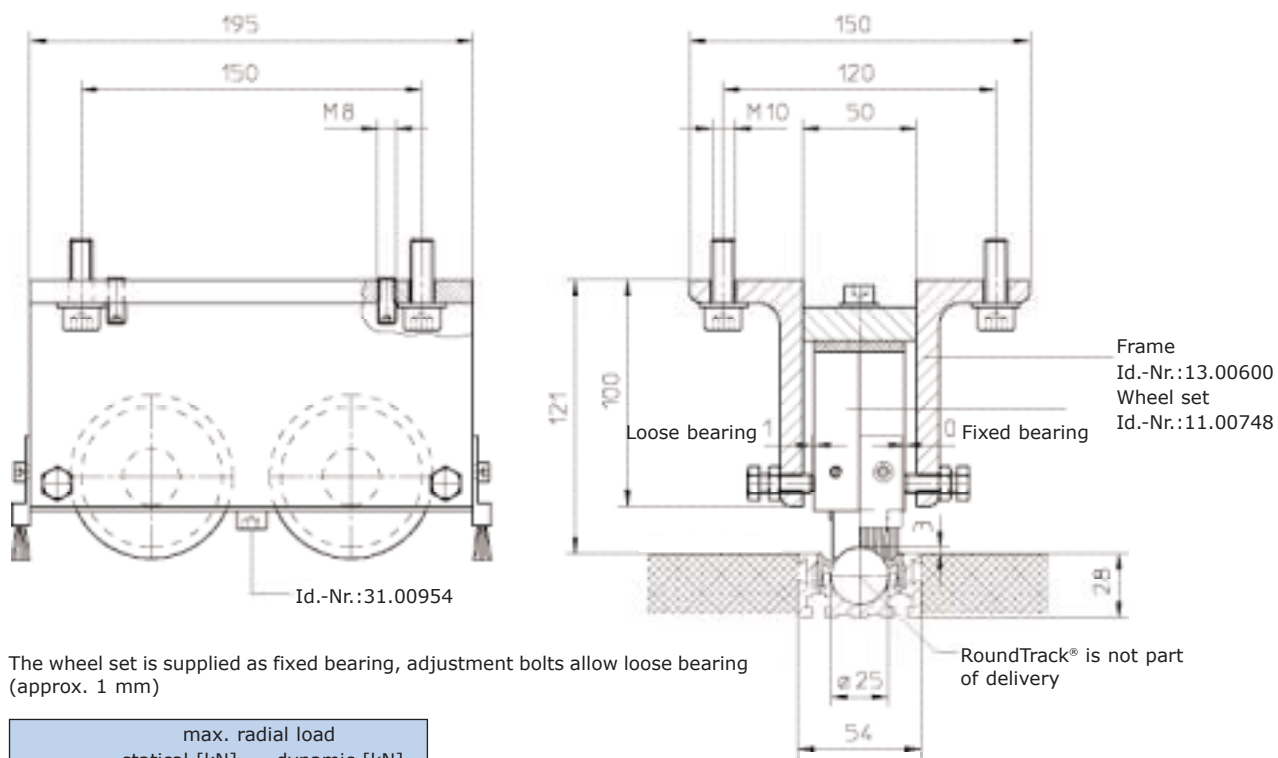
Felt stripper
Ident-No.: 30.00216

Single idle wheel set RoundTrack® 25 with mounting frame (Ident-No. 14.00110)



The wheel set is supplied as fixed bearing, adjustment bolts allow loose bearing (approx. 1 mm)

Double idle wheel set RoundTrack® 25 with mounting frame (Ident-No. 14.00111)

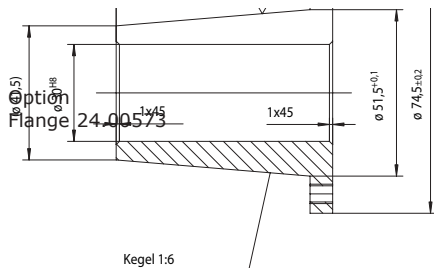


Id.-Nr.:31.00954

The wheel set is supplied as fixed bearing, adjustment bolts allow loose bearing (approx. 1 mm)

| | max. radial load | |
|--------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| single | 16,4 | 23,1 |
| dual | 32,8 | 46,2 |

RoundTrack® 25 Drive Wheel Set ϕ 160 (Ident-No. 11.02065)



Shimplate $\phi 160$
(STROTHMANN
supply)
Id.: 20.01536

Hex nut M16 for
top fixing
(not STROTHMANN
supply)

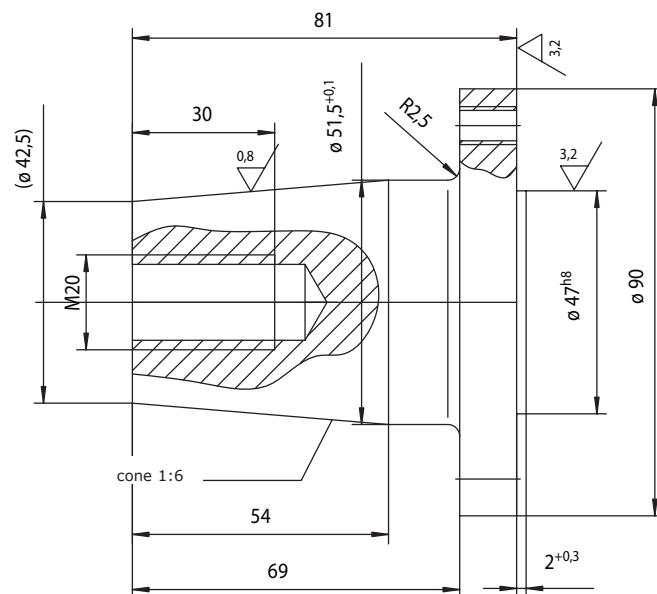
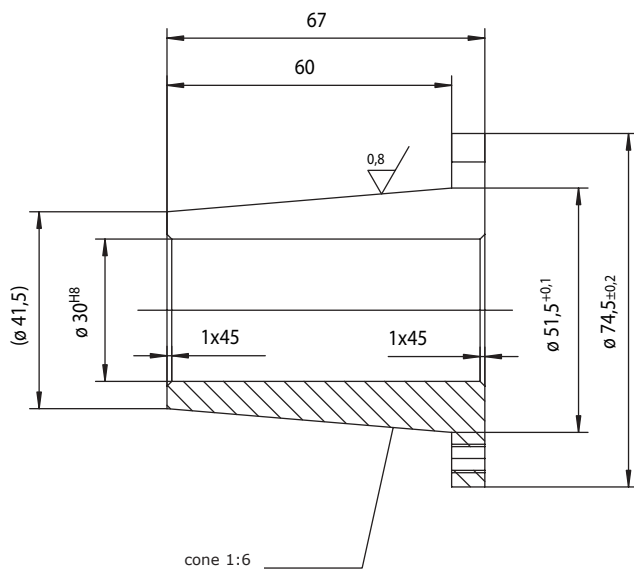
M Anz. = 150 Nm
Torque

RoundTrack® is not part of delivery

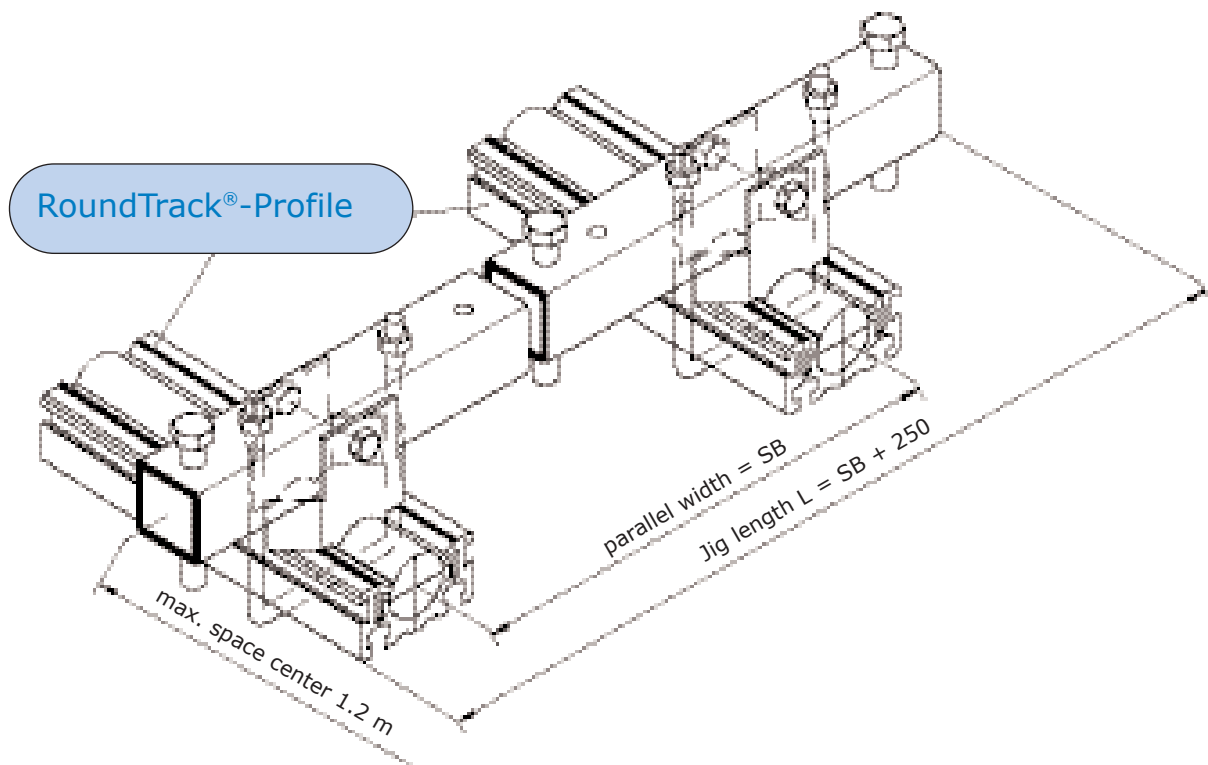
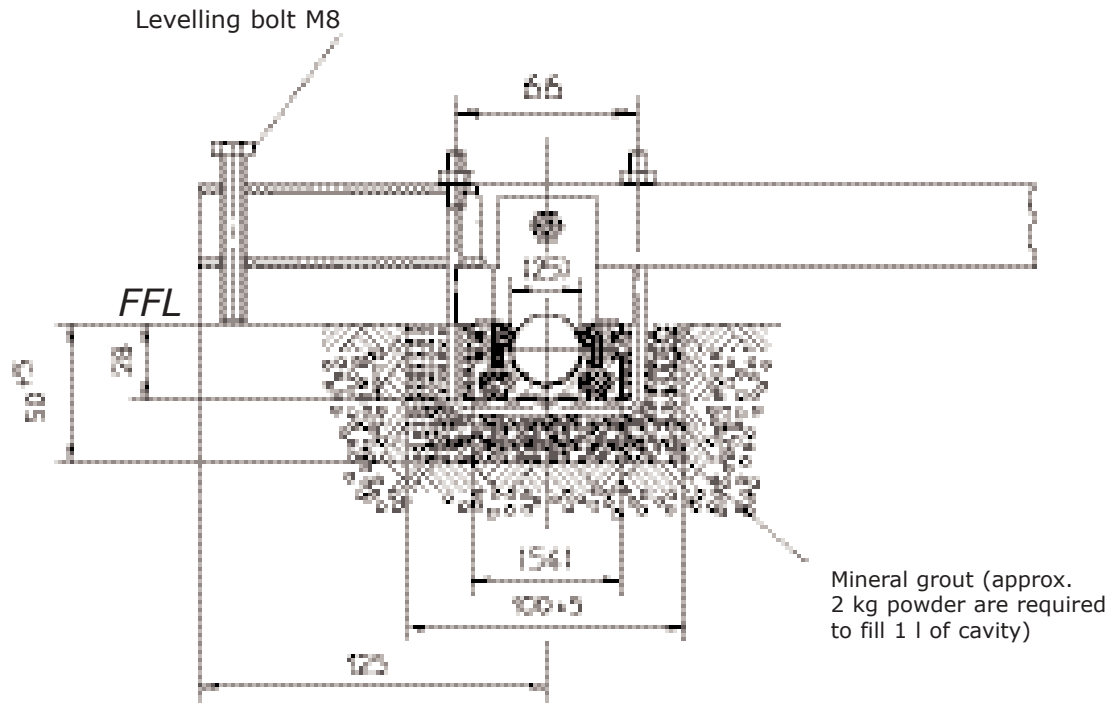
| wheel- ϕd 160 | max. radial load | |
|------------------------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| | 40 | ca. 50 |

Option:
Sleeve for fixed drive shaft
Ident-No. 24.00503 – shaft $\phi 30$
Ident-No. 24.00502 – shaft $\phi 40$

Option:
Flange for flexible joint drive shaft
Ident-No. 24.00573



Installation jig for parallel track lines – RoundTrack® 25



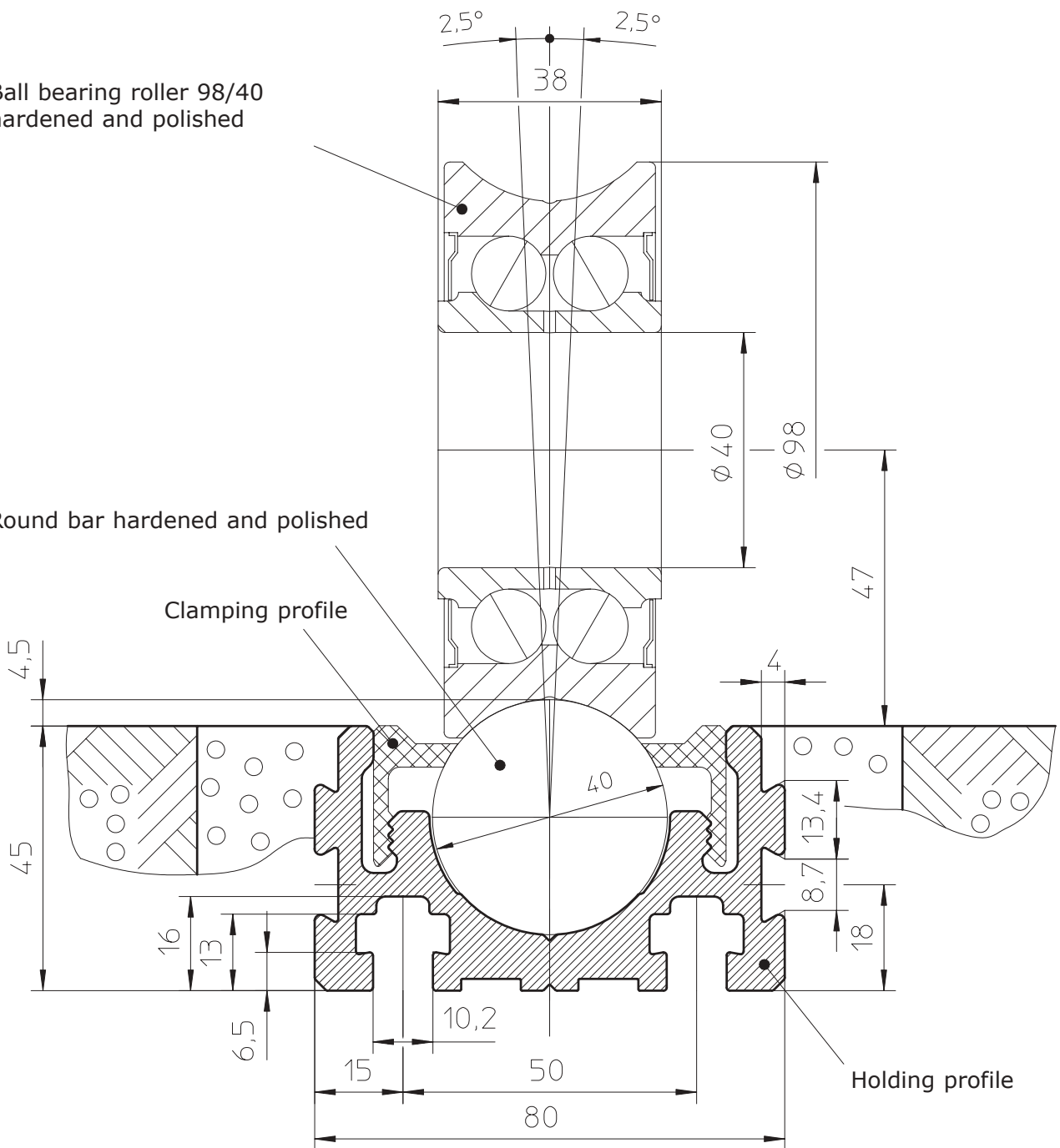
RoundTrack® 40

Ball bearing roller 98/40
hardened and polished

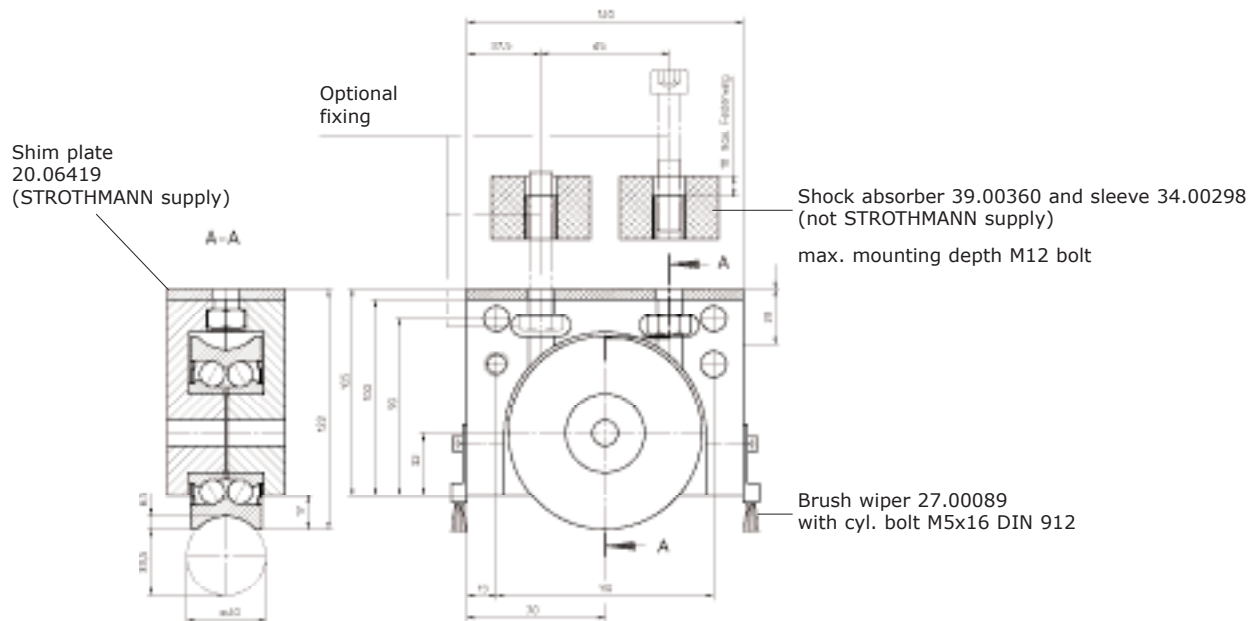
Round bar hardened and polished

Clamping profile

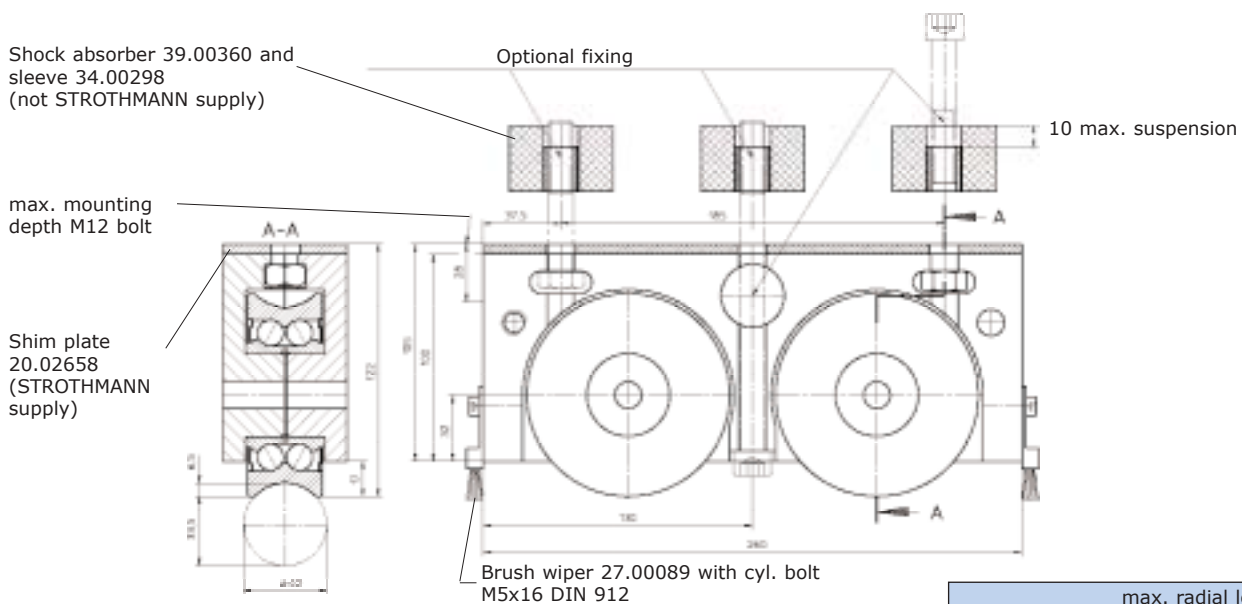
Holding profile



RoundTrack® 40 Single idle wheel set (Ident-No. 11.05859)

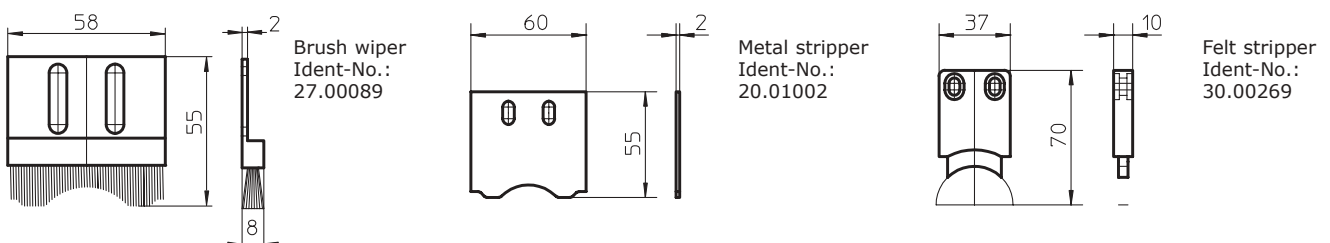


RoundTrack® 40 Double idle wheel set (Ident-No.: 11.05860)

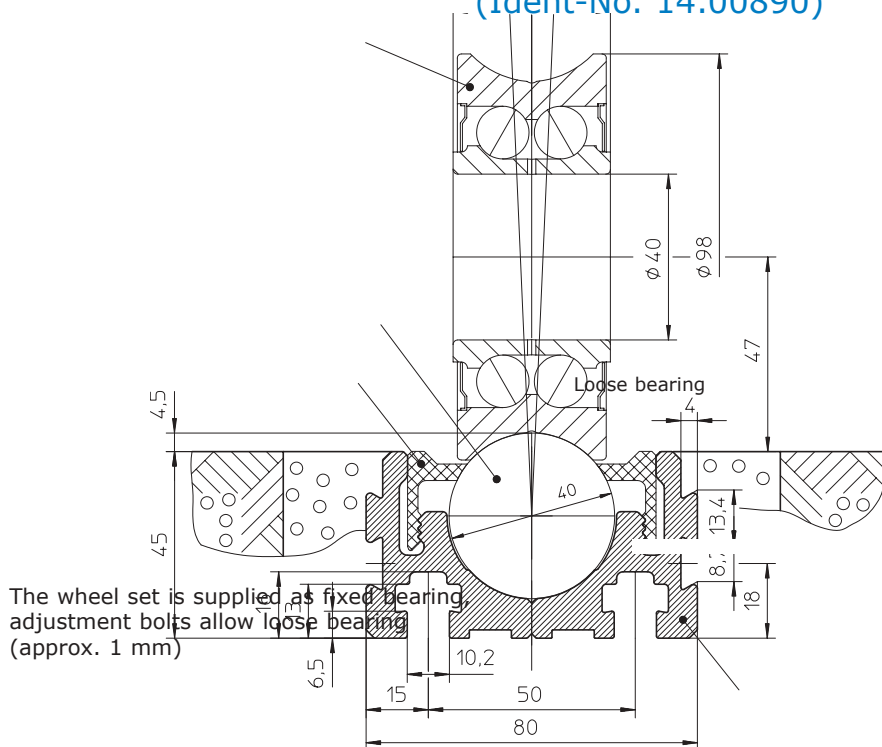


| | max. radial load | |
|--------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| single | 29,0 | 38,5 |
| dual | 58,0 | 77,0 |

The wheel sets are supplied with brush wipers. Optional scrapers according to spec. below.



RoundTrack® 40 Single idle wheel set with mounting frame (Ident-No. 14.00890)

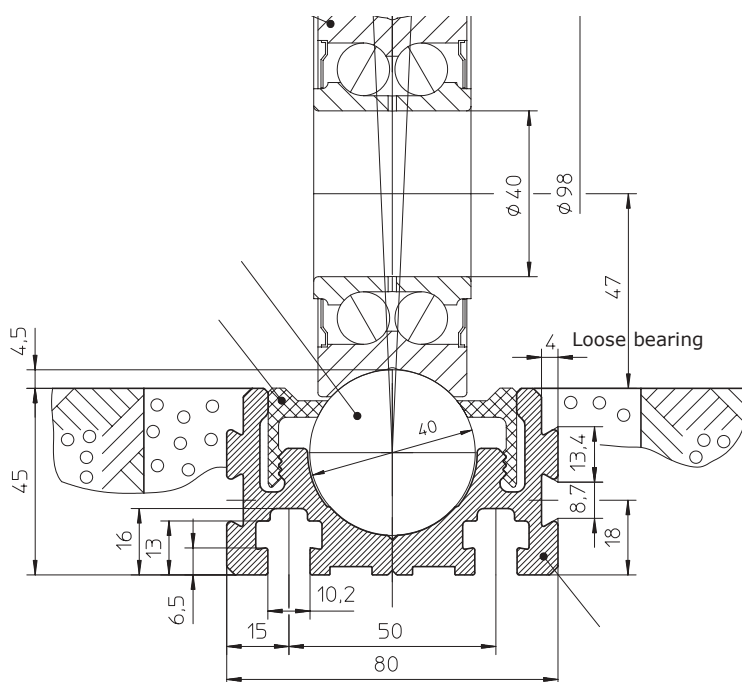


Frame
Id.-Nr.:13.00603

Fixed bearing

Wheel set
Id.-Nr.:11.05859

Double idle wheel set RoundTrack® 40 with mounting frame (Ident-No. 14.00889)



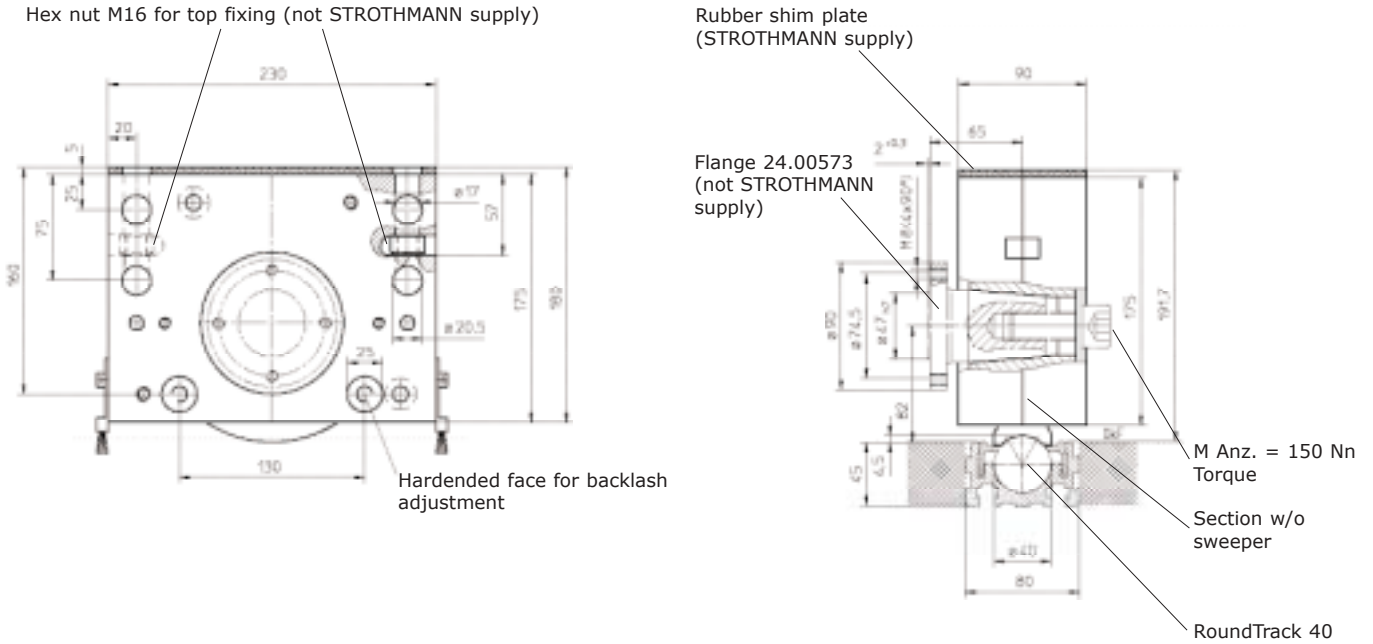
Frame
Id.-Nr.:13.00604

Fixed bearing Double idle wheel set
Id.-Nr.:11.05860

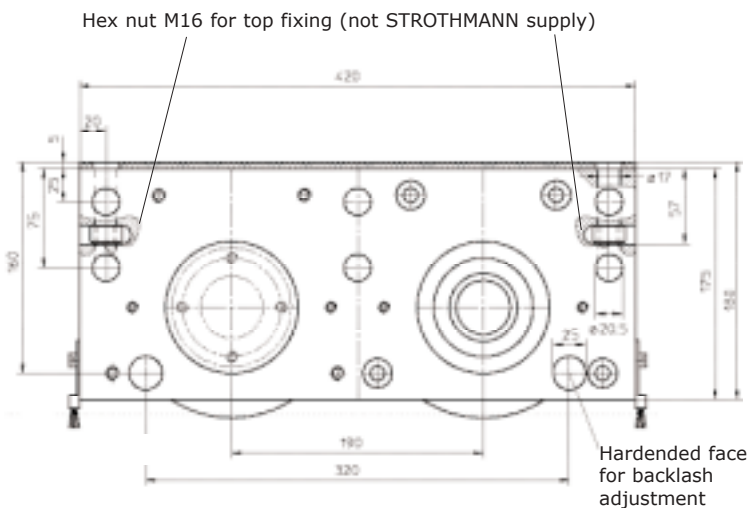
| | max. radial load | |
|--------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| single | 29,0 | 38,5 |
| dual | 58,0 | 77,0 |

The wheel set is supplied as fixed bearing, adjustment bolts allow loose bearing (approx. 1 mm)

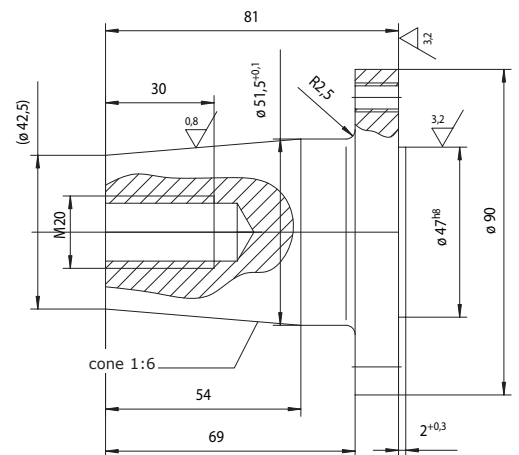
RoundTrack® 40 Drive Wheel Set \varnothing 160 single (Ident-No. 11.05803)



RoundTrack® 40 Drive Wheel Set \varnothing 160 dual (Ident-No. 11.05804)

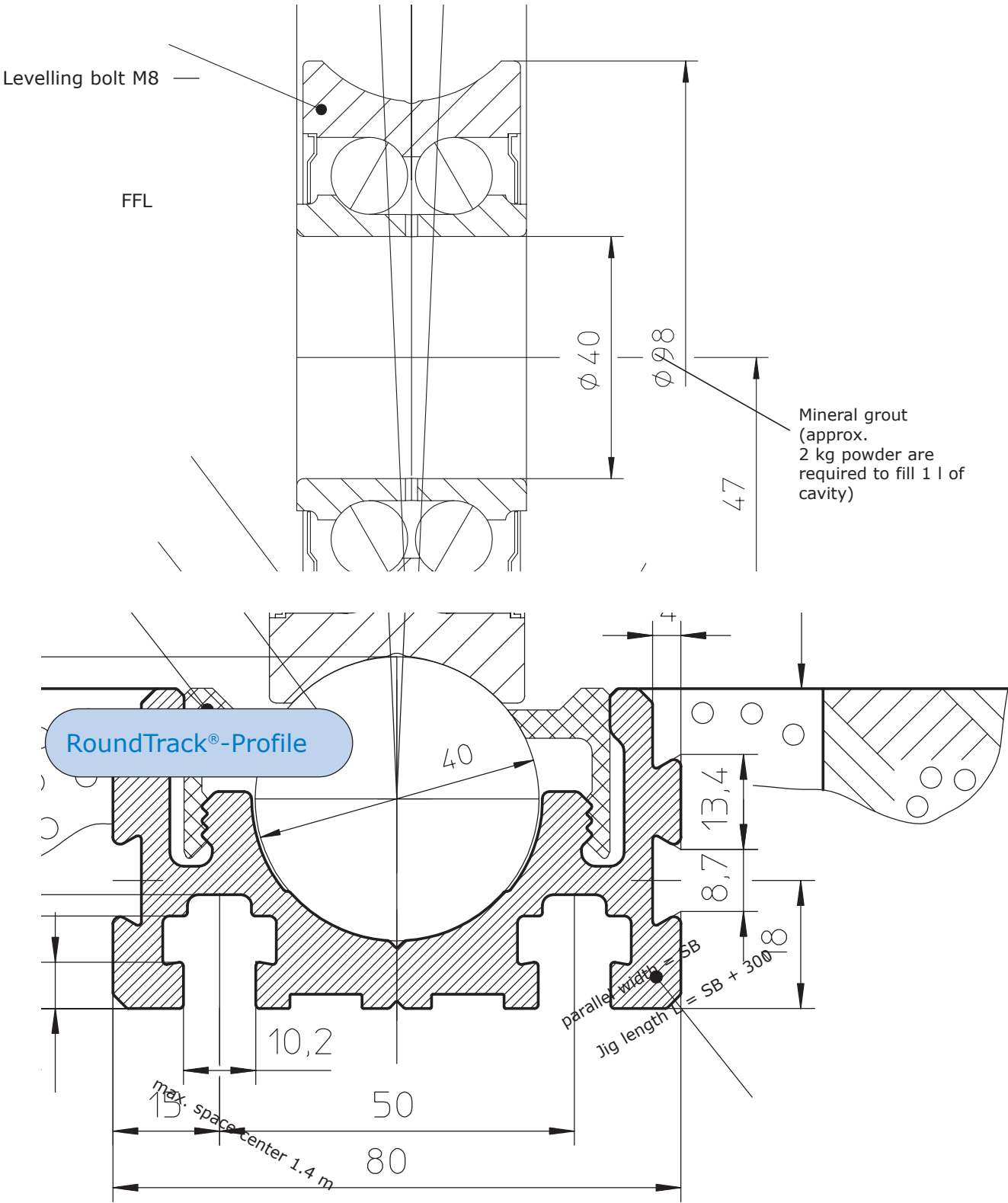


Option:
Flange for flexible joint drive shaft
Ident-No. 24.00573



| | max. radial load | |
|--------|------------------|--------------|
| | statical [kN] | dynamic [kN] |
| single | 56 | 70 |
| dual | 112 | 140 |

Installation jig for parallel track lines – RoundTrack® 40

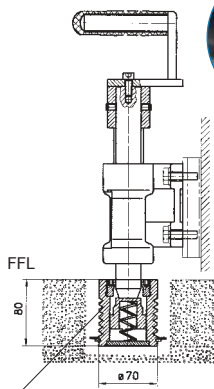


Floor centering

Floor centering with bolt ϕ 30 Ident No. 11.05515 (WITHOUT FLOOR SLEEVE)

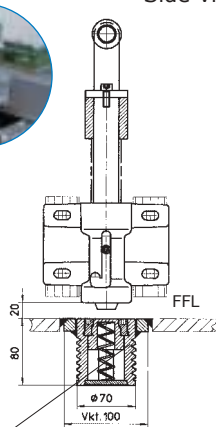
- Application:
- general fixing

Front view



floor sleeve concrete floor
Ident No. 11.00774

Side view

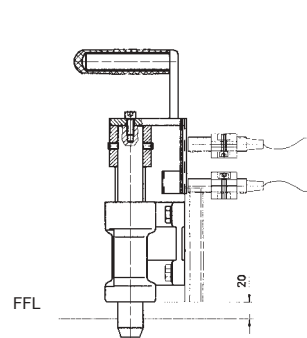


floor sleeve steel floor
Ident No. 11.00773

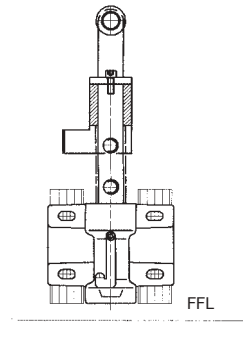
Bolt ϕ 30 with two position inductive switch Ident No. 11.05517 (WITHOUT FLOOR SLEEVE)

- Application:
- general fixing

Front view



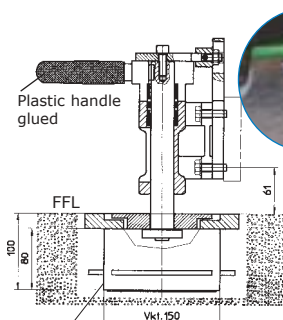
Side view



Floor centering with securing device Ident No. 11.05519 (WITHOUT FLOOR SLEEVE)

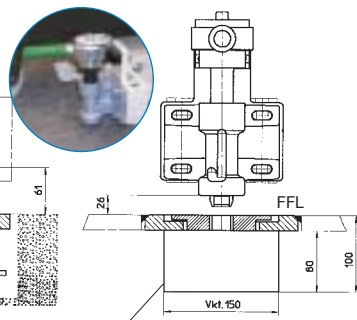
- Application:
- general fixing
 - securing device inclusive

Front view



base for floor centering/
concrete
Ident No. 11.05520

Side view

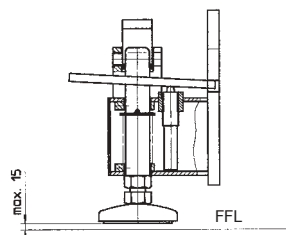


base for floor centering/steel
Ident No. 11.05531

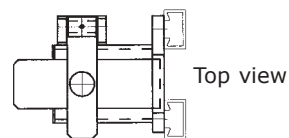
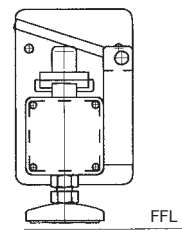
Locking lever with pedal control Ident No. 11.05524

- Application:
- simple retaining
 - large regulating limit
 - no accurate positioning

Front view



Side view



Floor centering

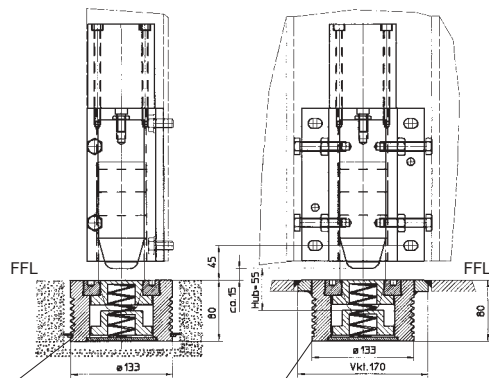
Pneumatic driven with bolt $\varnothing 60$ Ident No. 11.05521 (WITHOUT FLOOR SLEEVE)

Application:

- heavy loads
- large transverse load
- free from backlash

Front view

Side view



floor sleeve concrete floor
Ident No. 11.03053

floor sleeve steel floor
Ident No. 11.05533

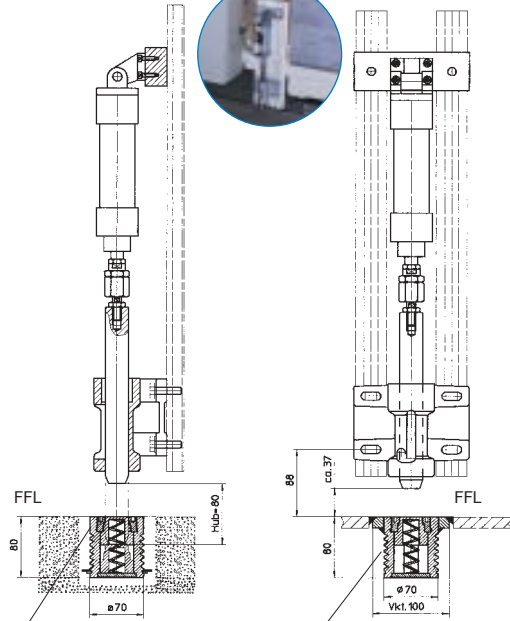
Pneumatic driven with bolt $\varnothing 30$ Ident No. 11.05525 (WITHOUT FLOOR SLEEVE)

Application:

- universal
- large regulating limit
- hydraulic drive optional

Front view

Side view



floor sleeve concrete floor
Ident No. 11.00774

floor sleeve steel floor
Ident No. 11.00773

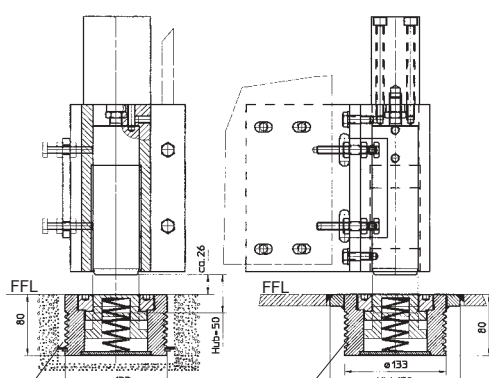
Hydraulic driven with bolt $\varnothing 60$ Ident No. 11.05522 (WITHOUT FLOOR SLEEVE)

Application:

- heavy loads
- large transverse load

Front view

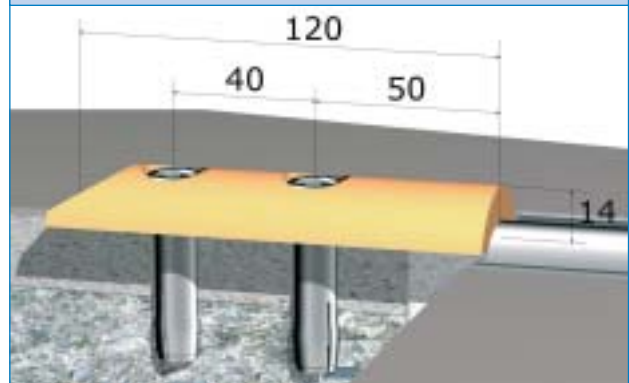
Side view



floor sleeve concrete floor
Ident No. 11.05523

floor sleeve steel floor
Ident No. 11.05534

Limit stop for carts / dollies size 25 Ident No. 24.04203



R o u n d T r a c k ®



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