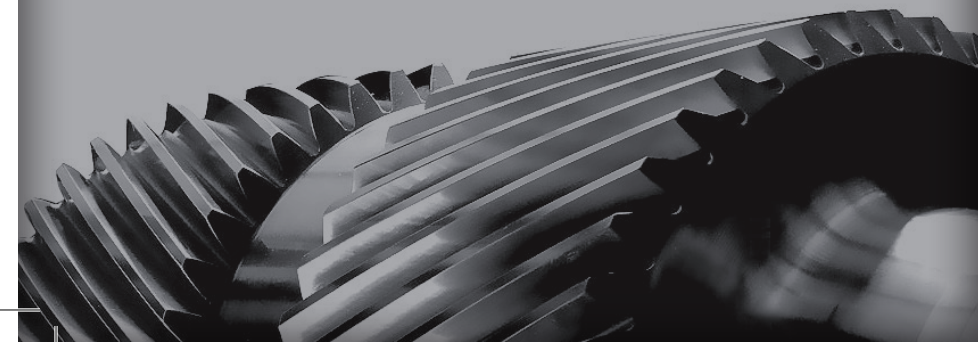




Oil
& Gas

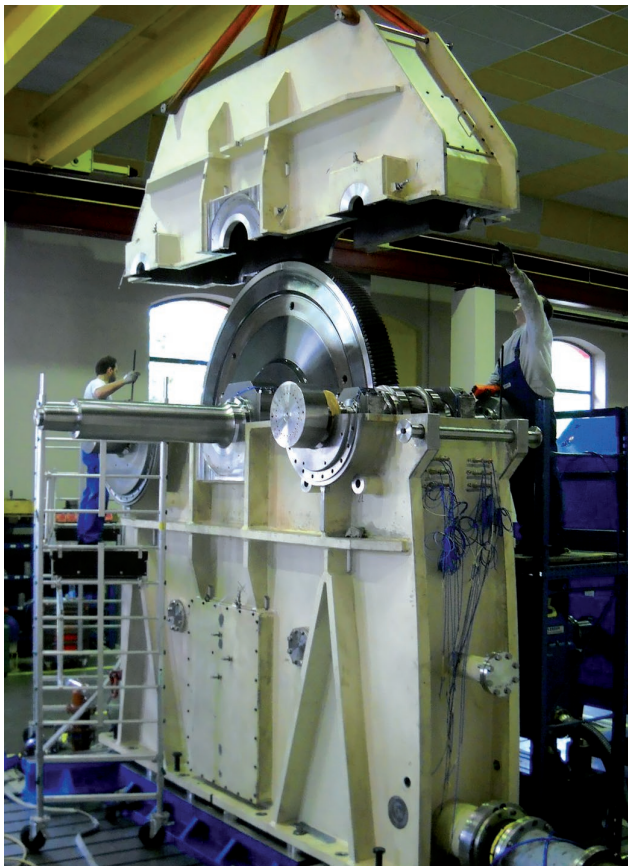
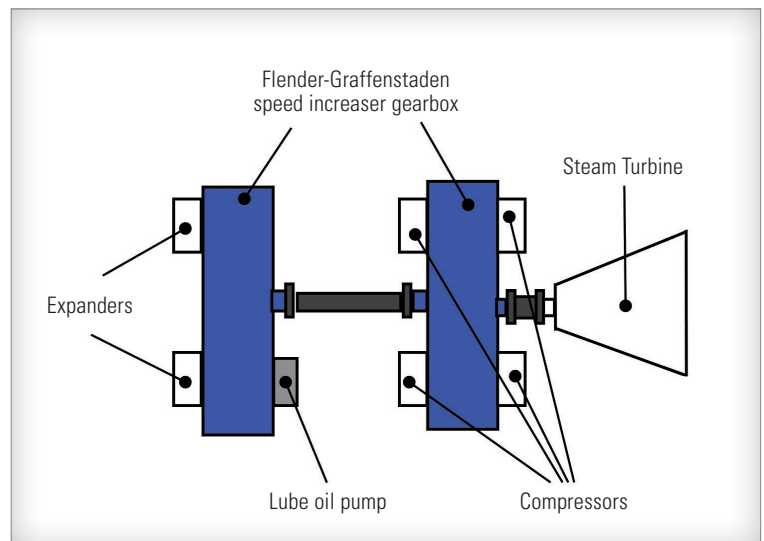
FLENDER
GRAFFENSTADEN



HIGH PERFORMANCE TRANSMISSION FOR ENERGY

Oil & Gas

With more than 60 years experience, Flender-Graffenstaden gearboxes are used in all processes in power plants, refineries, oil & gas offshore and onshore installations, chemical and petrochemical plants and industrial process plants throughout the world.



Design

Flender-Graffenstaden gear units are designed to your power transmission needs:

- Horizontal and vertical offset parallel shaft gearboxes
- Customised multi-stage gearboxes
- Integral gears with compressor housing integration
- Welded steel plate and cast iron casing
- Single helical, double helical or thrust collar arrangements

Applications

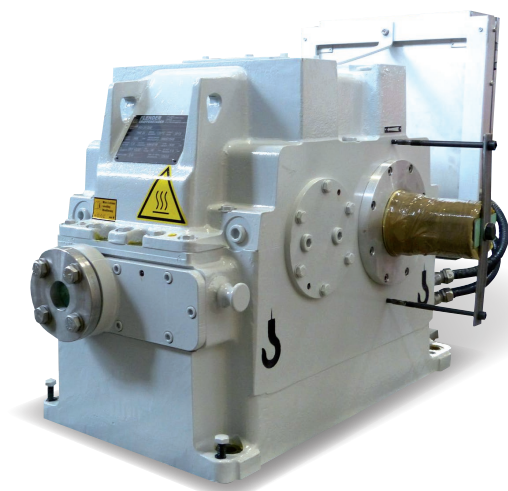
Flender-Graffenstaden gear units are located wherever oil & gas compression and oil by-products transformation takes place:

- Centrifugal compressors driven by turbines and motors
- Single stage integrally geared air and process gas compressors
- Multi-stage integrally geared compressors for combined compression and expansion
- LNG compression for transport

Scope of supply

Flender-Graffenstaden gear units can be customised to on-site requirements:

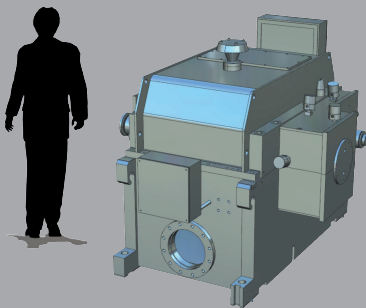
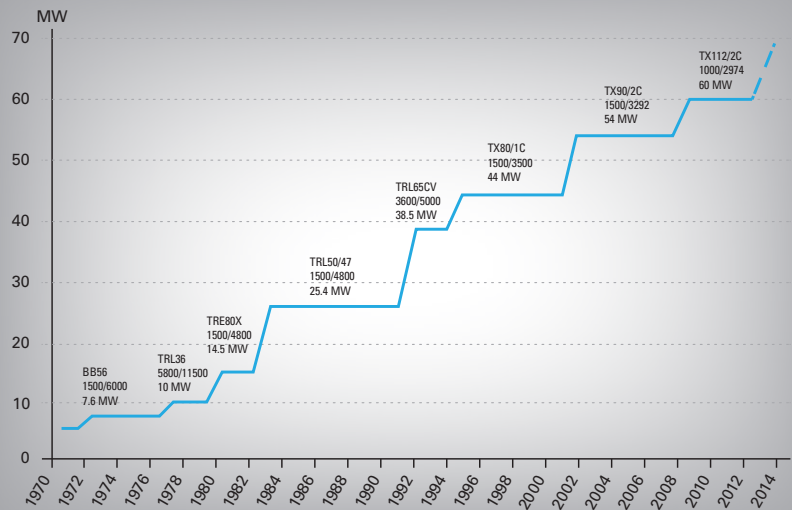
- Lubricating oil pumps
- Turning device for start-up and slow roll
- Couplings, quillshafts and adapted coupling guards
- Nitrogen container for spare parts preservation



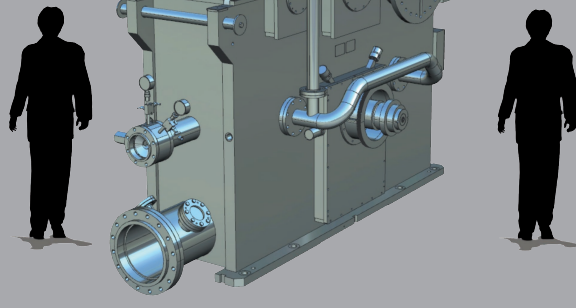
Engineering

Flender-Graffenstaden gear units are tailored to meet your « turbo » expectations:

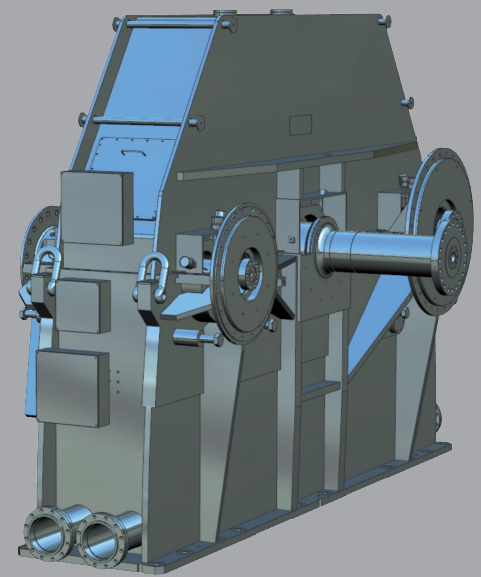
- Ratings according API 613, AGMA 421, AGMA 6011, ISO 6336
- Hydrodynamic bearings with dedicated performance determination
- Lateral vibration calculation and analysis of every unit
- Meshing load distribution calculation according AGMA 927
- Modal and structural finite-element analysis of casings
- Specific design features adapted to harsh environments and explosive areas



TX 50/2C



TSQ 105



TSD 190

Manufacturing processes

Flender-Graffenstaden gear units benefit from 60 years of in-house experience combined to state of the art manufacturing technology:

- Carburizing and nitriding
- ISO and AGMA grade 4 or better gear grinding
- CNC machine tools for cylindrical turning and high accuracy teeth grinding

Testing

Flender-Graffenstaden gear units are individually tested according to customer specifications and requirements:

- Standard full speed tests according API 613
- Partial load tests
- Back-to-back locked-torque test

Instrumentation

Flender-Graffenstaden gear units can be equipped with instrumentation adapted to your process control and site safety requirements according to API 670 and international standards.

- Temperature probes for oil and bearing survey
- Casing and shaft vibration probes
- Pressure gauges
- Junction boxes and wiring
- Equipments compliant with international as well as local requirements (ATEX, UL/CSA, GOST, NEC,...)

FLENDER **GRAFFENSTADEN**

1, rue du Vieux Moulin
BP 10063 F - 67400
ILLKIRCH GRAFFENSTADEN Cedex
Phone +33 (0) 3 88 67 60 00
Fax +33 (0) 3 88 67 06 17

www.flender-graff.com

