

JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS D 6021 : 2011

(JIVA/JSA)

Fork lift trucks—Overhead guards

ICS 53.060

Reference number : JIS D 6021 : 2011 (E)

PROTECTED BY COPYRIGHT

 **Documents**
Document Sharing Hub

13 S

Date of Establishment: 1984-03-01

Data of Revision: 2011-04-25

Date of Public Notice in Official Gazette: 2011-04-25

Investigated by: Japanese Industrial Standards Committee

Standards Board

Technical Committee on Logistics and Distribution
of Goods

JIS D 6021 : 2011, First English edition published in 2012-11

Translated and published by: Japanese Standards Association
4-1-24, Akasaka, Minato-ku, Tokyo, 107-8440 JAPAN

In the event of any doubts arising as to the contents,
the original JIS is to be the final authority.

© JSA 2012

All rights reserved. Unless otherwise specified, no part of this publication may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying and microfilm, without permission in writing from the publisher.

Printed in Japan

HT/SW

Contents

		Page
Introduction		1
1	Scope	1
2	Normative references	1
3	Terms and definitions	2
4	Construction	2
5	Dimensions	3
6	Testing	4
6.1	General	4
6.2	Dynamic test	4
6.3	Impact drop test	5
6.4	Operators' leg and feet protection test	7
7	Performance	8
Annex JA (normative)	Specification of forklift overhead guards in the Industrial Safety and Health Act	11
Annex JB (informative)	Comparison table between JIS and the corresponding International Standard	17

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by the Minister of Health, Labour and Welfare and the Minister of Economy, Trade and Industry through deliberations at the Japanese Industrial Standards Committee as the result of proposal for revision of Japanese Industrial Standard submitted by Japan Industrial Vehicles Association (JIVA)/Japanese Standards Association (JSA) with the draft being attached, based on the provision of Article 12 Clause 1 of the Industrial Standardization Law applicable to the case of revision by the provision of Article 14.

Consequently **JIS D 6021 : 1999** is replaced with this Standard.

This **JIS** document is protected by the Copyright Law.

Attention is drawn to the possibility that some parts of this Standard may conflict with a patent right, application for a patent after opening to the public or utility model right. The relevant Ministers and the Japanese Industrial Standards Committee are not responsible for identifying the patent right, application for a patent after opening to the public or utility model right.

Fork lift trucks—Overhead guards

Introduction

This Japanese Industrial Standard has been prepared based on the third edition of ISO 6055 published in 2004 with addition of some provisions (Industrial Safety and Health Act of Japan) not stated in the original International Standard and with some modifications of the technical contents due to the limitation of the scope to rider operated, powered forklift trucks.

Portions with dotted underlines and Annex JA are the contents not included in the corresponding International Standard.

A list of modifications and explanations is given in Annex JB.

1 Scope

This Standard specifies the requirements and testing of overhead guards, operators' legs and feet protection system for rider operated, powered fork lift trucks with a lift height exceeding 1 800 mm (hereafter referred to as "forklift").

This Standard covers only forklifts, and excludes industrial trucks including variable reach trucks where the operator position is not protected by the boom which are covered by ISO 6055. To overhead guards, in addition to this Standard, the Ordinance on Industrial Safety and Health, Article 151-17 is also applicable, and conformity to the Ordinance shall be ensured according to the vehicle type and use (see Annex JA).

NOTE 1 The term "load" used in this Standard means mass.

NOTE 2 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows:

ISO 6055:2004 *Industrial trucks—Overhead guards—Specification and testing* (MOD)

The symbols which denote the degree of correspondence in the contents between the relevant International Standard and JIS are IDT (identical), MOD (modified), and NEQ (not equivalent) according to ISO/IEC Guide 21-1.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. For standards with the year indication, only the editions of the indicated year shall be applied and the revisions (including amendments) made thereafter shall not be applied. For those without the indication of the year, the most recent edition (including amendments) shall be applied.

JIS A 8315:2001 *Earth-moving machinery—Physical dimensions of operators and minimum operator space envelope*

NOTE: Corresponding International Standard: ISO 3411:1995 *Earth-moving machinery—Human physical dimensions of operators and minimum operator space envelope* (IDT)

JIS A 8318:2001 *Earth-moving machinery—Seat index point (SIP)*

NOTE: Corresponding International Standard: ISO 5353:1995 *Earth-moving machinery, and tractors and machinery for agriculture and forestry—Seat index point* (IDT)

JIS D 6001:1999 *Fork lift trucks—Safety code*

NOTE: Corresponding International Standard: ISO 3691 *Powered industrial trucks—Safety code* (MOD)

JIS D 6011:1999 *Fork lift trucks—Stability and stability tests*

JIS D 6201:1999 *Glossary of terms relating to fork lift trucks*

ISO 13564-1 *Powered industrial trucks—Test methods for verification of visibility—Part 1: Sit-on and stand-on operator trucks and variable reach trucks*

3 Terms and definitions

For the purpose of this Standard, the terms and definitions given in JIS D 6201 apply.

4 Construction

The construction shall be as follows.

- a) When the operator in the normal operating position(s) as defined in **JIS D 6001** is operating the control levers and pedals as provided by the forklift manufacturer, the overhead guard shall extend over the operator and shall be large enough to protect the operator from falling objects. For overhead guards fixed to the mast, this also applies when the mast is inclined.

The grip of control lever in their neutral position, any unprotected pedals and the steering wheel may project up to a maximum distance of 150 mm beyond the front edge of the overhead guard (see figure 1). Adjustable steering wheels shall meet the dimensional requirement only in the centre position of the adjustable range. No account is taken of the parking lever in its off position.

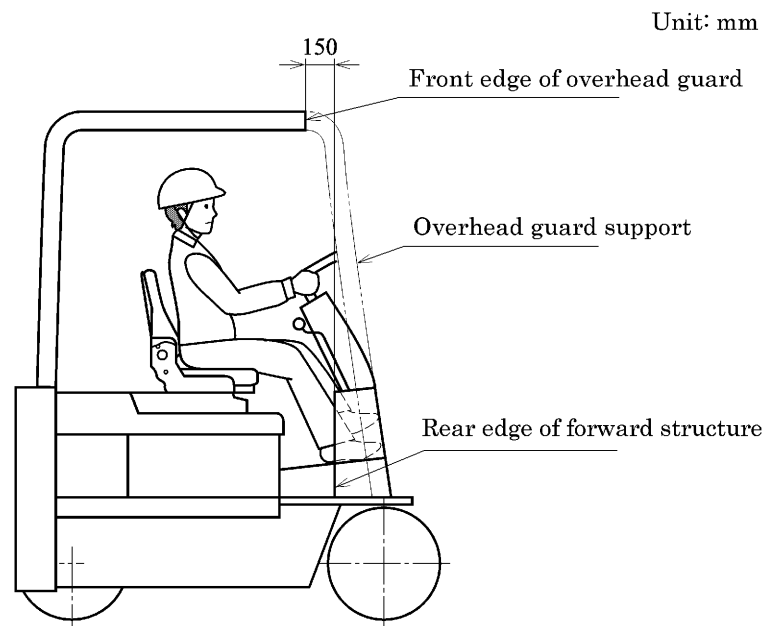


Figure 1 Satisfactory protection by the overhead guard

Any part of the operator's leg or feet, in the normal operating position, that project more than 150 mm beyond the front of the overhead guard when vertically projected onto a horizontal plane, shall be protected by a structure. The test procedure for the structure is described in 6.4.

- b) Failure of the tilting mechanism must not, directly or indirectly, cause the operator to be in danger because of the overhead guard.

5 Dimensions

The dimensions of the overhead shall be as follows.

- a) The guard shall be constructed in a manner that does not interfere with the visibility, as specified in **ISO 13564-1**.
- b) Openings in the top of the overhead guard shall not exceed 150 mm in one of the two dimensions, i.e. width or length.
- c) For forklifts on which the operator is seated, the vertical clearance from the seat index point (hereafter referred to as "SIP") (see Annex to JIS D 6011 and JIS A 8318) to the underside of the section of the overhead guard under which the operator's head is located when the operator is in the normal operating position, shall not be less than 903 mm (see Annex JA).

NOTE: Because SIP is located 97 mm above the top face of the operator's seat according to Annex of JIS D 6011 and JIS A 8318, the vertical clearance from the top face of the operator's seat to the underside of the overhead guard is 1 000 mm or more.

- d) For forklifts on which the operator stands, the vertical clearance from the platform where the operator stands to the underside of the section of the overhead guard

under which the operator's head is located when the operator is in the normal operating position, shall not be less than 1 880 mm (see Annex JA).

- e) When requested by the user, the manufacturer may reduce the normal overall overhead guard height and vertical clearance above the operator's head (distance from the underside of the overhead guard to the operator's head) to permit operation of the forklift with an overhead guard in areas where the overall height of the forklift is limited.

For example, if the torso height of the 95th percentile is 3A as defined in figure 3 of JIS A 8315 and the overhead guard height is reduced by Y, then the recommended torso height for operators should not exceed 3A-Y.

When the vertical clearance under the overhead guard is reduced, information shall be provided with respect to the clearance from the underside of the overhead guard to the operator's head for operators who may use the forklift on which the overhead guard is fitted.

- f) When the manufacturer of the overhead guard has been provided with user information that the operator may be at risk from falling objects which could pass through the 150 mm opening [see 5 b)], then the manufacturer shall remove that risk by setting the opening of the overhead guard as necessary based upon the information supplied.

6 Testing

6.1 General

General matters of the test shall be as follows.

- a) A dynamic and an impact drop test shall be carried out on a guard fitted to a forklift or on a guard fixed by other means but in the same mounting as to a forklift.
- b) The same overhead guard and mounting shall be used for both tests. The dynamic test, as described in 6.2, shall be conducted first, followed by the impact drop test, as described in 6.3.
- c) In the case of specially designed overhead guards, other means, such as calculation methods that have been verified through tests on comparable guards, may be used to determine compliance with the requirements.
- d) For forklifts with an elevating operator position and an auxiliary lifting equipment with a lift height up to and including 1 800 mm in relation to the operator platform, the impact test is not required.

6.2 Dynamic test

The dynamic test shall be as follows.

- a) The purpose of this test is to determine the resistance to permanent deflection of the portion of the overhead guard under which the operator sits or stands.

NOTE: In the case of overhead guards fitted to forklifts of special design, other