

사용설명서 이력영서

BETA-RAY THICKNESS TESTER

BTC-55

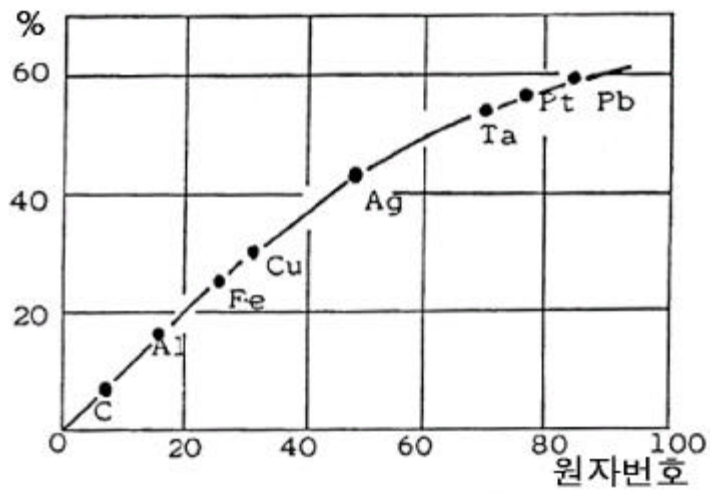


SECHANG INSTRUMENTS

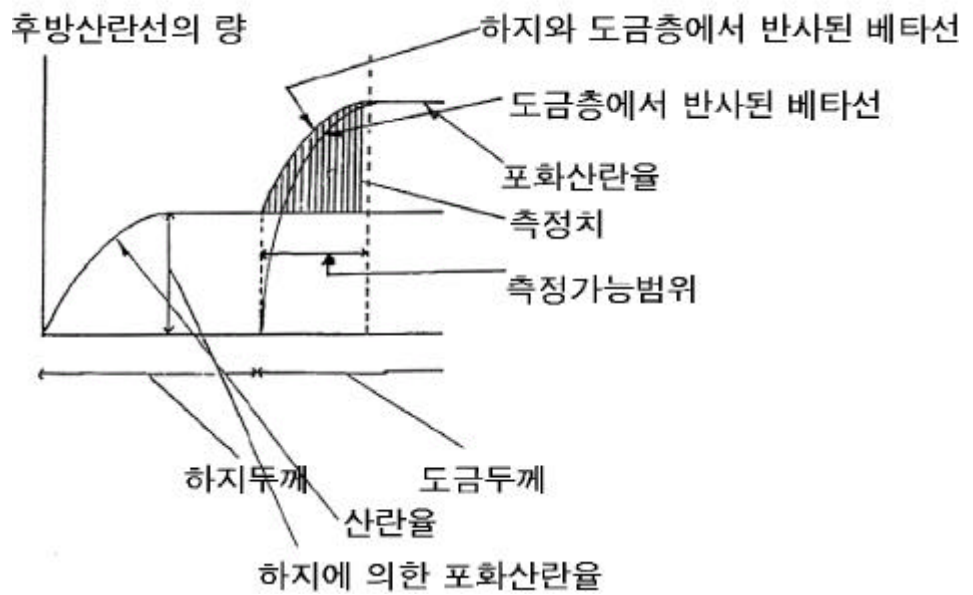
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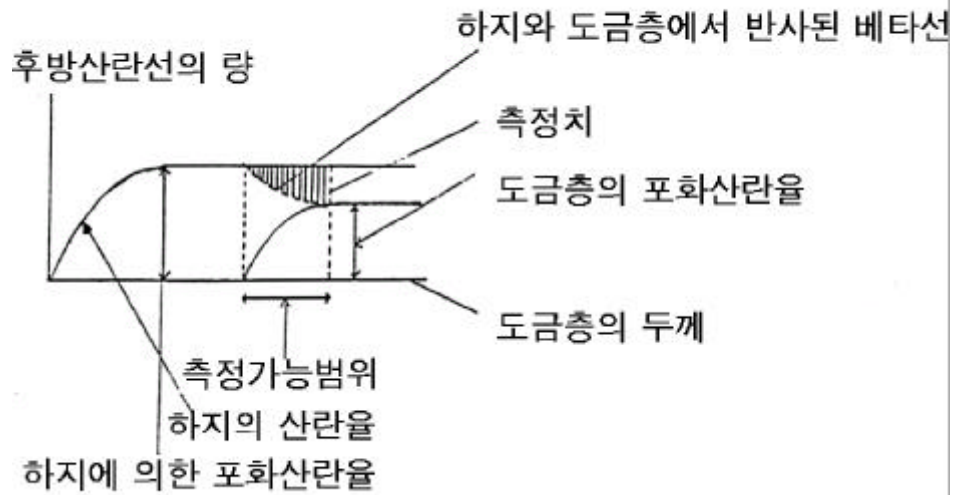
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()





$$I = IA (1 - e^{-\mu g}) = IB e^{-\mu g}$$

- IA :
- IB :
- G :
- μ : (constant)

BTC-55 , (standard)

2. 가 /

BTC-55

가

가

가

/

가

90%

Ag/Cu plating

Cu

29, Ag

47 . 47 90% 42.3 , 29 42.3

/

가

SN/Pb 가 60% 40% , Sn 50 Pb
82 . ,

$$Z = 50 \times 0.6 + 82 \times 0.4 = 62.8$$

가 /
/

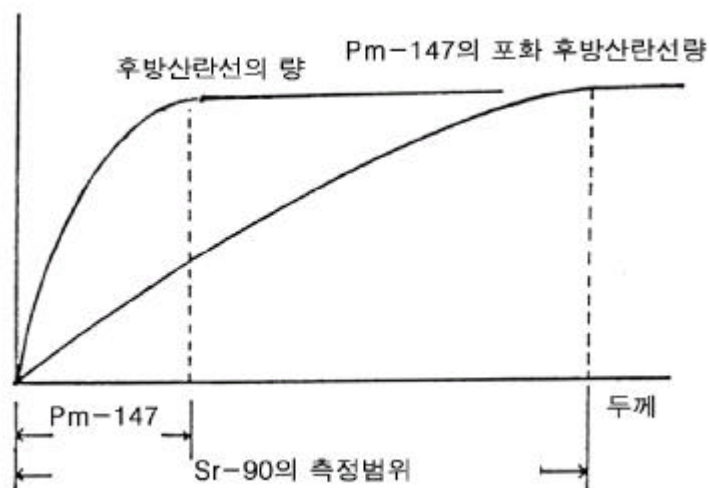
3.

가

, 0.01um

/	(μm)		
Au / Cu	0.01 - 1.1	C*	
Au / Br	0.02 - 2	Pm	
Au / Ni	2 - 8	Ti	
	3 - 11	Ra	
	5 - 28	Ti	
Au / Ag	0.01 - 1.5	C*	
	0.02 - 2	Pm	
	2 - 8	Ti	
Au / Fe	0.01 - 1.1	C*	
Au / Co	0.02 - 1.8	Pm	
Au / Inval	1.5 - 8	Ti	
	3 - 11	Ra	
	5 - 28	Sr	
Ag / Cu	0.02 - 1.8	C*	
Ag / Ni	0.02 - 3	Pm	
	3 - 15	Ti	
	5 - 28	Ra	
Ag / Fe · Au / Co	0.02 - 3	Pm	
Au / Inval	3 - 15	Ti	
	5 - 28	Ra	
Rh/Ni · Rh/Cu	0.01 - 1.4	C*	
	0.02 - 2.8	Pm	
	2.2 - 25	Ti	
Au / Rh	0.02 - 2	C*	
	0.05 - 4.5	Pm	
Sn- Ni Alloy / Cu	5 - 30	Ti	(Sn:Ni=65:35)
Cr / Cu	0.1 - 12	Pm	
	10 - 35	Ti	
Painting / Plastic	0.1 - 15(25)	C*	
	0.1 - 25(50)	Pm	

/	(μm)		
Painting / Plastic	0.1 - 15(25) 0.1 - 25(50)	C* Pm	.
Solder / Cu	0.02 - 2 3 - 22 5 - 36	Pm Ti Ra	(Sn: Pb= 60:40)
Solder alby ratio	90% - 30% (Tin) 10% - 70%	Pm	
Cd / Fe · Cd / Cu	0.05 - 4 3 - 18	Pm Ti	
Sn/Fe	0.02 - 2.6 0.05 - 3.5 3 - 22	C* Pm Ti	
Sn / Cu	0.02 - 5 0.05 - 3.5 3 - 22	C* Pm Ti	
Cu / Epoxy rasin / Phenol rasin Ni / Epoxy rasin / Phenol rasin	0.02 - 5 5 - 20 8 - 35 25 - 120	Pm Ti Ra Sr	
Cu / Al	0.02 - 5 5 - 20 8 - 30 25 - 100	Pm Ti Ra Sr	
Photoresist / Ni / Cu	0.1 - 15(25) 0.1 - 25(50)	C* Pm	
Zn / Fe	5 - 40	Ti	
Rh / Al	0.1 - 10	Pm	
Cu / Epoxy	12 - 70	Sr	
Teflon / Monel metal	0.1 - 20	Pm	



가

Pm

Sr

II.

1.

G.M

G.M

(: 147Pm, 204Tl, 90Sr)

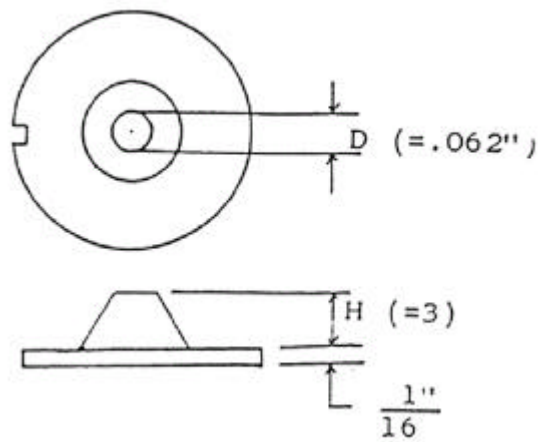
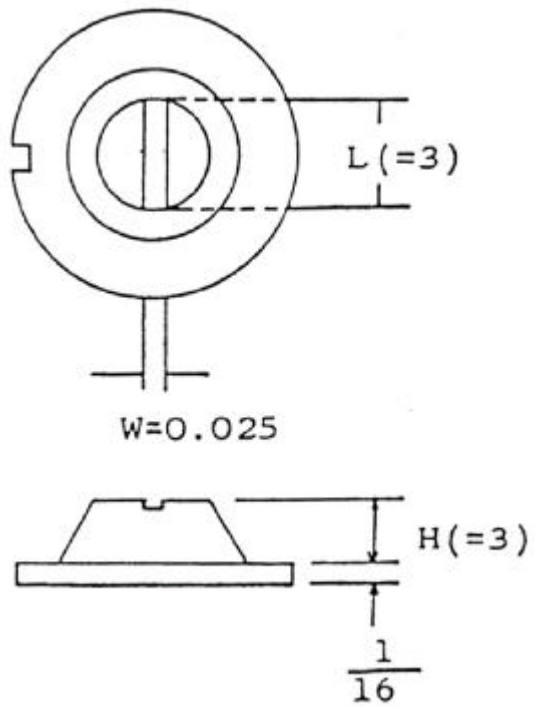
Aperture : plate

2. Apertures Specimen Masks

system H-5, MS-11

가 , 가

가 plate Probe



가 가 Aperture
 . (가 Aperture
) 가 Aperture
 , Aperture slit .
 Aperture (specimen)
 ■ : , 가 Aperture
 . Aperture가 ,
 . Aperture-opening
 가 .

■ : BTC-55 Aperture

$$W = \frac{1}{100} \sqrt{4.7D - 0.36} \quad D = \text{mm}\varnothing$$

가
,
) curvature가
가
가 Aperture (specimen
가

■ : BTC-55 Aperture
opening aperture
가
가

3.

tip , C, Pm, Tl, Ra, Sr 가
aperture , tip

4. 가

Aperture , G.M 가 가

MS-11 ()
H-5 가

Probe MS-11 ,

#180

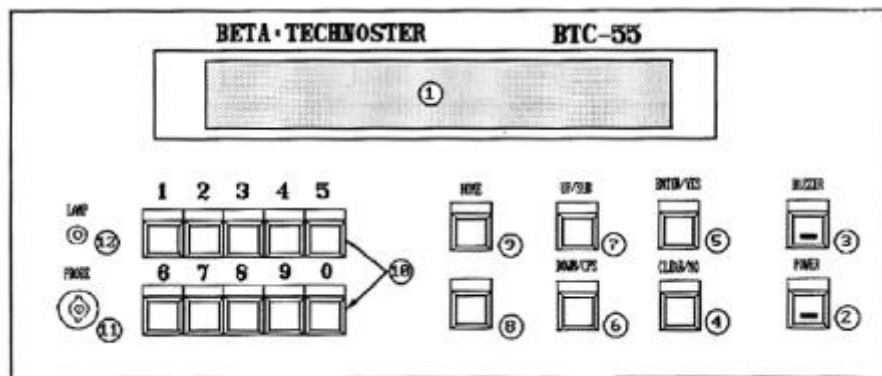
가
 . 가
 probe . (±0.1mm)

120

가

Aperture

5.



POWER

BUZZER :

CLEAN/NO :

ENTER/YES :

DOWN/CPS :

UP/SUB :

(SUB)

DECIMAL :

HOME :

'Channel Setting(

)'

1 0 :

PROBE :

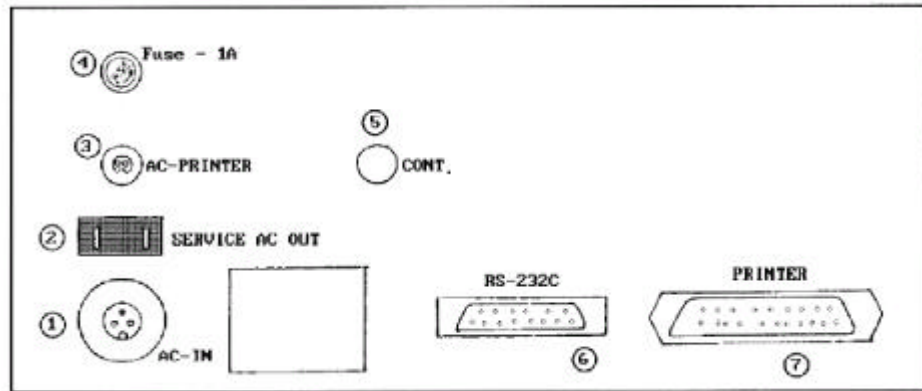
BNC

LAMP :

GB-3

가

6.



(3 pin connector) : AC 100V

AC PRINTER CONNECTOR

FUSE (1A)

RS232C : 가 ()

PRINTER() : Data Cord

III.

1.

B- RAY THICKNESS TESTER
model BTC-55
ELEC FINE INSTRUMENTS CO LTD

BTC-55

5

B- RAY THICKNESS TESTER
model BTC-55

DIAGNOSIS RUNNING
CHECK ON RAM, ROM, HIGH VOLTAGE AND PROBE

가

가

가

DIAGNOSIS PASSED

1	-0/					0 0
2	-0/					0 0
3	-0/					0 0
ENTER NUMBER OF CHANNEL						
()						

16

UP/DOWN

10

) 1 + Enter

2.

CH TYPE H RANGE L UNIT MINOR MAJOR

CH

TYPE :

H RANGE L: (H) (L)

UNIT :

MINOR :

MAJOR :

CH COAT BASE PROBE MASK I UNIT CT MT C

CH :

COAT :

BASE :

PROBE :

MASK : aperture specimen

I :

UNIT :

CT :

MT :

C : 가 ?

CH	COAT	BASE	PROBE	MASK I	UNIT	CT	MT	C
0	-0	-0					0	0
MEASURED DATA ()								
ACCEPT THIS CHANNEL AS CHOSEN?								
() Y/N								

, CLEAR/NO
ENTER/YES

1: COPY FORM ANOTHER CHANNEL ()
2: MODIFY CHANNEL ITEM ()
3: MEASURE ()
4: CALIBRATE ()
ENTER NUMBER()

- :
- :
- :
- :

-) ;
- 1 + 'Channel Copy'
- 2 + 'Channel'
- 3 + ' '
- 4 + ' '

가

1: CONTINUE MEASURING ()
2: CALIBRATION ONLY ()
3: CHANGE MEASURING TIME ONLY ()
ENTER NUMBER()

7
UP DOWN

- :

) 1 + Error ()

1: Au	
2: Ag	
3: Pt	
4: Pb	
5: Sn	
6: Ni	
7: Cu	
8: Zn	
9: Rh	
10: Cr	
11: Al	
12: Mg	
13: Fe	
14: Mo	
15: W	
16: C	
17: Si	
18: Ti	
19: V	
20: Mn	
21: Co	
22: B	
23: Ge	
24: Se	
25: Zr	
26: Pd	
27: Cd	Kovar
28: Kv	
29: Br	
30: So	
31: A1	
32: A1	
33: A2	
34: A3	
35: A4	
36: A5	
37: Pr	
38:: P1	
39: P2	
40: P3	
41: P4	
42: P5	
43: PR	
44: S1	
45: S2	
46: S3	
47: S4	
48: S5	

1:
7:
13:

ENTER NUMBER OF COM. PREVIOUS: NEW:
(COM) () ()

UP DOWN
) 5 +

1: Au	2: Ag	3: Pt	4: Pb	5: Sn	6: Ni
7: Cu	8: Zn	9: Rh	10: Cr	11: Al	12: Mg
13: Fe	14: Mo	15: W	16: C	17: Si	18: Ti

ENTER NUMBER OF BASE PREVIOUS: NEW:
()

48 가 UP DOWN
) 6 +

1: H-3	2: H-4	3: H-5	4: MS-10	5: MS-11
6: MS-12	7: MS-13	8: S-1	9: S-2	

PREVIOUS: NEW:
ENTER NUMBER OF BASE ()

9 가 *8:S-1
*9: S-2 가 'H ' 'MS '

) 5 +

1: .5D	2: .8D	3: 1.2D	4: 1.6D	5: 2.4D
6: .25W	7: .36D	8: .5W	9: .64W	10: .9W
11: 1.2W	12: S1	13: S2		

PREVIOUS:
ENTER NUMBER OF MASK: NEW
()

aperture specimen
(W) 가 , (D) 가 가

'12: S1', '13: S2'

가 가

) 4 + Enter

1: C	2: Pm	3: Ti	4: Cs	5: Ra	6: Sr	7: S1	8: S2
PREVIOUS:				NEW:			
ENTER NUMBER OF ISOTOPE							
()							

C: Pm:

Ti: Cs:

Ra: Sr:

'7: S1' '8: S2' 가

) 3 + Enter

4.

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.60	Ti	μm	60	10	
SET STATISTICS ITEM?					Y/N				
()					(/)				

'CLEAR/NO'

'ENTER/YES'

1: N	2: N-1	3: NOT USE	()
PREVIOUS:		NEW*	
ENTER NUMBER OF STATISTICS TYPE			
()			

1: N

2: N-1

3: NOT USE

) 1 + Enter

'N'

NO	TYPE	H	RANGE	L	UNIT	MINOR	MAJOR
1	N	.000	.000		μm	0	0

PREVIOUS: 0 NEW:
 ENTER NUMBER OF MAJOR STATISTICS
 ()

■

) 50 + Enter (50)

NO	TYPE	H	RANGE	L	UNIT	MINOR	MAJOR
1	N	.000	.000		μm	0	50

PREVIOUS: 0 NEW:
 ENTER NUMBER OF MAJOR STATISTICS
 ()

■

) 10 + Enter (10)
 가

1: MAJOR STATISTICS ()
2: MINOR STATISTICS ()
IT'S OVER MAJOR STATISTICS ()
CHOOSE EITHER TO MODIFY ()

가

가

'1' ,

'2'

■

NO	TYPE	H	RANGE	L	UNIT	MINOR	MAJOR
1	N	.000	.000		μm	10	50

PREVIOUS: .000 NEW: μm
 ENTER NUMBER OF UPPER LIMIT
 ()

) 10 + Enter (10 μm)

NO	TYPE	H	RANGE	L	UNIT	MINOR	MAJOR
1	N	10.00	.000		μm	0	50

PREVIOUS: .000 NEW: μm
 ENTER NUMBER OF UPPER LIMIT
 ()

) 5 + Enter (5 μm)

가 가

1: UPPER LIMIT ()
2: LOWER LIMIT ()
IT'S OVER UPPER LIMIT()
CHOOSE EITHER TO MODIFY ()

'1 , '2'

■

NO	TYPE	H RANGE	L	UNIT	MINOR	MAJOR
1	N	10.00	5.00	μm	10	50
USE PRINTER?				Y/N		
(?)				(/)		

'YES', 'NO'

'ENTER/YES'

'CLEAR/NO'

가

) 

■

'ENTER/YES'




NO	TYPE	H RANGE	L	UNIT	MINOR	MAJOR
1	N	10.00	5.00	μm	10	50
NEED HISTOGRAM?				Y/N		
(?)				(/)		

'ENTER/YES'

'CLEAR/NO'

■

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	0	
PREVIOUS:		0 SEC.		NEW:		SEC.			
ENTER CALIBRATING TIME									
()									

)   +  (60)



CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	0	
PREVIOUS:		0 SEC.		NEW:		SEC.			
ENTER MEASURING TIME									
()									

) 10 + (10)

:

5.

CALIBRATION DATE (MONTH/YEAR)	ex.) 5. '96
() (/)) 5. '96
COUNT CORRECTION	1
()	
FULL CALIBRATION?	Y/N
(가 ?)	(/)

1996 5

가

'CLEAR/NO'

'ENTER/YES'

(&)

가

2, 3

BTC-55

PREVIOUS:	0
ENTER "MONTH" OF CALIBRATION	
()	

) 8 : 8 +

PREVIOUS:	0
ENTER "YEAR" OF CALIBRATION	
()	

) 1997 : 97 +

1: INFINITE()
 2: EITHOUT INFINITE ()
 3: LINEAR() PREVIOUS:
 ENTER NUMBER OF CALIBATION MODE.
 ()

BTC-55 가 가 .

■ 1 :
 , 1-8
 1-8

■ 2 :
 2

■ 3 :
 가
 1-9

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

PREVIOUS: NEW:
 ENTER NUMBER
 CALIBRATING(3- 10)
 ((3- 10))

) +
 , , , thickness()-1 thickness()-2 가 4
 가
 , 'n' 'n + 2'가
 2

■

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

SET BASE STANDARD
AND PRESS ENTER
(ENTER)

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

REMAINING TIME : 60 SEC (calibrating) ()

■

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

SET INFINITE STANDARD AND PRESS 'ENTER'
('ENTER')

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

REMAINING TIME: 60 SEC (now calibrating)
() (60) ()

■

- 1

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

PREVIOUS: μm NEW: μm
ENTER THICKNESS OF STANDARD
()

- 1

) 2 . 0 8 +  (2.08 μm)

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

SET STANDARD
AND PRESS 'ENTER'
('ENTER')

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	

REMAINING TIME: 60 SEC (calibrating)
() (60) ()

■

- 2

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
PREVIOUS:			0.000	μm	NEW:			μm	
ENTER THICKNESS OF STANDARD									
()									

- 2

) 5 . 4 6 +  (5.46 μm)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
SET STANDARD									
AND PRESS 'ENTER'									
('ENTER')									

- 2

'ENTER/YES'

'n'

가

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
SET BASE STANDARD									
AND PRESS 'ENTER'									
('ENTER')									

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
REMAINING TIME:			60 SEC	(now calibrating)					
()			(60)	()					

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
PREVIOUS:				μm	NEW:			μm	
ENTER THICKNESS OF STANDARD									
()									

- 1

- 1

) 2 . 0 8 +  (2.08 μm)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	

SET STANDARD
AND PRESS 'ENTER'
('ENTER')

- 1 'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	

REMAINING TIME: 60 SEC (now calibrating)
() (60) ()

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	

PREVIOUS: μm NEW: μm
ENTER THICKNESS OF STANDARD
()

- -2
-2
) 5 . 6 4 + $\frac{\text{Error}}{\text{}}$ (5.64 μm)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	

SET STANDARD AND PRESS 'ENTER'
('ENTER')

-2 'ENTER/YES'

(liner range)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	

PREVIOUS: NEW:
ENTER NUMBER OF CALIBRATION(2- 10)
((2- 10))

'n'

. 'n+1'
) 2 + $\frac{\text{Error}}{\text{}}$ (,)

-
- | CH | COAT. | BASE | PROBE | MASK | I | UNIT | CT | MT | C |
|----|-------|------|--------|------|----|------|----|----|---|
| 1 | Au-0/ | Ni-0 | Ms- 11 | 1.6D | Ti | μm | 60 | 10 | |
- SET BASE STANDARD AND PRESS 'ENTER'
('ENTER')

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	
REMAINING TIME:			60 SEC	(now calibrating)					
()			(60)	()					

■ - 1

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	
PREVIOUS:						μm	NEW:		
ENTER THICKNESS OF STANDARD						()			

- 1

) 5 . 6 4 + (5.64 μm)

- 1

'ENTER/YES'

가

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	
CALIBRATION OD?						Y/N			
(OD ?)						(/)			

'ENTER/YES'

가

:

가

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms- 11	1.6D	Ti	μm	60	10	
CAN NOT CALIBRATE WITH THOSE STANDARDS!									
PRESS 'ENTER'									
(. ENTER)									

'ENTER/YES'

가

6.

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
NEED ADJUSTMENT OF (COAT/BASE)?						Y/N			
(/)						(/)			

가

'CLEAR/NO' : Lot. No
 'ELTER/YES' :

가

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
ADJUST (COAT) ONLY?						Y/N			
()						(/)			

'YES' 'ENTER/YES'
 'CLEAR/NO'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
PREVIOUS:						NEW			
ENTER ADJUSTMENT NUMBER OF BASE									
()									

) +


CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
SET YOUR BASE AND PRESS 'ENTER'									
('ENTER')									

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
REMAINING TIME:			60SEC						
()			(60)						

(가 'CLEAR/NO' Lot No
)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
PREVIOUS:									
ENTER ADJUSTMENT NUMBER OF COAT									
()									

) [1] + 

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-1	Ni-1	Ms-11	1.6D	TI	μm	60	10	
SET YOUR INFINITE COAT AND PRESS 'ENTER'									
('ENTER')									

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-1	Ni-1	Ms-11	1.6D	TI	μm	60	10	
REMAINING TIME: 60SEC									
() (60)									

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-1	Ni-1	Ms-11	1.6D	TI	μm	60	10	
PREVIOUS: 1.000 NEW									
ENTER DENSITY OF SAMPLE									
()									

) [1] (g/cm3)

7. (C% N%)

(%)

(100%) (0%)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	Ti	μm	60	10	
SET YOUR BASE AND ENTER									
('ENTER')									

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-1	Ni-1	Ms-11	1.6D	TI	μm	60	10	
REMAINING TIME: 60 SEC (calibrating)									
() (60) ()									

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	

SET YOUR INFINITE COAT AND PRESS ENTER
('ENTER')

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	

REMAINING TIME: 60SEC (calibrating)
() (60) ()

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	

CALIBRATION OK? Y/N
(?) (/)

가 'ENTER/YES' Lot No.

(%)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	TI	C%	60	10	

USE PURE STANDARD Y/N
() (/)

'ENTER/YES'

'CLEAR/NO'

100% 0% , Solder(Sn-Pb)
Pb 100%

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	C%	60	10	

SET PURE STANDARD OF SMALL ATOMIC NUMBER
AND PRESS 'ENTER'
(가 'ENTER')

가 'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0/	Ni-0	Ms-11	1.6D	TI	C%	60	10	

REMAINING TIME: 60 SEC (calibrating)
() (60) ()

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	C%	60	10	
REMAINING TIME:			60 SEC						
()			(60)						

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	C%	60	10	
PREVIOUS:						.000%		%	
ENTER % OF STANDARD OF LARGE ATOMIC NUMBER									
()			%						

%(W)

) +

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	C%	60	10	
SET STANDARD AND PRESS 'ENTER'									
()			'ENTER'						

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	C%	60	10	
REMAINING TIME:			60 SEC						
()			(60)						

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1			Ms-11	1.6D	TI	C%	60	10	
CALIBRATION OK?					Y/N				
()			?)		(/)				

8.

GM

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
SET BEST STANDARD AND PRESS 'ENTER'									
(BASE			'ENTER'						

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
REMAINING TIME:			60 SEC						
()			(60)						

9. Lot number

PREVIOUS LOT NUMBER	0
NEW LOT NUMBER	
ENTER LOT NUMBER (lot number)	

Lot No. . (lot no.가 '0' 'ENTER/YES'

) +

10.

CH	COAT	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
				*		SEC()			
USE PRINTER?				Y/N					
()			(/)						

'ENTER/YES'
가 'CLEAR/NO'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
PRINT OUT STATISTICS TITLE?				Y/N					
()			(/)						

가 'CLEAR/NO'

'ENTER/YES' 가

)

```

MEASURE ITEM
CH COAT BASE PROBE MASK I. UN. CT MT C
1 Au-0/Ni-0 MS-11 1.6D TI mil 60 10 0
STATISTICS ITEM
NO TYPE H LIMIT L UN. MINOR MAJOR
1 N 10.00 .0010 mil 500 500
LOT NUMBER 12345678
PARTS NUMBER -----
COMPANY -----

```

11.

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
SET SAMPLE & PRESS ENTER TO MEASURE									
()			'ENTER' .						

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
REMAINING TIME:				10 SEC	(now measuring)				
()				(10)	()				

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
	1	5.183				+ .1927 μm			
SET SAMPLE & PRESS ENTER TO MEASURE									
('ENTER')									

'CPS'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	Ms-11	1.6D	TI	μm	60	10	
	1	7524				+ 24.43 CPS			
PRESS 'CLEAR' TO RETURN									
('CLEAR')									

** 가 'CLEAR/NO'

** 'HOME'

'CLEAR/NO' , 'CLEAR/NO'

'CLEAR/NO'

가

NO 00001 .1810 mil +.0056 mil
-----DATA CANCEL-----

12. Sub key

1: ADJUST COAT/BASE (/)	2: PRINTER SET()
3: COUNT CORRECTION ()	4: SET STAT. ITEM ()
5: CHANGE MEASURING TIME ()	
ENTER NUMBER ()	

BTC-55

5

1: / ' '

2:

3: ' ,

4: ' ,

5:

'CLEAR/NO'

13.

가

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
	10	5/064		+-.1887		μm			
FINAL DATA OF STATISTICS?						Y/N			
()						(/)			

'ENTER/YES'

가

'CLEAR/NO'

CH	COAT	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
MINOR STATISTICS									
()									

1: ONLY MAJOR STATISTICS (major)
2: PRINT ALL DATA & STATISTICS ()
ENTER NUMBER ()

1:

2:

** 가

**

'HOME'

'HOME'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
1	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
PRINT OUT ALL DATA & STATISTICS?							Y/N		
(?)		

가 'CLEAR/NO'

'ENTER/YES'

SERIAL NUMBER ()	1-5		
MAXIMUM ()	4.938 μm	MEAN	3.817 μm
MINIMUM ()	2.150 μm	ST DIVIATION	1.330
PRESS 'ENTER' ('ENTER')			

가 'ENTER/YES'

```
NO 00001 .1810 mil +- .0056 mil
NO 00002 .1872 mil +- .0060 mil
NO 00003 .1911 mil +- .0061 mil
NO 00004 .1879 mil +- .0060 mil
NO 00005 .1921 mil +- .0061 mil
NO 00006 .1861 mil +- .0060 mil
NO 00007 .1902 mil +- .0061 mil
NO 00008 .1871 mil +- .0060 mil
NO 00009 .1866 mil +- .0060 mil
NO 00010 .1877 mil +- .0060 mil
LOWER LIMIT 0
UPPER LIMIT 0
TOTAL 95.7775 mil
MAXIMUM DATA .2024 mil
MINIMUM DATA .1807 mil
MEAN .1916 mil
STANDARD DEVIATION .0039 mil
```

NO 00497	.1874 mil	+-.0060 mil
NO 00498	.1947 mil	+-.0064 mil
NO 00499	.1945 mil	+-.0064 mil
NO 00500	.1871 mil	+-.0060 mil
LOWER LIMIT	0	
UPPER LIMIT	0	
TOTAL	95.7775 mil	
MAXIMUM DATA	.2024 mil	
MINIMUM DATA	.1807 mil	
MEAN	.1916 mil	
STANDARD DEVIATION	.0039 mil	

(G R A N D T O T A L)

MEASURE NUMBER	500
LOWER LIMIT	0
UPPER LIMIT	0
TOTAL	95.7775 mil
MAXIMUM DATA	.2024 mil
MINIMUM DATA	.1807 mil
MEAN	.1916 mil
STANDARD DEVIATION	.0039 mil

NO 00001	.1810 mil	+-.0056 mil
NO 00002	.1872 mil	+-.0060 mil
NO 00003	.1911 mil	+-.0061 mil
NO 00004	.1879 mil	+-.0060 mil
NO 00005	.1921 mil	+-.0061 mil
LOWER LIMIT	0	
UPPER LIMIT	0	
TOTAL	95.7775 mil	
MAXIMUM DATA	.2024 mil	
MINIMUM DATA	.1807 mil	
MEAN	.1916 mil	
STANDARD DEVIATION	.0039 mil	

(H I S T O G R A M)

THICKNESS (mil)	NUMBER
.1812	3
.1823	3
.1833	5
.1843	12
.1854	16
.1864	22
.1874	30
.1885	41
.1895	39
.1905	54
.1916	52
.1926	51
.1936	38
.1947	44
.1957	29
.1967	22
.1978	16
.1988	11
.1998	4
.2008	5
.2019	3

NO 00001	.1861 mil
NO 00002	.1902 mil
NO 00003	.1871 mil
NO 00004	.1866 mil
NO 00005	.1877 mil
LOWER LIMIT	0
UPPER LIMIT	0
TOTAL	95.7775 mil
MAXIMUM DATA	.2024 mil
MINIMUM DATA	.1807 mil
MEAN	.1916 mil
STANDARD DEVIATION	.0039 mil

(G R A N D T O T A L)

MEASURE NUMBER	500
LOWER LIMIT	0
UPPER LIMIT	0
TOTAL	95.7775 mil
MAXIMUM DATA	.2024 mil
MINIMUM DATA	.1807 mil
MEAN	.1916 mil
STANDARD DEVIATION	.0039 mil

NO	TYPE	H	RANGE	L	UNIT	MINOR	MAJOR
1	N		10.00	5.000	μm	10	60
ACCEPT THIS CHANNEL AS CHOSEN?						Y/N	
(/)
						?	

'CLEAR/NO'

'ENTER/YES'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
2	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
MEASURE WITH THIS CHANNEL?						Y/N			
(/)		
						?			

* 'CLEAR/NO'

'HOME'

* 'CLEAR/NO'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
2	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
ADJUST (COAT/BASE) ONLY?						Y/N			
(/)	(/)	
						?			

'ENTER/YES'

'CLEAR/NO'

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
2	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
ADJUST (COAT) ONLY?						Y/N			
(/)	(/)
						?			

'ENTER/YES'

'CLEAR/NO'

CALIBRATION (YEAR/MONTH)					5/'96
(/
)
SHORT CALIBRATE NUMBER					
()
FULL CALIBRATION?					Y/N
(/
)

'ENTER/YES'

'CLEAR/NO'

(short calibration)

CH	COAT.	BASE	PROBE	MASK	I	UNIT	CT	MT	C
2	Au-0	Ni-0	MS-11	1.6D	TI	μm	60	10	
MEASURE ON THIS CHANNEL?						Y/N			
(/)		

'ENTER/YES'

Lot No.

'CLEAR/NO'

IV.

BTC-55 가

1. RAM 가

RAM TROUBLE (가 .)
PLEASE MAKE CONTACT WITH MAKER!
()

2. ROM 가

ROM TROUBLE (가 .)
PLEASE MAKE CONTACT WITH MAKER!
()

3. 가

VOLTAGE TROUBLE (가 .)
PLEASE MAKE CONTACT WITH MAKER!
()

4. 가

PROBE TROUBLE (가 .)
PLEASE MAKE CONTACT WITH MAKER!
()

가

1. connector가 가?

2. 가?

가

가

V.

1.

Aluminium	Al	13	Mercury	Hg	80
Antimony	Sb	51	Molybdenum	Mo	42
Arsenic	As	33	Nickel	Ni	28
Barium	Ba	56	Niobium	Nb	41
Beryllium	Be	4	Nitrogen	N	7
Bismuth	Bi	83	Osmium	Os	76
Boron	B	5	Oxygen	O	8
Bromine	Br	35	Palladium	Pd	46
Cadmium	Cd	48	Phosphorus	P	15
Caesium	Cs	55	Platinum	Pt	78
Calcium	Ca	20	Potassium	K	19
Carbon	C	6	Rhodium	Rh	45
Chlorine	Cl	17	Selenium	Se	34
Chromium	Cr	24	Silicon	Si	14
Cobalt	Co	27	Silver	Ag	47
Copper	Cu	29	Sodium	Na	11
Fluorine	F	9	Strontium	Sr	38
Barium	Ba	56	Sulfur	S	16
Germanium	Ge	32	Tantalum	Ta	73
Gold	Au	79	Tellurium	Te	52
Hydrogen	H	1	Thallium	Tl	81
Indium	In	49	Tin	Sn	50
Iodine	I	53	Titanium	Ti	22
Iridium	Ir	77	Tungsten	W	74
Iron	Fe	26	Uranium	U	92
Lead	Pb	82	Vanadium	V	23
Lithium	Li	3	Yttrium	Y	39
Magnesium	Mg	12	Zinc	Zn	30
Manganese	Mn	25	Zirconium	Zr	40

2.

(C*) 가 promethium

/	(μm)		
Au / Cu Au / Br Au / Ni	0.01 - 1.1 0.02 - 2 2 - 8 3 - 11 5 - 28	C* Pm Ti Ra Ti	
Au / Ag	0.01 - 1.5 0.02 - 2 2 - 8	C* Pm Ti	
Au / Fe Au / Co Au / Inval	0.01 - 1.1 0.02 - 1.8 1.5 - 8 3 - 11 5 - 28	C* Pm Ti Ra Sr	
Ag / Cu Ag / Ni	0.02 - 1.8 0.02 - 3 3 - 15 5 - 28	C* Pm Ti Ra	
Ag / Fe · Au / Co Au / Inval	0.02 - 3 3 - 15 5 - 28	Pm Ti Ra	
Rh/Ni · Rh/Cu	0.01 - 1.4 0.02 - 2.8 2.2 - 25	C* Pm Ti	
Au / Rh	0.02 - 2 0.05 - 4.5	C* Pm	
Sn- Ni Alloy / Cu	5 - 30	Ti	(Sn:Ni = 65:35)
Cr / Cu	0.1 - 12 10 - 35	Pm Ti	
Painting / Plastic	0.1 - 15(25) 0.1 - 25(50)	C* Pm	

/	(μm)		
Solder / Cu	0.02 - 2 3 - 22 5 - 36	Pm Ti Ra	(Sn:Pb = 60:40)
Solder alloy ratio	90% - 30% (Tin) 10% - 70%	Pm	
Cd / Fe · Cd / Cu	0.05 - 4 3 - 18	Pm Ti	
Sn/Fe	0.02 - 2.6 0.05 - 3.5 3 - 22	C* Pm Ti	
Sn / Cu	0.02 - 5 0.05 - 3.5 3 - 22	C* Pm Ti	
Cu / Epoxy rasin / Phenol rasin Ni / Epoxy rasin / Phenol rasin	0.02 - 5 5 - 20 8 - 35 25 - 120	Pm Ti Ra Sr	
Cu / Al	0.02 - 5 5 - 20 8 - 30 25 - 100	Pm Ti Ra Sr	
Photoresist / Ni / Cu	0.1 - 15(25) 0.1 - 25(50)	C* Pm	
Zn / Fe	5 - 40	Ti	
Rh / Al	0.1 - 10	Pm	
Cu / Epoxy	12 - 70	Sr	
Teflon / Monel metal	0.1 - 20	Pm	

3. 가

	Cd	Cr	Ni	Cu	Au	Fe	Pb	Pd	Pt	Rh	Aa	Ta	Sn	Zn		
Al	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
Be	○	○			○	○	○	○	○	○	○	○	○		○	
Brass	○	○			○		○	○	○	○	○	○	○		○	
Ni	○	○			○	⊖	○	○	○	○	○	○	○	⊖	○	
Bronze	○	○		○	○	⊖	○	○	○	○	○	○	○		○	
Cu	○	○			○	⊖	○	○	○	○	○	○	○		○	
Iron	○	○	⊖	⊖	○	○	○	○	○	○	○	○	○	○	○	
Invar	○	○		⊖	○		○	○	○	○	○	○	○	⊖	○	
Kovar	○	○		⊖	○		○	○	○	○	○	○	○	⊖	○	
Pb	○	○	○	○		○	○	○	○	○	○	○	○	○	○	
Mg	○	○	○	○	○	○	○	○	○	○	○	○	○	○		○
Ag		○	○	○	○	○	○		○			○		○	○	
Steel	○	⊖		⊖	○		○	○	○	○	○	○	○	○	○	
Sn		○	○	○	○	○	○	○	○	○		○		○	○	
Ti	○	⊖	○	○	○	○	○	○	○	○	○	○	○	○	○	○
Zn	○	○	⊖		○	○	○	○	○	○	○	○	○		○	
	○	○	○	○	○	○	○	○	○	○	○	○	○	○		

○ : 가 ⊖ : 가 : 가

BETA-RAY THICKNESS TESTER

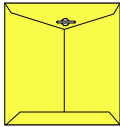
BTC-55



1 : 1997 1 10

2 : 1998 6 2

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ELEC FINE Instruments



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