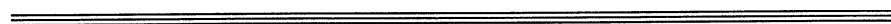


STANDARD

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## Small craft — Hydraulic steering systems

*Navires de plaisance — Appareils à gouverner hydrauliques*



Reference number  
ISO 10592:1994(E)

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## Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

International Standard ISO 10592 was prepared by Technical Committee ISO/TC 188, *Small craft*.

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# Small craft — Hydraulic steering systems

## 1 Scope

This International Standard specifies requirements, test methods, manuals for both the owner and the installer, and the designation for hydraulic steering systems and components from the wheel to the interface point for outboard motor, inboard motor and inboard-outdrive steering arrangements, used on small craft of up to 24 m length of hull.

Accessories connecting output rams to tiller arms or equivalent are not included.

## 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 10240:—<sup>1)</sup>, *Small craft — Owner's manual*.

## 3 Definitions

For the purposes of this International Standard, the following definitions apply.

**3.1 system maximum working pressure:** Relief valve pressure setting.

**3.2 system test pressure:** Non-destructive test pressure, at least one and half times the system maximum operating pressure.

**3.3 minimum retained system performance:** System capability after test(s) such that at least 90 % of the steering arc normally available to each side of the mid-position may be obtained by exertion of no more than 27 Nm of torque at the helm, through the wheel or other normal control.

NOTE 1 This criterion does not define steering system performance while a boat is underway but is intended to provide quantitative limits for design and test purposes.

**3.4 craft-mounted hydraulic system:** System in which a cylinder is secured to the boat.

**3.5 motor-mounted hydraulic system:** System in which a cylinder is secured to the engine.

**3.6 drag link:** Link in a motor-mounted steering system by which the linear force of the output ram is transmitted to the motor steering arm.

## 4 Outboard motor and inboard-outdrive requirements

**4.1** Steering stops on an outboard motor shall permit at least 30° of angular movement to either side. The design torque at the rudder stock shall be sufficient to put the helm from hard over to hard over (30° port to 30° starboard or vice versa) in not more than 30 s.

**4.2** Outboard motors shall meet the applicable dimensional requirements indicated in figures 1 and 2.

**4.3** Necessary fittings to attach an outboard motor to the cylinder output rod shall be supplied with the outboard motor.

1) To be published.