



# **prodajni program** **sales program**

**Toplinska obrada**

**Čelici / Metali / Tvrdi metal**

**Pribor za alatničare / Žica i pribor za elektroeroziju**

**AM - prašci za 3D printanje**

**Tvrde prevlake (PVD, CVD, DLC)**

**Heat Treatment**

**Steel / Metals / Cemented Carbides**

**Accessories for Toolmakers / EDM Wire and Accessories**

**AM - Powder for 3D Printing**

**Hard Coatings (PVD, CVD, DLC)**

# Alatni i brzorezni čelici

**alatni čelici za hladni rad** (W.Nr.1.2210, W.Nr.1.2358, W.Nr.1.2379, W.Nr.1.2767, W.Nr.1.2842, CP4M, CPOR, CPR...), **topli rad** (W.Nr.1.2343, W.Nr.1.2343 ESR, W.Nr.1.2365, W.Nr.1.2367, W.Nr.1.2367 ESR, W.Nr.1.2714, WP7V...), **preradu polimera** (W.Nr.1.2083, W.Nr.1.2085, W.Nr.1.2311, W.Nr.1.2312, W.Nr.1.2316, W.Nr.1.2378...), **brzorezni** (W.Nr.1.3343, W.Nr.1.3243...), **čelici proizvedeni tehnologijom praška** (PMD M4, PMD V10, PMD23, PMD550...)



## Tool Steel and High Speed Steel

**Cold work** (W.Nr.1.2210, W.Nr.1.2358, W.Nr.1.2379, W.Nr.1.2767, W.Nr.1.2842, CP4M, CPOR, CPR...), **hot work** (W.Nr.1.2343, W.Nr.1.2343 ESR, W.Nr.1.2365, W.Nr.1.2367, W.Nr.1.2367 ESR, W.Nr.1.2714, WP7V...), **plastic mould steel** (W.Nr.1.2083, W.Nr.1.2085, W.Nr.1.2311, W.Nr.1.2312, W.Nr.1.2316, W.Nr.1.2378...), **HSS** (W.Nr.1.3343, W.Nr.1.3243...), **powder metallurgical steels** (PMD M4, PMD V10, PMD23, PMD550...)

# Ostali čelici

Visokolegirani čelici (nehrđajući, vatrootporni, duplex i super duplex) i konstrukcijski čelici  
Slobodno kovani otkvici i odljevci od visokolegiranih i konstrukcijskih čelika



# Other Steels

High alloy steels (stainless, heat resistant, duplex and super duplex); structural steel  
Free forgings and castings of high-alloyed and structural steels

## Ostali metali / Tvrđi metal

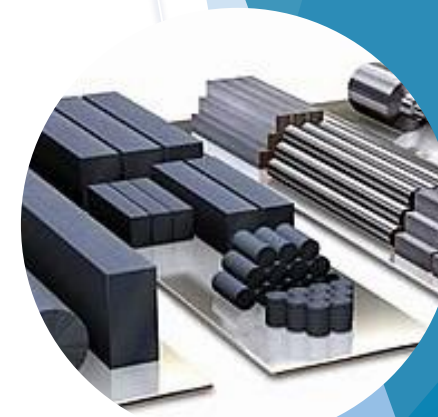
Precizno vučene žice (mesing, bronca, inox, Al, Cu, Ni legure) okruglog i specijalnih presjeka 0,01 - 6,00 mm

Ploče iz Al legura rezane na dimenzije po zahtjevu kupca

Bakrene legure - volframbakar, berilij bronca

Sivi i nodularni lijev

Tvrđi metal u blokovima i štapićima, dijelovi sinterirani prema nacrtu



## Other metals / Cemented carbides

Precision drawn wires (brass, bronze, stainless steel, Al, Cu, Ni alloys) round and special sections 0,01 - 6,00 mm

Aluminum alloy plates cut to dimensions at customer request

Copper alloys - tungsten copper, beryllium bronze

Gray and nodular cast iron

Cemented carbides - blocks and rods, sintered parts according the drawing

# Žica i pribor za elektroeroziju

Žica, filteri, smola, cjevčice, bakrene i grafitne elektrode za narezivanje navoja

## EDM Wire and Accessories

EDM wire, filters, resin, tubes, copper and graphite electrodes for threading



## Pribor za alatničare

Izbacivači, probijači, opruge, vodilice...

## Accessories for Toolmakers

Ejectors, punches, springs, bushes and guidings...

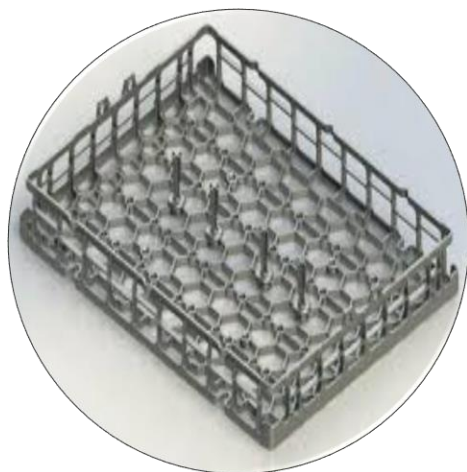
# Toplinska obrada

Oprema - rešetke, košare

Rezervni dijelovi - ventilatori, lanci, izolacije, prigušnice, termoparovi, kisikove sonde

Zaštitne paste

Nove i rabljene linije i peći za toplinsku obradu



# Heat Treatment

Equipment - grates and baskets

Spare parts - fans, muffles, furnace chains, isolation, thermocouples, oxygen probes

Protective sprays (stop-off paints)

New and used heat treatment furnaces

# Peći za toplinsku obradu

**Vakumske peći** → žarenje, napuštanje, precipitacijsko otvrdnjavanje, kaljenje u ulju i plinu, nitriranje, cementiranje i ostali patentirani postupci

**Atmoferske peći sa atmosferom inertnog/aktivnog plina ili zraka** → nitriranje, karbonitriranje, naugličavanje, lemjenje, predgrijavanje

**Toplinska obrada aluminija i CAB (lemljenje u kontroliranoj atmosferi)** → lemljenje, žarenje, otvrdnjavanje, starenje, homogenizacija, predgrijavanje, taljenje

**Vakumsko taljenje** → oprema za taljenje i pretaljivanje



u suradnji sa



zastupnikom za

**SECO/WARWICK**

# Heat Treatment Furnaces

**Vacuum furnaces** → annealing, solution heat treatment, brazing, sintering, gas and oil hardening, nitriding and other special technological processes

**Atmosphere (inert/active gases, air) heat treatment furnaces** → nitriding, carbonitriding, carburizing, hardening, tempering, annealing, preheating, soldering

**Aluminum Heat Treatment Systems and CAB (Controlled Atmosphere Brazing)** → brazing, annealing, solution, aging, homogenization, preheating, melting

**Vacuum melting technologies** → melting and remelting equipment



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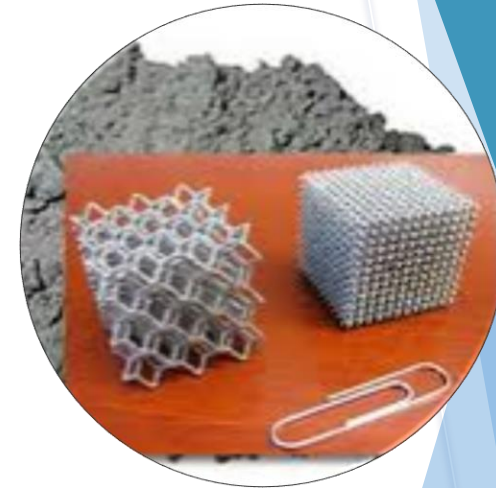
representative for

**SECO/WARWICK**



# AM - 3D printanje

Metalni prašci, polimerni prašci, printani dijelovi



# AM - 3D printing

Metal powders, polymer powders, printed parts

# Tvrde prevlake

PVD, CVD, DLC...

Za standardne rezne alate, alate za savijanje, preoblikovanje i štancanje, alate za plastiku ojačanu staklenim vlaknima



# Hard Coatings

PVD, CVD, DLC...

For standard cutting tools, bending, deep drawing and punching tools, glass fiber reinforced plastic processing tools

# Testiranje i ispitivanje

**Nerazorna ispitivanja** → endoskopi, digitalni mikroskopi, ispitivanje magnetnim česticama, penetranti

**Ispitivanje materijala** → ispitivanje tvrdoće, mehanička ispitivanja - ispitivanje statičkih opterećenja (kidanje, savijanje, tlačna i vlačna opterećenja)

**Kemijska analiza** → stacionarni i prijenosni optički spektrometri

**Metrologija** → stacionarni i prijenosni uređaji za mjerenje oblika i hrapavosti, robotske ruke, optički 3D sensori za automatsko mjerenje oblika i hrapavosti površine u proizvodnji, sistemi za automatsko mjerenje alata

**Održavanje opreme na osnovu detekcije stanja** → kontrola učinkovitosti i grešaka elektromotora i generatora, detekcija kvarova

**Detekcija plinova** → prijenosni detektori plinova



U suradnji sa



# Testing and examining

**NDT (Non Destructive Testing)** → endoscopes, digital microscopes, magnetic particle testing

**Material Testing** → hardness testing, mechanical testing - static load testing (tearing, bending, compressive and tensile loads)

**Elemental Analysis** → stationary and portable optical emission spectrometry devices

**Metrology** → stationary and portable devices for form and roughness measurement, robot arm for dimensional measurement, optical 3D sensor for automated form and roughness measurement in production, automatic tool measurement system

**Condition Based Maintenance** → efficiency and failures control of electric motors and generators, detection of failures

**Gas Detection** → Portable gas detector



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