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

GB/T 3766-2015

**Hydraulic fluid power -- General rules and safety requirements
for systems and their components**

(English Translation)

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Foreword

This Standard is drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard replaces GB/T 3766-2001 "Hydraulic Fluid Power - General Rules Relating to Systems". As compared with GB/T 3766-2001, the main technical changes are as follows.

- ADD reference standards GB/T 2878.1, GB/T 2878.2, GB/T 14048.14, GB/T 15706, GB 16754, GB/T 19671, GB/T 25133, ISO 1219-2, ISO 6149-3, ISO 16874, ISO 17165-1 (SEE Clause 2);
- DELETE reference standards GB/T 2514, GB/T 2877, GB 4208, GB/T 5226.1, GB/T 8098, GB/T 8010, GB/T 8101, JB/T 5244, JB/T 5963, ISO 4400, ISO 6149-1, ISO 6952, ISO 7790, ISO 8434-1, ISO 8434-2, ISO 8434-3, ISO 8434-4, ISO/TR 11688-1, ISO 12151-1, ISO 12151-2, ISO 12151-3, ISO 12151-4, ISO 12151-5 (SEE Clause 2 of the 2001 version);
- ADD the content which shall be considered for valve selection and the requirements for "isolation valve" (SEE 5.4.4.1);
- ADJUST some of the requirements for valve mounting (SEE 5.4.4.2);
- ADD requirements for identification of "manifold" (SEE 5.4.4.3.5);
- ADD the requirements for "level of contamination of hydraulic fluid" (SEE

5.4.5.1.3);

- ADD the requirement of providing a "pan" for reservoir design (SEE

5.4.5.2.1);

- ADD the requirement for the "structural integrity" of reservoirs (SEE

5.4.5.2.2.6);

- ADD the "corrosion protection" requirement for reservoirs (SEE 5.4.5.2.2.7);

- ADD "grounding" requirements for reservoirs (SEE 5.4.5.2.2.8);

- ADD the requirement of "electromagnetic interference protection" for controls (SEE 5.4.7.6.1);

- ADD the "contamination control" requirement for "diagnostics and monitoring" (SEE 5.4.8.5);

- ADD the connection identification requirement for conductors (SEE 7.4.3.2).

This Standard uses redraft law to modify and adopt ISO 4413.2010 "Hydraulic fluid power - General rules and safety requirements for systems and their components" (English version).

The technical differences between this Standard and ISO 4413.2010 and their reasons are as follows.

- About normative references, this Standard has made adjustments with technical differences, to adapt to the technical conditions of China. The adjustments are reflected in Clause 2 "Normative references", as follows.

lambda REPLACE ISO 1219-1 with GB/T 786.1 identical to the international standard (SEE 7.4.1.1);

lambda REPLACE ISO 6149-1 with GB/T 2878.1 identical to the international standard (SEE 5.3.2.5.2);

lambda REPLACE ISO 6149-2 with GB/T 2878.2 which uses the international standard by modification (SEE 5.3.2.5.2);

lambda REPLACE ISO 4406 with GB/T 14039 which uses the international standard by modification (SEE 5.4.5.1.3, 7.3.1.1);

lambda REPLACE IEC 60947-5-5 with GB/T 14048.14 identical to the international standard (SEE 5.4.7.7.2);

lambda REPLACE ISO 12100 with GB/T 15706 identical to the international standard (SEE Clause 1, Clause 3, 5.1.1, 7.1, Table A.1);

lambda REPLACE ISO 13850 with GB/T 16754 identical to the international standard (SEE 5.4.7.7.2);

lambda REPLACE ISO 5598 with GB/T 17446 identical to the international standard (SEE Clause 3);

lambda REPLACE ISO 4021 with GB/T 17489 identical to the international standard (SEE 5.4.8.3);

lambda REPLACE ISO 13851 with GB/T 19671 which uses the international standard by modification (SEE 5.4.7.3.6);

lambda REPLACE ISO 23309 with GB/T 25133 identical to the international standard (SEE 5.4.7.4.4);

- 5.4.1.7, ADD e), to cover more products for application;
- 5.4.2.1, DELETE ISO/TS 13725. This document has been abolished;
- b) of 5.4.5.1.2, CHANGE "fire-resistant hydraulic fluid" to "hydraulic fluid";
- g) of 5.4.5.2.1, ADD a narrative, to make the requirements more comprehensive;
- g) of 5.4.5.2.2.4, ADD a narrative, to reflect the actual application requirements;
- O) of 7.3.1.1, ADD "SEE 5.4.3".

This Standard also makes the following editorial changes.

- 5.2.7f), after "energy isolation", ADD "(e.g., disconnection of power, hydraulic sources)", for easy understanding;
- REORGANIZE the sub-clauses of 5.3.2, to make them consistent with the heading narrative order; SIMPLIFY the "Notes" of 5.3.2.3.2;
- MODIFY the "Notes" of 5.4.2.12;

- DELETE the statement "expressed in accordance with ISO 4406" in

5.4.5.3.1;

- ADD 5.4.6.5.3.3, to incorporate and supplement the same statements in

5.4.6.5.3.1 and 5.4.6.5.3.2;

- In Appendix B, some units are changed to the expression forms commonly used in this profession.

This Standard was proposed by China Machinery Industry Federation.

This Standard shall be under the jurisdiction of National Technical Committee 3 on Hydropneumatic of Standardization Administration of China (SAC/TC 3).

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The previous versions of the standard replaced by this Standard were released as follows.

- GB/T 3766-1983, GB/T 3766-2001.

1 Scope

This Standard specifies general rules and safety requirements for hydraulic systems and their components used on machinery as defined by 3.1 in GB/T