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Industrial trucks — Inspection and repair of fork arms in service on fork-lift trucks

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*Chariots de manutention — Contrôle et réparation des bras de fourche
en service sur les chariots élévateurs à fourche*
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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 5057 was prepared by Technical Committee ISO/TC 110, *Industrial trucks*, Sub-Committee SC 2, *Safety of powered industrial trucks*.

This first edition of ISO 5057 cancels and replaces the first edition of ISO/TR 5057 published in 1977, of which it constitutes a technical revision.

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Industrial trucks — Inspection and repair of fork arms in service on fork-lift trucks

1 Scope

This International Standard specifies methods for inspection and repair of solid-section fork arms in use on all types of fork-lift trucks.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this International Standard. At the time of publication, the editions indicated were 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 editions of the standards indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 2330:1974, *Fork lift trucks — Fork arms — Technical characteristics and testing*.

ISO 2331:1974, *Fork lift trucks — Hook-on type fork arms — Vocabulary*.

3 Definitions

For the purposes of this International Standard, the definitions given in ISO 2331 apply.

4 Inspection intervals

Fork arms in service shall be inspected in accordance with clause 5 at intervals of not more than 12 months and whenever any defect or permanent deformation is detected. Severe applications may require more frequent inspections.

5 Inspection

5.1 General

The inspection of a fork arm shall be carried out carefully by trained personnel with the aim of detecting any damage, failure, deformation, etc., which may impair safe use. Any fork arm which shows such a defect shall be withdrawn from service, and not be returned to service unless it has been satisfactorily repaired and tested in accordance with 6.2 if applicable.

5.2 Surface cracks

The fork arm shall be thoroughly examined visually for cracks and, if considered necessary, subjected to a non-destructive crack detection process. Special attention shall be paid to the heel and the top and bottom hooks including their attachment to the shank. The fork arm shall be withdrawn from service if surface cracks are detected.

5.3 Difference in height of fork tips

A set of fork arms shall be checked for any difference in height when mounted on the fork carrier. If the difference in tip heights exceeds 3 % of the blade length or that recommended by the truck manufacturer, the set of fork arms shall be withdrawn from service.

The set of fork arms shall not be returned to service until they have been re-set as necessary (see 6.1) and tested in accordance with 6.2.

5.4 Positioning lock

It shall be confirmed that the positioning lock, where originally provided, is in good repair and correct working order. If any fault is found, the fork arm shall be withdrawn from service until satisfactory repairs have been effected.

5.5 Legibility of marking

If the fork arm marking in accordance with ISO 2330 is not clearly legible, the fork arm shall be removed from service.

5.6 Wear

5.6.1 Fork arm blade and shank

The fork arm blade and shank shall be thoroughly checked for wear, special attention being paid to the vicinity of the heel.

If the thickness of the blade or shank is reduced to 90 % of the original thickness, or to the minimum thickness specified by the fork arm or truck manufacturer, the fork arm shall be withdrawn from service.

5.6.2 Fork arm mountings

The support face of the top hook and the retaining faces of both hooks shall be checked for wear, crushing and other local deformations. If these defects are apparent to such an extent that the clearance between the fork arm and the fork carrier becomes excessive, the fork arm shall be withdrawn from service. For other types of mounting, similar checks shall be carried out.

6 Repair and testing

6.1 Repair

Only the manufacturer of the fork arm or an expert of equal competence shall decide if a fork arm may be repaired for return to service. The repairs shall only be carried out in accordance with the recommendations of the fork arm manufacturer.

It is not recommended that surface cracks or wear be repaired by welding.

When repairs necessitating re-setting are required, the fork arm shall subsequently be subjected to an appropriate heat-treatment, as necessary.

6.2 Yield test

A fork arm that has undergone repairs other than repair or replacement of the positioning lock and/or the marking shall only be returned to service after being submitted to, and passing, the yield test described in ISO 2330, except that the test load shall be in accordance with table 1.

Table 1 — Test load for yield test

Values in kilograms

Fork arm specified capacity, m	Test load, F_t
$m \leq 5\,000$	$2,5m$
$m > 5\,000$	$2,1m$

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