



|                      |                 |
|----------------------|-----------------|
| <b>Document No.</b>  | GIS 34-204      |
| <b>Applicability</b> | Group           |
| <b>Date</b>          | 9 December 2009 |

---

**GIS 34-204**

---

# **Centrifugal Pumps (ISO 5199)**

## **Group Instruction for Supply**

**BP GROUP  
ENGINEERING TECHNICAL PRACTICES**

## Foreword

This issue of Engineering Technical Practice (ETP) GIS 34-204 incorporates the following modifications:

- a. Specification of the suction specific speed ( $N_{ss}$ ) limit.
- b. Clarification of shim requirements.
- c. Correction of reference numbers and titles.

Modifications are identified by a bar in the margin as is normal practice.

Copyright © 2009 BP International Ltd. All rights reserved.

This document and any data or information generated from its use are classified, as a minimum, BP Internal. Distribution is intended for BP authorized recipients only. The information contained in this document is subject to the terms and conditions of the agreement or contract under which this document was supplied to the recipient's organization. None of the information contained in this document shall be disclosed outside the recipient's own organization, unless the terms of such agreement or contract expressly allow, or unless disclosure is required by law.

In the event of a conflict between this document and a relevant law or regulation, the relevant law or regulation shall be followed. If the document creates a higher obligation, it shall be followed as long as this also achieves full compliance with the law or regulation.



## Table of Contents

|                                                                     | Page |
|---------------------------------------------------------------------|------|
| Foreword .....                                                      | 2    |
| Introduction.....                                                   | 4    |
| 2. Normative references.....                                        | 5    |
| 3. Terms and definitions.....                                       | 5    |
| 4. Design .....                                                     | 5    |
| 4.1 General.....                                                    | 5    |
| 4.3 Critical speed, balance and vibration.....                      | 6    |
| 4.4 Pressure-containing parts .....                                 | 7    |
| 4.5 Branches (nozzles) and miscellaneous connections .....          | 7    |
| 4.6 External forces and moments on flanges (inlet and outlet) ..... | 7    |
| 4.7 Branch (nozzle) flanges .....                                   | 7    |
| 4.9 Wear rings or equivalent components .....                       | 7    |
| 4.11 Shafts and shaft sleeves .....                                 | 7    |
| 4.12 Bearings .....                                                 | 8    |
| 4.13 Shaft sealing .....                                            | 8    |
| 4.14 Labelling .....                                                | 8    |
| 4.15 Couplings.....                                                 | 8    |
| 4.16 Baseplate.....                                                 | 9    |
| 5 Materials .....                                                   | 9    |
| 5.1 Selection of materials.....                                     | 9    |
| 5.3 Repairs .....                                                   | 9    |
| 6 Shop inspection and tests .....                                   | 9    |
| 6.1 General.....                                                    | 9    |
| 6.3 Tests.....                                                      | 9    |
| 7 Preparation for dispatch.....                                     | 10   |
| 7.7 Chemicals.....                                                  | 10   |

