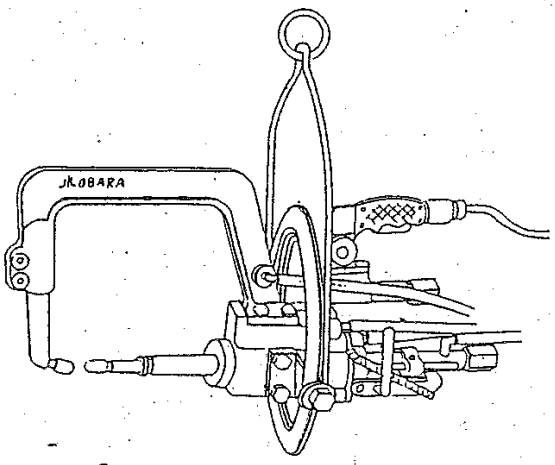
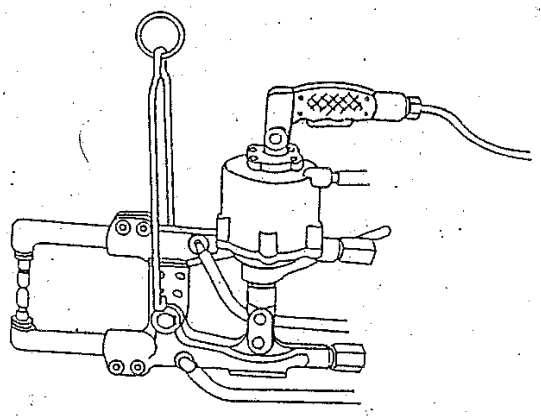
VERSION 1.0

INSTRUCTION MANUAL

Portable Spot Welding Gun Series

Model : UC,UX,UCH.UXH





Please translate this operation manual to your country language before you use the equipment.

In order to use this product safely, make sure that you read this document carefully before using it. Especially safety-related cautionary articles are extremely important to understand.
Always keep this instruction manual at a specified location.

JKOBARA CORP.

1997/6/18	No. F-121

Table of Contents

= Safety Precautions =

- Read this instruction manual thoroughly before usage, and use the product properly.
- The cautionary instructions in this user's guide are for safer operation to prevent danger and damage that may occur to you and other persons.
- While adequate safety considerations were given to the design and manufacture of this welder, items in the cautionary articles of this user's manual must always be followed to ensure its safer usage. Using the welder without following these instructions may cause bodily accidents such as death and severe injuries.
- Varying degrees of damages and dangers may occur when the equipment is mishandled. These degrees are categorized into 2 levels in this instruction manual, and they are accompanied by symbols, that should catch your attention, and signaling words as warning indicators. These symbols and signal words to induce your caution are used with exactly the same meanings on the equipment's warning labels.

Attention Calling Symbol	Signal Word	Description
	DANGER	When an error in handling equipment can cause a dangerous situation that can lead to eventual death or severe injuries.
	CAUTION	When an error in handling equipment can cause a dangerous situation that can lead to intermediate level injuries, light injuries, and/or material damage.

The attention catching symbols indicate general situations.

The severe injuries mentioned above include, but not limited to, wounds, burns (at high and low temperatures), electrical shock, bone damage, intoxication, and other injuries that leave after effects requiring hospitalization or prolonged outpatient medical care.

On the other hand, intermediate level injuries and light injuries include, but not limited to, injuries such as electrical shock and burns that do not require hospitalization or prolonged outpatient medical care, while material damages include damages to property, and expanded damages related to equipment damages.

	Mandated	Conducts that must be done. "Grounding work" for example.
	Prohibited	Conducts that must not be done.

The symbols indicate general situations.

Items to Follow as Safety Precautions

DANGER Always follow the instructions below in order to prevent bodily injuries.

1. Although considerations for safety have been adequately incorporated into the design and manufacture of this welder, make sure the cautionary instructions in this instruction manual are strictly obeyed upon usage of this equipment.
   Operating without following these cautionary instructions may cause or lead to eventual death, severe wounds, or other bodily- injury-related accidents.
2. Make sure that works on the power source on the input side, selection of installation site, and storage of products and handling of waste material after welding operations should comply with related laws and ordinances as well as your company's internal rules.
3. Make sure that no one enters the area surrounding the welder as well as welding operation site carelessly.
4. Do not let anyone on a pacemaker for hearts come near the area surrounding the welder or welding operation site unless he or she is permitted to do so by a physician. The welder generates a magnetic field in the surrounding area while it is charged, and thus, affects the pacemaker's operation negatively.
5. In order to assure safety, make sure that the installation, maintenance and inspection, and repairs of this welder should be conducted by personnel with appropriate qualifications or someone who is well versed with welders.
6. In order to assure safe operation of this welder, make sure it is operated by personnel who well understand the contents of this instruction manual, and have the knowledge and skills to operate it safely.
7. Do not use this welder for any purpose other than welding.

DANGER Always follow the following instructions in order to avoid electrical shocks.

* Touching a charged part other than the secondary conductor may cause life threatening electrical shocks and/or burns.
* Touching both ends of the secondary conductor, simultaneously, may cause electrical shocks.

1. Do not touch any charged part other than the secondary conductor.
2. Make sure that the welder is grounded by a certified electrician in accordance with the law (electrical installation technology regulation).

3. Make sure that installation, maintenance, and inspection are conducted at least 5 minutes after all of the input side power source are turned off by the switches on the switch box. Since capacitors may still be charged even after the input side power sources are turned off, make sure that the operation is conducted after checking that there is no voltage charged.
4. Do not use cables that have capacities below the specified requirement, that are damaged, or that are exposing their conductive parts.
5. Tighten the weld part of the cable securely, and insulate it.
6. Do not use the welder with its case or cover removed.
7. Do not use torn or wet gloves. Always wear dry and well insulated gloves during operations.
8. Make periodical inspection and maintenance and use the equipment only after repairing damaged parts.
9. Use high grade cooling water with a resistance of 5000 Ω-cm or more, which contains as little precipitates or sediments as possible.
10. When preparing cables, pneumatic hoses, water hoses, and other tubing and wiring, use ones that can adequately withstand the specified load or pressure.
11. When the welder is not being used, make sure that power source for all of its devices is turned off.

DANGER Do not insert fingers or hands between the electrodes.

* Placing a body part, such as hands, fingers, arms, etc. between electrodes will cause the body part to get squeezed by the electrodes, which, in turn, will lead to broken bones or other injuries.

1. Do not insert your hands, fingers, arms, or other body parts between the electrodes.
2. Check for safety around the welder upon turning on the power or supplying pressurized air.
3. When the welder is not being used, make sure that the power, pressurized air, and water supply for all its devices are turned off.

⚠ CAUTION

Use appropriate protective devices to protect yourself and others from splashes, spatters, and noises that are generated during welding operations.

* Airborne splashes and spatters can hurt your eyes and/or cause burns.
* Noises can cause hearing disorder.

1. Wear protective glasses to shield your eyes from airborne splashes and spatters.
2. Wear protective attire such as protective gloves, long-sleeve clothes, and leather aprons.
3. Install a protective curtain around the area surrounding the welding work site so that splashes and spatters are not projected towards other people.
4. Utilize sound proofing devices if the noise level is high.

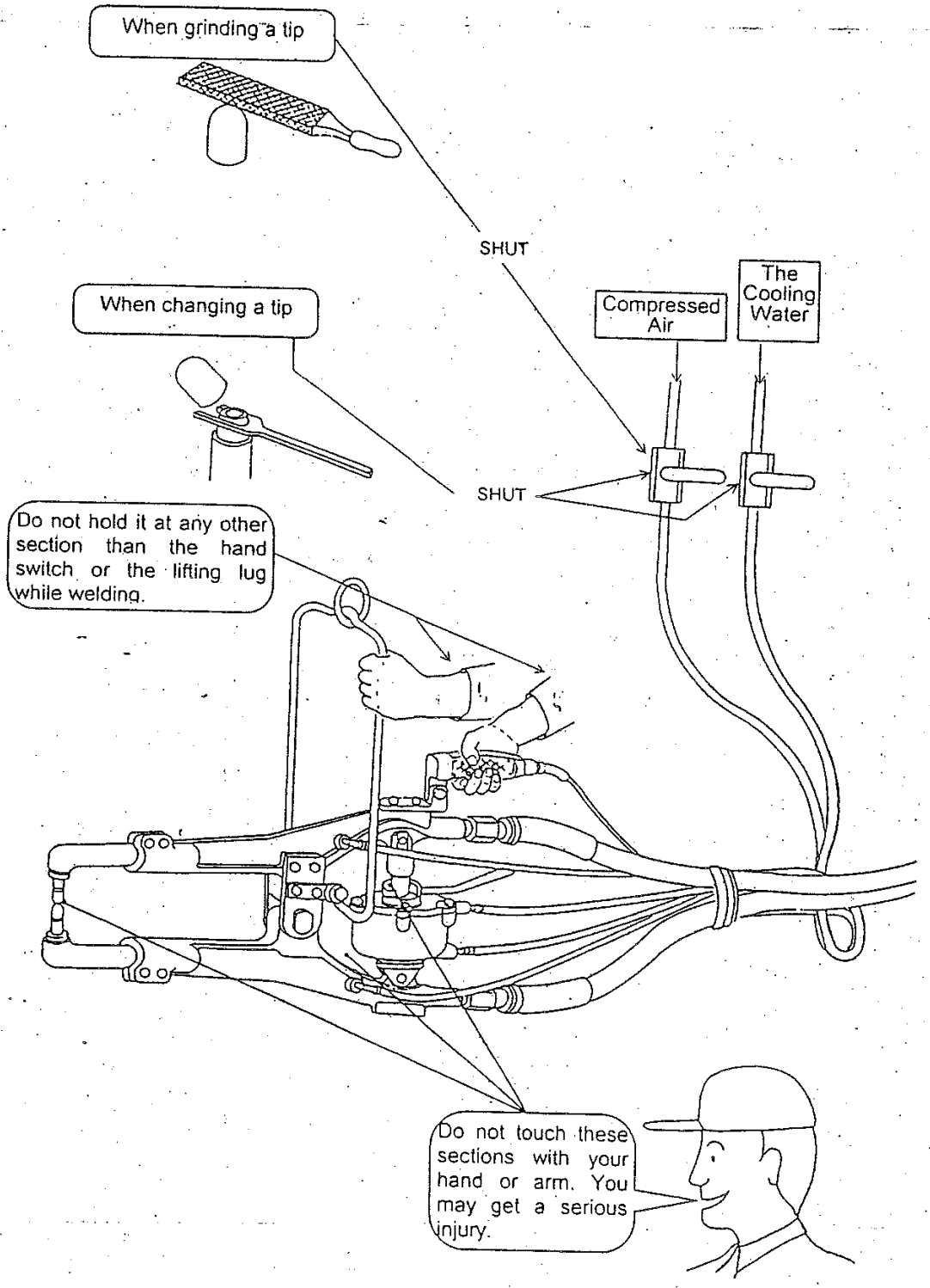
⚠ CAUTION

Always follow the following precautionary instructions in order to prevent fire and explosion.

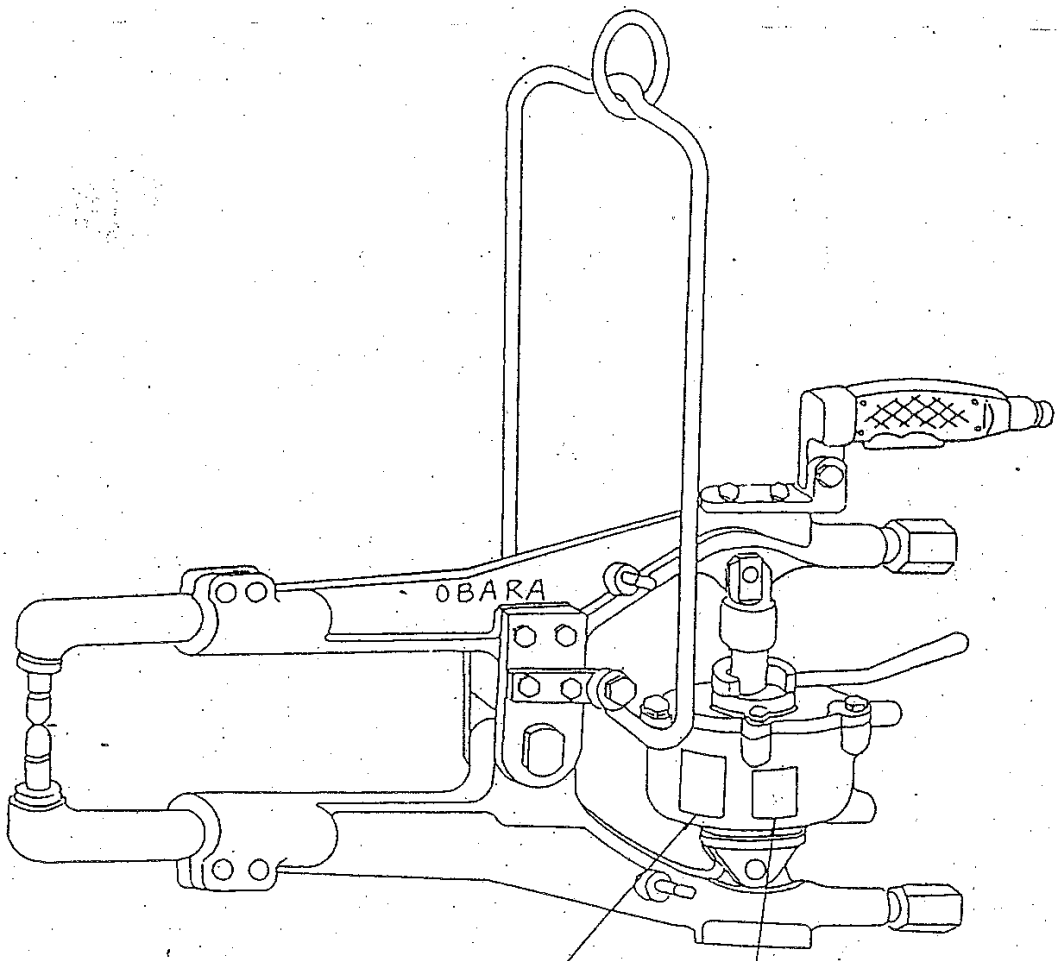
* Splashes and spatters generated during a weld, and a hot base metal right after a weld, may cause fire.
* Cables with imperfect connections may cause fire due to the heat generated when they are charged.

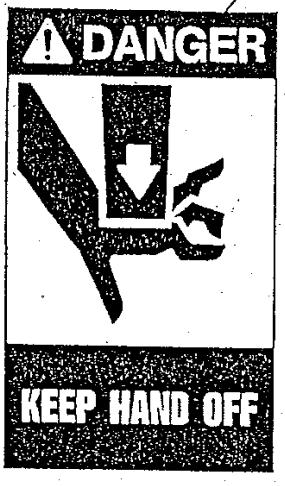
1. Remove inflammable objects so that airborne splashes and spatters are not projected towards them. If they cannot be removed, cover the inflammable objects with a nonflammable cover.
2. Do not weld near combustible and/or inflammable gases.
3. Do not let base metals that are hot immediately after a weld get near inflammable objects.
4. Tighten the weld part of the cable securely, and insulate it.
5. Prepare for unexpected incidents by having a fire extinguisher placed near the welding site.

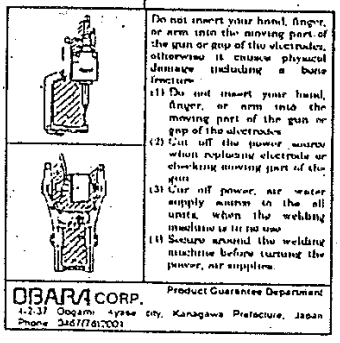
Indications of Dangerous Parts and Safety Remarks



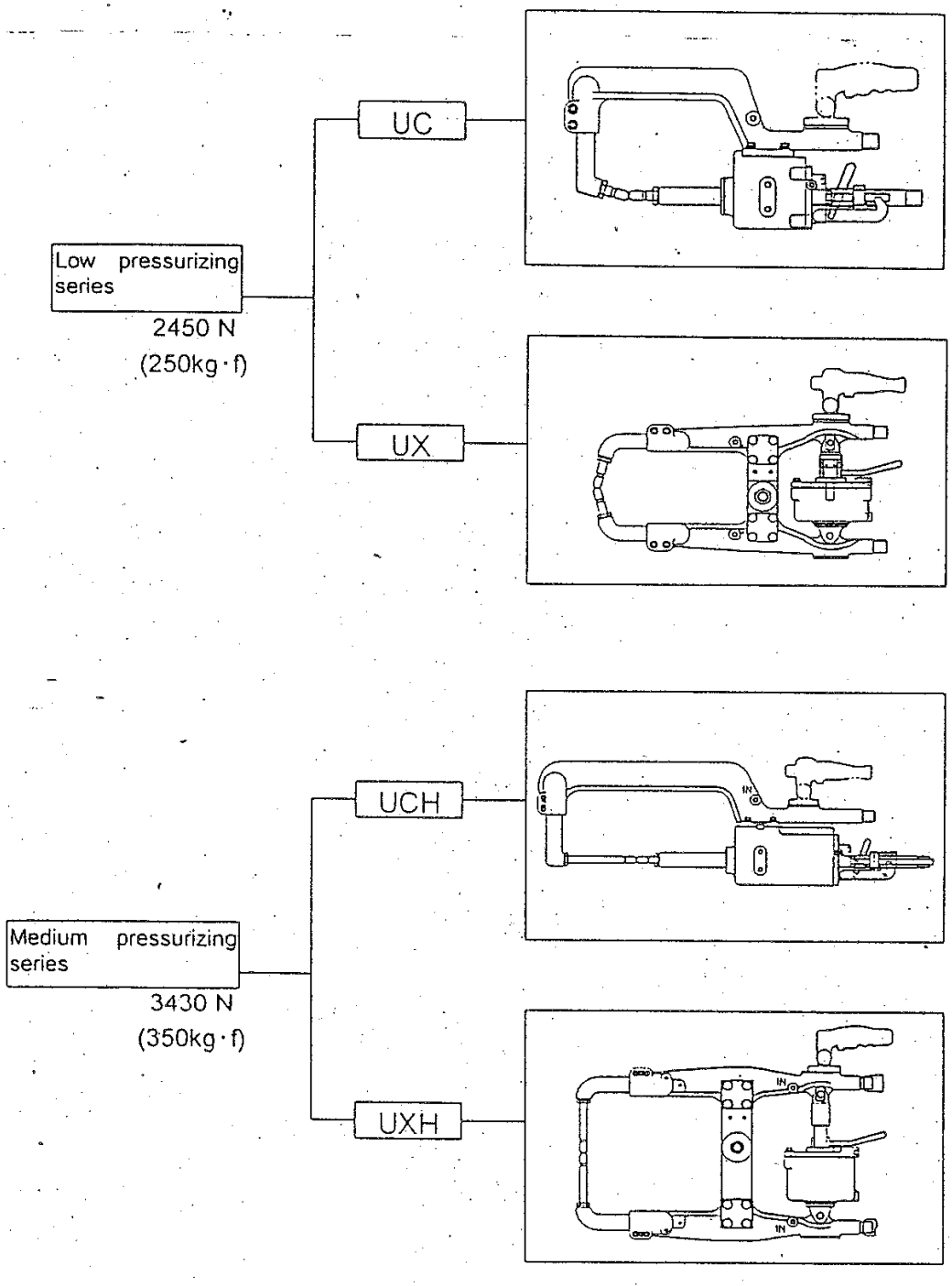
Indications of Dangerous Parts and Safety Remarks





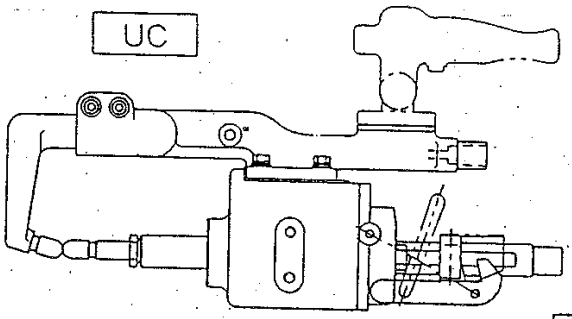


1 Portable Spot Welding Gun Standard Variation

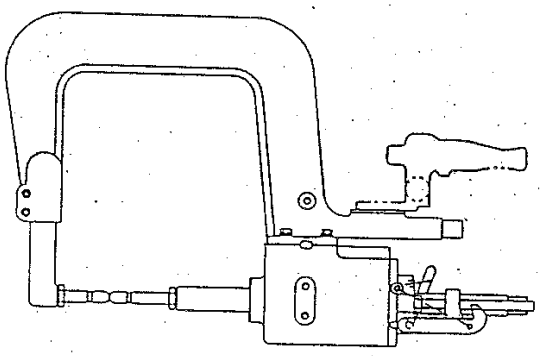


2 Examples for Representative Models

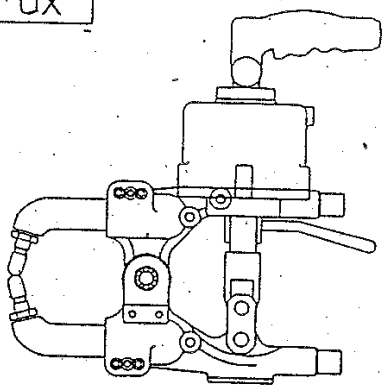
UC



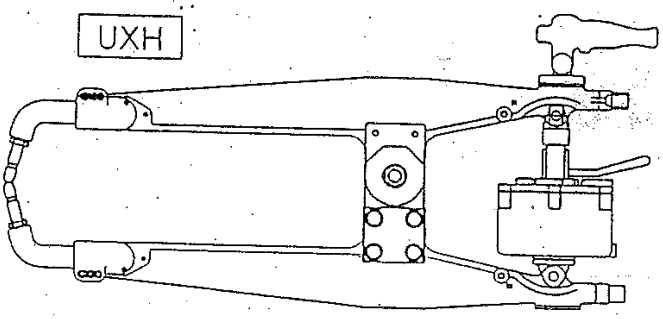
UCH



UX



UXH

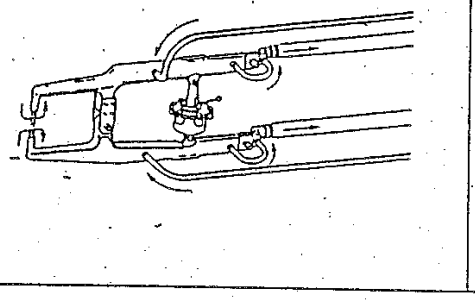


3 Features

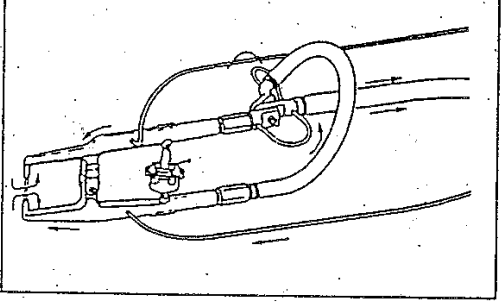
Since a portable spot gun is manipulated manually in spot welding, it is required to be small, light and easy to handle so that the operator is not exposed to a heavy load. OBARA's UC/UX series portable spot guns absolutely satisfy such needs of users. A rich variety of products are also available, which feature a wide variation in the specifications including arm length, electrode strokes and electrode force.

1. The electrodes of the products are detachable to make it easy to repair a worn-out electrode and to replace with a different type of electrode.
2. The products are designed to minimize the weight by reducing the number of parts used and also down-sizing the parts.
3. Standardization of the parts makes it possible to select various types of products by combining them.
4. Both two-line type and kickless type cables can be used as the secondary cable.

Tow line type cable

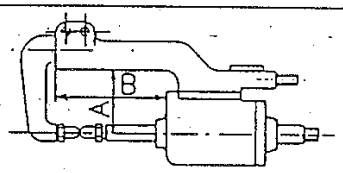


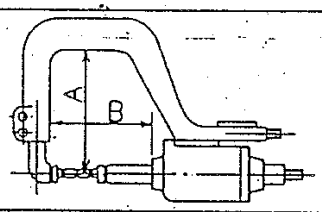
Kickless type cable



4 Basic Specifications

C type

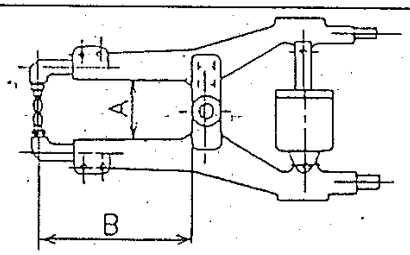




	A mm	B mm	CYLINDER STROKE mm (S)-Single stroke (D)-Dual stroke		Max electrode force N (Kgf)	A mm	B mm	CYLINDER STROKE mm (S)-Single stroke (D)-Dual stroke		Max electrode force N (Kgf)
UC	85	70	40	(S)	1960 (200)	155	150	40	(S)	1960 (200)
	105	120	60	(D)		205	200	60	(D)	
		170	85	(D)	2450 (250)	255	250	85	(D)	2450 (250)
		220	110	(D)		305	300	110	(D)	
						355	350	160	(D)	
						405	400	210	(D)	
						505				
						605				
UCH	90	70	40	(S)	2940 (300)	155	150	40	(S)	2940 (300)
	105	120	60	(D)		205	200	60	(D)	
		170	85	(D)	3430 (350)	255	250	85	(D)	3430 (350)
	-	220	110	(D)		305	300	110	(D)	
						355	350	160	(D)	
						405	400	210	(D)	
						505				
						605				

X Type

Throat area



Body code

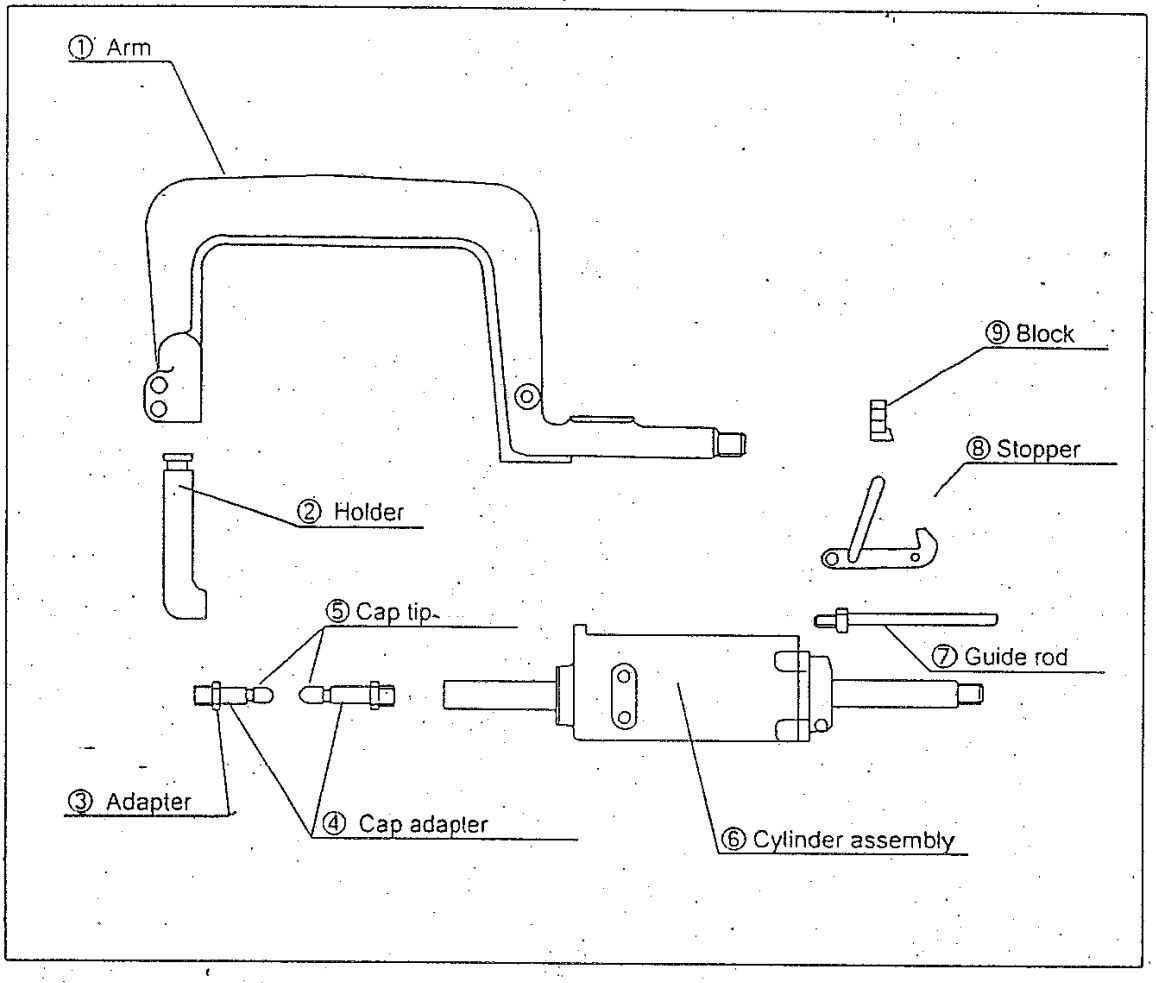
	A \ B	120	150	200	250	300	350	400	450	550	600	700	800
U X	68	A0 A1	B1		D1		F1						
	98	A2	B2	C2	D2	E2		G2	H2				
	128		B3						H3				
	148			C4		E4	F4				J4		
	178				D5			G5	H5	I5		K5	
	198			C6							J6		
	228					E7	F7	G7	H7	I7			L7
	248										J8		
	298									I9		K9	
U X H	60	A0 A1	B1		D1		F1						
	90	A2	B2	C2	D2	E2		G2	H2				
	120		B3						H3				
	140			C4		E4	F4				J4		
	170				D5			G5	H5	I5		K5	
	190			C6							J6		
	220					E7	F7	G7	H7	I7			L7
	240										J8		
	290									I9		K9	

Max electrode force

U X	U X H
1960N～2646N (200Kgf)～(270Kgf)	2842N～3430N (290Kgf)～(350Kgf)

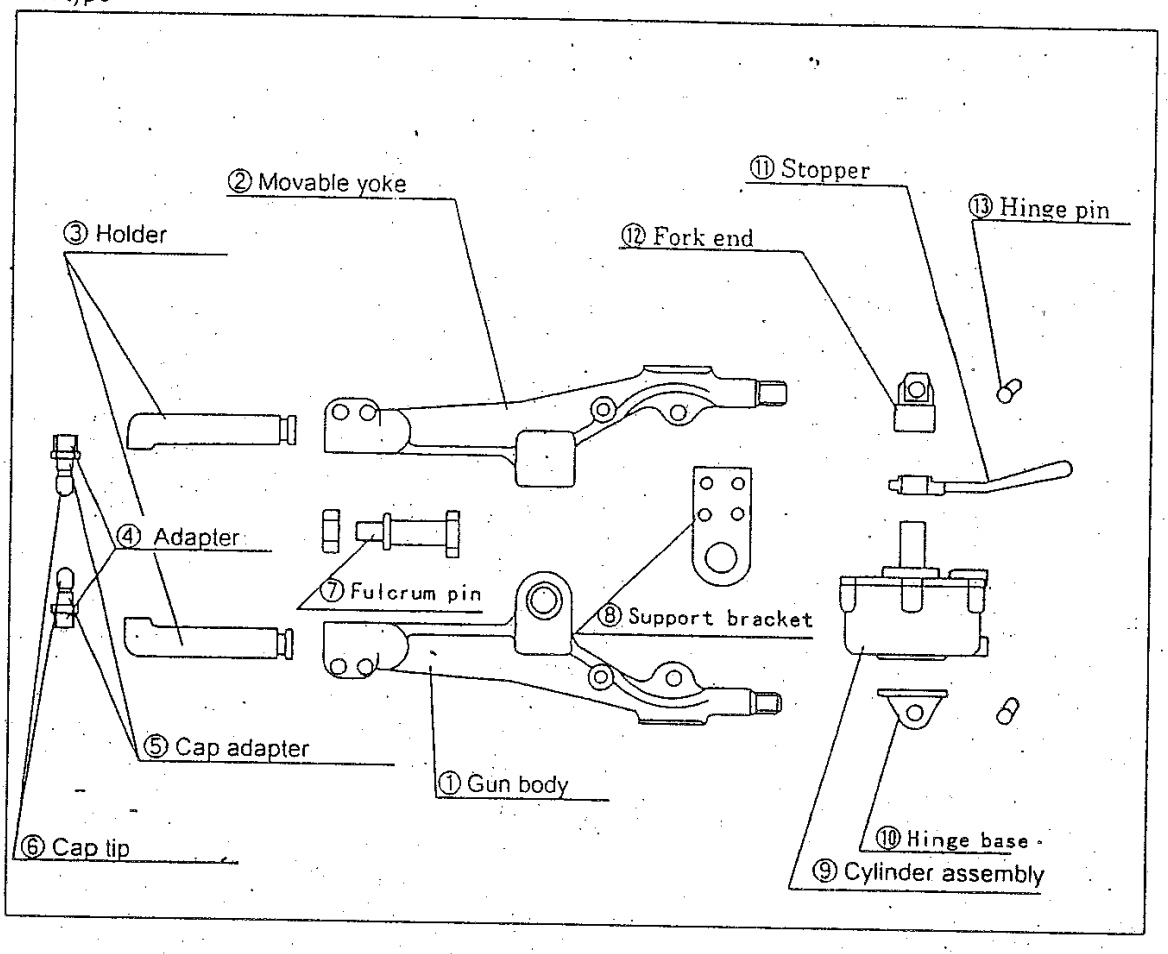
5 Component Parts and Designation

C type



	Names of Parts	Descriptions
①	Arm	Gun body-available in high strength of normal material.
②	Holder	Semi-consumable part attached to the arm.
③	Adapter	A conductor between the cap tip and the gun body.
④	Cap adapter	A conductor where the cap tip is installed.
⑤	Cap tip	An electrode in direct contact with weld zone.
⑥	Cylinder assembly	A unit that generates electrode pressurization.
⑦	Guide rod	A pin to prevent the electrode from rotating while moving.
⑧	Stopper	A fixture used to lock the piston rod in a sub-open position.
⑨	Block	A part to prevent the electrode from rotating while moving.

X type

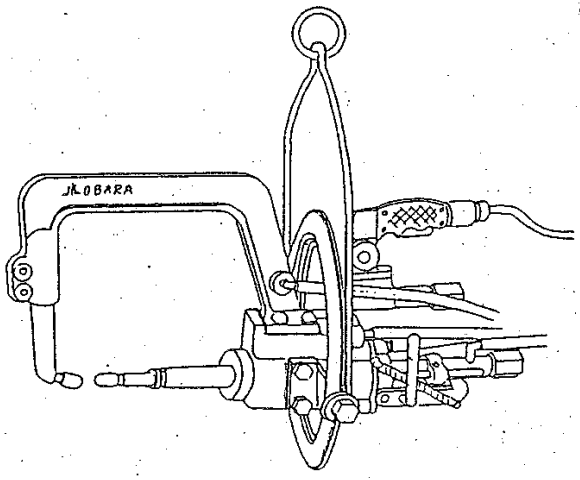


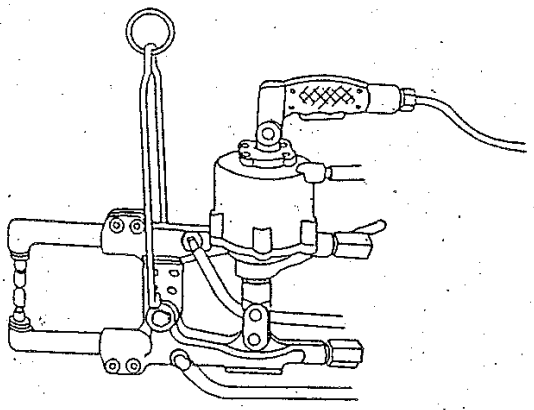
	Names of parts	Description
①	Gun body	An arm opposing to the movable yoke.
②	Movable yoke	An arm opposing to the gun body.
③	Holder	Semi-consumable part attached to gun body / movable yoke.
④	Adapter	A conductor between the cap tip and the gun body.
⑤	Cap adapter	A conductor where the cap tip is installed.
⑥	Cap tip	An electrode in direct contact with weld zone.
⑦	Fulcrum pin	A fulcrum to joint the movable yoke and the gun body.
⑧	Support bracket	A board for fixing the fulcrum pin.
⑨	Cylinder assembly	A unit that generates electrode pressurization.
⑩	Hinge base	A base to joint the cylinder and the gun body.
⑪	Stopper	A fixture to fix the piston rod in a sub-open position.
⑫	Fork end	A joint to connect the piston rod to the movable yoke.
⑬	Hinge pin	A pin used at the hinge.

OPERATION MANUAL

Portable Spot Welding Gun Series

Model : UC,UX,UCH.UXH





Please translate this operation manual to your country language before you use the equipment.

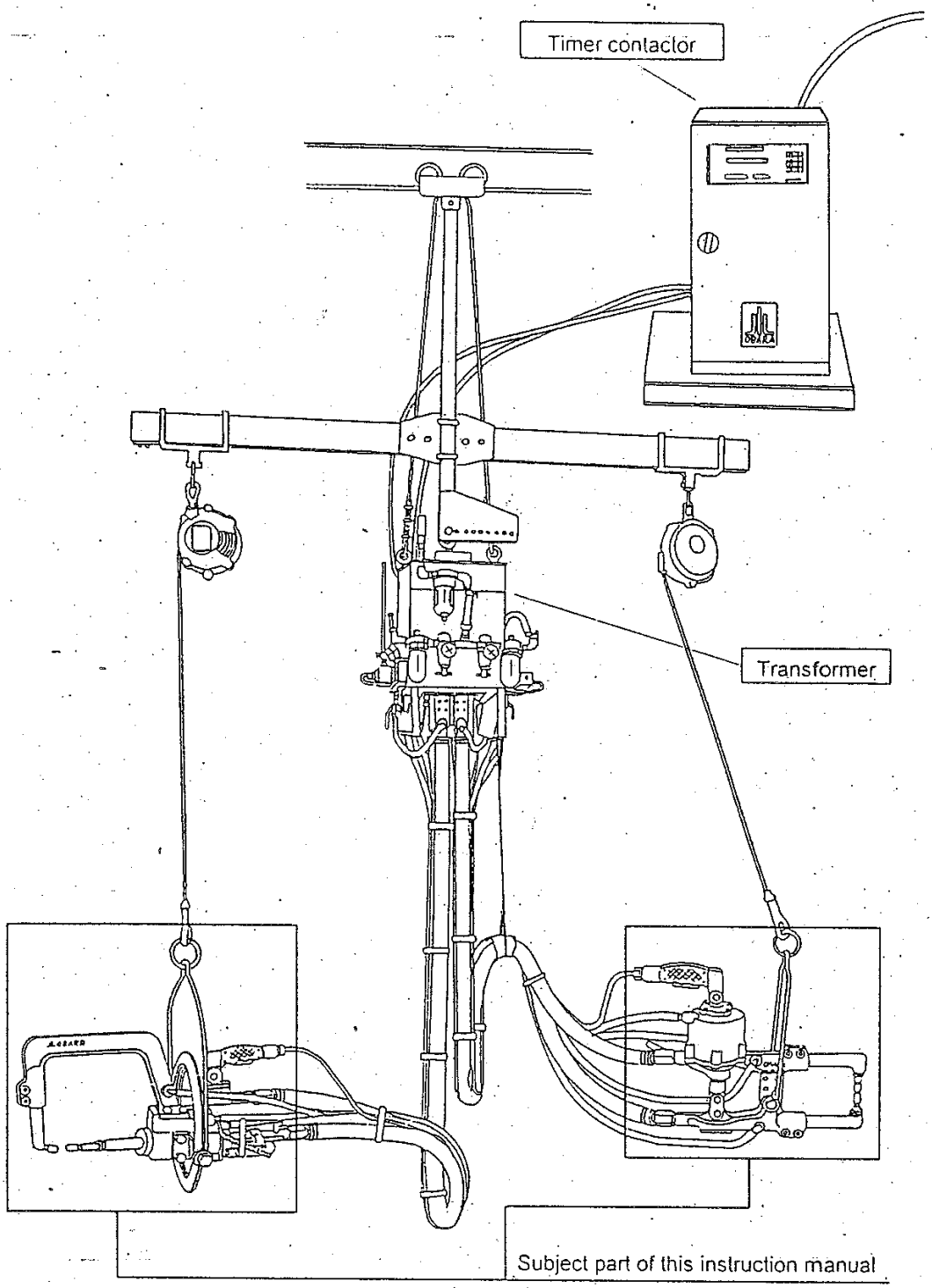
In order to use this product safely, make sure that you read this document carefully before using it. Especially safety-related cautionary articles are extremely important to understand.
Always keep this instruction manual at a specified location.

JLOBARA CORP.

1997/6/18	No. F-121-1

JLOBARA CORP.

1 Clarification of Subject to be Described



2 Limitation on Operator

In order to maintain the safety of the operations, do not allow the following people to engage in the operations.

⚠ CAUTION
• Mentally disabled. • Those with disability in hands, legs, eyes, and ears. • Drug (including narcotics) abusers. • Intoxicated. • Anyone who uses a heart pacemaker. • Those who do not wear specified protection devices. • Those who are non-qualified, (Those who have not had sufficient training in the operation of the equipment.) • Those who have left their long hairs as they are.

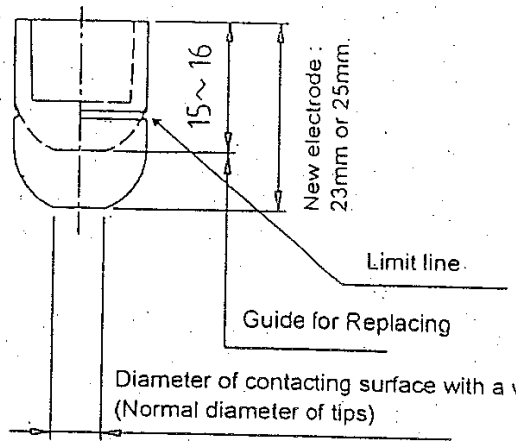
3 Safety Training

Operators of the gun should have enough knowledge and skill of the followings.

⚠ CAUTION
• To understand the contents of this instruction manual. • To understand the meaning of warning labels. • To acquire the method of heart massage and artificial respiration(CPR). • To check protective attire such as that of fire 'fighters. • To clarify contact point at emergency. • To acquire/check how to treat burns and injuries, and the location of first aid kit. • To check the location of emergency stop switch and how to reset it. • To understand how to inspect the system. • To have enough knowledge on electricity to understand it. • To understand the system, wiring diagram, and voltage. • To have enough knowledge on resistance welding to understand it.

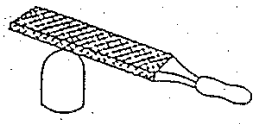
4 Guide to Replace Electrode Tips

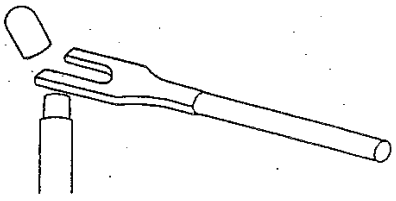
Replace the electrode tip when it wears to 3 to 5 mm from the limit line shown in the figure. The wear of electrode tip is 7 to 8mm. Given the entire length of new tip is 23mm, replace it when it becomes 15 to 16mm log.

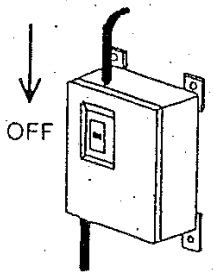


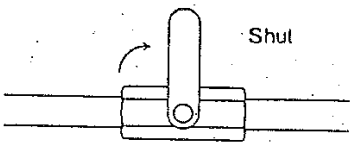
5 Safety Remarks when Replacing Electrode Tips

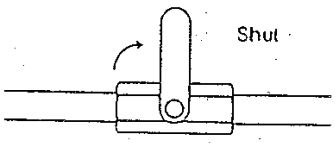
⚠ CAUTION
When dressing or replacing the electrode tip, make sure that power source to all devices are turned off, and shut the stop valve for compressed air and inlet/outlet of the cooling water, otherwise it may cause serious accidents.









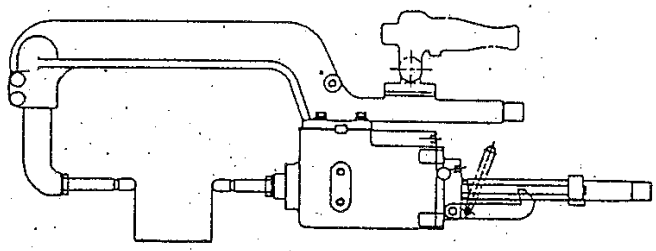


JILOBARA CORP.

6 Precautions in Welding

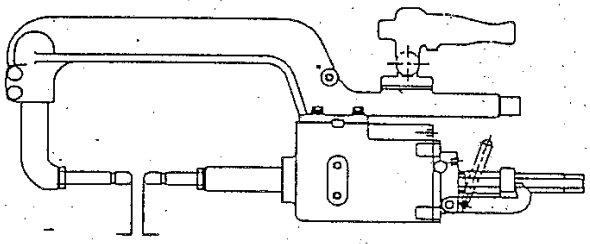
6.1 The double-stroke gun

When using a double-stroke gun, make sure to start welding in a sub-open position.



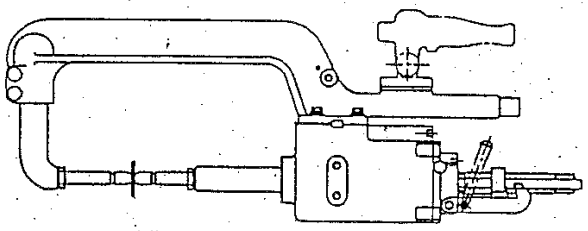
Retracted position

Turn ON the hand switch



Weld-lock position

Turn OFF the hand switch when the block has reached the stopper.



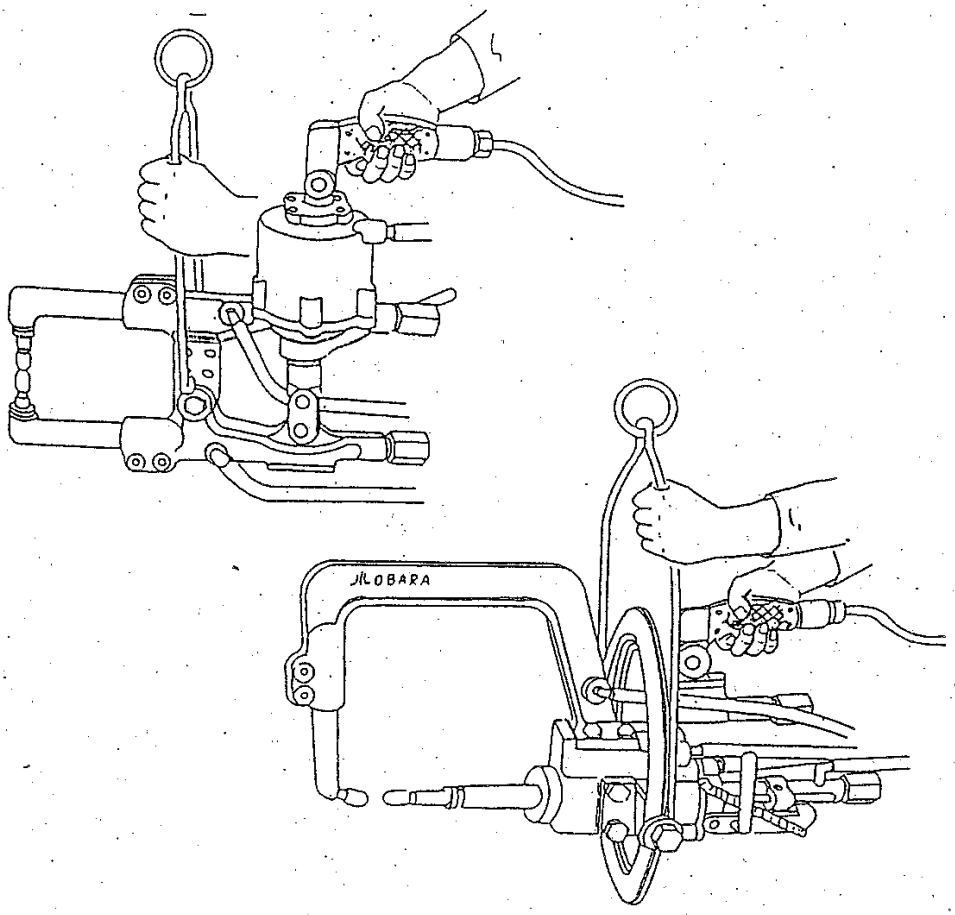
welding

Turn ON the hand switch again.

⚠ CAUTION
A direct welding from the retracted position causes a dangerous impact. It also results in a wrong or a slant welding. It is required to weld from a sub-open position.

6.2 How to handle the gun when welding

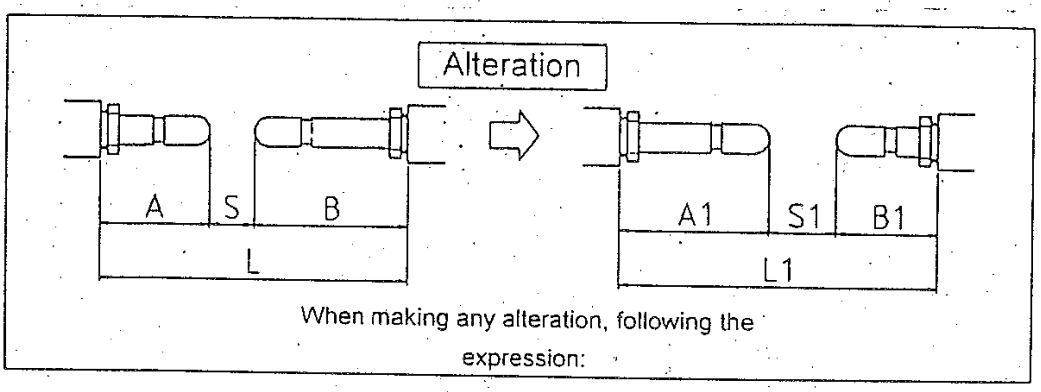
Grip the middle of the hanger and the hand switch.



⚠ CAUTION
Don not hold it at any other place than descried above when applying welding pressure. Your fingers or hands could be caught in the machine causing serious injury.

6.3 Other precautions

When altering any of the lengths of the adapter, the cap adapter or the cap tip, it is required that the total length of them be the same length as it was before the alteration.

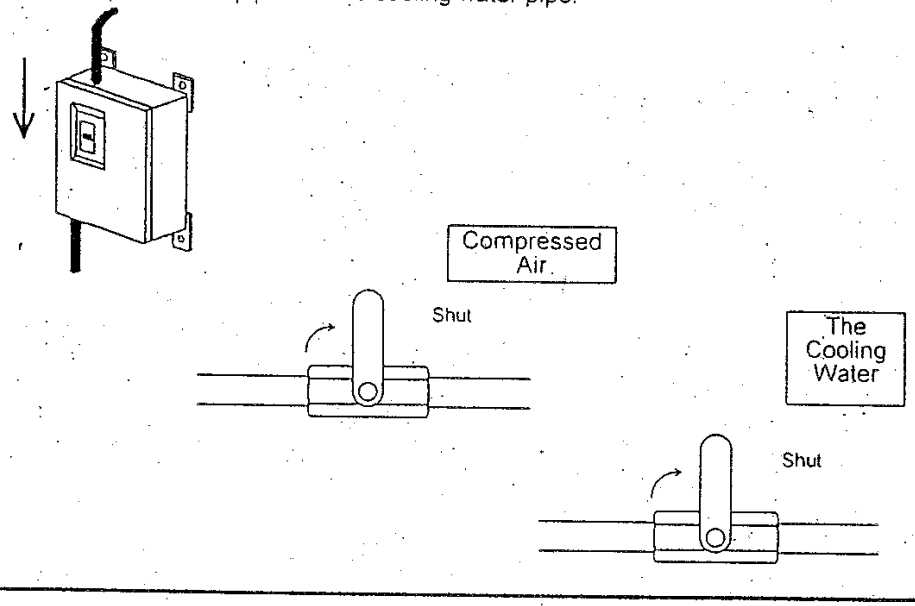


When making any alteration, following the expression:

In case of making any alteration mentioned above, change the length of the pipe for cooling water to match the electrode as well.

⚠ CAUTION

Before finishing any welding operation, turn off all power sources and close both stop valves of the compressed air pipe and the cooling water pipe.



7 Using Condition

- Condition with ambient temperature between 0°C to 40°C
- Indoor
- Altitude of 1000 meters or lower
- Temperature of cooling water to be used for welding machine shall be 30°C or lower and its resistance 5000 Ω · cm or more.

8 Maximum and Minimum Figures Allowed

Item	Maximum value	Minimum value
Volume	Refer to specifications on the assembly drawing.	
Position of center of gravity	Refer to the assembly drawing.	
Maximum welding pressure	Refer to specifications on the assembly drawing.	
Air	Specifications on the assembly drawing. Refer to operating air pressure.	0.245 MPa
Cooling water	10 ℓ / min, 0.392 MPa(4 kgf / cm²)	4.1 ℓ / min, Pressure loss 98 kPa (1 kgf / cm²)

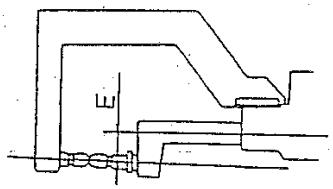
9 Eccentricity of Welding Position

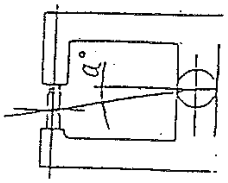
⚠ CAUTION

- Eccentricity of welding position causes increased deflection and slippage.
- When the tip gets wear, eccentricity arises between the tips which deteriorates the quality of welding. Therefore, care should be taken not to bring about the eccentricity.

- The criteria are as follows.

Standard	C type E= (mm)	X type α° =
○	0	0°
△	60 or less	10° or less
×	61 or more	11° or more

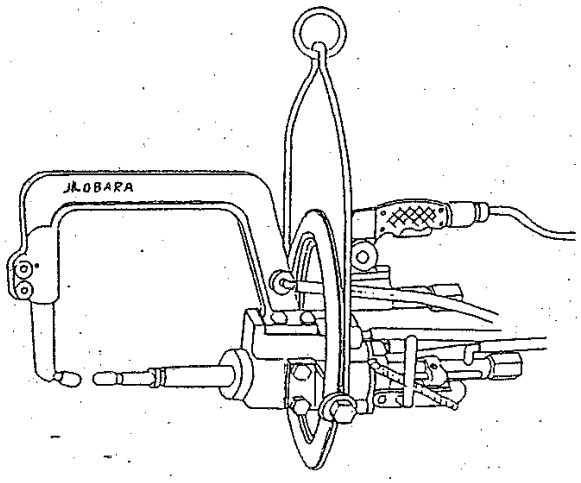


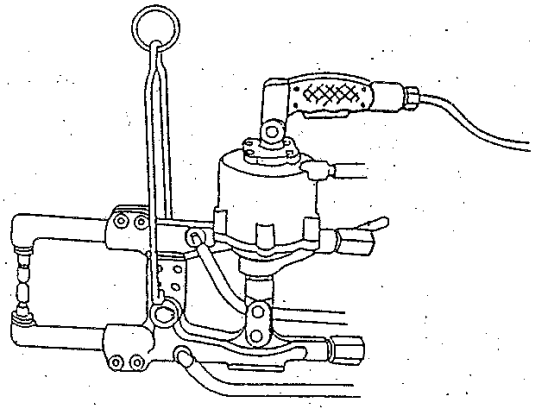


MAINTENANCE MANUAL

Portable Spot Welding Gun Series

Model :UC,UX,UCH.UXH





In order to use this product safely, make sure that you read this document carefully before using it. Especially safety-related cautionary articles are extremely important to understand.
Always keep this instruction manual at a specified location.

JLOBARA CORP.

1997/6/18	No. F-121-2

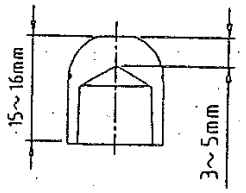
JLOBARA CORP.

1 Inspection Before Starting Operation

Inspect the following points before operation in order to have safe operation of the welding gun.

⚠ CAUTION		
Inspection points		Specification or standard condition
Checking if there is any water leakage	Transformer, secondary conductor section (electrode, shunt, terminal, etc.), piping section (hose, nipple)	There should be no water leakage.
Checking the volume of cooling water		There shall be specified flow rate. (4.0 ℓ/min)
Checking of compressed air	Cylinder section, piping section (hose, nipple), air pressure	There should be not air leakage. Refer to the assembly drawing of the gun. (standard 5kg/cm²)

2 Replacement Parts and Guide for Replacement

Classification	Parts name	C type (Unit : /0,000 times)	X type (Unit : /0,000 times)	Guide for replacement
Consumable parts	Tip	0.3 - 1		 (Depend on pressure)
Semi-consumable parts	Cap Adapter	30 - 50		Water leakage, dislocated welding
	Adapter	30 - 50		
	Holder	50 - 100		
Periodical replacement parts	Guide rod	100		Dislocated welding : 2mm or more
	Block	100		
	Piston rod pillow	100		
	Fulcrum pin		100	Dislocated welding : 2mm or more
	Fulcrum bush & washer		100	
	Hinge pin		100	Unstable operation
	Hinge bush & washer		100	
	Seals	200		Air leakage
	Spring	100		Malfunctioning of stopper

Replace hoses when damage is found.

3 Maintenance and Inspection

3.1 Periodical Inspection

In order to use the welder its in optimum condition, inspect the following periodically while it is being used.

Category	Inspection
Random inspection	• Dress the tip when its head is deformed or expanded. The dressing should be made in such a way that the head configuration looks like the original. • The tip should be used within its wear limit, which is maximum 8mm (for standard tip of ϕ 16 x 23L). • When excessive heat is generated in any section of the gun (60°C or more), make sure to check the volume of cooling water.
Daily inspection	• There should be no water or air leakage in the cooling water and air circuit. • There shall be no damage nor water drip on the power source. • There should be specified water flow rate. • Specified air pressure should be secured.
Weekly inspection	• Cleaning and inspection of the gun and valve. • Inspection loose bolts on the secondary side conductor. (Tighten by the specified torque) • Inspection of dislocated center of the tip.
Monthly inspection	• Inspect tightening condition of bolts of each part of the gun. (Tighten by the specified torque) • Inspection of welding spot position. • Cleaning of each section of the gun including removal of the spatter. • Checking the operation of both cylinder and each rod. Inspection to check if there is any damage on each rod.
Half-yearly inspection	• Inspection of cylinder seal and scraper. • Checking of insulation resistance. (500VDC 1M Ω or more)

3.2 Inspection per Unit

Important inspection points per unit are shown as follows.

Unit	Inspection
Cylinder	• Does it move smoothly? • Are the nuts and bolts of each part sufficiently tightened? • Is there any air leakage? • Check if the stroke is satisfactory. • Is there any damage on the rod?
Secondary conductor section	• Are all bolt nuts remain tightened that screw up the energized section? • Is there any damage on the insulation materials between secondary conductors as well as groundings respectively?

4 Troubleshooting

4.1 Troubleshooting of gun

Steps to deal with problems are shown as follows.

Unit	Source of problem	Phenomena	Dealing with problems
Cylinder	Internal surface of tube	Shallow sliding flaw	No practical problem Give a slight polish with sandpaper.
		Deep sliding flaw	When it is not repairable, replace with a new one.
		Burning flaw	Replace with a new one.
	Sliding surface of rod	Same with tube	No practical problem. Give a slight polish with sandpaper.
	Internal surface of bush	Shallow sliding flaw	No practical problem. Give a slight polish with sandpaper.
		0.2mm or more of partial wear, cracked bush	Replace with a new one. Check if there is an excessive lateral load inflicted.
	External surface of piston	Shallow sliding flaw	No practical problem. Give a slight polish with sandpaper.
		Deep flaw or scratch	When it is not repairable, replace with a new one. Check if there remains any foreign objects in the cylinder or tube.
		Cracked piston	Replace it with a new one.
		Abnormally worn piston	Check if there is an excessive lateral load inflicted on the piston rod.
	Connected section of piston rod and piston	Loose	Re-tighten it. Check if it is in a fixed position. Replace the nut with a new one.
		Crack	Replace with a new one. Check if there is a substantial inertia force inflicted.
Secondary conductor section	conductor area of arm, shunt, and shunt terminal	Shallow electric corrosion	Make it flat with a file and give a polish with sandpaper.
		Deep electric corrosion	Machine it to flatten. If it is not repairable, use other conductor surface or replace it with a new one.
		Excessive heat generation	Check duty cycle, current value, cooling condition, number of weld and tact, and standardize the weld. Check if insulation materials are acceptable, and replace it if any of them is found discolored.

4.2 Troubleshooting for general welding equipment

Problems	Check-1	Check-2	Check-3	Measurements
The gun does not operate.	The timer will go.	The pressure gage will read.	Air pressure is insufficient.	Adjust the pressure regulator.
			The electromagnetic valve works well	A failure in the actuator of the gun. Repair it
			The electromagnetic valve do not work.	A failure in the electromagnetic valves. Replace it. Breaking of a lead.
		The pressure gage will not read.	No compressed air in piping.	Open the stop valve.
	The timer will not go.	The lamp of the power supply for the timer will light. (Check the voltage with a voltage tester.)	The external stop switch is ON.	Turn the switch off.
			It is set to the test mode.	Change it to the operation mode.
			The handle switch malfunctions.	Replace the hand switch.
			A failure in the control unit.	Consult the manufacturer on the repair
		The lamp of the power supply for the timer will not light. (Check the voltage with a voltage tester.)	The fuse of power supply for the timer is burnout.	Replace the broken fuse.
			A failure in cables, breaker or knife switch.	Replace or repair the defective parts.
The gun works well but welding is unable.	The lamp of the power supply for welding will light. (Check the voltage with a voltage tester.)	Thermostat is activated.		Check the level of cooling water. (Replenish if needed.)
		No pressure is applied.	A tip is worn out or too short.	Replace the tip with a proper one.
		The timer is out of order.	The thyristor malfunctions. (broken down)	Consult the manufacturer on the repair or the replacement.
			The printed circuit board malfunctions. A failure in the ignition circuit	
	The lamp of the power supply for welding will not light. (Check the voltage with a voltage tester.)	The knife switch on the breaker is out of order.		Repair or replace it.

5 Notes on Disassembling and Assembling

⚠ CAUTION

① Notes on Disassembling

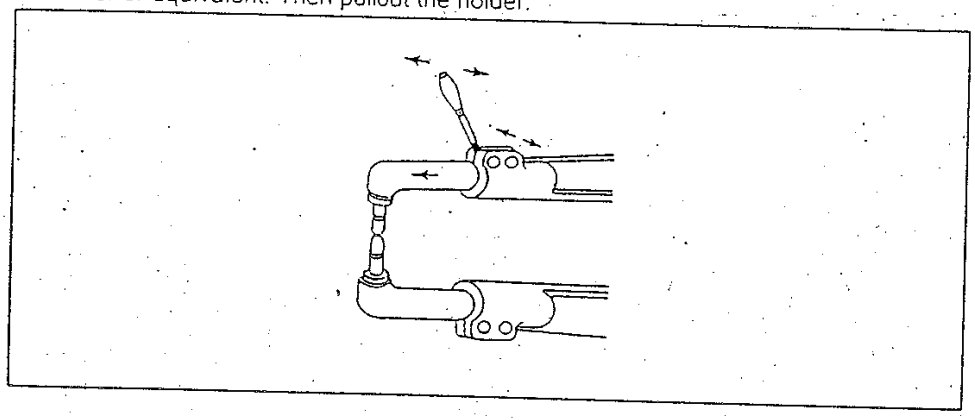
- Secure enough space for disassembling. The space must be dirt and dust-free.
- Disassemble after removing spatter, oil, and dirt.
- Pay attention to the disassembled components so they will not be mixed up with other parts.
- Treat the components carefully not to give any flaw to their sliding sections.
- When disassembling the piston rod, treat the clamp of rod or piston carefully not to give any flaw to its sliding section.
- When removing secondary cables, mark their terminals in advance so that their directions and angles can be easily realized.
- When removing hoses, mark the directions including "IN" and "OUT" in advance so that they can be correctly assembled.
- Protect connections of tubes and tips of rubber hoses with clean waste to keep dirt and dust away.
- When disassembling secondary side conductor sections, handle small parts and tools(insulating materials, bolts, nuts, and tools) carefully so that none of them should fall into the system or be left behind.
- When disassembling the arm, mark the disassembling portions in advance to avoid dislocation between electrodes when they are re-assembled.
- Make sure not to damage the conductor surface.

② Notes on assembling

- Assemble in clean work place to avoid any foreign objects.
- Make sure that every part is clean and no dirt and dust are attached to any of them before assembling.
- Apply lubrication oil to the rod, bush, and sliding bearing when assembling.
- Remove rust from every part completely if any.
- Pay attention not to remove balls from the bearing at the corner of the rod when In inserting the equalizing rod into a ball bearing. Check if there is any damage to the seal when assembling.
- Tighten nuts and bolts by the specified torque (See tightening torque for bolts).
- Handle the seal with care when assembling not to give them any flaw.
- Make sure not to give any scratch to the seal when inserting the piston to the tube and the bush into the rod
- Check if there is no discoloration nor change by oxidation.

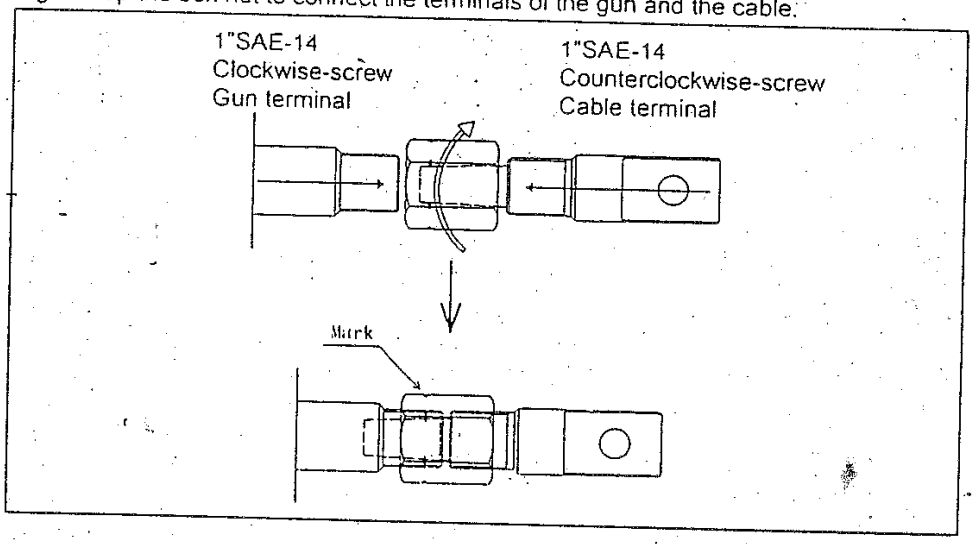
6 Replacing Method of Holders

Untighten the clamping bolts, and widen the split of the clamp supporting the holder by using a screwdriver or equivalent. Then pullout the holder.



7 Replacing Method of Cables

Tighten up the box nut to connect the terminals of the gun and the cable.



8 Endurance Life and Guaranteed Life

Endurance life and guaranteed life are shown as below.

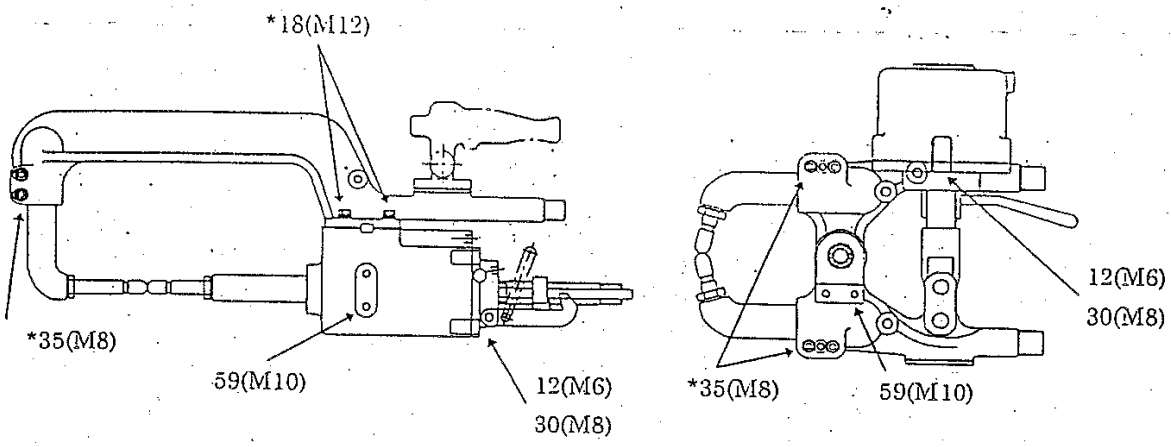
- Periodical replacement parts are excluded.
- Cases where special parts with less endurance are used excluded.

Number of spots (Unit : 1,000 times)

Type	Endurance life	Guaranteed life
UC,UCH	4,000	2,000
UX,UXH	4,000	2,000

9 Tightening Torque for Bolts

Unit : N·m
numbers in ( ) designate the bolt size



⚠ CAUTION

- Bolts marked with * marks should be tightened by above mentioned torque by using a torque wrench.
- Specified torque varies depending on bolt diameters and materials used.
- The strength of the bolts are 12.9T for hexagon socket head cap screws and 10.9T for hexagon bolts.
- Torque for bakelite(PL-FLE) is set by the surface pressure of 58.8MPa(6kg·f/mm²).
- The surface pressure of epoxy resin (EL-GEM) is set at 187.8Mpa (11 kg·f/mm²).

List of torque

Size	Bolt type (with washers)	Standard torque N·m (kg·f-cm)	Torque for aluminum N·m (kg·f-cm)	Torque for bakelite N·m (kg·f-cm)	Torque for epoxy resin N·m (kg·f-cm)
M5	Hexagon Head Bolts	6.8 - 7.6 (69 - 77)	6.8 - 7.6 (69 - 77)		
	Hexagon Socket Head Cap Screws	7.9 - 8.8 (80 - 89)			
M6	Hexagon Head Bolts	11.5 - 12.8 (117 - 130)	11.1 - 12.3 (113 - 125)	4.8 - 5.2 (48 - 53)	8.8 - 9.8 (89 - 99)
	Hexagon Socket Head Cap Screws	13.3 - 14.8 (135 - 150)			
M8	Hexagon Head Bolts	28.2 - 31.3 (287 - 319)	21.1 - 23.4 (215 - 238)	9.1 - 10.1 (92 - 102)	16.6 - 18.5 (169 - 188)
	Hexagon Socket Head Cap Screws	32.9 - 36.5 (335 - 372)			
M10	Hexagon Head Bolts	55.9 - 62.2 (570 - 634)	32.0 - 35.6 (326 - 362)	13.7 - 15.3 (139 - 155)	25.2 - 27.9 (256 - 284)
	Hexagon Socket Head Cap Screws	65.4 - 72.6 (666 - 740)			
M12	Hexagon Head Bolts	96.7 - 107.5 (986 - 1096)	48.7 - 54.1 (496 - 551)	16.9 - 18.8 (172 - 191)	30.9 - 34.4 (315 - 350)
	Hexagon Socket Head Cap Screws	113.0 - 125.6 (1152 - 1280)			
M16	Hexagon Head Bolts	244.2 - 271.4 (2490 - 2767)	59.2 - 65.8 (603 - 670)	25.4 - 28.24 (258 - 287)	46.5 - 51.6 (474 - 526)
	Hexagon Socket Head Cap Screws	285.2 - 316.9 (2908 - 3231)			
M20	Hexagon Head Bolts	285.2 - 316.9 (2908 - 3231)	90.0 - 99.9 (917 - 1018)		
	Hexagon Socket Head Cap Screws	476.9 - 530.0 (4863 - 5404)			

PSW GUN MONTHLY & SEMIANNUAL CHECK LIST

Machine Condition	Mark
Good	○
No good	x
Correction Made	ⓧ

Line Name		Gun No.	
Machine No.		Gun No.	

No.	Item	Check point	Frequency	1	2	3	4	5	6	7	8	9	10	11	12
1	Gun main frame	Cleaning, Removing spatter	Once per month												
2	Gun main frame	Loose screws and bolts	Once per month												
3	Welding spot position	No abnormalities such as bending, slide, and dislocated center.	Once per month												
4	Cylinder	Smooth action? Is the stroke proper?	Once per month												
5	Each rods	No damage allowed.	Once per month												

No.	Item	Check point	Frequency	Front stage						Second stage					
1	Cylinder	Seal scraper	Once per semiannual												
2	Arm - Body	Insulation resistance	Once per semiannual												
3	Fulcrum Assy	Insulation resistance	Once per semiannual												

PSW GUN WEEKLY CHECK LIST

Machine Condition	Mark
Good	○
No good	x
Correction Made	ⓧ

Line Name		Gun No.	
Machine No.		Gun No.	

No	Item	Check point	Frequency	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
1	Gun main frame	No damage allowed.	Once per week																										
2	Valve, S/L, etc.	No scratch/damage allowed. Check set position	Once per week																										
3	Secondary side conductor	Make sure bolts on connections are not tightened enough. If not tighten them firmly.	Once per week																										
4	Primary side power supply	No scratch/damage allowed. There shall be no loosening	Once per week																										
5	Electrode (tip)	Dislocation of electrode : Maximum 1.6 mm	Once per week																										

No	Item	Check point	Frequency	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52
1	Gun main frame	No damage allowed.	Once per week																										
2	Valve, S/L, etc.	No scratch/damage allowed. Check set position	Once per week																										
3	Secondary side conductor	Make sure bolts on connections are not tightened enough. If not tighten them firmly.	Once per week																										
4	Primary side power supply	No scratch/damage allowed. There shall be no loosening	Once per week																										
5	Electrode (tip)	Dislocation of electrode : Maximum 1.6 mm	Once per week																										

PSW GUN DAILY CHECK LIST

Machine Condition	Mark
Good	○
No good	x
Correction Made	⊗

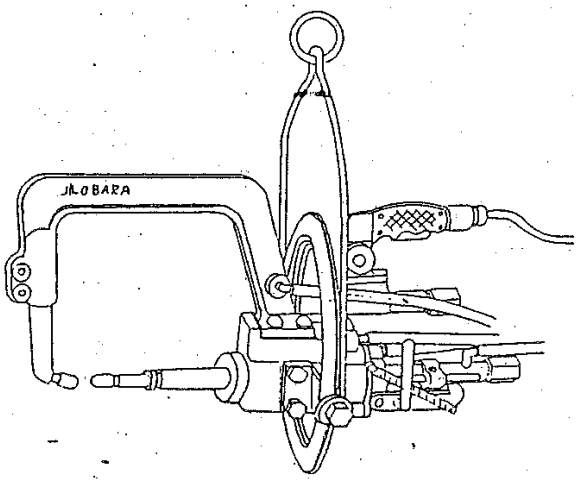
Line Name		Gun No.	
Machine No.		Gun No.	

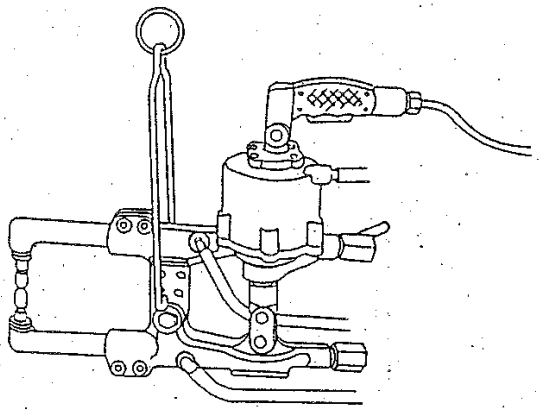
No.	Item	Check point	Frequency	Number /month 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
1	Electrode (tip)	Configuration of electrode head : MAXϕ 8mm	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
2	Air circuit	Check air pressure	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
3	Air circuit	No air leakage allowed.	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
4	Cooling water	Check flow rate	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
5	Cooling water	No water leakage allowed.	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/
6	Entire gun	No excessive heat must be generated : 110°C or lower	Once par shift	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/	/

INSTALLATION MANUAL

Portable Spot Welding Gun Series

Model : UC,UX,UCH.UXH





In order to use this product safely, make sure that you read this document carefully before using it. Especially safety-related cautionary articles are extremely important to understand.
Always keep this instruction manual at a specified location.

JL OBARA CORP.

1997/6/18	No. F-121-3

JL OBARA CORP.

1 Packing

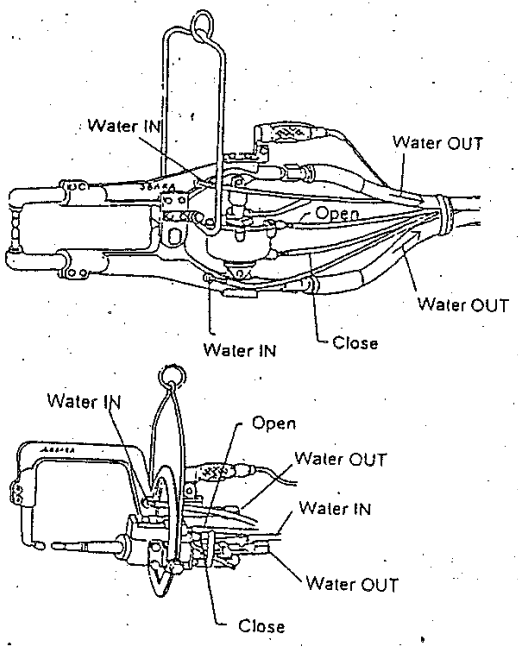
⚠ CAUTION
Packing is made in conformity to JIS Z1402 and JIS Z1403. You are kindly requested to handle the products carefully and avoid exposure to rain and strong impact. Crate packing shall be opened indooors or in a covered place with care not to damage the products inside.

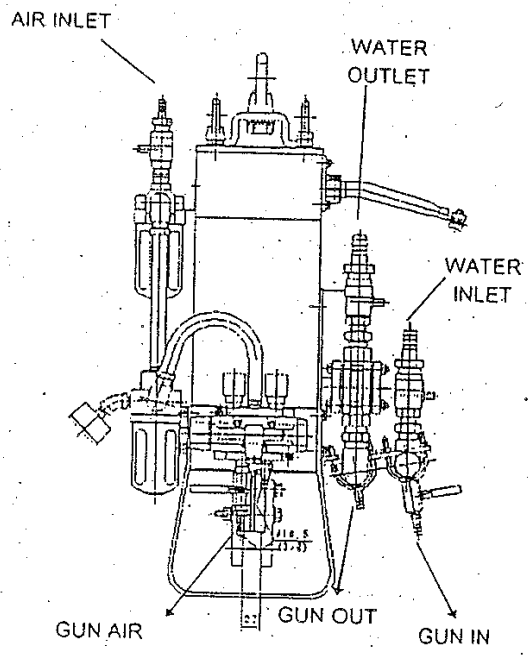
Standards applied	Contents
JIS Z1402 1·C−5	To be applied to net volume of 150kg or less. Plywood crating, wooden box.
JIS Z1403 2·A	To be applied to net volume of 150kg or more. Nailed plywood crating.

In the Japanese domestic market some products are delivered in simple packing or without packing depending on agreement with customers.

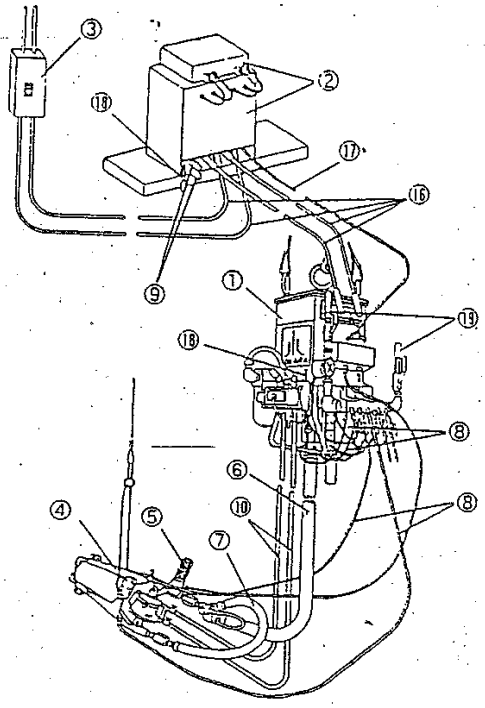
2 Installation

⚠ CAUTION
• When handling cables or hoses, keep their balance carefully by using a balancer so that an operator is not imposed to a heavy load. • Using a quick exhaust valve will reduce approximately 50% of the endurance of the gun by the increased impact (30 to 40% more) caused by cylinder movement. • Make sure that the cooling hoses and the air hoses are properly installed when connecting them to the transformer.





3 Setting Method of Cable, Cooling Water and Air Hose



	Name of Parts	Qty	Remarks
1	TRANSFORMER	1	PT-※※※
2	TIMER CONTACTOR	1	T252/T252P etc
3	NO-FUSE BREAKER	1	RGW-225B/400B
4	WELDING GUN	2	X-TYPE,C-TYPE
5	HAND SWITCH	2	
6	SECONDARY CABLE	2	
7	AID CABLE	2	
8	WATER HOSE		3/8" FOR GUN
9	〃 (IN.OUT)		〃 CONNECTOR
10	AIR HOSE		3/8" FOR
11	SUSPENSION	1	FOR TRANSFORMER
12	SPRING BALANCER	2	OEW-22~70
13	PLAIN TROLLEY	1	FOR
14	SAFTY WIRE	1	FOR TRANSFORMER
15	〃	1	FOR BALANCER
16	PRIMARY CABLE		WCT-100SQ
17	CONTROL 〃		VCTF-1.25SQ×12W
18	EARTH 〃		IV-14SQ
19	WATER HOSE		3/4"FOR
20	WIRE CLIP	8	
21	TERMINAL	2	"G" TERMINAL
22	INSULATING TUBE	8	
23	〃 WASHER	8	M10
24	BOLT/NUT	8	M10
25	KICKLESS BOLT	4	M12