rexroth
A Bosch Company

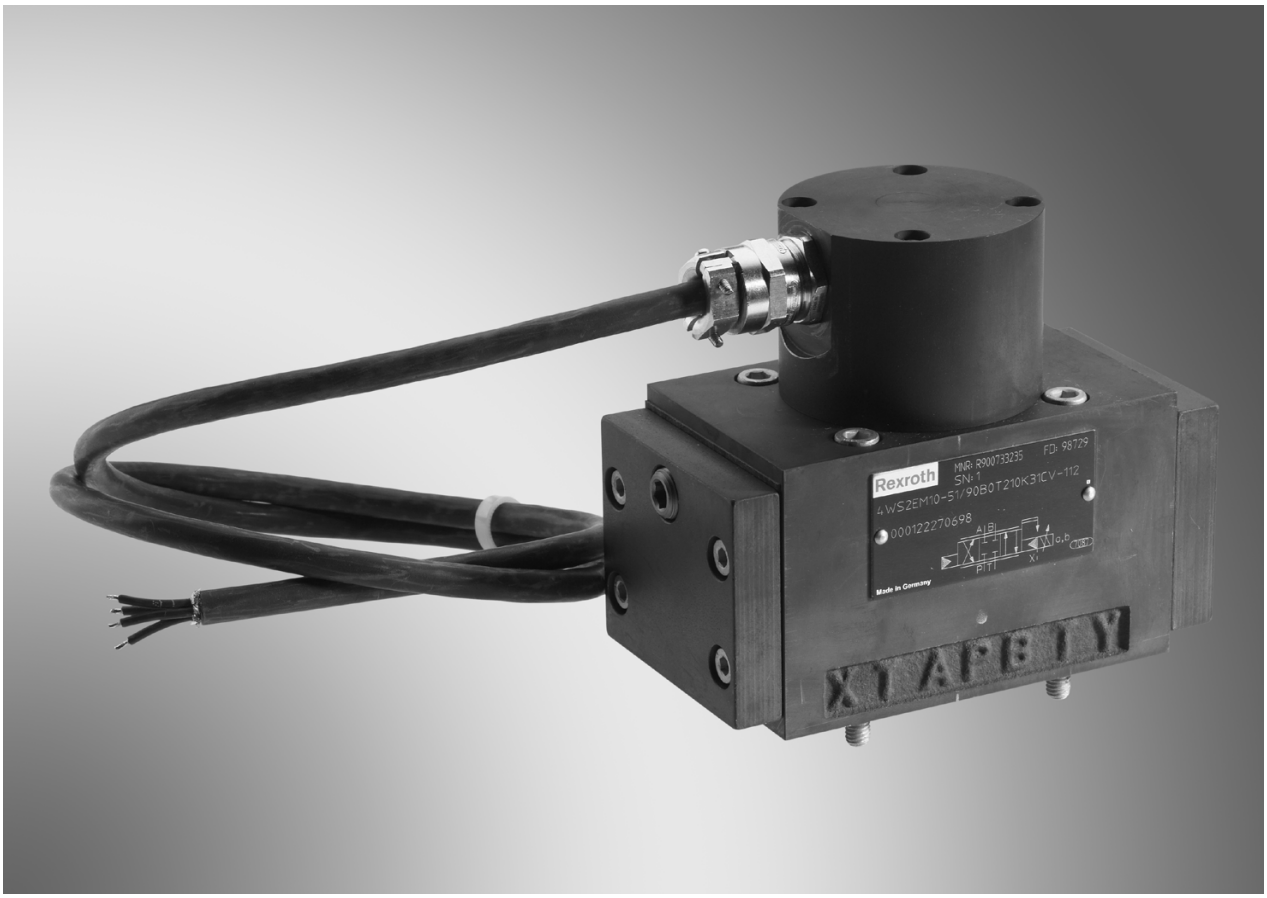
4-way servo valve with mechanical position feedback

(Area of application according to the Explosion Protection Directive 2014/34/EU: **II 2G**)

Type 4WS2EM10..5X/...XD...

Operating instructions
RE29583-XD-B/10.20

Replaces: 03.17
Document no.: RA88689582_AA
English



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ES: La puesta en marcha de este producto únicamente podrá realizarse cuando disponga de las instrucciones de servicio en una lengua oficial de la UE comprensible para usted y haya entendido su contenido. En caso contrario, diríjase a su persona de contacto en Bosch Rexroth o al servicio técnico competente, que podrá encontrar también en la dirección www.boschrexroth.com.

ET: Selle toote tohib kasutusele võtta ainult siis, kui teil on olemas ühes EL-i ametlikus keeles kirjutatud kasutusjuhend ja te olete selle endale selgeks teinud. Kui see nii ei ole, võtke ühendust oma Bosch Rexrothi kontaktisiku või vastutava teeninduskeskusega. Need leiate aadressilt www.boschrexroth.com.

FI: Tämän tuotteen saa ottaa käyttöön vasta kun olet saanut tämän käyttöohjeen ymmärtämälläsi EU-kielellä ja ymmärtänyt sen sisällön. Jos näin ei ole, ota yhteyttä Bosch Rexroth -yhteyshenkilöösi tai vastaavan palvelupisteeseen. Ne löytyvät myös osoitteesta www.boschrexroth.com.

FR: Ce produit ne doit être mis en service que lorsque vous disposez des présentes instructions de service dans une langue officielle de l'UE que vous comprenez et que vous avez compris son contenu. Si cela n'est pas le cas, veuillez vous adresser à votre interlocuteur Bosch Rexroth ou au service compétent. Vous pouvez trouver ces coordonnées également sur le site www.boschrexroth.com.

HU: A termék üzembe helyezése csak akkor történhet meg, ha az üzemeltetési utasítást az EU egyik hivatalos nyelvén elolvasta, és megértette a tartalmát. Ha nem ez a helyzet, kérjük, forduljon Bosch Rexroth kapcsolattartójához vagy az illetékes szervizhez. A szervizek elérhetőségét a www.boschrexroth.com webhelyen találja meg.

IT: La messa in servizio di questo prodotto può essere eseguita solo se si dispone del presente manuale d'uso in una lingua ufficiale della UE conosciuta e se ne è stato compreso il contenuto. In caso contrario rivolgersi al referente Bosch Rexroth o al punto di assistenza competente. Questi sono anche riportati sul sito www.boschrexroth.com.

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PL: Przed uruchomieniem niniejszego produktu należy zapoznać się z instrukcją obsługi w zrozumiałym dla Państwa języku urzędowym UE i zrozumieć jej treść. W przypadku gdy nie dołączono instrukcji w takim języku, należy zwrócić się z zapytaniem do osoby kontaktowej Bosch Rexroth lub do odpowiedniego punktu obsługi. Listę takich punktów można znaleźć na stronie www.boschrexroth.com.

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RO: Aveți voie să puneți în funcțiune acest produs, doar dacă aveți acest manual de utilizare într-o limbă oficială a UE, pe care o înțelegeți, şi după ce ați înțeles conținutul. Dacă aceste condiții nu sunt îndeplinite, adresați-vă persoanei de contact Bosch Rexroth sau centrului de service responsabil. Găsiți aceste service-uri şi pe www.boschrexroth.com.

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SV: Du får inte ta denna produkt i drift förrän du har denna bruksanvisning på ett EU-språk som du kan och du har förstått innehållet. Om detta inte är fallet ska du kontakta din kontaktperson på Bosch Rexroth eller ansvarig serviceplats. Denna hittar du också på www.boschrexroth.com.

HR: Ovaj proizvod smijete pustiti u pogon tek kada pročitate ove upute za uporabu na službenom jeziku EU-a koji razumijete i shvatite njihov sadržaj. Ako to nije slučaj, obratite se osobi za kontakt tvrtke Bosch Rexroth ili nadležnoj servisnoj službi. Te ćete podatke pronaći na adresi www.boschrexroth.com.

The data specified serves to describe the product. If information on the use of the product is given, it is only to be regarded as application examples and recommendations. Catalog information does not constitute warranted properties. The information given does not release the user from the obligation of own judgment and verification. Our products are subject to a natural process of wear and aging.

The cover shows an example configuration. The product supplied may therefore differ from the figure shown.

The original operating instructions were prepared in German.

Contents

1 About this documentation

1.1 Validity of the documentation

This documentation applies to the following products:

- 4WS2EM10..5X/...XD...

This documentation is intended for assemblers, operators, service engineers, system end-users, machine and system manufacturers.
This documentation contains important information on the safe and proper assembly, transport, commissioning, operation, use, maintenance, disassembly and simple troubleshooting of the product.

▶ You should read this documentation thoroughly and in particular chapter 2 "Safety instructions" and chapter 3 "General information on damage to property and damage to product", before working with the product.

The documentation version with which the product was supplied is valid.

1.2 Required and amending documentation

▶ The product may not be commissioned until you have been provided with the documentation marked with the book symbol 🕮 and you have understood and observed it.

Table 1: Required and amending documentation

	Title	Document number	Document type
🕮	Directional servo valve with mechanical position feedback	29583-XD	Data sheet
🕮	General product information on hydraulic products	07008	Data sheet
🕮	Subplates	45100	Data sheet
🕮	Analog amplifier module	29743	Data sheet
🕮	Service case with test device for servo valves without integrated electronics	29681	Data sheet
	Declaration of conformity 4WS2EM10..5X/...XD...	Document	See chapter 17

1.3 Representation of information

Uniform safety instructions, symbols, terms and abbreviations are used so that you can quickly and safely work with your product using this documentation. For a better understanding, they are explained in the following sections.

1.3.1 Safety instructions

In this documentation, safety instructions are included in chapter 2.6 "Product-specific safety instructions" and in chapter 3 "General information on damage to property and damage to product" and whenever a sequence of actions or instructions is explained which bear the danger of personal injury or damage to property. The hazard avoidance measures described must be observed.

Safety instructions are set out as follows:

> **⚠ SIGNAL WORD**
>
> **Type and source of danger!**
> Consequences in case of non-compliance
> ▶ Hazard avoidance measures
> ▶ <Enumeration>

- **Warning sign:** Draws attention to the danger
- **Signal word:** Identifies the degree of danger
- **Type and source of danger:** Specifies the type and source of danger
- **Consequences:** Describes the consequences of non-compliance
- **Precaution:** Specifies how the danger can be prevented

Table 2: Risk classes according to ANSI Z535.6-2006

Warning sign, signal word	Meaning
⚠ DANGER	Indicates a dangerous situation which will cause death or severe injury if not avoided.
⚠ WARNING	Indicates a dangerous situation which may cause death or severe injury if not avoided.
⚠ CAUTION	Indicates a dangerous situation which may cause minor or medium personal injury if not avoided.
NOTICE	Damage to property: The product or the environment could be damaged.

1.3.2 Symbols

The following symbols indicate notices which are not safety-relevant but increase the comprehensibility of the documentation.

Table 3: Meaning of the symbols

Symbol	Meaning
	If this information is not observed, the product cannot be used and/or operated optimally.
▶	Individual, independent action
1. 2. 3.	Numbered instruction: The numbers indicate that the actions must be carried out one after the other.

1.3.3 Abbreviations

The following abbreviations are used in this documentation:

Table 4: Abbreviations

Abbreviation	Meaning
ATEX	EU Directive for Explosion Protection *(Atmosphère explosible)*
EN	European Standard
ISO	International Organization for Standardization
IEC	International Electrotechnical Commission
RE	Rexroth document in English language
IP	Ingress protection class of electric operating equipment
A, B	Hydraulic connections (actuator)
X, Y	Hydraulic connections (pilot oil)
T	Hydraulic connection (tank)
P	Hydraulic connection (pump)
ANSI	American National Standards Institute

2 Safety instructions

2.1 General information on this chapter

The product has been manufactured according to the generally accepted codes of practice. However, there is still the danger of personal injury and damage to property if you do not observe this chapter and the safety instructions in this documentation.

- Read this documentation completely and thoroughly before working with the product.
- Keep this documentation in a location where it is accessible to all users at all times.
- Always include the required documentation when you pass the product on to third parties.

2.2 Intended use

The product is a hydraulic component.
You may use the product as follows:
• 4-way servo valve with mechanical position feedback for the intended use in an explosive atmosphere.

The product is only intended for professional use and not for private use.
Intended use includes having read and understood this documentation completely, especially chapter 2 "Safety instructions".
The valve is designed and constructed for the control of oil flows. It complies with the requirements of the ATEX Directive 2014/34/EU and IECEx regulations.

Details about the device group, category, temperature class and equipment protection level (EPL) in accordance with ATEX Directive 2014/34/EU and the derived standards are provided in *"Data sheet 29583-XD"* under *"Information on explosion protection"* and on the name plate of the valve.
The valve may only be operated in a technically perfect condition and used as described in these operating instructions. The connection conditions, application conditions and performance data defined in these operating instructions must not be changed.
If you intend to use the valve with other connection, application or performance data than those defined by Bosch Rexroth AG in these operating instructions, please contact Bosch Rexroth AG beforehand. The valve must not be used with other connection, application and performance data than those defined in these operating instructions without the written approval by Bosch Rexroth AG.

2.3 Improper use

Any use deviating from the intended use is improper and thus inadmissible.
The installation or use of inappropriate products in safety-relevant applications could result in unintended operating states when being used which in turn could cause personal injuries and/or damage to property. Therefore, please only use a product for safety-relevant applications if this use is expressly specified and permitted in the documentation of the product. For example, in explosion-protected areas or in safety-related control components (functional safety).
Improper use of the product includes:
- Faulty assembly
- Incorrect transport
- Lack of cleanliness during storage and assembly
- Incorrect installation
- Use of inappropriate/non-admissible hydraulic fluids
- Non-compliance with the specified performance limits

Changes and/or modifications to the valve are not admissible, refer to chapter 13 "Extension and modification".
Bosch Rexroth AG does not assume any liability for damage caused by improper use. The user assumes all risks involved with improper use.

2.4 Qualification of personnel

The activities described in this documentation require basic knowledge of mechanics, electrics and hydraulics as well as knowledge of the appropriate technical terms. In order to ensure safe use, these activities may only be carried out by an expert in the respective field or an instructed person under the direction and supervision of an expert.

Experts are those who are able to recognize potential dangers and apply the appropriate safety measures due to their professional training, knowledge and experience, as well as their understanding of the relevant conditions pertaining to the work to be undertaken. An expert must observe the relevant specific professional rules and have the necessary expert knowledge.

For example, for hydraulic products, the term expert knowledge refers to the following:

- Reading and completely understanding hydraulic schemes,
- In particular, completely understanding the correlations regarding the safety equipment and
- Having knowledge of the function and set-up of hydraulic components.

Qualification of personnel for the installation and commissioning of valves in explosion-proof areas

Personnel shall be qualified as follows to the extent necessary to fulfill their tasks:

- Understanding of the general principles of explosion protection, protection classes and device identification
- Understanding of the corresponding aspects affecting the protection concept
- Understanding of the contents of certificates and relevant parts of this standard
- General understanding of the test, maintenance and repair requirements from IEC 60079-17
- Familiarity with the specific methods to be used for selection and construction of devices referenced in this standard
- Understanding of the additional importance of work authorization systems and safe electrical isolation with regards to the explosion protection

Bosch Rexroth offers measures supporting training in specific fields. Please find an overview of the training contents on the Internet at:
`http://www.boschrexroth.de/didactic`

2.5 General safety instructions

- Observe the valid regulations on accident prevention and environmental protection.
- Observe the safety regulations and provisions of the country in which the product is used/applied.
- Only use Bosch Rexroth products in a technically perfect condition.
- Observe all notes on the product.
- Persons assembling, operating, disassembling or maintaining Bosch Rexroth products must not be under the influence of alcohol, other drugs or medications influencing the ability to react.
- Only use original Bosch Rexroth accessories and spare parts in order to prevent any hazard to persons due to unsuitable spare parts.
- Comply with the technical data and environmental conditions specified in the product documentation.
- The installation or use of inappropriate products in safety-relevant applications could result in unintended operating states when being used which in turn could cause personal injuries and/or damage to property. Therefore, only use a product for safety-relevant applications if this use is expressly specified and permitted in the documentation of the product, e.g. in explosion protection zones or in safety-related parts of control systems (functional safety).
- Do not commission the product until you can be sure that the end product (for example a machine or system) in which the Bosch Rexroth products are installed complies with the country-specific provisions, safety regulations and standards of the application.

2.6 Product-specific safety instructions

The following safety instructions apply to chapters 6 to 14.

⚠ WARNING

Explosion hazard due to ignitable atmosphere during all work on the valve!
During all work on the valve (assembly, disassembly etc.), an explosive atmosphere must be avoided! Otherwise, an ignition may be triggered which may lead to an explosion.

- Before working with the valve, ensure that no explosive atmosphere can occur during the work.

Easily inflammable liquid!
In connection with an explosive atmosphere or other heat sources, the use of liquids (e.g. hydraulic fluid, coolants etc.) may lead to explosions.

- Only use the valve in the intended explosion protection area.
- The ignition temperature of the fluid used must be at least 150 °C.

Explosion hazard due to the exceedance of the maximum temperatures!
The use of the valve outside the approved temperature ranges may lead to functional failures. Explosion protection is therefore no longer ensured.

- Only use the valve within the intended environmental and hydraulic fluid temperature range.

Hot surface!
Risk of burning!

- Provide for a suitable touch guard.
- During operation, only touch the valve using heat-protective gloves. Allow the valve to cool down to room temperature before touching it directly with your hands during maintenance work.

Pressurized system parts and leaking hydraulic fluid!
When working at hydraulic systems with stored energy (accumulator or cylinders working under gravity), valves may even be pressurized after switching off the pressure supply. During assembly and disassembly works, the valve or parts may be ejected and cause personal injury and/or damage to property. Furthermore, there is the danger of severe injury caused by a powerful leaking hydraulic fluid jet.

- Ensure before working at the hydraulic product that the hydraulic system is depressurized and the electrical control de-energized.
- Completely unload the pressure at machines and systems before working at the valve.

⚠ WARNING

Non-compliance with functional safety!
The valve controls movements in machines or systems. In case of mechanical and electric faults, e.g. failure of the energy supply, persons may be caught by the system, kicked away or bruised.

- During set-up of your circuit, observe functional safety e.g. according to EN ISO 13849.

Penetrating water and humidity!
In case of use in humid or wet environments, water or humidity may penetrate at electrical connections or the valve electronics. This may cause malfunctions at the valve and unexpected movements in the hydraulic system, which may result in personal injury and damage to property.

- Only use the valve within the intended IP protection class or lower.
- Ensure before the assembly that all seals are fitted and the electrical connections are intact.

⚠ CAUTION

Contaminated hydraulic fluid!
Contamination in the hydraulic fluid may cause functional failures e.g. jamming or blocking of nozzles of the valve. In the worst case, this may result in unexpected system movements and thus constitute a risk of injury for persons.

- Ensure an adequate hydraulic fluid cleanliness according to the details in the data sheet over the entire operating range.

Leakage in case of incorrect working temperatures!
Use of the valve outside the approved temperature range may lead to permanent leakage at the valves. Thus, hydraulic fluid in the form of a leaking hydraulic fluid jet may injure persons, lead to damage to property and endanger the environment.

- Only use the valve within the intended environmental and hydraulic fluid temperature range.
- In case of leakage, immediately exchange damaged seal rings or the valve.

Corrosion!
The valve described has surface protection (see *"Data sheet "29583-XD"*). Use of the valve in humid environments still holds the danger of corrosion on the valve and on the valve mounting screws and thus a reduction of the preload force of the screw connection. To prevent the valve from becoming loose and causing a risk of injury:

- Exchange the valves with corrosion damage as soon as possible.
- Regularly check the surface protection on the valve and the valve mounting screws.

Contact with salt water leads to increased corrosion on the valve. This can lead to chemical corrosion of individual valve components. Therefore, take suitable corrosion protection measures.

2.7 Personal protective equipment

The machine end-user must provide the personal protective equipment (such as gloves, working shoes, safety goggles, working clothes, etc...).

2.8 Obligations of the machine end-user

The machine end-user is obligated to check in the order confirmation whether the delivered valve corresponds to the required category and associated zone or equipment protection level.

The machine end-user of the Bosch Rexroth valve is responsible that

- the valve is only being used according to the intended use as defined in these operating instructions.
- the valve is only stored, operated and maintained according to the technical data, operating and environmental conditions indicated in the *"Data sheet 29583-XD"*, in particular that the limit values indicated in the *"Data sheet 29583-XD"* are not exceeded.
- the applicable provisions, rules and directives on explosion protection are being complied with.
- the operating personnel are instructed at regular intervals.
- a danger zone is marked, if required.
- the safety measures for the specific area of application of the valve are complied with.

3 General information on damage to property and damage to product

The warranty only applies to the delivered configuration.

- The claim to warranty expires if the product is assembled, commissioned and operated incorrectly, not used as intended and/or handled improperly.
- The following safety instructions apply to chapters 6 to 14.

NOTICE

Inadmissible mechanical load!

Impact or shock forces on the valve may damage or even destroy it.

- Never use the valve as handle or step. Do not place/put any objects on top of it.

Dirt and foreign particles in the valve!

Penetrating dirt and foreign particles in the valve lead to wear and malfunctions. The safe function of the valve can no longer be ensured.

- During installation, ensure utmost cleanliness in order to prevent foreign particles, such as welding beads or metal chips, from getting into the hydraulic lines.
- Do not use linting cleaning fabric for cleaning.
- Ensure that no cleaning agents are able to penetrate the hydraulic system.

Environmentally harmful hydraulic fluid!

Leaking hydraulic fluid leads to environmental pollution.

- Immediately remedy possible leakage.
- Dispose of the hydraulic fluid in accordance with the currently applicable national regulations in your country.

4 Scope of delivery

The scope of delivery includes:
- 4-way servo valve with mechanical position feedback
  Type 4WS2EM10..5X/...XD...
- Product documentation (operating instructions with declaration of conformity and data sheet)

- ▶ Check the scope of delivery for completeness.
- ▶ Check the scope of delivery for possible transport damage, see chapter 6 "Transport and storage".

In case of complaints, please contact Bosch Rexroth AG, see chapter 16.1 "List of addresses".

Accessories such as valve subplates are not included in the scope of delivery and must be ordered separately. See chapter 7.6 "Required accessories".

5 Product information

For information on the performance and product description please refer to *"Data sheet 29583-XD"* of your valve.

5.1 Product identification

5.1.1 Information on the name plate

The meaning of the information on the name plate can be obtained from the correspondingly numbered fields of the following table.

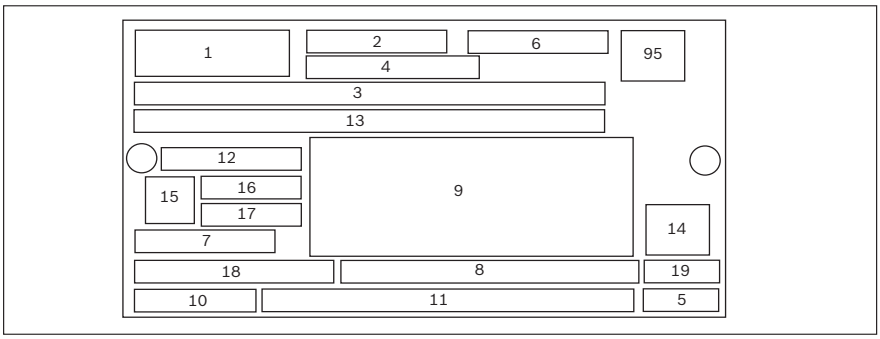

FIg. 1: Name plate of the valve

Table 5: Information on the name plate

No.	Type of information
1	Manufacturer's logo
2	Material no. of the valve
3	Type designation complete valve
4	Serial number of the valve
5	Manufacturer's factory number
6	Date of manufacture (year and week)
7	Maximum operating pressure
8	Ambient temperature range
9	Hydraulic symbol according to ISO 1219
10	Designation of origin
11	Name and address of the manufacturer
12	Customer's or production order number
13	Customer material number or additional information
14	CE mark
15	Explosion protection mark
16	Number of IECEx certificate
17	Marking according to ATEX directive 2014/34/EU and for the type of protection according to EN IEC 60079-0 / EN 60079-1 and IEC 60079-0 / IEC 60079-1
18	Number of the EU type examination certificate
19	Identification number of notified body carrying out the production audit
95	Bosch Rexroth QR code

5.1.2 Explosion protection marking

Zones, device groups and categories

The user/machine end-user has to classify potentially explosive atmospheres according to EU Directive 1999/92/EC into zones. In the following table, the corresponding zones for device groups and categories are shown.
The valve may only be used in the areas and zones which correspond to the device group and category. During use, also observe the other information on explosion protection in the *"Data sheet 29583-XD"*.

Table 6: Device groups and categories

Device group according to 2014/34/EU	Category according to 2014/34/EU	Area of application, properties (excerpt from the directives)	Usable in zone according to 1999/92/EC
I	M1	Firedamp areas (= device group I), i.e. underground parts of mines and their overground systems. In case of an explosive atmosphere, further operation is possible. Very high safety level.	-
I	M2	Firedamp areas (= device group I), i.e. underground parts of mines and their overground systems. In case of an explosive atmosphere, it must be possible to deactivate the device. High safety level.	-
II	1G	Potentially explosive atmospheres in which explosive gases, mists or vapors (=device group II) occur permanently or for a long time or frequently. Corresponds to zone 0 according to Directive 1999/92/EC. Very high safety level.	0, 1, 2
II	2G	Potentially explosive atmospheres where explosive gases, mists or vapors (= device group II) are occasionally present. Corresponds to zone 1 according to Directive 1999/92/EC. High safety level.	1, 2
II	3G	Potentially explosive atmospheres in which explosive gases, mists or vapors (=device group II) do not normally occur or only rarely or for a short time. Corresponds to zone 2 according to Directive 1999/92/EC. Normal safety level.	2
II	1D	Potentially explosive atmospheres where explosive dust/air mixtures (= device group II) are continually, long-term or often present. Corresponds to zone 20 according to Directive 1999/92/EC. Very high safety level.	20, 21, 22
II	2D	Potentially explosive atmospheres where explosive dust/air mixtures (= device group II) are occasionally present. Corresponds to zone 21 according to Directive 1999/92/EC. High safety level.	21, 22
II	3D	Potentially explosive atmospheres where an explosive atmosphere due to stirred dust (= device group II) is normally not present or occurs only rarely or short-time. Corresponds to zone 22 according to Directive 1999/92/EC. Normal safety level.	22

6 Transport and storage

6.1 Transporting the valve

⚠ CAUTION

Danger of damage to property and personal injuries!
With improper transport, the valve can fall and lead to damage and/or injuries since the parts are e.g. sharp-edged, oily, instable, loose or bulky.

- Use the original packaging for transport.
- Use personal protective equipment (such as gloves, working shoes, safety goggles, working clothes, etc.)
- Comply with the national laws and regulations regarding occupational health and safety and transport.
- Do not transport the valve using components with little stability, e.g. cables.

Sharp edges!
Danger of cut injuries!

- Wear suitable protective equipment for the transport of the safety valve.

Further information regarding the transport is available from Bosch Rexroth, see chapter 16.1 "List of addresses".

Report any transport damage to your responsible sales contact person within one week. The addresses of the sales subsidiaries can be found on the Internet on: `http:/www.boschrexroth.com/adressen`

6.2 Storing the hydraulic valve

Valves are delivered in a perfect state.

For transporting and storing the product, always observe the environmental conditions specified in *"Data sheet 29583-XD"*. Improper storage may damage the valve.

Valves can be stored for up to 12 months under the following conditions:

- Observe the storage temperature range indicated in *"Data sheet 29583-XD"* .
- The relative air humidity must not exceed 65%.
- The storage rooms must provide 100% UV protection.
- No ozone formation may occur near the storage facility.
- The storage facilities must be free from etching substances and gases.
- Do not store the valve outdoors but in a well-ventilated room.
- Protect the valve against humidity, particularly ground humidity. Store the valve on a shelf or on a pallet.
- Store the valve protected against impacts and sliding and do not stack it.
- Store the valve in the original packaging or comparable packaging in order to protect it from dust and dirt.
- All connections at the valve must be closed with cap elements.
- After opening the transport packaging, it must be closed properly again for storage. Use the original packaging for storage.

Procedure after expiry of the maximum storage time of 12 months

1. Check the complete valve for damage and corrosion prior to installation.
2. In a test run, check the valve for correct function and leak-tightness.

After expiry of the maximum storage time, we recommend having the valve checked by your competent Bosch Rexroth service. In case of questions regarding spare parts, please contact the Bosch Rexroth service responsible for your valve, see chapter 10.7 "Spare parts".

Following disassembly

If a dismounted valve is to be stored, it has to be preserved for protection against corrosion for the duration of storage.
Bosch Rexroth recommends the following procedure:

1. Clean the valve; refer to chapter 10.1 "Cleaning and care".
2. Close all connections so that they are airtight.
3. Pack the valve with a desiccant air-tightly in corrosion protection film.
4. Store the valve protected against shocks.

- In each case, please observe any applicable provisions and laws regarding the handling of substances hazardous to water or to health.

7 Assembly

⚠ CAUTION

High pressure!
Risk of injury due to parts shooting out during works at hydraulic accumulators which have not been unloaded.
- Only work on the valve after the system has been depressurized.
- Unload accumulators which may have been mounted at the system.
- Check the system with test pressure according to ISO 4413.
- Assembly and commissioning may only be carried out by specialists.

7.1 Unpacking

⚠ CAUTION

Falling parts!
Risk of injury! If the packaging is opened improperly, parts may fall out and cause injuries or damage of the parts.
- Put the packaging on level, bearing ground.
- Only open the packaging from the top.

- Dispose of the packaging in accordance with the national regulations of your country.

7.2 Changes to the surface protection of the valve

⚠ WARNING

Explosion hazard due to modifications to the valve!
In the event of changes to the surface protection of the valve, the following points must be observed:
- The valve housing may only be painted according to the provisions of EN ISO 80079-36, section 6.7; otherwise, explosion protection can no longer be ensured.

7.3 Installation conditions

- For installing the product, always observe the environmental conditions specified in *"Data sheet 29583-XD"*.
- It is imperative to provide for absolute cleanliness. The valve must be protected from dirt during installation. Contamination of the hydraulic fluid may considerably reduce the life cycle of the valve.
- Observe the installation position specified in *"Data sheet 29583-XD"*.

7.4 Prior to assembly

⚠ WARNING

Explosion hazard due to wrong area of application!

A valve which is not approved for the area of application may cause an explosion!

- Check whether all the explosion protection marks on the name plate of the valve comply with the information in these operating instructions.
- Please check if you have the right valve type by means of the type designation on the name plate of the valve.
- Make sure that the zone and the temperature class correspond to the area of application of the valve.

- Check the scope of delivery for completeness and possible transport damage.
- Also observe the safety instructions in chapter 2.6 "Product-specific safety instructions".
- Transport protection elements (e.g. cover plates, protective plugs) must be removed prior to use in an explosive atmosphere.

7.5 Required tools

You only require standard tools to assemble the valve.

7.6 Required accessories

The following accessories are recommended for the connection of the valve.
These accessories can be ordered separately from Bosch Rexroth:

Subplates

For subplates with dimensions for valves with porting pattern according to ISO 4401, refer to *"Data sheet 45100"*.

Flushing plate

Table 7: Flushing plate

	Material number
HSA 10 B019-4X/V00-J3	**R901541299**

Test device

Table 8: Test device

	Documentation to be carried
Test device VT-SVTSY, battery-operated, can optionally be operated with power supply unit	Data sheet 29681

⚠ WARNING

Explosion hazard!
Flushing plate and test device are **not** approved according to ATEX directive 2014/34/EU and IECEx regulations. Use of these components in an explosive atmosphere may cause an explosion!
- The flushing plate and test device may only be used if the formation of explosive atmospheres during use of these components can be excluded.

Servo amplifier (external)

For information on the servo amplifier (external), see *"Data sheet 29583-XD"*.

Ordering address for accessories and valves

The addresses of our responsible sales organizations can be found online under `www.boschrexroth.com`
and in appendix 16.1 "List of addresses".

7.7 Assembling the valve

7.7.1 Flushing the system

⚠ WARNING

Faulty mounting!
Fastening the flushing plate using mounting screws of reduced stability may cause the flushing plate to become loose. Consequently, hydraulic fluid may leak and lead to personal injuries and/or damage to property.
- Completely assemble the flushing plate according to the assembly specifications using suitable assembly aids.
- Observe the tightening torques, screw stabilities and the minimum length of the mounting screws.
- Always fasten the flushing plate with all 4 mounting screws.
- Only assemble the flushing plate using the mounting screws intended for that purpose and included in the scope of delivery.

Before installing the valve into a device or system, the system must be flushed. Only then is the unobjectionable functioning of the valve guaranteed. With an external pilot oil supply make sure that it is flushed, as well. Also observe the operating instructions of the device and/or system into which the valve is installed.
For flushing the system into which the valve is to be installed, flushing plates with FKM seals and porting pattern according to ISO 4401-05-05-0-05 are available.
For a dimensional drawing of the flushing plate refer to the "*Data sheet 29583-XD...*".
Within the flushing plate, ports P, T and T1 as well as X and Y are connected with each other.

Install this flushing plate into the system instead of the valve and subsequently flush it.

When using the subplates mentioned under chapter 7.6 "Required accessories" or in case of assembly on comparable cast iron installation surfaces, tighten all four mounting screws with a tightening torque of 12.5 Nm ± 1.5 Nm (with a friction coefficient of µtotal = 0.09...0.14). This tightening torque refers to the maximum admissible operating pressure.

The use of a directional valve with port in accordance with ISO 4401-05-05-0-05 is suited better than a flushing plate.
This valve can also be used for flushing the actuator ports.
The following is a guideline for the necessary flushing time t in hours:

$$t \geq \frac{V}{q_v} - 5$$

V Tank capacity in liters
q_v Pump flow in liters / minute

The degree of contamination of the hydraulic fluid that can be monitored by a continuous measurement using a particle counter is decisive for the flushing time. Install a pressure differential-resistant pressure filter without bypass, if possible with integrated clogging indicator, directly in front of the valve. During the flushing procedure, check all filters in short intervals and exchange the contaminated filter elements, if necessary.

7.7.2 Installing the valve in the system

⚠ WARNING

Faulty assembly of plug screws and lines!
Improperly fastened plug screws and lines may become loose during subsequent operation and may be ejected due to the pressure. This may cause severe injuries!
- Only pressurize your system after all plug screws and lines have been completely and properly mounted according to the specification.

Faulty mounting!
Mounting of the valve with valve mounting screws of reduced stability, insufficient mounting or fastening at blocks and plates with insufficient stability may lead to the valve becoming loose and falling down. Consequently, hydraulic fluid may leak and lead to personal injuries and/or damage to property. Particular caution applies to valves with suspended installation.
- Completely assemble the valve according to the assembly specifications by means of suitable assembly aids.
- Only assemble the valve at blocks or plates suitable for the weight of the valve.
- Observe the tightening torques, screw stability and the minimum length of the valve mounting screws.

⚠ CAUTION

Insufficient installation space!
Insufficient installation space may lead to jamming or abrasions in case of work at the valve.
- Provide for sufficient installation space.

Leaking hydraulic fluid!
Hydraulic fluid may leak during assembly and disassembly of the valve. Consequently, persons may slip or fall.
- After the disassembly, provide the bores containing the hydraulic fluid with suitable closing elements.
- Immediately remove hydraulic fluid that has leaked out.

NOTICE

Wear, tear and malfunctions!
The cleanliness of the hydraulic fluid has a considerable impact on the cleanliness and life cycle of the valve. Any contamination of the hydraulic fluid will result in wear and malfunctions. Particularly foreign particles may damage the valve.
- Always ensure absolute cleanliness.
- Install the valve in a clean condition.
- Make sure that all connections, hydraulic lines and attachment parts are clean.
- Ensure that no cleaning agents are able to penetrate the hydraulic system.
- Only use seal kits as listed in chapter 10.7 "Spare parts".

If the valve is directly attached to a moveable actuator, installation of the valve control spool parallel to the direction of acceleration of the actuator has to be avoided.

1. Before any assembly and disassembly work starts, the surroundings must be cleaned so that no dirt can get into the oil circuit. Only fiber-free cloth or special paper may be used for cleaning.
2. Remove existing preservative agent.
3. Check the valve contact surface for the required surface quality (see *"Data sheet 29583-XD"*). Remove the protective plate from the valve and keep it safe for returns in case any repairs become necessary later.
4. Dry the valve connection surface using suitable cleaning materials.
5. Check the seal rings at the valve connection surface for completeness. Other sealants are not admissible.
6. Check whether at the subplate, the pressure connecting line is connected to P and the return line to T.

Swapping P and T may cause damage at the valve when pressurized.

7. Place the valve on the contact surface.

Only use valve mounting screws with the thread diameters, screw lengths and strength properties listed in *"Data sheet 29583-XD"*.
Always fasten the valve with all 4 valve mounting screws, otherwise leak-tightness is not guaranteed.

8. When using the subplates mentioned under chapter 7.6 "Required accessories" or in case of assembly on comparable cast iron installation surfaces, tighten all four valve mounting screws with a tightening torque of 12.5 Nm ± 1.5 Nm (with a friction coefficient of μ_{total} = 0.09...0.14). This tightening torque refers to the maximum admissible operating pressure.

If the valve is to be used at a reduced maximum pressure and in this connection is to be mounted on connection surfaces of a different material, it might be necessary to use a lower tightening torque in order to exclude any damage.

7.7.3 Hydraulically connecting the valve

CAUTION

Damage of the valve
During operation, hydraulic lines and hoses installed under mechanical stress create additional mechanical forces, which reduces the life cycle of the valve and the complete machine or system.
- ▶ Assemble lines and hoses without stress.

1. Depressurize the relevant system part.
2. Establish all connections observing the operating instructions of the system.
3. Make sure that pipes and/or hoses are connected to all ports and/or that the ports are closed with plug screws.
4. Carry out a special check to make sure that the cap nuts and flanges are correctly tightened at the pipe fittings and flanges.

   Mark all checked fittings, e.g. using a permanent marker.

5. Make sure that all pipes and hose lines and every combination of connection pieces, couplings or connection points with hoses or pipes are checked for their operational safety by a person with appropriate knowledge and experience.

7.7.4 Connecting the power supply

⚠ WARNING

Explosion hazard!
If the electrical connection (provided by the customer) is located in the potentially explosive atmospheres or if the electrical connection (provided by the customer) is not designed with a type of protection which is appropriate for the intended use, an explosion may result!

- According to the construction provisions, the electrical connection (provided by the customer) must either be located outside the potentially explosive atmospheres or within the potentially explosive atmospheres in terminal boxes with a type of protection which is appropriate for the intended use.

Improper assembly!
Danger to life, risk of injury caused by electric shock due to incorrect connection and faulty pin assignment.

- The valve may only be connected by or under the supervision of a specialized electrician.
- De-energize the system before the assembly and any installation work. Secure the electrical equipment against restarting.
- Observe the connection data and instructions for the electrical supply of the valve, see *"Data sheet 29583-XD"*.

Explosion hazard due to lack of equipotential bonding!
Electrostatic processes, an incorrect grounding concept or a lack of equipotential bonding may lead to an explosion. Apart from this, malfunctions or uncontrolled movements at the machine may be caused!

- Provide for correct grounding and provide for proper equipotential bonding.
- The base plate or subplate on which the valve is fitted must be electrically conductive and included in the equipotential bonding according to EN 60079-14 and IEC 60364-4-41.

⚠ CAUTION

Danger of damage to property and personal injuries!
Faulty energy supply may lead to uncontrolled valve movements. These could result in possible malfunctions or failure of the valve and cause injuries.

- Always observe country-specific regulations.

Faulty electrical assembly!
Device might be destroyed.

- Disconnect the device from the mains or from the voltage source or de-energize it prior to installation work.

- Check the correct assignment of the connection cable braided wires at the external control electronics.
- Ensure that there are no bends in the connection line and braided wires to avoid short-circuits and interruptions.

- Install the connection line to the external control electronics in a strain-relieved form. The first mounting point must be within 25 cm of the cable gland.

8 Commissioning

⚠ WARNING

Explosion hazard!
The occurrence of explosive atmospheres in the hydraulic area of the valve may cause an explosion!
- Conditions for use in zone 1:
  For ensuring the type of protection d "flameproof enclosure", the occurrence of explosive atmospheres in the hydraulic area of the valve must be securely avoided. This may be ensured by applying a sufficiently high pilot pressure (≧ 10 bar in channel P and/or X) before applying an electrical signal at the coils or the electronics.

Faulty assembly!
If the valve is not correctly mounted, persons might be injured and the valve or system could be damaged when commissioning the valve.
- Only commission your system after all hydraulic connections and the valve have been completely and properly mounted according to the specifications.
- Look out for defective sealing points and exchange defective seal rings immediately.
- Wear personal protective equipment during the initial commissioning.

Inadmissibly high operating pressure!
In hydraulic applications with different area ratios, the hydraulic pressure is fortified and may - in case of incorrect design - lead to exceedance of the maximum admissible operating pressure. Thus, the valve may burst or the closing elements may be ejected and cause personal injury.
- Before commissioning the hydraulic system, ensure that the maximum admissible pressure of the valve in the system is not exceeded by any means.
- Ensure that in your system, the maximum admissible operating pressure is secured by means of a pressure limitation element.

Damage to persons and property!
Commissioning of the valve requires basic hydraulic and electrical knowledge.
- Only qualified personnel (see section 2.4 "Qualification of personnel") is authorized to commission the valve.

In order to commission the valve, proceed as described in the sections below:

Checking electrical connections

- Have the electrical connections checked for proper condition by or under the guidance and supervision of a specialized electrician before the initial commissioning or any re-commissioning.

Performing a functional test

- If possible, only check hydraulic functions in a controlled way and at low pressure.

For the control and functional test, special test devices are available. Refer to chapter 7.6 "Required accessories".

Performing a leak test

- Ensure that no hydraulic fluid leaks on the valve or on the connections during operation.

9 Operation

9.1 General information

⚠ CAUTION

Loud noise!
An unfavorable arrangement of valves results in resonance or fluid noises, such as whistling. In continuous operation, these noises may cause hearing damage in persons or damage at the valves.
- In this case, contact a service engineer.

Only use the valve within the performance range provided in *"Data sheet 29583-XD"*.
The machine and/or system manufacturer is responsible for the correct project planning of the hydraulic system and its control.
Changing the settings at the valve is not admissible.

For information on the operation, please refer to the operating instructions for the hydraulic system into which the valve is installed.

If errors occur, refer to chapter 14 "Troubleshooting".

10 Maintenance and repair

10.1 Cleaning and care

NOTICE

Penetrating dirt and fluids will cause faults!
When dirt and fluids penetrate, safe function is no longer ensured.
- Always ensure absolute cleanliness when working at the valve.

Solvents and aggressive, highly inflammable cleaning agents!
Aggressive cleaning agents may damage the seals and the surface of the valve and cause them to age faster.
- Never use solvents or aggressive or highly inflammable cleaning agents.

Damage to the valve due to ingress of humidity!
If a high-pressure washer is used, humidity may enter and damage the valve.
- Do not use a high-pressure washer for cleaning.

For cleaning and care of the valve, please observe the following:
- Close all openings with appropriate protective caps/devices.
- Ensure that all seals and electrical connections are firmly attached so that no humidity can penetrate the valve during cleaning.
- Remove external dirt and keep sensitive and important parts clean.
- Remove dust and dirt accumulations on the valve at regular intervals.

10.2 Inspection and maintenance

⚠ WARNING

Uncontrolled machine movements!
Risk of injury due to maintenance work at an activated machine.
- Unless expressly prescribed otherwise, deactivate the machine via the main switch, lock it and remove the key before carrying out any work.

The following inspection, testing and maintenance work is to be carried out regularly. The intervals for the same have to be selected in a way that - also dependent on the operating conditions - expected deficiencies are identified in good time. The check must, however, at least be carried out every **three years from the date of manufacture of the valve.** The date of manufacture of the valve can be found on the name plate, see chapter 5.1.1 "Information on the name plate".

Before the initial commissioning or re-commissioning of the valve in a system, check whether the valve requires maintenance. If required, carry out maintenance.
For order details for seal kits, please refer to chapter 10.7 "Spare parts".

In order to ensure a long life cycle and functionality, include the following activities in your maintenance schedule for the overall system:
1. De-energize and depressurize the relevant system part.
2. Remove coarse dirt from the exterior.

CAUTION! Damage to property and personal injury caused by electrostatic charging!
- In order to avoid electrostatic charging, clean the valve using a damp cloth only.

3. Check all external fittings for completeness and tight seat.
4. Check the electrical connection for tight seat.
5. Check the valve for external leakage and replace the sealing devices, if required, see chapter 10.6 "Rectifying external leakages".

10.3 Maintenance schedule

Valves are low-maintenance provided that they are used as intended.
To ensure that the valve functions reliably for a long time, Bosch Rexroth recommends checking the hydraulic system and the valve regularly.

10.3.1 Checking for leakage

Check the valve for leakage. An early detection of hydraulic fluid loss may help you to identify and remedy errors. Bosch Rexroth therefore recommends that you keep the valve and/or the system permanently clean.

10.3.2 Checking for noise development

Check the valve for noise development. Based on noise development or the increase in noise development, a possible failure of one or several components can be recognized in time and consequential damage can be avoided.

10.3.3 Checking the mounting elements

Check that the mounting elements are attached firmly. All mounting elements are to be checked when the system is switched off, depressurized and has cooled down.

10.4 Repair

⚠ WARNING

Explosion hazard due to improper repair!
Improper repair will void the explosion protection!
- For repair works, the valve may only be disassembled to the extent described in these operating instructions.
- Defective parts may only be replaced by new, interchangeable components in original equipment quality.
- Never disassemble the valve cap or the cable gland. Disassembly of the valve cap or the cable gland will lead to loss of the explosion protection.

10.5 Exchanging the filter element

The valve contains an installed, exchangeable filter element. You can also exchange the filter element if the valve has already been installed. Replacement filter elements with FKM seal are available as spare part, see 10.7 "Spare parts".
In case of contamination, you must exchange the filter element as follows:

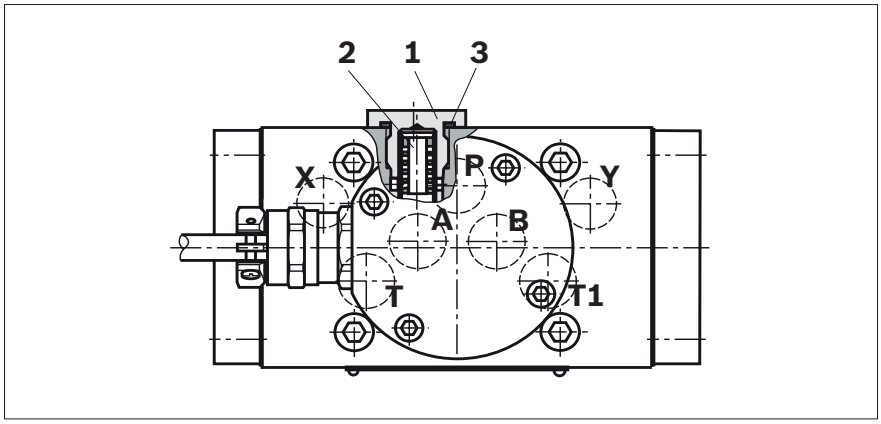

FIg. 2: Filter element

1 Filter screw
2 Filter element
3 Profile seal

1. Depressurize and de-energized the system.
2. Screw out the filter screw **(1)** (wrench size 22).
3. Pull the filter element **(2)** out of the filter screw **(1)** using an M4 screw. Clean the filter screw **(1)**.

Do not clean the filter element but replace it with a new one.

4. Change the profile seal **(3)** whenever the filter element is changed.

5. Install a new filter element in the filter screw **(1)**.
6. Screw the filter screw **(1)** into the valve housing and tighten it using a tightening torque of 30 Nm ± 3.8 Nm.
7. After the filter element has been exchanged, you should check the system for contamination before re-commissioning. In this connection, observe the operating instructions of the relevant system manufacturer.

10.6 Rectifying external leakages

External leakage at the valve connection surface can be rectified on site.
Other leakages have to be rectified by specialists of the manufacturer.

10.6.1 Rectifying leakage at the valve connection surface

1. Remove the valve, see chapter 11 "Disassembly and removal".
2. Inspect the contact surfaces of seal rings at the valve for cleanliness and damage.
3. Inspect the seal rings and recesses on the connection flanges for cleanliness and damage.
4. Dry the mounting surface and the contact surface using suitable cleaning materials.
5. Assemble the new seals.
6. Assemble the valve at the contact surface, see chapter 7 "Assembly".

10.6.2 Rectifying leakage at the filter screw

1. Disassemble the filter screw as described in chapter 10.5 "Exchanging the filter element".
2. Check whether the sealing surface for the profile seal is clean and intact.
3. Dry the mounting surface and the contact surface using suitable cleaning materials.
4. Assemble the new sealing device.

10.7 Spare parts

Exchangeable filter element

Table 9: Exchangeable filter element

	Material number
Exchangeable filter element with FKM seal and FKM profile seal item (3) in fig. 2 for filter screw M16x1	**R961001950**

Standard seal kit, complete

Table 10: Standard seal kit

	Material number
Standard seal kit, complete	**R961001590**

In case of questions regarding spare parts, please contact the competent Rexroth service.
Bosch Rexroth AG
Service Hydraulics
Bürgermeister-Dr.-Nebel-Str. 8
97816 Lohr am Main
Tel: +49 (0) 9352/40 50 60
service@boschrexroth.de

For the addresses of our sales and service network please refer to:
www.boschrexroth.com/adressen

11 Disassembly and removal

⚠ WARNING

Danger of damage to property and personal injuries at energized or pressurized system parts!
For works at pressurized or energized system parts, there is a danger of injury due to escaping hydraulic fluid or electric energy.
- Before disassembly, ensure that the hydraulic system is depressurized, and the electrical control is de-energized.

Explosion hazard!
Disassembly of the valve cap or the cable gland will lead to loss of the explosion protection!
- Never disassemble valve cap or cable gland.

⚠ CAUTION

Falling of an incompletely disassembled valve!
An incompletely disassembled valve may fall down and cause injuries.
- During disassembly, secure the valve against falling.

Have sufficiently dimensioned collecting containers, sufficient cleaning cloths and medium-binding materials ready in order to collect or bind leaking hydraulic fluid.
1. De-energize and depressurize the relevant system part.
2. Disconnect the connection cable from the external control electronics.
3. Use suitable tools to loosen the valve mounting screws of the valve.
4. Remove the valve mounting screws and remove the valve from the connection surface.

5. Collect escaping hydraulic fluid in the provided container and dispose of it properly.
6. If the valve is to be returned to the manufacturer for repair, close the valve connection surface using the protective plate supplied or protect it using equivalent packaging in order to avoid contamination and damage.
7. Close the hydraulic channels of the subplate (on the customer side) to avoid contamination.

If the valve is exchanged, all further steps are analogous to mounting, see chapter 7 "Assembly".

12 Disposal

12.1 Environmental protection

Careless disposal of the valve and the hydraulic fluid could lead to environmental pollution.

- Thus, dispose of the product and the hydraulic fluid in accordance with the currently applicable national regulations in your country.
- Dispose of hydraulic fluid residues according to the applicable safety data sheets for these hydraulic fluids.
- Please observe the following information for the environmentally-friendly disposal of the valve.

12.2 Return to Bosch Rexroth AG

The hydraulic products manufactured by us can be returned to us for disposal purposes at no cost. There must be no inappropriate foreign substances or third-party components when products are returned. Valves must be drained before being returned. The components should be delivered free to the following address:
Bosch Rexroth AG
Service Industriehydraulik [Industrial Hydraulics Service]
Bürgermeister-Dr.-Nebel-Straße 8
97816 Lohr am Main
Germany

12.3 Packaging

Upon request, reusable systems can be used for regular deliveries.
The materials for disposable packaging are mostly cardboard, wood, and expanded polystyrene. They can be recycled without any problems. For environmental reasons, disposable packaging should not be used for returning products to Bosch Rexroth.

12.4 Materials used

Hydraulic components from Bosch Rexroth do not contain any hazardous materials that could be released during intended use. Normally, no adverse effects on human beings and on the environment have to be expected.
The valves basically comprise of:

- Cast iron
- Steel
- Aluminum
- Copper
- Plastics
- Electronics components and assemblies
- Elastomers

12.5 Recycling

Due to the high metal content, hydraulic products can mostly be recycled. In order to achieve an ideal metal recovery, disassembly into individual assemblies is required. The metals contained in electric and electronic assemblies can be recovered by means of special separation procedures as well.

13 Extension and modification

⚠ WARNING

Explosion hazard caused by unauthorized modification!
Any unauthorized modification results in the loss of the explosion protection.

- ▶ Modifications exceeding the extent described in these operating instructions are not permitted.

14 Troubleshooting

14.1 How to proceed for troubleshooting

- Always work systematically and purposefully, even when under time pressure. In the worst case, random, thoughtless disassembly and changing settings might result in the inability to identify the original cause of error.
- First, get an overview of the functions of the valve in conjunction with the overall system.
- Try to find out whether the valve has worked properly in conjunction with the overall system before the error occurred.
- Try to determine any changes to the overall system in which the valve is integrated:
  - Were there any changes to the application conditions or area of application of the valve?
  - Have any changes (e.g. refittings) been made or have repair works been carried out at the overall system (machine/system, electrical systems, control) or at the valve? If so: What were they?
  - Was the valve and/or the machine used as intended?
  - How did the fault become apparent?

- Try to get a clear idea of the cause of error. Ask the direct (machine) operator.

Fault table

The valve is not sensitive to faults as long as the specified application conditions are complied with, in particular the oil quality and the operating temperature.

Table 11: Fault table

Error	Possible cause(s)	Remedy
Valve does not react to control	Electrical connection interrupted, no current continuity	
	• Cable break	Remove valve and have it repaired
	• Connection cable not connected	Connect the connection cable to the external control electronics
	• Valve-internal cable break	Remove valve and have it repaired
	No pilot oil pressure available	
	• No pressure at X and/or P	Ensure the pilot oil supply
	• Filter blocked	Exchange filter element and check system for contamination
	• Orifice blocked	Remove valve and have it repaired
Zero flow too high	• Control edges worn	Remove valve and have it repaired
Bad dynamic behavior	• Filter contaminated	Exchange filter element and check system for contamination
	• Orifice contaminated	Remove valve and have it repaired
Instable zero point	• Control spool friction due to contamination	Remove valve and have it repaired
Hysteresis	• Control spool friction due to contamination	Remove valve and have it repaired
Large zero point deviation	• Orifice contaminated	Remove valve and have it repaired

Error	Possible cause(s)	Remedy
External leakage	Seal defective	
	• Seal at the connection surface is defective	Remove the valve and replace the seals
	• Seal at filter screw is defective	Disassemble the filter screw and replace the seal
	• Other leakage	Remove valve and have it repaired

Following faults due to contamination, in addition to the repair, it is essential to check the oil quality and improve it, if necessary, by suitable measures such as flushing or the additional installation of filters.

15 Technical data

For the technical data of your valve please refer to *"Data sheet 29583-XD"*.

16 Appendix

16.1 List of addresses

Contacts for service and spare parts

Bosch Rexroth AG
Bürgermeister-Dr.-Nebel-Straße 8
97816 Lohr am Main
Germany

Phone +49 (0) 9352/40 50 60
Email service@boschrexroth.de

Headquarters

Bosch Rexroth AG
Zum Eisengießer 1
97816 Lohr am Main
Germany

Phone +49 (0) 9352/40 30 20
Email my.support@boschrexroth.de

The addresses of our sales and service network and sales organizations can be found at `www.boschrexroth.com/addresses`

17 Declaration of conformity

rexroth
A Bosch Company

EU-Konformitätserklärung - *Original*
EU declaration of conformity

Dok.-Nr. / *Doc. No.*: DCTC 31001-016
Datum / *Date*: 14.10.2020

- ☐ nach Maschinenrichtlinie 2006/42/EG / *in accordance with Machinery Directive 2006/42/EC*
- ☐ nach Niederspannungsrichtlinie 2014/35/EU / *in accordance with Low Voltage Directive 2014/35/EU*
- ☐ nach EMV-Richtlinie 2014/30/EU / *in accordance with EMC Directive 2014/30/EU*
- ☐ nach Druckgeräte-Richtlinie 2014/68/EU / *in accordance with Pressure Equipment Directive 2014/68/EU*
- ☒ nach ATEX-Richtlinie 2014/34/EU / *in accordance with ATEX Directive 2014/34/EU*
- ☐ nach RoHS-Richtlinie 2011/65/EU / *in accordance with RoHS Directive 2011/65/EU*
- ☐

Hiermit erklärt der Hersteller, / *The manufacturer*

Bosch Rexroth AG
Zum Eisengießer 1
97816 Lohr am Main
DEUTSCHLAND

dass das nachstehende Produkt / *hereby declares that the product below*

Bezeichnung / *Name*:	**4-Wege-Servoventil mit mechanischer Wegrückführung / *4-way directional servo valve with mechanical position feedback***
Typ / *Type*:	**4WS2EM10..5X/...XD...** (nach Datenblatt 29583-XD / *according to data sheet 29583-XD)*
Kennzeichnung / *Marking*	**II 2G**

in Übereinstimmung mit oben genannte(n) Richtlinie(n) entwickelt, konstruiert und gefertigt wurde. / *was developed, designed and manufactured in compliance with the above-mentioned directive(s).*

Die alleinige Verantwortung für die Ausstellung dieser EU-Konformitätserklärung trägt der Hersteller. / *This EU declaration of conformity is issued under the sole responsibility of the manufacturer.*

Angewandte harmonisierte Normen / *Harmonized Standards applied:*

EN IEC 60079-0:2018, EN 60079-1:2014

Die Notifizierte Stelle DEKRA Testing and Certification GmbH (Kennnummer 0158) hat folgende EU-Baumusterprüf-bescheinigung ausgestellt. / *The notified Body DEKRA Testing and Certification GmbH (number 0158) issued the following EU type Examination certificate.* **BVS 09 ATEX E 116 X**

IECEx Konformitätsbescheinigung / *IECEx Certificate of Conformity* **IECEx BVS 13.0120X**

Weitere Erläuterungen / *Further explanations:*

Die Montage- und Installationshinweise gemäß Produktdokumentation 29583-XD sind zu beachten. / *The assembling and installation instructions according to the manual 29583-XD have to be followed.*

Lohr am Main	14.10.2020	i.V.	i.V.
Ort / *Place*	Datum / *Date*	Achim Richartz, DC-IH/EHC Entwicklung Industriehydraulische Steuerungen *Engineering Industrial Hydraulic Controls*	Enno Klaaßen, LoP1/PT Technische Werkleitung *Vice President, Technical Plant Manager*

Änderungen im Inhalt der EU-Konformitätserklärung sind vorbehalten. Derzeit gültige Ausgabe auf Anfrage.
We reserve the right to make changes to the content of the EU Declaration of Conformity. Current issue on request.

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