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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 18024.1-2024

Replacing GB/T 18024.1-2009

**Graphical symbols for the technical documentation of coal
mine machinery - Part 1: General principles**

煤矿机械技术文件用图形符号 第1部分：总则

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1 Scope

The document establishes the design principles and the rules of use for the graphical symbols used in the technical documentation of coal mine machinery, referred to below as graphical symbols, and gives drawing explanations for the basic equipment graphical symbols and the information graphical symbols used in that documentation.

It applies to the drawing of schematics and diagrams relating to coal mine machinery and equipment, such as mining district roadway layout and machinery arrangement drawings, hoisting system schematics, underground and surface production system flow diagrams and other system diagrams, layout drawings and outline diagrams, for use in technical documents for coal mine design, production, research, teaching, publications, product manuals and management. Technical documents for similar machinery in other industries may follow it as a reference.

3 Terms and definitions

The document contains no terms and definitions requiring to be established.

4 Design principles

4.1 The design of graphical symbols shall comply with GB/T 16900, GB/T 16901.1, GB/T 16901.2 and GB/T 20001.2.

4.2 Graphical symbols shall be designed on the basis of the basic shape and structural features of the object represented, following the principles of being clear and simple, easy to draw, easy to understand and remember, easy to distinguish and unique.

4.3 A graphical symbol is generally drawn from one particular direction of the object

represented; different graphical symbols may also be drawn according to different views or functional requirements, but they shall be given different names.

4.4 Graphical symbols shall be designed on the basic grid of the standard module M in accordance with the basic rules of GB/T 16901.1, a 0.125 M grid system being preferred, so as to standardise the proportions of the symbol.

4.5 Graphical symbols shall be drawn with the line types specified in GB/T 17450.

4.6 Arrows indicating a direction should be drawn with a thin continuous line and the head angle should be 45 degrees to 60 degrees.

4.7 For coal mine machinery for which no graphical symbol has been specified, symbols may be deduced and derived according to the design principles of the document.

5 Rules of use

5.1 When graphical symbols are used, they shall be drawn with the line types specified in GB/T 17450.

5.2 When graphical symbols are used, they may be adjusted as required in different directions to the same or to different scales, provided the information of the original graphical symbol is fully conveyed.

5.3 Without changing the meaning of the symbol, the orientation in which a graphical symbol is placed may be adjusted as required, for example by rotating it through an angle or by mirroring it, but the text shall not be inverted.

5.4 Arrows indicating the direction of movement may be added or removed.

5.5 The graphical symbols described as general symbols in GB/T 18024.2, GB/T 18024.3, GB/T 18024.4, GB/T 18024.5, GB/T 18024.6 and GB/T 18024.7 may be used where there is no need to indicate a particular type of the object represented.

5.6 For coal mine machinery for which no graphical symbol has been specified, symbols specified in international standards or in the standards of other countries may be adopted, or self-designed symbols may be used, but the meaning of such symbols shall be stated.

6 Basic graphical symbols for equipment

Table 1 specifies the basic constituent elements of the graphical symbols for mechanical equipment in GB/T 18024.2, GB/T 18024.3, GB/T 18024.4 and GB/T 18024.7. The table lists a serial number, the basic graphical symbol, the name and the applicable document. The thirteen entries are, with their applicable documents: 01 basic support, GB/T 18024.2; 02 shearer, GB/T 18024.3; 03 roadheader, GB/T 18024.3; 04 electric drill, GB/T 18024.3; 05 scraper conveyor, GB/T 18024.4; 06 belt conveyor, side view, GB/T 18024.4; 07 belt conveyor, plan view, GB/T 18024.4; 08 winch, GB/T 18024.4; 09 locomotive, GB/T 18024.4;

10 car underframe, GB/T 18024.4; 11 rubber-tyred car underframe, GB/T 18024.4; 12 fan, GB/T 18024.7; 13 pump, GB/T 18024.7. The symbols themselves are drawings and were not reproduced by the extractor.

7 Information graphical symbols

Table 2 specifies the key information elements contained in the graphical symbols for mechanical equipment in GB/T 18024.2 to GB/T 18024.7. The table lists a serial number, the symbol and the name. The five entries are: 01 loading; 02 unloading; 03 electrically driven; 04 intelligent; 05 movement, sliding. The symbols themselves are drawings and were not reproduced by the extractor.