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**NATIONAL STANDARD OF THE
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**Hydraulic fluid power - Remanufacture of components - Part 1:
General technical specifications**

液压传动 元件的再制造 第1部分：通用技术规范

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Foreword

This document was drafted in accordance with the rules given in GB/T 1.1-2020, Directives for standardization - Part 1: Rules for the structure and drafting of standardizing documents.

This document is Part 1 of GB/Z 181, Hydraulic fluid power - Remanufacture of components.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. The issuing body of this document is not to be held responsible for identifying any or all such patent rights.

1 Scope

This document specifies the general technical requirements for the remanufacture of hydraulic components.

This document applies to the remanufacture of hydraulic components whose working medium is hydraulic oil or another hydraulic fluid of equivalent performance.

2 Normative references

The following documents contain provisions which, through normative reference in this text, constitute indispensable provisions of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document, including any amendments, applies.

GB/T 7935, General technical requirements for hydraulic components

GB/T 17446, Fluid power systems and components - Vocabulary

GB/T 27611, General requirements and marking of reused and remanufactured products

GB/T 28618, Remanufacturing of mechanical products - General technical requirements

GB/T 28619, Remanufacturing - Terminology

GB/T 31208, Quality inspection methods for remanufacturing cores

GB/T 32809, Remanufacturing - Technical specification for the cleaning of mechanical products

GB/T 32810, Remanufacturing - Technical specification for the dismantling of mechanical products

GB/T 32811, Technical specification for the assessment of the remanufacturability of mechanical products

GB/T 33947, Remanufacturing - Technical specification for machining

GB/T 35977, Remanufacturing - Technical specification for the surface repair of mechanical products

GB/T 40728, Remanufacturing - Methods for testing the quality of the repair layer of mechanical products

3 Terms and definitions

For the purposes of this document, the terms and definitions given in GB/T 17446 and GB/T 28619 and the following apply.

3.1 core of hydraulic components - a hydraulic component that cannot or should not go on being used, because of functional damage, technical obsolescence or having reached the end of its service life, but some of whose parts still hold value for further use.

3.2 remanufacture of hydraulic components - the process of repairing and reworking a core (3.1) so as to produce a hydraulic component that meets the relevant standard or technical specification.

3.3 remanufactured hydraulic components - the hydraulic component obtained after the remanufacturing process.

3.4 directly used components and parts - the parts in a core (3.1) that can be used directly in the remanufacturing assembly.

3.5 disposed components and parts - the parts in a core (3.1) that hold no value for use, or that do not meet the requirements of remanufacture in technical, economic or environmental terms.

3.6 remanufacturable components and parts - the parts in a core (3.1) whose quality characteristics can be restored or improved by remanufacturing processes.

3.7 remanufactured components and parts - the parts obtained after the remanufacturing processing of remanufacturable parts (3.6).

3.8 replaced components and parts - new parts designed, manufactured or selected according to the technical requirements of the remanufactured hydraulic component (3.3).

4 General requirements

4.1 The remanufacture of hydraulic components shall meet GB/T 28618. 4.2 Before remanufacture, an assessment shall be carried out according to GB/T 32811, taking together the technical, resource-use, environmental and safety factors. 4.3 Directly used parts shall meet the requirements of the relevant technical documents.

4.4 Remanufacturable parts shall be cleaned before machining; after cleaning the parts shall be clean, free from contaminants and free from residual cleaning fluid, and where necessary rust-preventive measures shall be taken. 4.5 When the quality of the parts is inspected, a quality inspection specification and a work instruction for the parts of the remanufactured hydraulic component shall be drawn up.

4.6 A remanufacturing scheme shall be designed for the hydraulic components that can be remanufactured, and the remanufacture shall follow the remanufacturing technical and

process documents. 4.7 Technical and process documents shall be drawn up for the replacement parts. 4.8 Safety protection shall be provided during the remanufacturing process, so as to avoid accidents.

4.9 Before the remanufactured hydraulic component is placed in store, its performance shall be tested, and its quality characteristics and safety performance shall meet the relevant technical specification. 4.10 The remanufactured hydraulic component shall have packaging and accompanying technical documents. 4.11 Databases of repair techniques, economic costs, energy consumption and evaluation rules should be set up, to support judgements on repair technique and the assessment of the economics of remanufacture.

5 The remanufacturing process for hydraulic components

5.1 Overview. The remanufacturing process comprises the preliminary inspection and assessment of the used hydraulic component; the cleaning, dismantling and washing of the core; the inspection, assessment and classification of the parts; the remanufacturing design; the remanufacturing processing and inspection of the parts; the design, manufacture or selection of replacement parts; the assembly of the remanufactured hydraulic component; testing and inspection; painting; marking; packaging; and transport and storage. The process is shown in Annex A.

5.2 Preliminary inspection and assessment. The used hydraulic components recovered are inspected preliminarily, and the core is determined by assessment.

5.3 Dismantling and cleaning of the core. 5.3.1 A dismantling scheme is drawn up; the surface should be cleaned before dismantling, the cleaning method following GB/T 32809. Protective devices shall be placed during dismantling to prevent contaminated oil from overflowing, and the dismantling method shall follow GB/T 32810. 5.3.2 The basic information of the parts is recorded during dismantling, at least the name and the quantity. 5.3.3 The wearing parts on the core, such as the seals, should be scrapped at dismantling. 5.3.4 After dismantling the parts are cleaned, the cleaning methods being those of Annex B.

5.4 Inspection, assessment and classification of the parts. 5.4.1 The parts shall be inspected after cleaning, the inspection method following GB/T 31208 and the content of the inspection being that of Annex C. 5.4.2 The parts shall be assessed after inspection, the assessment meeting GB/T 32811. 5.4.3 Failure analysis and assessment of the remaining life of the remanufacturable parts should follow GB/T 34631. 5.4.4 Inspection records shall be made for the parts inspected, and the parts stored separately as directly used parts, remanufacturable parts and disposed parts; disposed parts are scrapped. 5.4.5 Electronic components should be discarded. 5.4.6 The necessary protective measures shall be taken in storing the parts.

5.5 Remanufacturing design. 5.5.1 From the results of the remanufacturability assessment,