

INTERNATIONAL STANDARD

ISO 10437

Second edition
2003-07-01

Petroleum, petrochemical and natural gas industries — Steam turbines — Special-purpose applications

*Industries du pétrole, de la pétrochimie et du gaz naturel — Turbines à
vapeur — Usage spécial*



Reference number
ISO 10437:2003(E)

© ISO 2003

PDF disclaimer

This PDF file may contain embedded typefaces. In accordance with Adobe's licensing policy, this file may be printed or viewed but shall not be edited unless the typefaces which are embedded are licensed to and installed on the computer performing the editing. In downloading this file, parties accept therein the responsibility of not infringing Adobe's licensing policy. The ISO Central Secretariat accepts no liability in this area.

Adobe is a trademark of Adobe Systems Incorporated.

Details of the software products used to create this PDF file can be found in the General Info relative to the file; the PDF-creation parameters were optimized for printing. Every care has been taken to ensure that the file is suitable for use by ISO member bodies. In the unlikely event that a problem relating to it is found, please inform the Central Secretariat at the address given below.

© ISO 2003

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 either ISO at the address below or ISO's member body in the country of the requester.

ISO copyright office
Case postale 56 • CH-1211 Geneva 20
Tel. + 41 22 749 01 11
Fax + 41 22 749 09 47
E-mail copyright@iso.org
Web www.iso.org

Published in Switzerland

Contents

Page

Foreword	vi
Introduction	vii
1 Scope	1
2 Normative references	1
3 Terms and definitions	4
4 Dimensions	8
5 Statutory requirements	8
6 Basic design	8
6.1 General	8
6.2 Nameplates and rotation arrows	11
7 Casings	12
7.1 Pressure casings	12
7.2 Casing connections	14
7.3 Internal stationary components	15
7.4 External forces and moments	15
8 Rotating elements	15
8.1 General	15
8.2 Shafts	16
8.3 Blading	16
8.4 Speed-sensing element	17
9 Rotor dynamics	17
9.1 General	17
9.2 Lateral analysis	18
9.3 Unbalanced rotor response verification test	23
9.4 Additional testing	24
9.5 Torsional analysis	25
9.6 Vibration and balancing	26
10 Bearings, bearing housings, and seals	27
10.1 Radial bearings	27
10.2 Thrust bearings and collars	28
10.3 Bearing housing	29
10.4 Grounding	29
10.5 Shaft seals	29
11 Materials	30
11.1 General	30
11.2 Castings	31
11.3 Welding	32
12 Controls and instrumentation	33
12.1 General	33
12.2 Turbine governing system	33
12.3 Overspeed shutdown system	36
12.3.1 General	36
12.3.2 Electronic overspeed detection system	37
12.3.3 Electro-hydraulic solenoid valves	37
12.3.4 Trip valves/combined trip and throttle valves	37
12.4 Other alarms and shutdowns	39