



Group Instruction for Supply

GIS 34-103

Packaged Reciprocating Gas Compressors
(ISO 13631)

REVISION FOR REVIEW

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Foreword

This is a revised issue of Engineering Technical Practice (ETP) GIS 34-103 This Group Instruction for Supply (GIS) incorporates the following changes:

- Expanded the power range to 4 476 kW (6 000 hp).
- Redefined maximum rod load.
- Eliminated small bore DN 50 (NPS 2) threaded connections.
- Increased the threshold for vibration transducer requirement to 746 kW (1 000 hp).
- Various other minor clarifications.

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Introduction

- a. Guidance for high speed compressors is based on International Organization for Standardization (ISO) Standard 13631, “Petroleum and natural gas industries—Packaged reciprocating gas compressors”, First Edition, August 2002.
- b. Guidance statements of this GIS are modifications ISO 13631.
- c. Modifications to ISO 13631 are identified as Add, Modify to Read, or Delete.
- d. Clause numbers in this GIS correspond to ISO 13631.
- e. Clauses of ISO 13631 that are not revised remain applicable.

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1 Scope

Add to First Clause

This standard defines minimum requirements for design, materials, fabrication, inspection, testing, and documentation of high speed reciprocating gas compressors with maximum power rating of 4 476 kW (6 000 horsepower).

This standard does not apply to packaged reciprocating compressors which are intended exclusively for short term rental use by BP and owned by the rental company. However, any rental units which are intended for later purchase and ownership by BP shall comply with this standard.

Add to Third Clause

Air compressors and compressors for hydrogen rich gases (gases with molecular weight less than 12) are excluded.

Overall system responsibility for adequate sizing and interaction of components shall be with Vendor.

Add

1.1 Data sheets

- a. Compressor package, operating conditions, and compressor material requirements will be specified by BP on compressor data sheet.
- b. Data sheets from other applicable specifications may be used by BP to specify driver, cooler, exchanger, and control panel.
- c. Complete listing of specific exemptions (if any) to BP specifications shall be supplied by Packager on data sheet or other suitable document.
- d. Data sheet changes are not sufficient to be considered an exception.

2 Normative references

Add

BP

GIS 12-201	Low Voltage Induction Motors (IEC).
GIS 12-202	Low Voltage Induction Motors (IEEE 841).
GIS 12-203	High Voltage Induction Motors (IEC).
GIS 12-204	High Voltage Induction Motors (API 541).
GIS 12-205	IEC Synchronous Motors.
GIS 12-206	Synchronous Motors (API 546).
GIS 34-306	Gas Engines.
GP 06-60	Painting of Metal Surfaces.
GP 12-45	Electrical for Packaged Equipment.
GP 12-60	Hazardous Area Electrical Installations.
GP 30-65	Control Panels.
GP 30-70	Control and Instrumentation in Vendor Packaged Equipment.
GP 36-10	Metallic Materials Selection for Refineries and Petrochemical Facilities.



GP 36-15	Materials Selection for Surface (Topsides) Equipment in Oil and Gas Production Facilities.
GP 36-25	Materials for Sour Service in Exploration and Production Operations.
GP 36-26	Materials for Sour Service in Refining and Marketing Operations.
GP 44-60	Area Classification (API 500).
GP 44-65	Area Classification (IP 15).

5 General package requirements

5.1 Compressor package performance curves

Add

- Performance curves shall present values of dependent variables (compressor capacity, compressor shaft power, stage discharge temperatures, and combined rod loads and gas loads) on ordinate and shall show line plots for each of several constant compressor discharge pressures (kPag (psig)) as parameters.
- Values of inlet pressure (kPag ((psig)) that are common to all curves shall be shown on abscissa.
- Separate curves to same scale for various discharge pressures are acceptable.

5.5 Electrical area classification

Modify to Read

- Electrical installations shall comply with GP 12-60.
- Locations will be classified by BP in accordance with GP 44-60 or GP 44-65.

5.6 Package installation

Modify to Read

Site conditions will be specified in compressor data sheet.

5.7 Torsional analysis

Add

Package design shall ensure that torsional natural frequencies reside minimum of 20% above all specified operating speeds.

Add

5.8 Conflicting requirements

In case of conflicts, order of precedence shall be:

- Local codes and standards.
- Purchase order/requisition/contract.
- Project data sheet/drawings.
- This GIS.
- Referenced BP documents.
- Referenced standards.