# Installation and Maintenance Instructions

# TIZAN WHEELSET SERIES KG 130





# RAE/RNE 630 INSTALLATION IN SLOTTED CHASSIS SUPPORT

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## 1. Technical construction RAE/RNE 630



Wheel set RNE non-drivable



Detail X



Detail Y





Fixing using locking pins (only for version 7)

#### Parts list

Durt	Number pe	r wheel set	De transition
Part	RAE	RNE	Designation
1	1	1	Crane wheel
2	1	1	Drive shaft/idler shaft
3	1	1	Spacer ring Ø 156/130.3 28
4	1	1	Spacer ring Ø 142/110.2×27.2
5	2	2	Flanged bearing housing
6	2	2	Flat grease nipple DIN 3404 - M22 - G3/8
7	10	10	Locking screw M20×90-12.9 ZT (Durlok)
8	10	10	Retained nut M20 - St
9	2	2	Seal disc Ø 200/128×4
10	1	1	Self-aligning roller bearing DIN 635 - 24026
11	2	2	Seal disc Ø 200/143×4
12	1	1	Self-aligning roller bearing DIN 635 - 232 22
13	4	4	Adjusting washer DIN 988 - Ø 170/200×1
14	5	5	Compensating disc Ø 200/170×4
15	2	2	Circlip DIN 472 - 200×4
16	1	1	Tension disc Ø 127.5×30
17	3	3	Hexagon screw ISO 4017 - M20×75-10.9 ZT
18	1	2	Cover plate Ø 630
19	1	0	Cover plate with hole Ø 630
20	1	0	Feather key DIN 6885/1 (design depending on the drive shaft)
21	8	8	Locking pin ISO 8752 - Ø 21×80 (for version 7 only)
22	-	-	
23	4	4	Adjusting washer DIN 988 - Ø 170/200×0.5 (enclosed separately)

## 2. Chassis support installation

#### 2.1 Installation version 6 Flange centring, 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  $\varnothing$  268 H7.

Thus, this eliminates extensive alignment of the wheel set and pinning of the flanged bearing housing after assembly.

The wheel sets are complete, i.e. supplied as a ready-to-install unit, without grease filling however.

Preparation of the steel construction in accordance with the hole pattern (Figure 1) is possible as a quick installation in the slotted chassis support using commercial tools.

Hole pattern representation of chassis support installation (Figure 1)



Wheel set	Number for each flanged bearing housing, locking screw with retained nut	Tightening torque	
RAE/RNE 630	5 off M20×90	420 Nm	

## 2. Chassis support installation

#### 2.2 Installation version 7 Flange centring, flame-cutting

If precise, mechanical machining of the locating holes for the flanged bearing housing in the steel structure is not possible, then the holes can also be flame-cut in accordance with Figure 2.

In this case, however, precise alignment of the wheel sets is necessary by displacing the flanged bearing housing after installation.

After alignment, the exact position of the flanged bearing housing is fixed using the locking pins.

The wheel sets are complete, i.e. supplied as a ready-to-install unit, **without grease filling however**.

#### Hole pattern representation of chassis support installation (Figure 2)



	Number per flange		
Wheel set	Locking pin	Locking screw with retained nut	Tightening torque
RAE/RNE 630	4 off 21×80	5 off M20×90	420 Nm

## **3. Installation of the wheel sets RAE/RNE 630** Installation version 6



Wheel set	Number per flanged bearing housing Thickness of compensating disc Detail X	Number per flanged bearing hous- ing Adjusting washer, compensating disc thicknesses –Detail Y	max. adjustment option
RAE/RNE 630	3 × 4 mm	2 × 4 mm + 4 × 1 mm	± 12 mm

### **3.1 Assembly in accordance with installation version 6** Flange centring, mechanically machined

#### Preparations for assembly:

Ø

- Establish the steel construction in accordance with manufacturer specification 2.1
- Dismantle flanged bearing housing on the A and B side with cover plate, circlip, exchangeable adjusting washer and seal disc
- (Flanged bearing housings are installed solely as transport guards)
- Remove any preserving agents from the crane wheel and flanged bearing housing
- 1. Set the retained nuts (8) in the prefabricated holes from the inside.
- 2. Install the pre-assembled crane wheel unit into the steel construction from below.
- 3. Use locking screws (7) to assemble the A and B sides of the flanged bearing housing (5).
- 4. Tighten the locking screws (7) to their nominal torque (420 Nm).
- 5. Use the seal disc (9) to seal the self-aligning roller bearing (12) towards the outside, A-side.
- 6. Use the seal disc (11) to seal the self-aligning roller bearing (10) towards the outside, B-side.
- 7. Install three compensating discs (14) on the A side, two compensating discs (14) and four adjusting washers (13) on the B side and install circlips (15).

# Using the adjusting washers (Item 23 in the spare parts list, loose enclosure) assemble in a way that the wheel set is installed with practically no axial play.

8. Install the cover plates (18,19) in both of the flanged bearing housings.

#### 9. <u>Use lubrication nipples (6) to fill the antifriction bearing on the A and B sides with grease</u> (Texaco Multifak EP 2 or comparable grease at temperatures ranging from - 30 °C to +90 °C).

The position of the crane wheel with respect to the track and thus the average track dimension can be adjusted by up to ± 12 mm by moving both the adjusting washers (13) and the compensating discs (14) to one side.

## 4. Installation of the wheel sets RAE/RNE 630 Installation version 7



Wheel set	Number per flanged bearing housing Thickness of compensating disc Detail X	Number per flanged bearing hous- ing Adjusting washer, compensating disc thicknesses –Detail Y	max. adjustment option
RAE/RNE 630	3 × 4 mm	2 × 4 mm + 4 × 1 mm	± 12 mm

## 4.1 Assembly in accordance with installation version 7 Flange centring, flame-cutting

#### Preparations for assembly:

- Establish the steel construction in accordance with manufacturer specification 2.2
- Dismantle flanged bearing housing on the A and B side with cover plate, circlip, exchangeable adjusting washer and seal disc
- (Flanged bearing housings are installed solely as transport guards)
- Remove any preserving agents from the crane wheel and flanged bearing housing
- 1. Set the retained nuts (8) in the prefabricated holes from the inside.
- 2. Install the pre-assembled crane wheel unit into the steel construction from below.
- 3. Use locking screws (7) to assemble the A and B sides of the flanged bearing housing (5).
- 4. Tighten the locking screws (7) no more than hand-tight.
- 5. Use the seal disc (9) to seal the self-aligning roller bearing (12) towards the outside, A-side.
- 6. Use the seal disc (11) to seal the self-aligning roller bearing (10) towards the outside, B-side.
- 7. Install three compensating discs (14) on the A side, two compensating discs (14) and four adjusting washers (13) on the B side and install circlips (15).
- 8. Exactly align the wheel sets using suitable measurement tools.
- 9. Tighten the locking screws (7) to their nominal torque (420 Nm).
- 10. Check the axial play of the wheel set and correct if necessary

# Using the adjusting washers (Item 23 in the spare parts list, loose enclosure) assemble in a way that the wheel set is installed with practically no axial play.

11. Install the cover plates (18,19) in both of the flanged bearing housings.

12. Drill four holes Ø 5 mm (Figure 2) in all of the flanged bearing housings to the nominal dimension of the loosely delivered locking pins (Item 21 of the spare parts list). Then tap in the locking pins (21) so that the flange connection can be disconnected and connected at any time on both sides.

# 13. <u>Use lubrication nipples (6) to fill the antifriction bearing on the A and B sides with grease (Texaco Multifak EP 2 or comparable grease at temperatures ranging from - 30 °C to +90 °C).</u>

The position of the crane wheel with respect to the track and thus the average track dimension can be adjusted by up to  $\pm$  12 mm by moving both the adjusting washers (13) and the compensating discs (14) to one side.

## 5. 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 wheel sets are supplied as complete units, without grease filling however. The self-aligning roller bearings must be filled with grease during assem- bly!			
	Type of lubrication: Lubricant:	lubricating using greas Texaco Multifak EP 2 o grease of another man temperatures of -30 °C	e r equivalent roller bearing ufacturer (suitable for using at C to +90 °C)	
		For application temper ommend the roller bea 2 from the Co. Fuchs o another manufacturer. 90 °C, use appropriate and suitable high-temp	ratures of up to -50 °C, we rec- ring grease Renolit Unitemp r an equivalent grease from For temperatures of more than temperature-resistant seals perature lubricants.	
	Re-lubrication:	After every 2000 oper cation nipple through t	ating hours through the lubri- he flanged bearing housing	
	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 be	aring seals.		
	Running surfaces and Inspection every 3 ma	l flange wear of the crane v onths	wheel:	
	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 the locking and tensioning screws after 3 months operating time. Subsequently, annually within the framework of the recurring check.			
	The intervals given are reference values that must be adapted in extreme operating conditions.			
	Table 5	Locking scrow (7)	Toncioning serous (17)	

Creme wheel Ø	Locking Flanged bea	aring housing Tighten		screws (17) ing disc Tightening	
Crane wheel Ø	Screw	Tightening torque	Screw	Tightening torque	
630	M 20 × 90	420 Nm	M 20 × 75	580 Nm	

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## **Produkt- und Kundeninformation** *Product and customer information*

Beim Radblocksystem handelt es sich um eine einbaufertige Fahreinheit für fördertechnische Anlagen (z.B. Krane). The wheel block system is a ready-to-install travel unit for conveyor systems (e.g. cranes).

Das Radblocksystem ist keine Maschine und dazugehöriges Produkt im Sinne der Richtlinie 2006/24/EG sowie der Verordnung 2023/1230.

The wheel block system is not a machine and associated product within the meaning of Directive 2006/24/EC and Regulation 2023/1230.

Das Radblocksystem ist als Komponente zu betrachten und ist konform mit den Anforderungen nachstehender Dokumente:

The wheel block system is to be regarded as a component and conforms to the requirements of the following documents:

• DIN EN 13135 08/18	Krane – Sicherheit – Konstruktion – Anforderungen an die Ausrüstungen <i>Cranes – Safety – Design – Requirements for equipment</i>
• DIN EN 13001-3-3 02/15	Krane - Konstruktion allgemein - Teil 3-3: Grenzzustände und Sicherheitsnachweis von Laufrad/Schiene-Kontakten Cranes - General design - Part 3-3: Limit states and proof of competence of wheel/rail contacts
• DIN EN ISO 12100 03/11	Sicherheit von Maschinen – Allgemeine Gestaltungsleitsätze – Risikobeurteilung und Risikominderung (ISO 12100:2010) Safety of machinery – General principles for design – Risk assessment and risk reduction (ISO 12100:2010)
• DIN EN ISO 9001 11/15	Qualitätsmanagementsysteme - Anforderungen (ISO 9001:2015) <i>Quality management systems - Requirements (ISO 9001:2015)</i>

Bei der Verwendung der Komponenten sind die Vorgaben / Hinweise der Montage-, Wartungsanleitung zu o.g. Komponente zwingend zu beachten!

When using the components, the specifications / instructions in the installation and maintenance instructions for the above-mentioned components must be observed!

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

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