



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS B 2706 : 2013
(JSMA/JSA)
Disc springs

ICS 21.160

Reference number : JIS B 2706 : 2013 (E)

Date of Establishment: 1972-07-01

Date of Revision: 2013-10-21

Date of Public Notice in Official Gazette: 2013-10-21

Investigated by: Japanese Industrial Standards Committee
Standards Board
Technical Committee on Machine Elements

JIS B 2706:2013, First English edition published in 2014-02

Translated and published by: Japanese Standards Association
Mita MT Building, 3-13-12, Mita, Minato-ku, Tokyo, 108-0073 JAPAN

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

© JSA 2014

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

KK/AT

Contents

	Page
1 Scope	1
2 Normative references	1
3 Terms and definitions	1
4 Materials for springs	1
5 Classification of springs	2
5.1 Classification by thickness of spring	2
5.2 Classification by load of spring	2
6 Calculation in design	2
6.1 Quantifier used for calculation	2
6.2 Calculation formula used in design of spring	3
7 Load characteristics	4
7.1 Load characteristics for single unit	4
7.2 Load characteristics when springs are combined	6
8 Permissible stress	8
8.1 General	8
8.2 Case of receiving static load	9
8.3 Case of receiving repeated load	9
9 Shape and dimensions of springs, and load characteristics	10
10 Tolerances on springs	13
11 Hardness	14
12 Appearance	14
13 Tests	15
13.1 Instruments for tests	15
13.2 Procedure for measurement	15
14 Surface treatment	17
15 Inspection	18
16 Designation	18
17 Marking	18

Foreword

This translation has been made based on the original Japanese Industrial Standard revised by 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 Spring Manufacturers Association (JSMA)/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 B 2706:2001** 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 patent rights, applications for a patent after opening to the public or utility model rights. The relevant Minister and the Japanese Industrial Standards Committee are not responsible for identifying any of such patent rights, applications for a patent after opening to the public or utility model rights.

Disc springs

1 Scope

This Japanese Industrial Standard specifies the steel disc springs (hereafter referred to as "springs") used in a single unit or a combination thereof.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this Standard. The most recent editions of the standards (including amendments) indicated below shall be applied.

- JIS B 0103 *Springs—Vocabulary*
- JIS B 7502 *Micrometer callipers*
- JIS B 7503 *Mechanical dial gauges*
- JIS B 7507 *Vernier, dial and digital callipers*
- JIS B 7513 *Precision surface plates*
- JIS B 7533 *Dial test indicators (Lever type)*
- JIS B 7738 *Verification of helical compression and extension springs testing machines*
- JIS G 3311 *Cold rolled special steel strip*
- JIS G 4801 *Spring steels*
- JIS G 4802 *Cold-rolled steel strip for springs*
- JIS Z 2244 *Vickers hardness test—Test method*
- JIS Z 2245 *Rockwell hardness test—Test method*

3 Terms and definitions

For the purposes of this Standard, the terms and definitions given in **JIS B 0103** apply.

4 Materials for springs

The materials for springs shall be as given in table 1. The use of materials other than these shall be upon the agreement between the parties concerned with delivery.

Table 1 Materials for springs

Number of standard	Symbol of material
JIS G 3311	S60CM, S65CM, S70CM, SK85M, SUP10M
JIS G 4801	SUP10
JIS G 4802	S60C-CSP, S65C-CSP, S70C-CSP, SK85-CSP, SUP10-CSP