



# IPO Ltd.

**ENGINEERING COMPANY**

**MANUFACTURER AND SUPPLIER OF PREMIUM  
QUALITY EQUIPMENT AND SPARE PARTS FOR THE  
MINING, ROAD CONSTRUCTION, TRANSPORT AND  
AGRICULTURAL INDUSTRY**



BG19607Q/1 / BG19607E/1 / CZE-130001

[www.ipo-bg.com](http://www.ipo-bg.com)

**ABOUT US**

Found in 1990, IPO Ltd. is focused in two business domains – manufacturing and distribution of products and services focused on delivering premium quality and cutting edge technology solutions for the machine building, mining, construction, agricultural and transport industries in Bulgaria as well as internationally.

As a leading manufacturer of centrifugal castings in CEE and with over 20 years of experience, we are focused on the design, production, repair and maintenance of equipment and spare parts for the mining and road construction industries.



In addition we provide our own machining capabilities for all manufactured goods and production of finished metal constructions.

Furthermore, IPO Ltd is an official dealer of the leading manufacturer of Cummins diesel engines and Allison transmissions for Bulgaria. The company is also an authorized distributor of Cummins Power Generation and Fleetguard filtration systems for their full product range, authorized merchandiser and official Bosch diesel service, distributor of Yanmar diesel engines and Houchin ground power units for the aviation industry.



## ABOUT OUR PRODUCTION

With more than 20 years of experience and the long standing manufacturing practice of our excellently trained staff, we specialize in producing premium quality small to average series of castings from grey iron and steel with rough or finished machining and various metal constructions. All manufactured elements find wide application for machines and equipment for the machine-building, mining, and construction industries, energy, agriculture, shipbuilding and dockyards, transportation, etc.



Based in the town of Karlovo, the production plant is fully equipped with modern and up-to-date manufacturing technology. This enables us to close the full production cycle and provide our clients with the exclusive possibility to make their own choice of the final type of the ordered production, through rough or finishing mechanical treatment of the components.

Due to our long-standing manufacturing practice and the company's main focus – ensuring the delivery of high quality services to our clients - we have developed a stable network of clients and partners in a wide range of industries.

Our clients have the unique opportunity to order specific components, based either on their own technical documentation or on documentation designed by our skilled engineering unit based on the clients' specification and requirements.



**CLASSICAL CASTING OF COMPONENTS FROM FERROUS METALS**

IPO Ltd is an established supplier of components and spare parts for the mining and extracting industry equipment. The company is also a traditional producer of teeth, crown-wheels and blades for machines used in road construction, excavation works and quarries. We have the proven technology and model-case equipment needed for production of quality high-performance and wear-resistant castings, used in mining and road construction equipment.



We have both the expertise and the needed equipment to produce castings made of steel and cast iron of weight up to 2000kg with guaranteed chemical composition and mechanical qualities.

**Lining plates made from high resistant wear steels**

The castings are mainly used for mills in flotation factories, for copper grinding, lead or copper zinc ores, copper slag and extracting of iron from iron ore.



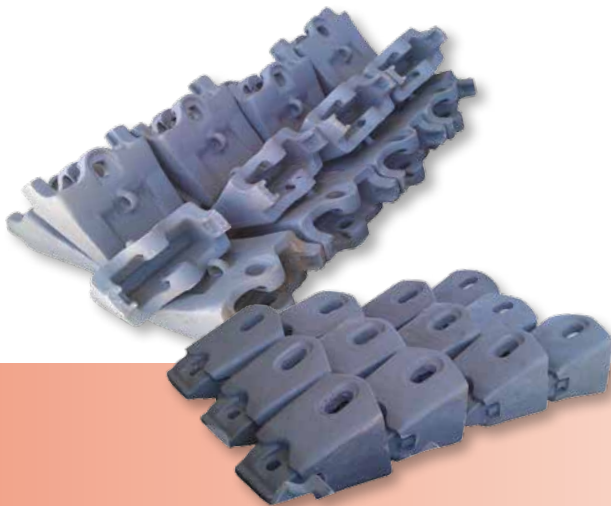
**Manufacturing of steel castings with special application from middle and high alloyed steels**

We have the technological equipment for the production of ferrous metal castings from steel and cast iron in sand moulds. The produced parts have a wide range of application as spare parts for installations for preliminary crushing and sifting of articles (jaw breakers, cone breakers and rotor crushers), sluices and castings of excavator buckets.

### Castings from unalloyed and low alloyed steels

#### Up-to-date technological equipment

- The software used to design elements for mill liner equipment achieves an exceptionally high precision of the castings.
- Fully equipped with latest technology heat



### Castings Application

- All produced components find wide application as wear parts for various mining equipment - lining plates for feeders, feeders for mills, mantles for cone crushers, jaw crusher wear parts, parts for impact crushers, hammers for hammer crushers, shredders, plate for plates and chain feeders and redlers. Wheels for heavy loaded cranes made from chrome-nickel, chrome-molybdenum, chrome-nickel-molybdenum, wheels for pumps worked with pulps made form special cast iron.



treatment facilities allowing for treatment of elements up to 2400x2400x1000mm and 600x800x5880mm.

#### Castings guarantee

- All castings offered to our clients are accompanied by quality guarantee, as well as all certificates covering all requirements of the EN 10 204 3.1.B standard.



**CENTRIFUGAL CASTINGS OF FERROUS METALS AND ALLOYS**

IPO Ltd. is an established producer of centrifugally cast bushings and rings made of bronze and brass, whose chemical composition and mechanical indicators comply with the following standards:

- DIN 1705, DIN 1714, DIN 1716, DIN 17656
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Castings produced by our company are offered to our clients with either final or rough machine treatment (polishing).

- Ship repairs and casing bushings for propeller shafts.
- Worm drive rings for heavily loaded engine transmissions.
- Sealing rings for hydraulic turbines.



**Large production capacity**

The rich variety of metal moulds for centrifugal casting enables us to produce castings with a wide range of sizes:

- Min inner diameter of a bushing Ø 80MM.
- Max. outer diameter of a bushing Ø 1100MM with height L 650MM.
- Max. outer diameter of a ring Ø 2300MM with height L 250MM.

**Wide application**

- Heavily loaded sliding bearings for the mining and ore dressing industry, road construction equipment, engines and machine units.

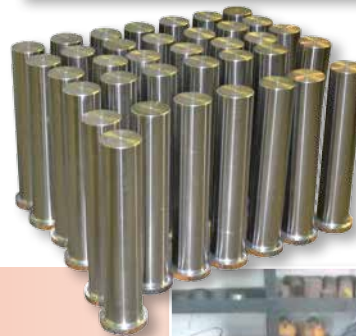


## MECHANICAL TREATMENT

IPO Ltd. provides their clients with the exclusive possibility to make their own choice of the final type of the ordered production by closing the production technological cycle through rough or finished mechanical treatment of billets manufactured by the company, submitted by the client or purchased from specialized companies.

We offer a range of manufactured products as well as their maintenance and repair:

- Parts and elements for drive systems – shafts, axles, rolls, pulleys, discs, drums, driving screws,



studs, flywheels, guiding elements, sleeves, bushings, bearing's shells and others.

- Standard fasteners and fasteners with special applications and design.

We have the ability to either work with the structural and technological documentation provided by our clients or develop original documentation. In the special cases where there are specific and more complex requirements for the final product, an

expert engineering team is organized and sent to the clients' site. This allows us to fully investigate and examine the clients' precise requirements in order to ensure the delivery of optimal engineering solutions.



**METAL CONSTRUCTIONS**

The structural and technological unit of the company has the ability to develop original structural and technological documentation on the basis of solid fundamental education and long years of acquired experience in designing, manufacturing and implementation of details and structures for various clients in different industrial fields.

- Parts and constructions for the mining industry – screens, separators, containers, tanks, machine bodies and special equipment.
- Metal welded constructions, beams, columns, stairs, anchor plates and bolts.
- Details and spare parts for road construction and agricultural machines and equipments – digger

Maintaining stock availabilities of the most frequently used materials, as well as the well organized supplies and internal transportation within the workshop, are a prerequisite for ensuring trouble-free and flexible production by mechanical treatment of single details, assemblies and structures with various geometry, weight, dimensions and complexity.

This is guaranteed by our own machine stock of universal and specialized machine-tools, selection of optimal technology and highly-qualified and motivated staff.

The development of the structural technological documentation is carried out by the latest engineering software – ‘Solid Works’ and ‘Auto CAD’. This



buckets, single to six lines mechanical clamshells, dredging grabs, buckets for draglines, paddles, etc.

- Optional equipment.

We have the capability for flame cutting, plasma cutting, disk-saw, guillotine and belt-saw cutting and cutting-out of billets from ferrous and non-ferrous metals, from circular, angled and sheet rolled metal, turning, milling and grinding of cylindrical and prismatic and frame details, classical electric-arc welding and welding in protective environment, gas welding, heat treatment, recovery, normalizing and ageing.



additionally ensures shorter led times of production, flexibility and high quality of the final product.



## FLEXIBLE HYDRAULIC AND PNEUMATIC HOSES WITH HOSE END CONNECTORS

The company produces a wide range of hose-end connectors and flexible hydraulic and pneumatic hoses, designed for equipment used in ore-dressing and road-building, land and water transportation, machine-building, agricultural machinery, machine units, etc.

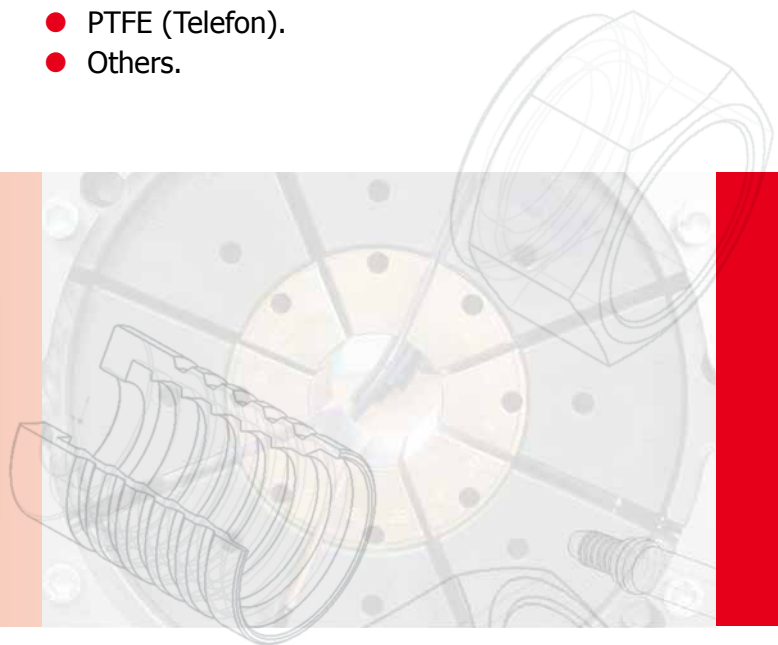
Our facilities:

- Perfectly equipped workshop for equipment completion of flexible hydraulic and pneumatic hoses (FHPH).
- Design and development of documentation for production of different combinations for FHPH implementation.



We work with hoses produced by renowned manufacturers such as Aeroquip, Manuli, Semperit, Rapisarda of various functions, characteristics and sizes:

- Rubber hoses with textile braiding, types 1 TE, 2TE, 3TE in compliance with DIN20021.
- Rubber hoses with steel braiding, types 1 ST, 1SN, 2ST, 2SN in compliance with DIN20022 and SAE100R1A.
- Rubber hoses with steel spiral braiding, types 4SP, 4SN in compliance with DIN20023 and SAE100R9R and types 6SH. 6SP in compliance with SAE100R12.
- PTFE (Telefon).
- Others.



- Well-supplied warehouse base.
- Varied technical and production experience.
- Qualified and perfectly trained personnel.
- Implemented operational system for quality management ISO9001.

The hydraulic hoses we produce are characterized by high durability and excellent pressing. The lead times and rhythm of order execution fully satisfy our clients' requirements.



The operational pressure reaches 380 bar and the temperature ranges from -40 C to +240 C in accordance with the type and diameter of the hose and its function.



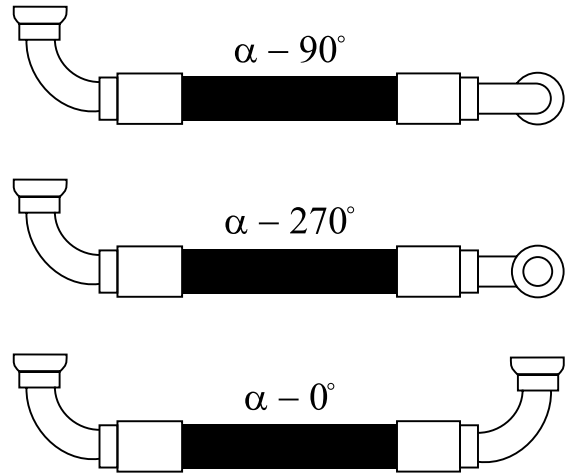
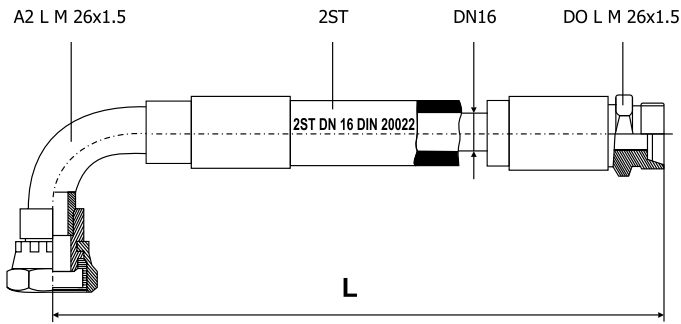
Conventional hose diameters – from DN5 (3/16" or 5mm) to DN60 (2 3/8" or 60.3mm).

Operational fluid – fuel, oil, cooling liquid, air and technical gases, etc.

The hose-end connectors that you search for can be ordered in different ways, and we present to your attention some of the most popular ones as well as tables with a choice of connecting ends such as:

**EXAMPLE 1:**

**Data needed for ordering FHPH**



**Fitting types**

<p><b>A0</b> (DKL)</p> <p>metrisch</p>	<p><b>D1</b> (CEL)</p> <p>metrisch</p>	<p><b>D5</b> (AGR-FL)</p> <p>BSPB</p>	<p><b>G7</b> (AGR-DK)</p> <p>BSPB</p>	<p><b>J9</b> (AGJ)</p> <p>UN</p>
<p><b>A5</b> (DKR)</p> <p>BSPB</p>	<p><b>D6</b> (AGR)</p> <p>BSPB</p>	<p><b>H6</b> (AGR-K)</p> <p>BSPB</p>	<p><b>K0</b> (BEL)</p> <p>45°/90°</p>	<p><b>P0</b> (ORFS)</p> <p>UN/UNF/UNS</p>
<p><b>A05</b> (DKOL)</p> <p>metrisch</p>	<p><b>E1</b> (CES)</p> <p>metrisch</p>	<p><b>H8</b> (AGN)</p> <p>NPTF</p>	<p><b>M1</b> (Steck)</p> <p>45°/90°</p>	<p><b>Q5</b> (DKJ)</p> <p>UN</p>
<p><b>B5</b> (DKOS)</p> <p>metrisch</p>	<p><b>G1</b> (AGM)</p> <p>metrisch</p>	<p><b>J0</b> (RGN)</p> <p>metrisch</p>	<p><b>M172</b></p> <p>metrisch</p>	<p><b>R6</b> (DRF)</p> <p>BSPB Manometer</p>

## QUALITY AND CONTROL ASSURED

A modern and fully equipped laboratory for incoming, preventive and final control over the casting process as well as a highly critical quality department guarantees the premium quality of the products. The technology facilities we use for testing and control are:

- Express analyzer Spectro CCD for detection of the chemical composition of the alloys.
- Supersonic inspection equipment Sonatest.
- Control through use of penetrants.
- Stationary and portable thickness gauge Krautkramer.



- Devices for measurement of revolutions and temperature.
- Devices for control of the casting mixtures.

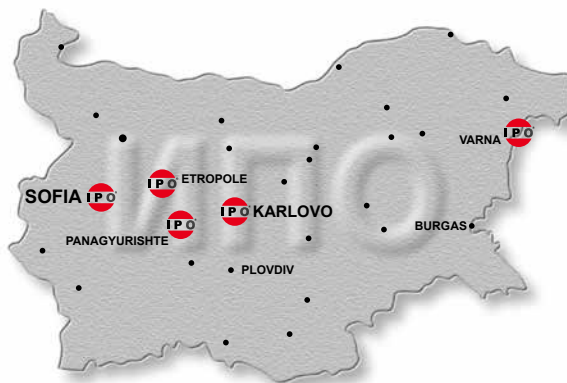
All finished products are accompanied by a full chemical composition and mechanical indicators certificate, with a complete guarantee and responsibility for their quality.

The quality of the manufactured goods is guaranteed by the implemented and operated system ISO9001-2000, by complex application of input control, selection of optimal technology, direct measurements of linear and angle dimensions, hardness and other functional and technological parameters at various stages of the production cycle, as well as output control of the final products.





All systems and procedures for quality control and monitoring are successfully integrated in IPO Ltd., comply with all requirements of quality standards: ISO 9001:2008, ISO 14001:2004 and OHSAS 18001:2007. This guarantees our clients the high quality and reliability of the products and services we offer.



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