










Pipe Cutter

OPERATION MANUAL



For every person who will be engaged in operation and maintenance supervision, it is recommended to read through this manual before any operations, so as to permit optimum operation of this machine.

Symbol	Title	Meaning
	General	General caution, warning, and danger
	Be careful not to get your fingers caught.	Possible injury to fingers if caught in the insertion port
	Caution: Electric shock!	Possible electric shock under special conditions
	Ground this equipment.	Operators must ground the equipment using the safety grounding terminal.
	Pull out the power plug from the outlet.	Operators must unplug the power plug from the outlet when a failure occurs or when there is a danger of lightning damage.
	Caution against bursting	Possible bursting under certain conditions
	General	General warning
	Caution: Hot!	Possible injury due to high temperature under certain conditions
	Caution: Ignition!	Possible ignition under certain conditions

CONTENTS

1 . Safety Information	2
1.1 General machine safety precautions	2
1.2 Gas cutting safety precautions.....	3
2 . Location of safety labels	5
3 . Outline of machine.....	6
3.1 Features of machine	6
3.2 Name and function of each section.....	6
3.3 Specifications.....	6
4 . Preparation for operation.....	7
4.1 Contents of package	7
4.2 Machine assembly	7
4.3 Preparation for operation	7
4.4 Fixing the machine to the pipe	8
5 . Cutting operation	8
5.1 Safety measures prior to operation.....	8
5.2 Ignition and flame adjustment.....	9
5.3 Cutting and piercing method	9
5.4 Procedures for starting cutting and extinguishing flame	10
5.5 Safety measures against backfire and flashback.....	10
5.6 Cutting operation	10
6 . Maintenance and inspection	11
6.1 Daily inspection	11
7 . Troubleshooting	11
8 . Sketch drawing of PICLE 1- II	11
9 . Parts list	12
10.1 Main units	12
10. Cutting Data.....	15

■ Safety information

Many accidents are caused by operation, inspection, and maintenance which disregard the basic safety rules. Carefully read, understand, and master the safety measures and precautions described in this instruction manual and on the machine before operating, inspecting, and maintaining the machine.

The safety messages are classified as follows for machine safety labels:

■ WARNING

This word is used in a warning message and a warning label at places that could cause injury or serious accident.

■ CAUTION

This word is used in a caution message and a caution label at places that could cause slight injury or machine damage. This is also used as a caution for frequent dangerous actions.

■ NOTICE SIGNS

This is a sign to show machine operators and maintenance engineers items that relate directly to damage of machines and surrounding facilities and equipment.

1.1 General machine safety precautions

Read and fully understand the following important safety information:

1.1.1 Machine safety

1. The machine casing is mainly made of aluminum alloy to reduce weight. For this reason, be careful not to drop a heavy item on the machine, or not drop the machine when carrying it since the alloy is not designed to withstand such impact.
2. When mounting hoses to the torch and distributor, tighten the nut with the attached wrench. After mounting, be sure to check there is no gas leak with a detection liquid. If a gas leak is found, retighten the nut firmly.
3. When fixing a tip to the torch, tighten the nut with the two wrenches attached. In addition, avoid damaging the taper of the tip since this may cause backfire.
4. Never disassemble the machine other than during maintenance and inspection. Otherwise, malfunction will result.
5. Never remodel the machine. Remodeling is very dangerous.
6. Never use the machine outdoors when the weather is wet. This will cause failure of the machine and could cause a fatal accident by electric shock.

1.1.2 Safety clothing

1. Be sure to wear protectors (gauntlets, goggles, helmet, and safety shoes) during operation.

1.1.3 Operation and handling safety precautions

1. Read this instruction manual before operating the machine.
2. Mount and center the machine correctly and confirm correct motion before operation.
3. Prior to operating the machine, check the safety of the surroundings to avoid accidents.
4. Never move the machine while the preheat flame is on.
5. Take great care of spatters and dross when operating the machine at a high position. They may injure people below.
6. Do not hit any object against the surface of the wheel to be in touch with pipes or drop the wheel so as not to scratch the surface; otherwise knocking will result.
7. **Weak chain tension will make the machine slip. Give an appropriate tension to the chain.**
8. Be careful not to get your hand caught between the upper plate and slide bracket.
9. When stretching the chain, be careful not to get your hand caught in the wing bolt.
10. Do not insert your hand into rotary sections (sprocket and wheel).
11. Be careful not to drop the machine when changing the chain.
12. Do not use deformed or rusted chains; otherwise the chain may be disengaged.
13. Do not mistake the top and bottom sides of the chain.
14. The number of chains must match the pipes.
15. Do not place the machine on pipes when it is unused.
16. Be careful not to damage the wheel.
17. The planer deflection due to a worm wheel causes curved cutting surfaces and discrepancy between the first and last cutting positions.

1.1.4 Maintenance and inspection precautions



1. Ask a qualified electrician to perform repair and inspection service.
2. Maintain the machine periodically.

1.2 Gas cutting safety precautions

Strictly observe the safety rules and precautions to ensure the safety of gas cutting operations. Operators and supervisors **MUST** keep safety in mind.

1.2.1 Prevention of explosion



1. Never cut pressurized cylinders or hermetically sealed containers.
2. Ensure sufficient ventilation for gas cutting to prevent the air from becoming stale.

1.2.2 Pressure regulator safety precautions



1. Before starting operation, check that all pressure regulators are operating correctly.
2. Ask a skilled repair engineer to perform maintenance and inspection service.
3. Do not use pressure regulators from which gas is leaking, nor malfunctioning pressure regulators.
4. Do not use pressure regulators smeared with oil or grease.

1.2.3 High-pressure gas cylinder safety precautions



1. Never use broken cylinders or cylinders from which gas is leaking.
2. Install cylinders upright and take measures to prevent them from falling.
3. Use cylinders only for specified purposes.
4. Do not smear container valves with oil or grease.
5. Install cylinders in a place free from heat, sparks, slag, and naked flame.
6. Contact the distributor if the container valves will not open.

Never use a hammer, wrench, or other tools to forcibly open container valves.

1.2.4 Safety precautions for hoses



1. Use the oxygen hose for oxygen gas only.
2. Replace cracked hoses or other hoses damaged by sparks, heat, unshielded fire, etc.
3. Install hoses without twisting.
4. To prevent breakage of hoses, take great care during operation and transportation.
5. Do not hold the hoses when moving the machine.
6. Periodically check the hoses for damage, leakage, fatigue, loose joints, etc. to ensure safety.
7. Cut hoses to the minimum possible length. Short hoses reduce hose damage and pressure drop, as well as reduce the flow resistance.

1.2.5 Safety precautions for fire



Take safety precautions to prevent fire prior to gas cutting.

Ignoring hot metal, sparks, and slag could cause a fire.

1. Keep a fire extinguisher, fire extinguishing sand, bucket full of water, etc. ready on the site where gas cutting is performed.
2. Keep flammables away from the cutting area to avoid exposure to sparks.
3. Always cool steel plates that have become hot after cutting, as well as hot cut parts or scrap, before bringing them close to flammables.
4. Never cut containers to which flammable materials are stuck.

1.2.6 Safety precautions for skin burns



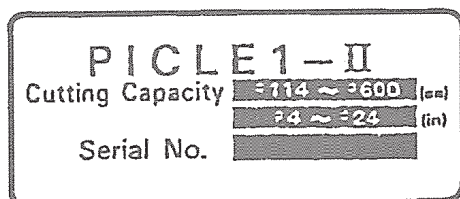
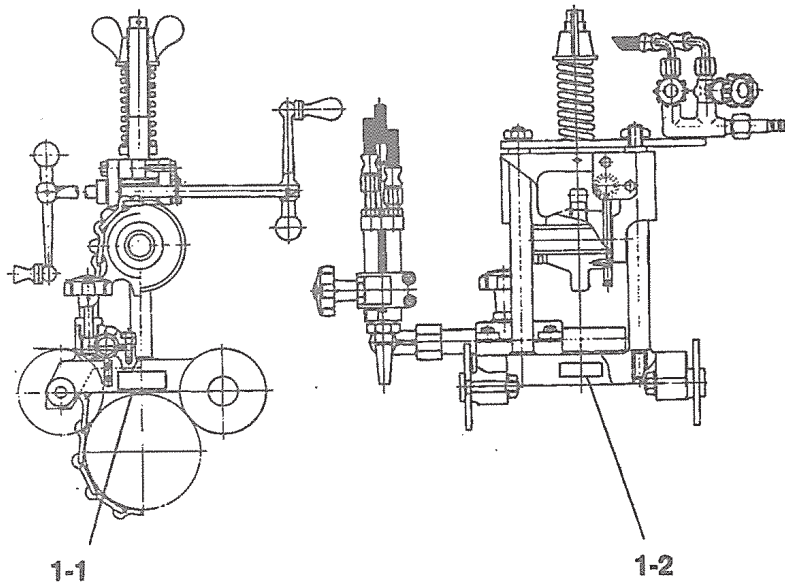
Observe the safety precautions to prevent skin burns. Ignoring heat, spatter, and sparks during operation could cause a fire or burned skin.

1. Do not perform cutting near flammables. (Move flammables well away from the sparks.)
2. Do not cut containers filled with flammables.
3. Do not keep lighters, matches, and other flammables nearby.
4. Flames from the torch will burn skin. Keep your body away from the torch and tip, and check the safety before operating the switches and valves.
5. Wear the correct protectors to protect your eyes and body.
6. Correctly tighten the tip to prevent backfire.
 - When fixing a tip to the torch, tighten the nut with the two wrenches attached.
 - If the tip is tightened excessively, it will be heated during cutting and tightened still more, making it difficult to remove the tip.
 - Avoid damaging the taper of the tip since this may cause backfire.

7. Check with soapsuds for any leakage of gas from the connection part of the distributor, hose, and torch.
Never use oil or grease on the connection of the oxygen pipe to avoid backfire which may lead to explosion.
8. Be sure to check the following when igniting:
 - Place the torch on the torch holder before igniting.
 - Always wear the required protectors (gauntlets, goggles, helmet, etc.)
 - Check for any obstacles, dangerous materials, and flammables near or in the direction of cutting. Determine the gas pressure.
 - The gas pressure must be within the appropriate range. (For the gas pressure, refer to the Cutting Data.)
9. The torch, tip, and heat shield are heated to a very high temperature. Always wear gauntlets when handling them. Also, the surface after cutting is very hot so do not touch it even while wearing gauntlets.
10. Never move the machine while the preheat flame is on.

Locations of safety labels

Safety labels and other labels for correct operation are affixed to the machine. Carefully read the labels and follow the instructions on them when operating the machine. Never remove the labels. Keep them clean and legible at all times.



1-1



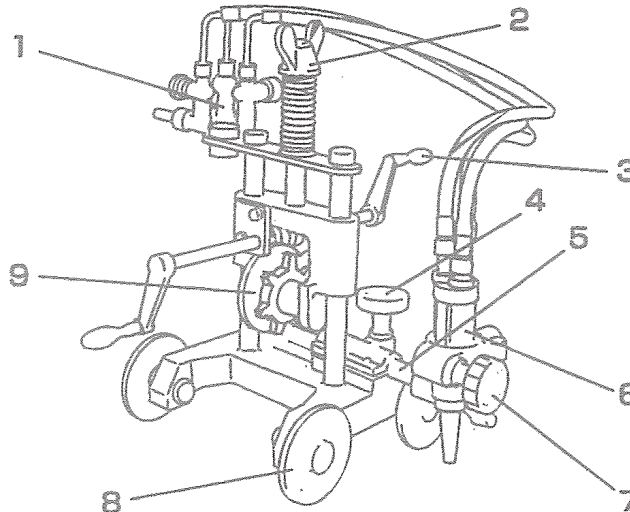
1-2

Outline of machine

3.1 Features of machine

PICLE1- II (pipe cutter) is a compact pipe cutter developed on the basis of the actual conditions of installed pipelines and work sites where pipe cutting is needed. The machine will exhibit excellent performance in straight and bevel cutting of all sizes of pipes, which accounts for most of pipe cutting work, being habitually used by many users.

3.2 Name and function of each section



1. Gas distributor

Controls the flow of preheating oxygen, fuel gas, and cutting oxygen, forming a cutting flame.

2. Wing nut

Controls the chain tension.

3. Handle

Drives the machine.

4. Torch slide handle

Moves the torch right and left.

5. Lateral bar

6. Torch

7. Up/down handle

Moves the torch up and down.

8. Wheel

9. Sprocket

Engaged with the chain, the sprocket rotates to move the machine.

3.3 Specifications

Weight :	8.5 kg
Length :	410mm
Wheel width :	210mm
Height :	410mm
Effective pipe cutting dia:	$\phi 114 \sim \phi 600$
Thickness of pipe to be cut:	50mm
Cutting shape :	I-shape cutting and V-bevel cutting (up to 45°)
Drive system :	Manual
Range of vertical torch movement:	50mm
Range of lateral torch movement:	100mm

Accessories

Tip: #0, 1, 2 one each	
Tip cleaning needle:	1 set
Lighter:	1 pc
Chain (80 pcs):	1 set

■ Preparation for operation

4.1 Contents of package

The contents of the standard package are shown below. Check them carefully before assembling the machine.

- Body1 set
- Gas distributor.....1 set
- Torch holder.....1 set
- Torch.....1 pc
- Hose
 - Distribution hose (3pcs set: 560L biased bend)1 set
- Tip 102 (for acetylene) or 106 (for propane) #0, 1, 2 ...one each
- Tip cleaning needle.....1 set
- Lighter1 pc
- Chain (80 pcs).....1 set

4.2 Machine assembly

1. Carefully take the machine out of its case.
2. Carefully check that the torch holder, gas distributor, torch, etc. are in position.
3. Attach the primary hose to the gas distributor.

Oxygen hose

Gas hose

4.3 Preparation for operation



4.3.1 Gas supply hose connection

1. Connect the respective gas supply hoses to the torch and distributor.
2. Check that hoses are connected correctly and there is no gas leakage.
3. Carefully check the cutting oxygen (JO), preheating oxygen (PO), preheating gas, and respective marking before connecting hoses to the torch and distributor.

4.3.2 Connecting the tip

1. Select a proper tip according to the thickness of the steel plate and attach it to the torch.
(To select a tip, refer to the table of cutting data.)
 - When fixing a tip to the torch, tighten the nut with the two wrenches attached.
 - If the tip is tightened excessively, it will be heated during cutting and tightened still more, making it difficult to remove the tip.
 - In addition, avoid damaging the taper of the tip since this may cause backfire.

4.3.3 Determination of number of chains

The relationship between the pipe O.D. and the number of chains is as follows:

$$y = x + 11$$

where, y = The number of chains

x = Pipe O.D. (Unit: cm; Round off the value in mm to the next value in cm.)

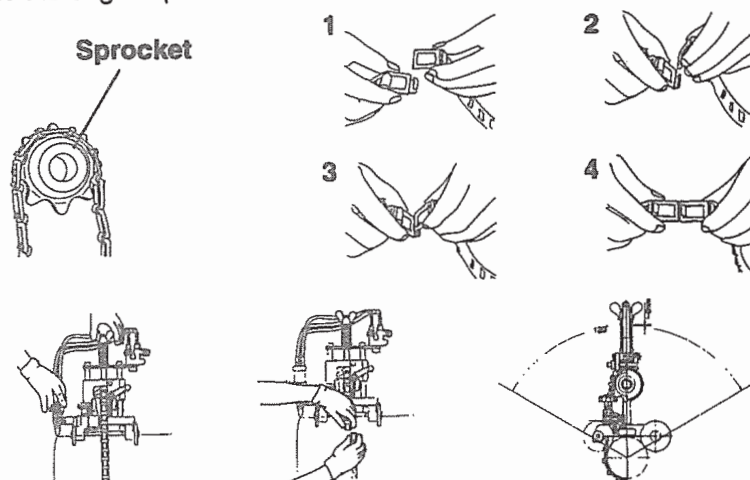
For example, pipe O.D. 114.3 mm 11.43 cm 12

$$\begin{aligned} y &= x+11 \\ &= 12+11 \\ &= 23 \end{aligned}$$

Therefore, about 23 chains are necessary.

4.4 Securing machine to pipe

1. Calculate the necessary number of chains, place the main unit on the pipe to cut, and turn the tightening handle counterclockwise to lower the slide bracket.
2. Engage the chain with the sprocket and attach the chain as shown in the figure to set it on the pipe. (Do not confuse the right side of the chain with its wrong side.)
3. Turn the tightening handle clockwise and fix the main unit to the pipe. When turning the tightening handle, exercise care so that the spring will not be in close contact, leaving a clearance of 1-2 mm.
4. To avoid a chain engagement error or chain loosening, hold the machine by hand, and turn the handle to the right and left within the range of approx. 120 degrees two or three times, tensioning the chain gradually.
5. After setting, turn the handle by one turn, and check to see if the hose length is sufficient and the nozzle returns to the original position.



Cutting operation



5.1 Safety measures prior to operation

5.1.1 Selection of tip

Referring to the Cutting Data, select the suitable tip according to the plate thickness.

For a heavily rusted plate or for a bevel cutting angle of more than 20°, select the tip one grade higher than the one shown in the Cutting Data.

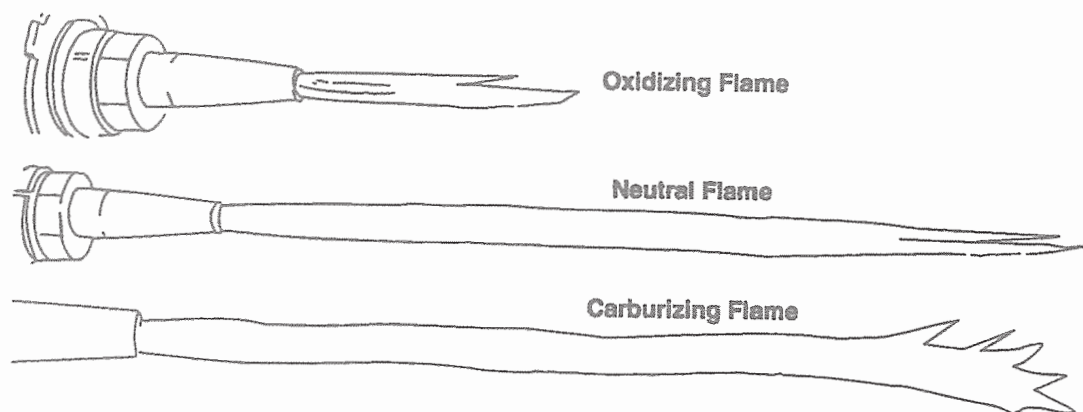
5.2 Ignition and flame adjustment

Adjust the gas pressure according to the Cutting Data. The data shows the pressure when all the valves are open. Readjust the pressure after ignition. (See page 20.)

■ Flame adjustment method

1. Open the fuel gas valve 1/4 to 1/2 a turn, and light the torch with an igniter.
2. Then, open the preheating oxygen valve gradually until a white cone of the standard flame has been obtained. (The incandescent area should be uniform and about 5-6 mm (3/16-1/14") in length.)
3. Open the jet oxygen valve fully. Readjust the flame if its condition has changed. A disorderly flow of the jet oxygen will adversely affect the quality of the cutting surface. In such a case, clean the tip with a suitable cleaning needle while the jet oxygen is flowing.
4. Appropriate distance between the tip end and cutting surface:
 - Acetylene gas8-10 mm
 - LPG gas5-8 mm

Neutral flame ensures a good-quality cut surface. (Oxidized flames may be used for bevel cutting.) The oxidized flame shortens the cutting oxygen flow, causing slug deposition or melting the upper edge of the cut surface. Excessively high cutting oxygen pressure will cause the same effect.



5.3 Cutting and piercing method

1. Cut in from the end of steel plate.
2. Pierce steel plate before cutting.
3. Drill a hole before cutting.

■ Piercing method

- 1) Ignite and adjust the flame.
- 2) Thoroughly preheat the cut-in point until it is white hot.
- 3) Open the cutting oxygen valve to pierce the steel plate. The tip should be about 15-20 mm from the plate to prevent slag from splashing onto the tip and adhering there, which will shorten the working life of the tip.

5.4 Procedures for starting cutting operation and extinguishing the flame

1. Align the tip with the cutting start point, ignite, and then adjust the flame.
2. Sufficiently preheat the cutting start point.
3. After heating, supply cutting oxygen and turn the handle simultaneously to begin cutting..
4. Carefully check the cut condition, and turn the handle to set an optimum cutting speed. Refer to the Cutting Data.
5. Extinguish the flame after cutting as follows:
 - 1) Stop the handle.
 - 2) Close the cutting oxygen valve.
 - 3) Close the preheating oxygen valve.
 - 4) Close the fuel gas valve.

5.5 Safety measures against backfire and flashback

5.5.1 Prevention of backfire

Backfires may cause serious accidents or fires. Be careful to prevent such disaster. When a backfire occurs, find the cause and inspect and maintain the machine correctly before using the machine again.

The following are causes of backfire:

- 1) Improper gas pressure adjustment
- 2) Overheated tip
- 3) Slag clogged in tip
- 4) Damage to the tapered section of the tip or torch will cause backfire.

5.5.2 Prevention of flashback

Flashback could cause fire and break the machine. Should there be a hissing sound in the torch, quickly take the following action:

- 1) Close the preheating oxygen valve.
- 2) Close the fuel gas valve.
- 3) Close the cutting oxygen valve.

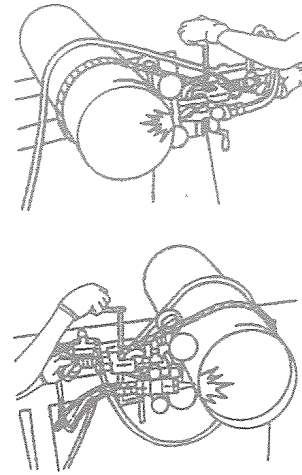
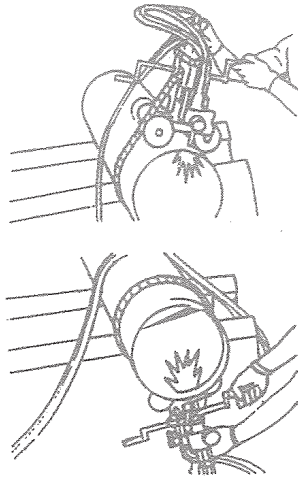
Should flashback occur, find the cause and take appropriate action before using the machine again.

5.6 Cutting operation

1. Place the tip at the cutting start point.
 2. Ignite the tip and continue preheating sufficiently.
 3. Open the cutting oxygen valve and turn the handle simultaneously to begin cutting.
 4. While observing the cutting conditions, turn the handle to set the optimum cutting speed.
 5. After cutting, stop the handle, and close the cutting oxygen valve, fuel gas valve, and preheating oxygen valve in this order.
- * Thereafter, repeat the operations from the beginning (item 1).

During cutting, hold the wing nut with the right or left hand as shown in the figure.

When the machine moves down, support the machine from the bottom, and when the machine moves up, lift the machine.



Maintenance and inspection

Refer to the following for inspection and maintenance of the machine and use the machine under the best operating conditions at all times.

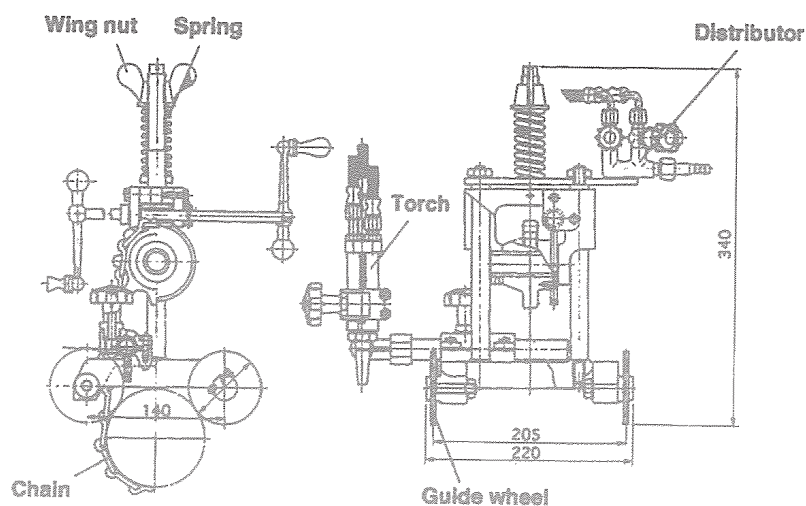
6.1 Daily inspection

1. Oil the rotary section of the machine (wheel, sprocket, worm gear, worm wheel, handle, and worm bearing), as well as the wing nut, lift shaft, and sliding sections once a week.

Troubleshooting

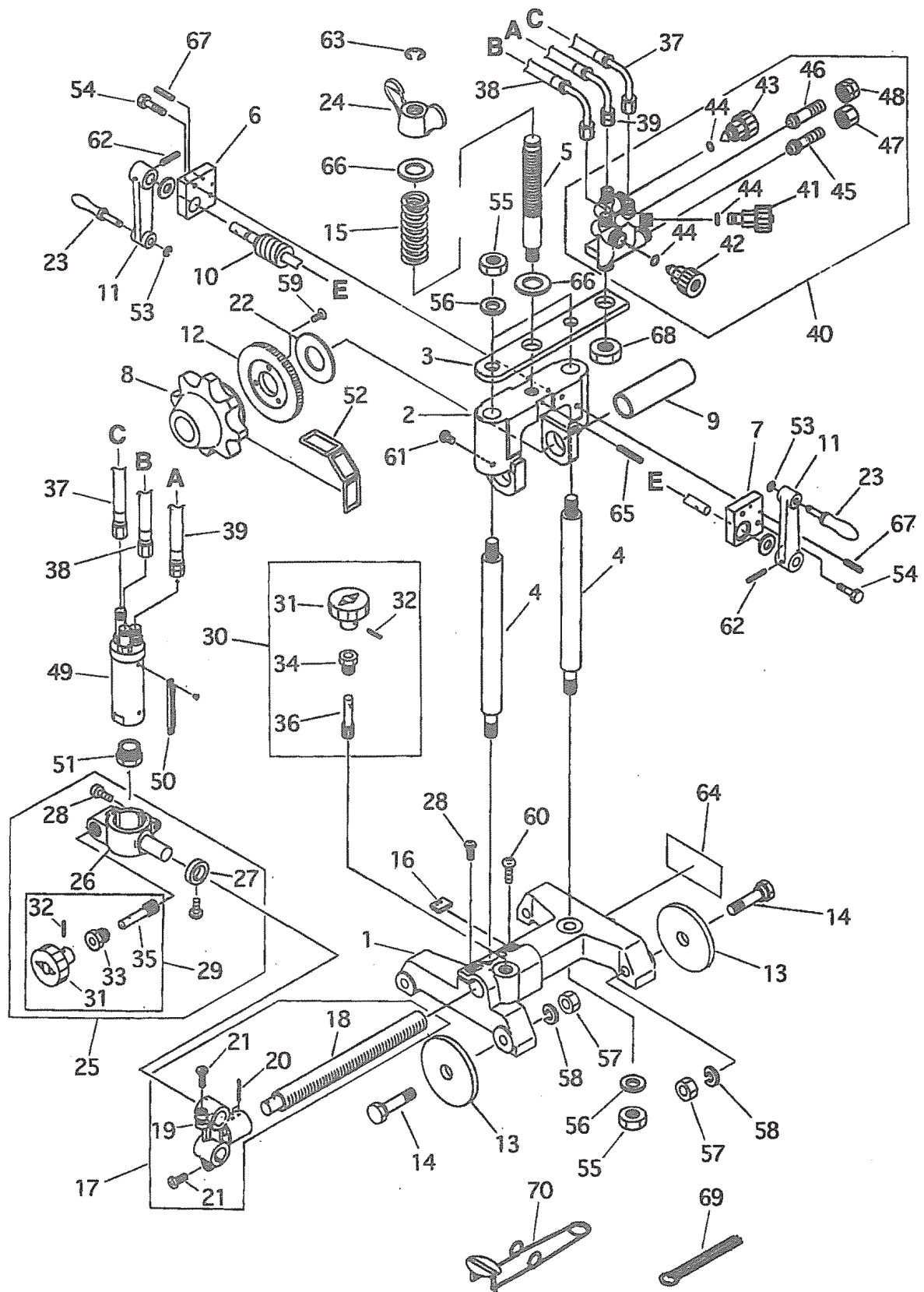
Trouble	Cause	Remedy
Machine does not run	1) Chain tension is too firm.	Adjust.
	2) Bad worm gear.	Repair.
	3) Wheel does not rotate.	Lubricate or repair.
Defective surface	1) Bad tip.	Clean or replace.
	2) Unsuitable gas pressure and cutting speed.	Re-adjust.

Sketch drawing of PICLE 1- II



Parts list

9.1 Main units



Main and driving units

ITEM No.	PART NAME	QTY	STOCK No.	REMARKS
1	Body	1	60031103	
2	Slide bracket	1	60031119	
3	Upper plate	1	60031124	
4	Slide shaft	2	60031122	
5	Lift shaft	1	60031123	
6	Worm metal(right)	1	60031138	With Du bush
7	Worm metal(left)	1	60031139	With Du bush
8	Sprocket	1	60031117	
9	Sprocket shaft	1	60031120	
10	Worm shaft	1	60031130	With worm
11	Grip arm	2	60031128	
12	Worm wheel	1	60031118	
13	Wheel	4	60031104	
14	Wheel shaft	4	60031105	
15	Spring	1	60031125	
16	Key	1	60031116	
17	Torch holder support assembly	1	60031137	
18	Bar	1	60031112	
19	Torch holder base	1	60031113	
20	Spring pin(PR-3×25)	2	6B023025	φ 3×25
21	Screw(SP-6×16)	2	6B520616	M6×16
22	Collar(A)	1	60031121	
23	Grip	2	60031127	
24	Wing nut	1	60031126	
25	Torch holder assembly	1	60031136	
26	Torch holder	1	60031114	
27	Angle graduation ring	1	60030906	With screw
28	Screw(SP-6×16)	2	6B520616	M6×16
29	Up/down handle assembly	1	60031115	
30	Cross feed handle assembly	1	60030556	
31	Handle(φ 40)	2	60030223	φ 2.5×16
32	Spring pin(PR-2.5×16)	2	6B022516	φ 2.5×16
33	Pinion metal	1	60030909	
34	Pinion metal	1	60030557	

ITEM No.	PART NAME	QTY	STOCK No.	REMARKS
35	Pinion	1	60030732	
36	Pinion	1	60030558	
37	Hose for Jet oxygen	1	60031106	M12×560 Except USA,KE
	Hose for Jet oxygen	1	60031107	M12×560 USA only
	Hose for Jet oxygen	1	60031108	M12×560 KE only
38	Hose for preheat oxygen	1	60031108	M12×560 Except USA
	Hose for preheat oxygen	1	60031109	M12×560 USA only
39	Hose for gas	1	60031110	M12×560Left Except USA
	Hose for gas	1	60031111	M12×560Left USA only
40	Distributor	1	60013101	Except USA,KE
	Distributor	1	60013102	USA only
	Distributor	1	60013105	KE only
41	Valve for Jet oxygen	1	60015251	Except KE
	Valve for Jet oxygen	1	60015252	KE only
42	Valve for preheat oxygen	1	60015255	Except KE
	Valve for preheat oxygen	1	60015258	KE only
43	Valve for gas	1	60015256	
44	O-ring		6E900001	KS-5
45	Hose connector(ox)	1	60015003	Except USA
	Hose connector(ox)	1	60015040	KE only
46	Hose connector(Gas)	1	60015004	Except USA
	Hose connector(Gas)	1	60015062	KE only
47	Nut for oxygen	1	60015001	Except USA
	Nut for oxygen	1	60015056	KE only
48	Nut for gas	1	60015002	Except USA
	Nut for gas	1	60015054	KE only
49	Torch	1	60010651	Except USA,KE
	Torch	1	60010602	USA only
	Torch	1	60010606	KE only
50	Rack	1	60010653	With screw
51	Tip fixing nut	1	60005020	
52	Chain	1	60031131	1.0M
	Chain	1	60031101	2.4M
53	Stop ring	2	6B530050	RS-5

Main and driving units

ITEM No.	PART NAME	QTY	STOCK No.	REMARKS
54	Hexagon bolt(BH-6×25)	4	6C400625	M6×25 With WS
55	Hexagon nut(NH-12)	4	6D010120	M12
56	Washer(WF-12)	4	6D500120	M12
57	Hexagon nut(NH-10)	4	6D010100	M12
58	Washer(WS-10)	4	6D510100	M10
59	Screw(SF-5×10)	3	6C500510	M5×10
60	Screw(SP-3×15)	2	6C520315	M3×15
61	Screw(SP-5×12)	1	6C520512	M5×12
62	Spring pin(PR-2.5×20)	2	6B022520	2.5 φ ×20
63	Stop ring	1	6B530100	RS-10
64	Name plate	1		
65	Spring pin(PR-3×32)	1	6B023032	φ 3×32
66	Washer(WF-18)	2	6D500180	M18
67	Spring pin(PR-2.5×20)	4	6B022520	φ 2.5×20
68	Hexagon nut(NH-16)	1	6D010160	M16
69	Tip cleaner	1	60030311	
70	Lighter	1	60031102	

Cutting data

102(STANDARD SPEED) For Acetylene

Metric System

PLATE THICKNESS (mm)	TIP SIZE	CUTTING SPEED (mm/min)	OXYGEN PRESSURE (kg/cm ²) / (Mpa)		FUEL GAS PRESSURE (kg/cm ²) / (Mpa)	KERF WIDTH (mm)
			CUTTING	PR-HEAT		
3	00	680	1.5 / 0.15	1.5 / 0.15	0.2 / 0.02	1.0
6	0	610	2.0 / 0.2	2.0 / 0.2	0.2 / 0.02	1.3
10	3	560	2.0 / 0.2	2.0 / 0.2	0.2 / 0.02	1.5
12.5	1	530	2.5 / 0.25	2.5 / 0.25	0.2 / 0.02	1.8
19	2	460	3.0 / 0.3	3.0 / 0.3	0.25 / 0.025	2.0
25	2	430	3.0 / 0.3	3.0 / 0.3	0.25 / 0.025	2.0
38	3	365	3.0 / 0.3	3.0 / 0.3	0.25 / 0.025	2.3
50	4	320	3.0 / 0.3	3.0 / 0.3	0.25 / 0.025	2.8
60	5	280	4.0 / 0.4	4.0 / 0.4	0.3 / 0.03	3.0
75	5	250	4.0 / 0.4	4.0 / 0.4	0.3 / 0.03	3.0
100	6	200	4.0 / 0.4	4.0 / 0.4	0.3 / 0.03	3.8
125	6	180	4.0 / 0.4	4.0 / 0.4	0.4 / 0.04	3.8
150	7	150	4.5 / 0.45	4.5 / 0.45	0.4 / 0.04	4.1
200	7	130	4.5 / 0.45	4.5 / 0.45	0.4 / 0.04	4.3
250	8	80	4.5 / 0.45	4.5 / 0.45	0.4 / 0.04	5.6
300	8	50	4.5 / 0.45	4.5 / 0.45	0.4 / 0.04	6.5

Inch System

PLATE THICKNESS (Inches)	TIP SIZE	CUTTING SPEED (in/min)	OXYGEN P.S.I.G		FUEL GAS P.S.I.G	KERF WIDTH (Inches)
			CUTTING	PR-HEAT		
1/8	00	27	20	20	2.8	0.04
1/4	0	24	30	30	2.8	0.05
3/8	0	22	30	30	2.8	0.06
1/2	1	21	40	40	2.8	0.07
3/4	2	18	45	45	3.6	0.08
1	2	17	45	45	3.6	0.08
1-1/2	3	14	45	45	3.6	0.09
2	4	12.5	45	45	4.3	0.11
2-1/2	5	11	55	55	4.3	0.12
3	5	10	55	55	4.3	0.12
4	6	8	55	55	5.7	0.14
5	6	7	55	55	5.7	0.14
6	7	6	65	65	5.7	0.16
8	7	5	65	65	5.7	0.17
10	8	3	65	65	5.7	0.23
12	8	2	65	65	5.7	0.27

102-D7(HIGH SPEED) For Acetylene

Metric System

PLATE THICKNESS (mm)	TIP SIZE	CUTTING SPEED (mm/min)	OXYGEN PRESSURE (kg/cm ²) / (Mpa)		FUEL GAS PRESSURE (kg/cm ²) / (Mpa)	KERF WIDTH (mm)
			CUTTING	PR-HEAT		
3	00	800	7.0 / 0.7	1.5 / 0.15	0.2 / 0.02	0.8
6	0	740	7.0 / 0.7	2.0 / 0.2	0.2 / 0.02	1.0
10	0	680	7.0 / 0.7	2.0 / 0.2	0.2 / 0.02	1.3
12.5	1	630	7.0 / 0.7	2.5 / 0.25	0.2 / 0.02	1.3
19	2	580	7.0 / 0.7	3.0 / 0.3	0.25 / 0.025	1.5
25	2	510	7.0 / 0.7	3.0 / 0.3	0.25 / 0.025	1.8
38	3	460	7.0 / 0.7	3.0 / 0.3	0.25 / 0.025	2.0
50	4	410	7.0 / 0.7	3.0 / 0.3	0.25 / 0.025	2.8
60	5	360	7.0 / 0.7	4.0 / 0.4	0.3 / 0.03	2.8
75	5	320	7.0 / 0.7	4.0 / 0.4	0.3 / 0.03	2.8
100	6	250	7.0 / 0.7	4.0 / 0.4	0.3 / 0.03	3.3
125	6	230	7.0 / 0.7	4.0 / 0.4	0.3 / 0.03	3.8
150	7	180	7.0 / 0.7	4.5 / 0.45	0.4 / 0.04	3.6
200	7	140	7.0 / 0.7	4.5 / 0.45	0.4 / 0.04	4.6
250	8	100	7.0 / 0.7	4.5 / 0.45	0.4 / 0.04	5.1
300	8	80	7.0 / 0.7	4.5 / 0.45	0.4 / 0.04	6.1

Inch System

PLATE THICKNESS (Inches)	TIP SIZE	CUTTING SPEED (in/min)	OXYGEN P.S.I.G		FUEL GAS P.S.I.G	KERF WIDTH (Inches)
			CUTTING	PR-HEAT		
1/8	00	31.5	100	20	2.8	0.03
1/4	0	29	100	30	2.8	0.04
3/8	0	27	100	30	2.8	0.05
1/2	1	25	100	40	2.8	0.05
3/4	2	22	100	45	3.6	0.06
1	2	20	100	45	3.6	0.07
1-1/2	3	18	100	45	3.6	0.08
2	4	16	100	45	4.3	0.10
2-1/2	5	14	100	55	4.3	0.11
3	5	12.5	100	55	4.3	0.11
4	6	10	100	55	5.7	0.13
5	6	9	100	55	5.7	0.14
6	7	7	100	65	5.7	0.14
8	7	5.5	100	65	5.7	0.18
10	8	4	160	65	5.7	0.20
12	8	3	100	65	5.7	0.24

NOTE: 1) All pressures are torch inlet pressures.

2) Oxygen purity is minimum of 99.7%; propane is minimum of JIS Grade 3.

3) Depending on the surface condition of the steel plate (scale, paint), either increase the fuel gas pressure or decrease cutting speed. Also, when precision cutting is required, adjust all data.

Pipe Cutter

OPERATION MANUAL
