

# Exchange reservoir P203 XNB0 / P203 XLB0

from 8 to 15 liters



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	Read these instructions before installation or start-up of the product and keep them readily available for later consultation!						



## Masthead

#### Manufacturer

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#### Warranty

The instructions contain no statements regarding the warranty or liability for defects. That information can be found in our General Terms of Payment and Delivery.

#### Training

We conduct detailed training in order to enable maximum safety and efficiency. We recommend taking advantage of this training. For further information, contact your authorized SKF dealer or the manufacturer.

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# Safety alerts, visual presentation, and layout

While reading these instructions, you will encounter various symbols, illustrations, and text layouts intended to help you navigate and understand the instructions. Their meaning is explained below.

#### Safety alerts:

Activities that present specific hazards (to life and limb or possible damage to property) are indicated by safety alerts. Always be sure to follow the instructions given in the safety alerts.

#### ▲ DANGER

These safety alerts indicate an imminent danger. Ignoring them will result in death or serious injury

#### **△** WARNING

These safety alerts indicate potentially imminent danger. Ignoring them could result in death or serious injury

#### 

These safety alerts indicate potentially imminent danger. Ignoring them could result in minor injury

#### NOTICE

These safety alerts indicate a potentially harmful situation. Ignoring them could result in damage to property or malfunctions

#### Illustrations:

The illustrations used depict a specific product. For other products, they may have the function of a diagram only. This does not alter the basic workings and operation of the product.

#### Text layout:

- First-order bulleted lists: Items on a bulleted list start with a solid black dot and an indent.
  - Second-order bulleted lists: If there is a further listing of subitems, the second-order bulleted list is used.
- **1 Legend:** A legend explains the numbered contents of an illustration, presented as a numbered list. Items in a legend start with a number (with no dot) and an indent.
  - Second-order legend: In some cases, the numbered contents of an image represent more than just one object. A second-order legend is then used.

- **1.Instruction steps:** These indicate a chronological sequence of instruction steps. The numbers of the steps are in bold and are followed by a period. If a new activity follows, the numbering starts again at "**1**."
  - Second-order instruction steps: In some cases, it is necessary to divide up a step into a few substeps. A sequence of second-order instruction steps is then used.

## 1. Safety instructions

## 1.1 General safety instructions

Provided the use of ADR connecting material as stated in the type identification code and correctly performed electrical installation, the lubricant pumps comply with ADR requirements for use outside potentially explosive zones 0, 1 or 2 in vehicle types EX/II, EX/III, FL and AT.

Test institute: TÜV-SÜD Auto Service GmbH Component approval marking: TÜ.EGG.054-01

## 1.2 General behaviour when handling the product

The product may only be used in awareness of the potential dangers, in proper technical condition, and according to the information in this manual.

Familiarize yourself with the functions and operation of the product. The specified assembly and operating steps and their sequences must be observed.

Any unclear points regarding proper condition or correct assembly/operation must be clarified. Operation is prohibited until issues have been clarified.

Unauthorized persons must be kept away.

Wear personal protective equipment.

All safety regulations and in-house instructions relevant to the particular activity must be observed.

Responsibilities for different activities must be clearly defined and observed. Uncertainty seriously endangers safety.

Guards and safety devices must not be removed, modified, nor disabled during operation and must be checked for proper function and completeness at regular intervals.

If guards or safety devices need to be removed, they must be reinstalled immediately following conclusion of work and then checked for proper function.

Any malfunctions that occur must be resolved according to responsibility. The supervisor must be notified immediately in case of malfunctions outside one's individual scope of responsibility.

Never use any part of the centralized lubrication system as a stand or step or for climbing.

### 1.3 Intended use

Spare parts should only be used to replace faulty components of identical construction.

Use is only permitted within the scope of commercial or economic activity by professional users, in compliance with the specifications, technical data, and limits specified in this manual.

# 1.4 Persons authorized to use the product

#### NOTE

Repairs may only be performed by authorized and qualified personnel.

#### Specialist in electrics

Person with appropriate professional education, knowledge and experience to detect and avoid the hazards that may arise from electricity.

#### **Specialist in mechanics**

Person with appropriate professional education, knowledge and experience to detect and avoid the hazards that may arise during transport, installation, start-up, operation, maintenance, repair and disassembly.

### 1.5 Referenced documents

In addition to these instructions, the following documents must be observed by the respective target group:

- Assembly or operating instructions of the product to be repaired
- Operational instructions and approval rules
- Where appropriate:
- Safety data sheet of the lubricant used
- Project planning documents
- Additional information on special versions of the pump. You will find these in the special system documentation.
- Any documents of other components required to set up the centralized lubrication system

## 1.6 Prohibition of certain activities

- Replacement of or modifications to the pistons of the pump elements
- · Repairs or modifications to the drive
- Alterations to the control circuit board beyond adjustment of lubrication times and interval times or replacement in case of defect
- Alterations to the power supply board beyond replacement in case of defect

### 1.7 Assembly, maintenance, fault, repair

Prior to the start of this work, all relevant persons must be notified of it. At a minimum, the following safety measures must be taken before any work is done:

- Unauthorized persons must be kept away
- · Mark and secure the work area
- Cover adjacent live parts
- Dry any wet, slippery surfaces or cover them appropriately
- Cover hot or cold surfaces appropriately
- Where applicable:
- Depressurize
- Isolate, lock and tag out

#### • Check to ensure live voltage is no longer present

• Ground and short-circuit

The product should be protected as much as possible from humidity, dust, and vibration, and should be installed so that it is easily accessible. Ensure an adequate distance from sources of heat or cold. Any visual monitoring devices present, such as pressure gauges, min./max. markings, or oil level gauges must be clearly visible. Observe the mounting position requirements.

Drill required holes only on non-critical, non-load-bearing parts of the operator's infrastructure. Use existing holes where

### 1.8 Residual risks

possible. Avoid chafe points. Immobilize any moving or detached parts during the work. Adhere to the specified torques.

If guards or safety devices need to be removed, they must be reinstalled immediately following conclusion of work and then checked for proper function.

Check new parts for compliance with the intended use before using them.

Avoid mixing up or incorrectly assembling disassembled parts. Label parts. Clean any dirty parts.

Residual risks									
Residual risk		Possible in lifecycle						Avoidance / Remedy	
Personnel slipping due to floor contamination with spilled or leaked lubricants.	I	В	С	E	F	G	н	<ul> <li>Exercise caution when connecting hydraulic connections on the product</li> <li>Promptly apply suitable binding agents and then remove the spilled or leaked lubricant</li> <li>Follow operational instructions for handling the lubricants and contaminated parts.</li> </ul>	
Tearing or damage to lines when installed on moving machine components.	I	В	С		F	G		<ul> <li>Removing/installing the pump on moving machine components should be avoided whenever possible. In cases where mounting the pump in this way cannot be avoided, flexible hose lines must be used.</li> </ul>	
Personal injury / property damage due to falling of hoisted parts	А				F	G		<ul> <li>Unauthorized persons must be kept away. Lift parts using suitable lifting gear.</li> </ul>	
Personal injury / property damage due to tilting or falling product due to non- compliance with specified torques	I	В			F	G		<ul> <li>Adhere to the specified torques. Mount the product only on components with a sufficient load-carrying capacity. If no torques are specified, use those specified for the screw size for screws of strength class 8.8.</li> </ul>	
Lubricant spraying out due to faulty component fitting, or incorrect connection of lines.	I	В	С		F	G		<ul> <li>Tighten all components securely or using the specified torques.</li> <li>Use hydraulic screw unions and lines suitable for the indicated pressures, and check them for proper connection and for damage prior to first start-up</li> </ul>	

Lifecycles: A = Transport, B = Assembly, C = First start-up, D = Operation, E = Cleaning, F = Maintenance, G = Malfunction, repair, H = Shutdown, K = Disposal

## 2. Assembly

## 2.1 General

Only qualified technical personnel may install, operate, maintain, and repair the products specified in the instructions. Qualified technical personnel are persons who have been trained, assigned, and instructed by the operator of the final product into which the product described here is incorporated. Such persons are familiar with the relevant standards, rules, accident prevention regulations, and operating conditions as a result of their training, experience, and instruction.

They are qualified to carry out the required activities and in doing so recognize and avoid potential hazards.

Before installing the product, the packaging material and any shipping braces must be removed. The packaging material must be preserved until any discrepancies are resolved.

# 2.2 Installing the pump at the place of use

Installation and first start-up at the place of use should be done as described in the instructions for the pump.

### 2.3 Required tools and accessories

- Combination wrenches size 27 mm / 13 mm and 10 mm
- Strap wrench 25 / 820
- Flat-tip screwdriver (blade length approx. 200 mm / Ø 10 mm)
- Reversible ratchet
- Socket 10 and 13 mm
- Torque wrench (5 Nm)
- Fuchs Renolit IPR2 for greasing
- Loctite 274
- Removal tool for the reservoir (Fig. 1 / 1), item no. 544-60279-1
- Swiveling device P203 for vice (Fig. 1 / 2), item no. 224-14147-6
- Drip pan for lubricant of adequate volume

#### NOTE

We strongly recommend using the reservoir removal tool and the swiveling device.



Recommended special tools

## 2.4 Contents of the retrofit kit

See also Figure 2

#### Order number / name:

544-32956-2 / REDESIGN-KIT:RESERVOIR 203-4/8 IN 15XNB0

#### **Contents:**

- 1 Reservoir, 15 liters with sealing insert and lid
- 2 Mounting ring
- 3 Transition ring
- 4 Clamp with bolt M8x20, nut M8, and washer (2x)
- 5 Stirring paddle, complete (Fig. 2 left)
- 6 Fixed paddle with guide
- 7 Mounting bracket
- 8 Support sleeve (4x)
- 9 Screw M6x16 (8x) / washer ST 6 (8x)

#### Order number / name:

544-32957-2 / REDESIGN-KIT:RESERVOIR 203-4/8 IN 15XLB0

#### Contents:

- 1 Reservoir, 15 liters with sealing insert and lid
- 2 Mounting ring
- 3 Transition ring
- 4 Clamp with bolt M8x20, nut M8, and washer (2x)
- 5 Stirring paddle, with deflection and magnet for low-level signal (Fig. 2 right)
- 6 Fixed paddle with guide
- 7 Mounting bracket
- 8 Support sleeve (4x)
- 9 Screw M6x16 (8x) / washer ST 6 (8x)



Cantents of retrafit kit

#### NOTE

The only difference between the two retrofit kits is the design of the stirring paddle (Fig. 2/5). The steps for the retrofit are the same for both.

## 2.5 Replacing the reservoir

#### NOTE

For the replacement, the pump should have no lubricant in it, or as little as possible.

To replace the reservoir, carry out the following steps in the order given.

#### Remove and clean the pump:

1. Thoroughly clean the pump and its attachments

- 2.Disconnect all the electrical connections to the pump:
  - First switch off the power supply to the system and secure the system to prevent it being switched back on (lock it out)
  - Disconnect all electrical connections by pulling the plugs out of the pump.

**3.**Remove the pump.

#### Remove the reservoir and the stirring paddle:

- **1.**Turn the reservoir lid counterclockwise to unscrew and remove it.
- **2.**If there is still lubricant in the reservoir of the pump, bring the pump into a horizontal position over a drip pan and remove the lubricant as much as possible.
- 3. Clamp the pump vertically in the holding fixture.

#### 

#### Risk of injury

If the holding fixture is not available, be sure to stabilize the pump first against possible twisting or slipping.

**4.**Insert the removal tool in the bayonet on the top side of the reservoir (Fig. 3).



Inserted removal tool

**5.**Use a screwdriver to counter the force on the transition ring, and then use the removal tool and the size 27 mm combination wrench to undo the reservoir counterclockwise (Fig. 4).



Removing the reservoir

- **6.**Lift the reservoir off the housing (Fig. 5 / 1) and empty any lubricant residue into the drip pan.
- **7.**Remove the residual lubricant on the stirring paddle and the intermediate base on the housing assembly.

#### NOTICE

### Property damage

**Do not reuse lubricant** Contaminants and air inclusions can result in failure of the pump. Dispose of the lubricant properly.

**8.**Removed the stirring paddle played by turning clockwise (left-hand thread) (Fig. 5 / 2).



Lifting off the reservoir /removing the stirring paddle

#### Remove the transition ring from the housing:

- **1.**Remove any lubricant residue on the male thread of the transition ring, to prevent the strap wrench from slipping.
- **2.**Place the strap wrench around the transition ring (Fig. 6 / 1) and then undo the transition ring counterclockwise by about  $60^{\circ}$  (Fig. 6 / 2). If necessary, use the arrow marking on the transition ring as a guide.



Removing the transition ring

3.Lift the transition ring off the housing.4.Properly dispose of all the removed parts.

#### NOTICE

Using removed parts Malfunction/leakage

We advise against reusing any removed parts as they might not function properly and might leak.

#### Preparations for installing the new reservoir:

- **1.**Unscrew and remove the lid (Fig. 7 / 1) from the new reservoir by turning counterclockwise.
- 2.Carefully remove the sealing insert (Fig. 7 / 2) from the reservoir.



Removing the lid and the sealing insert

- 3. Guide the fixed paddle down into the sealing insert.
- **4.**Manually turn the fixed paddle into the bayonet of the sealing insert until it is noticeably tight (Fig. 8).



Installing the fixed paddle in the sealing insert (final position)

**5.**Position the mounting ring with the locating lugs toward the rear side of the housing until the lugs are resting against the chamfers on the housing (Fig. 9).



Positioning the mounting ring

- **6.**Place the new transition ring with arrow marking (Fig. 10 / 1) on the pump housing, using the fill connection on the pump housing as a reference point if necessary.
- **7.**Place the strap wrench on the transition ring and tighten the ring by turning about  $60^{\circ}$  clockwise the (Fig. 10/2 = final position).



Installing the transition ring for the new reservoir

**8.**Ensure that the washer on the stirring paddle mount is still in its position (Fig. 11).



Washer for stirring paddle

**9.**Place the new stirring paddle on the thread of the stirring paddle mound and tighten it by manually turning counterclockwise (left-hand thread) (Fig 12).



Installing the stirring paddle

#### Install the new reservoir:

- **1.**Grease the transition ring shoulder and the inside of the lower end of the reservoir with Fuchs Renolit IPR 2 grease (Fig. 13 / 1).
- **2.**Bring the new reservoir down onto the transition ring and initially position it so that its entire circumference is flush on the O-ring (Fig. 13 / 2).
- **3.**Press down evenly on the reservoir until its entire circumference is in contact with the protruding edge of the transition ring (Fig. 13 / 3).



Fitting the reservoir

#### NOTICE

#### Damage Incorrect installation of the reservoir can result in leakage

When installing the reservoir, make sure the seal is correctly in place in the groove of the transition ring. If necessary, remove the reservoir again and repeat steps 2 and 3.

- **4.**Guide the clamp down over the reservoir (Fig. 14 / 1) until the clamp is resting on the mounting ring (it may be necessary to somewhat loosen or undo the clamping screw first).
- **5.**Align the clamping screw to the center of the rear side of the housing, and then tighten the clamping screw with a size 13 mm open-end wrench and a reversible ratchet with 13 mm socket (Fig. 14 / 2).



Installing the clamp

- 6.Coat four of the M6x16 screws with Loctite 274.
- **7.**Fasten the four support sleeves with the four M6x16 screws with one washer each on the underside of the mounting ring. Initially tighten the screws by hand only (Fig. 15).



Installing the support sleeves

**8.**Grease the sealing insert shoulder and the lower end of the fixed paddle with Fuchs Renolit IPR 2 grease (Fig. 16).



Greasing the sealing insert and fixed paddle

- **9.**Guide the fixed paddle with the sealing insert down into the reservoir (Fig. 17 / 1).
- **10.**Align the four fastening holes of the sealing insert based on the four support sleeves and then position the sealing insert so that its entire O-ring is flush on the upper edge of the reservoir.
- **11.**Press down evenly on the sealing insert until its entire circumference is completely in the reservoir. The fixed paddle should slide into the receptacle on the stirring paddle (Fig. 17 / 2).



Installing the sealing insert with fixed paddle

#### NOTICE

#### Prevent leakage

Check that the packing ring of the sealing insert is correctly in place.

- **12.** Coat the four remaining M6x16 screws with Loctite 274.
- **13.** First fasten the two front support sleeves with two M6x16 screws with one washer each from above on the top of the sealing insert (Fig. 18 / 1). Initially tighten the screws by hand only.
- **14.** Before you fasten the two rear support sleeves, first place the mounting bracket down on the sealing insert and align its holes with the fastening holes on the sealing insert.
- **15.** Fasten the two rear support sleeves with two M6x16 screws with one washer each from above, and tighten them initially by hand (Fig 18 / 2).



Installing the support sleeves and mounting bracket

**16.** Check that the support sleeves and mounting bracket are correctly aligned. The mounting surface of the bracket should be parallel to the rear wall of the pump housing (Fig. 19).

#### NOTICE

#### Damage to the support sleeves

Avoid deforming or bending the support sleeves. Make sure they are aligned straight, vertical, and as parallel as possible.



Checking the alignment of support sleeves and mounting bracket

**17.** Evenly tighten the M6x16 screws (8x) of the support sleeves crosswise with a torque wrench and a 10 mm socket (Fig. 20) by turning clockwise to a torque of 5  $\pm$ 0.5 Nm. If necessary, counter the force with a size 10 mm combination wrench.



Tightening the support sleeves

18. Screw the reservoir lid onto the sealing insert.

## 2.6 Initial filling via the fill connection

#### NOTE

For the initial filling, the pump should be standing upright on a stable flat surface.

#### See Figure 21

- 1. Place the pump upright on a stable flat surface.
- **2.**Unscrew and remove the protective cap (1) on the fill connection (2) by turning counterclockwise.
- 3.Connect the fill connections of the filling pump and the pump.
- **4.**Switch on the filling pump and fill the reservoir with lubricant up to just below the MAX marking **(3)**.
- **5.**Switch off the filling pump and disconnect the fill connections.
- **6.**Screw the protective cap (**1**) in clockwise direction back onto the fill connection (**2**) of the pump.



Initial filling via fill connection

# 2.7 Installing the pump in the lubrication system

#### NOTE

In addition to the subsequent work steps, please also observe the notes in the assembly instructions of the pump. Further observe the notes in the corresponding system documentation of the operator.

- 1.Reinstall previously removed attachments to the pump
- **2.**Install the pump at its original position in the lubrication system
- **3.**Install the connection ducts and hoses to the inlets and outlets of the pump
- 4.Re-establish all electrical connections to the pump
  - Verify that the power supply of the lubrication system is switched off
- Connect all electrical sockets and/or plugs to the pump
- Only now switch the power supply of the lubrication system on again.
- **5.**Then verify the proper functioning of the pump and the lubrication system

# 2.8 Marking and documenting the retrofitted pump

#### NOTE

Due to the retrofit, the designation and type identification code on the type plate no longer match the retrofitted pump and thus its condition on delivery. To avoid incorrect delivery in future when ordering spare parts, be sure to carry out the following measures:

**1.**Mark the date of the retrofit on the type plate fitted on the left side of the reservoir (Fig. 22 / 1).

2.Record the retrofit in the system documentation.



Marking the retrofitted pump

## 3. Delivery, returns, storage

## 3.1 Delivery

After receipt of the delivery, it must be inspected for any shipping damage and for completeness on the basis of the shipping documents. Immediately inform the transport carrier of any shipping damage. The packaging material must be preserved until any discrepancies are resolved.

## 3.2 Return shipment

Before return shipment, all contaminated parts must be cleaned. If this is not possible or practical, e.g. if it would impede fault detection in the case of complaints, the medium used must always be specified. In the case of products contaminated with hazardous substances as defined by GHS or CLP regulations, the safety data sheet (SDS) must be sent with the product and the packaging must be labeled in accordance with GHS/CLP. There are no restrictions for land, air, or sea transport. The choice of packaging should be based on the specific product and the stresses to be expected during transport (e.g., necessary anticorrosion measures in the case of shipment by sea). In the case of wooden packaging, the applicable import regulations and the IPPC standards must be observed. Required certificates must be included in the shipping documents. The following information, as a minimum, must be marked on the packaging of return shipments.



Marking of return shipments

## 3.3 Declaration of decontamination

If the product has come into contact with contaminants, the product must be carefully cleaned before being returned. Additionally, due to legal regulations and to protect our employees and operating equipment, we require a fully completed and signed "Declaration of decontamination."

## 3.4 Storage

#### The following conditions apply to storage:

- Dry, low-dust, vibration-free, in closed rooms
- No corrosive, aggressive substances at the storage location (e.g., UV rays, ozone)
- Protected against animals (insects, rodents)
- If possible, keep in the original product packaging
- Protected from nearby sources of heat or cold

- In the case of large temperature fluctuations or high humidity, take appropriate measures (e.g., heating) to prevent the condensation of water
- Before usage, check products for damage that may have occurred during storage. This applies in particular to parts made of plastic (due to embrittlement).

### 3.5 Storage temperature range

For parts not filled with lubricant, the permitted storage temperature is the same as the permitted ambient temperature range (see "Technical data").

# 3.6 Storage conditions for products filled with lubricant

For products filled with lubricant, the permitted storage temperature range is:

minimum	+ 5 °C	[+41 °F]
maximum	+ 35 °C	[+95 °F]

If the storage temperature range is not maintained, the following steps for replacing the lubricant may not lead to the desired result under certain circumstances.

## 3.6.1 Storage period up to 6 months

Filled products can be used without implementing additional measures.

## **3.6.2** Storage period between 6 and 18 months

#### Pump:

- Connect the pump to a power source
- Switch on the pump and run it until lubricant comes out of every outlet without air bubbles
- Disconnect the pump from the power source
- Remove and dispose of the lubricant that came out

#### Lines:

- Remove pre-installed lines
- Ensure that both ends of the line are open
- Fill the lines completely with fresh lubricant

#### Metering devices:

#### NOTE

Due to the large number of different metering devices, no universally valid statement can be made regarding the removal of the old lubricant and correct bleeding after filling with new lubricant. The instructions can be found in the technical documentation of the specific metering device used.

### 3.6.3 Storage period more than 18 months

To prevent faults, the manufacturer should be consulted before start-up. The basic procedure for removal of the old lubrication filling corresponds to that for storage periods between 6 and 18 months.



## 4. Cleaning

## 4.1 Basics

Cleaning should be carried out in accordance with the operator's own company rules, and cleaning agents and devices and the personal protective equipment to be used should likewise be selected in accordance with those rules. Only cleaning agents compatible with the materials may be used for cleaning. Completely remove any cleaning agent residue left on the product and rinse with clear water. Unauthorized persons must be kept away. Use signage to indicate wet areas.

## 4.2 Interior cleaning

The interior normally does not need to be cleaned. The interior of the product must be cleaned if incorrect or contaminated lubricant accidentally enters the product. Please contact our Service department.

## 4.3 Exterior cleaning

Do not allow any cleaning fluid to enter the interior of the product during cleaning.



If products have ultrasonic sensors, the active sensor surface must be cleaned with a cloth when it becomes contaminated.

## 5. Shutdown, disposal

## 5.1 Temporary shutdown

Temporary shutdowns should be done by a course of action to be defined by the operator.

## 5.2 Permanent shutdown, disassembly

Permanent shutdown and disassembly of the product must be planned properly by the operator and conducted in compliance with all applicable laws and regulations.

## 5.3 Disposal

The waste producer/operator must dispose of the various types of waste in accordance with the applicable laws and regulations of the country in question.

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