

KENZA WELD

Gas Pressure Welding Machine Catalog



About us :

Kenza Engineering Group:

- "Payandan Atieh" Engineering Company (private Held Co.)- established on 2002
- Farayand Joosh Kenza Company- (Ltd.co.) , established on 2009
- Aftab Taban Kenza Company: (Ltd.co.) , established on 2013
- Start of activity in the field of gas pressure welding: September 2009
- Date of receiving technology confirmation from the Road ,Housing & Urban development research center: January 2010
- Incorporated brand: KENZA

Activity field:

execution, sales, after-sales services, and training.

The group(company)could reshape it's services since 2009 relying on its obtained technical knowledge and experiences as the first official company in the field of **gas** pressure welding execution and has taken an effective step in the field of construction and industrialization so far by executing more than 3 million tip-welding in 5000 national and civil projects and about 200 agencies.

Among other actions taken by **KENZA** Company are gas pressure welding of rebar technolog localization in the west Asia,the result of which is a reduction in the cost of equipment, coherence of executive teams, and a reduction of unemployment rate.

Our main goal is to increase the coefficient of confidence and resistance in concrete structures and this was realized providing accurate, continues and technical trainingin accordance with existing universal standards and conscious domestic standard development.

We managed to take steps towards accelerating the industrialization of building-construction area in west Asia with a knowledge and understanding the importance of the issue after years of activities and infrastructure research without any rush and profit-oriented aims in presenting our products along with a rich technical experience and increased qualitative and quantitative level of the activity.

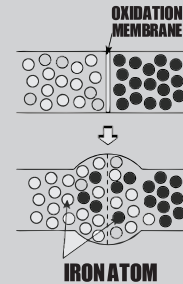
Certificates:

- 1-USA, concrete reinforcement steel institute
- 2-Japan, reinforcing bar joints institute
- 3-Japan, society of civil engineers
- 4-Iran, road, housing & urban development research center
- 5-Iran, construction engineering organization certificates



Gas pressure welding of rebar process:

Gas pressure welding of rebar is one of the methods in oxy acetylene welding in which the rebars reach getting-pasty temperature) (1,200-1,300 degrees centigrade), without melting the base metal and any additives, tip-to-tip by the heat resulting from oxyacetylene flame and get connected to each other by the pressure resulted from hydraulic cylinder (RAM).



Molecules of two welded surfaces transfer to each other without any changes in structure and mechanical properties. Reinforce bar is steel which is mixed by atom of iron and carbon. Atom of them in steel stable at normal temperature and they are making regular arrangement. Gas pressure welding sticks each reinforce bar by their join of crystal.

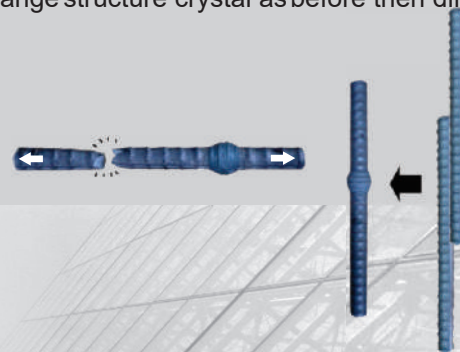
Then we used heat to make rearrangement of each atom easily at each reinforce bar joining.

Both atoms start to move actively by heating at once and also change structure crystal as before then diffuse. It means they start to be mixed of each atom.

Why Gas pressure welding of rebar?

A lack of enough stability at the location of connection and increased density in some areas caused some traditional method of rebars' overlapping to be replaced by (coupler) mechanical connections method and this method was not welcomed due to making delay in project advancement scheduling (due to time-consuming preparation and execution as well as high costs) at the onset and was not limited to be used in special projects. Gas pressure welding is a very proper method and good replacement instead of overlap traditional method and mechanical connections method as the latest method in buildings components with an easier, faster, cheaper and higher stability.

Gas pressure welding can save your cost and quantity of reinforce bar at your site definitely.



Advantages of gas pressure welding:

- Increased resistance in connection point due to increased diameter
- 30% save in rebar consumption
- Reduced human errors in rebar binding and layout of rebar
- Weight reduction in structure due to overlap elimination
- Increase in structure resistance against external forces (earthquake etc.) due to weight reduction in structure and a reduction in gravity force
- Increase in concrete mix with rebar due to a decrease in rebar dimensions
- The possibility to a better and more ideal vibration due to a decrease in volume of reinforcements
- A reduction in areas and consumption of concrete and a reduction of dead space under the building (in pillars)
- Maintenance of integration of bar's certificate of analysis in connection point
- A reduction in transportation costs due to a reduction in consumable materials
- Ability to create a connection with at least 10 cm reinforcement length
- Preservation of rods' metallurgical properties
- The possibility to connect different sizes (according to standard) to each other
- High execution pace with the least expense and time-waste prevention of reinforcing executive personnel
- The possibility to connect scrap rebars
- Usability in all circumstances including columns, shear walls, beams, foundation etc.)
- Lack of need to high-voltage electricity
- Comfortable application and portable by human Standards

standards:

JIS Z3881 Rev. 2014- Standard qualification procedure for gas pressure welding technique of steel bars for concrete reinforcement

JIS B 6801 - Manual blowpipes for oxyacetylene welding

JIS C 9611 - Electric disc grinder

JIS Z 3410 - Welding coordination tasks and responsibilities

JIS Z 3062 - Methods and acceptance criteria of ultrasonic investigation into gas pressure welds of reinforcing deformed bars.

JIS Z 3120- Method of Inspection for Gas Pressure Welded Joint of Steel Bars for Concrete Reinforcement

INSO 22442- Steel for concrete reinforcement– Gas pressure welded joint of steel bars – Test method and acceptance criteria

AS/NZS 1554.3:2014 - ; Structural steel welding, part 3 : welding of reinforcing steel, non-fusion welding processes- flame pressure welding

KS D 0244:2009; Method of inspection for gas pressure welded joint of steel bars for concrete reinforcement

Accessories to a full-package of gas pressure welding machine

1-Pressure supply system

- A-High-pressure hydraulic pump
- B-Ram cylinder
- C-Hydraulic hose
- D-Pistol type seesaw switch
- E-Operation cord

2-Rebar cutter Kenza saw

- A-Motor and gearbox complex
- B-Rebar holding clamp
- C-Special wrench to open and close the blades
- D-saw blade

3-Gas mixture tube & super valve

- A-Flush-backs
- B-Central control valve
- C-Torch
- D-Gas mixture tube
- E-Ring burner

4- Rebar welding base

- A-Outer tube
- B-Ram holder
- C-Clamp bolt
- D-Bar holder
- E-Bar holder
- F-Fixing bolt
- G-Square drives

5- Complementary devices and equipment

- A-Toolbox special for gas pressure welding
- B-Twin hose
- C-Fittings
- D-Manometers
- E-Fastenings
- F-Ring burner chip adjust jig



1-Pressure supply system

Application: Required pressure on longitudinal axis of rebars

for joining them during gas pressure welding process is provided by hydraulic pump.

Electrical high-pressure hydraulic pump

Electric Motor Drive Pump

For Gas Pressure Welding



Accessories:

A-High-pressure hydraulic pump

B-High-pressure Ram cylinder

C-High-pressure hydraulic hose

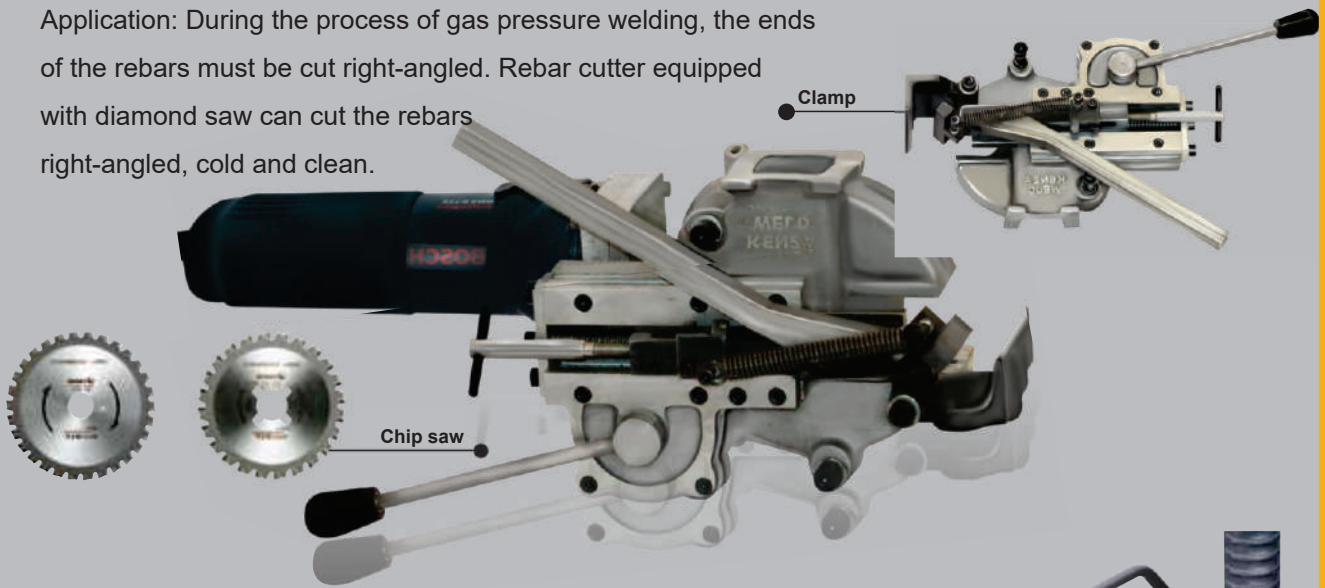
D-Pistol type seesaw switch

E-Operation cord

Model	ATK-PSI
Pressure range	0-700 bar
Rebar size range	D14-D51
Electrical motor specifications	4A, 220V/50-60 Hz, 950W, Single phase
Tanker capacity	3.5 lit
Weight	16 kg
Pressure regulation system	Relief valve
Pump output	2 lit/min
Connection type of pump hose	360" Swivel

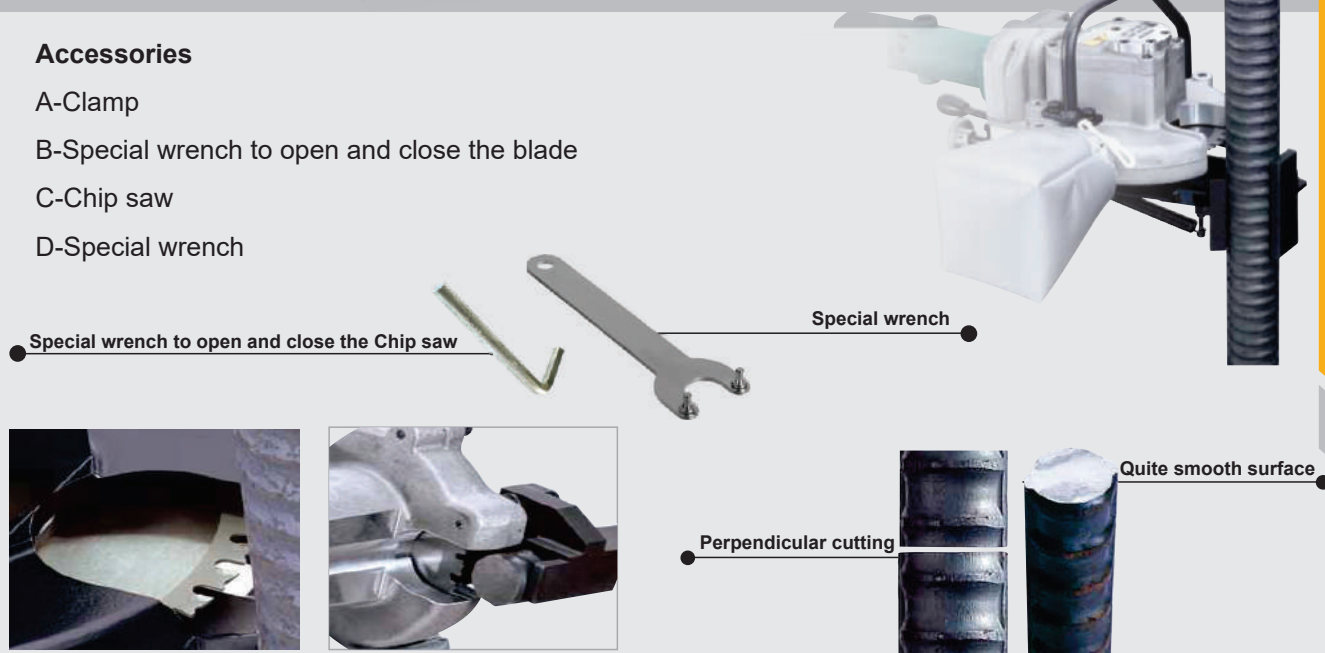
2-Rebar cutter device

Application: During the process of gas pressure welding, the ends of the rebars must be cut right-angled. Rebar cutter equipped with diamond saw can cut the rebars right-angled, cold and clean.



Accessories

- A-Clamp
- B-Special wrench to open and close the blade
- C-Chip saw
- D-Special wrench



Time and number of cutting of a cutting blade

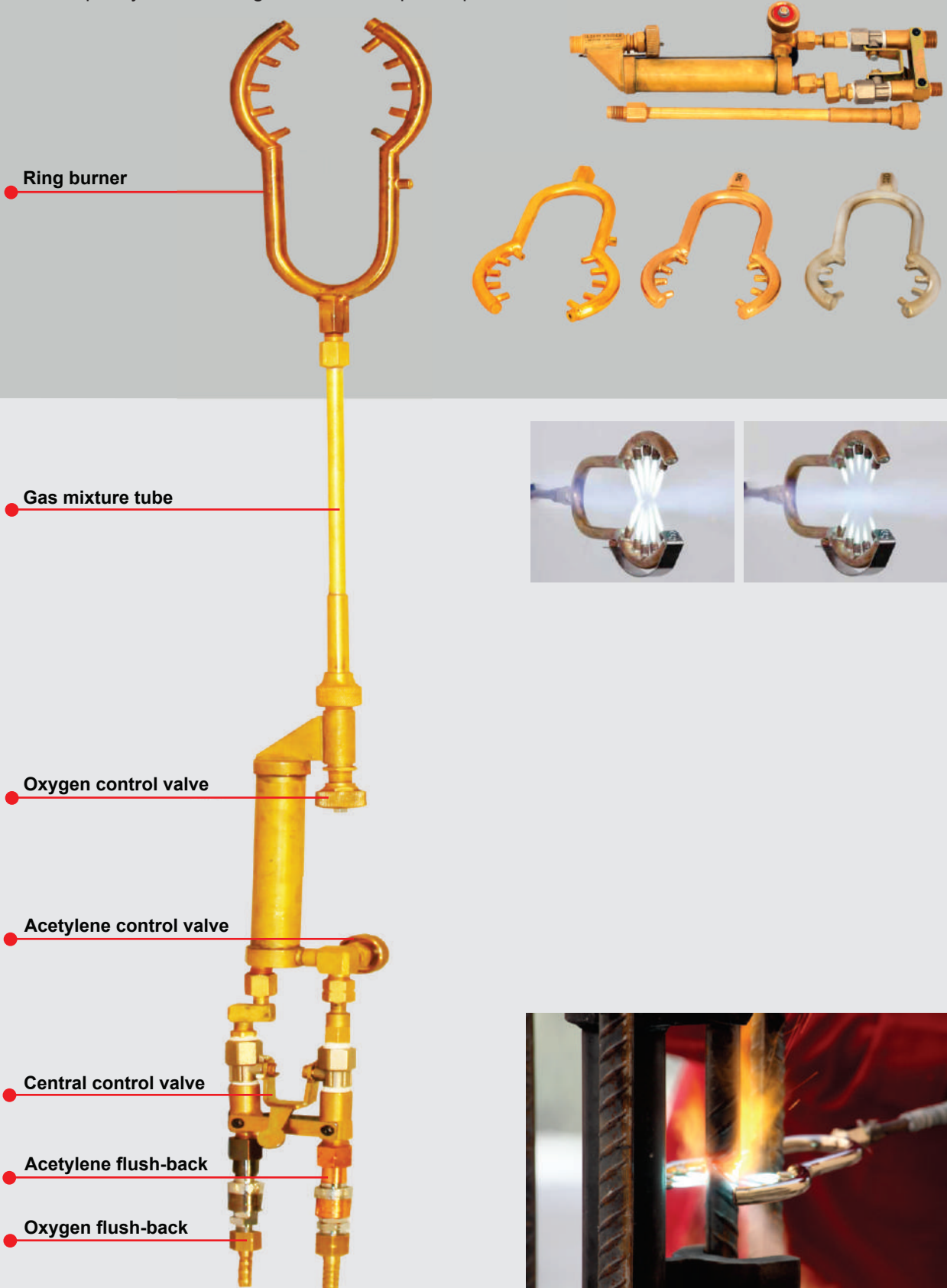
Number of cutting	Time of cutting (s)	Size of rebar(mm)
1,300	7	D14
1,200	8	D16
1,100	9	D18
1,000	10	D20
850	11	D22
700	13	D25
550	16	D28
400	22	D32
250	25	D34

It should be noted that number of cutting is subjected to blade material and its application and these numbers are calculated in normal work conditions.

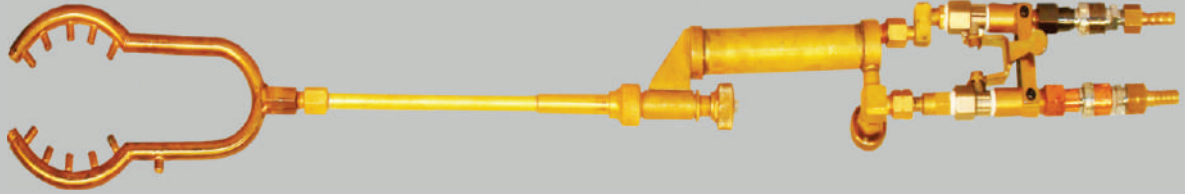
Model	ATK - C - 36
Electrical motor specifications	3.6A, 220-240V/50-60 Hz, 800W, Single phase
Gearbox specification and type	Decreasing
Lubricant material	Grease
Cooling system	Cooled by air
Weight	8 kg
Blade specification	122 mm in diameter
Type of middle hole	crossed
Number of dents	26 pieces
Material of dents	Carbide tungsten

3-Gas mixture tube & super valve

Application: Gas mixture tube is used for mixing the oxygen and acetylene gases together and super valve, its use is to quickly shut off the gas flow and stop the operation.



Flame accessories



Ring burner chip adjust jig



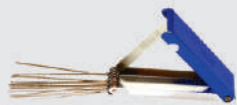
Acetylene fitting



Oxygen fitting



Manometer fastening



Nozzle cleaning



needleHose band



Twin hose

Regulator for Acetylene gas



Regulator for Oxygen gas



Accessories:

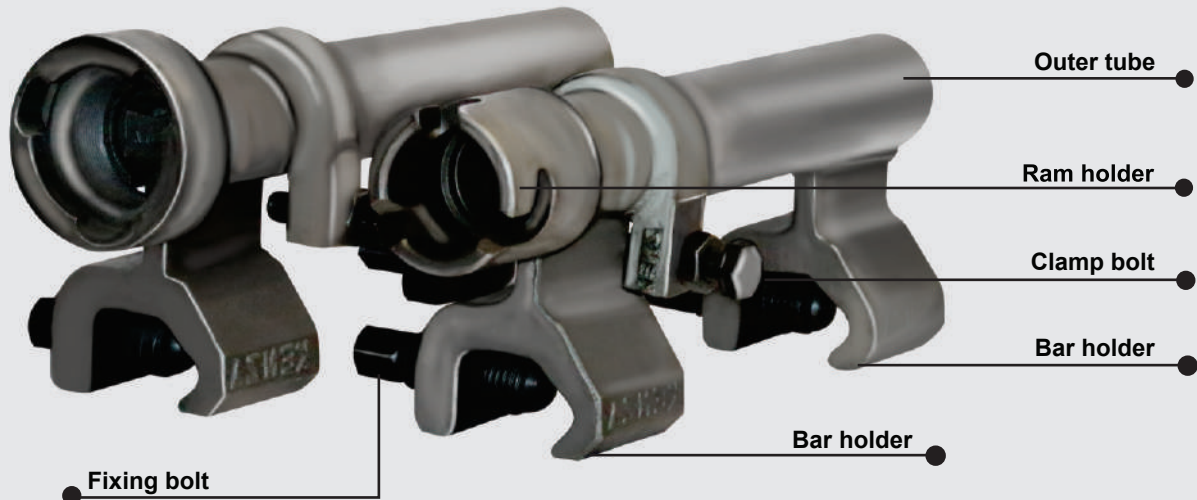
- A-Ring burner
- B-Gas mixture tube
- C-Oxygen control valve
- D-Acetylene control valve
- E-Central control valve
- F-Acetylene flush-back
- G-Oxygen flush-back
- H-Regulator for Acetylene gas
- I-Regulator for Oxygen gas
- J-Ring burner chip adjust jig
- K-Acetylene fitting
- L-Oxygen fitting
- M-Regulator clamp
- N-Nozzles cleaning needle
- O-Acetylene/oxygen twin gas hose





4-Rebar welding base

Application: Rebar welding base consists of both fixed and movable jaw .It is used for keeping the rebars aligned and transferring the pressure which is exerted on the movable jaw by Ram cylinder to the rebars.



● Square drives



● Special wrench to fix holder screws of 3/4 and 1/2 inch drive



Accessories:

- A-Outer tube
- B-Ram holder
- C-Clamp bolt
- D-Bar holder
- E-Bar holder
- F-Fixing bolt
- G-Square drives

Model	ATK-C1-34D
Model	ATK-C2-34D
Application range	D14-D34 rod
Movement course	6 cm
Weight	8.5 kg
Quantity in each package	6 pieces

4-Complementary devices and equipment



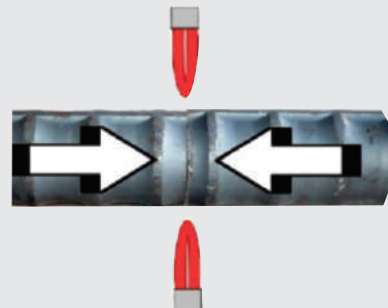
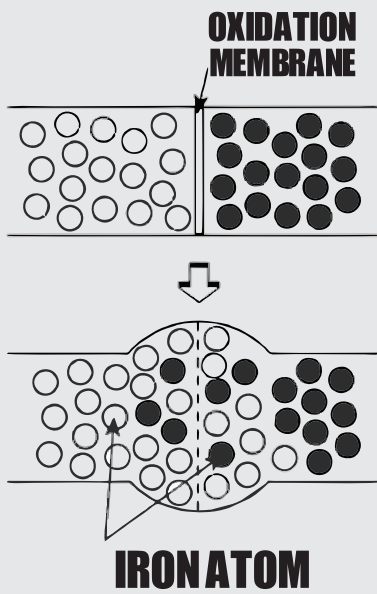
KENZA WELD
Gas Pressure Welding Machine

- 1-Pliers
- 2-Needle to clean the nozzles
- 3-Hose clamp
- 4-Wrench
- 5-Wrench to open and close acetylene capsule
- 6-Convert plugs
- 7-Regulators spare gasket
- 8-Retractable blade knife with replaceable utility blade
- 9-Two-purpose screw driver
- 10-Allen wrench to open and close chip saw and steering handle
- 11-Locking plier
- 12-Teflon tape
- 13-Electric masking tape
- 14-Work gloves and clothes
- 15-Toolbox
- 16-Cutting machine box
- 17-Rock lighter



Gas pressure welding process

Oxidation membrane



Heat + pressure





KENZA WELD
Gas Pressure Welding Machine

Advantages of KENZA gas pressure welding equipment:

- Compact and portable equipment
- Concentrated, high quality and cheap after-sales services and guarantee
- Frequency of consumable and spare parts
- Fast and comfortable access to services and technical experts
- Specialized design and development merely for forge welding far from making equivalent and remarking
- Proper design for 24-hour work



**Try to save your scrap.
Try to calculate how much amount you can save if you reuse your scrap!!**

PROMOTING SAFETY **FOR A** BETTER LIFE

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