SPECIAL STEELS
FOR THE WORLD’S TOP PERFORMERS
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INNOVATION IS

"Our success lies in innovation not imitation."

The Böhler success story has its beginnings in a metals trading house in Vienna in the 1870’s. The Böhler brothers Albert und Friederik were Viennese traders selling steel produced in Kapfenberg. Their sales, organisational and logistical skills were such that in 1894 they were able to buy the Kapfenberg crucible steel works. They modernized the plant, expanded the product range and increased production. The name “Böhler” quickly became synonymous with the term “The Best in Special Steels”.

Innovatively, through a Sales and Customer Service Network unrivalled at that time the Böhler tradition of being “close” to the customer was founded. Service is now embedded in our culture.

Since then our continued success has been based on the interaction of a good many forces. Technological advances, the ideas, know-how, experience and dedication of our employees, in addition to numerous joint projects with our customers have combined to result in the mutual respect and loyalty that we all now enjoy and benefit from. Böhler is very proud to be recognised in the world market as one of the leading manufacturers of tool steels, high speed steels, special materials and powder metallurgy products.

Furthermore, Böhler is now placed in a strong strategic position to realise the dreams and aspirations of all its stakeholders in the future. We know that our future lies in our ability to develop high-quality, value for money materials, tailored to our customers’ needs and delivered “just in time”.

Only by exceeding our customers’ expectations will we be able to exceed our own.
A BÖHLER TRADITION

Research and development play a strategic role at BÖHLER. We know that precise process and material research is the basis for the highest quality products.

In order to keep up with the constant evolutionary demand for improved materials BÖHLER maintains an intensive cooperation between universities and research centres and supports the exchange of information through the material chain to the end-user. The knowledge of those engaged in fundamental research gives superior value to our customers.

The most modern high performance high speed steels and tool steels produced by means of powder metallurgy, aluminum-alloyed tool steel, nitrogen alloyed pressure electro-slag remelted (PESR) and vacuum remelted (VMR) qualities in tool steel and special products form the metallurgical make up, the core of our product range.

In addition to producing high quality special steels the following matters have also become manifest for us treating resources with care and being sensitive to the needs of the environment. Because of their immense importance, these matters have become significant parts of BÖHLER’S strategy.

Proudly, we can present certificates for our renowned and accredited testing laboratories.
"Our ‘hot’ solutions"

BÖHLER has been at the forefront of steel manufacturing for more than 100 years. Presently, Böhler’s melting metallurgy ideas are acknowledged to be the domain on which the experts in the industry are orientated.

BÖHLER aims to maintain these high standards through ongoing research and development and by means of recent investments in the most modern production units. Melting and remelting in vacuum (VIM 1), VAR 2), literally "filling a vacuum to meet your needs" and producing materials of the highest purity for example for the aircraft industry.

Operating with the most modern Pressure ESR 3 units together with the traditional crucible melting these make up the “hot” core of BÖHLER’S special steel plant. The result over 200 brands of high speed steels, tool steels, and special products for extremely demanding applications.

All of the production steps at Böhler are certified ISO 9001.

1) Vacuum Induction Melting
2) Vacuum Arc Remelting
3) Electro-Slag Remelting
FORMING

"The shape of things to come."

ROLLING
BÖHLER produces bar steel (round and flat products) and wire of the highest precision and quality, using the most modern rolling mills in the world. Consistency, production flexibility and working as closely as possible with our customers allows us to give superior value throughout the process.

FORGING
On the 5200 t hammer press or on the long product forging machine, materials are shaped to meet exact customer demands and all "Just In Time".

Shapes available
BAR STEEL rolled
- round: 12.5 – 150 mm
- square: 15 – 150 mm
- flat: width 15 – 60 mm thickness 5 – 41 mm
  60 – 200 mm 5 – 86 mm
  100 – 300 mm 15 – 80 mm
ROLLED WIRE:
- rolled: dia. 5.0 – 13.5 mm
- drawn: dia. 1.0 – 12.0 mm
- precision shaped: round: 1 – 28 mm
  flat: 0.5 – 40 mm²
BAR STEEL forged
- round, square: 90 – 1200 mm
- flat: width: 100 thickness: 50 mm minimum
  1600 1000 mm maximum
  Ratio width / thickness maximum 10 : 1
BAR STEEL pre-machined
- IBO ECOMAX 12.5 – 315 mm
BRIGHT STEEL
- BRIGHT STEEL ground and polished
- ECOBLANK peeled and polished
- ECOFINISH band ground
Surface finish: black (abrasive blasted); pickled; machined (turned, peeled, polished h12 – h9); ground - polished
MACHINING

"As you like it!"

A wide variety of possibilities when it comes to the machining and finishing of long products allows us to dedicate ourselves to customer requirements individually and rapidly in the BÖHLER service tradition.

Rolled bar steel is put through a heat treatment and machined, finished and tested according to customer specifications.

BÖHLER endeavours to fulfil every customer request regarding surface treatment: bar steel, round-peeled, peeled and polished, continuously ground or turned; machined at both ends upon request; bar steel, flat milled and cut to large-scale flat dimensions and ingots. In the "BÖHLER" tolerance range you require.

For example:
- IBO ECOMAX bar steel, peeled
- ECOBLANK bright steel, peeled and polished
- ECOFINISH bright steel, band ground
- BRIGHT STEEL ground and polished
"A magical process producing stunning results."

Constantly changing applications for tools frequently demands new materials. The answer; high performance materials produced using powder metallurgy technology giving a homogenous carbide structure for outstanding applicational properties. Our metallurgical expertise forms the basis to advise our customers and to implement joint ideas for material properties, therefore giving them competitive advantages within their markets. In order to be able to meet increasing high quality standards, BÖHLER has invested in a state-of-the-art Powder Metallurgy-Production plant.

Our answers for you
BÖHLER MICROCLEAN

Carbide distribution in conventionally produced material
Carbide distribution in powder metallurgically produced material
"To handle the cut and thrust of the 21st C."

BÖHLER high speed steels are used for metal cutting tools such as drills, milling cutters, broaching tools and cold shaping tools. The properties required are wear resistance, elevated temperature hardness, and strength to prevent breakage on the cutting edge. These properties guarantee long tool life, lower maintenance costs and consistent finishing processes.

High speed steels which are produced using a powder metallurgical process (having the most advanced features of performance e.g. for tools for high speed metal cutting) are the core of this demanding segments product range.

**BÖHLER ISO RAPID®**
(ESR Quality) - our classic high speed steel produced using the highest quality of melting metallurgy available.

**BÖHLER MICROCLEAN®**
(Powder metallurgy steel).
COLD WORK TOOL STEEL

"For the mints, a breath of fresh air."

Due to its characteristic properties such as a high degree of hardness, strength, resistance to pressure and wear resistance, BÖHLER cold work tool steel are put to use as cutting and punching tools, as die plates (matrixes) and knives, as stamping and drawing tools, as hobs, thread rollers, adjustable screw dies and much more.

This material is available in stock, has a high economic efficiency and long-lasting tool life which are the criteria for choosing any material. BÖHLER is constantly optimizing these criteria to satisfy our customers’ requirements.

A lot of “money”, the Euro, for example is being made using coining dies made of BÖHLER cold work tool steel. But it’s not just the Euro being minted, internationally renowned mints are quite selective thus, most frequently opt for BÖHLER brands.

BÖHLER specialties for cold working:

BÖHLER ISODUR®
(ESR) electro slag remelting
BÖHLER MICROCLEAN®
(Powder metallurgy steel)
"The ultimate test of hardness for tool steel"
For pressure casting and extruding

The special properties of BÖHLER hot work tool steels are necessary for use at high temperatures. The purity of the steel giving extraordinary hardness, toughness and corrosion resistance is of the utmost importance for long tool life. The typical areas of application for hot work tool steels are pressure casting, extruding, drop forging, pipe and tube production and in the technical high performance manufacturing of specialized glass products.

BÖHLER specialties for hot working:
- **BÖHLER ISODISC**
- **BÖHLER ISOBLOC**
- ESR quality
- **BÖHLER VMR**
  Vacuum melted, remelted quality
"A series of suc(k)cess."

Steel with high wear resistance, high buffability, high erosion potential and high corrosion resistance at the seam is required for the production of plastic items. Depending on the user application, case hardened steel, precipitation hardened steel, corrosion resistant steel, nitride steel, and maraging steel or a high performance material made using powder metallurgical (PM) technology can be supplied.

BÖHLER delivers a series of tried and tested tool steels tailored to accommodate the wishes of the customers. Cost effective and easy to machine our steels have proven their value over years within the plastics industry.

For example:

- **BÖHLER ISOPLAST**
  - ESR quality

- **BÖHLER MICROCLEAN**
  - Powder metallurgy steel

- **BÖHLER VMR**
  - Vacuum melted, remelted quality
“Power materials”

Meeting today’s energy needs while at the same time being sensitive to the needs of the environment is one of the challenges we face. Energy-efficient and cost effective turbines, gas, steam or hydro-powered lay the foundation for environmentally friendly and economic energy forms.

In turbines the materials used need to withstand the most extreme thermal and mechanical strain. The ends of the turbine blades reach the speed of sound and because of the calorific intensity, are red hot at the tips. The test over time doesn’t get any harder than this.

For such extreme conditions, BÖHLER has developed high temperature alloys, such as nickel and cobalt based alloys, which guarantee optimum material properties. The most renowned international builders of turbines feature amongst our customers.
One small step for man
one giant leap for steel technology."

As far as safety is concerned in the aeronautics and space industries everyone is relentless in their pursuit of excellence. Each and every component must be officially certified. We melt and shape our materials with that same perfectionism. BOHLER special steel, nickel and cobalt based alloys used in vital parts for aircraft airframes and turbine units rigorously satisfy all the quality and reliability criteria demanded by the most notable aircraft manufacturers worldwide.
The automotive industry has left its mark on the economy as has no other industry in history. Only the best survive in terms of competition, product quality, reliability, innovation and service.

We at BÖHLER have also chosen to take up the challenge to meet the highest criteria. We know, that the quality of our steel bears a direct relationship to the versatility of the end-product. Consequently, we count the most prominent automobile and accessory manufacturers among our regular and satisfied customers.
"For the oil and chemical industries in aggressive environments."

The processing of drinking-water from sea-water, the manufacture of plastics and the exploration and extraction of fossil fuels from the bottom of our oceans have become common place. Only when disruption of these “services” occurs do we notice the extent of our reliance on them. That is why it is in everyone’s best interest that optimum materials which can withstand highly corrosive elements and extreme mechanical strain be made available to the oil and chemical industries. As a distinguished partner for such materials, BÖHLER is constantly developing steels which are highly corrosion resistant e. g. Super duplex materials and nickel based alloys.
"Shaping à la carte."

The heart of the open-die forging plant is a powerful, recently modernized, 5200 ton Forging Press with two integrated manipulating attachments. It is used for the production of open-die forgings, as well as that of round and flat tool steel, special grades and nickel based alloys. In this manner, piece weights from 3 to 30 tons can be produced “to order”. This facility has projected BÖHLER to become the reliable partner worldwide in the sectors of energy technology, metal and plastics extrusion, in the oil and aeronautics industries.

Long forging machine
Another significant part of this plant is the Long Forging Machine. With its high performance and precision dimensional tolerance, it is the ideal forging aggregate for the production of bar steel and open die forgings in the dimensional range of 100 – 450 mm Ø and a maximum piece weight of 4500 kg. In addition to tool steel and high speed steel, primarily stainless special grades and nickel based alloys are produced.

Forms of delivery
Raw dimensions of up to 45 tons, pre-machined, ready to be installed. Machined drop forgings. Also possible is a BÖHLER service of machining rolled, forged and cast parts provided by the customers.
“Providing ‘solid’ solutions”

Being available for our customers is just as important as increasing our technical competence. At BÖHLER we enjoy an exceptional type of partnership with our customers. Personal contact and regular exchanges of information creates an atmosphere of continuity in our business relationships. Customer seminars which are conducted at our headquarters in Kapfenberg play an important role in these relationships and serve not only to share our know-how but to encourage a lively dialogue between ourselves and the participants. All this is reinforced by our modern communication technology. Via the internet, by e-mail or through video conferences – any points can be addressed quickly and efficiently.

“We have been using BÖHLER materials for the production of our tools for more than 15 years. Our business success has confirmed our decision to use them.”

Hans Schnutt, Sales tool manufacturing ZUMTOBEL
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“Our interests are in the future because we will be spending a lot of time there.“

For further information about BÖHLER, our extensive product range and for a more detailed overview of our brands with their most significant properties; BÖHLER high speed steel, cold work tool steel, hot work tool steel, plastic mould tool steel and special products, they can be found on the internet; simply

www.bohler-edelstahl.at
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OUR SUPERIOR PRODUCTS ARE OUR BEST ADVERTS.
Metallurgy
is our profession
and basis of our business.

A viable, flexible
Corporate culture
and
Customer satisfaction
obtained by ”just in time“ deliveries,
best quality and service

are the key-factors of our Success.