

# High-Tech Mechanical Engineering

**Mechanical engineering has a great history in the Czech Republic.**

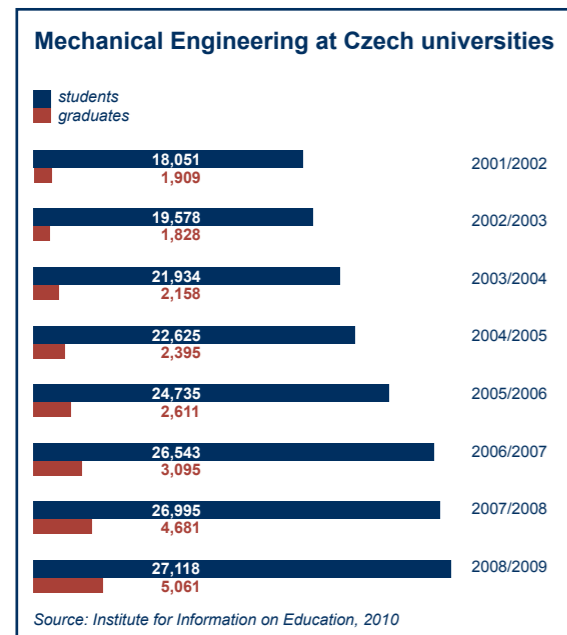
The country's high-level technical know-how has been shared over centuries, resulting in the world-class level of today's mechanical engineers, who are the sector's greatest asset.

Mechanical engineering plays a major role in the Czech economy and the country's great concentration of mechanical-engineering companies makes the Czech Republic an engineering hub.



## REASONS TO INVEST IN THE CZECH REPUBLIC

- Strategic position in Central Europe, direct transport access to the EU market of nearly 500 million consumers
- 300 years of academic engineering education in the Czech Republic – continuity of sharing premium-level technological know-how
- Highly educated and skilled workforce, good access to technically educated university graduates – over 5,000 mechanical engineers graduating every year
- High concentration of mechanical engineering companies allowing easy identification of business partners and suppliers
- Positive approach of the Czech Government, investment support covering up to 60% of eligible costs through a transparent system of investment incentives
- Highly developed transport infrastructure
- The most advanced telecommunications infrastructure within the CEE region, creating conditions for establishing a regional software hub, thus supporting future material research and precision mechanical engineering
- First-class support from CzechInvest



## BASIC FACTS

With a production base of more than 1,100 companies, the sector supplies complete equipment and machinery (including turbines, transportation and air-conditioning equipment; agricultural, food-processing and construction machinery; and machine tools) while also engineering household goods.

## IF R&D IS WHAT YOU NEED

The Czech Republic is home to a number of mechanical-engineering R&D centres. Corporate R&D centres involved in power engineering include, for example, Škoda Výzkum (**Škoda Research**) focused on research and testing of the service reliability of various power engineering devices and ČKD Blansko Holding with its in-house Water Machinery Research Institute. Others power engineering R&D centres are of an academic nature and are part of the Academy of the Sciences or technical universities. The most prominent of these are the **Nuclear Research Institute** in Řež, a suburb of Prague, the **Centre for Advanced Technologies and Power Engineering Systems** at the Czech Technical University (ČVUT) in Prague, the **New Technologies Research Centre** in Plzeň, the **Energy Institute** at the Technical University in Brno and the **Energy Research Centre** in Ostrava. The Czech Republic also directly participates in the international **CERN** project. The Czech transport engineering sector bases the success and reputation of its products on the work of world-class research centres and testing facilities. These R&D centres – Výzkumný Ústav Železniční (VUZ – **Railway Research Institute**), Výzkumný Ústav Kolejových Vozidel (VÚKV – **Research Institute of Rolling Stock**), Škoda Výzkum (**Škoda Research**), Zkušebna Kolejových Vozidel (ZKV – **Testing Laboratory of Rolling Stock**) and a number of academic institutions, such as the **Research Centre of Rail Vehicles**, at universities in Plzeň and Pardubice – are used for the purpose of designing, developing and testing new equipment aimed at improving the speed, safety, comfort and efficiency of rail transport.

## PRODUCTION FACILITIES

- AA number of world leaders such as Siemens, Honeywell, Bombardier Transportation, Robert Bosch, Sandvik, Doosan, Komatsu, Rieter Group, Otis have already established their operations in the Czech Republic.
- Well-known domestic leaders include Škoda Holding, Vítkovice Holding, Bonatrans Group, ČKD Blansko Holding, TOS Varnsdorf, Tajmac-ZPS, Třinecké železářny–Moravia Steel, První brněnská strojírna, etc.

## INVESTMENT CASE STUDY

### Siemens Industrial Turbomachinery

Siemens, a world leaders in the power engineering sector, re-established its business operations in the Czech Republic in 1990 and invested in a number of projects, including the **Siemens Industrial Turbomachinery** plant in Brno in 2003. Top-quality <150 MW industrial steam turbines for all types of applications are produced and serviced at the plant, which employs over 780 professionals. Over more than 100 years of continuous operation, the plant has delivered more than 4,300 industrial steam turbines to 66 countries.

*We found here the brains we need.*

*Kevin Giligan, Honeywell*



## R&D CASE STUDY

### Honeywell Czech Republic

Honeywell chose the Czech Republic for its first R&D facility outside the United States in 1993 when it founded its Prague laboratory. The laboratory closely cooperates with its partners in the US and the Czech Technical University in Prague. In 2003 the company established Honeywell Technology Solutions, Czech Republic, an integral corporate arm of Honeywell International Inc., providing research, development and engineering support to Honeywell's businesses. With its world-class engineering talent (over 700 engineers) and state-of-the-art infrastructure, the centre offers product development and support, and research and IT support to cross-company operations in the areas of aerospace, automation and transportation. Close cooperation with the University of Technology and Masaryk University in Brno is an essential aspect of the centre's work. Honeywell's Turbo Technologies Engineering Centre has been operating in Brno since 2008. It is focused on integrated engineering and research services for development and validation of the next generation of turbochargers.

## CZECHINVEST'S SERVICES

- Full information assistance
- Tailor-made visits
- Maximisation of networking capacity
- Handling of investment incentives
- Access to EU structural funds
- Business properties identification
- Business infrastructure development
- Supplier /JV/ acquisition partner identification

## EDUCATION SYSTEM

The Czech education system meets the needs of a competitive economy. According to a 2008 OECD study, the Czech Republic has one of the strongest positions regarding the percentage of students graduating in engineering and manufacturing fields. In the academic year 2007/2008, there were approximately 5,000 graduates in mechanical engineering at Czech universities. Moreover, according to the latest Eurobarometer survey, 61% of Czechs are able to speak at least one foreign language (predominantly English or German).



1707

Establishment of the Engineering Academy in Prague



1825

First European public railway established on the České Budějovice-Linz route



1911

Steam power turbine – the first of its own design produced by the Škoda works



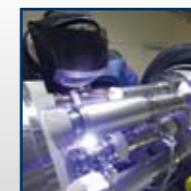
1912

Viktor Kaplan invents new type of water turbine at Brno Technical University



1966

TOS Varnsdorf produces a world-class numeric-controlled horizontal drilling machine



1993

The Czech Republic joins CERN, the European Organisation for Nuclear Research



2005

Elektra 14 T – high-capacity, low-flow tramcar from Škoda Transportation

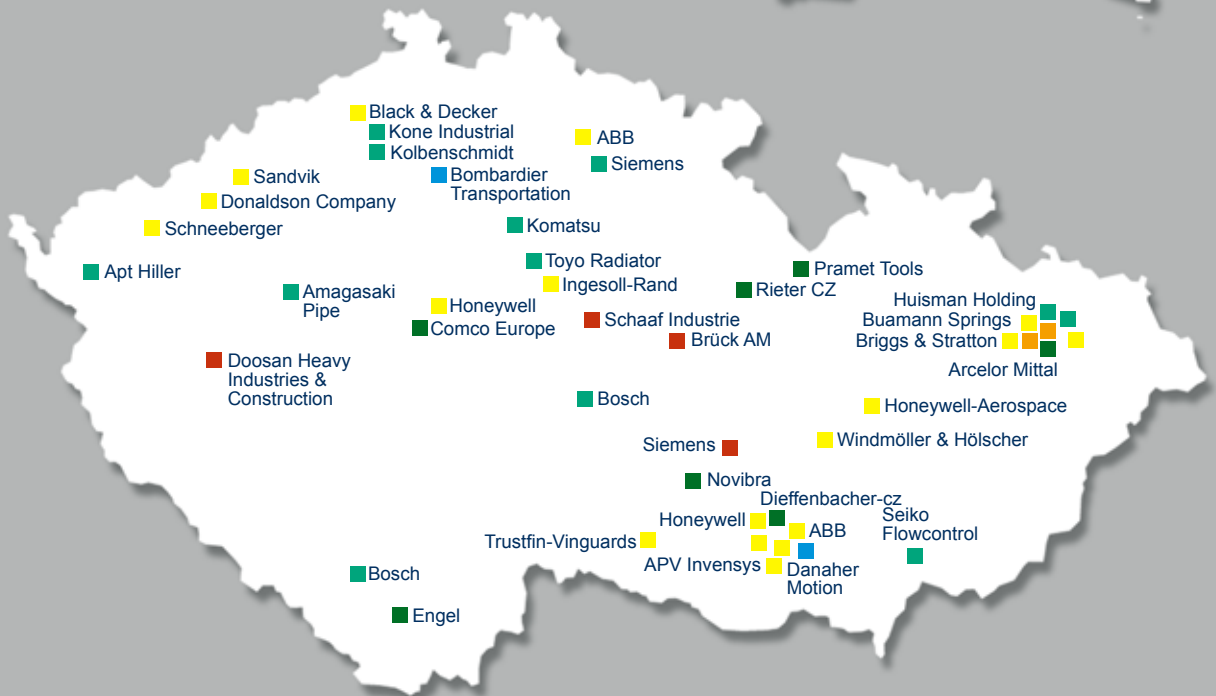


2006

World speed record on Bonatrans wheels

HIGH-TECH MECHANICAL ENGINEERING INVESTMENTS

- Power engineering
- Transport engineering
- Machine-Tool
- Metallurgy
- Metal construction and components
- Others



OUTSTANDING QUALITY OF LIFE

The Czech Republic boasts extraordinary quality of life.

The IMD World Competitiveness Yearbook's Quality of Life Index ranks the country twentieth in the world and first in the CEE region. But one must experience the local cultural heritage, sport facilities and natural beauty to fully grasp the joys of living in the Czech Republic.

The country offers a full range of services that are required by expatriates and their families, including multilingual international schools covering all levels from kindergarten to MBA studies, attractive housing, shopping malls and first-class recreational facilities including over 80 golf courses and 12 UNESCO heritage sites.



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