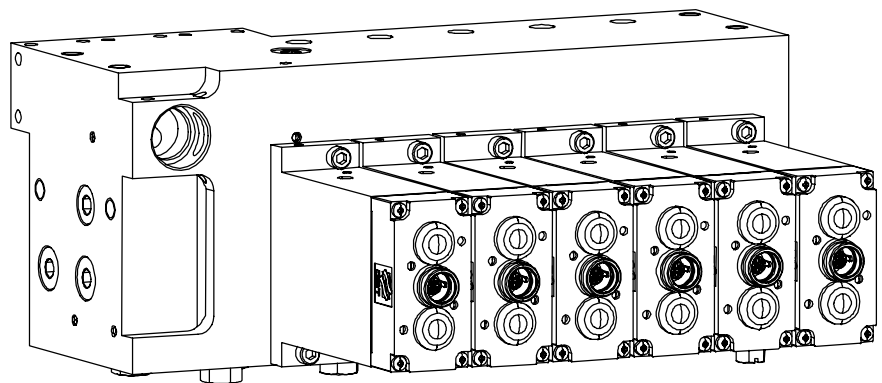




Operating Manual

DBT - Electrohydraulic Control Unit, 12 Functions

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Your safety

This chapter provides vital information for your safety.

Pay special attention to this chapter. The safety instructions and rules of procedure will help you to avoid hazardous situations and to perform the necessary work as safely as possible.

residual risk

The electrohydraulic control unit has been manufactured in accordance with the state of the art and generally recognized safety standards and regulations. However, a certain risk remains which might get you into hazardous situations when working with or on the electrohydraulic control unit. These may, for example, be caused by unforeseeable external influences, machine damage or operating errors.

supplementary regulations

In addition to this operating manual, also be sure to observe the respective legal provisions and regulations for accident prevention in your country.

Observe the safety and accident prevention regulations:

- of the mining company,
- of the mining authority, and
- of the miners' accident insurance association.

Personnel

Persons employed in the operation, repair, and overhaul of hydraulic and/or electrohydraulic control unit components must have special qualifications. In addition to having received training in mining skills the following minimum requirements shall be met.

Operation

qualification

Operation and maintenance of the shield control is only allowed to be performed by trained personnel. The training shall be matched to the type of shield control actually used. The content of the operating manual, especially the chapter on safety, shall constitute a part of this training.

They shall possess and furnish proof of adequate familiarity with the

- mechanical,
- hydraulic, and
- control systems.



Overview of the safety instructions



IMPORTANT!

Before commissioning the shield, take care to ensure that the symbol plate is positioned such that the symbols are clearly legible.

Chapter 5: Operations and maintenance



DANGER!

Safety hazard due to shield movements.

Persons may be severely injured or even killed, for example by unexpected movements of the shield, if the control unit is operated by somebody who does not have sufficient knowledge of how to perform this work.

Only operate the controls of the electrohydraulic control unit if you have the required knowledge.

Push buttons that are jammed or fixed could lead to uncontrolled movements of the shield. These may cause severe injuries or even death. Therefore never fix the push buttons.



WARNING!

Great likelihood of injury due to hydraulic fluid escaping under pressure. You may be severely injured or even killed. It is imperative that you depressurize the hydraulic circuit before working on it. Do not perform any work on a hydraulic circuit before having made sure that the pressure has been isolated.

Do not operate the control valve block without any or with a defective accumulator cartridge. Failure to comply can lead to malfunctions of the control valve block or the shield. This could result in injury or death to yourself or others. It is imperative that you replace defective accumulator cartridges without delay.

Hydraulic fluids escaping under high pressure can cause serious injury or death. Be sure to depressurize the hydraulic system before starting work.

If staple locks are impossible or difficult to pull out be extremely careful as this may indicate that the hydraulic line is still under pressure. Be sure to depressurize the hydraulic line.



CAUTION!

Only use each filter cartridge once and do not attempt to clean it. Dirt in the hydraulic system is a frequent cause of costly repairs. You should generally only use new filter cartridges and seals.

Soiling in the hydraulic system can result in serious damage to the whole hydraulic system!

Always ensure that your working area is clean.

Impurities in the hydraulic medium can result in serious damage to the whole hydraulic system!

Always ensure that your working area is clean.



IMPORTANT!

The maintenance intervals recommended are standard values. Special operating conditions may require different maintenance intervals. It is absolutely necessary that you adapt the maintenance intervals to the individual operating conditions.

The filter cartridge is soiled with emulsion residues and deposits. Dispose of the filter cartridge in accordance with the environment protection regulations!



Installation

This chapter contains information on the installation and removal of the elektrohydraulic control. Please pay particular attention to the warnings and tips.



WARNING!

Improper or incorrect installation endangers you and others. Carry out the installation only when you have the necessary special knowledge to do so and can prove it!

Requirements to the face hydraulic system



NOTICE!

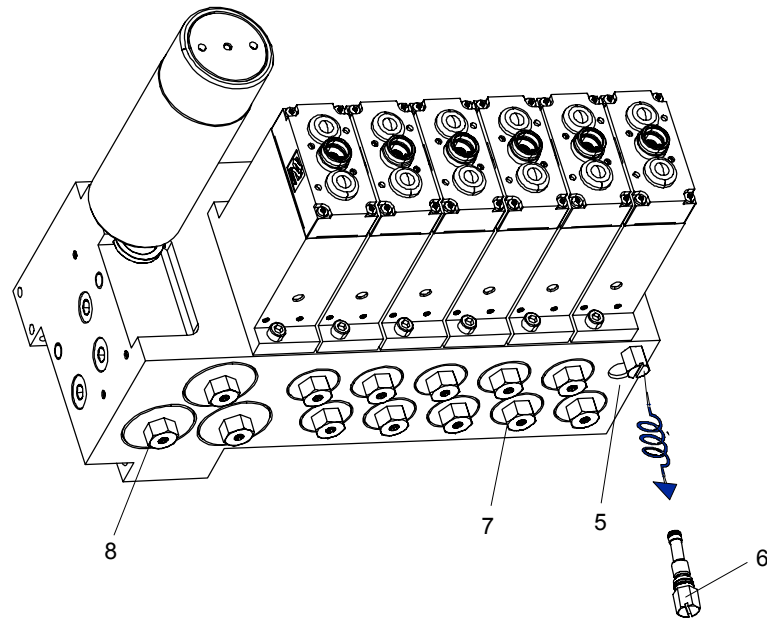
The electrohydraulic and electronic parts of the electrohydraulic shield control system are covered by two separate manuals. The information required for start-up and operation of the electrohydraulic control unit is given in the manual for the respective control system used.

For all hydraulic components included in the scope of supply of DBT, the hydraulic medium must meet the following requirements:

- Pressure fluid according to list of approved products, see section "Permissible media" in chapter 6 of this manual.
- Purity class 18 / 14 to ISO 4406.



Fig. 10: Unscrew the filter cartridge



5 check valve NG 2
6 filter cartridge

7 screw fitting
8 screw fitting

**IMPORTANT!**

The filter cartridge is soiled with emulsion residues and deposits.

Dispose of the filter cartridge in accordance with the environment protection regulations!

Screw in the new filter cartridge

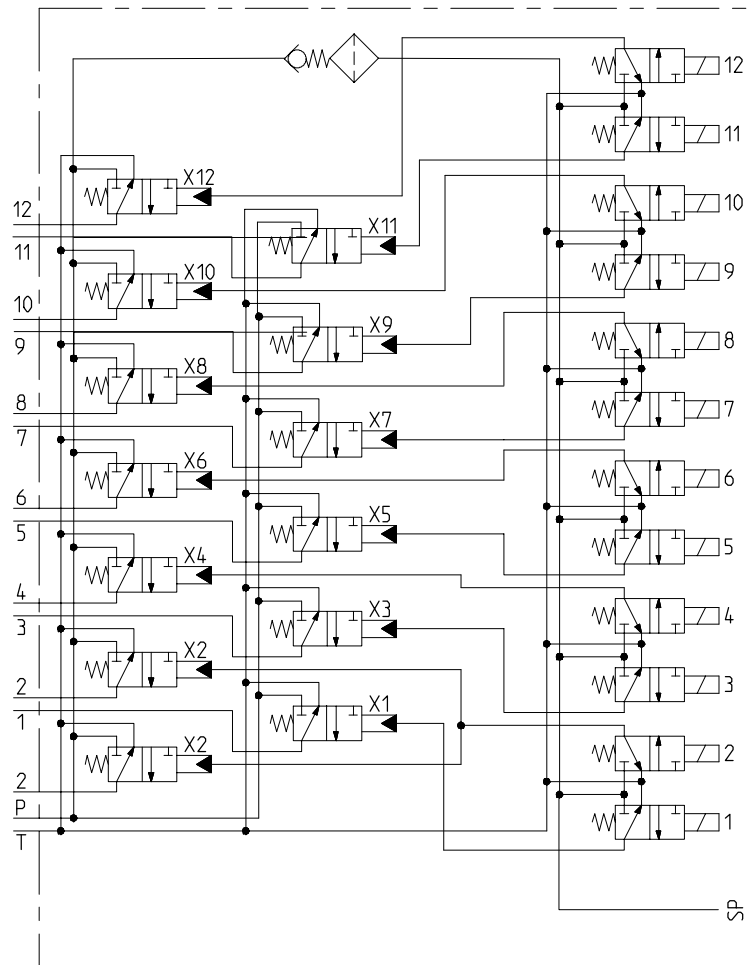
- ☞ Screw in the new filter cartridge.
- ☞ Tighten the cartridge finger-tight (15 Nm).
- ☞ Check that the cartridge is fitted leak-tight.

When you have completed the check without finding any faults, the electrohydraulic control unit can be pressurized again. Remove the securing elements only when you are sure that the hydraulic components function properly.



Hydraulic flow diagram

Fig. 15: Electrohydraulic control unit, 12 functions



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