



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

GB/T 41354-2022

**Hydraulic fluid power - Plain-end, seamless and welded
precision steel tubes - Dimensions and nominal working
pressures**

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foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for Standardization Work Part 1. Structure and Drafting Rules of Standardization Documents" drafted.

This document is revised and adopted ISO 10763.2020 "Hydraulic Transmission Seamless or Welded Plain End Precision Steel Tube Dimensions and Nominal Pressure".

The technical differences between this document and ISO 10763.2020 and their reasons are as follows.

--- Increased the scope of application (see Chapter 1) to make the expression more accurate;

--- Replaced ISO 5598 (see Chapter 3) with the normatively cited GB/T 17446 to adapt to my country's technical conditions and improve operability.

action;

--- Replaced ISO 4397 (see 4.1) with the normatively cited GB/T 2351 to adapt to my country's technical conditions and improve operability

action;

--- Deleted ISO 3305 (see Chapter 1, Chapter 2, Chapter 4 and Table 1 in ISO 10763.2020), directly referencing the standard

The data in, more concise.

The following editorial changes have also been made to this document.

---Adjusted the table layout format;

--- Deleted the unit "bar" for pressure.

Please note that some content of this document may be patented. The issuing agency of this document assumes no responsibility for identifying patents.

Introduction

In the hydraulic transmission system, the power is transmitted and controlled by the pressurized fluid in the closed circuit.

The elements are connected by joints (connectors) and pipes. A rigid tube is a rigid conduit.

Hydraulic transmission seamless or welded type plain end precision steel tubes

Dimensions and Nominal Pressure

1 Scope

This document specifies the dimensions and nominal working pressure (hereinafter referred to as "nominal pressure") of seamless or welded plain end precision steel pipes.

This document applies to steel pipes for hydraulic system connections.

2 Normative references

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, dated citations

documents, only the version corresponding to that date applies to this document; for undated references, the latest edition (including all amendments) applies to this document.

GB/T 2351 Fluid Transmission System and Components Hard Pipe Outer Diameter and Hose Inner Diameter (GB/T 2351-2021, ISO 4397.2011,

IDT)

GB/T 17446 Vocabulary of Fluid Transmission Systems and Components (GB/T 17446-2012, ISO 5598.2008, IDT)

3 Terms and Definitions

Terms and definitions defined in GB/T 17446 apply to this document.

4.1 The outer diameter of the steel pipe shall comply with GB/T 2351.

4.2 The tensile strength of the steel pipe in the normalized state (NBK) should not be less than 360MPa.

5 Nominal pressure

Table 1 gives the nominal pressure corresponding to the outer diameter and wall thickness of the selected steel pipe. The ratio of nominal pressure to calculated burst pressure is 1.4, according to the following

The formula to calculate the surface.

Calculate burst pressure.

$$p_b = R_m \cdot \ln[D/(D-2t)] \quad (1)$$

Nominal pressure.

$$p_w = p_b / 4 \quad (2)$$

where.

p_b --- Calculate the burst pressure, in megapascals (MPa);

p_w --- nominal pressure, in megapascals (MPa);

R_m --- minimum tensile strength, in megapascals (MPa);

$\ln$ --- natural logarithm, also expressed as $\log_e$;

D --- Nominal outer diameter of steel pipe, in millimeters (mm);