



**MACHINES, EQUIPMENT AND PROCESSING OF PARTS
INVITATION FOR CO-OPERATION**

MACHINES, EQUIPMENT AND PROCESSING OF PARTS

Dear our future partners,

Since our outset in 1967, in Bulgaria Vacuum El System has continued to develop and expand its three principle lines of production:

- *Vacuum technology – including oil rotary vane vacuum pumps, diffusion pumps, aggregates, systems and their components, manufactured in compliance with LEYBOLD Company's license.*
- *Electrical equipments - for electrical control of processes, panel and distribution boards, enclosures.*
- *Metal structures, frameworks, special equipment, machines and mechanical parts.*

Factory site is situated on 30 000 m², total built area is 10 000 m². Company personnel are 60 people, many of which are diploma engineers .We have machines and equipment for the production of different mechanical parts as well as precise parts in accordance with clients' assignment. Our versatile fabrication workshop can produce an extensive range of fabricated metal frame structures required by customers in all sectors of manufacturing. Precision machine and highly motivated technical machine operators ensure high quality end products, regardless of the batch.

Our ability to complete most projects from conception to introduction of the final product completely "in house" has proven to be very popular with our existing and prospective customer base.

*The fully self-sufficient production line cycle is organized in accordance with the **DIN EN ISO 9001:2000** requirements.*

In view of the low labor and energy cost in Bulgaria we are providing qualitative service at very competitive conditions. With regard to the above we are offering our cooperation and are willing to discuss the prospects of coordinating our efforts in certain aspects, such as production of items and systems or high quality machinery parts, production of casting parts and their subsequent machining at our factory site in Yambol, Bulgaria, which you might find **attractive and beneficial for you**, because our company **Mission Statement** is to continue to provide and expand our production of high quality products at competitive prices. Adopting this approach we aim to satisfy existing customer requirements and attract new partner. We strive to provide an excellent level of business relationship. Our quick response time ensures customer confidence, and minimum down time of process equipment and production, end this make our partners more and more competitive in their field of work.

In view of the all above mention reasons we invite you to become our partner!

Sincerely yours,

Vacuum El System
Bulgaria

MACHINES, EQUIPMENT AND PROCESSING OF PARTS

PROCESSING OF SHEET METAL PARTS

SHEARING AND SAWING

Cutting of metal sheets up to 2500 mm width and thickness from 1 mm to 16 mm, 6 machines

LASER BEAM CUTTING

CNC Laser cutting centre - MAZAK
Maximum dimensions of sheets-
3000 mm x 1500 mm



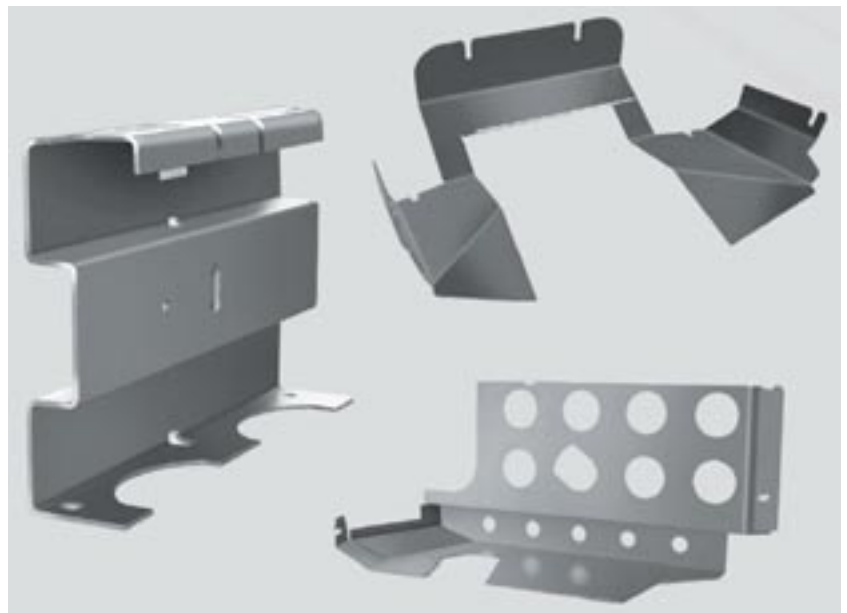
Material thickness:

- › Carbon steel - up to 16 mm
- › Stainless steel - up to 12 mm
- › Oxygen and HPN assist gases
- › Non-metal parts
- › Positional accuracy- $\pm 0.03\text{mm}$

PUNCHING AND STAMPING

Eccentric Presses - 20 machines,
from 5 tons to 400 tons

Hydraulic Presses - 4 machines,
up to 250 tons

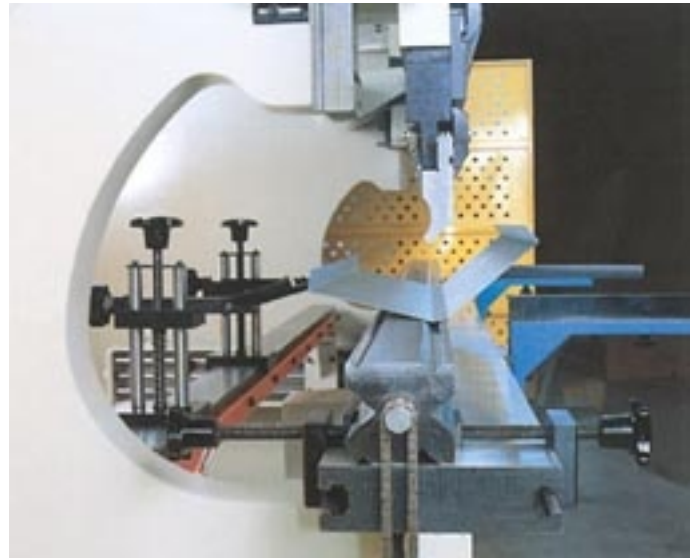


MACHINES, EQUIPMENT AND PROCESSING OF PARTS

PROCESSING OF SHEET METAL PARTS

BENDING

Press-brakes - 6 machines
CNC press-brake with 6 axis
100 tons, steel sheet width
3000 mm, sheet thickness-
up to 6 mm



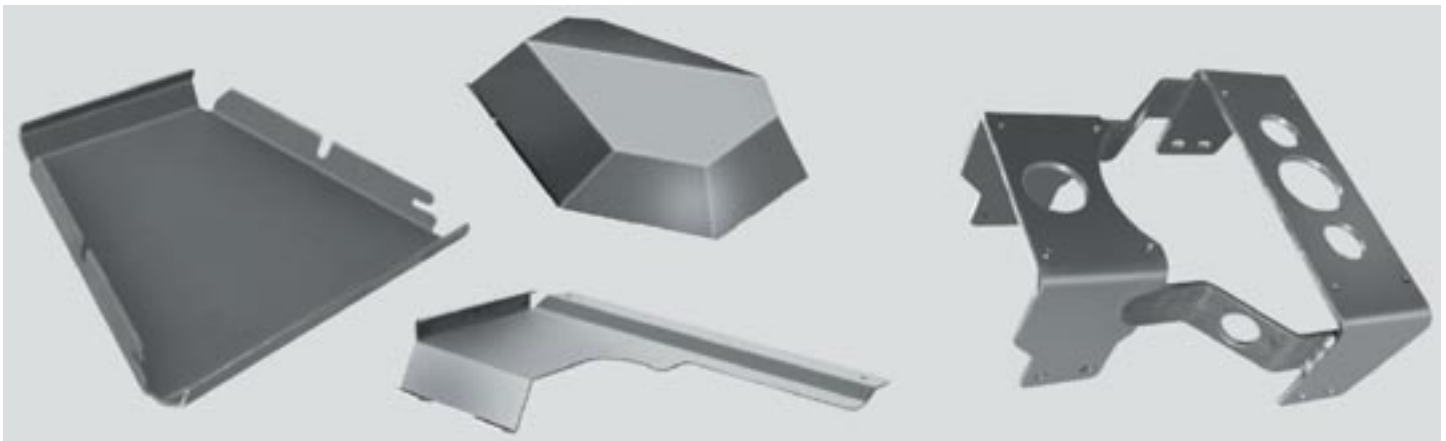
DEEP DRAWING

COATING

Spray coating
Epoxy Powder coating

WELDING

Spot Welding
Electrical arc welding
Argon-arc
Oxyfuel welding (gas welding)



MACHINES, EQUIPMENT AND PROCESSING OF PARTS

MACHINING OF PARTS



TURNING

Universal lathes - 18 machines
CNC lathes - 7 machines

- › Max diameter - 580 mm
- › Max length - 1500 mm
- › Tolerance class - 5
- › Surface roughness
- Ra 1,25 (Rz 6,3 mm)

BORING

Conventional boring machines
Max diameter - up to 50 mm
CNC coordinate boring

MILLING

Universal milling machines-
17 machines

- › Max part length - 785 mm
- › Max part width - 250 mm
- › Max part height - 400 mm
- › Surface roughness
- Ra 0,125 (Rz 0.63 mm)



MACHINING OF PARTS

CNC MACHINE CENTRES - 4 MACHINES

Horizontal Machine centres - Ex-Cell-O,
2 machines with high accuracy:

› Axes travels:

X - axis 630 mm

Y - axes 500 mm

Z - axes 500 mm

› Processing accuracy- $\pm 0,003$ mm

GRINDING

Universal grinding

Cylindrical grinding - automatic work cycle;
semi-automatic planer-cycle; Copying device;

› Max part diameter - 249 mm

› Min part diameter - 8 mm

› Max lenght - 600 mm

› Tolerance class - 5

MEASURING CONTROL

3D Coordinate measuring
Machine - ZEISS

› Max size of part:

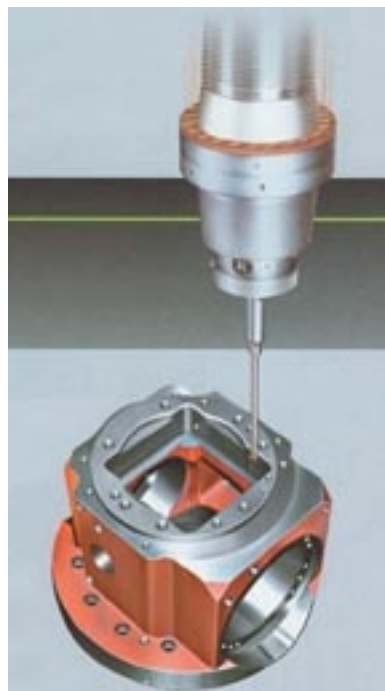
X axis 550 mm

Y axis 500 mm

Z axis 450 mm

› Max part weight 600 kg

› Accuracy $\pm 0,001$ mm



CENTRELESS GRINDING

Flat surface grinding

› Max diameter - 450 mm

› Max height - 450 mm

› Max weight - 400 kg

› Min diameter - 40 mm

› Tolerance class 5

BALANCE OF ROTARY PARTS

SCHENCK Balance Machine

› Max diameter 1260 mm

› Rotor weight from 1,5 kg - 150 kg



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