

ICS 47.080
CCS U 37



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

GB/T 19318-2024

Replacing GB/T 19318-2003

**Small craft - Remote hydraulic steering systems
(English Translation)**

Issued on: April 25, 2024

Implemented on: May 1, 2025

**Issued by: State Administration for Market Regulation, China National
Standardization Administration**

Table of Contents

Preface
1 Scope
2 Normative references
3 Terms and Definitions
4 General requirements
5 Materials
6 Steering system requirements
7 Installation
8 Test requirements
9 Owner's Manual 11
10 Installation Manual 11
Appendix A (Normative) Outboard and sterndrive
Appendix B (Informative) General fit of steering wheel and axle
References

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 for standardization documents" Drafting:

This document replaces GB/T 19318-2003 "Hydraulic steering system for small boats": Compared with GB/T 19318-2003, in addition to the structural adjustment in addition to editorial changes, the main technical changes are as follows:

- a) The content of "Scope" has been changed (see Chapter 1, Chapter 1 of the:2003 edition);
- b) "Terms and Definitions" has been changed (see Chapter 3, Chapter 3 of the:2003 edition);
- c) Deleted the content "the necessary accessories attached to the outboard motor and connected to the hydraulic cylinder output push rod shall be provided together with the outboard motor" Content (see 4.3 of the:2003 edition);
- d) Changed "General requirements for hydraulic steering systems" to "General requirements" and added system integrity, fasteners, pipes, joints and Testing requirements

(see Chapter 4, Chapter 5 of the:2003 edition);

e) Deleted the "Hydraulic Oil" chapter (see Chapter 6 of the:2003 edition);

f) Changed "Parts made of different materials should be galvanically compatible or isolated by plating" to "Materials used in remote hydraulic steering systems should be galvanically compatible or isolated by plating" the copper-based alloy should be isolated from the aluminum alloy by coating or should be prevented from being exposed:

Exposure, such as coating material using 300 series stainless steel or equivalent material" (see 5.1, 5:2, 7:1 of the:2003 edition);

g) Added "Light craft conditions defined in ISO 12217-1:2022, ISO 12217-2:2022, ISO 12217-3:2022" "Metallic steering gear parts located at or below the waterline should be cathodically protected or electrically isolated" (see 5.3);

h) Added "Materials used in remote hydraulic steering systems should be resistant to the fluids with which they may come into contact under normal shipboard conditions":

Damage caused by liquids or mixtures such as grease, lubricating oil, common tank solvents, seawater and fresh water" (see 5.4);

i) Changed "the hydraulic fluid shall be non-flammable, or its flash point shall not be less than 157°C" to "the hydraulic fluid shall be non-flammable, or its flash point shall not be less than Below 160°C" (see 5.6, Chapter 6 of the:2003 edition);

j) Added "Requirements for Steering System" (see Chapter 6);

k) Added specific requirements for installation piping (see Chapter 7, see Chapter 8 of the:2003 edition);

l) Changed "The selection of steering wheel and axle should be coordinated with each other, and the common configuration is shown in Figure 3" to "The selection of steering wheel and axle should be coordinated with each other, and the common configuration is shown in Figure 3" Mutually coordinated, the general configuration diagram is shown in Appendix B, as shown in Figure B:1" (see 7.10, Appendix B, 8:5 of the:2003 edition);

m) Changed the test contents to "installation verification test", "system application test" and "steering system component test" and added detailed tests Content (see Chapter 8, Chapter 9 of the:2003 edition);

n) Added "steering wheel with maximum diameter D_s and deepest concave disc that can be used for hydraulic tiller" (see Chapter 9);

o) Added the following content: "Recommended steering wheels with maximum diameter D_s and deepest concave discs that can be used for hydraulic steering devices (as shown in Figure 3)" capacity (see Chapter 10);

p) "Slogan" and "Part Marking" have been deleted (see Chapter 12 and Chapter 13 of

the:2003 edition);

q) Changed the following: "The rudder stop on the outboard engine should allow an angular displacement of at least 30° to either side: The design torque on the rudder stock should be sufficient to Sufficient to move the tiller from side to side (30° port to 30° starboard or vice versa) in not more than 30 seconds:

The rudder stop device should allow an angular displacement of at least 30° from the center to both sides" (see A:1, 4:1 of the:2003 edition);

r) Added "providing space for the connection of steering components as shown in Figures A:3, A:4 and A:5" [see A:2b), Figures A:3, Figures A:4 and A:5];

s) Changed "greater than the value specified in 9:3:1" to "greater than 9000N" (see A:4, 4:5 of the:2003 edition);

t) Changed "diameter is 9:65 mm" to "diameter is 9:6 mm" (see A:5, 4:6 of the:2003 edition);

u) Changed "greater than the value specified in 9:3:2" to "greater than 9000N" (see A:6, 4:7 of the:2003 edition):

This document is modified to adopt ISO 10592:2022 "Remote hydraulic steering systems for small craft":

This document has the following structural adjustments compared to ISO 10592:2022:

---3:17 corresponds to 3:17:1 and 3:17:2 in ISO 10592:2022;

--- Chapter 6 corresponds to Chapter 7 of ISO 10592:2022;

--- Chapter 7 corresponds to Chapter 8 of ISO 10592:2022;

--- Chapter 8 corresponds to Chapter 9 of ISO 10592:2022, in which:

- 8:2:2 a)~b) correspond to 9:2:2:1~9:2:2:2 in ISO 10592:2022;

- 8:3:3 a)~d) correspond to 9:3:3:1~9:3:3:4 in ISO 10592:2022;

- 8:3:5 a)~e) correspond to 9:3:5:1~9:3:5:5 in ISO 10592:2022; 8:3:5 d) 1)~2) correspond to 9:3:5:4:1~9:3:5:4:2 in ISO 10592:2022;

--- Chapter 9 corresponds to Chapter 10 of ISO 10592:2022;

--- Chapter 10 corresponds to Chapter 11 of ISO 10592:2022;

--- Appendix A corresponds to Chapter 6 of ISO 10592:2022;

--- Appendix B corresponds to Figure 9 in ISO 10592:2022:

The technical differences between this document and ISO 10592:2022 and their reasons are as follows:

--- Replace the obsolete ISO 12217-1:2022, ISO 12217-2:2022, ISO 12217-3:2022 with the current versions ISO 12217-1:2015, ISO 12217-2:2015, ISO 12217-3:2015 (see 5.3 and 7:8):

The following editorial changes were made to this document:

--- Added Appendix B (informative) General fit of steering wheel and axle:

1 Scope

This document specifies the design, installation and testing requirements for machine-mounted and boat-mounted remote hydraulic steering systems for small craft:

Single-engine and multi-engine outboard motors, as well as single-engine and multi-engine inboard motors, sterndrives and water jet propulsion motors exceeding 15 kW Enter the device:

This document applies to the design, installation and testing of machine-mounted and boat-mounted remote hydraulic steering systems for small boats:

This document does not cover emergency means for manoeuvring craft:

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document:

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to this document:

ISO 12217-1:2022 Evaluation and classification of stability and buoyancy of small craft - Part 1: Non-sailing craft of hull length not less than 6 m ISO 12217-2:2022 Evaluation and classification of stability and buoyancy of small craft - Part 2: Sailing craft of hull length not less than 6 m ISO 12217-3:2022 Evaluation and classification of stability and buoyancy of small craft - Part 3: Small craft with a hull length of less than 6 m (Small)

3 Terms and definitions

The following terms and definitions apply to this document:

Burst pressure

System pressure that exceeds the ultimate strength of the weakest hydraulic component, causing the hydraulic pressure to drop:

componentinterface