

WIRE CUT EDM

MACHINING CONDITION

TABLES

INCH VERSION

***m* WILLIAMS**
MACHINERY SALES
BRIDGEPORT MACHINES, INC.

*Amplitude 100%
Modulation 100%
(12)
Band 50%
Sync 100%
Duty cycle 100%*

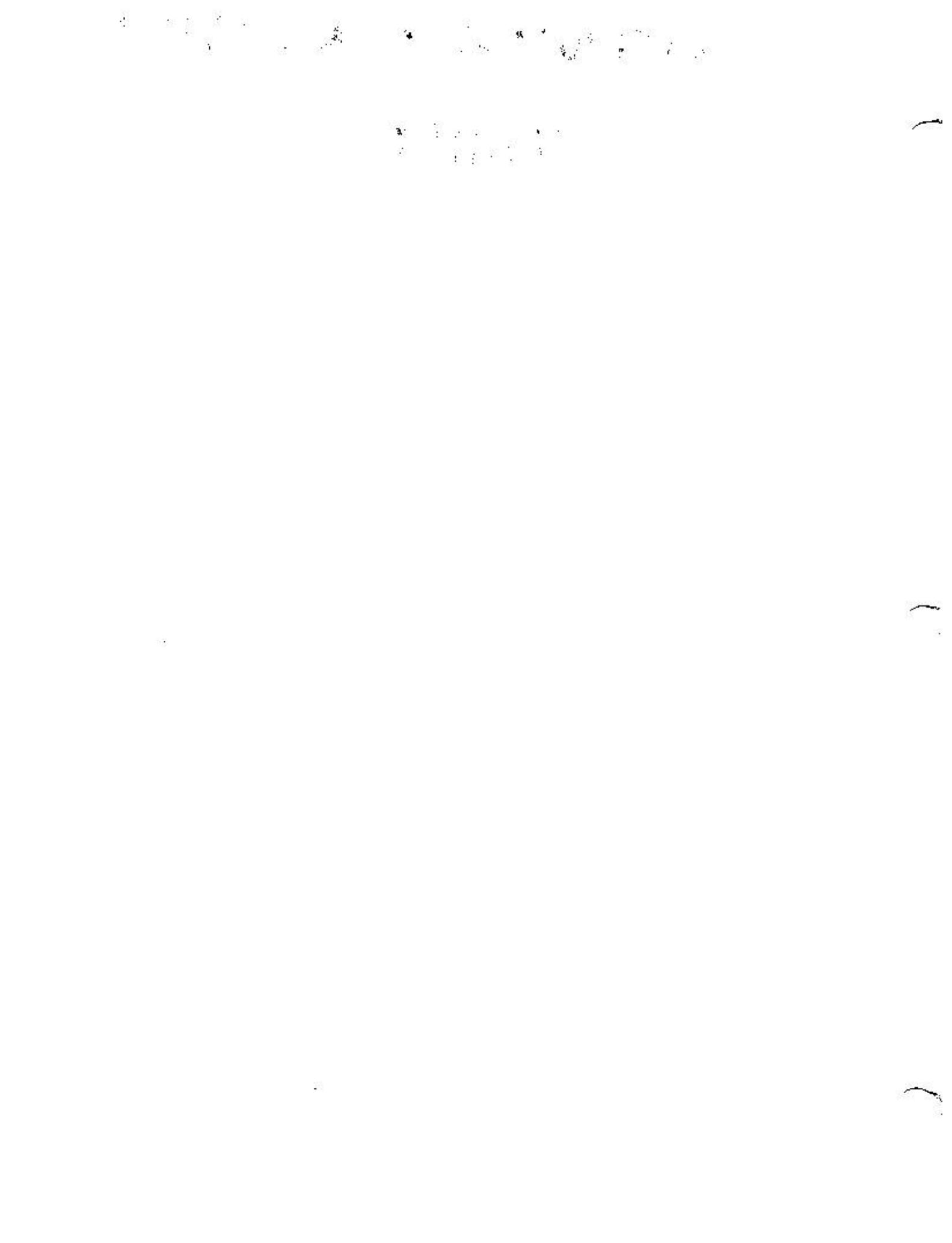
Vol. 1.1 G

MACHINING CONDITION

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1. KINDS OF PARAMETERS

C*** = ON OFF UP HP MA SV V SF C WT WS WP WC
 000 000 000 000 00 00 00 0000 00 000 000 000 000

These parameters control the setting of pulse energy and cutting speed adjustment.

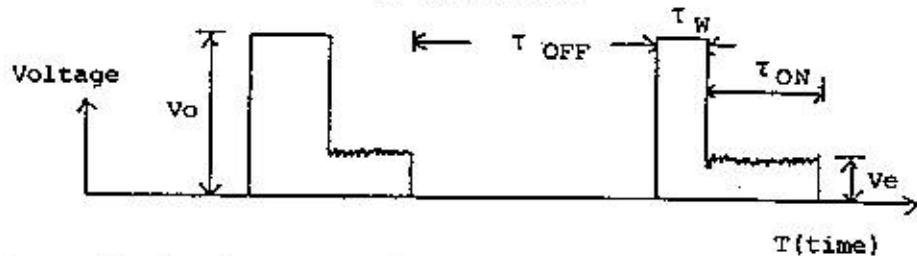
An explanation of each parameter is given below.

① ON and OFF (pulse width for stable cutting)

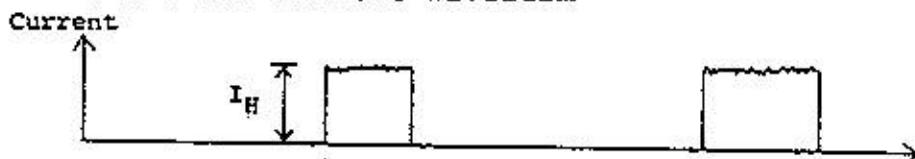
ON is the mode used to set the ON time for one pulse, that is the time during which voltage is applied between the electrodes. (This is equivalent to T_1 in the figure.)

The discharge energy due to a single discharge can be expressed as the area $\tau_{ON} \times I_H$. Consequently, if the pulse ON time becomes long, the discharge energy will increase, and the cutting speed will rise. Note, however, that the discharge gap will widen, causing the surface roughness to become poor. In addition, wire breakage will be likely to occur.

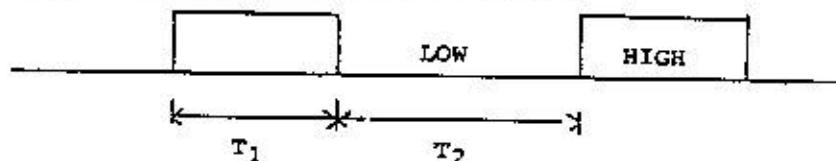
Inter-electrode voltage waveform



Inter-electrode current waveform



Gate signal for controlling transistor



V_O = Inter-electrode no-load voltage

V_E = Discharge voltage

τ_W = Discharge wait time

τ_{ON} = Discharge time

τ_{OFF} = Discharge rest time

I_H = Current high value

T_1 = Pulse ON time (ON)

T_2 = Pulse OFF time (OFF)

OFF is the mode used to set the discharge OFF time, that is the time up until voltage is applied to the electrodes. (This is equivalent to T_2 and τ_{OFF} .)

The shorter the discharge OFF time, the greater will be the number of discharges within a given period, resulting in greater cutting efficiency. If, however, the OFF time is very short, wire breakage may occur, causing the cutting efficiency to actually drop.

ON (pulse width)

0 (pulse width small) < 9 (pulse width large)
10 (pulse width small) < 19 (pulse width large)

OFF (pulse width)

0 (pulse width small) < 31 (pulse width large)

- * By making the second digit "1", control will take place so as to reduce random variations in τ_{ON} (discharge time).

If the second digit is made "1", the pulse width will remain unchanged (the pulse widths for 0 and 10 are equal), however this setting is not used for normal cutting.

- * Note that the maximum set value of ON (only when the second digit of ON is "0") will vary with the power supply voltage.

(2) IP and V (peak current value)

IP and V select the magnitude of I_H (current wave height value). I_p can be set between 0 and 17 (17 steps). $I_p = 0$ means that $I_H = 0$, and V can be set between 0 and 3 (4 steps).

$$I \text{ (current high value)} = \frac{V \text{ (No-load voltage)}}{R \text{ (Resistance)}}$$

- * I_p is equivalent to R (resistance) in the above equation.

(By increasing I_p , the number of transistor operating circuits will increase, causing R to decrease.)

In other words, by increasing I_p , I_H (current wave height value) will increase, causing the discharge

energy to increase.

- o V, as its name implies, is equivalent to V in the above equation (no-load voltage). In other words, by increasing V, the discharge energy will increase.

Naturally, the higher are the IP setting and the value of V, the higher becomes the peak current value, and along with ON (pulse ON time), the discharge energy of each pulse increases.

When the discharge energy increases, the cutting speed increases, however the discharge gap will widen, causing the surface roughness to increase.

(3) HP

- (a) HP function when Ip is 16 or greater

The H of HP is a condition which was created to improve starting of cutting and raise cutting efficiency by applying a high voltage circuit in addition to the normal voltage.

The P of HP is the output pulse ON time when the inter-electrode condition is unstable. Under normal conditions, P is never set higher than the ON condition.

H (high voltage application circuit selection conditions) → 10 steps between 0 and 9

H can be set between 0 and 9. The larger its value is, the higher is the voltage.

Conditions 1, 4, and 7 are used only with the ultra-fine finishing circuit (PIKA circuit). For normal cutting, use 2, 3, 5, 6, 8, or 9 to apply the high

voltage.

P (Pulse width selection conditions for use when the cutting condition is unstable)

Mark X → 5 steps between 0 and 4

Mark XI → 4 steps between 0 and 3

During stable cutting, pulses selected by the ON condition are output, and if the cutting condition deteriorates, the ON pulse width selected by P of HP will be output.

Note: When ON0 = HP00, the pulse width is the same

(b) HP function when I_p is 15 or less

H (high voltage application circuit selection conditions) → Steps 0 to 9

These steps are exactly the same as when I_p is 16 or more.

P (Selection conditions for ON pulse width when the cutting condition is unstable)

If I_p is 15 or less, the P setting will be completely ignored, and only the ON pulse width set by ON will be output.

- * During cutting at I_p of 15 or less, if the inter-electrode condition becomes unstable, control will take place to increase the OFF pulse width in order to maintain a stable cutting condition.

④ MA

Note that, Like MA and HP, the control method will vary depending on whether (a) I_p is 16 or more, or (b) I_p is

15 or less.

(a) If I_p is 16 or more

The A of MA is the OFF pulse selection condition which is output when the inter-electrode condition becomes unstable.

The M of MA is a condition which selects the level used for detecting whether the inter-electrode condition is stable or unstable.

A (condition for selecting the OFF pulse when the cutting condition is unstable) →

10 steps between 0 and 9

During stable cutting, the OFF pulse width selected by the OFF condition will be output. If the cutting condition becomes unstable, the OFF pulse width selected by A of MA will be output. The larger the value of A, the wider will be the pulse width, and the lower will be the frequency of wire breakage.

M (condition for selecting the inter-electrode detection level) → 10 steps between 0 and 9

It is necessary to judge whether or not the inter-electrode condition is stable or unstable. M of MA is a condition which assists in making this judgment.

The larger the value of M, the more frequently will an unstable condition be selected (the number of cases in which P of MP and A of MA are selected will increase), the rate of selection of cutting conditions in which I_H (current wave height value) is small will increase, and the cutting stability will increase, however the

cutting speed will fall.

(b) When IP is 15 or less

The A of MA is a condition which selects the multiple by which the OFF pulse set by OFF is to be expanded when the inter-electrode condition becomes unstable.

The M of MA is a level setting for detecting whether the inter-electrode condition is stable or unstable.

A (condition for selecting OFF pulse width multiplier when the machining condition is unstable) →

10 steps between 0 and 9

When the machining condition is stable, the OFF pulse width selected by the OFF condition will be output.

When the cutting condition deteriorates, the OFF pulse will be expanded by the multiple selected by A of MA.

This condition has been provided because the time set by OFF is short and if the inter-electrode condition deteriorates it will not recover and also wire breakage may occur, unless the pulse width is changed.

The larger the value of A of MA, the greater will be the expansion multiple.

M (condition for selecting inter-electrode condition detection level) → 10 steps between 0 and 9

It is necessary to judge whether the inter-electrode condition is stable or unstable. M of MA is a condition which assists in making this judgment.

The larger the value of M, the more frequently will an unstable condition be selected, and an OFF pulse consisting of the OFF pulse set by OFF whose width is

expanded by a multiple selected by A of MA will be more liable to be output.

⑤ SV (servo reference voltage)

While cutting is taking place, the average applied voltage will fluctuate due to the inter-electrode condition.

SV can set in 32 steps between 0 and 31. The higher the set value is, the higher will be the reference voltage and also the average gap width. In addition, the number of discharge cycles within a given time will decrease and the discharge condition will become more stable, however the cutting speed will fall off.

Conversely, if the number of discharge cycles in a given timer increases to an unnecessary degree, the discharge condition will become unstable.

Also, the number of discharge cycles in a given period will increase to the extent that the discharge condition becomes unstable, resulting in the risk of wire breakage.

⑥ C (capacitor)

C determines whether or not it is necessary to insert a capacitor circuit between the electrodes. The value of C sets the capacitance.

C can be set in five steps between 0 and 4. The larger the value of C, the greater will be the shock applied to the discharge energy, which will help the discharge to be more stable.

If, however, the set value is made unnecessarily large, the discharge gap will widen, causing the surface

roughness to increase.

Note: Use this cutting condition only for finishing.

(If I_p is 16 or more, be sure to set this condition to 0.)

⑦ SF (setting servo speed)

SF is used to set the table feed speed during machining.

The setting range of SF is between 0000 and 3999.

SF Input Method and SERVO Control Method

	Input	Control method	
SF	0000 - 0009	Normal servo	With corner control
	1000 - 1009	Constant feed at setting of SF = 0 to 9	
	1010 - 1999	Constant feed at direct setting of SFD = 10 to 999	
	2000 - 2009	Normal servo	Without corner control
	3000 - 3009	Constant feed at setting of SF = 0 to 9	
	3010 - 3999	Constant feed at direct setting of SFD = 10 to 999	

Notes:

- a) * A normal servo is a system which judges whether the inter-electrode voltage is lower or higher than the servo reference voltage set by SL, and changes the table feed rate accordingly.
- * Constant feed is a condition in which the inter-electrode condition is ignored and cutting per-

formed at a constant speed set by SF.

b) Regarding corner control

Corner control is usually used during the finish machining in order to finish the remained part of the corner.

Normally 2001~2009 are used for the data.

SF Input Method and Table Feed Speed at Settings of 0 - 9

SF	Feed Speed (mm/min)	SF	Feed Speed (mm/min)
0	40.0	5	7.5
1	30.0	6	5.0
2	20.0	7	4.0
3	15.0	8	3.0
4	10.0	9	2.0

Note: The above measurement is performed when there is no load across the electrodes and also the inter-electrode voltage is higher than the reference voltage of SV.

The faster the servo speed becomes, the narrower the discharge gap becomes, and the higher will be the cutting speed.

Conversely, when the servo speed decreases, the discharge gap will widen and the discharge condition will become stable. If, however, the servo speed is made unnecessary low, the cutting efficiency will fall off

markedly.

For the 1st cut, make the set value as small as possible to the extent that the wire electrode does not break.

For the 2nd and subsequent cuts, if the servo speed is made too high, there is a risk of the machined surface not being finished. Be sure, therefore, to set SF between about 3 and 5.

(8) Wire tension

Manual with WT-0: Adjustable with potentiometer inside operation pendant.

Auto with WT-1 to 15: Step settable by WT in cutting conditions.

Auto (WT-1 to 15)

WT (NC input)	A	Tension	Manual/ Auto
0	0.0	200 g	Manual
1	0.03	285	Auto
2	0.06	390	Auto
3	0.08	485	Auto
4	0.11	585	Auto
5	0.13	690	Auto
6	0.16	800	Auto
7	0.18	920	Auto
8	0.23	1280	Auto
9	0.26	1520	Auto
10	0.28	1750	Auto

WT (NC input)	A	Tension	Manual/ Auto
11	0.32	2000	Auto
12	0.37		Auto
13	0.39		Auto
14	0.41		Auto
15	0.42		Auto

Manual (WT-0)

Graduation	A	Tension	WT
1	0.05	340 g	0
2	0.06	390	0
3	0.07	420	0
4	0.08	485	0
5	0.09	500	0
6	0.11	600	0
7	0.14	740	0
8	0.21	1190	0
8.5	0.30	1930	0

⑨ Wire speed

Manual with WS-0 : Adjustable with a potentiometer inside operation pendant.

Auto with WS-1 to 12: Step settable by WT in cutting conditions.

Auto (WS-1 to 12)

WS (NC input)	Wire speed	Manual/Auto
0	420 cm/min	Manual
1	420	Auto
2	460	Auto
3	490	Auto
4	570	Auto
5	610	Auto
6	700	Auto
7	810	Auto
8	1070	Auto
9	1230	Auto
10	1340	Auto
11	1370	Auto
12	1430	Auto

Manual (WS-0)

Graduation	Wire speed
1	170 cm/min
2	240
3	420
4	680
5	910
6	1130
7	1280
8	1370
9	1420
10	1550

- ⑩ WP and WC are not used.

2. Machining fluid treatment.

(1) In case of rough machining (1st cut)

a) When the both side of the machining surface of the work can be closely contacted to the guide, set the source pressure of the supply tank at 18kg/cm² and adjust the upper and lower guide height so that the flow rate may be five litters. While the above adjustment, open the flow control valve (operation pendant) fully. Lower guide is already adjusted so that the flow rate may be five~six litters, them don't change the guide position except a special case.

When the machining accuracy is requested, adjust the source pressure at 10kg/cm² and use (1st-D) condition of the CONDITION FILE.

b) When the upper guide can not be closely contacted to the work surface, fully open the lower side flow control valve and adjust the upper side flow control valve so that the injection flow from the upper side may suppress the injection flow from the lower side.

Flow rate is 2.5 litters about.

c) When the neither upper guide nor lower guide can be closely contacted to the work surface, adjust the source pressure at 5kg/cm².

(2) In case of finish machining (from the 2nd cut)

a) When the punch machining, set the injection flow at LOW PRESS.

b) When the die machining and not the taper machining, machining fluid treatment becomes easy by setting the injection flow at LOW PRESS, and by lifting Z-axis from 5 to 10 mm.

While the taper machining and when the fluid treatment is not good, remove the nozzle top of the upper nozzle and increase the clearance.

- (3) When starting the machining from the initial hole, set the flow rate at 2 litters and decrease the machining condition.

After progressing about 10mm, change the flow rate and machining condition.

3. CONDITION FILE

[How to read CONDITION FILE]

MATERIAL = ①		THICKNESS = ② mm				WIRE DIA = ③ mm				RESISTIVITY = ④ X 10 ⁻⁸ ohm				MACHINE MODEL				
THE NO. OF CUTTING STAGES	CUTTING NO.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE FEEDRATE mm/min	WIRE SPEED mm/min	WATER PRESS. (H)	WATER PRESS. (H) mm/min	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A	⑧												High	High			
	1ST-B	⑤												High	High			
	1ST-C	⑥												High	High			
	1ST-D	⑦												High	High			
	1ST-E	⑧												High	High			
	1ST-F	①												High	High			
⑥ TO 2ND CUT	1ST	④												High	High			
	2ND													Low	Low			
	3RD													Low	Low			
⑦ TO 3RD CUT	1ST	④												High	High			
	2ND													Low	Low			
	3RD													Low	Low			
	4TH													Low	Low			

[CONDITION FILE MODELE]

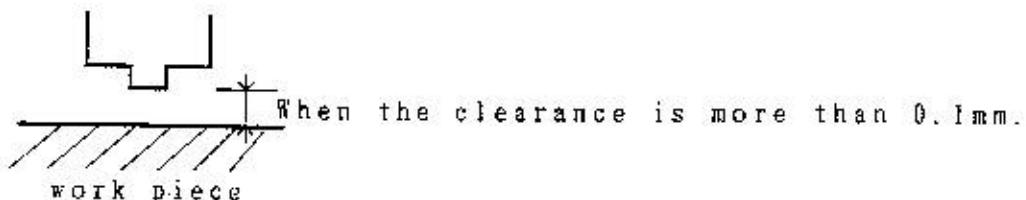
Following explanations are based on [CONDITION FILE MODELE]

- ① Work material
- ② Work thickness
- ③ Wire diameter
- ④ Specified resistance of the machining fluid.
- ⑤ Machining condition only for the rough machining (1st-cut)
- ⑥ 2nd finish cut condition
- ⑦ 3rd finish cut condition
- ⑧ 4th finish cut condition

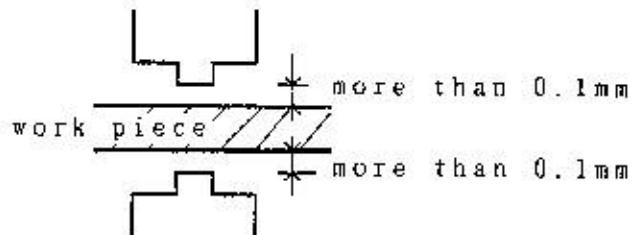
- ④ When required good finish machining surface by only the rough machining (1st-cut), use this.
 - ⑤ When neither upper nor lower guide can closely contact to the work surface, use this.
 - ⑥ When the upper guide can not closely contact to the work surface, use this.
 - ⑦ When required machining accuracy by only the rough machining (1st-cut), use this.
 - ⑧ When the both guide setting is good, use this for rough machining (1st-cut).
 - ⑨ When the both guide setting and work setting are good, use this for simple shape machining with maximum machining speed.
- ※ Normally (M) condition is used to rough machining (1st-cut).

Guide settings are indicated below.

[When the clearance between upper guide and work surface is more than 0.1mm]

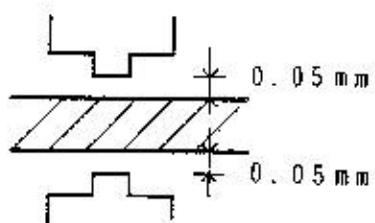


[When both guides have clearances]



※ Lower guide is set 0.05mm from the upper surface of the work stand.

(When the guide setting is good)



* Upper and lower injection flow rate
are set at 4~5 liters.

- ④ Select the rough machining conditions from 1st-A to 1st-F by setting the both guides.
Normally 1st-E condition is set.

4, MATERIAL = SKD11

WIRE DIA = 0.2

MATERIAL = SKD11		THICKNESS = 5mm				WIRE DIA. = 0.2mm				RESISTIVITY = 5×10^{-4} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G						
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	PRESS-UP (ℓ/min)	WATER (ℓ/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A C100	H044	000	011	017	000	15	04	03	0004	00	0.2	5	High	40	2.0	5.5			
	1ST-B C101	H047	001	020	017	000	16	05	03	0005	00	0.2	5	High	50	3.0	5.0			
	1ST-C C102	H047	001	012	017	000	16	05	03	0005	00	0.2	5	2.5 ℓ	2.5 ℓ	High	50	3.0	5.5	
	1ST-D C103	H046	001	012	017	000	15	04	03	0004	00	0.2	7	High	5 ℓ	5 ℓ	High	50	3.0	5.5
	1ST-E C104	H047	002	014	017	001	16	04	03	0003	00	0.2	10	5 ℓ	5 ℓ	High	45	4.0	6.0	
	1ST-F C105	H049	003	015	017	001	16	03	03	0003	00	0.2	10	5 ℓ	5 ℓ	High	45	6.0	13.0	
TO 2ND CUT	1ST C104																			
	2ND C106																			
	1ST C104																			
	2ND C106																			
TO 3RD CUT	1ST C104																			
	2ND C106																			
	3RD C107																			
	1ST																			
TO 4TH CUT	1ST																			
	2ND																			
	3RD																			
	4TH																			

MATERIAL = SKD11		THICKNESS = 10mm				WIRE DIA. 0.2mm				RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS-ON (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST - A C100	H045	000 011 017 000	15 04 03	0004 00	0.2	7			High	2.5 ft	2.5 ft	40	2.0	3.3
	1ST - B C108	H049	001 020 017 000	15 04 03	0004 00	0.2	7			High	2.5 ft	2.5 ft	40	3.0	3.5
	1ST - C C109	H047	001 012 017 000	15 03 03	0004 00	0.2	7			High	2.5 ft	2.5 ft	40	3.0	3.5
	1ST - D C110	H046	001 012 017 000	14 03 03	0004 00	0.2	7			High	2.5 ft	2.5 ft	40	3.0	3.5
	1ST - E C111	H047	002 014 017 001	15 02 03	0004 00	0.2	7			High	2.5 ft	2.5 ft	40	3.0	3.5
	1ST - F C112	H048	003 015 017 001	15 02 03	0003 00	0.2	10			High	5 ft	5 ft	30	6.5	7.5
	TO 2ND CUT	1ST C111								High	5 ft	5 ft	30	9.0	10.0
TO 3RD CUT	2ND C106									Low	Low	Low			
	1ST C111	H073								High	High	High			
	TD									Low	Low	Low			
	3RD CUT	2ND C106	H043	000 007 016 00	00 07 00	2004 00	0.2	10		2 ft	2 ft	2 ft	50	0.7	8.0
	1ST	3RD C107	H043	000 002 005 00	00 07 00	2004 00	0.2	10		2 ft	2 ft	2 ft	80	0.2	10.0
TO 4TH CUT	2ND									Low	Low	Low			
	3RD									Low	Low	Low			
	4TH									Low	Low	Low			

MATERIAL = SKD11		THICKNESS = 20mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G		
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (ft/min)	WATER PRESS-UP (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C113	H045	000 011 017	00 14 04	03	0005 00	00	0.2	5	High 2.5 ft	High	40	3.0	2.0		
	1ST-B C114	H051	002 020 017	00 14 04	03	0005 00	00	0.2	5	2.5 ft	2.5 ft	40	3.5	2.0		
	1ST-C C115	H049	002 015 017	01 14 03	03	0005 00	00	0.2	7	High 2.5 ft	2.5 ft	30	6.5	3.7		
	1ST-D C116	H049	003 014 017	01 14 03	03	0005 00	00	0.2	7	High 5 ft	5 ft	30	9.5	5.0		
	1ST-E C117	H049	004 014 017	01 14 02	03	0005 00	00	0.2	10	High 5 ft	5 ft	30	11.0	6.0		
	1ST-F C118	H049	004 014 017	01 14 01	03	0005 00	00	0.2	10	High 5 ft	5 ft	30	12.0	7.0		
TO 2ND CUT	1ST C117	H067									High	High				
	2ND C119	H042	005 010 016	03 12 09	01	2004 00	00	0.2	10	Low 2 ft	2 ft	60	1.0	7.0~8.0		
TO 3RD CUT	1ST C117	H073									High	High				
	2ND C119	H047									Low	Low				
TO 4TH CUT	3RD C120	H043	002 002 015	00 00 04	00	2004 02	02	0.2	10	Low 2 ft	2 ft	65	0.5	9.0~10.0		
	1ST C117	H075									High	High				
	2ND C119	H049									Low	Low				
	3RD C120	H045									Low	Low				
	4TH C121	H043	000 001 005	00 00 03	00	2004 00	00	0.2	10	Low 2 ft	2 ft	60	0.3	10.0		

MATERIAL = SKD11		THICKNESS = 30mm				WIRE DIA. = 0.2mm				RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV V	SF C	WIREF TENSION (A)	WIREF SPEED (inch/min)	WIREF PRESS-UP (inch/min)	WATER PRESS-ON (l/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A C122	H047	000 011	017 00	14 04	03	0006 00	0.2	5	High	40	2.5	1.2		
	1ST-B C123	H052	002 020	017 00	14 04	03	0006 00	0.2	5	High	2.5 l	40	3.5		
	1ST-C C124	H049	002 015	017 01	14 03	03	0006 00	0.2	5	High	2.5 l	40	3.5		
	1ST-D C116	H050	003 014	017 01	14 03	03	0005 00	0.2	7	High	2.5 l	40	3.5		
	1ST-E C117	H050	004 014	017 01	14 02	03	0005 00	0.2	10	High	5 l	30	9.0		
	1ST-F C125	H050	004 014	017 01	13 01	03	0005 00	0.2	10	High	5 l	30	11.5		
TO 2ND CUT	1ST C117	H068								High	5 l	25	12.5		
	2ND C119	H042	005 010	016 03	12 09	01	2004 00	0.2	10	Low	2 l	60	1.0		
TO 3RD CUT	1ST C117	H072								High	High				
	2ND C119	H047								Low	Low				
	3RD C120	H043	002 002	015 00	00 04	00	2004 02	0.2	10	Low	2 l	60	0.7		
TO 4TH CUT	1ST C117	H074								High	High				
	2ND C119	H049								Low	Low				
	3RD C120	H045								Low	Low				
	4TH C121	H043	000 001	005 00	00 03	00	2004 00	0.2	10	Low	2 l	60	0.3		

MATERIAL = SKD11		THICKNESS = 40mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS-UP (ft/min)	WATER PRESS-DN (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPED (mm/min)	
1ST CUT ONLY	1ST-A C122	H048	000	001	017	00	14	04	03	0006	00	0.2	5	High	40	2.0	1.0	
	1ST-B C123	H053	002	020	017	00	14	04	03	0006	00	0.2	5	2.5 ft	2.5 ft	40	3.5	1.0
	1ST-C C124	H049	002	015	017	01	14	03	03	0006	00	0.2	7	2.5 ft	2.5 ft	30	6.0	1.8
	1ST-D C126	H050	003	014	017	01	14	02	03	0006	00	0.2	7	5.4 ft	5 ft	30	9.5	2.8
	1ST-E C127	H050	004	014	017	01	14	02	03	0006	00	0.2	10	5.4 ft	5 ft	30	12.0	3.5
	1ST-F C128	H050	004	013	017	01	13	01	03	0006	00	0.2	10	5.2 ft	5.4 ft	30	13.0	3.8
TO 2ND CUT	1ST C127	H068												High	High			
	2ND C129	H043	005	010	016	03	12	08	01	2004	00	0.2	10	2 ft	2 ft	60	1.5	5.0~6.0
TO 3RD CUT	1ST C127	H074												High	High			
	2ND C129	H048												Low	Low			
	3RD C120	H043	002	002	015	00	00	04	00	2004	02	0.2	10	2 ft	2 ft	65	1.1	8.0~10.0
TO 4TH CUT	1ST C127	H076												High	High			
	2ND C129	H050												Low	Low			
	3RD C120	H044												Low	Low			
	4TH C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	2 ft	2 ft	30	0.7	10.0

MATERIAL = SKD11		THICKNESS = 50mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (mm/min) (notch)	WATER PRESS - UP (kg/min)	WATER PRESS - DN (kg/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C122	H048	000 011 017	00 14 04	03 0006 00	0.2	5				High	2.5 kg	2.5 kg	40	2.0	1.0	
	1ST-B C123	H054	002 020 017	00 14 04	03 0006 00	0.2	5				High	2.5 kg	2.5 kg	40	3.0	1.0	
	1ST-C C124	H050	002 015 017	01 14 03	03 0006 00	0.2	7				High	2.5 kg	2.5 kg	40	6.5	1.5	
	1ST-D C126	H050	003 014 017	01 14 02	03 0006 00	0.2	7				High	5 kg	5 kg	30	8.5	2.5	
	1ST-E C127	H050	004 014 017	01 14 02	03 0006 00	0.2	10				High	5 kg	5 kg	30	11.5	2.5	
	1ST-F C128	H050	004 013 017	01 13 01	03 0006 00	0.2	10				High	5 kg	5 kg	25	12.0	3.0	
TO 2ND CUT	1ST C127	H069									High	High	High				
	2ND C129	H043	005 010 016	03 12 08	01 2004 00	0.2	10				Low	2 kg	2 kg	58	1.5	4.0~5.0	
	1ST C127	H074									High	High	High				
	3RD C129	H048									Low	Low	Low				
TO 3RD CUT	3RD C120	H043	002 002 15	00 00 04	00 2004 02	0.2	10				Low	2 kg	2 kg	42	1.3	7.0~8.0	
	1ST C127	H076									High	High	High				
	2ND C129	H050									Low	Low	Low				
	3RD C120	H044									Low	Low	Low				
TO 4TH CUT	4TH C121	H043	000 001 05	00 00 03	00 2004 00	0.2	10				Low	2 kg	2 kg	30	0.7	9.0~10.0	

MATERIAL = SKD11		THICKNESS = 60mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP (L/min)	WATER PRESS-DN (L/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C130	H048	000 011 017	00 14 04	03	0007	00	0.2	10	High	2.5 L	2.5 L	High	40	20	0.7	
	1ST-B C131	H056	002 020 017	00 14 04	03	0007	00	0.2	10	High	2.5 L	2.5 L	High	40	30	0.7	
	1ST-C C132	H050	002 015 017	01 14 03	03	0007	00	0.2	10	High	2.5 L	2.5 L	High	35	6.5	1.2	
	1ST-D C133	H050	003 014 017	01 14 02	03	0007	00	0.2	10	High	2.5 L	2.5 L	High	30	8.5	1.8	
	1ST-E C134	H050	004 014 017	01 14 02	03	0007	00	0.2	10	High	5 L	5 L	High	30	10.5	2.0	
	1ST-F C135	H050	004 014 017	01 14 01	03	0007	00	0.2	10	High	5 L	5 L	High	25	11.5	2.4	
	TO 1ST C134	H069								High			High				
2ND CUT	2ND C129	H043	005 010 016	03 12 08	01	2004	00	0.2	10	Low	2 L	2 L	Low	58	1.5	4.0~5.0	
TO 3RD CUT	1ST C134	H074								High			High				
	2ND C129	H049								Low			Low				
	3RD C120	H043	002 002 015	00 00 09	00	2004	02	0.2	10	Low	2 L	2 L	Low	40	1.3	6.0~7.0	
	4TH C121	H043	000 001 005	00 03 00	00	2004	00	0.2	10	Low	2 L	2 L	Low	30	0.7	9.0~10.0	

MATERIAL = SKD11										THICKNESS = 70mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G		
TIME NO. OF CUTTING TIMES	CONDITION No.	OFFSET			ON OFF IP HP MA SV V SF C			WIRE TENSION (A)			WIRE SPEED (mm/min)			WATER PRESS-UP (mm/min)			WATER PRESS-ON (mm/min)			FEED SPEED (mm/min)	
		OFFSET	ON	IP	HP	MA	SV	V	SF	C	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)	WIRE SPEED (mm/min)		
1ST CUT ONLY	1ST-A C136	H049	000	011	017	00	14	04	03	0008	00	0.2	10	2.5 ♀	2.5 ♀	High	35	2.0	0.6		
	1ST-B C137	H058	002	020	017	00	14	04	03	0008	00	0.2	10	2.5 ♀	2.5 ♀	High	45	3.5	0.6		
	1ST-C C138	H051	002	002	017	01	14	03	03	0008	00	0.2	10	2.5 ♀	2.5 ♀	High	30	5.5	1.0		
	1ST-D C133	H051	003	003	017	01	14	02	03	0007	00	0.2	10	5 ♀	5 ♀	High	30	8.0	1.3		
	1ST-E C134	H051	004	004	017	01	14	02	03	0007	00	0.2	10	5 ♀	5 ♀	High	30	9.5	1.5		
	1ST-F C135	H051	004	004	017	01	14	01	03	0007	00	0.2	10	5 ♀	5 ♀	High	25	10.5	1.8		
TO 2ND CUT	1ST C134	H069																			
	2ND C129	H044	005	005	016	03	12	08	01	2004	00	0.2	10	Low	Low	Low	55	1.5	3.5~4.5		
TO 3RD CUT	1ST C134	H077																			
	2ND C129	H051																			
	3RD C139	H043	002	002	015	00	00	03	00	2004	02	0.2	10	Low	Low	Low	35	1.5	4.0~5.0		
TO 4TH CUT	1ST C134	H079																			
	2ND C129	H053																			
	3RD C139	H045																			
	4TH C140	H043	000	001	007	00	00	03	00	2004	01	0.2	10	Low	Low	Low	30	1.0	7.0~8.0		

MATERIAL = SKD11		THICKNESS = 80mm				WIRE Dia. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (mm/min)	WATER PRESS - UP (t/min)	WATER PRESS - DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C136	H049	000 011 017 00	14	04	03	0008	00	0.2	10	High 2.5 t	High 2.5 t	35	1.5	0.5		
	1ST-B										High	High					
	1ST-C C138	H050	002 015 017 01	14	03	03	0008	00	0.2	10	High 2.5 t	High 2.5 t	35	5.5	0.8		
	1ST-D C141	H051	003 015 017 01	14	02	03	0008	00	0.2	10	High 5 t	High 5 t	30	8.0	1.2		
	1ST-E C142	H051	004 015 017 01	14	02	03	0008	00	0.2	10	High 5 t	High 5 t	30	9.0	1.35		
	1ST-F C143	H051	004 015 017 01	14	01	03	0008	00	0.2	10	High 5 t	High 5 t	25	10.0	1.50		
TO 2ND CUT	1ST C142	H069									High	High					
	2ND C129	H044	005 010 016 03	12	08	01	2004	00	0.2	10	Low 2 t	Low 2 t	55	1.5	3.5~4.5		
TO 3RD CUT	1ST C142	H077									High	High					
	2ND C129	H051									Low	Low					
TO 4TH CUT	3RD C139	H043	002 002 015 00	00	03	00	2004	02	0.2	10	Low 2 t	Low 2 t	35	1.5	4.0~5.0		
	1ST C142	H079									High	High					
TO 4TH CUT	2ND C129	H053									Low	Low					
	3RD C139	H045									Low	Low					
TO 4TH CUT	4TH C140	H043	000 001 007 00	00	03	00	2004	01	0.2	10	Low 2 t	Low 2 t	30	1.0	7.0~8.0		

MATERIAL = SKD11		THICKNESS = 90mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G		
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (notch)	PRESS ~ UP (t/min)	WATER PRESS ~ ON (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C144	H050	000 011 017 00	14	04	03	0009 00	0.2	10	High	High	2.5 t	40	1.8	0.4	
	1ST-B									High	High	2.5 t				
	1ST-C C145	H050	002 015 017 01	14	03	03	0009 00	0.2		High	High	2.5 t	40	5.5	0.7	
	1ST-D C141	H052	003 015 017 01	14	02	03	0008 00	0.2		High	High	5 t	30	8.0	1.1	
	1ST-E C142	H052	004 015 017 01	14	02	03	0008 00	0.2		High	High	5 t	30	8.5	1.2	
	1ST-F C143	H052	004 015 017 01	14	01	03	0008 00	0.2		High	High	5 t	25	10.0	1.3	
TO 2ND CUT	1ST C142	H070								High	High					
	2ND C146	H044	005 010 016 03	12	07	01	2004 00	0.2	10	Low	Low	2 t	52	1.5	3.0~4.0	
TO 3RD CUT	1ST C142	H077								High	High					
	2ND C146	H052								Low	Low					
TO 4TH CUT	3RD C139	H044	002 002 015 00	00	03	00	2004 02	0.2	10	Low	Low	2 t	30	1.5	3.5~4.5	
	1ST C142	H079								High	High					
TO 4TH CUT	2ND C146	H053								Low	Low					
	3RD C139	H045								Low	Low					
TO 4TH CUT	4TH C140	H043	000 001 007 00	00	03	00	2004 01	0.2	10	Low	Low	2 t	30	1.0	7.0~8.0	

MATERIAL = SKD11		THICKNESS = 100mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G						
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch)	WATER PRESS - UP (ℓ/min)	WATER PRESS - DN (ℓ/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C144	H050	000 011 017	00	14	04	03	0009	00	0.2	10	High 2.5 ℓ	High 2.5 ℓ	40	1.8	0.35	
	1ST-B										High	High					
	1ST-C C145	H052	002 015 017	01	14	03	03	0009	00	0.2	10	High 2.5 ℓ	High 2.5 ℓ	35	5.0	0.60	
	1ST-D C147	H053	003 015 017	01	14	02	03	0009	00	0.2	10	High 5 ℓ	High 5 ℓ	30	7.8	0.90	
	1ST-E C148	H053	004 015 017	01	14	02	03	0009	00	0.2	10	High 5 ℓ	High 5 ℓ	30	8.7	0.1	
	1ST-F C149	H051	004 015 017	01	14	01	03	0009	00	0.2	10	High 5 ℓ	High 5 ℓ	25	9.5	1.15	
TO 2ND CUT	1ST C148	H070									High	High					
	2ND C146	H044	005 010 016	03	12	07	01	2004	00	0.2	10	Low 2 ℓ	Low 2 ℓ	52	1.5	3.0~4.0	
	3RD C146	H052									High	High					
TO 4TH CUT	1ST C139	H044	002 002 015	00	00	03	00	2004	02	0.2	10	Low 2 ℓ	Low 2 ℓ	30	1.5	3.0~4.0	
	1ST C148	H079									High	High					
	2ND C146	H053									Low	Low					
	3RD C139	H045									Low	Low					
TO 4TH CUT	4TH C140	H043	000 001 007	00	00	03	00	2004	01	0.2	10	Low 2 ℓ	Low 2 ℓ	30	1.0	7.0~8.0	

5. MATERIAL = CU

WIRE DIA = 0.2

MATERIAL = Cu		THICKNESS = 5mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G						
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (1/min)	WATER PRESS - DN (1/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A																
	1ST-B												High	High			
	1ST-C	C150	H057	002 013 017	00	15	06	03	0004	00	0.2	10	High	High	55	3.5	9.5
	1ST-D												High	High			
	1ST-E	C151	H055	002 013 017	01	14	07	03	0003	00	0.2	10	High	High	52	5.0	13.0
	1ST-F												High	High			
TO 2ND CUT	1ST												High	High			
	2ND												Low	Low			
	1ST												High	High			
	2ND												Low	Low			
TO 3RD CUT	1ST												High	High			
	2ND												Low	Low			
	3RD												Low	Low			
	1ST												High	High			
TO 4TH CUT	2ND												Low	Low			
	3RD												Low	Low			
	4TH												Low	Low			

MATERIAL = Cu												THICKNESS = 10mm		WIRE DIA.= 0.2mm		RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON OFF	IP HP	MA SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS-UP (psi/min)	WATER PRESS-ON (psi/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		FEED SPEED (mm/min)			
1ST CUT ONLY	1ST-A											High	High						
	1ST-B											High	High						
1ST CUT ONLY	1ST-C	H060	003 013	017 00	14 06	03 0004	00 00	0.2	10	High	High	5.0	5.0						
	1ST-D									High	High	5.0	5.0						
1ST CUT ONLY	1ST-E	C152								High	High	5.0	5.0						
	1ST-F	C153	H061	004 012	017 01	13 07	03 0003	00 00	0.2	10	High	High	5.0	5.0					
TO 2ND CUT	1ST									High	High	5.0	5.0						
	2ND									High	High	5.0	5.0						
TO 3RD CUT	1ST									Low	Low	Low	Low						
	2ND									Low	Low	Low	Low						
TO 3RD CUT	1ST									High	High	High	High						
	2ND									Low	Low	Low	Low						
TO 3RD CUT	3RD									Low	Low	Low	Low						
	1ST									High	High	High	High						
TO 4TH CUT	2ND									Low	Low	Low	Low						
	3RD									Low	Low	Low	Low						
TO 4TH CUT	4TH									Low	Low	Low	Low						

MATERIAL = Cu		THICKNESS = 20mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G				
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP (l/min)	WATER PRESS-DN (l/min)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A										High	High			
	1ST-B										High	High			
	1ST-C	C154	H061	003	012	017	01	14	06	03	0004	00	0.2	10	
	1ST-D												High	50	
	1ST-E	C155	H061	004	012	017	01	12	05	03	0004	00	0.2	10	
	1ST-F												High	50	
2ND CUT	TO	1ST	C155	H077									High		
	2ND	2ND	C119	H046	005	010	016	03	12	09	01	2004	00	0.2	10
	TO	1ST	C156	H080									Low	60	
	3RD	2ND	C119	H048									2 t	2 t	
3RD CUT	TO	3RD	C120	H044	002	002	015	00	00	04	00	2004	02	0.2	10
	4TH	2ND	C155	H081									Low	65	
	TO	3RD	C119	H050									2 t	0.5	
	4TH	3RD	C121	H044	000	001	005	00	00	03	00	2004	00	0.2	10
													Low	10.0	

MATERIAL = Cu		THICKNESS = 30mm				WIRE DIA. = 0.2mm				RESISTIVITY = 5×10^{-8} Q.cm				MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (l/min)	WATER PRESS - DN (l/min)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A														
	1ST-B														
	1ST-C	C156	H061	003	012	017	01	14	08	03	0005	00	0.2	10	High
	1ST-D														High
	1ST-E	C157	H061	004	012	017	01	12	05	03	0005	00	0.2	10	High
	1ST-F														High
TO 2ND CUT	1ST	C157	H078												
	2ND	C119	H046	005	010	016	03	12	09	01	2004	00	0.2	10	Low
TO 3RD CUT	1ST	C157	H079												
	2ND	C119	H048												High
TO 4TH CUT	3RD	C120	H044	002	002	015	00	00	04	00	2004	02	0.2	10	Low
	1ST	C157	H081												Low
	2ND	C119	H050												Low
	3RD	C120	H046												High
	4TH	C121	H044	000	001	005	00	00	03	00	2004	00	0.2	10	Low
															2.0
															60
															0.3
															10.0

MATERIAL = Cu		THICKNESS = 40mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (rotated)	WATER PRESS - UP (1/min)	WATER PRESS - ON (1/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A										High	High	High				
	1ST-B										High	High	High				
	1ST-C	C158	H062	003 012	017 01	14 05	03	0006 00	0.2	10	5 2	5 2	40	9.0	2.7		
	1ST-D										High	High	High				
	1ST-E	C159	H061	005 012	017 01	12 05	03	0005 00	0.2	10	5 2	5 2	445	12.0	3.7		
	1ST-F										High	High	High				
TO 2ND CUT	1ST	C159	H078								High	High	High				
	2ND	C129	H046	005 010	016 03	12 08	01.	2004 00	0.2	10	2 2	2 2	60	1.5	5.0~6.0		
	TO	1ST	C159	H081							High	High	High				
	3RD	2ND	C129	H049							Low	Low	Low				
TO 4TH CUT	3RD	C120	H043	002 002	015 00	00	04	00	2004	0.2	10	2 2	2 2	65	1.1	9.0~10.0	
	1ST	C159	H083								High	High	High				
	2ND	C129	H051								Low	Low	Low				
	3RD	C120	H045								Low	Low	Low				
	4TH	C121	H043	000 001	005 00	00	03	00	2004	0.2	10	2 2	2 2	30	0.7	10.0	

MATERIAL = Cu		THICKNESS = 50mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G						
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS-UP (ft/min)	WATER PRESS-ON (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A										High	High					
	1ST-B										High	High					
	1ST-C	C160	H063	004	012	017	01	14	02	03	0008	00	0.2	10	High	40	9.0
	1ST-D												High	5 ft	5 ft		
	1ST-E	C161	H061	005	012	017	01	12	02	03	0007	00	0.2	10	High	40	9.0
	1ST-F												High	5 ft	5 ft		
TO 2ND CUT	1ST	C161	H078										High	High	High		
	2ND	C129	H047	005	010	016	03	12	08	01	2004	00	0.2	10	Low	58	1.5
	1ST	C161	H081										Low	2 ft	2 ft		
TO 3RD CUT	2ND	C129	H049										High	High	High		
	3RD	C120	H043	002	002	015	00	00	04	00	2004	02	0.2	10	Low	Low	
	1ST	C161	H083										Low	2 ft	42	1.3	
TO 4TH CUT	2ND	C129	H051										Low	Low			
	3RD	C120	H045										Low	Low			
	4TH	C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	Low	30	0.7
													Low	2 ft	2 ft		

MATERIAL = Cu		THICKNESS = 60mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (in/min)	WATER PRESS - UP (psi/min)	WATER PRESS - DN (psi/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/mm)
1ST CUT ONLY	1ST-A													High	High			
	1ST-B													High	High			
	1ST-C	C162	H063	005	012	017	01	14	02	03	0008	00	0.2	10	5 4	40	9.0	2.1
	1ST-D													High	High			
	1ST-E	C163	H062	005	012	017	01	12	02	03	0008	00	0.2	10	5 4	40	12.0	2.5
	1ST-F													High	High			
TO 2ND CUT	1ST	C163	H079											High	High			
	2ND	C129	H047	005	010	016	03	12	08	01	2004	00	0.2	10	2 4	58	1.5	4.0~5.0
	1ST	C163	H081											High	High			
	2ND	C129	H050											Low	Low			
	3RD	C120	H044	002	002	015	00	00	04	00	2004	02	0.2	10	2 4	40	1.3	6.0~7.0
	1ST	C163	H083											High	High			
TO 4TH CUT	2ND	C129	H052											Low	Low			
	3RD	C120	H046											Low	Low			
	4TH	C121	H044	000	001	005	00	00	03	00	2004	00	0.2	10	2 4	30	0.7	9.0~10.0

MATERIAL = Cu												THICKNESS = 70mm												WIRE DIA. = 0.2mm												RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$												MACHINE MODEL = BP 40G											
THE No. OF CUTTING TIMES		CONDITION No.		OFFSET ON		OFF IP		HP MA		SV V		SF C		WIRE TENSION (A)		WIRE SPEED (notch)		PRESS - UP (t/min)		WATER PRESS - ON (t/min)		WATER VOLTAGE (V)		CURRENT (A)		FEED SPEED (mm/min)																																	
1ST CUT ONLY	1ST-A																																																										
	1ST-B																																																										
	1ST-C	C162	H063	005	012	017	01	14	02	03	0008	00	0.2	10	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High																												
	1ST-D																																																										
	1ST-E	C163	H062	005	012	017	01	12	02	03	0008	00	0.2	10	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High	High																												
	1ST-F																																																										
TO 2ND CUT	1ST	C163	H079																																																								
	2ND	C129	H048	005	010	016	03	12	08	01	2004	00	0.2	10	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low																												
TO 3RD CUT	1ST	C163	H083																																																								
	2ND	C129	H052																																																								
TO 4TH CUT	1ST	C163	H085																																																								
	2ND	C129	H054																																																								
	1ST	C163	H044	002	002	015	00	00	03	00	2004	02	0.2	10	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low																												
	2ND	C139	H046																																																								
	3RD	C140	H044	000	001	007	00	00	03	00	2004	01	0.2	10	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low	Low																													
	4TH																																																										

MATERIAL = Cu		THICKNESS = 80mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \text{cm}$			MACHINE MODEL = BP 40G							
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (kg)	WIRE SPEED (metre) (m/min)	WATER PRESS-UP (t/min)	WATER PRESS-DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A													High	High			
	1ST-B													High	High			
	1ST-C	C164	H063	005	011	017	01	14	02	03	0008	00	0.2	10	5 t	5 t	40	10.0
	1ST-D													High	High			
	1ST-E	C165	H062	005	011	017	01	12	02	03	0008	00	0.2	10	6 t	5 t	40	10.0
	1ST-F													High	High			
TO 2ND CUT	1ST	C165	H079											High	High			
	2ND	C129	H048	005	010	016	03	12	08	01	2004	00	0.2	10	2 t	2 t	55	1.5
	1ST	C165	H083											High	High			
	3RD	C129	H052											Low	Low			
TO 3RD CUT	3RD	C139	H044	002	015	00	00	03	00	2004	02	0.2	10	2 t	2 t	35	1.5	
	1ST	C165	H085											High	High			
	2ND	C129	H054											Low	Low			
	3RD	C139	H046											Low	Low			
	4TH	C140	H044	000	001	007	00	00	03	00	2004	01	0.2	10	2 t	2 t	30	1.0
RESISTIVITY = $5 \times 10^{-8} \Omega \text{cm}$																		

MATERIAL = Cu		THICKNESS = 90mm			WIRE DIA. = 0.2mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G							
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (t/min)	WATER PRESS - DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A												High	High				
	1ST-B												High	High				
	1ST-C	C166	H063	005	011	017	01	13	02	03	0009	00	0.2	10	High	40	10.0	1.35
	1ST-D												High	5 t	5 t			
	1ST-E	C167	H062	005	011	017	01	12	02	03	0009	00	0.2	10	High	40	12.0	1.65
	1ST-F												High	5 t	5 t			
TO 2ND CUT	1ST	C167	H080										High	High				
	2ND	C146	H048	005	010	016	03	12	07	01	2004	00	0.2	10	Low	52	1.5	3.0~4.0
	1ST	C167	H084										High	High				
	3RD	C146	H052										Low	Low				
TO 4TH CUT	3RD	C139	H044	002	002	015	00	00	03	00	2004	02	0.2	10	Low	30	1.5	3.5~4.5
	1ST	C167	H085										High	High				
	2ND	C146	H054										Low	Low				
	3RD	C139	H046										Low	Low				
4TH	4TH	C140	H044	000	001	007	00	00	03	00	2004	01	0.2	10	Low	30	1.0	7~8.0

MATERIAL = Cu		THICKNESS = 100nm			WIRE DIA. = 0.2mm			RESISTIVITY = 5×10^{-8} Ω.cm			MACHINE MODEL = BP 40G							
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch) (f/min)	WATER PRESS - UP (f/min)	WATER PRESS - DN (f/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A																	
	1ST-B											High	High	High	High			
	1ST-C	C166	H063	005	011	017	01	13	02	03	0009	00	0.2	10	5 4	40	10.0	1.15
	1ST-D														High	High		
	1ST-E	C167	H062	005	011	017	01	12	02	03	0009	00	0.2	10	5 4	40	12.0	1.45
	1ST-F														High	High		
TO 2ND CUT	1ST	C167	H080															
	2ND	C146	H048	005	010	016	03	12	07	01	2004	00	0.2	10	2 1	52	1.5	3.0~4.0
	TO 3RD CUT	1ST	C167	H084											High	High		
TO 4TH CUT	2ND	C146	H052												Low	Low		
	3RD	C139	H044	002	002	015	00	00	03	00	2004	02	0.2	10	2 1	30	1.5	3.0~4.0
	1ST	C167	H085												High	High		
	2ND	C146	H054												Low	Low		
	3RD	C139	H046												Low	Low		
	4TH	C140	H044	000	001	007	00	00	03	00	2004	01	0.2	10	2 1	30	1.0	7~8.0

6. MATERIAL = WC

WIRE DIA = 0.2

MATERIAL = WC										THICKNESS = 5mm										WIRE DIA. = 0.2mm										RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$										MACHINE MODEL = BP 40G									
THE NO. OF CUTTING TIMES		CONDION NO.		OFFSET ON		IP OFF		HP MA		SV V		SF C		WIRE TENSION (A)		WIRE SPEED (inch/min)		WATER PRESS - UP (L/min)		WATER PRESS - DN (L/min)		VOLTAGE (V)		CURRENT (A)		FEED SPEED (mm/min)																							
1ST CUT ONLY	1ST-A	C168	H050	001	015	017	00	15	04	03	0005	00	0.2	5	High	2.5 L	High	2.5 L	High	040	3.0	5.25																											
	1ST-B																																																
	1ST-C	C169	H052	002	015	017	00	17	03	03	0005	00	0.2	7	High	2.5 L	High	2.5 L	High	40	3.5	5.20																											
	1ST-D	C170	H050	002	015	017	00	15	03	03	0004	00	0.2	7	High	5 L	High	5 L	High	35	4.0	6.65																											
	1ST-E	C171	H051	002	015	017	01	16	02	03	0004	00	0.2	10	High	5 L	High	5 L	High	30	6.5	9.30																											
	1ST-F	C172	H051	003	017	017	01	16	01	03	0003	00	0.2	1	High	6 L	High	6 L	High	40	7.5	9.75																											
TO 1ST																																																	
2ND CUT		2ND																																															
TO 1ST																																																	
3RD CUT		2ND																																															
TO 1ST		3RD																																															
4TH CUT		2ND																																															
TO 4TH		3RD																																															
TO 4TH		4TH																																															

MATERIAL = WC		THICKNESS = 10mm		WIRE		DIA. = 0.2mm		RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G		
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV V	SF C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS-UP (psi)	WATER PRESS-DN (psi)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C173	H050	001	013	017	00	14	04	03	0005	00	0.2
	1ST-B											5
	1ST-C C174	H053	002	013	017	01	17	03	03	0006	00	0.2
	1ST-D C175	H050	002	013	017	01	16	03	03	0005	00	0.2
	1ST-E C176	H051	002	013	017	01	15	02	03	0005	00	0.2
	1ST-F C177	H051	003	015	017	01	15	02	03	0005	00	0.2
TO 2ND CUT	1ST											High
	2ND											Low
	1ST											High
	2ND											Low
TO 3RD CUT	1ST											High
	2ND											Low
	3RD											Low
	4TH											Low

MATERIAL = WC		THICKNESS = 20mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-9} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (ft/min)	WATER PRESS-UP (ft/min)	WATER PRESS-DN (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A	C178	H051	001	013	017	00	13	04	03	0006	00	0.2	5	High	40	4.0	
	1ST-B												High	2.5 ft	High		1.65	
	1ST-C	C179	H054	003	014	017	01	15	03	03	0006	00	0.2	7	High	2.5 ft	35	9.0
	1ST-D	C180	H052	002	013	017	01	15	03	03	0006	00	0.2	7	High	5 ft	35	7.0
	1ST-E	C181	H052	003	013	017	01	15	02	03	0006	00	0.2	10	High	5 ft	30	10.0
	1ST-F	C182	H053	003	013	017	01	13	02	03	0006	00	0.2	10	High	5 ft	30	11.0
TO 2ND CUT	1ST	C181	H061											High	High			
	2ND	C119	H042	005	010	016	03	12	09	01	2004	00	0.2	10	Low	Low	60	1.0
	3RD	C119	H067											2 ft	2 ft			7.0~8.0
TO 3RD CUT	1ST	C181	H067											High	High			
	2ND	C119	H047											Low	Low			
	3RD	C120	H043	002	002	015	00	00	04	00	2004	02	0.2	10	Low	Low	65	0.5
	4TH	C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	High	High		9.0~10.0
TO 4TH CUT	1ST	C181	H069											Low	Low			
	2ND	C119	H049											Low	Low			
	3RD	C120	H045											Low	Low			
	4TH	C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	2 ft	2 ft	60	0.3
																	10.0	

MATERIAL = WC		THICKNESS = 30mm				WIRE DIA. = 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV V	SF C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP (t/min)	WATER PRESS-DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A C183	H052	001 013 017 00	13 04 03	0007 00	0.2	5	High	High	40	3.5	1.20			
	1ST-B							High	High						
	1ST-C C184	H055	003 014 017 01	15 03 03	0007 00	0.2	7	2.5 t	2.5 t	40	8.5	1.90			
	1ST-D C185	H052	002 013 017 01	14 03 03	0007 00	0.2	7	High	High	35	7.0	1.80			
	1ST-E C186	H053	003 013 017 01	13 02 03	0007 00	0.2	10	5 t	5 t	30	10.5	2.45			
	1ST-F C187	H054	003 012 017 01	12 02 03	0007 00	0.2	10	High	High	30	12.5	2.80			
TO 2ND CUT	1ST C186	H062						High	High						
	2ND C119	H042	005 010 016 03	12 09 01	2004 00	0.2	10	Low	Low	60	1.0	6.0~7.0			
TO 3RD CUT	1ST C186	H067						High	High						
	2ND C119	H047						Low	Low						
TO 4TH CUT	3RD C120	H043	002 002 015 00	00 04 00	2004 02	0.2	10	Low	Low	60	0.7	9.0~10.0			
	1ST C186	H069						High	High						
	2ND C119	H049						Low	Low						
	3RD C120	H045						Low	Low						
4TH C121		H043	000 001 005 00	00 03 00	2004 00	0.2	10	Low	Low	60	0.3	10.0			

MATERIAL = WC		THICKNESS = 40mm				WIRE D/A, = 0.2mm				RESISTIVITY = 5×10^{-8} Q.cm				MACHINE MODEL = BP 40G					
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch)	WATER PRESS-UP (g/min)	WATER PRESS-DN (g/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)			
1ST CUT ONLY	1ST-A	C183	H052	001	013	017	00	13	04	03	0007	00	0.2	5	High	35	4.0	0.80	
	1ST-B											High	High	High	High				
	1ST-C	C1B4	H056	003	014	017	01	15	03	03	0007	00	0.2	7	High	High	35	9.0	1.40
	1ST-D	C185	H052	002	013	017	01	14	03	03	0007	00	0.2	7	5	High	35	7.0	1.35
	1ST-E	C186	H054	003	013	017	01	13	02	03	0007	00	0.2	10	5	High	30	10.5	1.85
	1ST-F	C188	H054	004	012	017	01	13	01	03	0007	00	0.2	10	5	High	25	13.0	2.15
TO 2ND CUT	1ST	C186	H062									High	High	High	High				
	2ND	C128	H043	005	010	016	03	12	08	01	2004	00	0.2	10	2	Low	60	1.5	5.0~6.0
TO 3RD CUT	1ST	C186	H068									High	High	High	High				
	2ND	C129	H048									Low	Low	Low	Low				
	3RD	C120	H043	002	002	015	00	00	04	00	2004	02	0.2	10	2	Low	65	1.1	9.0~10.0
	4TH	C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	2	High	High		
TO 4TH CUT	1ST	C186	H070									Low	Low	Low	Low				
	2ND	C129	H050									Low	Low	Low	Low				
	3RD	C120	H044									Low	Low	Low	Low				
	4TH	C121	H043									Low	Low	Low	Low				

MATERIAL = WC		THICKNESS = 50mm				WIRE DIA. = 0.2mm				RESISTIVITY = 5×10^{-4} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch/min)	WATER PRESS-UP (L/min)	WATER PRESS-DN (L/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST-A	C189	H052	001 013 017 00	14 04 03	0007 00	0.2	5	High	2.5 L	2.5 L	High	2.5 L	2.5 L	40	3.5	0.62	
1ST-B											High	High	High				
1ST-CUT ONLY	1ST-C	C184	H057	003 014 017 01	15 03 03	0007 00	0.2	7	High	2.5 L	2.5 L	High	2.5 L	35	8.0	1.05	
	1ST-D	C190	H052	002 013 017 01	15 03 03	0007 00	0.2	7	High	5 L	5 L	High	5 L	35	7.0	0.98	
	1ST-E	C191	H054	003 013 017 01	14 02 03	0007 00	0.2	10	High	5 L	5 L	High	5 L	40	10.0	1.40	
	1ST-F	C192	H055	004 013 017 01	13 02 03	0007 00	0.2	10	High	5 L	5 L	High	5 L	40	12.0	1.60	
TO 2ND CUT	1ST	C191	H063								High	High	High	High			
	2ND	C129	H043	005 010 016 03	12 08 01	2004 00	0.2	10	Low	2 L	2 L	Low	2 L	58	1.5	4.0~5.0	
TO 3RD CUT	1ST	C191	H068								High	High	High	High			
	2ND	C129	H048								Low	Low	Low	Low			
	3RD	C120	H043	002 002 015 00	00 04 00	2004 02	0.2	10	Low	2 L	2 L	Low	2 L	42	1.3	7.0~8.0	
	1ST	C191	H070								High	High	High	High			
TO 4TH CUT	2ND	C129	H050								Low	Low	Low	Low			
	3RD	C120	H044								Low	Low	Low	Low			
	4TH	C121	H043	000 001 005 00	00 03 00	2004 00	0.2	10	Low	2 L	2 L	Low	2 L	30	0.7	9.0~10.0	

MATERIAL = WC		THICKNESS = 60mm				WIRE DIA.= 0.2mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (L/min)	WATER PRESS - DN (L/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A C189	H052	001	013	017	00	14	04	03	0007	00	0.2	5	2.5 L	40	3.5	0.25
	1ST-B											High	High	High			
	1ST-C C184	H057	003	014	017	01	15	03	03	0007	00	0.2	7	2.5 L	35	8.0	0.87
	1ST-D C190	H053	002	013	017	01	15	03	03	0007	00	0.2	7	5 L	30	6.5	0.82
	1ST-E C191	H054	003	013	017	01	14	02	03	0007	00	0.2	10	5 L	30	9.5	1.15
	1ST-F C192	H055	004	013	017	01	13	02	03	0007	00	0.2	10	5 L	30	12.0	1.30
TO 2ND CUT	1ST C191	H063												High	High		
	2ND C129	H043	005	010	016	03	12	08	01	2004	00	0.2	10	2 L	58	1.5	4.0~5.0
	3RD C129	H049												Low	Low		
TO 3RD CUT	1ST C191	H069												High	High		
	2ND C129	H049												Low	Low		
	3RD C120	H043	002	002	015	00	00	04	00	2004	02	0.2	10	2 L	40	1.3	6.0~7.0
	4TH C121	H043	000	001	005	00	00	03	00	2004	00	0.2	10	2 L	30	0.7	9.0~10.0

MATERIAL = WC												THICKNESS = 70mm			WIRE DIA. = 0.2mm			RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G		
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS - UP (psi) (kg/min)	WATER PRESS - DN (psi) (kg/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)							
												WATER	WATER	VOLTAGE	CURRENT								
1ST CUT ONLY	1ST-A	C193	H052	001	013	017	00	14	04	03	0008	00	0.2	6	2.5 ℓ	40	3.5	0.43					
	1ST-B												High	High									
	1ST-C	C194	H059	003	014	017	01	15	03	03	0008	00	0.2	7	2.5 ℓ	40	7.0	0.70					
	1ST-D	C195	H053	002	013	017	01	15	03	03	0008	00	0.2	7	1.5 ℓ	30	6.0	0.68					
	1ST-E	C196	H054	003	013	017	01	14	02	03	0008	00	0.2	10	5 ℓ	30	9.0	0.98					
	1ST-F	C197	H056	004	013	017	01	14	02	03	0008	00	0.2	10	5 ℓ	30	11.5	1.07					
TO 2ND CUT	1ST	C196	H063										High	High									
	2ND	C129	H044	006	010	016	03	12	08	01	2004	00	0.2	10	2 ℓ	55	1.5	3.5~4.5					
TO 3RD CUT	1ST	C196	H071										High	High									
	2ND	C129	H051										Low	Low									
	3RD	C139	H043	002	002	015	00	00	03	00	2004	02	0.2	10	2 ℓ	35	1.5	4.0~5.0					
TO 4TH CUT	1ST	C196	H073										High	High									
	2ND	C129	H053										Low	Low									
	3RD	C139	H045										Low	Low									
	4TH	C140	H043	000	001	007	00	00	03	00	2004	01	0.2	10	2 ℓ	30	1.0	7.0~8.0					

MATERIAL = WC										THICKNESS = 80nm				WIRE DIA. = 0.2mm		RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF ON	IP	HP	MA	SV	V	SF	C	WIRES TENSION (A)	WIRES SPEED (r/min)	WATER PRESS - UP (r/min)	WATER PRESS - DN (r/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST - A	C198	H053	001	013	017	00	15	04	03	0008	00	0.2	5	2.5	1	High	
	1ST - B												High					
	1ST - C	C194	H059	003	014	017	01	15	03	03	0008	00	0.2	7	2.5	1	High	
	1ST - D	C195	H054	002	013	017	01	15	03	03	0008	00	0.2	7	5	4	High	
	1ST - E	C196	H054	003	013	017	01	14	02	03	0008	00	0.2	10	5	4	High	
	1ST - F	C189	H056	004	013	017	01	15	02	03	0008	00	0.2	10	5	4	High	
TO 2ND CUT	1ST	C196	H063														High	
	2ND	C129	H044	005	010	016	03	12	08	01	2004	00	0.2	10	Low	Low	55	
	3RD	C196	H071														Low	
	TO	C129	H051														Low	
TO 4TH CUT	1ST	C139	H043	002	002	015	00	00	03	00	2004	02	0.2	10	Low	Low	35	
	2ND	C196	H073														High	
	3RD	C129	H053														High	
	4TH	C139	H045														High	

MATERIAL = WC												THICKNESS = 90mm		WIRE DIA. = 0.2mm		RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G	
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET		ON	OFF	IP	HP	MA	SV	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP	WATER PRESS-ON	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
		1ST-A	C200	H053	001	013	017	00	15	04	03	0009	00	0.2	5	High	2.5 l	45	4.0
1ST CUT ONLY	1ST-B													High	High				
	1ST-C	C201	H061	003	014	017	01	15	03	03	0009	00	0.2	7	High	2.5 l	40	7.0	0.50
	1ST-D	C202	H054	002	013	017	01	15	03	03	0009	00	0.2	7	High	5 l	35	6.0	0.51
	1ST-E	C203	H055	003	013	017	01	14	02	03	0009	00	0.2	10	High	5 l	30	8.5	0.70
	1ST-F	C204	H056	004	013	017	01	15	02	03	0009	00	0.2	10	High	5 l	35	10.5	0.75
	TO 2ND CUT	1ST	C203	H064										High	High				
TO 3RD CUT	2ND	C146	H044	005	010	016	03	12	07	01	2004	00	0.2	10	Low	2 l	52	1.5	3.0~4.0
	1ST	C203	H071											High	High				
	2ND	C146	H052											Low	Low				
TO 4TH CUT	3RD	C139	H044	002	010	015	00	00	03	00	2004	02	0.2	10	Low	2 l	30	1.5	3.5~4.5
	1ST	C203	H073											High	High				
	2ND	C146	H053											Low	Low				
	3RD	C139	H045											Low	Low				
	4TH	C140	H043	000	001	007	00	00	03	00	2004	01	0.2	10	Low	2 l	30	1.5	7.0~8.0

MATERIAL = WC										THICKNESS = 100mm		WIRE DIA. = 0.2mm		RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G			
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	SF	C	WIRE TENSION (A)	WIRE SPEED (inch)	WATER PRESS - UP (psi/min)	WATER PRESS - DN (psi/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A	C200	H054	001	013	017	00	15	04	03	0009	00	0.2	5	2.5	2.5	4.0	0.25	
	1ST-B												High	High	High	High			
	1ST-C	C201	H061	003	014	017	01	15	03	03	0009	00	0.2	7	2.5	2	40	6.5	0.43
	1ST-D	C202	H054	002	013	017	01	15	03	03	0009	00	0.2	7	5	2	35	6.0	0.44
	1ST-E	C203	H056	003	013	017	01	14	02	03	0009	00	0.2	10	5	2	35	8.5	0.60
	1ST-F	C204	H057	004	013	017	01	15	02	03	0009	00	0.2	10	5	2	35	10.0	0.66
TO 2ND CUT	1ST	C203	H064																
	2ND	C146	H044	005	010	016	03	12	07	2004	00	0.2	10	2	2	52	1.5	3.0~4.0	
	1ST	C203	H071										High	High	High	High			
TO 3RD CUT	1ST	C146	H052										Low	Low	Low	Low			
	2ND	C146	H044	002	002	015	00	03	00	2004	02	0.2	10	2	2	30	1.5	3.0~4.0	
	3RD	C139	H044										High	High	High	High			
TO 4TH CUT	1ST	C203	H073										Low	Low	Low	Low			
	2ND	C146	H053										Low	Low	Low	Low			
	3RD	C139	H045										Low	Low	Low	Low			
	4TH	C140	H043	000	001	007	00	03	00	2004	01	0.2	10	2	2	30	1.0	7.0~8.0	

7. MATERIAL = SKD11

WIRE DIA = 0.25

MATERIAL = SKD11		THICKNESS = 30mm			WIRE DIA. = 0.25mm			RESISTIVITY = $5 \times 10^{-8} \Omega \text{cm}$			MACHINE MODEL = BP 40G					
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP (l/min)	WATER PRESS-DN (l/min)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A															
	1ST-B															
	1ST-C	C205	H064	004	012	017	01	16	02	03	0006	00	0.2	10	5 l	
	1ST-D	C206	H063	004	012	017	01	15	01	03	0006	00	0.2	10	5 l	
	1ST-E	C207	H063	005	013	017	01	15	01	03	0006	00	0.2	10	5 l	
	1ST-F	C208	H063	006	014	017	01	15	01	03	0006	00	0.2	10	5 l	
2ND CUT	TO	1ST	C207	H081												
	2ND	2ND	C119	H052	005	010	016	03	12	09	01	2004	00	0.2	10	2 l
	TO	1ST	C207	H086												
3RD CUT	3RD	2ND	C119	H057												
	TO	1ST	C207	H086												
	3RD	3RD	C120	H053	002	002	015	00	00	04	00	2004	02	0.2	10	2 l
4TH CUT	TO	1ST	C207	H087												
	2ND	C119	H057													
	4TH	3RD	C120	H054												
	TO	4TH	C121	H053	000	001	005	00	00	03	00	2004	00	0.2	10	2 l

MATERIAL = SKD11		THICKNESS = 40mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (t/min)	WATER PRESS - UP PRESS (t/min)	WATER DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A												High	High				
	1ST-B												High	High				
	1ST-C	C205	H065	004	012	017	01	16	02	03	0006	00	0.2	10	5 t	35	11.0	2.85
	1ST-D	C206	H064	004	012	017	01	15	01	03	0006	00	0.2	10	5 t	30	11.5	3.35
	1ST-E	C209	H064	005	013	017	01	13	01	03	0006	00	0.2	10	5 t	30	15.0	3.80
	1ST-F	C210	H064	006	014	017	01	12	01	03	0006	00	0.2	10	5 t	30	18.0	4.40
TO 2ND CUT	1ST	C209	H082											High	High			
	2ND	C129	H052	005	010	016	03	12	08	01	2004	00	0.2	10	2 t	60	1.5	5.0~6.0
	1ST	C209	H088											High	High			
	3RD	C129	H058											Low	Low			
TO 3RD CUT	3RD	C120	H052	002	015	00	00	04	00	2004	02	0.2	10	2 t	65	1.1	9.0~10.0	
	1ST	C209	H089											High	High			
	2ND	C129	H059											Low	Low			
	3RD	C120	H053											Low	Low			
TO 4TH CUT	4TH	C121	H052	000	001	005	00	00	03	00	2004	00	0.2	10	2 t	30	0.7	10.0

MATERIAL = SKD11		THICKNESS = 50mm			WIRE DIA. = 0.25mm			RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G					
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (mm/min)	WATER PRESS-UP (t/min)	WATER PRESS-ON (t/min)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A															
	1ST-B															
	1ST-C	C205	H067	004	012	017	01	16	02	03	0006	00	0.2	10	5 t	35
	1ST-D	C206	H065	004	012	017	01	15	01	03	0006	00	0.2	10	5 t	25
	1ST-E	C209	H065	005	013	017	01	13	01	03	0006	00	0.2	10	5 t	30
	1ST-F	C210	H065	006	014	017	01	12	01	03	0006	00	0.2	10	5 t	30
TO 2ND CUT	1ST	C209	H082													
	2ND	C129	H053	005	010	016	03	12	08	01	2004	00	0.2	10	2 t	58
	1ST	C209	H088													
	3RD	C129	H058													
TO 3RD CUT	1ST	C120	H052	002	002	015	00	00	04	00	2004	02	0.2	10	2 t	42
	2ND	C129	H058													
	1ST	C209	H089													
	4TH	C121	H052	000	001	005	00	00	03	00	2004	00	0.2	10	2 t	30

MATERIAL = SKD11		THICKNESS = 60mm				WIRE DIA. = 0.25mm				RESISTIVITY=5×10 ⁻⁸ Ω.cm				MACHINE MODEL = BP 40G
THE NO OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV V	SF C	WIRES TENSION (A)	WIRES SPEED (m/min)	WIRES PRESS-UP (1/min)	WATER PRESS-DN (L/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST-A														
1ST-B														
1ST-C	C205	H067	004 012	017 01	16 02	03 0006	00 0.2	10	High	High	35	10.5	1.80	
1ST-D	C206	H065	004 012	017 01	15 01	03 0006	00 0.2	10	5 2	5 2	30	12.5	2.30	
1ST-E	C209	H065	005 013	017 01	13 01	03 0006	00 0.2	10	5 2	5 2	30	15.0	2.60	
1ST-F	C210	H065	006 014	017 01	12 01	03 0006	00 0.2	10	5 2	5 2	30	18.0	3.10	
TO 1ST	C209	H083												
2ND CUT	C129	H053	005 010	016 03	12 08	01 2004	00 0.2	10	Low	Low	58	1.5	4~5.0	
TO 1ST	C209	H088												
3RD CUT	C129	H059												
TO 3RD	C120	H053	002 002	015 00	00 04	00 2004	02 0.2	10	Low	Low	40	1.3	6~7.0	
TO 2ND	C209	H089												
4TH CUT	C129	H059												
TO 3RD	C120	H054												
4TH	C121	H053	000 001	005 00	00 03	00 2004	00 0.2	10	Low	Low	30	0.7	9~10.0	

MATERIAL = SKD11		THICKNESS = 70mm			WIRE DIA. = 0.25mm			RESISTIVITY = $5 \times 10^{-1} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G						
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE SPEED (A)	WIRE TENSION (A)	WATER PRESS-UP (A/min)	WATER PRESS-ON (A/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A												High	High			
	1ST-B												High	High			
	1ST-C	C211	H069	004	012	017	01	15	02	03	0007	00	0.2	10	5 2	35	10.5
	1ST-D	C212	H065	004	012	017	01	14	01	03	0007	00	0.2	10	5 2	25	12.5
	1ST-E	C213	H065	005	013	017	01	13	01	03	0007	00	0.2	10	5 2	30	14.5
	1ST-F	C214	H065	006	014	017	01	13	01	03	0007	00	0.2	10	5 2	25	17.0
TO 2ND CUT	1ST	C213	H083														
	2ND	C129	H054	005	010	016	03	12	08	01	2004	00	0.2	10	2 2	55	1.5
	1ST	C213	H091														
	3RD	C129	H061														
TO 3RD CUT	1ST	C139	H053	002	002	015	00	00	03	00	2004	02	0.2	10	2 2	35	1.5~4.5
	2ND	C129	H061														
	3RD	C139	H053	002	002	015	00	00	03	00	2004	02	0.2	10	2 2	35	1.5~4.5
	4TH	C129	H062														
TO 4TH CUT	1ST	C213	H091														
	2ND	C129	H062														
	3RD	C139	H054														
	4TH	C140	H053	000	001	007	00	00	03	00	2004	01	02	10	2 2	30	1.0~8.0

MATERIAL = SKD11		THICKNESS = 80mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE No OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (t/min)	WATER PRESS - DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A										High	High					
	1ST-B										High	High					
	1ST-C	C211	H070	004 012	017	01	15	02	03	0007	00	0.2	10	High	High		
	1ST-D	C212	H065	004 012	017	01	14	01	03	0007	00	0.2	10	High	High		
	1ST-E	C213	H065	005 013	017	01	13	01	03	0007	00	0.2	10	High	High		
	1ST-F	C214	H065	006 014	017	01	14	01	03	0007	00	0.2	10	High	High		
TO 2ND CUT	1ST	C213	H083											High	High		
	2ND	C129	H054	005 010	016	03	12	08	01	2004	00	0.2	10	Low	Low		
TO 3RD CUT	1ST	C213	H091											High	High		
	2ND	C129	H061											Low	Low		
	3RD	C139	H053	002 002	015	00	00	03	00	2004	02	0.2	10	Low	Low		
	4TH	C213	H091											High	High		
TO 4TH CUT	2ND	C129	H062											Low	Low		
	3RD	C139	H054											Low	Low		
	4TH	C140	H053	000 001	007	00	00	03	00	2004	01	0.2	10	Low	Low		
														20	20		

MATERIAL = SKD11		THICKNESS = 90mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch/ min)	WATER PRESS - UP (g/min)	WATER PRESS - DN (g/min)	CURRENT (A)	FEED SPEED (mm/min)		
1ST CUT ONLY	1ST-A																	
	1ST-B																	
	1ST-C	C215	H071	004	012	017	01	15	02	03	0008	00	0.2	10	5 2	35	9.5	1.15
	1ST-D	C216	H065	004	012	017	01	14	01	03	0008	00	0.2	10	5 2	30	12.0	1.40
	1ST-E	C217	H065	005	013	017	01	14	01	03	0008	00	0.2	10	5 2	25	13.0	1.50
	1ST-F	C218	H065	006	014	017	01	14	01	03	0008	00	0.2	10	5 2	30	15.5	1.70
TO 2ND CUT	1ST	C217	H083															
	2ND	C146	H054	005	010	016	03	12	07	01	2004	00	0.2	10	2 2	52	1.5	3.0~4.0
	1ST	C217	H091															
	3RD	C146	H061															
TO 3RD CUT	3RD	C139	H054	002	002	015	00	00	03	00	2004	02	0.2	10	2 2	35	1.5	3.5~4.5
	1ST	C217	H091															
	2ND	C146	H062															
	3RD	C139	H054															
TO 4TH CUT	1ST	C217	H091															
	2ND	C146	H062															
4TH	3RD	C139	H054															
	4TH	C140	H053	000	001	007	00	00	03	00	2004	01	0.2	10	2 2	30	1.0	7~8.0

MATERIAL = SKD11		THICKNESS = 100mm				WIRE DIA.= 0.25mm				RESISTIVITY=5×10 ⁻⁸ Ω.cm				MACHINE MODEL = BP 40G			
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	MP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (t/min)	WATER PRESS - UP (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A																
	1ST-B																
	1ST-C	C215	H073	004	012	017	01	15	02	03	0008	00	0.2	10	5 2	35	9.5
	1ST-D	C216	H067	004	012	017	01	14	01	03	0008	00	0.2	10	5 2	5 2	0.9
	1ST-E	C217	H067	005	013	017	01	14	01	03	0008	00	0.2	10	5 2	30	12.0
	1ST-F	C218	H067	006	014	017	01	14	01	03	0008	00	0.2	10	5 2	25	13.0
TO 2ND CUT	1ST	C217	H083														
	2ND	C146	H054	005	010	016	03	12	07	01	2004	00	0.2	10	Low	52	1.5
	1ST	C217	H091														
	3RD	C146	H061														3~4.0
TO 3RD CUT	3RD	C139	H054	002	002	015	00	00	03	00	2004	02	0.2	10	Low	30	1.5
	1ST	C217	H091														
	2ND	C146	H062														
	3RD	C139	H054														
TO 4TH CUT	1ST	C217	H091														
	2ND	C146	H062														
	3RD	C139	H054														
	4TH	C140	H053	000	001	007	00	00	03	00	2004	01	0.2	10	Low	30	1.0

MATERIAL = SKD11		THICKNESS = 125mm			WIRE DIA. = 0.25mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G						
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch/min)	WATER PRESS - UP (l / min)	WATER PRESS - DN (l / min)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A											High	High	High	High		
	1ST-B											High	High	High	High		
	1ST-C	C219	H074	004	012	017	01	16	02	03	0009	00	0.2	10	5 1/2	35	8.5
	1ST-D	C220	H067	004	012	017	01	15	02	03	0009	00	0.2	10	5 1/2	30	10.5
	1ST-E	C221	H068	005	013	017	01	14	02	03	0009	00	0.2	10	5 1/2	30	11.5
	1ST-F	C222	H068	006	014	017	01	15	01	03	0009	00	0.2	10	5 1/2	30	12.5
TO 2ND CUT												High	High	Low	Low	Low	0.7
1ST												High	High	High	High	0.8	
2ND												Low	Low	Low	Low	0.95	
TO 3RD CUT												High	High	High	High	1.00	
1ST												Low	Low	Low	Low		
2ND												Low	Low	Low	Low		
TO 4TH CUT												High	High	High	High		
1ST												Low	Low	Low	Low		
2ND												Low	Low	Low	Low		
3RD												Low	Low	Low	Low		
4TH												Low	Low	Low	Low		

MATERIAL = SKD11		THICKNESS = 150mm				WIRE DIA. = 0.25mm				RESISTIVITY = 5×10^{-8} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G			
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch)	WATER PRESS - UP (t/min)	WATER PRESS - DN (t/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A																
	1ST-B												High	High			
	1ST-C	C223	H076	004	012	017	01	17	02	03	0009	00	0.2	10	High	High	40
	1ST-D	C224	H068	004	012	017	01	17	02	03	0009	00	0.2	10	High	High	54
	1ST-E	C225	H068	005	013	017	01	16	02	03	0009	00	0.2	10	High	High	54
	1ST-F	C226	H069	006	014	017	01	16	01	03	0009	00	0.2	10	High	High	54
TO 2ND CUT	1ST														High	High	
	2ND														Low	Low	
	1ST														High	High	
	2ND														Low	Low	
TO 3RD CUT	1ST														High	High	
	2ND														Low	Low	
	3RD														Low	Low	
	4TH														High	High	
TO 4TH CUT	1ST														Low	Low	
	2ND														Low	Low	
	3RD														Low	Low	
	4TH														Low	Low	



8. MATERIAL = WC

WIRE DIA = 0.25

MATERIAL = WC		THICKNESS = 30mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch)	WATER PRESS-UP (ℓ/min)	WATER PRESS-ON (ℓ/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)			
1ST CUT ONLY	1ST-A										High	High						
	1ST-B										High	High						
	1ST-C	C227	H066	004	013	017	01	14	03	0006	00	0.2	10	5 ℓ	35	13.0	2.25	
	1ST-D	C227	H065	004	013	017	01	14	03	0006	00	0.2	10	5 ℓ	30	13.0	2.40	
	1ST-E	C228	H065	005	013	017	02	15	02	0006	00	0.2	10	5 ℓ	30	15.5	2.80	
	1ST-F	C229	H066	006	014	017	02	16	01	0006	00	0.2	10	5 ℓ	25	17.5	3.15	
TO 2ND CUT	1ST	C228	H076											High				
	2ND	C119	H052	005	010	016	03	12	09	01	2004	00	0.2	10	2 ℓ	60	1.0	6.0~7.0
	1ST	C228	H080											High				
	TO 3RD CUT	C119	H057											Low				
TO 4TH CUT	3RD	C120	H053	002	015	00	00	04	00	2004	02	0.2	10	2 ℓ	60	0.7	9.0~10.0	
	1ST	C228	H081											High				
	2ND	C119	H057											Low				
	3RD	C120	H054											Low				
	4TH	C121	H053	000	001	005	00	00	03	00	2004	00	0.2	10	2 ℓ	60	0.3	10.0

MATERIAL = WC		THICKNESS = 40mm		WIRE DIA. = 0.25mm		RESISTIVITY = 5×10^{-4} $\Omega \cdot \text{cm}$		MACHINE MODEL = BP 40G											
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET	ON OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS - UP (l/min)	WATER PRESS - DN (l/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)		
1ST	1ST-A																		
1ST	1ST-B																		
1ST CUT ONLY	1ST-C	C230	H068	004	013	017	01	13	03	03	0006	00	0.2	10	5 l	High	35	13.0	1.75
	1ST-D	C230	H065	004	013	017	01	13	03	03	0006	00	0.2	10	5 l	High	30	13.5	1.95
	1ST-E	C231	H065	005	013	017	02	14	02	03	0006	00	0.2	10	5 l	High	30	16.0	2.25
	1ST-F	C232	H066	006	014	017	02	15	01	03	0006	00	0.2	10	5 l	High	22	18.0	2.56
TO	1ST	C231	H076													High	High		
2ND	2ND CUT	C129	H052	005	010	016	03	12	08	01	2004	00	0.2	10	2 l	Low	60	1.5	5.0~6.0
TO	1ST	C231	H082													High	High		
3RD	2ND	C129	H058													Low	Low		
CUT	3RD	C120	H052	002	015	00	00	04	00	2004	02	0.2	10	2 l	Low	65	1.1	9.0~10.0	
TO	1ST	C231	H083													High			
4TH	2ND	C129	H059													Low	Low		
CUT	3RD	C120	H053													Low	Low		
4TH	C121	H052	000	001	005	00	00	03	00	2004	00	0.2	10	2 l	Low	30	0.7	10.0	

MATERIAL = WC		THICKNESS = 50mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRED TENSION (A)	WIRED SPEED (inch) (ft/min)	WATER PRESS - UP (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A													High	High			
	1ST-B													High	High			
	1ST-C	C230	H069	004	013	017	01	13	03	03	0006	00	0.2	10	5 1/2	35	13.0	1.40
	1ST-D	C230	H065	004	013	017	01	13	03	03	0006	00	0.2	10	5 1/2	30	13.0	1.45
	1ST-E	C231	H066	005	013	017	02	14	02	03	0006	00	0.2	10	5 1/2	25	15.5	1.75
	1ST-F	C233	H066	006	013	017	02	13	01	03	0006	00	0.2	10	5 1/2	22	20.0	2.15
TO 2ND CUT	1ST	C231	H076											High	High			
	2ND	C129	H053	005	010	016	03	12	08	01	2004	00	0.2	10	2 1/2	58	1.5	4.0~5.0
	1ST	C231	H082											High	High			
	3RD	C129	H058											Low	Low			
TO 3RD CUT	1ST	C231	H083											Low	Low			
	2ND	C129	H059											Low	Low			
	3RD	C120	H052	002	002	015	00	00	04	00	2004	02	0.2	10	2 1/2	42	1.3	7.0~8.0
	4TH	C121	H052	000	001	005	00	00	03	00	2004	00	0.2	10	2 1/2	30	0.7	9.0~10.0

MATERIAL = WC		THICKNESS = 60mm				WIRE DIA.= 0.25mm				RESISTIVITY=5×10 ⁻⁴ Ω.cm				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch (notch))	WATER PRESS - UP (ft./min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A													High	High			
	1ST-B													High	High			
	1ST-C	C234	H070	004	013	017	01	14	03	03	0006	00	0.2	10	5 1/2	35	12.5	1.15
	1ST-D	C234	H066	004	013	017	01	14	03	03	0006	00	0.2	10	5 1/2	30	13.5	1.25
	1ST-E	C235	H067	005	013	017	02	15	02	03	0006	00	0.2	10	5 1/2	30	16.0	1.55
	1ST-F	C236	H067	006	014	017	02	14	01	03	0006	00	0.2	10	5 1/2	22	18.0	1.70
TO 2ND CUT	1ST	C235	H077											High	High			
	2ND	C129	H053	005	010	016	03	12	08	01	2004	00	0.2	10	2 1/2	58	1.5	4.0~5.0
TO 3RD CUT	1ST	C235	H082										High	High				
	2ND	C129	H059										Low	Low				
TO 4TH CUT	1ST	C120	H053	002	002	015	00	00	04	00	2004	02	0.2	10	2 1/2	40	1.3	6.0~7.0
	2ND	C235	H083										High	High				
TO 4TH CUT	3RD	C129	H059										Low	Low				
	4TH	C121	H053	000	001	005	00	00	03	00	2004	00	0.2	10	2 1/2	30	0.7	9.0~10.0

MATERIAL = WC		THICKNESS = 70mm			WIRE DIA. = 0.25mm			RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$			MACHINE MODEL = BP 40G							
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	SF	C	WIRE TENSION (A)	WIRE SPEED (mm/min)	WATER PRESS-UP (mm/min)	WATER PRESS-ON (mm/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)	
1ST CUT ONLY	1ST-A																	
	1ST-B																	
	1ST-C	C237	H074	004	013	017	01	14	03	03	0007	00	0.2	10	5 1/2	35	12.0	0.94
	1ST-D	C237	H069	004	013	017	01	14	03	03	0007	00	0.2	10	5 1/2	30	12.5	1.03
	1ST-E	C238	H069	005	013	017	02	15	02	03	0007	00	0.2	10	5 1/2	30	14.5	1.15
	1ST-F	C239	H070	006	014	017	02	15	01	03	0007	00	0.2	10	5 1/2	22	18.5	1.45
TO 2ND CUT	1ST	C238	H077															
	2ND	C129	H054	005	010	016	03	12	08	01	2004	00	0.2	10	2 1/2	55	1.5	3.5~4.5
	1ST	C238	H085															
	3RD	C129	H061															
TO 4TH CUT	3RD	C139	H053	002	002	015	00	00	03	00	2004	02	0.2	10	2 1/2	35	1.5	4.0~5.0
	1ST	C238	H085															
	2ND	C129	H062															
	3RD	C139	H054															
	4TH	C140	H053	000	001	007	00	00	03	00	2004	01	0.2	10	2 1/2	30	1.0	7.0~8.0

MATERIAL = WC		THICKNESS = 80mm				WIRE DIA. = 0.25mm				RESISTIVITY = 5×10^{-4} $\Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G	
THE NO. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (inch) (ft/min)	WATER PRESS - UP (ft/min)	WATER PRESS - ON (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A														
	1ST-B														
	1ST-C	C237	H072	004 013	017 01	14 03	03 03	0007 00	0.2	10 5 4	High 5 4	High 5 4	37	12.0	0.82
	1ST-D	C237	H089	004 013	017 01	14 03	03 03	0007 00	0.2	10 5 2	High 5 2	High 5 2	32	12.0	0.87
	1ST-E	C238	H089	005 013	017 02	15 02	03 03	0007 00	0.2	10 5 2	High 5 2	High 5 2	28	14.5	0.97
	1ST-F	C239	H089	006 014	017 02	15 01	03 03	0007 00	0.2	10 5 4	High 5 4	High 5 4	21	18.0	1.22
TO 2ND CUT	1ST	C238	H077												
	2ND	C129	H054	005 010	016 03	12 08	01 01	2004 00	0.2	10 2 2	Low 2 2	Low 2 2	55	1.5	3.5~4.5
	1ST	C238	H085												
	3RD	C129	H061												
TO 3RD CUT	3RD	C139	H053	002 002	015 00	00 03	00 00	2004 02	0.2	10 2 2	Low 2 2	Low 2 2	35	1.5	4.0~5.0
	1ST	C238	H085												
	2ND	C129	H062												
	3RD	C139	H054												
TO 4TH CUT	4TH	C140	H053	000 001	007 00	00 03	00 00	2004 01	0.2	10 2 2	Low 2 2	Low 2 2	30	1.0	7.0~8.0

MATERIAL = WC		THICKNESS = 90mm				WIRE DIA. = 0.25mm				RESISTIVITY = $5 \times 10^{-8} \Omega \cdot \text{cm}$				MACHINE MODEL = BP 40G					
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET ON	OFF IP	HP MA	SV	C	SF	WIRE TENSION (A)	WIRE SPEED (inch/min)	WATER PRESS - UP (ft/min)	WATER PRESS - DN (ft/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)					
1ST CUT ONLY	1ST-A																		
	1ST-B																		
	1ST-C	C240	H074	004	013	017	01	15	03	0008	00	0.2	10	5 ft	38	11.5	0.68		
	1ST-D	C240	H069	004	013	017	01	14	03	0008	00	0.2	10	5 ft	32	12.0	0.77		
	1ST-E	C241	H069	005	013	017	02	15	02	0008	00	0.2	10	5 ft	30	14.5	0.78		
	1ST-F	C242	H070	006	014	017	02	15	01	03	0008	00	0.2	10	5 ft	22	17.0	1.00	
2ND CUT	TO	1ST	C241	H078															
	2ND	2ND	C146	H054	005	010	016	03	12	07	01	2004	00	0.2	10	2 ft	52	1.5	3.0~4.0
	TO	1ST	C241	H085															
	3RD	2ND	C146	H061															
3RD CUT	TO	3RD	C139	H054	002	002	015	00	00	03	00	2004	02	0.2	10	2 ft	30	1.5	3.5~4.5
	1ST	C241	H087																
	TO	2ND	C146	H062															
	4TH	3RD	C139	H054															
4TH CUT	TO	4TH	C140	H053	000	001	007	00	00	03	00	2004	01	0.2	10	2 ft	30	1.0	7.0~8.0

MATERIAL = WC		THICKNESS = 100mm				WIRE DIA. = 0.25mm				RESISTIVITY = 5×10^{-8} Ω.cm				MACHINE MODEL = BP 40G				
THE No. OF CUTTING TIMES	CONDITION No.	OFFSET	ON	OFF	IP	HP	MA	SV	V	SF	C	WIRE TENSION (A)	WIRE SPEED (notch)	WATER PRESS-UP (l/min)	WATER PRESS-DN (l/min)	VOLTAGE (V)	CURRENT (A)	FEED SPEED (mm/min)
1ST CUT ONLY	1ST-A													High	High			
	1ST-B													High	High			
	1ST-C	C243	H076	004	018	017	01	20	03	03	0008	0.2	10	High	High	33	11.5	0.60
	1ST-D	C244	H069	004	012	017	01	14	03	03	0008	0.2	10	5 l	5 l			
	1ST-E	C245	H070	005	013	017	02	15	02	03	0008	0.2	10	High	High	35	12.0	0.68
	1ST-F	C246	H070	006	014	017	02	15	01	03	0008	0.2	10	5 l	5 l	30	14.5	0.78
TO 2ND CUT	1ST	C245	H078											High	High	22	17.0	0.90
	2ND	C146	H054	005	010	016	03	12	07	01	2004	0.2	10	Low	Low	52	1.5	3.0~4.0
	1ST	C245	H085											High	High			
	3RD	C146	H061											Low	Low			
TO 4TH CUT	3RD	C139	H054	002	002	015	00	03	00	2004	0.2	10	Low	Low	30	1.5	3.0~4.0	
	1ST	C245	H087											High	High			
	2ND	C146	H062											Low	Low			
	3RD	C139	H054											Low	Low			
4TH	4TH	C140	H053	000	001	007	00	03	00	2004	0.2	10	Low	Low	30	1.0	7.0~8.0	

