

Test equipment for generating vibration —

Part 2: Methods of describing characteristics of auxiliary tables for test equipment for generating vibration

[ISO title: Auxiliary tables for vibration generators — Methods of
describing equipment characteristics]

ICS 19.060

Cooperating organizations

The Mechanical Engineering Standards Committee, under whose direction this British Standard was prepared, consists of representatives from the following:

Associated Offices Technical Committee	Department of Trade (Marine Division)
Association of Consulting Engineers	Department of Transport
Association of Hydraulic Equipment Manufacturers	Electricity Supply Industry in England and Wales*
Association of Mining Electrical and Mechanical Engineers	Energy Industries Council
British Compressed Air Society	Engineering Equipment Users' Association*
British Constructional Steelwork Association	Federation of Manufacturers of Construction Equipment and Cranes
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British Gear Manufacturers' Association	Institution of Mechanical Engineers*
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	Telecommunication Engineering and Manufacturing Association (TEMA)
	Water-tube Boilermakers' Association

The organizations marked with an asterisk in the above list, together with the following, were directly represented on the Technical Committee entrusted with the preparation of this British Standard:

British Ship Research Association	Power Generation Association (BEAMA)
Institute of Sound and Vibration Research	Society of British Aerospace Companies Limited
Institution of Electronic and Radio Engineers	Society of Environmental Engineers
Motor Industry Research Association	Coopted member
North East Coast Institution of Engineers and Shipbuilders	

This British Standard, having been prepared under the direction of the Mechanical Engineering Standards Committee, was published under the authority of the Board of BSI and comes into effect on 29 October 1982

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National foreword

This Part of this British Standard has been prepared under the direction of the Mechanical Engineering Standards Committee and is one of a series of standards concerned with test equipment for generating vibration. It is identical with ISO 6070:1981 “*Auxiliary tables for vibration generators — Methods of describing equipment characteristics*” published by the International Organization for Standardization (ISO).

Part 1 of this British Standard was published by BSI. It is the UK implementation of 5344:1980 “*Test equipment for generating vibration*” Part 1 “*Methods of describing characteristics of electrodynamic test equipment for generating vibration*”, incorporating corrigendum September 2006. A further Part of this standard, dealing with hydraulic test equipment for generating vibration, is in course of preparation.

The start and finished of text introduced or altered by corrigendum is indicated in the text by tags AC AC. Text altered by ISO corrigendum 1 is indicated in the text by AC1 AC1.

Some terminology and certain conventions are not identical with those used in British Standards; attention is especially drawn to the following.

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

Wherever the words “International Standard” appear, referring to this standard, they should be read as “British Standard”.

This publication does not purport to include all the necessary provisions of a contract. Users are responsible for its correct application.

Compliance with a British Standard cannot confer immunity from legal obligations.

1 Scope

This International Standard defines the content of the information flow to be established between manufacturers and users of auxiliary tables with a view to working out related specifications and possibly to comparing in an objective way, the characteristics advertised by the various manufacturers of auxiliary tables and associated guidance systems.

2 Field of application

This International Standard applies to auxiliary tables associated with one or several vibration generators working along axes which are parallel to the longitudinal axis of the table.¹⁾

The tables dealt with in this International Standard are of the following types:

- flat spring tables;
- oil film or air cushion tables;
- mechanical slide tables;
- ball, roller or needle bearing tables;
- hydraulic slide tables;
- hydrostatic bearing tables;
- magnetic bearing tables;
- dry bearing tables with hydrostatic compensation;

or

- a combination of two or more of the above types.

This International Standard provides three levels of description to be used in describing test equipment, as follows:

- a) minimum level of description;
- b) medium level of description;
- c) high level of description.

This International Standard gives for each level of description a list of the characteristics to be described by the manufacturer either in his tender or in his literature.

3 Symbols

C_α	Limiting pitching torque
C_β	Limiting rolling torque
C_ψ	Limiting yawing torque
d	Total harmonic distortion of acceleration
F_a	Force measured in direction z to overcome static (stiction) friction (possibly for various test loads and various positions of the moving table along longitudinal z axis)
F_g	Force measured in direction z to overcome dynamic friction
F_s	Static load limit
$F_x - F_y - F_z$	Limiting forces which can be withstood by the moving auxiliary table along the three axes
f	Frequency
$f_{\max}$	Maximum operational frequency
$f_{\min}$	Minimum operational frequency
$I_x - I_y - I_z$	Moments of inertia of the moving table with respect to axes parallel to the reference axes through the centre of gravity
$K_x - K_y - K_z$	Translational stiffness of guidance system along the three axes
$K_\alpha - K_\beta - K_\psi$	Rotational stiffness of guidance about the three axes
m	Total mass of moving table including moving components of guidance system
m_t	Test load (index $t = 0, 1, 2, 3, 4$ and 5 , see clause 6)
V_z	Rated rms velocity along z axis
$X_c - Y_c - Z_c$	Coordinates of centre of test table surface (see 5.2, Figure 2)
$X_G - Y_G - Z_G$	Coordinates of moving table centre of gravity
α	Pitch angle (rotation about y axis)
β	Roll angle (rotation about z axis)
ψ	Yaw angle (rotation about x axis)

¹⁾ Auxiliary tables with several degrees of freedom are not covered by this International Standard which applies specifically to the more common types of auxiliary tables where the surface of the table is horizontal; however, if suitable means for counteracting the force of gravity are provided, the table may have any orientation.