



Presidency of the Islamic  
Republic of Iran  
Vice Presidency for  
Science and Technology



Seventh Volume

# MINING INDUSTRY

*Knowledge-Based Products and Equipment*

# مجلس المدینة العلمیة

SEVENTH VOLUME

Knowledge-Based Products and Equipment  
**Mining Industry**





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## Knowledge-Based Products and Equipment Seventh Volume: Mining Industry

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# Preface

One of the key factors in a nation's industrialization and economic complexity is technology. Complex economies can connect vast networks of individuals with relevant information to produce a variety of knowledge-based goods. Indeed, the types of goods or products that are ultimately supplied to international markets are taken into account when determining the complexity of an economy.

A knowledge-based economy is one in which the application of knowledge and information plays a significant role in shaping production and distribution, and where investments in knowledge-based businesses have drawn particular attention. Along with enhancing nations' competitiveness, the transformation of economies into knowledge-based economies has the potential to have a significant impact on international trade.

7000 knowledge-based businesses in Iran provide knowledge-based goods that are the result of the expertise and experience of professionals and university graduates. These businesses, which occasionally resemble enormous technology factories, sold more than 10\$ billion worth of goods last year and exported 1\$ billion or so to various nations. The Presidential Deputy for Science and Technology is recognized as the most significant authority for direction, leadership, and development of the technology area in Iran. It serves as a support organization for startups and knowledge-based businesses by finding and selecting these enterprises. This book, along with 19 other books, is a carefully curated selection of goods with a track record or export potential that was put together using data provided by chosen businesses for presentation to foreign clients, business people, and government and academic officials interested in using these goods. To review the company's manufacturing and distribution records, access to technical knowledge and specialized human resources, production and export capacities, and after-sales services, two specialized and commercial committees were formed separately, and each committee reviewed the products in detail with the participation of technical and commercial experts.

In this procedure, specialized committees were held with the collaboration of the experts of the center of companies and knowledge-based institutions of the Deputy for Science and Technology, headed by *Dr Reza Asadi Fard* and Coordinated by *Engineer Mojtaba Houshmandzadeh*. In addition, *Engineer Mehdi Ghaleh Noei* and *Engineer Ruhollah Estiri* presided over commercial committee meetings, which also included businessmen from the private sector, and I want to express my gratitude to these two groups for their work and assistance.

I also want to appreciate the project manager, *Zahra Afzali*, who has taken on a lot of responsibility and given close attention to the project's design and development from the beginning with innovative ideas.

I also think it's important to recognize and express my gratitude to my other colleagues for their efforts in gathering, reviewing, contacting firms, selecting, and rewriting texts, and finally editing and creating this book:

Project monitoring and editing team: *Mohammad Torabi, Fereshte Elahi*

Evaluation team: *Maryam Mehrabi*

Editorial team: *Fatemeh Mohammadi Siani, Mohammad Matin Shirzad*

Design team: *Mohammad Hossein Pourdabbaq, Masoud Khalili*

I want to underline that the aforementioned goods may be offered in a variety of ways in the country of destination, including export of end products, export of semi-finished and assembled products at the destination, joint production in the destination country and other economic cooperation. In each of the aforementioned scenarios, the Export Development and Technology Exchange Fund is prepared to co-invest in the target countries and guarantee the purchases as a financial sponsor of knowledge-based export enterprises.

The book's conclusion also includes a list of export management firms authorized by the Deputy for Science and Technology for communication, Iran Houses of Innovation & Technology (iHiTs), located in several countries, and commercialization and technology transfer agencies. Finally, I am hoping that this book will be beneficial to the readers and provide them with a thorough grasp of Iranian technological advancements.

Regards,  
**Mehrdad Amani Aghdam**  
CEO of Export Development and Technology Transfer Fund

Mining Industry



Knowledge-based products and equipment

# Contents

CHAPTER 0

## Introduction

The Origin of Industry and Export in The Eyes of Iranians .....	7
Industry and Export in Today's Iran .....	8
Where the New Technologies Stand in Iran's Industry .....	9
The Status of Knowledge-Based Products in Mining Industry .....	10
The Division of Knowledge-Based Products in Mining Industry .....	12

CHAPTER 1

## Mineral Exploration

Borehole Deviation Inclinometer .....	22
Core Orientation Device .....	24
Coring Drilling Machine .....	26
Mass and Energy Monitoring Software in Mining Industries .....	28
SPSEISw Seismometer .....	30
Laser Scanner of the Environment and Calculation of Volume of Objects .....	32
Digital Field Geology Device .....	34

## Mineral Extraction

Mineral Stacker-Reclaimer with a Capacity of 2000 tons per hour .....	40
Car Dumper .....	42
All-Hydraulic Exploratory Drilling Machine and Drilling Services .....	44
Trencher Drilling Machine .....	46
Drum Cutter Drilling Machine.....	48
Load Cells with Different Capacity and Temperature Tolerance .....	50
90-Blade Stone Cutting Saw With the Ability to Cut Marble Stone (Atlas Gang Saw).....	52
CNC Diamond Wire Stone Cutting Machine .....	54
Stone Multi-Wire Cutting Machine.....	56

## Mineral Processing

45-Inch Superior Gyratory Stone Crusher CS-440 .....	62
45-Inch Hydrocone Cone Crusher CH440.....	64
Jaw Crusher Model 250-150120 .....	66
HPGR Stone Crusher .....	68
Semi-Autogenous Laboratory Mill (SAG Mill) .....	70
Raymond Mill.....	72
Modular Ball Mill .....	74
Ball Mill.....	76
Complete Set of Roller Separator Mill (Raymond Mill).....	78
NJ Super Pulverizer Mill.....	80
Ball Mill.....	82
Jet Mill.....	84
Wear-Resistant non API Centrifugal Pumps .....	86
Slurry Pump.....	88
Wet Magnetic Separator Drum.....	90
Dry Magnetic Separator Drum (Housing) .....	92
Centrifugal Fine-Crusher of Silica Minerals, Feldspar, etc.....	94
Industrial Filter Press.....	96

Industrial Filter Press.....	98
Cyclofilter.....	100
Drum Magnet Hybrid .....	102
Electric Magnet Drum .....	104
Wet Magnet Drum .....	106
Papko Roll.....	108
Super Micronized Classifier.....	110
Sorting Machine for Stoneblocks and Slabs (Sort Plus) .....	112
Industrial and Mineral Pre-Processing Machine .....	114
Engineering Design and Construction of Iron Concentrate Desulfurization Pilot Line .....	116
Water Cooling Copper Panel for Electric Arc Furnaces .....	118
Blowing Lance of the Electric Arc Furnace .....	120
Water Cooled Panels in EAFs.....	122
Oxygen Blowing Lance (Injection Lance) .....	124
Technical Knowledge Development and Engineering Design Services .....	126
Raw Pellet Strength Testing Machine (GCS Pellets).....	128
Baked Pellet Compression Strength Testing Machine.....	130
Pelletizing Pilot Plant.....	132
Designing and Providing Technical Engineering Service of Direct Reduction Plant.....	134
Designing and Providing Technical Engineering Services of Steel Plant .....	136
Blast Furnace Copper Tuyeres .....	138
Electrode Holder, Electrode Clamp .....	140
Copper Stave Coolers .....	142
Cladding.....	144
Induction Furnace .....	146
Induction Furnace .....	148
Induction Melting Furnace Capacity from 50 kg to 10 tons .....	150
Induction Hardening Furnace.....	152
Copper Continuous Casting Machine with VF Furnace .....	154
Semi-Continuous Steel Casting Machine .....	156
Blain Test Machine .....	158
Linder Test Machine .....	160
Pycnometer Test Device .....	162
Epoxy Thinner Based on Alkyl Phenol Styrene (Raika-DE).....	164
Di-Methyl Glyoxime .....	166

# Introduction

## **The Origin of Industry and Export in The Eyes of Iranians**

The ancient land of Iran has long been the source of knowledge and industry, and Iranians have played a significant role in the development, evolution and promotion of science and human awareness. Most historians of the world believe that most of the advances in science and human civilization are owed to Iranian civilization and the most brilliant works of art and the highest industrial levels has come from the minds of Iranians. Metalworking industries, agricultural industry, pharmacy and alchemy with themes including tile glazing, carpet dyeing, fabrics and glass were some of the industries that were considered by ancient Iranians. In parallel with the special attention to the development of industry, the history of mutual trade relations between Iranians and other civilizations in East and Central Asia, Europe and Africa has a long history, and Iranians have played a significant role in the expansion of global altruism since long ago by being on the route of the Silk Road and maritime trade.

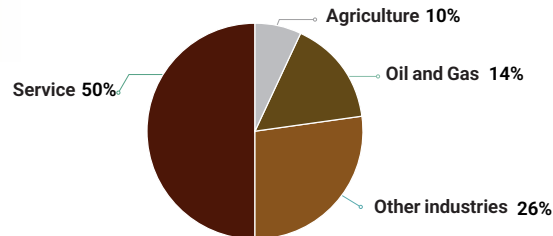
We Iranians today, like our ancestors, consider industry, art and production in our ancient land to be a transformative and constructive place, and we consider the development of technological interactions and the trade of knowledge-based industrial products with other countries as an opportunity for friendship and the expansion of ties.



### Industry and Export in Today's Iran

Industrial development has a very important place in the plans and policies of the Islamic Republic of Iran due to the creation of value added, job creation, increase in exports and reduction in imports, and the transition from an economy dependent on oil and mineral raw materials to an industrial and manufacturing economy, especially an economy dependent on new technologies, is a grand plan that has been adopted for this purpose. Currently, 50% of Iran's gross domestic product is allocated to services and another 50% to industry and manufacturing, which includes 10% agriculture and food industry, 14% oil and gas industry, and 26% other manufacturing industries.

The Share of Various Activities in Iran's GDP

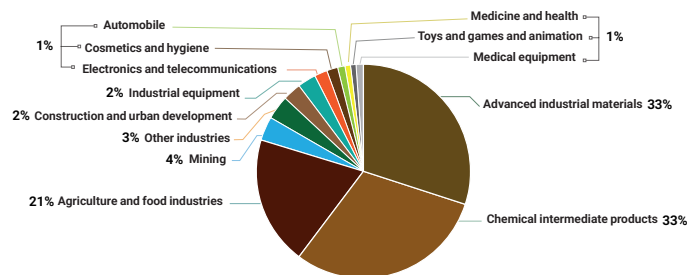


In the meantime, various industries such as pharmaceuticals, medical equipment, construction, communications and telecommunications, energy, mining, chemicals, etc. have a special share of Iran's gross domestic product, and their production, in addition to covering a considerable amount of country's domestic needs, are exported to various destinations.

According to World Customs Organization data, in 2021, the Islamic Republic of Iran had exports equal to 75 billion dollars, almost half of which is allocated to non-oil industries and processed industrial products. Advanced industrial materials, chemical intermediate products, agricultural products and food industry are all among the biggest exporting industries with more exports.

### Iran's Exports in 2021

Ref: Trade Statistics for International Business Development <sup>1</sup>



<sup>1</sup> www.trademap.org

Regarding the main export destinations of Iran, it should be noted that China, India, Indonesia, Russia, Uzbekistan, Ghana, Germany and South Africa, as well as among the regional neighbours, Iraq, Turkey, UAE, Afghanistan, Pakistan, Oman, Turkmenistan, and Azerbaijan account for the largest dollar value of imports from Iran.

### Where the New Technologies Stand in Iran's Industry

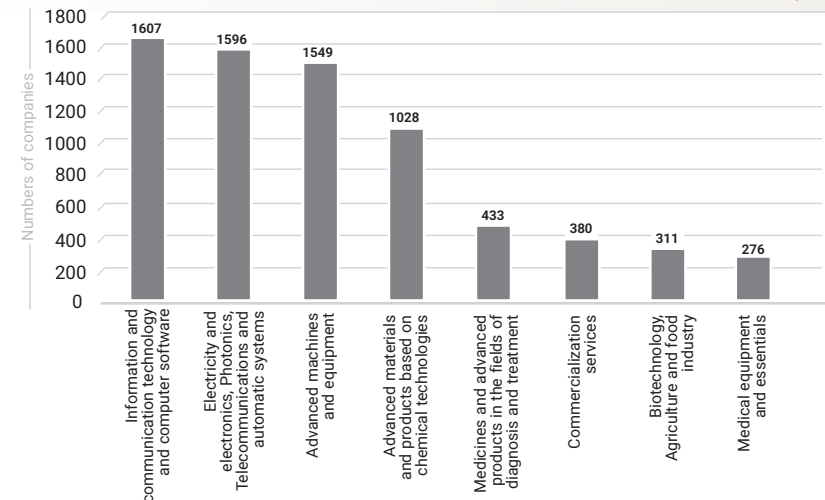
Paying attention to the development of new technologies, commercialization and its influence on manufacturing industries has caused the Islamic Republic of Iran to experience a growing progress in this field in the last decade; An issue that has taken place in Iran in the form of the development of knowledge-based enterprises. Based on this, the meaning behind knowledge-based enterprise is as follows:

A private company that produces products or provides services that have the following three features:

1. The product or service provided by the company has a high or medium to high technology level and its technical knowledge has a significant technical complexity (technology level condition).
2. The product or service design in the company is based on internal research and development or technology transfer (Research and development-based design condition).
3. The company is able to produce and provide the mentioned goods or services to the market (production condition).

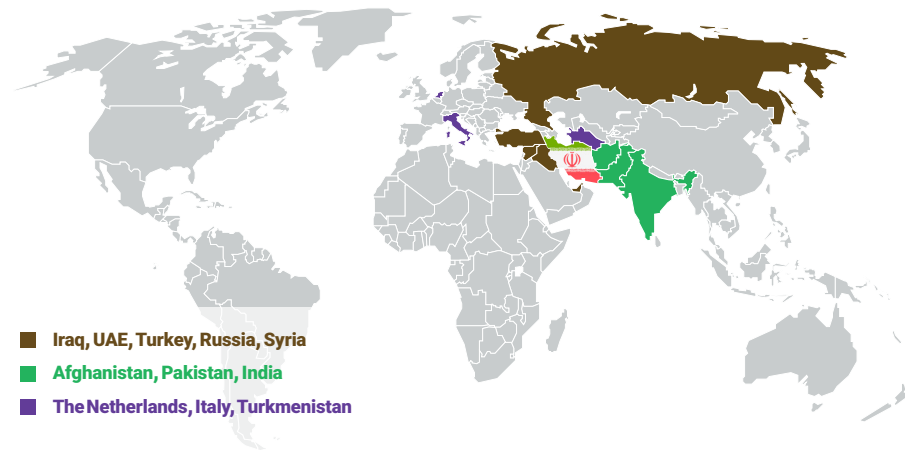
Currently, more than 7 thousand knowledge-based enterprises in Iran are producing products and providing services in the field of various technologies. These companies produce more than 15,000 products or services in total, and their direct employees, which generally include people with a high level of education, are around 250,000 people.

The Number of Knowledge-Based Companies - Technology Fields



The export of Iran's knowledge-based enterprises has been growing in the last 5 years, and these companies currently account for about %2 of Iran's non-oil exports.

**The Largest Export Destinations of Iranian Knowledge-Based Enterprises in the Last 5 Years**



**The Status of Knowledge-Based Products in Mining Industry**

With 68 types of minerals, 37 billion tons of proven reserves and more than 57 billion tons of potential reserves worth 770 billion dollars, the Islamic Republic of Iran is among the fifteen largest countries rich in minerals. The most important mines of Iran include coal, sand and gravel, salt and metal minerals such as iron, copper and zinc. What has attracted the attention of policymakers and Iranian industrialists in the last decade regarding mining is the reduction of sale of raw and unprocessed minerals and materials and the creation of more added value in minerals through their processing. According to Central Bank reports, the extraction of minerals has a share of %1.3 in Iran's GDP, and by adding the share of other industries related to mining, this figure will increase to %4.

The mining industry is also of great importance in Iran's exports. In recent years, about 1250 million dollars, which accounts for %2 of Iran's total exports, has been allocated to this industry.

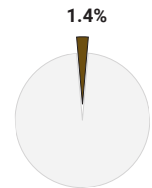
Due to the age, breadth and variety of mines in Iran and the breadth of related industries, as well as the special effort put into processing of extracted minerals and the reduction of unprocessed sales, the foundations for the growth of industrial knowledge-based technologies and products have been provided in it. This thesis can be understood

considering the activity of more than 110 Iranian knowledge enterprises and the supply of more than 200 technological products by them.

In the last few years, due to the development of new technologies in Iran and the resulting revolution in traditional industries such as mining, the activity and production of knowledge enterprises active in the mining industry have also been accompanied by this current, and the allocation of about %2 of Iran's knowledge-based production and employment to this industry proves this fact.

Finally, regarding the export of knowledge-based products of this industry, it needs to be mentioned that a total of 6.5 million dollars worth of products produced by knowledge-based companies active in the mining industry have been exported outside Iran.

**The Percentage of Mining Industry Companies from All the Knowledge-Based Enterprises**

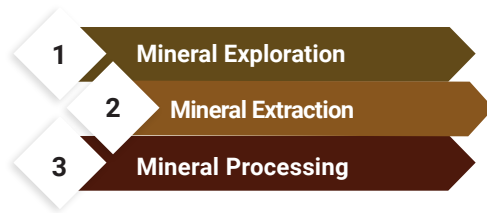


**The Main Export Destinations of Iranian Knowledge-Based Enterprises in the Fields of Mining Industry**



## The Division of Knowledge-Based Products in Mining Industry

As previously mentioned, the age, breadth and variety of mines in Iran and the breadth of dependent industries, as well as the special effort put into processing of extracted minerals and the reduction of unprocessed sales, the foundations for the growth of industrial knowledge-based technologies and products have been provided in it. In this book, products have been collected that can be divided into the following categories:



The following describes each category and their subcategories in order to give a general understanding of these areas.

### 1 Mineral Exploration

For the discovery and detection of minerals in general, four main stages have been stated, which include detection (choosing the appropriate areas to carry out the next steps from a large area), prospecting (conducting preliminary exploration operations in the selected areas in order to prioritize them), general exploration (expanding the area of exploration into more potential areas that have priority) and detailed exploration (carrying out extensive exploration operations in technically and economically justified areas). In this category, the technological equipment of knowledge enterprises that are used in mineral detection is discussed. These capabilities can be divided into the following subcategories:

- **First Section | Geophysics Study Tools:**

In geophysics, with the help of new technologies, physical characteristics of the Earth such as magnetic field, electrical resistance, mechanical properties, etc. are examined. In this subcategory, the tools used in geophysics as well as related software are introduced, which can be used to identify the characteristics of the underlying layers from the surface of the earth and obtain a proper image of the subsurface space. In this operation, well logging and drilling tools are used. Normally, the set of well logging equipment consists of a sound and a chamber in which the electronic equipment related to the sounds is placed, and it is used to check the physical parameters in well logging operations.

*Start chapter at page 22 »*

### 2 Mineral Extraction

Generally, after exploration, drilling and mining takes place, which leads to the extraction of needed minerals. Mining methods can be classified in different ways. Generally, the main mining techniques and methods are placed in two groups: surface mining (open pit) and subsurface mining (underground). In the surface mining method, in order to obtain mineral reserves, the surface vegetation of the area and mud, as well as the bedrock layers are removed using mining machines and equipment. In underground mining, machinery and equipment are used to dig tunnels to reach the depths of ground and ultimately

to extract ore, and transportation equipment is used to transport minerals and move waste stones. In this category, the capabilities of knowledge-based companies in the production of this equipment will be explained:

- **First Section | Transportation Equipment:**

Transportation of minerals in mines, which must be accompanied by continuous storage and retrieval, requires transportation equipment with capabilities such as management, control and monitoring of mining operations, technical control of equipment and machinery, and optimization of mine transportation operations.

- **Second Section | Drilling Equipment:**

Among mining equipment, equipment that has the ability to handle a high volume of work in special conditions such as high temperature and pressure are introduced in this subcategory. Drilling equipment is not limited to mining processes and may be used in exploration processes as well.

- **Third Section | Instrumentation Equipment:**

Instrumentation refers to all equipment that measure physical quantities. The measured quantity can be solid, liquid or gas. In fact, instrumentation forms the infrastructure of a control and automation system and include tools such as controllers, indicators, transmitters, recorders, etc., which have the task of measuring, transmitting, displaying, recording and controlling important physical parameters such as temperature and pressure, flow, liquid level, etc., in industrial processes in a precise manner.

Instrumentation equipment can be classified in two ways: one in terms of the type of function of the instrument; For example, instruments that have the task of controlling temperature, pressure, humidity, or level are known as controllers, and similarly, tools for displaying these values are known as indicators or displays, and tools for transmitting values in the form of standard signals are called transmitters.

Instrumentation can also be classified in terms of the parameter that this instrument should perform an operation on. For example, parts of temperature-related instruments such as temperature controller, temperature transmitter and thermometer or temperature display, pressure measurement and accurate control tools, flowmeter or fluid flow measurement and transfer of flow values or flow control, level measurement tools or measuring the level of materials inside tanks and their precise control and speed measurement tools, humidity measurement instruments, etc.

- **Fourth Section | Cutting Equipment:**

Today, wire cutters are used for the cutting and separation of blocks as well as different samples of rock that are extracted from mines for different purposes. Stone slab or stone block refers to stones with large dimensions that are extracted directly from mines and after being cut by a wire cutting machine, they are transported to stone cutting factories. The material of these stones is generally marble, travertine or granite for construction applications, etc.

The main mechanism of the wire cutting machine is such that a wire that has a higher degree of hardness than the stone in question is used to cut and separate and even shape the stone. In this method, abrasive materials are used to perform the cutting process. According to the type of stone, the type of operation and desired dimensions, the type of machine, cutting angle, cutting speed, abrasive materials, etc. will also be different. The wire cutter can be used in two stages of mining operations. In the first stage, this machine is used to cut the stone and extract it from the mine, and in the second stage, to divide the stone into smaller, portable pieces in the shape of a rectangular cube. This process is called stone dimensioning. Each dimension stone usually weighs more than ten tons.

*Start chapter at page 40 »*

## 3

## Mineral Processing

Processing of minerals includes all the operations that are performed on the extracted minerals and its purpose is to increase the concentration and purification of the desired materials. Mineral processing includes crushing (quarrying, crushing and grinding), beneficiation (separation), dewatering (refining, sedimentation, drying) and analysis (chemical analysis, mineralogical analysis, dimensional analysis). During this operation, various kinds of stone crushers and mills, classification and screening equipment, various types of magnetic separation equipment, all kinds of press and tape filters, etc. are used. Knowledge-based equipment produced by Iranian companies in this category can be divided into the following subcategories:

- **First Section | Crushing Equipment:**

Crushing is a process during which mineral materials are transformed into a product with desired dimensions in different stages, including stone crushing and grinding, which helps its transportation to the next stages become easier and also

achieve degree of freedom, which is the most important goal of crushing. Crushing equipment can be classified from different aspects such as input load size, product size, how to apply force and failure mechanism, crushing environment, application and so on.

- **Second Section | Separation and Concentration Equipment:**

This subcategory includes machines that are designed to sort raw materials by filtering usable materials from waste materials and is the most effective solution to separate materials to obtain a final product that can be extracted. Granulation including screening, hydrocyclone, classifier and physical separation methods such as gravity, magnetic and electrostatic are all included in this subcategory.

- **Third Section | Extraction Equipment:**

During the processing of many minerals, extraction is an important part of the overall process because it reduces waste and provides an efficient raw material to be supplied to the industrial consumption market. Knowledge-based products, in which electric arc and induction melting are generally used, are useful in extracting minerals such as iron ore. In general, equipment related to flotation methods, hydrometallurgy and pyrometallurgy are in this category.

*Start chapter at page 62* »

# Mining Industry

## First Chapter Mineral Exploration

- Geophysics Study Tools



## Second Chapter Mineral Extraction

- Transportation Equipment
- Drilling Equipment
- Instrumentation Equipment
- Cutting Equipment



## Third Chapter Mineral Processing

- Crushing Equipment
- Pumps
- Separation and Concentration Equipment
- Extraction Equipment
- Furnaces
- Other Processing Equipment
- Advanced Chemicals for Special Applications



First Chapter

# Mineral Exploration



# 1<sup>st</sup> QUARTER

# 1<sup>st</sup> CHAPTER

FIRST  
CHAPTER

Second Chapter

Third Chapter

## Mineral Exploration

- Borehole Deviation Inclinometer | 22
- Core Orientation Device | 24
- Coring Drilling Machine | 26
- Mass and Energy Monitoring Software in Mining Industries | 28
- SPSEISw Seismometer | 30
- Laser Scanner of the Environment and Calculation of Volume of Objects | 32
- Digital Field Geology Device | 34

Sections:

Geophysics Study Tools ○





**Application:**

- \* Measuring the deviation of the borehole (well) in exploratory excavation of mines, dam construction and geotechnical studies.
- \* Measurement of deviation of oil wells

➤ **Borehole Deviation Inclinometer**

◆ Samin Geotechnical & Mining Tools Co.

[www.samininstruments.com](http://www.samininstruments.com)



**Product Introduction:**

Borehole deviation meter is designed and built for measuring and monitoring deformation in rocky and soil slopes. These deviation meters move in the borehole and provide the data required for monitoring and preparation of horizontal and vertical movement gradients of all types of rock and soil slopes.

**Founded:**

2016

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Deviation measurement</b>	Three directional using a three-axis inclinometer sensor
<b>Movement speed</b>	0.5 to 1 m/s
<b>Digging rate</b>	512 samples per second
<b>Mechanical protection material</b>	Aluminium

**Advantages:**

Using the continuous measurement method

**International Standards or Permission:**

Calibration certificate of performance accuracy



**Application:**

- \* Measuring the direction of discontinuities inside the ground during drilling
- \* Measurement of the deviation of drilling boreholes

➤ **Core Orientation Device**

◆ Samin Geotechnical & Mining Tools Co.

[www.samininstruments.com](http://www.samininstruments.com)



**Product Introduction:**

This tool is an electronic system for accurate orientation of cored samples in angled, vertical and upright boreholes. The core orientation system can be installed quickly and easily on standard wireline drill inner tubes. The orientation system is located in the borehole along with the core barrel during drilling, and by recording the required parameters after pulling out the inner tube, the exact position of the core in the well is determined with the help of the on-site display. By using Core Orientation System, it is possible to show the exact location of the core in the well, which greatly helps to recognize schistosity faults, mineralization boundaries, slicken slides, and lithological boundaries.

**Founded:**

2016

*This product is a final B2B equipment.*

**Technical Specifications:**

Accuracy	
Core Orientation	± 5° (88 to 83 )1° for inclined Borehole
Dip	± 0.1°
Temperature	± 1°
Operating Range	
Core Orientation	0° to + 360°
Dip	- 90° to + 90°
Temperature	-5 °C to +85 °C
Resolution	
Core Orientation	0.1°
Dip	0.1°
Temperature	0.5°

**Advantages:**

Design of mechanical systems and sensor protection

**International Standards or Permission:**

Calibration certificate of performance accuracy



## ➤ Coring Drilling Machine

◆ Samin Geotechnical & Mining Tools Co.

[www.samininstruments.com](http://www.samininstruments.com)



### Product Introduction:

The coring device is used in sampling the subsurface layers of the earth (mass of soil and rock) in order to identify, examine and analyze rock and soil. These samples are obtained in both powder and cylindrical forms. The coring device that performs cylindrical sampling operates in two ways: metric sampling and wireline sampling. In order to more accurately identify the layers of the earth, the samples obtained are analyzed in the laboratory.

### Application:

In sampling the subsurface layers of the earth (mass of soil and rock) in order to identify, examine and analyze rock and soil.

*This product is a final B2B equipment.*

**Founded:**

2016



Knowledge-based products and equipment



## ➤ Mass and Energy Monitoring Software in Mining Industries

◆ Asia Watt Engineering Co.

[www.asiawatt.com](http://www.asiawatt.com)



### Product Introduction:

This software is designed to be used in copper mines, which identifies the energetic performance of different processes and equipment in mining industries under different operating conditions and analyzes the effect of different process parameters on the performance of the production process and its energy consumption. The software is able to provide the important bottlenecks in terms of production volume, expected output volume and mass and energy balance as output by receiving the inputs related to the entry of mass and energy flow into the system and performing calculations.

The simulation of operational units active in copper mines, including concentration, leaching, hydrometallurgy and pyrometallurgy, is one of the other capabilities of this software, which is considered an innovation due to the lack of process approach and simulation systems before, and is able to make many processes related to copper extraction predictable for the operating team.

Also, this software is able to identify the possible defects, efficiency and productivity of these systems by using the standard database and having the data sheets of devices (subsystems) such as pumps, blowers, compressors, etc., and by adding mechanical advantage to these subsystems, provide solutions for improved productivity.

**Founded:**

2000

### Application:

Identifying the energetic performance of different processes and equipment and analyzing the effect of different process parameters on the performance of the production and energy consumption process

*This product is a final B2B equipment.*

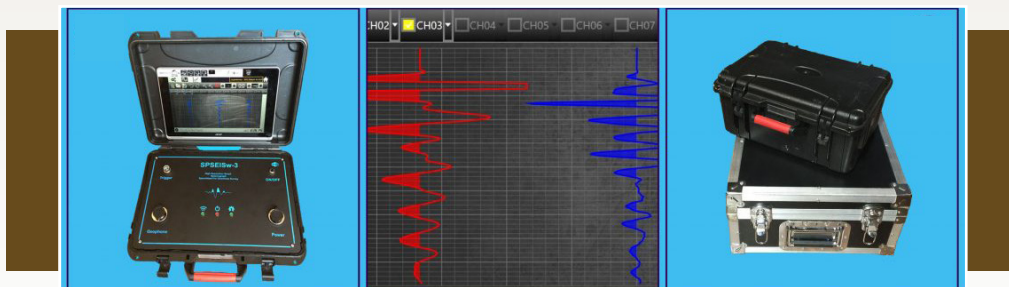
### Technical Specifications:

#### The different parts of this software are:

- \* Simulation of different units in the form of a block diagram and with a process view
- \* Receiving mass and volume inputs, device information, etc. from the user and presenting the mass and energy balance output.
- \* Examining equipment and subsystems according to technical specifications, operating hours, efficiency, etc. and providing solutions for replacing, increasing or reducing capacity and optimizing systems

### Advantages:

- \* Analysis of mass and energy flow and calculation of energy consumption indicators in mining equipment
- \* Analysis of process subsystems such as compressors, pumps, crystals, etc. in the production process
- \* Analyzing the effect of process parameters on energy consumption and production process simultaneously
- \* Compliance of the software input data with the instrumentation system and the recording method of information of the monitored factory
- \* Having the necessary efficiency for the user group due to easy operation



**Application:**

- ※ Determination of soil type
- ※ Wave speed measurement and soil modeling
- ※ Geophysical and geotechnical studies

➤ **SPSEISw Seismometer**

◆ Pishgam Tajhiz Bonyan Co.

[www.ptbi.ir](http://www.ptbi.ir)



**Product Introduction:**

The SPSEISW model seismograph device is designed and built using the latest technology in the world. In the design and manufacture of this device, accuracy of data, reduction of noise and ease of use have always been considered. In this regard, pre-amplifier, hardware filters and digitizer of the device have been designed using the latest and most up-to-date parts. All data acquisition and device control operations are performed by a tablet that is connected to the device through Wifi technology. The powerful SPware software is installed on the tablet, which provides many features to the user. Displaying the frequency spectrum, storing up to 256 stacks and deleting or adding each one separately, saving data with two output formats, SEG2 and Excel, various filtering, etc. are some of the features of this software. In addition, the ease of operation and user-friendliness of the software have also been considered and unnecessary complications have been avoided. The device is also made light and portable and is placed in a resistant and waterproof box along with the internal battery. In general, the SPSEISw seismograph can be considered a suitable option for use in a wide range of seismic operations.

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Number of channels</b>	4
<b>Gain</b>	6 to 48 dB
<b>City electricity removal filter</b>	50 Hz
<b>Maximum sampling time</b>	2000 ms
<b>Trigger input</b>	Digital and analog
<b>Device weight</b>	7.9 kg
<b>Dimensions</b>	16 × 27 × 35 cm

**Advantages:**

- ※ Equipped with Wifi technology
- ※ Equipped with a hardware filter
- ※ Excel and SEG2 file output
- ※ Calculating and displaying the frequency spectrum
- ※ Control and data collection through a tablet



## ➤ Laser Scanner of the Environment and Calculation of Volume of Objects

◆ Sedna Smart Solutions Co.



### Product Introduction:

Sedna's volume calculation solution is a smart solution to calculate the weight and obtain the exact volume of various objects to provide management information such as the exact amount of extraction from a mine, stock of goods, etc. This solution consists of two hardware and software parts. The hardware part uses a single-point laser to scan the intended location and after a complete scan, stores the information in the external memory or sends it to the server. After the complete scan, the analysis software receives the scan data and forms cloud points, calculates the procedure and produces the 3D shell. After producing the 3D image, the volume of the shell is calculated with high accuracy.

**Founded:**  
2020

### Application:

- \* Accurate calculation of accumulation and extraction volume in various industries, especially in mining, cement factories, and steelmaking industries.
- \* Monitoring and collection of geographical features
- \* Monitoring environmental-geographical changes
- \* Verification of various work situations in various industries
- \* Industrial silos, food and...
- \* Scanning the environments inside industrial sheds such as stone crushers and...

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Laser module measurement accuracy</b>	1 cm
<b>Laser module measurement range</b>	100 meters, can be increased to 500 meters
<b>Scan resolution at a distance of 100 meters</b>	20 cm x 20 cm mosaics
<b>Scan range</b>	360 degrees x 180 degrees

### Advantages:

- \* Adaptive scanning capability
- \* Ability to scan large objects
- \* Low maintenance and repair cost



## ➤ Digital Field Geology Device

♣ Segal Pajohan Zamin Co.



### Product Introduction:

Before the manufacture of the field geology device, in geological desert studies, a device called a compass was used to measure the slope and extension of structural features such as sedimentary layers, faults and joints. This device is mechanical and usually both the device itself and the measuring person cause errors in the amount of slope and extension of the layer. The accuracy of compass measurements is within degrees, which is not an acceptable limit in many mineral, geological and petroleum exploration studies, especially in the study of geological structures. The current device aims to measure the geological and mine structural features including the slope and extension of layers and veins, joints, fractures and faults and all linear and planar structures and then converts them into data and finally performs calculations such as actual thickness, the depth of the structures and mineral reserves and subsurface structural examination that is used in desert studies.

**Annual Production Capacity:**

400 Devices

**Founded:**

2016

### Application:

- ※ Preparation of surface and subsurface geological and mineral maps
- ※ Engineering and geotechnical designs
- ※ Tectonic and seismological studies
- ※ Exploration of underground reserves (oil, water, mines, etc.)

*This product is a final B2B equipment.*

### Technical Specifications:

- ※ Battery consumption 0.1 watt per day
- ※ Working temperature conditions 5- to 45 degrees Celsius
- ※ The measurement rate is one item per minute
- ※ The weight of the device is 400 grams

### Advantages:

Completely digital and with the ability to perform calculations

Second Chapter

# Mineral Extraction





# 2<sup>nd</sup> QUARTER

## 2<sup>nd</sup> CHAPTER

First Chapter

Second CHAPTER

Third Chapter

### Mineral Extraction

Mineral Stacker-Reclaimer with a Capacity of 2000 tons per hour		40
Car Dumper		42
All-Hydraulic Exploratory Drilling Machine and Drilling Services		44
Trencher Drilling Machine		46
Drum Cutter Drilling Machine		48
Load Cells with Different Capacity and Temperature Tolerance		50
90-Blade Stone Cutting Saw With the Ability to Cut Marble Stone (Atlas Gang Saw)		52
CNC Diamond Wire Stone Cutting Machine		54
Stone Multi-Wire Cutting Machine		56

Sections:

- *Transportation Equipment*
- *Drilling Equipment*
- *Instrumentation Equipment*
- *Cutting Equipment*



➤ **Mineral Stacker-Reclaimer**  
with a Capacity of 2000 tons per hour

◆ Mangan MFG Co.

[www.mangan-co.com](http://www.mangan-co.com)



**Product Introduction:**

The need to store bulk materials is always felt in industries related to such materials. Storage of materials may be done on a small scale in metal and concrete tanks with a capacity equivalent to a few minutes or a few hours; But in industries such as cement, steel, and mineral processing, the storage of raw materials or products is generally done in large open or covered warehouses that have a capacity of several days to several months. These warehouses are used before factories to store raw materials and after factories to store products. The existence of these warehouses makes it possible to reduce the impact of disruptions in the supply of raw materials and removal of products on the factory. In this way, the factory can be continuously and uniformly active. Also, in train and truck loading and unloading stations and loading and unloading terminals in ports, the use of such warehouses to store bulk materials is useful for traffic management and reducing the waiting time of ships, trains and trucks, and increasing the efficiency of the terminals. Equipment called stacker and reclaimer are generally used to accumulate and collect materials in such warehouses. This equipment is called stacking machine and collecting machine, respectively. The correct and uniform operation of these machines ensures the uniform flow of materials entering or leaving these warehouses and will have a significant impact on the proper operation and efficiency of factories and unloading and loading facilities before or after them.

**Founded:**

1985

**Application:**

Storage of bulk materials in industries such as cement, steel, mineral processing, etc.

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Accumulating capacity</b>	1400-1800 tons/h
<b>Collecting capacity</b>	1600-2000 tons/h
<b>Total weight</b>	900 tons

**Advantages:**

- ※ Three-point structural design
- ※ Using hydraulic drives for the slowing mechanism



## ➤ Car Dumper

◆ Bita Innovative Design Engineering Co.

[www.bidec.ir](http://www.bidec.ir)



### Product Introduction:

This machine is used in cases where the location of the direct reduction plant is such that raw materials are imported by train. In fact, this machine is used to empty out the contents of the freight wagon by tipping it in the accumulation and collection unit. The main task of the accumulation and collection unit is to homogenize and mix pellets and create a suitable reserve with a capacity of 2 million tons, and with connecting rail lines outside and inside the direct reduction plant, the pellets can be supplied by wagons. For this purpose, the incoming wagons are weighed by rail weighing and enter the area of the rotary car dumper (Crescent Type, Rotary Car Dumper) for unloading, where this device is able to perform the unloading operation by turning 140-180 degrees.

### Application:

Mining industry

*This product is a final B2B equipment.*

**Founded:**

2002



Knowledge-based products and equipment



## ➤ All-Hydraulic Exploratory Drilling Machine and Drilling Services

◆ Kani Sanat Shahvar Co.

### Product Introduction:

The first all-hydraulic exploration drilling machine up to a depth of 600 meters was produced in this company, and also the first drilling machine with the ability to drill deep into the ground with sound frequency was studied and its feasibility was investigated for drilling in the oil industry in addition to the mining industry.

**Founded:**

2012

### Application:

non-oil mines (metal and similar mines)

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Core recovery</b>	The movement of the core inside the sampling tube can be controlled through the sensor in the monitor system.
<b>Drilling solution flow rate system</b>	Stopping the machine and turning off the engine when the drilling solution is less than normal.
<b>Drill bit performance monitor</b>	In the soft and hard layers, the required drill bit can be used, which can be controlled by advancing of drill bit and sampling.

### Advantages:

- ※ Lower cost compared to similar products
- ※ Wireline and RC drilling capability
- ※ Intelligent system related to drilling solution
- ※ Drilling by means of sound frequencies



## ➤ Trencher Drilling Machine

◆ Talashgaran Sepehr Industrial Co.

[www.talashgaranco.com](http://www.talashgaranco.com)



### Product Introduction:

Trencher is one of the machines used in some construction works. Trenchers are classified as continuous drilling machines. These machines continuously perform the drilling operation. This machine takes less time to dig a channel than an excavator. This machine is capable of doing 100-300 meters of agricultural field drainage and 200-400 meters of drilling and pipe installation simultaneously in a fully mechanized way.

**Founded:**

2001

### Application:

Drainage of agricultural field and water transmission lines

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Motor</b>	6-cylinder turbocharged diesel with 330 horsepower
<b>Motion system</b>	<ul style="list-style-type: none"> <li>* <b>Wheel chain:</b> 540 mm wide and 3900 mm long and closed circuit hydraulic power transmission</li> <li>* <b>Nominal pressure:</b> 420 bar</li> <li>* <b>Speed:</b> 1 to 2200 meters per hour</li> </ul>
<b>Physical specifications</b>	<ul style="list-style-type: none"> <li>* <b>Dimensions:</b> length 950 cm, width 250 cm, height 350 cm</li> <li>* <b>Weight:</b> 22500 kg</li> </ul>

### Advantages:

- \* Ability to use the machine with radio control at a distance of 50 meters from the machine
- \* The ability to use laser in the implementation of the slope of the trench floor
- \* Ability of use change from cabling to piping and drainage of agricultural fields
- \* Ability to change the drilling boom for higher widths



**Application:**

The ability to be used in the implementation of fiber optic projects in the city or asphalt pavements and is capable of drilling and installing pipes or cables simultaneously.

➤ **Drum Cutter Drilling Machine**

◆ Talashgaran Sepehr Industrial Co.

[www.talashgaranco.com](http://www.talashgaranco.com)



**Product Introduction:**

This device is designed and built for digging narrow channels and laying pipes or cables at the same time. One of the most important uses of this machine is the simultaneous drilling and high-speed laying of ducts in urban projects and asphalt pavements for telecommunications and optical fiber cabling.

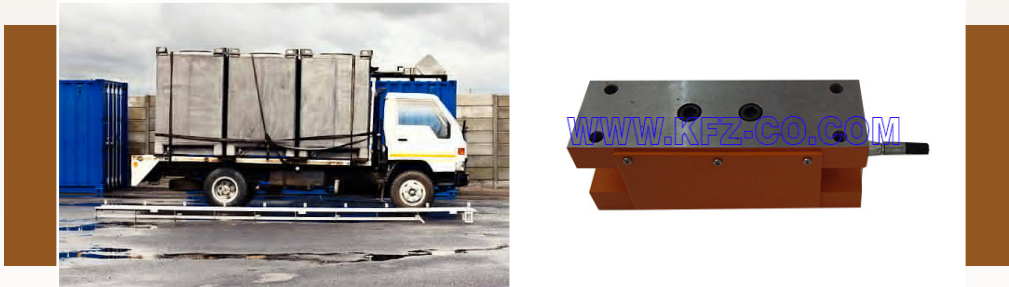
**Founded:**

2001

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Motion system</b>	<ul style="list-style-type: none"> <li>* <b>Minimum moving speed:</b> 60 meters per hour</li> <li>* <b>Maximum moving speed:</b> 2200 meters per hour</li> </ul>
<b>Machine efficiency</b>	<ul style="list-style-type: none"> <li>* <b>Dirt road:</b> 240 meters per hour</li> <li>* <b>Asphalt:</b> 78 meters per hour</li> <li>* <b>Rocky and sandy ground:</b> 60 meters per hour</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>* <b>Length:</b> 595 cm</li> <li>* <b>Width:</b> 174 cm</li> </ul>
<b>Weight</b>	31 tons



**Application:**

Making electronic scales and weighbridges

➤ **Load Cells**  
with Different Capacity and Temperature Tolerance

◆ Kavoshgaran Fanavar Zنده Roud Co.

www.kfz-co.com



**Product Introduction:**

Load cell is a type of electronic sensor (sensor) for measuring weight and force, which by applying force on it, a weak electrical signal of millivolts appears on its output wires. In fact, a load cell is a converter or transducer that converts force and pressure into standard electrical signals and is made in tensile, bending, compressive and torsional types.

The company's products include 2, 5, 20, 25, 100, 150, 200, 2000 and 3000 ton load cells, which, due to their use in hot rolling lines, melt transfer equipment, etc. in Isfahan Mobarakeh steel Complex, are capable of withstanding temperatures of 120 and 140 degrees Celsius.

**Annual Production Capacity:**

30 Devices

**Founded:**

2013

*This product is a final B2B equipment.*

**Technical Specifications:**

Model	Maximum range (ton)	Excitation voltage	Output	Accuracy
LCS3060-01	3000	5 to 10 VAC	2 mv/v	± 0.02% R.O
LCS2080-01	2000		1 to 2 mv/v	± 0.05% R.O
LCSB150	150		1.3 mv/m	± 0.05% R.O



➤ **90-Blade Stone Cutting Saw With the Ability to Cut Marble Stone (Atlas Gang Saw)**

🏠 Atlas Machine Co.

[www.atlasmachine-co.com](http://www.atlasmachine-co.com)



**Product Introduction:**

This machine is designed and made for cutting marble stone blocks. The blades are drawn on a course of 80 centimeters on the stone block and the cutting operation is performed by the motion of the frame holding the blades on four hydrostatic linear guides. The movement mechanism of the blade-holding frame by which the cutting operation is done, involves an electric motor, belt, belt pulley and connecting rod. In short, it uses the crank mechanism.

**Founded:**

2016

**Application:**

Cutting marble blocks

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Maximum number of blades</b>	87 N
<b>Blade dimensions</b>	180 × 4450 mm
<b>Main engine power</b>	132 kW
<b>Machine dimensions</b>	5300 × 13450 × 5300

**Advantages:**

- ✦ Complete product portfolio
- ✦ High quality, durability and reasonable price compared to similiar foreign products





**Application:**

The best and fastest tool for cutting stone blocks to desired dimensions with high accuracy

➤ **CNC Diamond Wire Stone Cutting Machine**

◆ Dena Fonoon Co.

[www.denafonoon.com](http://www.denafonoon.com)



**Product Introduction:**

In order to use minerals, the extracted stones must be cut into slabs or pieces with specific dimensions for the next steps. For this purpose, mineral stones are formed in the form of cubic stone blocks in the extraction site and then they are extracted from the mine. However, doing this work in the mine is not done with much precision and generally the blocks do not have a proper and smooth cubic shape. It is also possible that during transportation, fractures may occur in them, or even a part of the stone may be found to be unsuitable. In order to solve these issues and produce cubes with suitable surface smoothness, a diamond wire cutting machine is used, which cuts mineral stones in the desired dimensions and sizes with a diamond wire.

**Annual Production Capacity:**

25 Machines

**Founded:**

1989

*This product is a final B2B equipment.*

**Technical Specifications:**

Characteristic	Value
Maximum dimensions (cm)	520 × 900 × 120
Machine weight (kg)	5500
Maximum stone block dimensions (cm)	340 × 200
Wire length (cm)	19-20
Average water consumption (lit/min)	25
Main engine power (kW)	18.5

**Advantages:**

- \* Automatic control of the device in all stages of cutting
- \* Having an advanced electronic system for changing the speed of the inverter engine
- \* It has a sensor to detect the amount of electrical load entering the device's traction electric motors
- \* The ability of the wagon to rotate with complete freedom of movement compared to horizontal movement
- \* Following the basic and appropriate gradient and grading rules, in order to direct the device's cooling effluent as quickly as possible
- \* The ability to cut stone blocks in specific dimensions and the same size as each other, without the need for the operator recognition



## ➤ Stone Multi-Wire Cutting Machine

◆ Novin Tarh Meraj Andisheh Co.

### Product Introduction:

Slab stone cutting by diamond wire is one of the latest technologies in the world, which has replaced previous methods, such as cutting slabs, in the stone production process. This method has several advantages over previous technologies, which include: higher cutting speed, the ability to cut rough stones such as granite, and the ability to change the thickness of the cut in steps by moving the location of the cutting wire in the grooves on the roller, the simplicity of the device and installation, and less expensive maintenance.

#### Export History:

Up to 500,000 \$

#### Founded:

2013

### Application:

Cutting all kinds of hard stones

*This product is a final B2B equipment.*

### Technical Specifications:

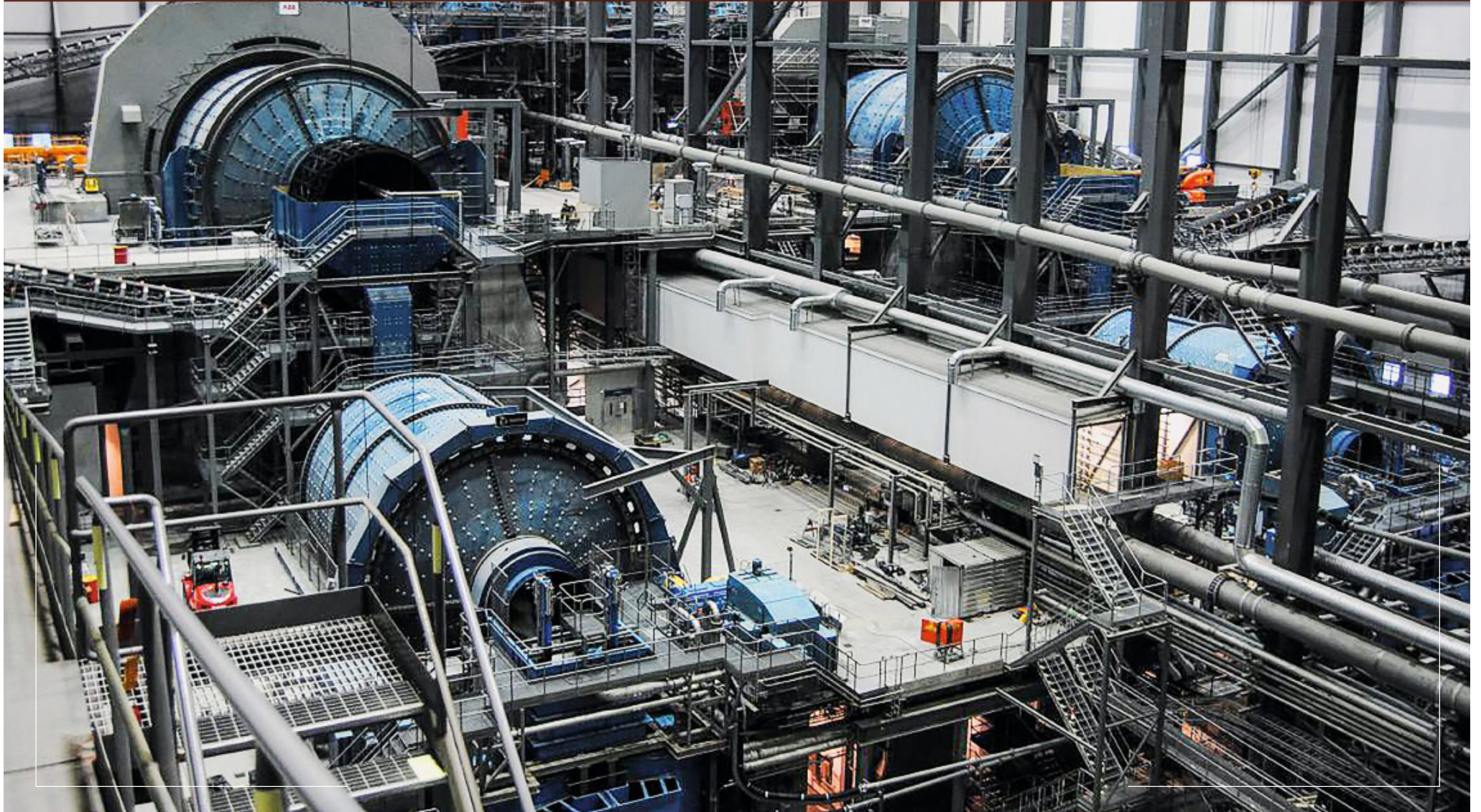
- \* **Device dimensions:** 10L\*4W\*8H
- \* **Maximum cutting dimensions of stone block:** 360 cm long and 200 cm high
- \* **Power of the main electric motor:** 100 horses, 900 rounds
- \* **Diameter of cutting wire:** 7.3 mm
- \* **Length of cutting wire:** 19.60 meters
- \* **Number of wire cutters:** 20 pieces
- \* **Cutting thickness:** 4 ,3 ,2, ... cm (by moving the wire in the groove of the rollers)
- \* **Wire rotation speed:** 20 meters per second
- \* **Cutting wire depth advance:** 15 to 25 cm per hour (depending on the hardness of the stone)
- \* **Cutting capacity:** 15 to 20 square meters of stone per hour (depending on the type and hardness of the stone)
- \* **Slab cutting accuracy:** 0.5 mm
- \* Ability to cut soft (marble, travertine, etc.) and hard (granite) stones by changing the wire material and cutting parameters

### Advantages:

- \* Accuracy in cutting stone with uniform and precise size and thickness
- \* The flatness and smoothness of the surface of the cut slab stone
- \* The tension of the wires, which is controlled and adjusted by a hydraulic system and is very effective in the cutting process
- \* Reducing the cost and processing time of the next stages of stone production (grinding)

# Third Chapter

## Mineral Processing



# 3<sup>rd</sup> QUARTER

## 3<sup>rd</sup> CHAPTER

First Chapter

Second Chapter

Third  
CHAPTER

### Mineral Processing

45-Inch Superior Gyratory Stone Crusher CS-440		62
45-Inch Hydrocone Cone Crusher CH440		64
Jaw Crusher Model 250-150120		66
HPGR Stone Crusher		68
Semi-Autogenous Laboratory Mill (SAG Mill)		70
Raymond Mill		72
Modular Ball Mill		74
Ball Mill		76
Complete Set of Roller Separator Mill (Raymond Mill)		78
NJ Super Pulverizer Mill		80
Ball Mill		82
Jet Mill		84
Wear-Resistant non API Centrifugal Pumps		86
Slurry Pump		88
Wet Magnetic Separator Drum		90
Dry Magnetic Separator Drum (Housing)		92
Centrifugal Fine-Crusher of Silica Minerals, Feldspar, etc.		94
Industrial Filter Press		96
Industrial Filter Press		98
Cyclofilter		100
Drum Magnet Hybrid		102
Electric Magnet Drum		104
Wet Magnet Drum		106
Papko Roll		108

Super Micronized Classifier		110
Sorting Machine for Stoneblocks and Slabs (Sort Plus)		112
Industrial and Mineral Pre-Processing Machine		114
Engineering Design and Construction of Iron Concentrate Desulfurization Pilot Line		116
Water Cooling Copper Panel for Electric Arc Furnaces		118
Blowing Lance of the Electric Arc Furnace		120
Water Cooled Panels in EAFs		122
Oxygen Blowing Lance (Injection Lance)		124
Technical Knowledge Development and Engineering Design Services		126
Raw Pellet Strength Testing Machine (GCS Pellets)		128
Baked Pellet Compression Strength Testing Machine		130
Pelletizing Pilot Plant		132
Designing and Providing Technical Engineering Service of Direct Reduction Plant		134
Designing and Providing Technical Engineering Services of Steel Plant		136
Blast Furnace Copper Tuyeres		138
Electrode Holder, Electrode Clamp		140
Copper Stave Coolers		142
Cladding		144
Induction Furnace		146
Induction Furnace		148
Induction Melting Furnace Capacity from 50 kg to 10 tons		150
Induction Hardening Furnace		152
Copper Continuous Casting Machine with VF Furnace		154
Semi-Continuous Steel Casting Machine		156
Blain Test Machine		158
Linder Test Machine		160
Pycnometer Test Device		162
Epoxy Thinner Based on Alkyl Phenol Styrene (Raika-DE)		164
Di-Methyl Glyoxime		166

Sections:

Crushing Equipment	○
Pumps	○
Separation and Concentration Equipment	○
Extraction Equipment	○
Furnaces	○
Other Processing Equipment	○
Advanced Chemicals for Special Applications	○



## ➤ 45-Inch Superior Gyrotory Stone Crusher CS-440 Reverse-Engineering Sandvik CS-440 Model

◆ Sanat Crusher Payam Co.

[www.crusher.ir](http://www.crusher.ir)



### Product Introduction:

Hydrocone cone crusher is one of the heavy and super heavy pieces of machinery and equipment of mining and construction industries. These types of stone crushers are designed for the first stage of crushing. This stone crusher consists of a fixed jaw and a movable jaw. The the movable jaw moves by an eccentric shaft connected to the motor by a belt and pulley. One of the capabilities of the machine made by Sanat Sangshakan Payam company is its high power and capacity in crushing stones.

This machine is produced in three models MC, C, EC, and all three models have a weight of 31 tons. This machine has an output capacity of 195 to 659 tons per hour based on the customer's needs and according to the type of model and selected output type. One of the important features of the machine made by Sanat Sang Shekhan Payam Company is the ability to adjust the amount of crushing by choosing the appropriate liners.

#### Main Export Destinations:

Turkey, Uzbekistan, Iraq, Afghanistan

#### Export History:

500,000 - 1,000,000 \$

#### Founded:

2006

### Application:

Use as primary and secondary crusher

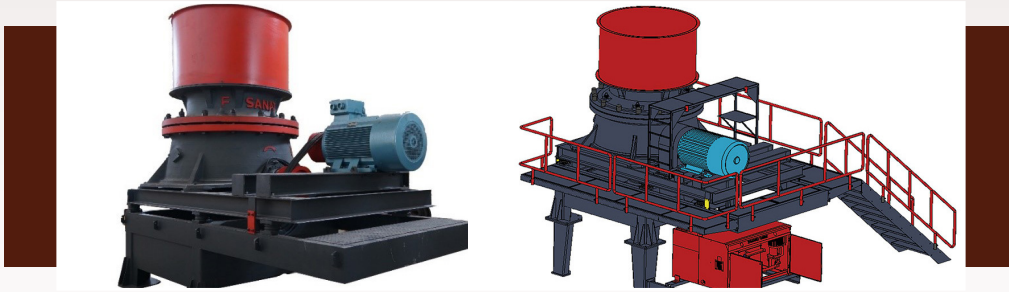
*This product is a final B2B equipment.*

### Technical Specifications:

Model	Maximum input size	CSS output size and output capacity
EC	450 mm	It has outputs of 45 to 54 mm with a capacity of 267 to 256 tons per hour.
C	400 mm	It has outputs of 29 to 51 mm with a capacity of 225 to 333 tons per hour.
MC	300 mm	It has outputs of 25 to 51 mm with a capacity of 195 to 317 tons per hour.

### Advantages:

- \* Special design of liners (Mantle and Concave) for uniform erosion and as a result, stabilization of the amount of crushing of the machine
- \* Increasing the capacity of the device, high quality output load, high life of liners and reduction of production cost as a result of high engine power and special design of liners
- \* Automatic hydraulic protection system to prevent damage to the machine by ungrindable or metallic load



➤ **45-Inch Hydrocone Cone Crusher CH440**  
Reverse Engineering of Sandvik CH440 Model

◆ Sanat Crusher Payam Co.

[www.crusher.ir](http://www.crusher.ir)



**Product Introduction:**

Hydrocone cone crusher is one of the heavy and super heavy pieces of machinery and equipment of mining and construction industries. There are many models of cone crushers, but this company's product is actually a reverse engineering of Sandvik company's CH440 model. This device can be produced with the possibility of customization with 38, 70, 85, 110, 140, 175 and 215 mm inlet chambers. This machine weighs 23 tons and is one of the advanced and huge machines of the mining industry, which can be produced with output openings varying from 8 to 44 mm in seven different models with crushing capacities of 90 tons to 384 tons per hour at the output.

**Main Export Destinations:**

Turkey, Uzbekistan, Iraq, Afghanistan

**Export History:**

500,000 - 1,000,000 \$

**Founded:**

2006

**Application:**

Use as primary and secondary crusher

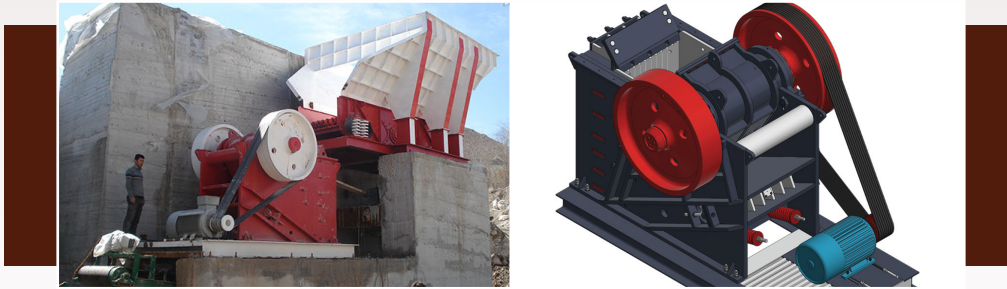
*This product is a final B2B equipment.*

**Technical Specifications:**

Model	Maximum input size	CSS output size and output capacity
EC	215 mm	It has outputs of 16 to 44 mm with a capacity of 114 to 384 tons per hour.
C	175 mm	It has outputs of 13 to 44 mm with a capacity of 109 to 229 tons per hour.
MC	140 mm	It has outputs of 13 to 38 mm with a capacity of 97 to 242 tons per hour.
M	110 mm	It has outputs of 13 to 38 mm with a capacity of 97 to 194 tons per hour.
MF	85 mm	It has outputs of 10 to 32 mm with a capacity of 114 to 248 tons per hour.
F	70 mm	It has outputs of 16 to 44 mm with a capacity of 90 to 208 tons per hour.
EF	38 mm	It has outputs up to 80% smaller than 6 to 7.5 mm with a capacity of 100 to 125 tons per hour.

**Advantages:**

- ✧ Wide range of application due to the special design with the ability to use different liners on one topshell and as a result, change of use and crushing characteristics of the machine (from fine crusher to coarse crusher)
- ✧ Special design of liners (mantel and concave) for uniform erosion and thus maintaining power
- ✧ Increasing the capacity of the device, high quality output load, long life of liners and reduction of production cost as a result of high engine power and special design of liners
- ✧ Automatic hydraulic protection system to prevent damage

**Application:**

Crushing stones and processing minerals and sand

## ➤ Jaw Crusher Model 250-150120

◆ Sanat Crusher Payam Co.

[www.crusher.ir](http://www.crusher.ir)

**Product Introduction:**

One of the types of stone crushers is the jaw crusher model, which is placed in the most basic stone crushing process and has the task of crushing stones and processing minerals and sand. This type of stone crusher crushes large minerals and stones (larger than 20 cm). The jaw crusher is exposed to wear during continuous operation, and the parts and materials used in its construction are made of manganese steel, which reduces friction and wear in the stone crushing process and increases the life of the parts. These types of stone crushers are designed for the first stage of crushing. This stone crusher consists of a fixed jaw and a movable jaw. The movable jaw moves by an eccentric shaft connected to the motor by a belt and pulley. One of the capabilities of the device made by Sanat Sang Shekan Payam is its high power and capacity in crushing stones. The capacity and size of these crushers are different. The size of the jaw in the stone crusher is determined by the size of the rectangular entrance opening above it. This model of the company's machine is of single toggle type and the crushing factor in these machines is pressure and impact force. Many models of jaw crushers are manufactured by the company, but this product of the company, model 150120, has the highest capacity.

**Main Export Destinations:**

Turkey, Uzbekistan, Iraq, Afghanistan

**Export History:**

500,000 - 1,000,000 \$

**Founded:**

2006

*This product is a final B2B equipment.*

**Technical Specifications:**

Capacity	430 to 900 tons per hour
Power (kW)	185-980 rpm
Maximum feed size	1000 mm
Weight	120 tons

**Advantages:**

- ✧ High power and capacity in crushing stones
- ✧ Using manganese steel to produce the parts exposed to wear
- ✧ Strong construction with high resistance
- ✧ Homogeneity of the external load
- ✧ Beautiful design and reliable performance
- ✧ Quick and easy replacement of spare parts
- ✧ Less erosion and higher resistance than other similar crushers



## ➤ HPGR Stone Crusher

◆ Araz Sang Shekan Co.

[www.arazsangshekan.ir](http://www.arazsangshekan.ir)



### Product Introduction:

HPGRs are known as an emerging technology in the grinding process in the mining industry. Compared to conventional crushing processes, HPGRs consume less energy, which leads to lower operating costs and environmental impacts. Also, using HPGR leads to reduction of work index and ultimately reduction of energy consumption in downstream stages. Another advantage of this type of crushing is the increase of degree of liberation. Also, HPGR is used at the end of the concentrate line to increase the Blaine for the production of pellet feed.

Roller presses consist of two rotating rollers mounted on special bearings. By applying pressure to one of the rollers with the help of a hydraulic system, the pressure force increases by 40 to 60 times. This pressure is formed in the area between the rollers and leads to grinding. The rollers are fed by a silo and a feeder installed on top of it. The distinctive feature of the roller press machine manufactured by Araz Stone Crusher Company is that the rollers of the roller press are covered with segments. This has caused the device downtime to replace segments and costs to be reduced.

**Founded:**

2005

### Application:

Grinding process in mining industry

*This product is a final B2B equipment.*

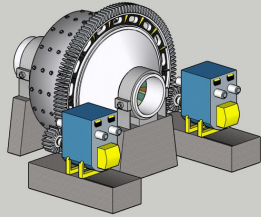
### Technical Specifications:

Model	Roll Diameter	Engine Power	Engine Torque	Weight
120 × 100	1250 (mm)	500 (kW×2)	4808 (N.M)	69 (ton)
160 × 120	1600 (mm)	800 (kW×2)	5093 (N.M)	128 (ton)

### Advantages:

- \* Reducing energy consumption by %40 compared to other HPGRs
- \* Short setup time
- \* Good grinding due to the flat surface of the rolls
- \* Having Segmented rolls, which leads to easy and quick replacement of the surface of the rollers.
- \* Blaine increase up to 350 units





➤ **Semi-Autogenous Laboratory Mill (SAG Mill)**  
with the Ability to Measure 6 Different Parameters

◆ Kian Madan Pars Co.

[www.kmp-co.com](http://www.kmp-co.com)



**Product Introduction:**

Semi-Autogenous Mill (Semi-Autogenous Mill) or SAG Mill is actually the boundary between ball mills and autogenous mills. Part of its crushing load consists of steel balls and another part of mineral material with specific dimensions.

Balls usually make up 6 to 15 percent of the volume of the mill. The ratio of length to diameter in Semi-Autogenous mills is equal to or less than 2. This type of mill is used as a primary mill. The input load of the Semi-Autogenous mill usually has dimensions between 130-160 mm. In these mills, the design of liners is one of the most important things and has the greatest impact on the trajectory of particles and movements of the mill during charging and discharging, and plays a decisive role in the amount of energy consumption and efficiency of the mill. Semi-Autogenous mills rotate at a speed equal to 75-85% of the critical speed, and their loading ratio is close to 50%.

**Application:**

Gold, Copper, Platinum, etc. extraction

*This product is a final B2B equipment.*

**Technical Specifications:**

Length	1 m
Diameter	0.5 m
Number of liners	60

**Founded:**  
2005



Knowledge-based products and equipment



**Application:**

Crushing of materials such as barite, calcite, iron ore, glass, clinker, cement, bentonite, fluorine and similar materials in the mining, chemical and building materials industry.

➤ **Raymond Mill**

◆ Dirin Sanat Bakhtar Co.

[www.dirinsanatbakhtar.com](http://www.dirinsanatbakhtar.com)



**Product Introduction:**

Raymond mill is one of the new crushing technologies, which is mainly used for crushing non-flammable and non-explosive stones in mining, metallurgy and chemical industries. The working basis of this mill is based on pressure and impact in the old models and rubbing in the new model. Minerals are placed between the body ring, which is fixed, and the roller in the equipment, which is rotating, and are crushed and ground.

Then, by specific air flow, the particles that have reached the desired size pass through the blades of the separator installed on the top of the mill, and the rest of the coarse particles that are not allowed to leave the separator are returned to the separator to be crushed again to the desired size. This process continues until the particles reach the desired size and are removed from the separator and collected as a product in a dust collector installed after the separator.

**Annual Production Capacity:**

20 Machines

**Founded:**

1994

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Device capacity</b>	3-20 ton/h
<b>Gradation</b>	0-40 μ
<b>Main components</b>	<ul style="list-style-type: none"> <li>* Main body</li> <li>* Spider</li> <li>* Mill gearbox drive system</li> <li>* Separator</li> <li>* Rinsing section</li> <li>* Electrical panel</li> <li>* Fan and mill motor</li> </ul>

**Advantages:**

- \* Small space required due to standing design
- \* Easy to adjust the size of mill output particles
- \* Reasonable price considering the high production capacity
- \* Less noise than similar samples
- \* Equipped with hot air to reduce the incoming soil moisture by %15.



**Application:**

Micronization of minerals in micronized cement, lime, carbonate, etc

➤ **Modular Ball Mill**

➤ Dirin Sanat Bakhtar Co.

[www.dirinsanatbakhtar.com](http://www.dirinsanatbakhtar.com)



**Product Introduction:**

One of the most common mills used in the industry to pulverize materials is the ball mill, whose pulverizing mechanism is based on the rotational movement of the machine's cylinder and creating friction between the ball and the material. In tile and ceramic industries, ball mills are used to grind the material formula. There are two types of mills available in factories, batch and continuous, and each of these two models has its own advantages and disadvantages. The combination of batch and continuous mills can have the advantages of both types and in return eliminate the weaknesses of both models. Batch mills, as their name suggests, are used as batches and after charging the ball mill and turning it for 5 to 10 hours, are discharged. The rotation time is a function of the hardness of the soil and the required residual, i.e. the residue on the input soil gradation sieve, the gradation of the mill balls and the rotational speed. The size of the input soil of these mills is in the range of 0-30 mm, and for this reason, 30-80 mm pellets are chosen as charge. By combining the above mentioned pellets, which is a function of the gradation of the input soil, by spending less than 30-40% of the total rotation time, all materials easily reach the gradation of 0-1000 microns, and the rest of the rotation time is used to reduce the size from 1000 microns to 63 microns.

**Annual Production Capacity:**

25 Machines

**Founded:**

1994

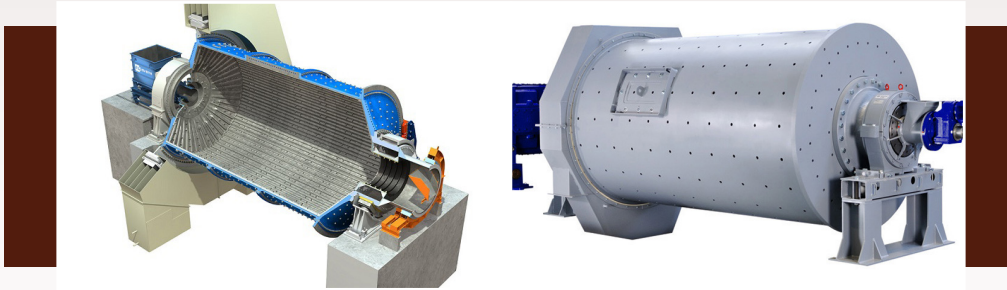
*This product is a final B2B equipment.*

**Technical Specifications:**

Model	Volume (m <sup>3</sup> )	Ball mill diameter (m)	Ball mill length (m)	Power (kW)
DSMM12	12	2.2	3.2	55
DSMM18	18	2	6	90
DSMM28	28	2.2	7	160
DSMM34	34	2.4	7	250

**Advantages:**

- \* Minimal waste in the finished product
- \* Increasing the resistance of the ballmill body and reducing the erosion and corrosion of the body



## ➤ Ball Mill

◆ Dirin Sanat Bakhtar Co.

[www.dirinsanatbakhtar.com](http://www.dirinsanatbakhtar.com)



### Product Introduction:

One of the most common mills used in the industry to pulverize materials is the ball mill, whose pulverizing mechanism is based on the rotational movement of the machine's cylinder and creating friction between the ball and the material. The permissible range of rotational speed depends on the diameter of the ball mill and is completely independent of the mass and size of the balls, which is usually in the range of 8-60% of the critical speed of the mill. The closer the rotational speed is to the critical speed, the greater is the capacity, but the percentage of output smoothness tends to decrease, and if the rotational speed exceeds the permissible limit, the components rotate rigidly with the cylinder and the efficiency tends to zero.

These mills are made in various continuous and intermittent models with ?dry and wet performance? of steel, rubber, silex, alumina, ceramic liners, as well as stone, steel and alumina pellets for different applications and uses. The size of the pellets is also a function of the diameter of the mill and the gradation of the materials entering the mill. The different ballmills of this company are as follows:

- 1. Model (DNDSM); continuous dry ball mill with metal liner:** These mills with cast iron liners and ball crushers are used in industry for grinding dry minerals and for minerals that have low corrosiveness and are not sensitive to metal oxides.

**Annual Production Capacity:**

20 Machines

**Founded:**

1994

- 2. Model (DIDSM); continuous dry ball mill with ceramic liner:** These mills with ceramic liners and ball crusher are used continuously to grind dry minerals free of metal oxides.
- 3. Model (BGDSM); of discontinuous ball mill with ceramic liner:** These mills work discontinuously with ceramic liners and ball crushers to prepare slurry and slipware. Also, they are used for grinding the mixture of water and minerals for the production of slurry, body and colored materials for paint, as well as for the preparation of glaze and mineral concentration processes in the tile industry.

### Application:

Powdering materials in industries

*This product is a final B2B equipment.*

### Technical Specifications:

Capacity	1 to 50 tons/h
Gradation	0 to 200 $\mu$
Power	30 to 700 kW

### Advantages:

- \* Lower price
- \* High quality parts



**Application:**

- \* Oil and gas industry (as drilling mud in exploration and extraction)
- \* Steel and casting industries (additives in pellet production and completing the steel cycle)
- \* Road and construction industry (types of construction materials including cement, lime, carbonate, construction and sanitary plaster, etc.)

➤ **Complete Set of Roller Separator Mill (Raymond Mill)**

◆ Hejazian Machine Designer Co.

[www.hmdmill.com](http://www.hmdmill.com)



**Product Introduction:**

One of the most common mills used in the industry to pulverize materials is the ball mill, whose pulverizing mechanism is based on the rotational movement of the machine's cylinder and creating friction between the ball and the material. In tile and ceramic industries, ball mills are used to grind the material formula. There are two types of mills available in factories, batch and continuous, and each of these two models has its own advantages and disadvantages. The combination of batch and continuous mills can have the advantages of both types and in return eliminate the weaknesses of both models. Batch mills, as their name suggests, are used as batches and after charging the ball mill and turning it for 5 to 10 hours, are discharged. The rotation time is a function of the hardness of the soil and the required residual, i.e. the residue on the input soil gradation sieve, the gradation of the mill balls and the rotational speed. The size of the input soil of these mills is in the range of 0-30 mm, and for this reason, 30-80 mm pellets are chosen as charge. By combining the above mentioned pellets, which is a function of the gradation of the input soil, by spending less than 30-40% of the total rotation time, all materials easily reach the gradation of 0-1000 microns, and the rest of the rotation time is used to reduce the size from 1000 microns to 63 microns.

**Annual Production Capacity:**

25 Machines

**Founded:**

2013

*This product is a final B2B equipment.*

**Technical Specifications:**

Model	RTM90	RTM110	RTM140	RTM175
Total installed power (kW)	97.5	139	240	397
Production capacity based on calcium carbonate crushing (tons per hour)	2.5	4	7	10
Maximum working pressure (Pascal)	6000	6000	6000	6000

**Advantages:**

- \* Reasonable price
- \* High quality



## ➤ NJ Super Pulverizer Mill

◆ Atiye Sazan Negin Faraz Co.

[www.iranlco.com](http://www.iranlco.com)



### Product Introduction:

The super NJ pulverizer mill is actually a set of grinding, filtering and suction machines, which performs the separation and granulation processes in an efficient manner, while also grinding the materials. In some cases, it is also called the separator mill micronized powder production line. This mill is usually used when the hardness of the material is between 1 and 3.5 mohs. Ball mill mechanism is used in materials with hardness between 3.5 and 7 mohs. Due to the integration of the mill and separator in this method, there is a uniform distribution of the particle size and there are no coarse particles and dust, due to the closed cycle of the process.

**Founded:**

2014

### Application:

- \* Crushing and production of micronized powder of minerals such as calcium carbonate, gypsum, talc, lime, cement, bentonite, cement clinker, feldspar, gilsonite and other non-metallic, chemical and medicinal minerals
- \* Production of aquatic feed or production of explosives

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Mill</b>	<ul style="list-style-type: none"> <li>* Device chassis</li> <li>* The main body of the device</li> <li>* Blade</li> <li>* Propulsion and power transmission</li> </ul>
<b>Cyclone</b>	<ul style="list-style-type: none"> <li>* Body</li> <li>* Filter</li> <li>* Self-cleaning system</li> </ul>
<b>Suction</b>	<ul style="list-style-type: none"> <li>* Body</li> <li>* Propeller</li> <li>* Electric motor and power transmission</li> </ul>

### Advantages:

- \* High production capacity compared to other available mills in the country
- \* Ability to grind all kinds of minerals and non-metallic minerals and ores with high efficiency
- \* Low energy consumption and very low depreciation compared to old devices
- \* The possibility of changing the size of the output material (mesh) by changing the speed of the separator
- \* Ability to quickly change the material being beaten with a new one



**Application:**

One of the most widely used grinding equipment in processing, mineral industries and micronized powder

➤ **Ball Mill**

◆ New Technologies of Altin Industry and Mining Co.

**Product Introduction:**

The first step in the mineral processing is to release the valuable minerals in the ore from the gangue minerals. To achieve this goal, the ore must be crushed in one or more stages by various crushers and mills. Usually, for further crushing and turning the materials into powder (to reach the appropriate degree of freedom), various types of mills are used. Mills can work dry or wet, and the choice depends on the type of ore and the next steps of the operation. One of the most common mills used in the industry to pulverize materials is a ball mill, which is used to grind many materials and turn them into soft powder.

**Founded:**  
2017

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Body material and thickness</b>	Depending on the diameter and length of ST-52 mill from 12 to 70 mm
<b>Type and size of trunnions</b>	Based on the size of the mill and the type of output and the rheological characteristics of the pulp
<b>Headwalls</b>	GS-45 alloy steel casting
<b>Rotation speed</b>	60 to 87% of the critical speed depending on the process requirement and the size of the mill



*This product is a final B2B equipment.*

➤ **Jet Mill**

◆ Samat Industrial Sepahan Co.

[www.samatmachine.com](http://www.samatmachine.com)



**Product Introduction:**

This type of mineral mill has much lower maintenance and repair costs compared to other mills in the market. In general, the grinding mechanism in these mills is based on wind, in such a way that the wind flow with supersonic speed hits the particles in the device from three directions and causes them to be crushed. In general, the jet mill is one of the mineral mills available in the market, which is generally used for materials with a hardness of 9.5 mohs. The size of the output particles of this type of mineral mills is generally in the mesh range of 200 to 2500. In order to increase the productivity of this category of mills, depending on the type of material, it is recommended that the size of the incoming particles should be less than 5 mm.

**Founded:**

2008

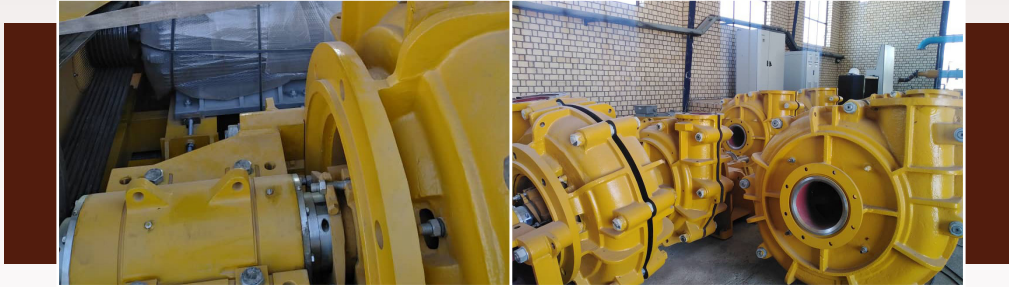
**Technical Specifications:**

Model	Capacity (kg/h)	Dimensions	Mill and compressor's power (kW)
SMJ10	0.5 to 5	1 × 2 × 1.8	15 to 22
SMJ 20	5 to 20	1 × 2.5 × 2	22 to 37
SMJ 100	50 to 150	2.5 × 7 × 4	37 to 55
SMJ 200	100 to 350	3 × 8 × 6	55 to 90
SMJ 300	200 to 450	3.5 × 9 × 6	110 to 160
SMJ 400	600 to 900	3.5 × 9 × 7	170 to 250
SMJ 500	1000 to 2000	4 × 9 × 7	250 to 350

**Advantages:**

Suitable for grinding materials sensitive to contamination such as pharmaceutical and food industries





*This product is a final B2B equipment.*

## ➤ Wear-Resistant non API Centrifugal Pumps

♣ Sharif Steel Co.

[www.sharifsteel.com](http://www.sharifsteel.com)



### Product Introduction:

Pump is the heart and engine of every hydraulic transmission system. There are many different pumps that are used to pump slurry; But the most common slurry pump is the centrifugal pump. This slurry pump uses the centrifugal force created by the rotating impeller to transfer energy to the slurry, which is similar to the centrifugal pump used to transfer clear liquid.

During operation, the slurry containing suspended solid particles is in contact with the wet parts of the pump. The main moist parts of the pump include the impeller, helix or housing liner and side liner. Due to the importance of the wear resistance of these pumps, the wet parts of the pump involved with particles moving at high speed are selected from high chrome white cast iron. These pumps can be divided into two groups according to their power, which are:

- \* Wear-resistant NON API centrifugal pumps with power greater than 150 KW
- \* Wear-resistant NON API centrifugal pumps with power between 30 and 149 KW

### Application:

Transferring the combination of solid materials and water in areas such as mineral processing, power plants, oil, metallurgy, building materials, environmental protection, dredging, chemical industries, papermaking and casting industries.

**Founded:**

1999

### Technical Specifications:

Wear-resistant NON API centrifugal pumps with power greater than 150 KW			
Model	Capacity (m <sup>3</sup> /h)	Engine power (kW)	Pump weight (kg)
AH20-18	5400	1300	15000
18-16(MC400)	4500	250	8000
AH16-14	4000	1000	10000
AH14-12	3000	461	6814
AH12-10	2200	355	4162
AH10-8	1500	52.8	3125
AH8/6	900	86.4	1000
AH6-4	400	200	832
AH4-3	102.5	22	332
AH1.5-1	57.5	15	97.5
Wear-resistant NON API centrifugal pumps with power between 30 and 149 KW			
Model	Capacity (m <sup>3</sup> /h)	Engine power (kW)	Pump weight (kg)
Ps pump PFP 80	50	20	590
Ps pump PFP 100	75	20	600
R150KSS	240	45	2345
Ps pump M40KSS	30	22	720
Ps pump R65KSS	105	11	718
PS pump 1.1/2-3_1/4 (40S-SVR)	11.7	5.5	600
PS pump 65QV-SP)	25	28.8	365

### Advantages:

- \* Fixed flow rate
- \* Low maintenance cost
- \* Excellent stability



## ➤ Slurry Pump

◆ Radin Tech Co.

[www.radintech.com](http://www.radintech.com)



### Product Introduction:

In order to pump liquid-solid fluid (slurry) that has two phases, special pumps called slurry pumps are used. Slurry pumps must have high strength and longevity due to hard working conditions and long working hours (usually around the clock). The presence of abrasive and corrosive particles in the pumped fluid, which are called slurry, increases the necessity of using parts with resistant materials. These pumps, which are commonly known as mining pumps, are used in most iron, copper, gold, and sand mines and in various parts of the processing process. A pump is a mechanical device for transferring liquids and enables the liquid to move to a higher height (by raising the head) or even to downstream (usually a pond or tank) by increasing its flow pressure. This pump works in such a way that the fluid enters the pump wheel parallel to the axis and exits the wheel perpendicular to it. Most centrifugal pumps have a good ability to create high pressures.

**Annual Production Capacity:**

250 Devices

**Founded:**

2013

### Application:

- \* Mining processing factories
- \* Iron and steel industries (cooling water pump)
- \* Dams (removal of sediment)
- \* Fossil power plants (removal of sediments)
- \* Paper industry
- \* Oil and gas (drilling mud pump)
- \* Water and sewage (dredging waterways)
- \* Fisheries and marine industries

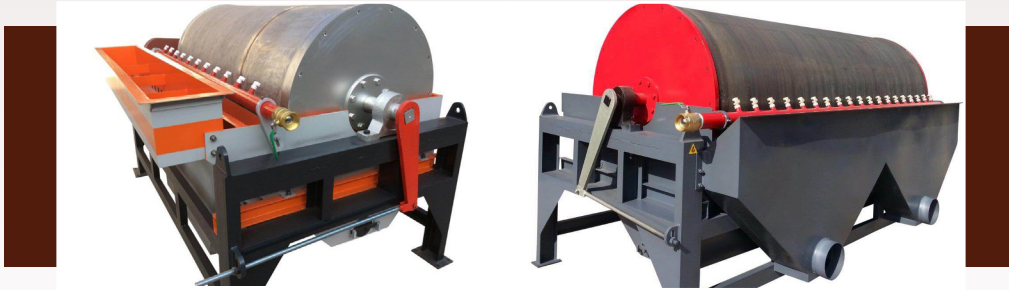
*This product is a final B2B equipment.*

### Technical Specifications:

Model	flow rate (cubic meters per hour)	Head	pump speed (rpm)	Efficiency mechanism (percentage)
1.5 to 1 SHONA design	25-12	68-6	3800-1200	40
1.5 to 2 SHONA design	54-32	58-5	3200-1200	50
3 to 2 SHONA design	89-39	60-10	2700-1300	55
4 to 3 SHONA design	198-79	60-10	2200-800	71
6 to 4 SHONA design	360-144	60-12	1550-800	65
8 to 6 SHONA design	830-320	60-10	1140-400	72
10 to 8 SHONA design	1350-540	60-10	850-400	71
12 to 10 SHONA design	2000-720	60-10	800-300	81

### Advantages:

- \* Using a wide range of materials in order to increase the pump lifespan
- \* Using various hydraulic parts in order to increase the efficiency and life of parts
- \* Using a variety of bearing systems in order to increase the lifespan of the seals and bearings system.



## Wet Magnetic Separator Drum

Fakoor Meghnatis Spadana Co.

[www.fms-co.com](http://www.fms-co.com)



### Product Introduction:

Wet magnetic separators are among the magnetic separators that are used in wet materials and slurry to separate micronized ferrous particles from non-ferrous ones.

The way the device works in general is that the magnetic separation is caused by the rotation of a stainless steel cylindrical shell around a constant magnetic field, and the iron absorbed on the separator drum shell rotates to the last magnetic point and is separated after leaving the magnetic zone. Wet Separator drum can be designed and produced in three groups: low field intensity (Lims), medium field intensity (Mims), and high field intensity (Hims).

### Main Export Destinations:

South Korea, China, UAE

### Export History:

500,000 - 1,000,000 \$

### Founded:

2012

### Application:

- \* In iron ore processing lines to concentrate the amount of iron
- \* In lines where iron is an interfering element to purify non-ferrous minerals.

*This product is a final B2B equipment.*

### Technical Specifications:

Magnetic field range	1000 to 7000 Gauss
Device dimensions	* Length: 1 to 4 m * Width: 0.5 to 2 m * Height: 0.5 to 3 m
Device design	Single floor and double-floor
Electric power of the drive motor	2 to 22 kW

### Advantages:

- \* Use of anti-wear ceramic coating for tank and drum shell
- \* Optimum arrangement of the magnet and thus achieving the highest efficiency in the separation of fine-grained iron ore
- \* Long service life of the equipment compared to similar products
- \* Lower price than similar products



## ➤ Dry Magnetic Separator Drum (Housing)

◆ Fakoor Meghnatis Spadana Co.

[www.fms-co.com](http://www.fms-co.com)



### Product Introduction:

Drum separators with housings are used for automatic separation of iron parts from raw materials in order to increase the quality of the final product/remove iron parts and avoid damage to equipment/iron ore enrichment in the industry. The drum magnetic separator is composed of a housing (made of stainless steel) and a cylindrical shell (made of anti-wear stainless steel) which creates a constant magnetic field, when the raw materials are dropped by the feeder onto the roller of the separator drum, the non-magnetic materials fall through the usual path and are discharged from the corresponding outlet shot, whereas the iron absorbed on the roller shell rotates to the last magnetic point and turns behind the roller.

### Main Export Destinations:

South Korea, China, UAE

### Export History:

500,000 - 1,000,000 \$

### Founded:

2012

### Application:

Separator of iron particles from ferrous materials in iron ore processing plant

*This product is a final B2B equipment.*

### Technical Specifications:

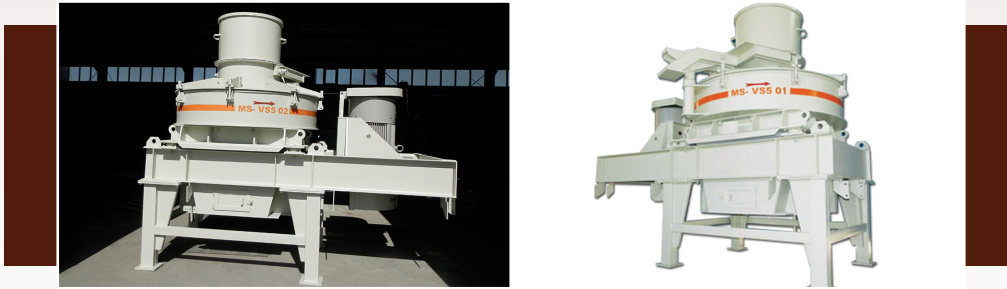
Magnetic field range	1000 to 7000 Gauss
Device dimensions	<ul style="list-style-type: none"> <li>* Length: 1 to 3.5 m</li> <li>* Width: 0.5 to 2 m</li> <li>* Height: 0.5 to 2.5 m</li> </ul>
Electric power of the drive motor	2 to 36 kW

### Advantages:

- \* Use of anti-wear ceramic coatings for the drum shell
- \* Using a composite shell instead of stainless steel to reduce the temperature on the drum shell and prevent energy loss.
- \* Optimum arrangement of the magnet and thus achieving the highest efficiency in the separation of fine-grained iron ore
- \* Long service life of the equipment compared to similar products

### International Standards or Permission:

- \* Patent - mobile unit for magnetic separation of fine-grained iron ore (0-10 mm)
- \* Patent - mobile unit for magnetic separation of fine-grained iron ore (10-25 mm)



### ➤ Centrifugal Fine-Crusher of Silica Minerals, Feldspar, etc. With Dimensions Below 4-5 cm

◆ Momtaz Crusher Co.

[www.momtazsangshekan.com](http://www.momtazsangshekan.com)



#### Product Introduction:

This device is used as a tertiary crusher. Centrifugal sand making machine has the ability to produce multi-faceted mixed load in accordance with the latest sand production standards for use in asphalt and concrete.

Also, the centrifugal fine-crusher or Rock on Rock is widely used in crushing hard rocks such as: feldspar, silica, dolomite, barite, etc., and the centrifugal sand maker's crushing system is aut-genous. It should be noted that all the hammers of the Rock on Rock machine are made of tungsten carbide and the rotor, which is the most vital part of this machine, is made of Hardox 400.

**Founded:**

2012

#### Application:

Tertiary stone crusher

*This product is a final B2B equipment.*

#### Technical Specifications:

Model	Rotor × Width	Engine power (kW)	Rotor speed (rpm)	Weight (kg)
MS-VS501	650 × 240	110	1450-1750	7000
MS-VS502	800 × 300	160	1300-1600	9000

#### Advantages:

- \* Low depreciation
- \* High crushing efficiency
- \* Easy maintenance and repair

**Application:**

Tertiary stone crusher

## ➤ Industrial Filter Press

◆ Safi Sazan Safa Co.

[www.safifilterpress.com](http://www.safifilterpress.com)

**Product Introduction:**

The filter press machine consists of a set of polypropylene plates that are divided into two fixed and movable parts together. Filtration cloths with very small and different pore sizes (based on the application, characteristics and particle size of the solid materials remaining in the slurry phase) will be placed on the plates that serve as a holder and a chamber for the collection of solids. After passing through the set of filtration plates and cloths, the slurry feed or incoming sludge is purified and the dewatered solids remain in the space between the filtration cloth and the chamber and a solid cake is formed. In each process cycle, first the plates are compressed by hydraulic jack and then the slurry solution is injected and loaded into the plates by a feeding pump. After the dewatering process is completed, the plates return to their original state and the cake or solids formed are discharged. Filter presses have been used for a long time.

**Main Export Destinations:**

Spain, Turkey

**Export History:**

Up to 500,000 \$

**Founded:**

2014

*This product is a final B2B equipment.*

**Technical Specifications:**

Model	Plate dimensions (mm)	Cake thickness (mm)	Cake volume (lit)	Effective area (m <sup>2</sup> )
Sp_1000	1000 × 1000	32	26	1.7
Sp_1200	1200 × 1200	32	36	2.2
Sp_1250	1250 × 1250	35	42	2.4
Sp_1500	1500 × 1500	35	66	3.8

**Application:**

- \* Sugar industry
- \* Zinc industry
- \* Copper industry
- \* Food
- \* Minerals

## ➤ Industrial Filter Press

◆ Safi Sazan Safa Co.

[www.safifilterpress.com](http://www.safifilterpress.com)

**Product Introduction:**

Plates are the main part of a filter press machine, thus their material, type and quality of their manufacture have a great effect on the performance of the device. Plates are divided into two types: Membrane and Recessed. Chamber plates are used alone or together with membrane plates in making all kinds of filter press machines. The filter press plate is made of polypropylene, which is used in the filter press machine to purify the product. There is a hole in the center of the plates and a path for fluids to exit in the corner. In the filter press machine, a piece of cloth is spread on different plates. The press filter plates are placed on top of each other and due to the pressure of the press, their contact surface is completely sealed. The fluid to be filtered enters through the hole in the middle of the plates, and due to the location of the cloth, the only way for the fluid to exit is through the cloth. When the fluid passes through the cloth, due to the size of the holes in the cloth, the particles that are larger than a certain limit will not be able to pass, but the water will be discharged through the discharge path of the plates as it passes through the cloth.

Thus, at the end of the process, the particles that should be separated from the fluid remain in the space between the pieces of cloth.

**Main Export Destinations:**

Spain, Turkey

**Export History:**

Up to 500,000 \$

**Founded:**

2014

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Material</b>	Polypropylene
<b>Plate size</b>	* 200 × 200
	* 300 × 300
	* 400 × 400
	* 500 × 500
	* and ...

**Advantages:**

- \* Ease of installation and repair
- \* Longer life than similar products
- \* One year warranty



**Application:**

- \* Metal and minerals
- \* Food industry
- \* Building Materials
- \* Ceramic
- \* Wood, paper, etc.

➤ **Cyclofilter**

◆ Kimia Machine Alborz Co.

[www.kimiamachine.com](http://www.kimiamachine.com)



**Product Introduction:**

Cyclonic separation is a device that is designed to be used in industrial environments for dusting and collecting suspended particles in the air such as air or gas or liquids and small materials that are created due to machine activities. In this device, the two forces of fluid rotation and gravity are used to separate suspended particles so that solid particles are separated from the fluid, which is called a dehumidifier.

Often, this device is called a two-stage device, because this device, unlike other dusting devices, has two collection points for dust and dirt. The first collection point of the device is used for dirt and heavier particles and the second collection point of the device is used for smaller materials and particles.

**Main Export Destinations:**

Turkey, Iraq, Pakistan

**Export History:**

500,000 - 1,000,000 \$

**Founded:**

2006

*This product is a final B2B equipment.*

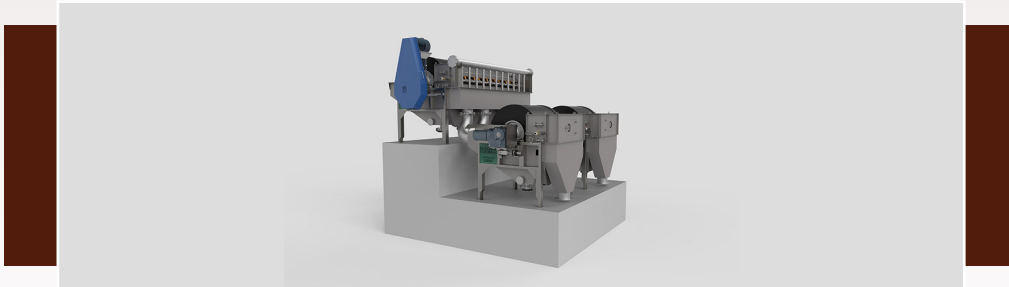
**Technical Specifications:**

<b>Polluted air chamber</b>	<ul style="list-style-type: none"> <li>* Outer body</li> <li>* Middle body</li> <li>* Volute</li> </ul>
<b>Clean air chamber</b>	<ul style="list-style-type: none"> <li>* Plate separating clean from dirty body</li> <li>* Filter</li> <li>* Cage</li> <li>* Ventory</li> </ul>

**Advantages:**

- \* Increased high efficiency compared to the old filter bag
- \* Reducing the depreciation of used parts compared to the old filter bag
- \* Easy and simple maintenance and repair
- \* Low pressure drop





## ➤ Drum Magnet Hybrid

◆ Papko Industrial Group

[www.papkogroup.com](http://www.papkogroup.com)



### Product Introduction:

Hybrid magnet drum is a device that is used in iron ore mines for beneficiation. The difference between the hybrid magnet drum and the normal magnet drum is in the special design and arrangement of the magnetic field. In these drums, the magnetic poles are designed in such a way that when separating ferrous materials from non-ferrous materials, the absorbed materials are removed from each subsequent pole, and this causes the fall of soil and dust enclosed in the absorbed iron, and increases the grade of the product and removes the dust.

**Founded:**  
2005

### Application:

In the iron ore placer mine system for beneficiation of iron ore

*This product is a final B2B equipment.*

### Technical Specifications:

Power	22 kW
Service temperature	20-80 °C
Capacity	80-130 tons/h
Magnet power	1000-3000 Gauss



**Application:**

Use in recycling industries as well as mining industries to separate non-ferrous materials and parts

➤ **Electric Magnet Drum**

🏠 Papko Industrial Group

[www.papkogroup.com](http://www.papkogroup.com)



**Product Introduction:**

Magnetic drums (Magnetic Drum Separator) are another equipment for separating materials from iron. Separation of iron in the industry is done for two purposes: concentration (increasing the grade of BULK and separating iron compounds as a useful element) or purification (separation of iron compounds as a disturbing element from the BULK)

**Founded:**  
2005

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Power</b>	6 kW
<b>Service temperature</b>	-20 to 50 °C
<b>Capacity</b>	About 50 tons per hour for materials with a grain size of 1 to 10 mm
<b>Voltage</b>	220 VDC
<b>Current</b>	27 A

**Advantages:**

- \* Changing the intensity of the magnetic field by changing the input voltage of the device
- \* Very high magnetic field depth



## ➤ Wet Magnet Drum

◆ Papko Industrial Group

[www.papkogroup.com](http://www.papkogroup.com)



### Product Introduction:

Wet Magnetic drum separators are used to separate ferromagnetic materials from slurry. In this method, iron ore processing is done in two phases, in the first phase, the goal is to obtain high recovery from the input product, and in the second phase, the final goal is to reach the highest possible grade for iron ore. The working structure of magnetic drum devices is such that the magnetic drum roller is placed inside the tank and the iron ore enters the tank along with water (slurry) and at the end the output of the tank is divided into two parts and two products.

In wet magnetic drum separation, the final product is high grade iron ore. For the optimal performance of magnetic drums, the maximum size of iron ore inside the slurry is 2 mm. As mentioned, the wet drum is placed in the tank, which has different shapes such as counter rotation and concurrent.

**Founded:**

2005

### Application:

Beneficiation of iron ore (concentrate)

*This product is a final B2B equipment.*

### Technical Specifications:

Power	11-15 kW
Service temperature	-20 to 80 °C
Capacity	Between 10-150 tons/h

### Advantages:

Better performance than similar products



## ➤ Papko Roll

### ➤ Papko Industrial Group

[www.papkogroup.com](http://www.papkogroup.com)



#### Product Introduction:

Papko Roll is a very effective iron compound separator with a very high magnetic field intensity, which is used to separate mineral iron compounds such as hematite, limonite, bentonite and muscovite. Among industrial magnetic equipment, Papko Roll is the best option for separating these materials. Conventional magnets cannot be purified. In this device, the magnetic roller is used as the head pulley, and a thin belt connects the roller to the back pulley. The material of the belt is kevlar with a thickness of 0.5 to 1 mm. When the material reaches the field of the Papko Roll magnetic roller, magnetic or paramagnetic particles are attracted to the roller and are discharged under the magnetic roller. While non-magnetic materials follow the usual path of discharge.

**Founded:**

2005

#### Application:

- \* The separation of inorganic iron compounds is very useful in various industries such as the following:
- \* Special minerals including silica, feldspar, calcium carbonate, magnesium carbonate, aluminum hydroxide, aluminum silicate
- \* Absorption of spinel minerals including ilmenite and mica
- \* Special abrasive materials including aluminum oxide, silicon carbide, glass beads In plastic industries, separation of PVC grains that contain iron.
- \* Recycling industries

*This product is a final B2B equipment.*

#### Technical Specifications:

<b>Power</b>	12-14000 Gauss
<b>Service temperature</b>	-20 to 80 °C
<b>Capacity</b>	About 8 tons/h

#### Advantages:

- \* Very high magnetic field 17,000-14,000 Gauss using kevlar belt
- \* Can be designed from 5-1 floors Equipped with Inverter (remote control)
- \* Special base design for fast belt replacement
- \* Compact design and classification of Papko Roll
- \* Ability to effectively absorb fine paramagnetic and ferromagnetic materials (less than MESH 325)



**Application:**

- \* Metal powders
- \* Mineral powders
- \* Abrasive materials
- \* Toner
- \* Wax & etc.

➤ **Super Micronized Classifier**

◆ Kimia Machine Alborz Co.

[www.kimiamachine.com](http://www.kimiamachine.com)



**Product Introduction:**

The classifier (granulator) is one of the most practical pieces of equipment for separating pebbles, sand and small solid grains in water, which helps a lot in wastewater treatment. The structure used in the design and construction of the classifier provides conditions for this equipment to remove sand up to 95% from water. The present device is another type of classifier that can meet many needs for separating super micronized powders. The horizontal arrangement of the blades of this device has caused wear to decrease and lifespan to increase when working with abrasive materials. This device can be used for special cases and high accuracy in gradation and different processes for separating different materials.

**Main Export Destinations:**

Turkey, Iraq, Pakistan

**Export History:**

500,000 - 1,000,000 \$

**Founded:**

2006

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Body</b>	* Upper body * Middle body * Lower body
<b>Body material</b>	ST 52
<b>Linear speed of the rotor</b>	80 to 105 m/s
<b>Rotor shaft material</b>	CRMO442

**Advantages:**

- \* Minimum space required
- \* The highest production rate of the desired product
- \* Stable operation even when the power supply fluctuates
- \* Long life
- \* Adjustable vent
- \* No vibration

**Application:**

Imagery and analysis of natural stone tiles or slabs up to 120 cm wide

## ➤ Sorting Machine for Stoneblocks and Slabs (Sort Plus)

◆ Negin Eram Co.

[www.negineram.com](http://www.negineram.com)

**Product Introduction:**

One of the biggest problems in the field of stone is the lack of a precise and mechanized sorting system. Stone sorting is done visually and completely traditionally all over the world, and therefore, the error of people's eyes and taste will cause the wrong sorting of the stone. The task of this device is to accurately separate the stones based on their texture, patterning and shape, which increases the uniformity and quality of the delivered products (cut slabs) to a great extent and customers can choose a code to receive their desired product and If needed, they will be able to request the product later by providing the same code and with the same quality.

**Annual Production Capacity:**

15 Machines

**Founded:**

1988

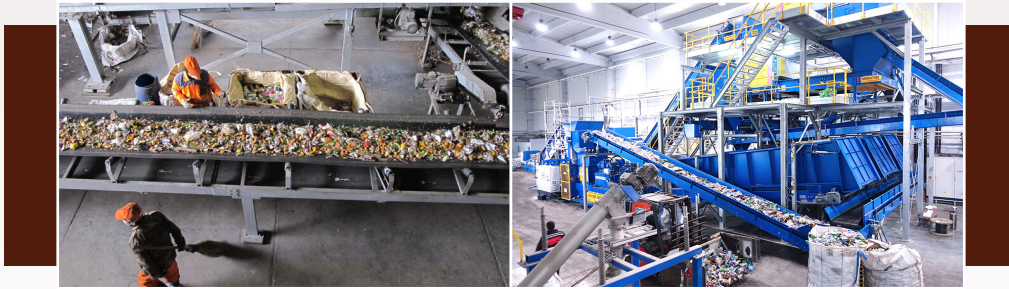
*This product is a final B2B equipment.*

**Technical Specifications:**

**Machine dimensions:** 150 × 430

**Advantages:**

- \* Creating %100 harmony between the stones installed in a space
- \* The use of special epoxy and its implementation in a special way on both sides of the stones, which minimizes the amount of waste and greatly increases the strength of the stones.
- \* Mechanized transportation of stone in unique packages that minimizes damage during transportation.



➤ **Industrial and Mineral Pre-Processing Machine**  
Sensor-Based Sorting | Based on Chemical Composition  
Analysis by XRF Method

◆ Behyab Sanat Faham Co.

[www.pishfaravar.com](http://www.pishfaravar.com)



**Product Introduction:**

The technical knowledge of chemical composition analysis (XRF) is one of the laboratory methods known and trusted by the mining and processing community due to the impossibility of error in the identification of elements, along with the reliable techniques of grade estimation. The pre-processing machine with the help of ultra-advanced equipment and unique and indigenous technical knowledge in radiation engineering and software, while estimating the exact grade (XRF) online in less than a few thousandths of a second, is capable of performing high-speed and accurate industrial separation operations, in any kind of selection limit (Cutoff) including material, grade or the ratio of the target element with the second element without any preparation.

**Founded:**

2017

**Application:**

- ✳ Mines for pre-concentration or extraction of minerals from tailings
- ✳ Separation of glass waste
- ✳ Separation of plastic waste and...

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Mechanical part</b>	includes all the parts that are either designed and made by the company itself using AUTOCAD software or purchased.
<b>Electric part</b>	includes an electrical panel to set up and perform the task of all units, a control part and all the protective equipment.
<b>Software part and implementation of sorting algorithm</b>	The method of analyzing a lot of raw data and the output of the X-RAY device, which is provided in the form of codes in MATLAB software.
<b>Motor Shaft Material</b>	CRM0442



## ➤ Engineering Design and Construction of Iron Concentrate Desulfurization Pilot Line Using Flotation Cell

◆ Kankash Optimal materials Haft Co.

[www.haft-co.com](http://www.haft-co.com)



### Product Introduction:

In this service, the aim is to design a pilot line for iron concentrate desulfurization with more efficiency than usual processes and methods. The most important physical part of the pilot is the flotation cell, which is completely manufactured by the company. Before applying the parameters of the flotation process on the newly constructed cell, the parameters have been examined in a laboratory and the results have been published and presented in the articles. Also, these parameters have been tested in the Ahan Sangan iron concentrate pilot of 25 tons of concentrate during 30 stages in the pilot line.

### Application:

Mining industry

*This product is a final B2B equipment.*

### Advantages:

Having the latest flotation technology

**Founded:**

2018



Mining Industry

Knowledge-based products and equipment





## ➤ Water Cooling Copper Panel for Electric Arc Furnaces

◆ Irsa Steel Equipment Co.

[www.irsasteel.com](http://www.irsasteel.com)



### Product Introduction:

Copper water cooling panels in electric arc furnaces have the task of protecting the furnace body. These parts are produced in different designs and dimensions, completely made of copper and copper-steel. Considering the location of this product and the possibility of arcing in the first melting process and before the formation of slag on these parts, the low quality of construction will bring the risk of water leakage into the furnace and this will cause irreversible damages.

### Application:

The task of protecting the furnace body in electric arc furnaces

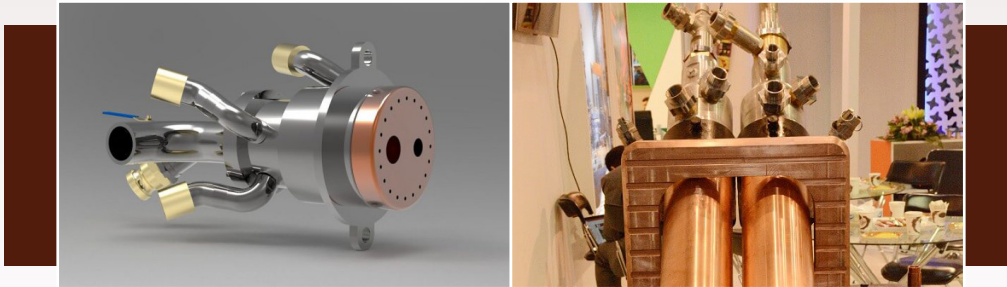
*This product is a final B2B equipment.*

### Technical Specifications:

<b>Material of the part</b>	<ul style="list-style-type: none"> <li>* Copper %99.97</li> <li>* Copper-steel 516</li> </ul>
<b>Designs</b>	<ul style="list-style-type: none"> <li>* Tubular panel</li> <li>* Screen panel</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>* <b>Planar:</b> from 60x60 cm to 2x2 meters</li> <li>* <b>Tubular:</b> maximum length of 4 meters</li> </ul>

### Advantages:

- \* Use of forged copper material
- \* Welding with very high bond quality
- \* High cooling efficiency
- \* Reduction of furnace stoppages
- \* Reduction of parts deformation



## ➤ Blowing Lance of the Electric Arc Furnace

🏠 Irsa Steel Equipment Co.

[www.irsasteel.com](http://www.irsasteel.com)



### Product Introduction:

Blowing lance is used to blow gas and inject materials (oxygen, carbon, lime and dolomite) with a controlled flow rate and at a certain angle. This process, which is done in order to create slag and control carbon and oxygen in the melting process, will save energy and increase production efficiency. The destruction of the lances due to the high temperature inside the furnace (about 3500 degrees) is the main problem of the lances. As a result, in order to reduce the possibility of failure and hence, increasing the life of the product, suitable water cooled panels have been incorporated in the product design.

### Application:

Blowing gas and injecting materials (oxygen, carbon, lime and dolomite) with a controlled flow at a specific angle to electric arc furnaces in the steel, aluminum and copper industry

*This product is a final B2B equipment.*

### Technical Specifications:

#### Main components:

- \* Cooling shell (main body)
- \* Blowing equipment
- \* Connections
- \* Chrome coating

#### Advantages:

- \* Optimum design
- \* Product performance at high temperature inside the furnace



**Application:**

Copper water cooling panels and copper plates in electric arc furnaces, which have the task of protecting the furnace body.

➤ **Water Cooled Panels in EAFs**

◆ Parchamdaran Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



**Product Introduction:**

Iron and steel industries are one of the biggest industrial consumers of energy. Therefore, reducing energy consumption is one of the goals of companies and industries active in this field. The reasons of steelmaking industries to use electric arc furnaces are as follows:

1. Reducing energy consumption and environmental pollution
2. Increasing equipment availability.

The presence of water cooling is essential in modern design (EAF) and water-cooled copper parts in blast furnaces and EAFs are constantly being optimized due to the direct impact on furnace stoppages, efficiency as well as reducing energy consumption.

**Founded:**

2010

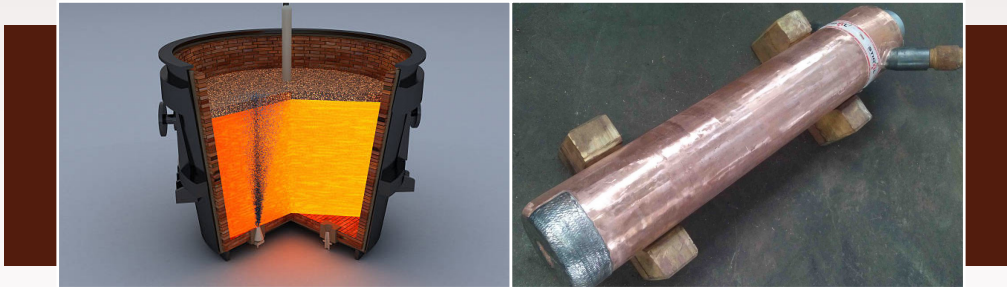
*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Material</b>	99.9% Cu - Steel
<b>Designs</b>	Copper slab tubular panel
<b>Weight</b>	500-1000 kg

**Advantages:**

- \* Reducing the number of emergency repairs during furnace operation and consequently reducing costs
- \* Increasing production rate per hour



**Application:**

Oxygen blowing lances and charging materials are usable parts for transferring charging materials and oxygenating the melt in electric arc furnaces and converters for converting cast iron into steel in steelmaking units.

➤ **Oxygen Blowing Lance (Injection Lance)**

◆ Parchamdaran Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



**Product Introduction:**

Blowing lance is used to blow gas and inject materials (oxygen, carbon, lime and dolomite) with a controlled flow rate and at a certain angle to electric arc furnaces in the steel, aluminum and copper production industry. This process, which is done in order to create slag and control carbon and oxygen in the melting process, will save energy and increase production efficiency.

Destruction of lances due to the high temperature inside the furnace (about 1500 degrees) is the main problem of the lances, as a result, in order to reduce the possibility of failure and thus increase the life of the product, suitable water cooling panels have been considered in the product design.

**Founded:**

2010

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Material</b>	99.9% Copper-Steel
<b>Coating</b>	Nickel cobalt iron-based welding coating
<b>Weight</b>	35-200 kg
<b>Diameter</b>	28-190 mm

**Advantages:**

Optimum design of the water panels and as a result reducing the cost of steel production units



### ➤ Technical Knowledge Development and Engineering Design Services in the Fields of Pelletizing, Direct Iron Reduction, Optimization of Electric Arc Furnaces and Steelmaking

◆ ASYN Steel Engineering Co.

[www.asynsteel.org](http://www.asynsteel.org)



#### Product Introduction:

A complete iron ore steelmaking plant generally consists of 4 parts: iron ore concentrate unit, pelletizing unit, direct reduction unit, sponge iron smelting unit and steelmaking. According to the production capacity and economic efficiency, different companies incorporate parts of these units or all of them.

- \* **Pelletizing unit:** The pelletizing process begins with receiving and storing raw materials in the mixing unit. This process includes receiving, storing and charging them in the mixer. The mixer has the task of mixing and homogenizing the composition of materials and moisture. For this purpose, forward and reverse paddles are mounted on a rotating axis, which perform the mixing action. The arrangement of these paddles and the retention time of concentrate and glue in this mixer (experimentally it is about 65 s) are important. In general, pelletizing mixers today are made in two designs, horizontal and vertical. The horizontal cylindrical mixer considered in this pilot plant has a capacity of 3 ton/hr.
- \* **Midrex direct reduction unit:** In the Midrex process, a shaft furnace or an oven is used to continuously reduce iron oxide in a solid state. The charging material including pellets and lumps of iron oxide moves down from the top of the furnace and is reduced by the hot reducing gas (a mixture of hydrogen and carbon monoxide) flowing from the bottom of the furnace

**Founded:**

2010

to the top. Reduction of iron oxide takes place in the reaction with  $H_2$  and  $CO$ . The reducing gas is produced in the gas converter reactor or Midrex process reformers by partially oxidizing natural gas (the main part of which is methane) in the reaction with the exhaust gas of the reduction furnace (the main part of which is carbon dioxide and water vapor) and in the presence of a nickel catalyst. After reducing the iron oxide in contact with the reducing gas, the reduced materials pass through the cooling zone of the reduction furnace and are cooled by the cooling gases. Finally, the sponge iron produced with a temperature of less than 100 degrees Celsius and a metal grade of about %92 is removed from the bottom of the furnace.

- \* **Steel making unit:** In the Pasargad iron smelting complex, the steel making unit converts a part of sponge iron into molten steel and converts crude steel into various types of alloy steels through secondary metallurgy using a ladle furnace (LF) and a vacuum degasser (VD) or vacuum oxygen decarburization (VOD) unit.

#### Application:

Steelmaking from the iron ore

*This product is a B2B Service Offering.*



## ➤ Raw Pellet Strength Testing Machine (GCS Pellets)

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

This machine performs the raw pellet strength test operation. It breaks the pellets with pressure and the graph of the forces exerted on them is drawn by the machine and shown on the screen. This machine can be divided into 4 main parts: power transmission system, disk, electronic board and software system. In total, the three main parts of this product are:

#### Mechanical section

- ※ **Force application system:** This system has the task of breaking the pellets with the help of a motor and mandrel.
- ※ **Disc:** The disc does the task of moving the pellet in the plate. The production process of this part includes machining and laser.

#### Electronic section

- ※ **Electronic eyes:** These eyes detect the movement of pellets and discs and communicate with the board.
- ※ **Electrical panel:** The electrical panel has the task of controlling and supplying electricity to different parts.
- ※ **Electronic board:** As the brain of the device, this board controls all parts. The electronic board is designed in such a way that it processes information very quickly, and therefore the number of load cell data collection is more than 1000 per second.

**Annual Production Capacity:**

2 Machines

**Founded:**

2007

### Software section

- ※ **Display screen:** Using this display, you can control different parts of the device.
- ※ **Computer software:** In addition to the screen, the automatic strength testing device can also be controlled through a computer program. The device can be controlled both through the screen and through the computer. Using this program, you can calibrate the machine and you can also change the settings of all parts.

### Application:

Measuring raw pellet strength

*This product is a final B2B equipment.*

### Technical Specifications:

Servo motor	2 pieces 400 W
Electricity supply	220 V
Maximum power	About 20 kg

### Advantages:

- ※ Ease of use
- ※ High accuracy of results

**International Standards or Permission:**

ISO 4700



## ➤ Baked Pellet Compression Strength Testing Machine

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

The baked pellet strength testing machine is designed and made in order to measure the amount of force applied to the pellet until it breaks. This machine can be divided into 5 main parts: power transmission system, feeder, disk, electronic board and software system. In total, the three main parts of this product are:

#### \* Mechanical section

- \* **Force application system:** This system has the task of breaking the pellets with the help of a motor and mandrel.
- \* **Disc:** The disc does the task of moving the pellet in the plate. The production process of this part includes machining and laser.
- \* **Feeder:** This part transfers pellets to the disk. Because this part has many components and there is a possibility of bullet getting stuck in it, advanced manufacturing processes such as CNC are used.

#### \* Electronic section

- \* **Electronic eyes:** These eyes detect the movement of pellets and discs and communicate with the board.
- \* **Electrical panel:** The electrical panel has the task of controlling and supplying electricity to different parts.
- \* **Electronic board:** As the brain of the device, this board controls all parts. The

**Annual Production Capacity:**

20 Units

**Founded:**

2007

electronic board is designed in such a way that it processes information very quickly, and therefore the number of load cell data collection is more than 1000 per second.

#### \* Software section

- \* **Display screen:** Using this display, you can control different parts of the device.
- \* **Computer software:** In addition to the screen, the automatic strength testing device can also be controlled through a computer program. The device can be controlled both through the screen and through the computer. Using this program, you can calibrate the machine and you can also change the settings of all parts.

### Application:

Evaluation of the hardness of pellets

*This product is a final B2B equipment.*

### Technical Specifications:

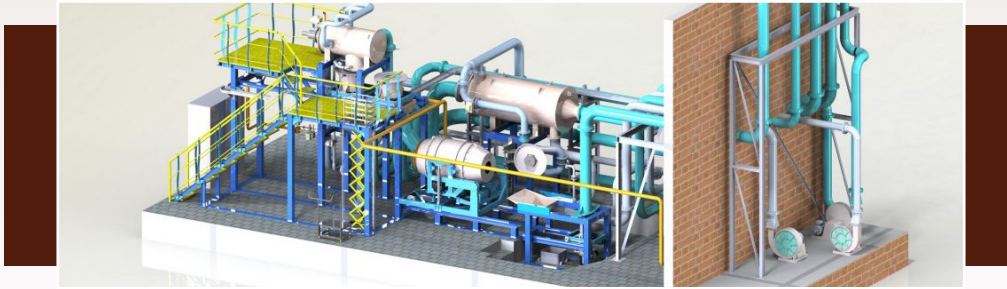
<b>Servo motor</b>	* 800 W with 1:10 gearbox * 400 W with a 1:10 gearbox
<b>Electricity supply</b>	220 V
<b>Maximum power</b>	About 800 kg

### Advantages:

- \* Graph drawing
- \* Calculating the average of testing 30 pellets in 5 minutes
- \* Calculation of standard deviation
- \* Classification according to the amount of breaking force
- \* Fully automatic machine

**International Standards or Permission:**

ISO 4700



## ➤ Pelletizing Pilot Plant

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

Pelletizing factories need a set to simulate their main line process from the beginning of design and construction to the end of operation time. This set is used at the beginning of the initial design to optimize and apply the results of the pilot as technology and construction data, and during operation in order to meet the needs such as continuous monitoring of the effect of continuous change of process parameters on the produced pellet, in order to maintain the quality and uniformity of the pellet. These process parameters include the timing and speed of the production line, raw materials and composition and their ratio, granulation, moisture level, flow rate and combination of gases and temperature and pressure of each part of the line. Mastering and handling the speed of the factory line will obviously lead to an increase in the production rate. The pelletizing pilot plant of Mobarakeh Steel complex is actually a small pelletizing factory. In this semi-industrial factory, any modification or research on the pelleting process will be carried out on a small scale and the results will be analyzed, and if approved by set points, will be transferred to the main factory according to the type of pellet or production speed.

**Annual Production Capacity:**

20 Unit

**Founded:**

2007

### Application:

Performing the pellet production process on a laboratory scale

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Combustion chamber</b>	Creating suitable air by simulating the main line in terms of temperature and pressure
<b>Baking and preheating pot</b>	Preservation of pellets during the baking process
<b>Rotary kiln</b>	Baking pellets in the second stage
<b>Heat recovery steam generator</b>	Using the exhaust air to preheat the entering air
<b>Electric valves</b>	Disconnecting, connecting and adjusting the flow inside the pipe
<b>Thermocouple</b>	Measuring temperature in different stages
<b>Electric motor</b>	Creating the required movement in the equipment

### Advantages:

Fully automatic baking without the need for operator intervention during baking

**International Standards or Permission:**

ISO 12759





## ► Designing and Providing Technical Engineering Service of Direct Reduction Plant

◆ Bita Innovative Design Engineering Co.

[www.bidec.ir](http://www.bidec.ir)



### Product Introduction:

Sponge iron production has a short history of 50 years compared to the old and traditional method of iron production by blast furnace. Iron production by the blast furnace method has many advantages that no other method has been able to replace it yet, but due to the reasons, such as the reduction of coking coal and environmental issues, new methods of iron reduction have been given attention. Different methods of direct iron reduction are: Midrex process, HYL process (fourth generation), SLRN process, ITmK3 process, CIRCORED Lugi process and CIRCOFER process (Lugi). In a direct iron ore reduction plant using the Midrex method, iron ore pellets are poured into the reduction furnace from above. As long as the materials are falling from the top to the bottom, the reducing gas enters the furnace from halfway inside the furnace and moves upwards. The reducing gases (carbon and hydrogen) combine with the oxygen of the pellet and cause the reduction of the iron ore. This direct reduction plant consists of five general parts of the architecture and construction of the plant structure, material transfer equipment, reduction furnace (oven), reformer (regenerative gas breakdown unit), cooling gas scrubber stop gas scrubber and production line maintenance equipment (gas supply lines, purge gas tank, fire extinguishing equipment, etc.)

**Founded:**

2002

### Application:

Iron production

*This Product is a B2B Service Offering.*

### Technical Specifications:

<b>The height of the furnaces (not including the foundation)</b>	90 m
<b>Gas reformer dimensions</b>	10 × 8 × 40 m
<b>Pipes diameter</b>	200 mm
<b>Pipes thickness</b>	9 mm
<b>Pipes temperature</b>	940-1000 °C

### Advantages:

- \* Reducing harmful environmental effects
- \* Reducing the amount of coking coal



## ➤ Designing and Providing Technical Engineering Services of Steel Plant

◆ Bita Innovative Design Engineering Co.

[www.bidec.ir](http://www.bidec.ir)



### Product Introduction:

A steel plant consists of five general parts of the architecture and construction of the plant structure, material transfer equipment, electric arc furnace, continuous casting and production line maintenance equipment (gas supply, cooling, firefighting, etc.) is formed. In this plant, furnaces are fed through silos, whose engineering design is done by the company. The important part of this design includes the use of load cells and limit switches controlling each silo. The reason for using these two precise tools is to prevent the reduction of more than 30% of the amount of pellets inside the silo and to stop feeding the pellets as soon as the silo is completely filled.

### Application:

Iron production

*This product is a B2B Service Offering.*

**Founded:**

2002

Mining Industry



Knowledge-based products and equipment



**Application:**

A piece used in blast furnaces to direct hot air and charging materials into the furnace

➤ **Blast Furnace Copper Tuyeres**

◆ Parchamdaran Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



**Product Introduction:**

Copper tuyeres are parts in blast furnaces that are used to direct hot air and charging materials into the furnace and are cooled by water circulation panels. The material of this part, which is considered one of the sensitive parts in the world's blast furnaces, is pure copper, and it provides the possibility of blowing 1200 degree air into the blast furnace and causes the reduction and melting of iron ore and coke in the blast furnace. This company currently designs and produces this product in single-wall, double-wall, triple-wall and spiral types with ceramic, welded and internal tiling.

**Founded:**

2010

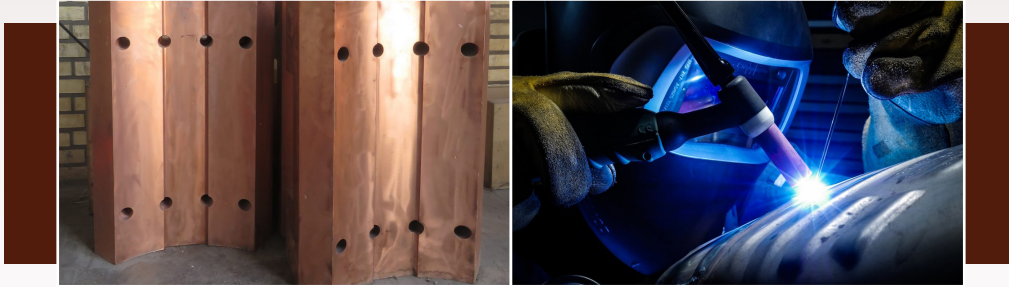
*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Material of the part</b>	99.9% Copper
<b>Designs</b>	Single-wall, double-wall, triple-wall and spiral
<b>Weight of the part</b>	150-200 kg
<b>Electric conductivity (iacs%)</b>	>80
<b>Service pressure of the part</b>	10-17 bar

**Advantages:**

Optimizing the water cooling panel system



**Application:**

Parts used in electric arc furnaces and secondary metallurgy, which perform the task of transferring electric current to the graphite electrode in arc furnaces.

➤ **Electrode Holder, Electrode Clamp**

◆ Parchamdaran Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



**Product Introduction:**

Electrode copper holders are consumable parts used in electric arc furnaces and secondary metallurgy, which perform the task of transferring electric current to the graphite electrode in arc furnaces. Considering that these parts are used for transferring electric current from the transformer to the graphite electrodes used in electric arc furnaces, they should be produced and operated without casting or forging defects, and with complete CNC machining process and pure molten copper welding.

The material of these parts is pure copper (99.9 percent) and if the percentage of some elements such as iron, phosphorus and silicon increases, or if there are holes and casting defects, it will cause a severe drop in electrical conductivity, which will make the performance of the part difficult and reduce the life of the part.

**Founded:**

2010

*This product is a final B2B equipment.*

**Technical Specifications:**

<b>Material</b>	Copper
<b>Chemical composition</b>	99.90% Cu
<b>Weight</b>	2100 Kg
<b>Thermal conductivity (IACS%)</b>	>80

**Advantages:**

Transmission of electric current from transformer to graphite electrode in electric arc furnaces



## ➤ Copper Stave Coolers

◆ Parchamdarán Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



Pss Co

### Product Introduction:

Copper stave coolers are one of the parts used in blast furnaces and electric arc furnaces, which are used to cool the furnace shell. For the first time in the Middle East, these parts have replaced cast iron coolers, which have been put into use in Isfahan iron smelting blast furnaces by casting, machining, and dissimilar welding of copper to steel.

Stave Coolers must be resistant to thermal loads as well as high mechanical loads. The greatest mechanical load occurs when charging the furnace. Waste material can damage coolers. Therefore, the design must be such that it can resist against these forces. Also, the life of coolers is mainly dependent on the amount of thermal cycle that the panel is exposed to.

**Founded:**

2010

### Application:

One of the parts used in blast furnaces for cooling the blast furnace shell

*This product is a final B2B equipment.*

### Technical Specifications:

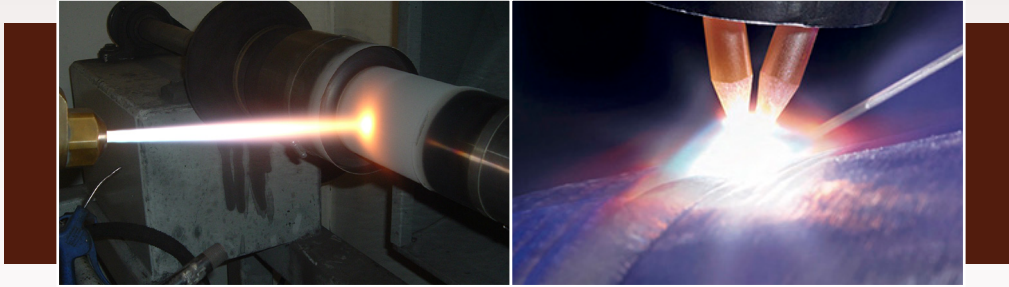
Material	99.9% Cu
Dimensions	150 × 900 × 2000 mm
Weight	2100 Kg
Service pressure	15 bar

### Advantages:

- \* Increasing production efficiency
- \* Reduction of perennial repairs
- \* Reducing water usage
- \* Increasing the volume of the furnace

**International Standards or Permission:**

Approval of Paul Wurth Company



## ➤ Cladding

◆ Parchamdaran Sanaat Sepahan Co.

[www.pssir.com](http://www.pssir.com)



### Product Introduction:

The Parchamdaram engineering company of Sepahan Sanat has the ability of coating colored metals to protect parts from corrosion, depreciation, abrasion, rusting and pitting by having dissimilar welding technology. Also, this group has the ability to design protective coatings against corrosion, wear, oxidation, high heat, etc by possessing the technical knowledge of modern coatings by thermal spraying method.

### Application:

Repair and restoration of damaged surfaces of copper parts and equipment

*This product is a final B2B equipment.*

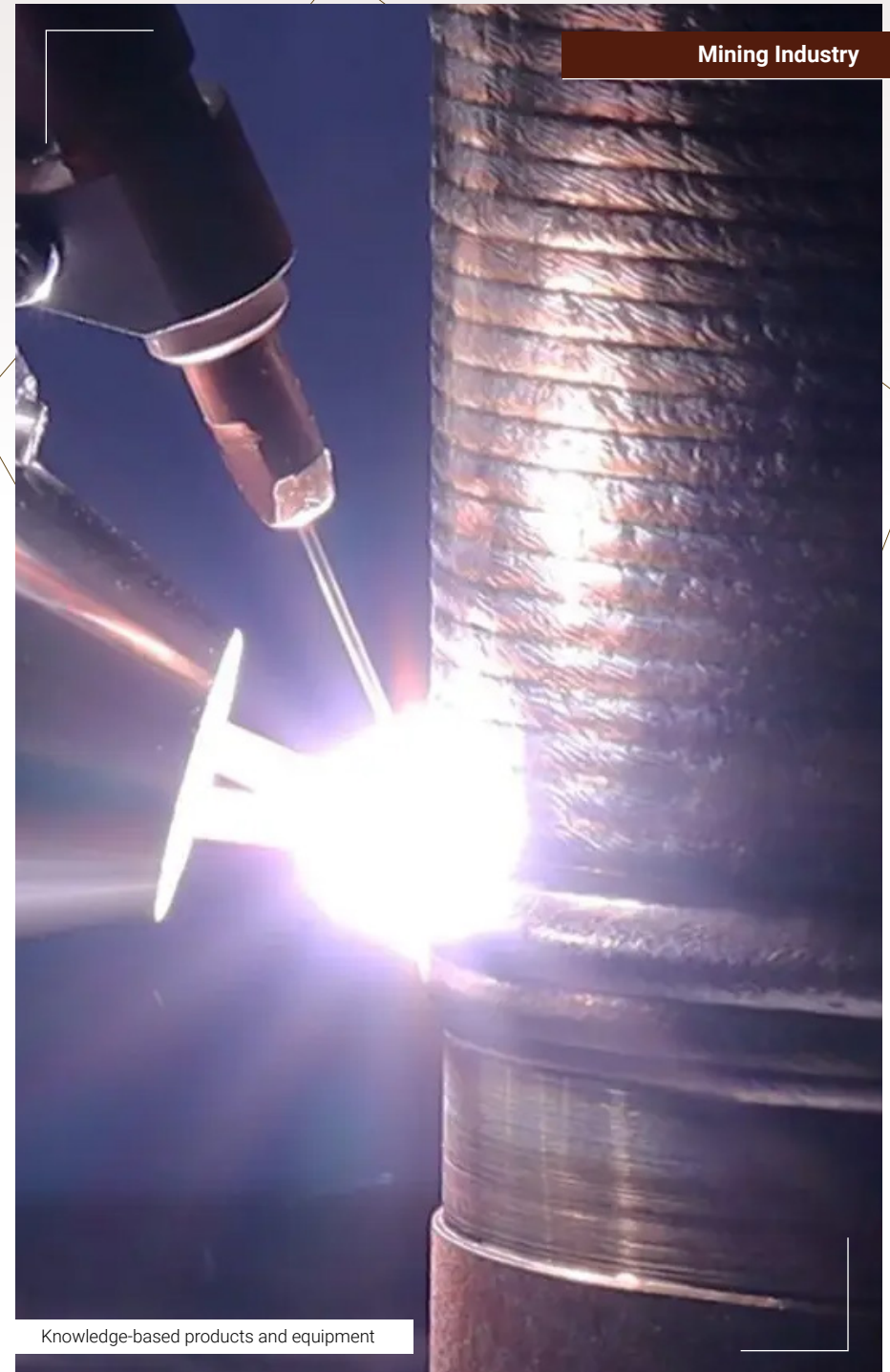
### Advantages:

- \* Hard facing coating
- \* Indigenization of lance coating

**Founded:**

2010

Mining Industry



Knowledge-based products and equipment



### Application:

- \* Melting ferrous metals
- \* Melting non-ferrous metals
- \* Alloy making
- \* Precise Casting
- \* Melting rare metals and etc.

## ➤ Induction Furnace

🏠 Mehronik Power Conversion Co.

[www.mehronic.com](http://www.mehronic.com)



### Product Introduction:

Induction melting furnaces are used for heat treatment and melting metals in the production of ingots and billets or castings. These furnaces use electric current to melt scrap iron or sponge iron or metal ingots, and the resulting molten material is produced in the form of steel ingots after being emptied into molds. Induction furnaces have high melting speed. One of the advantages of this induction furnace is low pollution and one of its disadvantages is its high water consumption. However a great amount of water will be saved if a closed circuit cooling system is used. These furnaces can be produced from low capacity and tonnage to high capacity and tonnage.

#### Export History:

Up to 500.000 \$

#### Main Export Destinations:

Armenia, Kazakhstan, Kyrgyzstan, Iraq and Afghanistan

#### Annual Production Capacity:

15 Devices

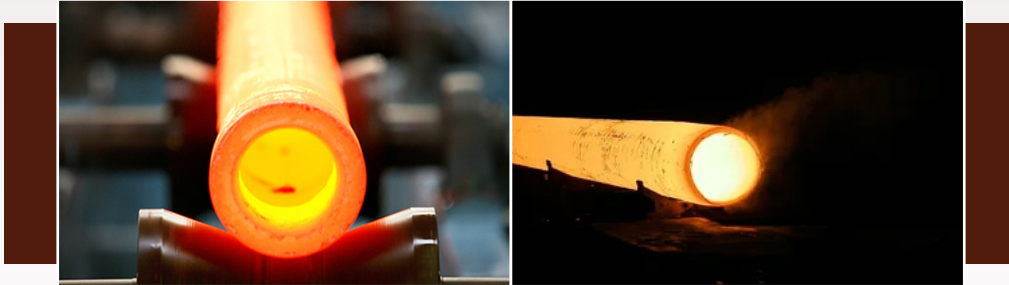
#### Founded:

2010

*This product is a final B2B equipment.*

### Advantages:

- \* Highest efficiency and very high melting speed
- \* Easy operation and repair
- \* Low pollution



## ➤ Induction Furnace

◆ Tapka Induction Furnace Manufacturing Co.

[www.tapka.ir](http://www.tapka.ir)



### Product Introduction:

Steel pipes that are placed inside the ground are exposed to severe corrosion. To increase the resistance of these pipes against corrosion, in the past, the pipe was coated with bitumen after being placed in the ground, But in new technologies, in order to increase the resistance of these pipes, a three-layer polyethylene or FBE coating is applied on them. To implement this coating operation; It is necessary to heat the surface of the pipe uniformly at around 220-250 degrees Celsius. Considering the large diameter of these pipes and the need for uniformity of temperature on all pipe surfaces, one of the most practical methods for preheating these pipes before entering the coating chamber is to use induction methods. The product "Induction Furnace for Pipe Preheating" has been designed and manufactured with this purpose in "TAPKA" company.

### Main Export Destinations:

Iraq

### Export History:

Up to 500,000 \$

### Founded:

1994

### Application:

Pipe factories related to oil and gas industry and water and sewage industry

*This product is a final B2B equipment.*

### Technical Specifications:

Model	MF-F-ST 2000
Medium frequency power	2000 KW
Power supply	2500 KVA
Input voltage	1000 V
Approximate weight	5 tons
Approximate dimensions	2915*1640*3110 mm

### Advantages:

- \* Coil voltage and current design for maximum power transmission and minimum losses
- \* Designing suitable solutions for electrical protection of equipment





**Application:**

Melting iron, steel, copper, aluminum and precious metals

➤ **Induction Melting Furnace Capacity from 50 kg to 10 tons**

◆ Tapka Induction Furnace Manufacturing Co.

[www.tapka.ir](http://www.tapka.ir)



**Product Introduction:**

For the production of many metal products, the production process begins with the melting of metals. In this case, it is necessary to raise the temperature of the metal to the melting point, and for metallurgical operations, it is often necessary to keep it at the said temperature. Using an induction furnace is one of the best ways to do this process. In these furnaces, the metal is placed inside a non-conductive bush, which is surrounded by a copper coil. By applying a variable voltage (AC) to both ends of the coil and passing a variable current through it, a strong variable magnetic field is created inside the coil.

Due to the magnetic property of metal, due to electromagnetic induction, a strong electric field is induced on the surface of the metal and creates circular eddy currents on the surface of the metal. Due to the electrical resistance of the metal, the passage of eddy currents generates a great amount of heat in the metal and causes rapid melting of the metal. After the metal is melted, the eddy currents cause intense mixing of the melt and provide the boiling and mixing necessary for a high-quality melting process.

The induction furnaces produced in the "TAPKA" company are available in two types (Compact Melt with a capacity between 100 and 350 kW) and Power Melt with a capacity between 500 and 10000 kW.

**Main Export Destinations:**

Iraq

**Export History:**

Up to 500,000 \$

**Founded:**

1994

*This product is a final B2B equipment.*

**Technical Specifications:**

5-ton Induction furnace	
Model	MF-M-ST2500
Medium frequency power	2500 kw
Working frequency	400-500 Hz
Power supply	2750 KVA

**Advantages:**

- ✦ Digital electronic control
- ✦ Application of maximum power from cold load to full melting
- ✦ High efficiency
- ✦ Accessible and safe chamber for installing the control board
- ✦ Ease of installation



## ➤ Induction Hardening Furnace

◆ Tapka Induction Furnace Manufacturing Co.

[www.tapka.ir](http://www.tapka.ir)



### Product Introduction:

Hardening is one of the most widely used metalworking processes in the casting and metalworking industry, which is used to increase the hardness of metals and improve their mechanical, metallurgical, chemical and physical properties, such as resistance to wear and corrosion, and causes an increase in lifespan of metal parts. Induction hardening is a type of surface hardening process that is used to harden the surface of conductive or metal parts such as steel, cast iron, copper, aluminum, brass, bronze, etc. In this method, a selected part of the surface, using an alternating magnetic field, reaches the temperature of the phase transformation range or even a higher temperature, and then it is immediately cooled by water, oil, or a polymer solution, which creates Martensite structure in the outer layer and the hardness and brittleness of the said area increase. In this treatment, the characteristics of the main core of the metal are preserved.

### Main Export Destinations:

Iraq

### Export History:

Up to 500,000 \$

### Founded:

1994

### Application:

Melting iron, steel, copper, aluminum and precious metals

*This product is a final B2B equipment.*

### Technical Specifications:

Model	MF-H-ST 400
Medium frequency power	400 kW
Medium frequency rated voltage	800 V
Power supply	500 KVA

### Advantages:

- ✦ Ability to control power through HMI monitor
- ✦ Setting the linear speed of the movement through the HMI monitor
- ✦ Rotational speed adjustment
- ✦ Planning and scheduling of cooling process (QUENCH)
- ✦ Electronic monitoring of position of the inductor
- ✦ The ability to set different powers in defined positions on the millimeter scale
- ✦ Controlling all processes required for hardening
- ✦ The possibility of programming the parameters of hardening for the work piece



**Application:**

Standard billet production in the desired length

➤ **Copper Continuous Casting Machine with VF Furnace**

◆ Tapka Induction Furnace Manufacturing Co.

[www.tapka.ir](http://www.tapka.ir)



**Product Introduction:**

Continuous Casting is the continuous and direct shaping of molten metal into semi-finished metal sections such as ingots, billets and slabs. In this process, the entire casting path is summarized in a production line. In other words, in a special machine, the casting process is carried out continuously until the final cooling of the parts, and there is no need to stop the machine or remove the parts and transfer them to the next stage. In this process, molten metal is first poured into a furnace. At this stage, it is necessary to carry out operations such as controlling the alloy composition, degassing and bringing the melt to the desired temperature. Then the molten metal is transferred to the tank (feeds), which are the first part of the continuous casting. Then the melt is poured into a fixed tank called "Tundish" using a refractory tube. The important task of tundish is to supply the melt necessary for the continuous operation of the continuous casting machine at the same time as changing the power supply. Afterwards, the molten metal that is in the tank is transferred to the graphite molds with pipes; This mold has the task of shaping and initial cooling of metal in casting.

**Main Export Destinations:**

Iraq

**Export History:**

Up to 500,000 \$

**Founded:**

1994

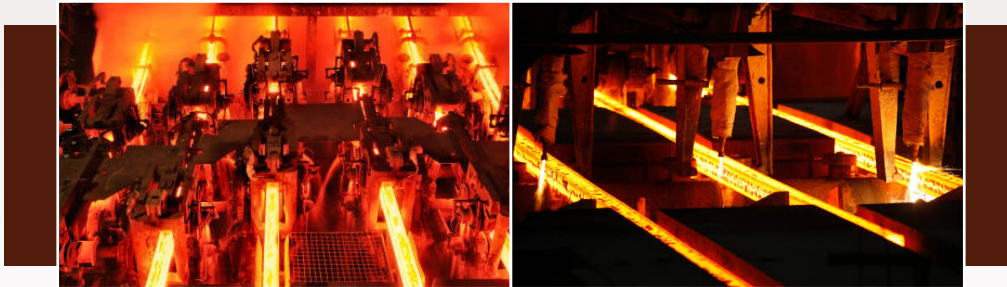
*This product is a final B2B equipment.*

**Technical Specifications:**

Output sheet width	40 cm
Output sheet thickness	16 mm
Melting furnace power	250 kW
Working frequency of melting furnace	40-60 Hz
Power of the holding furnace	150 kW
Working frequency of the holding furnace	40-60 Hz
Capacity	500 KQ/H

**Advantages:**

- \* Controlling different parts using PLC and control desk monitor (HMI)
- \* Displaying different sections on the control desk monitor (HMI)
- \* Calculating the capacity of the tundish according to the melting volume of the buyer's workshop
- \* Optimizing and managing energy consumption through the design and selection of cooling water equipment (closed circuit water, open circuit water and pool water) according to the plan and conditions of the buyer's site.
- \* Displaying the temperature and flow values of the required parts on the control desk monitor (HMI)



*This product is a final B2B equipment.*

### Technical Specifications:

Number of strands	1
Castability (mm × mm)	Max 150 × 150
Casting arc radius (m)	6
Type of dummy bar	Rigid

### Advantages:

- \* Automatic mold lubrication
- \* Automatic adjustment and control of mold water flow according to casting speed
- \* Automatic adjustment and control of the water flow of billet cooling zones according to the casting speed
- \* Cooling the rollers to increase their useful life
- \* Cooling the withdrawing and straightening structure to increase their life and prevent their deformation
- \* The use of hydraulic bearings in the withdrawal rolls and remover table to increase the useful life of the bearings
- \* Diagnosing various parts through auxiliary plates of the control desk monitor (HMI)

## ➤ Semi-Continuous Steel Casting Machine

◆ Tapka Induction Furnace Manufacturing Co.

[www.tapka.ir](http://www.tapka.ir)



### Product Introduction:

Continuous Casting Machine (CCM) is a device for producing standard steel billets in the desired length. Among the advantages of billet production by means of this machine, we can mention the homogeneity of solidification, uniformity of billet dimensions, high quality of billet surface, major removal of molten slag due to slag removal in several stages, and ease of rolling. These advantages make the manufactured product to be of much higher quality than the traditional and common methods in casting (molding in sand, which is mainly associated with low surface quality and is suitable for casting with low tonnage).

### Main Export Destinations:

Iraq

### Export History:

Up to 500,000 \$

### Founded:

1994



## ➤ Blain Test Machine

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

The purpose of making this device is to measure the Blaine number or the special surface of particles, which is highly needed by researchers, engineers and operators in laboratories and is used in their work process to identify and trace the main factor or factors affecting the target sample. Currently, there are devices with this capability (Blaine number measurement), but they have limitations; Such as the inaccuracy of the calculated Blaine, the device not being fully automatic and the possibility of human error, the possibility of testing only for one powder sample, not knowing the exact amount of porosity and the average diameter of the particles, performing the test with a longer duration, using a stopwatch to calculate the time, using a formula or table to reach the Blaine number, etc. The Blaine machine or dry powder particle size analyzer consists of different components and has three main parts, which are as follows:

1. The body of the device and the display and printer
2. Drive system and power application
3. Pneumatic connections and electronic devices

**Annual Production Capacity:**

20 Machines

**Founded:**

2007

### Application:

Automatic measurement of specific surface area of iron ore concentrate

*This product is a final B2B equipment.*

### Technical Specifications:

Servo motor	100 W
Pressure transmitter	50 mbar
Load cell	50 kg
Electricity supply	220 V

### Advantages:

- \* The ability to determine the number of Blaine in any porosity
- \* Has two methods for measuring the Blaine number
- \* The ability to measure the specific surface number of all types of powders

**International Standards or Permission:**

ISO 10070



## ➤ Linder Test Machine

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

Considering the importance of quality and strength of steel and the competitiveness of this market; The outputs of the Linder test device are very important, and with the reports and graphs provided by this device, the steel industry can save and economize on many things. In addition, these results can be used to significantly increase the quality of pellets and the finished product. The Linder test device checks the crushing during reduction. The Linder test is considered one of the most important pelletizing tests and reduction operations. During the reduction reaction, oxygen comes out of the pellet and pure iron is obtained.

One of the problems of pellet reduction process is the pellets turning into powder and becoming smaller during reduction. The reduced pellet powder is not useful and increases the cost for the steel industry, and one tries to prevent the pellet from crushing as much as possible. The pellet quality during the reduction process should be such that this does not happen. To ensure that this does not happen, various standard methods have been presented that describe the test procedure and crushing conditions.

**Annual Production Capacity:**

5 Machines

**Founded:**

2007

### Application:

Relative measurement of pellet crushing under reduction process

*This product is a final B2B equipment.*

### Technical Specifications:

Furnace power	40 kW
Temperature	Up to 950 °C
Accuracy	1 °C
Gas pressure control	Less than 0.2 percent

### Advantages:

- \* Equipment control and recording all the information in the control room
- \* Connecting to the LAN network and installing a SIM card and GPS for better control
- \* HMI remote control for reading gas pressure and gas flow rate
- \* Setting up the device by the user

**International Standards or Permission:**

ISO 11257



### Application:

Measuring the density of all kinds of solids, including metal powder

## ➤ Pycnometer Test Device

◆ Paya Sanat Sama Co. (PASCO)

[www.payasanat.ir](http://www.payasanat.ir)



### Product Introduction:

A pycnometer or densitometer is a machine that measures the density of various solids, including metal powder, by measuring gas pressure and using the first law of thermodynamics and Archimedes' law. The gas used in this machine is Helium gas. The components of this machine are:

#### Mechanical section

- \* **Primary chamber (SAMPLE CELL):** The place where the test sample is placed, in this chamber, the pressurization is done up to 20 psi.
- \* **Secondary chamber:** With the help of this chamber, the pressure reduction operation is performed up to 7 psi.
- \* **Regulator:** Setting line pressure to 22 psi

#### Electronic section

- \* **Solenoid valves:** These valves have the task of connecting and disconnecting the gas flow during the process.
- \* **Pressure sensor:** This sensor measures chamber pressure with an accuracy of 0.025FS and a full scale of 1.6BAR.

#### Software section

- \* **DELTA PLC:** Performing calculations and control operators
- \* **HMI:** Display of information and control processes by the operator
- \* **PRINTER THERMAL:** Printing the results and data
- \* **24 BIT DATA LOGGER:** High precision data receiving card for recording sensor data

**Annual Production Capacity:**

20 Machines

**Founded:**

2007

*This product is a final B2B equipment.*

### Technical Specifications:

<b>Machine accuracy</b>	0.01 g/cm <sup>3</sup>
<b>Used gases</b>	Helium and Nitrogen
<b>Service pressure</b>	18-20 psi
<b>Sample powder capacity</b>	55 g

### Advantages:

- \* Reasonable price compared to foreign products

**International Standards or Permission:**

ISO 11257

**Application:**

- \* Chemical containment coatings
- \* Maintenance coating
- \* Marine coatings
- \* Glue and sealant
- \* Casting

## ➤ Epoxy Thinner Based on Alkyl Phenol Styrene (Raika-DE)

◆ Raika Pajouhesh Chemical Industries Co.

[www.iranantioxidant.com](http://www.iranantioxidant.com)

**Product Introduction:**

Phenol and its derivatives are one of the main ingredients in the production of antioxidants and stabilizers in the polymer industry. Synthesis of diverse structures and using the technical knowledge of electrophilic substitution reactions and various synthesized phenol-styrene derivatives are used in the polymer industry, especially the rubber industry. The alkylation process of phenolic compounds is carried out during the Friedel-Crafts reaction, which is a series of electrophilic substitution reactions in which an alkyl or acyl group is replaced with one of the hydrogen atoms in the benzene ring. Raika-DE is a monofunctional glycidyl ether component that acts as a reactive diluent for solvent-free, high-solids epoxy coatings. This diluent participates in the curing reaction to become part of the cross-linked epoxy system. The recommended dosage is 2-10% based on the epoxy resin.

**Founded:**

2001

*This product is a final B2B consumer product.*

**Technical Specifications:**

Appearance	
Color (Gardner)	Max 1.0
EEW, g/eq	215-230
Water concentration, %	Max 0.2
Viscosity (25 °C)	5-10 cps

**Advantages:**

- \* Abrasion resistance
- \* Improved adhesion
- \* Improved resistance to polar solvents





### Application:

- \* Separation of cations from solutions of metal salts using gravimetric analysis
- \* Refinement of precious metals to precipitate palladium from palladium chloride solutions

## ➤ Di-Methyl Glyoxime

◆ Azar Chemical Sharif Co.

[www.azarchemicals.ir](http://www.azarchemicals.ir)



### Product Introduction:

Palladium metal is one of the most precious metals in the industry, which is most used in the production of car catalytic converters. Recycling the waste containing this metal is of utmost important, and for this purpose, a white chemical compound called dimethylglyoxime is required. Therefore, the online recycling team is selling dimethylglyoxime. Dimethylglyoxime is a chemical compound. The formula of this compound is  $\text{CH}_3\text{C}(\text{NOH})\text{C}(\text{NOH})\text{CH}_3$ . It is abbreviated as dmGH<sub>2</sub> for the neutral form and dmGH for the anionic form, where H stands for hydrogen.

Dimethylglyoxime is one of the chemical compounds used to extract palladium. This chemical compound is also called the specific nickel ligand; Because it only forms a bond with nickel. One of the applications of dimethylglyoxime is the detection of nickel and palladium in acidic solutions.

**Annual Production Capacity:**

2 tons

*This product is a B2B Final Consumer product.*

### Technical Specifications:

- \* **Analysis:** 96.5 %
- \* **Density:** 99 g/cm<sup>3</sup>
- \* High purity
- \* It is used to extract Palladium metal

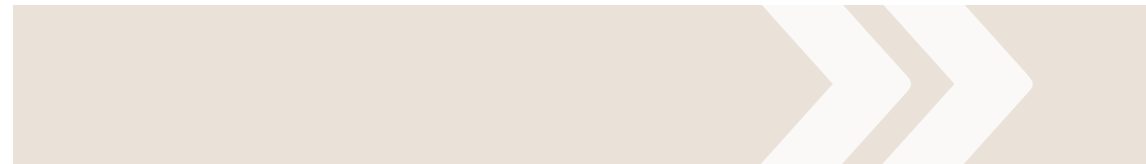
### Advantages:

- \* Odorless
- \* Appearance similar to white powder
- \* Has a hydrogen bond
- \* Insoluble in water, soluble in alcohol



### **Iran House of Innovation and Technology (iHiT)**

Iran House of Innovation and Technology (iHiT) is one of the types of export intermediaries that launched under the auspices of the Vice President for Science and Technology in Kenya, China, Russia, Turkey, Syria and Iraq. In addition to accessing the export instructions, these houses provide variety of services for companies to enter the interactional service markets such as: private and shared workspace, permanent exhibition of products, finding business partners and investing in the target countries of export, company registration, product registration, medicine, medical equipment and trademarks registration, dispatch and admission of business delegations, hiring local specialists to present products and service.





## TEHRAN iHiT

**Manager:** Mohammad Karami

**Field of Activity:** Permanent International Exhibition | Export of products and services of knowledge-based, creative and technology companies in Tehran

**Country:** Islamic Republic of Iran – Tehran

### Services:

- Holding permanent exhibition of knowledge-based products and services
- Holding specialized events and meetings
- Providing dedicated and shared workspace in Tehran
- Identifying export opportunities
- Identifying opportunities for scientific, technological and industrial cooperation

**Address:** Hall 37A, Tehran International Exhibition, Tehran, Iran

**website:** [www.ihit-expo.com](http://www.ihit-expo.com)

**Tel No:** (+98) 912 444 9958 / (+98) 21 910 737 37

**Supervisor:** Mohammad Mahdi Agharafiee

**Office Phone:** (+98) 912 706 9611



## NAIROBI iHiT

**Manager:** Ali Baniamerian

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** Republic of Kenya – Nairobi

### Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

**Address:** Dennis Pritt Road, Next to Maalim Juma Road, Kilimani, Nairobi, Kenya

**website:** [www.ihit.co.ke](http://www.ihit.co.ke)

**Tel No:** (+254) 111 606 113

**Supervisor:** Fahime Zabihi

**Office Phone:** (+98) 21 910 700 80 INT 301



## SUZHOU iHiT

**Manager:** Amir Ghorbanali

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** People's Republic of China - Shanghai

### Services:

- Holding Permanent exhibition of products and services
- Export development of knowledge-based products
- Providing dedicated and co-working space
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

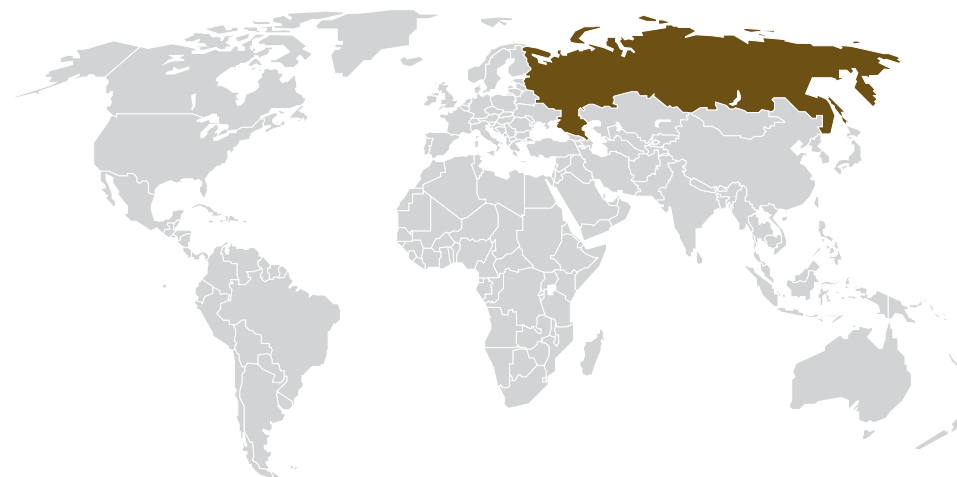
**Address:** Room 88 ,409 Keling Road, Advanced District, Suzhou, Jiangsu Province, China

**website:** [www.innotechexport.ir](http://www.innotechexport.ir)

**Tel No:** (+86) 182 062 123 92

**Supervisor:** Simin Rafeapour

**Office Phone:** (+98) 935 861 44 22



## MOSCOW iHiT

**Manager:** Mahdi Deilam Salehi

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** Russian Federation – Moscow

### Services:

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

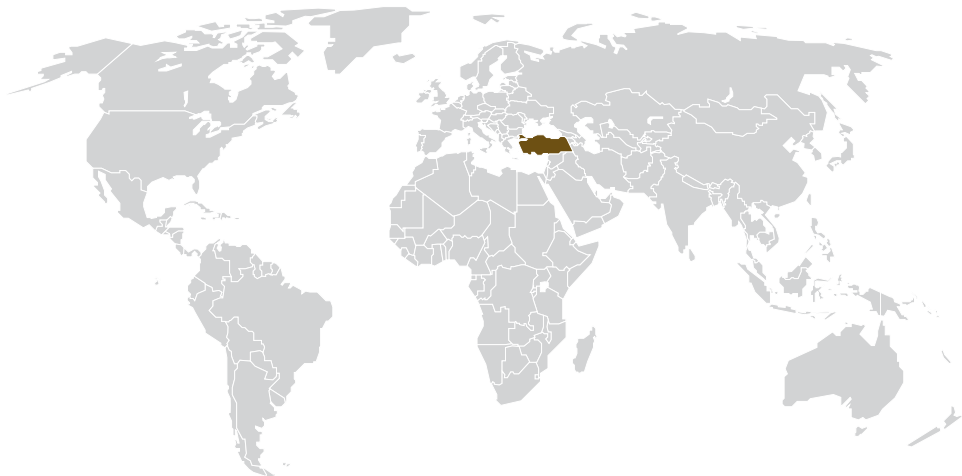
**Address:** No. 7, Unit 4, Arkhangelsky St., Moscow, Russian Federation

**website:** [www.ihit-ru.com](http://www.ihit-ru.com)

**Tel No:** (+7) 903 123 16 31

**Supervisor:** Malek Saeidi

**Office Phone:** (+98) 912 617 6293 | (+98) 21 860 537 15 INT 309



## ISTANBUL iHiT

**Manager:** Masoud Hasani

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** Turkey – Istanbul

### **Services:**

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

**Address:** Halaskargazi, Halaskargazi Cd. No: 34371 ,66-38 Şişli/Istanbul

**website:** [www.istanbulihit.com](http://www.istanbulihit.com) **Email:** [info@istanbulihit.com](mailto:info@istanbulihit.com)

**Tel No:** (+90) 21 240 141 44 **Whatsapp:** (+90) 533 505 4589

**Supervisor:** Masoud Hasani

**Office Phone:** (+98) 21 882 227 55



## DAMASCUS iHiT

**Manager:** Mohammad Hadi Zeighami

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** Syria – Damascus

### **Services:**

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Providing export instructions of the Center for International Science and Technology Cooperation

**Address:** Damascus Freezone, Jamarag Sq., Damascus, Syria

**website:** [www.ihit.sy](http://www.ihit.sy)

**Tel No:** (+98) 918 693 39 33

**Supervisor:** Hasan Tahmasebi

**Office Phone:** (+98) 21 631 033 15



## Iraq (Sulaymaniyah) iHiT

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**Manager:** Hossein Salmani

**Field of Activity:** Export of products and services of knowledge-based, creative and technology companies

**Country:** Iraq – Sulaymaniyah

**Services:**

- Holding Permanent exhibition of products and services
- Providing dedicated and co-working space
- Holding the National Pavilion of the Islamic Republic of Iran in international exhibitions
- Export development of knowledge-based products
- Identifying opportunities for scientific, technological and industrial cooperation
- Providing export instructions of the Center for International Science and Technology Cooperation

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