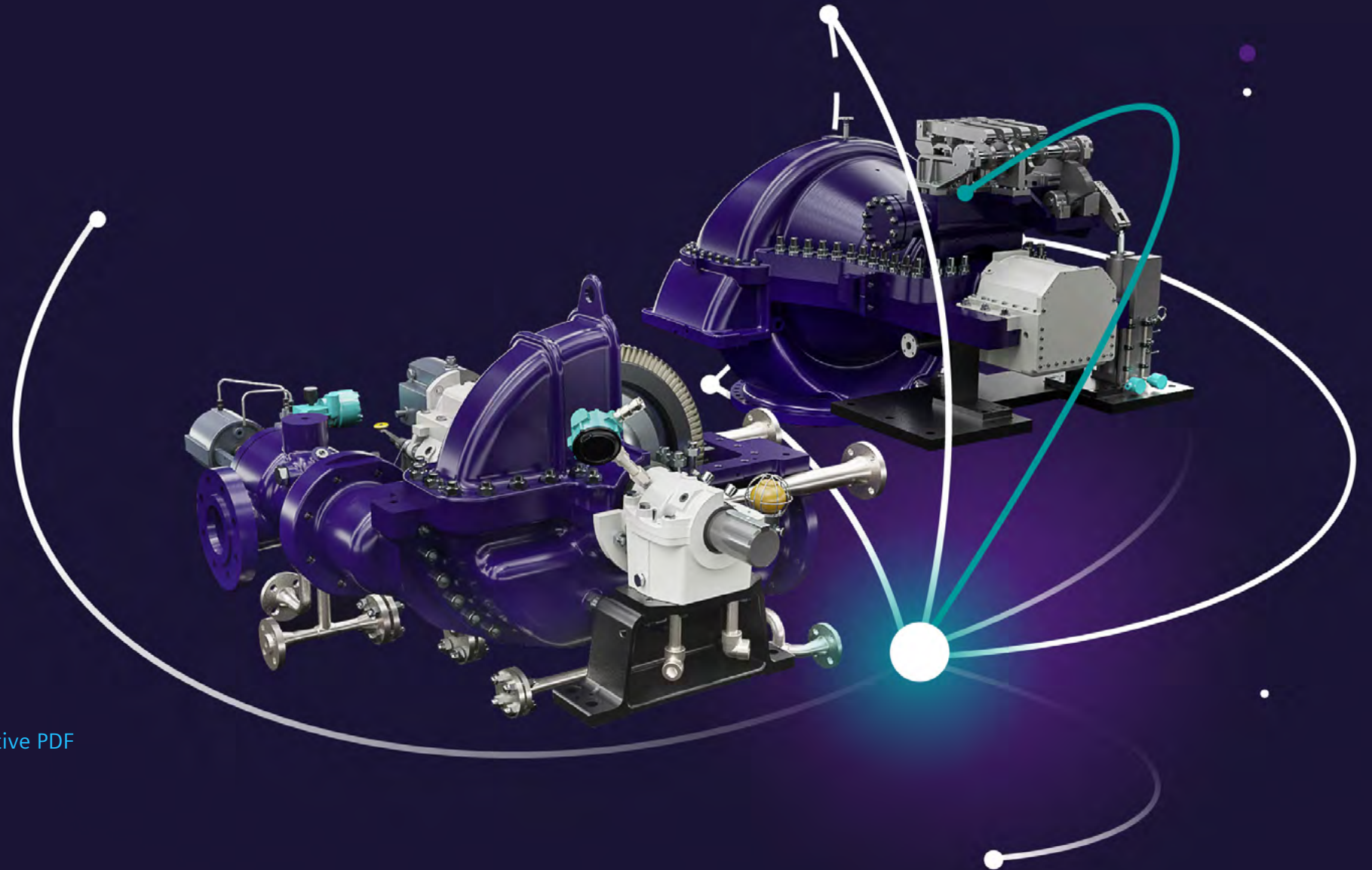


Footprint Solution

for Small Steam Turbines



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in the Acrobat PDF viewer 10.0 or higher.

Visit our website: [DR-SST Footprint Solution](#)

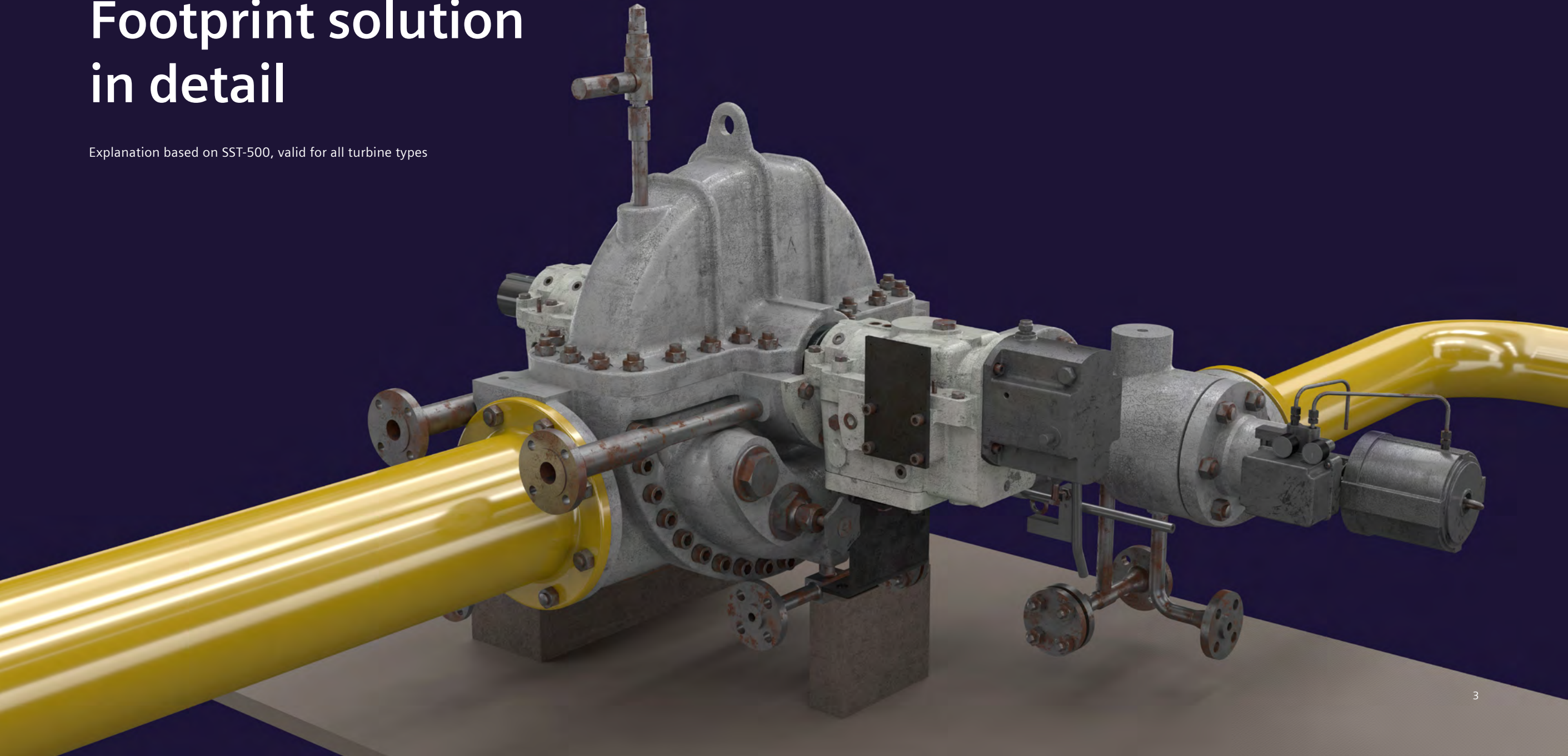
Footprint solution

With the footprint solution, the turbine and all its components are modernized but their dimensions and the positioning of the flanges are not changed, with the result that they can be perfectly integrated into the existing infrastructure.

In the process, it's possible to determine exactly which turbine components should be reworked to improve efficiency or performance.

Footprint solution in detail

Explanation based on SST-500, valid for all turbine types

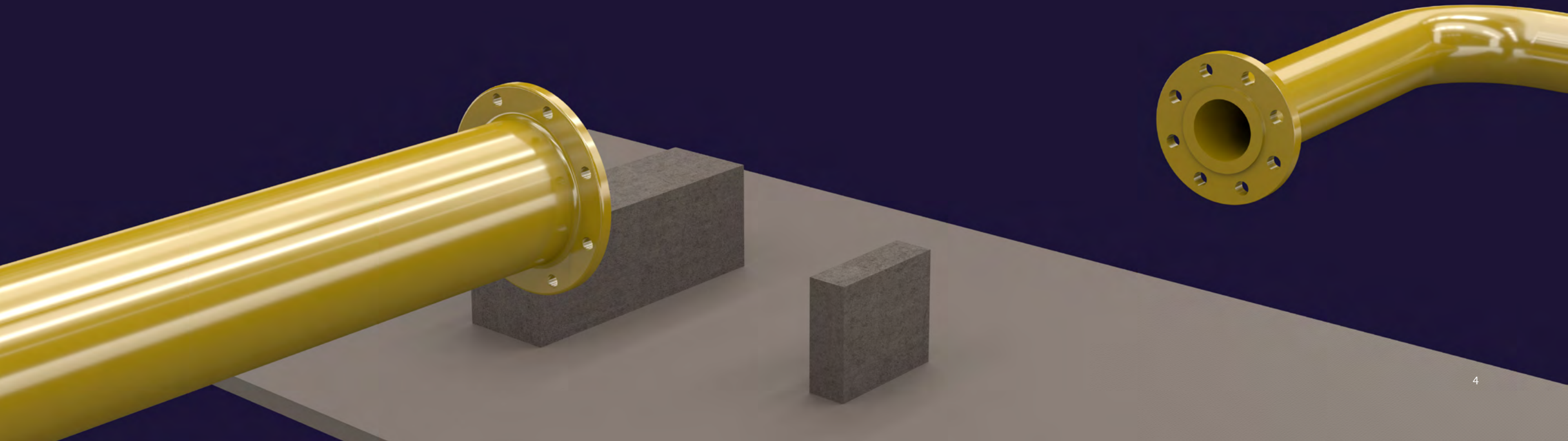


Footprint solution in detail

Explanation based on SST-500, valid for all turbine types

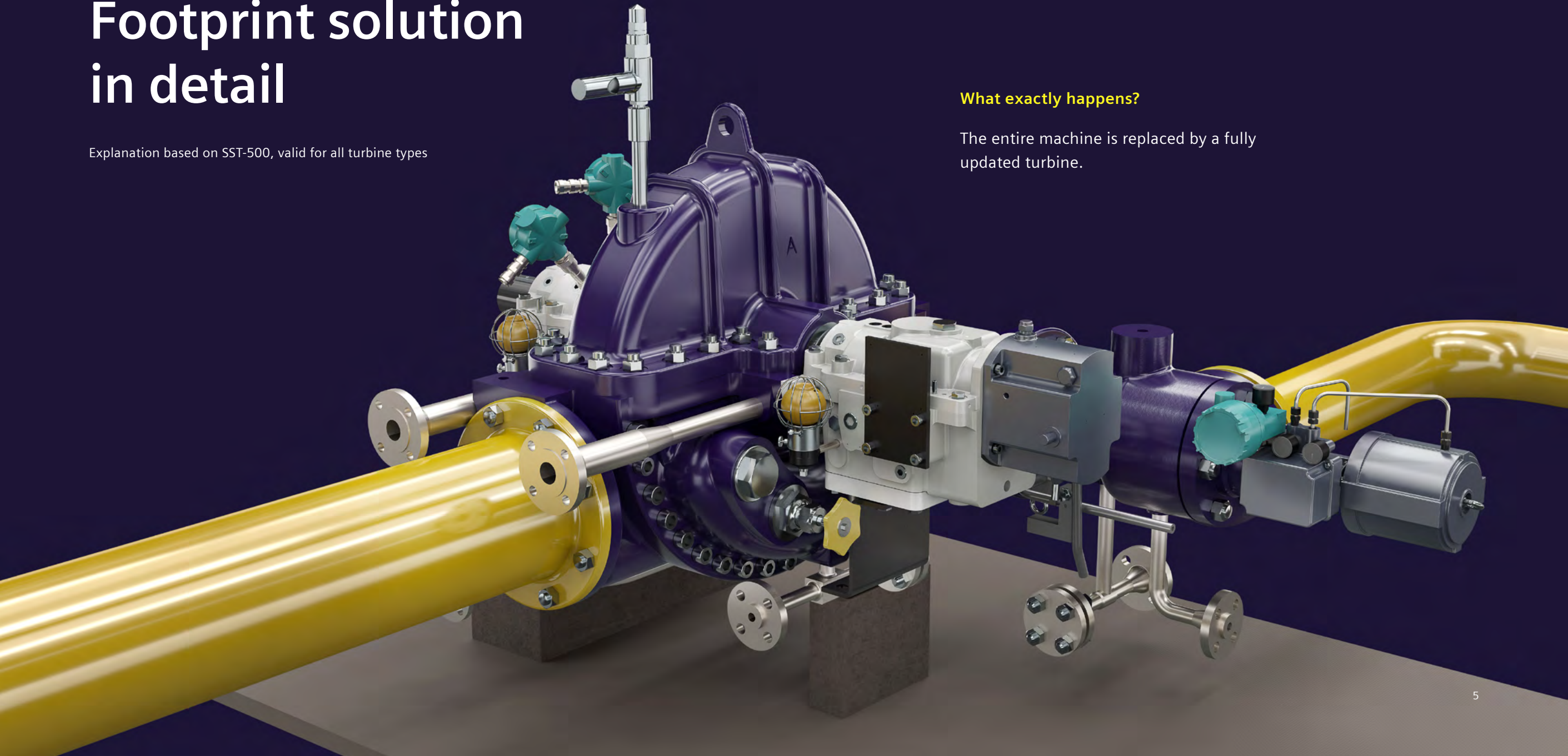
What exactly happens?

The entire turbine is removed from the existing infrastructure without the need for further investments in connecting cables and terminals.



Footprint solution in detail

Explanation based on SST-500, valid for all turbine types

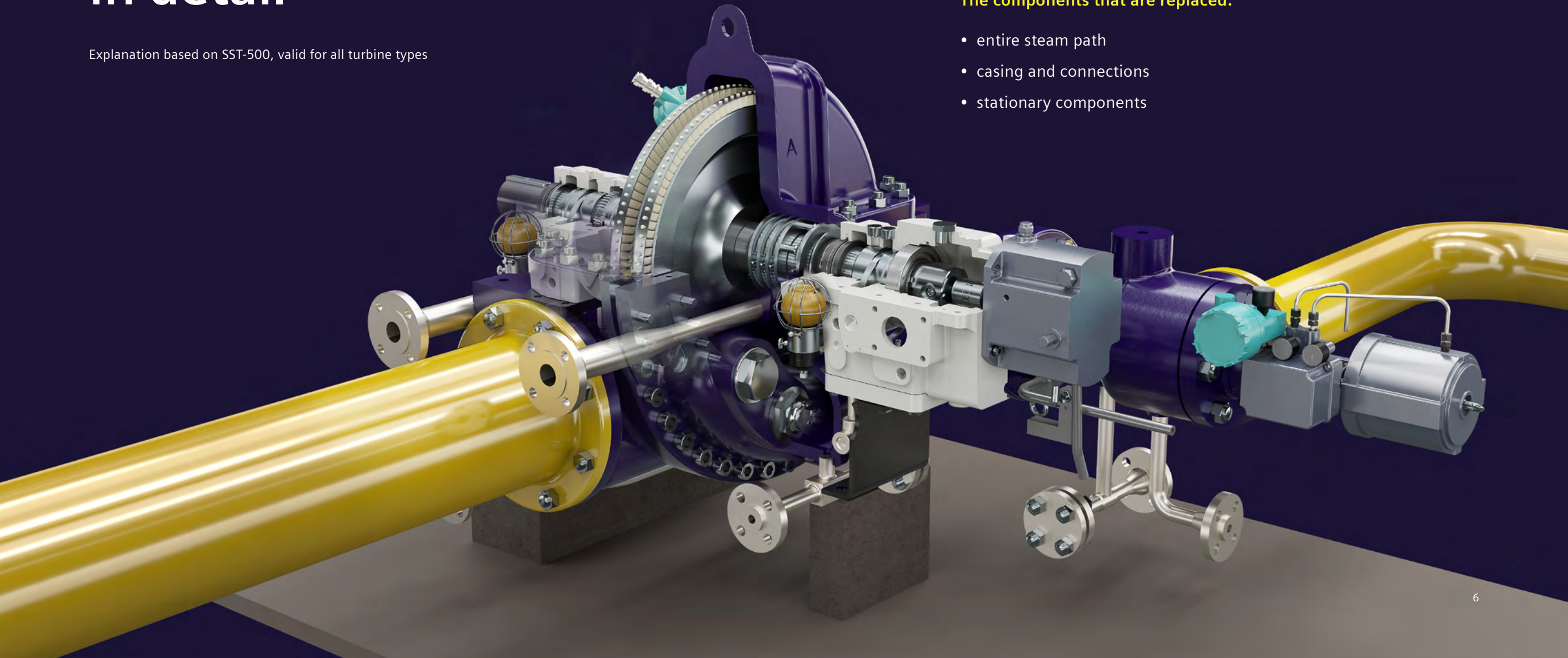


What exactly happens?

The entire machine is replaced by a fully updated turbine.

Footprint solution in detail

Explanation based on SST-500, valid for all turbine types



The components that are replaced:

- entire steam path
- casing and connections
- stationary components

Footprint solution in detail

Explanation based on SST-500, valid for all turbine types



What exactly happens?

Customized technical solution for the entire steam path:

- blades
- wheel
- nozzle and guide ring

Footprint solution in detail

Explanation based on SST-500, valid for all turbine types



What exactly happens?

Casing and connections

- The outer casing is tailored to the new requirements.
- Casing material can be improved if needed (stainless steel).
- It's extremely important that the dimensions and positioning of the terminals are not being changed.

Footprint solution in detail

Explanation based on SST-500, valid for all turbine types

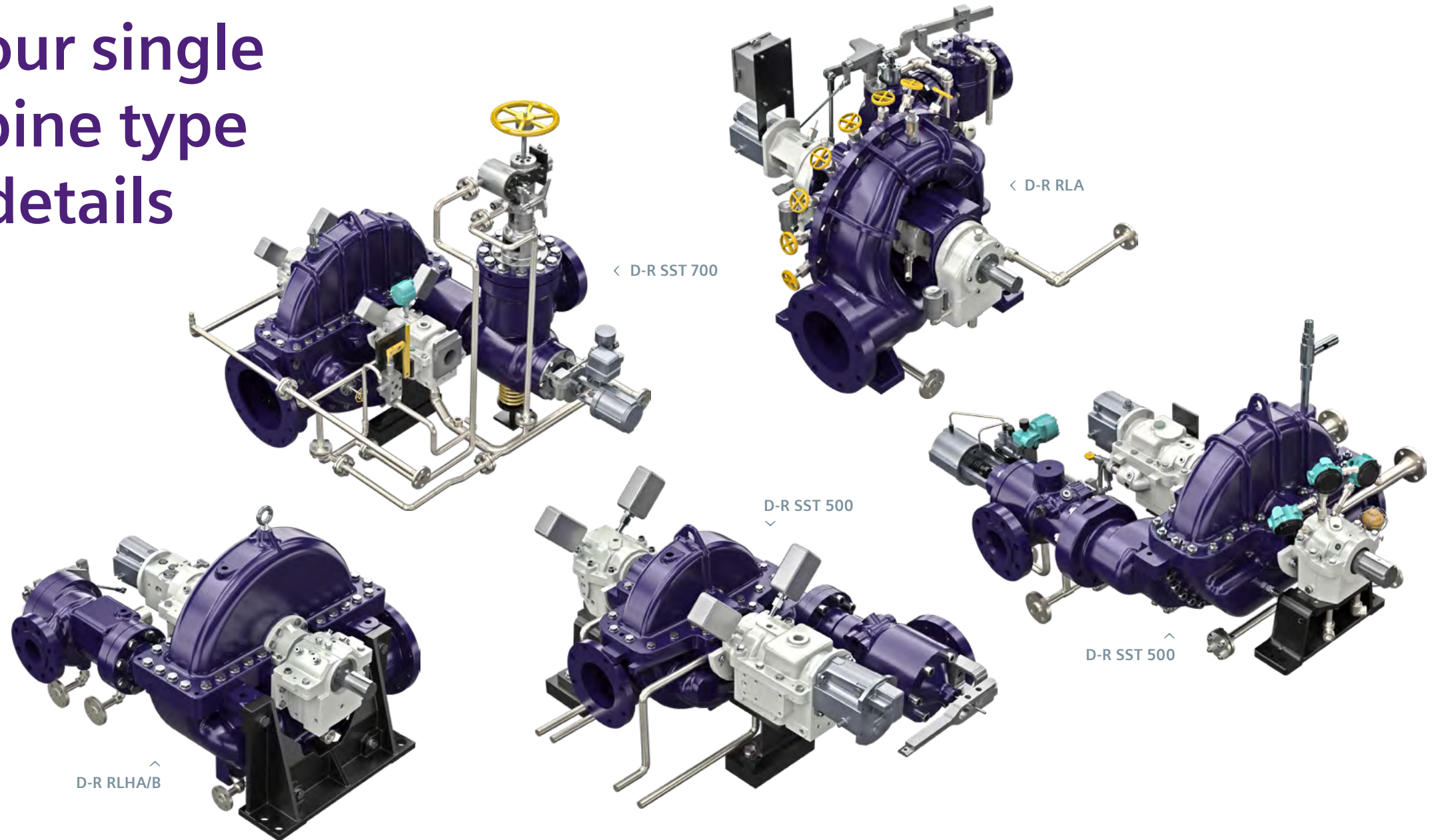


What exactly happens?

All the stationary components are replaced to guarantee optimal interaction with the turbine rotor including among others:

- the blading
- body and hand valves
- bearings
- oil baffles
- governor

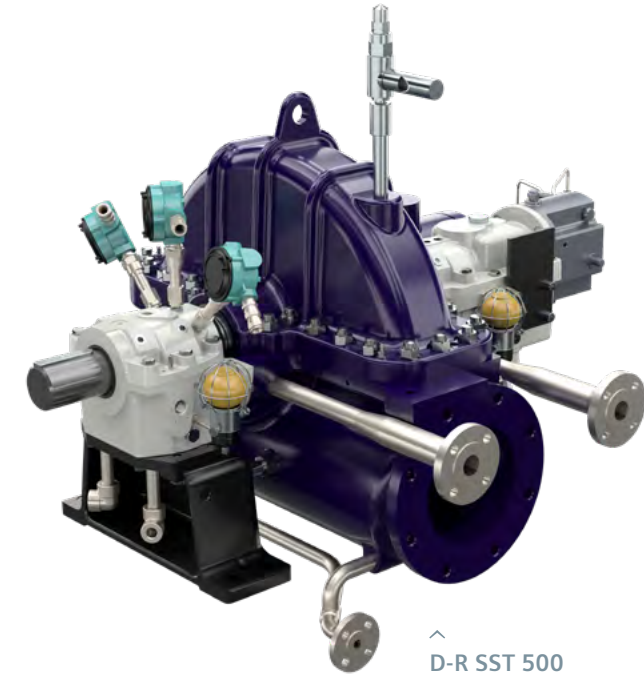
Choose your single stage turbine type for more details



Choose your single stage turbine type for more details

Technical data

- Rugged, versatile proven API design
- Woodward Oil Relay governors NEMA Class A and class D constant speed governor or electronic governor
- Horizontally split casing with centerline support
- Overspeed mechanical trip valve, separated from governor valve
- Carbon ring or labyrinth sealing glands
- Oil ring lubricated with forced lubrication as option
- Rolling ball bearing or Tilt-pad thrust bearings
- Steel or bronze backed sleeve bearings; ball bearing optional
- Broad range of instrumentation and accessories available
- Dresser-Rand heritage



Typical applications

- Refineries
- Petrochemical plants
- Sugar Mills
- Steel industry
- Pulp & Paper
- Institutional
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Pump drives
- Fan drives
- Compressor drives
- Generator drives

Choose your single stage turbine type for more details



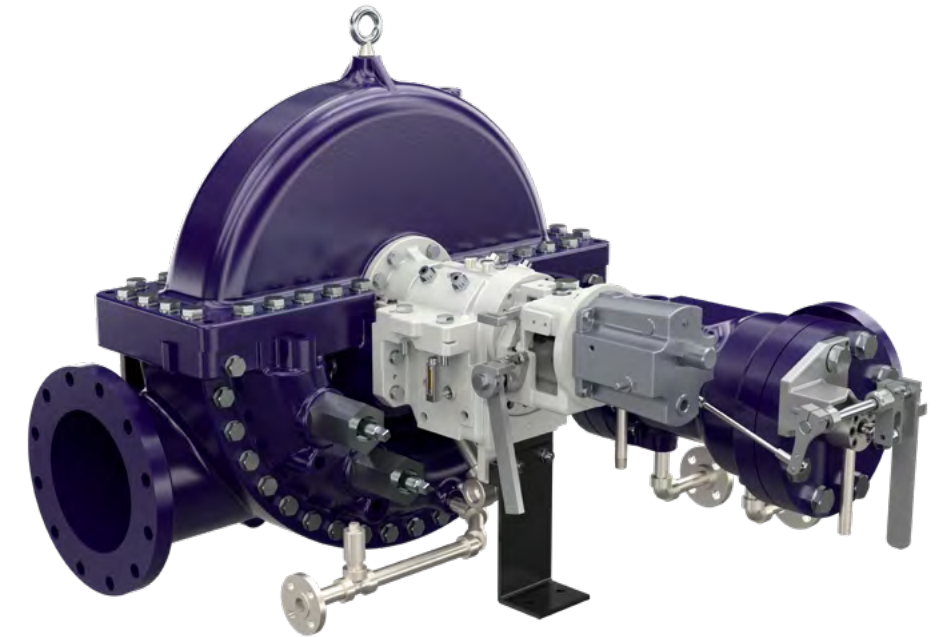
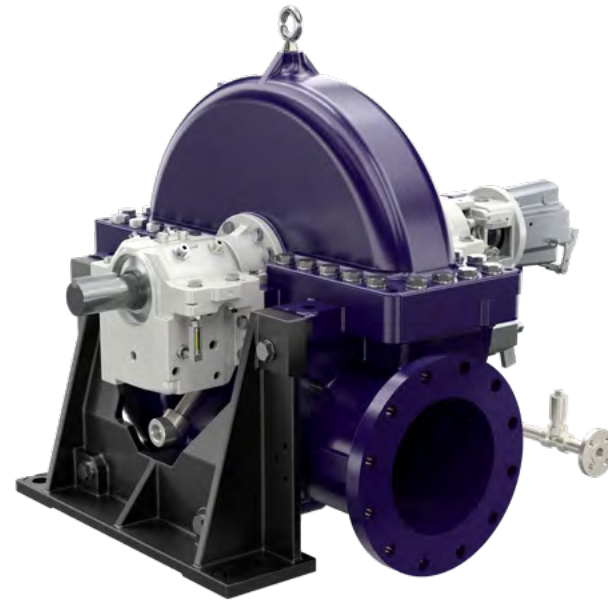
Technical data

- Rugged, versatile design
- Radially split casing with centerline support
- Woodward TG Oil Relay NEMA Class A constant speed governor
- API 611 compliant, positive seating, mechanical over-speed trip valve
- Separate double seated governor valve
- Built-in removable steam strainer
- Removable carbon ring sealing glands
- Oil ring lubricated
- Broad range of controls and accessories available
- COPPUS heritage

Typical applications

- Refineries
- Petrochemical plants
- Institutional
- Process pump drives
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Pump drives

Choose your single stage turbine type for more details



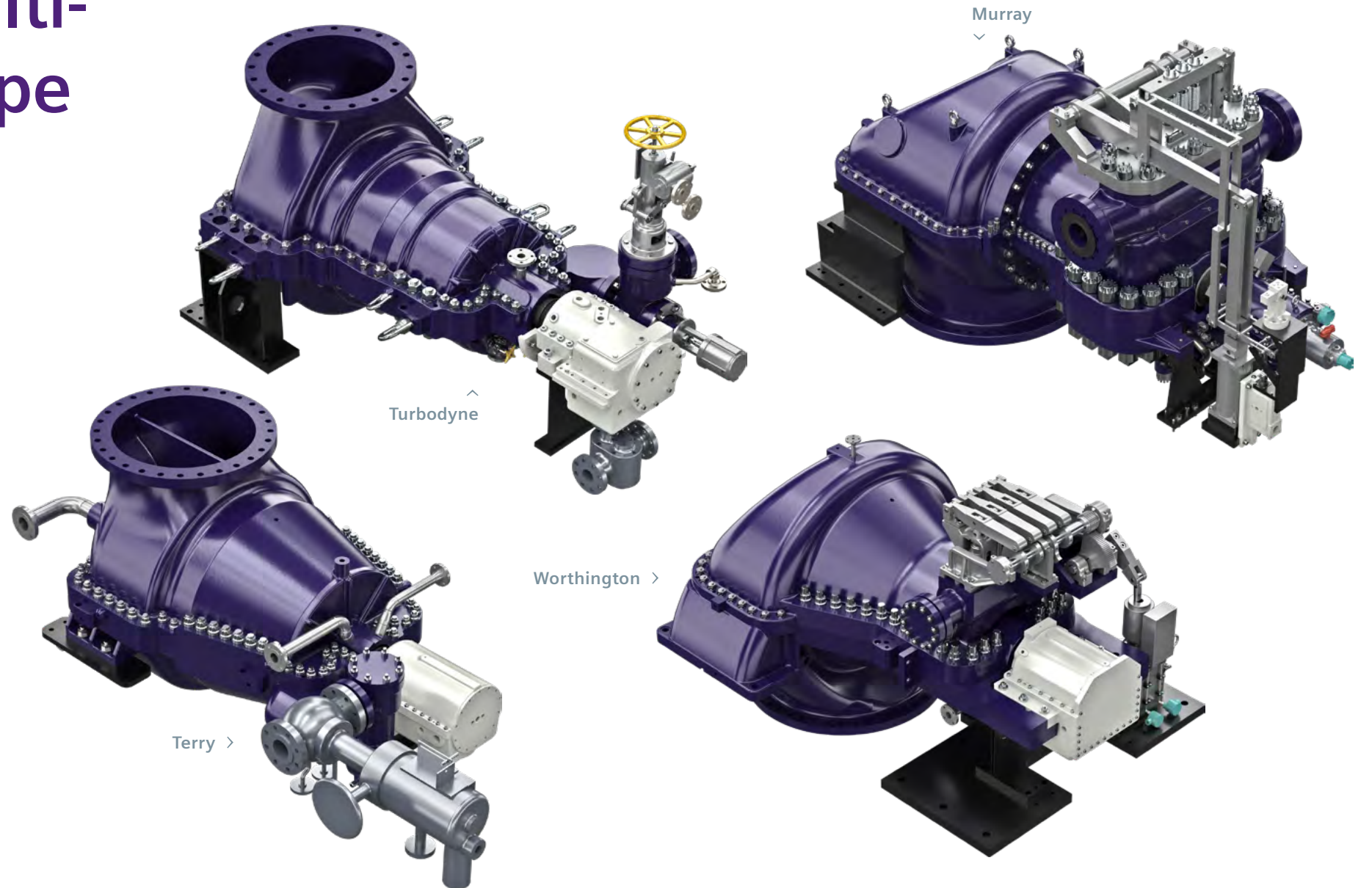
Technical data

- Rugged, versatile API design
- Woodward TG Oil Relay NEMA Class A constant speed governor or electronic governor
- Horizontally split casing with centerline support
- API 611 compliant, positive seating, mechanical over-speed trip valve
- Separate double seated governor valve
- Built-in removable steam strainer
- Carbon ring sealing glands
- Oil ring lubricated with forced pressure lubrication or circulating oil cooling options
- Broad range of controls and accessories available
- COPPUS heritage

Typical applications

- Refineries
- Petrochemical plants
- Food processing
- Institutional
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Pump drives
- Fan drives
- Compressor drives
- Generator drives

Choose your multi-stage turbine type for more details



Choose your multi-stage turbine type for more details



Technical data

- Optimum efficiency and performance
- Rugged, horizontally split casing designed to meet API 612 standards
- Smooth surfaces, proper spacing and aerodynamically design of nozzle block and diaphragm vanes
- Multiple wheel design that optimize machine size
- Up to 15 stages
- Condensing or back pressure
- Sleeve and tilting pad journal bearing
- Multi-pad, fully equalized Kingsbury-type thrust bearings

Typical applications

- Refineries
- Petrochemical plants
- Sugar Mills
- Steel industry
- Pulp & Paper
- Institutional
- Process waste heat recovery
- Replacement of steam pressure reduction valve
- Pump drives
- Fan drives
- Compressor drives
- Generator drives

Choose your multi-stage turbine type for more details



Technical data

- Casing is horizontally split at the shaft centerline maintaining correct alignment, minimizing vibration and wear, simplifying maintenance and reducing downtime
- Precision cast diaphragm nozzles for superior performance
- High chrome stainless steel blades that provide high resistance to erosion and excellent damping characteristic
- Steel and/or cast-iron casings
- Dynamically balanced rotors
- Steel-backed babbitt-lined journal bearings for optimum rotor stability
- API 611 / 612 Standard
- Available in single valve and multi-valve configurations to control steam flow

Typical applications

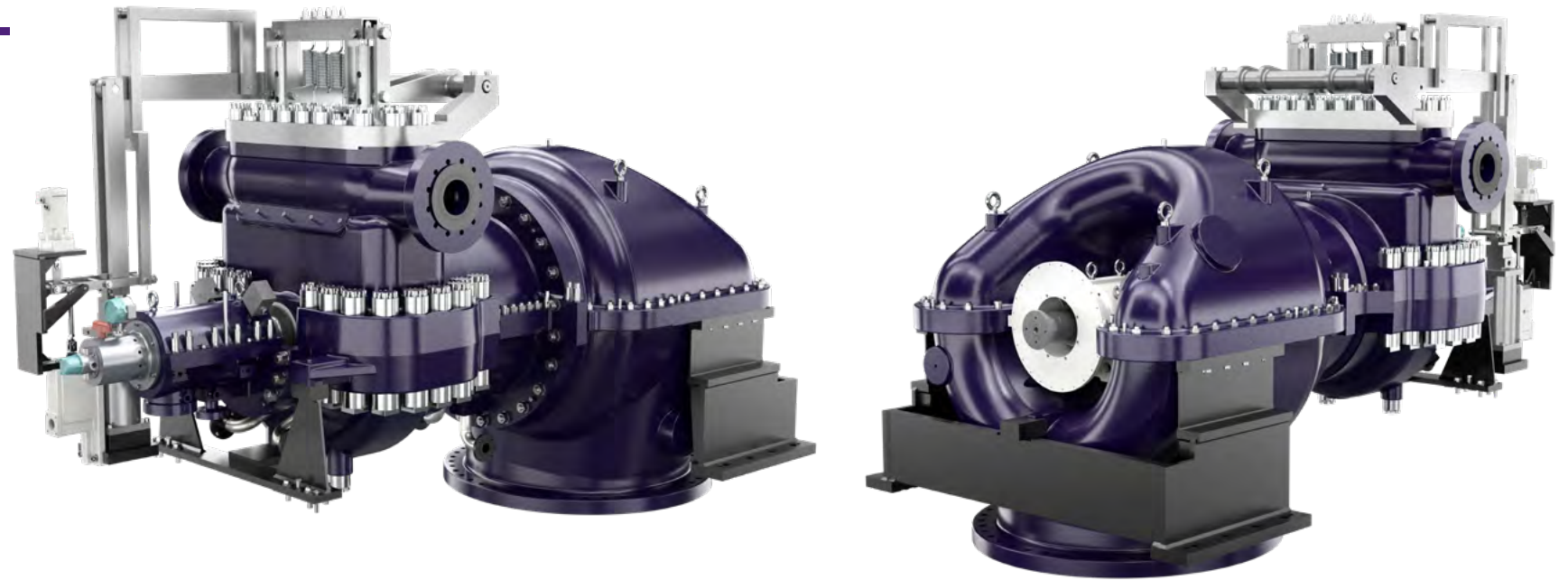
- Refineries
- Petrochemical plants
- Sugar Mills
- Steel industry
- Pulp & Paper
- Institutional
- Process waste heat recovery
- Pump drives
- Fan drives
- Compressor drives
- Generator drives



Worthington



Choose your multi-stage turbine type for more details



Technical data

- Available frames: U, R & K
- Horizontal split casing with flexible steam end support
- Number of stages depend on frame (R – up to 15 stages, K – up to 9 stages, U – up to 10 stages)
- Sleeve and tilting pad journal bearing
- Multi-pad, fully equalized Kingsbury-type thrust bearings
- Model R meets API 612 & 611 standards
- Model R condensing & backpressure configurations

Typical applications

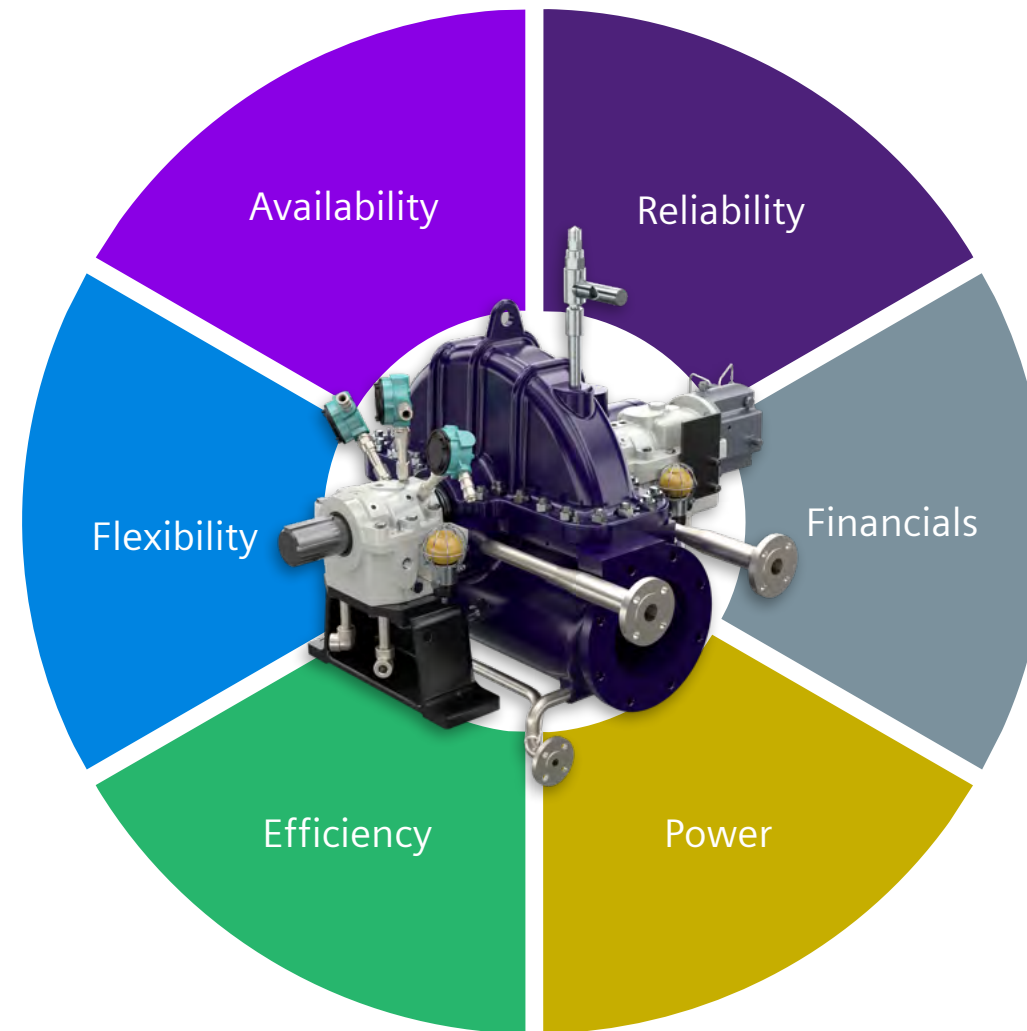
- Sugar Mill
- Pulp & Paper
- Refinery
- Petrochemical
- Food processing
- Pumps
- Fans
- Blowers
- Compressors
- Generators

Your benefits at a glance

- Minimal training requirements because personnel continue to work with the known system
- Minimal service interruption because the entire turbine is replaced instead of repairing/ modernizing individual components
- No problems with adapting to existing piping and foundation

The footprint concept permits an eventual adaptation to future system requirements in terms of flexibility


Improved energy efficiency thanks to state-of-the-art technology, e.g. blades, nozzle and guide ring



- Turbine tailored to individual requirements
- OEM's know-how and technical expertise

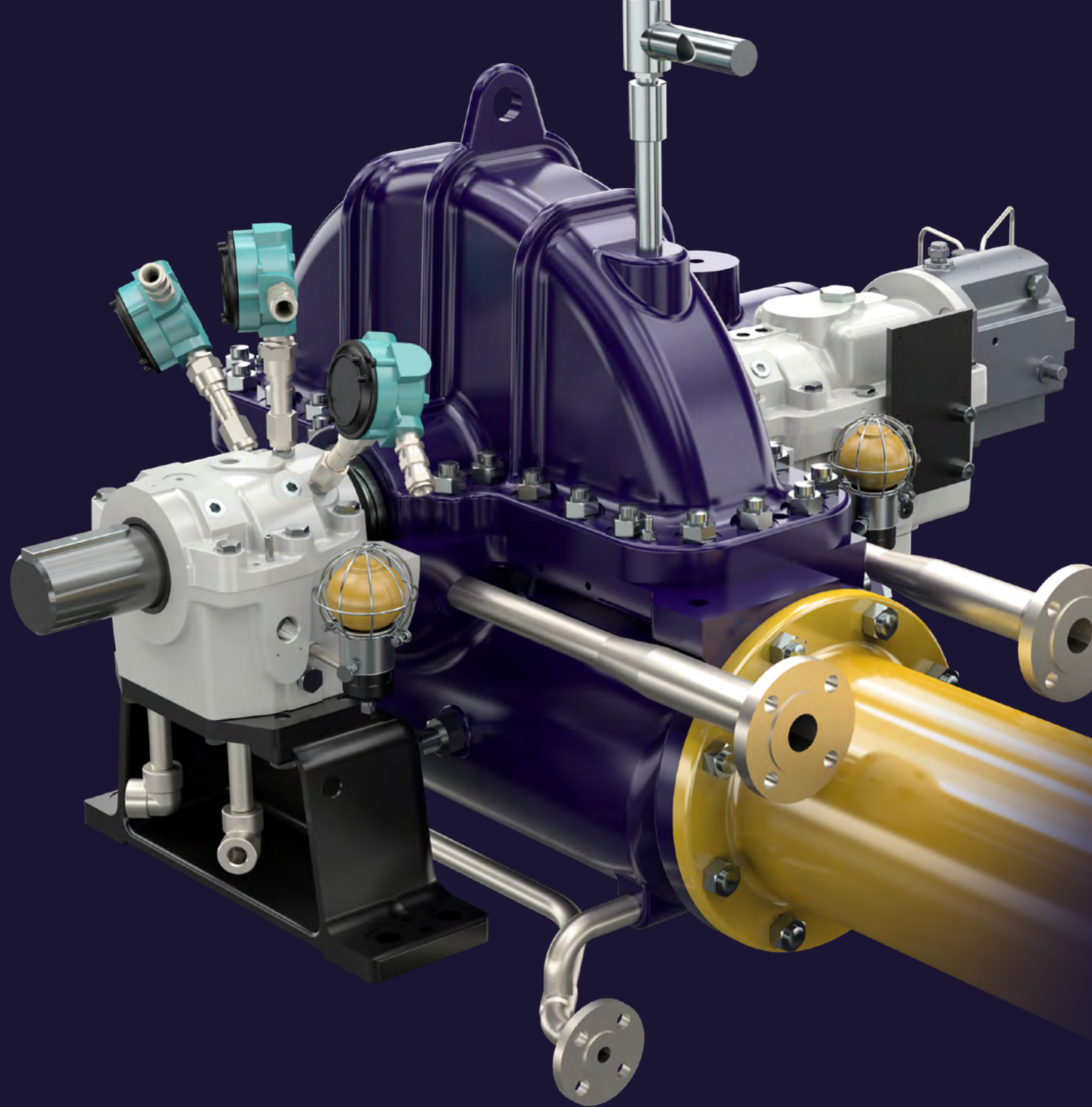
Cost advantage compared to a new turbine thanks to the use of existing spare parts

- New, state-of-the-art turbine adapted to changed operating parameters
- Optimal turbine performance

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