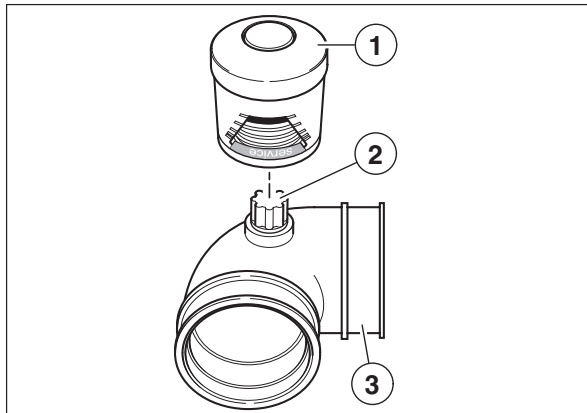
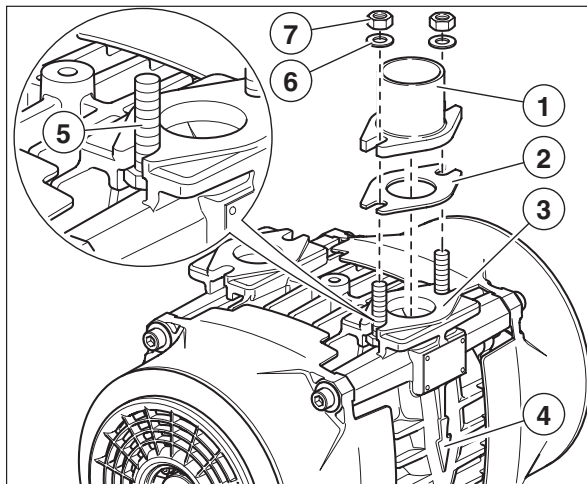


- Install intake air filter with mounting on the vehicle.



- Take off screw cap (2) at the rubber elbow piece (3) and screw in service gage (1).
- Put rubber elbow piece onto the hose connector fitting on the air filter casing and fasten with hose clamp.
- Insert an included pipe piece on the other side of the rubber elbow piece and fasten with hose clamp.  
(Install pipe piece on the vehicle.)



- Remove foil at the intake flange (3) of the compressor. Install hose connector fitting (1) and flange seal (2) with screws M10x40 (5), spring washers (6) and nuts (7) onto the compressor.

#### CAUTION

Always insert screw head into slot on the compressor as shown. An incorrect installation can damage the compressor.

#### NOTE

The intake side (the intake fitting) can be identified by the arrow marking (4) in the casing which points away from the flange on the respective side.

- Install intake line (spiral hose) in an as straight a line as possible on the vehicle and fasten the ends on the hose connector fitting as well as on the pipe piece using hose clamps.

#### NOTE

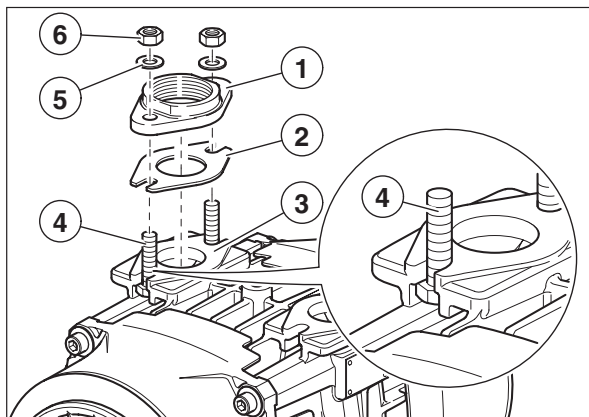
Keep intake hose as short as possible, shorten the hose if necessary.

- Install pressure line to the tank with safety and non-return valve (or combined safety and non-return valve) and if necessary also micro filter and relieve ball valve on the vehicle in accordance with Chapter 3.5.

#### WARNING

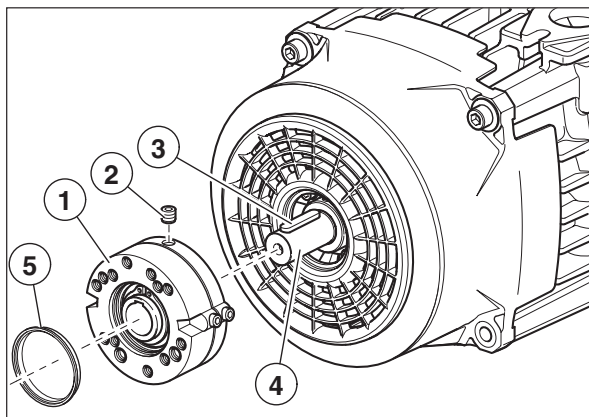
The length of the pressure line from the compressor to the safety valve may not exceed 1 meter.

It must be ensured that it is not possible for liquids from the tank to enter the pressure line and to reach the compressor.



- Remove foil at the pressure flange (3) of the compressor, attach pipe connection flange (1) of the pressure line with flange seal (2) and fasten with screws (4) M10×40, spring washers (5) and nuts (6) on the pressure flange.

#### SV120 D kit only:



- Install overload coupling with shear bolt (1, optional) or drive flange on the compressor drive shaft (4). Slide component over the feather key (3) on the drive shaft and secure hexagon-socket head bolt (2).

#### NOTE

The inner ring (5) in the overload coupling (1) can be taken out and inserted the other way around.

A switching of the inside/outside alignment enables the installation of the following DIN and SAE flanges on the coupling:

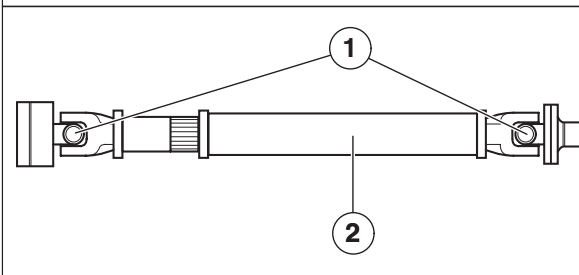
- DIN 100-6
- SAE 1100
- SAE 1310

- Screw in articulated shaft at the overload coupling as well as on the power take-off flange of the vehicle.

#### WARNING

Follow the instructions in Chapter 3.3.4 for the installation of the articulated shaft.

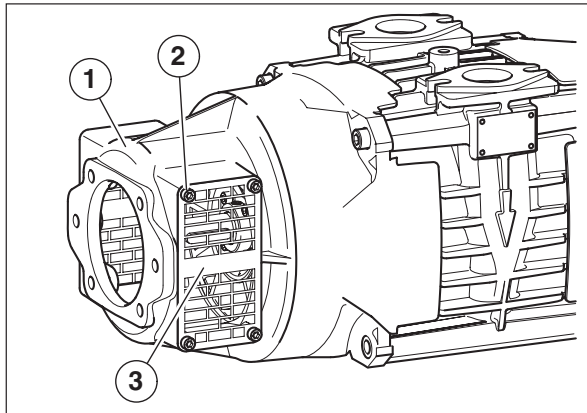
The cardan joints (1) of the articulated shaft (2) must point into the same direction.



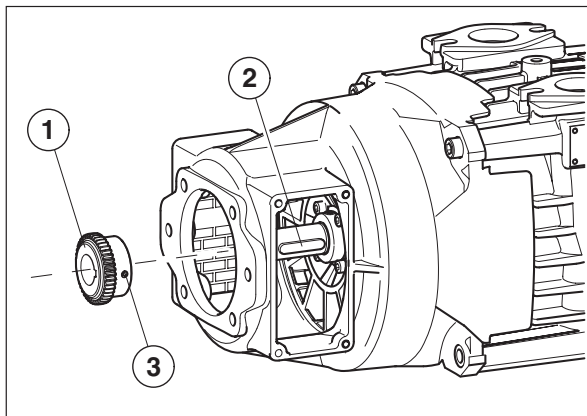
#### NOTE

Provide cover plate for the articulated shaft in accordance with accident prevention regulations if necessary.

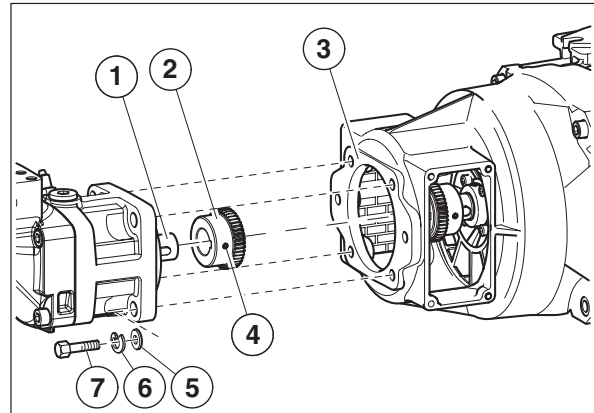
**SV120 H kit only:**



- Loosen screws (2) [4 pieces] at the drive cover (1) of the compressor and take of finger guard (3).



- Unscrew setscrew (3) of a hub (1) of the flexible coupling. Slide hub over feather key (2) onto the drive shaft and fasten with headless pin; initially only tighten headless pin into a finger-tight position.

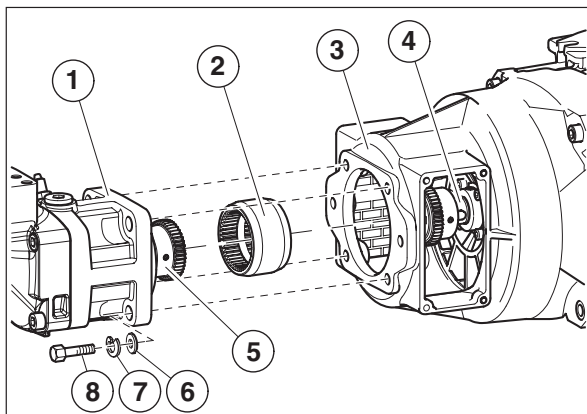


- Slide the second hub (2) of the flexible coupling onto the shaft (1) of the hydraulic motor and tighten headless pin (4) into a finger-tight position.
- Tentatively install the hydraulic motor with screws M12 (7), spring washers (6) and washers (5) on the drive cover (3) of the compressor.
- Measure space between the two hubs.
- If the measured space between the does not match the target value of 4 mm, move the hub(s) respectively and tighten the headless pins.

**NOTE**

The two hubs should be pushed onto the shafts, approximately the same length of the way.

- Uninstall the hydraulic motor again from the compressor covering.



- Place coupling sleeve (2) onto the hub of the compressor drive shaft (4) and install hydraulic motor (1) again onto the drive cover (3); at the same time push hub (5) onto the shaft of the hydraulic motor into the coupling sleeve (2). Cross-wise screw hydraulic motor with screws (8) [4xM12 or 2xM14], spring washers (7) and washers (6) into the threaded drill holes of the drive cover and tighten with the specified torque.

**Tightening torque:**

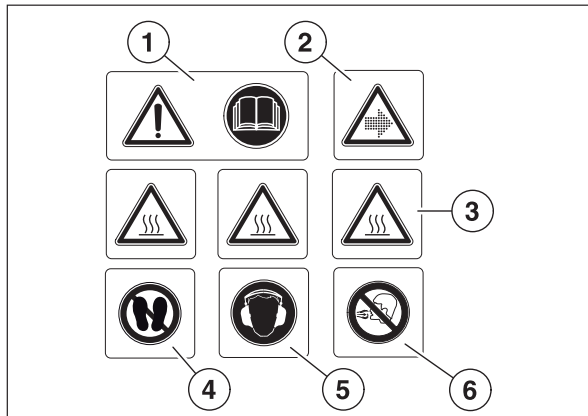
**(M12 8.8): 52 Nm / 38.4 lbf ft**

**(M14 8.8): 80 Nm / 59 lbf ft**

- Reinstall finger guard onto the drive cover.
- Install connecting lines of the hydraulic motor on the vehicle.

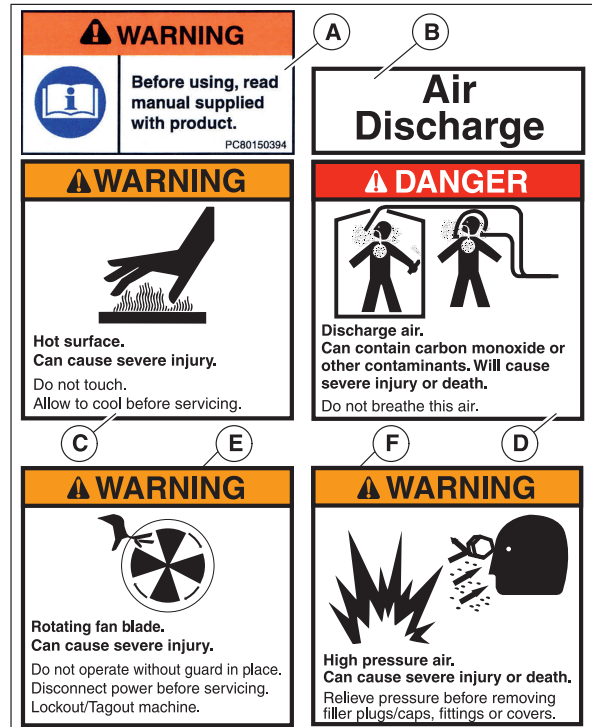
## 4 Safety labels

Sticker in compliance with ISO  
(European market)



- 1 Read and follow the safety notes and operating instructions before starting operation.
- 2 Pressurized air outlet/direction of flow
- 3 Burn hazard! Hot surface
- 4 Keep out
- 5 Wear hearing protection
- 6 WARNING! No breathable air

Sticker in compliance with ANSI  
(North-American market)



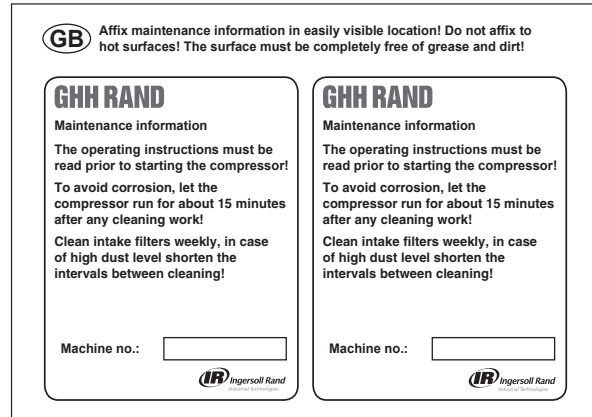
## Positioning of the stickers

Position the safety and maintenance notices as follows:

- Read Operating Instructions **(1/A)**: In the driver's cab right next to the control of the power take-off which starts the compressor.
- Exhaust air **(2/B)**: Look for optimal position in immediate proximity to drain line and pay attention to good visibility.
- Hot surface **(3/C)**: As close as possible next to the compressor casing, the drain sound suppressor and the drain line. Do not affix directly to hot surface.
- Do not step here **(4)**: As close as possible to the compressor casing so that it will not be used as an unintended stepping platform.
- Wear hearing protection **(5)**: Easily visible on the vehicle frame, close to the installed compressor.
- No breathable air **(6/D)**: On each line outlet of the system where exhaust air can be extracted.
- Rotating ventilation panel **(E)**: At the plastic covers and at the aluminum drive cover (only hydraulic drive) of the compressor step.
- Pressurized air **(F)**: If possible on any feature in the pressure line behind the non-return valve.

### NOTE

The areas that are to receive the stickers must be completely free of grease and dust!



- Apply service notice (in the for the operator local language version)!
- Attach the second maintenance instruction where it can be clearly seen, e. g. in the driver's cab.
- Enter machine no. with waterproof pen.

## 5 Initial commissioning

### 5.1 General

The first start of operation of the compressor kit takes place at the site of the system installer.

It includes the rotation direction control and a test run with pressure test.

If in exceptional cases the first start of operation is carried out by the customer, the following work has to be carried out:

Work	See Section
• Rotation direction control	3.3.1
• Test run	5.2

#### NOTE

The further operation of the completed compressor exclusively falls under the responsibility of the operator.

#### WARNING

It is absolutely necessary to adhere to the operating values of the rotary valve compressor specified in Chapter 1.6 Technical data of SV120 rotary valve compressor.

### 5.2 Test run

#### WARNING

Prior to the test run check all safety-relevant screw connections for a tight fit.

Vehicle motors with EDC control must potentially be re-parameterized prior to the start of operations.

The rotation direction, the rotational speed and the flawless function of the safety equipment must be checked during the test run.

Only start compressor without any load. Never go into operation against a potentially existing counter pressure.

#### Rotation direction control

When look onto the compressor drive shaft, the compressor step must turn corresponding to the arrow marking on the compressor casing (see Chapter 3.3.1).

#### Compressor drive rotation speed

The rotational speed range of the rotary valve compressor stated in the technical data must not be exceeded or undercut.

#### Reliable rotational speed range of the rotary valve compressor:

SV120	
Min.	1000 min <sup>-1</sup> /rpm
Max.	1800 min <sup>-1</sup> /rpm

#### WARNING

Ensure that the compressor is only operated within its permissible rotational speed range.

### 5.3 Switching Compressor Off

#### CAUTION

Do not turn compressor off if there is counter pressure!

If there is counter pressure, take appropriate measures to reduce pressure before turning compressor off.

#### CAUTION

Do not turn vehicle motor off while power take-off is running.

---

## 6 Repair/service

### 6.1 General

GHH RAND points out that damage on the seal will void the warranty.

### 6.2 Personnel and qualification

The repair and service work on the compressor / compressor kit described in this Chapter may only be carried out by trained or educated personnel who are familiar with the applicable safety regulations.

The staff of the Service Center or of GHH RAND is also available to carry out this work.

### 6.3 Safety

Adhere to all safety instructions to prevent injuries and damage to the compressor / compressor kit.

#### **WARNING**

The rotor as well as the feather key groove may have sharp edges.

As a prevention against injuries caused by cuts, wear protect gloves while carrying out respective work.

Turn vehicle motor off prior to work relating to the dismantling / installation, remove key and secure vehicle against rolling away; use wedges.

#### **CAUTION**

Ensure that no foreign parts enter the compressor or remain in the compressor, because this may damage / destroy the compressor.

### 6.4 Repair time and scope

If it is determined during a scheduled inspection of the separation valves (see Operating Instructions for SV120 D/H), that the separation valves must be replaced, the compressor requires repair.

In addition to the separation valves, the shaft bearings and the shaft seals will also be replaced during the repair.

#### **NOTE**

The required replacement parts come together in one repair kit which can be obtained as a replacement part from GHH RAND or through authorized service partners.

The tools that are required to carry out the repair work are listed in Chapter 6.7.

#### **WARNING**

The continued operation of the compressor with worn separation valves may damage the rotor and the compressor casing; this in turn will lead to an increased wear and tear / a shortened lifespan of new separation valves.

An insufficient or neglected cleaning of the parts that are to be reinstalled can also lead to an increased wear and tear and therefore to a premature failure of the compressor.

In conjunction with broken separation valves, the following additional work must be carried out:

- Cleaning of the air filter / replacement of the air filter cartridge
- Cleaning of the intake and pressure lines
- Check and potentially replacement of safety and non-return valve.



## 6.5 Preparatory work

Prior to the dismantling of the compressor from the vehicle or the reinstallation of the compressor on the vehicle, the compressor as well as the area surrounding the vehicle must be cleaned to prevent the entry of dirt/foreign particles into the compressor.

### WARNING

Compressor and pressure line become hot. Let parts cool down prior to working on or cleaning the compressor.

If a pressure washer is used, make sure to keep a distance of at least 0.5 m/1.7 ft.

While cleaning the outside and the inside with pressurized air, ensure that flying dust is not breathed in; remove more extensive accumulation of dust by washing the outside and the inside or by wiping it off with a moist rag.

### CAUTION

Do not use cleaning products/ solutions with a high PH level (strong alkaline solution) - corrosion hazard. Always rinse with clean water afterwards.

## 6.6 Repair work

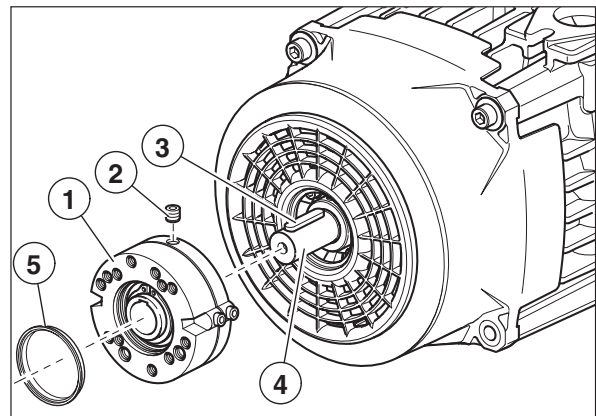
### 6.6.1 De-installation / dismantling

- Deinstall the compressor from the vehicle and place on a work bench.

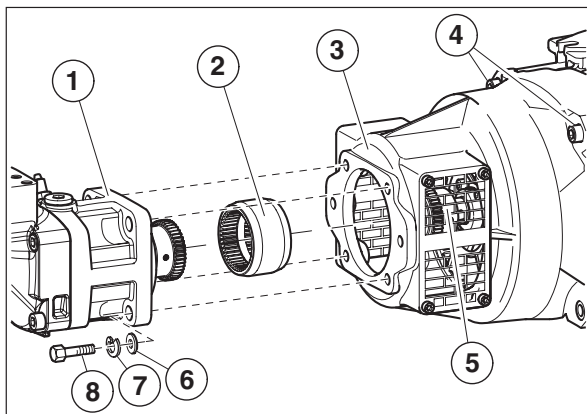
### WARNING

Do not hold / lift the compressor by the plastic covers that are attached to the sides.

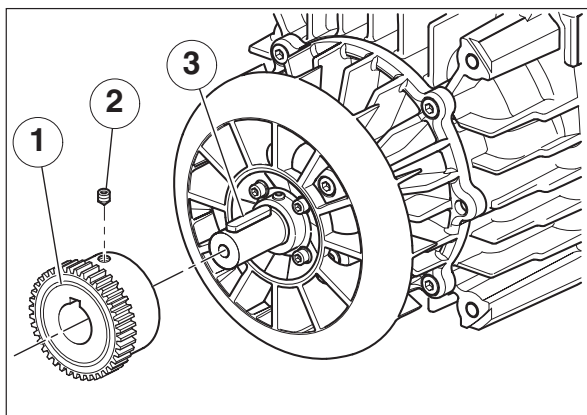
- Loosen fastening screws of the fastening plate (or the footers) and take off fastening plate (footers).



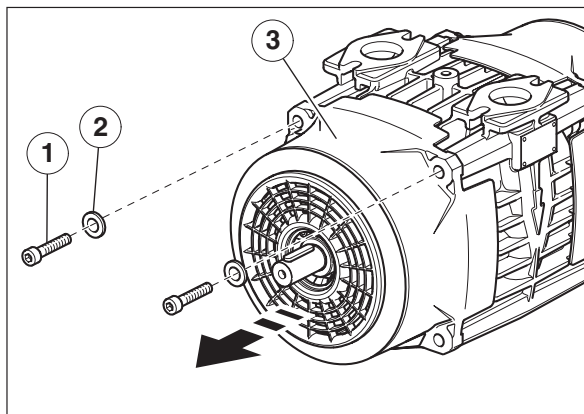
- Only SV120 D:  
Loosen the headless pin (2) for the fastening of the overload coupling (1) (or the drive flange) and pull of overload coupling with inner ring (5) (or drive flange) from the the compressor drive shaft (4). Take feather key (3) out of the groove in the compressor shaft.



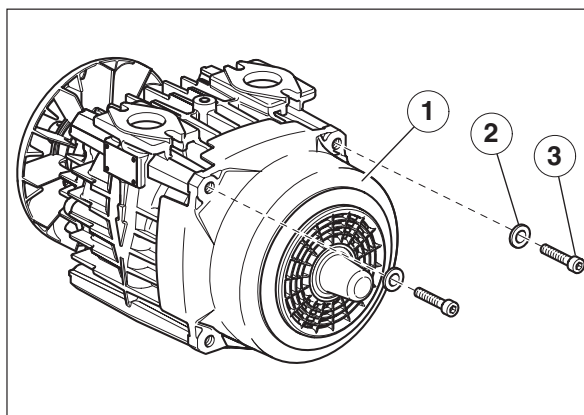
- Only SV120 H:  
Loosen fastening screws (8) and together with spring washers (7) and disc washers (6) take them off the hydraulic drive (1).  
Take hydraulic drive off the drive cover (3) and put aside.  
Pull coupling sleeve (2) off the hub (5) on the compressor shaft.
- Only SV120 H:  
Loosen the two remaining fastening screws (4) of the drive covering (3) and pull the drive covering in longitudinal direction off the compressor.



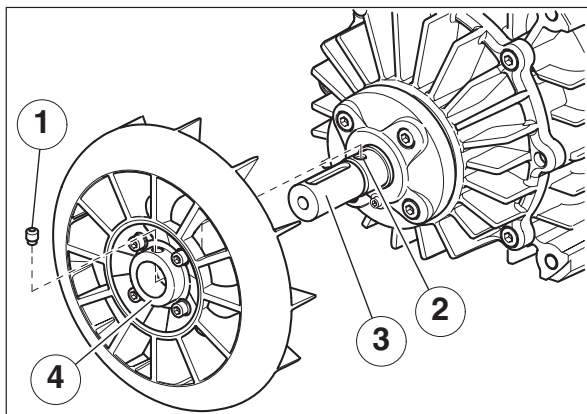
- Only SV120 H:  
Loosen headless pin (2) of the coupling hub (1) on the compressor shaft and pull coupling hub from the compressor shaft.  
Take feather key (3) out of the groove in the compressor shaft.



- Only SV120 D:  
Loosen fastening screws (1) and take them off the drive covering (3) together with disc washers (2). Pull drive covering from compressor in longitudinal direction of the shaft.



- Take off cover (1) on the side opposite to the drive. Loosen screws (3) and take them off the cover together with disc washers (2). Pull cover from compressor in longitudinal direction of the shaft.

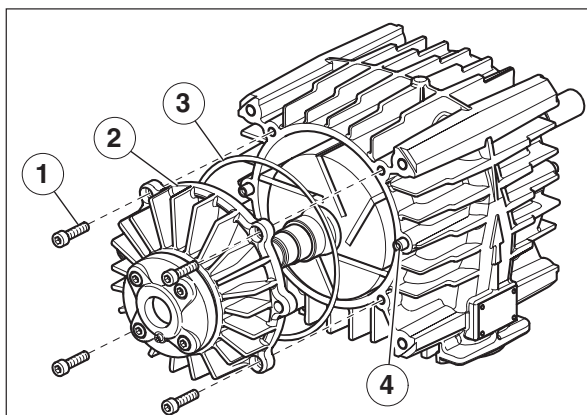


- Unscrew headless pin (1) from the fan hub (4) and pull fan hub off the compressor shaft (3) together with installed fan wheel.

#### NOTE

Due to the counterbore (2) in the rotor shaft, it may not be possible to pull the fan hub off the shaft if the headless pin (1) is only slightly loosened.

- Put compressor on the side with the connecting flanges.



- Loosen fastening screws (1) of the side cover (2) on one compressor side and carefully pull the side cover in longitudinal direction to the rotor shaft off the alignment dowel pins (4) in the compressor casing.  
Remove and dispose of O-rings (3).

#### CAUTION

When pulling the side cover off, carefully place the rotor into the casing, do not let it drop! The surface of the casing drilling may otherwise get damaged.

#### NOTE

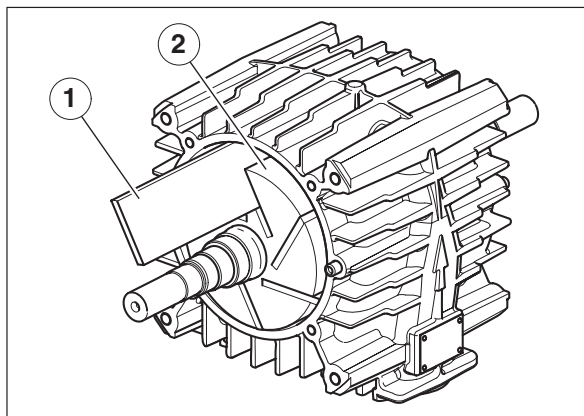
During the subsequent reassembly, install the side again on the respective side; if necessary mark the side cover.

#### NOTE

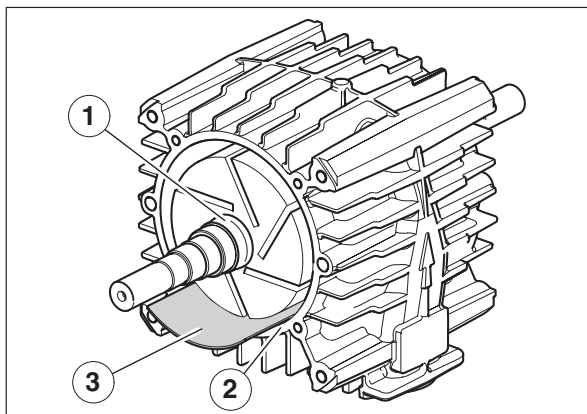
To loosen a tight-fitting side cover, you may use a rubber hammer to lightly tap against the side of the side cover.

The 2 cylinder pins (4) ensure that the side covers cannot be attached on the wrong side during the installation.

- Take off second side cover off the casing as described above.



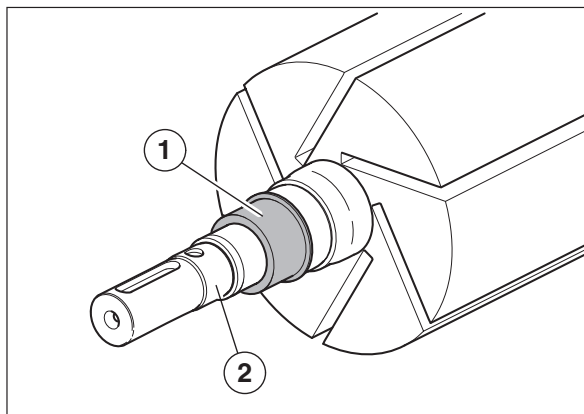
- Pull out separating valve (1, total of 6 units) out of the slots in the rotor (2).



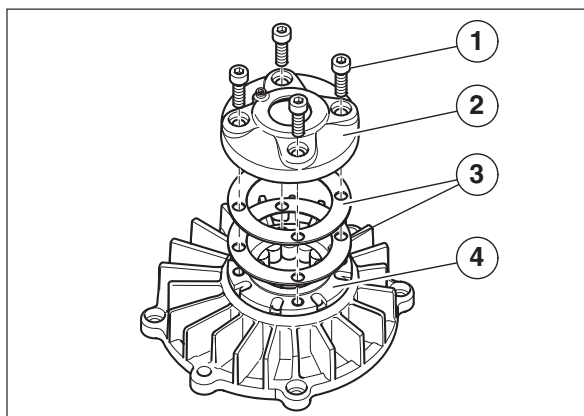
- Carefully lift rotor (1) and insert paper or something similar (3) between the rotor and the casing (2); ensure that the paper covers the entire length of the casing.
- Carefully lift rotor, take it out of the casing and place it on a clean surface. Remove paper from the casing.

#### CAUTION

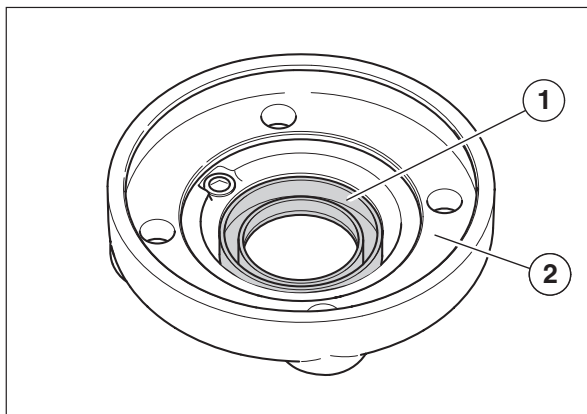
When lifting the rotor out of (back into) the case, ensure that the rotor does not touch the casing.



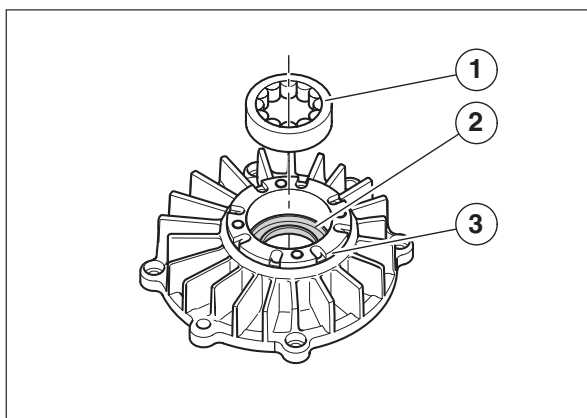
- Briefly heat up the inner ring of the bearing (1) with a burner on both sides of the rotor shaft (2) and immediately thereafter pull it off the rotor shaft while wearing an appropriate protective glove.  
Dispose of bearing ring.
- Carefully clean rotor.



- Take off bearing cover from both side covers: Loosen screws (1) and bearing cover (2) as well as shim ring(s) (3) from the side cover (4). Dispose of dismantled shim rings.



- Remove and dispose of rotary shaft seal (1) from the two bearing covers (2).

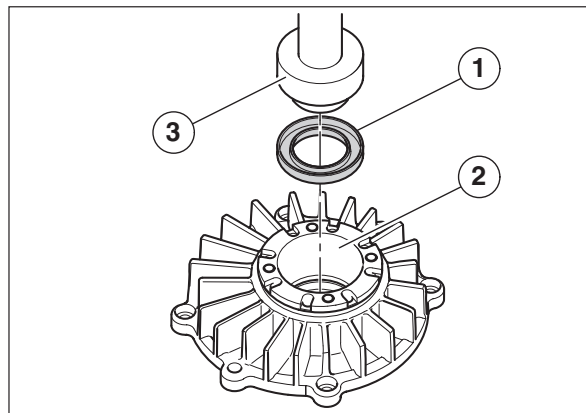


- Remove and dispose of exterior bearing ring including rolling element (1) as well as rotary shaft seal (2) from the two side covers (3).
- Carefully clean compressor casing, rotor as well as side cover and bearing cover.

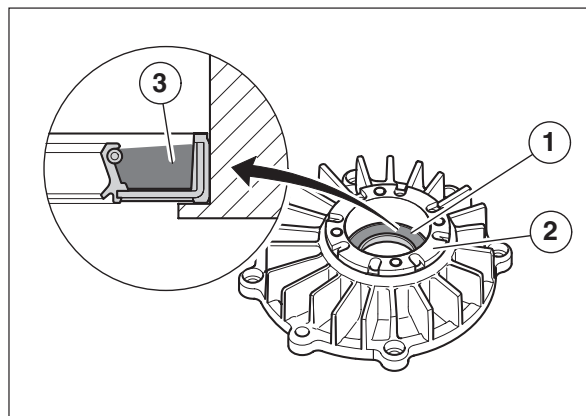
#### CAUTION

An insufficient or neglected cleaning of the parts that are to be reinstalled can lead to an increased wear and tear and therefore to a premature failure of the compressor.

### 6.6.2 Assembly / installation

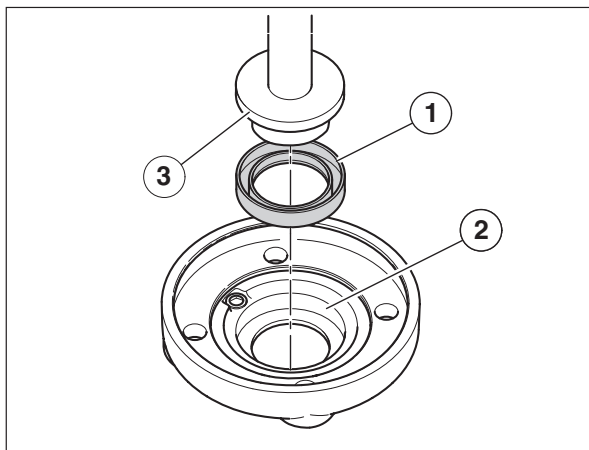


- Insert rotary shaft seal (ø45/62×7) (1) onto a respective installation pin (3) and afterwards push it into the side cover (2) as shown.

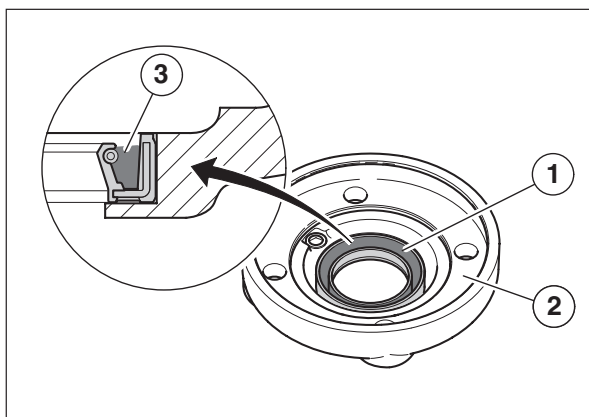


- Fill inside space of the rotary shaft seal (1, see magnifying glass) in side cover (2) with specified grease (3).

**Grease: SV120 Bearing Grease**

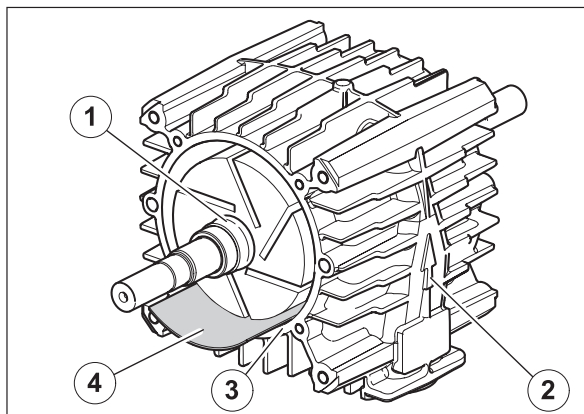


- Slide rotary shaft seal (ø30/42×6) (1) onto a respective installation pin (3) and then push it into the bearing lid (2) as shown.



- Fill interior room of the rotary shaft seal (1) in the bearing cover (2) with a specific grease (3).

**Grease: SV120 Bearing Grease**



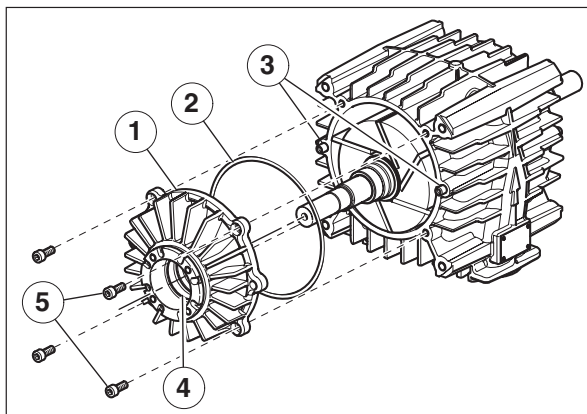
- Place paper or similar (4) place into the compressor casing (3); ensure that the entire length of the casing is covered with paper.
- Carefully place rotor (1) on the paper in the compressor casing. Ensure that the rotation direction of the rotor matches the arrow (2) on the casing; if necessary place rotor in the casing in opposite direction.

#### CAUTION

The fitted key slot in the shaft has sharp edges. Wear appropriate protective gloves.

- Lift the rotor slightly and remove paper or similar with any traces. Carefully put down rotor.





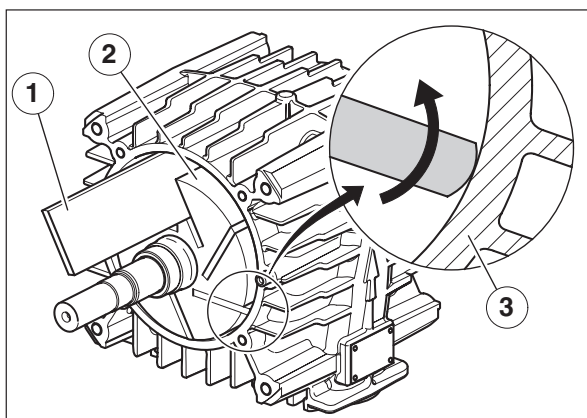
- Insert O-ring (2) on one side into the groove in the side cover (1) and carefully slide side cover with installed shaft seal (4) over the rotor shaft; use a respective cone shaped sleeve. Place side cover onto the alignment pins (3) on the casing and fasten to the casing with screws M8 (5).

**Tightening torque (M8x20 10.9):**  
28 Nm/20.7 lbf ft

#### CAUTION

Ensure that the seals are clean during the installation.

Side covers must be reinstalled on the original casing side.



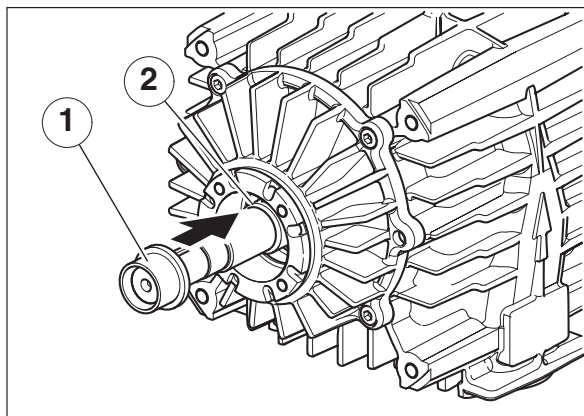
- On the other compressor side, insert new separating valves (1) into the grooves in the rotor (2); ensure at the same time that the slanted edge points to the casing and that the sharp edge points in rotor direction (see magnifying glass)

#### CAUTION

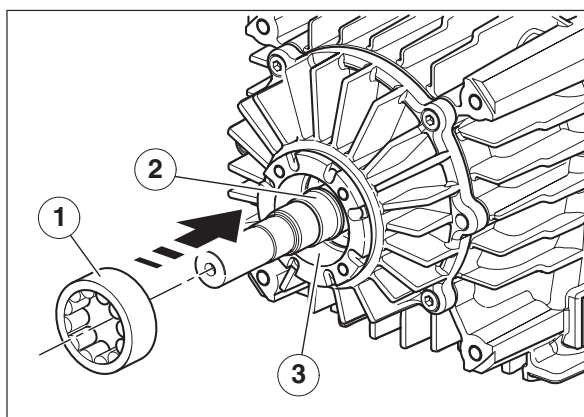
Prior to inserting the separating valve into the rotor, if necessary clean separating valve from attached dirt/grease that are a result from touching them.

Only touch separating valves with clean fingers at the corners.

- Install second side cover as previously described.



- Shrink fit new bearing inner rings onto the rotor shaft. Warm bearing interior rings (1) to 120°C/248°F. While wearing an appropriate protective glove quickly push bearing rings with the smooth side toward the rotor until they sit flush (2) on the rotor shaft. Wait a few seconds before letting go so that the bearing ring will no longer be able to move.

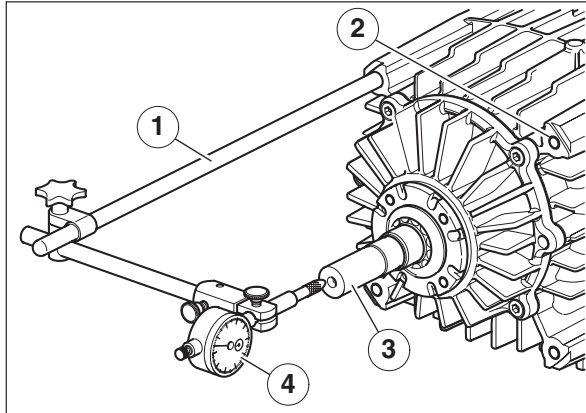


- Insert bearing exterior ring (1) on both sides into the side cover (3), while carefully pushing the rolling elements onto the interior ring (2).

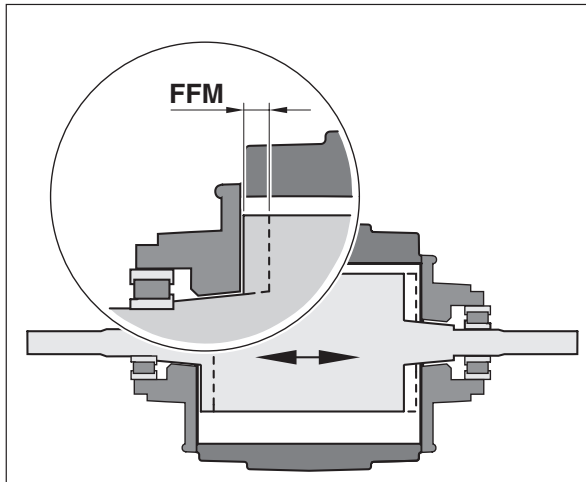
### 6.6.3 Measuring / calibration of the bearing float

#### NOTE

Only carry out float measuring with cold compressor and grease-free bearings.

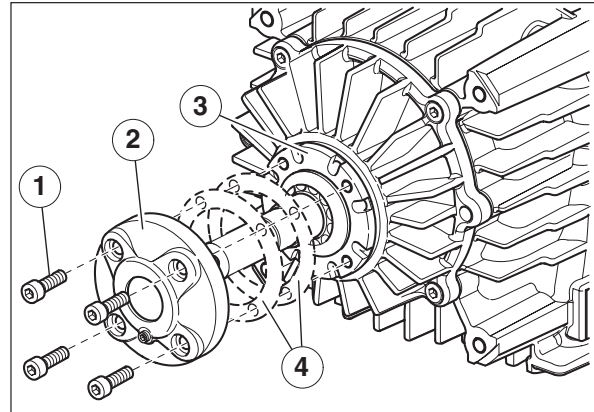


- Screw measuring stand (1) into a threaded drill M10 (2) for the side covers and place sensors of the dial gage (4) onto the end of the rotor shaft (3).
- Push rotor shaft fully against the side cover on one side and set dial gage to zero.
- Push rotor shaft onto the other side until it sits flush on the side cover and record the value "free float measured" FFM; the value must fall in to the range of 0.49 to 0.59 mm.



#### Example:

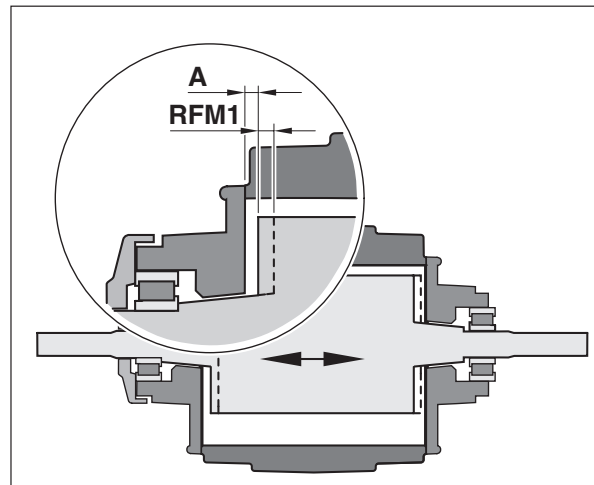
Measured free float (FFM) = 0.540 mm



- Install bearing cover (2) on one side with screws M8x20 (1) onto the side cover (3); at this time do **not** insert shim rings (4) yet!

**Tightening torque (M8x20 10.9):**  
28 Nm/20.7 lbf ft

- Remaining axial tolerance RFM1 (Remaining Float Measured) as previously described. Record measured value.



#### Example:

Remaining float measured (RFM1) = 0.320 mm

The difference between free float and the remaining float is the fixed float (minimal spacing A) between rotor and side cover.

$$A = \text{FFM} - \text{RFM1}$$



The float should fall into the range between 0.150 to 0.180 mm and can be adjusted by respective shim rings between bearing cover and side cover.

#### NOTE

The use of shim rings increases the spacing between the bearing cover and the side cover, the minimal spacing between the rotor and the side cover is therefore reduced by the same value.

#### Example:

Spacing  $A = 0.54 - 0.32 \text{ mm} = 0.22 \text{ mm}$

To set the spacing between the rotor and the side cover to the target value of 0.15 to 0.18 mm, you therefore need to use shim rings with a total thickness of 0.04 to 0.07 mm.

#### NOTE

Select shim rings so that the required thickness is achieved with the least number of shim rings. No more than 3 shim rings should be used on one bearing cover.

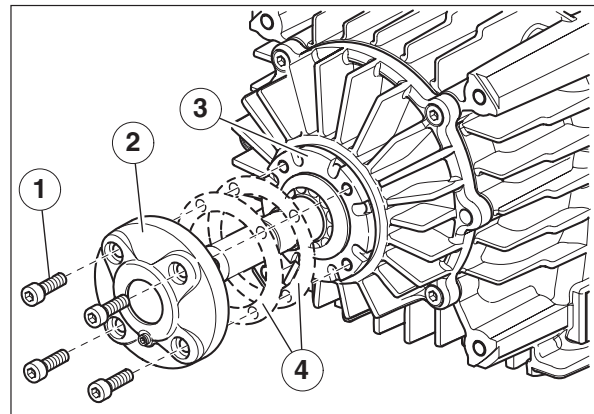
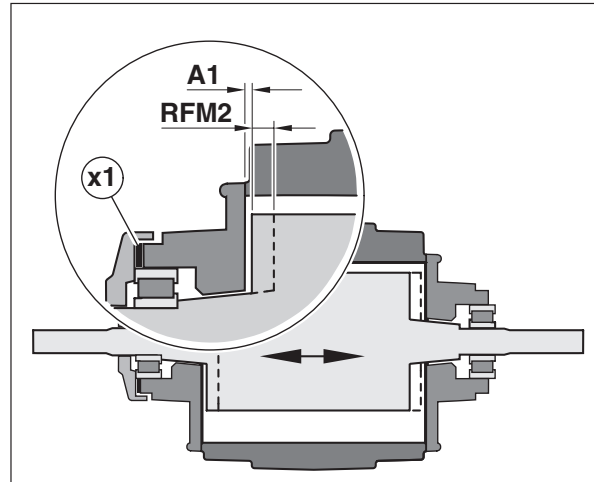
The shim rings that came with the delivery feature the following thickness: 0.05 / 0.08 / 0.13 / 0.25 mm

#### Example:

A shim ring with a thickness (=X1) of 0.05 mm is used.

The spacing  $A_1$  (= Spacing 1st side after shim ring installation) is therefore reduced by 0.05 mm and is therefore set to

$A_1 = A - X_1 = 0.22 \text{ mm} - 0.05 \text{ mm} = 0.17 \text{ mm}$ .  
(This corresponds with the target range.)



- Loosen screws (1) and take off bearing cover (2). Reinstall bearing cover with the determined shim ring(s) (4) on the side cover (3).

The remaining float  $RFM_2$  after the installation of the bearing cover and the shim ring(s) is increased by the implemented thickness of the shim rings.  
 $RFM_2 = RFM_1 + A_1$

#### Example:

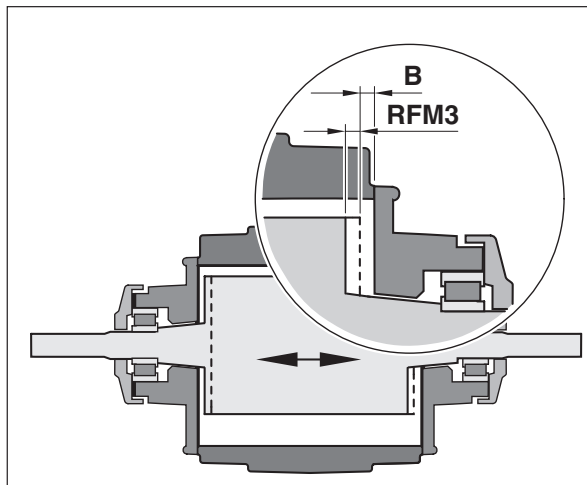
Remaining float  $RFM_1$  previously: 0.32 mm;  
utilized shim ring thickness  $X_1$ : 0.05 mm;  
remaining float  $RFM_2$ :

$$RFM_2 = 0.32 \text{ mm} + 0.05 \text{ mm} = 0.37 \text{ mm}$$

- Install second bearing cover on the opposite side without shim rings, tighten fastening screws with specified torque.

**Tightening torque (M8x20 10.9):**  
**28 Nm/20.7 lbf ft**

- Measure and record remaining axial float of the rotor shaft after installation of the second bearing cover (= RFM3).



The difference from RFM2 (without installed bearing cover) and the measured value for RFM3 is the minimal spacing between rotor and second bearing cover B.

$$B = \text{RFM2} - \text{RFM3}$$

**Example:**

value float RFM2: 0.37 mm;

measured float RFM3: 0.13 mm

spacing B (2nd side) therefore:

$$B = \text{RFM2} - \text{RFM3} = 0.37 \text{ mm} - 0.13 \text{ mm} \\ = 0.24 \text{ mm}$$

To set the spacing B of the rotor to the side cover on the second side to the target value of 0.15 to 0.18 mm, shim rings have to be used with a strength of 0.06 to 0.09 mm.

**NOTE**

The shim rings that came with the delivery feature the following thickness: 0.05 / 0.08 / 0.13 / 0.25 mm

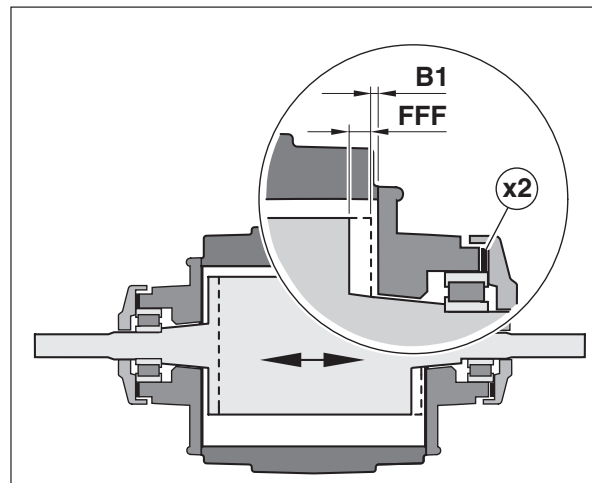
**Example:**

A shim ring with a thickness (=X2) of 0.08 mm is used.

The spacing B1 (= Spacing 2nd side after shim ring installation) is therefore reduced by 0.08 mm and is therefore set to

$$B1 = B - X2 = 0.24 \text{ mm} - 0.08 \text{ mm} = 0.16 \text{ mm}$$

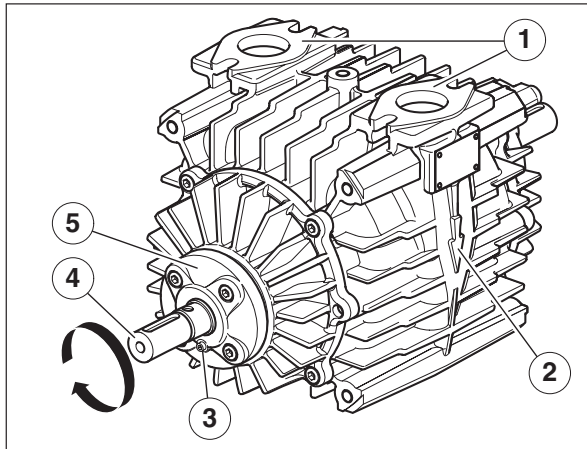
(This corresponds with the target range.)



- Unscrew second bearing cover and reinstall it on the side cover with the determined shim rings.
- Measure axial float "Fixed Free Float" (FFF: Fixed Free Float) and check whether the float falls into the target area.

**Target value "Fixed Free Float":**  
**0.19 to 0.35 mm**

#### 6.6.4 Final work



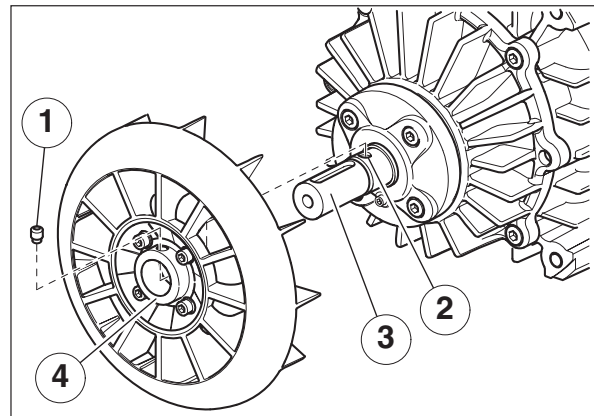
- Turn compressor around (the connecting flanges (1) must point upwards). Tape / cover connecting flanges to prevent that dirt or something similar enter the compressor.
- Check flexibility of the separating valve:  
Slowly turn shaft in the specified rotation direction - see arrow (2) and listen whether you can hear 6 "clicking sounds" with a full turn of the shaft.  
(The clicking occurs the the separating valves hit the casing when the separating valves slide down from the rotor slots.)
- Unscrew locking screw (3) on both compressor sides and through the opening pressure fit 8 cm<sup>3</sup> of the specified grease while turning the shaft (4) to achieve an even filing of the ball bearing.

**Grease: SV120 Bearing Grease**

#### CAUTION

Do not fill more than the specified amount of grease into the bearings, because it may otherwise lead to a failure of the bearing due to an excessive warming of the bearings. Use a suitable measuring device to determine the exact filling amount of grease.

- Fit locking screws with screw retention (e.g. Loctife 243, Loxeal 55.03 or similar) and screw them back into the bearing cover (5).



- Insert fans with fan hubs (4) onto the shaft (3) on both sides and position them so that the headless pin (1) comes to rest on the counterbore (2) in the shaft when it is screwed into the fan hub. Tighten headless pin.
- Install covers back into the original position / orientation to the connection flanges (see Chapter 6.6.1), pay attention to the correct rotation direction at the free shaft end. Do not screw in screws to attach the fastening plate or footers yet.
- Re-insert feather key into the rotor shaft and install the drive flange / overload coupling (SV120 D) or coupling hub (SV120 H) onto the compressor shaft.

- Install compressor on the vehicle and attach drive shaft or hydraulic drive on the compressor.

#### CAUTION

Only SV120 H:  
When the hydraulic drive is reattached to the compressor, the spacing of the hubs of the flexible coupling must be checked again and set to the specified volume, see Chapter 3.6.

- Install intake and pressure line with new flange seals on the compressor.

#### CAUTION

Only the non-electricity conductive flange seals that come with the repair kit may be used on the compressor flanges - risk of corrosion!

#### NOTE

After the repair and the reattachment on the vehicle the proper function of the compressor has to be checked and the connections have to be checked for leaks in a test run.

## 6.7 Required tools

The tools required for the service / repair of the SV120 rotary valve compressor can be found in the following table.

Pos.	Name
1	Installation pin Ø 30/42 mm
2	Installation pin Ø 40/62 mm
3	Grease volume measuring device

You can obtain these tools from GHH RAND if necessary.

For that please contact GHH RAND or a GHH RAND service partner.

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## 7 Replacement parts and ordering

The components required for the repair of the rotary valve compressor (bearing, separating valve, sealings, O-rings and shim rings) are combined in a special repair kit.

This kit includes all components that are required for a new bearing and/or sealing including the replacement of the separating valves. The required special grease must be ordered separately.

Name	GHH RAND order number
SV120 repair kit	C23523012
SV120 Bearing Grease	C23537509

The address or telephone number for ordering replacement parts can be found on the last inside cover of this instruction.

## Service

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Max-Planck-Ring 27  
46049 Oberhausen, Germany

SILU Service Hotline	Tel. (+49) 208 / 99 94 - 177
Service	Tel. (+49) 208 / 99 94 - 170
Spare parts	Tel. (+49) 208 / 99 94 - 171
	Fax (+49) 208 / 99 94 - 179
E-Mail	info_ghh-rand@irco.com
Internet	www.ghhrand.com

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