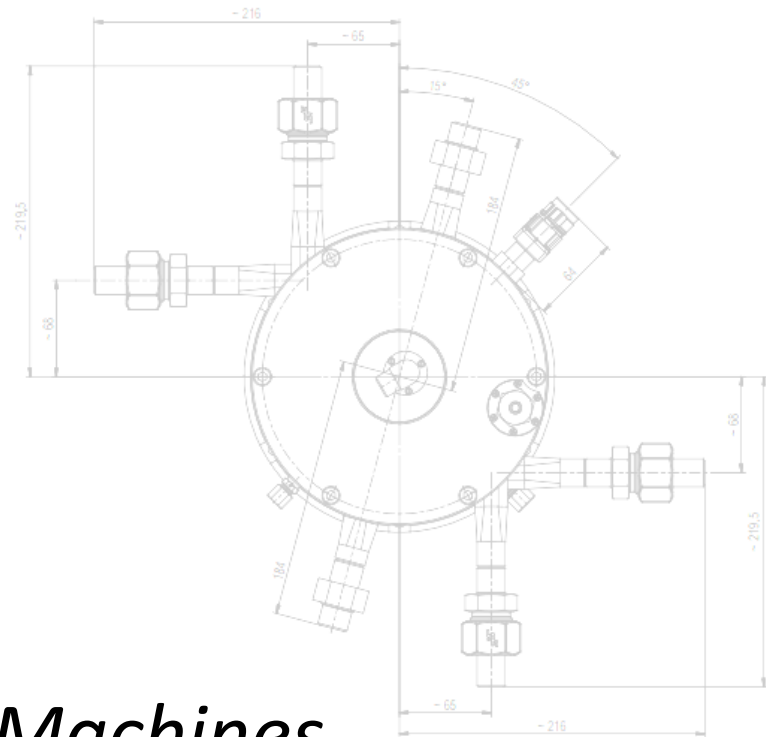


ATEKO a.s.

1949 – 2019

*A Company Introduction
Experimental Equipment & Machines
Construction & Civil Engineering*



ATEKO a.s.

- **ATEKO a.s.** is an engineering, manufacturing and supply company, offers turn-key deliveries of complete investment plants in the field of:
 - Chemical, gas & oil, energy and food industry
 - Low temperatures, power production technologies
 - Environmental protection technologies.
- Czech company
- Founded in 1949 as a research institute
- Since 1994 ATEKO a.s. (a joint-stock company)
- Company headquarters: Hradec Kralove
- Number of employees: approx. 50
- Share of exports: 30-45 %
- Member of MEDIS Group
- EN ISO 9001:2015
- EN ISO 14001:2015



ATEKO a.s. Business Profile

ATEKO a.s. is an engineering company and specialized supplier that offers deliveries of turnkey industrial plants, technology equipment and numerous services for the chemical, gas & oil, energy, engineering and manufacturing industry.

Portfolio of products and services

» Design and engineering services

- Civil engineering and design
- Design of processes and technological plants
- Design and construction of technological apparatuses, machinery and equipment
- Designer's and technical supervision
- Investment consultancy

» Technological supplies

- Equipment – exchangers, separators, columns, filters, tanks, vessels etc.
- Machinery – compressors, turboexpanders and expanders
- Compact technological systems – skids
- Prototypes and experimental equipment

» Construction and civil engineering

- Industrial plants
- Technology plants

Market segments

- Chemical and petrochemical industry
- Gas & oil industry
- Automotive and machinery industry
- Research centers
- Energy sector

Internal organization

- ❑ Business Unit „Advanced Technology & Equipment“
- ❑ Business Unit „Plant Design & Construction“

BU Advanced Technology & Equipment (BU AT & E)

- **Gas Drying Units**
- **Radon Removal Systems**
- **Cryogenic & Low Temperatures Equipment**
- **Heat Exchangers**
- **Columns**
- **Rotary Machines**
- **Petrol Vapour Recovery Systems**
- **Engineering Services**
- **Experimental Equipment**

Technology systems - references

CEPRO

- Czech Republic
- Recovery of petrol vapor (VRU)
- 1998 – 2017
- 12 Units for CEPRO company
- The next units for AGA, Paramo, VAE companies



Radon Removal Systems

Deliveries for laboratories:

- Modane, France, 2004,
- Gran Sasso, Italy, 2011-12,
- Czech Technical University, Czech Republic, 2013
- Y2L, Korea, 2015
- LSC, Spain, 2015
- SURF, USA, 2017
- Jin Ping, China, 2018



Technology systems – references 2

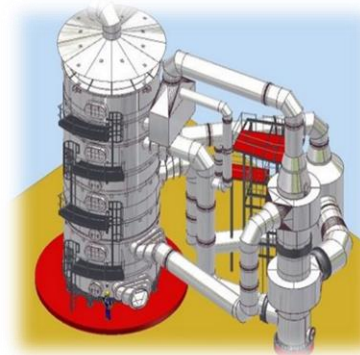
innogy (RWE)

- Natural gas drying process
- Underground gas storages
- Absorption, adsorption and low temperature process
- Czech Republic and Poland



Spolana

- 2012 – 2013, 2016 Neratovice, Czech Republic
- Optimization of contact reactor for sulfuric acid production
- Equipment and technology for the chemical industry
- Innovation of cooling for the compressor rolls



BU AT & E Contracts 2018

- innogy Gas Storage, Štramberk, CZ – Gas Drying Equipment (Gas drying columns, TEG Regeneration Unit, Breed Vapours Combustion Unit)
- Varmavelaverk, Island – Geothermal Heat Exchanger
- UNIPETROL RPA, CZ – Nitrogen Cooler



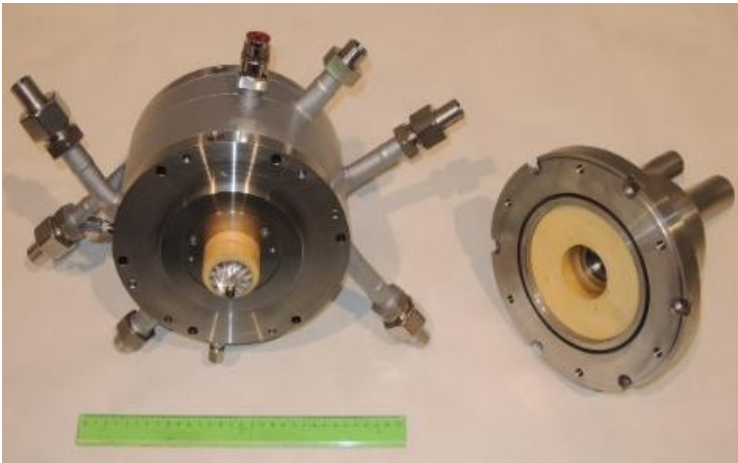
BU AT & E Contracts 2017

- **Karlsruher Institut fuer Technologie, GER – Feasibility Study TC Demo**
- **UNIPETROL RPA, CZ – new reactors**
- **SDSTA, South Dakota, USA - Radon Removal System**
- **Howden CKD Compressors, CZ – cooling coils**



BU AT & E Contracts 2016

- SUSEN – S-Allegro
- Heat exchangers, oil separators (Russia)
- Gas separators, columns
- Cryogenics expansion turbines (Cryogenmash BZKM, Russia)



BU AT & E Contracts 2015

Laboratorio Subterraneo Canfranc, Spain, Radon Removal System



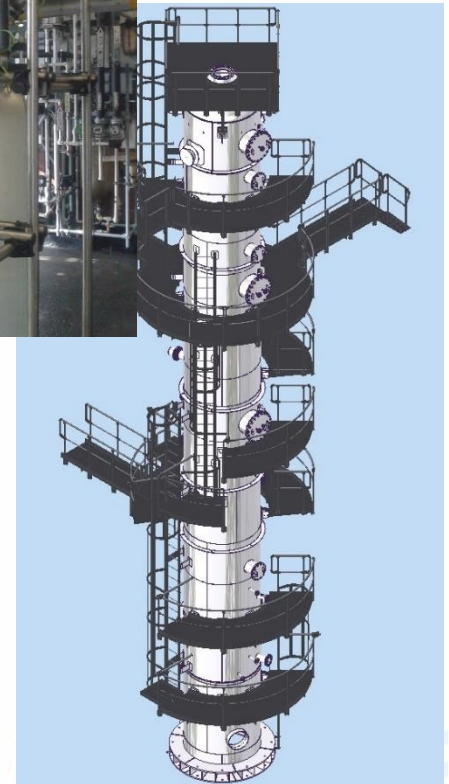
BU AT & E Contracts 2015

- Dampeners, Heat exchangers, Piping (35 MPa) for Gazprom Salavat, Russia)
- Heat exchangers, separators (36 pcs for JSC Nizhnekamskneft Russia)
- Turbocirculators for IPR, India
- Cryogenics expansion turbines (Korea, China)
- Radon removal system for LSC Spain
- Separators, Columns, Heat exchangers for chemical and gas industry



BU AT & E Contracts 2014

- Heat exchangers Cerkassy UA
- Cryogenics expansion turbines (Korea, China)
- Separators, Columns, Heat exchangers for chemical and gas industry
- ELI Beamlines – Brayton Cooling Cycle



BU AT & E Contracts 2014

FÚ AV ČR – Research Centre ELI Beamlines – Helium Brayton Cooling System



BU AT & E Contracts 2013

- Gas Separators and Air cooler VCNG - Irkutsk region, Russia
- Separators, absorbers for UGS (RWE)
- The experimental unit for the production of synthesis gas



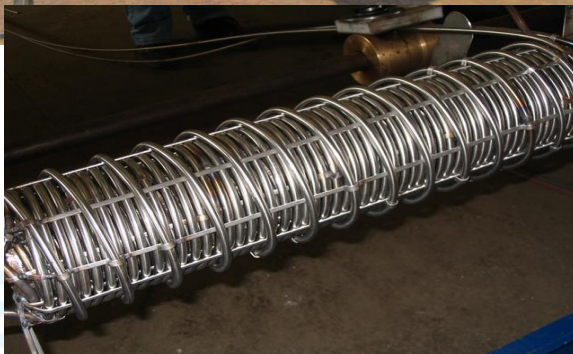
BU AT & E Contracts 2012

- Contact reactor for the production of sulfuric acid (Neratovice, CZ)
- Separators, filters, heat exchangers for chemical, gas and energy industry
- Equipment for the production of specialty chemicals (Kolín, CZ)
- Mobile storage of CNG (RWE)



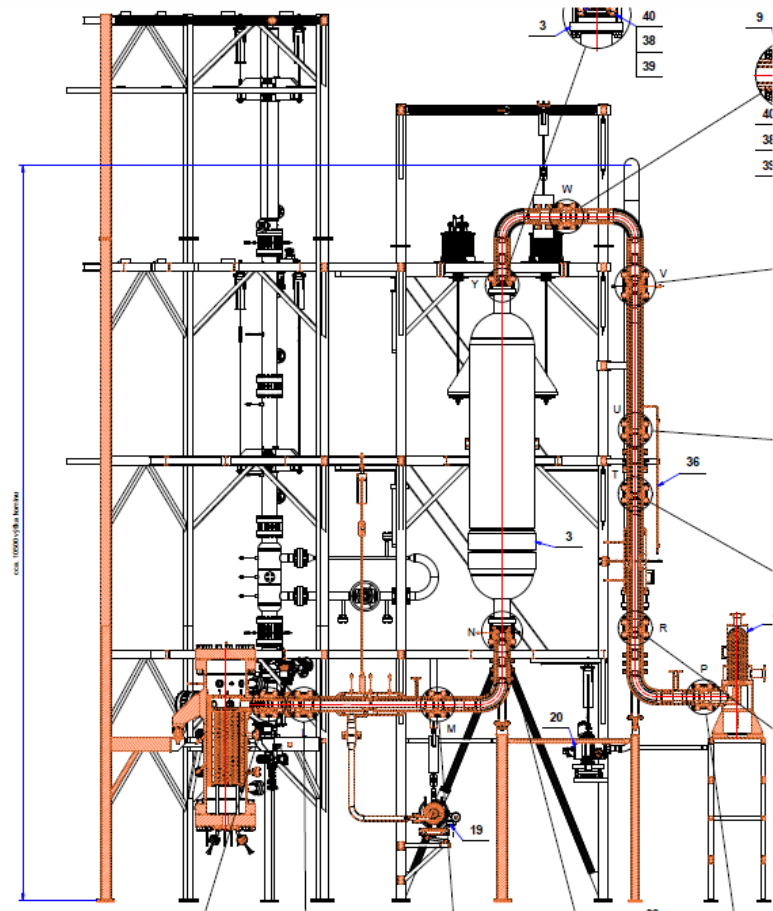
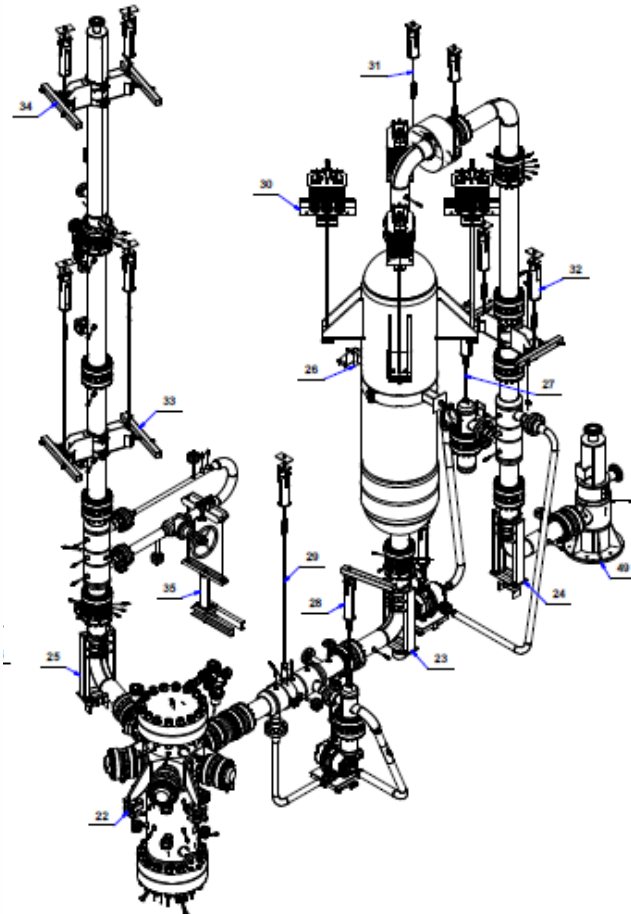
BU AT & E Contracts 2011

- Turbocirculator „KATHELO“, KIT Germany
- Radon reduction system, Gran Sasso, Italy
- Heat exchangers and equipment for chemical and gas industry

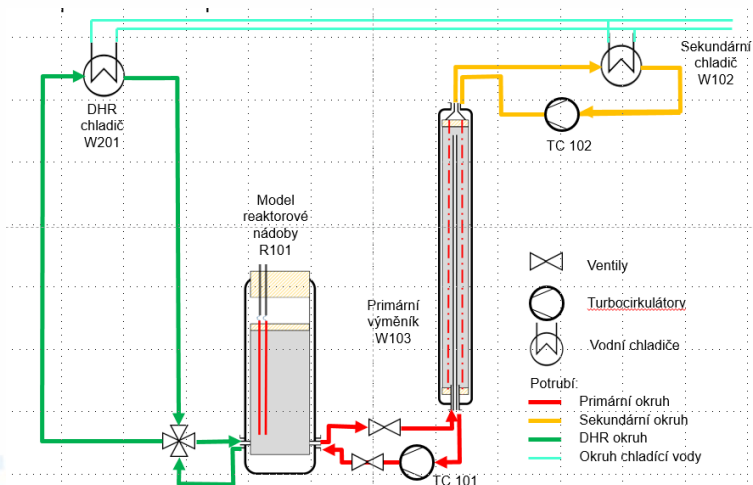
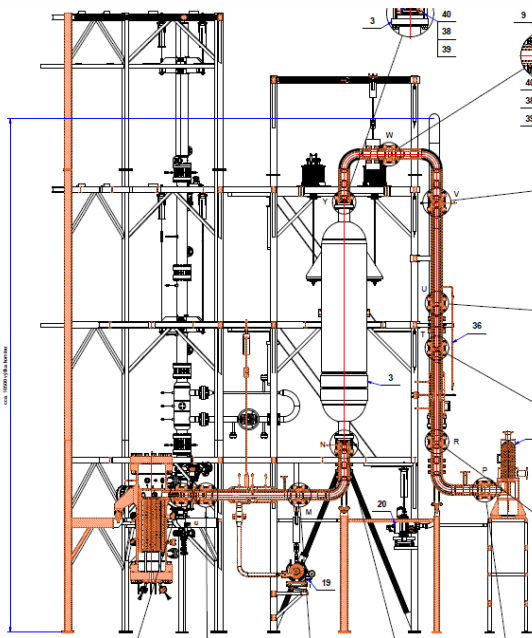


BU AT & E Main Research Project

Research Centre Řež, S-Allegro Experimental Helium Loop



BU AT & E Main Research Project 2



BU AT & E Rotary Machines Dept. - Main Projects

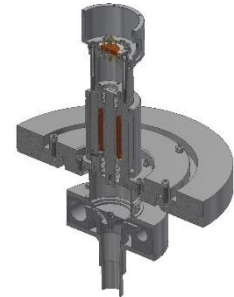
Helium Expansion Turbines (HET)

- Up to 300 000 rpm
- 2 kW – 10 kW
- *Temperature: approx. 5 K*
- *Pressure: up to 25 bar,a*



Cold Compressors (CC)

- Up to 54 000 rpm
- 0.13 – 10 kW
- *Temperature from: 2.5 K*
- *Pressure from: 3 kPa*



TurboCirculators (TC)

- Up to 250 000 rpm
- 0.5 kW – 400 kW
- *Temperature: up to 800 K*
- *Pressure: up to 150 bar,a*



Turbo-Expander Circulator (TEC)

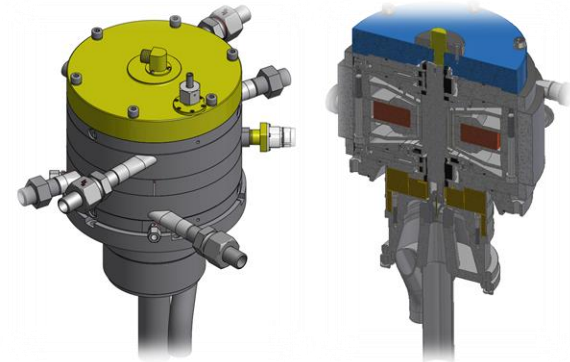
- 250 000 rpm
- 0.1 - 20 kW
- *Temperature: 170 - 5 K*
- *Pressure: 25 bar,a*



Rotary Machines (RM) Dept. References

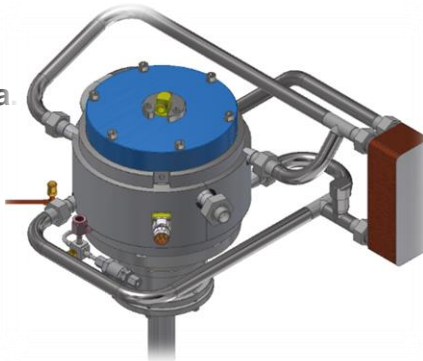
ASIPP

- Project of ASIPP – 2016, China.
- HET, HEXT
- "cooling power" 500 - 10 000 W
- inlet temperature 14 K – 80 K
- inlet pressure 0,5 - 2,0 MPa
- max. 250 000 rpm
- 9 pieces



TIPC

- Project of TIPC – 2015, 2016, 2018, China.
- HET, CC
- "cooling power" 500 - 10 000 W
- inlet temperature 14 K – 45 K
- inlet pressure 0,5 - 1,8 MPa
- max. 250 000 rpm
- Up to 15 pieces



ELI Beamlines

- AV CR, 2014 - 2015, Czech Republic
- Cooling System Brayton incl. Helium turbo-expander-circulator
- "cooling power" 800 W
- inlet temperature 150 K
- inlet pressure 1 MPa
- 120 000 rpm



RM Dept. References for ITER Project

EFDA, KATHELO

- 2011 - 2013, Germany KIT
- 2x TC 1
- $P = 232 \text{ kW}$
- $n = 40\,000 \text{ rpm}$
- $\Theta_n = 50^\circ\text{C}$
- $p_n = 80 \text{ bar,g}$
- Active magnetic bearings
- For ITER Project

1x TC 2
 $P = 22 \text{ kW}$
 $n = 76\,000 \text{ rpm}$
 $\Theta_n = 50^\circ\text{C}$
 $p_n = 80 \text{ bar,g}$
Aerodynamic gas



EFDA

- 2009, Italy Brasimone
- TC
- $P = 232 \text{ kW}$
- $n = 40\,000 \text{ rpm}$
- $\Theta_n = 50^\circ\text{C}$
- $p_n = 80 \text{ bar,g}$
- Active magnetic bearings
- For ITER Project



IPR

- 2016, Indie
- 2x TC
- $P = 18 \text{ kW}$
- $n = 75\,000 \text{ rpm}$
- $\Theta_n = 60^\circ\text{C}$
- $p_n = 78 \text{ bar,g}$
- Aerodynamic gas bearings



BU Plant Design & Construction (BU PD & C)

» Plants for Machinery and Automotive Industry for longstanding partners

» (*Promens Zlín, WIKOV GEAR Plzeň, Kovolis Hedvikov, TMT Chrudim, Ljunghall Čáslav, DGS Druckguss Systeme Liberec etc.*)

» Plants for Railway Heavy Maintenance and Overhaul Services

» (*CZ LOKO Česká Třebová, DPOV Nymburk*)

» Car Retail Showroom

» (*Citroen Hradec Králové*)

» Promens, Zlín, CZ

» - a brand new manufacture plant, workshops, storages and shipping area, offices, transport ways – connection to public network



» Ljunghall, Čáslav, CZ

» - continuing development and upgrade of existing automotive plant in longstanding cooperation



»TMT, Chrudim, CZ

- » - *expansion of existing facilities destined for conveyor manufacture*
- » - *a new manufacture hall, offices and energy supply centre, surrounding moving areas, connection to existing facilities*



» KOVOLIS HEDVIKOV, Hedvikov, CZ, a study

- » - a brand new plant destined for aluminium parts, automotive industry
- » - two machining halls, press shop hall, storage and shipment hall, surrounding moving areas, energy supply centre, office building, parking

ATEKO a.s., Hradec Králové

3-PR-7078

Příloha P.10



Model - pohled jižní

» DGS Druckguss Systeme, Liberec, CZ , a study

- » - *expansion of existing production area producing aluminum conventional parts for automotive*
- » - *expansion includes new production hall for structural*
- » *parts, storage with shipping area, parking area and office building*



» Ljunghall, Čáslav, CZ

- » - *expansion of existing manufacturing area for aluminium parts, automotive industry*
- » - *machining and storage equipment installations*



» WIKOW GEAR, Plzeň, CZ

- » - *expansion of existing gearbox development centre and test range*
- » - *upgrade includes new crane installation, air conditioning system, oil cooling and filtration system, safety enhancement modification, new operations control centre (crew room)*



» DPOV, Nymburk, CZ

» - *renewal of an existing railway paint shop*

» - *brand new technology installed*



» CZ LOKO, Česká Třebová, CZ, a study

- » - *brand new railway wheel-sets maintenance centre*
- » - *brand new hall, moving areas, road connection*



Thank you for your attention

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ateko@ateko.cz

