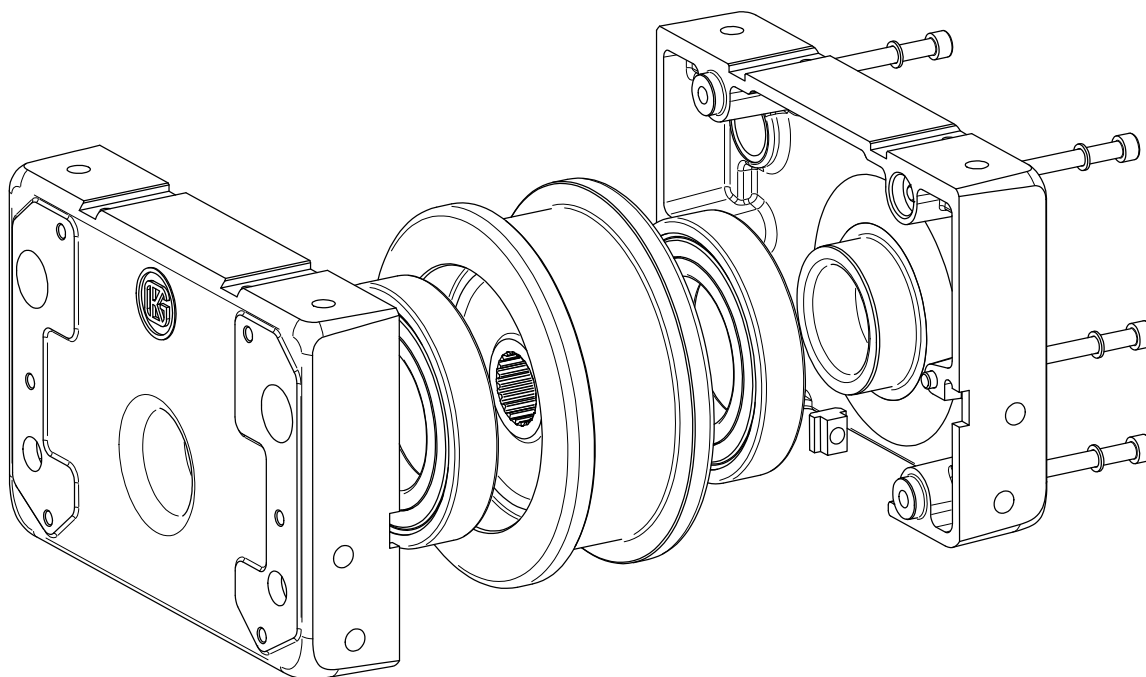


Assembly and maintenance instructions

OLYMP

WHEEL BLOCK SYSTEM



ORS 125-200

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1 Information on the use of these instructions

These assembly and maintenance instructions include all required notes on how to assemble and maintain the wheel blocks. Read these assembly and maintenance instructions carefully before the assembly and start-up. These instructions must be accessible at all times to the assembly and maintenance personnel.

1.1 Validity of these instructions

These assembly and maintenance instructions are valid for the following systems:

- ORS 125
- ORS 160
- ORS 200

1.2 Signal words and symbols

Information of particular importance is marked with the following symbols in the assembly and maintenance instructions:

DANGER

indicates a danger that, if not avoided, will result in death or severe injury.

WARNING

indicates a danger that, if not avoided, may result in death or severe injury.

CAUTION

indicates a danger that, if not avoided, may result in minor or moderate injury.

NOTICE

indicates important information (e.g. referring to property damage), but not injury to persons.

1.2.1 Danger symbols



Danger due to suspended loads!

The text passages marked with this symbol provide you with information on hazardous situations regarding dangers that are posed by suspended loads.



Warning of hand injuries!

This sign indicates hazardous situations involving the risk of crushing your limbs.



Hazardous to the environment!

This sign indicates that the substance/material used may harm the environment.

1.2.2 Symbols relating to personal protective equipment



Wear protective headgear!

Protective headgear is absolutely required for carrying out the activities marked with this symbol.



Wear protective clothing!

Protective clothing is absolutely required for carrying out the activities marked with this symbol.



Wear hand protection!

Hand protection is absolutely required for carrying out the activities marked with this symbol.



Wear foot protection!

Foot protection is absolutely required for carrying out the activities marked with this symbol.

1.2.3 Info symbol



Info!

This symbol indicates general information. This information is introduced with the pictograph shown and with the word **Info!** printed in bold.

2 Safety

2.1 Intended use

The OLYMP wheel block system serves as a ready-to-install travelling unit for conveyor systems. Mounting of the wheel block system on the conveyor system must be carried out by top, side or bolt connection.

Intended use also includes

- observing these assembly and maintenance instructions
- observing the supplementary information in the main catalogue
- observing the national regulations relating to occupational safety

Any other use than the intended use will be deemed as misuse.

2.2 Reasonably foreseeable misuse

Non-observance of these assembly and maintenance instructions and/or the supplementary information of the main catalogue will result in impermissible use of the wheel block system. Unfavourable conditions may entail malfunction, failure of the machine or danger to life and limb.

Reasonably foreseeable misuse includes the following activities:

- Incorrect dimensioning for the scheduled application (e.g. impermissible stresses, load peaks or extreme ambient conditions that have not been taken into consideration, or impermissible operating temperatures).
- Improper assembly (e.g. incomplete use of connection elements, use of third-party connection elements or insufficient alignment of the wheel blocks to the rail).
- Disregard of the maintenance intervals (e.g. non-compliance with the relubrication intervals in the case of extreme conditions).
- Disregard of tightening torques of the fastening screws and/or their inspection intervals.

2.3 General safety instructions

The wheel block system has been designed and built in accordance with the present state of the art and the recognised safety regulations. Nevertheless, the assembly and maintenance may result in danger to life and limb as regards both the user and third parties or damage to items of property. Observe the following safety instructions:

- When carrying out assembly and maintenance work on the wheel block system, wear your personal protective equipment, e.g. head protection, foot protection, protective clothing and hand protection.
- Secure the wheel block system and the corresponding component parts against falling down during the assembly/disassembly process.
- Carry out all work with and on the wheel block system carefully and in a safety-conscious fashion.
- When carrying out assembly and maintenance work, observe the applicable national regulations with regard to health, occupational safety, fire protection and the environment. The personnel carrying out the assembly and maintenance work must be familiar with these regulations.
- Define the competencies of the personnel before starting the work.
- Do not carry out any changes or additions and modifications to the wheel block system without the manufacturer's consent.

2.4 Safety instructions with regard to maintenance, fault rectification and cleaning

Observe the following safety instructions before starting maintenance work, fault rectification and cleaning:

- Maintenance work, fault rectification and cleaning activities may only be carried out by personnel with corresponding qualifications (chapter 2.5, page 6).
- Ensure compliance with the maintenance intervals specified in these assembly and maintenance instructions.
- Maintenance work, fault rectification and cleaning activities may only be carried out when the machine has been shut down.
- Before starting work, cut off the electrical, pneumatic and hydraulic supply of the machine following the instructions given in the machine manual.
- Only use suitable tools to carry out the work.
- Only use lubricants with properties that comply with those of the original manufacturer lubricants. Observe the safety data sheets of the lubricants.
- Adhere to the safety instructions in the manual for the machine into which the wheel block system is installed.
- Retighten screwed connections after having completed maintenance work or if they have been loosened for fault rectification.
- Remove tools or repair materials from the site of operation after having completed the maintenance work.

2.5 Personnel qualifications

Observe the following personnel requirements for the assembly and maintenance of the wheel block system:

- Ensure that the assembly and maintenance is only carried out by personnel specifically commissioned to these tasks.
- Working with and on the wheel block system is exclusively allowed to personnel that is familiar with these assembly and maintenance instructions.
- Personnel to be trained or briefed, or personnel serving an apprenticeship may only carry out work with and on the wheel block system whilst being constantly supervised by an experienced employee.
- Observe the statutory provisions regarding the personnel's minimum age applicable at the operating site.

The various qualifications comprise the following skills and knowledge:

Persons who have been briefed must be able to do the following:

- Operate the machine into which the wheel block is installed
- Recognise possible damage and potential hazards on the wheel block

Industrial mechanics/mechatronics engineers must be able to do the following:

- Read and comprehend design drawings
- Carry out mechanical assembly and maintenance activities
- Ensure the functional serviceability of mechanical components
- Recognise potential hazards when handling mechanical components

The individual activities on the wheel block system require different personnel qualifications that are listed in the following table:

Activities	Briefed persons ¹	Briefed persons ¹ with the qualification "Industrial mechanic" or an equal qualification
Transport	x	x
Set-up, assembly		x
Mechanical work: Fault rectification, repair and maintenance		x
Dismantling, disassembly	x	x
Cleaning	x	
Disposal	x	

Tab. 1: Personnel qualifications

¹ Briefed persons must have undergone training in the operating company for handling the machine into which the wheel block system has been installed.

3 Technical information

3.1 Description of the wheel block system

This wheel block system is a ready-to-install travelling unit for conveyor systems.

The wheel block body consists of two housing halves that have been precisely machined and screwed together. The wheel block system can be mounted with top, flange or bolt connection. The wheels run in deep groove ball bearings sealed on both sides and consist of spheroidal graphite cast iron. The self-lubricating effect of the spheroidal graphite cast iron reduces the friction and therefore the wear of the wheel and rail.

The wheel blocks are lifetime lubricated with a special grease as standard; relubrication is not possible.

The wheel block is available in three versions – driven, semi-driven and non-driven:

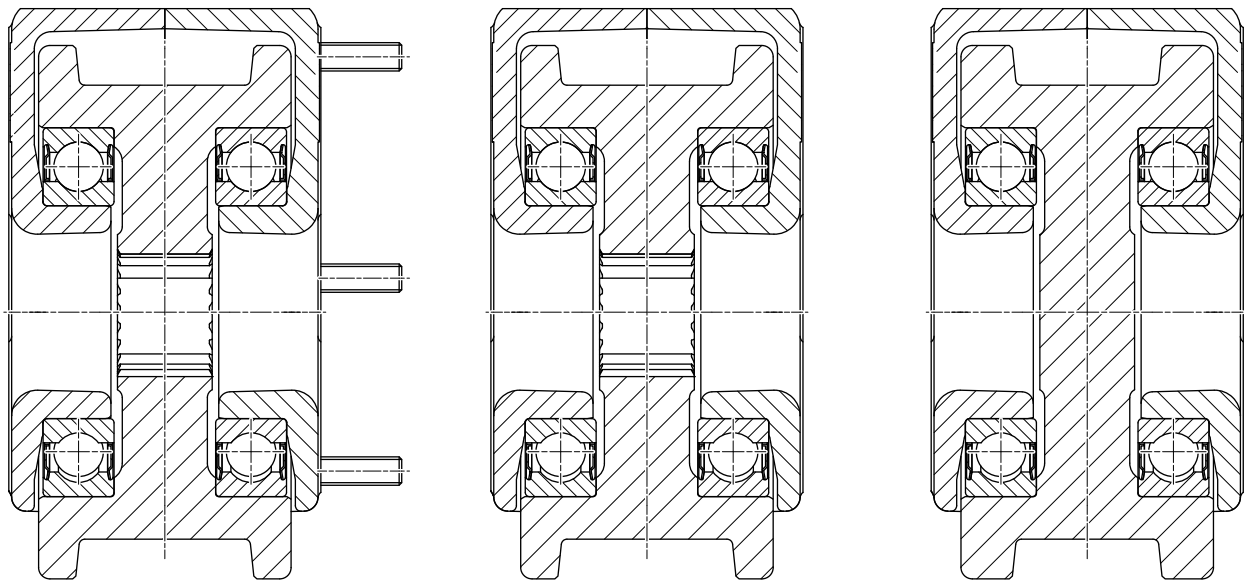


Fig. 1: Driven (left), semi-driven (centre) and non-driven (right) wheel block

For the drivable wheel blocks, drive shafts with multiple splining (DIN 5480) can be installed.

A 1-K corrosion protection primer coat in silver-grey (RAL 7001) is a standard feature provided by the factory for the wheel block housing and the wheel bodies. On request, the wheel blocks can be equipped with a primer, intermediate coat and top coat.

3.2 Components of the wheel block

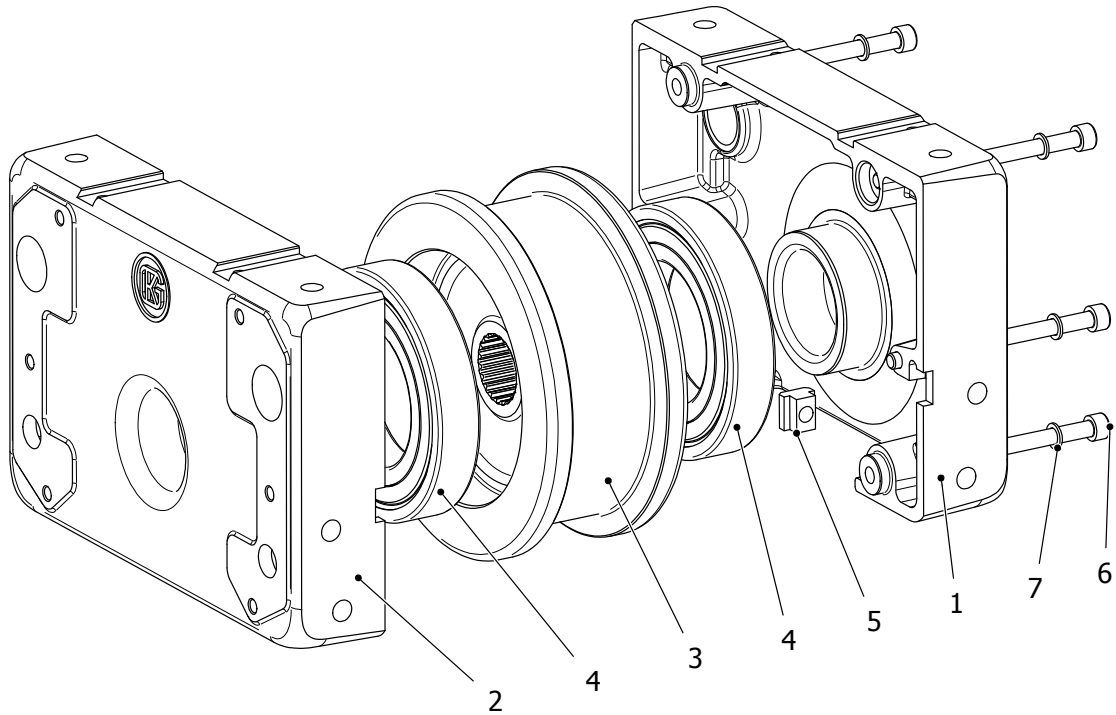


Fig. 2: Components of the wheel block

Item	Quantity	Components	Item	Quantity	Components
1	1	Housing half	5	2	T-slot nut
2	1	Housing half	6	6	Cylinder head screw
3	1	Wheel	7	6	Lock washer
4	2	Deep groove ball bearing			

Tab. 2: Components of the wheel block

3.3 Transport

WARNING



Suspended load!

Risk of injury by falling load.

1. Use adequately dimensioned load handling attachments and lifting gear for transport. Details on the weight of the components can be found in the technical data and in the main catalogue.
2. Do not stand under the lifted components or in their vicinity.
3. Keep third parties away from the danger zone. Use corresponding barriers for this purpose or appoint persons in charge.
4. When transporting the components using a forklift, secure them against slipping from the fork.
5. Banksman must stand within sight of the person operating the means of transport and must have voice contact with this operator.
6. Transport the component parts in dry condition.

The wheel block is delivered in completely assembled condition.

Transport the wheel block lashed on a pallet using a hoist / forklift or crane. Use adequately dimensioned lifting equipment for transport to the place of installation (e.g. ropes or ring bolts). When using ring bolts, install them in the existing bore holes by means of a thread.

3.4 Technical data

3.4.1 Mounting dimensions of the wheel block

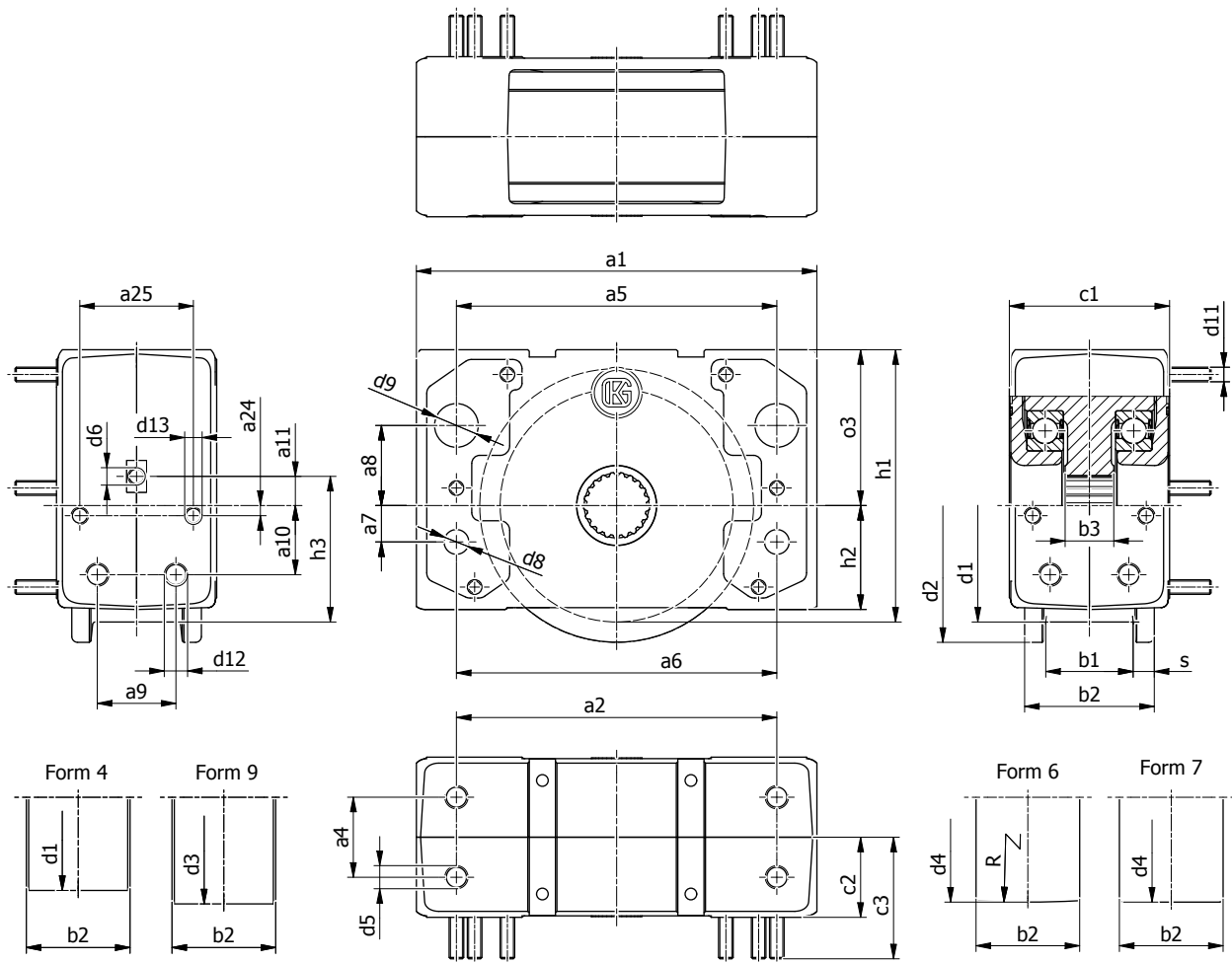


Fig. 3: Dimensions of the wheel block

Wheel block	Toothed hub profile (DIN 5480)	a1	a2	a4	a5	a6
ORS 125	TBC (to be confirmed)	TBC	TBC	TBC	TBC	TBC
ORS 160	N 35 / N 45	275	220	55 _{±0.2}	220 _{±0.05}	220 _{±0.1}
ORS 200	N 45 / N 50	340	275	65 _{±0.2}	275 _{±0.05}	275 _{±0.1}

Tab. 3: Dimensions a1-a6

Wheel block	a7	a8	a9	a10	a11	a24	a25
ORS 125	TBC	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160	25 _{±0.1}	55 _{±0.05}	54	47.5	20	7	78
ORS 200	35 _{±0.1}	75 _{±0.05}	62	64	0	10	78

Tab. 4: Dimensions a7-a25

Wheel block	b1 max.	b1 ¹	b2	b3	c1	c2	c3
ORS 125	TBC	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160	65	67	89	33	110	55	83.5
ORS 200	67	75	101	36	130	65	93.5

Tab. 5: Dimensions b1-c3

¹ Running tread and wheel flanges hardened

Wheel block	d1	d2	d3 ²	d4	d5	d6	d8
ORS 125	TBC	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160	160 _{-0.2}	188	183 _{-0.2}	180	4 x M16	M12	17
ORS 200	200 _{-0.2}	230	226 _{-0.2}	225	4 x M16	M12	21

Tab. 6: Dimensions d1-d8

² Without wheel flanges with a large diameter

Wheel block	d9	d11	d12	d13	h1 ³	h2	h3 ³
ORS 125	TBC	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160	30 _{F8}	M10	M12	M16	187	71	100
ORS 200	35 _{F8}	M10	M16	M16	238	90	100

Tab. 7: Dimensions d9-o3

³ Relating to diameter d1

Wheel block	s min.	o3
ORS 125	TBC	TBC
ORS 160	12	107 _{±0.1}
ORS 200	17	138 _{±0.1}

Tab. 8: Dimensions s min.-o3

3.4.2 Other technical data

Wheel block	ORS 125	ORS 160	ORS 200
Weight	TBC	26 kg	44 kg
Permissible wheel load ¹	TBC	7,000 kg	10,000 kg
Wheel material	EN-GJS-700 (GGG-70)		
Housing material	EN-GJS-500 (GGG-50)		
Temperature range of plastic plugs	-20 °C to +60 °C		
Rolling bearing grease series	Branded special grease ²		
Temperature range for rolling bearing	-20 °C to +120 °C		

Tab. 9: Other technical data

¹ The value applies to optimum conditions. With temperatures > 150 °C, the wheel load is reduced.

² For high loads and low to medium speeds.

4 Assembly and dismantling

WARNING



Risk of crushing!

Risk of injury for the hands when assembling the wheel block.

- ▶ Wear hand and foot protection.
- ▶ Consult a second person, if necessary, providing support during assembly/dismantling.

WARNING



Loose component parts!

Risk of injury by falling component parts.

- ▶ Wear protective headgear.
- ▶ When assembling/dismantling, secure all component parts against falling.

NOTICE



If the wheels are to be stored for a prolonged period, they should be rotated several times every six months.

4.1 Top connection

When carrying out top connection, the top of the wheel block is screwed underneath the attachment design using socket set screws and nuts (e.g. for rolled profiles, welded constructions).

Top connection (precise direct connection) requires exact consistency of the drilling patterns on the wheel block and the attachment design.

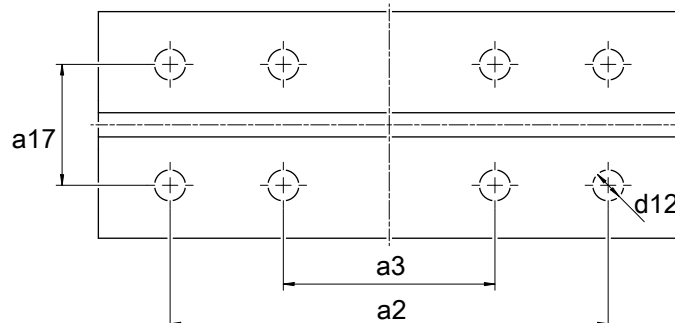


Fig. 4: Drilling pattern of the attachment design for top connection

Wheel block	a2	a3	a17	d12
ORS 125	TBC	TBC	TBC	TBC
ORS 160	220 ± 0.2	-	55	Ø 18
ORS 200	275 ± 0.2	-	65	Ø 18

Tab. 10: Dimensions for the drilling pattern

NOTICE



Premature wear of the wheels when wheel blocks are aligned inaccurately!

- ▶ Align the mounting surfaces with the fixing holes precisely to the direction of travel.

The following illustrations show permissible deviations from the perfect alignment of wheel blocks in the interconnection:

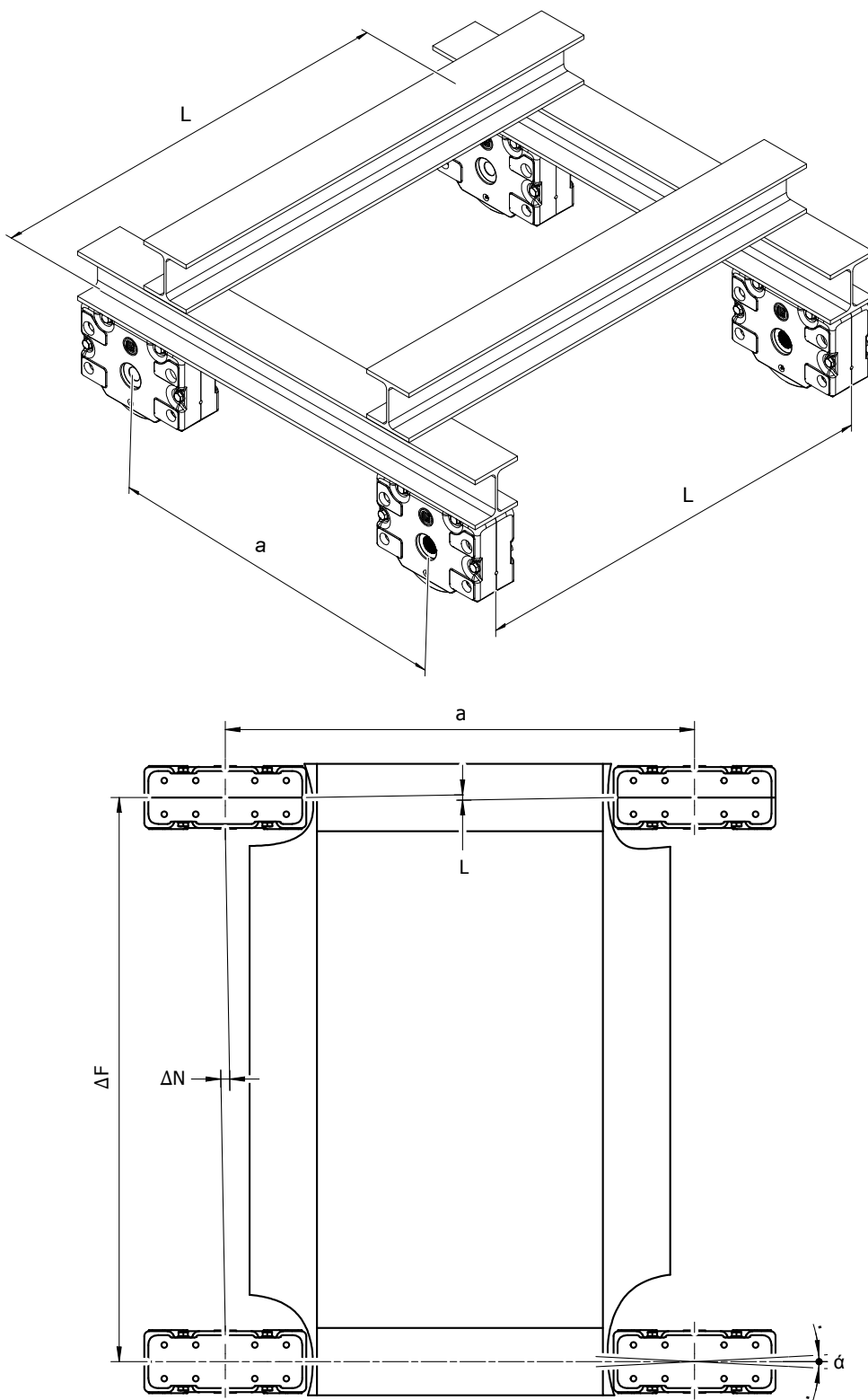


Fig. 5: Requirements regarding the alignment of the wheel blocks

ΔF	ΔN	L	a
$\leq 0.5 \text{ ‰} \times a$ (mm)	≤ 2 mm for a central drive ≤ 6 mm for an individual drive	± 2 mm for $L \leq 10$ m	$\leq 2.5 \text{ ‰}$ for an individual drive $\leq 1.6 \text{ ‰}$ for a central drive

Tab. 11: Permissible deviations from the perfect alignment

The given values suffice for the normal case.

Further tolerance specifications can be found in the following standards and regulations:

- DIN EN ISO 13920:1996-11: Welding – General tolerances for welded constructions – Dimensions for lengths and angles; shape and position
- VDI 3576: Rails for crane systems – rail connections, rail fastenings, tolerances

For this type of fastening, one OLYMP top connection set is available for each size, containing:

- 4 x Socket set screw
- 4 x Lock nut

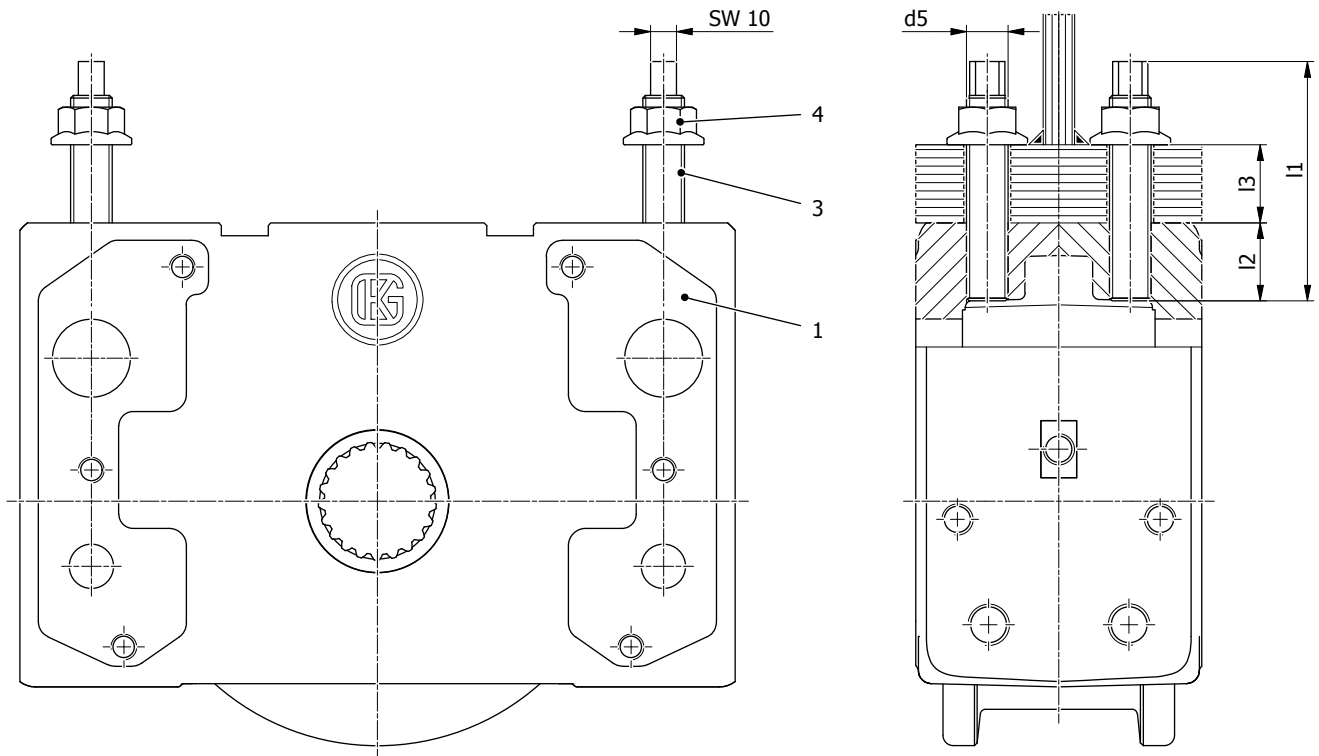


Fig. 6: Wheel block with top connection

Wheel block	I1	I2	I3	d5
ORS 125	TBC	TBC	TBC	TBC
ORS 160	92	25-35	max. 35	M16
ORS 200	92	25-35	max. 35	M16

Tab. 12: Dimensions for top connections of the different sizes

Preparatory activities:

- ▶ Remove the conservation on the connection surface and the running tread of the wheels.
- ▶ Remove possible coats of paint or grease on the connection faces of the design.
- ▶ Glue the socket set screws (3) into the fixing holes at the wheel block housing (1).

Assemble the wheel block as follows:

- ▶ Insert the wheel block (1) with the glued-in socket set screws (3) into the fixing holes of the attachment design (2).
- ▶ Screw the lock nuts (4) onto the socket set screws (3) until they are hand-tight.
- ▶ Align the wheel block at the system accurately, in order to prevent positional errors and premature wear of the wheels. Use the machined side faces to determine the alignment.
- ▶ Tighten the lock nuts (4) as follows:
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160: torque 330 Nm
 - ⇒ ORS 200: torque 330 Nm

4.2 Side connection

Side connection is a lateral connection option for low-construction designs.

This fastening type offers different assembly sets for each size:

- 1 x Set for side connection ORS (size)
- 1 x Set for side connection ORS 200, suitable for torque arm (see illustration below)

The set of fastening elements for ORS side connection includes the following components:

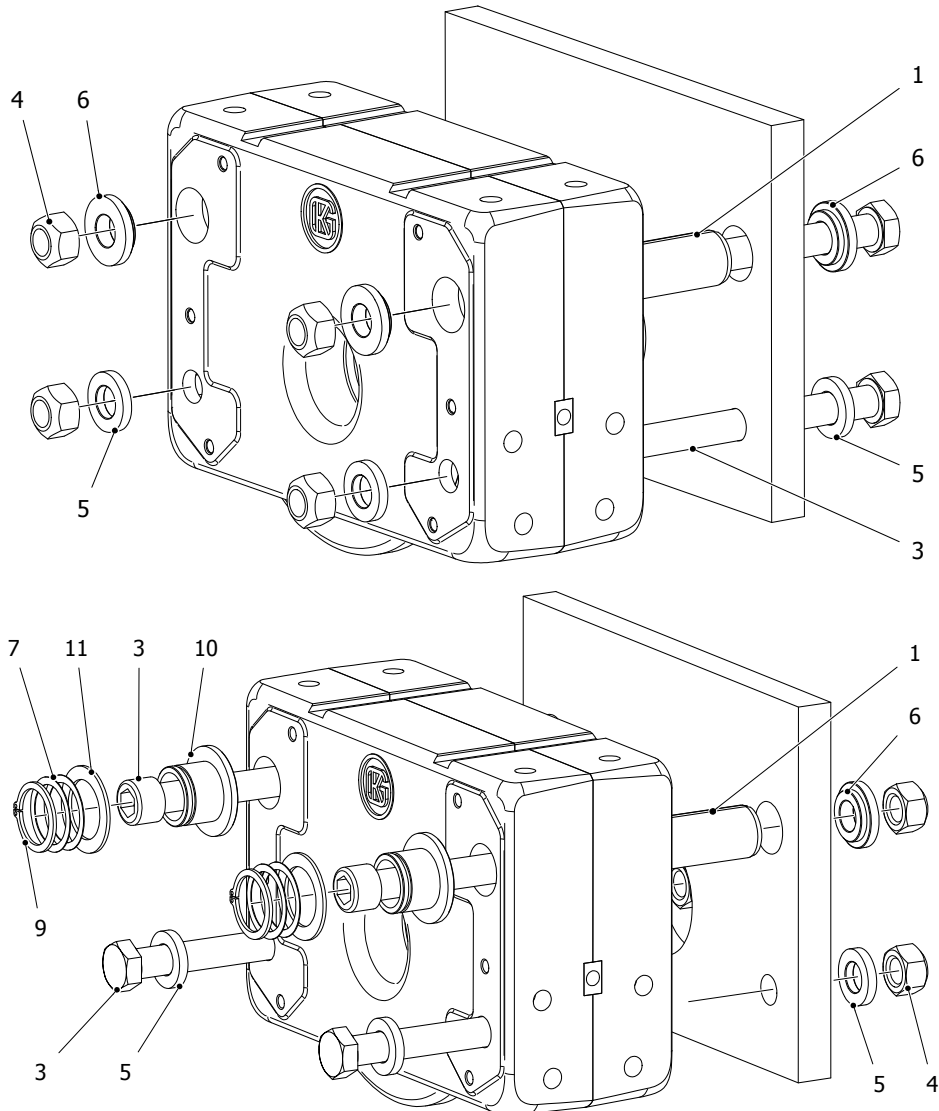


Fig. 7: Side connection (top) and side connection for torque arm (bottom)

Item	Name	Comment
1	Clamping sleeve	
3	Fastening screw	
4	Lock nut	
5	Disc	
6	Flanged bushing	
7	Shim rings	for torque arm only
9	Circlip	for torque arm only
10	Adapter socket	for torque arm only
11	Disc	for torque arm only

Tab. 13: Components of the side connection set

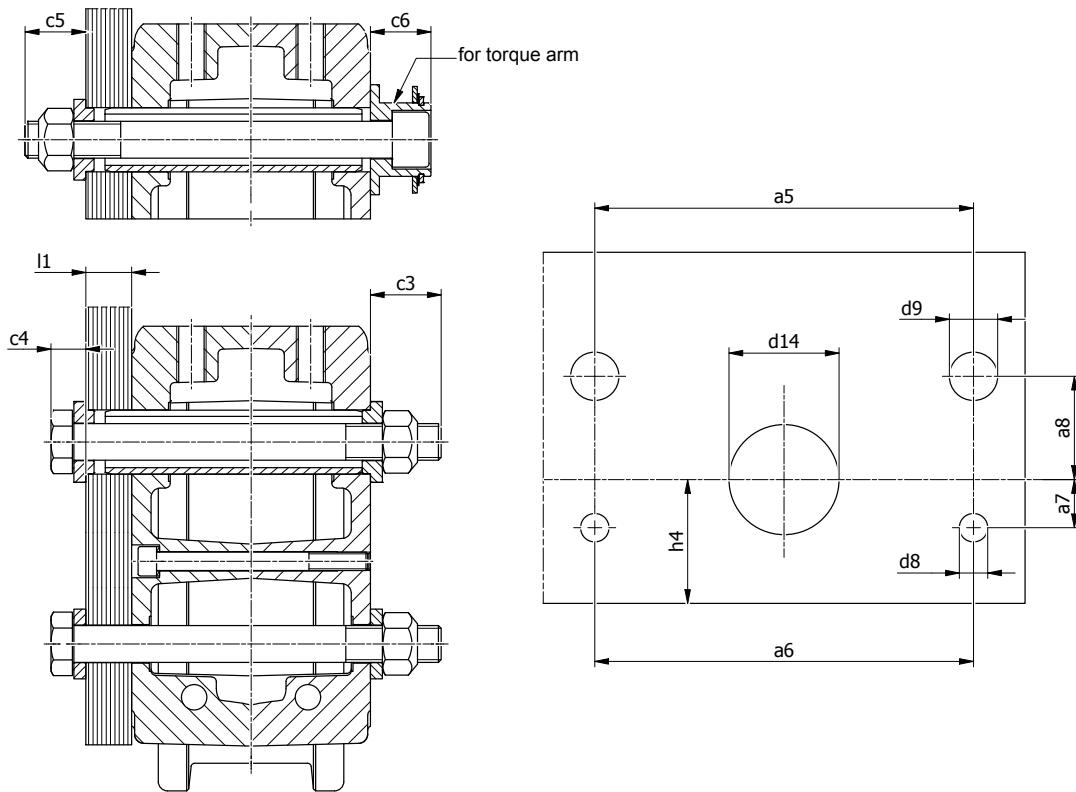


Fig. 8: Side connection and drilling pattern for side connection

Wheel block	a5 ± 0.1	a6 ± 0.1	a7 ± 0.1	a8 ± 0.1	c3 min-max	c4	c5 ¹ min-max	c6 ¹	d8	d9 D9	d14	h4	l1 min-max
ORS 125	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160	220	220	25	55	35-41	15	-	-	16.5	30	80	70	14-20
ORS 200	275	275	35	75	39-44	19	33-38	33	20.5	35	80	90	20-25

Tab. 14: Dimensions for the side connection and drilling pattern

¹For torque arm version

NOTICE



Premature wear of the wheels when connection faces are uneven and aligned inaccurately!

- ▶ Prior to the assembly, ensure that the connection faces of the attachment design are even, allowing perfect fit of the wheel block with the machined surfaces.
- ▶ Align the connection surfaces in the direction of travel.

Preparatory activities:

- ▶ Drill the four holes as shown in the illustration.
- ▶ Remove the conservation on the connection surface and the running tread of the wheels.
- ▶ Remove possible coats of paint or grease on the connection faces of the design.

Assemble the wheel block as follows:

1. Fit the two clamping sleeves (1) into the upper holes in the housing.
The chamfer on the clamping sleeves should face the attachment design.
2. Fit the wheel block with the clamping sleeves into the attachment design.
3. Insert a fastening screw (3) with disc (5) into each of the lower holes in the housing and push the former through the attachment design.
4. Insert a fastening screw (3) with flanged bushing (6) into each of the upper holes in the housing and push the former through the attachment design.
In the torque arm version, a cylinder head screw (3) with adapter socket (10) is used instead.
5. Screw the wheel block together using four nuts (4), two discs (5) at the bottom and two flanged bushings (6) at the top.
6. Tighten the lock nuts (4) as follows:
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160: torque 230 Nm
 - ⇒ ORS 200: torque 450 Nm
7. For the torque arm version, fit the discs (11), shim rings (7) and circlips (9) together with the torque arm (torque arm not included in the set).

4.3 Bolt connection

The bolt connection installation variant with a socket set screw and bolt connection with spacer plates is for instance used for hollow profiles and swing arms. Both variants differ from each other by the technique of aligning the wheel block to the mean track.

This fastening type offers different assembly sets for each size:

- 1 x Set for bolt connection ORS (size) – S with socket set screws
- 1 x Set for bolt connection ORS (size) – L with socket set screws
- 1 x Set for bolt connection ORS 200 – L for torque arm with socket set screws
- 1 x Set for bolt connection ORS (size) – S with spacer plates
- 1 x Set for bolt connection ORS (size) – L with spacer plates
- 1 x Set for bolt connection ORS 200 – L for torque arm with spacer plates

The sets for ORS bolt connection include the following components:

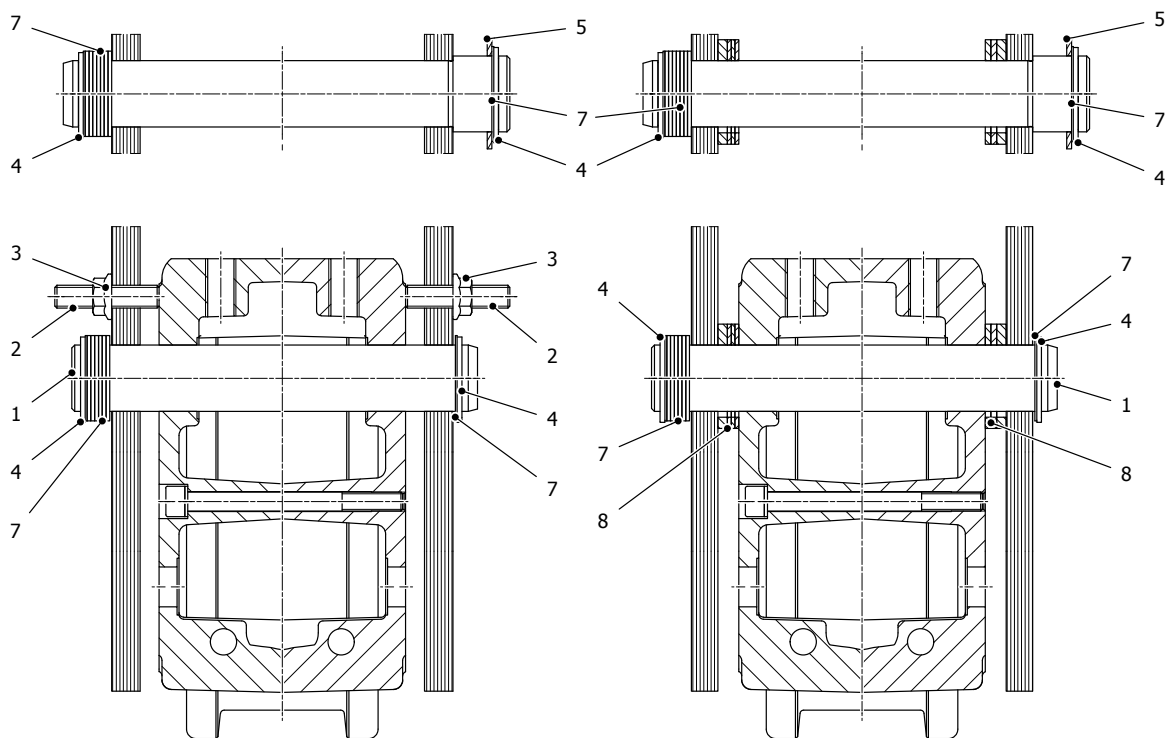


Fig. 9: Bolt connection with alignment of the mean track via socket set screw (left-hand illustration) or spacer plates (right-hand illustration)

Item	Components	Comment
1	Bolt	
2	Socket set screw	only for set with socket set screws
3	Lock nut	only for set with socket set screws
4	Circlip	
5	Supporting disc	for torque arm set only
7	Shim rings	
8	Spacer plate	only for set without socket set screws

Tab. 15: Components of the bolt connection sets

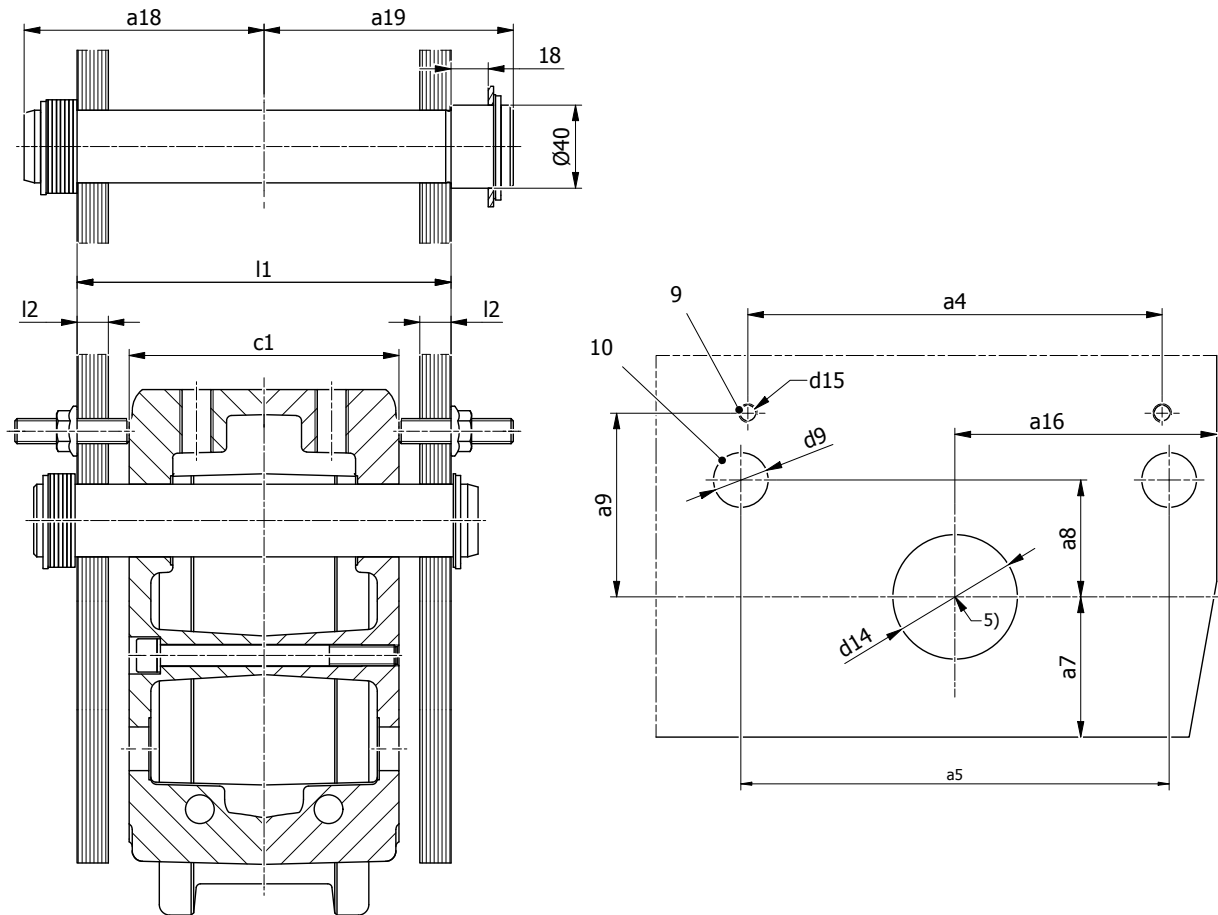


Fig. 10: Drilling pattern for bolt connection with alignment of the mean track via socket set screw or spacer plates
⁵⁾ wheel centre

Wheel block	a4 ¹	a5 ±0.05	a7	a8 ±0.1	a9 ¹	a16	a18 ²	a19 ²	c1	d9 D9	d14	d15 ¹	l1 max	l2 min
ORS 125 – S	TBC	TBC	TBC	TBC	TBC	TBC	-	-	TBC	TBC	TBC	TBC	TBC	TBC
ORS 125 – L	TBC	TBC	TBC	TBC	TBC	TBC	-	-	TBC	TBC	TBC	TBC	TBC	TBC
ORS 160 – S	206	220	70	55	90	135	-	-	110	30	80	M12	150	10
ORS 160 – L	206	220	70	55	90	135	-	-	110	30	80	M12	160	10
ORS 200 – S	266	275	90	75	118	168	-	-	130	35	80	M12	182	10
ORS 200 – L	266	275	90	75	118	168	108.5	127	130	35	80	M12	194	10

Tab. 16: Bolt connection dimensions for bolt connection from drilling pattern

¹ For centring with socket set screws

² For torque arm version

NOTICE



Premature wear of the wheels when fixing holes are aligned inaccurately in the attachment design!

- ▶ Prior to the assembly, ensure that the connecting drill holes of the attachment design are implemented accurately, so that the drilled holes in the steel construction and wheel block are aligned with each other. If you use spacer plates, the contact surfaces of the wheel block and the inner surface of the steel construction must be implemented in parallel.
- ▶ Align the connection surfaces in the direction of travel.

Preparatory activities:

- ▶ Drill the holes (10) as shown in the illustration.
- ▶ **Only for bolt connection using a socket set screw and lock nut:** Drill the holes (9) as shown in the illustration.
- ▶ Remove the conservation on the connection surface and the running tread of the wheels.
- ▶ Remove possible coats of paint or grease on the connection faces of the design.

Assemble the wheel block as follows:

- ▶ Insert the wheel block into the completed steel construction and fasten it using the two bolts (1).
- ▶ **For the 125/160/200 – S/L version:** Mount the shim ring (7) and the circlip (4) onto one side and the shim rings (7), if required, and circlip (4) onto the other side in order to secure the bolt axially with low backlash.
- ▶ **For the 200 – L version for torque arm:** Mount the shim rings (7), if required, and circlip (4) on the side facing away from the drive in order to secure the bolt axially with low backlash. The circlip (4), shim ring (7) and supporting discs (5) on the drive side are fitted together with the torque arm.

Aligning the mean track using socket set screws and lock nuts

- ▶ Screw the four socket set screws (2) into the drilled holes above the bolt (1) and in this way adjust the mean track.
- ▶ Tighten the four lock nuts (3) whilst counter-holding the socket set screw (2).
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160/200: torque 104 Nm

Aligning the mean track using spacer plates

- ▶ Adjust the mean track by shifting the wheel block onto the bolt (1). Fasten the wheel block by correspondingly inserting some spacer plates (8).

4.4 Assembly of the cellular plastic buffer

The cellular plastic buffer serves as a limit stop at the end of the rail.

The scope of supply of the cellular plastic buffer includes the following components:

- 1 x Cellular plastic buffer (1)
- 1 x Socket set screw (2)

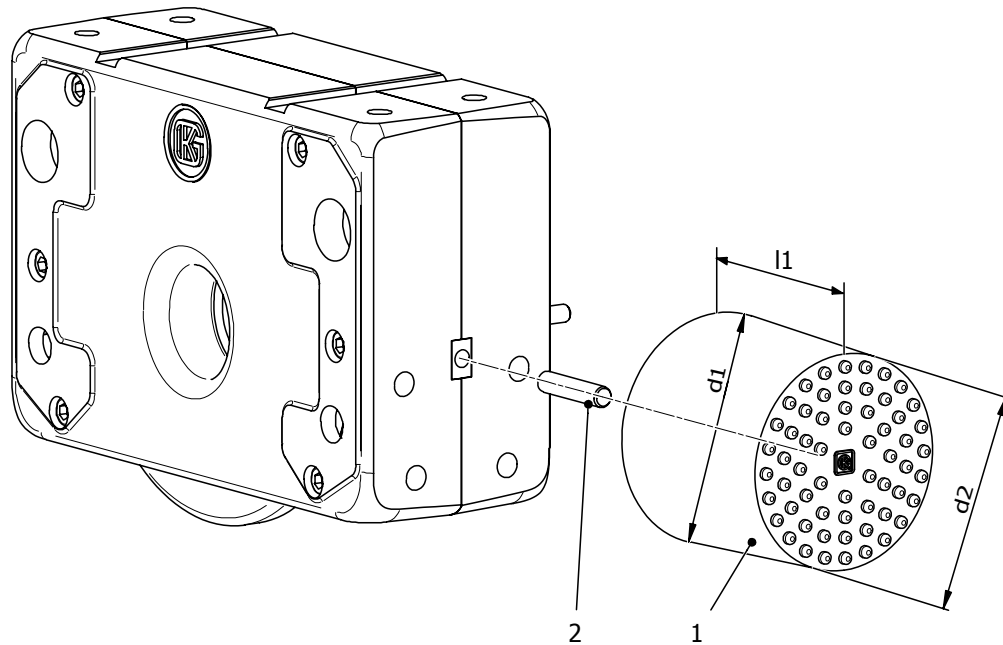


Fig. 11: Wheel block with cellular plastic buffer

Nominal size	d1	d2	l1	Energy absorption [kJ] ¹	Spring travel [mm] ¹	End force [kN] ¹	Unit weight [kg]
Pu 70	70	65	66	0.25	55	7	0.3
Pu 100	100	95	100	0.80	74	40	0.6
Pu 130	130	122	120	1.60	86	54	1.0
Pu 160	160	155	150	4.20	120	110	2.1

Tab. 17: Dimensions and properties of the cellular plastic buffers

¹ These values apply to impacts as they occur during crane operation (V = 120 m/min)

Assemble the cellular plastic buffer as follows:

- ▶ Screw the socket set screw (2) halfway into the buffer (1).
- ▶ Screw the cellular plastic buffer (1) with the socket set screw into the wheel block.

4.5 Assembly of the horizontal roller guide

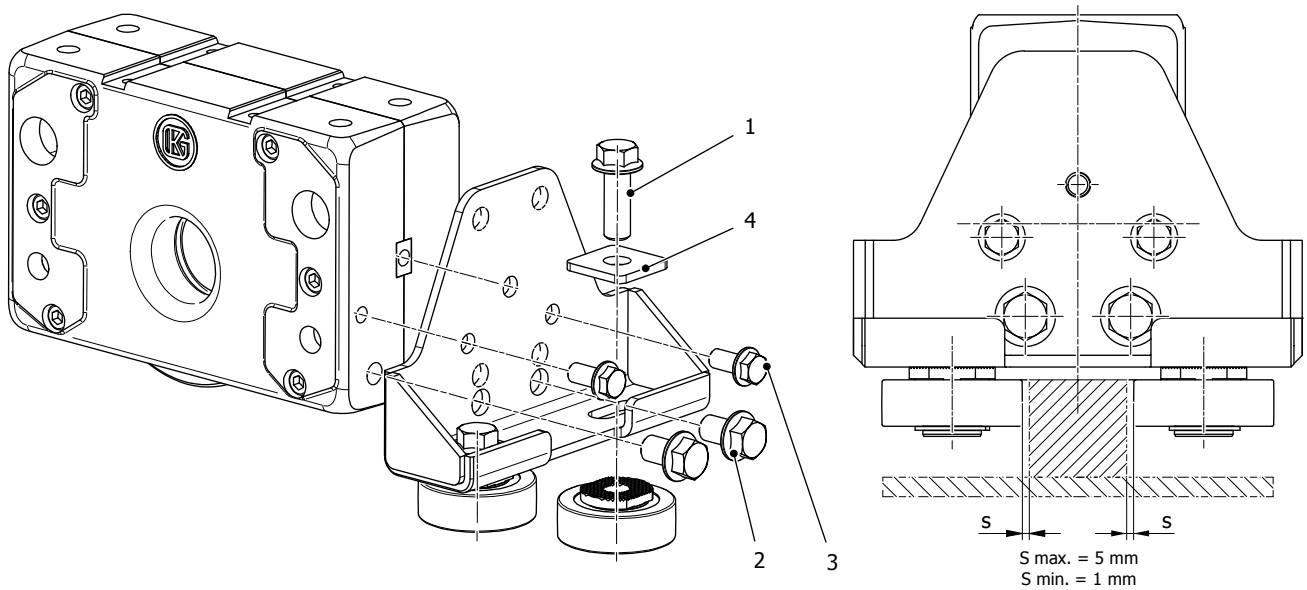


Fig. 12: Horizontal roller guide

Item	Components	Comment
1	Locking screw	
2	Fastening screw	
3	Fastening screw	
4	Disc (KG in-house production)	

NOTICE



- ▶ The horizontal load of a horizontal roller guide screwed onto the wheel block must only be maximally 20 % of the existing wheel load. If the roller guide is mounted to the attachment design, the horizontal load may be 20 % of the permissible wheel load.

Proceed as follows to carry out the assembly:

1. Remove the corrosion protection.
2. Assemble the roller guide by means of the fixing screws (2, 3).
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160: torque item 2 = 330 Nm; item 3 = 130 Nm
 - ⇒ ORS 200: torque = 330 Nm
3. Adjust the roller distance (dimension "S") and align the roller guides with the rail.
4. Tighten the locking screw (1).
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160: torque = 330 Nm
 - ⇒ ORS 200: torque = 330 Nm
5. When you have assembled the components, treat construction surfaces that are not required and joints with a suitable anticorrosive.

4.6 Assembly of the drive shaft

4.6.1 Assembly of the drive shaft for top connection

Provide the following details when making your order:

- Gearbox type
- Shaft end
- Manufacturer

Ordering example: 1 x Set drive shaft set ORS 160, top connection, FV 47 – W 35 – SEW

The scope of supply of the drive shaft set includes the following components:

- 1 x Drive shaft with mounted deep groove ball bearing
- 1 x Connection plate with shrink-fitted bearing seat
- 2 x Circlips
- 2 x Centring bolts
- 6 x Lock nuts

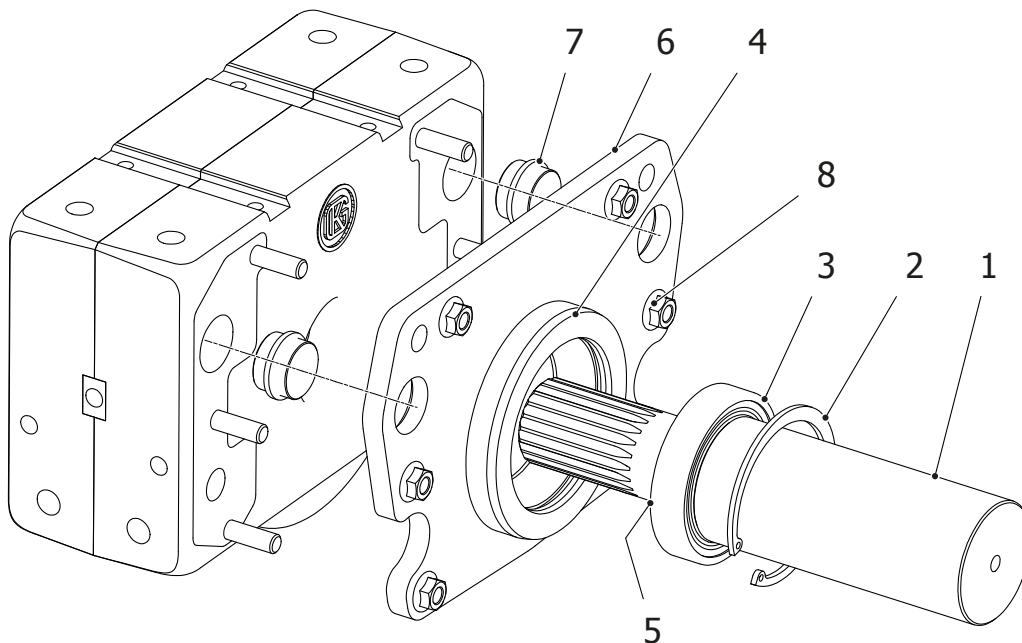


Fig. 13: Mounting the drive shaft for top connection

Item	Components	Comment
1	Drive shaft	
2	Circlip	
3	Deep groove ball bearing	Pre-assembled at the factory
4	Bearing seat	Pre-assembled at the factory
5	Circlip	Pre-assembled at the factory
6	Connection plate	
7	Centring bolts	
8	Lock nuts	

Tab. 18: Components of the drive shaft for top connection

Assemble the drive shaft as follows:

1. In order to prevent corrosion in the splined hub, apply a coat of suitable bearing grease to the drive shaft (1) prior to the assembly.
2. Insert the drive shaft (1) with the pre-assembled deep groove ball bearing (3) into the bearing seat (4) on the connection plate (6).
3. Mount the circlip (2).
4. Insert the centring bolts (7) into the holes in the wheel block housing.
5. Place the drive shaft assembly onto the wheel block. Make sure that the connection plate (6) is correctly positioned on the side surfaces of the housing.
6. Secure it by tightening the six lock nuts (8) whilst counter-holding the cylinder head screws by the head.

Tightening torque

- ORS 160/200 = 85 Nm

4.6.2 Assembly of the drive shaft for side connection

Provide the following details when making your order:

- Gearbox type
- Shaft end
- Manufacturer

Ordering example: 1 x Set drive shaft set ORS 160, side connection, FV 47 - W 35 - SEW

The scope of supply of the drive shaft set includes the following components:

- 1 x Drive shaft with mounted deep groove ball bearing
- 1 x Connection plate with shrink-fitted bearing seat
- 2 x Circlips
- 2 x Adapter nut

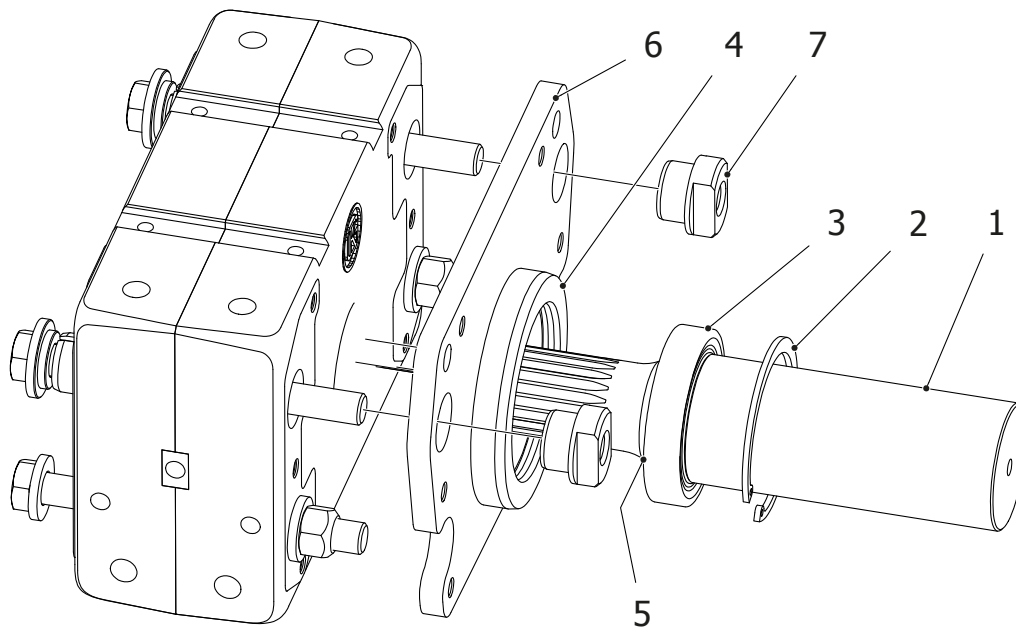


Fig. 14: Mounting the drive shaft for side connection

Item	Components	Comment
1	Drive shaft	
2	Circlip	
3	Deep groove ball bearing	Pre-assembled at the factory
4	Bearing seat	Pre-assembled at the factory
5	Circlip	Pre-assembled at the factory
6	Connection plate	
7	Adapter nut	

Tab. 19: Components of the drive shaft for side connection

Assemble the drive shaft as follows:

1. In order to prevent corrosion in the splined hub, apply a coat of suitable bearing grease to the drive shaft (1) prior to the assembly.
2. Insert the drive shaft (1) with the pre-assembled deep groove ball bearing (3) into the bearing seat (4) on the connection plate (6).
3. Mount the circlip (2).
4. Place the drive shaft assembly onto the wheel block using the adapter nuts (7). Make sure that the connection plate (6) is correctly positioned on the side surfaces of the housing. The adapter nuts (7) are used to centre the connection plate (6) with the wheel block.
5. Fit the side connection (chapter 4.2, page 17). Screw the upper fixing screws into the adapter nuts (7) and tighten them to the specified torque whilst counter-holding the adapter nuts (7) by the wrench flats.

Tightening torque

- ORS 125 = TBC
- ORS 160 = 230 Nm
- ORS 200 = 450 Nm

4.6.3 Assembly of the drive shaft for bolt connection

Provide the following details when making your order:

- Gearbox type
- Shaft end
- Manufacturer

Ordering example: 1 x Set drive shaft set ORS 160, bolt connection, FV 47 - W 35 - SEW

The scope of supply of the drive shaft set includes the following components:

- 1 x Drive shaft with mounted deep groove ball bearing
- 1 x Weld-on plate with shrink-fitted bearing seat
- 2 x Circlips

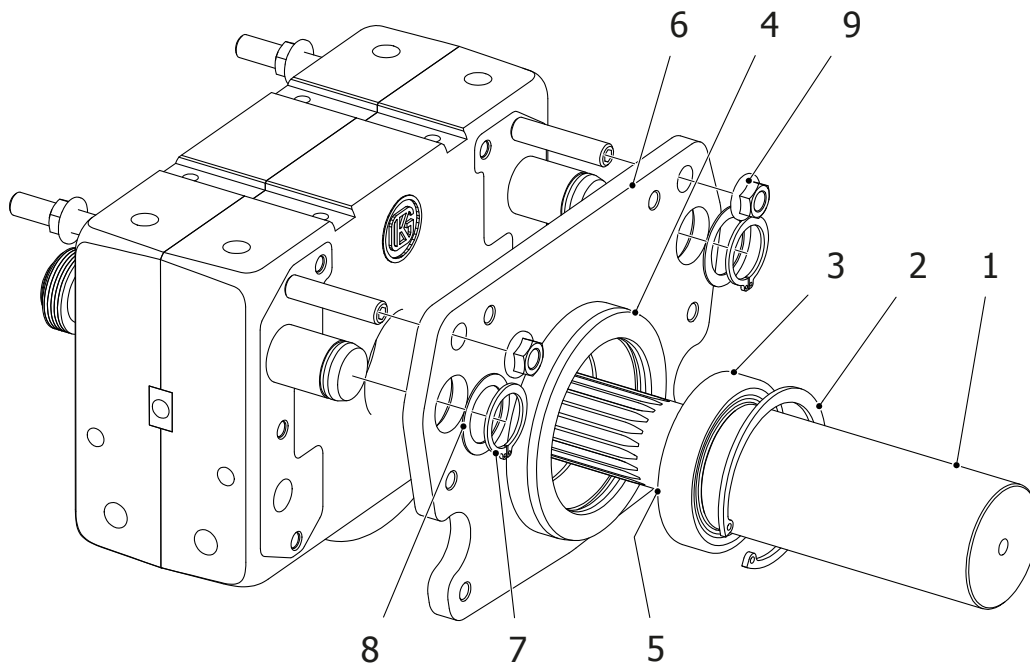


Fig. 15: Mounting the drive shaft for bolt connection

Item	Components	Comment
1	Drive shaft	
2	Circlip	
3	Deep groove ball bearing	Pre-assembled at the factory
4	Bearing seat	Pre-assembled at the factory
5	Circlip	Pre-assembled at the factory
6	Weld-on plate	

Tab. 20: Components of the drive shaft for bolt connection

Assemble the drive shaft as follows:

1. In order to prevent corrosion in the splined hub, apply a coat of suitable bearing grease to the drive shaft (1) prior to the assembly.
2. Insert the drive shaft (1) with the pre-assembled deep groove ball bearing (3) into the bearing seat (4) on the weld-on plate (6).
3. Mount the circlip (2).
4. Remove the circlips (7), supporting discs (8) and lock nuts (9) from the existing bolt connection.
5. Slide the drive shaft assembly onto the bolts.
6. Refit the supporting discs (8) and circlips (7).
7. Tighten the lock nuts (9) to the specified torque.

Tightening torque

- ORS 125 = TBC
- ORS 160/200 = 104 Nm

4.7 Assembly and disassembly of the central drive

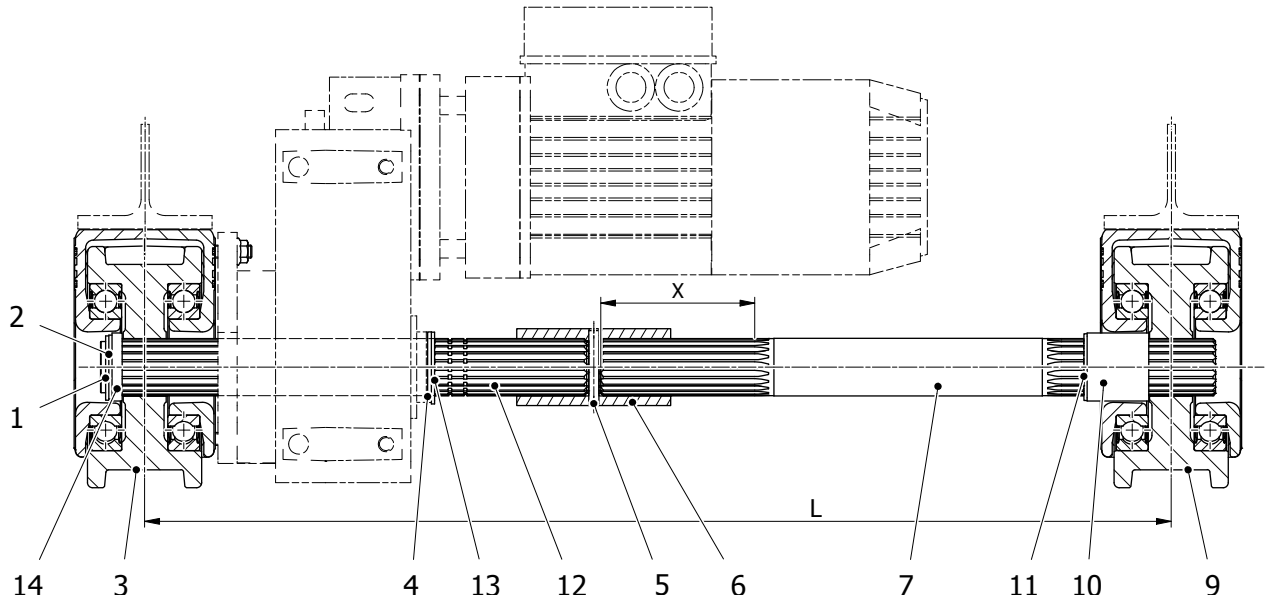


Fig. 16: Wheel blocks with central drive

Assemble the central drive as follows:

1. Mount the wheel block (3) at the drive end to the steel construction.
2. In order to prevent corrosion in the splined hub, apply a coat of suitable bearing grease to the drive shaft (12) prior to the assembly.
3. Insert the drive shaft (12) into the wheel block (3).
4. Mount the bushing (14), supporting disc (2) and circlip (1).
5. Slide the slip-on gearbox onto the drive shaft (12) and fasten it in accordance with the manufacturer's specification.
6. Mount the supporting disc (4) and circlip (13).
7. Apply a coat of bearing grease to the area X (without circlip groove) of the central drive shaft (7) and slide the coupling (6) completely onto the central drive shaft.
8. Apply a coat of bearing grease to the other end of the central drive shaft (7).
9. Fit the circlip (11) and the bushing (10) to this end of the central drive shaft (7).
10. Insert the central drive shaft (7) into the wheel block (9).
11. Mount the complete unit to the steel construction and align the latter to the wheel block at the drive end.
12. Slide the coupling (6) halfway from the central drive shaft (7) onto the drive shaft (12) and drive in the clamping sleeve (5).
 - ⇒ The central drive shaft (7) is secured in axial direction.

To carry out the disassembly process, proceed in reverse order.

4.8 Disassembling the wheel block

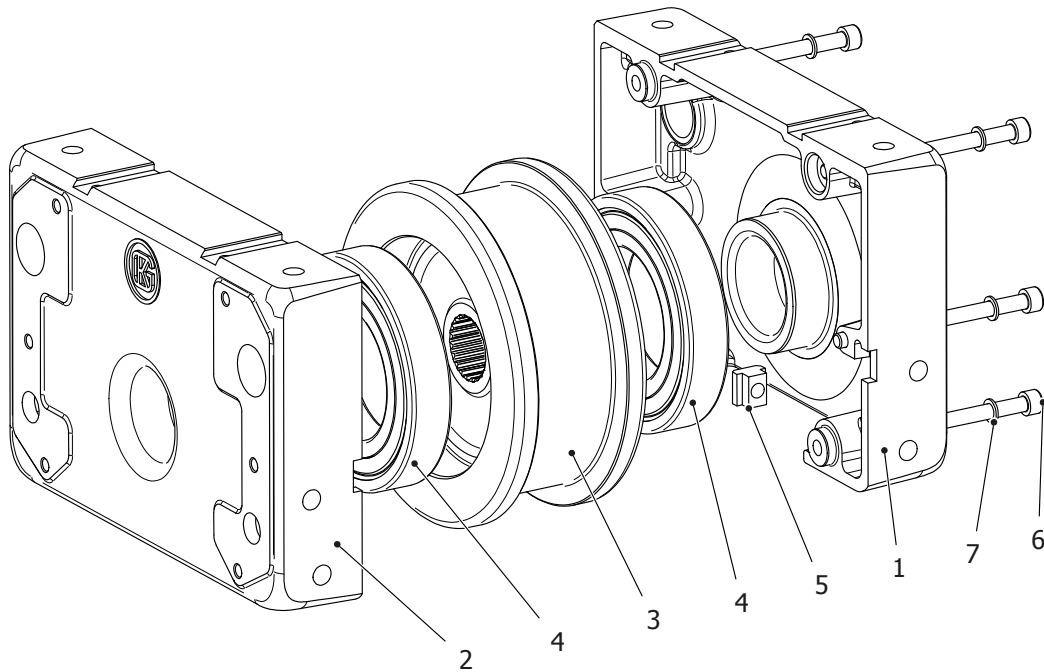


Fig. 17: Components of the wheel block

1. Place the wheel block on the top surface.
2. Loosen the cylinder head screws (6), applying the torque to the screw head.
3. Remove the cylinder head screws (6) with the discs (7).
4. Place the wheel block on the side.
5. Remove the housing half (1) from the deep groove ball bearing (4).
6. Pull the wheel unit (3,4) out of the housing half (2).
7. Clean the housing halves (1 and 2) and check the bearing seats for damage.

Replace the disassembled wheel unit by a completely pre-assembled set, consisting of a wheel (3) and deep groove ball bearing (4).

4.9 Assembly of the wheel block

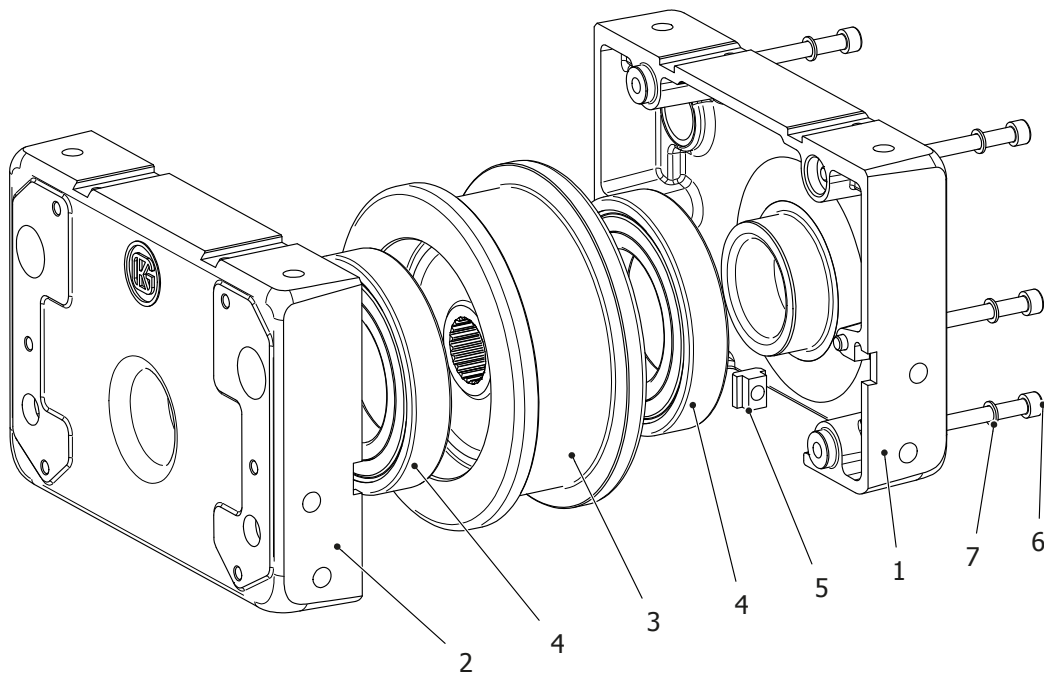


Fig. 18: Components of the wheel block

1. Place the housing half (2) on the side.
2. Apply a small amount of lubricant to the bearing seat of the housing half.
3. Insert the pre-assembled wheel unit (3, 4) with the deep groove ball bearing into the housing half (2).
4. Apply a small amount of lubricant to the bearing seat of the housing half (1).
5. Insert the housing half (1) into the hole in the deep groove ball bearing (4).
 - ⇒ In doing so, make sure that the centring bolts of the two gearbox halves are accurately inserted.
6. Place the wheel block on the top surface.
7. Insert the cylinder head screws (6) with the discs (7).
8. Tighten the screws (6), to do so, apply the torque to the screw head.
 - ⇒ ORS 125: torque TBC
 - ⇒ ORS 160: torque = 69 Nm
 - ⇒ ORS 200: torque = 69 Nm

5 Maintenance

Before starting maintenance work, cleaning tasks and fault rectification, observe the safety instructions in chapter 2.4, page 5.

5.1 Maintenance intervals

Maintenance activity	Maintenance interval	Further information
Visual inspection for externally visible damage and defects	daily	chapter 5.2.1, page 35
Check wheel block and drive shafts for corrosion, material fracture (in particular shaft fracture) and ensure that the alignment is correct	daily	chapter 5.2.1, page 35
Check the running tread and wheel flanges for wear and/or damage	every 3 months	chapter 5.2.1, page 35
Cleaning	in accordance with the interval of the machine to which the wheel block is mounted	chapter 5.2.1, page 35

Tab. 21: Maintenance intervals - complete wheel block

Maintenance activity	Maintenance interval	Further information
Check tightening torque of the fastening screws	after the first 3–6 operating hours or after 100 load changes	chapter 5.2.2, page 36
Retighten all fastening screws	After an operating time of 3 months, then in accordance with the operating conditions and the operational conditions or every year	chapter 5.2.2, page 36

Tab. 22: Maintenance intervals - screwed connections

5.2 Maintenance activities

5.2.1 Visual inspection

- ▶ Check the wheel blocks for externally visible damage and defects (e.g. check the wheel for cracks and fracture points).
- ▶ Report changes that have occurred (including changes of the operational performance) to the responsible party and/or person immediately.
- ▶ Shut down the associated machine immediately and secure it against restart.
- ▶ Check the wheel block and drive shafts for corrosion, material fracture (in particular shaft fracture) and ensure that the alignment is correct.

Wheel wear

- ▶ Check the running treads and wheel flanges for wear and/or damage.
- ▶ Replace the wheel unit if one of the following limit values is reached:

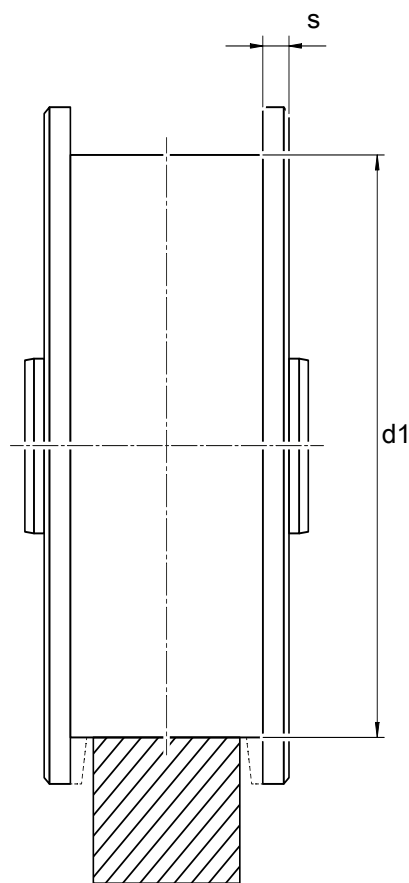


Fig. 19: Wear limits of the wheels

Nominal wheel diameter	Remaining smallest wheel flange width s	Smallest wheel diameter d1	Greatest difference of the wheel diameters with coupled wheels
125	TBC	TBC	TBC
160	7.0	153.5	0.15
200	8.5	193	0.15

Tab. 23: Dimensions in mm for the wear limits of the wheels

Increased wheel wear or wear at the wheel flange may have the following causes:

- Misalignment of the wheel block: Re-align the wheel blocks.
- Soiled rail: Clean the rail at regular intervals. If required, use a rail cleaning system or a rail sweeper.

In the event of a bearing defect, check the whole wheel unit and replace the defective parts.



Info!

On request, Karl Georg GmbH offers wheels with slip-free hardened running treads and wheel flange inner surfaces with a significantly increased lifespan.

In the event of a bearing defect, check the whole wheel unit and replace the defective parts.



Info!

On request, Karl Georg GmbH offers a complete repair of wheel blocks.

5.2.2 Retightening the screwed connections

After an operating period of three months, retighten all screwed connections with the torques specified. Further intervals depend on the operating conditions and the operational circumstances. The screwed connections must be retightened at least once a year (see provisions for the employer's liability insurance coverage (BGV) D6 accident prevention regulations for cranes).

6 Storage

Observe the following storage conditions to store the wheel blocks:

- dry,
- weatherproof (e.g. underneath a roof)
- Storage temperature in the range of the local outdoor temperature

Turn the wheels several times every six months to prevent them from stalling.

7 Disposal

NOTICE



Environmentally hazardous greases and oils!

Danger of environmental pollution by oils or greases.

- ▶ Do not let oils and greases enter the soil, bodies of water or the sewer system.
- ▶ Dispose of waste oil, greases or rags contaminated with oil in an environmentally friendly fashion, complying with local legislation, e.g. at collecting stations. Information on the type of auxiliary materials can be found in the technical data and in the safety data sheets.

To dispose of the wheel block system, dismantle it and disassemble it into its individual material groups:

- Steel
- Lubricants
- Plastic plugs

Dispose of the materials in compliance with local legislation.







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