



**SELUR METAL**

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## COMPANY

**SELUR METAL** is a global trading and engineering company established in 2008, owned by Sezai Birişçi, the inventor of patented **BOLS RING LOCKING** technology with over 40 years of experience in Iron&Steel industry, has been serving to Iron & Steel Industry mainly including supplies of materials, machineries and equipment through representation of well-known global and Turkish brands.

**SELUR METAL** invites you to contact for any products and/or services you may be interested related to iron & steel industry such as listed below:

- BOLS Ring Locking System
- Bearings
- Rolls
- Tungsten Carbide Rolls/Rings
- Forging
- Rolling Guides
- Bearing Blocks (Stand roll neck blocks)
- Couplings
- Graphite Electrodes
- Copper Mold Tubes
- Oxygen Lances
- CaFe, CaSi...etc. Wires for LF Treatment
- Ladle Filling Sand
- Fluxes (Mould powder, TD covering powder...etc.)
- Pass Design Solutions/Courses
- Consultancy Services for Rolling Mills
- Machinery Supplies (for rolling mills and meltshops)



## BOLS RING LOCKING SYSTEM

A patented roll ring locking system that has been created by the means of process facts and needs in rolling mills with respect to the problems observed on most common ring locking systems.



As mostly known, there are two main systems - mechanical and hydraulic - to lock rings on shafts to be used as rolling rolls all around the world (or hybrid systems allowing to utilize both systems together). All have advantages and disadvantages in comparison to each other based on their design limitations, briefly:

- **Mechanical Systems** works with a wedge for locking the rings on shafts, but as these systems needs to be assembled in shrink fit, whole shaft required to be heated, which creates loss of material properties of shafts effecting the life of usage (creating breakages on shafts). Besides, as the rolling loads are trying to be balanced with a wedge, this huge load usually causes damages on wedges due to the limitation in assembling different materials (shaft/wedge/TC ring) together, which are lasted with ring cracks or breakages.

On the other hand, to solve assembling the different materials; an innovation made by one of the worldwide known company and they've created a TC ring with different layers, which are metallurgical bounded to each other and mostly solved the problem; but this has created a new problem of being committed to single supplier with very high prices in comparison to ordinary ones.

- **Hydraulic Systems** are being designed with a ring type hydraulic cylinder to clutch the rings on shafts by squeezing from one side. In this respect, these hydraulic cylinders are the base of problems usually, due to several reasons:

- They have to be stayed pressurized on the shaft to leave the rings locked or to not let them loose. So, in one hand, O-rings are being necessary to be used for each hydraulic cylinder, which are creating weak points in dirty operational conditions and on each disassemble, they need to be renewed with an additional cost. On the other hand, for each shaft, a hydraulic cylinder is necessary, which is creating high investment costs. But, besides all, due to operational conditions, as it's necessary to work under water and grease, these hydraulic cylinders cannot be disassembled properly, which is creating to bear the renewing cost repeatedly.
- Most important of all, due to limited space on the shaft, these hydraulic cylinders are being designed very small, so they can't create the real required high forces to not let the TC rings to spin/rotate, which usually creates ring damages.

Thanks to our patented **BOLS RING LOCKING SYSTEM** all above mentioned disadvantages and weaknesses have been solved and further advantages become possible.

Our system is also based on hydraulic locking of rings on shaft,

but with below stipulated differences in comparison to any competing one:

- For each type/size of shaft you need to invest only one hydraulic cylinder and just for once!
- This hydraulic cylinder removed after assembling/disassembling, so:
  - It allows us to design the hydraulic cylinder, big enough to make the locking at correct hydraulic force, which enables to have zero risks of spinning/rotating of rings.
  - Assembling and disassembling will be extremely quicker than any other system, without any consumable cost.
- This system enables us to offer the ring locking mechanism to be used in high torques from 1<sup>st</sup> roughing stand to finishing stand with different kinds of rings such as TC (WC-Tungsten Carbide), HSS, pearlitic/acicular cast iron...etc., which is not possible in any other system to be used before the finishing stands (even usually used only for leader and finish passes).



Of course, as usual, using ring locking systems have general advantages based on selected ring qualities such as:

- Long pass lifetimes (up to 15 times in comparison to an ordinary cast iron roll) and as a result, reduction on roll consumption costs
- High utilization of mill due to reduced pass/roll changing times
- Based on above, decrease of fixed costs
- High surface quality on rolled product, more profitable products
- Reduced workload on Roll Turning and Stand Preparation Workshops

Currently, BOLS Ring Locking System is being used in 10 different well-known companies.

## SUPPLIES through REPRESENTATIONS

### • BEARINGS

Our manufacturing factory has been certified for ISO9001 Quality Management and ISO14001 Environmental Management Systems. With various advanced equipment, strong technical background, high-level procedures and complete testing methods, we are supplying the best quality with competitive prices in diameters range from 90 to 900mm.

- Roll Neck Bearings for Rolling Mill
- Single, Two and Four-Row Tapered Roller Bearings
- Spherical Roller Bearings
- Spherical Plain Bearings
- Single-Row Cross Roller Slewing Rings
- Four-Point Contact Ball Slewing Bearings
- Double-Row Ball Slewing Bearings
- Spherical Roller Thrust Bearings
- Single Direction Taper Thrust Bearings
- Cylindrical Roller Thrust Bearings
- Screw Down Bearings
- Deep Groove Ball Bearings
- Single, Double and Four Row Cylindrical Roller Bearings
- Backing Bearings / Sendzimir Bearings
- Angular Contact Ball Bearings
- Four Point Contact Ball Bearings



- **ROLLS**

We supply all kinds of rolls for steel industry:

- Nodular Pearlitic Cast Iron Rolls
- Nodular Acicular Cast Iron Rolls
- **Duplex High-Speed Steel Rolls (HSS ROLLS)**
- Adamite Rolls
- Flat Rolling Mill Rolls
  - Work Rolls
  - Back-up Rolls
  - Table Rolls
  - Pinch Roll Rolls
- Tube Rolling Mill Rolls
  - Piercing Rolls
  - Bar and Tube Straightening Rolls
  - Mandrel Bar & Mandrel Bar Tail Piece
- Profile Rolling Mill Rolls
- Roll Forming Mill Rolls
- Roll Bending Mill Rolls
- Lehr Glass Rollers for Float Glass Line
- HP-Nb Furnace Rolls for Annealing Furnace
- Hearth Rolls in Continuous Annealing Furnace
- Roll for CGL
- Alloy Indefinite Chill Rolls
- Fused Quartz Rollers/Ceramic Rollers





- **TUNGSTEN CARBIDE ROLLS/RINGS**

Cemented carbide rolls have good heat conductivity and they are featured by small hardness decrease under high temperature condition, thermal fatigue resistance, good wear resistance and high strength...etc., which are not possessed by other materials.



The rolls are primarily applied in rebar lines with high-productivity, high-speed wirerod lines, Kocks (3-rolls) mills, seamless pipe stretch reducing mills, 3-dimensional rolls for cold-rolled ribbed steel bars...etc.

- **FORGING**



Tailor made design for different field, such as forge shaft, rotor, ring forge, cylinder, pipe mould, wind spindle...etc.

Pls. ask for any material, dimension and geometry of shape to be produced as per your specifications.



- **ROLLING GUIDES**

Our Guides have been awarded the trust of the majority of steel producers for the following main reasons:



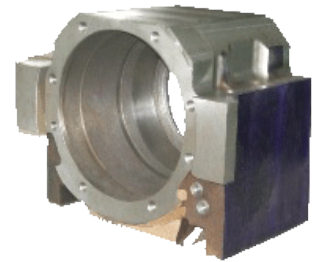
- Common components for different guide sizes and types of guides.
- Strong design.
- Resistant to aggressive operational condition.
- Unique design of roller holder allowing a spring action resulting in high stability of the roller guides.
- Single point adjustment and easy access to all setting points.
- Durable roller material for longer life of guiding rollers.
- Full assistance of qualified expertise in process, guide setting and maintenance.

- **BEARING BLOCKS (STAND ROLL NECK BLOCKS)**

Bearing blocks with excellent quality; ultrasonic tests on every piece; perfectly machined pieces as per drawings by first-class machining equipment.

A series of inspections are being applied such as chemical analysis, metallographic analysis, mechanical properties, Charpy impact test, ultrasonic test, magnetic particle test...etc.

All ingots are being produced through LF + VOD route; ESR raw material is available in case of requirement.



- **COUPLINGS**

We supply couplings such as universal joint shafts, drum type and composite drive shaft...etc.





- **GRAPHITE ELECTRODES**

Graphite electrodes for EAFs and LFs in between 300-800mm diameters and 1500-2700mm lengths with high temperature strength, low thermal expansion and excellent thermal and electrical conductivity:

- **RP** – Regular Power Electrode
- **HP** – High Power Electrode
- **UHP** – Ultra High-Power Electrode



- **COPPER MOULD**



**Beam Blank**  
Copper Mould Tubes

**Square and Rectangular**  
Copper Mould Tubes



**Round**  
Copper Mould Tubes



Based on your requirements, we supply Copper Moulds Tubes:

- To reach high casting speed
- To obtain better surface quality and
- To eliminate defect with various types

- **OXYGEN LANCES**

Oxygen lances and oxygen lance nozzles for various kinds of converters, electric furnace and electrode grips for slag notch, assembling & forging nozzles...



## OTHER PRODUCTS/SERVICES

- **PASS DESIGN SOLUTIONS**
- **TRAINING COURSES for PASS DESIGN (ADVANCE LEVEL)**
  
- **CONSULTANCY SERVICES**
  - **ROLLING MILL INVESTMENT**
  - **ROLLING MILL PROCESSES**
  
- **MACHINERY SUPPLIES**
  - REHEATING FURNACES
    - Turnkey Supply
    - Machinery Supply (i.e. kick-off, charging/discharging rollers...etc.)
    - Refractory Lining Solutions
  - ROLLING MILL MACHINERY
    - DESCALERS
    - PINCH ROLLS
    - ROLLING STANDS
    - GEARBOXES (GEARS)
    - SHEARS
    - COOLING BEDS
    - BUNDLING SYSTEMS/EQUIPMENT
  - MELTSHP MACHINERY
  - WATER PUMPS
  - MECHANICAL LABORATORY EQUIPMENT/DEVICES
    - Tensile Testing Machines
    - Bend/Rebend Devices
  
- **CONSUMABLES**
  - o CaFe, CaSi...etc. Wires for LF Treatment
  - o Ladle Filling Sand
  - o Fluxes (Mould powder, TD covering powder...etc.)



## REFERENCES

- İDÇ – İZMİR DEMİR ÇELİK SAN. A.Ş. (Turkey)
- KAPTAN DEMİR ÇELİK END. ve TİC. A.Ş. (Turkey)
- HABAŞ SINAİ ve TIBBİ GAZLAR İSTİHSAL END. A.Ş. (Turkey)
- BAŞTUĞ METALURJİ SAN. A.Ş. (Turkey)
- KOCAER HADDECİLİK SAN. ve TİC. A.Ş. (Turkey)
- YOLBULAN DEMİR SAN. ve TİC. A.Ş. (Turkey)
- MARMACOR Inc. (Turkey)
- TOSYALI ALGERIE FER ET ACIER (Algeria)
- WATANI IRON&STEEL Co. (Kingdom of Saudi Arabia)
- UNITED STEEL INDUSTRIAL Co. (Kuwait)
- SOHAR STEEL (Oman)







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