INTERNATIONAL STANDARD

ISO 24044

First edition
2020-10

Ships and marine technology — Deck machinery — Multifunctional manipulator

Reference number
ISO 24044:2020(E)

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Published in Switzerland

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Foreword

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 8, *Ships and marine technology*, Subcommittee SC 4, *Outfitting and deck machinery*.

Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

Ships and marine technology — Deck machinery — Multifunctional manipulator

1 Scope

This document specifies the classification, requirements, test methods and inspection rules, as well as marking, packaging, shipping and storage requirements for multifunctional manipulators for deck operations (hereinafter referred to as "multifunctional manipulators").

It is applicable to the design, manufacture and acceptance of double folding multifunctional manipulators for clamping and tidying the anchor chain and ropes in deck operations.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements 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.

ISO 780, *Packaging — Distribution packaging — Graphical symbols for handling and storage of packages*

ISO 3828, *Shipbuilding and marine structures — Deck machinery — Vocabulary and symbols*

ISO 13849-1:2015, *Safety of machinery — Safety-related parts of control systems — Part 1: General principles for design*

IEC 60529, *Degrees of Protection Provided By Enclosure (IP Code)*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 3828 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
jib
second movable arm of the multifunctional manipulator used to lift and hook tension free ropes

3.2
multifunctional head
operating device of the multifunctional manipulator used to grasp, clamp and tidy the anchor chain and ropes

3.3
multifunctional boom
second movable arm of the multifunctional manipulator used to connect the *multifunctional head* (3.2)

3.4
main boom
first movable arm of multifunctional manipulator used to connect the slewing tower body and the second movable arm of the double folding boom

3.5
luffing
movement made by the *main boom* (3.4), *jib* (3.1) and *multifunctional boom* (3.3) of the multifunctional manipulator in changing the range in a reach direction

3.6
safe working load
SWL
maximum static load (kN) that the multifunctional manipulator can hoist or the *multifunctional head* (3.2) operates under design working conditions

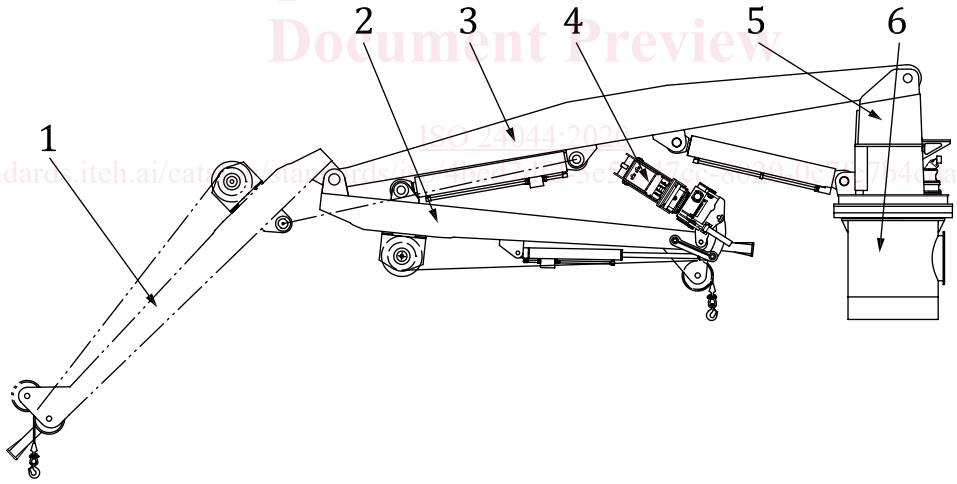
3.7
travelling mechanism
mechanism of the travelling multifunctional manipulator used to complete the movement with load along the guide rail, consisting of carrier, roller train, guide pulley set, travel driving unit, cable reel, pay-out stand, rail clamping device, speed control valve, buffer, and lubrication line

4 Classification

4.1 Structural types

4.1.1 Multifunctional manipulators can be divided into fixed and travelling types, according to their structure (installation) form.

4.1.2 Multifunctional manipulators can be divided into multifunctional boom only and combined multifunctional boom and jib, according to their composition. See Figure 1 and Figure 2.



Key

1	jib	4	multifunctional head
2	multifunctional boom	5	slewing tower body
3	main boom	6	fixed base

Figure 1 — Fixed multifunctional manipulator with combined multifunctional boom and jib