

# JIS

JAPANESE  
INDUSTRIAL  
STANDARD

Translated and Published by  
Japanese Standards Association

---

---

JIS Z 3021 : 2016

(JWES)

**Welding and allied processes — Symbolic  
representation**

---

ICS 01.080.20 ; 01.100.20;25.160.01

Reference number : JIS Z 3021 : 2016 (E)

Z 3021 : 2016

Date of Establishment: 1955-02-01

Date of Revision: 2016-09-20

Date of Public Notice in Official Gazette: 2016-09-20

Investigated by: Japanese Industrial Standards Committee

Standards Board for ISO area

Technical Committee on Metal and Inorganic Materials

---

JIS Z 3021 : 2016, First English edition published in 2017-03

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 2017

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

HT/HN

PROTECTED BY COPYRIGHT

## Contents

	Page
Introduction .....	1
1 Scope .....	1
2 Normative references .....	1
3 Terms and definitions .....	2
4 Welding symbol .....	4
4.1 General .....	4
4.2 Basic welding symbol .....	5
4.3 Welding symbol systems .....	5
4.4 Elementary symbols .....	5
4.5 Supplementary symbols .....	10
4.6 Arrow line .....	15
4.7 Reference line and weld location .....	15
4.8 Tail .....	17
5 Dimensioning of welds .....	18
5.1 General .....	18
5.2 Cross-sectional dimensions .....	18
5.3 Length dimensions .....	18
5.4 Butt welds .....	19
5.5 Fillet welds .....	20
5.6 Plug welds in circular holes .....	21
5.7 Plug welds in slots .....	21
5.8 Spot welds .....	21
5.9 Seam welds .....	21
5.10 Edge welds .....	21
5.11 Stud welds .....	21
5.12 Overlay welds .....	22
6 Dimensioning of joint preparations .....	31
6.1 General .....	31
6.2 Root gap .....	31
6.3 Included angle .....	32
6.4 Radii and root faces .....	33
6.5 Depth of joint preparation .....	33
6.6 Countersink angle for plug and slot welds .....	34
7 Alternative butt weld symbol with required weld quality .....	35
7.1 General .....	35
7.2 Example .....	35

8	Nondestructive testing symbol .....	35
Annex A (informative)	Example of the use of welding symbols .....	36
Annex B (informative)	Tolerances and transition points for weld types .....	41
Annex JA (normative)	Nondestructive testing symbol of weld .....	42
Annex JB (informative)	Comparison table between JIS and corresponding International Standard .....	47

Currently in preview, click buy full vers.

## 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 The Japan Welding Engineering Society (JWES) 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 Z 3021:2010** 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.

# Welding and allied processes — Symbolic representation

## Introduction

This Japanese Industrial Standard was established in 1955 and has gone through eight revisions up to the present. The last revision was made in 2010, and the revision at this time is to conform to **ISO 2553** revised in 2013.

**ISO 2553** : 2013 allows System A based on **ISO 2553** : 1992 to coexist with System B based upon standards used by Pacific Rim countries.

This Standard adopts System B given in the fourth edition of **ISO 2553** published in 2013 with some modifications of the technical contents.

When necessary, System A specified in **ISO 2553** is applied.

The portions given sidelines or dotted underlines are the matters in which the contents of the original International Standard have been modified. A list of modifications with the explanations is given in Annex JB.

## 1 Scope

This Standard defines the rules to be applied for symbolic representation of welding on technical drawings according to System B.

NOTE : The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 2553 : 2013 *Welding and allied processes — Symbolic representation on drawings — Welded joints* (MOD)

In addition, symbols which denote the degree of correspondence in the contents between the relevant International Standard and **JIS** are **IDT** (identical), **MOD** (modified), and **NEQ** (not equivalent) according to **ISO/IEC Guide 21-1**.

## 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 0031 *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation*

NOTE : Corresponding International Standard : ISO 1302 *Geometrical Product Specifications (GPS) — Indication of surface texture in technical product documentation* (IDT)

JIS Z 2300 *Terms and definitions of nondestructive testing*