

Performance assessment of agricultural tractors —

Part 6: Method for determination of centre of gravity

ICS 65.060.10

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Committees responsible for this British Standard

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- Agricultural Engineers' Association
- British Agricultural and Garden Machinery Association Ltd.
- County Surveyor's Society
- Department of Industry (Mechanical Engineering)
- Forestry Commission
- Health and Safety Executive
- Home Timber Merchants' Association of Scotland
- Ministry of Agriculture, Fisheries and Food
- National Farmers' Union
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- National Union of Agricultural and Allied Workers
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National foreword

This Part of BS 6347 has been prepared under the direction of the Agricultural Machinery and Implements Standards Committee. It is identical with ISO 789-6 “*Agricultural tractors — Test procedures — Part 6: Centre of gravity*”, which was developed by Technical Committee ISO/TC 23, Tractors and machinery for agriculture and forestry, and was published in 1982 by the International Organization for Standardization (ISO). It includes amendment 1 to International Standard ISO 789-6:1982 prepared by Technical Committee ISO/TC 23, *Tractors and machinery for agriculture and forestry*, Subcommittee SC 2, *Common tests*.

Terminology and conventions. The text of the International Standard has been approved as suitable for publication as a British Standard without deviation. Some terminology and certain conventions are not identical with those used in British Standards; attention is drawn especially to the following.

The comma has been used as a decimal marker. In British Standards it is current practice to use a full point on the baseline as the decimal marker.

Wherever the words “International Standard” and “this part of ISO 789” appear, referring to this standard, they should be read as “British Standard” and “this Part of BS 6347” respectively.

Cross-references. There are no corresponding British Standards for ISO 612:1978 (which is referred to in clause 2, 3.2, 3.4.1 and 3.5.3) or ISO 3339-1¹⁾ (which is referred to in clause 3.1). As these standards are referred to for information only, the validity of this British Standard is not affected.

NOTE In the note to 6.4 “weighbride” should be read as “weighbridge”.

A British Standard does not purport to include all the necessary provisions of a contract. Users of British Standards are responsible for their correct application.

Compliance with a British Standard does not of itself confer immunity from legal obligations.

Summary of pages

This document comprises a front cover, an inside front cover, pages i and ii, pages 1 to 8, an inside back cover and a back cover.

This standard has been updated (see copyright date) and may have had amendments incorporated. This will be indicated in the amendment table on the inside front cover.

¹⁾ At present at the stage of draft.

0 Introduction

This International Standard specifies test procedures for agricultural tractors. This part deals with the centre of gravity. Other parts of this International Standard will be as follows:

- *Part 1: Power tests;*
- *Part 2: Hydraulic power and lifting capacity;*
- *Part 3: Turning and clearance diameters;*
- *Part 4: Exhaust smoke measurement;*
- *Part 5: Partial power p.t.o. — non-mechanically transmitted power;*
- *Part 7: Power and torque of the drive wheels;*
- *Part 8: Engine air cleaner.*

Although there are many possible methods of determining the centre of gravity, the purpose of this part of ISO 789 is to specify a simple, practical method, which requires the use of a weighbridge and crane. Alternative methods may be used if they locate the centre of gravity with respect to the specified reference planes and within the specified tolerances.

1 Scope and field of application

This part of ISO 789 specifies a method of determining the position of the centre of gravity of agricultural tractors.

The method is applicable to agricultural tractors having at least two axles fitted with wheels or tracks.

2 Reference

ISO 612, *Road vehicles — Dimensions of motor vehicles and towed vehicles — Terms and definitions.*

3 Definitions

For the purpose of this part of ISO 789, the following definitions apply.

3.1

agricultural tractor

see ISO 3339-1 (in preparation)

3.2

wheelbase

see ISO 612

3.3

tractor mass

the mass of a tractor as submitted for test

3.4 reference planes

3.4.1

vertical reference planes:

- a) transverse plane
 - 1) for wheeled tractors: vertical plane containing the centreline of the rear axle;²⁾
 - 2) for crawler tractors: vertical plane containing the centreline of the driving sprocket axle;
- b) median longitudinal plan (or symmetric longitudinal plane): vertical plane through the major fore-and-aft axis, i.e. midway between the tracks or wheels (see ISO 612).

3.4.2

horizontal reference plane

ground level. (A hard contact shall be assumed.)

3.5 coordinates of the centre of gravity

3.5.1

horizontal fore-and-aft coordinate (symbol $\bar{x}$)

the horizontal distance of the centre of gravity from the transverse reference plane

3.5.2

vertical coordinate (symbol $\bar{h}$)

the vertical distance of the centre of gravity from the horizontal reference plane

3.5.3

lateral coordinate (symbol $\bar{y}$)

the horizontal distance of the centre of gravity from the median longitudinal plane (see ISO 612) of the tractor

4 Apparatus

The following apparatus is required.

4.1 Weighbridge or load cells

4.2 Crane

4.3 Decking with knife edges

4.4 Level

4.5 Plumb rule

4.6 Squares

4.7 Scribing board

The scribing board shall be at least 600 mm high by 450 mm wide, rigidly constructed, and attached to the tractor in a suitable position with a smooth face vertical and parallel to the side or other appropriate plane.

²⁾ For articulated tractors: locked in a straight line.