

General Purpose Gear - Data Sheet

Standardization

This Standard replaces and cancels its previous revision.

The CONTEC - Authoring Subcommittee provides guidance on the interpretation of this Standard when questions arise regarding its contents. The Department of PETROBRAS that uses this Standard is responsible for adopting and applying the sections, subsections and enumerates thereof.

Technical Requirement: A provision established as the most adequate and which shall be used strictly in accordance with this Standard. If a decision is taken not to follow the requirement ("non-conformity" to this Standard) it shall be based on well-founded economic and management reasons, and be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by imperative nature.

Recommended Practice: A provision that may be adopted under the conditions of this Standard, but which admits (and draws attention to) the possibility of there being a more adequate alternative (not written in this Standard) to the particular application. The alternative adopted shall be approved and registered by the Department of PETROBRAS that uses this Standard. It is characterized by verbs of a nonmandatory nature. It is indicated by the expression: **[Recommended Practice]**.

Copies of the registered "non-conformities" to this Standard that may contribute to the improvement thereof shall be submitted to the CONTEC - Authoring Subcommittee.

Proposed revisions to this Standard shall be submitted to the CONTEC - Authoring Subcommittee, indicating the alphanumeric identification and revision of the Standard, the section, subsection and enumerate to be revised, the proposed text, and technical/economic justification for revision. The proposals are evaluated during the work for alteration of this Standard.

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Introduction

PETROBRAS Technical Standards are prepared by Working Groups - WG (consisting specialized of Technical Collaborators from Company and its Subsidiaries), are commented by Company Units and its Subsidiaries, are approved by the Authoring Subcommittees - SCs (consisting of technicians from the same specialty, representing the various Company Units and its Subsidiaries), and ratified by the Executive Nucleus (consisting of representatives of the Company Units and its Subsidiaries). A PETROBRAS Technical Standard is subject to revision at any time by its Authoring Subcommittee and shall be reviewed every 5 years to be revalidated, revised or cancelled. PETROBRAS Technical Standards are prepared in accordance with PETROBRAS Technical Standard N-1. For complete information about PETROBRAS Technical Standards see PETROBRAS Technical Standards Catalog.

CONTEC

 Comissão de Normalização
Técnica

SC - 11

Machines

Foreword

This Standard is the English version (issued in 12/2012) of PETROBRAS N-2921 REV. A 12/2012. In case of doubt, the Portuguese version, which is the valid document for all intents and purposes, shall be used.

1 Scope

1.1 This Standard covers general purpose gear data sheets to be used in PETROBRAS designs.

1.2 This Standard shall be applied to supplies beginning from its issue date.

1.3 This Standard contains only Technical Requirements.

2 Normative References

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies..

PETROBRAS [N-381](#) - Execution of Drawing and Other General Technical Documents;

PETROBRAS [N-1521](#) - Identification of Industrial Equipment;

API [STD 677:2006](#) - General Purpose Gear Units for Petroleum, Chemical, and Gas Industry Services.

NOTE For documents referred in this Standard and for which only the Portuguese version is available, the PETROBRAS department that uses this Standard should be consulted for any information required for the specific application.

3 Basic Considerations

3.1 The Annex A is the data sheet to be used to general purpose gear units, parallel shaft, according to API [STD 677:2006](#).

3.2 The Annex B is the data sheet to be used to general purpose gear units, bevel mounted, according to API [STD 677:2006](#).

3.3 These data sheets shall be attached to a Material Requisition (RM), to be considered a purchasing document.

3.4 These data sheets shall be considered a lasting document of the equipment after they have been fulfilled (as built) by the Manufacturer or Engineering Company.

3.5 The heading and footnotes shall be filled in accordance with PETROBRAS [N-381](#).

3.6 The tag number of the equipment shall be written in an outstanding position as per PETROBRAS [N-1521](#).

			No.						
	CLIENT:				SHEET				
	JOB:				of				
	AREA:								
	TITLE: GENERAL PURPOSE GEAR UNITS, PARALLEL SHAFT								
INDEX OF REVISIONS									
REV.	DESCRIPTION AND/OR REVISED SHEETS								
	REV. 0	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G	REV. H
DATE									
DESIGN									
EXECUTION									
CHECK									
APPROVAL									
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		No.		REV.
		SHEET of		
		TITLE: GENERAL PURPOSE GEAR UNITS, PARALLEL SHAFT		
1	APPLICABLE TO: ☐ PROPOSAL ☐ PURCHASER ☐ AS BUILT			
2	FOR:		MANUFACTURER:	
3	SITE:		MODEL No.:	
4	UNIT:		SERIAL No.:	
5	SERVICE:		DRIVER TYPE:	
6	No. REQUIRED:		DRIVEN EQUIPMENT:	
7	NOTE: NUMBERS WITHIN () REFER TO APPLICABLE API STD 677:2006 PARAGRAPHS: ☐ INFORMATION TO BE COMPLETED BY PURCHASER			
8	☐ INFORMATION TO BE COMPLETED BY MANUFACTURER ☐ A DECISION IS REQUIRED OR FURTHER INFORMATION IS TO BE PROVIDED BY THE PURCHASER			
9	DRIVEN EQUIP. POWER:	NORMAL:	MAX.:	☐ BASIC GEAR DATA
10	DRIVER POWER:	RATED:	MAX.:	MECHANICAL RATING: kW rpm
11	GEAR RATED POWER:			THERMAL RATING: kW rpm
12	TORQUE @ MAX. CONT. SPEED:		kg.m	FULL LOAD HORSEPOWER LOSS:
13	MAX. TORQUE :	kg.m;	rpm	MECHANICAL EFFICIENCY: %
14	RATED SPEED, rpm:			PITCH LINE VELOCITY: m/sec
15	INPUT:	☐ SPECIFIED ☐ NOMINAL		TOOTH PITTING INDEX, "K":
16	OUTPUT:	☐ SPECIFIED ☐ NOMINAL		ACTUAL: ALLOWABLE:
17	ALLOW. VAR. IN GEAR RATIO (+)(-):		%	TANGENTIAL LOAD, "Wt": N
18	MAX. CONTINUOUS SPEED:		rpm	BENDING STRESS NUMBER, "St"
19	TRIP SPEED:		rpm	
20	GEAR SERVICE FACTOR:		(MIN.)	ACTUAL
21	PIN/GEAR HARDNESS:		/	
22	SHAFT ASSEMBLY DESIGNATION:		MATERIAL INDEX NUMBER:	
23	HS SHAFT ROTATION FACING CPL'G. END:	☐ CW ☐ CCW	ANTICIPATED SOUND PRESS LEVEL: dBA @ m	
24	LS SHAFT ROTATION FACING CPL'G. END:	☐ CW ☐ CCW	JOURNAL STATIC WEIGHT LOADS::	
25	HS SHAFT END: ☐ CYLINDRICAL ☐ TAPER ☐ HYD. TAPER		PINION kg	GEAR kg
26	☐ 1-KEY ☐ 2-KEYS			WR² REFERRED TO LS SHAFT: kg.m²
27	LS SHAFT END: ☐ CYLINDRICAL ☐ TAPER ☐ HYD. TAPER			BREAKAWAY TORQUE: kg.m @ LOW SPEED
28	☐ 1-KEY ☐ 2-KEYS ☐ INTEGRAL PLANGE			OVERHUNG LOAD FACTOR:
29	EXTERNAL LOADS :		☐ CONSTRUCTION FEATURES	
30	OTHER OPERATING CONDITIONS:		TYPE OF GEAR ☐ REDUCER ☐ INCREASER	
31			☐ SINGLE STAGE ☐ DOUBLE STAGE	
32	☐ INSTALLATION DATA		☐ SINGLE HELICAL ☐ DOUBLE HELICAL	
33	☐ INDOOR ☐ HEATED ☐ UNDER ROOF		☐ OTHER	
34	☐ OUTDOOR ☐ UNHEATED ☐ PARTIAL SIDES			
35	☐ GRADE ☐ MEZZANINE ☐			
36	☐ WINTERIZATION REQ'D ☐ TROPICALIZATION REQ'D			
37	ELECTRICAL AREA:	CLASS:	GRP.:	DIV.:
38	MAX ALLOW SPL:	dBA @		m
39	ELEVATIO N m;	BAROMETER:		(kPa)
40	RANGE OF AMBIENT TEMPERATURES:		(BAR)	
41		DRY BULB	WET BULB	
42	NORMAL	°C	°C	
43	MAXIMUM	°C	°C	
44	MINIMUM	°C	°C	
45	UNUSUAL CONDITIONS:		TEETH	
46	☐ DUST ☐ FUME ☐		NUMBER OF TEETH: PINION: GEAR:	
47	NOTES:		GEAR RATIO: CENTER DISTANCE: mm	
48			PITCH DIA. mm: PINION: GEAR:	
49			FINISH: (RA) AGMA GEOMETRY FACTOR "J":	
50			PINION: GEAR:	
			HELIX ANGLE: Deg NORMAL PRESS ANGLE: Deg	
			NET FACE WIDTH, "F": mm ; PINION L/D:	
			NORMAL DIAMETRICAL PITCH, "PND": ; BACKLASH: mm	
			MANUFACTURING METHODS	
			TEETH GENERATING PROCESS	
			TEETH FINISHING PROCESS	
			TEETH HARDENING METHOD	
			PINION TO SHAFT ☐ INTEGRAL ☐ SHRUNK-ON	
			GEAR TO SHAFT ☐ INTEGRAL ☐ SHRUNK-ON	

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