Traditional Branch of Industry Is Showing Marked Recovery

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The manufacturing industry has a long tradition in the Czech Republic. One of its main supporting pillars is the manufacture and repair of machinery and equipment, class 29 according to the NACE branch classification of economic activities. This branch covers a very wide range of manufacture and servicing of equipment, indispensable for any investment in production technology. It is divided into seven sectors, from the construction of turbines to machine tools and arms production and the manufacture of household appliances.

Development of Czech Engineering
In 2005, revenue from the sale of own products and services in comparable prices in this branch rose by 14.1 % on a year-on-year basis. Efforts to save wage costs and investment in more advanced technologies on the one hand and the implementation of measures ensuing from the National Action Programme of Employment on the other hand led to the stabilisation of the number of workers in the branch. Employing some 12.8 % of the country's entire workforce, the average number of workers employed in general engineering in 2005 has given this sector an important position within the Czech Republic's manufacturing industry as a whole. Average monthly wages rose by 5.5 % and productivity of labour increased by 13.4 %.

In recent years, exports in this branch have continued to grow considerably. From the foreign trade point of view the export recovery of the branch began in 2003. In 2005, the branch's balance of trade showed a high surplus amounting to approx. EUR 1.7 billion, up 245 % against 2004. In 2005, the most favourable balance was displayed by products in NACE category 29.12 – Pumps and compressors, parts, wiring – amounting to approx. EUR 7.7 million, and NACE 29.23 – Cooling, ventilating, air-conditioning equipment – EUR 5.4 million. The most marked change from trade deficit in 2004 to a surplus in 2005 occurred in NACE 29.4 – Machine tools, presses etc.

The trends displayed by the individual sectors of this branch reveal the growing competitive strength of Czech general engineering.
Machine Tools and Forming Machines – the Foundation of Czech Industry

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Engineering is without doubt one of the most important fields of human activity. Its development influences the development of all other branches of any given economy. The machine tool and forming machine sector is part of a large industrial whole and a sub-sector of the production of machines and equipment in the manufacturing industry. Although this sector is not so large in terms of value, it is the foundation of the entire Czech industry, its products influencing other areas within the framework of the national economy. It is the driving force behind growing labour productivity and a source of added value. Although the annual volume of the world production and consumption in this sector worth approximately EUR 40 billion accounts for less than 1 % of world engineering production, it nevertheless plays a decisive role in the development of technologies in all areas of human activity.

Classification of the manufacture of machinery and equipment under NACE 29

- 29.1. Machines for the production and use of mechanical energy
- 29.2 General purpose machines
- 29.3. Agricultural and forestry machines
- 29.4. Machine tools and forming machines
- 29.5. Special purpose machines
- 29.6. Arms and ammunition
- 29.7. Household appliances

The production of machine tools and forming machines in the Czech Republic forms a substantial part of the country’s production of machinery and equipment.

Production of Machine Tools and Forming Machines in the CR in 2005

In 2005, the volume of produced machine tools and forming machines amounted to EUR 739.410 million. Besides metal cutting and metal forming machines, this volume also includes other machines in sub-class 29.4, such as woodworking and welding machines, stone-working machines, spare parts, repair and maintenance of machine tools, manual mechanised tools and instruments, assembly and installation. In 2005, the volume of production in the metalworking sector amounted to EUR 314.172 million, up 37.3 % year-on-year, with a 12.2 % increase in exports and a 14.8 % drop in imports. The export/import balance was negative, amounting to EUR 12.3 million. The output of businesses that are members of the Association was worth EUR 272.2 million, accounting for 86.7 % of the total output in the machine tool and forming machine sector in the Czech Republic.

Table 1 – Production and exports

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<th>EUR millions</th>
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Graph 1 – Production of machine tools and forming machines in the CR in 2001-2005

- Metal forming production
- Metal cutting production
- Total production in the CR

Production of machine tools and forming machines in the CR (without spare parts, accessories, overhauls)

Graph 1 – Production of machine tools and forming machines in the CR in 2001-2005

Production of machine tools and forming machines in the CR in 2005

Graph 1 – Production of machine tools and forming machines in the CR in 2005

EUR million
The year-on-year growth of output is apparent especially in the following groups of machine tools and forming machines:

Group 8457 – machining centres, up by 41.5 %. Total machining centre production amounted to EUR 84.539 million. The largest volumes in this group were accounted for by numerically controlled vertical machining centres, amounting to EUR 43.718 million.

Group 8459 – thread drilling, boring, milling and cutting machines, increase of 26.2 %. Total production of these machines reached the value of EUR 54.277 million. The largest volumes in this group were accounted for by numerically controlled combined boring and milling machines, amounting to EUR 36.009 million.

Group 8460 – grinding, sharpening, honing and lapping machines, with a year-on-year growth of 83.6 %. Total production of grinding machines amounted to EUR 75.722 million. The largest volume of production in this group was accounted for by numerically controlled roll face grinding machines totalling EUR 37.268 million.

Group 8461 – planing, shaving, broaching and gearing machines and saws, growth by 15.1 %. Total production in this group was worth EUR 17.929 million. The largest volumes in this group were other (not circular) saws, worth EUR 60.367 million, followed by metal cutting machines, amounting to EUR 18.949 million.

Czech Exports of Machine Tools and Forming Machines in 2005

In 2005, Czech exports of machine tools and forming machines amounted to EUR 321.935 million, of which EUR 237.332 million were accounted for by the export of machine tools and forming machines manufactured by members of the Association, representing 73.7 % of total Czech exports. Growth was displayed by group 8459 – thread drilling, boring, milling, and cutting machines, up 43.0 % year-on-year. Exports of this group reached a value of EUR 91.982 million. The largest volume of exports in this group was accomplished by numerically controlled combined boring and milling machines, worth EUR 60.367 million, followed by planning, shaving, broaching and gearing machines, and saws in group 8461. In 2005, the total exports of these machines reached a value of EUR 21.616 million. The largest export items in this group were other (not circular) saws, totalling EUR 18.949 million.

As regards the territorial structure of exports, in comparison with 2004, the 2005 volume of machine tool and forming machine exports to Russia rose by EUR 8.088 million, while the export of these machines to Germany and Slovakia decreased by EUR 2.827 million and EUR 2.588 million, respectively. China has become the Czech Republic’s fourth largest export destination, with exports worth EUR 24.993 million. A slight increase in comparison with 2004 was displayed by the USA, where the volume of exports increased by EUR 1.487 million.

Czech Imports of Machine Tools and Forming Machines in 2005

Czech imports of machine tools and forming machines in 2005 amounted to EUR 334.270 million, which is 14.8 % less than in the previous year. The largest growth of machine tool and forming machine imports was recorded in group 8461 – planing, shaving, broaching, and gearing machines and saws (up 77.7 %), followed by group 8458 – lathes (up 22.8 %), group 8456 – physical-chemical machines (up 19.4 %), and group 8457 – machining centres (up 14.1 %). All other groups recorded a fall in the imports of machine tools and forming machines against 2004, when total imports displayed a relatively high value of EUR 392.207 million. In 2005, Germany was once again the CR’s leading importer for this category of machines. A significant drop in imports was recorded in trade with Japan and Italy, whilst Spain and Taiwan displayed moderate growth.

The manufacture of machine tools and forming machines reached its maximum both worldwide and in the Czech Republic in 2000 and 2001. In 2004, after a period of stagnation, and in response to worldwide recession, this sector gradually began to recover, both in the world and in the Czech Republic, especially after the CR’s accession to the EU. In general, the world economy finds itself in a phase of recovery. This is directly affecting the global production of machine tools and forming machines, which surpassed the 2001 level in 2005 with an output worth EUR 41.7 million, thus reaching the world maximum. The year 2006 and the coming years look promising for the machine tool and forming machine sector, which is expected to follow an upward trend, with year-on-year growth of both production and exports.
Gauge and Tool-making Sector Benefits from CR’s Membership of EU

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The Gauge and Tool-making Sector in the Czech Republic is a Consolidated Branch. This is largely due to the favourable situation in Czech and European engineering and the Czech Republic’s membership of the European Union. The industry’s ownership structure has been consolidated and both export contacts and foreign ties of co-operation have been established and stabilised. In 2005, exports accounted for 35% of the turnover, the average annual per capita turnover in the branch amounting to EUR 45,300.

The best indicators of productivity, efficiency and year-on-year growth are displayed by those firms that have a solid and financially strong foreign partner enabling them to profit from the partner’s international trading network and from the availability of large sums for investment in engineering equipment. Both partners benefit from sharing know-how and from the mutually advantageous division of labour between the foreign parent firm and the Czech company. In general it can be said that the development of these businesses is showing signs of determined implementation of long-term business visions. Another important group includes enterprises privatised by their own management, in the absence of a foreign partner, and consequently with limited investment possibilities, managed, however, by people who consider the firm’s development to be their mission in life and who are prepared to fight for new ideas and risk to realise them.

Importance of Support Programmes
For the tool-making sector, too, the programme of grants financed from EU funds comprises important elements of stimulation. The Innovation programmes and programmes based on cross-border co-operation are considered a considerable help, the use of which will enable the tool-making sector, a sector where high value is added to input material, to maintain its position within the European economy.

Czech Woodworking Machines Score Success in Russia

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The Woodworking Machinery Manufacturers’ Association (SVDSZ) associates Czech manufacturing firms, currently numbering 14, as well as the Faculty of Forestry of the Mendel University of Agriculture and Forestry in Brno. The Association’s chief activities include the holding of exhibitions and trade fairs at home and abroad, mediation of foreign ties of co-operation, and running an information service in the area of production programmes and marketing.

Czech Products Presented in Russia
In spring 2006, with the assistance of the Czech Trade Promotion Agency/ CzechTrade, Czech companies presented their products at the Wood and Woodworking Exhibition in Arkhangelsk. The event was attended by 43 representatives of woodworking plants from the Arkhangelsk area. The presentation scored success with representatives of regional and local firms. News of a possible financing of complete technologies by ALTA of Brno (www.alta.cz) was very favourably received. Currently, work is in progress on several technological projects in the area of timber waste processing, the delivery of complete technologies for sawmills and for the production of construction balk.

SVDSZ is preparing the participation of Czech firms in the LESDREVMASSH 2006 Moscow exhibition of woodworking machines, Russia’s most important exhibition in this area, which will be held in September 2006. The exhibition is supported under the framework of the pro-export policy of the Ministry of Industry and Trade. Another event is the presentation of Czech companies in Ekaterinburg and Sankt Petersburg at the TEHNODREV exhibition at the end of 2006, which is being prepared by the Association in cooperation with CzechTrade.

Examples of successful gauge and tool-making companies:
- NAREX Česká Lípa, a.s. www.narex.cz
- PRAMET TOOLS, s.r.o. www.pramet.cz
- YORK s.r.o. www.york.cz
- NAREX BYSTŘICE, s.r.o. www.narexby.cz
- STROJÍRNY POLDI, s.r.o. www.stropoldi.cz
- ZPS-FN, a.s. www.zps-fn.cz
State Programmes for Support of Small and Medium-sized Businesses

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In 2003, the Government of the Czech Republic approved programmes of the Ministry of Industry and Trade in support of research and development financed from the state budget. These include IMPULS and TANDEM, programmes launched once again in 2006 as in previous years. Both programmes invite research workers and institutions to submit projects, which are to be launched in 2007.

IMPULS Programme
IMPULS focuses on the support of research and development of new materials, industrial products, production technologies, information and control products, and technologies. It will be open to projects for the research and development of manufacturing machines to be built by Czech manufacturers and groups formed for this purpose. Support will also go to projects to develop new products, technologies, and services following further follow-up industrial research and development. Projects under this programme must be implemented by special-purpose groups, i.e. project teams, consisting of groups of workers from industrial organisations and researchers who work in academic, university, public research, and other institutions. All organisations involved in the project must have their permanent seat registered in the Czech Republic. Every project included in the IMPULS programme must ensure the transfer of its results from the level of basic research to the level of industrial research and development. State aid for the implementation of a project can amount to 25-100%, as in the case of the IMPULS programme, and projects must be completed by 2010.

Also in the TANDEM programme, the assessment commissions recommended that support is granted to projects in the area of manufacturing technologies. Examples of successful projects include "Research and development of mechatronic elements and systems for spinning machines" submitted by Rieter CZ, which was awarded a subsidy of approximately EUR 417 000, and "Research and development of machines for volume and surface forming", which was submitted by ZDAS and received a subsidy of approximately EUR 124 000.

EU Structural Funds
With the accession of the Czech Republic to the European Union, opportunities have opened up for Czech organisations and institutions to gain subsidies for projects in the area of research and development not only from the state budget of the Czech Republic, but also from programmes co-financed from EU Structural Funds. For the new 2007-2013 programming period, the Ministry of Education, Youth, and Sports is preparing the Operational Programme Research and Development for Innovation, which sets itself three priorities. The aim of the first priority – Enhancing research and development capacities – is to ensure the continuous and lasting generation of new knowledge in research and development in regions, which is to be used for the sustainable development of the economy and a rapid and efficient spreading of knowledge at all levels. The second priority – Development of co-operation between the public and private sector – sets itself the aim to support lasting and efficient co-operation between public research organisations, universities, and other institutions and enterprises, and in doing so to ensure that knowledge is transferred from research and development to the practical uses. The last priority of the Operational Programme is Raising the capacity of universities for tertiary education, with the clear aim of increasing the offer and raising the education level of regions by broadening the capacity of universities for tertiary education. The Ministry of Education has already published the first draft of the Operational Programme; a call to submit projects is expected in 2007.

more at: www.deloitte.cz
JUNKER Maschinen was founded by Erwin Junker in Nordrach, Germany, in 1962. From the very beginning, the firm has been developing machines intended for the precision tool industry. Today, it provides complete deliveries of systems for practically all sectors that employ grinding and straightening equipment. Thanks to the development of new designs of machines for the complete machining of demanding parts, such as camshafts and crankshafts that employ modern technologies, the firm found its way into the automotive industry in the early 1990s.

The technological lead and advanced design of Junker grinding machines are based on almost a hundred patents. The most important of them is the introduction of the QUICKPOINT technology, high-speed grinding with CBN and diamond charged grinding wheel, the three-point clamping system as well as the machine’s safety system. Many of the firm’s original technical designs have influenced the development of grinding technology as a whole.

The Company’s Current Activities
The firm’s current strategy focuses on three grinding technologies named according to their target use: AUTOMOTIVE, TOOLTEC, and METALWORKING. The company’s core activity is its AUTOMOTIVE programme, which is subjected to the strict standards and conditions that govern the automobile industry.

Company clientele include a large number of world firms, among others car manufacturers and contractors for the automobile industry, such as Audi, Bosch, Daimler-Chrysler, General Motors, INA, LUK, Scania, Volkswagen Group, and Volvo. Customers also include tool manufacturers and engineering companies that employ JUNKER products in all types of engineering production from single piece to mass production.

In terms of territorial structure, most of JUNKER’s customers are located in Europe, although the company is currently expanding its business activities to Asia and South America. An important project was recently implemented in China.

The current holding arrangement of JUNKER is represented by organisational units in Germany, the Czech Republic, the USA, and China.

Erwin Junker Grinding Technology in the CR
The company came to the Czech Republic in 1992, when it privatised three former units of the TOS Hostivař concern. Later, in 1999, another Czech company became part of the JUNKER Group.

Following privatisation, all manufacturing units located in the Czech Republic, a country with a long tradition in grinding machine production, were radically modernised. Today, thanks to their high technical standard, their output is largely responsible for the dynamic turnover of the entire Junker Holding.

The works in Mělník is now the principal manufacturing works of JUNKER Group. In Ctyrkoly, high-precision spindles are manufactured for Junker grinders in addition to filtering and exhaustion systems bearing the LTA label. In the BSH works in Holice, a new assembly hall has just been opened, a part of which is the Technological Centre for the innovation of machines and grinding technology, from both the theoretical and practical aspect.

The finalisation of machines is also carried out in other units outside the CR, depending on the specialisation.

Products from the CR mainly include CNC plain grinding machines for external and internal grinding. Another group are CNC centreless grinders and CNC surface double-wheel grinders. Examples of advanced technologies include the Saturn machine project, a machine based on CBN grinding and the Jumat 3000/50 machine, which employs CBN technology and which won a prize at the 2005 International Engineering Fair in Brno.

The company’s long-term strategy is to build an innovative firm, which is expressed, among other things, by a new concept entitled Evolution’. A new series of products designed on a modular basis will secure a number of important advantages and higher profitability. The assets of this solution are: a greater certainty in the planning of the grinding process, higher output, a reduction in the operating costs of training and servicing and a broadening of the prospects of further use of the equipment. In general, the new generation machine concept not only brings good prospects for Junker, but first and foremost, it guarantees the economic future of customers.
TAJMAC-ZPS, a joint stock company based in Zlín, has a tradition of more than a hundred years in engineering production. Machine tools were first made under the MAS trademark, in the latter half of the 20th century they were manufactured under the name of ZPS, and today they are produced as TAJMAC-ZPS machines. Due to their consistently high quality, they are in great demand on the most significant engineering goods markets (Europe, America, Asia). The company is a part of the TAJMAC GROUP, which associates following companies: TAJMAC-MTM, TAJMAC-MSW, ZPS Slévárna (Foundry), ZPS Generální opravy (Overhauls), TECNIMETAL, Wickman, MONEO, and MANURHIN K’MX.

Modern Production Technologies

The company’s focus is at present on the development, production, and sale of machine tools, whilst employing the most sophisticated technologies. TAJMAC-ZPS has design departments at its disposal with over 70 qualified designers, a specialised foundry with capability to produce complex castings of grey and ductile iron (one of the most modern foundries in Europe), vast and well equipped machining workshops, a great pattern casting capacity, high-quality assembly workshops, including workshops for the precision assembly of high-speed spindles, complete electro-assembly of machine tools and their components, and a prototype development and testing centre. It also offers the adjustment of machines to fit the customer’s workpiece.

The production of containers and equipment for export packaging, including the company’s own terminal for railway transport, is a matter of course. This potential makes it possible for TAJMAC-ZPS to be self-reliant in the manufacture of various components. The company employs 1 100 people who ensure the entire production process.

Current Production Programme

The company’s present core programme is the production of multi-spindle automatic lathes, sliding headstock machines, vertical machining centres, horizontal machining centres, multipurpose machining centres, and CNC lathes. The production programme of TAJMAC-ZPS is influenced by the programme of the Italian company TAJMAC-MTM, which acquired ZPS in June 2000, as an experienced firm on the specialised multi-spindle automatic lathe market. By combining original MORI-SAY, Wickman, and TAJMAC models made in Zlín, TAJMAC-ZPS has created the best possible foundation for the production of high-quality multi-spindle automatic lathes and other multi-spindle application technologies. In the area of multi-spindle automatic lathes the company now ranks among the world’s top manufacturers, measuring up to companies such as Shutte and Gildemeister.

Another TAJMAC-ZPS product range are the three- and five-axis vertical machining centres designed for heavy loads at a high quality. The table sizes range from 1200 mm x 510 mm to 2200 mm x 800 mm, and the machines are very suitable for machining heavy moulds. Optionally, the machines can be equipped with an automatic pallet changer for two pallets. Another group comprises high-quality three- and five-axis horizontal machining centres. There is a model with a maximum 80 mm diameter of bar stock and shaft length of up to 2500 mm. The MANURHIN K’MX sliding headstock machines are for the time being the most recent acquisition of TAJMAC-ZPS.

In 2005, TAJMAC-MTM became the majority owner of the MANURHIN K’MX trademark, and in 2006 the production of sliding headstock machines was launched by TAJMAC-ZPS in Zlín.

TAJMAC-ZPS has the use of advanced know-how and employs the CAD/CAM Pro/ENGINEER system and the Pro/MECHANICA finite elements method.

In its production base, which comprises a modern grey and ductile iron foundry, the firm uses top-standard equipment and technologies of leading world manufacturers. The workmanship of production and assembly workers is traditionally high, making it possible for the firm to offer its customers comprehensive solutions for the technological and production cycle.

Awards for TAJMAC-ZPS

The success of machines built by TAJMAC-ZPS and the skill and workmanship of the company’s workers has been attested, among other things, by the awards the company has won at specialised competitions, specifically the award of a Gold Medal for its MCV 1210 vertical machining centre at the International Engineering Fair in Brno in 2005 and the prestigious award in a competition held by AV ENGINEERING, a.s., where the company’s designers won the main prize – the AV AWARDS 2005 for the best project “MCV 1210 vertical machining centre”, and the workers of the application centre won an award in the NC manufacture category for the project “Raising the utility value of the H 40 machine based on the productive blade machining technology”.

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New Equipment for Conventional Technologies

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In mid-2006, the ŽĎAS joint stock company will celebrate 55 years since production was launched within its metallurgical and engineering complex based in Žďár nad Sázavou. From the very beginning, the company’s programme has been divided into two lines of production: the metallurgical part, where it specialises in the manufacture of castings and forgings, and the engineering part, where it focuses on rolling mill equipment, forming machines, and tools.

An important step five years ago was the entry of a strategic partner into the firm and the incorporation of ŽĎAS into the Železiarne Podbrezová Group. Železiarne Podbrezová steelworks is one of the most important tube manufacturers in Europe. In addition to ŽĎAS, it has acquired other significant companies, such as ŠKODA TS Plzeň and PRAKO Prakovce.

Top Products Manufactured by ŽĎAS, a.s.

In the area of open die forging, a number of unique machines and equipment have been manufactured by ŽĎAS, at the world’s top standards. Integrated forging sets have been supplied for instance to Nakamura Iron Works in Japan, BGH Edelstahl Lippendorf in Germany, and Wyman and Gordon in Great Britain. In co-operation with ŠKODA TS Plzeň, the company has also exported a large production plant to Iran. It has also exported, for instance, its CDT 1000 straightening press and its LKJP crank press to Germany.

At present the company is modernising the equipment of its hydraulic forming presses and forging sets. In this area, ŽĎAS has gained a dominant position on important markets, such as those of Japan, Germany, India, and Egypt.

ŽĎAS manufactures a variety of lines for the longitudinal and transversal division of materials for firms processing materials for the manufacture of car bodies. It has acquired excellent references for its deliveries to US Steel Košice of Slovakia. Important deliveries of rolling mill equipment include the delivery of the coating section for the Starý Oskol rolling mill in Russia and an XRK9-100 straightening machine to Shanghai.

High Export Dynamics

The high productivity of the company’s engineering segments is further augmented by the export of more than 50% of its output. Its metallurgical segment is doing even better with deliveries for power plants, as well as equipment for manufacturers of components for large transport aircraft. Its partners and customers include important firms, such as VAGL Linz, Energomash, SMS Demag, ŠKODA Power, and Wyman and Gordon.

These references indicate the distribution of the company’s exports to different territories. Nearly 30% of its total exports go to the German market. Another 30% is divided between Slovakia and the United Kingdom, and other interesting markets include Russia, Spain, Austria, and Italy.

It goes without saying that deliveries of entire plants, quite often the case in deliveries made by ŽĎAS, take several years to finalise commercially and technically and very often significantly influence the structure of actual exports at the time of their execution.
Engineering production is a branch with a long tradition in the Czech Republic and it is one of the main pillars of industrial production. TOSHULIN, a.s. is a leading world manufacturer of vertical lathes and vertical machining centres with a long tradition. The history of the company dates back to 1949, when the first foundation stone was laid for the new engineering works.

Development Is a Prerequisite of Success on Advanced Markets

Thanks to the work of its development laboratories in Hulín and Brno, the use of modern manufacturing and assembly technologies and distribution through the global trading network, TOSHULIN was able to focus on industrially advanced markets after 1989. Machines made by TOSHULIN, a.s. sell with success on demanding markets, such as that of the USA, the United Kingdom, Germany, and France.

The company supplies its machines to the energy, aircraft, space, and transport industry markets, as well as to small manufacturers and contractors of large firms. During its existence, the firm has delivered more than 13 500 machine tools to 60 countries worldwide. Its aim is to maintain and promote co-operation with Czech and foreign customers alike. The most important include, for example, companies such as Rolls-Royce, SNECMA, GE Aircraft Engines, as well as many others.

TOSHULIN Products

The company's core programme is the manufacture of REV, SKL, SKA, POWERTURN, POWERTURN Y, SKG, SKAT, and SKIQ vertical lathes and vertical machining centres.

The different series of machines produced by TOSHULIN vary in their tool exchange systems, the cross section of the slide ram, and the general design of the machines.

The lathes come in types with table diameters ranging from 800 mm to 7000 mm and they are fitted with top-standard electronic elements, which, together with the traditionally high-precision mechanical parts, are a guarantee of high output, reliability, and precision of machining. All these types of machines are intended for work in demanding and complicated industrial applications and are adjusted to the individual requirements of customers.

The machines are supplemented with a wide range of accessories for workpiece manipulation, the checking of the tool and the workpiece, ecological guards, and other facilities.

Comprehensive Service

Customers increasingly demand investment intensive technological units with a large number of adjustments to meet their specific needs. TOSHULIN a.s. focuses on custom deliveries and provides its customers with comprehensive services, including the offer of machines best suited to their purposes, the required technology, its production and assembly, delivery, installation, and the supply of after-sale services. The good functioning of this system relies on systematic research and the introduction into development of the latest technological and construction know-how.

Other important activities of the firm, in addition to the manufacture of new machines, include the modernisation and overhaul of machine tools. The highly competent execution of the overhauls and modernisation is based on a combination of the high quality of mechanical machine parts and the most advanced electronic elements.

History of TOSHULIN

- Building the factory 1949
- Construction of the first vertical lathe 1952
- Construction of a new SKQ vertical lathe with patented exchange device 1974
- First machine with palletisation and C-axis 1986
- Privatisation of the company 1996
- New POWERTURN vertical lathe generation 1999
- New generation of SKL machines 2000
- New generation of heavy duty SKG and POWERTURN machines 2002
- First machine with chuck plate slide along the Y-axis 2004
- New generation of REV machines 2005
The history of the manufacture of machine tools bearing the ŠKODA trademark dates back to 1911. As its production and exports were growing, the company became a symbol of high technical standard, reliability, and perfect workmanship. These qualities rank ŠKODA among the world's leading manufacturers of machine tools. In 1993, the European organisation EMRC awarded ŠKODA MACHINE TOOL the Euromarket Award 1993 in appreciation of the outstanding technical standard of its products. ŠKODA MACHINE TOOL boasts several other important prizes the company has gained at international exhibitions and trade fairs.

Research and Development – Key to Position of Global Leader
The company has a strong research, development, and construction-design potential based on the skills of its creative workers, which enables it to maintain its lead in the technical standard of its products. A number of its original solutions have been patented. For example, the company was a pioneer in fitting its heavy-duty machine tools with numerically controlled systems. The first machines using these systems of control aroused well-deserved interest on the part of specialists from all over the world.

ŠKODA MACHINE TOOL s.r.o. is currently number one on the heavy-duty horizontal boring and milling machine market. It also holds a leading position in the area of heavy-duty lathes and special-purpose machines. To maintain and strengthen its share of the market, it regularly broadens its product range by adding new items to it.

New Items in the ŠKODA MACHINE TOOL Production Programme
In recent years, ŠKODA MACHINE TOOL has carried out a complete innovation of its key products. The ŠKODA boring machines are represented by a new series of heavy-duty HCW tailstock horizontal boring and milling machines with a spindle 150-300 mm in diameter, the company’s core business. All ŠKODA HCW machines have hydrostatic guideways. Besides the heavy-duty range of horizontal boring and milling machines, there is a lighter series of FCW horizontal milling machines with spindles 145 and 150 mm in diameter. The FCW ŠKODA machines have linear guideways. Horizontal machine workplaces can be fitted with TDV rotary tables with bearing capacity ranging from 25 to 250 tonnes and with various milling and boring heads and other accessories.

A new series of unit-built ŠKODA heavy-duty lathes bearing the traditional ŠKODA SR label has been placed on the market. It is used for machining workpieces with diameters of 1 000 mm to 5 200 mm and weighing between 16 and 250 tonnes. All these are modular unit-built machines that make it possible to react promptly to customers’ needs and allow the construction of special workplaces, for example for working rotors for turbo-generators, steam turbines, heavy-duty crankshafts and other kinds of heavy workpieces of demanding shape.

ŠKODA machines are used in workshops that employ highly efficient top-standard technology. New orders placed with ŠKODA in recent years are worth more than EUR 50 million a year. For their wide working range, high installed output, and precision the machines are used for efficient and accurate machining of heavy and large-size workpieces by means of milling, boring, drilling, and turning.

New Owner Helps towards the Development of the Company
The company’s further development is guaranteed, among other things, by the new majority owner, TELONIA TRADING LIMITED. With the arrival of the new strategic partner, ŠKODA MACHINE TOOL has gained access to Russian markets, as TELONIA TRADING LIMITED is backed by Russian capital, specifically the Stankolmpex Group.

The strong capital background (after its arrival, the new owner raised the firm’s registered capital to EUR 15 million) and the broad production base allow a substantial increase of production and cooperation, which consequently leads to a shortening of delivery terms and the reduction of production costs.

ŠKODA Products for Export
More than 90 % of the company’s output is exported. The most important outlets are China, Germany, South Korea, Russia, the Ukraine, India, Japan, the Netherlands, Finland, and Sweden.

The company’s customers include companies such as Siemens, Sandvik, Alstom, Wärtsilä, Doosan, Hyundai, Daewoo, Mitsubishi Heavy, and Japan Steel Works.
TOS Varnsdorf was founded in 1903, and from the very beginning its core programme has been the manufacture of machine tools. During the entire time of its existence, it has never interrupted its production and, on the contrary, it has gradually enlarged not only its product range and volume of production, but also the volume and size of its exports. It produced its first horizontal boring and milling machine in 1915, and in the 1930s this type of machine began to dominate its production programme. In the late 1940s, the company settled into the specialisation in horizontal boring and milling machines. From the very beginning, the company has been a private manufacturer and exporter of products not only to Europe, but also to the American continent and to Asia. After 1945, the company exported the major part of its output to the former Soviet Union. With time, however, it began increasingly to export its machines to West European countries, later members of the European Union. With the emergence of numerically controlled machines, which the company was one of the first in the former Czechoslovakia to build, its exports to the European Union gradually predominated, Germany becoming its largest customer for decades to come. At that time, TOS Varnsdorf was already considered a synonym of high-quality and advanced products that work reliably far beyond the customary service life of comparable machines. The company was privatised in 1995, and in 1996 it became a joint stock company.

**Foreign Trade**

During the entire time of its existence, the company has always been one of three largest machine tool makers in the Czech Republic. In its line of business it ranks among leading European manufacturers and exports its products to many countries. Its main customers are businesses in the EU states, with sales to Russia, China and India growing. It has regained its position in Canada and the USA, and it also exports to Central and Eastern Europe, not to mention French- and English-speaking Arab states.

**Technologically Advanced Machines**

The company has always placed special emphasis on development and the use of the most advanced technologies, and it continues and will continue to do so in the future. Its production programme includes horizontal milling and boring machines and machining centres, from the simplest horizontal boring and milling machines for simple operations to efficient machining centres, machines for working large and heavy-duty workpieces, machines for cutting different shapes, and five-axis machining and high-speed cutting machines. All machines are provided with a wide range of optional equipment. The company presents its products each year at the most important engineering fairs and exhibitions, and it is a regular Gold Medal winner at the Brno International Engineering Fair, always in appreciation of its technologically inspiring and advanced machines (in recent years the company was awarded for its TOStec PRIMA and TOStec OPTIMA machining centres.)

The current range of machine tools, together with the development of new generations of machining centres, which will appear in the near future, create a favourable foundation for the development of customer-oriented production that employs the very latest technology to satisfy demands for a full range of operations, from basic metalworking to the most demanding operations in terms of space, weight, material, and shape. Such production will ensure a flexible offer of machines and accessories, as well as a wide range of services. At present, TOS VARNSDORF a.s. is investing in the further development of its own production base and its human potential.
System of Educating Specialists in the Area of Machine Tools and Forming Machines

Stanislav Maňas, Head of the Department of Production Machines and Mechanisms, Faculty of Mechanical Engineering, Czech Technical University in Prague, e-mail: Stanislav.Manas@fs.cvut.cz, www.fs.cvut.cz

The Department of Production Machines and Mechanisms at the Faculty of Mechanical Engineering of the Czech Technical University in Prague trains young specialists in the area of machine tools and forming machines, offering structured studies in courses for Bachelor’s, Master’s and Doctor’s degrees.

Bachelor Study Programme
Graduates – Bachelors (Bc.) – are able to work as designers and testing engineers in industrial laboratories or in the technology investment departments of industrial enterprises. They can also find work introducing comprehensive production automation in non-mechanical engineering enterprises.

Master Study Programme
The Master Study Programme in “Production Machines and Equipment” focuses on the preparation of mechanical engineers for the construction and operation of production machines, equipment, and systems. Areas covered mainly include machine tools and forming machines, woodworking machines, and machines for the manufacture of plastics, die casting machines and automation devices, such as industrial manipulators and robots. Machine design – in the form of term projects – is based on the use of computers and much attention is paid to the practical aspects of programming digitally controlled machines. Experimental exercises take place in modern laboratories on both conventional and numerically controlled machines. Studies are supplemented with visits to companies – important manufacturers of machine tools and forming machines. We also organise one or two-term stays at universities abroad (some of our students have been to England, France, Germany, Austria, Sweden, the USA, and Australia). Further into their studies, students contribute towards finding solutions to grant projects. The final project and the thesis are based on assignments from industry, or alternatively, students may be asked to find a solution to a certain aspect of the faculty’s research programme. Graduates, who have been awarded the title of Engineer (Ing.), can work as project planners, designers, in the field of development, as operation engineers and laboratory test engineers. They are also very well qualified for work in trade companies, as businessmen.

Doctoral Study Programme
Doctoral studies are the third level of structured studies. Young graduates – engineers – are given the opportunity to carry out scientific work, to improve their theoretical and technical knowledge and their knowledge of foreign languages. All this is organised on the basis of an individual study plan, prepared by the student and his/her mentor at the beginning of studies. At this stage, too, the student very often takes advantage of stays at universities abroad or internships with significant firms both at home and abroad. Doctoral studies are completed by the doctoral state examination and thesis defence. Following a successful thesis defence, the graduate is awarded the PhD title. Most often, graduates find work in the research and development of production machines and equipment.
Support to Manufacturing Machine Development from EU Research and Development Support Programmes

Luděk Hanáček, Manager of EU Projects and Grants Division, Deloitte BPO G&I a.s., e-mail: ludek.hanacek@elbona.cz, www.deloitte.cz

The two principal aims pursued by the Sixth EU Framework Programme for Research, Technological Development, and Demonstration for 2002-2006 are the strengthening of the scientific and technological base of industry and raising the international competitiveness of the European Union. The programme is one of the main instruments promoting the creation of a European Research Area. Similarly to the previous programme, the following Seventh Framework Programme for 2007-2013, now under preparation, contains a list of thematic priorities with calls for the submission of projects. Individual calls specify the focus of projects, which correspond to the different priorities. This means that only projects corresponding precisely to the announced areas may be given support. The first calls under the Seventh Framework Programme are expected at the end of 2006 with submission of projects in the course of 2007.

Support to the Development of Manufacturing Machines

Although the support of the development of manufacturing machines is not a specific subject of the calls, such projects can be included in thematic priority 4 – Nanosciences, nanotechnologies, materials and new production technologies, which will be a part of one of the four programmes under the Seventh Framework Programme, specifically the Cooperation programme. Projects are to be submitted directly to the European Commission, always by a consortium of several research entities from EU member states. Projects approved by the appraisal committees will be selected for co-financing from the budget of the Framework Programme.

Three Projects in the Czech Republic

In the Czech Republic, applicants for support under the Sixth Framework Programme include entities concerned with the development of new machine tools. Their projects have been submitted under priority 4 – Nanosciences, nanotechnologies, materials and new production technologies, a priority that will be maintained under the following Seventh Priority Programme. One such project is that of the Research Centre of Manufacturing Technology of the Czech Technical University in Prague. The Research Centre, together with other European research teams, submitted two projects, which the European Commission chose to finance. The first project, entitled ECOFIT, sets itself the aim of developing, over the next three years, new control systems for lightweight, highly dynamic machine tools. The project, co-ordinated by the FATRONIK of Spain, brings together research institutions in the area of machine tools, in this case the Research Centre of Manufacturing Technology and the University of Stuttgart, as well as machine tool manufacturers, specifically KOVOSVIT and N.CORREA, who will fit the machines with the new systems. The other companies participating in the project are MIROW, AIDO, SEQUOIA, D-ELEKTRON, and ISG, concerned with development in areas such as optics, mechatronics, and sensing devices. The costs of the project amount to EUR 3.14 million, to which the European Commission contributes EUR 1.79 million.

The last project in the area of manufacturing machines is entitled NEXT with KOVOSVIT as the Czech participant. It is a large integrated project bringing together 24 organisations from the European Union, which specialise in five main areas. The first area is the manufacture of “green” machines based on respect for environmental principles, such as the use of recycled materials in the construction of machines and lower energy consumption in machining. The second area focuses on autonomous machines and the third is the development of high-performance manufacturing machines that enable greater precision of machine-tool production. The last two areas focus on innovation in business processes combined with education and dissemination in the area of manufacturing technology. The budget of this extensive project spreading over four years is EUR 21.75 million, with a EUR 14 million contribution from the European Commission.
Research into Machine Tools in the CR Continues Successfully

The Research Centre of Manufacturing Technology (RCMT) was founded at the Faculty of Mechanical Engineering, Czech Technical University in 2000, when it obtained state aid from the Ministry of Education, Youth, and Sports for the establishment of a new research base for the manufacturing technology industry in the CR.

Towards the end of 2004, the project was successfully completed, comprising two detached workplaces, one at the Brno University of Technology (www.vutbr.cz) and the other at the Technical University of Liberec (www.vslib.cz). In addition, an accredited testing laboratory was set up and provided with the latest measuring equipment for measuring the precision of machine tools, the temperature and thermal fields of machines, static and thermal deformations, the working precision of the spindles of milling machines and lathes, and machine vibrations and noise levels. An experimental machine, the LM-2, was built for testing and checking the sub-assemblies of highly dynamic machines. A new way of arranging the control axis of NC machines, using the so-called floating principle, has been theoretically devised and tested experimentally. Several other theoretical and experimental projects have also been carried out in the area of drives. In co-operation with industry, two machines, the MCVL 1000 Laser machining centre and the FNG 50 CNC Laser tool-making milling machine, have been constructed with built-in lasers. Furthermore, an automated production system has been introduced at the RCMT workplace at the University of Technology in Brno. Another project involved the manufacture of paddle wheels of different shapes by means of five-axis machining.

A Project for the Research of Production Techniques and Technology

In 2004, the Research Centre obtained state aid for another five years, specifically for a project entitled "Research of Production Techniques and Technology". The content and focus of the project is based on new world trends and on co-operation with the Czech manufacturing technology industry. The project comprises a total of 27 research sub-projects in three different areas of interest: firstly, the research of highly efficient, high-precision, reliable, and environmentally friendly machines and their components, secondly, the research, measuring, monitoring, and evaluation of the properties of machine tools, and finally the research of advanced, efficient, and environmentally friendly production machines (especially machine tools). The Centre has invited the University of West Bohemia in Plzeň to co-operate on this project.

Current Projects and Co-operation with Businesses

Today the Centre is able to offer the new results of its research activities, useful for application in engineering production. Its floating principle, for instance, has been applied on the H 50 – FLOAT machine produced by Tajmac-ZPS (www.tajmac-zps.cz) and for covering the X and Y axes of the LM-2 experimental machine in connection with the innovation of the production programme of Hestego. Furthermore, the Centre has provided several machine tool manufacturers with new solutions in the area of drives and five-axis machining.

The Centre's great achievement in 2005 was the launching of two European projects under the 6th Framework Programme, namely Ecofit and HardPrecision. Here, the Centre co-operates for example with the Technical University in Stuttgart, with IPT of Aachen, with Hemtech of the Netherlands, with Fatronik – a Spanish research institute, and other partners. Co-operation is underway with UWE Bristol on a project involving Airbus UK as a significant partner. We also have working contacts with Optodyne of the USA under the framework of a thesis.

The Centre provides well for the further education of its workers. For this purpose, the Centre obtained a substantial grant from the Labour Office of the Capital City of Prague this year (www.portal.mpsv.cz) under the JPD 3 programme for the education of the Centre's employees, entitled Raising the Adaptability of RCMT Workers to Changes in Technological Conditions. The project, which spans over two years, will provide funds for all manner of education. The implementation of this project, which began on 1 May 2006, will help significantly to raise the competitiveness of the Centre.
Strojimport a.s. Praha is a commercial company which, for 53 years now, has successfully represented on foreign markets both Czech and Slovak manufacturers of machine tools and forming machines with renowned brands such as TOS, MAS, ŠKODA, ZPS, ŽDAS, ŠMERAL, as well as many others. Supplies for companies such as FORD MOTOR Co., KRUPP, ABB, VOEST ALPINE, PRATT & WHITNEY are among its most important references.

The company’s export programme encompasses lathes (all types of universal centre lathes, heavy duty lathes, automatic lathes and CNC numerically controlled turning machines), drilling and boring machines (both CNC and conventional), gear generating machines – gear hobbing and gear shaping machines, milling machines (both CNC and conventional), machining centres (both vertical and horizontal), grinding machines (both CNC and conventional), metal and profile forming machines, presses and forging machines, metal cutting saws, as well as woodworking and wood processing machines.

Return to Remote Markets

Although a dominant part of exports continues to go to West European countries, in recent years, Strojimport a.s. has begun to increasingly penetrate the markets of more remote countries, which are commercially more demanding to cater for. These include above all China, India, Algeria, Brazil, Venezuela, as well as the countries of the former Eastern bloc, particularly Poland, Hungary, and Russia.

A necessary prerequisite of business success is the establishment of a large worldwide network of representations, which Strojimport a.s. has systematically worked to put into place during the entire course of its existence. The greatest intensity of cooperation is with businesses operating in Europe as well as Central America, where Strojimport a.s. has an ownership interest. In Asia, the most important business partners especially include state-owned companies in China and India. Strojimport’s representative offices have been operating in both of these countries for a number of years now, providing quick and high quality commercial services.

Accomplishments of Strojimport

The greatest recent commercial accomplishments of Strojimport a.s. include above all:

– The reconstruction and modernisation of forging sets for smith forging, supplied to Indian state organisations approximately 25 years ago. The value of these contracts ranges between EUR 5–10 million. The manufacturer and supplier is ŽDAS.

– Supplies of vertical lathes manufactured by ČKD Blansko and TOSHULIN.

– Contracts with Russian manufacturers of aircraft engines for general repair and for the modernisation of various machine tools and forming machines.

– The processing of the market in Poland is continuing intensively. Strojimport a.s. has also located one of its representative offices here. Great success has been recorded in particular in supplies of horizontal boring machines manufactured by TOS Varnsdorf and in the supply of the FUEQ 150 reference machine manufactured by TOS Kuřim.

– A stable and long-time partner of Strojimport a.s. is, among others, Algeria, where thousands of machines have been supplied to in the past, especially lathes manufactured by TOS Trenčín. The TOS trademark remains a symbol of quality and reliability here. At present, there is great interest above all in our woodworking machines for small and medium-sized joineries, manufactured by ROJEK and HOUFEK. Each year, Strojimport a.s. takes part in the FIA international trade fair in Algeria.

A strong advantage of Strojimport a.s., the ownership of which is incorporated within the structures of the Ministry of Finance of the Czech Republic, is its ability to finance fully both the supply of goods as well as its manufacture.
Poll of Successful Firms Operating in the Area of Machine Tools and Forming Machines

KOVOSVIT MAS, a.s.
Náměšť Tomáše Bati 419, 39 102 Sezimovo Ústí, phone: +420 381 631 111, fax: +420 381 276 372, e-mail: mas@kovosvit.cz, www.kovosvit.cz

Turnover (for 2005): approx. CZK 1.2 billion
≈ approx. EUR 40 million
Number of employees: 1 000
Contact person: Mr Miloslav Kafka, e-mail: kafka@kovosvit.cz
Export: 52 %, e.g. to Germany, Italy, Russia, the Ukraine, Denmark, Portugal, Spain, Belgium

KOVOSVIT MAS, a.s. Sezimovo Ústí joint stock company has a tradition of more than sixty years in the development, manufacture, and sale of high-precision and high-quality MAS machine tools. The company is an important exporter within the Czech engineering industry. At present, it supplies customers both in the CR and abroad with a very broad range of machine tools and customer services encompassing a full range of machining, milling, drilling and boring technologies.

At the 2005 Brno International Engineering Fair you were awarded a Gold Medal. For which project?
It was the MCU 630V – 5X five-axis vertical machining centre.

Which new products do you have in store for 2006?
In 2006, we want to launch a new series of MCV 754 and 1016 QUICK vertical machining centres and an innovation of the MASTURN 54 CNC universal lathe with CNC control.

PRAMET TOOLS, s.r.o.
Uničovská 2, 787 53 Šumperk, phone: +420 583 381 111, fax: +420 583 215, e-mail: pramet.info.cz@pramet.com, www.pramet.com

Turnover (for 2005): CZK 984 million – EUR 32.3 million
Number of employees: 488
Contact person: Mr Pavel Večerka, e-mail: pavel.vecerka@pramet.com
Export: 50 % to more than 300 countries on all the continents.
Our largest export territories are those countries where we have located our branches: Slovakia (10 %), Germany (10.4 %), Poland (8 %), Italy (4.5 %), followed by Russia, Spain, the USA, Taiwan, Belarus, and Romania.

The company is engaged in the design, manufacture, and sale of cutting and forming tools made of cemented carbide. The tools are intended for industrial use.
Its core programme features machining tools – exchangeable cutting inserts, VBD cutting tools, VBD turning tools, VBD drills, clamps and metal forming tools and construction elements, such as sealing rings and bushings for pump technology, drawing mill tools, semi-finished tools for drawing and other uses, hot and cold metal forming tools, pressing tools for powder metallurgy, and special-purpose tools.

You export products via your foreign branches. Where are they located?
The company has subsidiaries in Italy, Poland, Slovakia, and Germany, and a regional manager has been appointed to cover the Russian Federation.

You place emphasis on your own research and development. What does this mean for the company in practice?
We operate our own development department and each year we put on sale approximately 300 new cutting tools. In the case of certain projects we co-operate with Czech universities. We also place emphasis on further education, and in 2006 we opened a training and testing centre on the company’s grounds, where we present our new products and organise training for employees to instruct them on the correct use of the products, on raising productivity, and so on.
INTOS s.r.o.

Tovární 220, 267 53 Žebrák, phone: +420 311 535 111, fax: +420 311 533 236, e-mail: intos@intos.cz, www.intos.cz

Turnover (for 2005): CZK 270 million – approx. EUR 9 million
Number of employees: 240
Contact person: Mr Václav Zavadil, e-mail: zavadil@intos.cz
Export: to Austria, Germany, Italy, Finland, Sweden, the Netherlands, Slovakia, Slovenia, Bulgaria, Croatia, Romania, Russia, Belarus and the Ukraine, Poland, Hungary, Canada, Turkey, India

INTOS, spol. s r.o., a limited liability company, is a Czech machine tool manufacturer with a tradition dating back more than 130 years. Its current product range can be divided into conventional milling machines represented by the well-known models FN 20, FNGJ 30, FNGJ 40, and FNGJ 50. Another important group comprises numerically controlled milling machines, models FNGP 40 and FNGP 50, with rectangular control, models FNG 30 CNC E, FNG 40 CNC E, fitted with the Heidenhain control system. Another item in this group is the numerically controlled INTURN 320 lathe with the Heidenhain TNC 4110 Manual Plus control system. Another addition to the production range are the MCX 750 and MCX 1200 vertical machining centres. INTOS is making a far-reaching innovation to its range of conventional lathes to include in its production programme the INTURN 320, INTURN 340, and INTURN 400 modern lathes, available in both the Basic and Digital versions.

In 2004, EMCO, the Austrian supranational concern, became the 100 % owner of Intos. What has this re-organisation brought to the company?
Immediately after the acquisition of INTOS, spol. s r.o., by EMCO, an Austrian supranational concern, INTOS experienced a dynamic development. Almost directly after the change of ownership, the Austrian side launched an extensive re-organisation of the Czech company to incorporate it in its supranational structure. Our company has access to the latest technologies and can offer its customers equally advanced machines as those that have been known on all developed markets for many years. The traditional users and potential buyers of machines bearing the INTOS trademark can look forward to far-reaching innovations and new machines every year.

Can you mention some of your most important foreign customers?
Our most important foreign customers include the Volvo Group, TRW Group, Siemens, Velan, Pafflinger and Belaz, whom we supply with machine tools, complete with technologies.

Which important companies are your subcontractors?
We have relatively many subcontractors, including companies such as Siemens, Heidenhain, Fanuc and Bosch-Rexroth, Festo.

TOS KUŘIM–OS, a.s.

Blanenská 257, 664 34 Kuřim, phone: +420 541 101 111, fax: +420 541 103 266, e-mail: marketing@tos-kurim.cz, www.tos-kurim.cz

Number of employees: 700
Contact person: Mr Lukáš Repa, e-mail: lukas.repa@tos-kurim.cz
Export: to Austria, Germany, Italy, Finland, Sweden, the Netherlands, Slovakia, Slovenia, Bulgaria, Croatia, Romania, Russia, Belarus and the Ukraine, Poland, Hungary, Canada, Turkey, India

TOS KUŘIM–OS, a.s. is one of the oldest manufacturers of milling machines, single-purpose machines, and automatic machining lines in the Czech Republic. The factory was founded in 1942 as an affiliation of Zbrojovka Brno. During the 60 years of machine tool production, the company’s employees have acquired experience in research, development, construction, manufacture, and operation of more than 83 000 machine tools, 60 automatic machining lines, and 3 500 single-purpose machines. In 2005, ALTA, a.s., of Brno, became the majority owner of TOS KUŘIM–OS. Machine tools are among ALTA’s chief trading commodities.

Which important companies are your subcontractors?
We have relatively many subcontractors, including companies such as Siemens, Heidenhain, Fanuc and Bosch-Rexroth, Festo.
**STROJÍRNA TYC, s.r.o.**

Dlouhá 17, 338 05 Mýto, phone: +420 371 750 591, fax: +420 371 750 129, e-mail: prodej@tyc.cz, www.strojirna-tyc.cz

- **Number of employees:** 40
- **Contact person:** Mr Jaroslav Tyc, e-mail: jaroslav@tyc.cz
- **Export:** to Poland, Germany

STROJÍRNA TYC manufactures portal machining centres of the FVC, FVP and FP range, FPPC gantry type machining centres and BPP portal horizontal surface grinding machines. In 2005, we worked to develop our FVC portal machining centre. We have made five machines since the development was completed. We have also launched the production of portal milling machines for a German customer.

Are you planning to attend the 2006 International Engineering Fair to defend the title that you were awarded in 2004?

We are preparing primarily to present another new machining centre, which we want to introduce at the International Engineering Fair in Brno in 2007.

Which new items are you preparing for 2006?

Our largest FVC portal machining centre (FVC 160 CNC / 4000).

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**TRIMILL, a.s.**

Louky 304, 764 32 Zlín, phone: +420 577 112 111, fax: +420 577 112, e-mail: info@trimill.cz, www.trimill.cz

- **Turnover:** approx. CZK 280 000 – approx. EUR 9 400
- **Number of employees:** 70
- **Contact person:** Ms Veronika Julinová, e-mail: vjulinova@trimill.cz
- **Export:** 80 %, mainly to Germany, followed by Slovenia, Finland, the United Kingdom, Italy, and France

TRIMILL, a.s. was founded in the first half of 2000. Its core programme is the development, construction, assembly, sale, and servicing of machining centres. The company specialises in particular in the construction and supply of high-speed machining centres for the manufacture of press tools, moulds, fixtures, and dies for the automobile, aircraft, and plastics industries.

What does your company specialise in?

Since its founding right up to the present day, TRIMILL, a.s. has focused on the development, construction, assembly, sale, and servicing of machining centres. During the time of its operation on the market, the company has developed and constructed a standardised product range comprising seven basic types of machining centres, such as the vertical and horizontal machines. We specialise in particular in the construction and supply of high-speed machining centres for the manufacture of press tools, moulds, fixtures and dies for the automobile, aircraft, and plastics industries.

Which foreign markets and which products have brought you the greatest success?

The markets, which the company TRIMILL, a.s. has addressed and where it has succeeded primarily include the EU states, in particular Germany, Portugal, the United Kingdom, Finland and Belgium. Eastern markets (Poland, Slovakia, Russia, etc.) are among the company's potential outlets for a possible further expansion of business activities. In an effort to optimise production costs, supranational corporations are building new production facilities in East European countries, giving rise to the establishment of new markets, which our company is trying to address.
MACHINING AND FORMING IN BRNO IN SEPTEMBER

The 48th International Engineering Fair (MSV) and the 5th International Machine Tools Exhibition (IMT) will take place simultaneously in Brno from 18 to 22 September 2006.

IMT on a Record-Size Area
Today, already, the area reserved by exhibitors for the IMT 2006 exhibition is 500 sq. m larger than at the previous IMT. Since 1998, when this biennial exhibition was held for the first time together with the MSV, its size has been growing, and 2006 will be no exception. Fifty new firms have registered for the IMT 2006, most of them foreign companies. All the important Czech manufacturers of machine tools and forming machines will be present, and the number of exhibitors from Slovakia, and especially from Spain, is also growing. For the very first time, participants will include companies from Denmark and India. The last IMT exhibition in 2004 was attended by 489 exhibitors from 25 countries, and the share of foreign exhibitors rose to a record 46.2 %.

Gold Medals 2005
Machine tools and forming machines were also well represented at the MSV 2005, four of them winning the prestigious Gold Medal. The main criteria under scrutiny for assessing products competing for Gold Medals at the MSV are their novelty, originality of concept and design with proven benefit, the technical and technological standard, degree of innovation, workmanship of the whole as well as attention to detail, design, user comfort, commercial and technical parameters, readiness of the product for launch on the market, ecological aspects, and the general level of its presentation.

Further information is available at: www.bvv.cz/imt
Prepared by Jiří Erlebach