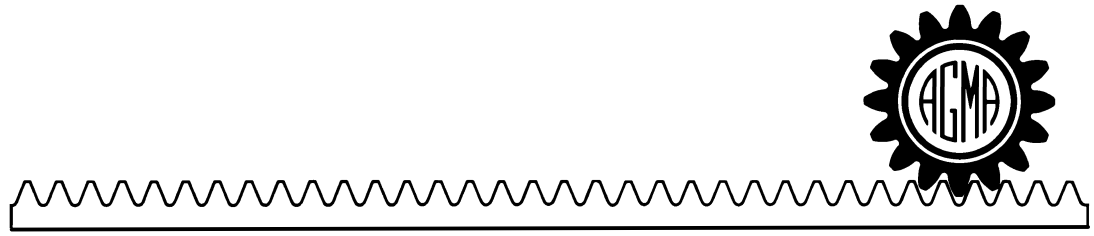
ANSI/AGMA 9002-B04
Revision of
ANSI/AGMA 9002–A86

AMERICAN NATIONAL STANDARD

Bores and Keyways for Flexible Couplings (Inch Series)

ANSI/AGMA 9002-B04



AGMA STANDARD

American National Standard

Bores and Keyways for Flexible Couplings (Inch Series)
ANSI/AGMA 9002–B04

Approval of an American National Standard requires verification by ANSI that the requirements for due process, consensus, and other criteria for approval have been met by the standards developer.

Consensus is established when, in the judgment of the ANSI Board of Standards Review, substantial agreement has been reached by directly and materially affected interests. Substantial agreement means much more than a simple majority, but not necessarily unanimity. Consensus requires that all views and objections be considered, and that a concerted effort be made toward their resolution.

The use of American National Standards is completely voluntary; their existence does not in any respect preclude anyone, whether he has approved the standards or not, from manufacturing, marketing, purchasing, or using products, processes, or procedures not conforming to the standards.

The American National Standards Institute does not develop standards and will in no circumstances give an interpretation of any American National Standard. Moreover, no person shall have the right or authority to issue an interpretation of an American National Standard in the name of the American National Standards Institute. Requests for interpretation of this standard should be addressed to the American Gear Manufacturers Association.

CAUTION NOTICE: AGMA technical publications are subject to constant improvement, revision, or withdrawal as dictated by experience. Any person who refers to any AGMA technical publication should be sure that the publication is the latest available from the Association on the subject matter.

[Tables or other self–supporting sections may be referenced. Citations should read: See ANSI/AGMA 9002–B04, *Bores and Keyways for Flexible Couplings (Inch Series),* published by the American Gear Manufacturers Association, 500 Montgomery Street, Suite 350, Alexandria, Virginia 22314, http://www.agma.org.]

Approved May 5, 2005

ABSTRACT

This standard describes sizes and tolerances for straight and tapered bores and the associated keys and keyways, as furnished in flexible couplings. The data in the standard considers commercially standard coupling bores and keyways, not special coupling bores and keyways that may require special tolerances.

Published by

American Gear Manufacturers Association
500 Montgomery Street, Suite 350, Alexandria, Virginia 22314

Printed in the United States of America

ISBN: 1–55589–841–6

Contents

Annexes

Figures

Tables

Foreword

[The foreword, footnotes and annexes, if any, in this document are provided for informational purposes only and are not to be construed as a part of ANSI/AGMA 9002−B04, *Bores and Keyways for Flexible Couplings (Inch Series).*]

ANSI/AGMA 9002−A86 consolidated and superseded the information found in AGMA 511.02, *Bore and Keyway Sizes for Flexible Couplings,* AGMA 512.03, *Keyways for Flexible Couplings, and* AGMA 513.01, *Taper Bores for Flexible Couplings.*

The intent of ANSI/AGMA 9002−A86 was to offer designers and users standard dimensions and tolerances for inch bores, keys and keyways for flexible couplings. In general, the dimensions contained in ANSI/AGMA 9002−A86 represented the dimensions and tolerances used within the industry for pre−engineered couplings. It proved useful in establishing dimensions and tolerances for custom engineered coupling products.

ANSI/AGMA 9002−A86 was developed after intensive study of previously existing standards, literature, design practices and manufacturing procedures for bores and keyways of unmounted flexible coupling hubs and similar components. The study revealed that much of the data contained in previously existing standards and specifications was predicated upon practice and procedures that pertained more to keyways in the shaft members than to keyways in coupling hub bores. The information contained with ANSI/AGMA 9002−A86 did not necessarily agree with some commonly used specifications. ANSI/AGMA 9002−A86 was based upon the design criteria related to bores and keyways in coupling hubs that had evolved over many years of successful industry practice.

ANSI/AGMA 9002−A86 presented pertinent data on dimensions, tolerances, and sizes for straight bores, tapered bores, keys and keyways for unmounted industrial flexible couplings. Decimal equivalents of fractions were shown to a maximum of four decimal places and were *not* meant to imply tolerances. Inspection methods for tapered bores and keyways were included in the appendices. The appendices also included the recommended design practice for tapered shafts for use with flexible couplings.

ANSI/AGMA 9002−B04 supersedes the information from ANSI/AGMA 9002−A86, *Bores and Keyways for Flexible Couplings (Inch Series)*.

This revised version of the standard includes an extension of the bore sizes (through 18 inches). It has also been rearranged and clarified to make it easier to use. One annex was broken into two annexes to clarify the information presented. Two new annexes were added: “Straight bore inspection methods” and “Coupling hub bores required to obtain ANSI B4.1 “Preferred Limits and Fits for Cylindrical Parts” FN2 class interference fits with AGMA 9002−B04 recommended shaft tolerances”.

The first draft of ANSI/AGMA 9002−B04 was made in May 2001. It was approved by the AGMA membership in October 23, 2004. It was approved as an American National Standard on May 5, 2005.

Suggestions for improvement of this standard will be welcome. They should be sent to the American Gear Manufacturers Association, 500 Montgomery Street, Suite 350, Alexandria, Virginia 22314.

PERSONNEL of the AGMA Flexible Couplings Committee

Chairman: Glenn Pokrandt . . . . . Falk Corporation
Vice Chairman: Jim Paluh . . . . . Ameridrives Coupling

ACTIVE MEMBERS

T. Hewitt . . . . . Lord Corporation
D. Hindman . . . . . Falk Corporation
D. Lyle . . . . . Ameridrives Coupling
H.A. Lynn, III . . . . . Falk Corporation
J.W. Mahan . . . . . Lovejoy, Inc.
J.R. Mancuso . . . . . Kop–Flex/Emerson Power Transmission
T. Schatzka . . . . . Rexnord Industries, Inc.
J. Sherred . . . . . Ameridrives Coupling
R.G. Thompson . . . . . System Components, Inc.
R. Whitney . . . . . Riverhawk Company

ASSOCIATE MEMBERS

L.E. Baer . . . . . TB Wood’s Inc.
T. Cain . . . . . Riverhawk Company
T.A. Geiger . . . . . Falk Corporation
K.R. Gray . . . . . Metal Improvement Company
D. Lindsay . . . . . EPT Gearing
J. Mayhan . . . . . Xtek, Inc.
M.A. O’Neil . . . . . Riverhawk Company
E.I. Rivin . . . . . Wayne State University

(This page is intentionally blank)

American National Standard –

Bores and Keyways for Flexible Couplings (Inch Series)

1 Scope

This standard presents inch dimensions, tolerances, and sizes for straight bores, tapered bores, single keys and keyways for unmounted industrial flexible couplings. The keys are square or rectangular. This specification includes index tolerances for multiple keyways.

Inspection methods for straight and tapered bores and keyways are included in the annexes. The annexes also include the recommended design practice for tapered shafts for use with flexible couplings.

1.1 Application area

This standard is applicable to couplings as defined in ANSI/AGMA 9009–D02, *Nomenclature for Flexible Couplings*, with inch bores and keyways.

1.2 Excluded areas

This standard does not apply to couplings attached to shafts without keys (see ANSI/AGMA 9003–A91), shafts and bores with tapered keys, inch bores with metric keyways, metric bores with inch keyways, metric bores with metric keyways, or shaft keyseat tolerances. See ANSI/AGMA 9112–A04 for metric bores with metric keyways.

2 Normative references

The following standards contain provisions which, through reference in this text, constitute provisions of this American National Standard. At the time of publication, the editions indicated were valid. All standards are subject to revision, and parties to agreements based on this American National Standard are encouraged to investigate the possibility of applying the most recent editions of the standards indicated below.

ANSI/AGMA 9009–D02, *Flexible Couplings – Nomenclature for Flexible Couplings*

3 Symbols and definitions

3.1 Symbols

The symbols used in this standard are shown in table 1.

NOTE: The symbols and terms contained in this document may vary from those used in other AGMA standards. Users of this standard should assure themselves that they are using these symbols and terms in the manner indicated herein.

Table 1 – Symbols

Symbol	Description	Units	First used
C_h	Chord height at keyway	inch	Figure 3
D_b	Large end diameter of hub bore	inch	Figure 1
D_g	Gage line diameter for hub bore	inch	Figure 2
D_{se}	Small end diameter of hub bore	inch	5.3
H_k	Nominal height of key	inch	Figure 3
h_{kw}	Keyway depth	inch	Figure 3
I_{kw}	Multiple keyway index tolerance	inch	7.3.8

(continued)