BSD® Torsionally Stiff Shaft Coupling
Type Modulflex®, Series 9XXX

Operating Instructions
BA 9XXX-000 EN 06/2015 (Rev. 2)
Replacement for operating instructions 92 900 1

REXNORD | BSD

BSD® Torsionally Stiff Shaft Coupling Type Modulflex®, Series 9XXX

Operating Instructions

BA 9XXX-000 EN 06/2015 (Rev. 2)

Translation of the original operating instructions in German language

Replacement for operating instructions 92 900 1

Rexnord Antriebstechnik
Zweigniederlassung der
Rexnord GmbH Betzdorf

Postfach 103252
44032 Dortmund
GERMANY

www.rexnord.eu

Notes and symbols in these operating instructions

Note: The term "operating instructions" will in the following also be referred to as "instructions" or "manual".

Legal notes

Warning notes

These instructions include notes which must be observed for your personal safety and for preventing material damage. Notes with regard to your personal safety are marked with a warning triangle, notes for preventing material damage only with a "STOP" sign.

WARNING! Imminent personal injury!

The notes indicated by this symbol are given to prevent personal injury. Disregarding these notes may result in serious injury or death.

WARNING! Imminent damage to the product!

The notes indicated by this symbol are given to prevent damage to the product. Disregarding these notes may result in material damage.

WARNING! Hot surfaces!

The notes indicated by this symbol are made to prevent risk of burns due to hot surfaces and must always be observed. Disregarding these notes may result in light or serious injury.

USEFUL INFORMATION!

The hints and pieces of information marked with this symbol are to be observed as general information on proper operating.

Where there is more than one hazard, the warning note for whichever hazard is the most serious is always being used. If in a warning note a warning triangle is used to warn of possible personal injury, a warning of material damage may be added to the same warning note.

Qualified personnel

The product or system to which these instructions relate may be handled only by persons qualified for the work concerned and in accordance with applicable safety standards and with the instructions relating to the work concerned, particularly the safety and warning notes contained in those instructions and standards. Qualified personnel must be specially trained and have the experience necessary to recognize risks associated with these products or systems and to avoid possible hazards.

Intended use of Rexnord products

Observe the following:

Rexnord products must be used only for the applications provided for in the catalogue and the relevant technical documentation. If products and components of other suppliers are being used, they must be recommended or approved by Rexnord. Fault-free and safe operation of the products require proper transport, storage, erection, assembly, installation, initial start-up, operation and maintenance. The permissible ambient conditions must be adhered to. Notes in the relevant documentations must be observed.

Trademarks

All designations indicated with the registered industrial property mark ® are registered trademarks of Rexnord Antriebstechnik or Rexnord Corporation resp. Other designations used in these instructions may be trademarks the use of which by third parties for their own purposes may infringe holders' rights.

Exclusion of liability

We have checked the content of the instructions for compliance with the hard- and software described. Nevertheless, variances may occur, and so we can offer no warranty for complete agreement. The information given in these instructions is regularly checked, and any necessary corrections are included in subsequent editions.

Note on the EC machinery directive 2006/42/EC

Rexnord BSD couplings are to be considered as components in the sense of the EC machinery directive 2006/42/EC. Accordingly Rexnord Antriebstechnik issues a declaration of incorporation. Information on safe fitting, startup and operation can be found in these instructions; in addition the warning notes herein must be observed.

TABLE OF CONTENTS

1. SAFETY AND GENERAL NOTES

1.1 General notes

BSD MODULFLEX shaft couplings are designed to accommodate inherent misalignment while transmitting the power and torque between the connected shafts. According to their specified capacity flexible shaft couplings compensate for unavoidable alignment faults and misalignments which occur during operation. The lesser alignment faults during installation, the higher compensation capacity, lifetime, and smooth running in service.

These instructions are intended to help you install and maintain your BSD Modulflex coupling. Please read these instructions prior to installing the coupling, and prior to maintenance works on the coupling and connected equipment. Keep these instructions near the coupling installation and available for review by maintenance personnel.

Installation by skilled personnel only. The assembly drawing has to be in hand of the customer/user at installation site.

1.2 Safety instructions

Rotating power transmission products are potentially dangerous! It is the responsibility of the customer/ user to provide proper protection in compliance with applicable safety standards, relative to the type of equipment, and to operate power transmission elements exclusively within their predetermined applications and their specified application limits.

Safety should be a primary concern in all aspects of coupling installation, operation, and maintenance. Because of the possible danger to person(s) and/or property, from accidents which may result from improper use or installation of these products, it is extremely important to follow the proper selection, installation, maintenance and operational procedures. All personnel involved in the installation, service, operation, maintenance, and repair of this coupling and the connected equipment must read, understand, and comply with these operating instructions.

Proper lockout/tag out procedures should be followed to safeguard against unintentional starting of the equipment. Do not make contact with the coupling when it is rotating and/or in operation. All work on the coupling should be performed when the coupling is at rest under no load. Do not start the rotating shaft without securing the coupling components.

Lifting gears and loaded equipment for handling the coupling or components must be suitable for the coupling weight.

If the equipment is started with only a hub attached, the hub must be properly mounted and ready for operation, with the key and set screw (if included) fastened. When the full coupling assembly is started, all fasteners and hardware must be completely and properly secured.

Do not run the coupling with loose fasteners. Do not operate the coupling if there is any visible damage.

In addition to any generally prescribed personal safety equipment e.g. safety shoes, helmets, suitable safety gloves and suitable safety glasses must be worn when handling the coupling.

The coupling may only be used in accordance with the technical data provided in the technical bulletin. Modifications and alterations to the coupling are not permitted. All spare parts for service or replacement must originate from or be approved by Rexnord Antriebstechnik, Dortmund.

Please send your enquiries to:

Rexnord Antriebstechnik
Überwasserstr. 64
44147 Dortmund / DEUTSCHLAND
Tel.: +49 (231) 8294-334
Fax.: +49 (231) 8294-250
E-mail: cs.bsd@rexnord.com

1.3 Marking

Rexnord BSD couplings are marked with the order number as well as week and year of production.

2. TECHNICAL DATA

2.1 Description

The instructions describe the coupling in horizontal mounting position with shaft-to-hub connection by cylindrical or conical bore with parallel key. If a vertical or inclined arrangement or other shaft-to-hub connections, such as shrink fit or splines to DIN 5480 are to be used, Rexnord Antriebstechnik must be consulted.

If a dimensioned drawing has been made out for the coupling, the data in this drawing must be given priority. The dimensioned drawing including any other documents should be made available to the user.

Part numbers and designations are to be taken from the relevant drawing or information thereon obtained from Rexnord Antriebstechnik.

2.2 Schematic drawing

Fig. 1: Series 9XXX

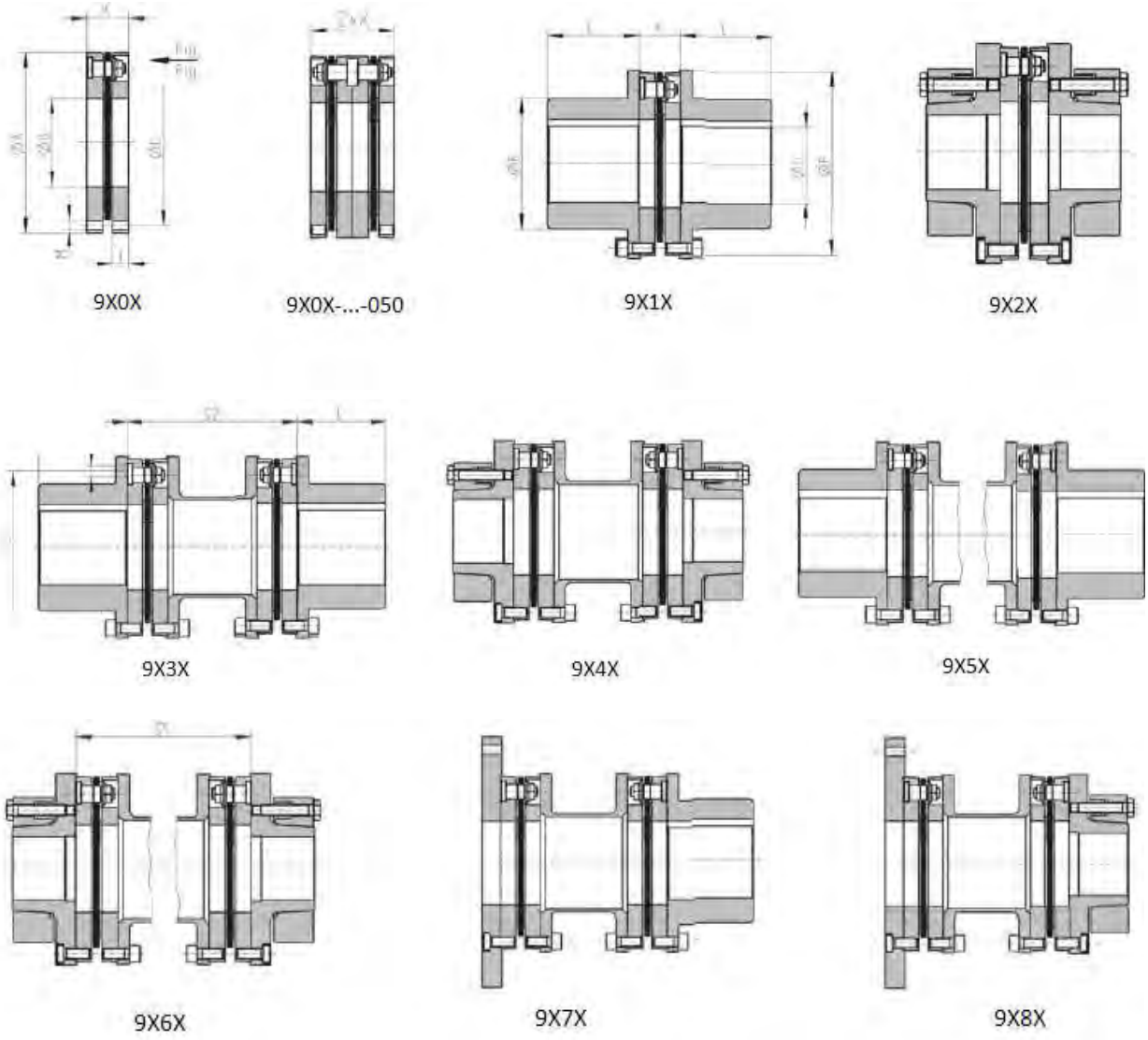
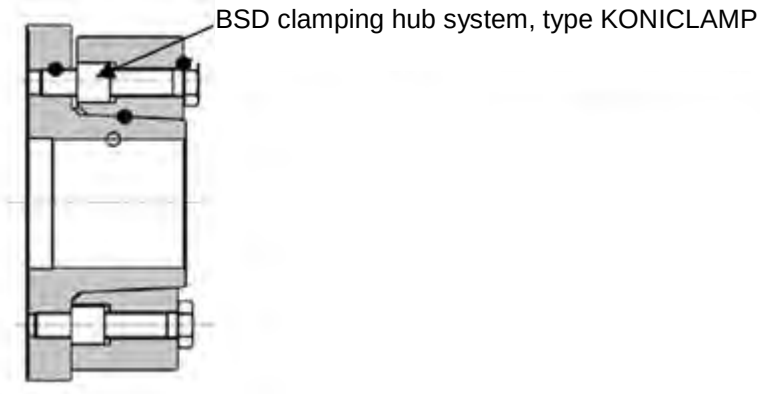


Fig. 2: Clamping hub, series 9X9X



Bestellbeispiel / Ordering Example

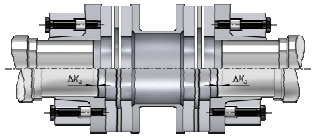
Typ Type	Bohrung Bore dia. Ø mm	Nut Keyway DIN 6885/1	Bohrung Bore dia. Ø mm	Nut Keyway DIN 6885/1	Maß S5 (nur 986x) Dim. S5 (only 986x) mm	Betriebsdrehzahl Operating Speed min^{-1}
9231-2,8-000	D = 22 H7	6 x 2,8	D = 32 H7	10 x 3,3	-	3 000 (> 30 m/s) Wuchten ISO 1940 G = 2,5 erforderlich Balancing acc. to ISO 1940 G = 2,5 required

Typ / Type: 9231; 1 = allg. Industrieanwendung / for general industrial applications, 4 = Marine, 6 = Prüfstand / test benches
Größe / Size: 2,8
Ausführung / Version: 000 = Standard

2.3 Operating principle

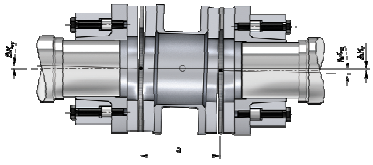
Figures 3a, 3b and 3c show the principle design of double flexible couplings and their characteristics at shaft misalignments.

Fig. 3a:



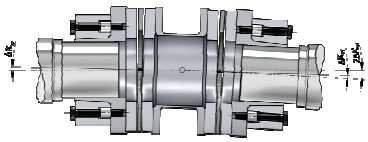
ΔK_a – axial offset

Fig. 3b:



ΔK_r – radial offset

Fig. 3c:



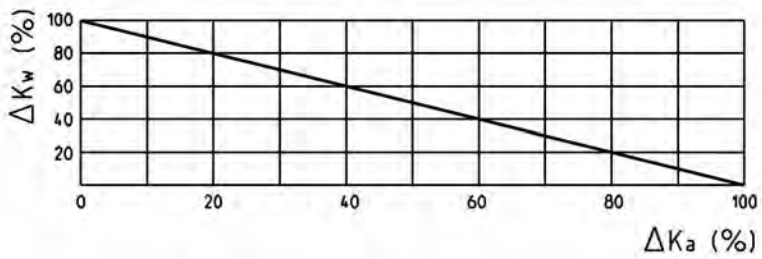
ΔK_w – angular offset

In general, the three shown types of misalignment occur simultaneously during operation. They superimpose to a total misalignment which has to be compensated for by the coupling. Whereas a single flexible element only compensates for angular and axial misalignment, radial misalignment capacity of double flexible couplings is a result of the ratio of admissible angular misalignment and distance "*x*" of the two disc packs acc. to formula:

$$\Delta K_r = x \cdot \tan(\Delta K_w)$$

It has to be strictly observed that maximum admissible axial and angular misalignment values must not be used at the same time. Please refer to Graph 1 for their dependence.

Graph 1:



3. Installation

3.1 Transport

Steel components are heavy! Use appropriate transport and lifting devices.

After inspection on receipt, the coupling is to be unpacked from its original packing and carried to the place of installation. Transport the coupling separately without additional loads.

The fixing device (Figures 6a, 6b, items 1.1, 1.2, 1.3) of the shaft couplings provided by the manufacturer is only to be removed after the installation. General: keep the coupling at dry, non-corrosive environment and prevent from external forces which could affect the components.

3.2 Delivery status

Fig. 4a: Delivery status of series 9XXX-...-XXX

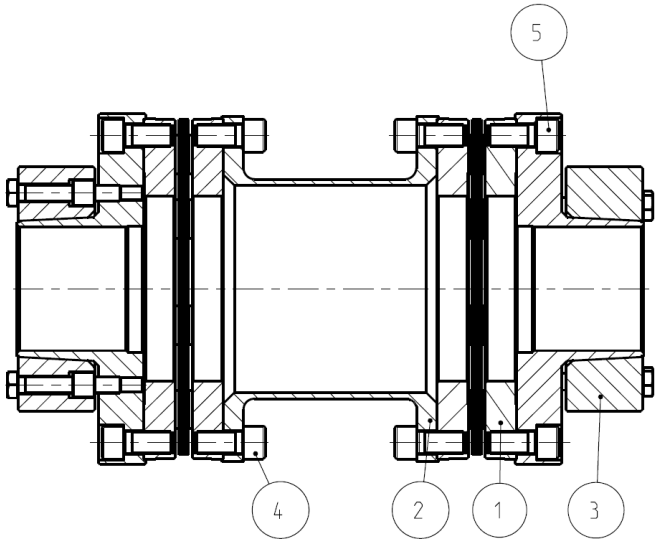


Fig. 4b: Delivery status of series 9XXX-...-XXX

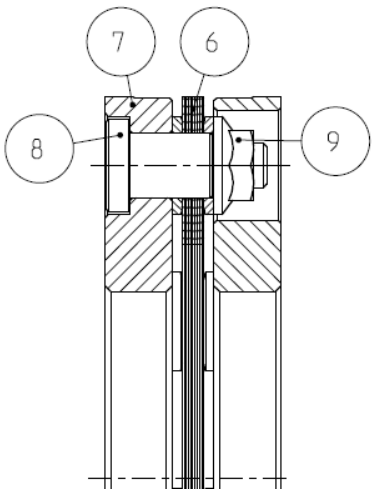


Fig. 5a: BSD clamping hub systems
Type KONICLAMP

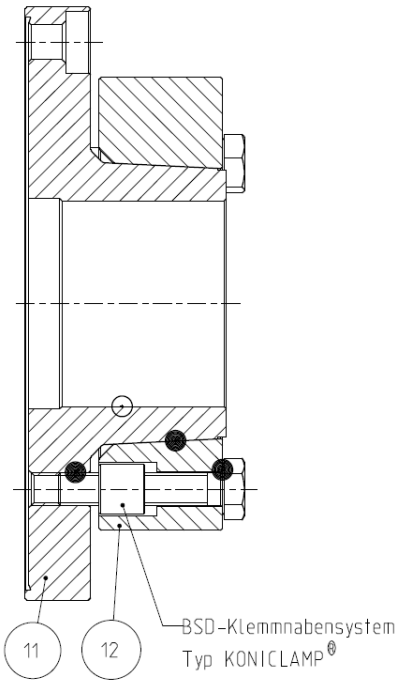


Fig. 5b: BSD clamping hub
with pull-off threads

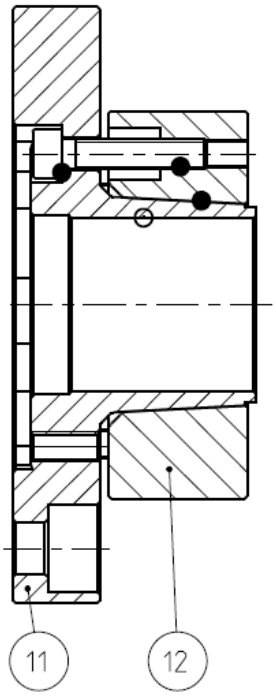


Fig. 6a: Locking device,
series 9XXX-…-XXX

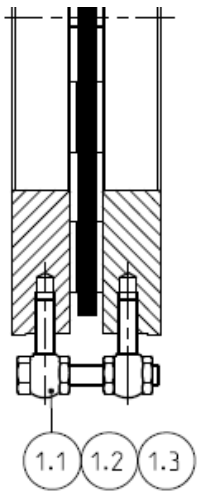


Fig. 6b: Locking device,
series 9XXX-…-XXX

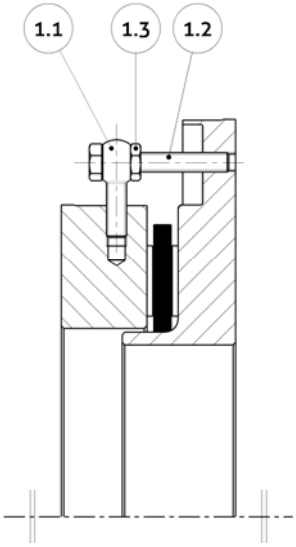


Table 4: Parts description, relating to figures 4a, 4b, 5a, 5b, 6a, 6b

Item	Designation
1	Flexible element
1.1	Eye srew
1.2	Fixing screw
1.3	Fixing nut
2	Spacer
3	Clamping hub
4	Hexagon head bolt
5	Hexagon head bolt
6	Disc pack
7	Flange
8	Shrink pin
9	Locking nut
11	Clamping hub
12	Shrink ring

3.3 Prior to installation

- **Installation by skilled personnel only. The assembly drawing has to be in hand at installation site.**
- **Only install products of our supplies and use them under designated service conditions.**
- **When handling coupling components, avoid extending fingers through the clearance holes or bolt holes to prevent them from a shearing force and potential injury when the bolts or supporting devices are moved.**
- **Shut-down the system / machine / drive mechanism of the coupling before commencing any work on the installation.**
- **Secure the drive against accidental activation and rotation.**
- **Assemble outside of the danger zone. Ensure that suitable means of transport are available and that transport routes are free of obstacles.**
- **In accordance with health and safety regulations, all rotating parts must be protected against accidental contact and against falling parts by fixed protective installations.**
- **Incorrectly tightened screws can lead to serious personal injury and material damage.**

3.4 Installation procedure, series 9XXX-…-XXX

Installation steps of the coupling parts:

1. See assembly drawing – observe installation dimensions and position.

2. Flanges or hubs to be connected have to be free from dirt/corrosion particles and burrs. Check fitting dimensions and tolerances.

3. Tolerances – both concentric and rectangular, have to comply with our specifications. In case of doubt please consult the manufacturer.

4. Balanced parts need to be installed in the same order as they were initially balanced.

Do not dismantle flexible elements (figure 4b, items 6; 7; 8; 9;).
Do not dismantle fixing devices (figures 6a, 6b, items 1.1; 1.2; 1.3) until the shaft coupling is completely installed.

5. Install flexible elements (Fig. 4a, item 1) on the shafts, according to OEM vendor intallation specification. Always make sure the position of the flexible elements is according to the specified dimensions on the drawing.

Observe that the maximum heat-up temperature for the hub flange does not exceed 250°C while the maximum admissible design temperature of the flexible element (Figure 4a, Item 1) is set at 150°C.

IMPORTANT! Hot surfaces! Prevent risk of possible burns.

6. Attach flexible elements (figure 4a, item 1) to the clamping hubs (figure 4a, item 3) with bolts (figure 4a, item 4) on both sides. Tighten the bolts to the torques stated in the drawing. Observe point 3.6 "Tightening torques and wrench sizes".

7. Put the spacer (figure 4a, item 2) between the flexible elements (figure 4a, item1). Tighten the bolts to the tightening torques stated in the drawing. Observe point 3.6 "Tightening torques and wrench sizes".

Care should be taken when handling the spacer (securing against dropping etc.). Support the center member at both ends in an appropriate way. It may be helpful to support the end that is not being worked on with bolts through the center member flange bolt holes.

8 Completely remove the fixing device and stock for future maintenance works (figures 6a, 6b, items 1.1; 1.2; 1.3).

Attention: dynamic balancing required for high speeds.

3.5 Installation, operating and maintenance of BSD clamping hubs (figures 5a and 5b)

1. Delivery status

The clamping hubs are supplied in greased condition. For relubrication proceed according to point 5 "Reassembly".

2. Inspection

Check dimensional tolerances of shaft and hub bore. Make sure that mating surfaces are undamaged and free from burrs.

3. Installation

Important! Black and phosphated to be oiled only lightly.

ATTENTION! Never tighten clamping bolts before the hub is positioned on the shaft. Degrease the shaft and hub bore first. Remaining grease at the mating surfaces, especially molybdenum disulphide materials could limit the torque transmission ability. After placing onto the shaft, position clamping hub according to connecting dimensions. The clamping bolts are tightened with a torque wrench one after the other (not crosswise) with a stepwise increased torque, starting with approx. 1/5th of the nominal torque followed by in 1/5th increasing steps where several rotations will be necessary for each step. The tightening process is completed when all the bolts have been tightened to the nominal torque specified in the drawing.

4. Disassembly

a) BSD-KONICLAMPclamping hub systems

Featuring the BSD KONICLAMP Clamping Hub System, the clamping bolts are also used as pull-off bolts. Appropriate torque is to be applied for initial loosening. After that all bolts are to be turned back one after the other until there will be a resistance. An increasing torque is to be applied to all bolts - one after the other proceeding according to point 3. until the clamping ring is released.

b) BSD clamping hubs with pull-off threads

Loosen tightening bolts and screw back a few millimetres. Insert pull-off bolts in the threads. Tightening bolts might be used as pull-off bolts. Each threaded hole in the clamping ring must be used in order to achieve the required releasing force! Tighten bolts one after the other until the clamping ring is released.

IMPORTANT! Remove pull-off bolts before reassembly!

5. Reassembly

Reassembly is carried out as described above. If a shortage of lubricant is found on one of the surfaces marked with an ○, regrease with Molykotespray 321 or Molykotepaste G-Rapid Plus.

IMPORTANT! Make sure that mating surfaces of shaft and hub bore are metal clean. Black or phosphated screws to be oiled only lightly.

3.6 Tightening torques and wrench sizes

The use of impact screwdrivers is not permitted!

Tighten bolts or nuts to the specified torque (see assembly drawing or catalogue).

3.7 Coupling alignment

Figures 7a through 7c show different methods which may be used for coupling alignment. Any readings specified in this instruction are reference values for alignment.

Fig. 7a:

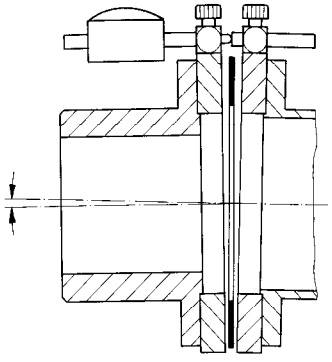
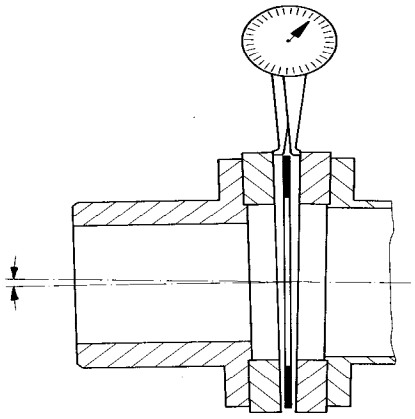


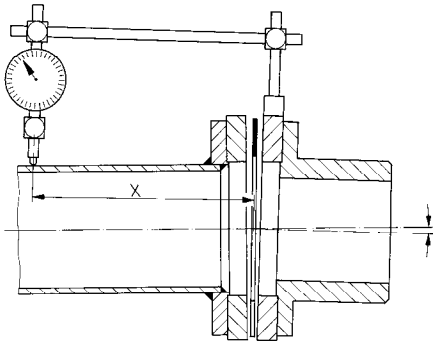
Fig. 7b:



As shown in Fig. 7a, mount dial indicator and gauge on the outer diameter of the coupling. The measuring point should be close to the outer diameter of the coupling. Rotate the coupling through 360°. The deflection shown on the dial gauge may not exceed 0.015 mm per each 10 mm of the external diameter.
Example: If the external diameter is 200 mm, the maximum permissible deflection of the dial gauge is 20 x 0.015 mm = 0.3 max. Align the drive and output sides relative to one another until the value obtained is the same as or less than the value calculated.
The indicator reading should not exceed 0.015 mm per 10 mm outer diameter.
Example: Outer diameter 200 mm = 20 x 0.015 mm = 0.3 max. indicator reading. Adjust driven and driving unit until this value is achieved or is lower.

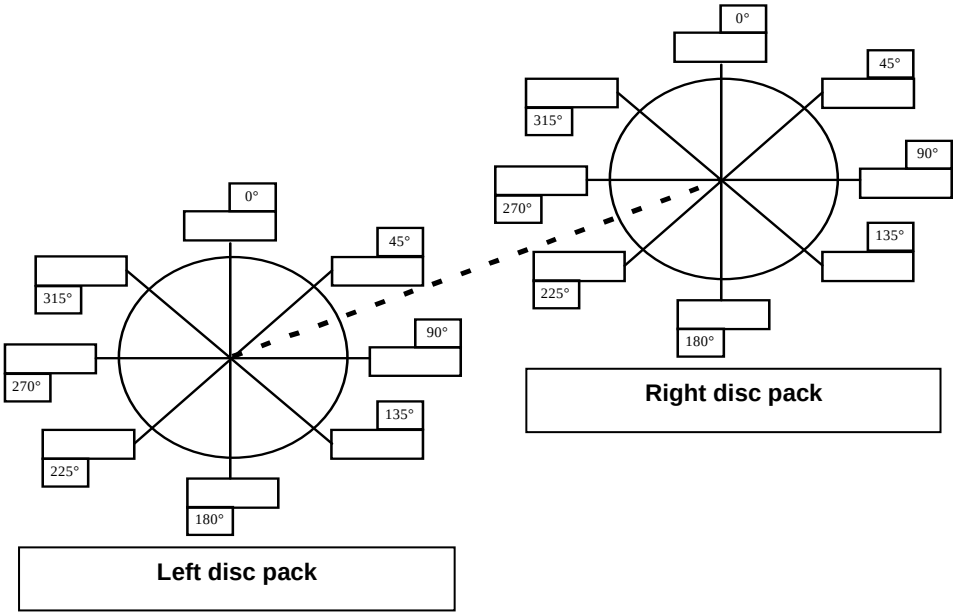
Alternatively use caliper with dial indicator (Figure 7b). Description as above. Instead of outer diameter scan diameter applies.

Fig. 7c:



Another method of alignment is to use dial indicator with adapter (Figure 7c). Description as for Figure 7a and 7b. Max. indicator reading is 0.015 mm per 10 mm length "x"
Example: "x" = 400 mm = 40 x 0.015 mm = 0.6 mm max. indicator reading.
Another practical method is the use of a slide gauge instead of caliper with dial indicator. The gap of each disc pack assembly (Figure 8) is measured and noted every 45° in one direction. Note: The coupling must not be rotated during measuring! Clearly arranged notes are shown in the following.

Fig. 8:



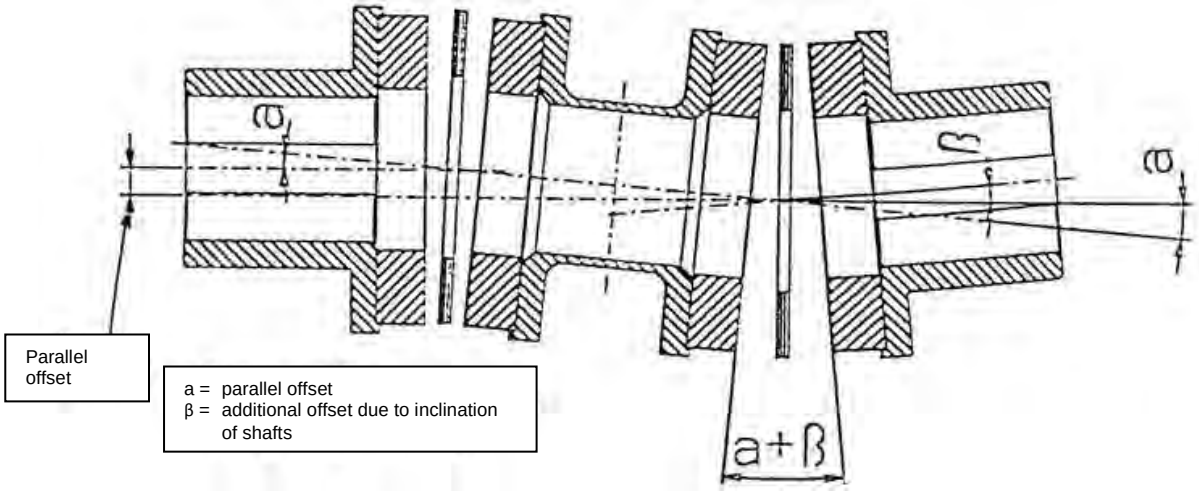
Interpretation example

left: 0°= 10.0 mm; 180°= 12.0 mm; measuring diameter D=200 mm;
nominal dimension = 11 mm
12.0 - 10.0 = 2.0 mm ⇒ angle = arc tan (2.0 / 200) = 0.57°
measuring values at: 45° = 315°; 90° = 270°; 135° = 225°;
The axis of the left element is turned by 0.57° in vertical dimension.
right: 0°= 13.0 mm; 180°= 9.0 mm; measuring diameter D=200 mm;
13.0 - 9.0 = 4.0 mm ⇒ angle = arc tan (4.0 / 200) = 1.15°
measuring values at: 45° = 315°; 90° = 270°; 135° = 225°;
The axis of the right element is turned by 1.15° in vertical dimension, i.e. positioning of drive and driven unit is not parallel but provides an angular deviation of 1.15° - 0,57° = 0,58°
In this way, alignment can be easily controlled and readjusted. Acceptable alignment shows deviation in the range of 0.1 mm, comparing the actual situation with admissible values considering service values. After a trial run of the coupling, values should be finally noted and recorded for further interpretation.

Figure 9 shows an alignment fault which might overload a disc pack arising from radial offset due to parallel offset of drive and driven shaft, both shafts additionally being angular to each other. Thus the angle between the shafts is added to the angle resulting from radial offset as cumulative angle for one disc pack.

At additional operational offsets this disc pack is being overcharged.

Fig. 9: Possible offsets



After having aligned the coupling, driven and driving units are to be fixed and secured so that the position of the coupling remains unchanged. It is recommended that the coupling be checked once again in accordance with section 3.3 or 3.4 after the machine parts have been located and fixed in position.

STOP

When aligning, angular and radial misalignment should be kept as low as possible.
It has to be strictly observed that maximum admissible axial and angular misalignment values must not be used at the same time.
Please refer to Section 2.3, Graph 1 for their dependence.

After the alignment procedure disc packs should look flat and parallel with the mating surfaces if no axial alignment was pre-set.

4. INITIAL START-UP AND OPERATION

4.1 Initial start-up

After having assembled the shaft coupling and considering valid and **applicable safety standards for the equipment by the customer/user (see Section 1.2)** the coupling is subject to a trial run. Before initial start-up make sure that fixing devices have been removed and stocked for future maintenance works.

Bolt-tightening torques for the coupling and tightening torques for the foundation bolts of the coupled machine must be checked before initial start-up. Enclosures (coupling protection, contact guard) must be fitted!
Overload conditions during start-up cannot be excluded. If the coupling breaks through overload, metal parts may fly off and cause personal injury and/or material damage.

Recheck specified tightening torques of bolts and locknuts after a trial running time of 1 to 2 hours. If necessary, readjust bolt connection acc. to Section 3.6 – Tightening torques and wrench sizes.

Observe coupling while operating. Any improperties occurring especially as to smooth running, might be caused by insufficient or improper alignment or by subsequent deviations, e.g. setting of driving or driven unit. Shut-down equipment immediately and recheck alignment of installation dimensions and position according to Section 3.7 – Coupling alignment. If necessary, correct.

It is recommended to balance the complete drive unit at higher speeds, high rotating masses or for other reasons (soft machinery basement).

4.2 Operation

Inspect shaft coupling after approx. 500 operating hours after the initial start-up:

Inspection checklist:

- Are tightening torques of bolts and locknuts still correct (figure 4a, items 4; 5;)? Correct if necessary. Observe section 3.6 - Tightening torques and wrench sizes.
- Is the coupling still well aligned?
  Note: For certain designs misalignment values must not be used as maximum simultaneously.
- Are the disc packs still flat and parallel with the mating surfaces? Corrections may be necessary. Coupling alignment and axial adjustment according to section 3.7 - Coupling alignment.

After inspection and correction, if so necessary, the shaft coupling is subject to usual inspection intervals of the equipment. These inspections are to be carried out according to Section 5.1 – Maintenance and repair.

4.3 Troubleshooting

Possible causes of faults with changed alignment or inadmissible large vibration:

- Eliminate the reason for the change in alignment (e.g. loose foundation bolts).
- Align coupling.
- If in place, check axial fastening and correct if necessary.
- The critical speed of the drive train has been reached.

Frequent faults when selecting the coupling and/or coupling size:

- Important information describing the drive and the environment was not passed on.
- System torque too high.
- System speed too high.
- Application factor not correctly selected.
- Chemically aggressive environment not taken into account.
- Ambient temperature not permissible.
- Finished bore with inadmissible diameter and/or inadmissible fit.
- Machining of parallel keyways of which the width across corners is greater than the width across corners of the parallel keyways to DIN 6885/1 with a maximum permissible bore.
- The transmission capacity of the shaft-to-hub connection is not appropriate for the operating conditions.
- Maximum load or overload conditions were not taken into account.

- Dynamic load conditions were not taken into account.
- Shaft-to-hub connection resulting in inadmissible material stress on the coupling.
- Operating conditions were changed in an inadmissible manner.
- Coupling and machine / drive train form a critical torsional, axial or bending vibration system.
- Fatigue torque load too high.

Frequent faults at coupling assembly:

- Components with transport or other damage are being fitted.
- Parts of the flexible element (figure 4b) are heated up impermissibly when hot-assembling coupling parts.
- The shaft diameter is outside the prescribed tolerance range.
- Coupling parts are being mixed up, i.e. the assignment to the specific shaft is not given.
- Prescribed axial securing devices are not fitted.
- Prescribed tightening torques are not maintained.
- Bolts are fitted dry or greased.
- Flange surfaces of screwed connections are not clean.
- Alignment and/or shaft offset values are not in accordance with the instructions.
- The coupled machines are not connected correctly to the foundations so that a displacement of the machines - e.g. through loosening of the bolting to the foundations - leads to the coupling parts relocating themselves in an impermissible manner.
- The machines coupled together are not adequately earthed.
- The coupling protection system is not suitable.

Frequent faults at maintenance:

- Spare parts are used which are not original Rexnord BSD spare parts.
- Old or damaged spare parts are being used.
- Different flexible elements are being used (figure 4a, item 1).
- Indications of faults (noises, vibration etc.) are not acted upon.
- Prescribed tightening torques are not maintained.
- Alignment and/or shaft offset values are not in accordance with the instructions.

5. MAINTENANCE AND REPAIR

5.1 Inspection and maintenance

It is assumed that inspection and maintenance of the equipment is carried out once a year for one shift operation, twice a year for two shift operations and three times a year for continuous operations.

Inspection checklist:

- Are the tightening torques of the bolts still correct (figure 4a, items 4; 5;)? Correct if necessary. Observe section 3.6 - Tightening torques and wrench sizes.
- Is the coupling still well aligned?
  Note: For certain designs misalignment values must not be used as maximum simultaneously.
- After this period of operation, are the disc packs still flat and parallel with the mating surfaces? Corrections may be necessary. Coupling alignment and axial adjustment according to section 3.7 - Coupling alignment.

The disc pack assembly of the flexible element is the most important performance component of the shaft coupling (figure 4b, item 1).

Any deformation, cracks or corrosion of the disc pack including bolts, locknuts and washers which are noticed during coupling inspection, may be caused by torque overload or excessive shaft misalignments.

In such a case the flexible elements must be replaced (figures 6a/6b, item 1). Important: First of all eliminate the cause of the overload (see section 4.3 – Troubleshooting).

With such damage all the other components should also be critically checked. In case of doubt contact Rexnord Antriebstechnik.

Though our products are being designed as non fatigue critical being operated within their predetermind applications and their specified application limits, an unlimited lifetime cannot be ensured technicalwise. Materials might alter due to operational and environmental conditions (corrosion, structure, outer damages) thus limiting lifetime. We, therefore, recommend regular visual inspections of the product with regard to alternations and damages (fractures, cracks) or its replacement after an operation period of 10 years.

5.2 Disassembly

Steel components are heavy! Use appropriate transport and lifting devices.

The coupling is being disassembled by loosening connecting bolts of the spacer (figure 4a, item 4) and axially stressing the flexible elements (figure 4a, item 1). Use the locking device as shown in section 3.1, figures 6a/6b, in order to simplify the pre-stressing.

After obtaining enough axial clearance, remove the spacer (figure 4a, item 2) completely (radially).

Care should be taken when handling the spacer (securing against dropping etc.). Support the center member at both ends in an appropriate way. It may be helpful to support the end that is not being worked on with bolts through the center member flange bolt holes.

Important: Do not remove the bolts of the disc pack (figure 4b, items 8,9) of the flexible element!

Coupling series 9XXX-…-XXX:
In order to remove the flexible elements (figure 4a, item 1), loosen and remove the bolts (figure 4a, item 5) which are connected to the clamping hub (figure 4a, item 3).
Remove the flexible element (figure 4a, item 1) and remove the clamping hub (figure 4a, item 3) from the shaft in according to OEM vendor installation specification.

IMPORTANT! Hot surfaces! Avoid the risk of burns!

6. STOCK OF SPARE PARTS AND CUSTOMER SERVICE

6.1 Spare parts

In order to avoid disruptions, it is recommended that flexible elements (figure 4a, item 1) are kept in stock at the system operator.

6.2 Ordering process and customer service

Please state the following data if possible when ordering spare parts:

- Our order number with item number
- Drawing number
- Type and size of the coupling
- Part number (see spare parts list on the drawing)
- Bore, bore tolerance, keyway and balancing as well as special characteristics such as flange connection dimensions, spacer length etc.
- Any specific requirements

Our customer service is available to assist you. Contact us as below:

Rexnord Antriebstechnik
Überwasserstr. 64
44147 Dortmund
DEUTSCHLAND

Tel.: +49 (231) 8294-334
Fax.: +49 (231) 8294-250
E-mail: cs.bsd@rexnord.com

7. APPENDIX

7.1 BSD MODULFLEX coupling type 9201 with VIBRA-DAMP system

This version of the MODULFLEX coupling is equipped with the specially developed permanent magnetic damping system VIBRA-DAMP (4). This system serves to dampen axial vibrations exceeding the admissible axial displacement of the MODULFLEX coupling with the dampening force being developed only when it is needed (like the turbo-charger of an internal combustion engine which - depending on the particular design - does not need any effective charging at the lower speed range).

The damping must become fully effective at high frequencies and large oscillation amplitudes (these two values define the oscillation speed) or may not permit inadmissible amplitudes at all. The permanent magnetic damping force increases with the speed!

The VIBRA-DAMP system is part of the flexible element and must not be disassembled!

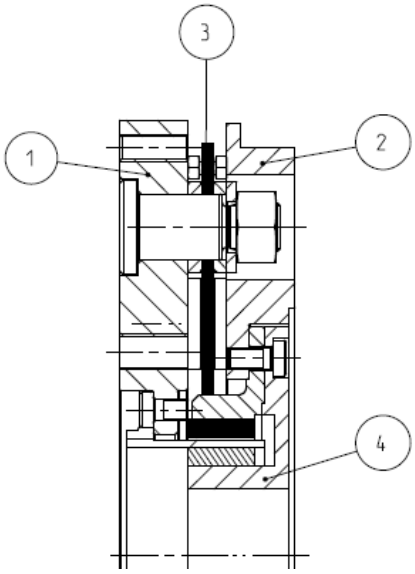


Table 5: Parts list (Only BSD original spare parts are to be used)

Item	Designation
1	Flange
2	Flange
3	Disc pack
4	VIBRA-DAMP system

7.2 BSD MODULFLEX coupling type 9201 with axial support

This version of the MODULFLEX coupling is equipped with the specially provided axial supports (4), which are bolted to the flanges. This system is used to counter the forces requiring support in axial direction (e.g. if the coupling is mounted vertically).

The support cams are part of the flexible element and must not be disassembled!

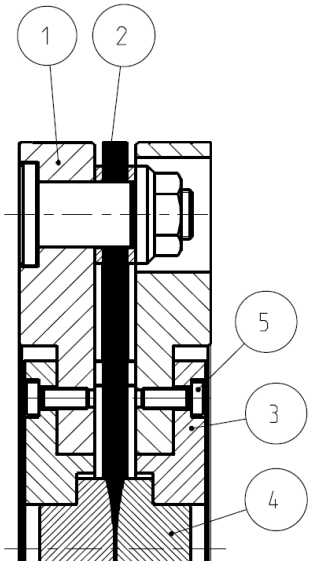


Table 6: Parts list (Only BSD original spare parts are to be used)

Item	Designation
1	Flange
2	Disc pack
3	Axial support
4	Support cams
5	Hexagon head bolt

7.3 BSD MODULFLEX coupling type 9201 with limited end float

This version of the MODULFLEX coupling is equipped with the specially provided limited end float (3) considerably limiting axial offset of the coupling in both directions.

The limited end float forms part of the flexible element and must not be disassembled!

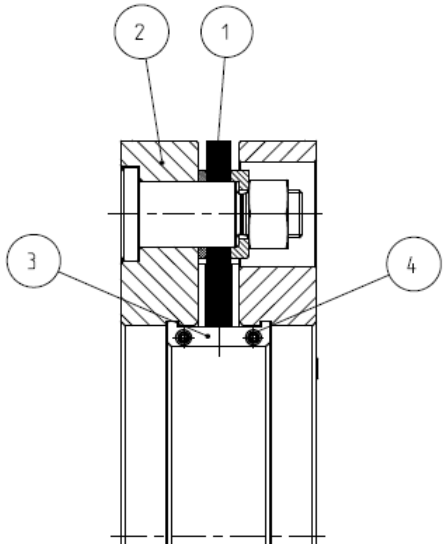


Table 7: Parts list (Only BSD original spare parts are to be used)

Item	Designation
1	Disc pack
2	Flange
3	Limited end float
4	Thrust spring

7.4 BSD MODULFLEX coupling type 9201 with electrical insulation

This version of the MODULFLEX coupling is fitted with the specially provided electrical insulation (3).

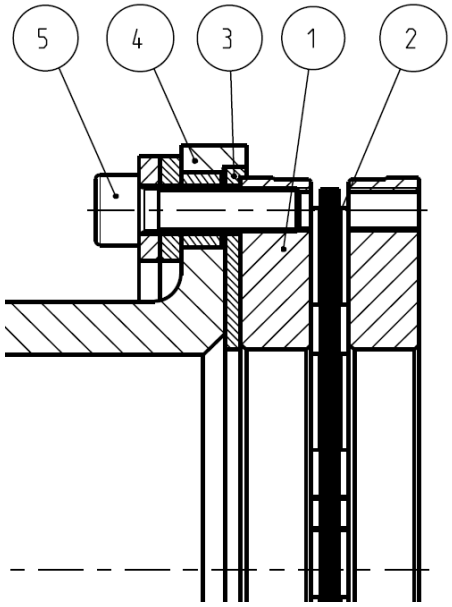


Table 8: Parts list (Only BSD original spare parts are to be used)

Item	Designation
1	Flange
2	Disc pack
3	Electrical insulation
4	Spacer
5	Hexagon head bolt