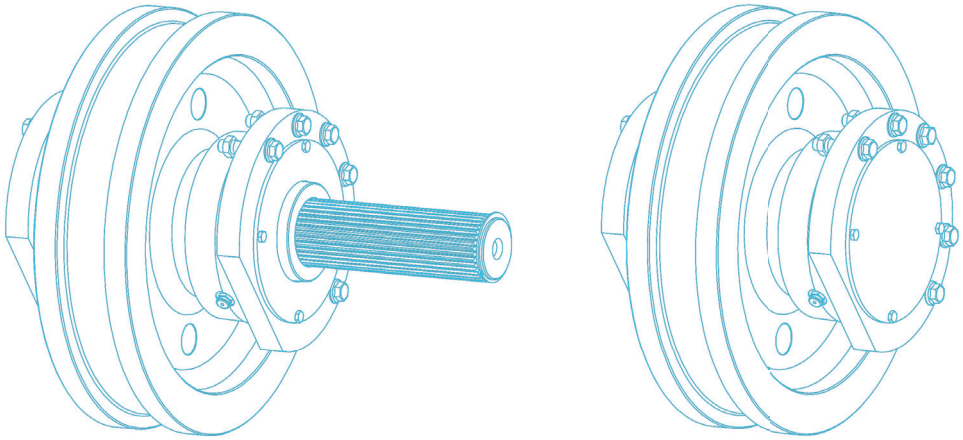
Installation andMaintenance Instructions

WHEEL SET

KG 135 SERIES



DRIVEN AND
NON DRIVEN WHEEL SET

KARL GEORG

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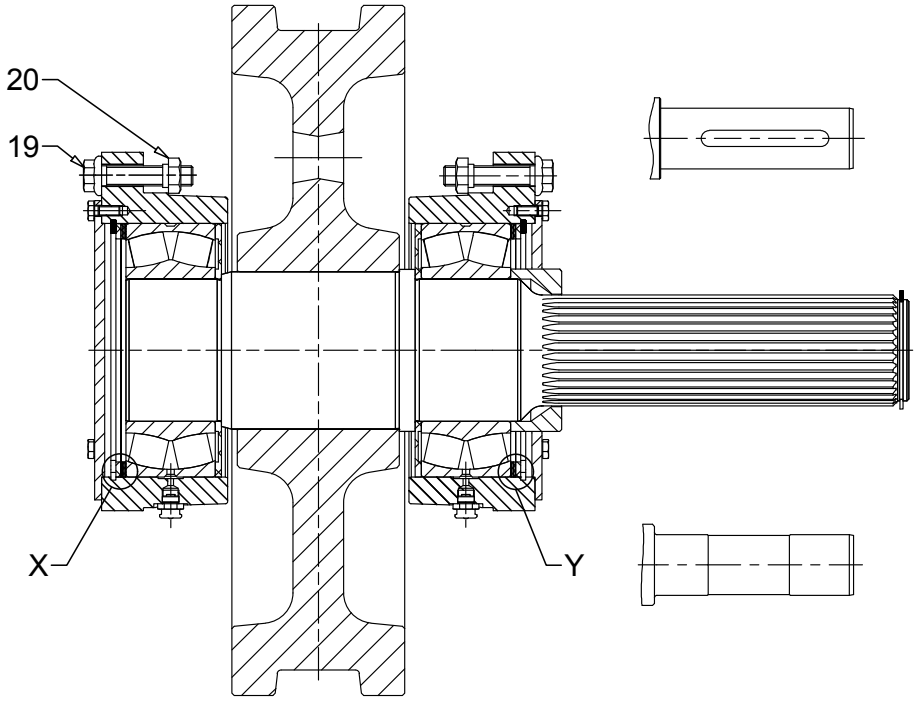
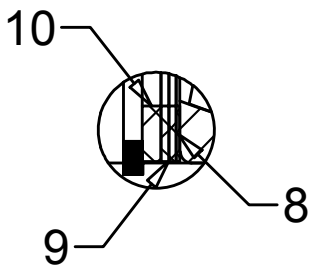
Before installing the wheel set and commissioning, read these Installation and Maintenance Instructions. Observe all directions and instructions. We accept no liability for damage and malfunctions caused as a result of non-observance of these instructions.

1. Technical construction driven and non driven wheel set

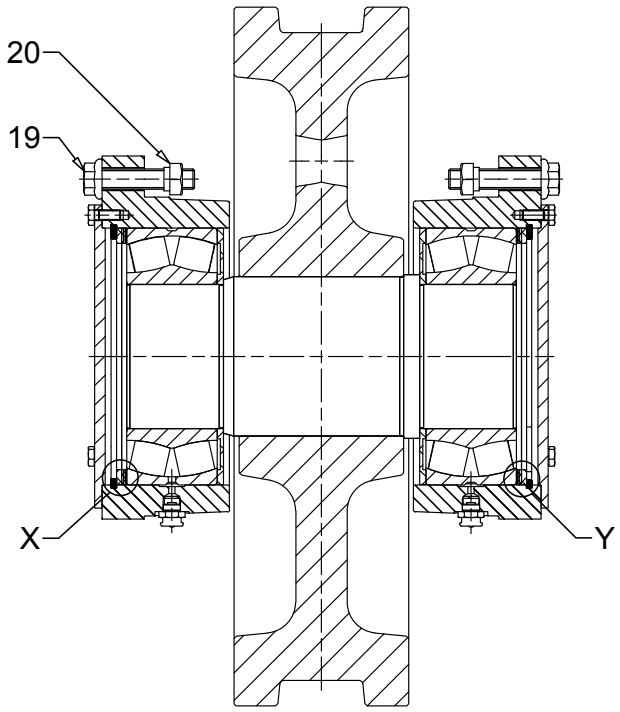
Installation version 1 and 2
Installation of corner bearing

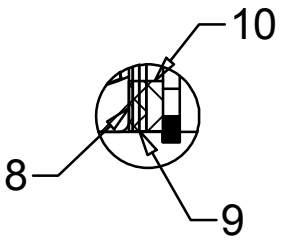
Wheel set driven

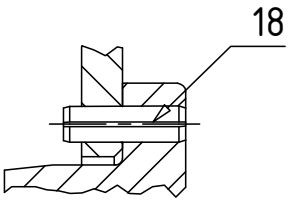




Wheel set not driven







Fixing using locking pins
(only for version 2)

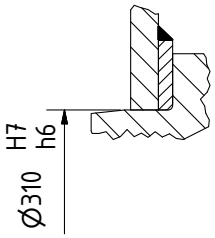
Parts List

Part	Number per wheel set		Designation
	driven	non driven	
1	1	1	Crane wheel
2	1	1	Drive shaft/Idler shaft
3	2	2	Flanged bearing housing
4	-	-	
5	1	2	Cover plate
6	1	0	Cover plate with hole
7	2	2	Seal disc Ø249,5/140 x 6
8	2	2	Compensating disc Ø249,5/220 x 1
9	4	4	Compensating disc Ø249,5/220 x 2
10	2	2	Compensating disc Ø249,5/220 x 5
11	8	8	Hexagon-headed screw DIN 933 - M10 x 25
12	2	2	Circlip DIN 472 - 250x5
13	-	-	
14	2	2	Flat grease nipple DIN 3404
15	2	2	Self aligning roller bearing DIN 635 - 23228
16	x	x	Roller-bearing grease
17	0/1	0	Spacer ring
18	10	10	Locking pin ISO 8752 - Ø 21x80 (only for version 2) (optionally available)
19	12	12	Locking screw M20x90 (Durlok) (optionally available)
20	12	12	Retained nut M20 - St (optionally available)

1.1 Installation dimensions and hole pattern for the steel construction

Installation version 1
Installation of corner bearing
Flange centering mechanically machined

For this installation version, the locating holes for the flanged bearing housing in the steel construction are mechanically machined with the tolerances of fit Ø 310 H7.
Thus, this eliminates extensive alignment of the wheel set and pinning of the flanged bearing housing after installation.
The wheel sets are complete, i.e. supplied as a ready-to-install unit.
Preparation of the steel construction in accordance with the hole pattern (Figure 1) is possible as a quick, corner bearing installation using commercial tools.



Radial forces are absorbed through the tolerance fit

Hole pattern representation corner bearing installation (Figure 1)

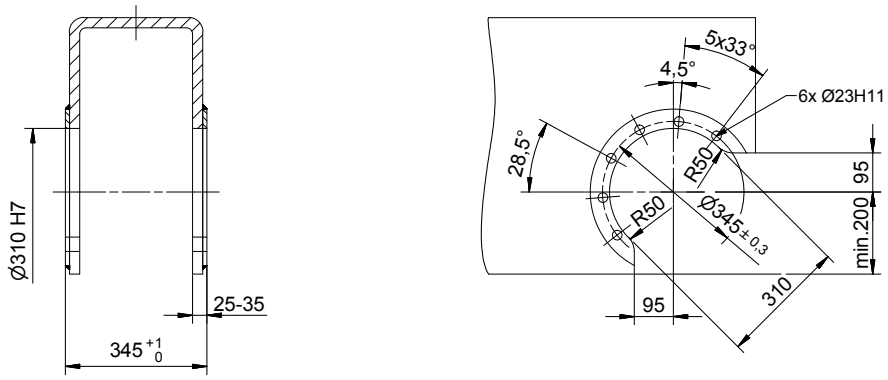


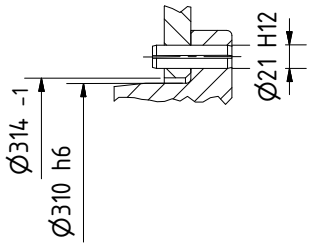
Table 1

driven and non driven wheel set	Number for each flanged bearing housing Locking screw with retained nut	Tightening torque
	6 off M20x90	420 Nm

1.2 Installation dimensions and hole pattern for the steel construction

Installation version 2
Installation of corner bearing
Flange centering flame-cutting

For this installation version, the locating holes for the flanged bearing housing in the steel construction are flame-cutting to Ø 314 -1 mm.
However, in this case, precise alignment of the wheel sets is necessary by displacing the flanged bearing housing after installation.
The wheel sets are complete, i.e. supplied as a ready-to-install unit.
Preparation of the steel construction is carried out in accordance with the hole pattern (Figure 2). After alignment, the exact position of the flanged bearing housing is fixed using the locking pins.



Radial forces are absorbed through locking pins

Hole pattern representation corner bearing installation (Figure 2)

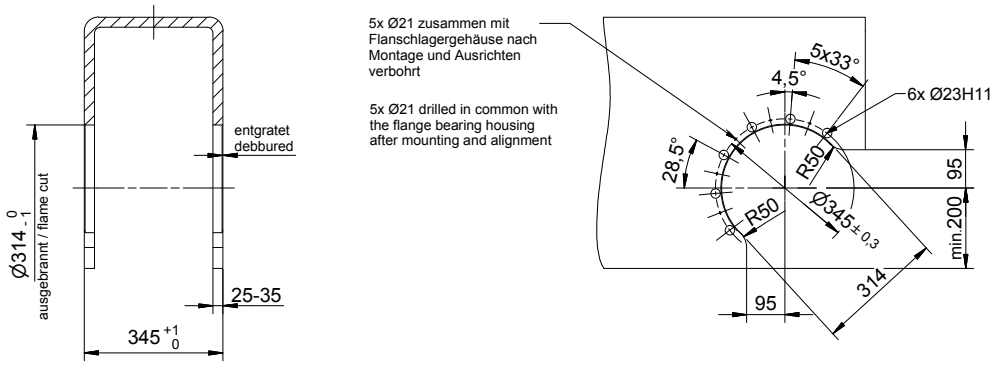
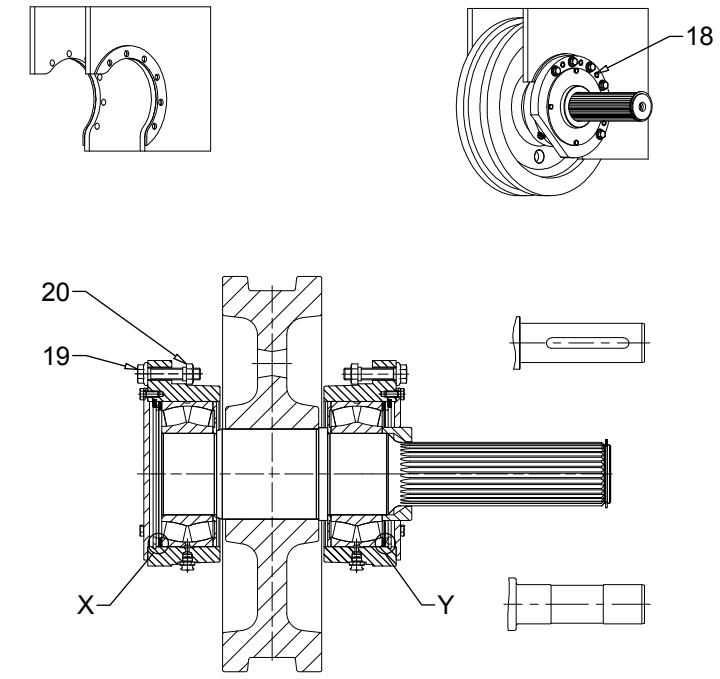


Table 2

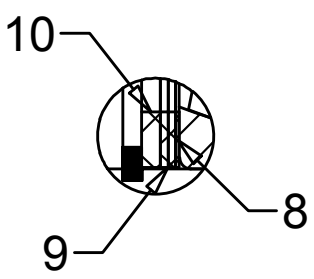
driven and non driven wheel set	Anzahl je Flanschlagergehäuse		
	Spannstift	Sicherungsschraube mit Setzumutter	Anziehdrehmoment
	5 Stück 21x80	6 Stück M20x90	420 Nm

2. Installation of the driven and non driven wheel set

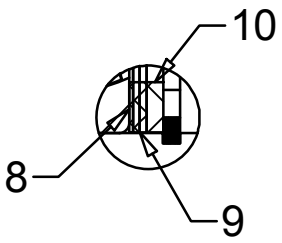
Installation version 1 and 2
Installation of corner bearing

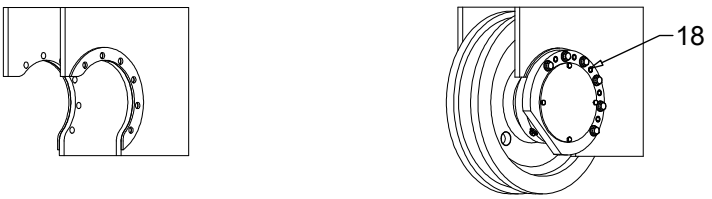


Detail X



Detail Y





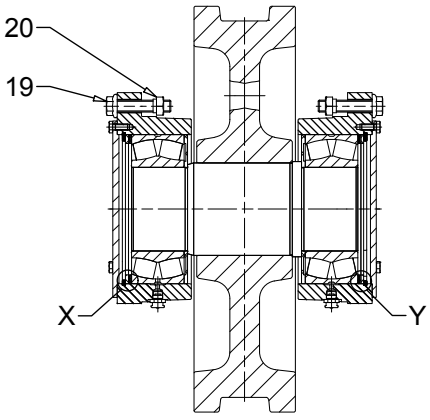


Tabelle 3

The average track dimension can be changed by using interchangeable adjusting washers.

	Number per flanged bearing housing		
driven and non driven wheel set	Thickness of compensating disc Detail X	Thickness of compensating disc Detail Y	max. adjustment option
	1 x 5 mm + 2 x 2 mm + 1 x 1 mm	1 x 5 mm + 2 x 2 mm + 1 x 1 mm	± 8 mm

2.1 Installation procedure, installation version 1

Installation of corner bearing
Flange centering mechanically machined

1. 1Manufacture the steel construction in accordance with 1.1 (refer to Page 6).
2. From the inside, install retained nuts M 20 in the prefabricated holes Ø 23 mm in the steel construction.
3. Insert the complete wheel set into the steel construction.
4. Use the locking screws (M 20x90) and attach both flanged bearing housings to the steel construction, tightening torque 420 Nm (in accordance with Table 1 on Page 6)
5. Relubricate both roller bearings

However, this simple installation process is only applicable if the dimension of the steel construction (clearance of the flanged bearing housing) has been manufactured exactly as given in Figure 1 on Page 6 (345 +1 mm). If the installation dimension is exceeded by more than 1 mm, the difference must be compensated by installing the corresponding compensating discs. Thereby, there is less axial play.

If the installation dimension (345 +1 mm) has been manufactured smaller, it is mandatory to remove the appropriate adjusting washers and compensating discs from a flanged bearing housing before installation. Only thus can constraining forces on the self-aligning roller bearings be prevented and thus, damage caused by the forces. After assembly, both flanged bearing housings must rest on the steel construction. The wheel set should then have a minimum axial play of 0.1 mm.

2.2 Installation procedure, installation version 2

Installation of corner bearing
Flange centering flame-cutting

1. Manufacture the steel construction in accordance with 1.2 (refer to Page 7).
2. From the inside, install retained nuts M 20 in the prefabricated holes Ø 23 mm in the steel construction.
3. Insert the complete wheel set into the steel construction
4. Use the locking screws (M 20x90) to attach both flanged bearing housing to the steel construction, thereby, only hand tighten the screws.
5. Using suitable measurement tools, accurately align all wheel sets of the system by moving the flanged bearing housing.
6. After aligning, tighten the locking screws to a torque of 420 Nm (in accordance with Table 2 on Page 7).
7. Open up the predrilled holes Ø 5 mm in all flanged bearing housings together with the steel construction to Ø 21 mm (in accordance with Figure 2 on Page 7).
   Subsequently, tap in the locking pins (Ø 21x80). Thereby, the flanged bearing housing can be released at any time and accurately installed again.
8. Relubricate both roller bearings.

If the dimension of the steel construction (345 +1 mm) has not been manufactured accurately in accordance with Figure 2 on Page 7, the appropriate adjusting washers and compensating discs must be removed from the flanged bearing housing or adjusting washers installed, in accordancewith 2.1. To prevent constraining forces acting on the self-aligning roller bearings, make sure that there is small axial play.

3. Commissioning, Maintenance and Servicing

Recurring check

in accordance with UVV (Accident Prevention Regulations) cranes BGV D6 § 26 Para. 1 (VBG 9) and the basic principles for specialist examinations (ZH 1/27)

Lubrication and maintenance

The diven and non driven wheel sets are supplied as complete units. The self-aligning roller bearings are filled with roller-bearing grease Multifak EP 2 (Texaco).

Type of lubrication:	lubricating using grease
Lubricant:	Multifak EP 2 (Texaco) or equivalent roller bearing grease from another manufacturer (suitable for use at temperatures of -30 °C to +90 °C) For use in temperatures to -50 °C, we recommend the roller-bearing grease Renolit Unitemp 2 (Fuchs) or an equivalent, frostresistant grease from another manufacturer. For temperatures of more than 90 °C, use appropriate temperature-resistant seals and suitable high-temperature lubricants.
Re-lubrication:	After every 2000 operating hours, through the lubrication nipple through the flanged bearing housing and bearing bushes
Change lubricant:	Annually

Before attaching the gear motor, apply a layer of suitable assembly grease to the drive shafts with gearing or feather key.

Servicing

Replace damaged seal discs.

Running surfaces and flange wear of the crane wheel:
Inspection every 3 months

If there is wear on the running surfaces of more than 10 mm and at a wheel flange width of less than 13 mm, replace the crane wheel.

Use a torque wrench and check the specified tightening torques of all locking screws after 3 months operating time.
Subsequently, annually within the framework of the recurring check.

The maintenance intervals given are reference values that must be adapted in extreme operating conditions.

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Subject to alterations by the manufacturer for the purposes of further technical development!

No claims can be derived from the information, figures and descriptions given in these operating instructions.