



The TRIZ company was founded in 1990 in Sumy, Ukraine. TRIZ develops and manufactures products to improve the efficiency of dynamic equipment in the chemical, petrochemical, gas transportation, oil, energy and other industries.

TRIZ is an authorized supplier of spare parts for manufacturers of compressor and turbine equipment SIEMENS AG, ALSTOM, MITSUBISHI HEAVY INDUSTRIES, GENERAL ELECTRIC, etc.

Main customers



EUROCHEM



ALSTOM

SIEMENS



MITSUBISHI
HEAVY INDUSTRIES, LTD.



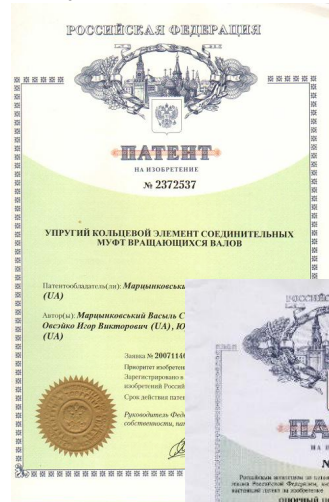
URALCHEM



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Together we are the best!

TRIZ products are certified for compliance with API standards and protected by more than 300 patents for design and production technology.



Main products:

- ✓ Static and rotor parts of bundle
- ✓ Journal SMART bearings
- ✓ Thrust SMART bearings
- ✓ Elastic couplings with ring elements
- ✓ Anti-circulation seals
- ✓ Mechanical impulse seals
- ✓ Special purpose pumps

Basic services :

- ✓ Modernization of centrifugal compressors and pumps
- ✓ Modernization of reciprocating compressors
- ✓ Installation and service of dynamic equipment, vibration diagnostics
- ✓ Metalworking



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Modernization of centrifugal compressors

TRIZ carries out modernization of compressors in order to change the performance characteristics of equipment to meet current operating requirements, increase efficiency and reliability, reduce operating costs, extend the service life and meet the requirements of the API standard. This is a budgetary alternative to purchasing new equipment.

Modernization includes a full cycle of work: inspection of the unit, gas-dynamic and strength calculations, design, manufacture, installation, testing and post-warranty service.

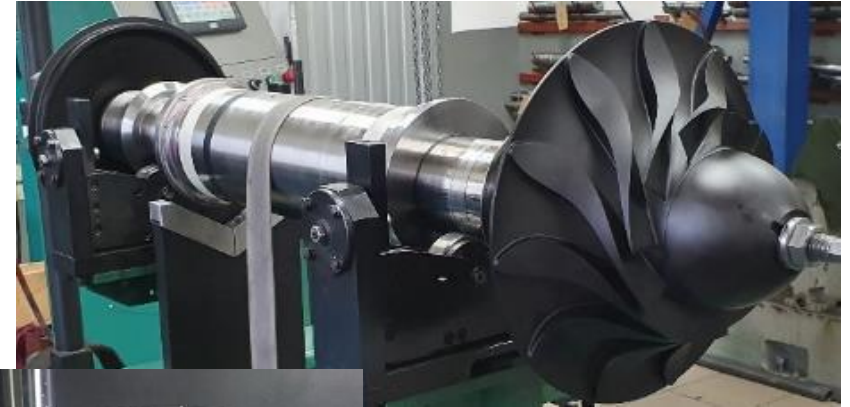


Advantages:

- payback period no more than two years
- increase in efficiency of at least 5%
- overhaul cycle in continuous operation - at least three years
- high reliability and dynamic stability
- stability of characteristics during the overhaul period
- reduced operating costs, improved service life
- the number of modernized units exceeds several hundred.

Static and rotor parts of bundle

TRIZ designs and manufactures static and rotor parts of bundle for centrifugal machines operating in the chemical and oil and gas industry in accordance with the requirements of API 617.



Journal SMART bearings - PD TRIZ®



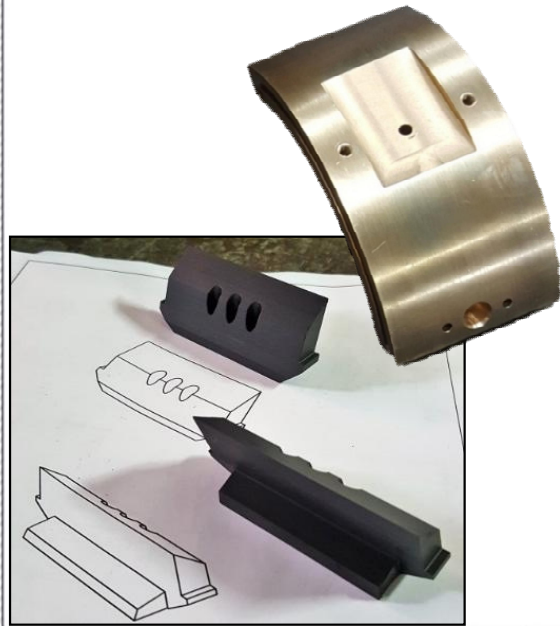
PD TRIZ® - smart intelligent self-adjusting bearing device with self-aligning pads on hydrostatic suspension with individual supply and drainage of lubricating oil. Developed taking into account the individual characteristics of the equipment.

The device is constantly evolving to meet the emerging needs of operation. New functions are added at the request of the Customer:

- self-generated hydrostatic suspension
- self-aligning pads
- individual inlet and outlet of the lubricating oil
- built-in protector for prevention against electrical discharge destruction
- built-in sensor for control of magnetization
- reduced shaft precession
- ensured stable clearances
- work in the standard oil system

Advantages:

- the optimum ratio of price and quality
- high damping capacity, reduction of vibration level by 1,5 - 3 times
- high bearing and damping capacity ensure high reliability and long service life
- increase in overhaul life up to 6...8 years



Thrust SMART bearings - *PUR TRIZ*[®]

PUR TRIZ[®] - SMART self-adjusting bearing device with pads on the leveling lever system.

SMART functions:

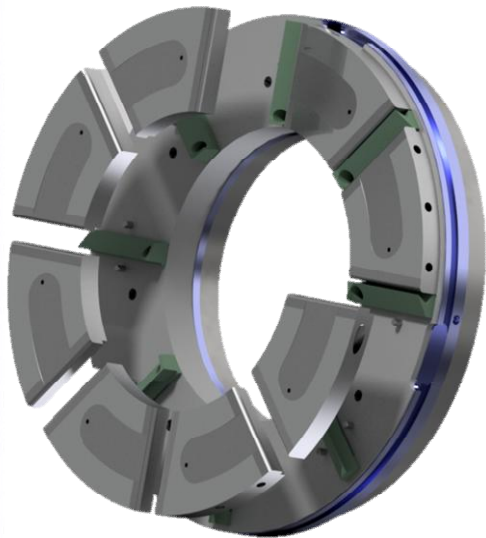
- self-leveling rolling system
- individual inlet and outlet of the lubricating oil
- built-in protector for prevention against electrical discharge destruction
- built-in sensor for control of magnetization
- work in the standard oil system



Advantages:

- the optimum ratio of price and quality
- Increased load bearing capacity of 1.5 - 2 times
- high leveling and compensating ability
- increase in overhaul life up to 6...8 years
- reduction of lubricant consumption up to 2 times

SMART thrust damper bearings - *PUD TRIZ*[®]



PUD TRIZ[®] - SMART self-aligning pad bearing device on self-generated hydrostatic suspension. New hydrostatic thrust pad design eliminates the disadvantages of traditional thrust pad bearings and provides high damping and load capacity while reducing the axial and radial dimensions of the bearing.

Advantages:

- high damping ability to damp axial vibrations of rotors, which has no analogues
- no axial force subsidence
- no axial subsidence from abrasion of contacting thrust surfaces
- lowest price by simplifying design

Anti-circulation seals

Labyrinth seals **TRIZ**[®] are used as inter-stage, inter-section, end seals, and unloader seals. They are developed taking into account the individual characteristics of the equipment for specific operating parameters.



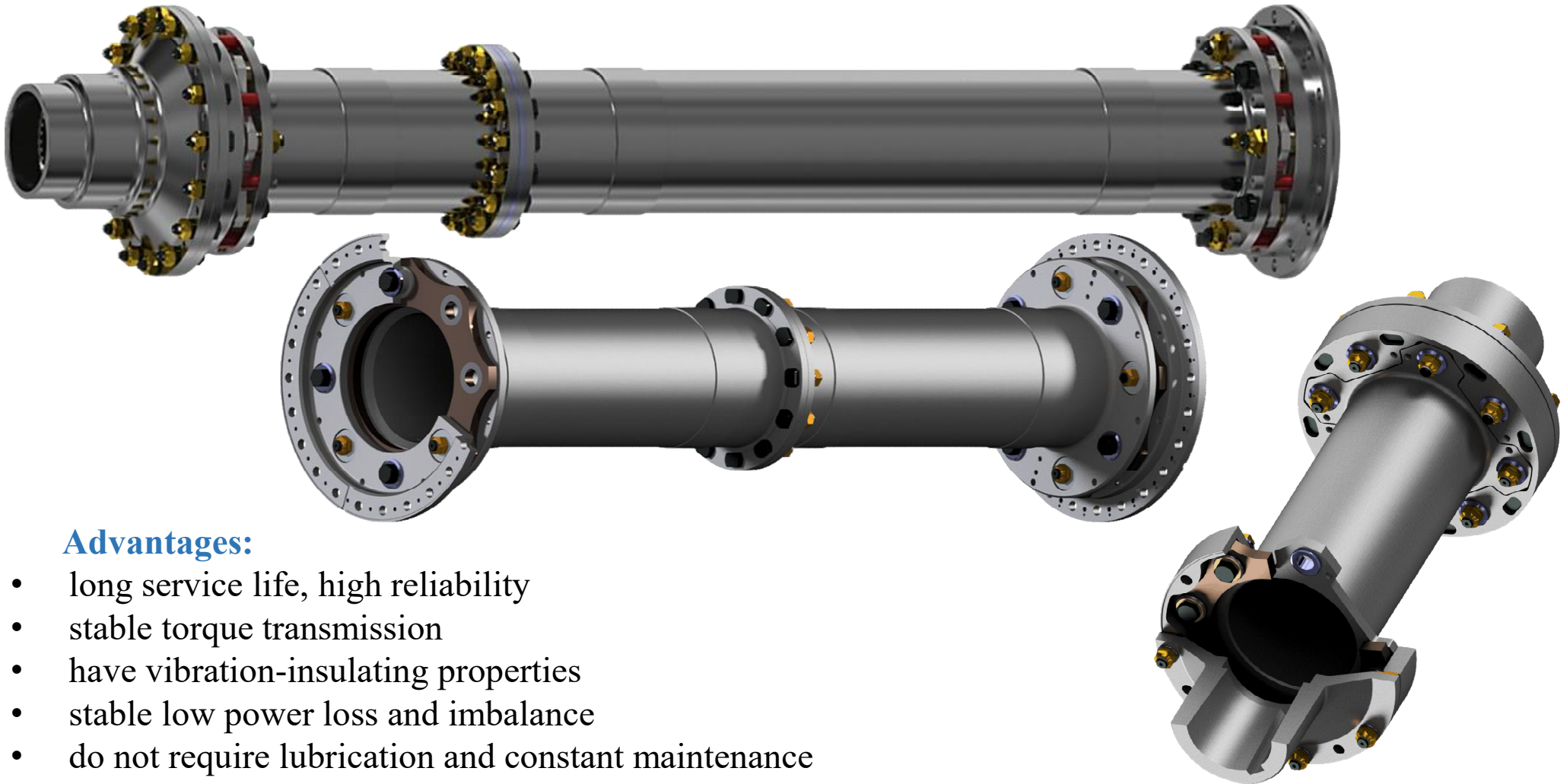
Advantages:

- high sealing ability
- anti-circulation design, does not excite vibration
- high damping ability dampens vibration
- allow contact with rotating parts
- long service life
- low wear, clearances stability

Elastic couplings with ring elements *TRIZ*[®]

TRIZ[®] couplings are designed to suit individual equipment, thereby ensuring minimal reactive forces on the bearings while compensating for pre-assembly misalignments, stretch marks and operational deviations.

TRIZ[®] coupling helps to increase inter-repair equipment run from one to six years.



Advantages:

- long service life, high reliability
- stable torque transmission
- have vibration-insulating properties
- stable low power loss and imbalance
- do not require lubrication and constant maintenance

Service maintenance

The **TRIZ service** carries out vibrodiagnostic surveys, overhauls of dynamic equipment in chemical plants, participates in modernizations aimed at increasing productivity, takes part in the construction of new production facilities, in terms of installing dynamic equipment, in cooperation with well-known international companies.

Recovery repairs after emergency shutdowns

TRIZ responds quickly to customers' requests in emergency situations due to emergency shutdowns and in practice applies modern technologies and methods of refurbishment. This allows carrying out repair work both at the site of operation and with the removal of equipment to the production facilities of **TRIZ**.



Service maintenance

TRIZ specialists carried out installation and overhaul of dynamic equipment in the ammonia production shop (the latest KBR Purifier technologies and unique dynamic equipment were used) with a capacity of 1 million tons / year.

Overhaul of dynamic equipment



Installation and commissioning of dynamic equipment at enterprises under construction



Production facilities



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Together we are the best!

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**Compressors, pumps
and their spare parts.**

**High-efficient changeable static
and rotor parts of bundle, bearings,
couplings, seals.**



Engineering Problems Realization Company

30 years

Together we are the best!

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**Vibration diagnostics, inspection,
modernization, service, repair,
installation of dynamic
equipment, metalworking**



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