

EPOCH-600
Instruction Manual

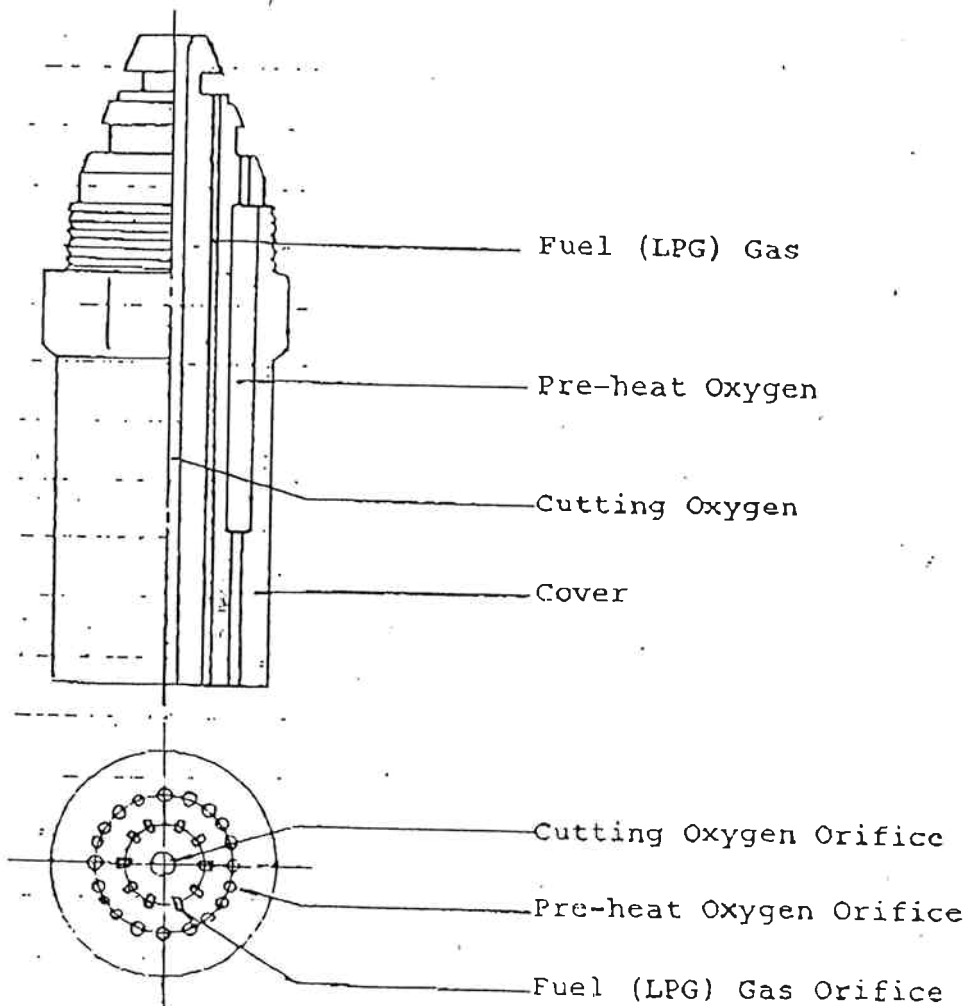
KOIKE SANSO KOGYO CO., LTD.

Tokyo, Japan

1. Introduction

The Epoch-600 gas-cutting tip was developed especially for heavy-duty cuttings. It shall be noted that the Epoch-600 is a specially designed "out-mixing" type tip. This means preheating oxygen gas and fuel gas are mixed outside of the tip. This outstanding feature assures no backfire and clean cuts unless there is no defect nor malfunction of the product.

2. Structure



3. Cutting Data of Epoch-600

EPOCH-600

Thickness (mm)	Pressure kg/cm ²			Cutting speed mm/min	Consumption Nm ³ /hour			Kerf mm
	JOX	POX	LPG		JOX	POX	LPG	
300	5	0.6~0.7	0.4~0.5	130~ 150	60	4.0~4.8	2.7~ 3.1	8.0~ 12
400	6	0.7~1	0.5~0.6	80~90	70	4.8~7.0	3.1~ 3.4	10~ 13
500	7			60~70	80			11~ 14
600	10			50~60	110			12~ 15

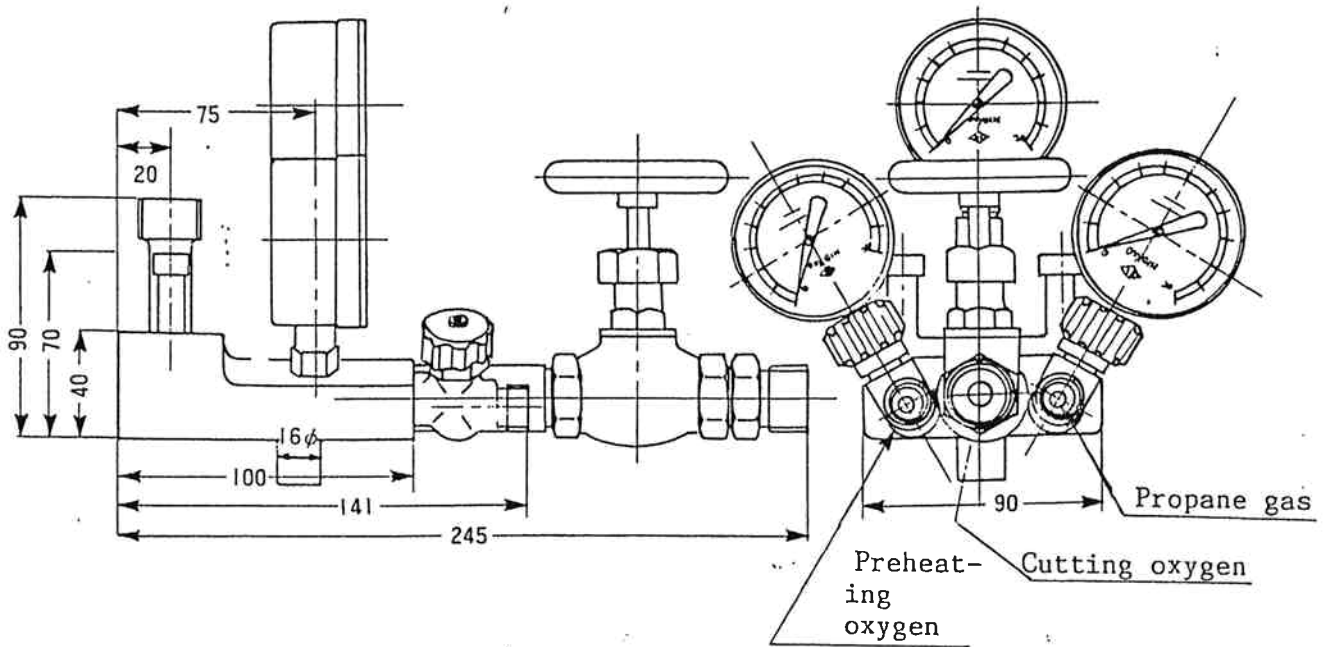
Note: JOX is cutting oxygen.

POX is preheating oxygen.

4. Pre-operation setting up

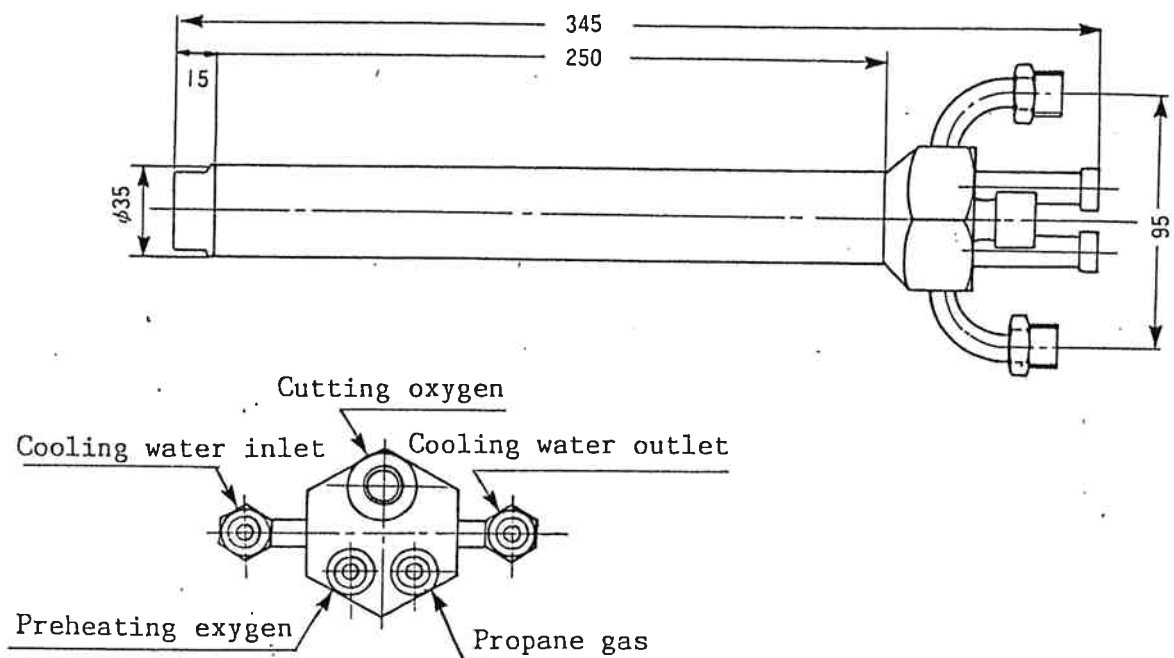
Please follow the assembly instruction below to properly prepare the machine for operation with the Epoch-600. This is a pre-operation setting up for using the IK-12 MAX portable cutting machine.

- (1) Connect each pressure gauge to its correct position on the gas distributor. Please note the important packing shall be installed between the gauges and the distributor.



- (2) Connect appropriate hoses (KOIKE Epoch-600 hoses) between the gas distributor and the torch. Each inlet of the torch is marked as "JO" for cutting oxygen, "PO" for preheating oxygen and "PR" for preheating gas. For fuel gas (LPG), both the torch and the gas distributor adopt counter clockwise threads.

Please also connect the water hoses to the inlet and the outlet of cooling water.



- (3) Connect the gas distributor stand for the Epoch-600 to the IK-12 MAX carriage. (Remove the standard stand of the IK-12MAX if it is mounted.) Install the heat-shield.
- (4) Connect the arm holder, the pipe arm and cross slide holder to the carriage.
- (5) Mount the gas distributor and insert the torch into the torch holder.

- (6) Connect the primary hoses of the preheating oxygen, cutting oxygen and LPG to the inlet of the gas distributor.
- (7) Install the Epoch-600 cutting tip on the torch and tighten it securely. Do not tighten it excessively.
- (8) Set the rail on the appropriate position and make sure that there is no unbalance of the IK-12 MAX carriage. To avoid heat affection during cuttings, operate the carriage as high from the work piece and as far away from the cutting area as possible. The work piece shall be positioned at least 150 mm or from the floor.

5. Adjusting flame

Make sure that there is no gas leakage at all connections.

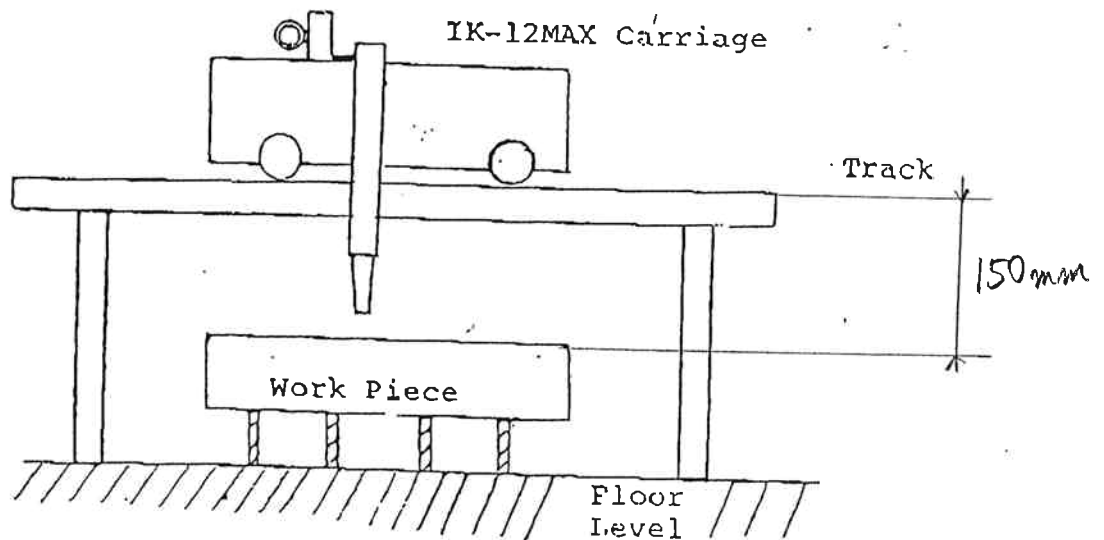
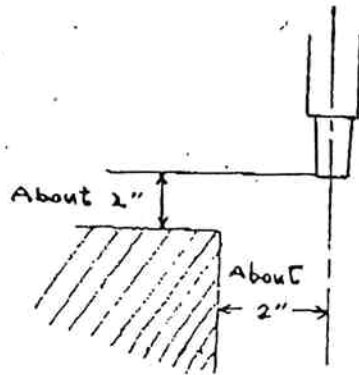
Do not adjust the flame with the valves. It shall be adjusted totally with the pressure gauges based on the figures of the cutting data.

Thickness (mm)	Pressure kg/cm ²			Cutting speed mm/min	Consumption Nm ³ /hour			Kerf mm
	JOX	POX	LPG		JOX	POX	LPG	
300	5	0.6~0.7	0.4~0.5	130~ 150	60	4.0~4.8	2.7~ 3.1	8.0~ 12
400	6	0.7~1	0.5~0.6	80~90	70	4.8~7.0	3.1~ 3.4	10~ 13
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(1) Ignition and adjusting flame

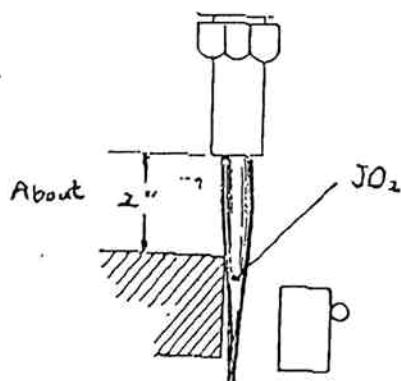
When igniting the flame, keep the tip away from the work piece by about 50 mm horizontally and vertically.

Open the fuel gas (LPG) valve slightly and ignite the flame. Then, open the preheating oxygen valve immediately. Observing the pressure gauges, operate the valves until the pressure indicators reach the working pressure. Then, open the cutting oxygen valve and adjust the pressure to the working pressure.

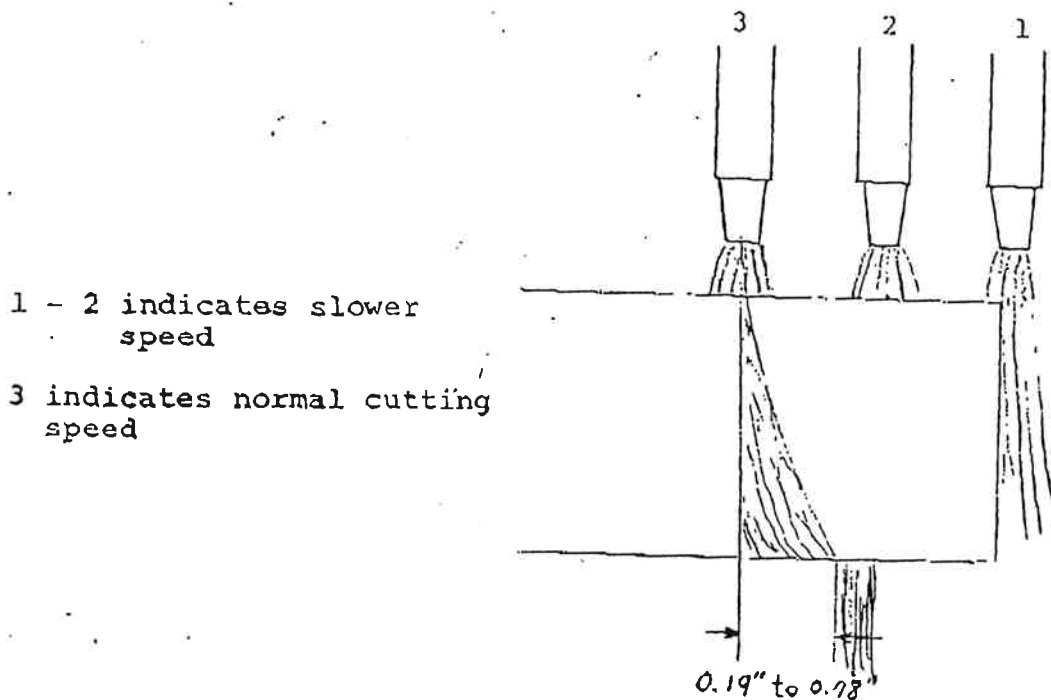


(2) Preheating and cutting

Keeping the cutting oxygen valve open, position the tip at 50 mm to 60 mm away from the work piece for preheating. At that time, oxygen flow shall barely touch the edge of the work piece.



When the upper surface of the work piece starts melting, start the machine at the speed slighter slower than the specified cutting speed. After confirming that the flame penetrates through the work piece, increase the machine speed to the specified cutting speed.



During cutting, adjust the speed to get the drag line between 5 mm to 20 mm away from the center line of the cutting tip.

(3) Precautions during cutting

It is difficult to observe the cut surface and judge its quality during cutting. It needs a lot of experiences to judge its quality with slag diffusions and cutting sounds. Therefore, in order to make quality cuts and avoid failures, suitable cutting parameters shall be obtained before production cuttings through trial cuttings of scraps. When you want to improve surface quality, decrease cutting oxygen pressure and cutting speed.

(4) Finishing cutting

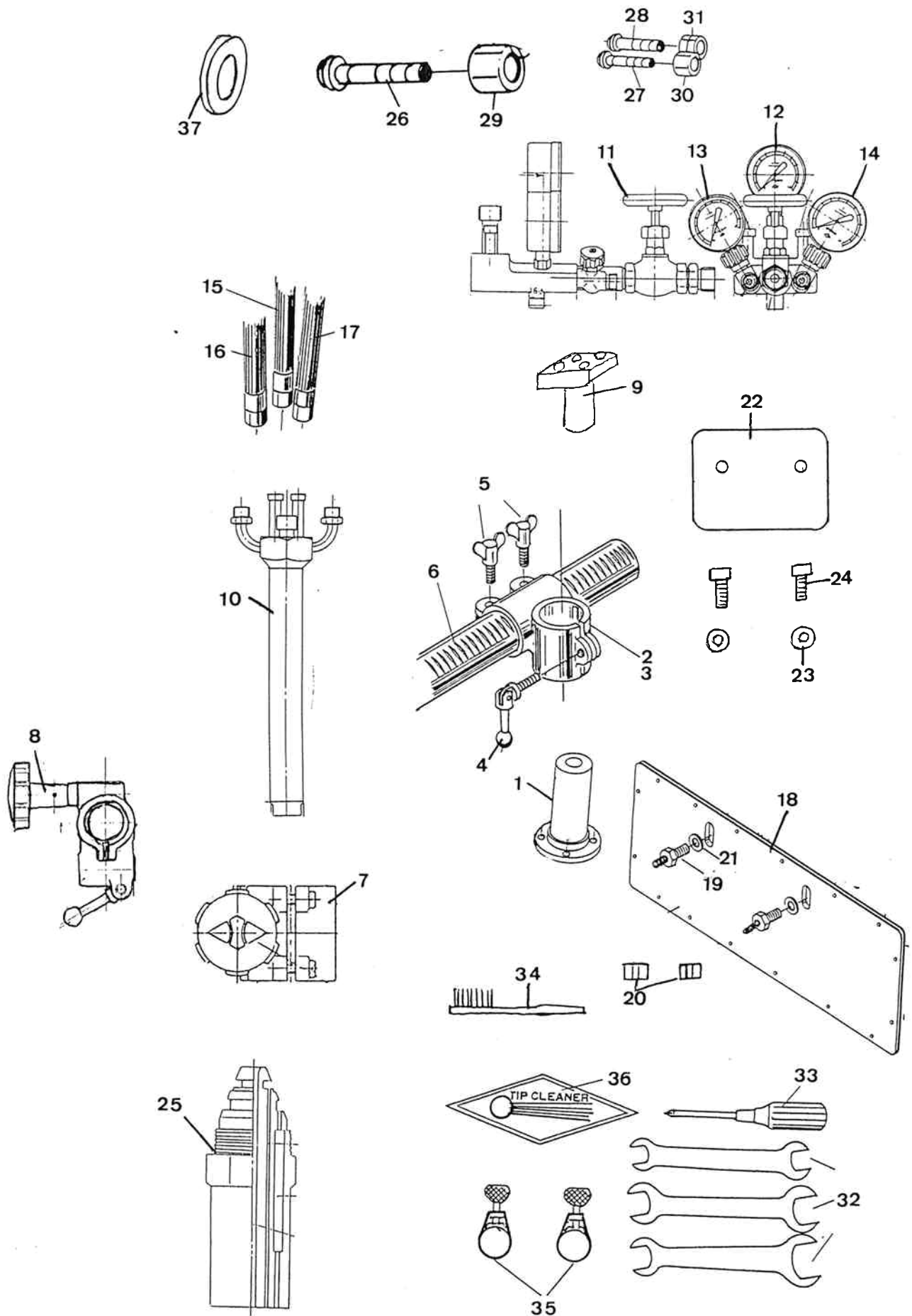
When making quality cut of heavy plate, delay of drags are inevitable. Therefore, the following process is recommendable

- (a) Raise the cutting oxygen pressure little by little before stopping the cutting machine so that the drag delay does not happen. However, when the cutting oxygen pressure is raised, kerf becomes wider and can make defects on the products.
- (b) Slower the cutting speed before stopping the machine. However, slow cutting speed can make surface rough and produce notches.
- (c) Finishing at normal speed and cutting oxygen pressure, and then, cut the uncut portions.

(5) Shut –down

- (a) Stop the carriage
- (b) Close the cutting oxygen valve
- (c) Close the fuel gas valve
- (d) Close the preheating oxygen valve

EPOCH-600 TORCH SET



PRODUCT STOCK NO.

PRODUCT NAME (TYPE)
EPOCH-600 TORCH SET

DRAWING NO.

PAGE
1 / 2

ITEM NO.	PART NAME	Q' TY	PART NO.	STOCK NO.	REMARKS
1	Stand	1		60030378	
2	Arm holder assy	1		60030301	
3	Arm holder	1		60030314	
4	Crank handle	1		60030313	M8x20
5	Wing bolt	2		60030315	M8x20
6	Pipe arm	1		60030321	500mm
7	Torch holder assy	1		60030367	
8	Cross feed holder assy	1		60030372	
9	Fitting stand	1		60035244	
1 0	Torch	1		60010765	M16xP1.5
1 1	Distributor	1		60013360	
1 2	Presser gage (JO)	1		60004003	
1 3	Presser gage (PO)	1		60004005	
1 4	Presser gage (GAS)	1		60004001	
1 5	Hose (JO)	1		60035250	
1 6	Hose (PO)	1		60035251	
1 7	Hose (GAS)	1		60035252	
1 8	Heat shield	1		60030379	
1 9	Bolt	2		60030380	
2 0	Nut	2		NH-10	
2 1	Washer	2		WF-10	
2 2	Weight	2		60030346	
2 3	Washer	2		WF-10	
2 4	Bolt	2		BH-10x45	
2 5	Cutting tip	2			
REVISION					

KOIKE SAN SO KOGYO CO., LTD.

