KARA GROUP

Production of Cutting and Welding Machines

Production of H and Box Beam Machines with Automation from Cutting Machines to Shot Blasting Machines

Production of Vessel Welding Equipment

Production of Pipe and Joints Welding Line Equipment

Design and Production of Metal Structures, Vessel Welding and Various Cutting and Welding Machines Customized Equipment

Welding and Cutting General Guidelines

Welding Processes

Most of the welding processes require the formation of a zone with high local temperature for the metal to melt and join. The welding processes are often classified in terms of the heat source which is used. One of the major problems in welding process is that the metals are oxidized at a high temperature. The method for protecting molten metal from oxidation is another significant factor taken into consideration while classifying

welding processes. There are several methods to protect the metal from oxidation such as slag and inert gas shielding. In some cases, the oxidation of welding environment and molten area with vicinity is excluded. Also, there are surface coating methods which form surfaces on the work-pieces to increase their resistance to corrosion, erosion and impact. The Electric Arc Welding process is the most widely used welding process. As the name speaks, in this welding method, the heat source is the electric arc which is formed between work-piece and electrodes.

In this process, the electric energy converts to the heat and forms a temperature of about 7000° C causing the metal to melt and join. The equipment used in this process can be of various size and complexity. The main distinction between arc welding processes depends on the type of shielding methods, materials and electrodes which are consumed. The Electric Arc Welding methods include Manual Electrode Arc, Metal Arc with Shielding Gas, Tungsten Arc with Shielding Gas and Submerged Flux Welding.

Flux Cored Arc Welding (FCAW)

Flux Cored Arc Welding (FCAW) and Metal Inert Gas (MIG) /Metal Active Gas (MAG) processes are closely related to each other since both processes use similar equipment and continuous wire feeds and the same type of wire supply but the FCAW uses a hollow tubular electrode that is filled with flux. In this process, first, the metal belt is formed in a U shape. Then, the flux and alloys are poured into the U shaped belt and turned into a closed tubular using a roller. In FCAW process similar to MAG/MIG, the shield gas is used for protecting the weld area against oxidation. The shield gas can be applied discretely where the electrodes are called flux cored electrodes with shield gas or the gas can be produced through flux breakdown where the electrode is called self-shield electrode. Also, the flux cored shield gas electrodes produce a slag

which can protect the weld metal against oxidation. This slag needs to be cleaned after welding.

Tungsten Arc Gas Welding (TIG)/ (GTAW)

The Tungsten Arc Gas Welding (TIG)/ (GTAW) is a welding process recognized as Argon Welding in Iran. This process uses a non-consumable Tungsten electrode. The weld area and electrode is protected from oxidation and other atmospheric contaminations by an inert shielding gas. If a filler metal is needed, it can be added to the weld pool. The TIG welding produces exceptionally clean high quality welds. Since there is no slag in the welding process, it is not necessary to remove the final weld. The TIG weld can be performed manually or automatically on all the alloys and metals. The common applications include welding carbon steel, aluminum, stainless steel and titanium alloys where the integrity is critical. It can be used in medical, aerospace and food industries.

Gas Metal Arc Welding (GMAW)/ (MIG)/ (MAG)

In Metal Inert Gas (MIG) welding also called Metal Active Gas (MAG), an arc is maintained between a continuous solid wire electrode and the work-piece. The arc and weld pool are shielded by a stream of inert or active gas. The process is suitable for most materials and filler wires are available for a wide range of metals. Generally speaking, the MAG/MIG increases production through high welding speed compared to Manual Metal Arc (MMA) welding since, in MMA process, it is not necessary to replace the electrode by the welder. Also, the electrode wastes at the end of each electrode in manual arc welding do not exist in MAG/MIG welding process. In manual metal arc welding, about %65 of electrode turns into weld metal and the remaining will be wasted. The (MIG)/ (MAG) and FCAW welding processes increase the electrode consumption efficiency up to about %80-95. The MAG/MIG welding process is one of the most commonly used methods which can be used with a high speed and for all the positions. This is a widely used process for

welding aluminum structures where the manual welding high velocity is required. The use of flux cored steel wires is taken into consideration where the high thickness of steel needs welding.

KARA Tondar Inverter 200

Technical Specifications

Δ Application

√ A Welding Machine with Inverter Technology (IGBT)

√ Industrial and Household Applications

√ Easy to Carry

√ Maximum Welding Cable Size

√ Suitable for Various Acid and Alkaline Electrodes Welding

Δ Accessories

√ Earth Clamp

√ Electrode Holder

√ Two Male Sockets

√ 5 M Welding Cable

Δ Major Features

√ Easy to Carry, Light, Low Power, Noiseless

√ Suitable for Welding up to Size 4

√ Excellent Welding Quality

√ Actual Output Current 200 Amp

√ Compatible with Diesel Generator

√ Suitable for Working in Dusty, Damp or Humid Environments

√ Having an Internal Arc Torque

√ Over-Current Protection

√ Over-Voltage Protection

KARA Inverter Welding Machine-KIW 500

Technical Specifications

Δ Application

√ Possibility of Welding with Manual Metal Arc Process (MMA Welding)

√ Possibility of Using in Pipe Welding

√ Suitable for all Industrial Projects Including Metal Structure, Oil and Gas, Auto-making, Construction and Tower Building Industries

Δ Features

√ Excellent and Reliable Performance for Welding Various Metals at the Highest Welding Quality

√ Design and Manufacture Using the Latest Welding Digital Technology and IGBT Technology

√ Suitable for Continuous Welding for Three Work Shifts with High Power and %100 Duty Cycle

√ Possibility of Using Various Welding Electrodes Including Alkaline, Acid and Cellulosic Electrodes

√ Possibility of Connecting to the Diesel Generator with the Minimum Required Amperage at the Time of Start of the Welding

√ Robust, Compact and Light with High Efficiency and Power Factor

√ Very Low Power Consumption and Tangible Energy Saving

√ Having a Slow Arc with Controllable Molten Pool

√ Using Nano Technology Main Trans

√ Possibility of Adjusting Welding Amperage

√ Possibility of Easy Transportation and Warehousing

√ Two-Fold Electrostatic Flux Coating

√ Considerable Reduction in Energy Consumption and Costs

√ Reduction in Negative Impact of Voltage Fluctuations and Protection against Over Current

√ Possibility of Controlling Dynamic Features at Various Conditions and Sustainable Weld Parameters

KARA Welding Rectifiers LHA 400, 630, 800

Technical Specifications

Δ Application

√ Possibility of Manual welding, TIG Welding (Argon) and Gouging Operation

√ Possibility of Using in Pipe Welding

√ Suitable for Various Industries such as Metal Structure, Oil and Gas, Construction and so on

Δ Features

√ Suitable for Continuous Welding for Three Work Shifts with High Power and %100 Duty Cycle

√ Possibility of Using Various Welding Electrodes Including Alkaline, Acid, Rutile and Cellulosic Electrodes at Various Sizes

√ Possibility of Performing Gouging Operation for Removal of Weld Defects Using Carbon Electrodes with 6-13mm Thickness

√ Possibility of Performing TIG welding on very Thin Metal Pieces Using a Minimum Current 18 Amp

√ Having a Slow Arc and Easy control of Molten Pool

√ Having an Excellent and Reliable Performance for Welding Various Metals

√ Possibility of Welding Amperage Adjustment

√ Having an Arc Force System for Establishing Arc Sustainability

√ Having a Two-Phase Warning Signal

√ Equipped with a CT for Synchronization and Compensation in Network Fluctuations

√ Equipped with a Compensator Circuit for Manual Operator and Input Voltage

√ Equipped with a Gearbox Protecting the Potentiometer against Mechanical Pressure

√ Having an Anti-Sticking System against Electrode Sticking to the Work-Piece

√ Possibility of Connecting to a Generator with Minimum Amperage at the Time of Start of the Welding

√ Easy Separation of wheels for Installation of Machines on Chassis

√ Having a Two Layer Electrostatic Powder Coating and a Tarpaulin Cover

√ Having a Double and Robust Galvanized Coating against Rust

√Having a high Open Circuit Voltage and an Optocoupler Mechanism for Creating Fast and Efficient Feedbacks to Control Molten Pool

∆ **Control Panel**

1. A Socket for Connecting to a Remote Controller

2. Having a Thermal Display

3. Having an On/OFF Switch

4. A Potentiometer to Adjust Electrical Amperage Equipped with a Gearbox

5. A Warning Light for Two Phase Power

6. A Switch for Determining Welding Process State

7. Equipped with Arc Force Volume for Establishing Arc Sustainability

8. A Digital Welding Amperage Display (Ampere Meter)

Other Features

° Having a Copper Coil and Varnish Coating Electronic Boards

° Having Robust Mount Holders

° Having Reliable Handles for Monaural Movement

°Equipped with Heavy Duty Lifting Eyelets for Comfort Transportation

Welding Rectifier LHA 630 & 400

The Stationery Four Wheel Rectifier LHA 630 & 400

Δ Technical Specifications

√ Possibility of Welding With Various Electrodes and Equipped with a Digital Display

√ Manufactured with a Suitable Capacity for Three Work Shifts

√ Equipped with an Anti-Sticking System against Electrode Sticking to the Work-Piece

√ Equipped with a Compensator Circuit for Manual Operator

√ Having a Two Phase Warning Signal

√ Possibility of Using Manual welding, TIG Welding (Argon) and Gouging Operation

√ Having Four Wheels for Easy Transport

√ Equipped with a Gearbox Protecting the Potentiometer against Mechanical Pressure

√ Accompanied by a Smart Remote Controller and Socket

√ Equipped with an Optocupler Mechanism for Establishing Fast and Efficient Feedbacks to Control Molten Pool

√ Equipped with Arc Force Volume for Establishing Arc Sustainability

√ Equipped with a CT for Synchronization and Compensation in Network Fluctuations

√ Having a Two Layer Electrostatic Powder Coating and a Tarpaulin Cover

√ Suitable for Pipe Lines Welding

√ Possibility of Connecting to a Generator with Minimum Amperage at the Time of Start of the Welding

√ Easy Separation of wheels for Installation of Machines on Chassis

√ Suitable for TIG Welding with a Minimum 18 Amp for Welding on Metal Work-Pieces

Manual Metal Arc Welding

In Manual Welding, the open circuit and excellent current balancing results in circuit reliability. The anti-sticking circuit of this machine automatically decreases the possibility of sticking welding current electrode to 18 Amp and consequently the electrode can be separated from the work-piece easily.

TIG Welding

The Rectifiers (400/630/800 LHA) have been designed for manual and TIG welding. The rectifiers 400/630/800 LHA allow for TIG welding on very thin metal work-pieces with a minimum 18 Amp.

Manual Metal Arc Welding Rectifier LH800

° Excellent and Reliable Performance of Manual welding rectifiers (400/630/800 LHA) Meets All of Your Welding Needs

° Chassis Robust Galvanized Coating against Rusting

° Other Parts Covered by a Static Powder Coating

° Dynamic Features, Voltage & Amperage Changes, Anti-Sticking System Performance and High Power has made the Manual Welding Rectifiers (LHA) a Reliable tool for Construction Contractors and Manufacturers of Metal Structures

° Welding Amperage can be Adjusted Easily Using Manual Welding Rectifiers (LHA)

° Welding Rectifiers (LHA) Features Result in Arc Stability and Easy Control of Molten Pool

° Power Output Remains Constant in spite of Long Cable

° Open Circuit High Voltage brings about considerable capabilities for the machine. The Anti-Sticking Circuit Reduces the Possibility of Sticking Electrode to the Work-Piece.

Gouging Operation (LHA 800)

The combination of manual welding and gouging is very ideal and practical. The gouging operation is a very efficient method for cleaning and removing welding faults. The welding rectifier LHA 800 allows for gouging operation using carbon electrodes with 6-13mm thickness.

KARA DC TIG Welding Machine-KTW400

Technical Specifications

∆ Application

√ Suitable for Welding Beams with Thin Thickness from 5.0 mm and above in Metal Industries

√ Useful for Welding Various Metals (Except Aluminum) up to a Current Capacity of 400 Amp

√ Possibility of Being Used in both Manual Welding and TIG Welding

Process Description

Tungsten Inert Gas Welding (GTAW) is an arc welding process in which an arc is established between the non-consumable Tungsten electrode and work-piece. In TIG welding process, the electrode is not consumable but rather it supplies the electrical current and directs it towards the arc area. In this process, electrode can be used with and without the filler metal. Since there is no slag in TIG welding process, the electrode, the work-piece surface and filler metal need be protected by an inert shielding gas such as Helium, Argon, Hydrogen or a combination of them to avoid their

contamination and faults. This process is also referred to as TIG and GTAW. In workshop terminology, Tungsten Inert Gas Welding process is recognized as Argon welding.

Features

√ Having an Output Current DC suitable for Long Performance and High Production Capacity (Heavy Duty)

√ Equipped with an Up Slope potentiometer at the Start of Welding (Changeable)

√ Equipped with a Down Slope potentiometer at the End of Welding (Changeable)

√ Equipped with a Potentiometer with Digital Amperage for Adjusting the Current

√ Having an HF and Start Welding System with High-Frequency Current

√ Having a Cable, an Electrode Holder Welding tool, a Remote Controller and a Selection Switch

√ Having a Sustainable Slow Arc for Achieving the Highest Welding Quality

√ Equipped with a PLC Programming to Issue Commands and a Solenoid Valve to Control Shield Gas

√ Having a T2 and T4 System

√ Equipped with Pre-flow and Post-flow Gas Time

Accessories

√ TIG Welding Torch (Optional and If Requested)

√ Accompanied by an Air Cooled TIG Torch (If the Air Cooled System is selected)

√ Accompanied by a Water Cooled TIG Torch (If the Water Cooled System is selected)

√ Water Cooled Unit

√ Equipped with a Flow Switch and an On/Off Signal Unit

√ Having a Mechanism for Detecting Water Pressure and a Warning Signal to Cut off Water Supply

√ A Manometer (Italy) (Optional and If Ordered)

TIG Welding Machine-KTW400 Benefits

-Suitable for Welding All Metals (Manual/Machined)

- Lack of Welding Sparks

- Possibility of Welding in All Positions

- Possibility of Being Used with and without Filler Metal

- Observable Molten Weld Pool and Electric Arc

- Lack of any Slag or Flux

-Possibility of Applying both Alternating Current (AC) and Direct Current (DC)

- Having a Concentrated Arc and Less Distortion

- Suitable for Joint Root Pass Welding

- Suitable for Welding Active Metals such as Titanium, Zirconium, Aluminum or Manganese which Refractory Oxides

TIG Welding Machine Equipment

1. Power Supply (Supplying Heat for Melting Edge Joint and Steel Wire

2. Electrode (Typically Tungsten Electrode) and Filler Metal

3. Water Circulate Cooling System

4. Welding Cable

5. Welding Torch

6. Shielding Gas Supplier

Electric Current

Welding Amperage is considered as the most significant variable in this process. The higher the welding amperage is, the higher penetration depth of electric arc and molten material will be. If the electric current is a direct current (DC), the electric Tungsten can be connected to the negative or positive terminal of power source. This has been illustrated in the above picture.

Direct Current-Electrode Negative: This state is called straight polarity and is very common in Tungsten Inert Gas Welding (GTAW). Electrode is connected to the negative terminal of power source. As we can see in the above picture, electrons are emitted from Tungsten Electrode and are accelerated passing through the electric arc.

Direct Current-Electrode Positive:

This state is called reverse polarity where the electrode is connected to the positive terminal of power source. In these conditions, the thermal effect of electrons is much more in Tungsten electrode than the work-piece since electron bombardment is towards electrode. Therefore, it is necessary to prevent electrode tip from being melted. The positive ions bombard the work-piece surface causing the oxide shells on the work-piece break down. This can be used for welding materials with hard oxide layers such as aluminum and Magnesium. The method for cleaning the work-piece surface is shown in the following picture.

Alternating Current (AC): In this process, the penetration and cleaning oxide layers from work-piece surfaces can be performed effectively. This method can be used for welding aluminum.

MIG MAG Welding Machine (TCK 514) Specifications

Δ Application

√ Possibility of Welding Various Metals, Steel Alloys, Stainless Steel, Aluminum and Copper

√ Possibility of Being Used in Industries such as Steel Structure, Ship-Building, Oil, and Gas, etc.

√ Possibility of Being Used in Gas Metal Arc Welding (CO2) and Flux Cored Arc Welding

Features:

√ Possibility of Welding Thin-Thick Beams (Sheets) at Different Positions

√ Having a Three-Phase Input Power Supply with a High Output Capacity for Continuous Welding in Three Shifts

√ Equipped with Burn Back Control System to Avoid Welding Rod Sticking with Nozzle or Work-Piece

√ Equipped with Soft Start System for Maintaining a Slow and Sustainable Arc at the Start of Welding

√ Two Negative Junction Sockets for Providing the Most Sustainable arc and Welding Penetration Control

√ Possibility of a Precise and Continuous Adjustment of Wire Speed (Amp)

√ Easy Transportation Using a Crane Hood, Four Rotatory and Fixed Wheels and a Carry Handle

√ Having a Wide Range of Welding Voltage Choice Using a 4-10 State Voltage Selector and Two Selector Switches

√ Possibility of Welding Automation with Capability for Adjusting Electric Arc Time

√ Possibility of Separating, Moving and Transferring Wire Feeder Unit to Welding Area Using Special Cables

√ Having Appropriate Space at the Back of Machine for Holding Gas Cylinder along with a Chain

√ Having a 220v Output Socket for Gas Heater

√ Possibility of Gas and Wire Movement Testing Prior to Welding Operation

√ Rectifier Thermal Overload Protection

Advantages

- High Speed Production and Welding

- Low Electrode Waste & Consumption Costs Using Continuous Welding Rod

- Easy Application Operations and No Need to Be Cleaned Due to Lack of Any Slag

- A Water Circulator Unit inside the Machine for Cooling Welding Torch

Components & Accessories

-Having a Wire Feeder Unit (KWF22/DWF22/DWF20)

- Having Four Rollers with Appropriate Wiring Capability

- Using a Robust Motor and Gearbox in Wire Feeder

- Having a Digital Voltmeter and Ammeter Display

-Having a High Speed Wire Feeding with the Possibility of Speed Control

- Possibility of Welding with and without Holding Torch Switch (T2/T4)

- Possibility of Adjusting the Time of Arc Contact Using a Weld Timer

-Possibility of Using V and U Shaped Rollers in Terms of Welding Rod Toughness

- Possibility of 360° Rotation of Wire Feeder Using Wire Feeder Wheels and Rotatory Flange Installed on the Machine

- A Water Circular Unit (Inside the Rectifier) for Cooling Welding Torch Equipped with:

° Flow Switch System and Water Cut Off Warning Signal

° A Brass Pump with Steel Shaft

Other Accessories

- Equipped with a Wire Feeder to Power Supply Contact Control Cable, Feeding Cable, Earth Clamp and Cable

- Equipped with Gas Hose and Water Circular Pipes for water Cooled Torches

- Accompanied by Water/Air Cooled Torches, a Manometer (ITALY) and a Gas Heater (If Ordered)

- A Welding Cart for Longitudinal Welding (with Possibility of Installing a Machine Torch) (Optional)

KARA TCK 250, 400, 500S & 600 H

Technical Specifications of CO2 Welding Machines

KARA TCK 250, 400, 500S & 600 H are MIG/MAG welding rectifiers with constant voltage which are specifically designed and manufactured

for MIG/MAG welding (Welding under the shield gas). The welding voltage is adjusted step by step using two selectors (three selector switches in TCK 600).

An electronic circuit discontinuously controls the wire feeder speed using a volume. The Control unit is provided with an operating mode selector switch (LATCK/UNLATCH 2Stroke/4Stroke), a timer volume switch for spot welding and a bum back circuit. The control unit operates with 24 VAC voltages for the security of the operator. The machine is equipped with two stationary solid rubber wheels and two rotatory solid rubber wheels.

The TCK 250 wire feeder has two rollers and the wire feeder of TCK 400, TCK 500 and TCK600 have 4 rollers. The torch socket is EURO type. The rectifier is equipped with an Ammeter and a Voltmeter for displaying ampere and voltage values so as to readily set the welding parameters. The hooks fitted on the machine intended for easy transportation by crane. The rotatory flange built on top of the machines (TCK 400/TCK 500/600S/6ooH) for mounting wire feeder on the body of rectifier allows the rectifier to rotate 360°. For using wire feeder in pending state (in continuous production line), one hook is fitted on the wire feeder.

TCK 250 Co2 Welding Machine

∆ Application:

√ Gas Metal/Arc Welding (MIG/MAG)

√ Flux Cored Arc Welding (FCAW)

∆ Features

° Three Phase Input Power

° 16 Position Voltage Adjustment Selector

° Potentiometer for Wire Speed Adjustment and Consequently Welding Voltage

° Electronic Controlled Feeding System

° Air Cool System

° Shield Gas Shut Off Delay System

° Welding Time Controller

° Welding Up to Maximum 250 Amp.

° Suitable for Steel, Stainless Steel, Aluminum, Copper

° Digital Voltmeter and Ammeter

° Separate Wire Feeder Unit

° Two Wheels Drive with Smooth Wire Feed

° Soft Start-Post Flow Gas- Latch/Unlatch

° Easy Transportation

TCK 600S/600H/500S/400 and 250 Co2 Welding Machine

∆ **Application:**

√ Gas Metal/Arc Welding (MIG/MAG)

√ Flux Cored Arc Welding (FCAW)

∆ **Features**

° Three Phase Input Power

° 24/32 Position Voltage Adjustment Selector

° Welding Time Controller

° Air Cool/Water Cool System

° Welding Up to 400/500/600 Amp

° Suitable for Steel, Stainless Steel, Aluminum

° Potentiometer for Wire Speed Adjustment and Consequently Welding Voltage

° Electronic Controlled Feeding System

° Welding Up to Maximum 250 Amp.

° Separate Wire Feeder Unit

° Precise Adjustment of Wire Speed, Voltage and Ampere

° Digital Voltmeter and Ammeter

° Easy Transportation

° Four Wheels Drive (WIN) (ITALY) with Smooth Wire Feed

° 220V Socket for Gas Heater Plugging

° Suitable for Three Work Shifts

KARA WSE-315 & WSE-500

Argon Welding Machine User Manual

Features:

-Equipped with a Memory for Full Digital Planning and Adjustment

- Welding Arc Sustainability Due to Electrical Control

- Up Slope of Current at the Start of Welding (Changeable)

- Down Slope of Current at the End of Welding (Changeable)

- Equipped with HF Start and Pulse System

- Frequency Control for Aluminum Welding

- Shield Gas Solenoid Valve

- Capability of Using Switch & Valve Series TIG Torch

- Digital Monitor and Touch Screen Switch

∆ Five Stage Performance

1. MIMAT Welding with Various Coated Electrodes

2. DC-TIG Welding for Different Types of Metals (Except Aluminum) Using Tungsten Electrode and Inert Gas

3. DC-SPOO TIG Spot Welding Using Tungsten Electrode and Inert Gas

4. AC-TIG Aluminum Welding Using Tungsten Electrode and Inert Gas

5. PULSE TIG Welding for Stainless Steels with Low Thickness Tungsten Electrode and Inert Gas

KARA TCR, 1000, 1250 & 1600A

Submerged Arc Power Source

KARA TCR Automatic submerged welding power source with a capacity of 1000, 1250 and 1600 amp with widespread standard specifications and a selection of efficient equipment is the consequence of years of engineering experience and latest technology which has been designed and manufactured for enhancing the quality and efficiency of welding operation.

∆ Applications

√ **Submerged Welding**

The excellent specifications of TCR, 1000, 1250 & 1600A has turned it into an ideal power source for submerged welding. All the standard equipment has been included in KARA TCR power source. The remote control of TCR power supply has provided the possibility of aligning it with automatic welding systems.

√ **CO2 Welding (Shield Gas)**

This power supply system is ideal for welding with shield gas at a low amperage and voltage.

√ **Gouging Operation (Arc-Oxy)**

The TCR power source has appropriate features and is highly cost-effective for being used in the gouging cutting method.

√ **Manual Welding**

The TCR power supply sources have been designed so that if there is no need to use submerged arc welding, they can be used as the manual welding power supply.

KARA Submerged Arc Welding Rectifier K4

Technical Specifications

Δ Application

√ Suitable for heavy and long work shifts welding operation

√ Capability of being used in various steel structures, oil, gas, and petrochemical industry as well as manufacturing vessels,…

Δ Features

√ A highly robust and light truck with excellent design of parts

√ A high speed of travel in welding operation

√ Possibility of being connected to the full automatic submerged arc power source (TCR)

√ Possibility of welding in different positions (Flat and Fillet)

√ Possibility of welding on steel sheets with 3 mm thickness and more

√ Equipped with a laser guided indicator for determining the weld path with a distance of 10 cm from the welding nozzle

√ Having an advanced fast and precise pre-setting system for adjusting all welding parameters (ampere, voltage, velocity) prior to welding

√ Equipped with two axes to adjust the weld head in three axes for changing, transferring and adjusting height, width and angle

√ Possibility of installing a two wire directory set for cladding and hard facing operations

√ Having a feedback system for precise control of weld pool and a high quality welding

√ Savings through welding time and material consumption compared to other welding methods

√ Having a high quality welding throughout the welding path

Δ **Types**

° Single wire submerged Welding

° Twin wire submerged Welding tractor

Δ **Accessories**

° Equipped with a wire feeder for supplying wire rod

° Equipped with a control panel and a digital display for welding ampere, voltage and velocity adjustment

° Pulleys with adequate grooves (Roll Feeder) for supplying 2-4mm welding rods

° Equipped with submerged pulley wires with a load bearing capacity of 30 kg and a nozzle tube

° Equipped with a powder tank (Flux Box) with a capacity of 6 liters

° Having two handles in the front and back of truck for easy transportation

° Having a clutch for locking the wheels

Control Panel (PEG1)

° Having three potentiometers for welding ampere, voltage and velocity adjustment

° Having three ampere, voltage and velocity digital display

° Having a welding parameters pre-setting potentiometer

° Having a power supply switch (lifting the wire up/down)

° Having a switch for changing the direction of tractor

° Having a potentiometer fore adjusting the velocity motion of tractor

° Having two on/off switches

KARA LHG 1250

Air Gouging (Cutting) Machine (LHG 1250)

Arc Air Gouging (Cutting) Machine uses carbon electrode and compressed air for cutting carbon steel, low alloy steel, stainless steel, cast iron and other metals. In this method, a carbon electrode is used for melting the metal and compressed air for removal of molten metal. Also, the compressed air causes cooling of electrode.

Technical Specifications

∆ Application

√ Suitable for cutting and removing contaminations from various metals

√ Suitable for preparing root pass, creating grooves, removing incomplete welds and detaching welded work-pieces

∆ Advantages

√ Cheapest and fastest cutting and removal process

√ Easy operation

∆ Features

° Excellent Design for working under hard conditions in factories

° Voltage control up to 1250 amp

° Capability of welding with coated electrode

° Making an excellent arc at the start of welding

° High power factor and efficiency

° Equipped with a digital potentiometer and an ampere meter

° Accompanied by an earth connection cable and remote controller

° Equipped with a twin negative connection to avoid heating the machine and earth connection cable

Inverter Welding Machine Circuits and Systems

√ Having a Modular and Programmable Microcontroller

√ Over-Current Protection System

√ Protection under Voltage & Power Phase Absence

√ Anti-sticking System against Electrode Sticking to the Work-Piece

√ High Frequency Electronic Circuit (KHz10) and Quick Welding Dynamic Features Control at Various Conditions

Control Panel

√ Having an Arc Force Potentiometer for Controlling Arc in Particular Welding Positions

√ Equipped with Exact Amperage Adjustment as Pre-setting

√ Equipped with Surge Current Potentiometer for Hot Start Current Determination

√ Having Two Over-Heat and Over-Current Warning Lights

√ Having a Two State Switch for Determination of Cellulosic Electrode Welding

√ A Welding Current Digital Display (Ampere Meter)

√ An Operation Mode Selection Switch (Manual/Automatic)

Other:

√ A Remote Controller

√ Four Wheels for Moving on the Floor

√ Equipped with a Cooling Fan

√ Having a Cable, an Earth Clamp and a Manual Electrode Holder

KARA Plasma Cutting Machine

Technical Specifications

Δ Application

√ Suitable for cutting in all metal industries with easy operation, high velocity and quality

√ Capability of cutting carbon steel with a 0.5mm-30mm thickness as well as aluminum and stainless steel with a 0.5mm-30mm thickness

∆ Process Description

KARA Plasma Cutting uses a concentrated electrical arc which melts the material though a high temperature plasma beam. All the conductive metals such as carbon steel, alloy steel, aluminum, copper, etc. can be cut. In this process, the work-pieces can be cut using ionization of gas and jet ions which are expanded with a high velocity from a very thin orifice. The contact of these ions with work-piece produces a high amount of heat causing the area to be melted. The plasma gases can be compressed air, Nitrogen, Oxygen or a mixture of Argon/Hydrogen. Since there is a 5-7 times increase in cutting velocity compared to Oxy-Fuel cutting, there will be less dead times (without pre-heating). Indeed, the high speed and no need to Oxy-Fuel, there a considerable reduction in the plasma cutting price compared to Oxy-Acetylene welding.

∆ Types

1. Plasma cutting Machine 150 amp (air/water Cooled)

1. Plasma cutting Machine 160 amp (air/water Cooled)

1. Plasma cutting Machine 200 amp (air/water Cooled)

∆ Features

° Continuous current Control from 20 A to 160 A (thyristor control)

° Thigh work shifts for a long time cutting

° Thermostat for protection against overload & overcurrent

° Twin filter drier

° Output current display

° Air pressure gauge

° Possibility of being used with low air pressure

° Maximum Current limiter

° Tow eyelet for easy transportation

∆ **Accessories (If requested and ordered by customer)**

-Water circulate unit for plasma cutting water cooling systems

- Plasma cutting torch (air/water Cooled)

- Longitudinal cutting cart with capability of machined torch installation (optional)

KARA Flame Cutting Machine P22.P2.PP2.CP2

KARA Portable Flame Cutting Machine with adjustable linear speed is the most suitable rail cutting machine which can be used for cutting steel sheets with K, X, V, I shaped edges. Also, this machine has the capability of circular cutting for manufacturing disc and flange.

∆ **Linear and Belt Cutting Machine**

Linear and Belt Cutting Machine has the capability for linear cutting of work-pieces with a 3-300mm thickness. Also, this machine has the ability for belt cutting and beveling using two torches

° **Machine Directory**

A set of specific aluminum rails with a 2.2-3 meters have been designed to guide the linear and belt cutting machine.

∆ **Circular Cutting Machine (CP2)**

Circular Cutting Machine (CP2) has been designed for cutting lenses, flange and circles with a diameter between 50-420mm and 530-2000mm. This machine operates using an electrical motor with DC current. The speed of this machine can be adjusted in accordance with type of cutting.

Δ Chain Type Pipe Cutting Machine (PP2)

This machine (Motorized/Manual) has been designed for simple cutting and beveling of pipes with various diameters. The speed of this machine can be adjusted in terms of the chain length. The pipe cutting machine (pp2) can be used for cutting pipes with a 15 cm diameter and more.

CNC Controller-TexComputer-Control Panel

Technical Specifications:

1. Possibility of Having 6 Machine Zero Points for Placing 6 Beams at 6 Various Locations of Machine

2. Possibility of Transferring Files through WIFI, INTERNET PORT, USB HUB and USB Ports

3. 10" Inch Wild Touch Screen Color Monitor

4. Possibility of Controlling Gas-Fuel-Plasma Torch at Various Modes

5. Possibility of Adjusting Cutting Torch Offset

6. Prefabricated Geometric-Shapes Library

7. Touch Screen and Graphic Monitor (Persian and English)

8. Backward Cutting Program

9. Possibility of Being Connected to a Mouse and Keyboard for Editing Codes

10. Possibility of Editing and Converting Various Files to G-Code in Controller

11. A Laser Pointer for Determination of Point of Zero in Beam

12. Possibility of Adjusting Beam Angle

13. Possibility of Attaching Axis Beveling

14. G-Code Generator-Pro Nest Software Program

15. CNC Automatic Torch Height Controller

16. Pro Nest>Nesting Software for Work-piece

17. Fully-Closed-Loop Servomotor Control System

18. Cutting Type Software Selection (Oxy-Fuel/Plasma)

19. Controller Technology (ITALY, 2016)

CNC Controller-TexComputer-Control Panel

Technical Specifications:

1. Possibility of Having 6 Machine Zero Points for Placing 6 Beams at 6 Various Locations of Machine

2. Possibility of Transferring Files through WIFI, INTERNET PORT, USB HUB and USB Ports

3. 10" Inch Wild Touch Screen Color Monitor

4. Possibility of Controlling Gas-Fuel-Plasma Torch at Various Modes

5. Possibility of Adjusting Cutting Torch Offset

6. Prefabricated Geometric-Shapes Library

7. Touch Screen and Graphic Monitor (Persian and English)

8. Backward Cutting Program

9. Possibility of Being Connected to a Mouse and Keyboard for Editing Codes

10. Possibility of Editing and Converting Various Files to G-Code in Controller

11. A Laser Pointer for Determination of Point of Zero in Beam

12. Possibility of Adjusting Beam Angle

13. Possibility of Attaching Axis Beveling

14. G-Code Generator-Pro Nest Software Program

15. CNC Automatic Torch Height Controller

KARA STRIP&CNC CUTTING MACHINE 2.5×6 (KSCCM2.5×6)

1. Suitable for making exact cuttings in various shapes and sizes using Oxy-Fuel and Plasma cutting techniques.

2. Equipped with an Oxy-Fuel transverse nozzle

3. Having a robust and durable machining structure.

4. Having a precise and high-speed linear motion using Servo Motor and APEX gearbox with a very low backlash.

5. Equipped with two Servo Motors and APEX gearboxes at the two sides of machine for a constant and vibration less motion.

6. Possibility of transferring longitudinal motion force of cutting gate using a diagonal bevel gear for a fast and precise travel speed (Rack&Pinion).

7. Possibility of linear movement of cutting nozzle on the linear ball bearings using a diagonal bevel gear for fast and precise movements (Linear Guide).

8. Equipped with strip cutting nozzles control system (PLC-FATEK) with MM Bran (Polycarbonate) and easy operation.

9. Equipped with automatic solenoid valves for each nozzle to avoid Oxygen and Gas waste, to adjust cutting flame and easy operation.

10. Having a dust collector for slide rails.

11. Equipped with a spring-applied control system for gearbox to protect damages resulting from operator fault while working.

12. Equipped with robust, integrated and adjustable slide rails (Italy) for unsmooth workshop surfaces.

13. Having a set of robust steel and belt tables which can be replaced easily.

14. Possibility of installing automatic height adjustment for each strip cutting nozzle.

Technical Specifications: (KSCCM 2.5× 6)

1. Work-Piece Holder Useful Dimensions: 2500 mm×6000m

2. Number of Strip Cutting Torches: 1-5 Torches (Oxy-Fuel)

3. Minimum and Maximum Strip Cutting Thickness: 5mm-100mm

4. Number of Transverse Cutting Torches

Optional: Oxy-Fuel (Master) Oxy-Fuel (Slave)

5. Minimum and Maximum Distance between Torches (Strip Cutting): Max: 5 (Oxy-Fuel)/105mm-415mm

6. Maximum Travel Speed (MS): 7000mm/min

7. Power Consumption: Nominal Current@max.load=220v-50Hz-1PH,16A

8. Possibility of Beveling Transverse and Strip Cutting Torches: ±45°-Manual

9. Control System: PLC-FATEK

10. Ingress Protection (IP): IP52

11. Flash Back Arrestor

12. Number of Solenoid Valves: 21-PACKER

13. Electricity System: Energy Chain

14. Longitudinal Travel Rails: T90/B (T16) ITALY&RACK Pinion

15. Sparkler Transformer: Automatic

16. Possibility of Increasing Torches: Up to 7 Torches

17. Possibility 0f Increasing Machine's Longitudinal and Transverse Dimensions

Width: Up to 4m, Length: Up to 12m

18. Torch Height Adjustment: Motorized

19. Work-piece Holding Table: 2450mm×3200mm 2 Sets Belt-Steel Type

20. Useless Dimensions: 3600mm×8000mm

21. Slide Rails Installation: Anchor Bolt

22. Motor and Gearbox Trade Marks:

Up & Down: KORMAS/VALEO

Step Motors: KAPA

GANTRY SIZE				
KSCCM(E-F)	**2500**	**3000**	**3500**	**4000**
Number of Cutting Torches (Strip)	**Up to 7 Torch**	**Up to 11 Torch**	**Up to 15 Torch**	**Up to 15 Torch**

KSCCM 2.5×6

CNC Controller-Tex Computer-Control Panel

Technical Specifications:

1. Possibility of Having 6 Machine Zero Points for Placing 6 Beams at 6 Various Locations of Machine

2. Possibility of Transferring Files through WIFI, INTERNET PORT, USB HUB and USB Ports

3. 10" Inch Wild Touch Screen Color Monitor

4. Possibility of Controlling Gas-Fuel-Plasma Torch at Various Modes

5. Possibility of Adjusting Cutting Torch Offset

6. Prefabricated Geometric-Shapes Library

7. Touch Screen and Graphic Monitor (Persian and English)

8. Backward Cutting Program

9. Possibility of Being Connected to a Mouse and Keyboard for Editing Codes

10. Possibility of Editing and Converting Various Files to G-Code in Controller

11. A Laser Pointer for Determination of Point of Zero in Beam

12. Possibility of Adjusting Beam Angle

13. Possibility of Attaching Axis Beveling

14. G-Code Generator-Pro Nest Software Program

15. CNC Automatic Torch Height Controller

16. Pro Nest>Nesting Software for Work-piece

17. Fully-Closed-Loop Servomotor Control System

18. Cutting Type Software Selection (Oxy-Fuel/Plasma)

19. Controller Technology (ITALY, 2016)

HUST CNC Control System

1.Maximun Number of Controllable Axes: 4+½
2. Number of Standard Input/output: 24/16
3. Number of Expand Input/output (SIO): 16/16
4. Program Memory Capacity: K512
5. RAM Memory Capacity: K56
6. PLC Memory Capacity: K56
7. Display: 10.4”
8. Color: Color or Black &White
9. Information Transfer Rate of Port RS232: 38400-9600
10. Tap Cutting: OK
11. Simultaneous Control of Axes: 4
12. Mandrill Hand Wheel MPG: OK
13. Number of Variables for User: 7999
14. Controller Size (L.W.H. mm): 80*267*430
15. Weight (kg): 4.5
16. Appliance: Mill
17. Control Type-Closed Loop: OK
18. Noise Testing: V3000

H and Box Beam Production Line

Kara Welding & Cutting Industrial Manufacturing Company having the first and only H beam and Box beam production line in Iran has embarked to design and manufacture machinery to meet customers' demands and needs recognizing the problems facing manufacturers of these structures.

The production line of this company includes several benefits such as high production efficiency, low production costs, operational simplicity and high performance. Also, the implementation of machinery used in this production line does not need to skillful workforce and it enjoys high quality and production speed. The production capacity of machinery used in the production line can reach 500, 100 and 1500 Tons and more in terms of the available work space, machinery configurations and selection.

Machinery & Equipment

√ Strip and CNC Cutting Machine

√ H-Beam Assembly Machine

√ Box Beam Assembly Machine

√ Gantry Welding Machine

√ Positioners and Linear and Circular Transporter of H & Box Beams

√ One Way Welding Column and Boom

√ Electro slag Welding Column and Boom

√ H-Beam Straightening Machine

√ Conveyor Set

√ Shot Blasting Machine

√ Paint Sprayer

√ Paint Drying Oven

KARA CNC Cutting Machine 2.5×6 (KCCM 2.5×6)

1. Suitable For Making Exact Cuttings In Various Shapes And Sizes Using Oxy-Fuel And Plasma Cutting Techniques.

2. Possibility of Oxy-Fuel And Plasma Nozzles Installation On The Leading Head And An Extra Oxy-Fuel Nozzle Attachment (Master&Slave)

3. Having a Robust and Durable Machining Structure.

4. Having a Precise and High-Speed Linear Motion Using Servo Motor and APEX Gearbox with a Very Low Backlash.

5. Equipped with Two Servo Motors And APEX Gearboxes At The Two Sides Of Machine For A Constant And Vibration less Motion.

6. Possibility of Transferring Longitudinal Motion Force Of Cutting Gate Using A Diagonal Bevel Gear For A Fast And Precise Travel Speed (Rack&Pinion).

7. Possibility of Linear Movement of Cutting Nozzle on The Linear Ball bearings Using A Diagonal Bevel Gear For Fast And Precise Movements (Rack &Pinion And Linear Guide).

8. Using The TEX Computer Nozzle Control System Made In Italy with a Performance Version 2016.

9. Equipped With An Automatic Height Control System For Nozzles To Prevent Crashing Of Nozzle With H-Beam.

10. Equipped With Automatic Solenoid Valves For Each Nozzle To Avoid Oxygen And Gas Waste, To Adjust Cutting Flame And Easy Operation.

11. Equipped With A Flame Or Flashback Arrestor.

12. Having a Dust Collector for Slide Rails.

13. Equipped With a Spring-Applied Control System For Gearbox To Protect Damages Resulting From Operator Fault While Working.

14. Equipped With Robust, Integrated And Adjustable Slide Rails (Italy) For Unsmooth Workshop Surfaces.

15. Having a Set of Robust Steel and Belt Tables Which Can Be Replaced Easily.

16. Is Equipped With A Dust Suction Table.

17. Equipped With An Operator Seat.

Technical Specifications:

1. Useful Working Dimensions: 2500 mm×6000m

2. Minimum and Maximum Oxy-Fuel Cutting Torches: 2 Torches (Master&Slave)

3. Minimum and Maximum Oxy-Fuel Cutting Thickness: 5mm-300mm

4. Minimum and Maximum Plasma Cutting Torches: 1Torch (Master)

5. Minimum and Maximum Plasma Cutting Thickness: 0.5mm-25mm Carbon Steel

0.5mm-20mm Stainless Steel

0.5mm-15mm Aluminum

6. Possibility of Combining Oxy-Fuel and Plasma Cutting Torches: Master (Oxy Fuel-Plasma) Slave (Oxy Fuel)

7. Minimum and Maximum Distance between Torches and Flames: 160mm-2500mm

8. Control System

Optional: TEXT COMPUTER ITALY

ADETECH 6500(CHINA)/ ADETECH 4500 (CHINA)

9. Plasma Cutting Power Source: Kara PL200&Optional

10. Remote Control: 12 Button Remote Control (Korea)

11. Cutting Torch: BINZEL-200A

12. Maximum Travel Speed (MS): 7000mm/min

13. Power Consumption (excluding Plasma Cutting Power Source): Nominal Current@max.load=220v-50Hz-1PH,16A

14. Ingress Protection (IP): IP52

15. Number of Solenoid Valves (Oxy-Fuel Cutting): 2Torch (oxy Fuel)/6 Packer

16. Possibility of Beveling Oxy-Fuel Cutting Torches:

±45°-Manual

Oxy Fuel Automatic Beveling System (Coming Soon)

17. Possibility of Beveling Plasma Cutting Torches:

Plasma Automatic Beveling System (Coming Soon)

18. Electricity System: Energy Chain

19. Longitudinal Travel Rails: T90/B (T16) ITALY&RACK Pinion

20. Possibility of Increasing Longitudinal and Transverse Dimensions of Machine: Width: Up To 4m, Length: Up To 12m

21. CNC Plasma Cutting Dust Suction System: Zone by Zone Automatic Pneumatic Jacks

22. Operator Seat: Available

23. Work piece Holder Table: 2400mm×3200mm 2 sets: Belt-Steel

24. Slide Rails Installation: Anchor Bolt

25. Motor and Gearbox Trade Marks: Apex Solar Gearbox, Stone Servo Motor

KARA STRIP&CNC CUTTING MACHINE 2.5×6 (KSCCM2.5×6)

1. Suitable for Making Exact Cuttings in Various Shapes and Sizes Using Oxy-Fuel And Plasma Cutting Techniques.

2. Equipped with an Oxy-Fuel transverse nozzle

3. Having a robust and durable machining structure.

4. Having a precise and high-speed linear motion using Servo Motor and APEX gearbox with a very low backlash.

5. Having two Servo Motors and APEX gearboxes at the two sides of machine for a constant and vibration less motion.

6. Possibility of transferring longitudinal motion force of cutting gate using a diagonal bevel gear for a fast and precise travel speed (Rack&Pinion).

7. Possibility of linear movement of cutting nozzle on the linear ball bearings using a diagonal bevel gear for fast and precise movements (Rack &Pinion and Linear Guide).

8. Possibility of linear movement of welding nozzles on linear ball bearings (Linear Guide).

9. Equipped with strip cutting nozzles control system (PLC-FATEK) with MM Bran (Polycarbonate) and easy operation.

10. Using the TEX Computer Nozzle Control System made in Italy with a performance version 2016.

11. Equipped with automatic solenoid valves for each nozzle to avoid Oxygen and Gas waste, to adjust cutting flame and easy operation.

12. Equipped with a flame or flashback arrestor.

13. Having has a dust collector for slide rails.

14. Equipped with a spring-applied control system for gearbox to protect damages resulting from operator fault while working.

15. Equipped with robust, integrated and adjustable slide rails (Italy) for unsmooth workshop surfaces.

16. Having a set of robust steel and belt tables which can be replaced easily.

17. Possibility of automatic height adjustment Installation for each strip cutting nozzle.

Technical Specifications: (KSCCM 2.5× 6)

1. Work-Piece Holder Useful Dimensions: 2500 mm×6000m

2. Number of Strip Cutting Torches: 1-5 Torches (Oxy-Fuel)

3. Minimum and Maximum Strip Cutting Thickness: 5mm-100mm

4. Number of Transverse Cutting Torches

Optional: Oxy-Fuel (Master) Oxy-Fuel (Slave)

5. Minimum and Maximum Cutting Thickness: Oxy-Fuel: 5-300mm

6. Minimum and Maximum Distance between Torches (Strip Cutting): Max: 5 (Oxy-Fuel)/105mm-415mm

7. Maximum Travel Speed (MS): 7000mm/min

8. Power Consumption: Nominal Current@max.load=220v-50Hz-1PH,16A

9. Possibility of Beveling Transverse and Strip Cutting Torches: ±45°-Manual

10. Control System

Optional: TEXT COMPUTER ITALY

ADETECH 6500(CHINA)/ ADETECH 4500 (CHINA)

11. Ingress Protection (IP): IP52

12. Flash Back Arrestor

13. Number of Solenoid Valves

Strip: 21-PACKER CNC: 3 PAKER

14. Electricity System: Energy Chain

15. Longitudinal Travel Rails: T90/B (T16) ITALY&RACK Pinion

16. Possibility of Increasing Torches (Strip Cutting): Up to 7 Torches

17. Torch Height Adjustment

Strip: Motorized CNC: Automatic Motorized

18. Work-piece Holding Table: 2450mm×3200mm 2 Sets Belt-Steel Type

19. Useless Dimensions: 3600mm×8000mm

20. Slide Rails Installation: Anchor Bolt

21. Motor and Gearbox Trade Marks: Apex Solar Gearbox, Stone Servo Motor

GANTRY SIZE				
KSCCM(E-F)	**2500**	**3000**	**3500**	**4000**
Number of Cutting Torches (Strip)	**Up to 7 Torch**	**Up to 11 Torch**	**Up to 15 Torch**	**Up to 15 Torch**

3. There is Possibility of cutting 5 torches with 200 mm thickness simultaneously using a High Pressure Regulator and Supplying the required Debbi (For Explanations See Table 1).

There is Possibility of automatic adjustment of torch height in strip cutting (Optional).

KARA H BEAM ASSEMBLY MACHINE (A)

1. KARA H beam assembly machine (A) can be used for manufacturing various T & H shapes steel structures in different industries.

2. Involving 7 Chassis parts including 1 main Chassis set, 3 movable table sets equipped with 4 web and flange plate and 3 swivel table.

3. Having 2 weld and forward velocity simultaneously with Possibility of changing Programmer Logic Controller (PLC)

4. Having travel Parameters in accordance with each project working thickness

5. Equipped with 8 web roller on the main chassis.

6. Equipped with 8 flange roller on the main chassis.

7. Possibility of simultaneous travel of the web of main table using command switches to create an exact motion for assembly.

8. Possibility of simultaneous travel of the flange of main table using a control key to create an exact motion for assembly.

9. Using a hydro-motor and helical gearbox to exert force on web and flange of H-beam in the main chassis.

10. Equipped with a lower jack on the main gate for assembly of flange beams with high level of distortion.

11. Equipped with hydro-mechanical step and an adjustable clamp for faster and more precise assembly of H beam web and flange.

12. Having a multi-stage hydraulic set attached to the main chassis.

13. Equipped with an automatic oil filling system on mechanical joints.

14. Having a robust main assembly gate with 4 axis of motion to direct the pressure set precisely.

15. Equipped with 2 web set on the main gate for heavy duty H beams with high dimensions.

17. Equipped with 4 hydraulic joint flange rollers on movable input tables.

18. Equipped with 2 H beam rollers on movable output tables.

19. Equipped with pneumatic welding torch holder with an adjustable spring system (manual)

20. A Thru flange Control panel

21. Equipped with a radiator cooling hydraulic power unit.

Technical Specifications: KHBAM (A)

1. H Beam Web Dimensions Min: 250mm Max: 1500mm
2. H Beam Web Thickness Min: 6mm Max: 40mm
3. H Beam Flange Dimensions Min: 200mm Max: 800mm
4. H Beam Flange Thickness Min: 6mm Max: 50mm
5. H Beam Length Min: 2000mm Max: 12000mm
6. Loading Capacity 14000kg
7. Linear Velocity 0.8-6 m/min Two Speed Motors-PLC Controller for welding sections
8. H Beam Ready to Assembly Types: H Beam & T Beam
9. Possibility of Conical Beams Assembly: Conical Beam, Recommended Max 8°
10. Control System: PLC-FATEK
11. Motor and Gearbox: Motor: 5.5 kw Gearbox: Rahnama Gearbox
12. Welding Power Source: KARA TCK 400A*2
13. Power Consumption: Nominal Current@max.load=220v-50Hz-1PH,16A
14. Ingress Protection (IP): IP52
15. Electric Motor Power and Unit Set Pump: 5.5kw Pump 2 stages 16-52 Liters
16. Hydraulic System Debbi and Output Pressure: 180 bar 7Tons Adjustable
17. Table Set: 1 Assembly Main Table 3 Movable Tables 3 Swivel Tables
18. Overall Dimensions: 2300mm×4500mm×24000mm
19. Weight: 10800 kg

Row		**H & BOX Beam Positioning**	**H & BOX Beam Positioning**	**H & BOX Beam Positioning**	**H & BOX Beam Positioning**
1	Machine Working Dimensions	Web: 250-1500 mm Flange: 250-800mm Length: 2000-12000mm	Web: 250-1500 mm Flange: 250-800mm Length: 2000-12000mm	Web: 250-1500 mm Flange: 250-800mm Length: 2000-12000mm	Web: 250-1500 mm Flange: 250-800mm Length: 2000-12000mm
2	Linear Travel Speed	Stationary	2.5m/min	2.5m/min	2.5m/min
3	Table Sets	2 Set	3 Set	2 Set	3 Set
4	Motor	----------	Motor: 0.55kw*3 PACK PINION	Motor: 0.55kw*2 PACK PINION	Motor: 0.55kw*3 PACK PINION
5	Distance between Tables	4000mm	3300mm	3500mm	4000mm
6	Working Loading Capacity	12000kg	12000kg	12000kg	12000kg
7	Overall Dimensions	W=2770mm L=2095mm H= 1600mm	W=2095mm L=500mm H= 2285mm	W=3530mm L=980mm H= 2300mm	W=1500mm L=1150mm H= 820mm
8	Ingress Protection (IP)	IP52	IP52	IP52	IP52
9	Power Consumption (Total Line)	Nominal Current@max.load=380V-50Hz-3PH	Nominal Current@max.load=380V-50Hz-3PH	Nominal Current@max.load=380V-50Hz-3PH	Nominal Current@max.load=380V-50Hz-3PH

10	Electric Motor Power & Unit Set Pump(Total Line)	11 kw Motor	4 Stages Pump 9 liters	7.5 kw Motor	3 Stages Pump 9 liters
11	Debbi & Output Pressure	Unit Debbi 11kw 36 l/min	Unit Debbi 7.5kw 27 l/min	System Pressure 110 bar 2400 kg	Test Pressure 220 bar 2250 kg
12	Weight	2400kg	2100kg	2400kg	2250kg

Oxy-Fuel Cutting (OFC)

Oxy-Fuel Cutting (OFC) is basically used for cutting soft alloys with high quality. These gases include Acetylene, Propane, natural gas or a mixture of gases. The use of single or multiple nozzle systems allow for cost-effective and high quality welding on thick steel sheets.

Shielded Metal Arc Welding (SMAW)/(MMA)

Manual Metal Arc Welding (MMA) is also known as Shielded Metal Arc Welding (SMAW). This process is the oldest and most widely used process of arc welding. In this process, an electric arc is maintained between the ends of a coated metal electrode and the work-piece. During this process, droplets of molten metal are detached from the upper electrode and transferred to the weld pool. The excited gases shield the electrode coating from oxidation. The molten slag floats on the weld pool so that the molten metal is protected from oxidation as it solidifies. The frozen slag needs to be removed from the weld after each weld pass. There are different types of welding electrodes which often contain alloy elements to increase robustness and ductility of weld metal. This process is

frequently used in various industries such as ship building for manufacturing steel structures. Another significant application of this process is in repair welding. Except the low speed, the need to change electrode and remove slag, this process is still one of the most flexible and widely used welding processes when welding in confined spaces.

Plasma Arc Welding (PAW)

Plasma Arc Welding (PAW) is closely similar to Tungsten Inert Gas Welding (TIG). This process is considered as an advance d version of TIG welding designed to increase efficiency. In this process, two there are two separate gases: Plasma gas which flows around tungsten electrode and a shielding gas for shielding of the weld area.

The Plasma Arc Welding (PAW) can be used in three modes:

1. Plasma arc welding with weld current 1 to 20 Amp

2. Plasma arc welding with average weld current 20 to 100 Amp

3. Welding in key hole mode with weld current more than 100 amp. This process is widely used for high quality welding in industries such as aerospace, chemical, oil, gas, etc.

Plasma Arc Cutting (PAC)

Plasma Arc Cutting (PAC) is an electric arc cutting process that severs metal by melting a concentrated area with a constricted arc of super-heated gas, which melts the base material at high velocity. The Plasma Arc Cutting (PAC) systems usually use current intensity ranging from 20 to 1000 amp for cutting sheets with a 5mm to 160mm thickness. The plasma gas involve compressed air, Nitrogen, Oxygen with Argon/Hydrogen mixture for cutting soft steel, alloy steel, aluminum, copper as well as other metals and alloys.

Some of the characteristics of Plasma Arc Cutting (PAC) are as follows:

° High cutting velocity (five times as fast as Oxy-Fuel Cutting (OFC) method) and low wasting time (no pre-heating)

° High heat concentration and low heat input

° Possibility of cutting materials with a thickness between 5-160mm and a plasma intensity up to 1000 amp.

° The cost-effectiveness of building steel cutting compared to Fuel Cutting (OFC) up to a thickness of 30 mm

Submerged Arc Welding (SAW)

In Submerged Arc Welding (SAW), an electrical arc is formed between work-piece and the end of consumable electrode. The weld area, electric arc and the end of electrode are shielded by a layer of granulated flux. The electric arc heat melts some of the flux and a layer of slag is formed on the molten pool. The un-melted flux is collected and reused. The submerged arc welding is usually performed using full automatic equipment. This process is highly suitable for joints with direct high length in a flat welding position. The Submerged Arc Welding has numerous applications in manufacturing pressurized vessels, chemical, heavy steel structures, repair welding and ship building industry.

Transporter machine

Transporter machine is a machine tool which is used in the production line for transferring the H beam. It is composed of a hydraulic jack for lifting the work-piece from Transporter, one electromotor and gearbox for transferring H beam on the positioner.

Positioner 0-45

This Machine tool is used for holding the H beam at an angle of 45° to perform weld operations. When the submerged flux weld process is performed on the H beam, it is necessary that the H beams are placed on

this machine. The hydraulic system of this positioner uses a valve to distribute the current for hydraulic jack so that each machine works synchronized with others.

Positioner 0-90

This machine tool is used for transferring the H beam from I to H state. In this positioner, an electric motor has been used for transferring H beam and a hydraulic jack for changing arm position.

Positioner 0-180

This machine consists of two rotatory arms which each performs the rotation operation of work-piece from 0° to 180° degrees using hydraulic jacks that act independently. The motor and gearbox installed on this machine transfer the H beam on the rails and return it to the welding process.

1F Boom and Column

The 1F boom and Column welding machine is used for welding H and Box sections. This machine can be used to weld H and Box steel sections in the shortest possible time using submerged arc welding. The 1F boom and Column welding machine is equipped with two submerged arc welding sets along with a rectifier and an air feeder.

KARA Cantilever Column & Boom Welding Machine (1F)
1.Machine Working Dimensions: 1000mm*1000mm*12000mm
2. Travel Speed: 2500mm/min
3. Minimum and Maximum Vertical distance to Ground Level: Min: 400mm Max.: 1600mm
4. Welding Boom Transverse Travel Course: 1100mm
5. Longitudinal Travel Motor and Gearbox: Motor: 0.55 kw*2 Gearbox: Rahnama Gearbox+ Rack Pinion
6. Control System: PLC-FATEK

7. Ingress Protection (IP): IP 52
8. Welding Power Source: KARA TCR 1250 A
9. Welding Powder Tank Volume: 50L
10.Wire Cable Capacity: 30kg*2
11. Motorized Suction Set: KARA Suction Machine
12. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 13. Overall Dimensions: L: 3100mm/W:1700mm/H:4800mm
14. Weight: 1850 kg

H-Straightener Hydraulic (A)

The H-Straightener Hydraulic (A) machine is used to straighten wrapped steel profile beams (H&I, T type sections). This machine has a high efficiency and easy application.

KARA H Straightening Machine (A) **KHSM (A)**	
1	Machine Working Dimensions: Flange: 250mm* 800 mm Flange thk: 10mm*40mm Web: Up to 280mm Min Length: 2000mm Max Length:12000mm
2	H-Beam Thickness to Web (st37): 10~20 on 180~ 800mm Width 20~30 on 300~ 800mm Width 30~40 on 400~ 800 Width (st52): 6~25mm
3	Travel Velocity: 15000mm/min
4	Straightening Speed: Dependent on H beam material and thickness

5	Motor and Gearbox: Motor: 11 kw Gearbox: Rahnama Gearbox
6	Input & Output Movable Table: 2 Set-6000mm Drive & Idler
7	Control System: Inverter-Delta
8	Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 30A
9	Ingress Protection (IP): IP 52
10	Electric Motor Power & Pump : Gear Pump 4kw-9Liter/Min
11	Hydraulic Unit Debbi & Output Pressure: 180 Bar 8Tons:Adjustable
12	Overall Dimensions: L3300/W:1320/H:1560
13	Weight: 7500kg

H-Straightener Hydraulic (B)

The H-Straightener Hydraulic (b) machine is used to straighten wrapped steel profile beams (H&I, T type sections). This machine has a high efficiency and easy application.

KARA H Straightening Machine (B) **KHSM (B)**	
1	Machine Working Dimensions: Flange: 250mm* 800 mm Flange thk: 10mm*30mm Web: Up to 220mm Min Length: 2000mm Max Length:12000mm

2	H-Beam Thickness to Web: 10~20 on 300~ 800mm Width 20~30 on 400~ 800mm Width
3	Travel Velocity: 10000mm/min
4	Motor and Gearbox: Motor: 7.5 kw Gearbox: Rahnama Gearbox
5	Control System: Inverter-Delta
6	Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 25A
7	Ingress Protection (IP): IP 52
8	Electric Motor Power & Pump : Gear Pump 4kw-9Liter/Min
9	Hydraulic Unit Debbi & Output Pressure: 180 Bar 8Tons:Adjustable
10	Overall Dimensions: L3300/W:1320/H:1560
13	Weight: 5800kg

KARA CNC PLATE DRILLING MACHINE 1S (1.6×2.2)

KARA CNC Movable Gantry H Beam Drilling Machinbe-3S (KCMGDM-3S)

Practical Explanations:

1. Possibility of Drilling Original and Assembled Box Beams

2. Possibility of Three Spindles Simultaneous Performance for Asymmetric Drilling on H and Box Beam Wing and Flange

3. Possibility of Tools Replacement for Each Spindle Independent of Their Performance While Drilling

4. Work-Piece Clamping During Whole Drilling Process

5. Using Double Ball Screw for Spindles Fast Movement While Positioning Drill Bit

6. Ineffectiveness of Work-Piece Assembly Methods Such as Split H and Box Beam and Stud Welding on the Precision of Drill Bit Position

7. Small Occupied Workshop Space Due to Machine's 12 Meter Useful Travel Course Compared to Pusher Machines

8. Easy and Exact Installation Due to Using an Integrated Chassis along with Rails rather than Using Multi Piece Table Sets and H-Beam Pusher

9. A Robust and Integrated Main Gate Structure for Sustainability and less Vibration during Drilling Process

10. Using 2 Servo Motors (5-7kg) and 2 Gearboxes with Low Backslash and High Speed Linear Module for a Fast and Exact Movement between Drilling Distances at the Start and End of the H Beam (Compared to Pusher Set)

11. A Centralized Movable Electric Power System along with Gate Movement for Noise Reduction, Cabling and Trouble-shooting Improvement

12. Using an Air-Conditioning System than a fan in Power Center for Cooling

13. Using an Optic Sensor to Locate Zero Point on Work-Piece than a Mechanical Step or Micro Switch

14. Possibility of Connecting Controller to Internal Network-Cable-Wireless

15. Having a Monitoring System for each Spindle

16. Possibility of Drilling, Tape Cutting, Marking and Milling on Spindles Simultaneously

17. Equipped with an Operator Seat

18. Possibility of Determining Several Zero Points on Work Table for Several Work-Pieces with Less Length

19. Equipped with Three Separate Hand Wheels for Each Process and Discrete Selection of each Axis

20. A Robust Clamping System for Keeping the Work-Piece Constant While Drilling

21. Possibility of Changing the Position of H Beam Holding Tables Discretely

22. Equipped with CAN-OPEN Network System than the Old Analog System

Technical Specifications

1.Work Holding Dimensions: Web: 200-1500 mm Flange: 200-500mm Length: 2500-12000mm Thickness: 10-50mm
2. Number of Spindles: 3 Spindles
3. Number of Axes: 10 Axes
4. Spindle Speed Specifications and Range: AC Servo Motor:11kw Max Spindle Speed: 1500rpm Maximum Drilling Torque: 80 N.M Spindle Taper: BT 40
5. Control System: PC Base-Promax- ITALY Under Network Servo Control

10 Axis Simultaneous
6. Software: Flex 3D for G-Code Generator (Lantek, Spain)
7. Control System Capabilities Monitor: 17-Color-Touch Screen-USB-WIFI
8. Tool Change Equipped with 3 Magazines for each Spindle (3 Tools) Drilling, Tapping, Milling, Marking
9. Tool Replacement Set: Horizontal Disc Type Magazine Capacity: 3 Tools Tool Model: BT 40 Max Tool Length: 320 mm
10. Drill Bit Type and ISO HSS: Max 35mm (Direct) HSS: Max 40mm (with Leading Drill) Drill Insert (Spade Drill) HSS: Max 24mm
11. Maximum Linear Speed of A Axis (Gate Longitudinal Travel): 6000mm/min
12. Maximum Linear Speed of Y Axis (Spindle Transverse Travel): 8000mm/min
13. Maximum Linear Speed of X Axis (Spindle Vertical Travel): 8000mm/min
14. Maximum Linear Speed of Z Axis (Spindle Vertical Travel): 8000mm/min
15. Useful Travel Course of X Axis in Three Spindles: 500mm
16. Useful Travel Course of Y Axes : Y1:1500mm, Y2-Y3: 500mm
17. Useful Travel Course of Z Axes : Z1:800mm, Z2: 500mm, Z3: 1500mm
18. Spindle Travel Precision: ±0.02
19. Drilling Precision: Dependent on Drill Life & Quality
20. H Beam Reference: by Optic Sensor Installed on Gantry
21. Cooling System: Misting Coolant (Internal and External) %60 More Cooling and %40 Less Consumption
22. Monitoring: 3X (CC Camera)+32” LCD TV
23. Specifications of Under Work-Piece Tables:

Possibility of 5 Clamps Discreet Travel including one Hydraulic Clamp at Longitudinal Axis
24. Number of Clamps Holding H Beam: 2 Hydraulic Vertical Clamps on Gantry
25. Motor and Gearbox of A Axis (Longitudinal Travel of Gantry): AC Servo Motor: 2× (7.5 kw-1500rpm) 2× (Low Backlash Gearbox) Rack & Pinion+ Linear Guide
26. Motor and Gearbox of Y Axis (Transverse Travel of Spindle): AC Servo Motor: 2× (1 kw-1000rpm) Direct Flexible Coupling Ball Screw+ Linear Guide
27. Motor and Gearbox of X Axis (Longitudinal Travel of Spindle): AC Servo Motor: 2× (1 kw-1000rpm) Direct Flexible Coupling Ball Screw+ Linear Guide
28. Motor and Gearbox of Z Axis (Forward Travel of Spindle): AC Servo Motor: 2× (1 kw-1000rpm) Electrical Break Pulley and Timing Belt Ball Screw+ Linear Guide
29. Ingress Protection: IP52
30. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 90A
31. Hydraulic Unit Debbi & Output Pressure: 180 Bar

32. Hydraulic Unit Set Electric Motor Power & Pump : AC Motor 1.1kw 1400rpm Pump Flow: 5 lit/min Work Pressure: 50 bar
33. Hydraulic Work-piece Subseries Unit Set Electric Motor Power & Pump : AC Motor 1.1kw 1400rpm Pump Flow: 5 lit/min Work Pressure: 50 bar
34. Hydraulic Unit Cooling System: AC Motor 0.25kw-1400rpm
35. Operator Seat: Available
36. Useless Dimensions: L: 16700mm W:5800mm H:3000mm
37. Weight: 80700kg

KARA CNC PLATE DRILLING MACHINE-1S (1.6 ×2.2)

1. An Integrated Stressed-Relieved Beam-Plate Structure

2. All the Motion Axes under CNC Control

3. Travel of X, Y and Z Axes Using Servo Motor and Ball Screw on Linear Ball bearings

4. Z axis Forward Command under CNC Control Using Servo Motor and Ball Screw on Linear Ball bearings

5. Z Axis Equipped with an Electric Lock

6. Spindle Equipped with Servo Motor with Maximum Output Transmission Speed 8000rmp

7. Machine Programming Using G Code Generation

8. Input Command of DXF Machine from TEKLA Structures or Power Mill and Solid Work 3D Software

9. A Controller Equipped with the Most Commonly Used drilling Cycles as Default

10. Possibility of Using Various Drill Bits including High Speed Steel (HSS), Carbide, tapping, Milling and Replaceable Diamond Core Drill Bits.

11. Tapping Cycle G84

12. Drilling Cycle: Simple: G81; Metal Cutting: G82; and Deep: G83

13. Drilling Cycle on a Circular Path: G34

14. Drilling Cycle on an Angle Line with Similar Distances G35

15. Drilling Cycle on a Sector of a Circle G36

16. Possibility of Sub-Programming for Simple Repetitive Operations

17. Possibility of Macro Programming for repetitive and complicated mathematical operations

18. Possibility of Testing the Program through MPG Motion (Hand Wheel)

19. Possibility of Using 6 Auxiliary Zero for Changing the Work-Piece Specifications G54-G59

20. Possibility of Continuing from the Preferred Line during Power Outage While Working

21. Three Protection Groups against Axes Movement: Software, Hardware and Emergency Stop Switch

22. Equipped with a Remote Controller for Fast Positioning (Hand Wheel), Wireless (Optional)

23. Equipped with Hydraulic Clamps for holding the Work-Piece on Work Table

24. Equipped with Work-Piece Holder Mid-Clamps

25. Equipped with Internal and External Cooling System with a Command Switch Including a Mixture of Cooling Liquid and Compressed Air for Less Consumption of Work-Piece Cooling Liquid

26. Possibility of Discrete Loading/Unloading at Four Corners of the Table without the Need to Stop the Machine

27. A Robust Metal Cutting Using Steel Hinge Belt Transporter

28. Covered Spindle and Work Table to Avoid Liquid Soap and Iron Ore Dispersion

29. Equipped with Water Proof Protective Shutter Covers on the Axes Exposed to Cooling Liquid Dispersion

30. Equipped with a Wheeled Bucket for Discharging Ores

31. Safety Light of Machine Working Status: On/Off-Working/Stop-Alarm

32. Equipped with an Air Blow Gun and a Water Gun for Cleaning the Machine

Technical Specifications: KCPDM-1S (1.6× 2.2)

1. Working Dimensions: Length: 2200mm Width: 1600mm, Thickness: 8-100mm
2. Number of Spindle: 1 Spindle
3. Number of Axes: 3 Axes
4. Spindle Speed Range and Specifications: AC Servo Motor: 18.5kw Max Spindle Speed: 3000rpm Max Spindle Torque: 230N.m Spindle Taper: BT4&BT50 (Optional)
5. Control System: CNC STAND ALONE HUST-H4 CLM 3 Axis Simultaneous

6. Control System Capabilities: Monitor:10.4”-Color G Code Generation (External Software) USB
7. Tool Changer: Equipped with Magazines (6Tools) Drilling-Tapping-Milling-Marking
8. Maximum Linear Speed of Y Axis (Gantry Longitudinal Travel): 10000mm/min
9. Maximum Linear Speed of X Axis (Spindle Transverse Travel): 16000mm/min
10. Maximum Linear Speed of Z Axis (Spindle Vertical Travel):8000mm/min
11. Z Axis Travel Course (Spindle Vertical Travel):650mm
12. Travel Precision: ±0.02mm
13. Drilling Precision: Dependent on Drill Life and Quality
14. Drill Bit Type and Size (ST37 H-Beam Drilling): HSS: Min 6mm, Max 35mm (Direct) HSS: Max 40mm (with Leading Drill) Drill Insert (Spade Drill)HSS Min:10mm, Max 35mm Index-able U-Drill: Min 24mm, Max30mm
15. Replacement Tool Set: Horizontal Disc Type Magazine Capacity: 6 Tools, Tool Model:BT40, Max Tool Length:320mm
16. Table Utilization: From Four Sides of Table (Simultaneous) Using Distinct Hydraulic Control
17. Possibility of Table Loading: 1 Piece Up to 6 Piece (Middle & Corner)
18. Cooling System: Misting Coolant, Internal and External %60 more Cooling and %40 Less Power Consumption
19. Number of Clamps Holding Beam on the Table: 8 Clamps at Hydraulic Longitudinal Axis 4 Clamps at Hydraulic Transverse Axis 5 Subseries with T Shaped Grooves

20. H Beam Holding Clamps Motor Course: At Longitudinal Axis: 250mm for Each Clamp At Transverse Axis: 400mm for Each Clamp
21. Y Axis Motor and Gearbox (Longitudinal Travel of Gantry): 2xAC Servo Motor:3kw-2000rpm Pulley and Timing Belt 2xFixed Ball Screw and Linear Guide
22. X Axis Motor and Gearbox (Transverse Travel of Spindle): 2xAC Servo Motor:3kw-2000rpm Direct Flexible Coupling Ball Screw and Linear Guide
23. Z Axis Motor and Gearbox: AC Servo Motor:3kw-2000rpm Pulley and Timing Belt 2x Ball Screw and Linear Guide
24. Ingress Protection (IP): IP 52
25. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 90A
26. Ore Cutter Set: A Movable Belt Table, with Wheeled Bucket
27. Motor and Gearbox of Ore Cutter Set: Motor:0.37kw Gearbox: MVF/VF 62
28. Hydraulic Unit Debbi & Output Pressure: 180 Bar

29. Hydraulic Unit Set Electric Motor Power & Pump : AC Motor 3kw 1400rpm Pump Flow: 16 lit/min Work Pressure: 50 bar
30. Hydraulic Unit Set Cooling System: Motor and Radiator Butterfly Valve 0.25kw, 1400rpm
31. Additional Capabilities: Air Blow Gun and a Water Gun for Cleaning the Machine
32. Useless Dimensions: L: 6100mm W: 4100mm H:2600mm
33. Weight: 6500 kg

Shot Blasting Machine

Working Principles of Shot Blasting Machine

In this machine, steel shots after entering the eccentric turbines are accelerated and thrown on work-piece. The continuous and rapid crashes of these steel shots result in shooting operation. The shot blasting machines are typically used in different industries and manufacturing work-pieces in large quantities as well as smooth surfaces such as ships body and gym flooring as well as performing decorative things and patina.

The shot blasting machines can be used for performing the following operations:

1. Paint removal, sand removal and paint stripping internal and external surfaces of work-pieces.

2. Layer removal of various forged work-pieces surfaces

3. Roughening surfaces of work-pieces (Using grit) for optimization of enameling and Teflon coating for better longevity and quality.

4. Preparation of surfaces for performing various industrial and decorative or paint electroplating.

5. Cleaning and preparing work-pieces (Shot Blasting)

Box Beam Assembly Machine

Kara Welding & Cutting Ind. Mfg. Co. has embarked on designing and manufacturing Box Beam Assembly Machine for facilitation of industrial and heavy duty boxes assembly and automation of technical productions. This machine has four major hydraulic jacks for fixing the box beam walls and four auxiliary hydraulic jacks for adjusting the locations of these major jacks. There are several benefits to this machine including high power, a robust structure and easy operation. The production efficiency of this machine is as 3-4 times as the other methods causing a reduction in costs and an increase in production speed and quality.

KARA Box Beam Assembly Machine (KBBAM)
1.Working Specifications: Min:350mm*350mm Max: 1000mm*1200mm THK: 8mm*50mm Length: 2000mm*12000mm
2. Loading Capacity: 1100kg/m
3. Linear Speed: 2-10m/min
4. Control system: Inverter-Delta
5. Motor and Gearbox: Motor: 0.55 kw*2 Gearbox: Rahnama Gearbox
6. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 90A
7. Ingress Protection: IP50
8. Hydraulic Unit Set Electric Motor Power & Pump : 4kw 2 Stages 9.9 lit/min
9. Hydraulic Unit Debbi & Output Pressure: 180 Bar

10. Table Sets : 2 Sets-7500mm
11. Web and flange Holding Set: 2 Sets on Each Table
12. Overall Dimensions: 2300mm* 4500mm*24000mm
13. Weight: 6200kg

H & Box Gate Welding Machine (KGW)

Gate Welding Machine (KGW) has been designed with BOX-H BEAM welding capacity (seam weld at an angle). In this machine, the leading structure has been manufactured in a form of gate so that rail speed can be controlled by a 2 AC motor inventor. The gate welding machine can be used for welding various boxes and metal structures inside and outside of machine.

KARA Gantry Welding Machine (A)

1. Possibility of Welding H and Box Sections Inside and Outside of Gantry

2. Using Robust Standard Industrial Profiles in Structures Designing and Manufacturing

3. Using Two Synchronized Gearbox in Longitudinal Travel at the Two Sides of Gantry to Avoid Constant Travel of Welding and rotation Box Due to Errors Resulting from Work-Piece Contact with the Rails

4. Equipped with 2 Flux Tanks (150 Lit.) and Changing into 2 Tanks (30Lit.) along with a Control Valve for Manual Charging of Welding Path

5. Using a Step-Motor in Transverse and Height Travel of Welding Booms for a Precise PLC Controlled Motion

6. Equipped with Two Welding Power KARA TCR 1250A

7. Equipped with Two Motorized Suctions for Collecting Welding Powder and Transferring to KARA Automatic Suction Powder Tanks

8. Equipped with Adjacent Sensors for Directing and Maintaining Welding Path for an Automatic PLC Controlled Motion

9. Equipped with a Laser Type Index

10. Using a Wire Straightener Set

11. Control Panels with Welding Booms

12. Equipped with four Sliding Contactor for Negative Contact under Spring-applied System

Technical Specifications: KGWM (A)

1.Working Specifications: H Beam: 800×1500×12000mm×2 Inside/Outside Box Beam: 1000×1000×12000mm×2 Inside/Outside
2. Useful Dimensions: Width: 2500mm Height: 2000mm
3. Linear Speed: 250-1800 m/min
4. Control system: PLC- FATEK
5. Motor and Gearbox: Motor: 0.55 kw×2 Gearbox: Rahnama Gearbox+ Rack Pinion
6. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 220A
7. Ingress Protection: IP50
8. Welding Power Supply: KARA TCR 1250×2
9. Wire Separator: Wire 2.4mm-5mm
10. Suction Machine Set: KARA Automatic Suction Machine
11. Welding Powder Tank: 40L×2, 10L× 2
12. Pulley Wire Capacity: 30 kg×2
13. Overall Dimensions: W: 5000mm H: 3750 L:16000

Weight: 2600kg

Electro Slag Welding Machine

Δ Application

The electro Slag welding machine is used in manufacture and assembly of building boxes and welding internal stiffeners to the fourth box of column facing many problems in the past. This method allows for welding stiffeners to the internal box in a weld pass. The Electro Slag Welding Machine can be used in various industries including railway, auto-making, pressure vessels, shipbuilding, casting, bridge construction, etc. Also, it is a method confirmed and recognized by all codes and standards (ASWD1.1, ASME, and API).

Δ Process Description

This welding process is used to connect very thick cross-sections in a vertical or close to vertical position as well as welding of inaccessible sections.

KARA Electro slag Welding Machine (KESWM)(U)
1.Working Dimensions: 1500mm*1500mm*12000mm
2. Travel Speed: Up to 10 m/min
3. Number of Weld Nozzles: Optional 1/2
4. Minimum and Maximum Distance between Weld Nozzles: Min: 300mm Max: 1000mm
5. Minimum and Maximum Distance between Weld Nozzles to Ground: Min: 300mm Max: 1500mm
6. Motor and Gearbox: Motor: 1.1.kw Gearbox: Rahnama
7. Control system: INVERTER-DELTA

8. Welding Power Supply: KESW 1300 A*2
9. Protection Ingress: IP 50
10. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 220A
11. Protection System: Safety Lock/ Balance Weight
12. Useless Dimensions: L: 3850mm W:1400mm H:3500mm
13. Weight: 2900kg

KARA Electro slag Welding Machine (KESWM)(SP)
1.Working Dimensions: 1500mm*1500mm*12000mm
2. Travel Speed: Peg 1: 0.35-1.8m/min Slag: Up to 10 m/min
3. Number of Weld Nozzles: Optional ½ Slag & Peg 1 Welding Head
4. Minimum and Maximum Distance between Weld Nozzles: Min: 300mm Max: 1300mm
5. Minimum and Maximum Distance between Weld Nozzles to Ground: Min: 300mm Max: 1500mm
6. Motor and Gearbox: Motor: 0.55 kw*2 Gearbox: Rahnama
7. Control system: INVERTER-DELTA
8. Welding Power Supply: KESW 1300 A*2
9. Powder Tank Capacity: 50 L*2
10. Pulley Wire Capacity: 30 kg*2
11. Machine Suction Set: KARA Suction Machine*2
12. Protection Ingress: IP 50
13. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 220A
14. Protection System: Safety Lock/Balance Weight
15. Useless Dimensions: L: 3850mm W:1400mm H:3500mm

16. Weight: 2950kg

KARA Electro slag Welding Machine (KESWM)(T)
1.Working Dimensions: 1500mm*1500mm*12000mm
2. Travel Speed: Peg 1: 0.35-1.8m/min Slag: Up to 10 m/min
3. Number of Weld Nozzles: Optional 2 Head: Slag / Peg 1 3 Head: Slag/Slag-Page 1
4. Minimum and Maximum Distance between Weld Nozzles: Min: 300mm Max: 1150mm
5. Minimum and Maximum Distance between Weld Nozzles to Ground: Min: 300mm Max: 1500mm
6. Submerged Flux Nozzle Transverse Course (Box Beam Longitudinal and Transverse Weld): 1200
7. Motor and Gearbox: Motor: 0.55 kw*2 Gearbox: Rahnama
8. Control system: INVERTER-DELTA
9. Welding Power Supply: KESW 1300 A*2
10. Powder Tank Capacity: 50 L*2
11. Pulley Wire Capacity: 30 kg*2
12. Machine Suction Set: KARA Suction Machine*2
13. Protection Ingress: IP 50
14. Power Consumption: Nominal Current@max.load=380V-50Hz-3PH 220A
15. Protection System: Safety Lock/Balance Weight
16. Useless Dimensions: L: 3850mm W:1400mm H:3500mm
17. Weight: 2950kg

Electro Slag Welding Machine Components

- Welding Boom, Column and head

Welding boom and column needs to involve high quality motors, cogwheels and electronic equipment with a robust and smooth motion as well as high precision and speed. Also, the weld head needs to pass welding wire with a diameter of 3.2 mm.

-Power Supply

The Electro slag Welding power supply is closely similar to submerged arc welding. The customers need to notice that the electro slag welding power supply should have a DCEP output and an Amperage-Voltage characteristic curve (CV). Also, it needs to supply welding amperage between 400-800 Amp and a welding voltage ranging from 30 to 55 V. If the welding power source cannot supply the necessary voltage, Possibility of a lack of fusion (LOF) at the connection increases.

Vessel Welding Equipment

The Full Automatic CNC Welding & Cladding

Full Automatic Boom and Column Welding Machine

The Full Automatic Boom and Column Welding Machine is used for cladding using kara etr_s Tig rolayion system endless method and surface hardening of oil valves, oil and well head equipment using Inconel Alloy.

Δ Features

√ Endless Torch Rotation System

√ Having Inside Wire Feeder and Motorized Slides

√ Equipped with HF for Boom and Column Welding Start 4000/4000 HD with (6 Axes) Degree of Freedom

√ KTW-500 P Series Pulse Power Supply Source with the Capability of Adjusting all Welding Parameters While Working

√ Equipped with a Central CNC Control System with the Capability of Programming with G-Code

√ The Capability of Storing 999 Programs for implementation of Welding Process on Various Work-Pieces

√ Equipped with a Remote Controller and an HMI Display for Welding Parameters Adjustment

√ KMT 45/ 200 ERT Water Cooled Machine Torch

√ Suitable For Cladding Operation and Surface Hardening of Oil Valves, Oil and Well Head Equipment Using Inconel Alloy

√ Having the Capability of Welding in Spiral Welding and Step Welding Positions

Welding Column & Boom

Welding column and boom has been designed and manufactured for welding several metal structures, vessels and circular surfaces at high dimensions ranging from 3×2, 6×2, and 7×3 meters up to 10×10. The driving force of this machine is supplied by a motor gear box caused by a mechanical movement. The travel speed equals the speed of a welding tractor from 10 to 120 cm/min. The slow vertical movement and linear control of horizontal boom movement in two directions leads to a high speed and quality of welding on heavy metal work-pieces. The 360° turning of the column allows for a radial performance of machine. Also, there is a possibility for installation of a movable cutting and welding

torch on the boom. The efficiency of this machine can be increased by using KARA rotary tables.

Accessories

√ Equipped with a Security Lock for Fall Protection of the Boom and chain cut off.

√ Equipped with a 360° Turning System of Boom and Column and if Necessary Motorized (Optional)

√ Possibility of Inductive Sensor Installation for thin Height Automatic Adjustment

√ Equipped with a Powder Succession System

√ Possibility of torch Installation (Optional)

√ Equipped with a Balance Weight

Spiral, Step & Waving Cladding System

Δ Column & Boom Welding with Swing

Cladding weld system is a device used for turning, angling, and changing the work-piece height, as well as simple circular (cylinder) or longitudinal weld. This machine has the capability of changing torch height and longitudinal travel.

Machine Components

- Hydraulic Positioner

- Column & Boom 202

- Control Unit

- Welding Machine (MIG/MAG)

Δ Positioner

This machine is equipped for holding the work-piece on a plate with t-shaped groves. This plate is capable of moving in a circular direction with a variable speed and changing the height of work-piece. The work-piece needs to be installed on this plate. All the movements of this plate can be carried out under load. The circle movement is controlled by AC motor and other movements by hydraulic jacks. The hydraulic jack stimulator switches are fitted on the control panel. These switches include work-piece up/down switch, angle switch, and hydraulic pump stop and start switches. Also, the frequency inverter converting the AC motor speed is fitted inside this control panel. An encoder is fixed under the positioner to measure rotation angle. The power cable of this part needs to be connected separately. The power supply is placed in front of the control panel.

Δ Column and Boom Set (2*2)

The Column and Boom Set (2*2) is used for maintaining the longitudinal motion and height of torch to the work-piece. The height is adjusted by an AC motor and the longitudinal motion of torch is controlled by a Stepper motor. A swivel rotator is fitted on the boom and column for holding high cylinders.

Control Unit

The control unit including a control panel and an HMI operator panel is fitted on the column and boom and is controlled by a programmable logic controller (PLC).

The relays, motor drive stop, power supply and PLC are placed inside the control panel and an HMI operator panel.

KARA Self Aligning Rotator (20-250 Ton)

1. Equipped with a Robust and Sustainable Structure

2. Self-Aligning Capability for each Vessel Diameter

3. Equipped with a Self-Locking Helical Gearbox for Power Outage

4. Alloy Axes with a Thermal Operation Process

5. Gear Alloy Wheels with a Thermal Operation Process

6. Wheels Made from a Special Alloy in accordance with Rotator Loading Capacity and Equipped with Poly Urethane Coating

7. Possibility of Wheels Installation for Longitudinal Motion of Rotator

8. Equipped with Box and Remote Controller

9. Equipped with a Frequency Inverter

10. Capability of Unlimited Synchronizing with Other Rotators of Similar Type for Vessels with High Length

11. Equipped with Mixed Hybrid Gearwheels for Acceleration of Gravity and Eccentric Loads

KARA Hydraulic Positioners

Axial Rotary Tables

Hydraulic Positioner

Kara Welding & Cutting Industrial Manufacturing Co. has produced a set of axial rotators for automatic welding. These machines allow for welding at the most appropriate positions. The axial rotators have been designed for a load capacity up to 10000 kg and higher. This machine is closed for welding work-pieces in angular directions. The hydraulic positioner has the ability to travel in a circular direction and to change the height of work-piece. The rotary motion is controlled by an AC motor and the other motions by hydraulic jacks. These switches include up/down switch, setting angle switch and hydraulic pump start/stop switch. Also, the frequency inverter changing AC motor is located inside the control panel. An encoder is fitted under the positioner for measuring rotation angle.

Technical Specifications of KARA Hydraulic Positioners 0-90				
1	Product	Hydraulic positioner 0-90° Angle (1-2-3- Ton)	Hydraulic positioner 0-90° Angle (5 Ton)	Hydraulic positioner 0-90° Angle (10 Ton)
2	Capacity	1-2-3- Ton	5 Ton	10 Ton
	Work Piece Holder Rotation	360°	360°	360°
3	Work Holder Angle to Ground Level	Described in Picture	Described in Picture	Described in Picture
4	Work Holder Diameter	1000mm	1500mm	2000mm
5	Three Point Gripper	Can Be Installed in Terms of Customer's Request	Can Be Installed in Terms of Customer's Request	Can Be Installed in Terms of Customer's Request
6	Work Holder Groove Size	16 Bolt, 4 Groove Maker	20 Bolt, 4 Groove Maker	20 Bolt, 4 Groove Maker
7	Rotary Motion Mechanism	Servo Motor+ Gearbox+ Gear Wheel	Servo Motor+ Gearbox+ Gear Wheel	Servo Motor+ Gearbox+ Gear Wheel
8	Rotatory Motor and Gearbox	Servo Motor Helical Gearbox	Servo Motor Helical Gearbox	Servo Motor Helical Gearbox
9	Ingress Protection	IP 50	IP 50	IP 50

10	Negative Contact	Brass Contact+ Compression Spring	Brass Contact+ Compression Spring	Brass Contact+ Compression Spring
11	Useless Dimensions	1700*1300* 1100	1349* 1452*2430	
12	Rotatory Gear Wheel Material	CK 45	CK 45	CK 45
13	Electric Motor and Pump Power	1.5 kw rpm=1400	3 kw rpm=1400	4 kw rpm=1400
14	Machining	%65	%65	%65
15	Sand Blast	%100	%65	%65
16	One Layer Painting to Avoid Oxidation	%100	%100	%100
17	Installation	Anchor Bolt	Anchor Bolt	Anchor Bolt

Axial Rotatory Tables

KARA Welding and Cutting Ind. Co has produced a set of axial rotators for automatic welding. These machines are very flexible and reliable and allow for welding operation at the best possible position. These axial rotators have been designed for welding with KARA welding machines and a loading capacity of up to 10000kg. There is a possibility of designing these machines for higher loading capacity.

Technical Specification of Mechanical Positioners 0-90°					
	Product				
1	Loading Capacity	Mecha nical Position	Mechanical Positioner 0-90°	Mechanical Positioner 0-90°	Mechanical Positioner 0-90°

		er 0-90° 250/350kg	1-2-3 Ton	5 Ton	10 Ton
2	Work Holder Plate Rotation	360°	360°	360°	360°
3	Work Holder Plate Angle to the Ground	(-25°+115°)	(-25°+115°)	(-25°+115°)	(-25°+115°)
	Work Holder Plate Diameter	500mm	1000mm	1500mm	2000mm
4	Three Point Gripper	Available	If Requested by Customer	If Requested by Customer	_____
5	Groove Size	16 Bolt, 4 Groove Maker	16 Bolt, 4 Groove Maker	20 Bolt, 4 Groove Maker	20 Bolt, 4 Groove Maker
6	Power Consumption	380 V-50Hz-3PH 5A	380 V-50Hz-3PH 5A	380 V-50Hz-3PH 8A	380 V-50Hz-3PH 10A
7	Ingress Protection	IP 52	IP 52	IP 52	IP 52
8	Negative Contact	Brass Contact+ Compression Spring	Brass Contact+ Compression Spring	Brass Contact+ Compression Spring	Brass Contact+ Compression Spring
9	Useless Dimensions	L:1300/W:650/H:1050mm	L:1390/W:1350/H:1350mm	L:1800/W:1600/H:1800mm	L:2270/W:1850/H:12300mm

10	Rotatory Gear Wheel Material	CK45	CK45	CK45	CK45
11	Machining	%65	%65	%65	%65
12	Sand Blast	%100	%100	%100	%100
13	One Layer Painting to Avoid Oxidation	%100	%100	%100	%100
14	Installation	Anchor Bolt	Anchor Bolt	Anchor Bolt	Anchor Bolt

KARA Portable Flame Cutting Machines

Lifting and Turning Device

Δ Double Head Positioner

Mechanical and hydraulic positioner machines are used to create the appropriate angle and observe weld standards. The two way positioners are of a highly significance since they create up and down cutting motion as well as rotational movement. The bolt-spiral mechanism with a high diameter along with helical gearbox in up and down motion of cutter not only increases the safety while working but also ensures long-term welding at a stationary state without losing the position. The use of linear ball bearings at two sides of the machine creates an appropriate mechanism with high precision for cutter up and down motion in welding work-pieces.

The integrated structure of the positioner machine not only ensures bearing heavy duty loads with high length but also allows for installation of this machine in different locations of site. The machine and grooved work holder plates increase the installation speed of work-piece on the positioner. The use of servo drives for the rotary motion of work holder plates decreases the rotation speed from maximum to zero. Also, using synchronized AC motors with helical gearboxes at the two sides of the

positioner maximizes the machine's safety and minimizes lack of longitudinal alignment. The positioners can be used for manufacturing integrated chassis in auto-making and rail way industries.

Spool Fabrication Line

Welding Pipes and Joints Equipment

This machine is used for welding tube to tube, tube to elbow, tube to flange and T-shaped joints. This machine includes four components as follows:

1. Column and boom welding set

2. Two axial positioner machines

3. Four hydraulic butterfly series machine with height self-alignment

4. Parallel tables for welding column and boom as well as hydraulic subseries

∆ **Equipment:**

- Weld seam detection system

- Equipped with a digital thermometer

-Equipped with a powder suction system

-Having an LCD monitor for displaying welding parameters

∆ (1) Motorized Column and Boom Set

KARA KBC Motorized Saw Welding Manipulator

(For pipe diameter max.24"/48", length: 12000mm)

- Equipped with a Saw Welding Head including wire feeder, a tube, a tube nozzle and rail hub

- Equipped with an Auto Seam Tracing System on the welding head for self-alignment of welding throughout the welding path.

- Equipped with a digital thermometer (Laser)

-Equipped with submerged welding power sources 1250 Amp. (TCR 1250)

- Equipped with a control box and a weld head (PEG1)

-Equipped with a motorized suction and powder welding system

- Possibility of traveling the column and boom set on four wheels throughout the rails between the two positioners

- Accompanied by rails with a length of 12 meters for column and boom travel parallel to the two positioners

- Having an LCD monitor for displaying welding parameters

-3 phase, 380 v, 50HZ, 50-100 A

Δ (2) Axial Positioner Set (Positioner)

-Positioner machine KVP 10

-Holding and turning pipe with a load capacity of Max. 10 Ton

-Positioner plate (600mm) and three point clapper (500 mm) (optional)

- Capability of welding rotation speed adjustment (Servo Motor)

- Capability of positioner height adjustment (Electrical Motor Gearbox)

- Equipped with a Remote controller

-Lifting Device: 3 phase, 380 V, 50 HZ, 2 A

- Turning Device: Servo Motor, 2kw

Δ (3) Longitudinal Seam Welder Machine

Longitudinal Seam Welder Machine is a worktable with distinctive features which can be used for welding various pipes, shells or small vessels. The use of this machine for welding various pipes reduces the distortion of work-pieces. The machine clamps can be used for fixing the sheets with a maximum thickness of 10mm using edge to edge method. The expected welding method to be used for this machine is TIG, MIG-MAG method. The control panel along with welding torch that travel on a guide rail allows the user to control the start and end of the welding process. Since the welding process, in this method, is a continuous and automatic process, the cooling operation or heat transfer is performed simultaneously along the copper belts.

KARA TUBE & PLATE CNC CUTTING MACHINE 2.5×6 (KTPCM2.5×6)

1. Suitable for making exact cuttings in various shapes and sizes using Oxy-Fuel and Plasma cutting techniques.

2. Possibility of Oxy-Fuel and Plasma nozzles installation on the main head and attaching an extra Oxy-Fuel nozzle (Master&Slave)

3. Possibility of cutting various geometric shapes on the tube

4. Having a robust and durable machining structure.

5. Having a precise and high-speed linear motion using Servo Motor and APEX gearbox with a very low backlash.

6. Equipped with two Servo Motors and APEX gearboxes at the two sides of machine for a constant and vibration less motion.

7. Possibility of transferring longitudinal motion force of cutting gate using a diagonal bevel gear for a fast and precise travel speed (Rack&Pinion).

8. Possibility of linear movement of cutting nozzle on the linear ball bearings using a diagonal bevel gear for fast and precise movements (Rack &Pinion and Linear Guide).

9. Using the TEX Computer Nozzle Control System made in Italy with a performance version 2016.

10. Equipped with an automatic height control system for nozzles to prevent crashing of nozzle with H-beam.

11. Equipped with automatic solenoid valves for each nozzle to avoid Oxygen and Gas waste, to adjust cutting flame and easy operation.

12. Equipped with a flame or flashback arrestor.

13. Having a dust collector for slide rails.

14. Equipped with a spring-applied control system for gearbox to protect damages resulting from operator fault while working.

15. Equipped with robust, integrated and adjustable slide rails (Italy) for unsmooth workshop surfaces.

16. Having a set of robust steel and belt tables which can be replaced easily.

17. Equipped with a dust suction table.

18. Equipped with an operator seat.

KARA Pipe & Plate CNC Cutting Machine 2.5×6

Technical Specifications

1. Work-piece Holder Useful Dimensions (Beam): 2500 mm×6000m

2. Work-piece Holder Useful Diameter (Tube): ø50mm~ø500m (ø2" ~ø20")

3. Work-piece Holder Useful Length: Min: 500mm Max: 6000mm

4. Loading Capacity of Tube Cutting: Max: 4000kg

5. Minimum and Maximum Thickness of Plasma Cutting:

0.5mm-25mm Carbon Steel

0.5mm-20mm Stainless Steel

0.5mm-15mm Aluminum

6. Minimum and Maximum Number of Plasma Torch: 1 Torch Master

7. Minimum and Maximum Thickness of Oxy-Fuel Cutting: 5mm-300mm

8. Minimum and Maximum Number of Oxy-Fuel Torch: 2 Torches Master&Slave

9. Possibility of Combining Oxy-Fuel and Plasma Cutting Torches: Master (Oxy Fuel-Plasma) Slave (Oxy Fuel)

10. Remote Control: 12 Button Wireless Remote Control (Korea)

11. Minimum and Maximum Distance between Torches and 2 Flames: 160mm-2500mm

12. Control System: TEXT COMPUTER (ITALY)

13. Plasma Cutting Power Source: Kara PL200&Optional

14. Cutting Torch: BINZEL-200A

15. Maximum Travel Speed (MS): 7000mm/min

16. Power Consumption (excluding Plasma Cutting Power Source): Nominal Current@max.load=220v-50Hz-1PH,16A

17. Ingress Protection (IP): IP52

18. Number of Solenoid Valves (Oxy-Fuel Cutting): 2Torch (oxy Fuel)/6 Packer

19. Possibility of Beveling Oxy-Fuel Cutting Torches:

±45°-Manual

Oxy Fuel Automatic Beveling System (Coming Soon)

20. Possibility of Beveling Plasma Cutting Torches:

Plasma Automatic Beveling System (Coming Soon)

21. Electricity System: Energy Chain

22. Longitudinal Travel Rails: T90/B (T16) ITALY&RACK Pinion

23. Possibility of increasing longitudinal and transverse dimensions of Machine: Width: Up to 4m, Length: Up to 12m

24. CNC Plasma Cutting Dust Suction System: Zone by Zone Automatic Pneumatic Jacks

25. Operator Seat

26. Work piece Holder Table: 2450mm×3200mm 2 sets: Belt-Steel

27. Slide Rails Installation: Anchor Bolt

28. Motor and Gearbox Trade Marks: Apex Solar Gearbox, Stone Servo Motor

Elbow Welding Machine

Elbow welding machine is an extremely easy, fast and high quality welding machines. The column and other accessories are positioned at the end of weld path to speed up the loading operation and to prevent any damage to the accessories while loading. The column travel operation takes less than 30 seconds.

The rotary travel of this machine is supplied by a Servo Motor and a Gear Box which reduce the machine backlash to the minimum. The capacity of this machine is between 6″-30″ inches.

Longitudinal Seam Welder Machine

Longitudinal Seam Welder Machine is a worktable with distinctive features which can be used for welding various pipes, shells or small vessels. The use of this machine for welding various pipes reduces the distortion of work-pieces. The machine clamps can be used for fixing the sheets with a maximum thickness of 10mm using edge to edge method. The expected welding method to be used for this machine is TIG, MIG-MAG method. The control panel along with welding torch that travel on a guide rail allows the user to control the start and end of the welding process. Since the welding process, in this method, is a continuous and automatic process, the cooling operation or heat transfer is performed simultaneously along the copper belts.

Automatic Cylinder Welding Machine

The Circumference welding machine is suitable for automatic linear and environmental welding fixation with following features:

-Work holder diameter 120-850mm

- Work holder length 220-300mm

-Work-piece rotation system using AC Motor Microprocessor-based control

KARA Welding & Cutting Ind. Mfg. Co.

The policy of KARA Welding & Cutting Ind. Mfg. Co. relies on every day development and growth, so this company reserves the right to change and modify any information on products introduced inside the catalogue. Thus, contact us to ensure the full specifications of products inside the catalogue.

Company Records

Founding and Obtaining the “Approval in Principle” 1989

Manufacturing of Flame Cutting Machine P22.P2 1989

Manufacturing of Submerged Arc Welding Tractor K2 1990

Manufacturing of Submerged Arc Welding Power Sources TCR 1000-1250 1991

Design & Development Phase I 1992

Manufacturing of Manual & Automatic Tube Cutting Machine PP2 1993

Manufacturing of Circle Cutting Machine CP2 1993

Manufacturing of Manual Rectifier Welding Machine LHA 630 1993

Manufacturing of Manual Rectifier Welding Machine LHA 400 1994

Manufacturing of CO2/MAG Welding Machine TCK 600S 1995

Manufacturing of CO2/MAG Welding Machine TCK 250/400 1996

Manufacturing of Column & Boom Welding Machine 1997

Obtaining ISO 9002 Certification from DNV 1998

Manufacturing of Roller Beds/Vessel Welding Rotator 20 & 40 Ton 1998

Manufacturing of Submerged Arc Welding Tractor K4 1999

Manufacturing of Vertical Welding Positioner 1999

Manufacturing of Plasma Cutting Machine PL140 2000

Manufacturing of Air Carbon Arc Cutting (Gouging) Machine LHG 1250 2001

Manufacturing of Roller Beds/Vessel Welding Rotator 150 Ton 2001

Design & Development Phase II 2001

Manufacturing of Manual Rectifier Welding Machine LHA 800 2001

Manufacturing of Submerged Arc Welding Power Source TCR 1600 2003

Manufacturing of TIG Welding Machine KTW 400DC 2003

Manufacturing of Rolling Mill Machine (Diameter: 6000mm Thickness: 35mm) 2003

Obtaining ISO 9001 Certification from DNV 2003

Manufacturing of H-Beam Welding Machine 2003

Manufacturing of Pulse TIG AC DC Inverter Welding Machine 2003

Manufacturing of Pulsed MIG Welding Machine 2004

Manufacturing of Gantry Type Box Beam Welding Machine KBWM 2004

Manufacturing of Hydraulic Vertical Positioner 2005

Manufacturing of Twin Wire Submerged Arc Welding Machine K4 2005

Manufacturing of CO2 Welding Machine TCK 600 K 2005

Manufacturing of Roller Beds/Vessel Welding Rotator 250 Ton 2005

Manufacturing of Roller Beds/Vessel Welding Rotator 60 Ton 2005

Manufacturing of H Straightening Machine 2006

Manufacturing of Column & Boom CNC Machine 2005

Obtaining Certification from DNV The Netherlands 2007

Manufacturing of CO2 Welding Machine TCK 500 2007

Manufacturing of Automatic Vertical H-Beam Assembly & Welding Machine 2008

Manufacturing of Plasma Cutting Machine 160 Amp 2008

Manufacturing of Automatic Cylinder Welding Machine 2008

Manufacturing of Strip Cutting Machine (5 Torches 2.4× 6.5) 2008

Manufacturing of Inside Box Beam Welding Machine (Header Box) 2008

Manufacturing of Storage Tanks Welding Machine 2008

Manufacturing of H-Beam Chain Rotator 5 Ton 2008

Manufacturing of Rail Road Wheels Cladding Welding Machine 2008

Manufacturing of Commutator Welding Machine 2008

Manufacturing of Linear Shot Blasting Machine 2009

Manufacturing of H-Beam Automatic Production Line 2009

Manufacturing of Electro Slag Welding Machine 2009

Manufacturing of Box Beam Assembly Machine 2010

Manufacturing of Inverter Welding Machine 160 A, 500 A 2010

Manufacturing of Paint Spray Machine 2011

Manufacturing of Paint Drying Oven 2011

Manufacturing of Elbow Welding Machine 2011

Manufacturing of Double Head Positioner 2011

Manufacturing of 3 Axes CNC Drilling Machine 2011

Manufacturing of Automatic Tube Cutting Machine 2011

Manufacturing of Tube & Joints Welding Machine 2011

Manufacturing of CNC Plate Drilling Machine 2012

Manufacturing of CNC and Strip Cutting Machine 2012

Manufacturing of H Beam Shot Blasting Machine 2012

Manufacturing of H Beam Seam Welding Machine 2012

Manufacturing of H Beam Surface Welding Machine 2012

Manufacturing of Shell Assembly Machine 2012

Manufacturing of Roller Cladding Machine 2013

Manufacturing of CNC Drilling & Cutting Machine 2013

Manufacturing of Cylinder Automatic Welding Machine 2014

Manufacturing of Portable Electro Slag Welding Machine 2014