



JAPANESE
INDUSTRIAL
STANDARD

Translated and Published by
Japanese Standards Association

JIS G 0589 : 2024

(JISF)

Automated full peripheral ultrasonic
thickness examination of steel pipes and
tubes

ICS 77.040.20

Reference number: JIS G 0589 : 2024 (E)

PROTECTED BY COPYRIGHT

G 0589 : 2024

Date of Establishment: 2013-01-21

Date of Revision: 2024-06-20

Date of Public Notice in Official Gazette: 2024-06-20

Developed by: The Japan Iron and Steel Federation

Investigated by: The Japan Iron and Steel Federation, Standardization
Center

JIS G 0589 : 2024, First English edition published in 2024-10

Translated and published by: Japanese Standards Association
Mita Avanti, 3-11-28, 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 2024

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

HN

PROTECTED BY COPYRIGHT

 **Documents**
Document Sharing Hub

Contents

	Page
Introduction	1
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 General requirements	2
4.1 Timing of test	2
4.2 Properties of tubes	2
4.3 Technical expert of test	2
5 Test method	3
5.1 General	3
5.2 Scanning method	3
5.3 Transducer	3
5.4 Marking device (or sorting device) and recording device	3
6 Reference sample	3
6.1 General	3
6.2 Types of reference sample and tolerances	3
7 Equipment calibration and checking	4
7.1 Equipment calibration	4
7.2 Measuring speed	4
7.3 Checking of precision	4
7.4 Recalibration	4
7.5 Retest	4
8 Judgement of result	5
8.1 General	5
8.2 Treatment of suspect tubes	5
9 Test report	5
Annex JA (normative) Manual ultrasonic testing of suspect areas	7
Annex JB (informative) Comparison table between JIS and corresponding International Standard	8

Foreword

This Japanese Industrial Standard has been revised by the Minister of Economy, Trade and Industry based on the provision of Article 14, paragraph (1) of the Industrial Standardization Act applied mutatis mutandis pursuant to the provision of Article 16 of the said Act in response to a proposal for revision of Japanese Industrial Standard with a draft being attached, submitted by The Japan Iron and Steel Federation (JISF), an accredited standards development organization. This edition replaces the previous edition (**JIS G 0589** : 2013), which has been technically revised.

This **JIS** document is protected by the Copyright Act.

Attention is drawn to the possibility that some parts of this Standard may conflict with patent rights, published patent application or utility model rights. The relevant Minister is not responsible for identifying any of such patent rights, published patent application or utility model rights.

Automated full peripheral ultrasonic thickness examination of steel pipes and tubes

Introduction

This Japanese Industrial Standard has been prepared based on **ISO 10893-12** : 2011, Edition 1, and its Amendment 1 : 2020 with some modifications of the technical contents. The amendment to the said International Standard has been incorporated into this Standard.

Annex JA is unique to **JIS** and not given in the corresponding International Standard. The dotted underlines indicate changes from the corresponding International Standard. A list of modifications with the explanations is given in Annex JB.

1 Scope

This Standard specifies requirements for the automated full peripheral ultrasonic thickness testing of seamless and welded steel tubes, with the exception of submerged arc-welded (SAW) tubes, for wall thickness measurement.

This Standard is applicable to the thickness measurement of tubes with a specified outside diameter equal to or greater than 25.4 mm and a minimum wall thickness of 2.6 mm, unless otherwise agreed upon by the purchaser and manufacturer.

NOTE 1 Full peripheral testing does not necessarily mean that 100 % of the tube surface is scanned (see **5.2**).

NOTE 2 The International Standard corresponding to this Standard and the symbol of degree of correspondence are as follows.

ISO 10893-12 : 2011 *Non-destructive testing of steel tubes — Part 12: Automated full peripheral ultrasonic thickness testing of seamless and welded (except submerged arc-welded) steel tubes* + Amendment 1 : 2020 (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

Part or all of the provisions of the following standards, 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 G 0201 *Glossary of terms used in iron and steel (Heat treatment)*

JIS G 0203 *Glossary of terms used in iron and steel (Products and quality)*

JIS G 0431 *Steel products — Employer's qualification system for non-destructive*