Presidency of the Islamic
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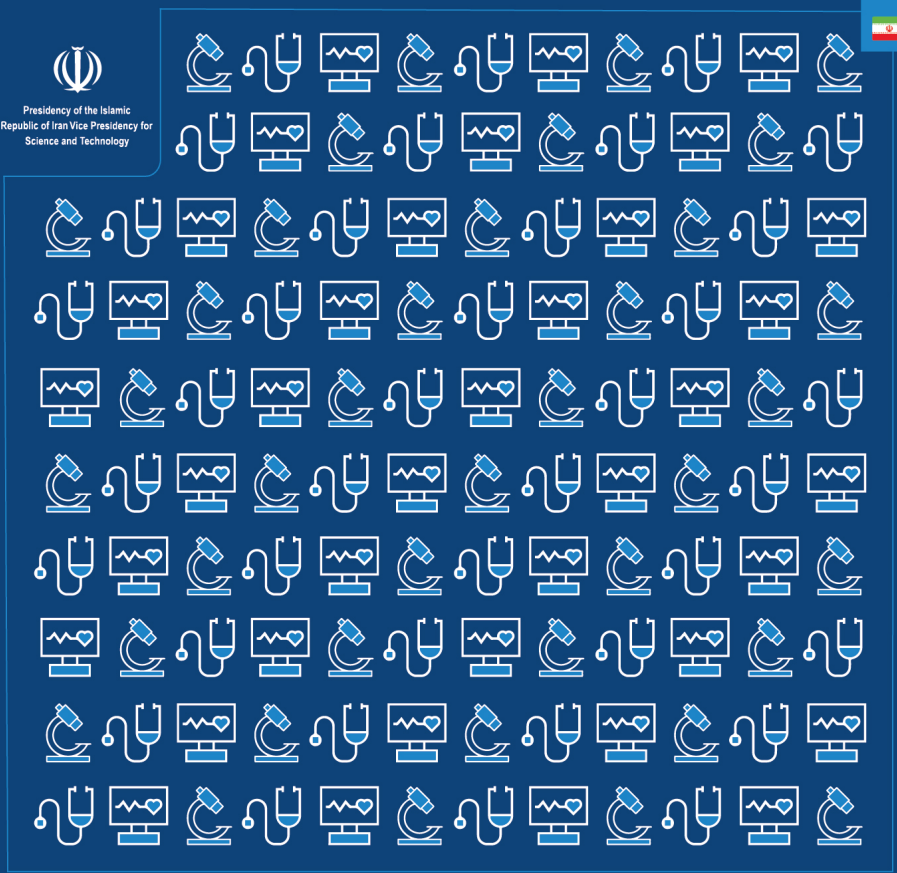
Science and Technology



Third Volume

MEDICAL EQUIPMENT

Knowledge-Based Products and Equipment


بسم الله الرحمن الرحيم

THIRD VOLUME

Knowledge-Based Products and Equipment

Medical Equipment

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

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Knowledge-Based Products and Equipment
Third Volume: Medical Equipment

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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, Shahrzad Bahrizadeh***
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

Knowledge-based products and equipment

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Introduction

The Origin of Industry and Export in The Eyes of Iranians

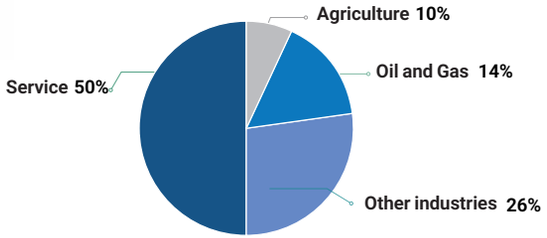
The ancient land of Iran has long been the source of knowledge and industry, and Iranians have played a significant role in the development, evolution and promotion of science and human awareness. Most historians of the world believe that most of the advances in science and human civilization are owed 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

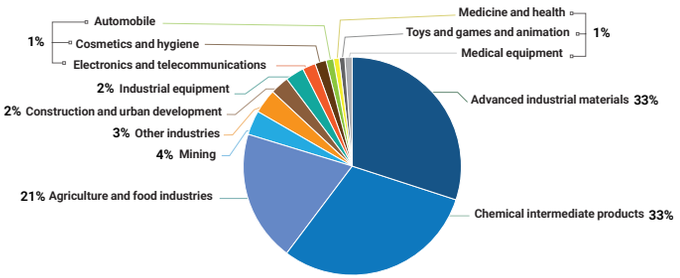


In the meantime, various industries such as pharmaceuticals, medical equipment, construction, communications and telecommunications, energy, mining, chemicals, etc. have a special share of Iran's gross domestic product, and their production, in addition to covering a considerable amount of country's 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 [1]



[1] 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

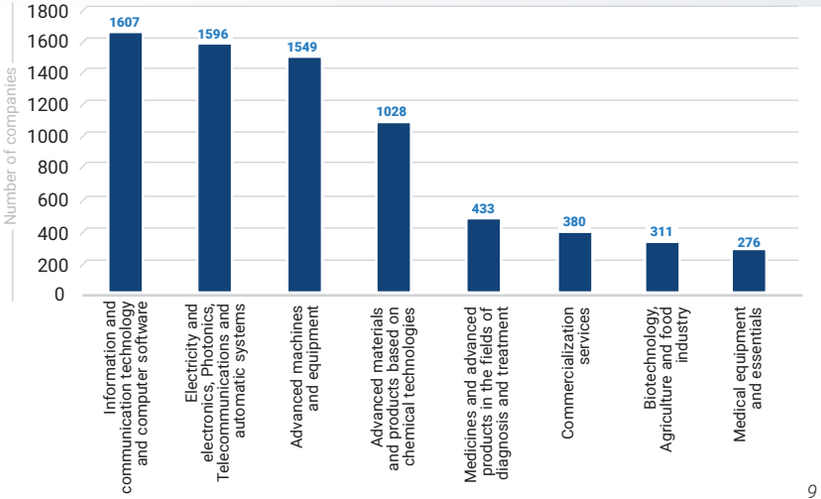
Paying attention to the development of new technologies, commercialization and its influence on manufacturing industries has caused the Islamic Republic of Iran to experience a growing progress in this field in the last decade; An issue that has taken place in Iran in the form of the development of knowledge-based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

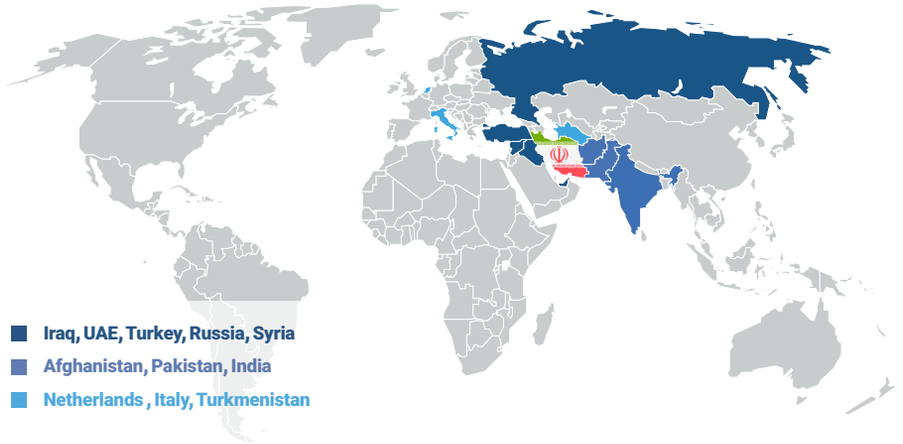
Currently, more than 7 thousand knowledge-based enterprises in Iran are producing products and providing services in the field of various technologies. These companies produce more than 15,000 products or services in total, and their direct employees, which generally include people with a high level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

The medical equipment industry has a special place in the field of health and economy of the Islamic Republic of Iran. In the past few years, the activities of many small and medium-sized companies in this industry and their products' use have been effective in dealing with the corona disease.

With the implementation of the Health Transformation Plan, the medical equipment industry and products in Iran have found an exceptional place to provide better quality medical services and reduce the amount of money patients pay. Currently, the medical equipment industry is one of the industries of interest to create added value and employment in Iran. However, the annual export of this field in the last few years has been around 20 million dollars, but the existing plans and investments in this field promise significant development.

Considering the interdisciplinary nature of the medical equipment industry and the use of many new technologies in it, such as electronics and hardware, biotechnology, advanced materials, etc., we can say that the medical equipment industry is an intertwined industry with high-tech technologies. Considering the activity of more than 450 Iranian knowledge enterprises and the supply of more than 750 technological products, we can realize this

fact. In recent years, even though the medical equipment industry has a smaller market size than other active industries in Iran, due to its knowledge-based nature, about %4 of Iran's knowledge-based production and employment have been allocated to knowledge enterprises in this industry.

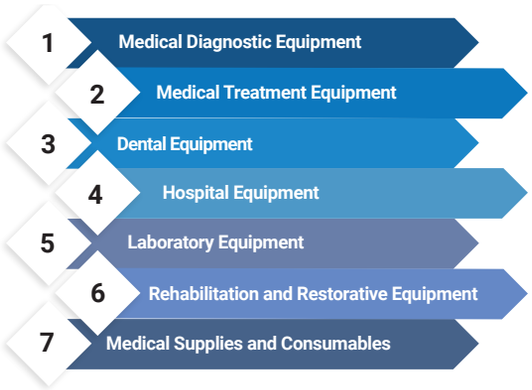
Finally, regarding the export of knowledge-based products in this industry, it is necessary to explain that in the last five years, a total of 130 million dollars of the products of active knowledge enterprises in the medical equipment industry have been exported.

The Percentage of Medical Equipment Companies from All the Knowledge-Based Enterprises

The Main Export Destinations of Iranian Knowledge-Based Enterprises in the Fields of Medical Equipment

The Division of Knowledge-Based Products in Medical Equipment Industry

As stated, the interdisciplinary nature of the medical equipment industry and the use of many new technologies in it has caused this industry to be an industry intertwined with high-tech technologies; Also, the high number of Iranian knowledge enterprises and knowledge-based products in this industry is proof of this. In this book, products have been collected that can be divided into the following areas:



In the following, to provide a general understanding of these areas, each of the cases and their subcategories is described:

1 Medical Diagnostic Equipment

The products included in this category are medical equipment used for diagnosis. In these devices, a diagnostic test is performed based on the patient's symptoms to evaluate the patient's internal state. The relevant doctor or technician looks for any abnormalities in the organs affected by the disease or body parts that cause these symptoms. The diagnostic equipment presented in this book generally has a mechanism to receive feedback from the patient's tissues and organs after sending electrical pulses or radiation. This equipment can record the patient's vital signs and heart, brain, nerve, and muscle signals or detect cancerous masses and tumors. The products of this field are generally required to obtain internal approvals such as a manufacturing license from Iran's General Directorate of Medical Equipment and Device (IMED) and international approvals such as CE.

Start chapter at page 24 »

2 Medical Treatment Equipment

The Treatment equipment considered in this category is designed to treat some diseases in specific medical conditions and use modern technologies; They target particular abnormalities in the organs affected by the disease or the tissues in the body and recover their function. Doing so may involve surgeries designed for specific medical conditions. The mechanism of treatment equipment is generally invasive (such as surgical instruments and equipment) and non-invasive (such as ventilators, hemodialysis machines, laser, and plasma therapy). The products of this field are generally required to obtain internal approvals such as a manufacturing license from Iran's General Directorate of Medical Equipment and Device (IMED) and international approvals such as CE.

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3 Dental Equipment

As seen from the title of this category, products and equipment used in the dentistry field are included. These products are either consumable or used by dentists as equipment. With this explanation, the technological products included in this category of the book are divided into the following subcategories:

- **First Section | Advanced materials used in the dental field:**

Advanced materials in this field are generally examined in biocompatibility and related tests. This equipment is generally made of titanium metal alloys, medical grade steel, polymer, and ceramic composites.

- **Second Section | Dental unit equipment:**

Introduced units include peripheral equipment such as disposable and permanent dental turbines and suctions.

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4 Hospital Equipment

In this category, products used in hospitals that have specialized or general applications have been offered. This equipment includes devices that are either commonly used in hospitals or used in sterilizing, destroying, and decontaminating infectious waste. Therefore, these products can be divided into the following two categories:

- **First Section | Specialized Hospital Equipment:**

These include devices such as incubators, Infant CPR beds, water purification devices used in hospitals such as hemodialysis, and products such as Vein Finder and monometer, which are commonly used in hospitals.

- **Second Section | Advanced Sterile Devices:**

These devices are for sterilizing equipment and tools or decontamination and disposal of infectious waste. The technological operation of this equipment is generally based on high temperature and pressure, plasma technology, and sterilizing gases. These devices are used to sterilize a wide range of hospital equipment, including surgical and dental instruments, and to destroy and neutralize infectious waste.

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5 Laboratory Equipment

The use of medical laboratory equipment is often seen in medical clinics or diagnostic laboratories. The laboratory equipment presented in this book is used to analyze blood, urine, genes, and other biological materials and includes two types of analysis devices and preparation devices.

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6 Rehabilitation and Restorative Equipment

The equipment used in rehabilitating handicapped or people with disabilities is included in this category. This equipment is used to compensate for the disabilities of the members or to rehabilitate the injured members. Due to the sensitivity of this equipment, the products of this field are generally required to obtain internal approvals such as a manufacturing license from Iran's General Directorate of Medical Equipment and Device (IMED) and international approvals such as CE. These devices should be suitable for people with disabilities.

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7 Medical Supplies and Consumables

This category of products includes the capabilities of knowledge enterprises in the field of consumable goods and products among medical equipment. Although a wide range of products can be placed in this category, in this book, only those products are mentioned that are generally required to obtain internal approvals, such as a manufacturing license from Iran's General Directorate of Medical Equipment and Device (IMED) and international approvals such as CE. They include the following groups:

- **First Section | Lenses:**

Medical lenses are used permanently and non-permanently. Generally, these lenses are made of hydrophilic and hydrophobic acrylic polymers. They are used to solve eye diseases, such as correcting refractive errors and replacing natural lenses and cataracts (cataract surgery).

- **Second Section | Prostheses:**

Introduced prostheses are implantable and orthotic and are used permanently or non-permanently. These products can replace organs such as bones and joints or treat eye diseases such as keratoconus (Corneal Hump). It is necessary to explain that the products of this category have passed the necessary tests such as biocompatibility, torque resistance, etc.

- **Third Section | Medical Consumables:**

the products of this category include items such as needles, masks, bandages, surgical thread, etc., which are among the necessities used in all therapeutic and medical activities, and the fields of pathobiology and surgery can be named the main fields of their use.

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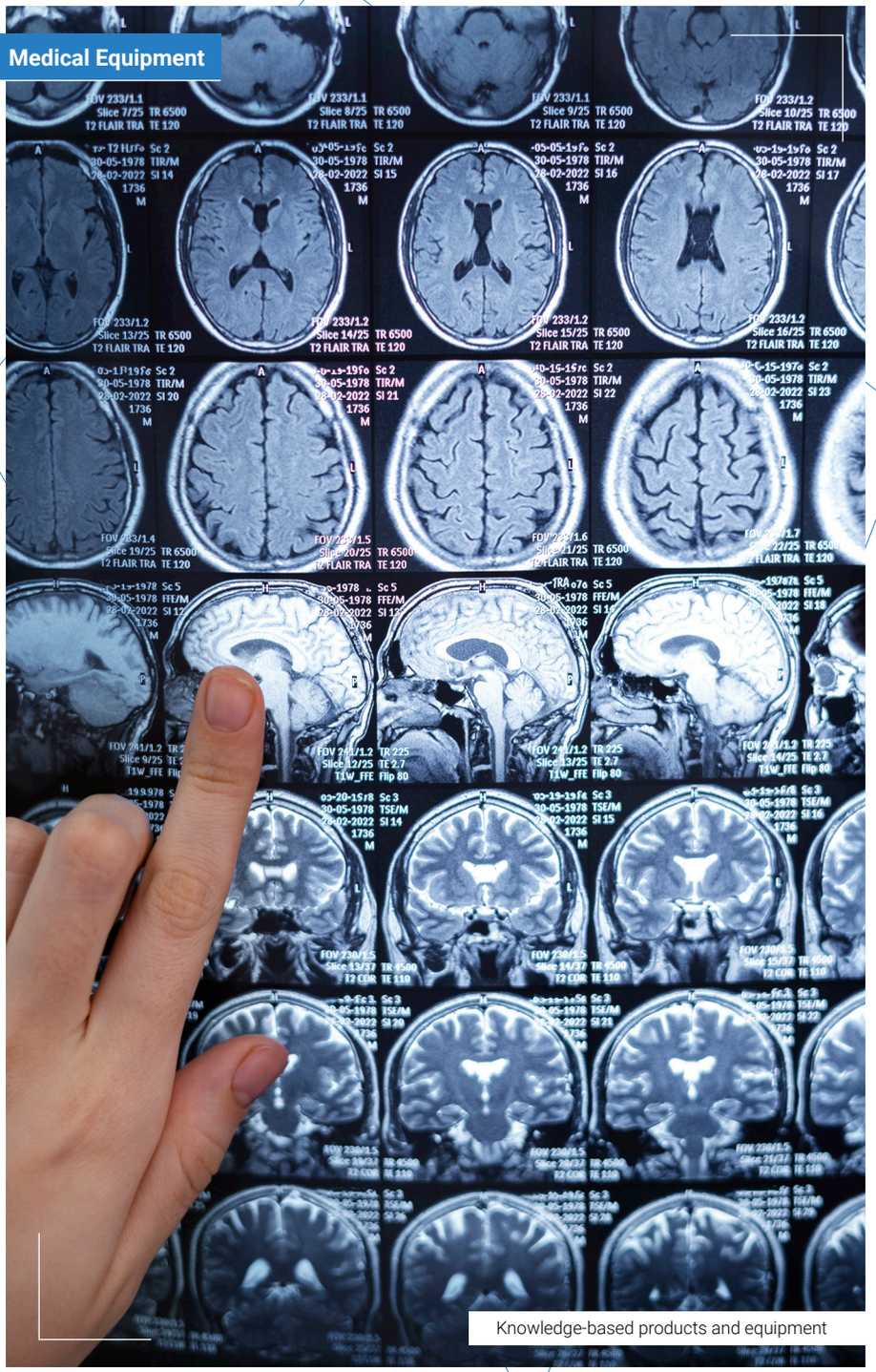


Knowledge-based products and equipment

MEDICAL EQUIPMENT

First Chapter
Medical Diagnostic Equipment

Second Chapter
Medical Treatment Equipment

Third Chapter
Dental Equipment

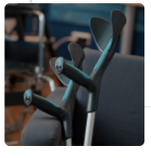
- Advanced Materials Used in the Dental Field
- Dental Unit Equipment

Fourth Chapter
Hospital Equipment

- Specialized Hospital Equipment
- Advanced Sterile Devices

Fifth Chapter
Laboratory Equipment

- Blood and Body Fluids Test



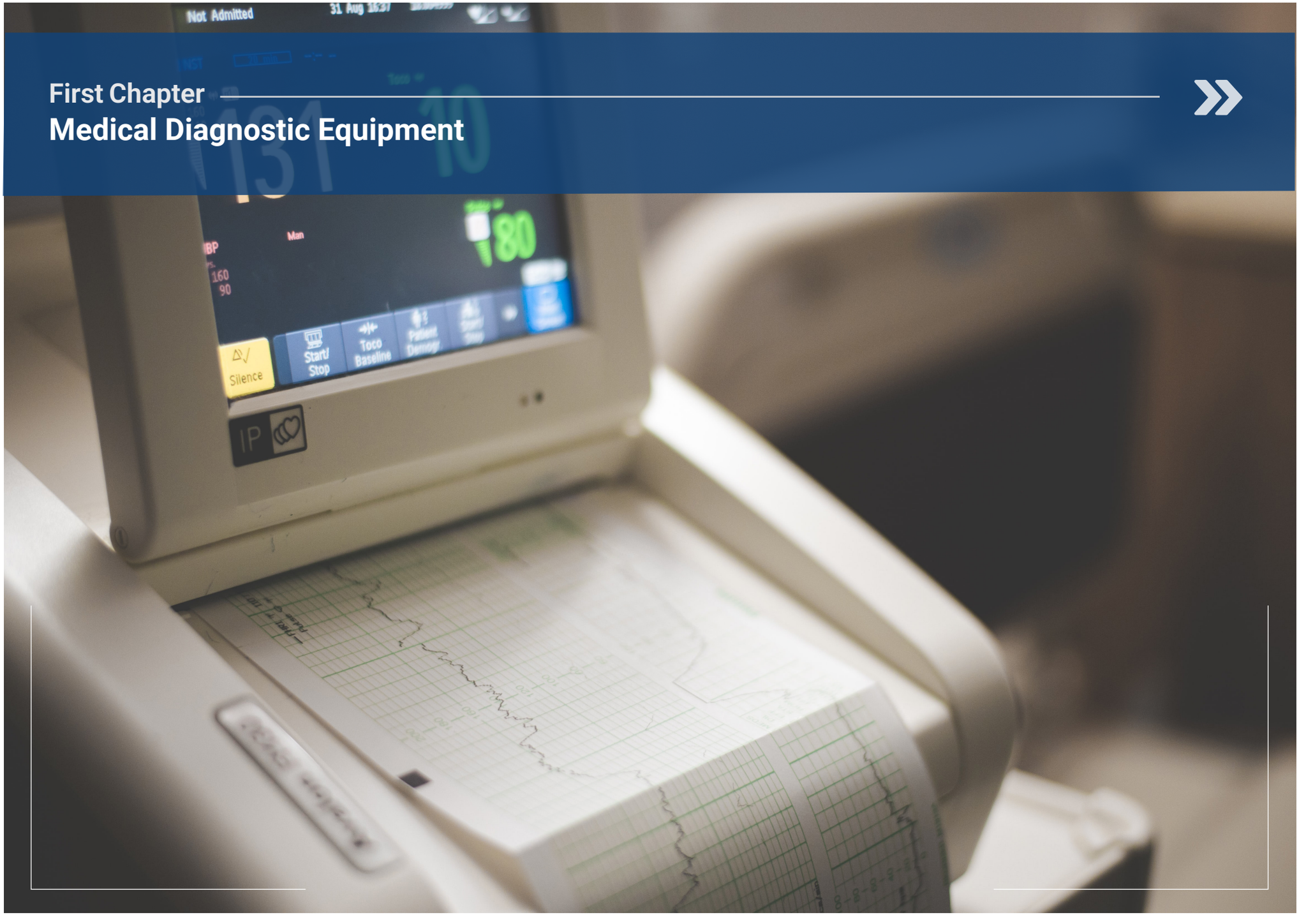
Sixth Chapter
Rehabilitation and Restorative Equipment

Seventh Chapter
Medical Supplies and Consumables

- Lenses
- Prostheses
- Medical Consumables

First Chapter

Medical Diagnostic Equipment



FIRST CHAPTER

Medical Diagnostic Equipment

Vital Signs Monitoring Device
Alborz, Arya, Novin, Zagros Alvand and Sahand Models

Pouyandegan Rahe Sa'adat Co.

www.saadatco.com

شرکت پویندگان راه سعادت

Product Introduction:

Vital signs monitoring systems are used for safe and effective patient care and are also usable for infants, children, and adults hospitalized in intensive care units. In continuous function mode, this system has the ability to monitor vital signs and can analyze 13 types of arrhythmias, parameters such as NIBP, SpO_2, CO, CO_2, N_2O, O_2, AA (AWRR, RR), RAINBOW, four-channel IBP, two-channel temperature, and aesthetic depth (BFA). The vital signs monitoring system has various modules for measuring multiple parameters, a recorder, and an alarm system. It is also possible to attach it to a secondary monitor or central network. Vital signs monitoring systems of Pouyandegan Rahe Sa'adat Co. include models:

- Alborz B9
- Arya and Arya TC
- Novin S1600 and S1800
- Zagros Alvand (H12-H18-V18)
- Central Sahand and Sahand Pro signs including ECG, respiratory rate, ST-segment deviation

Application:

In emergency wards, general operating room, open heart operating room, recovery, ICU, CCU, at hospitals and medical clinics.

Founded:
1998

This product is a final B2B Equipment.

Technical Specifications:

Model Name	Technical Specification
Alborz B9, Zagros S	❊ Touchscreen display ❊ Thermal printer with the ability to draw three waves simultaneously ❊ Able to record 12 leads ECG ❊ Upgrading the IBP module from two channels to four channels ❊ Upgrading SPOY Massimo module to SPOY Massimo Rainbow to measure blood parameters, including ORI, SpCO, PVI, SpHb, SpMet, SpOc ❊ Simultaneous connection of two SPO_2 modules (dual) to assess the anesthetic depth (BFA) ❊ Capnography (CO_2 level in respiration), anesthetic gases (multi-Gas), intracranial fluid pressure, cardiac output
Arya, Arya CT	❊ Touchscreen display ❊ 5-inch color display with a resolution of 272 × 480 and a 170-degree viewing angle ❊ Displaying 3 to 5 diagrams and 10 parameters on one screen, at the same time ❊ Storing vital signs (Trend) for 96 hours and the ability to store 100 NIBP pressures and 80 arrhythmias ❊ Storing ECG signal for 35 seconds (Sigma) ❊ Visual and audio alarm ❊ Arrhythmia detection software, PVC per second announcer, and ST-segment analyzer ❊ Three types of filters to cancel electrocautery and environmental noises ❊ Keyboard with six shortcut keys ❊ Internal battery, rechargeable on the system and mounts ❊ Compatible with AC and DC power supplies, 90-minute working time on batteries, 12 hours working time on F1 mounts or FIR
S1600, S1800	❊ Color display LCD with a resolution of 60 × 80 and a 170-degree viewing angle ❊ Displaying 6 to 8 diagrams and 10 parameters on one screen ❊ 96-hour diagram storage, capacity to store 500 NIBP pressures ❊ ST-segment analyzer and ARR software, PVC per minute announcer ❊ Customizable parameters display on the screen (Multi-page) ❊ Drug Calculation software ❊ Customizable parameter colors by the user ❊ Rechargeable internal battery and AC power input compatible

Advantages:

- Advanced design
- Fast boot
- Anti-shock and anti-scratch screen protector

Vital Signs Monitoring Device
Safira, Vectra, Vista and Saba Models

Sazgan Gostar Co.

www.sazgan.com

Product Introduction:

Vital signs monitoring device, also known as patient monitor, physiological monitoring, and clinical monitor, obtains various vital signs of patients using different methods and, after processing and amplification, displays them in waveforms or parameters on the screen.
Patients hospitalized in CCU, ICU, emergency, operating rooms, and patients under high-risk surgeries are among those who require this device for constant monitoring of vital signs. The monitoring system constantly provides nurses with information about the patient's condition; so they may make better medical decisions. This device has been designed and made in 14, 17, and 22 inch models and have the following 4 models:

- Saphira
- Vectra
- Vista
- Saba

Main Export Destinations:
Indonesia

Exports History:
Up to 500,000 $

Annual Production Capacity:
15,000 devices

Founded:
1993

Application:

- Vital Sign detection and parameters monitoring
- Providing effective safety and care for patients hospitalized in intensive care units

This product is a final B2B Equipment.

Technical Specifications:

- **Able to monitor parameters:** ECG, RESP, SpO_2, NiBp, TEMP, IBP, CO_2
- **Various device parts:** ECG, respiration, temperature, SpO_2, and NiBp modules, control unit, and display
- **Power input:** 9-18 V, 100-240 VAC, 50/60 Hz, 140 VA
- **Dimensions:** 12 to 22 inches display, 390 (W) x 630 (D) x 150 (H) mm

Advantages:

- In compliance with EMC requirements
- Integration of PACS system with vital signs monitor
- Three different programs for accessing Bed Side information, recording vital signs, data management, displaying and providing various alarms
- Reasonable pricing compared with similar products

International Standards or Permission:

- 2006 IEC 60601-1-8
- 2001 EN 12470-4
- 2007 ANSI/AAMI EC13
- 2000 IEC 60601-2-30
- 2005 ISO 9919
- 2005 IEC 60601-1
- 2004 IEC 60601-1-4
- 2000 IEC 60601-2-49
- 2000 IEC 60601-2-34
- Immunity (IEC 60601-1-2:2007)

Vital Signs Monitoring Device

Including pulse oximeter module and capnography model ACCUDIS 908

Parsian Medical Co.

www.parsianmedical.com

Product Introduction:

The purpose of this device is to measure and display the amount of saturated carbon dioxide in human exhalation and to measure the saturated oxygen of the blood through the surface of the skin. Having added a capno sensor to the ABADIS 907 device, the ability of this device to measure the saturated CO_2 in exhalation has improved.

The vital signs monitor is used to measure the amount of saturated oxygen in the blood, heart rate, and display the curve of cardiopulmonary function, body temperature, and cardiac perfusion. This monitor helps the doctor and the treatment staff to check the condition of the heart and lungs of the patient. This product is designed in such a way that according to the most up-to-date standards of the world, it has the ability to connect to computer networks under hospital protocols. Monitoring the health status and improvement of the disease process in COVID-19 patients due to the involvement of lung tissue and the reduction of oxygen saturation in the blood, is done in medical centers in public departments with high accuracy, especially in patients with low signal range.

This product is similar to the ABADIS907 product in terms of technology and appearance; with the difference that a sensor (purchased from Respironics) has been added to it. An absolute pressure measurement sensor is also added to measure ambient pressure and compensate for the effect of ambient pressure on the measurement made by the Capno sensor on the main board.

Main Export Destinations:

Indonesia, Vietnam, South Korea

Exports History:

Up to 500,000 $

Annual Production Capacity:

5,000 devices

Founded:

2004

Application:

- Critical Care units, ICU, NICU, CCU, RCU
- Operating rooms, imaging centers
- Diagnostic monitoring and follow-up care for COVID-19 patients.
- Emergency Units, Car, Air and Ship Ambulances
- Surgical Rooms, Radiology Centers
- Recovery Rooms

This product is a final B2B Equipment.

Technical Specifications:

- Internal Rechargeable Battery with 6 Hours Working Capacity
- ETHERNET Connection Complying HL7 Protocols
- USB Connector
- Unlimited Trend for Several Patients
- 7 inch TFT LCD with CAPACITIVE TOUCH panel
- Capability to Install Other Vital Sign Modules
- Auto-Rotate Sensor for Detecting Horizontal or Vertical Positions
- Arm Processor Design
- **Device power consumption:** 7.2 V 2.5 A hour lithium ion battery
- **Dimensions of the device:** unknown (7-inch screen)
- Capability of removing noise caused by low signal amplitude in patients (Low Perfusion)

Advantages:

- Signal processing in 3 age categories (adults, infants and children)
- Portable and very easy to use, accessible and functional menus
- More reasonable price than similar products

International Standards or Permission:

- Capnograph and pulse oximeter confirmation (second and third products)
- South Korea IGC quality approval
- ISO 13485, ISO 80601-2-55 (for capnograph)
- CE: ISO 80601-2-55 (for pulse oximeter)

Electrocardiograph (ECG) Device

Six-Channel DENA650 & Twelve-Channel DENA1210 Models

Pouyandegan Rahe Sa'adat Co.

www.saadatco.com

شرکت
پویندگان راه سعادت

Product Introduction:

DENA electrocardiograph (ECG recording device) is one of the most reliable, safest, and easiest user interfaces of medical equipment to assess, display, store, and record ECG to diagnose various heart diseases.
This device can be used for adults, children, and neonates. It must be noted that this device is designed to operate by trained medical staff for diagnostic purposes at medical centers that have met the medical requirements and standards.

Founded:
1998

Application:

Medical centers, hospitals, and specialized cardiology clinics.

This product is a final B2B Equipment.

Technical Specifications:

Model	Amount
DENA 650	❊ 5inch color display (272 × 480 resolution) with resistive touch screen ❊ Simultaneous display of 12 leads on the screen ❊ High-resolution thermal printing on 110 mm paper ❊ Simultaneous printing of 2 (1+1), 3, 4 (3+1), or 6 channels ❊ Isolated and protected against electroshocks (CF type) ❊ Three modes of recording (Auto/manual/rhythm) ❊ Dedicated display for rhythm mode **Multiple filters:** Muscular noise (EMG), alternating current (HUM), Low pass, and sudden signal changes (drift) ❊ Rechargeable Li-ion battery, 8 hours working time or recording 150 sessions
DENA 1210	❊ 10.1 inch color display (1024 × 600 resolution) with a capacitive touchscreen ❊ Simultaneous display of 12 leads on the screen ❊ High-resolution thermal printing on 210 mm paper ❊ Simultaneous printing 4 (3+1), 5 (3+2), 6 (3+3, or 6), 7 (6+1), 8 (8+2), 9 (3+6), or 9 channels ❊ Isolated and protected against electroshocks (CF type) ❊ Three modes of recording (Auto/manual/rhythm) ❊ Dedicated display for rhythm mode **Multiple filters:** Muscular noise (EMG), alternating current (HUM), Low pass, and sudden signal changes (drift) ❊ ECG signal measurement and interpretation (Glasco University Software) ❊ Smart recording (dedication of suitable storage space to every channel to reduce the interference in drawing signals) ❊ Advanced Linux-based software ❊ Storage of patients signals, up to 500 records with recovery or the ability to resaving them

Advantages:

❊ Light and compact design

Electrocardiograph(ECG) Device

Sina 100 Model

Ave Ceinna Co.

www.avecinna.com

Product Introduction:

Electrocardiograph device is a set of hardware components includ- ing: thermal printer, patient cable, Chest suction electrodes, Limb clamp electrodes, and heart signal display and control keys.
One of the important characteristics that indicate heart health or disease, is how the electrocardiograph system works. There are various ways to study how this system operates.
One of the oldest and most widely used methods is the study of how electrical signals of the heart travel. By means of electrocardiograph, it is possible to study and measure the electrical signals resulting from the electrical function of the heart by sampling the propagation of this signal in different parts of the body.

Main Export Destinations:

Azerbaijan, Iraq and Syria

Exports History:

Between 500,000 and 1,000,000 $

Annual Production Capacity:

6000 devices

Founded:

2005

Application:

Creating the necessary contraction and expansion in order to pump blood to different parts of the body, or in other words, creating the appropriate blood pressure to get the blood circulating in the circulatory system in the body.

This product is a final B2B Equipment.

Technical Specifications:

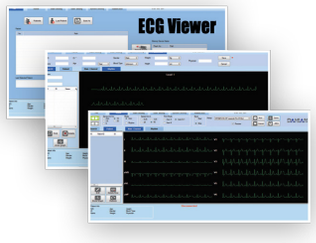
- **Power Supply/ Fuse:** 110 ~ 240 VAC / 200 mA / 60VA / Fuse 2000mA
- Ability to simultaneously display 12 heart signal channels at the same time with very high quality on the screen
- Ability to print ECG signal in three modes 1, 3 and 6 channels
- It has an internal battery with the ability to keep the device on for up to 8 hours without connecting to the city's electricity supply
- Ability to maintain and save ECG signal for 150 patients
- It has anti-noise/interference technology to ensure the stability of the baseline and to reduce the effect of electrical noise
- **Different parts of the device:** A Motherboard including signal amplifier and filtering board and signal processor, Thermal printer, patient cable, pipet filler, wristband
- **Device dimenstions:** 298 × 240 × 80 (mm)

Advantages:

- It has technological modules such as receiving heart signal analysis when the patient is running on the treadmill, removing the noise of muscle vibrations without affecting the main signal, controlling the treadmill through the software, receiving the heart signal from the body wirelessly
- A more affordable price than the other similar device

International Standards or Permission:

- IEC60601-1 & ANSI/AAMI EC11 & IEC60601-1-2
- ISO 9001:2008 - Productions line - DQS Germany
- ISO 13485 :2012 - Production line - DQS Germany



Electrocardiograph (ECG) Device

Six-Channel Yasham 635 Model

Dahian Pezeshki Pishro Co.

www.dahian-co.com

Product Introduction:

This device receives and records the electrical potential changes caused by cardiac muscle stimulation using 12 connected leads to the patient and displays them in waveforms. This device can work with AC or DC (battery) power inputs. The device is not portable and is usable at physicians' offices, medical centers and clinics, general and specialized hospitals, and rural health centers.

Main Export Destinations:

Afghanistan, UAE, Iraq and Syria

Exports History:

Up to 500,000 $

Founded:

2007

Application:

Medical centers, medical universities, clinics, and offices of cardiologists, rural health centers, hardly-accessible locations, and family physicians

This product is a final B2B Equipment.

Technical Specifications:

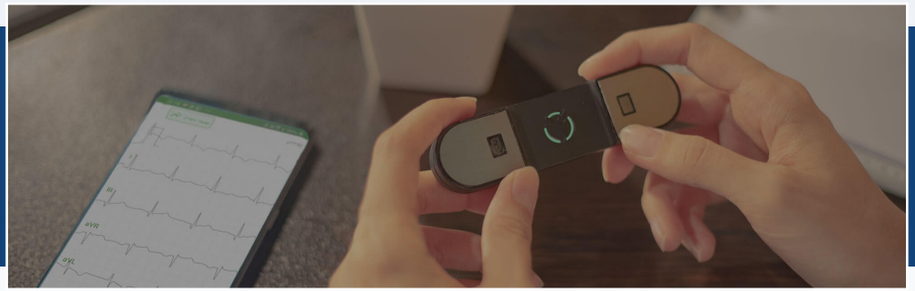
- Capable of displaying 12-lead waveforms, selection of Rhythm Lead, and displaying its waveform separately on the screen, printing the waveforms up to 6 channels, internal storage to record data, displaying and printing the recorded data, measuring and interpreting ECG parameters
- Class-1 protection class with built-in battery
- Electroshock-protected (Type CF)
- 5-inch display with 480 × 270 pixel resolution
- Sampling frequency: 1000 Hz
- Frequency bandwidth 0.05~150 Hz with CMRR higher than 92 dB
- Leakage current less than 10 uA

Advantages:

- Contains technological modules, such as multilayered technology (four layers for analog board and ten layers for motherboard), motherboard design based on ATMEL-family micro-controller, digital filter design (especially EMG filter), also designing a ten-layered motherboard compatible with Linux operating system
- Containing software filters, including drift-removal filter (low-frequency distortions on the grounding line), power grid noise removal (with a selectable frequency of 50 or 60 Hz), low-pass filter (with four selective cut-off frequencies), and EMG filter (which can adaptively remove muscular noise)
- Lower prices compared with similar devices.

International Standards or Permission:

- CE from KIWA
- In compliance with IEC 60601-1:2012 and IEC 60601-2-25:2011 standards
- In compliance with design control requirements according to ISO 13485



Electrocardiograph (ECG) Device

Nabz Group Co.

www.nabzgroup.com

Product Introduction:

NH1 ECG recorder is a portable device for daily monitoring of heart rhythm. This device is the best equipment for heart care and preventing further complications.
The ECG recorder is a lightweight small-sized device. It's easy to use and can record the ECG of the patient in only 30 seconds. Physicians can have online access to the ECG. This device sends the ECG data and provides the physician with a complete package of checkups and continuous heart assessments.
This device is suitable for every family member, from children to adults, and contributes to the cardiac health of family members. It can be used in physicians' offices for primary monitoring and at home for daily heart rhythm checkups. This device is easy to use and can provide ECG without gel, tape, and wire strips.

Annual Production Capacity:
10,000 devices

Founded:
2018

Application:

- Portable clinical vital signs monitor
- Easy to use in emergencies (point of care)
- Useable as ECG
- Fast ECG recorder during sudden heart dysfunctions

This product is a final B2B & B2C Equipment.

Technical Specifications:

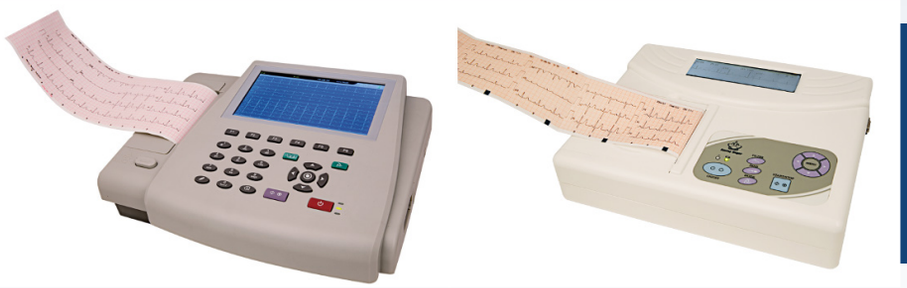
- Equipped with three dry metal electrodes (without the need for gel and tape), simultaneous recording of six leads: I, II, II, avL, avR, and avf
- Upgradeable firmware using the application and wireless (SDR)
- Connection to the application using Bluetooth for data transfer
- Ability to record 200 samples with a single full charge
- Micro-USB charging port
- Optimum operating temperature of 0-45 degrees Celsius
- Low power consumption in standby mode
- Ability to change hardware algorithms based on the requirement

Advantages:

- Able to connect to smartphones and immediately provide the charts
- Rechargeable battery
- Providing early analysis
- AF diagnosis using artificial intelligence
- Sending real-time data to the physician
- Ability to store data in PDF format
- Lower weight compared with similar products
- Lead Off detection and pace detection, AF arrhythmia detection using artificial intelligence
- Able to estimate and calculate SpO2, respiration rate, blood pressure, QRS duration, HRV, and R-R interval parameters

International Standards or Permission:

- ISO 13485
- IEC 60601-2-25
- IEC 62304
- IEC 60601-1
- IEC 60601-1-2



Electrocardiograph (ECG) Device
PC216, A80 and A110 Models

Amvajnegar Sepahan Co.

www.amvajnegar.com

Product Introduction:

The Electrocardiograph receives the electrical signals of the heart from the surface of the body's skin by electrodes and sends them after amplification, filtering and processing for display on an LCD or a thermal or laser printer. A total of 12 standard cardiac signals (ECG) are displayed for physician diagnosis. By means of this device, the function and health of the heart is examined as the most important vital sign of the body.

Application:

in different medical departments:

- ICU
- CCU
- Emergency units
- Clinics
- Physician, cardiologist and GP's practices
- Research centers

Main Export Destinations:

Afghanistan, Iraq, Turkey, East Asia

Exports History:

Up to 500,000 $

Annual Production Capacity:

1000 devices

Founded:

2009

This product is a final B2B Equipment.

Technical Specifications:

Model	Technical Specifications
A110	**Input circuit:** floating system **Input Impedance:** >20M ohm **Input current circuit:** <1Ua **Input dynamic range:** ±5mV **Calibration voltage:** 1mV (max error: 5%) **Skin voltage tolerance**: ±300mV **Operating system:** Linux **Power supply:** AC, 180 to 230V, 50/60HZ **Power consumption:** 40VA **Battery:** 12.6V/4400mAh, Li-Ion, Rechargeable **Dimensions:** 330 × 280 × 120 **Weight**: 3.5 KG
A80	❊ Simultaneous reception of 12 ECG leads ❊ Simultaneous display of three signal channels on the screen and thermal printer ❊ 128 x 480 pixels monochrome screen ❊ Thermal printer with high resolution and paper width of 80 mm ❊ Protection against defibrillators and Isolated inputs from city's electricity supply ❊ It has two modes, manual and automatic, and displays the rhythm signal (long lead). ❊ Definitive display of leads and audio alarms ❊ Automatic adjustment of background line without distortion in ST segment ❊ Ability to connect to the computer via USB ❊ The possibility of storing the signals of up to 50 patients along with inserting the date according to the Persian solar calendar
PC216	❊ Simultaneous reception of 12 ECG leads ❊ Simultaneous display of 12 signal channels on the computer monitor ❊ Simultaneous printing of 12 signal channels on a laser printer connected to the computer ❊ Unlimited storage and archive management of patient signals ❊ Receiving signals through Isolated USB and transferring data through LAN network ❊ The possibility of patient monitoring ❊ Definitive display of leads

Advantages:

- 1 year of after sales service
- 1 year of warranty
- Lower price than similar products
- Being multilingual and directly connected to laser printers

International Standards or Permission:

- In compliance with IEC-60601-1 and IEC-60601-2-25 standards.
- CE mark and ISO13485

Electrocardiograph (ECG) Device
Instructional, 8-Channel and Non-Therapeutic

Elm Gostar Mad Co.

www.egm.co.ir

Product Introduction:

Recording the vital signal of the human heart is one of the most important diagnostic parameters of cardiovascular diseases and this device records all the leads needed by researchers and doctors.

Annual Production Capacity:
20 devices

Founded:
2015

Application:

- Hospitals
- Cardiovascular disease research centers
- Faculties of medical engineering and medicine

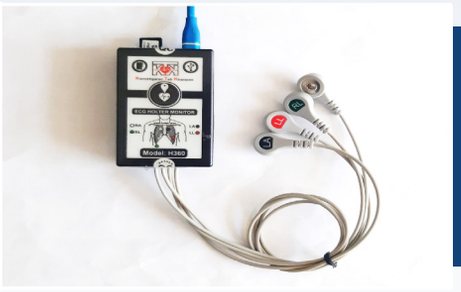
This product is a final B2B Equipment.

Technical Specifications:

- Simultaneous recording of 8 to 32 EEG channels
- 24-bit resolution
- 250 and 500 Hz sampling frequency
- Direct USB protocol of monitoring software and data storage in lab view
- LABVIEW monitoring and data storage software
- Bandwidth from 0.1 to 250 Hz
- 5 volt rechargeable battery power supply

Advantages:

- Lower price than similar products
- Less noise than similar products



ECG Holter Monitoring Hardware-Software Package

Kavoshgaran Teb Kharazmi Co.

Product Introduction:

H360 is a portable ECG Holter monitor with the required accessories for recording and analyzing ECG signals. The patient can wear this device inside or outside the medical centers or at home. This device is designed for easy installation on the patient's body. Using an internal rechargeable battery, it can continuously record the ECG signal of the patient in six channels (or more) simultaneously for more than 96 hours on a storage card.

Founded:
2009

Application:

- Hospitals
- Specialized cardiology centers
- Medical clinics
- Offices of cardiovascular specialists

This product is a final B2B Equipment.

Technical Specifications:

Sampling accuracy	12-bit
Sampling rate	500 samples per second
Frequency range	0.05 – 150 Hz
Dimensions	70 × 45 × 18 mm
Frame material	Plastic/Polyester
Storage card capacity	16 gigabytes maximum
Functioning voltage	3.7 V
Battery type	Rechargeable Li-Po
Operating temperature	0 – 45 °C

Advantages:

Lower prices compared with similar products.

ECOG Signal Recorder Device

Zist Kankash Toos Co.

www.toosbioresearch.com

Product Introduction:

This device records brain signals (Neural Daq) and receives and stores extracellular signals of ECOG nature. The signals are of electrical field type created by neural activities of the brain. ECOG signals indicate the function of various parts of the brain. It can identify groups of neurons responsible and activated during each command in smart creatures.

Founded:
2015

Application:

- Recording brain function from the cortex
- Behavioral analysis of various parts of the brain in reaction to external stimulants

This product is a final B2B Equipment.

Technical Specifications:

Hardware	❊ Recording 1 to 8 channels of neural signal ❊ Able to run on a rechargeable Li-ion battery ❊ Sampling rate of 40 KS/S with 16-bit resolution for neural channels and additional analog channels ❊ Equipped with hardware and software filters ❊ Optimization control and hardware filter using the software ❊ Operation time: 20 hours (single channel), 18 hours (8 channels)
Software	❊ Displaying the neural signal input from the hardware ❊ Able to display overlayed spikes (up to 500) ❊ Spike sorting of the online data or pre-recorded information ❊ Clustering the sampled spikes (up to four clusters) ❊ Able to identify feature space (PC1-PC2, PC1-PC3, PC2-PC3, VALLEY-PEAK) ❊ Able to identify and separate spikes based on the selected feature space

Advantages:

High-quality signal input

Electromyograph (EMG) Device | 4000S Model

Negar Andishgan Co.

www.negand.com

Product Introduction:

The electromyograph (EMG 4000S) is a diagnostic device to record the electrical activities of muscles or nerves by placing the recorder electrode on the surface or in invasive manner. The related muscle recordings can be with or without external stimulant connected ti the muscle nerve. Recordings related to the nerve are also performed with nerve stimulation in an electrical, optical or audio methods. Using the characteristics of the recorded signal, including the time characteristics or signal amplitude, the physician can diagnose the possible complications, such as nerve damages.

Founded:
1998

Application:

Recording muscle or nerve electric activities to diagnose the origin of the limb pains, indicating the location of the nerve damage, determining the intensity of the nerve damage, diagnosis and treatment of neck and back disc pain, diagnosis of nervous system disorders, diagnosis of diseases affecting the connection between nerve and muscle, diagnosis of cell disorders in the brain or spinal cord, diagnosis of diseases affecting nerve roots.

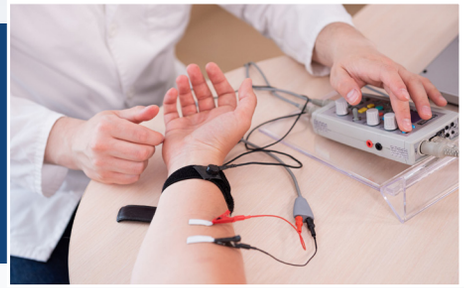
This product is a final B2B Equipment.

Technical Specifications:

- **CMRR**: > 75 dB
- **Sensitivity:** 0.5 µV – 15 mV
- **Noise level**: < 1.5 µV
- **Frequency range:** 5Hz – 3 kHz
- **Sample rate frequency**: 44.1 kHz
- **Notch filter:** 50 or 60 Hz (Optional)
- **Intensity range:** 0 – 100 mA
- **Stimulation duration:** 50 – 1000 µS
- **Input resistance:** ~ 100 MΩ
- **Power Requirements:** Input 110-220 V 50/60HZ
- **Power supply:** 110/240 V AC, 50/60 Hz, Isolated Medical Grade

International Standards or Permission:

- Certified by IMED, Department of medical equipment
- Electrical safety of medical equipment QAI 60601-1
- Electromagnetic field compatibility test IEC 60601-1-2
- Electromyograph device exclusive safety standard IEC 60601-2-40
- Software verification standard IEC 62304
- ISO 9001: QS Swiss



Electromyograph (EMG) Device

Shafa Danesh Hoonam Co.

www.nikavapishro.ir

Product Introduction:

Physical medicine and rehabilitation physicians use this device to assess neural networks and cells inside the body. The device receives the neural reaction of the nervous system by exerting an electrical signal to the body. It analyzes the reaction and displays the results on computer software. This device helps to diagnose the type and severity of the damage to the nervous system and body muscles.

Founded:
2016

Application:

Diagnosing the health condition of the neural cells throughout the body organs, muscles, and spine.

This product is a final B2B Equipment.

Technical Specifications:

Operational features	❊ **Operating temperature:** 0 - +60 degrees Celsius ❊ Usable in office spaces and hospitals ❊ Usable as a fixed or portable device ❊ Ability to be installed on laptops or desktop computers
Functional features	❊ Remote control using headbox and computer ❊ Easy access by using the support arm ❊ Display for device stats in various tests ❊ Adjustable stimulation ❊ Ability to use pedal and mouse to exert the stimulation
Dimensions	❊ **Length:** 205 mm ❊ **Width:** 140 mm ❊ **Height:** 50 mm
Weight	**Device weight:** 500 gr
Safety features	❊ The ability of connection to earthing cable for added stability ❊ Isolation of the patient from the computer and the earthing ❊ Isolation of the patient from the exerted stimulation ❊ Safe control on the stimulation of the device and using safe controllers ❊ Equipped with laptop's internal battery for higher safety levels against the high noise level environments ❊ Maximum stimulation warning during the exertion of stimulant

Advantages:

- ❊ Portable, small-sized, light-weight, and solid built quality
- ❊ Three-year warranty and 10 years of after-sales services
- ❊ Low noise level, without earthing requirement
- ❊ Very low power consumption and powering the device using USB connection
- ❊ High safety during the stimulation and low current drawing of the device

International Standards or Permission:

- ❊ IEC 60601-2
- ❊ IEC 60601-1
- ❊ IEC 60601-2-26
- ❊ IEC 60601
- ❊ IEC 62304

Electromyograph (EMG) Device
instructional, 8-Channel and Non-therapeutic

Elm Gostar Mad Co.

www.egm.co.ir

EGM

Product Introduction:

The nerve and muscle activity signal is recorded by the electrodes and circuits of the EMG device. These signals are widely used in neurology and muscle science, rehabilitation and robotics.

Annual Production Capacity:
25 devices

Founded:
2015

Application:

- Hospitals
- Neuromuscular diagnostic clinics
- Faculties of medical engineering and medicine

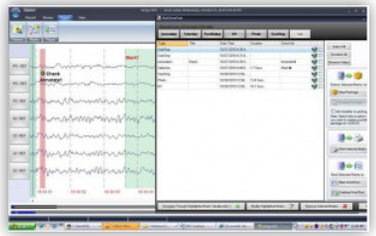
This product is a final B2B Equipment.

Technical Specifications:

- Simultaneous recording of 2 to 8 EMG channels
- 24-bit resolution
- Sampling frequency 1 to 2 kHz
- Direct USB protocol LabView monitoring and data storage software
- MATLAB GUI signal processing offline software
- Bandwidth from 0.1 to 1 kHz
- 5 volt rechargeable battery power supply

Advantages:

- Lower price than similar products
- Less noise than similar products



Electroencephalograph (EEG) Device | NrSign 3840 Model

Negar Andishgan Co.

www.negand.com

Product Introduction:

Electroencephalograph devices (such as EEG 3840) measure the electrical activity of the brain, and neurologists use the recorded signals to diagnose brain diseases and disorders. This device has various channels (24 or 32 channels). The device receives the brain signals using electrodes that connect to the surface. Hence, the function of this device is non-invasive. The display indicates the recorded signals, and the required section can be printed for further evaluation by the expert. Recordings usually take between 30 minutes to several hours.

Founded:
1998

Application:

Recording EEG to diagnose brain damages and their location, investigating epilepsy and convulsions, diagnosing mental disorders, studying sleep and investigating sleep disorders, monitoring and analyzing brain responses to sensory stimuli, research related to brain-computer interface (BCI), analyzing memory loss, evaluating encephalitis and brain tumor, diagnosing the causes of headaches and early diagnosis of Alzheimer's disease.

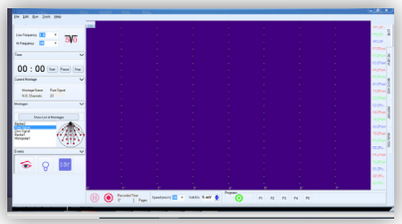
This product is a final B2B Equipment.

Technical Specifications:

- **Power input:** Power Supply 110-220 V, 50 or 60 Hz, 1A max via an Isolated power
- **CMRR:** > 100 dB
- **Sensitivity range:** 10 uV to 2 mV
- **Noise level:** < 2 uV
- **Frequency range:** 0.16 – 500 Hz
- **Adjustable sampling rate:** from 500 to 2000 Hz
- High-quality MP2 videos
- **Electrical safety:** Class II BF

International Standards or Permission:

- Certified by IMED, Department of medical equipment
- Electrical safety of medical equipment QAI 60601-1
- Electromagnetic field compatibility test IEC 60601-1-2
- Electroencephalograph device exclusive safety standard IEC 60601-2-26
- Software verification standard IEC 62304
- ISO 9001: QS Swiss



Electroencephalograph (EEG) Device | Neurounique Model

Shafa Danesh Hoonam Co.

www.nikavapishro.ir

Product Introduction:

This device records brain signals from the outer brain membrane. Analysis of a combination of signals from various parts of the brain can be used to diagnose different diseases, complications, and disorders and determine their intensity.

Application:

- Assessment of brain health condition at various parts
- Diagnosis of damages to different brain parts due to diseases, accidents, or genetic defects.
- Diagnosis of various diseases, including epilepsy

Founded:
2016

This product is a final B2B Equipment.

Technical Specifications:

Operational Features	❊ Operating temperature: 0 _ +60 degrees Celsius ❊ Usable in office spaces and hospitals ❊ Usable as a fixed or portable device ❊ Ability to be installed on laptops or desktop computers
Functional Features	❊ Remote control ability ❊ Equipped with an arm for added flexibility ❊ Provides various tests ❊ Ability to add a camera to record images
Dimensions	❊ Length: 100 mm ❊ Width: 140 mm ❊ Height: 40 mm
Weight	Device weight: 300 gr
Safety Features	❊ Very low current intake, without earthing requirement ❊ Ability to use ECG and resuscitation devices and operating rooms simultaneously

Advantages:

- Very low noise level, without earthing requirement
- Very low power consumption, able to continuously run on the internal battery for up to 80 hours
- Ability to use backup battery during emergencies
- Quick-charge time with long life-span
- Adaptable with current standard software
- Small-sized, portable, and solid built

International Standards or Permission:

- IEC 60601-2
- IEC 60601-1
- IEC 60601-2-26
- IEC 60601
- IEC 62304

Electroencephalograph (EEG) Device

instructional, 8 Channel and Non-therapeutic

Elm Gostar Mad Co.

www.egm.co.ir

Product Introduction:

Recording the vital signal from the human brain cortex (EEG) is one of the most important parameters of neurological and medical sciences. This device enables doctors and neuroscientists to record 8 to 32 channels of EEG signals at the same time.

Annual Production Capacity:
20 devices

Founded:
2015

Application:

- Hospitals
- Neuroscience research centers
- Faculties of medical engineering and medicine

This product is a final B2B Equipment.

Technical Specifications:

- Simultaneous recording of 8 to 32 EEG channels
- 24-bit resolution
- 250 and 500 Hz sampling frequency
- Direct USB protocol
- LABVIEW monitoring and data storage software
- MATLAB GUI offline signal processing software
- Bandwidth from 0.1 to 250 Hz
- 5 volt rechargeable battery power supply

Advantages:

- More accuracy than similar products
- Less noise than similar products

Ambulatory Blood Pressure Monitoring

Ave Cinna Co.

www.avecinna.com

Product Introduction:

Blood pressure holter monitor is a device by which a doctor can determine whether a patient has a blood pressure disease or not. This device records blood pressure (BP) monitoring over a -24hour and -48hour period while the patient is awake or asleep.

In clinics, a tool called a sphygmomanometer is used to measure blood pressure. Blood pressure is usually taken once or twice per visit. In most cases of ambulatory blood pressure monitoring, blood pressure is measured every 20 to 30 minutes during the day and once every hour during the night.

Heart rate can also be measured at the same time. The blood pressure Holter system made by Avecinna Company carries out blood pressure analysis and heart rate for a period of 24 and 48 hours.

Main Export Destinations:

Azerbaijan, Iraq and Syria

Annual Production Capacity:

1000 devices

Founded:

2005

Application:

Measuring and diagnosing the patient's blood pressure

This product is a final B2B Equipment.

Technical Specifications:

- Automatic recording of blood pressure: for 24 or 48 hours
- **Performance:** Up to 3 separate periods automatically to record the patient's blood pressure
- Can be used for babies under 10 kg
- **Blood pressure range:** 25-280 mmHg, inflates up to 300 mmHg
- **Heart rate range:** 40-200 bpm
- **Temperature conditions:** 10°C(50F) to 50°C(122F)
- **Power supply:** Internal rechargeable lithium-ion battery
- **Recording time:** Recording up to 48 hours, 300 times pressure
- Weight: 350 grams (batteries included)
- **Device power:** 110 ~ 240 VAC / 200 mA / 60VA / Fuse 2000mA
- **Device dimensions:** 298 x 240 x 80 (mm) – 3.65 kg
- **Device accuracy:** ± 3mmHg

Advantages:

It has technological modules such as calculation of the patient's heart rate and MAP while recording the blood pressure by the device recorder, round-the-clock analysis of the patient's blood pressure and calculation of the maximum minimum, systolic and diastolic for examining patients with high blood pressure, accurate measurement of the heart rate of patients.

International Standards or Permission:

- ISO 10004
- ISO 10002
- ISO 13485
- ISO 9001
- IEC 60601-1 2005
- ISO 9001: 2008 standard - Germany DQS
- Standard ISO 13485: 2012 - Germany DQS

Holter Monitoring Device

Three-Channel Model

Dahian Pezeshki Pishro Co.

www.dahian-co.com

Product Introduction:

Electronic data recorder registers include chest surface electrodes and one electrocardiograph amplifier. The application of these registers is primarily for the diagnosis of transient ventricular arrhythmias after myocardial infarction or other diseases with the cardiac origin of the outpatients.

Main Export Destinations:

Afghanistan, UAE, Iraq and Syria

Exports History:

Up to 500,000 $

Founded:

2007

Application:

Hospitals, medical centers, medical universities, clinics, and cardiology offices.

This product is a final B2B Equipment.

Technical Specifications:

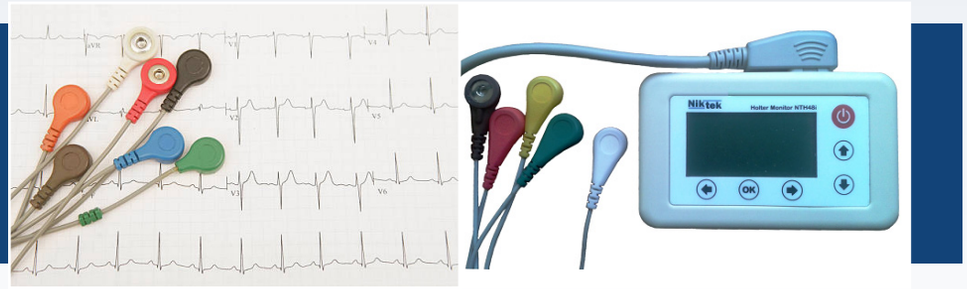
- 16-bit resolution
- 200 Hz rate for each channel
- Operateable up to 96 hours
- **Internal power:** 1.5 V AA alakaline battery
- **Device dimensions:** 69 x 79 x 22 mm, weight: 100 gr
- **Class:** IIa
- **Dynamic range:** ±5 mV
- **CMRR:** higher than 95 dB
- Equipped with a graphical LCD with a resolution of 64 x 128 pixels
- IP22 rated dustproof and waterproof
- Simultaneous registration of 3 channels with 16-bit resolution and sampling rate of 200 Hz

Advantages:

- Containing technological modules, such as designing and executing signal conditioning and filtration
- Reasonable pricing compared to similar devices

International Standards or Permission:

- CE
- Compliance with design control requirements according to ISO 13485: Matching (SZUTEST)



Holter Monitoring Device

Niktek Co.

www.niktek.ir

Product Introduction:

A Holter monitor is a portable device with the ability to continuously record the heartbeat for 24, 48 hours, or longer. Some cardiac arrhythmias occur randomly at large intervals; therefore, they can not be diagnosed when visiting a physician. In such cases, the physician uses a Holter monitor. The Holter monitor records the cardiac signals, and physicians can diagnose the arrhythmia using smart software, which detects the arrhythmia from the recorded information. Nik Tak Holter Monitor is the first domestic Holter that has passed every standard related to Holter monitors.

Founded:
2004

Application:

Diagnosing various cardiac diseases at specialized heart offices, hospitals, and clinics.

This product is a final B2B Equipment.

Technical Specifications:

- Storing three leads (5 electrodes), 200 per second sampling rate
- Able to save the event by pressing a button
- Displaying electro cardiac signals for assuring the proper attachment of the cables
- Storing the patient's data as text and voice
- Rechargeable Li-ion battery
- Recording cardiac signals for up to 14 days with a single charge
- **Power input:** Battery – Voltage +/- 100 to +/- 300 mV
- **Dimensions and weight:** 106x65x20 mm, 127 gr

Advantages:

- Containing technological modules, such as arrhythmia detection and categorizing algorithm, hardware-based data compression algorithm, low consumption
- 99.8% accuracy of the R detection algorithm

International Standards or Permission:

- IMED
- IEC 60601-1:2012
- IEC 60601-1-2:2014
- IEC 60601-2-47:2012
- IEC 62304:2006

Disposable Holter Monitoring Device

Ahange Salamat Khavarmianeh Co.

www.pegahsalamat.com

Product Introduction:

Since arrhythmias may indicate no sign, an ECG examination is the most accurate method of diagnosis. However, as they are not always detectable, ECG examination must be performed at long durations (more than 24 hours). Holter monitoring devices are suitable candidates for the job.
This gadget is a newer generation of Holter monitoring that records the electrical activities of the heart (ECG) for defined periods (usually 48 ,24, or 72 hours). Then, this valuable and vital information will be processed by the specialists, and the resulting data will be provided to the cardiologist to decide the treatment and care method for the patient.

Founded:
2019

Application:

- Diagnosis of congenital heart dysfunctions, investigating heart rhythms, investigating disturbances in the sinus rhythm of the heart, diagnosis of heart enlargement, diagnosis of thickening of the myocardium (QT syndromes, Brugada syndrome, ARVC syndrome, HCM syndrome), proposing suitable treatments, preventing sudden cardiac arrest
- Helping athletes

This product is a final B2B Equipment.

Technical Specifications:

Index	Amount
Electrical specifications	❊ Frequency response: 0.15 Hz to 34 Hz ❊ Input impedance: >3mohn ❊ Differential range: +/-1.65 mv ❊ Resolution: 8 bits
Physical properties	❊ Dimensions: 8 × 93 × 140 mm ❊ Weight: 34 gr ❊ Endurance: 6 months
Power input	Battery: Li-ion battery with a life cycle of 48 hours

Advantages:

- Customizable order
- Domestic product
- Lower prices compared with the similar foreign products

International Standards or Permission:

- ISO 13485
- Related standards
- Medical equipment basic standard
- Specialized Holter monitoring standard
- IEC 60601-1-1
- IEC 60601-1-2
- IEC 60601-2-47

Three-Dimensional Digital Mammography

Payamed Electronic Industrial Co.

www.payamed.com

Product Introduction:

Mammography can diagnose 85 to 90 percent of breast cancers among women older than 50 at least two years before they can feel the tumor. Women between 40-50 are recommended to perform digital mammography every two years, and women over 50 should perform it annually. Accurate imaging of breasts requires special mammography equipment, which besides providing high-quality images, must also have the capability of optimized image calibration. Without low radiation doses (to increase the contrast and accuracy of the graphs) and powerful compression, observing the tiniest details in the breast images is possible.

A mammography device is medical imaging equipment that uses the X-ray to image the breast. When the patient is placed in a proper location, pads compress the breast, and the X-ray radiates from the X-ray tube and hits the image receiver after passing the breast tissue. The software processes the data shown on display, and when an ideal state for diagnosis is obtained, results can be printed or sent to the attending physician.

Application:

Medical imaging centers and diagnostic and treatment clinics

This product is a final B2B Equipment.

Founded:
2000

Screening System for Congenital Heart Diseases in Children and Newborns (Phonocardiograph)

Gostaran Sanaye Novin Pars Co.

POUYA-HEART

Product Introduction:

Congenital heart dysfunctions are the most common type of congenital defect among children and neonates. Many infants are born with undiagnosed congenital heart diseases without apparent symptoms. Congenital heart diseases are categorized into CHD and CCHD groups. CCHD diagnosis in the early hours after childbirth is a necessity. In CHD cases, with earlier screening, treatment will be faster and easier. If congenital heart diseases are not diagnosed and treated before age 12, there will be critical consequences, such as heart failure during childhood or heart disease in adulthood. Approximately 30 percent of the children that lose their lives to congenital diseases consist of children born with congenital heart diseases. Accordingly, assuring the cardiac health of newborns and children for not having congenital heart defects is of significant importance.

There are about twenty types of congenital heart disease, and their combinations will result in more than one million different conditions. On the other hand, there are extra sounds in the heart sounds of more than 70 percent of newborns not caused by diseases, which relate to the immaturity of the heart muscles (known as innocent murmur). Therefore, the diagnosis of diseases based on the hearing of a pediatrician is not accurate. Gostaran Sanaye Novin Pars Co. cooperating with Amir Kabir (Iran) and Mons (Belgium) universities after extensive studies of 25 years, has provided a system to diagnose congenital heart diseases in children. This system has been patented in 33 countries and is well-received by physicians.

Founded:
1992

Application:

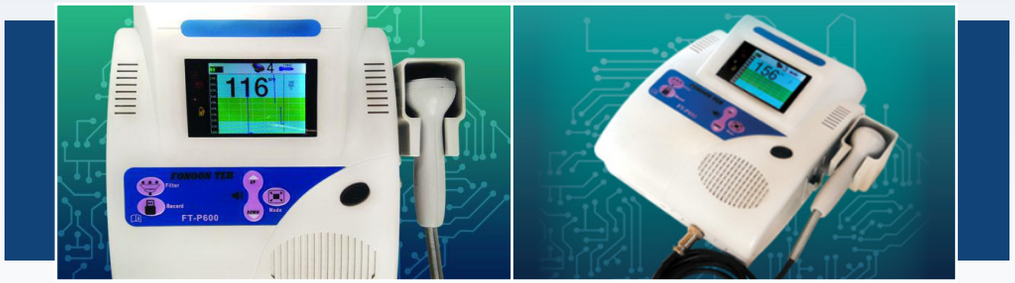
Children's congenital and acquired heart diseases screening.

This product is a final B2B Equipment.

Technical Specifications:

- 100 percent differentiation of innocent murmur from pathological murmur
- Zero percent negative error
- An exclusive algorithm based on a mathematical model of a child's heart with calculative methods of artificial intelligence, internationally patented
- Completely passive and without emissions
- Advanced training software
- Screening of two centers with a 10-seconds analysis of the heart sound
- Certified by required medical standards
- Equipped with a 300-500 Hz headphone to play the recorded sound

International Standards or Permission:
Patented in the United States, Russia, and China.



Fetal Heart Monitor | P600 Model

Fonoon Teb Naqshe Jahan Co.

www.fonoonteb.com

Product Introduction:

Fetal heart monitor can be used to hear fetal heartbeats inside the mother's womb after the 10th week of pregnancy. The function of this device is based on the doppler theory, and it sends and receives ultrasound signals. The transmitter connects to an oscillator that continuously sends ultrasound toward the fetus. The probe receives the returning waves after hitting the fetal heart and turns them into electrical signals. Features of this device include acceptable sound, high reception sensitivity, and oscillator stability.

Founded:
1998

Application:

Hearing the movements of the fetal heart inside the mother's womb after the 10th week of pregnancy.

This product is a final B2B Equipment.

Technical Specifications:

Input power	200-240 V AC, 50-60 Hz
Input current	4 Watt maximum
Main fuse	100 mA, 250 V, small regular glass fuse
Battery fuse	2 A / 12 V / Small regular glass fuse
Battery type	9 V, 1100 mAh rechargeable battery, 4 hours of continuous work time
Dimensions (without the handle)	20 × 24 × 10 cm

Advantages:

- Higher quality compared with other products.
- Lower prices compared with similar products.

Fetal Monitoring

Fonoon Teb Naqshe Jahan Co.

www.fonoonteb.com

Product Introduction:

This device can be used for hearing the fetal heartbeat inside the mother's womb and counting fetal heartbeats in late pregnancy. Fetal monitoring can be used to determine the time of the labor. Compared with the P600 fetus tracker device, fetal monitoring has more features.

Founded:
1998

Application:

In maternity hospitals, offices of gynecologists, pregnancy-care clinics, and general practitioner's offices to assess fetal health during late pregnancy and determine the time of labor.

This product is a final B2B Equipment.

Technical Specifications:

Voltage	100-240 V – frequency 50 Hz
Input power	50 Watt maximum
Battery type	4.8 V li-ion
Dimensions (L × W × H)	10 × 29 × 30 cm
Weight	3-4 kg

Advantages:

- Lower prices compared with similar products
- After sales services

Smart Baby Health Care Gadget

Dadeh Pardazan Raymon Co.

www.ninixco.com

Product Introduction:

Ninix is a wearable gadget to monitor the health of children using the latest technology. This gadget measures the vital signs of children and displays them on smartphones. Using this gadget, parents can monitor the health condition of their children anywhere and anytime.

Founded:
2017

Application:

Care for children under two years old at home, kindergarten, and other locations. Infant's fever monitoring, prevention of sudden infant death syndrome (SIDS), care for newborns rolling, tachycardia and bradycardia warning, and health monitoring.

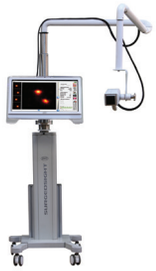
This product is a final B2B & B2C Equipment.

Technical Specifications:

- Standalone functioning without the application of the smartphone.
- Employing Bluetooth 4.2 (BLE) due to being harmless to the human body
- Obtaining vital signs (respiratory rate and heart rate) using non-invasive methods from the accelerometer data
- Extremely low power consumption (average consumption of 500uA)
- Mirco-USB charging port using the common chargers available on the market
- Over-the-air (OTA) updating support
- **Dimensions:** 42.5 mm diameter, 17.5 mm thickness
- **Weight of the device:** 15 gr
- Water, dust, and shock-resistant

Advantages:

- Micro-controllers programmed for low consumption
- Analysis of sensors output data and conclusion
- Unique connection and utilization design
- Employing exclusive algorithms for data synchronization
- Utilizing cloud computing for analysis and assessment of children's health behavior for Big Data
- Utilization of AI for behavioral assessment of child health



Surgeosight Handheld Gamma Camera System

Parto Negar Persia Co.

www.pnpmed.com

Product Introduction:

A handheld gamma camera device (Surgeosight) is a small portable camera used for a preoperative lymphoscintigraphy thyroid scan and to scan the transferred lymphatic nodes during the surgery. Lymphoscintigraphy and lymphadenectomy are techniques to reveal the extent of the damaged tissue of the patients. The presence or lack of regional lymph nodes helps physicians to diagnose and treat most malignant tumors. In other words, this device can play the role of an 'eye for the surgeons' inside the operating room.

Founded:
2010

Application:

- Sentinel lymph node biopsy during the surgeries related to breast cancer, melanoma, head and neck, urology, gynecology, and digestive system.
- Scintigraphy before the surgery, radiopharmaceutical-guided surgery, and detection of thyroid and parathyroid glands.

This product is a final B2B Equipment.

Technical Specifications:

Index	Amount
Number of pixles	36 × 36
Pixel size	1.2 × 1.2 mm
PSPMT	H8500
Field of view	42 × 42 mm
Spatial resolution	<2.5 mm FWHM @Collimator surface
Sensitivity @ Collimator surface	320 cpm/uCi for TC-99m
Energy range	60 - 300 keV
Weight	1.2 kg

Advantages:

- Proper shielding design to reduce noise at applied energy levels
- High-speed data analysis system designed for detection at high rates.
- High accuracy and sensitive energy separation system with the ability to select the energy level
- Design and manufacture two different collimators to obtain higher-quality images
- Suitable arm and mechanics design to obtain higher levels of freedom.

International Standards or Permission:

General requirements for basic safety and essential performance based on standards including:

- IEC 60601-1: 2005
- IOS 2009:2015
- IS 13485:2016

Animal Gamma XTrim PET and HiReSPECT Imaging Systems

Parto Negar Persia Co.

www.pnpmed.com

Product Introduction:

Xtrim-PET device for animals: This device is designed for imaging (PET) of small animals, including mice and rats. This device evaluates the metabolic and physiologic performance of the animal's body by estimating the distribution of radiopharmaceuticals. The obtained images can be used to diagnose, evaluate, and estimate the progression of tumors and lesions and to assess the performance of the internal organs. Considering that this system is preclinical, it can be used to fulfill research purposes, such as radiopharmaceutical production and assessment and estimating the success rate of various image reconstruction techniques. It can also be a significant help in designing radiotherapy treatments.

HiReSPECT imaging: This model provides functional imaging that supplies information on the function of tissues by injecting radiopharmaceuticals into the patient and receiving the output photons of the patient's body based on the accumulation of radiopharmaceuticals. Cardio SPECT is a dedicated SPECT system for cardio imaging. This system provides a noninvasive functional imaging technique. Since cardiac diseases are the primary cause of death in the world, the existence of this device is a necessity. ProSPECT is designed and manufactured for dedicated imaging of the heart.

ProSPECT Imaging: This system is a nuclear medicine imaging system used for tomographic imaging of the patient›s heart. The purpose of using this system is to reveal and determine the location of the radiopharmaceutical that was previously injected into the body and penetrated into the tissue of the heart and other organs.

Founded:
2010

The difference between types of products:

- Dimensions and working resolution of the products
- Dynamic and gantry system of the products
- The number of detectors used in each product (in the HiReSpect type, because it has a rotational movement system, there are fewer detectors than in Xtrim)

Application:

Investigating the impact of pharmaceuticals and biomarkers related to animal studies and research on dysfunctional hearts.

This product is a final B2B Equipment.

Technical Specifications:

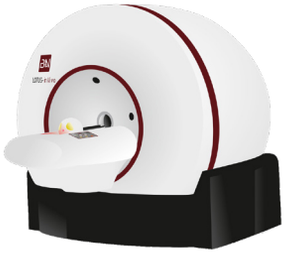
Model	Technical Specifications
Xtrim	Single bed axial FOV: 5cm Number of detector rings: 24 Transaxial FOV: 100mm Bore opening: 110mm LYSO crystal size: 2 × 2 × 10 mm Crystal pixel pitch: 2.1 mm Total number of crystals: 5760 Spatial Resolution: 1.7 mm @ center Energy Resolution: 17%
HiReSPECT	Number of Detector Heads: 2 Crystal Material: CSI(Na) Crystal Size: 100 × 50 mm^2 Crystal Element Size: 1 × 1 × 5 mm^3 Crystal Element Pitch: 1.2mm Active Area Per Detector Head: 96 × 45.6 mm^2 Number of Crystal Elements Per Head: 3040

Advantages:

Nuclear medicine technologies, and innovative software, mechanics, and electronics were used to manufacture the system.

International Standards or Permission:

- ISO 9001:2015
- ISO 13485:2016



Micro CT Scanner | LOTUS-inVivo Model

Matin Behin Negareh Co.

www.behinnegareh.com

Product Introduction:

LOTUS-inVivo is a CT scan X-ray imaging device with a special resolution of 30 microns. This device is designed to perform imaging on live small animals, such as mice or rats. The device can also take images of in vivo and ex vivo samples. Compared with a clinical CT scan, this device can obtain images with a -30micron resolution.

Annual Production Capacity:
10 devices

Founded:
2017

Application:

- Imaging of small live laboratory animals for preclinical studies
- Imaging tissue samples for ex-vivo medical studies

This product is a final B2B Equipment.

Technical Specifications:

X-ray source	❊ Power: 8 V ❊ Kv Range: 20 to 90 ❊ mA range: Higher than 0.18 ❊ Focal point for 20 to 90 Kv: ≤ 4 µm
X-ray camera	Matrix: 3 MP
Material	CMOS sensor with direct-contact Gd2O2S scintillator sensitive to x-ray energies as low as 15 keV
Reading speed	Fast reading speed
Resolution	< 5 µm
Sampling size	90 × 120 mm

Advantages:

Lower prices compared with similar products.

Micro CT Scanner | LOTUS-NDT Model

Matin Behin Negareh Co.

www.behinnegareh.com

Product Introduction:

LOTUS-NDT is a tomography device for imaging the structure and internal material of objects in a non-invasive manner with a resolution of lower than 10 micrometers using an X-ray beam for multiple industrial purposes.

Annual Production Capacity:
10 devices

Founded:
2017

Application:

- Obtaining images from oil reservoir rocks for modeling and evaluating the reservoir operations to increase the extraction
- Obtaining images to perform non-destructive testing of parts, engineered tissues, and scaffolds.
- Obtaining microradiography images from particular insect species to investigate and develop strategies for unknown pest control or counter-terrorism purposes
- Obtaining microtomography images of various types of cellular scaffolds at different anatomical parts of animals to check the bone formation
- Obtaining microtomography images of the manufactured parts using different processes to control the quality of the manufacturing process and to investigate the defects
- Obtaining microtomography images of bones and implants to investigate the mechanical characteristics and their structures

This product is a final B2B Equipment.

Technical Specifications:

X-ray source	❊ Power: 40 V ❊ Kv Range: 45 to 130 ❊ mA range: Higher than 0.500 ❊ Focal point: ≤ 5 µm
X-ray camera	Matrix: 3 MP
Material	CMOS sensor with to GOS direct-contact scintillator
Reading speed	Fast reading speed
Resolution	< 2 µm
Sampling size	120 × 90 mm

Advantages:

Lower prices compared with similar products

Urea Breath Test Device

Parto Negar Persia Co.

www.pnpmed.com

Product Introduction:

The urea breath test device branded as HeliGuide is a beta detector that measures the activity level of urea breath test cards to detect the Helicobacter pylori inside the stomach. Helicobacter pylori is a spiral-shaped gram-negative bacteria that lives exclusively in the gastric mucosa. H. pylori can cause gastritis, stomach ulcer, and eventually, gastric cancer. Various methods, including gastroscopy, urea breath test (UBT), fecal antigen testing, and endoscopy, can diagnose H. pylori. European H. pylori specialists have introduced UBT as the first and most reliable non-invasive method for initial diagnosis and follow-up of the active infection caused by this bacterium.

Founded:
2010

Application:

Detection of Helicobacter pylori inside the stomach

This product is a final B2B Equipment.

Technical Specifications:

Specificity	100%
Sensitivity	95%
Particle sensitivity	α, β, γ
Acceptance detection angle (Rad)	4π with two detectors
Display	16 × 2 Character LCD Indicator LEDs
Dimensions	15 × 15.5 × 21 (depth × height × width)
Weight	4 kg

Advantages:

Lower price compared with similar foreign products.

International Standards or Permission:

- ISO 9001:2015
- ISO 13485:2016
- CE self-declaration certificate
- Safety tests based on IEC 61010-1:2013
- EMC tests based on IEC 61326-1:2013

Digital Stethoscope (SPO2) / NS1

Nabz Group Co.

www.nabzgroup.com

Product Introduction:

The smart digital stethoscope is a device that physicians use to hear the sound of the heart and other internal organs, such as lungs, bowel, arteries (while measuring the blood pressure), fetal heart sound and movements (in pregnant women), and diagnose the condition based on these sounds. Noise cancellation technology helps this device to function at an optimal level in crowded areas.

Application:

- Hearing heart sounds, diagnosing cardiac diseases and heart murmurs that are not detectable with other methods
- Hearing the voices of lightweight and heavy animals, hearing percussion sounds in veterinarian methods

Annual Production Capacity:

10,000 devices

Founded:

2018

This product is a final B2B & B2C Equipment.

Technical Specifications:

- Able to receive and play sounds at a 44 kHz sampling rate, sending the data using Bluetooth at a 2 kHz rate, sound amplification up to 7 levels (a maximum of 24 dB), equipped
- with LED lights to announce the remaining battery level, filter type, Bluetooth status, and sound level
- Able to weaken environmental noises using ANR technology, training of the clinical simulator of heart and lung sounds, sound play using a handsfree (connected using a wire to a 3.5 mm jack or wireless connection using Bluetooth), automatic Bluetooth turn-off in case of not connecting to the smartphone to save energy, an automatic sound limiter to protect the user's ear
- Three filter modes (heart, lung, extensive frequency range), 10 hours of continuous working time
- Wireless firmware update using the application
- Optimum operating temperature of 0 - +45 degrees Celsius
- Four buttons to adjust the features
- Equipped with a rechargeable 1000 mAh internal Li-ion battery

Advantages:

- Low price
- Hardware update using the application
- Hardware adjustment using the smartphone application
- Multi-microphone array-phased technology to cancel the environmental noises
- Fourth generation NS1 Bluetooth device
- Ability to connect with wired and Bluetooth handsfree

International Standards or Permission:

- ISO 13485
- IEC 60601-2-25-2011
- IEC 60601-1
- IEC 60601-1-2
- IEC 62304

Clinical Audiometers

Pejvak Ava Sahar Co.

www.pejvakava.com

Product Introduction:

The clinical audiometer performs various tests on the ears and auditory system to assess the hearing threshold. The tests must be performed in an acoustic room. The other ear (not under testing) must be masked with noises created by the headphone to prevent interfering with the test.
The usual tests include airway audiometry, bone conduction audiometry, and speech recognition which are the best methods to diagnose the level and nature of hearing loss. The additional tests include TDT, PI-PB, ABLB, and SISI, which are suitable to differentiate sensory lesions from nervous system lesions. The clinical audiometer devices of Pejvak Ava Sahar Co. include models:

- CA models
- PC Based models
- Hand-held models

Founded:
1997

Application:

Hospitals, rehabilitation centers, schools for students with disabilities, hearing clinics, training centers of universities, occupational medicine centers, and workers' examinations for hearing tests.

This product is a final B2B Equipment.

Technical Specifications:

Technical specification of CA-series audiometers:

- ATMega128 microcontroller to control digital and analog parts
- ALTERA FPGA (EP2C8Q208C7) to control and coordinate various parts of the audiometer
- Uses two flash memories to store patient's data and calibration
- Equipped with a colorful graphical touchscreen LCD with a resolution of 320 × 240
- Connection with personal computers using USB and RS232 serial ports
- Contains a White noise generator with NBN-SpN-Pink filtration

Advantages:

Generation of sine waves with an accuracy of 1% and filtered against the harmonic frequencies

International Standards or Permission:

- ISO 389-1
- ISO 389-2
- ISO 389-3
- ISO 389-4
- EN 60645-1 2015
- EN 60601-1 2014
- ISO 9001 – 2016, KIVA SERMET, Italy
- ISO 13485 – 2016, KIVA SERMET, Italy

ECG Simulator

Amvaj Negar Sepahan Co.

www.amvajnegar.com

Product Introduction:

This device is a simulator of heart signals and breathing signals and a pacemaker. In fact, this device is connected to devices such as vital signs monitor or electrocardiograph instead of the patient and is used to test the accuracy and efficiency of these devices and calibration.

Main Export Destinations:
Afghanistan, Iraq, Turkey, East Asia

Exports History:
Up to 500,000 $

Annual Production Capacity:
200 devices

Founded:
2009

Application:

- In the medical equipment departments of hospitals
- Medical devices testing laboratories
- Medical calibration companies
- Research and design centers

This product is a final B2B Equipment.

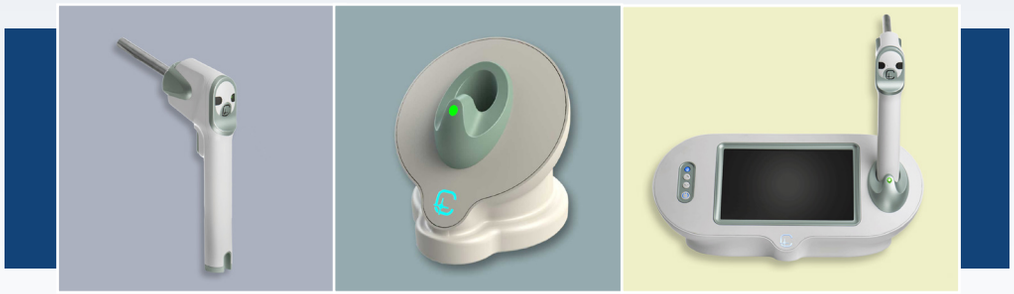
Technical Specifications:

- Simultaneous 12-lead ECG simulator with independent output with selectable range and repetition rate
- Breathing signal simulator on leads I and II with selectable range and repetition rate
- Simulator of all types of pace signal modes with the ability to adjust the amplitude and pulse width
- Cardiac artifact simulator and sine, square, triangular and impact test signals with the ability to change the range
- Ability to work for a long time with a rechargeable battery with the possibility of internal charging
- Suitable dimensions for handling and can be used for calibrating devices

Advantages:

- 10 years of after sales service
- 1 year of warranty
- Lower price than similar products

International Standards or Permission:
EC11 and EC13 standards' tests



Cancer Diagnostic Probe

Nano Hesgar Sazan Salamat Aria Co.

www.nanoelechealth.com

Product Introduction:

The CDP device is a device that helps the surgeon in the operating room to operate on the areas of the patient's body which are affected by cancer almost without the need for frozen section pathology and identifies the affected areas with high accuracy and by diagnosing the type of disease, enables the surgeon to either keep the tissue or remove it.
Another advantage of this device is performing a clean surgery by removing the margins infected with cancer, which leads to a reduction in the rate of recurrence of the disease.

Annual Production Capacity:
150 devices

Founded:
2017

Application:

- In operating rooms by general cancer surgeons (alternative to frozen section pathology during surgery to diagnose suspicious cancerous tissues)

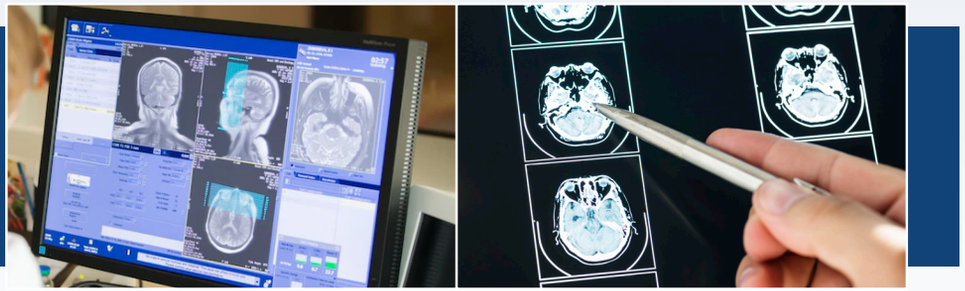
This product is a final B2B Equipment.

Technical Specifications:

Power supply	220 V AC/50 Hz
Power consumption	25 Watts
Maximum current (when charging)	150 mA
Minimum Measurable Current Resolution (with probe connection)	1 nA ±5%
Isolation class	Class II
Readability selection indicator	0 uA – 300 uA
Function	60 minutes on
Battery type	Godox VB18 II-IV 2200~AH with a life of 12000 full charge/discharge
Battery charging time	60 minutes
Charger type	Godox vc18 12-8v 2500
Charger pin model	3 pins
Connection device	Wireless using Bluetooth with a maximum connection distance of 12 meters

Advantages:

- Determining voltage and its rate of change and extracting electrochemical changes of cancer tissue
- Accurate detection of cancer tissue
- The first and only cancer margin testing device in the world with the latest pathological classification (Intraepithelial Ductal neoplasia) approved for breast cancer.



Automatic and Optimal Selection of Arterial Input Function (AIF) in Brain Tumor

Parseh Diagnostic Medical Imaging Systems Innovators Co.

www.kiomedical.com

Product Introduction:

Diffuse glioma tumors show many spatial and temporal changes, which causes the life expectancy of patients with glioma tumors to be low. Identification and separation of different areas of glioma are very effective for evaluating the prognosis of the patient and the degree of response to the designed treatment. Recently, it has been proven that a part of the tumor cannot be identified on conventional images. With these images, it is also impossible to detect the degree of invasion of tumor cells into the healthy surrounding tissue. As a result, segmentation methods based on conventional imaging are ineffective, and physiological imaging such as perfusion should be used to evaluate glioma tumors accurately.

Founded:
2016

Application:

Medical centers and medical imaging centers

This service is a final B2B service.

Technical Specifications:

- Reading DSC-MRI images
- Define a mask to remove the background
- Sort images by recording time
- Obtaining the signal intensity curve in terms of time
- Removal of the tumor area
- Obtaining the concentration curve in terms of time
- Shortened curves restoration filter
- Eliminating irregular curves using the provided condition

Advantages:

- Ability to install and run on radiology workstations
- As one of the main diagnostic modules and as an auxiliary tool in Computer Aided Diagnosis (CAD) systems.

Alzheimer's Disease Diagnostic Aid System

Parseh Diagnostic Medical Imaging Systems Innovators Co.

www.kiomedical.com

Product Introduction:

With the increase in the elderly population, the possibility of Alzheimer's disease (AD), which is related to age, has increased. MCI has been proposed as a prognostic of AD, which is different from normal cognitive decline in old age. Symptoms of AD and MCI overlap with other dementias. Therefore, the differential diagnosis between these stages is complex, time-consuming, and requires highly experienced doctors. It is essential to use non-invasive methods based on MRI, including DTI, which examines the neurological changes of the brain. Using artificial intelligence to create comprehensive diagnostic aid biomarkers can be important.

Founded:
2016

Application:

Taking help from software diagnosis to reach certainty and receive an auxiliary diagnosis in the shortest time in medical and imaging centers.

This service is a final B2B service.

Technical Specifications:

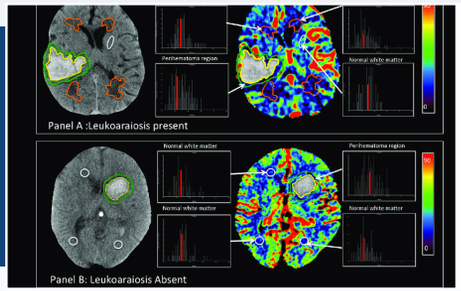
Data preparation (using two brain atlases of gray matter and white matter of the brain)	❊ FA ❊ MD ❊ A×D ❊ RD ❊ RA
Modeling (in three modes)	❊ Differentiate between NC and MCI ❊ Differentiate between MCI and AD ❊ Differentiation of NC, MCI, and AD

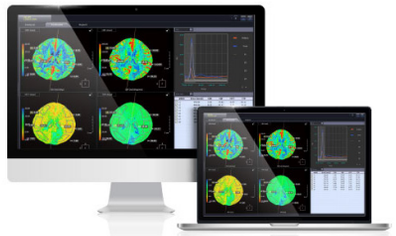
Advantages:

- ❊ Eliminating long and expensive neuropsychological tests to speed up diagnosis
- ❊ Use of patient data with the supervision and approval of experts in this field
- ❊ Creating comprehensive diagnostic markers based on gray matter and white matter of the brain as well as a combination of these areas
- ❊ Reducing the costs of transferring patients due to the lack of need to refer to experienced doctors in telemedicine
- ❊ The possibility of diagnosing the disease in illiterate people or people who cannot respond to cognitive tests due to a further decline in cognitive status.

International Standards or Permission:

Received the top patent certificate at the Turkish International Exhibition of Inventions in two consecutive years (2020 and 2021)





Perfusion Quantification Module

Parseh Diagnostic Medical Imaging Systems Innovators Co.

www.kiomedical.com

Product Introduction:

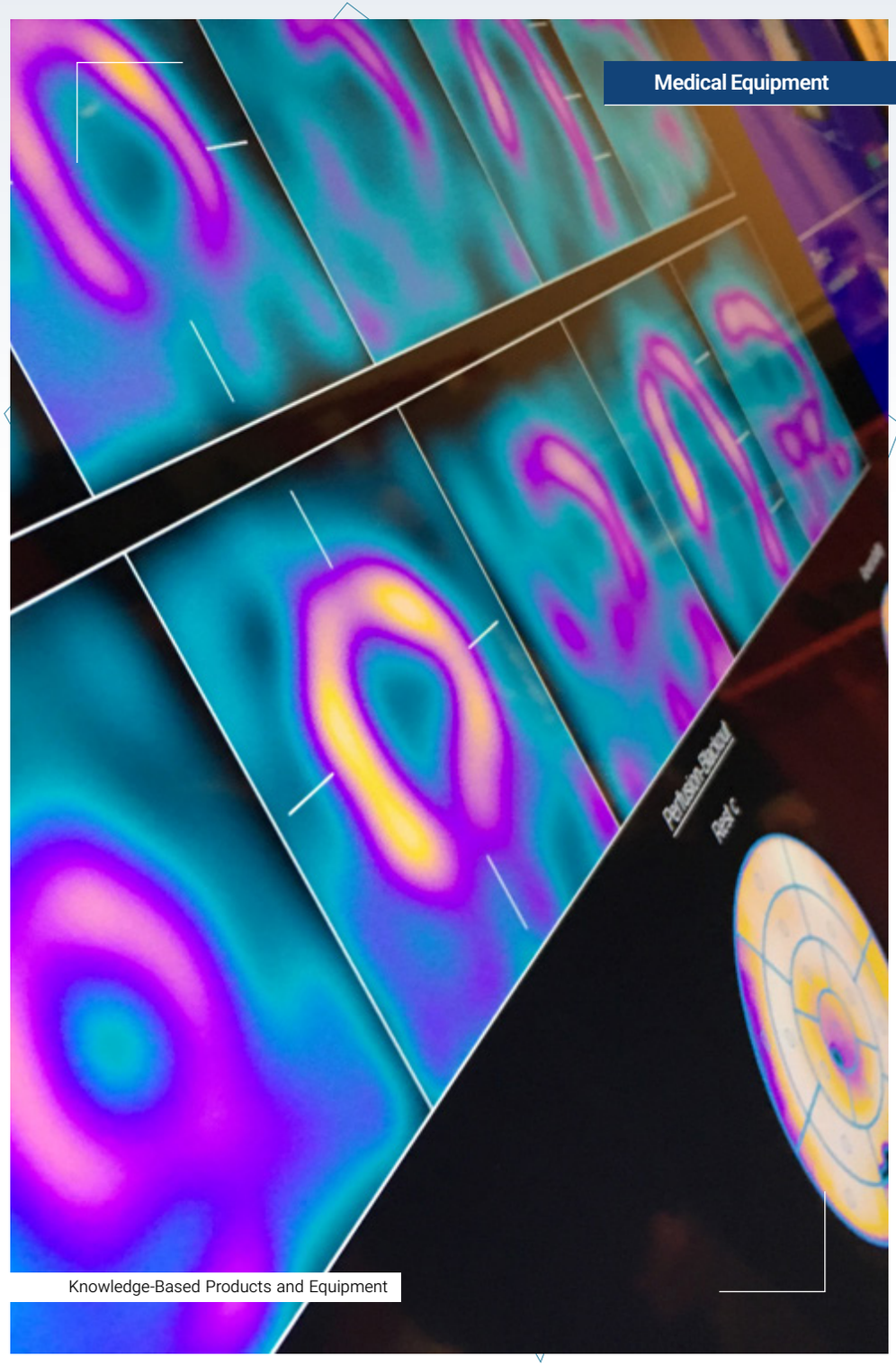
DCE-MRI imaging can quantitatively assess tumor conditions and provides a series of images before and after contrast agent injection. Therefore, MRI signal intensity changes over time are recorded for each image voxel. By using this imaging technique, the calculations related to the severity of vascular permeability are made. The purpose of performing DCE-MRI analysis in various tumors, including breast, prostate, liver, and ovarian cancer, is to determine the state of tumor angiogenesis. This way, the tumor progression and malignancy rate and the prediction of tumor response to treatment are determined.

Application:

Medical centers and medical imaging centers

This service is a final B2B service.

Founded:
2016



Video Laryngoscope

Norsa Dayan Darman Co.

www.norsamedical.com

Product Introduction:

This device has a laryngoscopy video blade and a screen, which provides an indirect view of the larynx by placing the blade at the tongue's end. It increases the security and accuracy of laryngoscopy or intubation by displaying the image of the vocal cords and the respiratory tract.

Annual Production Capacity:
30 devices

Founded:
2017

Application:

Hospitals and medical centers for intubation and opening respiratory tracts (airways)

This product is a final B2B Equipment.

Technical Specifications:

- Anti-fog system for the camera lens
- **Micro camera:** 300000 pixel VGA resolution 640×480 with 30 frames per second and range and viewing angle of 54 degrees
- **Average lifespan:** 10 years
- Supports HDMI and AVI image output
- Store and archive data permanently
- **Internal Memory:** up to 256 GB
- **Maximum cross-section of the blade:** 14 mm
- Integrated video blade and handle design
- Equipped with 10-inch screen
- Touch screen technology

Advantages:

- More features with the ability to customize for each customer
- Having a lower final price compared to similar foreign products
- Strong return on capital
- Not using complex, special and exclusive parts

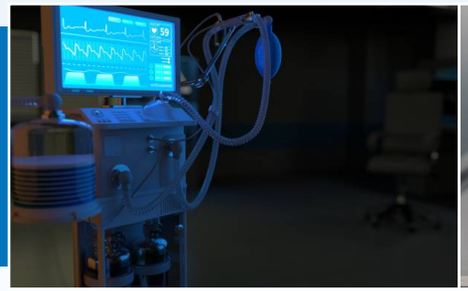
International Standards or Permission:
IEC 60601.1

Second Chapter

Medical Treatment Equipment

2ND CHAPTER

Medical Treatment Equipment



ICU Ventilator | RespiVent

Pouyandegan Rahe Sa'adat Co.

www.saadatco.com

شرکت پویندگان راه سعادت

Product Introduction:

Ventilator devices can be used for adult patients and children with weights higher than 5 kilograms hospitalized in intensive care units. This device is designed to provide mechanical ventilation for patients with such necessities. Mechanical ventilation in this machine can be performed in invasive and non-invasive methods. A ventilator is a relatively high-risk medical equipment (class III according to the Iranian Ministry of Health, equal to the class IIb of the European Union). Only the trained-qualified personnel are allowed to work with this device under the supervision of a physician.

Application:

Hospitals and medical centers with ventilation requirements for patients' oxygenation.

Founded:

1998

This product is a final B2B Equipment.

Technical Specifications:

Patient height	42 – 250 cm
IBW (ideal body weight)	5 – 200 kg
Synchrony	0.5 – 5 ml/cmH_2O
Inspiratory resistance	0 – 2.5 cmH_2O.s/l
Expiratory resistance	0 – 2.5 cmH_2O.s/l
Pressure stimulation	(-2) – (-20) cmH_2O
Current stimulation	2 – 20 l/min
Dimensions	48 × 45 × 48 cm
Weight	32 kg
Operating altitude	11,000 ft (3,500 m) above sea level
Maintenance and transportation humidity	5% to 95%
Operating humidity	15% to 95%
Operating temperature	5 to 35 °C

Advantages:

- Easy to use with touchscreen color display
- Extensive respiratory features, drawing graphs, and parameters indicator
- Smart alarm system
- Patient's records storage up to 72 hours
- Fast IBW calculator and ventilation according to IBW
- Suitable for children and adult groups, from 20 to 2000 ml volumes

International Standards or Permission:

- EMC Test
- Operation Condition
- ISO 60601
- ISO 8185
- ISO 15223-1
- EN1041
- ISO 80601-2-74
- Pre-Condition

ICU Ventilator | EDP-DIOMEDE & EDP-TS Models

Ehya Darman Pishrafteh Co.

www.ehyadarman.com

احیا درمان پیشرفته
Ehya Darman Pishrafteh

Product Introduction:

EDP-DIOMEDE: This device is an electro-pneumatic respiratory aid machine. Oxygen and air resources connected to the pneumatic sections of the device provide the driving force. After the entrance of the gases in the pneumatic section, the electrical valve control, pressure sensors, and regulators provide the controlled flow according to the required ventilation for the patient and transfer the air via an inhalation valve. During mechanical ventilation, the machine does not exchange energy with the patient.

This device is equipped with various advanced modes to provide ventilation for the patients in invasive and non-invasive methods. An 18.5-inch touchscreen display can indicate every parameter related to the patient's respiration (including the waveforms). In addition to an AC power input that connects the device to the city grid, it can also work with batteries.

This device can be used for adult and child patients that require ventilation for short or prolonged durations.

EDP-TS: EDP-TS is an electro-pneumatic ventilator with compressed air and high-pressure oxygen inputs. Central air of medical centers or portable compressors can be used as compressed air suppliers. Also, central oxygen or oxygen capsules can provide the required oxygen input. After the gases entrance to the pneumatic section, the air is supplied and transferred to patients according to user adjustments (through electronic valves control, pressure sensors, and regulators). The processor of the device executes the electronic controls. This device can provide care for patients with or without breathing ability. In case of technical failure, when the mechanical ventilation fails, the patient can breathe through the emergency vent.

The device is equipped with a battery as emergency power input. It can calculate and display parameters including inspiratory volume, expiratory volume, tidal volume, the ratio of inhalation to exhalation, flow, and volume per minute. The device has a touchscreen display that provides faster parameter selection and easier access for the users.

Main Export Destinations:
Germany, England, UAE, Belgium, Georgia, Syria, Iraq

Exports History:
1,000,000 - 10,000,000 $

Founded:
2004

Application:

NICU, CCU, ICU, and emergency wards of hospitals and medical centers.

This product is a final B2B Equipment.

Technical Specifications:

Model	Specifications
EDP-DIOMEDE	❊ Various parts of the device: Manifold, board sensor, compressor unit, power unit, ventilation module, battery, HMI graphical user interface, frame, and trolley ❊ Power input: 100-240 V, power consumption of 1.4 A current at 100 V
EPD-TS	❊ Various parts of the device: Manifold, board sensor, compressor unit, power unit, ventilation module, battery, HMI graphical user interface, frame, and trolley ❊ Power input: 100-240 V, power consumption of 1.4 A current at 100 V

International Standards or Permission:

- ❊ General electrical safety according to IEC 60601-1: 2005 standard
- ❊ Exclusive tests of the ventilator according to ISO 80601-2-12:2011 standard
- ❊ Software verification according to IEC 62304:2006 standard
- ❊ Electromagnetic compatibility according to IEC 60601-1-2:2014 standard
- ❊ ISO 17025

Hemodialysis Machine | Renova Model

Novatis Teb Co.

www.novatisteb.com

Product Introduction:

This machine is responsible for the management of hemodialysis treatment. Hemodialysis is one of the three alternative treatments for patients with kidney failure. For this task, the software takes over the blood and dialysis circuits. In the blood part, the blood pump, clamp, blood level pump, and heparin injection pump connected with leak detection sensors, blood level meter, and air in blood detectors will pump the blood taken from the patient's body to the dialysis filter and then returns it to the patient's vein. On the other hand, the device must create a solution with features close to blood plasma for transferring the blood wastes, and this fluid must be controlled by the hemodialysis machine in terms of temperature, concentration, and flow.

Main Export Destinations:
Turkey and Ukrain

Exports History:
1,000,000 - 10,000,000 $

Annual Production Capacity:
1000 devices

Founded:
2013

Application:

- Performing hemodialysis treatments, including HD, HDF, bicarbonate, acetate, dual-needles, and single-needle.

This product is a final B2B Equipment.

Technical Specifications:

Net fluid removal	100cc/hr-2500 cc/hr
Measurement type	Online Noninvasive flow metric measurement system
Bicarbonate concentration	8 mS/cm
Sodium concentration	16 mS/cm
Dialysate temperature	34 - 39 °C
Dialysis time	10min – 10 hr
Dialysate flow rate	100-800 cc/min

Advantages:

Modern electronics and hardware control, advanced software, 15-inch touchscreen display, flow metric UF system, auto prime, profile, KTV, BPM system.

International Standards or Permission:

- ISO 13485
- ISO 9001
- MDD 93/42/EEC
- IEC 60601-1
- IEC 60601-1-2
- 93/42/EEC

Hemodialysis Machine | ATF1022 Model

Arya Teb Firouz Co.

www.arya-teb.com

آریا طب فیروز

Product Introduction:

This device performs the detoxification and water excretion from the blood of patients with kidney failure. One of the primary tasks of this device is to prepare the dialysis liquid with controlled temperature, concentration, and pressure, so the proximity of this liquid and blood inside the filter will detoxify and dehydrate the blood while it does not affect the temperature of the blood. On the other hand, the device is tasked to safely receive and return the blood from the patient without posing any danger (such as entering air or clots inside the patient's body).

Kidney dysfunction or failure will result in an increased level of toxic materials, including urea and ammonia, inside the blood, and due to a lack of water excretion through the kidneys, the patient will gain weight. A hemodialysis device prepares a fluid (a combination of sodium, potassium, and magnesium ions and glucose), pumps it toward the dialysis filter, then receives the patient's blood from an artery using a peristaltic pump, and sends it toward the dialysis filter. The dialyzer (the dialysis filter) consists of a semi-permeable membrane that provides ion and water exchangeability between the blood and the dialysis fluid. Therefore, the device separates the toxic materials and water from the blood and returns the purified blood to the patient's body. In case of kidney failure, this device is a suitable replacement.

Main Export Destinations:

Afghanistan, Iraq, Indonesia

Exports History:

Up to 500,000 $

Founded:

2008

Application:

Dialysis centers

This product is a final B2B Equipment.

Technical Specifications:

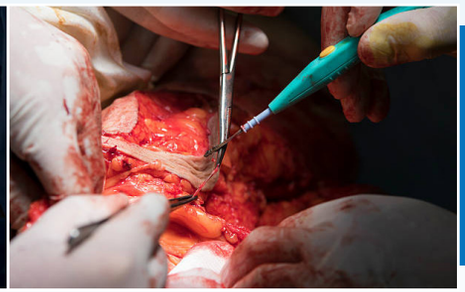
- **Parts of the device:** Hydraulic circuit of the AFT 1022 hemodialysis device, UFC subsystem, TC subsystem, and monitoring subsystem
- Equipped with calibration software
- **Power supply:** 200-240 V AC/1 ph 50-60 Hz 5 A
- **Weight and dimension:** 1870 gr, 134.5 × 133 × 233 mm (blood pump section)

Advantages:

- Algorithms are designed to treat the patient in the best way.
- Less maintenance during the operation compared with foreign devices
- Similar therapeutic abilities to foreign device Ferzinios model 4008 S classic.

International Standards or Permission:

- EC 60601-1-1
- IEC 60601-1-2
- IEC 60601-2-16
- CE certificate



Electrosurgical Unit - Iconic Family

Iconic IS410, Iconic IS410S, Iconic-Image1 Models

Kavandish System Co.

www.kavandishsystem.ir

KAVANDISH SYSTEM

Product Introduction:

In simple words, this device is surgical equipment that can stop the bleeding while performing an incision. The function of this device is based on the thermal impact of high-frequency electrical currents (higher than 300 kHz) on biological tissues of the body, which provides the surgeon the ability to operate (tissue incision) while stopping the bleeding. This function has numerous advantages compared to a surgical blade, including fast recovery without post-operative pus or intense healing contractions, ease of operation, reduced operation time, and protection against rupture or contusion made by regular mechanical operative tools. Also, in electrical surgery, tissues become contracted due to local heat and prevent the blood particles to spread to their surroundings. One of the significant features of electrical surgery is its ability to use it in areas where ordinary surgical tools cannot be used. Various models of this device include:

- Iconic-IS410
- Iconic-IS410s
- Iconic-Image1

Main Export Destinations:

India, Turkey, Malezia, Ukrain, Dubai, Belarus, Mexic, Azerbaijan, Lobenan, Aman, Indonesia, Iraq, Syria

Exports History:

500,000 - 1,000,000 $

Founded:

2005

Application:

General and specialized surgeries, including treatment of intra-abdominal bleeding through the digestive tract, using an endoscopy system for sampling from natural body tracts, prostate tumor surgery from the urinary tract (TUR), surgery inside the bladder, and also operations related to gynecology, for instance, surgeries related to infertility (IVF).

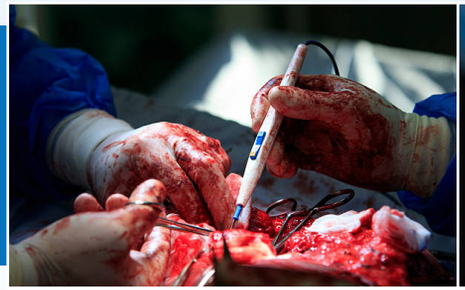
This product is a final B2B Equipment.

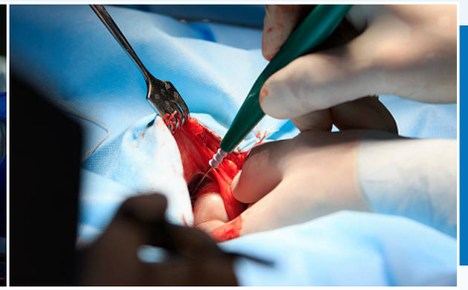
Technical Specifications:

- **General specifications shared by all of the models:** Memory, Self-check System, Feedbacks, Control Loops, OUTPUTS, Return Electrode Monitoring Technique
- **Main Voltage:** 220 VAC ± 10%, 50 Hz or
- **Maximum Current Consumption:** 4.5 A(RMS)
- **Maximum Power Consumption:** 800 V.A
- **Fundamental Frequency:** 410 kHz ± 1%
- **Modulation frequency:** 25 kHz
- **Weight:** 8.0 kg
- **Maximum power consumption:** 800 V.A
- **Dimensions:** 44 x 17 x 40 cm

International Standards or Permission:

- EN ISO 14971:2012 Standards
- EN ISO 15223-1:2016
- IEC 60601-1:2005/A1:2012
- EN 60601-1:2006/A1:2013
- EN 60601-1-2:2015
- IEC 60601-1-2:2014
- EN 60601-1-6:2010
- EN 60601-1-8:2007/A11:2017
- EN IEC 60601-2-2:2018
- EN 62366-1:2015
- EN 62304:2006/AC:2008
- IEC 62304:2007
- ISO 9001 & EN46001 International certificate





Electrosurgical Unit with Automatic Control

Parsam Sanat Behdad Co.

www.psb-co.ir

Product Introduction:

Electrosurgery (AKA HF and RF surgery) refers to exposing body tissues to a high frequency-high density power current to remove lesions, continuous bleeding, creating incisions, coagulation, or drying the tissue. Compared with a mechanical scalpel (surgical blade), this device has advantages, including simultaneous incision-coagulation and high accuracy. In simple words, we can call it an electrical blade.

Founded:

2013

Application:

- Dentistry offices (Cosmetic surgeries of gums, jaw, dental implant surgery, gum removal)
- Medicine (skin, hair, aesthetics, removing skin lesions, hair transplant surgeries)
- General medicine (general surgeries and outpatient surgeries)
- Gynecology (removing genital warts and gynecological surgeries)
- Otorhinolaryngology (ENT surgeries)

This product is a final B2B Equipment.

Technical Specifications:

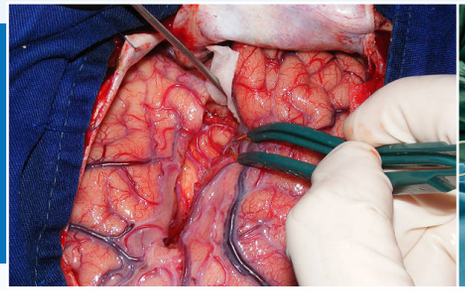
Input frequency/voltage	220 V, 60 Hz
Maximum power consumption	120 W
Operating frequency	1 MHz
Power level	1 W
Dimensions (W × D × H)	30 × 20 × 12 cm
Weight	6 kg

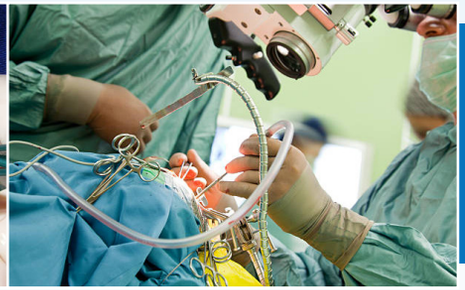
Advantages:

- Addition of spray mode compared to the foreign samples
- Using a standard pen for both modes (cut and coag)

International Standards or Permission:

Electromagnetic compatibility standard from EPIL laboratory





Comprehensive Surgical Navigation System

Compo, Compo +, Ov3 and OV4 Models

Parseh Intelligent Surgical Systems Co.

www.parsiss.com

Product Introduction:

The surgical navigation system is employed as a tool to assist the surgeon in pinpointing the precise position of tumors, lesions, and the desired target of the surgeon in various surgeries, including brain biopsy, brain shunting surgery, deep brain stimulation electrode implementation, and screwing in orthopedic surgery. Navigation systems can track the surgeon's tools using infra-red stereo cameras in real-time and display the exact position of tools on pre-operative images of patients. In this way, the surgeon will be able to guide his tools into the patient's body during the surgery without any need for direct vision.

This product is now available in the OPTO, OV4, Compo, Compo+, and C-Guide variants. These models come in different mechanical and physical configurations. Products from OPTO and OV4 solely differ in terms of design. The main trolley and camera base are separated in the OV4 and OPTO products so that the camera base can be moved around the operating room to provide the required conditions to perform surgery more effectively and correctly. Both of these devices are fixed and made to be put in operating rooms; they are not suited for constant movement between hospital operating rooms.

The Compo and Compo+ devices have entirely distinct mechanical design and appearance, but they share the same software requirements and accuracy as the first two versions. These models have the benefit of being lightweight, which makes it simple to transport them between the hospital's operating rooms. The only difference between these two items is, indeed, the tracking camera. Furthermore, the Compo product is considered to be a good option for educational applications and for outfitting university skill labs.

A growing number of traumatic occurrences, an aging population, and other variables are driving up the demand for minimally invasive therapeutic interventions in the field of orthopedics. Therefore, the surgical guidance system based on fluoroscopic images, or C-GUIDE for short, is designed and produced based on two-dimensional images. C-GUIDE has the potential to guide the specialist doctor in the delivery of orthopedic therapeutic treatments. Due to real-time tracking of the position of the tools, this technology enables specialists to track and direct their tools using two or more X-ray images. This eliminates the need for further imaging.

Main Export Destinations:

Russia, Germany, Turkey, Ecuador

Exports History:

Up to 500,000 $

Annual Production Capacity:

5 devices

Founded:

2009

Application:

Neurosurgery, ENT Surgery, Spine surgery, CMF, Orthopedic

This product is a final B2B Equipment.

Technical Specifications:

Stereo IR Camera Tracker:

- Wide field of view: 3000 × 1470 × 1856 mm
- High tracking accuracy (0.25 mm RMS error)
- Supporting passive and wireless

Minimal Computing Configs:

- Intel Core i5 2.4 GHz processor
- 8GB DDR3 RAM
- 1GB DDR5 Graphical card
- Wireless Mouse and keyboard
- Two Full HD monitors, one for the surgeon and one for the user
- Operating system: Windows 10-64 bit

Power Specification:

- AC Voltage: 220-240 V
- Current: 2.5A
- Frequency: 50-60 Hz

- A highly maneuverable trolley with adjustable arms for positioning the camera and monitor in various situations
- Folding arms for easy handling and storage
- Analog (Component, S-Video) and digital (HDMI) ports for capturing videos from devices such as endoscopes and microscopes
- Ethernet port and DVD writer are provided for network connectivity and data transfer
- Video port to connect to digital endoscope/microscope (HDMI)
- Video port to connect to analog endoscope/microscope (Component, S-Video)
- USB port on the panel to transfer information from the planning system (USB2 and USB3)

International Standards or Permission:

- CE
- ISO 13485:2016
- IEC 60601-1:2012
- IEC 60601-1-2:2015
- IEC 62304
- IEC 62366:2014
- ASTM E 1086-14:2016

Laparoscopic Surgery Trainer

Sina Robotics and Medical Innovators Co.

www.sinamed.ir

Product Introduction:

The Sina Flex model robotic surgery training system is a remote robotic surgery system that has enabled us the ability to perform laparoscopic surgeries using a robotic method.
The Sinaflex consists of two main subsystems including the Surgery Console at the surgeon's side (master system) and robotic arms at the patient's side (slave system). The Surgery Console receives the surgeon's hands movements and transmits them to the robotic surgery arms. Simultaneously, interaction forces/torques between the patients' tissues and the surgery arms are calculated and transmitted to the Surgery Console.
Communication between the two aforementioned parts is possible locally or remotely through the Internet, and the surgeon can perform surgery from one city to another. But the main advantage of using this system is not only in remote surgery, but also in local mode and from a room next to the main operating room.

Main Export Destinations:
Indonesia

Exports History:
Up to 500,000 $

Annual Production Capacity:
10 devices

Founded:
2015

Application:

Robotic and remote surgery and local surgery (from a room next to the operating room)

This product is a final B2B Equipment.

Technical Specifications:

Specification of Master Robotic Console	
Dimensions (length × depth × height)	150 × 95 × 180 cm^3
Total weight	210 kg
No. of total active DOFs	10 motorized joints
No. of total passive DOFs	joints plus two 6 DOF6 6
Local communication frequency	1 kHz
Main monitor resolution	(1080 × 1920) Full HD
Specification of Slave Robotic System	
Dimensions (length × depth × height)	maximum 220 × 200 × 215 cm^3
Total weight	260 kg
No. of total active DOFs	16 motorized joints
No. of total passive DOFs	13 joints
Local communication frequency	1 kHz
Endoscope resolution	(1080 × 1920) Full HD
Motion resolution	1 µm in each direction without loading operation
Pinch Force Sensing resolution	1 N
Interaction force sensing resolution	1N

Advantages:

- Low initial, consumable and maintenance costs
- Selectable surgery handles
- Ergonomic postures for surgeon in sitting, semi-sitting and standing positions
- Modular design and high configuration flexibility (Selectable architecture for surgery)
- Non-interruptive repositioning of surgical bed during surgery
- Moving with the surgical bed
- Sitting or standing surgery
- Modular and flexible design
- Inexpensive disposable tools
- Low repair and maintenance cost
- Reasonable final price of the product

International Standards or Permission:
- ISO 9001
- ISO 13485
- GMP

Laparoscopic Surgery Assistant Robot
Standalone and Bedside Models

Sina Robotics and Medical Innovators Co.

www.sinamed.ir

Product Introduction:

This robot is a robotic surgery system that, as the third hand of the surgeon in laparoscopic surgery, takes on the task of carrying and holding the laparoscopic camera and taking pictures during laparoscopic surgery. This arm is under the direct control of the surgeon and receives commands from the movements of the surgeon's legs or hands. This robot is designed and built in two different models:

Standalone model: Standalone model is a model that is installed independently on the cart and wheels of the device itself and is completely portable, it can move between different operating rooms and participate in laparoscopic surgeries.

Bed Side Model: Bed Side model is a model that is attached to the general surgery bed and can move seamlessly with the surgery bed. It can also participate in surgical operations on the soft and mobile viscera of the abdominal cavity and move to the sides along with the surgical bed when necessary without stopping.

Main Export Destinations:
Indonesia

Exports History:
Up to 500,000 $

Annual Production Capacity:
10 devices

Founded:
2015

Application:

- To hold, control, and move the camera in laparoscopic surgeries

This product is a final B2B Equipment.

Technical Specifications:

Model	Standalone	Bed Side
Packaging dimensions for transportation (height × length × depth)	70 × 90 × 170 cm^3	70 × 70 × 150 cm^3
Dimensions of the device in park mode (height × length × depth)	60 × 70 × 165 cm^3	25 × 20 × 60 cm^3
Dimensions of the device in functional mode (height × length × depth)	70 × 40 × 170 cm^3	40 × 120 × 60 cm^3
Total weight of the device	90 kg	17 kg
Electric power supply	220 v	220 v
Maximum power consumption	1000 W	500 w

Advantages:

- **Standalone:** Not occupying the space required by the surgeon
- **Bed Side:** More work space and more access

International Standards or Permission:

- ISO 9001
- ISO 13485
- GMP

Laparoscopic Surgery Simulator

Sina Robotics and Medical Innovators Co.

www.sinamed.ir

Product Introduction:

The laparoscopic surgery simulator is a laparoscopic surgery simulator with the ability to record the user's performance and provide a progress report. This system consists of two parts, hardware and software. The hardware of the system provides geometric and spatial conditions similar to laparoscopic surgery conditions and provides the user with a set of surgical tools, electrosurgery pedals and a reconstructed image of the real conditions of laparoscopic surgery. The system software, in simultaneous connection with the hardware, geometrically simulates the laparoscopic surgery environment and reacts based on the user's performance in interaction with the hardware and the surgical instrument handles and electrosurgery pedals, and simulates the behavior of the organ to be operated on.

Main Export Destinations:

Indonesia

Exports History:

Up to 500,000 $

Annual Production Capacity:

200 devices

Founded:

2015

Application:

Trains surgeons how to perform laparoscopic surgeries

This product is a final B2B Equipment.

Technical Specifications:

Dimensions (length × depth × height)	70 × 70 × 125 cm^3
Dimensions of the device in park mode	70 × 70 × 170 cm^3
Dimensions of the device in functional mode (height × length × depth)	70 × 110 × 170 cm^3
Total weight	70 kg
Electric power supply	220 v
Maximum power consumption	600 W

Advantages:

- Lower price than similar products
- Quick and easy access to learn laparoscopic surgery skills
- Preventing animal and human tests

International Standards or Permission:

- ISO 9001
- ISO 13485
- GMP

Phaco-Vitrectomy Device with Phaco Tip

Aali Payam Co.

www.aalipayam.com

شرکت مهندسی پزشکی
عالی پیام

Product Introduction:

Thie device uses the phacoemulsification method by creating ultrasound vibrations with piezoelectric crystals for cataracts (a condition of the eye with a cloudy area due to various causes) surgeries.
The phaco-vitrectomy device consists of a starter for piezoelectric ultrasound handpiece for tissue incision on the eye, one vitrectomy intraocular cutter, and one pneumatic cautery forceps, which the physician control by stimulation of a foot pedal to control each section, separately or all together. The device has a venturi vacuum pump, which is upgradeable to a dual pump (venturi in addition to peristaltic). This device provides features including an intra-serum air injection system and connected anti-surge tube to maintain the stability of the anterior chamber at high vacuum powers. The manufacture consists of three models:

1. **Morvarid:** A basic model of phaco-vitrectomy
2. **Morvarid Plus:** Every feature included in the Morvarid model, in addition to the ability to inject air into the serum to increase the stability of the anterior eye chamber at high vacuum levels.
3. **Morvarid Dual Model:** Every feature included in the Morvarid Plus model, in addition to a peristaltic pump, to fulfill the requirement of surgeons who prefer a peristaltic pump to venturi pumps.

Main Export Destinations:
Turkey, Azerbaijan, Syria, Pakistan

Exports History:
Up to 500,000 $

Founded:
2005

Application:

A phaco-vitrectomy device can be used for vitreous and unclear eye lens extraction (cataract surgery) using a phaco method and stopping the bleeding on the surface or inside the eye.

This product is a final B2B Equipment.

Technical Specifications:

- Starter of phaco handpiece with 40 kHz frequency and continuous, pulse and micropulse control
- Bipolar cautery with a maximum power of 7.5 W and 1 MHz frequency
- Adjustable vacuum power with venturi/peristaltic pump up to 500 mmHg
- **Phaco power:** 5-100%, adjustable as fixed and linear
- **Phace tip course:** 50-150 micron
- Phaco modalities at modes including continuous, pulse, burst, and three modes of cold phaco
- **Vitrectomy cutter:** 60-1200 cuts per minute
- **Cautery energy changes:** 100% at 10-fold intervals, as fixed and linear
- **Power input:** DC input with 5, 12, and 24 V outputs
- **Power consumption:** 200 W, 47-63 Hz, 90-264 VAC
- **Dimensions and weight:** 50 × 35 × 21 (W × D × H), 18 kg

Advantages:

- Iran is the sole manufacturer of phaco-vitrectomy in Middle-East
- Lower prices compared with foreign smaples (Alcon, Dorc, Bausch & Lomb)

International Standards or Permission:

- Certified IEC 60601-1 standanrd
- Certified IEC 60601-2-2 standard
- Certified IEC 60601-1-2 standard

Medical Linear Accelerator

Behyar Sanaat Sepahan Co.

www.behyaar.com

Product Introduction:

The Omid medical linear accelerator device is used to treat and heal cancer patients using high-energy X-rays. First, the electron in the electron gun moves towards the magnetron and accelerates there. The accelerated electron is moved to the tube at high speed by the RF (radio frequency) wave generated in the circulator. Electrons hitting the tungsten tablet produce X-rays. X-rays are limited by the collimator and MLC set according to the size of the cancerous tumor and directed towards the tumor. X-rays burn and destroy cancer cells.

Main Export Destinations:

Denmark and Iraq

Exports History:

Up to 500,000 $

Founded:

2003

Application:

Treatment and healing of cancer patients

This product is a final B2B Equipment.

Technical Specifications:

Energy (MV)	6
RF power supply	Magnetron
Waveguide Type	Standing
Nominal Dose Rate at Dmax (cGy/min)	200-(Optional) 300
Flattening Filter Free Mode	(Optional) Dose Rate 600 (MU/min)
Source to Axis Distance (SAD) (cm)	100
Dmax (cm)	1.5

Advantages:

Lower price and higher quality compared to similar products

International Standards or Permission:

- IEC 60976
- IEC 60977
- IEC 60601-1
- IEC 60601-2-1
- IEC 60601-1-2

Anesthesia Machine | Cyrus3000- Model

Saramad Teb Parayeh Co.

www.stparayeh.com

Product Introduction:

An anesthesia device (anesthesia machine) is one of the essential tools in every operating room. Using this machine during the surgery, the specialist continues to give the required dose of anesthetic drugs to the patient to stop the patient from regaining consciousness. Considering the sensitive nature of the function, this device is a complicated and technological piece of machinery. An inhalational induction device consists of various linked parts to execute the inhalational anesthesia.

This device is designed for application in operating rooms, recovery rooms, and resuscitation rooms and operates with an N_2O, O_2, and air piping system (or external gas capsules). Halothane and ISO flurane are the primary anesthesia drugs for this device. This device complies with design control requirements according to the ISO 13485:2016 standard, KIWA, Italy.

Annual Production Capacity:

300 devices

Founded:

2006

Application:

Operating rooms, recovery rooms, and resuscitation rooms for induction of anesthesia and controlling the respiration rate of the patient during the anesthesia.

This product is a final B2B Equipment.

Technical Specifications:

- **Volume measurement error:** Less than 10 percent
- **Pressure measurement error:** Less than 2 percent
- **Battery run time:** A minimum of 2 hours
- **Power input:** 110 – 240 VAC, 47/63 Hz, I50VA maximum
- **Dimensions:** (W) 69 cm x (H) 130.8 cm x (D) 82 cm, 114 kg
- **Air intake oxygen measurement:**
  - Oxygen flow range 0-10 liters
  - Nitrous oxide flow range 0-10 liters
  - Airflow range 0-15 liters
- **Various parts of the device:** Anaesthesia machine, vaporizers, induction circuit, ventilator, and evacuation system
- Equipped with a reliable CO^2 absorbent
- Manufactured by autoclavable material (up to 134 degrees Celcius)

Advantages:

- Lower prices compared to similar devices

International Standards or Permission:

- EN60601-1 General safety of medical equipment
- EN60601-2-13 Safety and function of anesthesia machine
- EN60601-1-2 Compatible with electromagnetic fields
- Clinical evaluation based on the ISO 14155 standard

Bank-type Oxygen Generator By PSA method

Farsar Tejarat Co.

www.farsar.com

Product Introduction:

The Bank Type oxygen generator is the same as the PSA model, with the difference that it has zeolite banks (with a different quantity) and provides the possibility for hospitals and medical centers to produce oxygen continuously without depending on oxygen capsule at the place of consumption.
Oxygen production in this method is based on the passage of compressed air through the zeolite grains (molecular sieve method). Nitrogen in the air is trapped while passing through the zeolite column (absorbent substrate) and air oxygen is released. At the same time, another absorbent column continues to produce, and this generally leads to continuous production of oxygen.

Main Export Destinations:
Blarus, Iraq, syria, Afghanistan

Annual Production Capacity:
400 devices

Founded:
2001

Application:

In all departments of the hospital, including the operating room, inpatient rooms, emergency room, CCU, ICU, etc. (product category; respiratory)

This product is a final B2B Equipment.

Technical Specifications:

- **Different parts of the device:** Master generator – slave generator – compressed air storage tank – oxygen storage tank – Electrical panel – compressed air system – Dryer – filtration
- **Power:** 220V AC generator, 380V AC 3- Phase compressor
- **Compliance with design control requirements according to ISO 13485 standard:** Yes

Advantages:

Complete assurance of a permanent source of oxygen, no worries about irregular oxygen delivery, complete assurance of oxygen production at peak time of consumption, high safety and preventing the possible danger of explosion in capsules.

Technological modules:

- The ability to store information about the oxygenation process at all hours of the day and night
- It has a GSM system that can notify several people by SMS in case of a drop in oxygen purity.
- Ability to change process control program remotely using HMI
- More affordable price than similar products

International Standards or Permission:

- EN 60601-1
- EN60601-8
- ISO 10083
- ISO 14971
- ISO 15223-1
- IEC 62304
- EN60601-8
- CE Certificate

Cardiac Electroshock Device (Defibrillator)

Toos Co.

www.tpd-co.com

شرکت تجهیزات پیشرفته درمان

Product Introduction:

The automatic cardiac defibrillator device is for restoring the ventricular fibrillation (defibrillation) that a person suffering from cardiac arrest experiences. This device receives the patient's heart signal, processes it, and based on the processing result, decides whether the patient needs an electric cardiac shock, and if the response is positive, it will shock the patient.

Annual Production Capacity:

10,000 devices

Founded:

2017

Application:

In all public places where access to medical centers takes more than 10 minutes.

This product is a final B2B Equipment.

Technical Specifications:

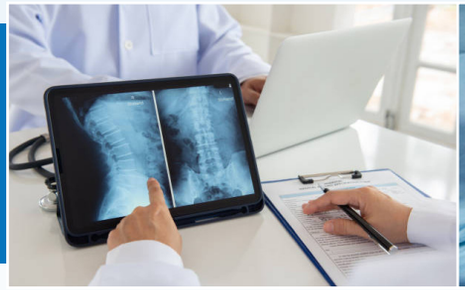
- Biphasic exponential output waveform
- Frequency response 0.25 to 45 Hz
- The charging time of the device is 4 seconds at 200 joules with a fully charged battery
- The maximum time between turning on and ready for shock is 19 seconds
- The amount of storable memory is 256 MB
- Rechargeable lithium ion battery type 2200 mAh
- Battery charging time 2 hours
- The operating time of the fully charged device is 120 shocks of 200 joules or 10 hours of continuous work

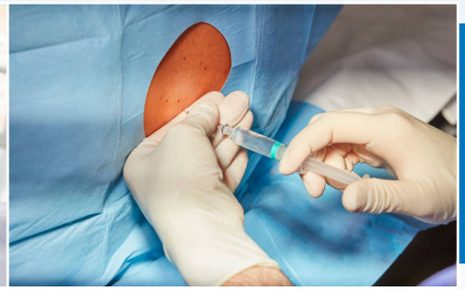
Advantages:

- Matches the applied shock to the patient's impedance with an error of less than 2%
- Very low weight and volume compared to other brands
- Reasonable price and costs

International Standards or Permission:

- IEC 60601-2-4:2010
- IEC 60601-1:2018
- IEC 60601-1-2:2014
- IEC 62304:2006
- IEC 62366-1:2015
- EN ISO 14971:2012





Lumbar Puncture Training Moulage

Sina Robotics and Medical Innovators Co.

www.sinamed.ir

Product Introduction:

LP Sim is a robotic system that may be used for education and evaluation of LP skills using virtual reality environment with force feedback. It is designed to maximize efficiency in LP skills acquisition and evaluation for medical residents.
The robotic system simulating the skill of spinal injections in the virtual reality environment is designed to provide a suitable platform for teaching and evaluating this skill in medical students. This system consists of two parts, software and hardware. The system hardware creates conditions similar to the conditions of performing spinal injections in the patient's lumbar region for the user and provides the user with an LP needle. The system software also simulates the patient's L2 to L5 lumbar region and displays it to the user.

Main Export Destinations:
Indonesia

Exports History:
Up to 500,000 $

Annual Production Capacity:
200 devices

Founded:
2015

Application:

Teaching spinal injections

This product is a final B2B Equipment.

Technical Specifications:

Workspace	Linear: 4in
Max. Applied Force	15 N
Accuracy	±0.01 mm
Dimentions	9in × 9in × 9in
Weight	2 kg
Power	30 W
Input	30V

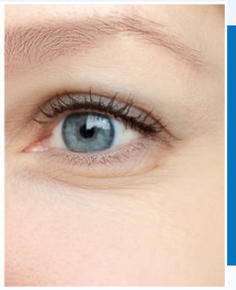
Advantages:

- Simulating the real conditions of the spinal injection process
- Displaying different layers of the lumbar area in the simulation environment
- Ability to evaluate and draw diagrams for different users

International Standards or Permission:

- ISO 9001
- ISO 13485
- GMP





Thermal Plasma Therapy Device

Exon Medical Equipment Co.

www.exonmedical.com

Product Introduction:

This device causes point shrinkage for purposes including skin lifting, removing nevi, freckles, wrinkles, frown lines, laugh lines, and crow's feet lines near the eyes, and also in the treatment of ptosis using the resulted plasma heat from electrical discharge on the skin surface. The function of this device is based on creating a potential difference between the tips of the pen, which causes the air between the tip and the skin to become ionized, and an electrical charge will discharge from the needle head to the skin tissue.

Main Export Destinations:

Oman

Founded:

2015

Application:

- Treatment of ptosis
- Removing skin wrinkles and forehead lines
- Removing skin lesions, including nevi and freckles
- Skin rejuvenation

This product is a final B2B Equipment.

Technical Specifications:

- **Output power:** 7 Watts
- Ability to control the output power with real-time power feedback
- Ability to function with controlled energy packs
- **Electric field generating frequency:** 135 kHz
- **Battery:** 3400 mAh Li-ion
- **Charging time:** 4 hours
- **Power on time:** 2 hours of continuous time, 6 hours in Quantized mode, and four days in standby mode

Plasma-Jet for Skin Lesions

Mersa Teb Tajhiz Co.

www.mersateb.com

Product Introduction:

By creating voltage difference, electrical pulse, and ionizing air, this device discharges focused electrical energy as heat inside the tissue and sublimates it to remove eyelid fat, acne, and freckles. Thermal plasma technology uses energy delivered by plasma instead of light or radioactivity, compared with other skin recovery methods (such as radiotherapy). A high-frequency generator activates air into ionized gas, known as plasma.

Main Export Destinations:

Turkey, Spain

Exports History:

Up to 500,000 $

Founded:

2017

Application:

Treatment of blepharoplasty, eyelid fat, acne, wrinkles, freckles, scar and skin fibroma.

This product is a final B2B Equipment.

Technical Specifications:

Input voltage	220 AVC ± 10%
Maximum input current	0.2 A
Maximum power input	44 VA
Maximum output pulse/ second	25000
Maximum power output	18W
Output frequency	251 kHz
Function type	BF
Insulation class	Class II
IP group	IP21
Weight	2.7 kg

Advantages:

- Non-resonant high-voltage-frequency generator circuit design with digital pulse frequency adjust
- Design and manufacture of trans with required technical characteristics
- Minimum leakage current
- Limited current passage from the patient
- Equipped with smart key for patient safety and longer lifespan of the device
- Equipped with capacitive pad for current return

International Standards or Permission:

- European Union CE certified
- ISO -13485
- IEC 62304: 2006
- IEC 60601-1
- IEC 60601-2-2
- IEC 60601-1-2

Fractional & Vaginal RF Devices

Mersa Teb Tajhiz Co.

www.mersateb.com

Product Introduction:

Nettle, Fractional RF device: It's a radiofrequency device in addition to fractional and multipolar handpieces. The fractional handpiece is equipped with micron-sized needles for entering the skin. At the entrance of these needles inside the skin, RF waves are formed between them. Due to the body tissues' high electrical resistance, the area temperature increases with the passage of RF from the skin tissue. The needle's penetration depth and the temperature are adjustable according to the physician's opinion.

Madam-X, Vaginal RF device: This device increases the temperature of the vaginal canal and the surrounding area using radio waves for rejuvenating and tightening purposes of the area and also to treat pelvic and bladder prolapse and urinary incontinence.

Application:

Nettle – RF fractional device	❊ Removing skin lines, such as forehead lines, laugh lines, and crow's feet lines ❊ Removing the wrinkles on the hand and neck area ❊ Removing striae and stretch marks of the skin caused by labor or rapid weight change
Madam-X – Vaginal RF device	❊ Treatment of vaginal muscles weakness and sagging ❊ Treatment of stress incontinence of urine ❊ Healing the pain or burning when urinating

Main Export Destinations:
Turkey, Spain

Exports History:
Up to 500,000 $

Annual Production Capacity:
1000 devices

Founded:
2017

This product is a final B2B Equipment.

Technical Specifications:

Device Model	Fractional RF	Vaginal RF
Device Name	Nettle	Madam-X
Device Model	FRF1901	VRF2001
Output frequency	4 Mhz	4 Mhz
Input Voltage	100-240 VAC	100-240 VAC
Maximum Power Input	145 VA	145 VA
35 Watt	Multi-polar 35 Watt Fractional 7 Watt	Maximum Power Output
Class I	Class I	Insulation Class
5.5 kg	5.5 kg	Weight
Internal, External Monopolar, Multipolar		Functional Modes

Advantages:

Devices	Advantages
Nettle – RF fractional device	❊ High power ❊ Digital ❊ Low-price ❊ Touchscreen display ❊ Various treatment modes ❊ Pulse control adjustment from 100 ms to 1 s
Madam-X – Vaginal RF device	❊ Using 360 degrees loops ❊ Equipped with temperature and head tracker sensors ❊ Equipped with treatment indications

International Standards or Permission:

❊ IEC 62304: 2006
❊ ISO -13485
❊ IEC 60601-1
❊ IEC 60601-2-2
❊ IEC 60601-1-2
❊ European Union CE certified

Thermia Radiofrequency Device

Melorin Arvin Teb Co.

www.thermiarf.com

Product Introduction:

Thermia is a non-surgical device that can improve the symptoms and diseases on the skin surface. This device is equipped with micro-needles which create tiny wounds when contacting the skin surface and produces radiofrequency waves that can pass the skin surface and generate heat. Therefore, the skin automatically tries to heal the wounds, and the procedure will treat the damaged skin.

Founded:
2012

Application:

Treatment of skin diseases, including acne, burn marks, scar marks, stretch marks due to weight gain/loss, wrinkles, skin blemishes, open skin pores, psoriasis, rosacea, hyperpigmentation, and skin rejuvenation.

This product is a final B2B Equipment.

Technical Specifications:

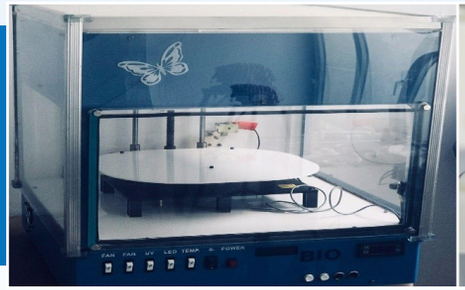
Output RF Frequency	463 KHZ ± 1 KHZ
Voltage Level of Output Wave	180 ~ 280 V ± 5V, Adjustable
Number of Needles	160 Needles
Maximum Output Power	62 mJ/Pin – 10 J/Shot
Input Voltage	200 W (max), 50/60 HZ 220 ~ 240 V AC
Average Lifespan	10 years
Dimensions (Height × Width × Length)	46.5 × 40 × 38 cm
Weight	10 kg

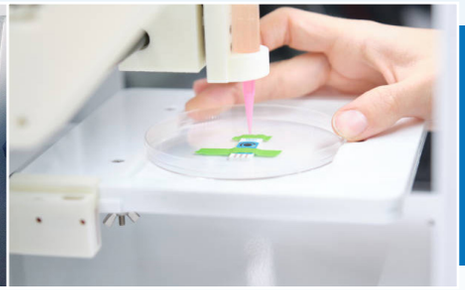
Advantages:

- The first device with smart adjustable Ablation and coagulation.
- Smart scanning ability and an adjustable number of effective needles.
- Higher technology compared with similar products.

International Standards or Permission:

- 1IEC 60601-1-2 Electromagnetic interference standard
- ISO 14971 and ISO 13485 Product risk identification and management and medical device quality management system.
- ISO 10993 Biocompatibility standard
- IEC 60601-1 General standard of electrical safety
- IEC 60601-2-2 Confirmation of essential performance
- Product risk analysis and management
- Clinical evaluation of the product





Three-Dimensional Bioprinter

Pishgaman Sazeh Nano Zist Co.

www.gamaprinter.com

Product Introduction:

The invention of 3D printing technology has revolutionized multiple fields of science, including manufacturing engineering, art, education, pharmacy, and medicine, which has led to numerous innovations. The recent advances in medicine and engineering have provided the opportunity to create mobile products similar to natural body tissues using 3D bioprinters and biocompatible materials, cell planting techniques, and required support for cell growth. Bioprinters offer special advantages, such as generating body tissues and a fundamental strategy to produce damaged tissues.

Annual Production Capacity:
20 devices

Founded:
2017

Application:

Production of various natural scaffolds, synthetic, single head, double head, and triple head bioprinters.

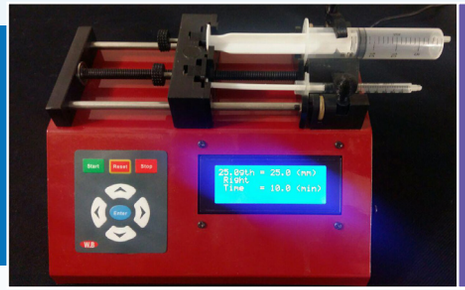
This product is a final B2B Equipment.

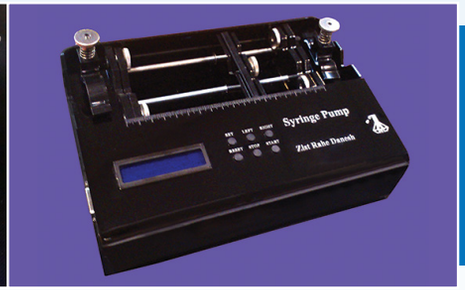
Technical Specifications:

- Equipped with sound alarm, touchscreen displays, incubator, temperature controller, and cold-warm table.
- Able to print multiple heads simultaneously.
- One micron accuracy
- **Operating temperature:** -20 to + 60 degrees Celsius
- Operating in indoor or outdoor environments
- Resistant to dust and water penetration
- Print head with especial printing kit

Advantages:

- Lower pricing compared with similar products
- High quality and custom production according to the buyer's requirements





Various Types of Syringe Pumps

Zist Rah Danesh Co.

www.zistrad.ir

Product Introduction:

Syringe pumps come in various types, including medical and laboratory versions. There are differences between the two models, for example, the rate and their application. This product is designed and manufactured for injection of suction of solutions inside the container at various flow rates.

Application:

Laboratories, universities, engineering, medical engineering, medicine, veterinary medicine and agriculture research centers that require suction and injection of different fluids.

This product is a final B2B Equipment.

Founded:
2012

Technical Specifications:

Four-inch, four-nuzzle touch syringe pump	❊ Ability to add a temperature sensor to start the fan when the heat sink temperature passes 30 degrees Celsius. ❊ Ability to run all four pumps on the battery for up to 2 hours ❊ Stainless steel body with an electrostatic paint job or stainless steel 316L ❊ Fixed and dynamic jaws made of anodized 7000-series aluminum, steel, and polycarbonate ❊ Touchscreen LCD, 4-inch character-color display ❊ USB and power supply socket, with the ability to turn on/off using a pressure button ❊ Displaying the battery level on the screen ❊ Injection accuracy higher than 99 percent ❊ Minimum speed of the pump syringe motor: 11 millimeters per hour ❊ Maximum speed of the pump syringe motor: 8640 millimeters per hour
Four-nuzzle button syringe pump	❊ The body and mechanics of this syringe pump are similar to the 7-inch touch four-nuzzle syringe pump. ❊ The injection is made through the keypad, according to the internal diameter and length of the cylinder (similar to the seven-inch touch product) ❊ The maximum injection time is three hours.
Four-inch plexiglass -body touch syringe pump	❊ Injection time up to 99 hours ❊ Injection control using Bluetooth (via the application provided by the company), Wi-fi (via smartphone and computer), infra-red, and USB. ❊ Able to perform the suction/injection using two identical or different syringes, on the same side or from different sides ❊ Injection with Hamilton, glass, and plastic syringes ❊ Injection on a scale of nanoliters per minute ❊ Error lower than 1 percent ❊ Device weight: less than 2 kg ❊ Body material: Plexiglass sheet ❊ Ports: One USB port and five analog-to-digital inputs ❊ Power input: 12V DC adaptor
Metal-body syringe pump & Plexiglass-body syringe pump	❊ Able to perform the suction/injection using two identical or different syringes, on the same side or from different sides ❊ Injection with Hamilton, glass, and plastic syringes ❊ Injection on a scale of nanoliters per minute ❊ Error lower than 1 percent ❊ Minimum injection rate: 1 ml per 60 minutes ❊ Maximum injection rate: 80 ml per minute ❊ Accuracy of the motor: 2 micrometers, 0.9 degrees ❊ Device weight: less than 2 kg ❊ Body material: Plexiglass sheet ❊ Ports: One USB port and five analog-to-digital inputs ❊ Power input: 12V DC adaptor

Resuscitation Kit

Daru Darman Persia Co.

www.darudarman.ir

Product Introduction:

EasyVent pneumatic resuscitator is a portable pulmonary resuscitator that provides ventilation without a power supply (AC or DC) using the positive energy of pressured oxygen. Since there is no power source, there is no possibility of short-circuiting or sparks. Accordingly, this device can be used in exposure to explosive gasses, such as oxygen, in sterile environments for patients with spontaneous breathing disorders, trauma patients, and patients with low blood oxygen levels.

Application:

- Ambulances; to provide mechanical ventilation or perform CPR
- Medical centers; to provide short-time ventilation for patients or while transferring the patient between the hospital wards
- Transferring the patient inside the city
- In war-time conditions for transferring the patient and performing CPR

Main Export Destinations:
Neighboring countries

Exports History:
Up to 500,000 $

Annual Production Capacity:
500 kits

Founded:
2010

This product is a final B2B Equipment.

Technical Specifications:

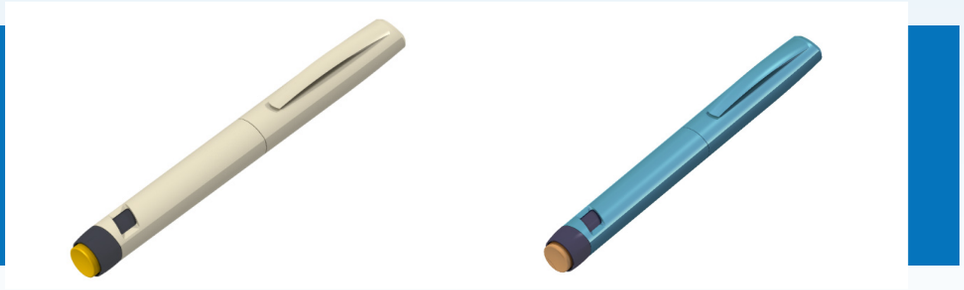
Patients weight range	15-100 kg
Functional modes	Manual and automatic
Maximum pressure connected to patients	45 cmH_2O
Relationship between the tidal volume and respiration rate	Dependent
Weight	250 gr, without the hosing
Dimensions	65 × 93 × 130 mm^3
Oxygen concertation	100% V/V
Oxygen input pressure	2.7-5 bar
Minimum input current	40 LPM
Respiratory frequency	10 – 25 ± 10% BPM (Automatic)
Expiratory flow rate	11 – 36 ± 10% BPM (Automatic), 40 ± 2 LPM (Manual)
Average tidal volume	150 – 1000 ± 10% (Automatic), User adjustable (Manual)
Respiratory duration	0.7 – 2.3 s (Automatic), User adjustable (Manual)
Pressure range in the respiratory route	11 – 35 cmH_2O
Dead space with a mask	Less than 150 ml
Exhalation resistance	Less than 5 cmH_2O

Advantages:

- In compliance with ISO 10651-5 standard
- Increased device and parts dimensions for better development opportunities, easier usage, and ergonomic design
- Impossible to misuse, impossible to break by impact using a pressure button design at level with the frame (instead of a trigger)
- A new module is designed to provide three functions

International Standards or Permission:

- Certified medical equipment quality management system in compliance with ISO 13485 standard
- Safety and function test in compliance with ISO 10561-5 standard for pneumatic resuscitators
- Safety and function test in compliance with ISO 10524-1 standard for high-pressure gas regulators



Insulin Pen

Mahan Co.

Product Introduction:

The estimated number of diabetic patients in the world is less than 7% of the population; however, according to World Health Organization (WHO), the estimates of Iranian diabetic patients are as high as 10.3%. The insulin pen is one of the high-precision injection items. The primary section of the insulin pen, responsible for dose adjustment, consists of a plastic micro gearbox with several gears and a clutch-like mechanism. The main task of this part is to adjust the drug dosage, injection, and preparation of the next step.

Annual Production Capacity:
2 milion pens

Founded:
2019

Application:

Injection of particular doses of pharmaceuticals, including insulin and growth hormone.

This product is a final B2C Equipment.

Technical Specifications:

Material	Polymer
Physical Specifications	100 percent plastic. Dimensions are similar to a pen.
Mechanical Specifications	Unibody with one plastic micro gearbox to adjust the dosage

Advantages:

- Lower price than similar products

Disposable Insulin Pen

Pooyesh Tazriq Co.

www.pinjection.com

پویش تزریق
فناوری تجهیزات پزشکی

Product Introduction:

Diabetic patients need insulin injections to control their blood sugar. These patients are facing problems such as fear of injections, inability to accurately adjust the required dosage, and forgetting to carry or inject insulin. Therefore, in recent years, an «insulin pen» has been made to solve these problems.
An insulin pen is an insulin injection device that is available to patients in two types: disposable and replaceable cartridge. Empty injection pens (such as insulin) are produced at Pooyesh Injection Company.
In Pinjection we manufacture the “Pen” and pharmaceutical companies use our pens to place their filled cartridge and send the final product to patients.

Annual Production Capacity:
2 milion pens

Founded:
2020

Application:

Insulin pens are used to administer an accurate dose of insulin in a simple and convenient way.

This product is a final B2C Equipment.

Technical Specifications:

Material of each piece	-4 pieces of polypropylene -1 piece of polybutylene terephthalate -1 piece of composite containing 30% glass fibers -2 pieces of acrylonitrile butadiene styrene -6 pieces of polyester -1 piece of polyamide -1 piece of 402 stainless steel
Composite components	-1 piece of EXO consisting of 70% polybutylene terephthalate composite and 30% glass fibers
Physical specifications	❊ The same size as a whiteboard marker ❊ Resistant to moisture and temperature
Mechanical specifications	Strength and wear resistance of parts
Dimensions	Some parts of this device have tolerance ranges of 0.05 mm, which is a decisive limit for the mass production of polymer parts.

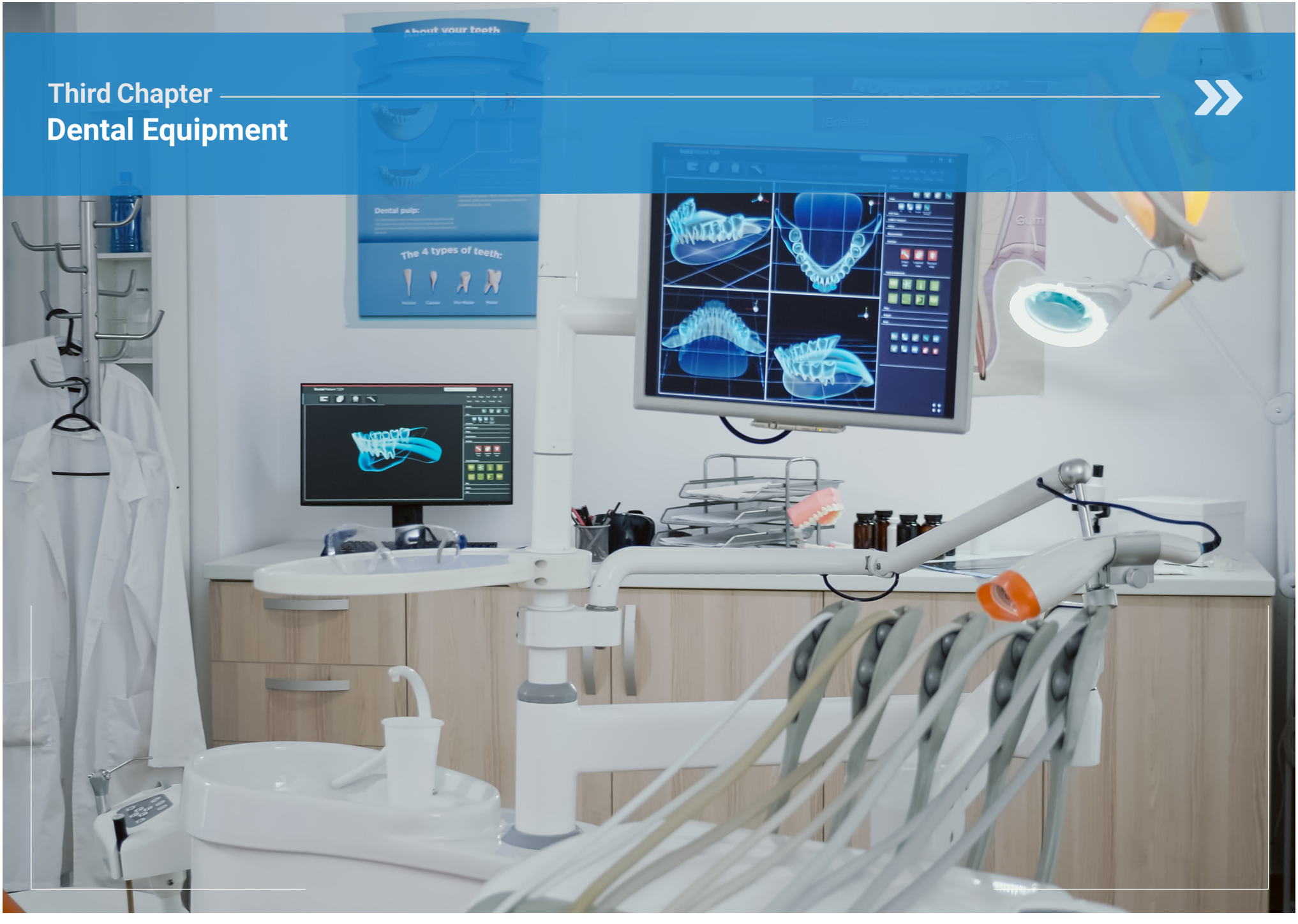
Advantages:

- ❊ Excellent quality
- ❊ Lower price than similar products

International Standards or Permission:
ISO 13485 – Medical Equipment Quality Management

Third Chapter

Dental Equipment



3ND CHAPTER

Dental Equipment

Sections

Advanced Materials Used in the Dental Field

Dental Unit Equipment

Primary Substance of Dental Implants Base Fixture

Fartak Teb Arvin Co.

Product Introduction:

Prostheses are designed for complete or partial implantation of oral tissue or to support the fixed or movable oral prostheses (dentures) as the root of dentures. Dental implants are screw-like devices made of inorganic materials (such as metal). Dental implants are usually surgically placed in the bone and support fixed or mobile prostheses (dentures).
Titanium is the most common material used in making dental implants. But recently, several studies have reported functional defects of titanium implants in the body's internal environment. These defects in titanium dental implants have led to efforts to choose suitable and new alloys to replace titanium alloys in the manufacture of dental implants. Among the known metal alloys, elements of the same group as titanium in the periodic table, especially alloy lower than titanium, such as zirconium or hafnium, have properties similar to titanium metal. Also, in many cases, these properties appear stronger. Arvin Teb Fartak company manufactures such dental implants.

Founded:
2020

Application:

In dentistry, the primary material of tooth root fixtures, bone plates, bone pins, etc.

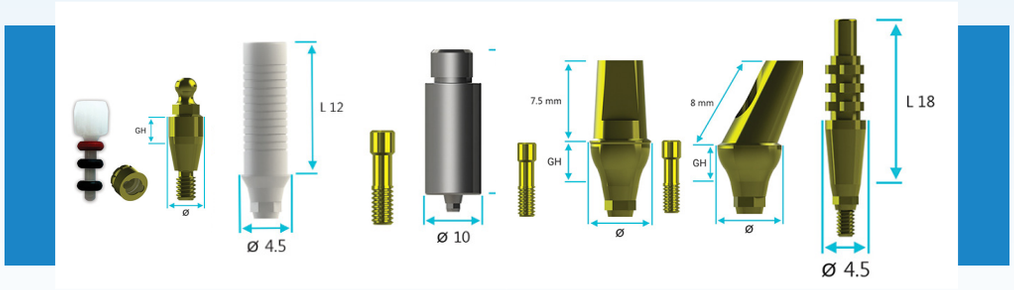
This product is a final B2B Equipment.

Technical Specifications:

Components: zirconium (Zr), nubium (Nb), hafnium (Hf) and titanium (Ti)

Advantages:

- Appropriate biocompatibility
- Improving corrosion resistance in the environment
- Increased healing of bone and surgical wounds
- Reduction of expenses
- High tensile strength



Dental Implant Fixture Material

Kimia Kasht Atebba Co.

www.kimiakasht.com

Product Introduction:

Individuals may lose their teeth for several reasons. Dental implants or fixtures will replace the root of the lost tooth in the same size as the root. Fixtures are parts identical in size to natural teeth. They are made with high precision to look natural. Fixture and abutment are the two primary parts of dental implants. A fixture is a part that sits inside the jawbone, and an abutment is a crown that sits above the gum. A prosthesis or implant cover will be installed on the abutment. Since the implant stand is made out of titanium, it is compatible with the jawbone. Therefore, the implants won't cause noise, slipping, or bone injuries.

Founded:

2015

Application:

Dentistry, to replace tooth roots

This product is a final B2B consumer product.

Technical Specifications:

Fixture dimensions	3.5, 4, 4.5, and 5-millimeter diameters, corresponding with 8, 10, 12, and 14 millimeter lengths
Abutment	Various direct and angled types (15 and 25 degrees)
Material	Fixture: Grade 4 titanium, abutment: Grade 5 titanium

Advantages:

- Lower price compared with similar products
- After-sales services included

International Standards or Permission:

- ISO 13485

Dental Turbine Unit

Helal Tehran Co.

Product Introduction:

Turbines have numerous applications in most dental treatment processes. Removing the hard tissues and removing the decayed parts require high rpm turbines for burs. Various burs mount on this device and then connect to water and air outputs from the dental unit (which provides the ability to spin for the bur). Turbines have water and air channels to cool down and rotate the bur. It must be noted that turbine heads are exposed to contaminations, and sterilizing them (especially the internal bearing) is time-consuming and costly. Therefore, manufacturing ‹disposable turbines' have come to attention and become valuable.

Founded:
2001

Application:

Dentistry

This product is a final B2B Equipment.

Technical Specifications:

Parts of the device: Coupling, turbine wrench, turbine cover, turbine head, middle frame of the turbine, terminal part of the turbine.

Advantages:

Contains high technology modules, such as structural complications in preparing the blueprints of each part, maintaining the tolerances, and dimensional accuracy of various parts.

International Standards or Permission:

- ISO 14457:2012

Fourth Chapter

Hospital Equipment

4ND CHAPTER

Hospital Equipment

Sections

Specialized Hospital Equipment

Advanced Sterile Devices

Dialysis Water Treatment Machine
Central and Portable Models

Nova Tis Teb Co.

www.novatisteb.com

Product Introduction:

This device is responsible for providing the required water for dialysis using reverse osmosis for water purification according to the dialysis water standard (ISO 23500). Water enters the device, and after monitorization, it is pumped to reverse the osmosis membrane. After the final control, the water enters the dialysis machine. The generated water must comply with the standard range for microbial and chemical properties. This device is equipped with automation software and monitoring with remote access. The functional modes of the device include water generation, decontamination, dehydration according to time table, and maintenance mode.

Main Export Destinations:
Ukrain, turkey

Exports History:
Up to 500,000 $

Annual Production Capacity:
100 device

Founded:
2013

Application:

- Providing the required water for HD and HDF hemodialysis treatments

This product is a final B2B Equipment.

Technical Specifications:

Model name	Central	Portable
Voltage	380 V	220 V
Electrical protection	FI Bimetal Thermal Switch Siemens Contactor Phase Controller	-
Input temperature	Maximum: 40 °C	
Infiltration pressure	Maximum: 5 Bar	
Supply pressure	Minimum: 1 Bar	
Conductance	Maximum: 3000 µs	
Functional modes	Auto wash Manual production Automatic production Maintenance	

Advantages:

Modular design, high-end electronic and control Provides data report

International Standards or Permission:

- ISO 13485
- ISO 9001
- MDD 93/42/EEC
- IEC 60601-1
- IEC 60601-1-2

Hemodialysis Water Purification System

Diba Ebtekar Mehrad Co.

www.mehrad-md.com

Product Introduction:

The hemodialysis water purification machine is the first stage of the hemodialysis process for dialysis patients; In the hemodialysis process, the patient's blood should be placed in close proximity to water with standard chemical parameters, acidic hemodialysis solution and bicarbonate and sodium solution through hemodialysis cellulose filters. In this process, 4 main devices are used in European countries and America, which are hemodialysis machine, water purification machine and acid mixer and bicarbonate mixer.

Application:

The target market of this product is (mobile) hospitals and it is used in the water purification department of dialysis unit and sterilization units. Other applications of this device are in CSR units, operating rooms and ICU-CCU. Portable type is also used for home dialysis.

International Standards or Permission:

- ISO 13485 standard
- ISO 9001 standard
- ISO 23500 standard
- Standard IEC60601-1-Electrical safety
- Standard IEC60601-1-2-Magnetic compatibility
- Medical product manufacturing license (based on the 2019 standard
- Patent certificate of high pressure vessel without dead space
- Patent certificate of dialysis interface without dead space

Founded:

2010

This product is a final B2B & B2C Equipment.

Technical Specifications:

- **Device components:**
  - TDS sensor and controller
  - Pressure gauges
  - Flowmeter
  - Temperature sensor
  - One-way valves
  - High pressure switch pressure
  - Low pressure switch pressur;
  - Regenerable pre-treatment system and automatic washing
  - Set of reverse osmosis system membranes
  - High pressure Electro-pump
  - Electric valves
  - Control board and command circuit
  - High pressure vessel, Zero dead volume
  - Dialysis Connector to remove the dead valume of the dialysis line
  - Piping connections without dead valume
  - A set of reverse osmosis system membranes
- Equipped with a semi-automatic disinfection system
- Equipped with dialysis line washing system
- Equipped with a system to prevent dialysis with non-standard water
- High pressure vessel without dead space to completely remove the dead space from the device
- Existence of reaction system to non-standard temperature and water quality

Advantages:

- Dedicated design of three software, to increase product reliability, ease of operation, high efficiency and detection of failure time;
- The existence of the inlet water temperature control system to increase the efficiency of the reverse osmosis system;
- Increasing the lifespan of reverse osmosis system membranes by designing an efficient pre-treatment system;
- Piping without dead space to prevent the growth of microorganisms in the distribution line;
- High biocompatibility of the device due to saving salt consumption of ion exchange filters,
- User-friendly design;

Infant Incubator

Tosan Co.

www.tosanco.com

Product Introduction:

The principal usage of the neonatal incubator is in neonatal intensive care units (NICUs). Since the nervous system of preterm neonates is not fully developed, they cannot maintain their internal temperature due to energy deficiency. A neonatal incubator maintains the internal body temperature of the neonate at 37 degrees Celcius. Also, the air inside the container flows at a controlled temperature to provide the neonate with the natural condition of the mother's womb, including the temperature, moisture, and required oxygen for the neonate's growth. The role of the incubator is to provide a condition for the neonates to use their energy for growth and development (instead of maintaining the body temperature). Therefore, in addition to providing the required body temperature, the incubator helps the neonates to grow. Inside the incubator, a transparent casing covers the surrounding of the neonate's mattress, and the internal temperature increases by a heater element under the mattress.

The temperature of the air inside the container, oxygen level, and moisture is monitored with internal sensors and sent to the attending physician for better treatment and monitoring. The device is equipped with an air filter that prevents dust from entering the container.

Main Export Destinations:

Russia, turkey, Indonesia, Iraq, Syria

Founded:

1982

Application:

Guard, develop, and improve the health of preterm neonates or newborn with diseases.

This product is a final B2B Equipment.

Technical Specifications:

- Electronic circuits, metal parts of the body, plastic parts for injection.
- **Different parts of the device**: Container, cabinet, serum rod, column, base, mattress for the neonate, tray for the neonate, sliding tray, drawer, feeding section, heating element, boiler and ventilation, main electronic board, lithium-ion battery, metal and plastic frame of the device.
- **Power input:** 220V-240V AC, 50 Hz, 500W (Maximum).
- **Dimensions of the device**: Height:130-150cm - Length: 94cm - Width: 60cm.

Advantages:

- The device contains programming technologies with ARM Cortex-M0 to M7 processors, six PCB layers (and higher), high-frequency PCB design and bus ram routing and fast flash, designing and implementing battery fuel gauge, designing and manufacturing transformers, and tests for switching converters.
- Designs of every device according to safety protocols and EMC limitations.

International Standards or Permission:

- IEC 60601-1 / ISIRI 3368-1
- IEC 60601-1-2
- EN 60601-1-8 / ISIRI 3368-1-8
- IEC 60601-1-10
- BS EN 60601-2-19 / ISIRI 3368-2-19
- EN 15223-1
- EN 14971 / ISIRI 12136
- EN 1041
- EN ISO 14155
- ISO 10993-1
- BS EN 62304 / ISIRI 12138
- BS EN 62366 / ISIRI 12137
- EN ISO 7396-1

Portable Infant Incubator

Tosan Co.

www.tosanco.com

Product Introduction:

This device helps the transportation of preterm neonates between the medical centers, a task which is a significant challenge for the medical staff and the parents. There are efforts at play to facilitate the health services of infants. The portable incubator 320' helps to reach this goal. This device provides proper air conditioning for neonates with abilities, including temperature control. Usually, preterm neonates that require transportation for several months can be guarded by a portable incubator. Accordingly, a calm environment is a significant health factor for neonates. Also, a suitable ventilation system for neonates reduces the generated noise by the device to the minimum.

Main Export Destinations:

Russia, turkey, Indonesia, Iraq, Syria

Founded:

1982

Application:

Transportation of preterm neonates at medical and non-medical centers.

This product is a final B2B Equipment.

Technical Specifications:

- **Weight:** 41 kg
- **Dimensions of the neonatal bed:** 500 × 300 mm
- **Display:** Three inches, touchscreen
- **Oxygen supply:** 2 liters
- **Charging time:** 3 hours
- **Temperature range:** 28-37 degrees Celcius
- **Internal noise level:** < 40dB

International Standards or Permission:

- IEC 60601-1 / ISIRI 3368-1
- IEC 60601-1-2
- EN 60601-1-8 / ISIRI 3368-1-8
- IEC 60601-1-10
- BS EN 60601-2-19 / ISIRI 3368-2-19
- EN 15223-1
- EN 14971 / ISIRI 12136
- EN 1041
- EN ISO 14155
- ISO 10993-1
- BS EN 62304 / ISIRI 12138
- BS EN 62366 / ISIRI 12137
- EN ISO 7396-1

Neonatal Resuscitation Unit

Tosan Co.

www.tosanco.com

Product Introduction:

The neonatal Resuscitation Unit is a device usually placed beside the delivery bed for neonatal resuscitation and performing surgeries on neonates. This unit is equipped with a warmer system, temperature controller, oxygen level controller, suction, and alarms (including skin sensor disconnection, unsafe temperature, temperature deviation, and power failure alarms) to improve the condition of the neonates. The neonatal bed has a transparent casing that prevents the neonates from falling off and is also equipped with an angle variation system and height adjustment. Since the device is equipped with an X-ray cassette, X-ray photography is also available.

Main Export Destinations:

Russia, turkey, Indonesia, Iraq, Syria

Founded:

1982

Application:

Neonatal resuscitation beside the delivery bed, performing surgery on neonates, and also in neonatal intensive care units.

This product is a final B2B Equipment.

Technical Specifications:

- **Different parts of the device:** Head, upper column, neonatal bed, drawer, lower column, stand
- **Power input:** 220-240V AC, 50 Hz, 1100W (Maximum)
- **Dimensions of the device:** Height:180-200cm, Length: 110cm, Width: 74cm

Advantages:

- Designed according to safety protocols and EMC limitations for devices.
- Real-time activity and high response time graphical interface with the lowest price.
- The device contains programming technologies with ARM Cortex-M0 to M7 processors, six PCB layers (and higher), high-frequency PCB design and bus ram routing and fast flash, designing and implementing battery fuel gauge.

International Standards or Permission:

- IEC 60601-1 / ISIRI 3368-1
- IEC 60601-1-2
- EN 60601-1-8 / ISIRI 3368-1-8
- IEC 60601-1-10
- BS EN 60601-2-19 / ISIRI 3368-2-19
- EN 15223-1
- EN 14971 / ISIRI 12136
- EN 1041
- EN ISO 14155
- ISO 10993-1
- BS EN 62304 / ISIRI 12138
- BS EN 62366 / ISIRI 12137
- EN ISO 7396-1

Medical Oxygen Manometer | Salamat Model

Tavan Jam Co.

www.tavanjam.com

Product Introduction:

People with different respiratory diseases and weaknesses require higher oxygen levels (compared with their natural state) to heal and survive. Accordingly, using pure oxygen is an effective measure to control their condition. Compressed oxygen capsules can supply the required oxygen for patients. These capsules contain pressured oxygen, and using them requires special tools. This device supplies the required oxygen for the patients from the capsules.

Founded:
1997

Application:

Oxygenation to patients at home and medical centers.

This product is a final B2B Equipment.

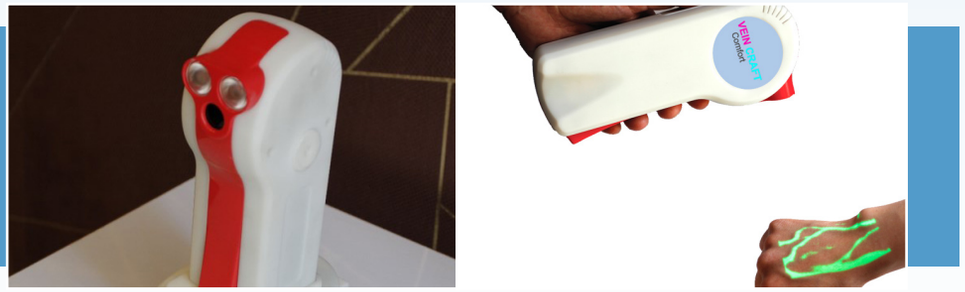
Technical Specifications:

- **Body material:** Brass with resistant chromium-nickel cover
- **Automatic output pressure:** adjusted between 3.6 to 5.5 bars
- **Calibrated controller and flow indicator (flow/discharge),** 0 to 15 liters per minute
- **Equipped with:** brass flowmeter and safety valve
- **Total weight of the product:** 0.638 kg
- **Operating temperature:** -20 to 60 degrees Celsius
- **Humidity**: 41% humidity based on the surrounding atmosphere
- **Maximum pressure:** 150 bars
- **Regulator pressure:** 15-150 bars
- **Water capacity of humidifier cup:** 100 ml

Advantages:

Lower price compared with similar products

International Standards or Permission:
ISO 10524-1:2006



Projection Vein Finder

Pooyesh Taradeh Co.

www.pooyesh-taradeh.ir

Product Introduction:

In cases including colored individuals, obese people, patients who have passed chemotherapy courses, and children with low blood pressure, nurses cannot trace the vein for injection or take blood samples. In such conditions, auxiliary equipment (such as this vein finder) is necessary to find the accurate location of the vein.
This device is a small projection vein finder that detects the location of a vein from over the skin and projects it on the skin. Infra-red light is used to detect the vein location. This device is portable and has a rechargeable battery.

Founded:
2016

Application:

Laboratories, emergency centers, and centers that perform intra-venous injections or blood sampling.

This product is a final B2B Equipment.

Technical Specifications:

Input power	12 V
Dimensions	12 × 7 × 6 cm
Battery	4000 mAh Li-ion
Infra-red-light frequency	780-850 nm
Penetration depth	9 mm

Advantages:

- Unique image-processing algorithm for real-time analyzing of infra-red camera images using ARM processor
- Indicating the accurate vein location on the skin using a projector
- Special design for device production cost reduction

Autoclave Machine

Pharmaceutical, Hot Shower, Ethylene Oxide and for Hospitals

Sazgar Co.

www.sazgarmed.com

Product Introduction:

An autoclave is a machine to perform sterilization. Sterilization means destroying or removing every life form (microbes, including spores) in non-moving materials using physicochemical methods or steam. This device is also known as a sterilizer. Sterilization must be considered a group of related significant processes to perform health-related services (sterilizing materials, growth cultures, and devices) according to strict disinfection protocols. The processes to obtain a sterile condition in non-moving materials include: Cleaning, decontamination, inspection and monitoring, preparation and packaging, sterilization, storage, and delivery of materials and supplies. A hot shower device can sterilize human and animal serums using hot water shower. A pharmaceutical autoclave can be used to sterilize various types of growth cultures and liquid or solid medical products using different temperatures and adjustable durations, and also for the sterilization of products including syringes, vials, bottles, glassware, and plastic containers with open or closed doors.

Founded:
1992

Application:

- Pharmaceutical, laboratory, and food industries that sterilize liquids in closed-door containers
- Pharmaceuticals sterilization in hospitals and drug factories

This product is a final B2B Equipment.

Technical Specifications:

- Equipped with complete sterilization cycle using hot water
- **Horizontal pneumatic sliding door in two models:** one-door and two-door
- Hot water production (128 degrees Celsius)
- **Parts of the machine:** pharmaceutical autoclave chamber, vacuum pump, heat exchange

Advantages:

- Minimizing contamination risk for injection serums of patients
- Reasonable pricing compared with Tuttnauer product (Made in the Netherlands)

Ethylene Oxide Sterilization Device

Noeadeh Andishan Hoseini Co.

www.medniamsh.com

Product Introduction:

Sterile systems can be used for the disinfection of disposable medical equipment products. Sterilization devices are among the essential medical equipment. This device is a compact, easy-to-use, and low-consumption equipment. This device is designed as a fully automatic system with monitoring and a reinforced container with one or two doors. Every parameter of the device is adjustable and controllable.

Annual Production Capacity:
10 devices

Founded:
2011

Application:

Sterilization of disposable medical products and various laboratory tools

This product is a final B2B Equipment.

Technical Specifications:

Power consumption	6 – 12 KW
Air intake	100 liters per minute
Water intake	50 – 200 liter per cycle
Power input	380 V
Body material	ST37
Volume	1 – 30 cubic meters
Gas piping material	Stainless steel

Advantages:

There is no similar product in market

International Standards or Permission:
QC 100

Hospital Infectious Waste Sterilizer Device

Sazgar Co.

www.sazgarmed.com

Product Introduction:

Hazardous hospital wastes are divided into several categories. Two of these categories include infectious and sharp wastes. These groups have been in contact with patients blood and other body fluids and are highly contaminated. Infectious waste is stored in yellow bags, and sharp infectious wastes (including syringes and surgical blades) are stored in yellow containers called safety boxes.

In the first step, the infectious wastes must be decontaminated; in this process, the wastes are placed inside special machines to remove microbes and pathological agents. Using this method, the infectious wastes are turned into usual wastes similar to household wastes and can be shredded, buried, or incinerated like household wastes.

The infectious wastes decontaminator and post shredder machines made by Sazgar Co. can decontaminate the infectious wastes of hospitals and then shred them.

Founded:
1992

Application:

Burying the infectious hospital wastes after the completion of the sterilization process.

This product is a final B2B Equipment.

Technical Specifications:

- **Structure (body) material:** Carbon steel
- **Front panel material:** Carbon steel
- Touchscreen display to monitor and control the sterilization process
- **Blade material:** Steel with Rockwell C 60 hardness level
- Able to use the central steam system of the hospitals or with an electrical steam-maker (or both systems)
- Automatic separation of sterilized leachate into the sewer system
- Reduction of volume (80%) and weight (30%) of the wastes
- Equipped with microbiological filter for air filtering
- Equipped with rotational internal blades with the opposite movement of the blades relative to each other and reverse movement for crushing all types of hospital infectious wastes
- Equipped with an automatic waste elevator for transferring the waste into the container
- Equipped with PLC control

Hospital Hazardous Waste Disposal System
Plasma Incinerator

Araz Teif Plasma Co.

www.atplasma.com

Product Introduction:

This system disposes of industrial and hospital waste using torches with plasma technology. The chemical and medical wastes of hospitals will first undergo a pyrolysis process after being injected inside the oven; then, the plasma torches will dispose of them at 1800 degrees Celsius. In the end, organic gases and molten minerals will be the only remaining materials of the mentioned waste.

Founded:
2014

Application:

Disposing of medical and chemical hospital wastes

This product is a final B2B Equipment.

Technical Specifications:

System capacity	Infectious waste: One ton per day Hazardous chemical and medical waste: 300 kilos per day
Input waste	Hazardous medical and chemical waste
Power consumption	70 kWh
Furnace temperature	1800 degrees Celsius maximum
Output	Organic material (as synthetic gas) and minerals (as molten)
Heat source	Plasma torches running on air
Lifespan of electrodes of the plasma torches	400 hours

Advantages:

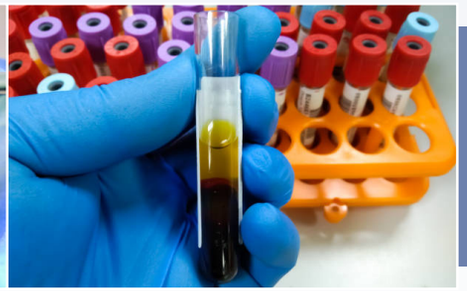
- Various thermal zones
- Lower prices compared with similar foreign products
- Feeding system designed for every type of waste

Fifth Chapter

Laboratory Equipment

5ND CHAPTER

Laboratory Equipment



Bilirubinometer with 0.25 Repeatability

Parsian Teb Zaman Co.

www.parsiantebzaman.com

Product Introduction:

The bilirubin measurement device is a jaundice meter for neonates. The blood sample inside the sampling tube (hematocrit) is placed inside the container then a white light (LED) beam is radiated toward the container. As a result of the white light hitting the blood sample, the output light will be yellow according to the baby's jaundice level.

Founded:
2009

Application:

Medical laboratories for testing the neonate's jaundice.

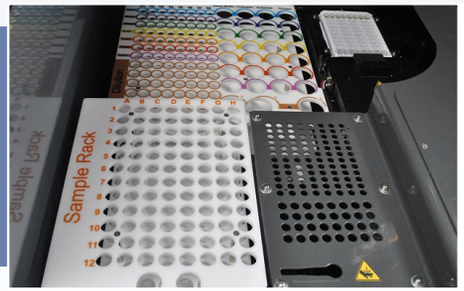
This product is a final B2B Equipment.

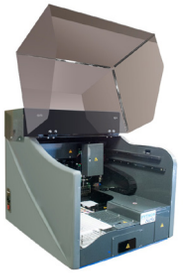
Technical Specifications:

Product parts	❊ Optics chamber (450 and 546 nm lens, filter, and white LED) ❊ Mainboard for measuring light using two photodiodes and displaying the read measures on an LCD ❊ Frame and body
Measuring time	8 seconds
Photodiode reading accuracy	0.001 V

International Standards or Permission:

❊ CE
❊ ISO 13485
❊ ISO 14971
❊ IEC 62304





Fully Automated ELISA Machine

Parsian Teb Zaman Co.

www.parsiantebzaman.com

Product Introduction:

Similar to chemiluminescence devices, this device measures hormone concentrations in patients' samples. There is only one difference; instead of a photon counter, this device uses the ELISA method. All pipetting steps are also automated. The device is similar to a 3-axis CNC device, with one difference: instead of a spindle, there is a nuzzle for suction and pouring the solution, which adds the material to the sample of the patient, according to the test type and orders defined by the software (graphical interface). In the end, using a photodiode scanner, detecting color percentage, and extracting formulas, the device reports the relationship between the color percentage and the hormone concentration.

Founded:
2009

Application:

Medical laboratories for measuring the hormone concentration in patients' samples.

This product is a final B2B Equipment.

Technical Specifications:

- **Parts:** mainboard, electromotors controller boards, ELISA board, valves board, nine motor steppers, graphical user interface programmed by C#, power input, PC, tungsten light source, frame, and mechanical body
- Four filters (405, 450, 492, and 630 nm)
- Able to run seven simultaneous tests
- Light absorption accuracy of 0.01%.

Chemiluminescence Device

Parsian Teb Zaman Co.

www.parsiantebzaman.com

Product Introduction:

Inside the chemiluminescence device (light beam through chemical reactions), the patient's hormone is mixed with other solutions in a vial and emits light due to chemical reactions. The intensity of these photons is not visible. Hence, photons are sent to PMT (which can measure these low-energy photons) using an optical fiber. The mainboard of the device measures every emitted photon from the patient's sample as an analog voltage in PMT. Then it shows the relationship between the number of photons (the voltage) and the concentration on the display.

Founded:
2009

Application:

Medical laboratories for measuring the hormone concentration in patients' samples.

This product is a final B2B Equipment.

Technical Specifications:

- **Parts:** mainboard, two motor steppers, PMT, frame of the device, GUI software in C# language,
- **Linear dynamic range:** 10E6
- **Photon counter:** PMT
- **Wavelength peak:** 400 nm
- **Calculation mode:** Regression, Point to Point

International Standards or Permission:

- CE
- ISO 13485

Sediment Analyzer

Parsian Teb Zaman Co.

www.parsiantebzaman.com

Product Introduction:

This device can measure the sediments. Blood sample tubes are placed inside the matrix-shaped storage. Installed photodiodes on a plate move every few minutes upward-downward by a stepper motor and a screw in a parallel direction with the blood tubes and scan the length of the test tube. This device measures the place of separation of plasma from the blood while the photodiode passes the separating edge. After saving the data and entering them in a linear equation, the velocity of RBC is determined after thirty minutes. The higher number of sedimented red blood cells indicates higher sedimentation rates.

Founded:
2009

Application:

Medical laboratories for detection of inflammation or infection, disease progression and treatment effect.

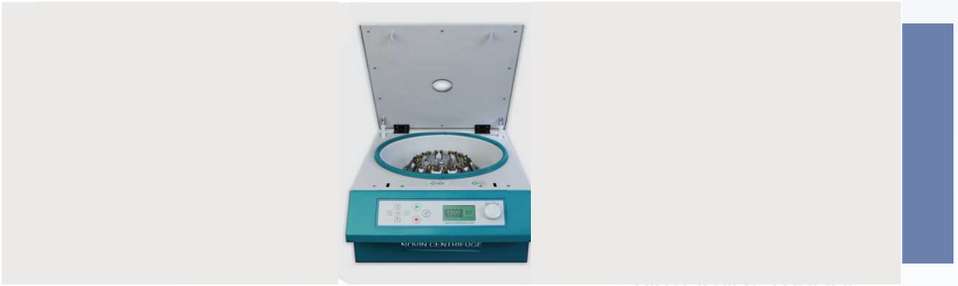
This product is a final B2B Equipment.

Technical Specifications:

- **Parts:** Motor stepper and screw, mainboard, touchscreen display
- **Analyzing time:** 30 minutes
- 30 channels
- **Measuring accuracy:** ±0.2

International Standards or Permission:

- CE
- ISO 13485



Cytocentrifuge

Novin Tashkhis Farhan Co.

www.novinmedco.com

Product Introduction:

A cytocentrifuge device separates cells. Today, conventional pop-smear tests are gradually being forgotten and replaced by novel techniques. Performing pop-smear tests using the Lquidbase method increases the accuracy of diagnosing the probable abnormalities.

Founded:
2013

Application:

Pathology laboratories

This product is a final B2B Equipment.

Technical Specifications:

- **Input voltage:** 220 V
- **Frequency:** 50 Hz
- **Input current:** 1 A
- **Power consumption:** 220 W
- **Maximum speed:** 4000 revolutions per minute
- **Ambient temperature:** Can be installed from 30 to 80 degrees Celsius, reduced to 40 degrees, and linear to 50 degrees Celsius.

Advantages:

- Low priced product
- Production of all components by the company
- Low prices of the raw material
- Warranty and after-sales services

Sixth Chapter

Rehabilitation and Restorative Equipment

6ND CHAPTER

Rehabilitation and Restorative Equipment

Cardiac Rehabilitation System | ACR6000 Model

Ave Cinna Co.

www.avecinna.com

Product Introduction:

After the studies conducted in the field of cardiovascular diseases and the examination of patients who, after primary heart treatments, consider themselves to be disabled people, and to have fallen behind with the normal routine of life and routine economic activities; By this system, they can be revived and returned to routine life. In this collection, patients, depending on the type and level of their different physical conditions, can use different parts of the device that can be controlled by computer (treadmill, bicycle, arm, etc.). Considering that cardiovascular diseases are one of the common diseases among the people of the world, with the help of this device, it is possible to help treat, improve and increase the life span of patients who have undergone CABG (open heart surgery).

Main Export Destinations:
Azerbaijan, Iraq and Syria

Exports History:
Up to 500 T$

Annual Production Capacity:
300 devices

Founded:
2005

Application:

This system is mainly used for diagnosis, prevention, and treatment of patients who have experienced acute myocardial infarction or people who have undergone open-heart surgery, (CABG), those with constant pain chest, PCI with CHF, heart transplantation with repair of heart valves, and etc

This product is a final B2B Equipment.

Technical Specifications:

- The ability to display the ECG signal wirelessly up to a radius of 100 meters
- The ability to record and save the patient's ECG signal during the test
- Has anti-noise/interference technology to ensure the stabilization of the baseline and reduce the impact of electrical noise, baseline wander and industrial electrical wave noise on the ECG signal.
- **Different parts of the device:** lead snippy cardiac rehabilitation system, printer, receiver and transmitter module, ?Hand massager?, IC amplifier, NRF model wireless module
- **Device power consumption:** 5 VDC / 800 mA
- **Dimensions of the device: Transmitter:** 124 x 80 x 31 (mm)

Advantages:

- Monitoring and recording ECG signal wirelessly within 100 meter radius
- EMG Filtering
- 3 lead ECG Real time monitoring
- Real time simultaneous control of 16 devices and 16 heart signal transmitter modules
- Simultaneous controling of 16 heart signal transmitter module devices
- Removal of muscle vibration noises without affecting the main signal

International Standards or Permission:

- Certified by MOH
- ISO 9001:2015
- ISO 13485:2016
- CE0476
- ISO 10004
- ISO 10002

Pars Flex Prosthetic Carbon Foot

Composite Gostar Sepahan Co.

www.cgseco.com

Product Introduction:

Carbon prosthetic foot are a type of lower limb prostheses which are made of carbon fiber composite material with suitable mechanical properties. They are designed and produced for the use of disabled people and veterans whose legs are amputated below or above the knee. Properties such as optimal flexibility along with high strength and durability have made the carbon prosthetics a necessity and not a choice as an artificial leg for amputees, Because the flexibility of these prosthetics along with the resilience causes the absorption of the energy of the person's weight while walking or running and prevents damage to the user's healthy joints. This energy is returned to the user in the next step and causes him to experience far less fatigue during walking or running. Pars Flex carbon prosthetics are produced with a wide variety of different models.

Annual Production Capacity:

3,000 pcs

Founded:

2012

Application:

It is installed as an artificial foot by prosthetists for the use of people who have had their legs amputated below or above the knee.

This product is a final B2B Equipment.

Technical Specifications:

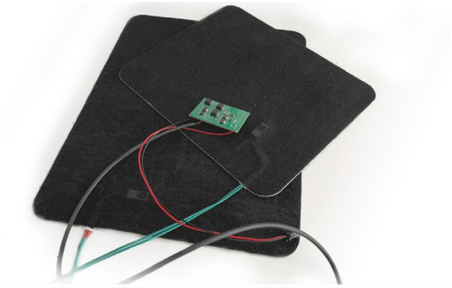
Material	Carbon fiber composite
Chemical composition	Epoxy resin
Composite components	❊ Carbon fibers ❊ Epoxy resin
Physical specifications	❊ 360 grams without polyurethane cover (LP) ❊ 400 grams without polyurethane cover (original) ❊ 670 grams without polyurethane cover (sport) ❊ 250 grams without cover (Chopart) ❊ 350 grams without polyurethane cover (Sime)
Mechanical specifications	❊ Minimum bending strength N 3500 ❊ Maximum bending strength of 5000 N
Dimensions (length × height × width) Cm	❊ 27 × 8 × 8 (LP) ❊ 8 × 17 × 27 (original) ❊ 27 × 45 × 6 (Sport) ❊ 8 × 3 × 27 (Chopart) ❊ 27 × 4 × 8 (Sime)

Advantages:

The price is lower than that of similar products of other companies

International Standards or Permission:

ISO 13485 from IGC



Rehabilitaion Robot

Royal Tosse'e Paydar Co.

www.rtprobotics.com

Product Introduction:

RTP Co. Ltd, as an active company in the Field of Control, Robotics and Flexible Electronics, offers its new medical robot, K1 LifeBot which can not only assist doctors and nurses in providing patients with effective healthcare, but also considerably alleviate their heavy duties.

The K1 LifeBot is exclusively designed to provide a safer medium through which doctors can safely communicate with patients infected with contagious and infectious diseases, including Corona. In addition, due to the fully sealed body design, deploying the K1 LifeBot is certainly a promising approach for Isolated environments in hospitals or any other environments that require minimal human traffic.

Main Export Destinations:
Russia, China, Turkey , Qatar

Exports History:
Up to 500,000 $

Annual Production Capacity:
50 Robots

Founded:
2007

Application:

- Physician assistant and providing services to patients in different hospital departments, laboratories and Isolation rooms
- Providing services in stores, hotels and shopping centers

This product is a final B2B Equipment.

Technical Specifications:

- **Dimensions**: 520 × 525 × 1085 mm
- **Weight:** 40 kg
- **Material:** plastic and aluminum
- **Charging time:** 6 hours
- **Working time:** 6 hours
- **Maximum weight on the trays:** 5 kg
- **The maximum angle of the path traveled by the robot:** 15 degrees

Advantages:

- Equipped with an impedance control to control the torque of the motors and the force exerted on the patient's hand
- Creating an appropriate user interface by real-time implementing the robot control loop using a computer
- Has technological modules such as routing algorithm and general design, simultaneous control of 2 axes, solving direct and inverse kinematics, implementation of direct and inverse kinematics on real-time systems, Jacobian equations, torque control, impedance control and package technology development

Neural Prosthesis for Helping Paraplegic Patients with Cycling

Neurotek Co.

www.neurotek.ir

Product Introduction:

Neural-motor para-cycling prosthesis is a microelectronic system under the control of a microprocessor that controls the cycling movements of the lower limbs of people with spinal cord and brain based on the human central nervous system. This system simulates the commands of the motor cortex of the human brain and, by sending them to the paraplegic muscles involved in the cycling, stimulates this movement in them. The intensity of the contraction of the paraplegic muscles will be controlled by combined sliding-fuzzy control methods based on the speed and power of the cycling at every moment.

Founded:
2015

Application:

- Stimulating the cycling movement in people with spinal cord injuries
- Preventing osteoporosis, muscular atrophy and bedsores

This product is a final B2B Equipment.

Technical Specifications:

- Consists of a bicycle, one neural-muscular stimulant, and a control unit
- Isolated 8-channel stimulant
- Stimulant signal of a symmetrical two-phased type
- Adjustable stimulation frequency of 10-50 Hz, with an accuracy of 1 Hz
- Adjustable stimulation pulse width between 0-700 s μ with an accuracy of 1 μs
- Adjustable stimulation signal domain between 1-100 mA with an accuracy of 1 mA

Advantages:

- Lower price compared with similar products
- Equipped with a torque and power control unit
- Ability to control the speed and torque simultaneously

International Standards or Permission:

- IEC 60601-1:2012
- IEC 60601-2-10:2012
- IEC 60601-1-2:2014
- IEC 62304:2015

Prosthetic Carbon Foot

Chakad Teb Adrin Co.

www.chakadteb.com

Product Introduction:

The Chekad1 foot prosthesis with a unique design is used for people who have below or above knee amputation. This product is produced by combining several complex composite springs with a special arrangement in parallel and series made of carbon fibers and epoxy resin with a layer of flexible soft carbon in the sole of the foot with the ability of changing the length like soft tissue. This foot functions by absorbing the shock, and moving vertically by 12 mm and acts like the soleus muscle. On the other hand, different energy absorbers completely simulate the functions of normal legs while changing the walking speed. This foot prosthesis is inspired by the anatomy of human foot and has several pieces. The anterior part acts as the metatarsal, navicular, and toe bones, simulating the curvature of the foot. This piece stores the energy of tip of the toe when in contact with the ground and returns it when detached from the ground, so the person walks significantly more naturally and he requires less energy. The lower part, which is placed on the sole of the prosthesis, acts as a plantar fascia tendon, which, while providing coherence and curvature of the sole of the foot, provides the necessary flexibility during loading in the static phase. By means of this prosthesis, the amputee can walk for a long time without getting tired or using too much energy and easily do his daily and normal activities.

Founded:

2017

Application:

Lower limb amputation especially lower knee amputation

This product is a final B2B Equipment.

Technical Specifications:

Size	23-28
Base height	181 mm
Heel height	11.8 mm
Weight	570±5 gr
Ultimate tolerable force	2065 N
Activity level	K3-K2
Class of weight	F3-F7
Material	Carbon

Advantages:

Lower price compared to similar products with the same quality

International Standards or Permission:

- ISO 13485
- ISO 10328
- CE

Light-Weight Wheelchair (Carborun) Made of Carbon Fiber Composite

Ava Yekta Samaneh Novin Co.

www.avita-med.com

Product Introduction:

Among active wheelchairs, light and ultra-light wheelchairs are known in the world. These types of wheelchairs are suitable for users who want to handle their daily affairs with minimal dependence on others. Carborun wheelchair is designed and manufactured in the class of lightweight active wheelchairs using advanced carbon fiber technology. The total weight of this product is about 8 kg, and its maneuverability and mobility are comparable to the current models available in the European and American markets.

Founded:

2017

Application:

Suitable for disabled people

This product is a final B2B Equipment.

Technical Specifications:

Frame, Footplate and Sideguard Material	Carbon fiber composite
Backrest Material	Aluminum
Frame Color	Custom
Front Wheel	Size: 3" - 4" - 5"
Rear Wheel	Size: 24"
Seat Width (SW)	36 - 39 – 42 – 45 cm
Seat Depth (SD)	38 – 40 – 42 – 44 cm
Footplate Distance (FD)	33 – 35 – 37 – 39 – 41 – 43 – 45 cm
Backrest Height (BH)	25 – 35 – 40 – 42 – 45 cm
Backrest Angle (BA)	85, 90, 95, 100 degree
Carrying weight (Without rear wheels)	approx. 5.1 kg
Total Weight	approx. 8 kg
Maximum User Weight	approx. 130 kg

Advantages:

- Ultra-light
- Made of carbon fiber composite
- Very low price compared to competitors
- Appearance and design of the product
- Personalization

International Standards or Permission:

- EN12835 Standard
- CE(European Union)

Seventh Chapter

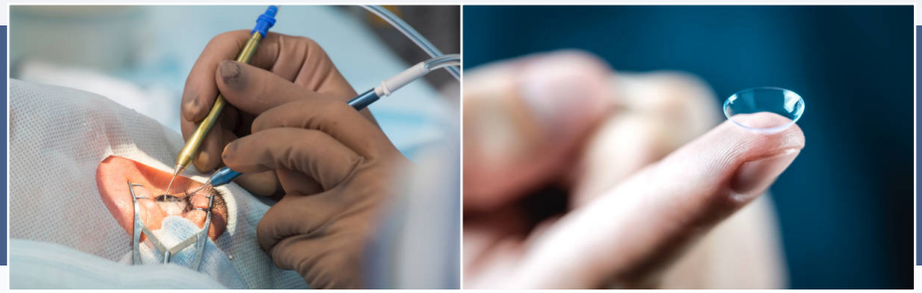
Medical Supplies and Consumables

7ND CHAPTER

Medical Supplies and Consumables

Sections

Lenses
Prostheses
Medical Consumables



Intraocular Lenses

Pmma, Hydrophilic, Hydrophobic-Aniridia, Perlens, Ruby, Ruby Pl, Antique

Abzar Teb Pouya Co.

www.abzartebpouya.com

Product Introduction:

According to the damage to the eye (especially in treating corneal complications), various types of intraocular lenses can be used in cataract surgeries where lens replacement is necessary. Also, in cases where phaco surgery is not possible due to the rupture of the eye capsule, such lenses can be used. The manufactured lenses of this company are primarily made with polymethyl methacrylate (PMMA) or hydrophilic polymers (soft material) and acrylic hydrophobic polymers (hard material) with the ability of intraocular injection with low incision and also the ability of placement in anterior/ posterior chamber.

Intraocular lenses are produced in various types, including:

- Hydrophilic
- Hydrophobic
- Hydrophobic prelude
- Perlens, Aniridia
- PMMA
- Artisan

Main Export Destinations:
China, Pakistan, Iraq, turkey, Syria

Exports History:
Up to 500,000 $

Annual Production Capacity:
Over than 160,000

Founded:
2006

Application:

- Cataract surgeries
- Replacement for naturl eye lens

This product is a final B2B consumer product.

Technical Specifications:

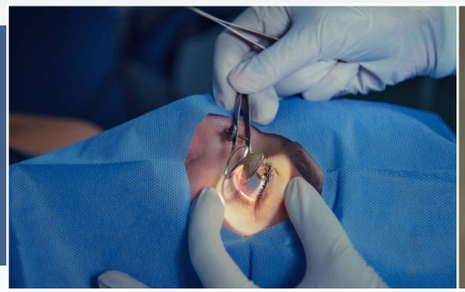
- Foldable without breaking
- A low incision with the ability of intraocular injection
- Material without water absorption and soft in the natural environment
- The ability of placement in the anterior chamber (AC) and posterior chamber (PC)
- Without lens glare inside the eye
- Made from materials including ANTIQUE, PMMA AC, PMMA PC, RUBY, ANIRIDIA LENSES, PER LENSES, RUBY PL.
- **Various parts of the lens:** medical acrylic polymers
- **Dimensions:** 13 mm diameter

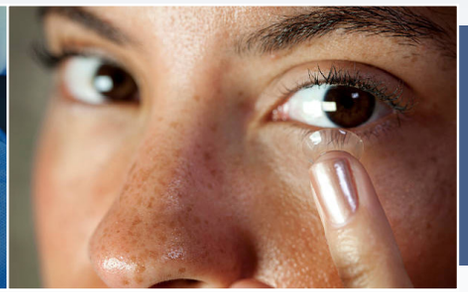
Advantages:

- The sole manufacturer of this product
- Designed as Aspheric without being de-centered
- High-quality resolution and MTF lens with square-edge
- Without lens glare inside the eye
- Without PCO
- Reasonable pricing compared with similar products

International Standards or Permission:

- ISO 9001 – IMQ-CSQ
- ISO 13458 – IMQ-CSQ
- ISO IEC 17025:2017 from EIQM
- GMP certification from AQC MIDDLE EAST FZE.
- CE certification from ROYAL STANCERT B.V.





Various Types of Intraocular Lenses

Mehr Davar Co.

www.mehrdavar.com

مهرداور – گلبندی

Product Introduction:

An intraocular lens is a medical tool implanted in the patient's eye during surgery. In some cases, the lens replaces the natural lens, and in some cases, it is used to correct the refractive errors. These lenses are primarily made from biocompatible polymers and let oxygen pass through them. The geometric dimensions of various lenses are different. The optical part can be as large as 6 mm, and the largest part may have a length of up to 12 mm. Ocular lenses made by Mehr Davar Co. include:

- Hydrophilic intraocular lens
- Hydrophobic intraocular lens
- Iris-fixated intraocular lens

Founded:
1999

Application:

Ophthalmology, eye surgery

This product is a final B2B consumer product.

Technical Specifications:

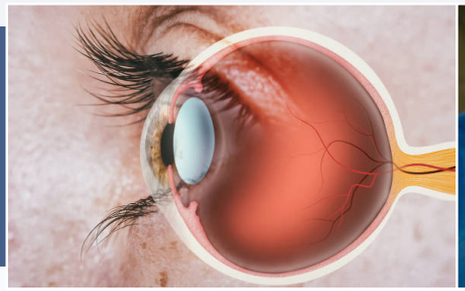
- **Material**: Polymer (Medical-grade biocompatible polymers)
- High-accuracy lens with high resolution and optical features
- **Lens dimensions:** The geometric dimensions of the intraocular lens may vary in different models. On average, the optical part has a 6 mm diameter, and the largest part may be as large as 12 mm.

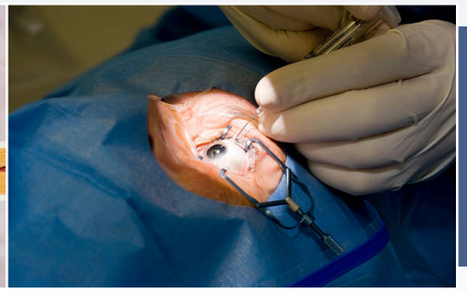
Advantages:

- Solid mechanical aspects to sustain the physiological forces in the transplant area
- Reasonable pricing compared with foreign samples.

International Standards or Permission:

- ISO 13585 certified by TCL Co., Australia
- ISO 13485 – TCL - 2019





Intracorneal Implantable Prosthesis

Mehr Davar Co.

www.mehrdavar.com

مهرداور – گلبندی

Product Introduction:

The intracorneal implantable prosthesis is used to treat patients with keratoconus by transplantation inside the corneal stromal tissue. This prosthesis is made from gas permeable polymers, such as PMMA, and has a thickness between 100 to 200 microns.

Application:

Ophthalmology, treatment of eye problems in patients with keratoconus.

This product is a final B2B consumer product.

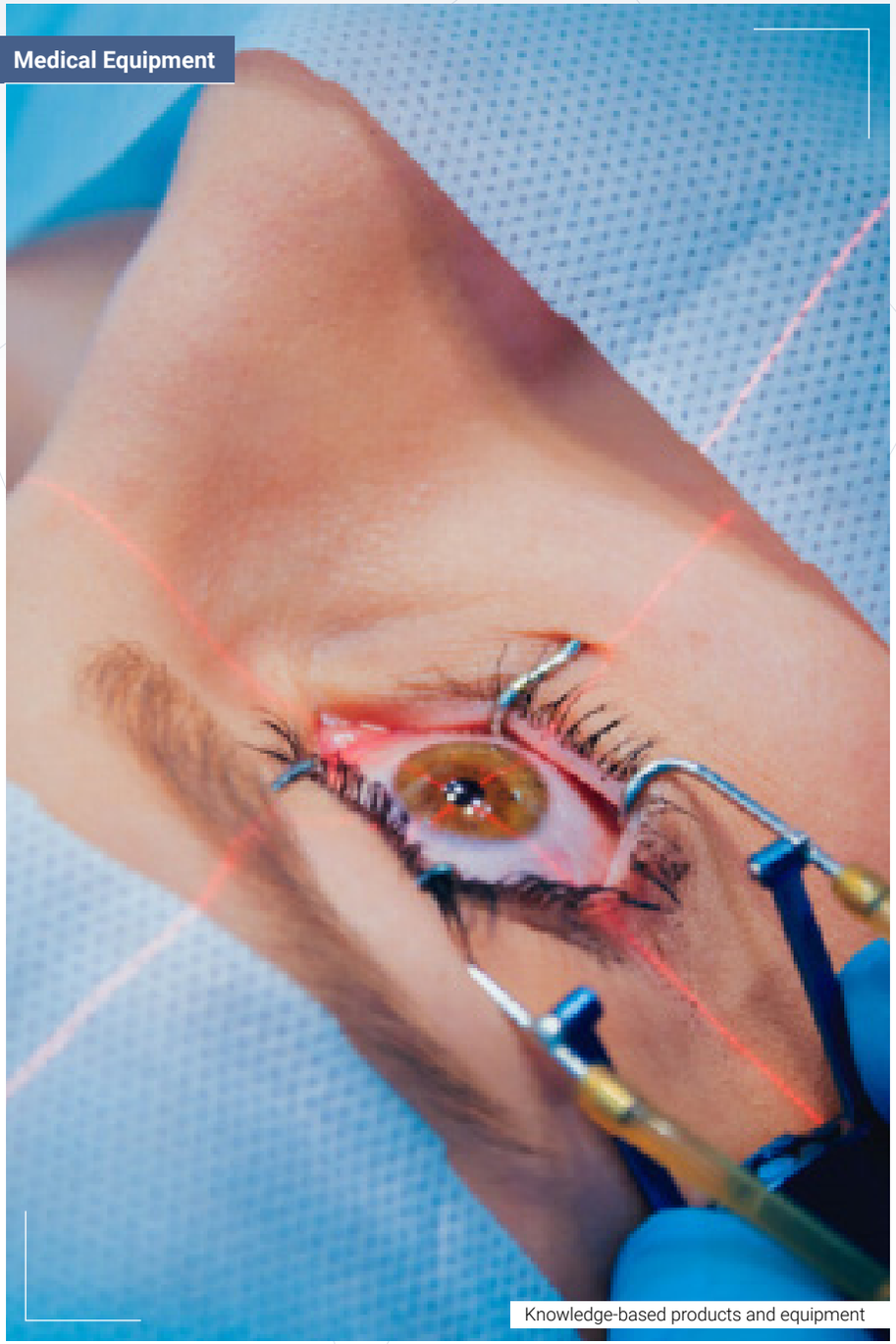
International Standards or Permission:

- ISO 13585 certified by TCL Co., Australia

Founded:

1999

Medical Equipment



Knowledge-based products and equipment

Synthetic Bone Graft

Osveh Medical Co.

www.osvehmedical.com

Product Introduction:

Bone grafts are used to replace and regenerate lost bone matrix. Bone defects are caused by various factors such as trauma and bone fractures, bone tumors, surgical operations (spinal fusion, craniomaxillofacial and implantology) or bone necrosis. In this situation, the surgeon can use bone grafts to fill bone defects. Synthetic bone grafts are bio-implants with calcium phosphate compounds similar to the mineral phase of bone.

Application:

- Trauma and orthopedics
- Filling voids caused by cysts or osteotomies
- Filling defects arising from fractures
- Refilling of cancellous bone harvesting sites and unfused areas

Spine surgery:

- Postero-lateral fusion
- Interbody fusion (as cage filling material)
- Vertebrectomies (as a filling material of the vertebral implants)
- Refilling of bone graft harvesting sites

Cranio-maxillofacial surgery:

- Reconstruction of mandibular cyst defects
- Reconstruction of voids after tooth socket extractions
- Reconstruction of maxillary sinus.
- Ridge Augmentation

Founded:
2008

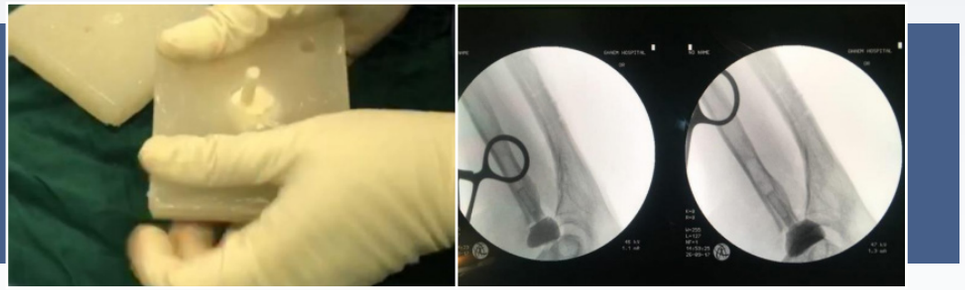
This product is a final B2B Equipment.

Technical Specifications:

Material	Ceramic
Physical State	Solid (Powder, Granule, Block)
Chemical composition	Biphasic calcium phosphate (60% hydroxyapatite – 40% Beta-tricalcium phosphate)
Origin	Fully Synthetic
Porosity	75- 80 %
Pore size	100-1000 microns
Mechanical Strength	more than 0.5 MPa
Degradation kinetics	Natural resorption through enzymatic activity (fast resorption of β-TCP, 4-6 months) (slow resorption of HA > 2 years)
Healing/Integration Time	5-6 months
Sterility	Gamma irradiation
Packaging	Double sterile Tyvek pack
Storage Temperature	Room temperature
Shelf life	5 years
Availability	Powder: (0.5-1.0, 1-2 mm), (0.5, 1.0, 2.0 cc) Granule: (3.4-4.8 mm), (5, 10, 15, 20 cc) Stick: (5 × 5 × 20 mm), (4,6, 8,10 pieces)

Advantages:

- Using new materials and techniques to create bone scaffolds in a way that, in addition to improving the physicochemical properties, lowers the cost of the product.
- No limitation of raw material resources and availability compared to goods of the same category, including allograft (human origin) and xenograft (animal origin) due to the provision of raw materials of chemical origin and not human or animal origin



Radial Head Bone Prosthesis

Arian Melal Abadis Co.

www.aubadis.com

Product Introduction:

After creating a 3D model of the radius bone on the healthy side, the mirroring operation to obtain the natural model of the damaged side begins. The design of the prosthesis is according to the damage to the radial head bone and the orthopedic surgeon's opinion. The prosthesis includes the head of the radius bone and the stem, which is connected to it. The stem fits the internal canal of the patient's radius bone and extends to the end of the radius bone. The format of the created 3D model of the prosthesis and the fixture is STL, which must be converted to G-codes (x-y-z movements) so the printer can execute the model. This device directly manufactures the prosthesis without removing metal shavings (which a CNC device has to perform for creating a metal prosthesis).

Founded:
2017

Application:

Orthopedic designing for changing the joint of the radial head bone for every reason (fracture, tumor, congenital disfiguration, diabetic patients with infected bone and joints).

This product is a final B2B consumer product.

Technical Specifications:

- Medical images in di com format
- Imaging using CT scan based on the Hounsfield scale
- **Device material:** PLA

Advantages:

- Designing and production according to the patient's bone and joint size and the internal diameter of the bone canal
- Oval-shaped metal prosthesis of the radial head
- Accurate determination of the excision height of the damaged joint
- Low-cost

Cranial Helmet for Children
Helmet Orthosis for Baby's Skull

Abtin Pars Co.

Product Introduction:

Several genetic disorders or diseases during childbirth cause the child's skull deformity. These infants are involved in cranial deformation or twisted face and head. The theory of treatment for such disorders suggests shaping helmets for the skull. The helmet presses some areas of the cranium to prevent growth in those regions, while the rest are free to grow. Hence, the growth will become normal. The presented product is a cranial correctional orthosis for infants, designed according to the requirement of each patient's skull (digital design) and produced using a 3D printer. The design and production are patient-exclusive, based on the extracted geometry of the skull and tested protocols. In other words, there is no direct contact with the head during the scanning process, and the 3D geometry of the patient is extracted with a scanner and CT.

Founded:
2020

Application:

Treatment of deformity and flattening of newborns' skull through pressure adjustment on the skull

This product is a final B2B consumer product.

Technical Specifications:

Material	PLA (derived from plant root. Does not cause skin sensitivity)
Physical specification	Variable weight according to the medical and patient's requirement
Mechanical specification	❊ Hinge-shaped orthosis ❊ Maintains integrity in the proximity of medical oils and ointments ❊ Equipped with foam in the inner area to adjust the pressure and prevent wounds ❊ Equipped with a strap to adjust the pressure
Dimensions	According to the patient's skull

Advantages:

- ❊ Accurate multi-layered design
- ❊ Non-interfering geometric data extraction
- ❊ High-accuracy
- ❊ Short production time
- ❊ Design according to the daily requirement of the patient

Needle-Free Injector | Chitogun

Chito-tech Co.

www.chitotech.com

كيتوتك

Product Introduction:

This product is a needle-free injector, which injects at the epidermis layer with high pressure instead of a needle passing the epidermis, dermis, and hypodermal layers. Since the injector is needle-free and does not enter the dermis layer, it creates less pain. Features of the product include:

- Avoiding fear of injecting with needles
- Preventing contaminations from spreading
- Simple application
- Smart distribution of drugs inside the tissue by entering the required depth

Founded:
2001

Application:

Every injection (especially insulin) at home, in medical clinics, and hospitals.

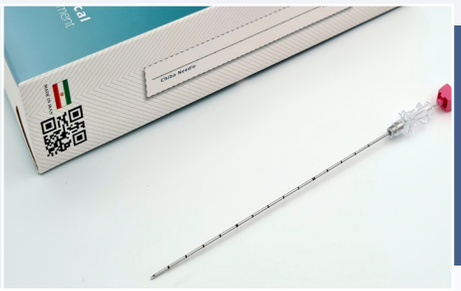
This product is a final B2B consumer product.

Technical Specifications:

- **Device material:** 316 steel
- **Penetration depth:** 3 to 9 mm
- Electrically charging capability
- Adjustable for children and adults injections
- Suitable for injection of multiple drugs, including insulin and general vaccines through skin pores with an injection speed of 100 ms
- Drug distribution type inside the body: In the shape of a cone with a 5-18 mm diameter
- **Device parts:** Cartridge, chiton injector, charger, and adapter
- **Input power:** 5 V power supply for the display and 24 V for linear reciprocation
- **Dimensions of the device:** 22 mm adaptor

Advantages:

More affordable pricing compared with foreign devices (such as Pharmajet).



Bone Marrow Biopsy Needle

Daya Danesh Gostar Arman Co.

www.bitamedco.com

Product Introduction:

Bone marrow biopsy needles consist of a hollow tube with a sharp tip attached to a polymer handle. The needle is for sampling spongy bone tissue where the spongy bone is covered by a dense thin coating. Since the needle will undergo tensions while penetrating the bone tissue, the sharpness and solidity of the needle are of significant importance. Accordingly, to improve the required mechanical properties of the needle and transform a soft steel pipe into a solid, sharp steel pipe following the ISO 6926 and JIS3228 standards (applicable at bone marrow sampling), a mechanical method (wire tension) is used.

Founded:
2017

Application:

Sampling of sponge bone tissue to perform biological and pathological tests related to diagnosis of various diseases, especially cancer.

This product is a final B2B consumer product.

Technical Specifications:

Material	❊ Needles: Stainless steel 304 according to JIS3228 standard ❊ Handles: ABS polymer
Physical specifications	❊ Internal diameter: 2.2 mm ❊ External diameter: 3 mm ❊ Effective length: 10 cm ❊ Tip shape: 2 sided
Dimensions	11 and 13 gauges at a length of 10 cm

Advantages:

- ❊ Simple design
- ❊ Up-to-date, exclusive technology
- ❊ Developing needle stretching technology
- ❊ Developing and manufacturing needle grinding machine

International Standards or Permission:

- ❊ ISO9626 and JIS3228 standards
- ❊ ISO13485 certificate in quality management of surgical needles from QS Co., Switzerland

Surgical Suture and Needle Package
Automatic and Manual

Nakh Jarrahan Pars Co.

Product Introduction:

Currently, surgical sutures (stitches) are among the necessary medical tools and equipment in operating rooms to treat damaged tissues and close open wounds and areas under surgery. A suture is an act of stitching a part of body tissue. Micro sutures range between 0-6 USP to 0-11 USP, and the attachment process is done by Pars Micro Attach device and manual coaxial connection microdevice. Suture and needle packaging includes four stages of manufacture, suture, surgery needle, connecting suture to surgery needle, and packing.

Founded:
2015

Application:

- Closing skin wounds and veins
- General surgeries
- Stitching the skin
- Plastic surgeries
- Surgeries related to the digestive system, gynecology, childbirth, and urology.

This product is a final B2B consumer product.

Technical Specifications:

Material and chemical compound	❊ Monofilament synthetic sterile absorbable suture ❊ Consisted of poliglecaprone 25, copolymer (75% glycolic), and 25% caprolactone ❊ Colored (purple) and colorless product
Mechanical specifications	❊ Biocompatible, according to requirements of European and American pharmacopeia ❊ Loss of tensile strength and final absorption through hydrolysis ❊ Loss of sixty percent of effective tensile strength within one week after placement ❊ Total suture absorbance duration of 90 to 120 days
Dimensional characteristics	❊ Available in sizes 1 to 10-0 (4 to 0.2 metric) ❊ Suture length of 30 to 90 centimeters

Advantages:

- Minimizing the possibility of forming folds
- Higher strength than the required standard (30% higher)

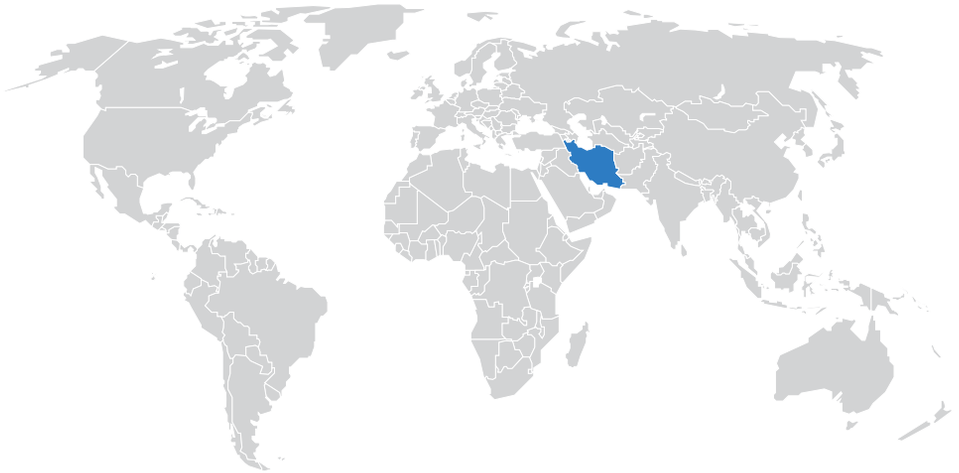
International Standards or Permission:

- ISO 13485

iHiT

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
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

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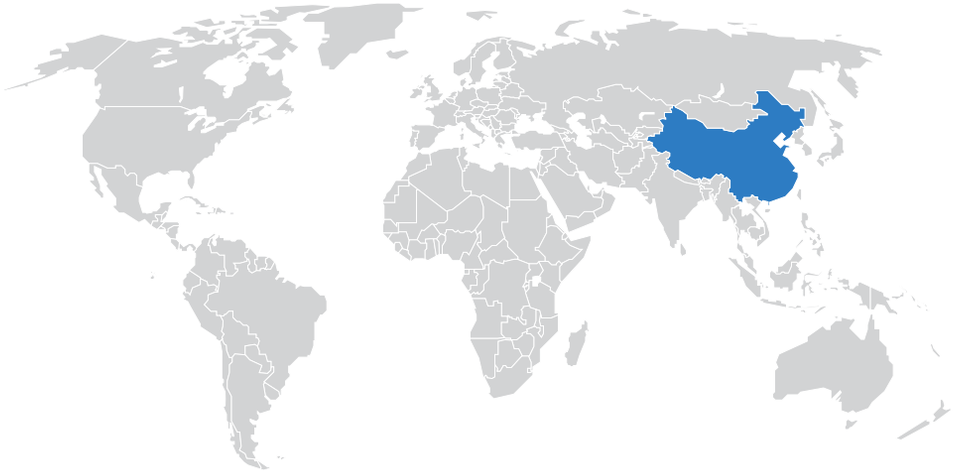

SUZHOU iHiT

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

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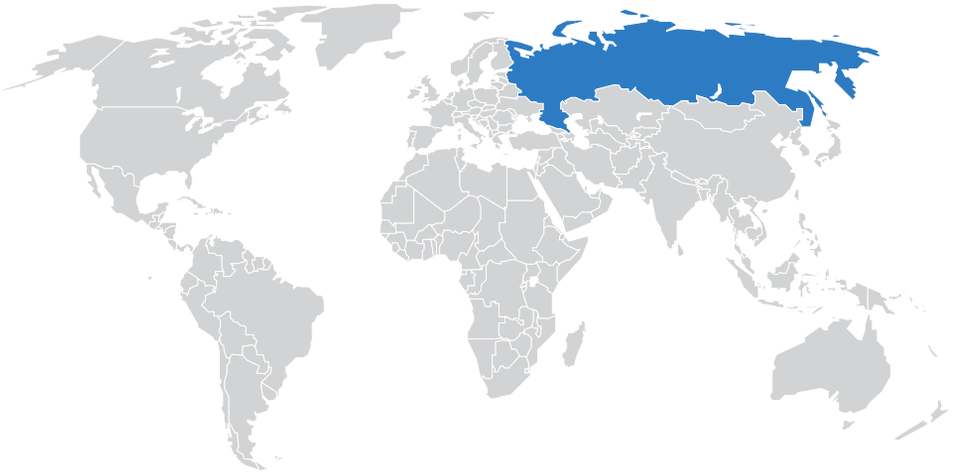

MOSCOW iHiT

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

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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

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DAMASCUS iHiT

Manager: Mohammad Hadi Zeighami

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

Country: Syrian Arab Republic – 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

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Iraq (Sulaymaniyah) iHiT

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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