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*CERTIFICATE AND RECORDS OF PNC-3  
FUEL PINS FOR PHENIX IRRADIATION  
PROGRAM*

*March 1980*

*Tokai Works*

*Power Reactor & Nuclear Fuel Development Corporation*

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Certificate and Records of PNC-3 Fuel Pins  
for  
PHENIX Irradiation Program

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1. General remarks

PHENIX PNC-3 irradiation program is planned to examine the fuel behavior of core fuel assembly of MONJU reactor. Twenty-five fuel pins for this irradiation were fabricated in Research and Development Section of Plutonium Fuel Division in PNC.

Fuel pins will be assembled into a rig at C.E.A CADARACHE.

Four type of fuel pellets were provided.

type	PuO <sub>2</sub> content	density	O/M ratio
A	30 W/O	85% T.D.	1.98
B	30 W/O	85% T.D.	1.94
C	27 W/O	93% T.D.	1.98
D	27 W/O	93% T.D.	1.94

2. Fabrication process of the fuel

2-1	Fabrication flow sheet of pellet	.....	Fig. 2-1
2-2	Fabrication flow sheet of cladding	.....	Fig. 2-2
2-3	Fabrication flow sheet of fuel pin	.....	Fig. 2-3

3. Fabrication and inspection records of fuel pellets and pin components

3-1 Fuel pellets

3-1-1 Sampling

(1) Lot size and lot number

Lot size of PuO <sub>2</sub> -UO <sub>2</sub> powder mixing process	.....	1500 gr
Lot size of sintering	.....	1500 gr
Lot number of sintering	.....	4

(2) Pellets were taken out at random from each sintered lot for the following examinations.

a) Plutonium content	}	6 pellets
b) Impurity (spectroscopy)		
c) Impurity (chemical analysis)		
d) O/M ratio		
e) Volume of released gas (including H <sub>2</sub> O)		4 pellets
f) Ceramography, autoradiography and X-ray diffraction		3 pellets

### 3-1-2 Analysis and other inspection methods

The methods which are in the routine work at PNC were applied to the above analysis and inspections.

### 3-1-3 Inspection results

(1) Isotopic composition of plutonium and uranium are shown in Table 3-1-1.

(2) Chemical analysis

The results of analysis of plutonium content, impurities and O/M ratio in the mixed oxide fuel are shown in Table 3-1-2.

(3) Amount of released gas

The amount of released gas at 1700<sup>o</sup>C for 30 minutes are shown in Table 3-1-2.

(4) X-ray diffraction

The X-ray diffraction charts are shown with lattice constant in Fig. 3-1-1 to Fig. 3-1-4.

(5) Micrography

The ceramographs and alpha-autoradiographs of fuel pellets are shown in Photo. 3-1-1 ~ 3-1-8.

(6) Dimension and density

The diameter, height and weight of pellets were measured for determination of geometrical densities. (Sampling : 125 pcs/lot)  
The diameter and calculated densities are presented in Fig. 3-1-5 to Fig. 3-1-12.

## 3-2 Blanket pellets

### 3-2-1 Inspection results

The same methods which applied to inspection of fuel pellets were used for determination of following items.

(1) Dimension and density

The diameter and calculated densities are presented in Fig. 3-2-1 to Fig. 3-2-4. (Sampling : 50 pcs/lot)

(2) Chemical analysis

The results of chemical analysis are shown in Table 3-2-2.

### 3-3 Cladding

#### 3-3-1 Description

Cladding tubes, made of SUS 316 (or AISI 316), were cold worked about 20% after final solution treatment.

#### 3-3-2 Inspection results

##### (1) Chemical composition

Results of chemical analysis of cladding which were made by tube manufacturer are shown in Table 3-3-1.

##### (2) Mechanical property

Mechanical properties which were measured by tube manufacturer are shown in Table 3-3-2.

##### (3) Metallography

Metallographic tests such as grain size were performed by tube manufacturer. The results of grain size measurements is listed in Table 3-3-2 with mechanical properties.

##### (4) Dimension

The results of dimensional measurement made by PNC are listed in Table 3-3-3.

##### (5) Non destructive test

Non destructive tests of surface roughness, ultrasonic inspection, and visual inspection were performed by PNC. The results are shown in Table 3-3-4.

### 3-4 End plug, sleeve and spring.

#### 3-4-1 Description

End plug of fuel pin, made of SUS 316 (or AISI 316), were cold worked about 20% after final solution treatment. Plenum sleeve made of SUS 316 were cold worked about 24% after final solution treatment.

The spring is made of SWPB (piano wire).

#### 3-4-2 Inspection results

##### (1) Chemical composition

Chemical analysis of end plug material, plenum sleeve and spring

were made by manufacturer.

The results are shown in Table 3-4-1 ~ 3-4-3.

(2) Weight and dimension

The results of weight and dimensional measurements are shown in Table 4-1-1 to 4-1-5 with other pin data.

3-5 Wrapping wire

3-5-1 Description

The wire made of SUS 316 were cold worked about 20% after final solution treatment.

3-5-2 Inspection results

(1) Chemical composition

Results of chemical analysis of the wire which were made by manufacturer are shown in Table 3-5-1.

3-6 SiC capsule and tagging gas capsule

3-6-1 Description

A SiC capsule container consist of a container tube, two end plugs, and SiC pellet. The tubes and end plugs are the same material used for the plenum sleeve and end plug of fuel pin.

3-6-2 Inspection results

(1) Chemical composition

Results of chemical analysis which were made by manufacturer are shown in Table 3-4-1 to 3-4-2 and 3-6-1.

(2) Weight and dimension

The results of weight and dimensional measurements were shown in Table 4-1-1 to 4-1-5.

4. Fabrication and inspection records of fuel pins.

4-1 Components of fuel pins.

Weight and length of fuel pin components, total length of fuel pellets and blanket pellets were measured. The results are presented in Table 4-1-1 to 4-1-5.



4-2 Pin diameter, total length and wrapping pitch

Pin diameter were measured at 10mm intervals with a laser inspection system.

Total length of the pins and wrapping pitch were measured with vernier calipers. These results are shown in Table 4-2-1 to 4-2-2.

4-3 Helium leak test

The results were below to the allowable leak late of  $1.0 \times 10^{-8}$  atm cc/sec. The results are shown in Table 4-4-1.

4-4 X-ray radiography

The welded sections and components of fuel pins were inspected by X-ray radiography.

Any harmful defects of abnormalities were not observed. The results are shown in Table 4-4-1.

X-ray films of each fuel pin will be sent to C.E.A together with this certification.

4-5 Surface contamination

Loose and fix contamination of fuel pins were checked and the results are shown in Table 4-4-1 together with other inspection results.

5. Weight of fuel materials

Weight of fuel material of each pin are presented in Table 5-1.

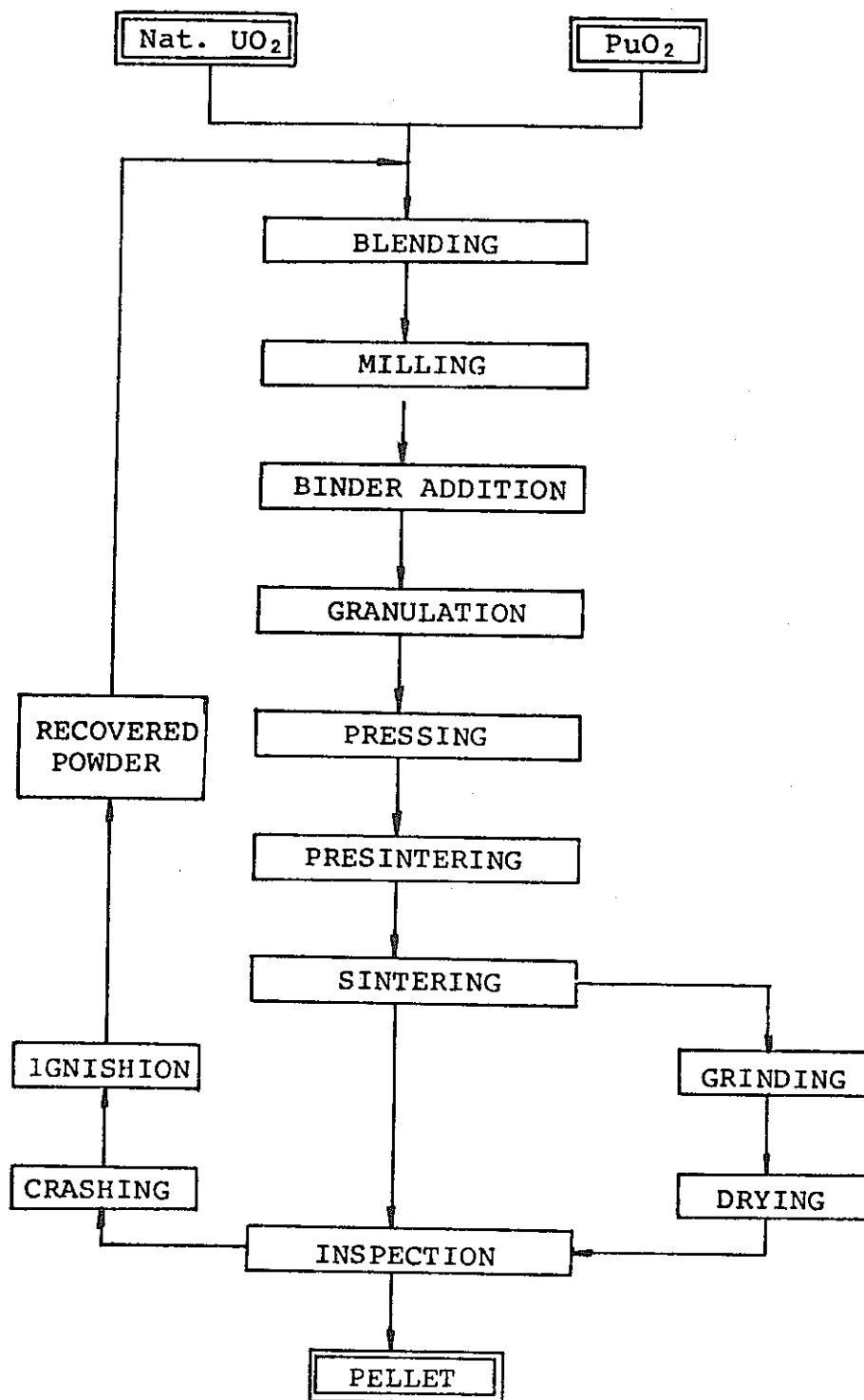


Fig. 2.1 Fabrication Flow Sheet of Pellet

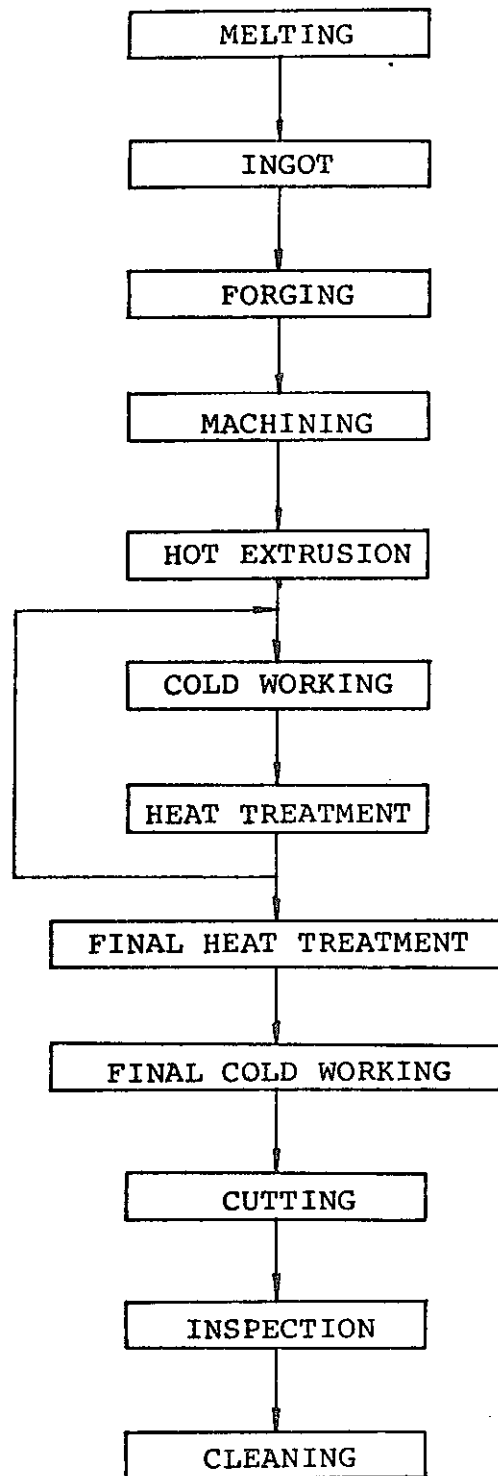


Fig. 2.2 Fabrication Flow Sheet of Cladding

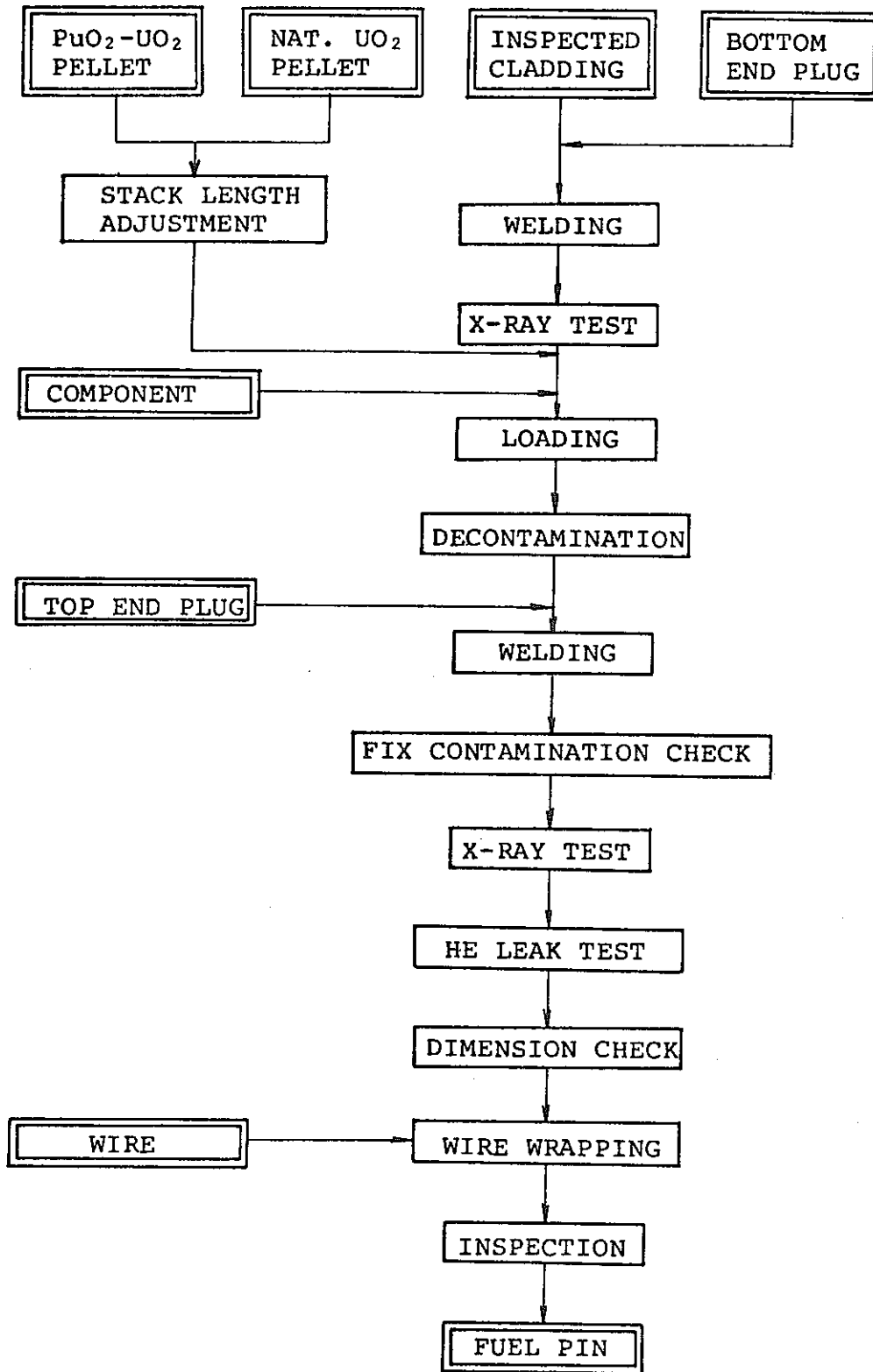


Fig. 2.3 Fabrication Flow Sheet of Fuel Pin

Table 3-1-1 Isotopic composition of Plutonium

	Specification (%)	Isotopic composition *
U	Natural	Natural
Pu - 238	0.06	0.0617
Pu - 239	77.65	78.172
Pu - 240	18.80	18.78
Pu - 241	3.05	2.568
Pu - 242	0.42	0.4270

\* Date of analysis ; Dec 5. 1978

Table 3-1-2 Results of chemical analysis of fuel pellet

	Specification	A		B	
		PX-14	PX-15	PX-22	PX-23
PuO <sub>2</sub>	A 27±1w/o B 30±1w/o	26.97	26.77	30.18	29.38
O/M	A i)1.94±0.02 B i)1.94±0.02 ii)1.98±0.02 B ii)1.98±0.02	1.99	1.95	1.955 1.99	1.98
Al	≤ 500 ppm	<50	<50	<50	<50
B	≤ 20	<1	<1	<1	<1
Cd	≤ 20	<5	<5	<5	<5
Cr	≤ 500	<20	<20	<20	<20
Fe	≤ 800	<50	<50	<50	<50
Mg	≤ 25	<10	<10	<10	<10
Ni	≤ 500	<20	<20	<20	<20
V	≤ 500	<50	<50	<50	<50
Cu+Zn+Si	≤ 700	<155	<165	<155	<155
Ag+Mn+Mo+Pb+Sn	≤ 200	<71	<71	<71	<71
C	≤ 150	120	45	30	30
Cl	≤ 25	<10	<10	<10	<10
F	≤ 25	<10	<10	<10	<10
N	≤ 200	<50	<100	<50	55
Released Gas (Included Moisture)	≤ 150 μg/l	<10	<10	12	15

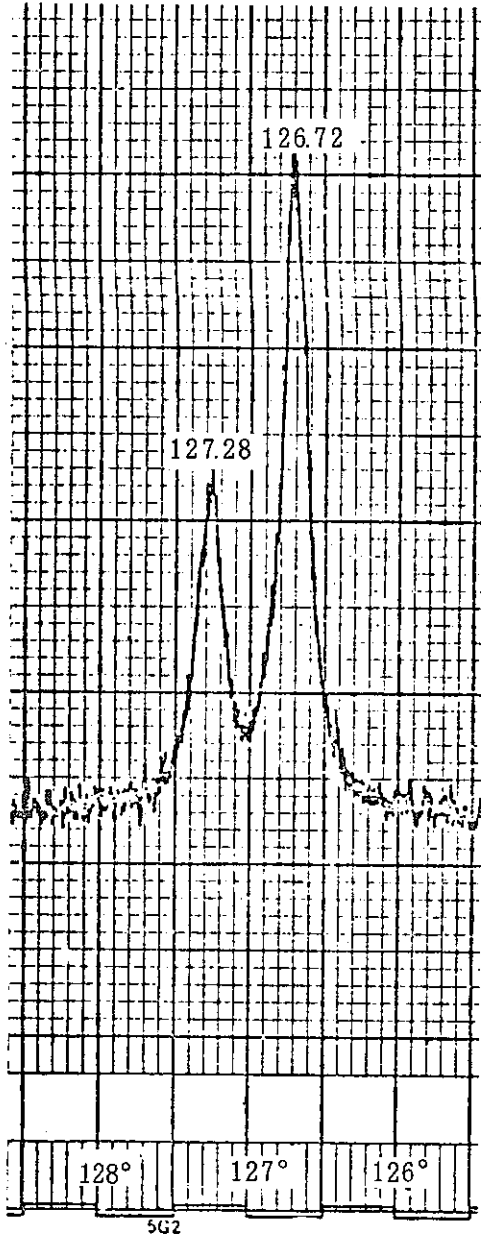


Fig 3-1-1 X-ray diffraction result  
Lot PX-14

Lattice constant  $544970 \pm 0.0003 \text{ \AA}$   
Solid homogeneity 100%

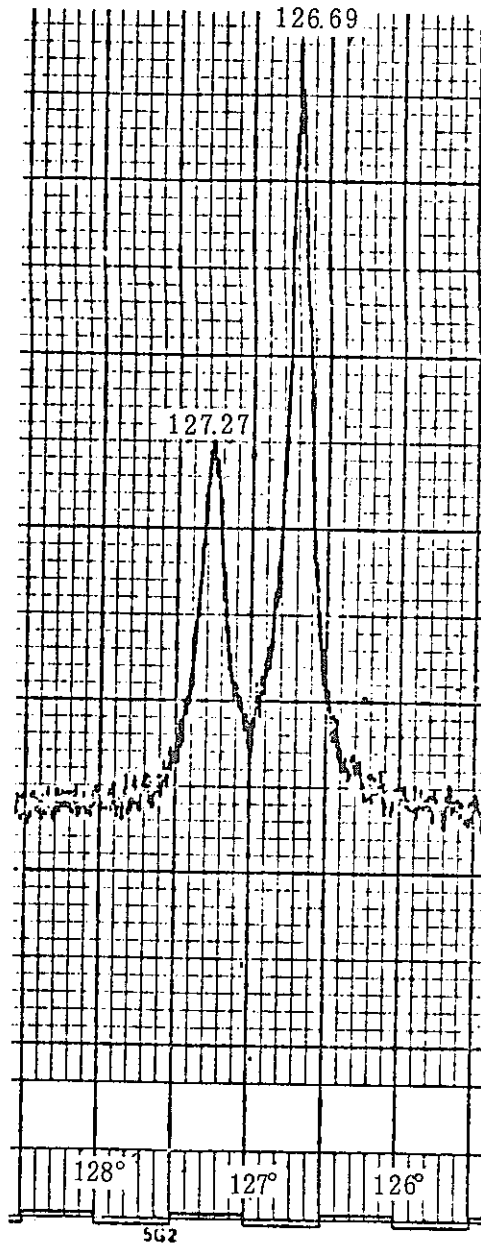


Fig 3-1-2 X-ray diffraction result  
Lot PX-15

Lattice constant  $544970 \pm 0.0004 \text{ \AA}$   
Solid homogeneity 100%

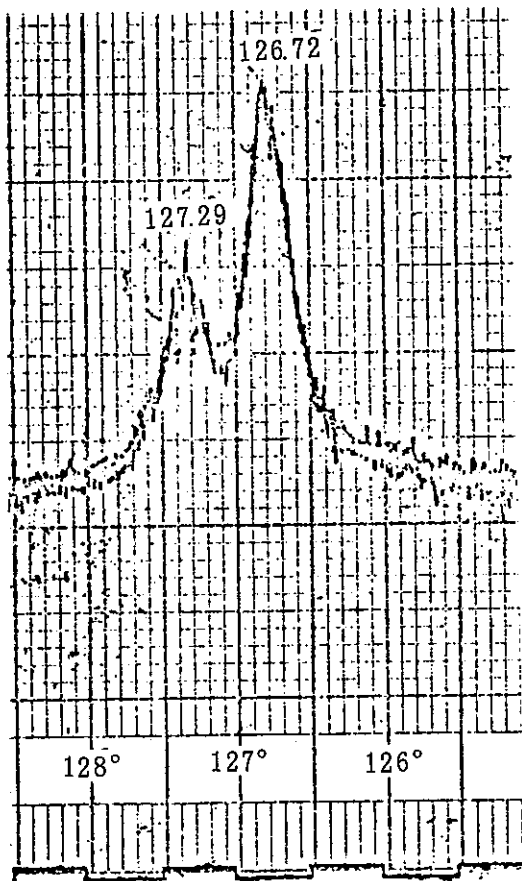


Fig 3-1-3 X-ray diffraction result  
Lot PX-22

Lattice constant  $544963 \pm 0.0004 \text{ \AA}$   
Solid homogeneity 100%

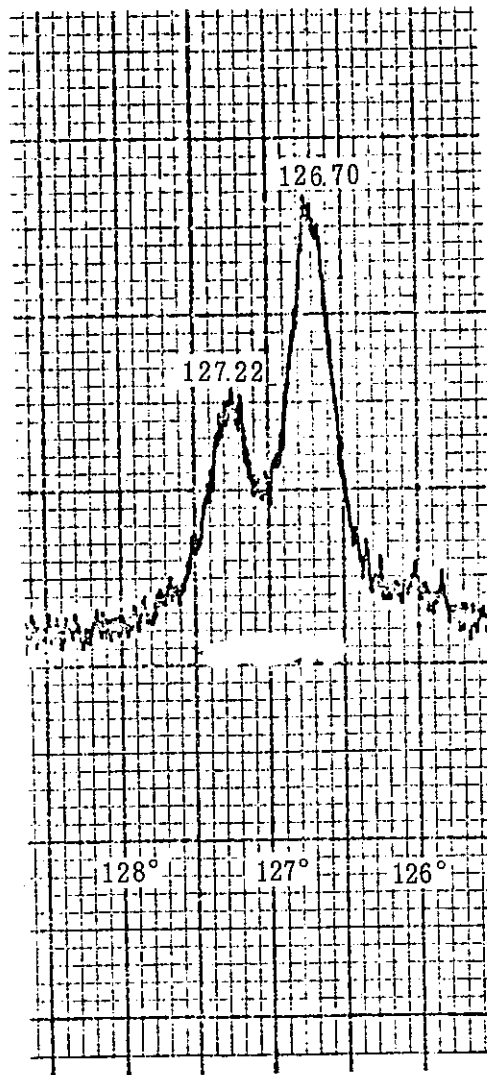
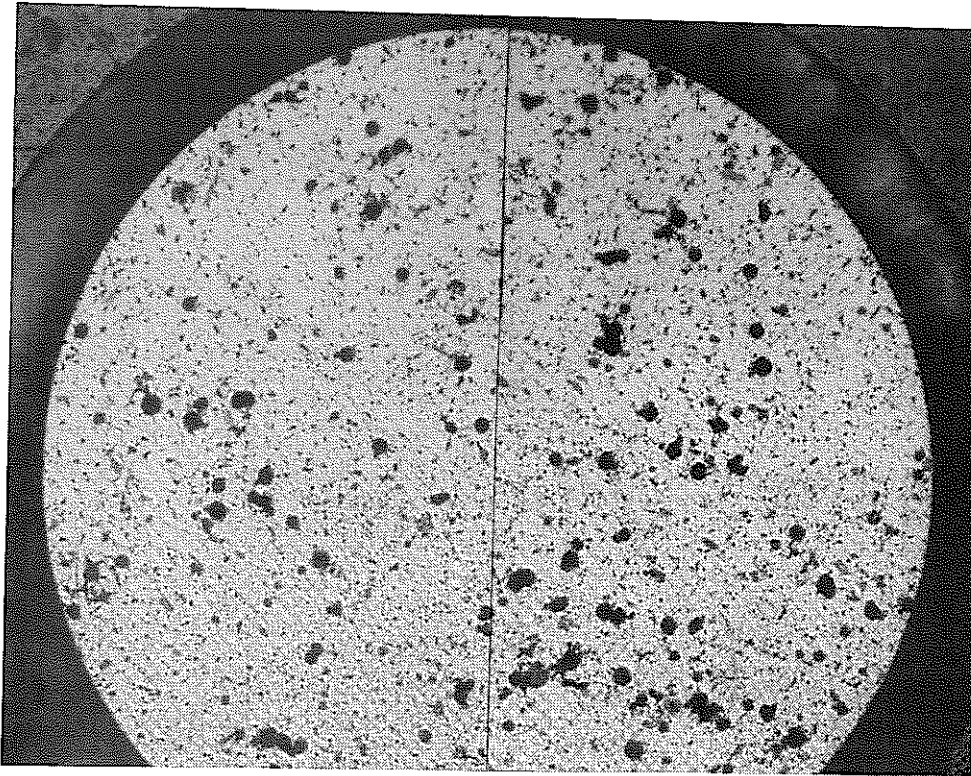


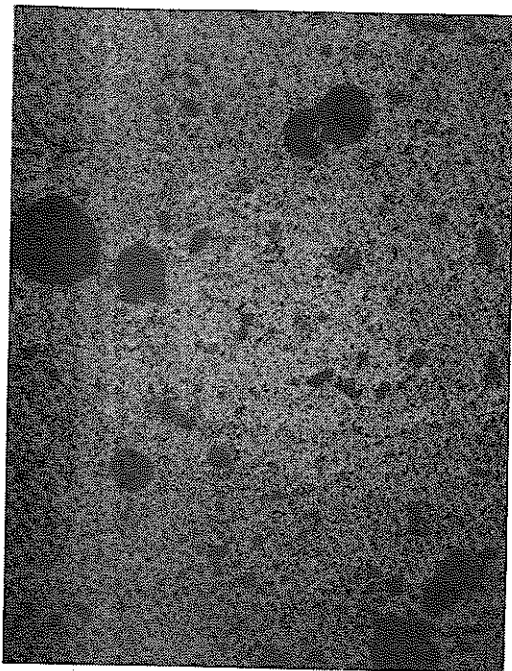
Fig 3-1-4 X-ray diffraction result  
Lot PX-23

Lattice constant  $545123 \pm 0.00044 \text{ \AA}$   
Solid homogeneity 97%



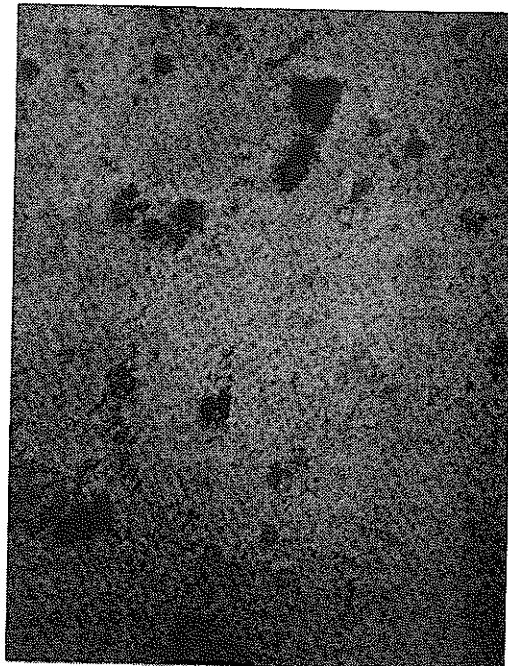
MACRO

500 $\mu$



MICRO

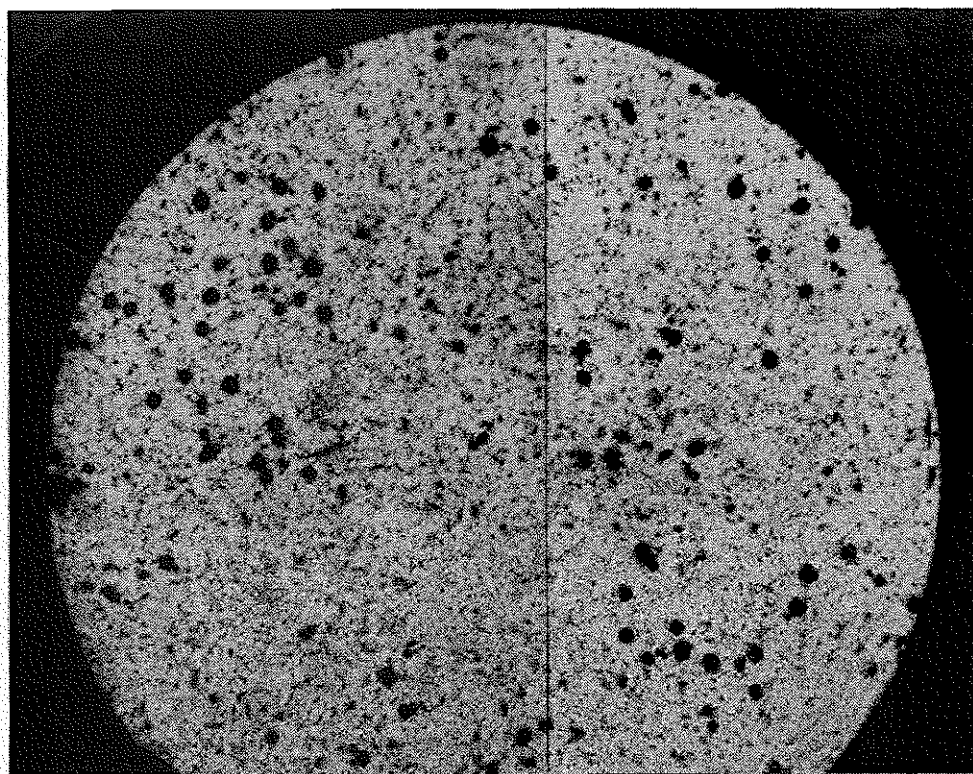
100 $\mu$



25 $\mu$

Photo 3-1-1 Ceramograph of PX-14 fuel pellet (As polished)





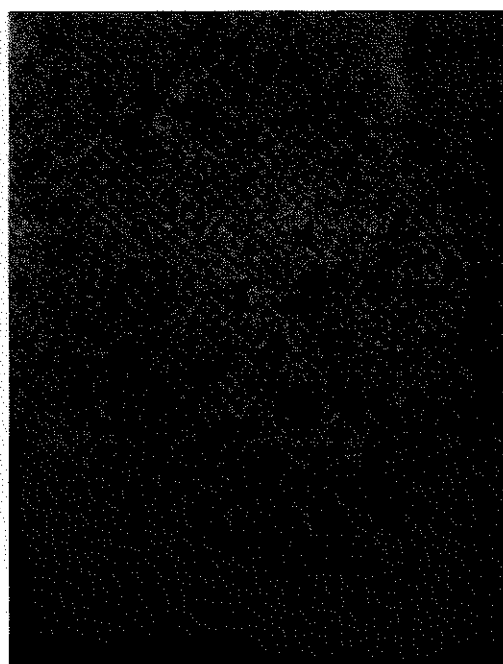
MACRO

500  $\mu$



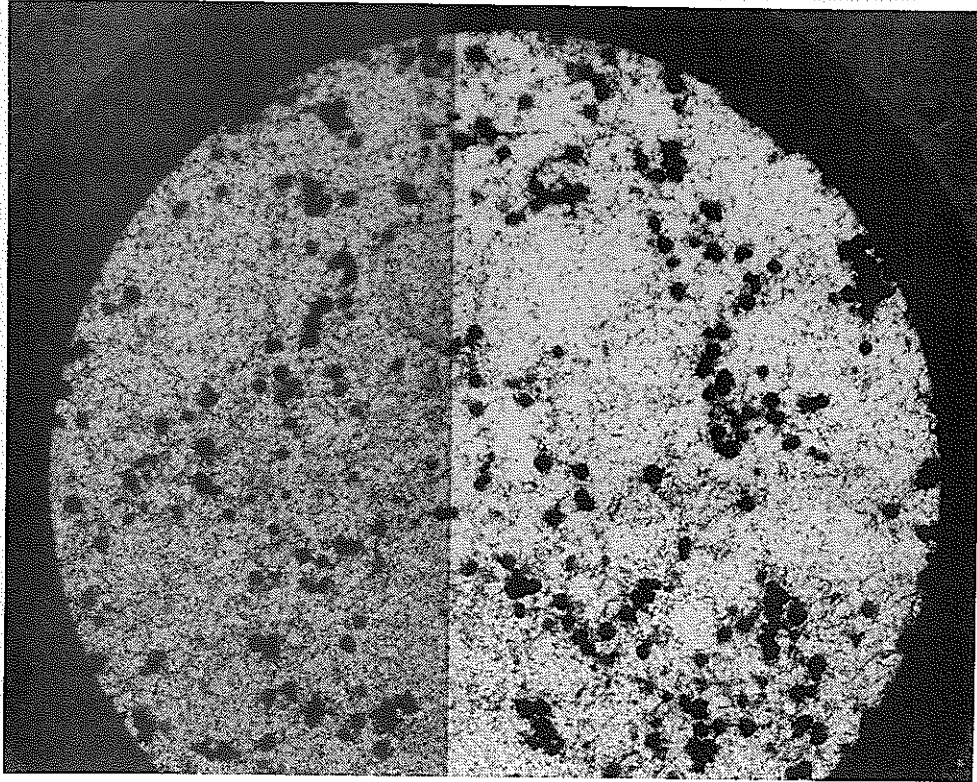
MICRO

100  $\mu$



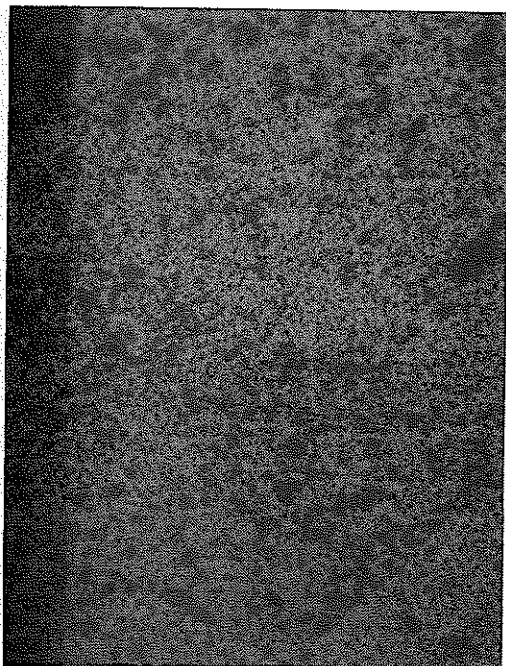
25  $\mu$

Photo 3-1-2 Ceramograph of PX-15 fuel pellet (As polished)



MACRO

500  $\mu$



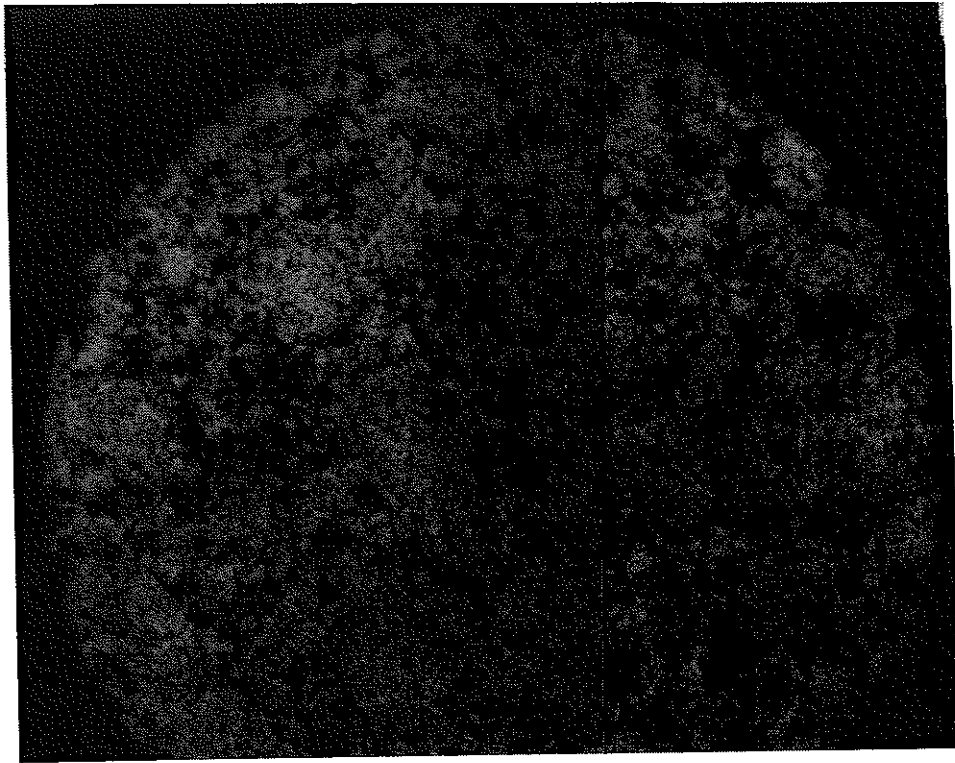
MICRO

100  $\mu$



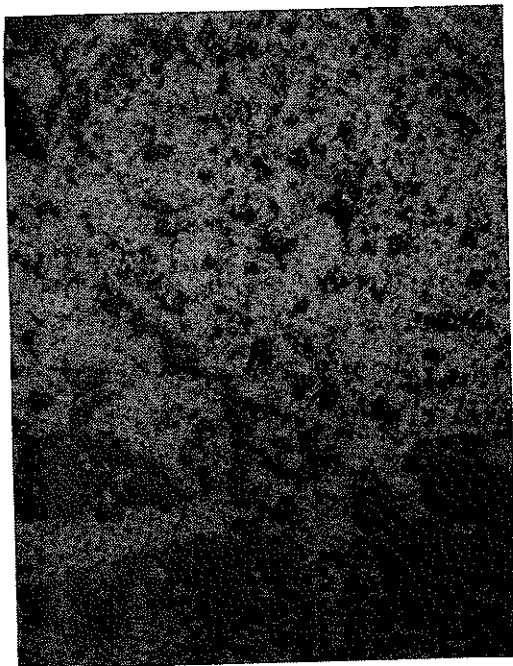
25  $\mu$

Photo 3-1-3 Ceramograph of PX-22 fuel pellet (As polished)



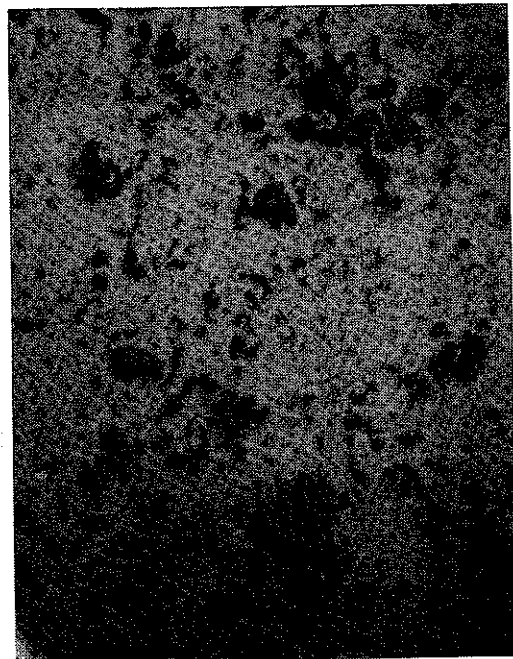
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[500 $\mu$ ]



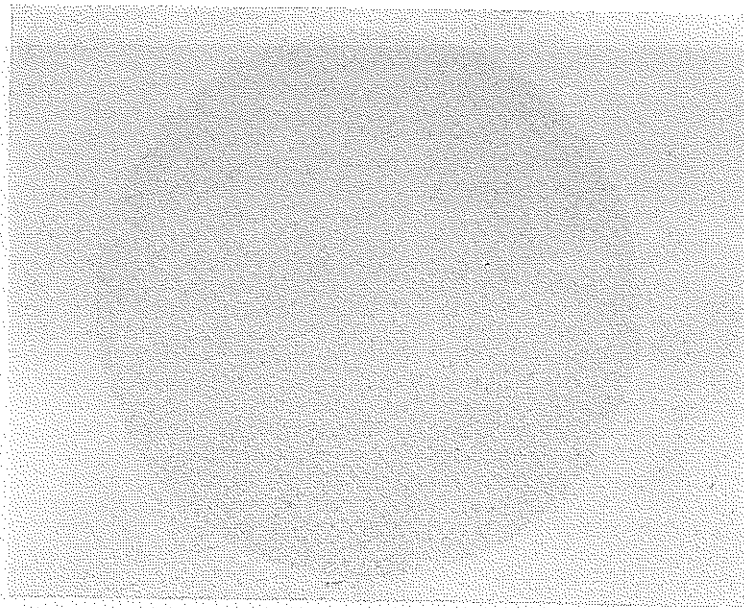
MICRO

[100 $\mu$ ]



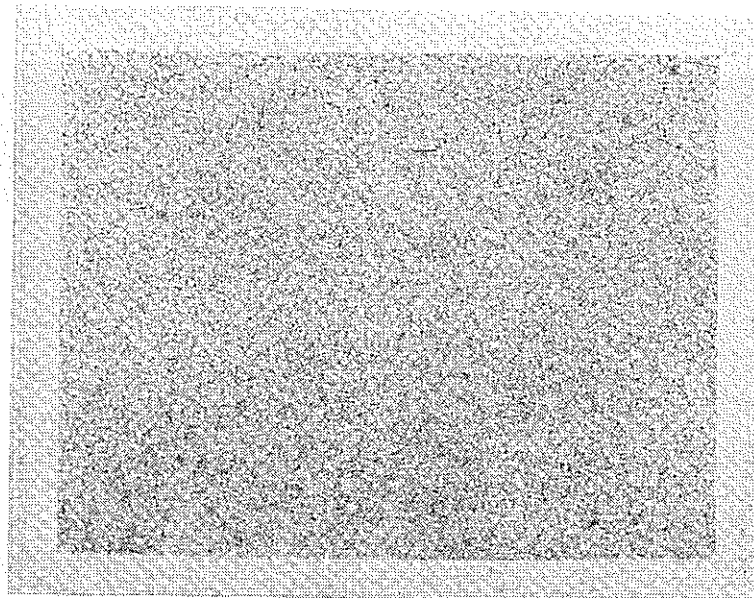
[25 $\mu$ ]

Photo 3-1-4 Ceramograph of PX-23 fuel pellet (As polished)



MACRO

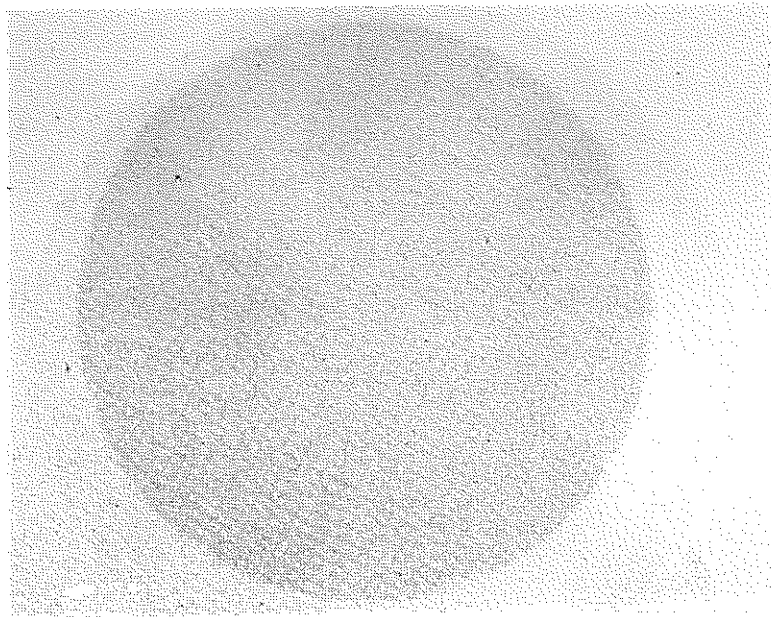
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MICRO

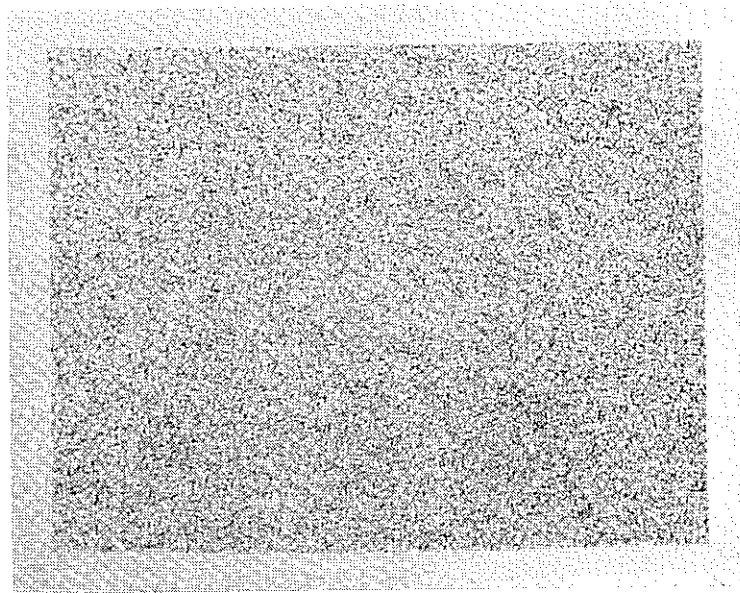
100  $\mu$

Photo 3-1-5  $\alpha$ -autoradiograph of PX-14 fuel pellet



MACRO

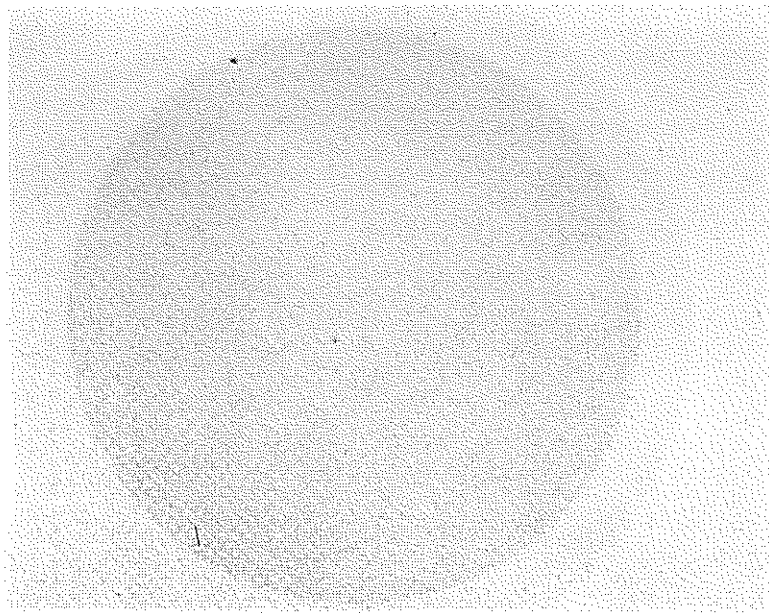
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MICRO

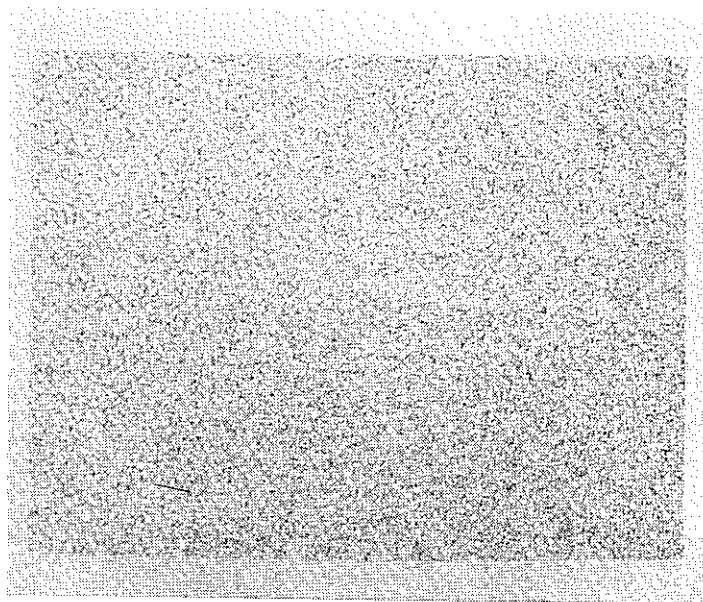
100 $\mu$

Photo 3-1-6  $\alpha$ -autoradiograph of PX-15 fuel pellet



MACRO

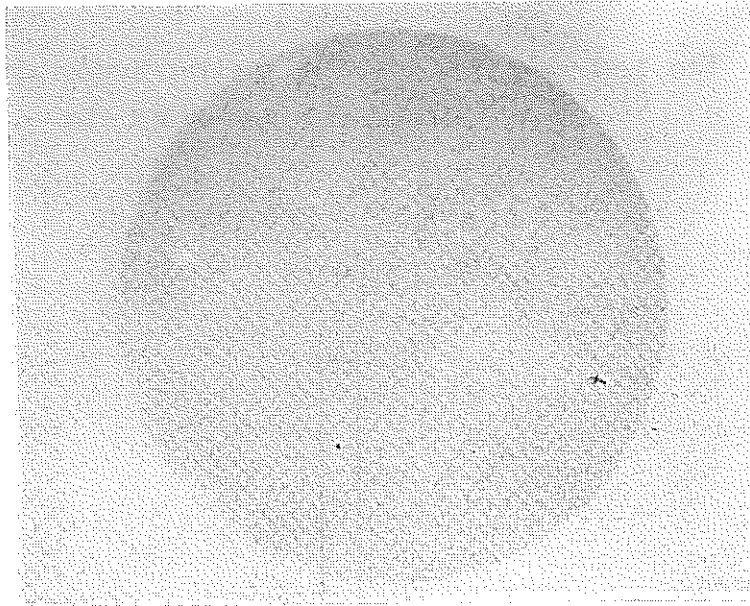
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MICRO

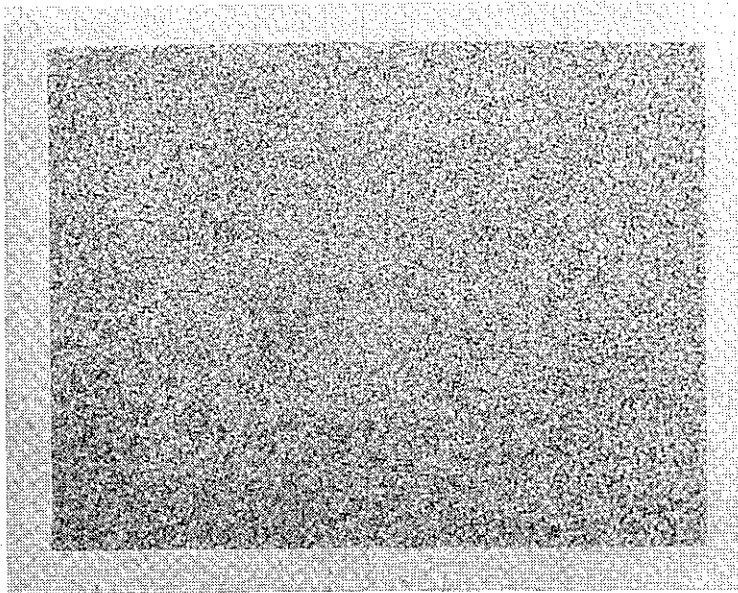
100  $\mu$

Photo 3-1-7  $\alpha$ -autoradiograph of PX-22 fuel pellet



MACRO

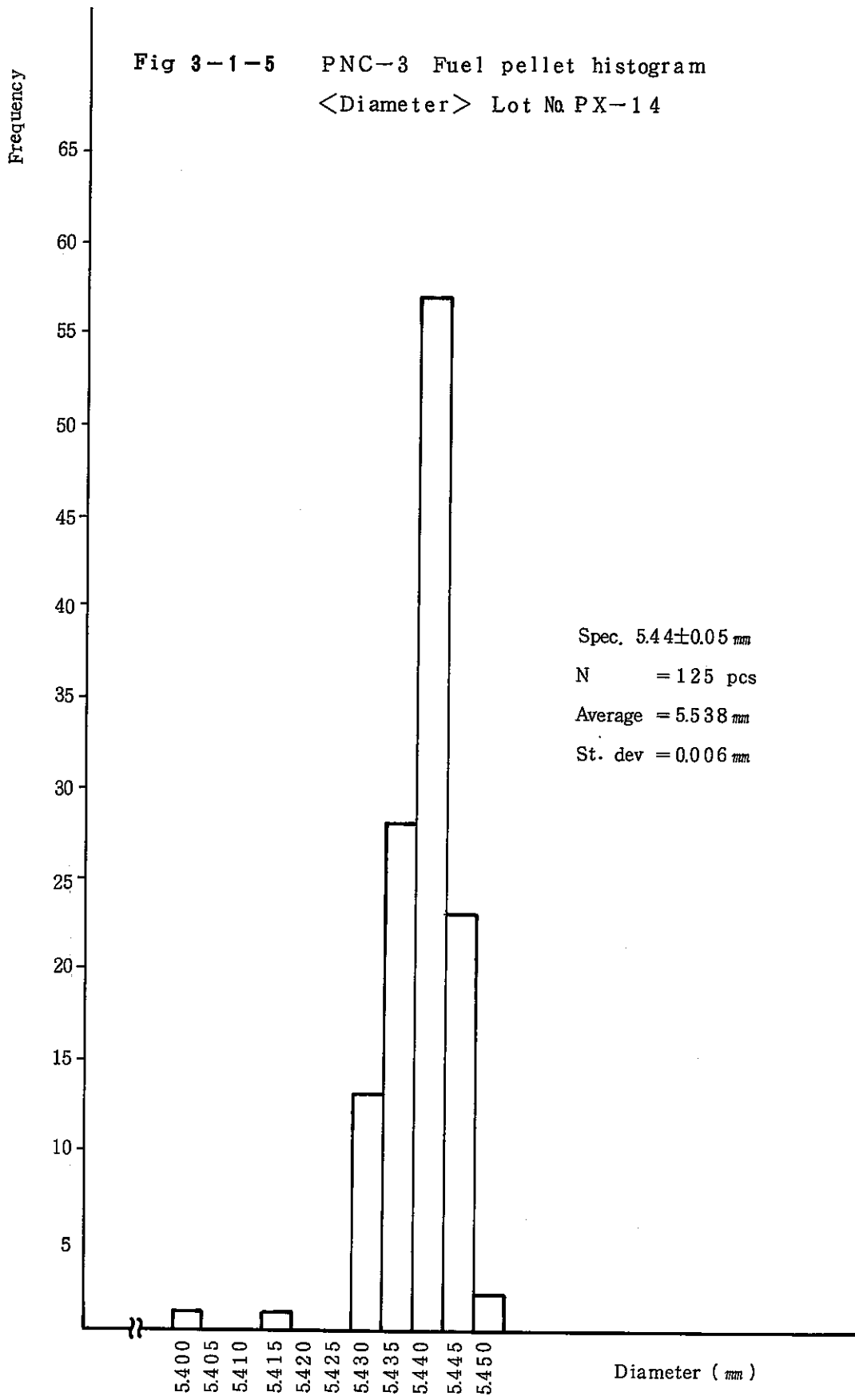
1 mm



MICRO

100 $\mu$

Photo 3-1-8  $\alpha$ -autoradiograph of PX-23 fuel pellet





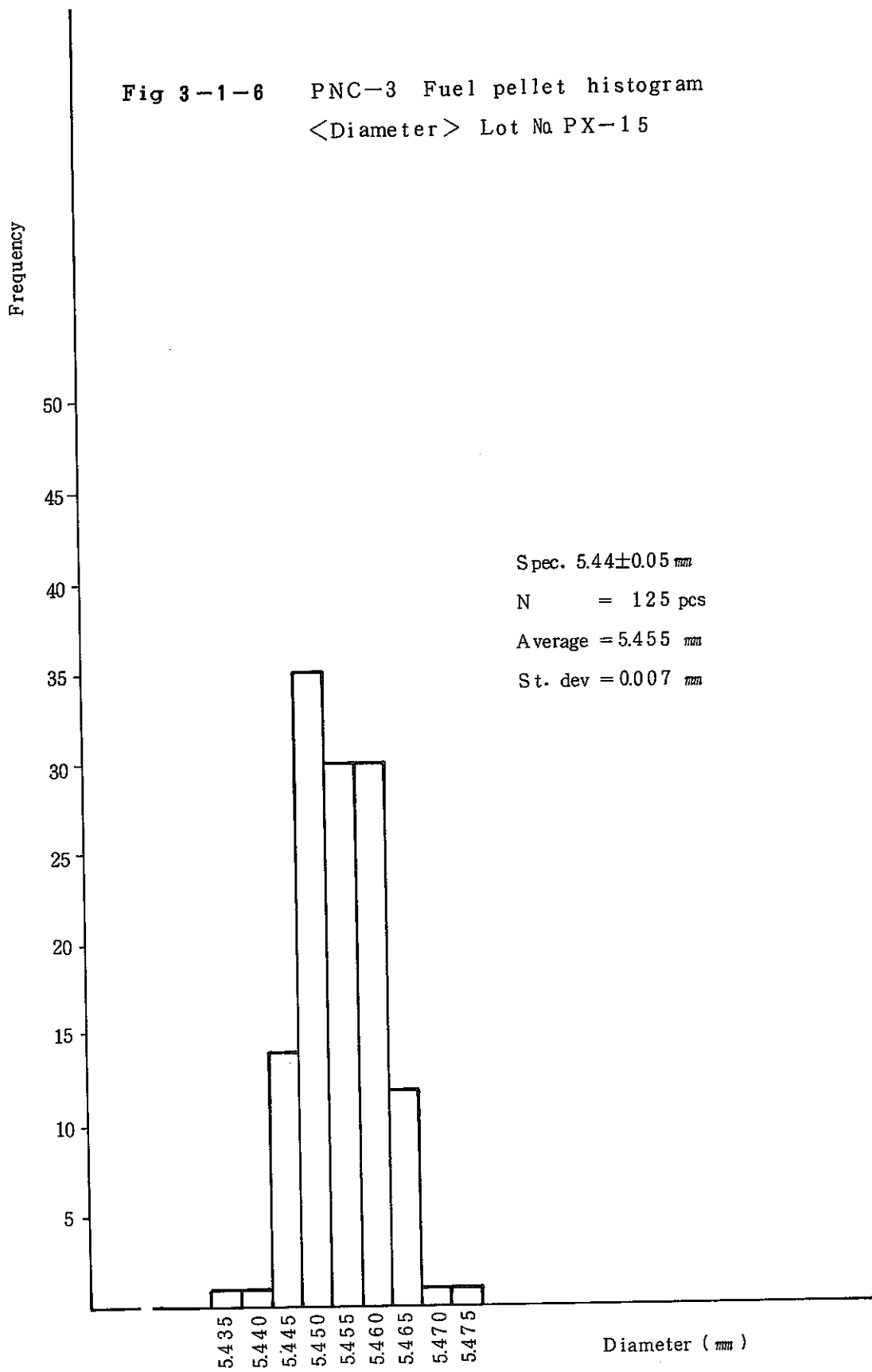


Fig 3-1-7 PNC-3 Fuel pellet histogram  
<Diameter> Lot No PX-22

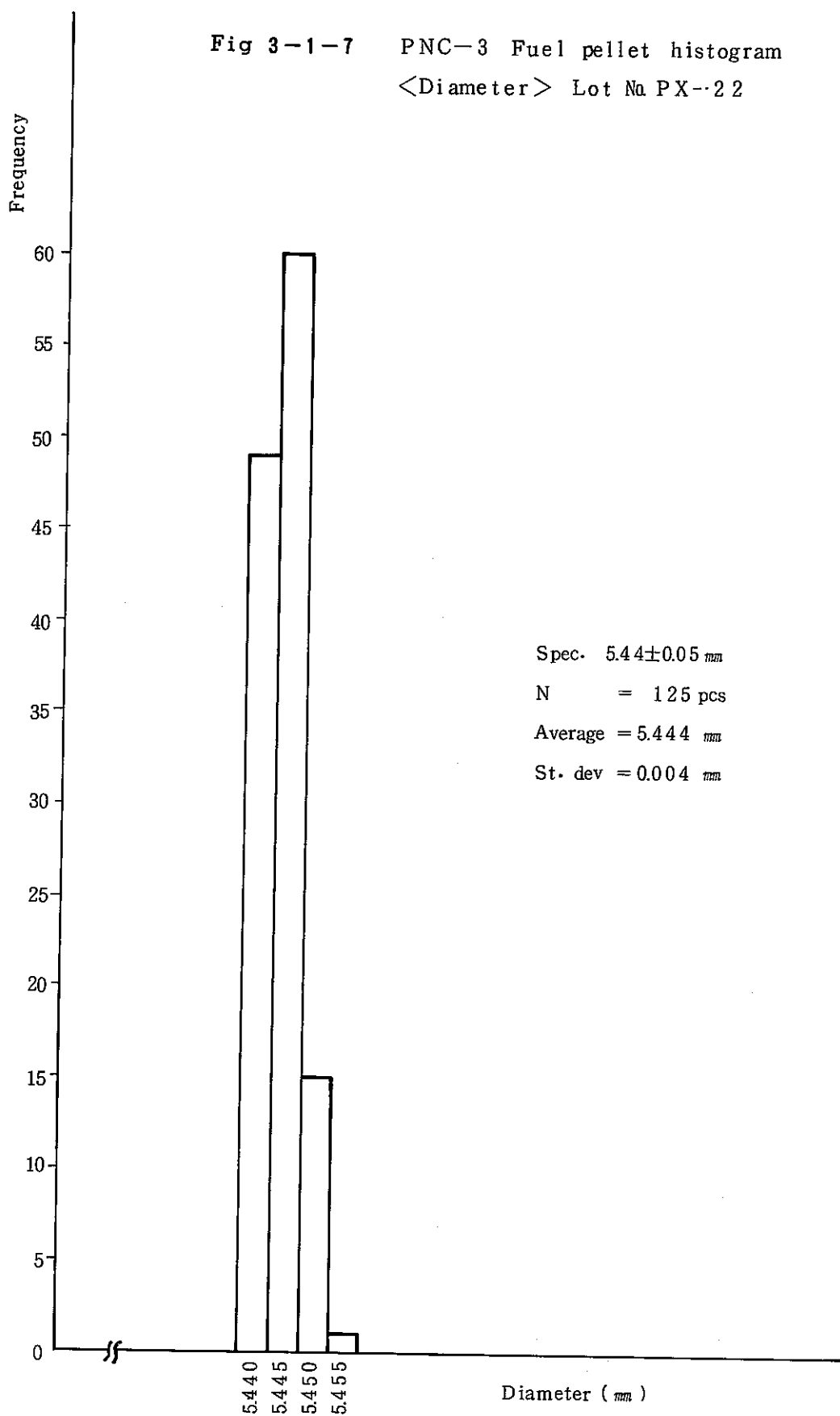


Fig 3-1-8 PNC-3 Fuel pellet histogram  
<Diameter> Lot No PX-23

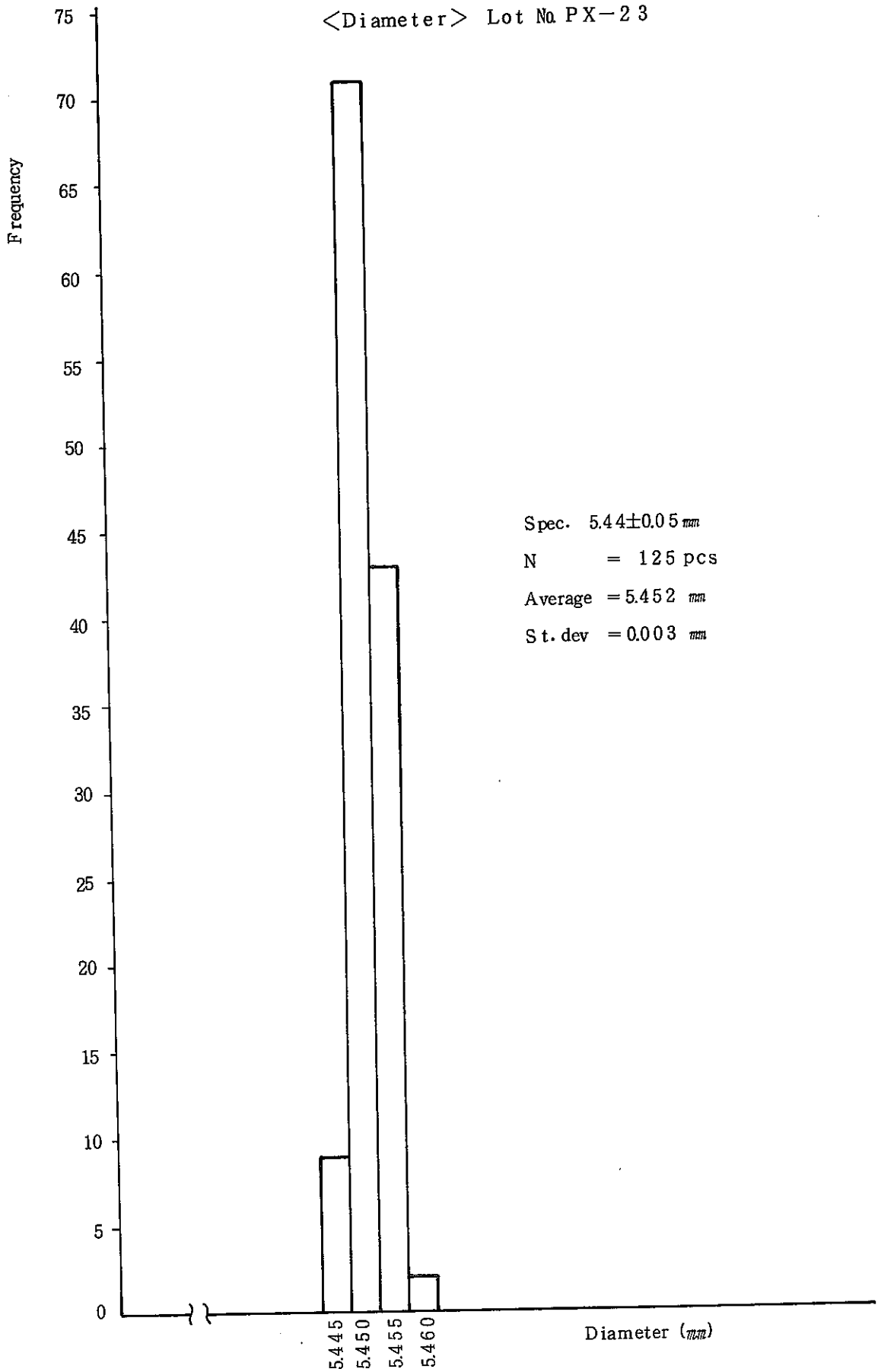


Fig 3-1-9 PNC-3 Fuel pellet histogram

<Density> Lot No PX-14

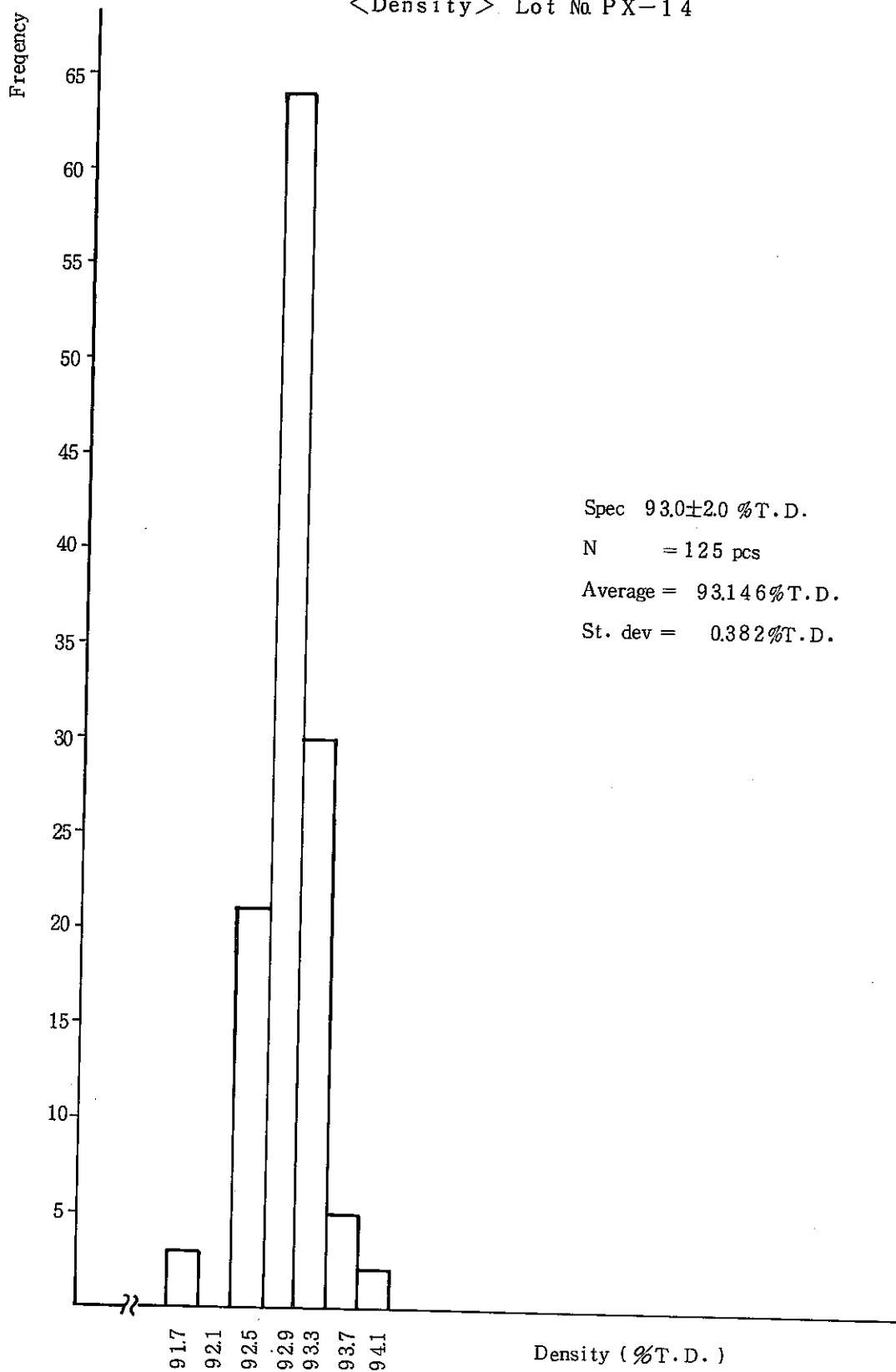
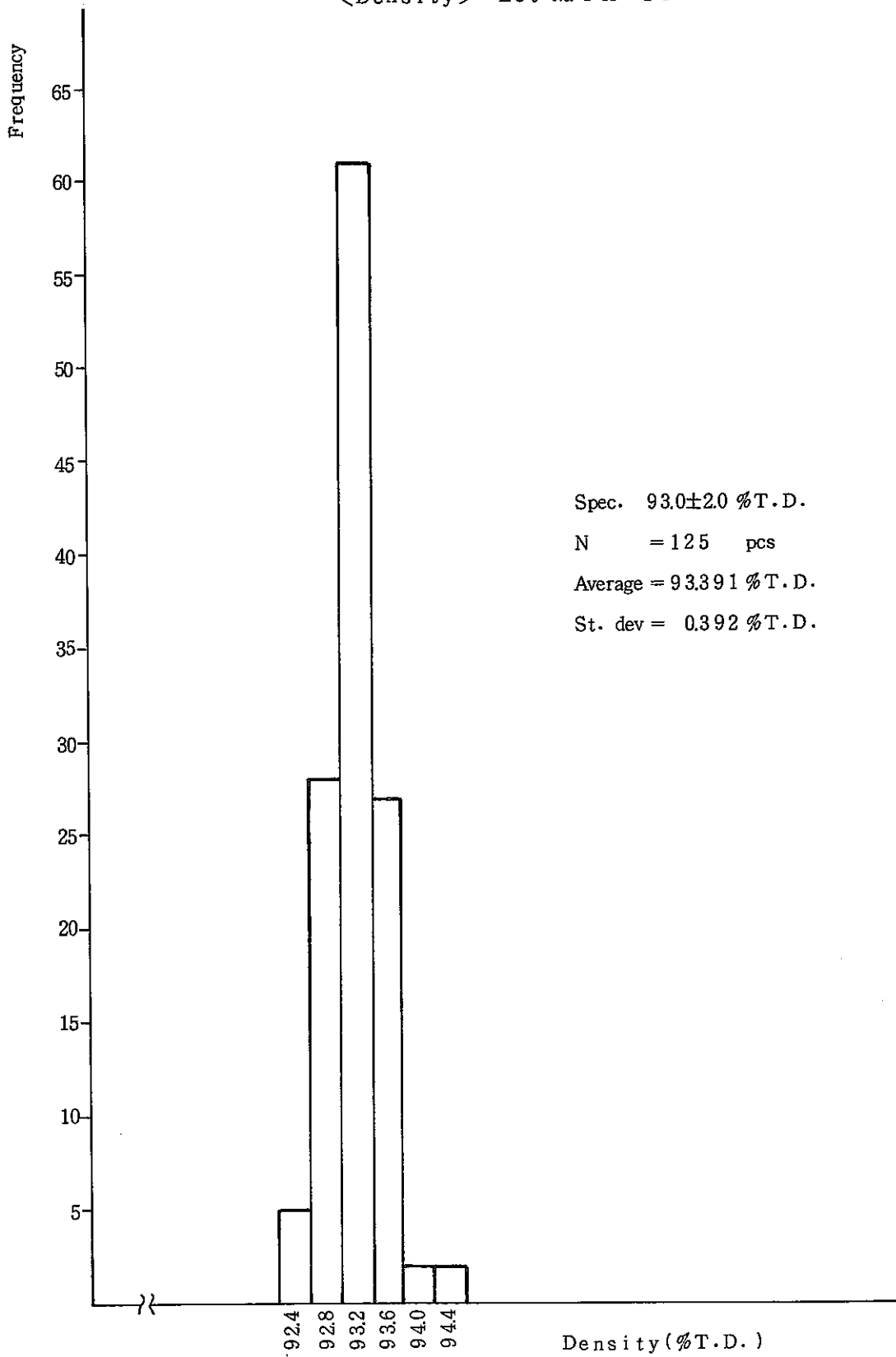
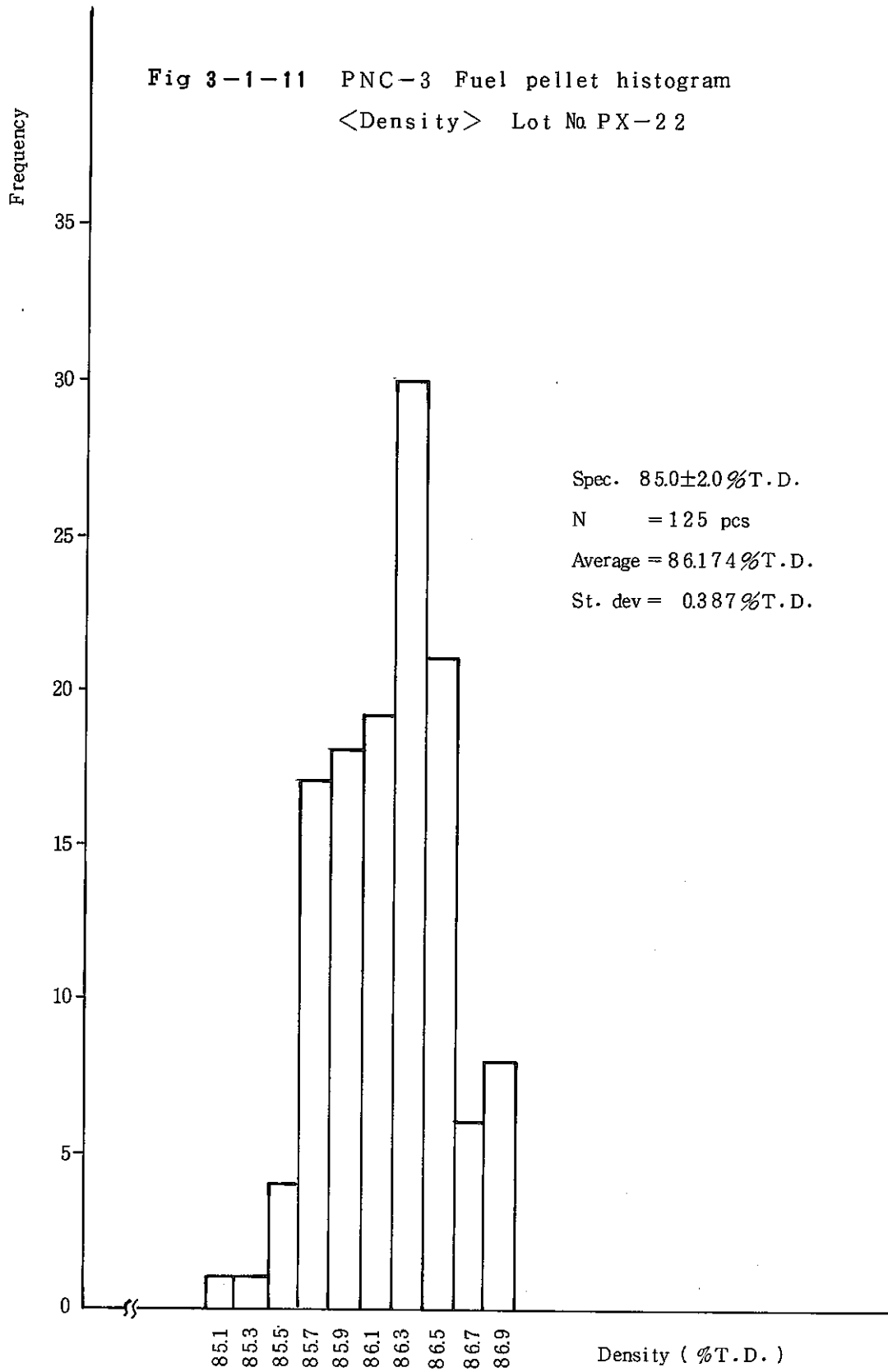


Fig 3-1-10 PNC-3 Fuel pellet histogram  
<Density> Lot No PX-15





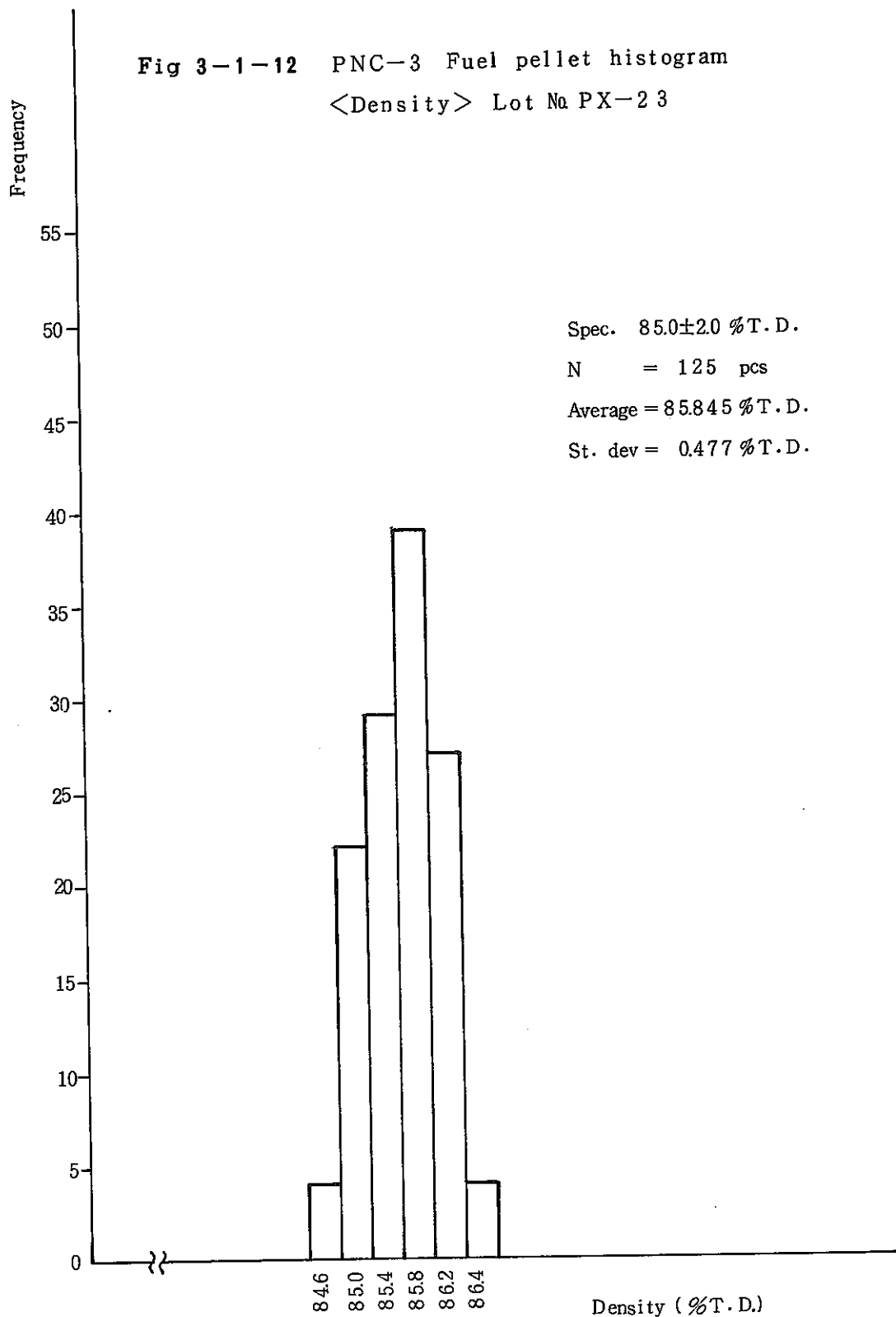


Fig 3-2-1 PNC-3 Fuel pellet histogram  
<Diameter> Lot Na PX-32

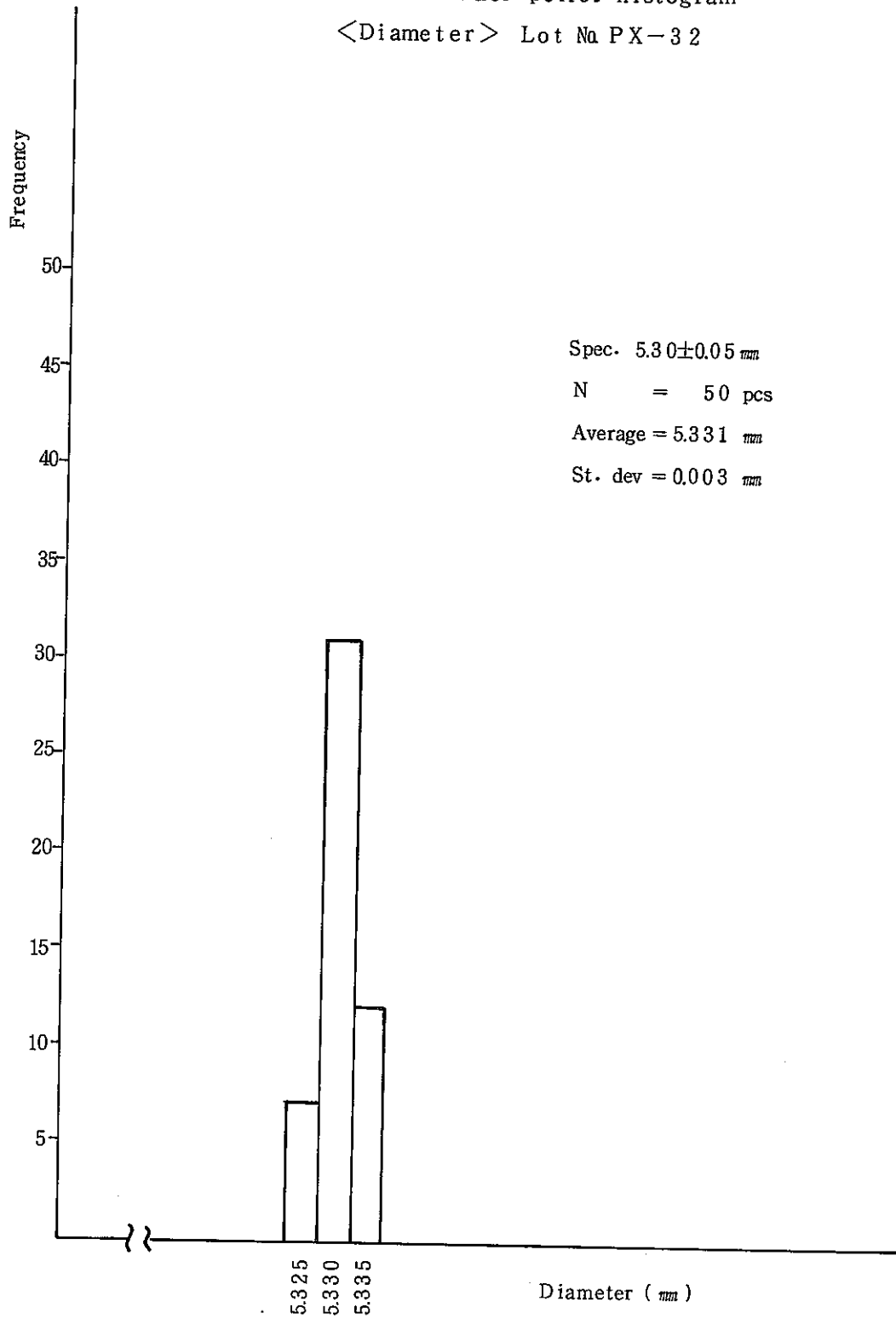




Fig 3-2-2 PNC-3 Fuel pellet histogram  
<Diameter> Lot No PX-33

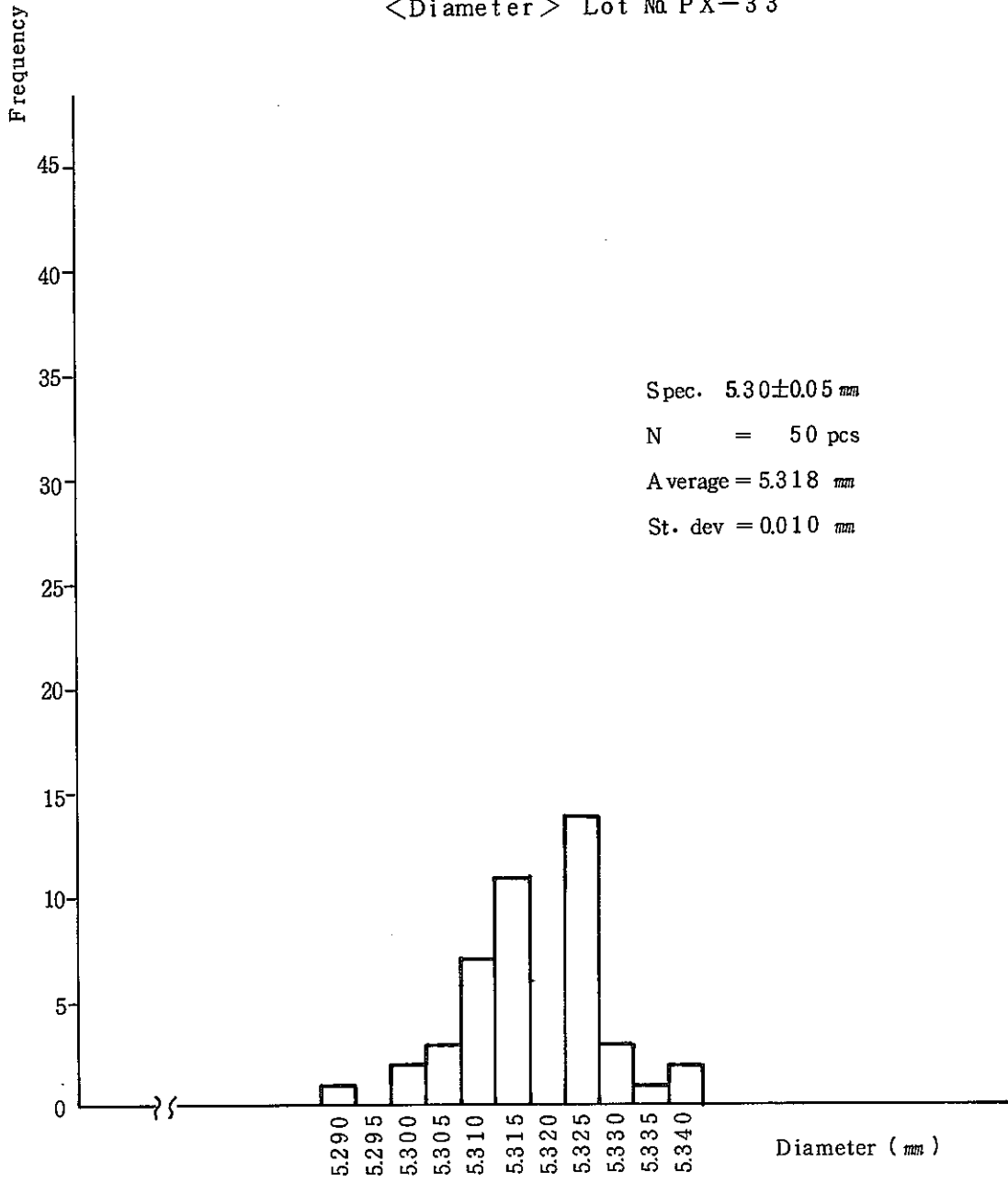
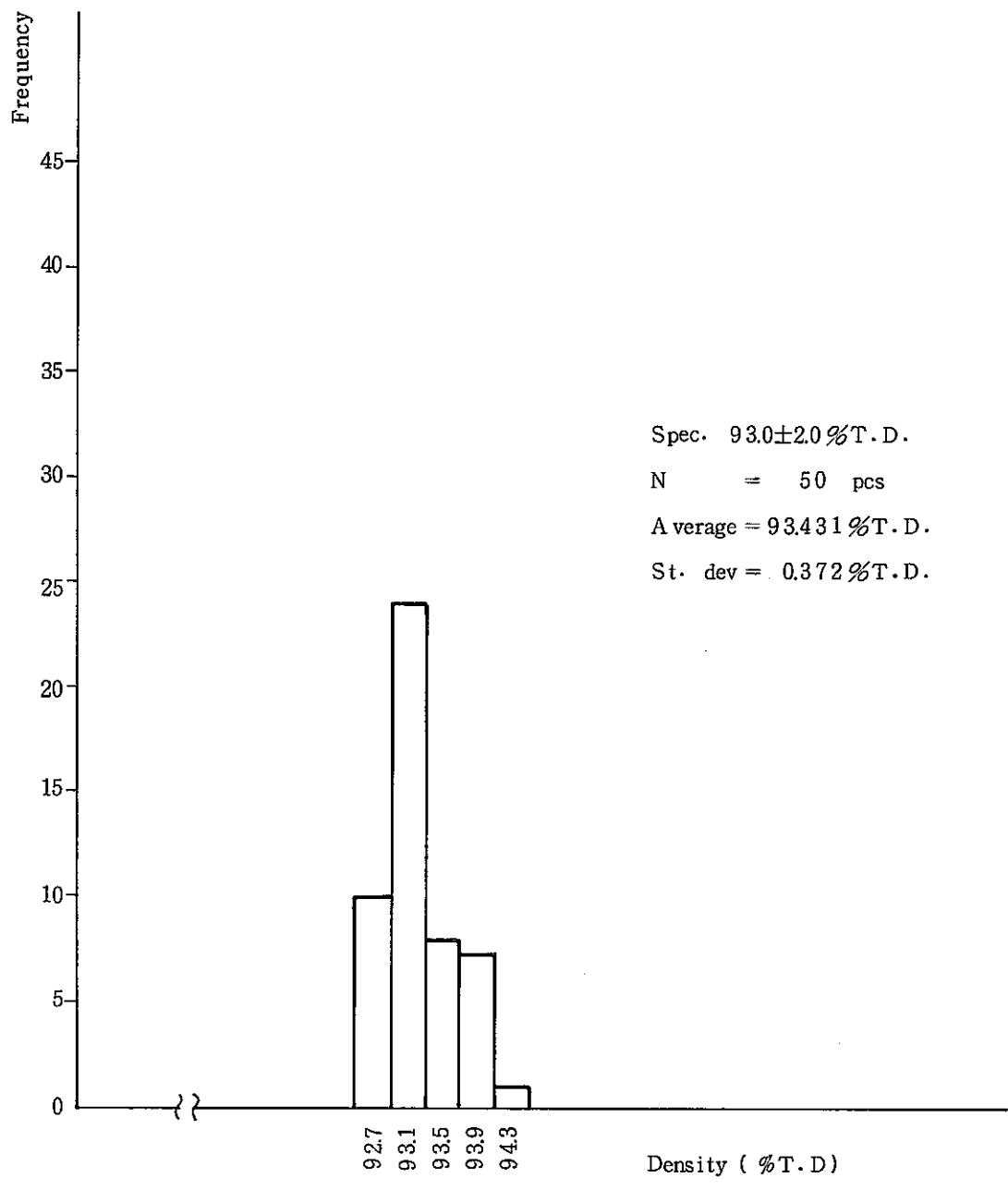
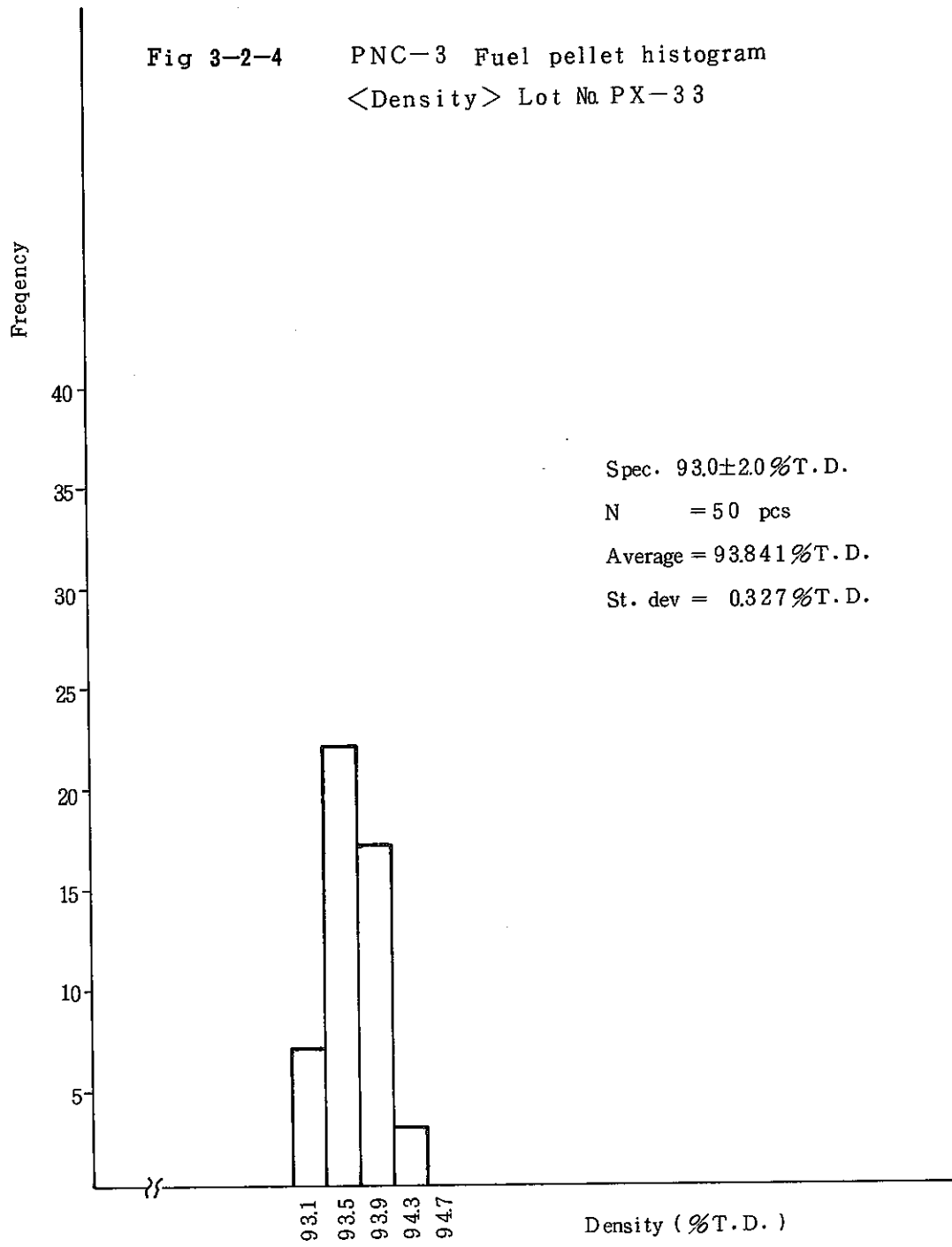


Fig 3-2-3 PNC-3 Fuel pellet histogram  
<Density> Lot No PX-32





Tabel 3-2-2 The result of chemical analysis of blanket pellet

Item	Specification	PX - 32	PX - 33
Al (ppm)	$\leq 500$ (ppm)	130 (ppm)	40 (ppm)
B	$\leq 20$	< 0.3	< 0.3
C	$\leq 150$	40	45
Ca	$\leq 80$	< 10	< 10
Cd	$\leq 20$	< 1.0	< 1.0
Cl	$\leq 25$	< 10	< 10
Cr	$\leq 500$	< 10	< 10
F	$\leq 25$	< 10	< 10
Fe	$\leq 800$	30	30
Mg	$\leq 25$	7	6
N	$\leq 200$	< 50	< 50
Ni	$\leq 500$	15	15
V	$\leq 500$	< 10	< 10
Cu+Zn+Si	$\leq 700$	< 86	< 86
Ag+Mn+Mo+Pb+Sn	$\leq 200$	< 36.2	< 36.2

Tabel 3-3-1 Chemical composition of claddings

Item	Specification	Sumitomo	Kobe	Car-Tec
C	0.035~ 0.064 (%)	0.058 (%)	0.052 (%)	0.047 (%)
Mn	150 ~ 200	194	169	168
P	$\geq 0.015$	0.029	0.027	< 0.005
S	$\leq 0.01$	0.010	0.005	0.005
Si	$\leq 0.75$	0.53	0.42	0.54
Ni	13.00 ~14.00	13.05	13.85	13.32
Cr	17.00 ~18.00	17.50	17.76	17.13
Mo	2.00 ~ 3.00	2.40	2.30	2.58
Co	$\leq 0.10$	0.01	0.07	0.01
B	$\geq 0.0005$	0.0012	0.0020	< 0.0005
N	$\leq 0.010$	0.0073	0.0071	0.003
Fe	Balance			

Tabel 3-3-2 Mechanical properties of claddings

Properties	Spec.	Sumitomo	Kobe	Car-Tec
Tensile strength ( $kg/mm^2$ )				
At room temperature	$\geq 75$	83.6 83.0	85.9 86.4	{ 99.0 98.5 99.0
At 650°C	$\geq 40$	51.4 48.4	54.7 54.9	{ 78.0 77.1 77.8
0.2% offset strength ( $kg/mm^2$ )				
At room temperature	$\geq 60$	71.4 71.2	81.0 80.3	{ 82.0 82.5 82.0
At 650°C	$\geq 30$	43.3 43.4	49.5 49.7	{ 60.0 60.1 63.0
Elongation (%)				
At room temperature	$\geq 10$	20 20	15.6 15.9	{ 36.0 36.0 36.0
At 650°C	$\geq 7$	13 16	9.8 9.7	{ 26.0 25.0 25.1
Grain size	<No. 6	No. 8 No. 8	No. 8.5 No. 8.5	No. 8.0 No. 8.0 No. 8.0
Hardness		287 281	282 280	277 275 281

Tabel 3-3-3 Dimension of claddings

Pin No	Spec. Tube No	Outer dia		Inner dia		Thickness		Straightness <0.5 mm / Total length
		6500±0.030 mm		5600±0.025 mm		0.450±0.030 mm		
		MAX.	MIN.	MAX.	MIN.	MAX.	MIN.	
84K-1	K-5654	6.502	6.496	5.595	5.588	0.464	0.447	<0.5
84K-2	K-5655	6.502	6.496	5.602	5.596	0.460	0.445	"
84K-3	K-5658	6.512	6.507	5.603	5.597	0.465	0.448	"
84S-1	S-6108	6.499	6.495	5.596	5.592	0.463	0.446	"
84S-2	S-6122	6.498	6.496	5.598	5.594	0.459	0.443	"
88K-1	K-5648	6.509	6.504	5.604	5.599	0.462	0.445	"
88K-2	K-5640	6.505	6.495	5.599	5.593	0.463	0.447	"
88K-3	K-5659	6.502	6.497	5.601	5.597	0.460	0.443	"
88K-4	K-5652	6.502	6.496	5.601	5.597	0.462	0.441	"
88S-1	S-6103	6.498	6.495	5.597	5.595	0.461	0.448	"
88S-2	S-6105	6.498	6.494	5.599	5.596	0.463	0.441	"
88S-3	S-6106	6.498	6.493	5.598	5.595	0.460	0.443	"
88S-4	S-6107	6.498	6.493	5.596	5.593	0.462	0.446	"
88C-1	CT-015	6.500	6.491	5.594	5.588	0.455	0.444	"
94K-1	K-5657	6.502	6.499	5.599	5.594	0.464	0.445	"
94S-1	S-6112	6.501	6.494	5.598	5.595	0.463	0.449	"
94S-2	S-6127	6.499	6.496	5.594	5.594	0.460	0.448	"
94C-1	CT-024	6.499	6.494	5.594	5.586	0.457	0.440	"
94C-2	CT-026	6.499	6.491	5.592	5.587	0.457	0.443	"
98K-1	K-5629	6.509	6.503	5.602	5.596	0.465	0.447	"
98K-2	K-5635	6.513	6.508	5.606	5.600	0.464	0.449	"
98S-1	S-6118	6.502	6.493	5.596	5.593	0.463	0.446	"
98C-1	CT-029	6.502	6.493	5.594	5.588	0.456	0.443	"
98C-2	CT-027	6.501	6.494	5.594	5.589	0.459	0.443	"
98C-3	CT-028	6.500	6.492	5.592	5.588	0.460	0.442	"

Tabel 3-3-4 Non-destructive test of claddings

Item	Spec.	Result
Surface roughness	3.2 S	< 3.2 S
Ultrasonic inspection	< 32 $\mu$	Go
Visual inspection	Free of all scale and oxide	Go

Tabel 3-4-1 Chemical composition of end plug material

Item	Specification(%)	Sumitomo Denko	Kobe	H. E , D. L
C	0.035~0.064	0.058 (%)	0.057 (%)	0.05 (%)
Si	≤0.75	0.48	0.51	0.58
Mn	1.50~2.00	1.85	1.84	1.92
P	≤0.03	0.011	0.007	0.009
S	≤0.02	0.005	0.006	0.007
Ni	12.00~14.00	13.96	13.90	14.07
Cr	16.00~18.00	17.25	16.78	17.50
Co	≤0.10	0.04	0.01	0.04
Mo	2.00~3.00	2.55	2.32	2.45
B	≤0.001	0.0003	0.0004	<0.001
N	≤0.010	0.006	0.0066	0.072

Tabel 3-4-2 Chemical composition of sleeve

Item	Specification(%)	Tube A05~08	Tube B01~04
C	0.035~0.064	0.058	0.058
Si	≤0.75	0.52	0.52
Mn	1.50~2.00	1.74	1.74
P	≤0.03	0.003	0.003
S	≤0.02	0.007	0.007
Ni	12.00~14.00	12.92	12.92
Cr	16.00~18.00	17.20	17.20
Co	≤0.10	0.06	0.06
Mo	2.00~3.00	2.50	2.50
B	≤0.0005	0.0001	0.0001
N	≤0.010	0.006	0.006



Tabel 3-4-3 Chemical composition of spring

Item	Specification (%)	Result (%)
C	0.60 ~ 0.85	0.82
Si	0.12 ~ 0.32	0.24
Mn	0.30 ~ 0.90	0.52
P	≤0.025	0.016
S	≤0.030	0.004
Cu	≤0.20	0.01

Tabel 3-5-1 Chemical composition of wrapping wire

Item	Specification (%)	Result (%)
C	0.04~0.08	0.053
Si	≤0.75	0.48
Mn	≤2.00	1.96
P	≤0.03	0.011
S	≤0.03	0.005
Ni	11.00~14.00	13.82
Cr	16.00~18.00	17.30
Mo	2.00~ 3.00	2.56
Co	≤0.10	0.04
B	≤0.001	0.0004
N	≤0.035	0.0008

Tabel 3-6-1 Chemical composition of tag gas capsule

Item	Specification (%)	Result (%)
C	0.035~0.064	0.054
Si	$\leq 0.75$	0.52
Mn	1.50~2.00	1.74
P	$\leq 0.03$	0.003
S	$\leq 0.02$	0.008
Ni	12.00~14.00	12.92
Cr	16.00~18.00	17.15
Co	$\leq 0.10$	0.06
Mo	2.00~3.00	2.50
B	$\leq 0.0005$	0.0002
N	$\leq 0.010$	0.0064

Tabel 4-1-1 Dimension and weight of fuel and components

Pin No	Item	Lower end plug	Plenum sleeve	Container of TAG gas capsule	Lower blanket fuel pellet	Core fuel pellet	Upper blanket fuel pllet	Container of SiC	Spring	Upper end plug	Cladding with lower end plug
	Spec.	45.0±0.2 mm	504.0±0.5 mm	70.0±0.3 mm	264±2 mm	720±4 mm	64±2 mm	40.0±0.3 mm	-	25.0±0.2 mm	-
84K-1	1. No	42	1	1	PX-32	PX-22	PX-32	26		45	K-5654
	2. Length (mm)	45.00	504.10	70.05	262.20	719.60	633.2	39.90	70.00	25.02	1772.98
	3. Weight (gr)	7.10	19.47	4.41	61.30	159.90	14.60	2.51	1.56	3.60	125.49
84K-2	1. No	36	2	2	PX-32	PX-22	PX-32	2		44	K-5655
	2. Length (mm)	45.00	504.10	70.13	264.35	719.75	64.00	39.75	70.00	25.00	1773.00
	3. Weight (gr)	7.12	19.49	4.43	60.50	160.20	15.20	2.44	1.56	3.60	124.61
84K-3	1. No	47	5	5	PX-32	PX-22	PX-32	5		28	K-5658
	2. Length (mm)	45.00	504.05	70.01	263.95	721.85	63.90	39.80	70.00	25.05	1772.98
	3. Weight (gr)	7.11	19.49	4.41	60.60	160.30	14.80	2.48	1.56	3.60	126.41
84S-1	1. No	44	3	3	PX-32	PX-22	PX-32	3		25	S-6108
	2. Length (mm)	45.00	504.10	70.04	264.90	721.90	63.85	39.85	70.00	25.01	1773.02
	3. Weight (gr)	7.12	19.50	4.42	60.90	160.20	15.00	2.46	1.56	3.60	124.91
84S-2	1. No	45	4	4	PX-32	PX-22	PX-32	4		26	S-6122
	2. Length (mm)	45.00	504.05	69.99	265.00	721.20	63.85	39.80	70.00	25.04	1773.04
	3. Weight (gr)	7.13	19.50	4.43	60.90	160.40	14.80	2.49	1.56	3.60	124.68

Tabel 4-1-2 Dimension and weight of fuel and components

Pin No	Item	Lower end plug	Plenum sleeve	Container of TAG gas capsule	Lower blanket fuel pellet	Core fuel pellet	Upper blanket fuel pellet	Container of SiC	Spring	Upper end plug	Cladding with lower end plug
	Spec.	45.0±0.2mm	504.0±0.5mm	70.0±0.3mm	264±2mm	720±4mm	64±2mm	400±0.3mm	-	25.0±0.2mm	-
88K-1	1. No	34	6	6	PX-33	PX-22	PX-33	6		30	K-5648
	2. Length (mm)	45.00	504.05	70.14	265.95	723.06	65.25	39.70	70.00	25.03	1773.02
	3. Weight (gr)	7.12	19.49	4.43	60.76	160.99	14.94	2.48	1.56	3.60	125.28
88K-2	1. No	37	7	7	PX-33	PX-23	PX-33	7		32	K-5640
	2. Length (mm)	45.00	504.10	69.99	264.90	716.30	65.85	39.75	70.00	25.00	1772.96
	3. Weight (gr)	7.13	19.50	4.42	60.40	159.30	15.40	2.48	1.56	3.60	125.68
88K-3	1. No	38	8	9	PX-33	PX-23	PX-33	8		33	K-5659
	2. Length (mm)	45.00	504.10	69.97	265.30	716.60	65.80	39.80	70.00	25.01	1772.98
	3. Weight (gr)	7.11	19.48	4.40	60.90	159.70	15.00	2.48	1.56	3.60	124.54
88K-4	1. No	39	9	10	PX-33	PX-23	PX-33	9		14	K-5652
	2. Length (mm)	44.95	504.25	70.06	263.80	723.30	65.80	39.85	70.00	25.02	1772.96
	3. Weight (gr)	7.10	19.48	4.43	60.50	161.00	15.10	2.48	1.56	3.60	124.53
88S-1	1. No	48	10	11	PX-33	PX-23	PX-33	10		37	S-6103
	2. Length (mm)	45.00	504.05	70.01	264.00	722.15	65.20	39.70	70.00	25.01	1773.00
	3. Weight (gr)	7.11	19.48	4.46	60.50	161.00	15.10	2.44	1.56	3.60	124.94

Tabel 4-1-3 Dimension and weight of fuel and components

Pin No	Item	Lower end plug	Plenum sleeve	Container of TAG gas capsule	Lower blanket fuel pellet	Core fuel pellet	Upper blanket fuel pellet	Container of SiC	Spring	Upper end plug	Cladding with lower end plug
	Spec.	45.0±0.2 mm	5040±0.5 mm	70.0±0.5 mm	264±2 mm	720±4 mm	64±2 mm	40.0±0.3 mm	-	25.0±0.2 mm	-
88S-2	1. No	49	11	12	PX-33	PX-23	PX-33	11	70.00 1.56	39 25.01 3.60	S-6105 1773.00 124.54
	2. Length (mm)	45.00	5040.5	70.04	265.10	718.00	65.70	39.75			
	3. Weight (gr)	7.11	19.48	4.43	60.60	160.30	14.90	2.47			
88S-3	1. No	50	12	13	PX-33	PX-23	PX-33	12	70.00 1.56	40 25.00 3.60	S-6106 1772.96 124.63
	2. Length (mm)	45.00	5041.0	70.13	264.85	718.40	65.95	39.75			
	3. Weight (gr)	7.10	19.47	4.42	60.60	160.00	14.90	2.46			
88S-4	1. No	51	13	14	PX-33	PX-23	PX-33	13	70.00 1.56	41 25.00 3.60	S-6107 1772.98 124.78
	2. Length (mm)	45.00	5040.0	70.03	263.70	717.30	65.30	39.80			
	3. Weight ( )	7.10	19.49	4.41	60.20	160.00	15.30	2.46			
88C-1	1. No	A-2	14	15	PX-33	PX-23	PX-33	14	70.00 1.56	A-12 25.01 3.60	CT-015 1773.02 125.12
	2. Length (mm)	45.00	5041.5	70.01	263.90	723.50	65.50	39.75			
	3. Weight (gr)	7.10	19.48	4.42	60.90	161.80	15.00	2.47			
94K-1	1. No	40	15	16	PX-32	PX-15	PX-32	15	70.00 1.56	42 25.02 3.60	K-5657 1773.02 125.37
	2. Length (mm)	45.00	5041.5	70.01	265.50	720.95	62.90	39.80			
	3. Weight (gr)	7.11	19.49	4.42	60.60	174.90	14.50	2.48			

Tabel 4-1-4 Dimension and weight of fuel and components

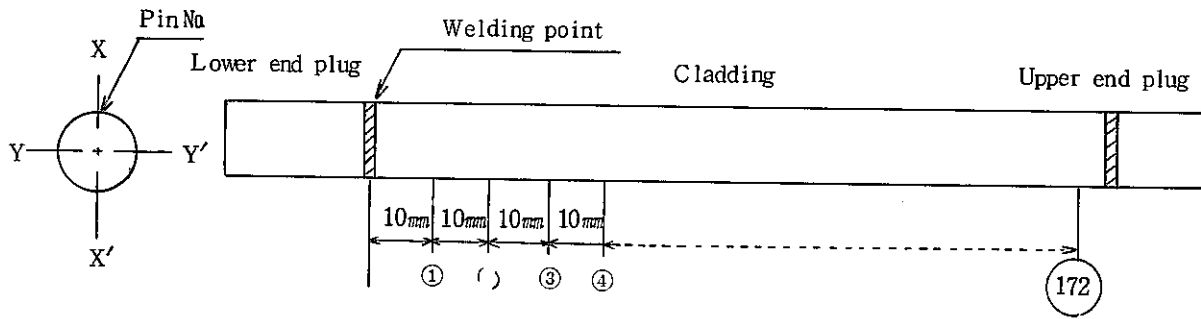
Pin No	Item	Lower end plug	Plenum sleeve	Container of TAG gas capsule	Lower blanket fuel pellet	Core fuel pellet	Upper blanket fuel pellet	Container of SiC	Spring	Upper end plug	Cladding with lower end plug
	Spec.	45.0±0.2mm	504.0±0.5mm	7.00±0.3mm	264±2mm	720±4mm	64±2mm	40.0±0.3mm	—	25.0±0.2mm	—
94S-1	1. No	52	16	17	PX-32	PX-15	PX-32	16	—	43	S-6112
	2. Length (mm)	45.00	504.15	70.12	263.00	718.05	64.60	39.80	70.00	25.01	1772.92
	3. Weight (gr)	7.11	19.45	4.42	60.80	173.80	14.40	2.47	1.56	3.60	124.70
94S-2	1. No	53	17	18	PX-32	PX-15	PX-32	17	—	47	S-6127
	2. Length (mm)	45.00	504.10	70.12	263.75	723.65	64.50	39.75	70.00	25.01	1773.00
	3. Weight (gr)	7.10	19.53	4.43	60.90	175.50	14.80	2.48	1.56	3.60	124.90
94C-1	1. No	A-8	18	20	PX-32	PX-15	PX-32	18	—	A-42	CT-024
	2. Length (mm)	45.00	504.15	70.14	263.15	720.25	64.95	39.70	70.00	25.00	1773.00
	3. Weight (gr)	7.15	19.53	4.43	60.90	174.60	15.00	2.46	1.56	3.60	125.61
94C-2	1. No	A-1	19	22	PX-32	PX-15	PX-32	19	—	A-43	CT-026
	2. Length (mm)	45.00	504.10	70.13	263.05	723.55	63.35	39.80	70.00	25.03	1773.04
	3. Weight (gr)	7.10	19.52	4.43	61.00	175.20	14.50	2.47	1.56	3.60	125.40
98K-1	1. No	41	20	23	PX-32	PX-14	PX-32	20	—	49	K-5629
	2. Length (mm)	45.00	504.05	70.15	264.95	719.15	63.70	39.80	70.00	25.00	1773.04
	3. Weight (gr)	7.11	19.49	4.49	60.66	172.44	14.60	2.44	1.56	3.60	125.80

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Tabel 4-1-5 Dimension and weight of fuel and components

Pin No	Item	Lower end plug	Plenum sleeve	Container of TAG gas capsule	Lower blanket fuel pellet	Core fuel pellet	Upper blanket fuel pellet	Container of SiC	Spring	Upper end plug	Cladding with lower end plug
	Spec.	45.0±0.2 mm	504.0±0.5mm	70.0± 0.3mm	264±2 mm	720±4 mm	64±2 mm	40.0±0.3mm	-	25.0±0.2 mm	-
98K-2	1. No	46	22	26	PX-33	PX-14	PX-33	22		54	K-5635
	2. Length (mm)	45.00	504.20	70.01	265.35	719.35	65.55	39.80	70.00	25.01	1773.04
	3. Weight (gr)	7.13	19.52	4.42	60.70	172.00	14.70	2.43	1.56	3.60	405.29
98S-1	1. No	57	21	24	PX-33	PX-14	PX-33	21		52	S-6118
	2. Length (mm)	45.00	504.20	70.15	265.00	718.80	65.80	39.70	70.00	25.02	1772.98
	3. Weight (gr)	7.13	19.50	4.43	61.10	172.80	15.20	2.43	1.56	3.60	124.78
98C-1	1. No	A-3	23	28	PX-33	PX-14	PX-33	23		A-22	CT-029
	2. Length (mm)	45.00	504.20	70.09	265.50	719.55	65.65	39.80	70.00	25.02	1773.00
	3. Weight (gr)	7.15	19.52	4.43	60.60	171.80	14.40	2.44	1.56	3.60	125.52
98C-2	1. No	A-6	24	29	PX-33	PX-14	PX-33	24		A-25	CT-027
	2. Length (mm)	45.00	504.15	70.08	265.50	719.50	65.80	39.80	70.00	25.04	1773.02
	3. Weight (gr)	7.12	19.53	4.43	60.90	172.80	15.10	2.46	1.56	3.60	125.30
98C-3	1. No	A-5	25	30	PX-33	PX-14	PX-33	25		A-46	CT-028
	2. Length (mm)	45.00	504.20	70.08	265.85	720.70	65.55	39.70	70.00	25.03	1773.06
	3. Weight (gr)	7.12	19.48	4.42	61.30	172.60	15.10	2.46	1.56	3.60	125.41

Table 4-2-1 Diameter of fuel pin





Tabel 4-2-1-(1)

Pin No			84 K-1						(mm)		
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.494	6.499	49	6.497	6.498	97	6.498	6.497	145	6.497	6.496
2	6.496	6.497	50	6.496	6.498	98	6.497	6.499	146	6.495	6.496
3	6.494	6.498	51	6.494	6.496	99	6.498	6.498	147	6.497	6.496
4	6.495	6.498	52	6.496	6.497	100	6.498	6.496	148	6.497	6.497
5	6.497	6.497	53	6.497	6.497	101	6.496	6.497	149	6.496	6.498
6	6.496	6.498	54	6.496	6.497	102	6.497	6.497	150	6.497	6.495
7	6.495	6.498	55	6.498	6.498	103	6.497	6.496	151	6.497	6.498
8	6.496	6.496	56	6.498	6.498	104	6.498	6.498	152	6.497	6.497
9	6.495	6.496	57	6.497	6.497	105	6.498	6.500	153	6.497	6.496
10	6.495	6.497	58	6.498	6.497	106	6.499	6.497	154	6.498	6.497
11	6.495	6.495	59	6.498	6.497	107	6.498	6.497	155	6.497	6.497
12	6.495	6.496	60	6.496	6.496	108	6.497	6.498	156	6.496	6.494
13	6.494	6.497	61	6.497	6.497	109	6.498	6.497	157	6.496	6.495
14	6.495	6.496	62	6.498	6.498	110	6.498	6.497	158	6.494	6.495
15	6.496	6.497	63	6.497	6.496	111	6.497	6.498	159	6.495	6.495
16	6.496	6.497	64	6.495	6.497	112	6.497	6.497	160	6.496	6.497
17	6.496	6.496	65	6.497	6.499	113	6.497	6.496	161	6.495	6.497
18	6.497	6.497	66	6.498	6.498	114	6.496	6.497	162	6.495	6.495
19	6.495	6.498	67	6.498	6.498	115	6.496	6.496	163	6.496	6.495
20	6.496	6.497	68	6.498	6.499	116	6.498	6.497	164	6.496	6.495
21	6.496	6.496	69	6.498	6.498	117	6.498	6.499	165	6.495	6.494
22	6.495	6.498	70	6.497	6.497	118	6.498	6.498	166	6.496	6.496
23	6.495	6.497	71	6.497	6.497	119	6.499	6.496	167	6.497	6.496
24	6.497	6.497	72	6.497	6.497	120	6.498	6.498	168	6.495	6.495
25	6.495	6.498	73	6.497	6.497	121	6.496	6.496	169	6.495	6.496
26	6.495	6.496	74	6.498	6.498	122	6.497	6.496	170	6.496	6.495
27	6.496	6.495	75	6.498	6.497	123	6.497	6.497	171	6.494	6.494
28	6.496	6.497	76	6.497	6.496	124	6.496	6.497	172	6.494	6.495
29	6.495	6.497	77	6.497	6.498	125	6.496	6.495			
30	6.497	6.496	78	6.498	6.497	126	6.497	6.497			
31	6.496	6.498	79	6.497	6.497	127	6.497	6.497			
32	6.494	6.496	80	6.498	6.500	128	6.497	6.496			
33	6.496	6.497	81	6.498	6.498	129	6.497	6.498			
34	6.496	6.499	82	6.497	6.497	130	6.498	6.498			
35	6.495	6.498	83	6.497	6.499	131	6.498	6.496			
36	6.497	6.497	84	6.498	6.498	132	6.498	6.496			
37	6.497	6.499	85	6.497	6.498	133	6.496	6.497			
38	6.496	6.497	86	6.497	6.500	134	6.496	6.495			
39	6.495	6.496	87	6.500	6.499	135	6.497	6.496			
40	6.496	6.498	88	6.498	6.497	136	6.496	6.497			
41	6.496	6.498	89	6.496	6.497	137	6.496	6.496			
42	6.496	6.499	90	6.498	6.498	138	6.497	6.496			
43	6.498	6.499	91	6.499	6.497	139	6.496	6.497			
44	6.497	6.499	92	6.498	6.499	140	6.496	6.496			
45	6.497	6.497	93	6.498	6.499	141	6.497	6.496			
46	6.496	6.498	94	6.499	6.499	142	6.497	6.497			
47	6.497	6.498	95	6.498	6.498	143	6.496	6.495			
48	6.496	6.497	96	6.496	6.498	144	6.496	6.495			

Tabel 4-2-1-(2)

Pin		84 K-2 (mm)										
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.494	6.497	49	6.496	6.496	97	6.497	6.497	145	6.497	6.495	
2	6.496	6.496	50	6.498	6.496	98	6.497	6.495	146	6.496	6.497	
3	6.497	6.496	51	6.495	6.496	99	6.499	6.495	147	6.497	6.496	
4	6.497	6.495	52	6.496	6.495	100	6.497	6.496	148	6.496	6.495	
5	6.496	6.497	53	6.497	6.495	101	6.498	6.495	149	6.496	6.496	
6	6.495	6.495	54	6.496	6.496	102	6.499	6.496	150	6.497	6.498	
7	6.497	6.494	55	6.496	6.495	103	6.496	6.497	151	6.497	6.496	
8	6.496	6.495	56	6.497	6.495	104	6.496	6.495	152	6.495	6.497	
9	6.497	6.496	57	6.506	6.496	105	6.496	6.494	153	6.496	6.496	
10	6.499	6.495	58	6.496	6.496	106	6.495	6.497	154	6.497	6.496	
11	6.498	6.497	59	6.498	6.496	107	6.496	6.496	155	6.495	6.497	
12	6.497	6.497	60	6.496	6.498	108	6.500	6.497	156	6.496	6.495	
13	6.498	6.495	61	6.495	6.497	109	6.496	6.498	157	6.497	6.496	
14	6.497	6.496	62	6.497	6.495	110	6.496	6.497	158	6.496	6.498	
15	6.497	6.497	63	6.495	6.496	111	6.497	6.496	159	6.497	6.497	
16	6.498	6.495	64	6.496	6.495	112	6.495	6.497	160	6.497	6.495	
17	6.497	6.495	65	6.497	6.495	113	6.496	6.495	161	6.495	6.496	
18	6.496	6.497	66	6.495	6.496	114	6.497	6.496	162	6.494	6.495	
19	6.497	6.495	67	6.495	6.496	115	6.496	6.497	163	6.497	6.495	
20	6.496	6.495	68	6.496	6.494	116	6.496	6.495	164	6.495	6.496	
21	6.495	6.497	69	6.496	6.495	117	6.495	6.494	165	6.495	6.495	
22	6.497	6.496	70	6.495	6.495	118	6.495	6.494	166	6.496	6.495	
23	6.497	6.496	71	6.498	6.495	119	6.496	6.494	167	6.495	6.496	
24	6.496	6.498	72	6.497	6.496	120	6.496	6.494	168	6.495	6.496	
25	6.498	6.496	73	6.495	6.496	121	6.496	6.496	169	6.496	6.495	
26	6.496	6.495	74	6.497	6.494	122	6.496	6.496	170	6.495	6.497	
27	6.496	6.497	75	6.496	6.495	123	6.498	6.494	171	6.496	6.497	
28	6.498	6.495	76	6.495	6.495	124	6.496	6.496	172	6.496	6.494	
29	6.497	6.495	77	6.497	6.495	125	6.496	6.495				
30	6.496	6.496	78	6.496	6.496	126	6.498	6.495				
31	6.497	6.495	79	6.495	6.496	127	6.496	6.496				
32	6.497	6.495	80	6.496	6.494	128	6.496	6.496				
33	6.496	6.497	81	6.496	6.495	129	6.498	6.495				
34	6.498	6.496	82	6.495	6.496	130	6.496	6.496				
35	6.498	6.496	83	6.497	6.495	131	6.495	6.495				
36	6.496	6.497	84	6.496	6.496	132	6.497	6.495				
37	6.498	6.496	85	6.495	6.497	133	6.496	6.496				
38	6.497	6.495	86	6.496	6.495	134	6.496	6.497				
39	6.496	6.497	87	6.496	6.495	135	6.497	6.495				
40	6.498	6.496	88	6.495	6.496	136	6.495	6.495				
41	6.497	6.495	89	6.497	6.494	137	6.494	6.496				
42	6.496	6.497	90	6.496	6.499	138	6.496	6.495				
43	6.496	6.496	91	6.495	6.496	139	6.495	6.497				
44	6.497	6.495	92	6.496	6.496	140	6.495	6.498				
45	6.496	6.496	93	6.495	6.498	141	6.496	6.494				
46	6.497	6.496	94	6.495	6.498	142	6.496	6.495				
47	6.498	6.496	95	6.496	6.495	143	6.494	6.495				
48	6.496	6.497	96	6.497	6.495	144	6.499	6.496				

Tabel 4-2-1-(3)

Pin Na		84 K-3									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.511	6.509	49	6.509	6.511	97	6.511	6.510	145	6.509	6.511	
2	6.510	6.510	50	6.510	6.510	98	6.509	6.512	146	6.510	6.510	
3	6.511	6.511	51	6.511	6.510	99	6.510	6.511	147	6.510	6.509	
4	6.512	6.510	52	6.510	6.512	100	6.512	6.510	148	6.509	6.510	
5	6.511	6.511	53	6.516	6.511	101	6.511	6.512	149	6.509	6.511	
6	6.511	6.511	54	6.512	6.511	102	6.511	6.511	150	6.510	6.509	
7	6.511	6.509	55	6.509	6.512	103	6.512	6.510	151	6.509	6.511	
8	6.510	6.511	56	6.512	6.510	104	6.510	6.512	152	6.510	6.510	
9	6.510	6.512	57	6.510	6.511	105	6.509	6.511	153	6.511	6.510	
10	6.511	6.510	58	6.509	6.511	106	6.509	6.509	154	6.509	6.511	
11	6.510	6.512	59	6.511	6.510	107	6.510	6.511	155	6.509	6.510	
12	6.509	6.512	60	6.511	6.511	108	6.508	6.511	156	6.510	6.508	
13	6.511	6.511	61	6.509	6.511	109	6.510	6.509	157	6.508	6.510	
14	6.510	6.511	62	6.508	6.510	110	6.510	6.510	158	6.509	6.509	
15	6.510	6.512	63	6.511	6.509	111	6.509	6.510	159	6.509	6.509	
16	6.512	6.512	64	6.510	6.511	112	6.509	6.509	160	6.508	6.510	
17	6.511	6.511	65	6.510	6.510	113	6.509	6.510	161	6.507	6.510	
18	6.509	6.512	66	6.512	6.509	114	6.509	6.511	162	6.509	6.509	
19	6.511	6.511	67	6.510	6.511	115	6.510	6.510	163	6.509	6.510	
20	6.510	6.511	68	6.509	6.510	116	6.510	6.510	164	6.509	6.511	
21	6.510	6.512	69	6.510	6.508	117	6.508	6.511	165	6.510	6.509	
22	6.511	6.511	70	6.509	6.511	118	6.509	6.509	166	6.510	6.509	
23	6.511	6.509	71	6.509	6.510	119	6.510	6.509	167	6.509	6.510	
24	6.509	6.511	72	6.510	6.509	120	6.509	6.511	168	6.510	6.509	
25	6.510	6.510	73	6.510	6.511	121	6.510	6.510	169	6.508	6.510	
26	6.511	6.510	74	6.508	6.510	122	6.511	6.510	170	6.510	6.510	
27	6.510	6.512	75	6.510	6.510	123	6.509	6.511	171	6.510	6.508	
28	6.511	6.513	76	6.510	6.511	124	6.509	6.509	172	6.508	6.508	
29	6.513	6.511	77	6.509	6.511	125	6.510	6.510				
30	6.510	6.512	78	6.511	6.511	126	6.509	6.511				
31	6.511	6.511	79	6.511	6.512	127	6.510	6.510				
32	6.511	6.510	80	6.509	6.511	128	6.511	6.510				
33	6.515	6.512	81	6.510	6.510	129	6.510	6.510				
34	6.511	6.511	82	6.510	6.510	130	6.509	6.510				
35	6.512	6.511	83	6.509	6.511	131	6.510	6.509				
36	6.509	6.512	84	6.510	6.510	132	6.509	6.511				
37	6.510	6.511	85	6.511	6.510	133	6.509	6.510				
38	6.511	6.510	86	6.509	6.511	134	6.510	6.508				
39	6.510	6.511	87	6.509	6.509	135	6.509	6.510				
40	6.510	6.512	88	6.511	6.510	136	6.508	6.510				
41	6.512	6.511	89	6.509	6.512	137	6.509	6.509				
42	6.511	6.512	90	6.510	6.511	138	6.509	6.510				
43	6.510	6.512	91	6.511	6.510	139	6.509	6.511				
44	6.511	6.509	92	6.510	6.512	140	6.510	6.510				
45	6.513	6.511	93	6.510	6.510	141	6.510	6.512				
46	6.509	6.513	94	6.510	6.510	142	6.510	6.513				
47	6.511	6.510	95	6.508	6.511	143	6.511	6.510				
48	6.510	6.511	96	6.509	6.511	144	6.510	6.510				

Tabel 4-2-1-(4)

Pin No		8 4 S - 1									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.502	6.496	49	6.497	6.496	97	6.494	6.497	145	6.496	6.495	
2	6.497	6.495	50	6.497	6.497	98	6.495	6.498	146	6.495	6.496	
3	6.497	6.495	51	6.496	6.495	99	6.498	6.497	147	6.495	6.496	
4	6.500	6.496	52	6.495	6.495	100	6.494	6.497	148	6.495	6.496	
5	6.498	6.496	53	6.496	6.496	101	6.494	6.496	149	6.495	6.496	
6	6.498	6.495	54	6.496	6.495	102	6.495	6.497	150	6.495	6.495	
7	6.498	6.495	55	6.496	6.496	103	6.495	6.498	151	6.494	6.495	
8	6.495	6.495	56	6.496	6.495	104	6.495	6.498	152	6.495	6.496	
9	6.496	6.495	57	6.496	6.495	105	6.494	6.497	153	6.496	6.495	
10	6.497	6.496	58	6.496	6.495	106	6.494	6.497	154	6.494	6.495	
11	6.497	6.495	59	6.497	6.496	107	6.497	6.497	155	6.495	6.495	
12	6.496	6.494	60	6.496	6.496	108	6.495	6.498	156	6.495	6.496	
13	6.496	6.494	61	6.495	6.495	119	6.495	6.498	157	6.495	6.496	
14	6.496	6.495	62	6.495	6.494	110	6.494	6.498	158	6.495	6.496	
15	6.496	6.495	63	6.496	6.495	111	6.494	6.496	159	6.494	6.496	
16	6.498	6.495	64	6.496	6.497	112	6.494	6.497	160	6.494	6.495	
17	6.499	6.495	65	6.496	6.497	113	6.495	6.498	161	6.494	6.495	
18	6.495	6.494	66	6.495	6.496	114	6.494	6.497	162	6.496	6.495	
19	6.497	6.495	67	6.495	6.496	115	6.494	6.497	163	6.494	6.495	
20	6.497	6.495	68	6.496	6.496	116	6.494	6.496	164	6.494	6.495	
21	6.496	6.495	69	6.496	6.496	117	6.494	6.496	165	6.494	6.495	
22	6.496	6.494	70	6.496	6.496	118	6.494	6.497	166	6.495	6.496	
23	6.497	6.494	71	6.495	6.495	119	6.494	6.496	167	6.496	6.496	
24	6.496	6.495	72	6.495	6.495	120	6.494	6.496	168	6.495	6.496	
25	6.498	6.496	73	6.496	6.496	121	6.494	6.496	169	6.494	6.495	
26	6.497	6.496	74	6.496	6.496	122	6.494	6.496	170	6.494	6.495	
27	6.496	6.495	75	6.495	6.496	123	6.494	6.496	171	6.494	6.497	
28	6.496	6.494	76	6.495	6.496	124	6.494	6.496	172	6.496	6.497	
29	6.497	6.495	77	6.495	6.495	125	6.493	6.496				
30	6.497	6.495	78	6.496	6.496	126	6.494	6.496				
31	6.496	6.496	79	6.495	6.497	127	6.495	6.496				
32	6.495	6.495	80	6.496	6.496	128	6.495	6.496				
33	6.496	6.494	81	6.495	6.497	129	6.494	6.496				
34	6.496	6.495	82	6.495	6.496	130	6.494	6.496				
35	6.496	6.496	83	6.496	6.497	131	6.494	6.495				
36	6.497	6.495	84	6.496	6.497	132	6.494	6.496				
37	6.495	6.494	85	6.495	6.498	133	6.495	6.496				
38	6.496	6.495	86	6.495	6.498	134	6.494	6.495				
39	6.497	6.495	87	6.495	6.497	135	6.494	6.495				
40	6.497	6.497	88	6.496	6.498	136	6.494	6.495				
41	6.495	6.495	89	6.496	6.498	137	6.494	6.495				
42	6.496	6.495	90	6.495	6.497	138	6.495	6.495				
43	6.496	6.495	91	6.495	6.497	139	6.494	6.495				
44	6.498	6.495	92	6.495	6.497	140	6.494	6.495				
45	6.497	6.496	93	6.495	6.498	141	6.493	6.496				
46	6.496	6.495	94	6.496	6.498	142	6.494	6.496				
47	6.496	6.495	95	6.497	6.497	143	6.495	6.496				
48	6.496	6.495	96	6.494	6.497	144	6.495	6.495				

Tabel 4-2-1-(5)

Pin No		8 4 S - 2									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.493	6.494	49	6.493	6.492	97	6.493	6.492	145	6.494	6.492	
2	6.495	6.493	50	6.493	6.492	98	6.493	6.492	146	6.494	6.492	
3	6.495	6.493	51	6.494	6.493	99	6.493	6.492	147	6.493	6.492	
4	6.494	6.492	52	6.493	6.492	100	6.494	6.493	148	6.494	6.492	
5	6.494	6.492	53	6.493	6.492	101	6.494	6.493	149	6.494	6.493	
6	6.495	6.493	54	6.493	6.492	102	6.494	6.493	150	6.494	6.493	
7	6.494	6.493	55	6.493	6.493	103	6.493	6.492	151	6.494	6.491	
8	6.495	6.492	56	6.493	6.493	104	6.493	6.493	152	6.493	6.492	
9	6.492	6.491	57	6.494	6.493	105	6.494	6.492	153	6.493	6.492	
10	6.492	6.492	58	6.493	6.492	106	6.494	6.493	154	6.494	6.493	
11	6.494	6.493	59	6.493	6.492	107	6.494	6.492	155	6.494	6.492	
12	6.494	6.493	60	6.494	6.493	108	6.495	6.492	156	6.494	6.492	
13	6.493	6.493	61	6.494	6.492	109	6.492	6.493	157	6.494	6.492	
14	6.492	6.492	62	6.494	6.492	110	6.494	6.493	158	6.494	6.492	
15	6.492	6.492	63	6.493	6.492	111	6.495	6.493	169	6.495	6.493	
16	6.493	6.493	64	6.493	6.497	112	6.494	6.491	160	6.495	6.493	
17	6.493	6.493	65	6.494	6.493	113	6.494	6.492	161	6.494	6.492	
18	6.492	6.493	66	6.494	6.492	114	6.494	6.493	162	6.494	6.493	
19	6.492	6.492	67	6.493	6.492	115	6.494	6.493	163	6.494	6.493	
20	6.493	6.492	68	6.493	6.491	116	6.494	6.492	164	6.494	6.493	
21	6.494	6.493	69	6.493	6.492	117	6.493	6.491	165	6.494	6.492	
22	6.494	6.494	70	6.493	6.492	118	6.493	6.492	166	6.494	6.492	
23	6.493	6.492	71	6.494	6.493	119	6.493	6.493	167	6.493	6.493	
24	6.492	6.492	72	6.493	6.492	120	6.493	6.494	168	6.493	6.493	
25	6.493	6.493	73	6.493	6.492	121	6.494	6.492	169	6.495	6.493	
26	6.494	6.493	74	6.494	6.492	122	6.493	6.492	170	6.494	6.492	
27	6.493	6.493	75	6.494	6.493	123	6.493	6.492	171	6.494	6.493	
28	6.492	6.492	76	6.494	6.492	124	6.493	6.493	172	6.494	6.492	
29	6.492	6.492	77	6.494	6.492	125	6.494	6.493				
30	6.493	6.492	78	6.493	6.492	126	6.494	6.492				
31	6.493	6.493	79	6.493	6.493	127	6.493	6.491				
32	6.493	6.493	80	6.494	6.493	128	6.493	6.492				
33	6.493	6.492	81	6.494	6.493	129	6.494	6.493				
34	6.493	6.492	82	6.494	6.493	130	6.494	6.493				
35	6.493	6.492	83	6.494	6.492	131	6.494	6.493				
36	6.493	6.493	84	6.494	6.492	132	6.493	6.492				
37	6.494	6.493	85	6.494	6.493	133	6.493	6.492				
38	6.493	6.492	86	6.495	6.493	134	6.493	6.492				
39	6.493	6.493	87	6.494	6.492	135	6.493	6.493				
40	6.496	6.492	88	6.494	6.492	136	6.494	6.492				
41	6.494	6.493	89	6.494	6.492	137	6.493	6.492				
42	6.494	6.493	90	6.494	6.493	138	6.494	6.493				
43	6.493	6.492	91	6.494	6.493	139	6.493	6.493				
44	6.493	6.492	92	6.494	6.492	140	6.494	6.493				
45	6.493	6.492	93	6.493	6.492	141	6.494	6.492				
46	6.494	6.493	94	6.494	6.493	142	6.493	6.492				
47	6.493	6.493	95	6.494	6.492	143	6.493	6.493				
48	6.493	6.492	96	6.493	6.493	144	6.493	6.493				

Tabel 4-2-1-(6)

Pin No		88 K-1 (mm)									
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.507	6.502	49	6.507	6.505	97	6.506	6.506	145	6.508	6.503
2	6.506	6.505	50	6.505	6.505	98	6.507	6.505	146	6.506	6.504
3	6.507	6.505	51	6.504	6.506	99	6.506	6.505	147	6.507	6.504
4	6.506	6.506	52	6.507	6.505	100	6.504	6.506	148	6.509	6.504
5	6.506	6.506	53	6.507	6.506	101	6.505	6.504	149	6.506	6.504
6	6.507	6.505	54	6.507	6.507	102	6.506	6.505	150	6.506	6.502
7	6.505	6.505	55	6.508	6.506	103	6.506	6.507	151	6.506	6.503
8	6.505	6.506	56	6.507	6.506	104	6.507	6.506	152	6.505	6.503
9	6.507	6.506	57	6.506	6.506	105	6.507	6.506	153	6.505	6.503
10	6.506	6.506	58	6.507	6.505	106	6.505	6.506	154	6.507	6.504
11	6.507	6.506	59	6.506	6.506	107	6.506	6.505	155	6.506	6.504
12	6.507	6.506	60	6.506	6.506	108	6.506	6.505	156	6.504	6.503
13	6.506	6.507	61	6.506	6.506	109	6.505	6.505	157	6.505	6.503
14	6.506	6.507	62	6.507	6.505	110	6.505	6.504	158	6.504	6.504
15	6.508	6.506	63	6.505	6.505	111	6.506	6.503	159	6.504	6.503
16	6.506	6.506	64	6.507	6.504	112	6.505	6.505	160	6.505	6.503
17	6.507	6.508	65	6.508	6.505	113	6.504	6.503	161	6.505	6.505
18	6.507	6.507	66	6.506	6.507	114	6.505	6.503	162	6.503	6.503
19	6.506	6.506	67	6.507	6.505	115	6.505	6.505	163	6.503	6.502
20	6.506	6.507	68	6.508	6.505	116	6.506	6.505	164	6.505	6.504
21	6.507	6.506	69	6.505	6.506	117	6.506	6.504	165	6.504	6.503
22	6.506	6.505	70	6.505	6.504	118	6.505	6.505	166	6.505	6.503
23	6.507	6.507	71	6.505	6.504	119	6.506	6.504	167	6.506	6.505
24	6.507	6.506	72	6.504	6.506	120	6.508	6.504	168	6.505	6.503
25	6.505	6.505	73	6.505	6.505	121	6.505	6.505	169	6.505	6.501
26	6.505	6.506	74	6.507	6.504	122	6.505	6.504	170	6.506	6.503
27	6.508	6.506	75	6.505	6.506	123	6.506	6.504	171	6.504	6.503
28	6.507	6.505	76	6.505	6.506	124	6.506	6.505	172	6.503	6.502
29	6.506	6.506	77	6.506	6.505	125	6.505	6.505			
30	6.508	6.507	78	6.506	6.507	126	6.506	6.504			
31	6.508	6.505	79	6.506	6.507	127	6.506	6.505			
32	6.506	6.506	80	6.507	6.505	128	6.505	6.505			
33	6.508	6.506	81	6.505	6.507	129	6.508	6.505			
34	6.507	6.506	82	6.505	6.505	130	6.506	6.504			
35	6.507	6.507	83	6.506	6.505	131	6.505	6.504			
36	6.507	6.507	84	6.505	6.507	132	6.505	6.504			
37	6.508	6.505	85	6.505	6.505	133	6.505	6.504			
38	6.505	6.506	86	6.506	6.504	134	6.507	6.504			
39	6.505	6.506	87	6.505	6.505	135	6.505	6.503			
40	6.507	6.505	88	6.505	6.505	136	6.506	6.505			
41	6.506	6.507	89	6.506	6.504	137	6.505	6.505			
42	6.506	6.508	90	6.506	6.506	138	6.505	6.504			
43	6.507	6.506	91	6.506	6.506	139	6.506	6.505			
44	6.506	6.507	92	6.508	6.505	140	6.506	6.505			
45	6.505	6.508	93	6.506	6.506	141	6.505	6.505			
46	6.507	6.506	94	6.506	6.505	142	6.507	6.504			
47	6.506	6.506	95	6.507	6.504	143	6.504	6.504			
48	6.505	6.506	96	6.506	6.506	144	6.505	6.504			

Tabel 4-2-1-(7)

Pin No			88 K-2						(mm)		
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.500	6.499	49	6.500	6.500	97	6.500	6.502	145	6.500	6.501
2	6.501	6.499	50	6.498	6.503	98	6.498	6.502	146	6.501	6.500
3	6.499	6.500	51	6.499	6.500	99	6.500	6.502	147	6.501	6.502
4	6.499	6.501	52	6.500	6.500	100	6.501	6.502	148	6.500	6.501
5	6.501	6.499	53	6.498	6.502	101	6.500	6.501	149	6.503	6.501
6	6.500	6.500	54	6.501	6.501	102	6.501	6.501	150	6.501	6.502
7	6.499	6.500	55	6.500	6.502	103	6.499	6.503	151	6.501	6.500
8	6.499	6.498	56	6.499	6.503	104	6.498	6.501	152	6.502	6.501
9	6.498	6.501	57	6.500	6.500	105	6.501	6.501	153	6.500	6.502
10	6.499	6.500	58	6.499	6.501	106	6.501	6.503	154	6.501	6.500
11	6.501	6.498	59	6.499	6.502	107	6.499	6.502	155	6.501	6.501
12	6.500	6.501	60	6.501	6.409	108	6.502	6.501	156	6.500	6.502
13	6.499	6.500	61	6.502	6.500	109	6.499	6.503	157	6.500	6.500
14	6.500	6.500	62	6.498	6.501	110	6.499	6.502	158	6.500	6.501
15	6.497	6.501	63	6.500	6.503	111	6.501	6.502	159	6.500	6.502
16	6.499	6.500	64	6.501	6.501	112	6.501	6.502	160	6.502	6.500
17	6.500	6.500	65	6.500	6.502	113	6.499	6.501	161	6.500	6.501
18	6.498	6.502	66	6.499	6.500	114	6.501	6.501	162	6.500	6.502
19	6.500	6.499	67	6.499	6.409	115	6.499	6.503	163	6.499	6.501
20	6.499	6.500	68	6.501	6.502	116	6.499	6.501	164	6.501	6.502
21	6.497	6.501	69	6.498	6.500	117	6.501	6.501	165	6.500	6.502
22	6.499	6.500	70	6.500	6.500	118	6.500	6.503	166	6.502	6.499
23	6.501	6.499	71	6.500	6.501	119	6.500	6.501	167	6.500	6.499
24	6.497	6.503	72	6.499	6.501	120	6.501	6.502	168	6.500	6.502
25	6.499	6.501	73	6.501	6.500	121	6.499	6.502	169	6.501	6.499
26	6.499	6.500	74	6.500	6.502	122	6.499	6.500	170	6.499	6.499
27	6.497	6.501	75	6.500	6.502	123	6.499	6.501	171	6.499	6.501
28	6.500	6.500	76	6.501	6.501	124	6.499	6.502	172	6.503	6.503
29	6.500	6.500	77	6.500	6.502	125	6.501	6.502			
30	6.499	6.501	78	6.499	6.500	126	6.499	6.502			
31	6.500	6.501	79	6.501	6.500	127	6.499	6.502			
32	6.498	6.501	80	6.500	6.503	128	6.501	6.501			
33	6.498	6.500	81	6.498	6.500	129	6.500	6.502			
34	6.500	6.499	82	6.502	6.500	130	6.498	6.503			
35	6.500	6.501	83	6.502	6.502	131	6.501	6.501			
36	6.499	6.501	84	6.500	6.500	132	6.500	6.502			
37	6.501	6.500	85	6.501	6.501	133	6.499	6.502			
38	6.500	6.501	86	6.500	6.503	134	6.502	6.501			
39	6.498	6.500	87	6.501	6.501	135	6.501	6.502			
40	6.500	6.499	88	6.501	6.501	136	6.500	6.501			
41	6.499	6.503	89	6.499	6.502	137	6.501	6.501			
42	6.500	6.501	90	6.500	6.500	138	6.501	6.502			
43	6.501	6.500	91	6.500	6.501	139	6.500	6.501			
44	6.500	6.501	92	6.498	6.503	140	6.504	6.500			
45	6.500	6.500	93	6.499	6.501	141	6.503	6.503			
46	6.499	6.501	94	6.500	6.501	142	6.499	6.502			
47	6.498	6.502	95	6.498	6.502	143	6.503	6.500			
48	6.499	6.501	96	6.499	6.500	144	6.501	6.502			

Tabel 4-2-1-(8)

Pin No		8 8 K-3									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.499	6.496	49	6.498	6.496	97	6.497	6.496	145	6.496	6.496	
2	6.497	6.498	50	6.497	6.498	98	6.498	6.496	146	6.497	6.496	
3	6.497	6.496	51	6.497	6.499	99	6.497	6.495	147	6.497	6.496	
4	6.496	6.501	52	6.499	6.497	100	6.497	6.496	148	6.497	6.496	
5	6.497	6.498	53	6.497	6.497	101	6.498	6.497	149	6.498	6.496	
6	6.498	6.496	54	6.497	6.497	102	6.498	6.496	150	6.495	6.497	
7	6.498	6.497	55	6.498	6.497	103	6.496	6.496	151	6.498	6.497	
8	6.499	6.498	56	6.498	6.497	104	6.497	6.497	152	6.497	6.497	
9	6.499	6.498	57	6.498	6.498	105	6.497	6.496	153	6.496	6.498	
10	6.499	6.497	58	6.499	6.497	106	6.497	6.497	154	6.497	6.496	
11	6.498	6.498	59	6.497	6.496	107	6.497	6.497	155	6.497	6.497	
12	6.499	6.497	60	6.497	6.498	108	6.498	6.496	156	6.496	6.497	
13	6.498	6.498	61	6.498	6.497	109	6.497	6.496	157	6.497	6.496	
14	6.498	6.499	62	6.497	6.498	110	6.498	6.497	158	6.498	6.495	
15	6.499	6.497	63	6.496	6.499	111	6.497	6.496	159	6.495	6.496	
16	6.497	6.496	64	6.498	6.498	112	6.496	6.495	160	6.496	6.496	
17	6.497	6.498	65	6.497	6.500	113	6.497	6.498	161	6.498	6.495	
18	6.498	6.497	66	6.496	6.498	114	6.497	6.497	162	6.497	6.497	
19	6.498	6.497	67	6.497	6.497	115	6.495	6.496	163	6.495	6.497	
20	6.498	6.499	68	6.498	6.497	116	6.495	6.497	164	6.497	6.495	
21	6.498	6.498	69	6.497	6.501	117	6.497	6.497	165	6.498	6.496	
22	6.498	6.497	70	6.499	6.497	118	6.496	6.496	166	6.496	6.501	
23	6.497	6.498	71	6.498	6.496	119	6.497	6.498	167	6.501	6.496	
24	6.498	6.497	72	6.497	6.496	120	6.498	6.497	168	6.497	6.497	
25	6.498	6.497	73	6.497	6.497	121	6.496	6.496	169	6.496	6.497	
26	6.497	6.499	74	6.497	6.496	122	6.497	6.497	170	6.497	6.497	
27	6.498	6.498	75	6.497	6.497	123	6.497	6.496	171	6.496	6.496	
28	6.498	6.497	76	6.498	6.498	124	6.497	6.495	172	6.495	6.495	
29	6.496	6.498	77	6.498	6.498	125	6.497	6.498				
30	6.497	6.497	78	6.496	6.497	126	6.498	6.498				
31	6.498	6.497	79	6.497	6.498	127	6.496	6.496				
32	6.497	6.498	80	6.498	6.497	128	6.495	6.497				
33	6.498	6.497	81	6.498	6.497	129	6.497	6.497				
34	6.498	6.496	82	6.498	6.497	130	6.496	6.496				
35	6.497	6.498	83	6.498	6.496	131	6.497	6.497				
36	6.498	6.497	84	6.497	6.496	132	6.498	6.497				
37	6.498	6.497	85	6.496	6.497	133	6.496	6.497				
38	6.497	6.499	86	6.498	6.497	134	6.496	6.497				
39	6.500	6.498	87	6.496	6.497	135	6.497	6.497				
40	6.497	6.497	88	6.496	6.498	136	6.496	6.495				
41	6.497	6.498	89	6.497	6.498	137	6.496	6.496				
42	6.497	6.498	90	6.496	6.497	138	6.497	6.497				
43	6.498	6.496	91	6.497	6.497	139	6.496	6.496				
44	6.497	6.499	92	6.497	6.497	140	6.496	6.496				
45	6.498	6.498	93	6.497	6.496	141	6.496	6.497				
46	6.498	6.497	94	6.503	6.497	142	6.496	6.496				
47	6.497	6.497	95	6.499	6.497	143	6.498	6.496				
48	6.497	6.497	96	6.498	6.496	144	6.498	6.497				



Tabel 4-2-1-(9)

P i n		8 8 K - 4 (mm)									
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.504	6.497	49	6.499	6.498	97	6.497	6.497	145	6.499	6.497
2	6.502	6.499	50	6.498	6.497	98	6.498	6.496	146	6.498	6.496
3	6.503	6.497	51	6.497	6.499	99	6.497	6.495	147	6.498	6.497
4	6.503	6.497	52	6.498	6.496	100	6.497	6.497	148	6.498	6.497
5	6.501	6.499	53	6.499	6.497	101	6.498	6.496	149	6.497	6.497
6	6.502	6.499	54	6.498	6.496	102	6.498	6.495	150	6.498	6.497
7	6.501	6.497	55	6.500	6.497	103	6.498	6.497	151	6.498	6.496
8	6.500	6.499	56	6.501	6.498	104	6.500	6.496	152	6.497	6.495
9	6.501	6.498	57	6.499	6.496	105	6.499	6.497	153	6.498	6.497
10	6.501	6.497	58	6.500	6.496	106	6.497	6.498	154	6.500	6.497
11	6.500	6.498	59	6.500	6.497	107	6.498	6.497	155	6.498	6.496
12	6.501	6.498	60	6.498	6.495	108	6.498	6.497	156	6.496	6.496
13	6.501	6.496	61	6.500	6.496	109	6.498	6.497	157	6.498	6.497
14	6.499	6.496	62	6.500	6.497	110	6.499	6.497	158	6.497	6.495
15	6.499	6.497	63	6.498	6.496	111	6.498	6.496	159	6.497	6.496
16	6.499	6.497	64	6.498	6.495	112	6.498	6.497	160	6.498	6.496
17	6.500	6.497	65	6.498	6.496	113	6.499	6.497	161	6.498	6.496
18	6.500	6.500	66	6.498	6.496	114	6.497	6.496	162	6.498	6.497
19	6.498	6.498	67	6.499	6.495	115	6.499	6.497	163	6.498	6.497
20	6.499	6.498	68	6.499	6.497	116	6.500	6.497	164	6.497	6.495
21	6.498	6.498	69	6.497	6.496	117	6.499	6.497	165	6.497	6.496
22	6.498	6.497	70	6.498	6.495	118	6.499	6.498	166	6.499	6.497
23	6.499	6.496	71	6.499	6.496	119	6.499	6.498	167	6.499	6.496
24	6.499	6.499	72	6.498	6.497	120	6.499	6.496	168	6.498	6.496
25	6.498	6.497	73	6.499	6.495	121	6.499	6.497	169	6.499	6.497
26	6.498	6.496	74	6.499	6.496	122	6.499	6.498	170	6.498	6.496
27	6.500	6.497	75	6.498	6.497	123	6.498	6.496	171	6.498	6.495
28	6.498	6.497	76	6.497	6.495	124	6.499	6.497	172	6.499	6.496
29	6.499	6.497	77	6.498	6.496	125	6.499	6.498			
30	6.500	6.498	78	6.498	6.497	126	6.498	6.497			
31	6.499	6.498	79	6.498	6.496	127	6.498	6.495			
32	6.498	6.497	80	6.499	6.497	128	6.500	6.497			
33	6.499	6.498	81	6.498	6.498	129	6.498	6.497			
34	6.498	6.498	82	6.499	6.497	130	6.498	6.496			
35	6.499	6.497	83	6.497	6.496	131	6.498	6.497			
36	6.499	6.497	84	6.498	6.498	132	6.498	6.497			
37	6.498	6.497	85	6.499	6.496	133	6.499	6.496			
38	6.498	6.496	86	6.497	6.496	134	6.498	6.496			
39	6.499	6.496	87	6.497	6.497	135	6.497	6.496			
40	6.499	6.498	88	6.498	6.497	136	6.498	6.495			
41	6.499	6.497	89	6.497	6.495	137	6.497	6.496			
42	6.499	6.497	90	6.497	6.496	138	6.496	6.496			
43	6.500	6.499	91	6.497	6.497	139	6.498	6.495			
44	6.499	6.497	92	6.499	6.496	140	6.497	6.496			
45	6.497	6.496	93	6.498	6.498	141	6.500	6.498			
46	6.498	6.498	94	6.497	6.497	142	6.500	6.498			
47	6.498	6.497	95	6.498	6.496	143	6.498	6.498			
48	6.498	6.496	96	6.497	6.496	144	6.498	6.498			

Tabel 4-2-1-00

Pin No		88 S-1									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.496	6.495	49	6.496	6.494	97	6.496	6.496	145	6.497	6.497	
2	6.496	6.496	50	6.496	6.494	98	6.495	6.495	146	6.496	6.497	
3	6.495	6.495	51	6.496	6.494	99	6.496	6.495	147	6.496	6.496	
4	6.495	6.495	52	6.496	6.495	100	6.496	6.495	148	6.497	6.496	
5	6.494	6.494	53	6.496	6.495	101	6.497	6.496	149	6.496	6.497	
6	6.495	6.495	54	6.495	6.494	102	6.496	6.496	150	6.496	6.497	
7	6.495	6.495	55	6.496	6.495	103	6.496	6.495	151	6.496	6.497	
8	6.495	6.495	56	6.496	6.495	104	6.496	6.495	152	6.496	6.497	
9	6.494	6.494	57	6.496	6.495	105	6.496	6.496	153	6.495	6.496	
10	6.494	6.494	58	6.495	6.495	106	6.496	6.496	154	6.496	6.497	
11	6.495	6.494	59	6.495	6.494	107	6.496	6.496	155	6.496	6.497	
12	6.498	6.494	60	6.496	6.494	108	6.495	6.496	156	6.497	6.497	
13	6.494	6.494	61	6.497	6.495	109	6.496	6.496	157	6.496	6.497	
14	6.494	6.494	62	6.496	6.495	110	6.496	6.496	158	6.496	6.496	
15	6.494	6.494	63	6.496	6.495	111	6.495	6.497	159	6.496	6.496	
16	6.495	6.494	64	6.496	6.494	112	6.495	6.496	160	6.497	6.497	
17	6.495	6.495	65	6.496	6.495	113	6.496	6.495	161	6.497	6.497	
18	6.495	6.494	66	6.497	6.495	114	6.495	6.495	162	6.497	6.497	
19	6.495	6.495	67	6.497	6.496	115	6.496	6.496	163	6.497	6.495	
20	6.494	6.495	68	6.496	6.495	116	6.496	6.497	164	6.495	6.496	
21	6.496	6.496	69	6.496	6.495	117	6.496	6.496	165	6.496	6.496	
22	6.495	6.495	70	6.497	6.495	118	6.495	6.496	166	6.496	6.496	
23	6.496	6.495	71	6.497	6.496	119	6.496	6.495	167	6.497	6.496	
24	6.495	6.495	72	6.496	6.496	120	6.495	6.496	168	6.496	6.496	
25	6.496	6.494	73	6.495	6.496	121	6.496	6.496	169	6.496	6.497	
26	6.496	6.495	74	6.495	6.495	122	6.495	6.497	170	6.496	6.497	
27	6.496	6.495	75	6.499	6.495	123	6.495	6.496	171	6.496	6.497	
28	6.495	6.494	76	6.497	6.496	124	6.496	6.495	172	6.496	6.497	
29	6.495	6.494	77	6.497	6.496	125	6.496	6.496				
30	6.496	6.495	78	6.496	6.496	126	6.496	6.496				
31	6.496	6.495	79	6.496	6.494	127	6.496	6.496				
32	6.496	6.495	80	6.497	6.495	128	6.495	6.496				
33	6.495	6.494	81	6.496	6.496	129	6.495	6.496				
34	6.495	6.494	82	6.496	6.496	130	6.496	6.496				
35	6.497	6.494	83	6.496	6.496	131	6.496	6.496				
36	6.496	6.495	84	6.496	6.495	132	6.496	6.496				
37	6.496	6.495	85	6.497	6.495	133	6.496	6.496				
38	6.496	6.494	86	6.496	6.497	134	6.496	6.496				
39	6.495	6.494	87	6.496	6.495	135	6.496	6.497				
40	6.496	6.495	88	6.496	6.495	136	6.496	6.496				
41	6.496	6.495	89	6.495	6.495	137	6.495	6.497				
42	6.496	6.495	90	6.496	6.495	138	6.495	6.496				
43	6.495	6.495	91	6.497	6.496	139	6.496	6.497				
44	6.495	6.494	92	6.496	6.496	140	6.496	6.497				
45	6.496	6.495	93	6.496	6.496	141	6.496	6.497				
46	6.497	6.495	94	6.496	6.495	142	6.495	6.496				
47	6.496	6.495	95	6.497	6.495	143	6.496	6.496				
48	6.496	6.494	96	6.497	6.496	144	6.496	6.496				

Table 4-2-1-(II)

Pin No			88 S-2									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'		
1	6.498	6.492	49	6.495	6.494	97	6.495	6.494	145	6.495	6.495		
2	6.496	6.494	50	6.495	6.495	98	6.494	6.494	146	6.495	6.495		
3	6.494	6.494	51	6.496	6.495	99	6.495	6.494	147	6.495	6.494		
4	6.494	6.493	52	6.495	6.495	100	6.495	6.494	148	6.495	6.494		
5	6.494	6.494	53	6.495	6.494	101	6.495	6.494	149	6.495	6.495		
6	6.494	6.494	54	6.495	6.494	102	6.495	6.494	150	6.495	6.495		
7	6.495	6.494	55	6.495	6.495	103	6.495	6.494	151	6.495	6.494		
8	6.495	6.493	56	6.496	6.497	104	6.496	6.495	152	6.496	6.494		
9	6.495	6.494	57	6.495	6.494	105	6.496	6.495	153	6.495	6.495		
10	6.495	6.493	58	6.495	6.494	106	6.495	6.494	154	6.495	6.495		
11	6.495	6.494	59	6.495	6.494	107	6.494	6.494	155	6.495	6.494		
12	6.495	6.495	60	6.496	6.495	108	6.495	6.494	156	6.494	6.495		
13	6.494	6.494	61	6.497	6.495	109	6.495	6.494	157	6.495	6.495		
14	6.494	6.494	62	6.496	6.494	110	6.496	6.495	158	6.496	6.495		
15	6.495	6.494	63	6.495	6.494	111	6.494	6.495	159	6.496	6.495		
16	6.495	6.495	64	6.495	6.494	112	6.495	6.494	160	6.495	6.495		
17	6.495	6.495	65	6.496	6.494	113	6.495	6.494	161	6.495	6.494		
18	6.495	6.494	66	6.496	6.494	114	6.495	6.494	162	6.495	6.494		
19	6.495	6.494	67	6.495	6.494	115	6.495	6.495	163	6.496	6.494		
20	6.495	6.494	68	6.495	6.493	116	6.494	6.494	164	6.496	6.495		
21	6.496	6.495	69	6.496	6.493	117	6.495	6.494	165	6.495	6.494		
22	6.498	6.495	70	6.496	6.494	118	6.495	6.494	166	6.495	6.494		
23	6.496	6.494	71	6.496	6.494	119	6.496	6.495	167	6.495	6.495		
24	6.495	6.494	72	6.495	6.494	120	6.496	6.495	168	6.496	6.495		
25	6.494	6.494	73	6.495	6.494	121	6.496	6.495	169	6.495	6.495		
26	6.495	6.496	74	6.495	6.493	122	6.495	6.494	170	6.495	6.496		
27	6.495	6.495	75	6.496	6.494	123	6.496	6.494	171	6.495	6.495		
28	6.494	6.495	76	6.495	6.494	124	6.497	6.494	172	6.496	6.494		
29	6.494	6.494	77	6.495	6.493	125	6.496	6.495					
30	6.497	6.495	78	6.496	6.493	126	6.496	6.494					
31	6.495	6.495	79	6.495	6.494	127	6.495	6.494					
32	6.495	6.495	80	6.496	6.493	128	6.499	6.494					
33	6.494	6.495	81	6.495	6.495	129	6.496	6.495					
34	6.495	6.494	82	6.495	6.494	130	6.496	6.495					
35	6.494	6.495	83	6.494	6.493	131	6.495	6.494					
36	6.496	6.495	84	6.495	6.494	132	6.495	6.494					
37	6.495	6.495	85	6.496	6.494	133	6.495	6.495					
38	6.494	6.495	86	6.495	6.494	134	6.496	6.494					
39	6.495	6.494	87	6.495	6.493	135	6.495	6.495					
40	6.495	6.494	88	6.495	6.493	136	6.495	6.495					
41	6.496	6.495	89	6.495	6.494	137	6.495	6.494					
42	6.495	6.495	90	6.495	6.495	138	6.496	6.495					
43	6.495	6.495	91	6.495	6.494	139	6.497	6.495					
44	6.495	6.494	92	6.495	6.494	140	6.496	6.495					
45	6.495	6.494	93	6.495	6.494	141	6.495	6.495					
46	6.495	6.494	94	6.495	6.494	142	6.495	6.495					
47	6.496	6.494	95	6.496	6.494	143	6.495	6.495					
48	6.495	6.493	96	6.495	6.494	144	6.496	6.495					

Table 4-2-1-(2)

(9) --- S --- Welds T

Bin No			88-PS-3						Bin No		
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.494	6.498	49	6.497	6.497	97	6.496	6.497	145	6.496	6.496
2	6.496	6.496	50	6.497	6.496	98	6.497	6.497	146	6.495	6.497
3	6.495	6.497	51	6.496	6.496	99	6.497	6.497	147	6.496	6.498
4	6.497	6.496	52	6.496	6.496	100	6.496	6.497	148	6.496	6.497
5	6.496	6.497	53	6.497	6.497	101	6.496	6.496	149	6.495	6.496
6	6.496	6.496	54	6.497	6.501	102	6.497	6.497	150	6.495	6.496
7	6.496	6.495	55	6.497	6.497	103	6.497	6.497	151	6.496	6.497
8	6.496	6.495	56	6.496	6.496	104	6.496	6.497	152	6.497	6.497
9	6.496	6.496	57	6.496	6.496	105	6.496	6.496	153	6.496	6.497
10	6.496	6.496	58	6.498	6.497	106	6.496	6.496	154	6.496	6.496
11	6.496	6.496	59	6.497	6.496	107	6.496	6.497	155	6.496	6.497
12	6.496	6.495	60	6.496	6.496	108	6.497	6.497	156	6.498	6.497
13	6.496	6.496	61	6.496	6.495	109	6.496	6.497	157	6.500	6.497
14	6.497	6.496	62	6.496	6.496	110	6.496	6.496	158	6.497	6.497
15	6.497	6.496	63	6.497	6.496	111	6.496	6.497	159	6.496	6.497
16	6.496	6.496	64	6.497	6.497	112	6.497	6.498	160	6.496	6.499
17	6.496	6.496	65	6.496	6.496	113	6.497	6.498	161	6.497	6.500
18	6.497	6.496	66	6.499	6.496	114	6.497	6.497	162	6.496	6.498
19	6.496	6.496	67	6.496	6.496	115	6.496	6.496	163	6.497	6.498
20	6.497	6.496	68	6.496	6.496	116	6.496	6.497	164	6.496	6.498
21	6.496	6.496	69	6.497	6.497	117	6.498	6.497	165	6.495	6.498
22	6.495	6.496	70	6.497	6.497	118	6.496	6.497	166	6.495	6.498
23	6.496	6.499	71	6.495	6.496	119	6.497	6.496	167	6.495	6.497
24	6.498	6.497	72	6.496	6.496	120	6.495	6.497	168	6.495	6.497
25	6.497	6.496	73	6.497	6.497	121	6.496	6.497	169	6.494	6.497
26	6.497	6.496	74	6.497	6.498	122	6.497	6.497	170	6.494	6.498
27	6.496	6.496	75	6.497	6.496	123	6.497	6.498	171	6.496	6.499
28	6.497	6.496	76	6.496	6.496	124	6.496	6.497	172	6.496	6.498
29	6.497	6.497	77	6.495	6.497	125	6.495	6.497			
30	6.497	6.496	78	6.497	6.498	126	6.495	6.497			
31	6.496	6.497	79	6.496	6.497	127	6.496	6.497			
32	6.496	6.496	80	6.495	6.496	128	6.496	6.497			
33	6.497	6.496	81	6.495	6.497	129	6.495	6.496			
34	6.497	6.497	82	6.496	6.497	130	6.496	6.496			
35	6.497	6.497	83	6.497	6.497	131	6.497	6.497			
36	6.496	6.496	84	6.496	6.497	132	6.496	6.498			
37	6.496	6.495	85	6.496	6.496	133	6.497	6.497			
38	6.497	6.496	86	6.496	6.496	134	6.496	6.497			
39	6.497	6.496	87	6.496	6.496	135	6.495	6.496			
40	6.497	6.496	88	6.496	6.497	136	6.496	6.497			
41	6.496	6.496	89	6.496	6.497	137	6.497	6.497			
42	6.496	6.496	90	6.496	6.496	138	6.496	6.497			
43	6.497	6.496	91	6.496	6.496	139	6.497	6.497			
44	6.497	6.497	92	6.496	6.497	140	6.495	6.496			
45	6.496	6.496	93	6.497	6.498	141	6.496	6.500			
46	6.496	6.496	94	6.497	6.497	142	6.497	6.498			
47	6.495	6.496	95	6.496	6.496	143	6.498	6.497			
48	6.496	6.496	96	6.496	6.496	144	6.495	6.498			

Table 4-2-1-(13)

Pin No			8 8 S-4									(mm)
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.492	6.493	49	6.495	6.493	97	6.493	6.493	145	6.493	6.494	
2	6.493	6.493	50	6.495	6.493	98	6.493	6.493	146	6.493	6.494	
3	6.493	6.492	51	6.494	6.492	99	6.493	6.494	147	6.493	6.494	
4	6.494	6.493	52	6.494	6.493	100	6.493	6.493	148	6.493	6.494	
5	6.494	6.494	53	6.494	6.493	101	6.493	6.493	149	6.493	6.495	
6	6.494	6.493	54	6.495	6.493	102	6.493	6.494	150	6.493	6.494	
7	6.493	6.492	55	6.495	6.493	103	6.493	6.494	151	6.493	6.494	
8	6.495	6.494	56	6.494	6.492	104	6.493	6.493	152	6.494	6.494	
9	6.493	6.492	57	6.494	6.496	105	6.493	6.493	153	6.493	6.494	
10	6.494	6.492	58	6.494	6.493	106	6.493	6.493	154	6.493	6.494	
11	6.493	6.492	59	6.494	6.493	107	6.493	6.494	155	6.493	6.494	
12	6.493	6.492	60	6.494	6.493	108	6.493	6.494	156	6.493	6.494	
13	6.494	6.492	61	6.494	6.493	109	6.493	6.493	157	6.493	6.494	
14	6.494	6.492	62	6.494	6.493	110	6.493	6.493	158	6.493	6.494	
15	6.494	6.492	63	6.494	6.493	111	6.493	6.493	159	6.493	6.494	
16	6.493	6.492	64	6.494	6.493	112	6.493	6.493	160	6.493	6.495	
17	6.493	6.492	65	6.494	6.493	113	6.493	6.494	161	6.493	6.494	
18	6.494	6.492	66	6.493	6.493	114	6.493	6.493	162	6.493	6.494	
19	6.493	6.493	67	6.493	6.493	115	6.493	6.493	163	6.494	6.494	
20	6.494	6.492	68	6.493	6.493	116	6.493	6.493	164	6.493	6.496	
21	6.494	6.492	69	6.493	6.493	117	6.493	6.494	165	6.493	6.494	
22	6.494	6.492	70	6.494	6.493	118	6.493	6.493	166	6.493	6.494	
23	6.494	6.493	71	6.494	6.493	119	6.493	6.494	167	6.494	6.495	
24	6.494	6.493	72	6.494	6.493	120	6.493	6.493	168	6.493	6.494	
25	6.494	6.492	73	6.494	6.493	121	6.493	6.493	169	6.493	6.493	
26	6.493	6.492	74	6.493	6.493	122	6.493	6.494	170	6.493	6.495	
27	6.494	6.492	75	6.493	6.493	123	6.493	6.494	171	6.493	6.495	
28	6.494	6.493	76	6.493	6.492	124	6.493	6.494	172	6.494	6.494	
29	6.494	6.493	77	6.494	6.493	125	6.493	6.493				
30	6.494	6.493	78	6.494	6.494	126	6.493	6.493				
31	6.494	6.492	79	6.494	6.494	127	6.493	6.493				
32	6.493	6.492	80	6.493	6.494	128	6.494	6.494				
33	6.494	6.492	81	6.493	6.493	129	6.493	6.493				
34	6.493	6.492	82	6.493	6.493	130	6.493	6.493				
35	6.493	6.492	83	6.494	6.494	131	6.493	6.494				
36	6.494	6.492	84	6.494	6.494	132	6.493	6.494				
37	6.494	6.492	85	6.493	6.493	133	6.493	6.493				
38	*6.494	6.492	86	6.493	6.493	134	6.493	6.494				
39	6.494	6.493	87	6.493	6.493	135	6.492	6.493				
40	6.494	6.493	88	6.493	6.494	136	6.492	6.494				
41	6.493	6.493	89	6.493	6.493	137	6.493	6.494				
42	6.494	6.492	90	6.493	6.494	138	6.493	6.494				
43	6.494	6.496	91	6.493	6.493	139	6.493	6.493				
44	6.494	6.493	92	6.493	6.494	140	6.493	6.494				
45	6.495	6.494	93	6.493	6.494	141	6.493	6.494				
46	6.494	6.492	94	6.493	6.494	142	6.493	6.494				
47	6.494	6.492	95	6.493	6.493	143	6.493	6.494				
48	6.495	6.493	96	6.493	6.493	144	6.493	6.494				

Table 4-2-1-(14)

Pin No		8 8 C-1									(mm)
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.496	6.498	49	6.498	6.499	97	6.498	6.497	145	6.497	6.497
2	6.497	6.497	50	6.498	6.499	98	6.498	6.497	146	6.497	6.497
3	6.498	6.497	51	6.498	6.499	99	6.498	6.500	147	6.497	6.497
4	6.497	6.497	52	6.497	6.499	100	6.497	6.497	148	6.498	6.498
5	6.497	6.498	53	6.499	6.496	101	6.498	6.497	149	6.497	6.497
6	6.497	6.497	54	6.498	6.498	102	6.498	6.497	150	6.497	6.497
7	6.497	6.497	55	6.497	6.499	103	6.498	6.498	151	6.497	6.497
8	6.497	6.497	56	6.498	6.498	104	6.498	6.497	152	6.497	6.497
9	6.497	6.499	57	6.497	6.498	105	6.497	6.497	153	6.497	6.499
10	6.497	6.499	58	6.498	6.497	106	6.497	6.498	154	6.497	6.497
11	6.497	6.499	59	6.498	6.498	107	6.497	6.497	155	6.497	6.497
12	6.496	6.499	60	6.497	6.499	108	6.497	6.498	156	6.497	6.497
13	6.497	6.499	61	6.497	6.498	109	6.498	6.498	157	6.497	6.497
14	6.497	6.499	62	6.498	6.497	110	6.497	6.498	158	6.497	6.498
15	6.497	6.498	63	6.498	6.497	111	6.497	6.499	159	6.497	6.498
16	6.497	6.499	64	6.498	6.497	112	6.498	6.497	160	6.497	6.497
17	6.497	6.498	65	6.498	6.497	113	6.497	6.497	161	6.497	6.497
18	6.497	6.498	66	6.498	6.497	114	6.497	6.497	162	6.497	6.497
19	6.497	6.498	67	6.497	6.497	115	6.497	6.497	163	6.497	6.497
20	6.497	6.498	68	6.498	6.497	116	6.497	6.497	164	6.497	6.496
21	6.497	6.499	69	6.498	6.497	117	6.497	6.497	165	6.497	6.496
22	6.497	6.499	70	6.498	6.497	118	6.497	6.497	166	6.497	6.497
23	6.497	6.498	71	6.498	6.498	119	6.497	6.497	167	6.497	6.497
24	6.497	6.499	72	6.497	6.497	120	6.497	6.498	168	6.497	6.497
25	6.497	6.499	73	6.498	6.497	121	6.497	6.497	169	6.497	6.497
26	6.497	6.498	74	6.498	6.497	122	6.497	6.497	170	6.497	6.497
27	6.497	6.499	75	6.498	6.497	123	6.497	6.497	171	6.497	6.498
28	6.497	6.499	76	6.497	6.497	124	6.497	6.497	172	6.497	6.498
29	6.497	6.499	77	6.497	6.497	125	6.497	6.497			
30	6.497	6.501	78	6.497	6.497	126	6.497	6.496			
31	6.497	6.499	79	6.498	6.497	127	6.497	6.497			
32	6.497	6.499	80	6.497	6.497	128	6.497	6.497			
33	6.497	6.504	81	6.497	6.497	129	6.497	6.497			
34	6.497	6.500	82	6.497	6.497	130	6.497	6.497			
35	6.497	6.500	83	6.497	6.497	131	6.497	6.496			
36	6.497	6.499	84	6.498	6.497	132	6.497	6.497			
37	6.497	6.499	85	6.497	6.497	133	6.497	6.496			
38	6.497	6.499	86	6.497	6.497	134	6.497	6.497			
39	6.497	6.500	87	6.499	6.497	135	6.497	6.498			
40	6.497	6.500	88	6.499	6.496	136	6.497	6.497			
41	6.497	6.500	89	6.499	6.497	137	6.497	6.498			
42	6.497	6.500	90	6.499	6.497	138	6.497	6.497			
43	6.497	6.500	91	6.498	6.497	139	6.497	6.497			
44	6.497	6.500	92	6.499	6.497	140	6.497	6.497			
45	6.497	6.501	93	6.498	6.497	141	6.497	6.497			
46	6.497	6.499	94	6.498	6.497	142	6.497	6.497			
47	6.498	6.499	95	6.498	6.497	143	6.497	6.497			
48	6.498	6.498	96	6.497	6.497	144	6.497	6.497			

Table 4-2-1-(15)

Pin No		9 4 K-1									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.501	6.499	49	6.500	6.498	97	6.500	6.498	145	6.499	6.498	
2	6.502	6.498	50	6.500	6.499	98	6.499	6.497	146	6.500	6.498	
3	6.500	6.498	51	6.500	6.498	99	6.498	6.497	147	6.498	6.497	
4	6.500	6.500	52	6.500	6.497	100	6.500	6.496	148	6.498	6.499	
5	6.501	6.498	53	6.500	6.499	101	6.499	6.496	149	6.498	6.497	
6	6.500	6.497	54	6.500	6.497	102	6.498	6.498	150	6.497	6.496	
7	6.499	6.498	55	6.499	6.496	103	6.500	6.497	151	6.498	6.498	
8	6.500	6.498	56	6.499	6.498	104	6.497	6.497	152	6.499	6.498	
9	6.501	6.499	57	6.500	6.498	105	6.497	6.497	153	6.498	6.496	
10	6.501	6.501	58	6.499	6.497	106	6.499	6.497	154	6.498	6.497	
11	6.501	6.499	59	6.500	6.500	107	6.499	6.497	155	6.498	6.497	
12	6.500	6.499	60	6.502	6.499	108	6.499	6.499	156	6.498	6.496	
13	6.501	6.500	61	6.499	6.498	109	6.501	6.498	157	6.499	6.497	
14	6.502	6.499	62	6.499	6.499	110	6.500	6.497	158	6.500	6.498	
15	6.500	6.498	63	6.500	6.498	111	6.498	6.497	159	6.498	6.497	
16	6.501	6.499	64	6.499	6.497	112	6.501	6.497	160	6.498	6.497	
17	6.501	6.498	65	6.500	6.498	113	6.499	6.497	161	6.500	6.498	
18	6.500	6.496	66	6.502	6.498	114	6.499	6.498	162	6.498	6.496	
19	6.500	6.498	67	6.500	6.496	115	6.499	6.498	163	6.500	6.497	
20	6.502	6.498	68	6.499	6.497	116	6.498	6.496	164	6.502	6.497	
21	6.501	6.498	69	6.500	6.498	117	6.497	6.496	165	6.500	6.497	
22	6.501	6.499	70	6.500	6.497	118	6.498	6.497	166	6.504	6.498	
23	6.502	6.499	71	6.500	6.498	119	6.499	6.497	167	6.500	6.498	
24	6.501	6.498	72	6.501	6.498	120	6.498	6.498	168	6.498	6.496	
25	6.500	6.498	73	6.500	6.497	121	6.500	6.500	169	6.497	6.496	
26	6.501	6.498	74	6.499	6.498	122	6.500	6.498	170	6.499	6.498	
27	6.501	6.498	75	6.499	6.497	123	6.498	6.497	171	6.500	6.497	
28	6.501	6.498	76	6.499	6.496	124	6.498	6.498	172	6.497	6.495	
29	6.500	6.497	77	6.499	6.498	125	6.498	6.496				
30	6.499	6.497	78	6.500	6.498	126	6.497	6.497				
31	6.498	6.497	79	6.492	6.497	127	6.498	6.498				
32	6.499	6.498	80	6.492	6.497	128	6.500	6.496				
33	6.501	6.498	81	6.499	6.498	129	6.497	6.496				
34	6.500	6.500	82	6.500	6.496	130	6.498	6.496				
35	6.501	6.500	83	6.499	6.497	131	6.498	6.495				
36	6.500	6.498	84	6.500	6.498	132	6.498	6.495				
37	6.499	6.498	85	6.500	6.497	133	6.499	6.498				
38	6.500	6.499	86	6.499	6.496	134	6.500	6.497				
39	6.499	6.497	87	6.500	6.498	135	6.498	6.496				
40	6.499	6.498	88	6.500	6.497	136	6.499	6.498				
41	6.500	6.499	89	6.499	6.497	137	6.499	6.497				
42	6.500	6.497	90	6.500	6.499	138	6.498	6.498				
43	6.498	6.497	91	6.500	6.497	139	6.505	6.498				
44	6.500	6.503	92	6.499	6.497	140	6.499	6.497				
45	6.501	6.498	93	6.499	6.498	141	6.497	6.496				
46	6.500	6.499	94	6.500	6.497	142	6.496	6.497				
47	6.501	6.500	95	6.499	6.498	143	6.498	6.496				
48	6.501	6.498	96	6.499	6.499	144	6.497	6.496				

Table 4-2-1-(10)

Pin No			9 4 S-1									(mm)
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.492	6.492	49	6.492	6.491	97	6.491	6.492	145	6.492	6.493	
2	6.491	6.491	50	6.492	6.492	98	6.492	6.491	146	6.492	6.493	
3	6.490	6.492	51	6.492	6.492	99	6.493	6.492	147	6.492	6.492	
4	6.491	6.491	52	6.492	6.493	100	6.492	6.492	148	6.493	6.492	
5	6.491	6.491	53	6.491	6.492	101	6.491	6.492	149	6.493	6.493	
6	6.491	6.492	54	6.492	6.492	102	6.491	6.492	150	6.492	6.493	
7	6.491	6.492	55	6.492	6.491	103	6.491	6.492	151	6.491	6.492	
8	6.491	6.492	56	6.492	6.492	104	6.492	6.492	152	6.492	6.492	
9	6.491	6.491	57	6.491	6.492	105	6.492	6.492	153	6.492	6.492	
10	6.491	6.491	58	6.491	6.492	106	6.491	6.493	154	6.492	6.492	
11	6.492	6.491	59	6.492	6.491	107	6.491	6.492	155	6.492	6.493	
12	6.492	6.492	60	6.492	6.492	108	6.491	6.492	156	6.491	6.492	
13	6.491	6.491	61	6.492	6.493	109	6.492	6.492	157	6.492	6.492	
14	6.492	6.491	62	6.491	6.493	110	6.492	6.493	158	6.493	6.493	
15	6.492	6.491	63	6.491	6.492	111	6.490	6.493	159	6.492	6.493	
16	6.492	6.491	64	6.492	6.491	112	6.491	6.492	160	6.495	6.493	
17	6.492	6.492	65	6.492	6.492	113	6.492	6.492	161	6.493	6.495	
18	6.491	6.491	66	6.492	6.492	114	6.492	6.492	162	6.492	6.493	
19	6.491	6.491	67	6.491	6.492	115	6.491	6.492	163	6.492	6.493	
20	6.492	6.491	68	6.491	6.491	116	6.491	6.492	164	6.491	6.494	
21	6.492	6.492	69	6.491	6.491	117	6.491	6.492	165	6.491	6.493	
22	6.492	6.492	70	6.492	6.492	118	6.491	6.491	166	6.492	6.493	
23	6.492	6.492	71	6.492	6.492	119	6.493	6.493	167	6.492	6.493	
24	6.491	6.491	72	6.491	6.492	120	6.492	6.493	168	6.492	6.493	
25	6.492	6.491	73	6.491	6.491	121	6.491	6.492	169	6.492	6.493	
26	6.492	6.492	74	6.491	6.491	122	6.491	6.492	170	6.491	6.493	
27	6.491	6.492	75	6.492	6.491	123	6.492	6.492	171	6.491	6.493	
28	6.490	6.492	76	6.491	6.492	124	6.492	6.492	172	6.493	6.494	
29	6.491	6.491	77	6.491	6.492	125	6.491	6.493				
30	6.491	6.491	78	6.491	6.491	126	6.491	6.493				
31	6.491	6.493	79	6.491	6.491	127	6.491	6.492				
32	6.491	6.493	80	6.493	6.492	128	6.492	6.492				
33	6.490	6.492	81	6.492	6.492	129	6.493	6.493				
34	6.490	6.492	82	6.491	6.492	130	6.492	6.493				
35	6.491	6.492	83	6.491	6.491	131	6.491	6.493				
36	6.491	6.493	84	6.491	6.491	132	6.491	6.492				
37	6.491	6.493	85	6.493	6.492	133	6.492	6.492				
38	6.491	6.492	86	6.492	6.492	134	6.492	6.492				
39	6.491	6.492	87	6.491	6.491	135	6.497	6.493				
40	6.492	6.492	88	6.491	6.491	136	6.491	6.492				
41	6.491	6.493	89	6.492	6.491	137	6.492	6.492				
42	6.491	6.493	90	6.494	6.492	138	6.492	6.492				
43	6.491	6.492	91	6.491	6.492	139	6.493	6.493				
44	6.491	6.492	92	6.491	6.491	140	6.492	6.493				
45	6.492	6.492	93	6.491	6.491	141	6.491	6.494				
46	6.492	6.492	94	6.491	6.491	142	6.492	6.492				
47	6.496	6.493	95	6.492	6.492	143	6.493	6.492				
48	6.491	6.492	96	6.491	6.492	144	6.492	6.492				



Table 4-2-1- (17)

Pin No			9 4 S-2						(mm)		
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.494	6.495	49	6.495	6.494	97	6.496	6.496	145	6.496	6.496
2	6.495	6.495	50	6.495	6.494	98	6.496	6.496	146	6.496	6.496
3	6.495	6.494	51	6.495	6.494	99	6.495	6.495	147	6.496	6.495
4	6.496	6.495	52	6.495	6.494	100	6.495	6.495	148	6.495	6.496
5	6.495	6.494	53	6.496	6.494	101	6.496	6.495	149	6.495	6.495
6	6.495	6.494	54	6.496	6.495	102	6.496	6.495	150	6.495	6.495
7	6.495	6.495	55	6.495	6.494	103	6.496	6.496	151	6.496	6.496
8	6.496	6.496	56	6.495	6.494	104	6.495	6.495	152	6.496	6.496
9	6.495	6.495	57	6.496	6.495	105	6.495	6.495	153	6.495	6.495
10	6.494	6.494	58	6.496	6.495	106	6.495	6.496	154	6.495	6.495
11	6.494	6.494	59	6.495	6.494	107	6.496	6.496	155	6.495	6.495
12	6.494	6.495	60	6.495	6.494	108	6.495	6.496	156	6.496	6.495
13	6.495	6.495	61	6.495	6.494	109	6.495	6.496	157	6.495	6.496
14	6.495	6.495	62	6.496	6.495	110	6.495	6.496	158	6.496	6.495
15	6.495	6.495	63	6.496	6.495	111	6.495	6.496	159	6.495	6.495
16	6.495	6.494	64	6.495	6.495	112	6.495	6.496	160	6.495	6.496
17	6.495	6.495	65	6.495	6.494	113	6.495	6.496	161	6.495	6.496
18	6.496	6.495	66	6.496	6.495	114	6.494	6.495	162	6.496	6.496
19	6.496	6.495	67	6.496	6.495	115	6.495	6.495	163	6.497	6.495
20	6.495	6.494	68	6.496	6.495	116	6.496	6.496	164	6.496	6.495
21	6.495	6.495	69	6.495	6.494	117	6.496	6.497	165	6.496	6.495
22	6.497	6.495	70	6.495	6.493	118	6.495	6.496	166	6.496	6.497
23	6.495	6.495	71	6.495	6.494	119	6.495	6.495	167	6.496	6.495
24	6.495	6.495	72	6.495	6.495	120	6.495	6.496	168	6.496	6.495
25	6.495	6.494	73	6.496	6.495	121	6.495	6.496	169	6.495	6.495
26	6.495	6.494	74	6.495	6.495	122	6.496	6.497	170	6.496	6.496
27	6.495	6.495	75	6.495	6.494	123	6.495	6.496	171	6.496	6.496
28	6.496	6.495	76	6.496	6.494	124	6.495	6.495	172	6.496	6.496
29	6.495	6.495	77	6.496	6.496	125	6.495	6.496			
30	6.494	6.494	78	6.496	6.495	126	6.496	6.496			
31	6.495	6.494	79	6.495	6.495	127	6.496	6.496			
32	6.494	6.495	80	6.495	6.495	128	6.495	6.496			
33	6.495	6.495	81	6.495	6.495	129	6.495	6.495			
34	6.495	6.494	82	6.496	6.495	130	6.495	6.495			
35	6.494	6.494	83	6.496	6.495	131	6.495	6.496			
36	6.494	6.494	84	6.495	6.495	132	6.496	6.496			
37	6.495	6.494	85	6.495	6.494	133	6.496	6.495			
38	6.495	6.495	86	6.495	6.495	134	6.497	6.495			
39	6.495	6.494	87	6.496	6.495	135	6.495	6.494			
40	6.495	6.494	88	6.497	6.495	136	6.496	6.495			
41	6.495	6.494	89	6.495	6.495	137	6.496	6.496			
42	6.495	6.495	90	6.495	6.495	138	6.495	6.495			
43	6.496	6.495	91	6.495	6.495	139	6.495	6.495			
44	6.496	6.495	92	6.496	6.495	140	6.496	6.495			
45	6.495	6.494	93	6.496	6.495	141	6.496	6.496			
46	6.495	6.494	94	6.495	6.495	142	6.496	6.496			
47	6.495	6.495	95	6.495	6.495	143	6.495	6.495			
48	6.496	6.495	96	6.495	6.495	144	6.495	6.495			

Table 4-2-1-(18)

Pin No			9 4 C-1									(mm)		
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'
1	6.497	6.493	49	6.495	6.496	97	6.494	6.495	145	6.495	6.495			
2	6.494	6.497	50	6.495	6.496	98	6.494	6.495	146	6.495	6.495			
3	6.494	6.496	51	6.495	6.495	99	6.494	6.494	147	6.495	6.496			
4	6.494	6.495	52	6.495	6.496	100	6.495	6.495	148	6.495	6.495			
5	6.495	6.495	53	6.495	6.495	101	6.495	6.495	149	6.495	6.496			
6	6.495	6.495	54	6.495	6.496	102	6.495	6.495	150	6.495	6.495			
7	6.495	6.495	55	6.495	6.496	103	6.495	6.495	151	6.495	6.495			
8	6.495	6.495	56	6.495	6.496	104	6.495	6.495	152	6.495	6.495			
9	6.495	6.496	57	6.495	6.496	105	6.495	6.495	153	6.495	6.495			
10	6.495	6.495	58	6.495	6.495	106	6.495	6.495	154	6.495	6.495			
11	6.495	6.495	59	6.495	6.496	107	6.495	6.495	155	6.499	6.495			
12	6.495	6.495	60	6.495	6.496	108	6.495	6.495	156	6.495	6.497			
13	6.495	6.495	61	6.495	6.495	109	6.495	6.495	157	6.495	6.496			
14	6.495	6.495	62	6.495	6.495	110	6.495	6.495	158	6.496	6.496			
15	6.495	6.495	63	6.494	6.495	111	6.495	6.496	159	6.495	6.495			
16	6.495	6.495	64	6.494	6.495	112	6.495	6.496	160	6.496	6.496			
17	6.495	6.495	65	6.495	6.495	113	6.495	6.495	161	6.496	6.497			
18	6.495	6.495	66	6.494	6.496	114	6.495	6.495	162	6.496	6.496			
19	6.495	6.495	67	6.494	6.495	115	6.496	6.495	163	6.496	6.496			
20	6.495	6.495	68	6.495	6.496	116	6.495	6.496	164	6.496	6.495			
21	6.495	6.495	69	6.494	6.495	117	6.495	6.496	165	6.496	6.495			
22	6.494	6.495	70	6.494	6.495	118	6.495	6.495	166	6.496	6.495			
23	6.495	6.495	71	6.494	6.496	119	6.495	6.495	167	6.497	6.495			
24	6.494	6.495	72	6.494	6.495	120	6.494	6.495	168	6.496	6.495			
25	6.494	6.496	73	6.494	6.495	121	6.495	6.494	169	6.496	6.496			
26	6.494	6.496	74	6.494	6.495	122	6.494	6.494	170	6.496	6.496			
27	6.494	6.496	75	6.494	6.496	123	6.495	6.495	171	6.497	6.496			
28	6.494	6.496	76	6.494	6.496	124	6.495	6.494	172	6.496	6.496			
29	6.494	6.495	77	6.495	6.495	125	6.494	6.495						
30	6.494	6.496	78	6.494	6.495	126	6.494	6.495						
31	6.495	6.495	79	6.495	6.495	127	6.494	6.495						
32	6.494	6.496	80	6.494	6.495	128	6.495	6.495						
33	6.495	6.496	81	6.494	6.496	129	6.494	6.495						
34	6.494	6.495	82	6.494	6.496	130	6.495	6.495						
35	6.494	6.496	83	6.495	6.496	131	6.494	6.495						
36	6.494	6.495	84	6.494	6.495	132	6.495	6.495						
37	6.494	6.495	85	6.495	6.495	133	6.495	6.494						
38	6.495	6.496	86	6.494	6.495	134	6.494	6.495						
39	6.494	6.496	87	6.495	6.495	135	6.494	6.495						
40	6.494	6.495	88	6.495	6.495	136	6.494	6.495						
41	6.494	6.496	89	6.495	6.495	137	6.495	6.495						
42	6.494	6.495	90	6.495	6.495	138	6.495	6.495						
43	6.495	6.495	91	6.495	6.495	139	6.495	6.495						
44	6.494	6.496	92	6.495	6.495	140	6.495	6.495						
45	6.494	6.496	93	6.495	6.495	141	6.495	6.495						
46	6.494	6.496	94	6.494	6.495	142	6.495	6.495						
47	6.495	6.496	95	6.494	6.494	143	6.494	6.495						
48	6.495	6.496	96	6.495	6.494	144	6.494	6.495						

Table 4-2-1-(19)

Pin No			9 4 C-2									(mm)
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.494	6.497	49	6.496	6.496	97	6.496	6.497	145	6.497	6.497	
2	6.495	6.495	50	6.496	6.496	98	6.497	6.497	146	6.498	6.497	
3	6.496	6.495	51	6.496	6.496	99	6.497	6.497	147	6.497	6.497	
4	6.496	6.495	52	6.497	6.496	100	6.497	6.497	148	6.497	6.497	
5	6.496	6.495	53	6.496	6.496	101	6.496	6.496	149	6.497	6.497	
6	6.496	6.495	54	6.496	6.496	102	6.496	6.496	150	6.499	6.497	
7	6.497	6.495	55	6.496	6.496	103	6.497	6.497	151	6.497	6.497	
8	6.497	6.495	56	6.496	6.501	104	6.497	6.497	152	6.497	6.497	
9	6.496	6.495	57	6.496	6.497	105	6.497	6.497	153	6.497	6.498	
10	6.496	6.494	58	6.496	6.496	106	6.497	6.497	154	6.498	6.497	
11	6.496	6.495	59	6.496	6.496	107	6.497	6.497	155	6.497	6.497	
12	6.495	6.494	60	6.496	6.496	108	6.497	6.497	156	6.497	6.497	
13	6.500	6.494	61	6.496	6.496	109	6.497	6.497	157	6.497	6.498	
14	6.495	6.495	62	6.496	6.496	110	6.497	6.497	158	6.497	6.498	
15	6.495	6.494	63	6.496	6.497	111	6.497	6.496	159	6.498	6.497	
16	6.495	6.495	64	6.496	6.496	112	6.497	6.497	160	6.497	6.497	
17	6.495	6.495	65	6.496	6.497	113	6.497	6.497	161	6.497	6.498	
18	6.495	6.496	66	6.496	6.496	114	6.497	6.497	162	6.497	6.498	
19	6.495	6.495	67	6.496	6.497	115	6.497	6.497	163	6.498	6.497	
20	6.495	6.495	68	6.496	6.496	116	6.497	6.496	164	6.498	6.497	
21	6.495	6.495	69	6.496	6.497	117	6.497	6.497	165	6.498	6.497	
22	6.495	6.495	70	6.496	6.496	118	6.497	6.497	166	6.498	6.497	
23	6.495	6.495	71	6.496	6.496	119	6.497	6.497	167	6.498	6.497	
24	6.495	6.496	72	6.496	6.496	120	6.497	6.497	168	6.498	6.497	
25	6.494	6.496	73	6.496	6.497	121	6.497	6.497	169	6.499	6.497	
26	6.495	6.496	74	6.496	6.497	122	6.497	6.497	170	6.498	6.497	
27	6.494	6.497	75	6.496	6.497	123	6.497	6.496	171	6.497	6.497	
28	6.495	6.497	76	6.496	6.496	124	6.497	6.497	172	6.497	6.497	
29	6.495	6.497	77	6.496	6.497	125	6.497	6.497				
30	6.495	6.496	78	6.496	6.497	126	6.497	6.497				
31	6.496	6.496	79	6.496	6.497	127	6.497	6.496				
32	6.496	6.495	80	6.496	6.497	128	6.497	6.496				
33	6.496	6.495	81	6.496	6.497	129	6.497	6.497				
34	6.496	6.495	82	6.496	6.497	130	6.497	6.497				
35	6.495	6.495	83	6.496	6.497	131	6.497	6.497				
36	6.495	6.495	84	6.496	6.497	132	6.497	6.497				
37	6.495	6.495	85	6.496	6.496	133	6.497	6.496				
38	6.495	6.496	86	6.496	6.497	134	6.497	6.497				
39	6.495	6.495	87	6.496	6.497	135	6.497	6.497				
40	6.495	6.496	88	6.496	6.497	136	6.497	6.497				
41	6.495	6.496	89	6.497	6.497	137	6.497	6.496				
42	6.495	6.496	90	6.497	6.497	138	6.498	6.497				
43	6.496	6.496	91	6.496	6.497	139	6.498	6.497				
44	6.495	6.496	92	6.497	6.497	140	6.497	6.497				
45	6.495	6.496	93	6.497	6.496	141	6.497	6.496				
46	6.496	6.496	94	6.496	6.497	142	6.498	6.496				
47	6.496	6.496	95	6.497	6.496	143	6.497	6.497				
48	6.496	6.496	96	6.496	6.497	144	6.498	6.497				

Table 4-2-1-②

Pin No			9 8 K-1									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'		
1	6.505	6.507	49	6.508	6.508	97	6.505	6.505	145	6.504	6.507		
2	6.506	6.505	50	6.508	6.506	98	6.504	6.506	146	*6.508	6.506		
3	6.507	6.504	51	6.506	6.506	99	6.506	6.506	147	6.506	6.504		
4	6.504	6.507	52	6.507	6.508	100	6.505	6.503	148	6.505	6.506		
5	6.506	6.504	53	6.507	6.505	101	6.504	6.506	149	6.507	6.505		
6	6.504	6.504	54	6.506	6.506	102	6.506	6.504	150	6.505	6.505		
7	6.504	6.506	55	6.508	6.507	103	6.505	6.504	151	6.505	6.507		
8	6.505	6.505	56	6.506	6.505	104	6.505	6.507	152	6.506	6.505		
9	6.509	6.512	57	6.504	6.505	105	6.506	6.505	153	6.505	6.507		
10	6.507	6.508	58	6.506	6.507	106	6.505	6.504	154	6.507	6.508		
11	6.508	6.509	59	6.505	6.505	107	6.505	6.506	155	6.507	6.505		
12	6.508	6.508	60	6.505	6.506	108	6.506	6.505	156	6.506	6.505		
13	6.506	6.508	61	6.507	6.506	109	6.505	6.505	157	6.506	6.506		
14	6.508	6.506	62	6.506	6.504	110	6.505	6.506	158	6.507	6.505		
15	6.508	6.508	63	6.505	6.504	111	6.507	6.506	159	6.507	6.507		
16	6.506	6.508	64	6.507	6.506	112	6.506	6.504	160	6.508	6.507		
17	6.509	6.506	65	6.504	6.503	113	6.508	6.505	161	6.508	6.505		
18	6.507	6.510	66	6.504	6.505	114	6.509	6.504	162	6.506	6.506		
19	6.506	6.507	67	6.506	6.505	115	6.506	6.506	163	6.507	6.506		
20	6.509	6.506	68	6.503	6.502	116	6.506	6.506	164	6.508	6.506		
21	6.510	6.508	69	6.504	6.504	117	6.507	6.504	165	6.508	6.509		
22	6.509	6.508	70	6.505	6.504	118	6.505	6.511	166	6.510	6.506		
23	6.509	6.505	71	6.504	6.504	119	6.506	6.507	167	6.508	6.505		
24	6.510	6.508	72	6.503	6.506	120	6.507	6.506	168	6.507	6.506		
25	6.507	6.508	73	6.505	6.507	121	6.504	6.508	169	6.508	6.505		
26	6.508	6.506	74	6.504	6.505	122	6.505	6.507	170	6.507	6.506		
27	6.508	6.508	75	6.504	6.506	123	6.506	6.504	171	6.506	6.508		
28	6.508	6.507	76	6.506	6.506	124	6.505	6.505	172	6.509	6.505		
29	6.509	6.507	77	6.504	6.504	125	6.507	6.506					
30	6.507	6.508	78	6.505	6.506	126	6.507	6.504					
31	6.508	6.507	79	6.504	6.503	127	6.506	6.506					
32	6.510	6.510	80	6.503	6.504	128	6.507	6.505					
33	6.508	6.508	81	6.505	6.505	129	6.506	6.504					
34	6.507	6.508	82	6.505	6.504	130	6.504	6.506					
35	6.508	6.509	83	6.504	6.505	131	6.506	6.505					
36	6.507	6.507	84	6.505	6.505	132	6.506	6.504					
37	6.508	6.506	85	6.508	6.505	133	6.504	6.506					
38	6.509	6.508	86	6.505	6.504	134	6.507	6.507					
39	6.507	6.506	87	6.507	6.506	135	6.507	6.505					
40	6.508	6.508	88	6.505	6.503	136	6.506	6.507					
41	6.508	6.508	89	6.503	6.506	137	6.508	6.504					
42	6.505	6.507	90	6.506	6.505	138	6.507	6.504					
43	6.508	6.508	91	6.504	6.503	139	6.505	6.506					
44	6.507	6.508	92	6.503	6.504	140	6.507	6.504					
45	6.505	6.507	93	6.506	6.505	141	6.506	6.504					
46	6.507	6.507	94	6.504	6.503	142	6.505	6.507					
47	6.508	6.506	95	6.504	6.504	143	6.507	6.506					
48	6.507	6.506	96	6.505	6.506	144	6.505	6.505					

Table 4-2-1-(2)

Pin No			9 8 K-2									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'		
1	6.506	6.516	49	6.510	6.511	97	6.509	6.509	145	6.511	6.509		
2	6.509	6.513	50	6.510	6.510	98	6.517	6.510	146	6.519	6.512		
3	6.510	6.511	51	6.508	6.512	99	6.510	6.519	147	6.512	6.510		
4	6.507	6.513	52	6.510	6.510	100	6.519	6.519	148	6.510	6.510		
5	6.509	6.511	53	6.510	6.519	101	6.518	6.510	149	6.519	6.511		
6	6.510	6.510	54	6.508	6.511	102	6.510	6.519	150	6.511	6.513		
7	6.519	6.513	55	6.510	6.519	103	6.518	6.518	151	6.510	6.511		
8	6.518	6.512	56	6.510	6.519	104	6.517	6.511	152	6.518	6.510		
9	6.514	6.512	57	6.508	6.511	105	6.519	6.519	153	6.510	6.519		
10	6.512	6.513	58	6.509	6.511	106	6.519	6.519	154	6.511	6.511		
11	6.513	6.511	59	6.510	6.510	107	6.518	6.510	155	6.519	6.510		
12	6.514	6.510	60	6.509	6.511	108	6.519	6.510	156	6.511	6.518		
13	6.513	6.513	61	6.511	6.519	109	6.519	6.519	157	6.511	6.510		
14	6.515	6.511	62	6.509	6.510	110	6.518	6.519	158	6.519	6.510		
15	6.514	6.511	63	6.508	6.511	111	6.510	6.512	159	6.510	6.519		
16	6.513	6.512	64	6.511	6.519	112	6.519	6.519	160	6.519	6.511		
17	6.517	6.510	65	6.509	6.510	113	6.519	6.511	161	6.518	6.510		
18	6.514	6.511	66	6.508	6.510	114	6.511	6.518	162	6.510	6.518		
19	6.510	6.511	67	6.511	6.517	115	6.518	6.519	163	6.517	6.510		
20	6.511	6.510	68	6.508	6.519	116	6.519	6.510	164	6.519	6.517		
21	6.514	6.510	69	6.511	6.511	117	6.510	6.518	165	6.511	6.518		
22	6.513	6.511	70	6.510	6.519	118	6.519	6.519	166	6.518	6.519		
23	6.513	6.511	71	6.510	6.519	119	6.519	6.511	167	6.518	6.519		
24	6.513	6.511	72	6.519	6.511	120	6.510	6.519	168	6.510	6.519		
25	6.512	6.512	73	6.519	6.518	121	6.519	6.510	169	6.519	6.511		
26	6.514	6.510	74	6.519	6.519	122	6.510	6.511	170	6.510	6.519		
27	6.513	6.511	75	6.518	6.510	123	6.518	6.519	171	6.512	6.510		
28	6.511	6.511	76	6.510	6.517	124	6.510	6.519	172	6.519	6.510		
29	6.513	6.510	77	6.518	6.519	125	6.510	6.511					
30	6.511	6.512	78	6.519	6.519	126	6.518	6.518					
31	6.511	6.511	79	6.519	6.517	127	6.510	6.510					
32	6.512	6.510	80	6.517	6.519	128	6.518	6.511					
33	6.511	6.511	81	6.518	6.518	129	6.510	6.518					
34	6.511	6.513	82	6.519	6.517	130	6.510	6.519					
35	6.512	6.512	83	6.519	6.519	131	6.510	6.510					
36	6.511	6.511	84	6.510	6.519	132	6.511	6.510					
37	6.511	6.512	85	6.511	6.517	133	6.511	6.510					
38	6.513	6.511	86	6.509	6.519	134	6.519	6.511					
39	6.511	6.513	87	6.509	6.510	135	6.511	6.510					
40	6.511	6.513	88	6.510	6.518	136	6.511	6.511					
41	6.511	6.511	89	6.518	6.511	137	6.519	6.512					
42	6.510	6.513	90	6.519	6.519	138	6.512	6.512					
43	6.510	6.511	91	6.519	6.518	139	6.511	6.510					
44	6.510	6.510	92	6.518	6.519	140	6.519	6.511					
45	6.509	6.511	93	6.519	6.519	141	6.511	6.519					
46	6.510	6.511	94	6.519	6.518	142	6.510	6.510					
47	6.511	6.511	95	6.519	6.519	143	6.510	6.513					
48	6.508	6.513	96	6.519	6.510	144	6.511	6.519					

Table 4-2-1-(22)

Pin No		9 8 S-1									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.498	6.493	49	6.495	6.495	97	6.495	6.495	145	6.494	6.495	
2	6.496	6.494	50	6.495	6.496	98	6.494	6.494	146	6.493	6.494	
3	6.495	6.494	51	6.495	6.496	99	6.495	6.494	147	6.494	6.494	
4	6.493	6.494	52	6.495	6.497	100	6.496	6.494	148	6.493	6.494	
5	6.494	6.494	53	6.495	6.496	101	6.495	6.495	149	6.494	6.495	
6	6.492	6.493	54	6.494	6.495	102	6.495	6.495	150	6.493	6.497	
7	6.493	6.494	55	6.495	6.496	103	6.494	6.495	151	6.493	6.495	
8	6.493	6.495	56	6.496	6.497	104	6.494	6.494	152	6.493	6.495	
9	6.495	6.497	57	6.495	6.496	105	6.495	6.495	153	6.493	6.496	
10	6.495	6.496	58	6.494	6.497	106	6.495	6.495	154	6.495	6.497	
11	6.496	6.497	59	6.494	6.497	107	6.495	6.494	155	6.495	6.497	
12	6.496	6.498	60	6.494	6.497	108	6.495	6.494	156	6.495	6.496	
13	6.497	6.498	61	6.495	6.497	109	6.495	6.493	157	6.494	6.495	
14	6.495	6.497	62	6.495	6.496	110	6.495	6.494	158	6.494	6.495	
15	6.495	6.497	63	6.495	6.495	111	6.496	6.494	159	6.495	6.496	
16	6.496	6.497	64	6.494	6.495	112	6.496	6.494	160	6.496	6.496	
17	6.496	6.498	65	6.494	6.495	113	6.494	6.493	161	6.496	6.497	
18	6.496	6.497	66	6.494	6.495	114	6.494	6.494	162	6.495	6.495	
19	6.495	6.497	67	6.494	6.496	115	6.496	6.495	163	6.494	6.494	
20	6.494	6.496	68	6.494	6.495	116	6.496	6.494	164	6.496	6.495	
21	6.496	6.496	69	6.493	6.495	117	6.495	6.494	165	6.495	6.495	
22	6.497	6.497	70	6.494	6.495	118	6.495	6.494	166	6.495	6.495	
23	6.497	6.497	71	6.494	6.495	119	6.495	6.494	167	6.494	6.494	
24	6.496	6.496	72	6.494	6.495	120	6.495	6.495	168	6.495	6.495	
25	6.495	6.496	73	6.494	6.496	121	6.495	6.495	169	6.495	6.495	
26	6.496	6.497	74	6.493	6.495	122	6.494	6.494	170	6.495	6.496	
27	6.497	6.498	75	6.494	6.496	123	6.494	6.494	171	6.494	6.495	
28	6.496	6.497	76	6.494	6.497	124	6.495	6.494	172	6.494	6.496	
29	6.496	6.497	77	6.494	6.496	125	6.495	6.494				
30	6.496	6.497	78	6.494	6.495	126	6.495	6.494				
31	6.496	6.497	79	6.494	6.495	127	6.494	6.494				
32	6.497	6.497	80	6.494	6.495	128	6.494	6.493				
33	6.497	6.496	81	6.495	6.496	129	6.494	6.493				
34	6.497	6.496	82	6.495	6.495	130	6.495	6.494				
35	6.497	6.496	83	6.493	6.494	131	6.494	6.494				
36	6.496	6.497	84	6.494	6.494	132	6.493	6.493				
37	6.497	6.497	85	6.494	6.495	133	6.494	6.493				
38	6.497	6.498	86	6.494	6.496	134	6.494	6.494				
39	6.496	6.496	87	6.494	6.495	135	6.495	6.494				
40	6.496	6.496	88	6.494	6.495	136	6.494	6.495				
41	6.496	6.497	89	6.494	6.495	137	6.494	6.494				
42	6.497	6.497	90	6.494	6.496	138	6.494	6.494				
43	6.496	6.497	91	6.495	6.496	139	6.494	6.494				
44	6.496	6.496	92	6.495	6.495	140	6.495	6.494				
45	6.496	6.496	93	6.495	6.494	141	6.494	6.494				
46	6.496	6.496	94	6.495	6.494	142	6.494	6.495				
47	6.497	6.496	95	6.496	6.494	143	6.495	6.494				
48	6.496	6.495	96	6.496	6.495	144	6.494	6.495				

Table 4-2-1-(23)

Pin No			9 8 C-1									(mm)
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.498	6.494	49	6.495	6.495	97	6.495	6.496	145	6.495	6.496	
2	6.496	6.495	50	6.495	6.496	98	6.495	6.495	146	6.495	6.496	
3	6.494	6.496	51	6.495	6.497	99	6.496	6.495	147	6.494	6.495	
4	6.494	6.495	52	6.495	6.497	100	6.496	6.496	148	6.494	6.496	
5	6.495	6.494	53	6.495	6.496	101	6.496	6.496	149	6.495	6.495	
6	6.494	6.494	54	6.494	6.496	102	6.495	6.497	150	6.494	6.497	
7	6.494	6.495	55	6.495	6.496	103	6.495	6.495	151	6.494	6.497	
8	6.495	6.495	56	6.495	6.497	104	6.494	6.496	152	6.494	6.496	
9	6.495	6.497	57	6.495	6.496	105	6.495	6.496	153	6.494	6.497	
10	6.495	6.496	58	6.495	6.497	106	6.495	6.496	154	6.495	6.498	
11	6.495	6.496	59	6.495	6.497	107	6.495	6.496	155	6.496	6.498	
12	6.495	6.497	60	6.495	6.497	108	6.495	6.496	156	6.494	6.497	
13	6.495	6.498	61	6.495	6.497	109	6.495	6.495	157	6.495	6.496	
14	6.495	6.497	62	6.495	6.497	110	6.495	6.495	158	6.496	6.496	
15	6.495	6.497	63	6.494	6.496	111	6.496	6.495	159	6.495	6.497	
16	6.495	6.497	64	6.494	6.496	112	6.495	6.495	160	6.496	6.497	
17	6.496	6.497	65	6.494	6.496	113	6.494	6.495	161	6.495	6.497	
18	6.496	6.498	66	6.495	6.497	114	6.495	6.496	162	6.495	6.496	
19	6.495	6.497	67	6.495	6.497	115	6.496	6.496	163	6.496	6.496	
20	6.495	6.496	68	6.494	6.496	116	6.496	6.496	164	6.496	6.496	
21	6.496	6.496	69	6.494	6.496	117	6.495	6.495	165	6.496	6.497	
22	6.496	6.497	70	6.495	6.496	118	6.495	6.495	166	6.494	6.496	
23	6.496	6.497	71	6.495	6.496	119	6.495	6.495	167	6.494	6.496	
24	6.495	6.496	72	6.495	6.496	120	6.495	6.496	168	6.496	6.497	
25	6.495	6.496	73	6.494	6.496	121	6.495	6.496	169	6.496	6.497	
26	6.495	6.496	74	6.494	6.496	122	6.494	6.496	170	6.496	6.497	
27	6.496	6.497	75	6.495	6.497	123	6.494	6.495	171	6.495	6.496	
28	6.496	6.497	76	6.495	6.497	124	6.495	6.496	172	6.495	6.497	
29	6.495	6.497	77	6.495	6.497	125	6.495	6.496				
30	6.495	6.496	78	6.494	6.496	126	6.495	6.495				
31	6.496	6.497	79	6.494	6.496	127	6.493	6.495				
32	6.497	6.497	80	6.495	6.496	128	6.495	6.495				
33	6.496	6.497	81	6.495	6.497	129	6.495	6.495				
34	6.495	6.497	82	6.495	6.496	130	6.495	6.495				
35	6.495	6.496	83	6.494	6.495	131	6.495	6.496				
36	6.495	6.498	84	6.494	6.495	132	6.494	6.495				
37	6.497	6.498	85	6.495	6.496	133	6.494	6.495				
38	6.496	6.497	86	6.495	6.497	134	6.495	6.495				
39	6.495	6.497	87	6.494	6.496	135	6.496	6.496				
40	6.496	6.496	88	6.494	6.496	136	6.495	6.496				
41	6.495	6.497	89	6.494	6.495	137	6.494	6.495				
42	6.497	6.497	90	6.495	6.497	138	6.494	6.495				
43	6.495	6.498	91	6.495	6.497	139	6.495	6.496				
44	6.495	6.496	92	6.495	6.496	140	6.495	6.496				
45	6.495	6.496	93	6.494	6.495	141	6.495	6.495				
46	6.496	6.497	94	6.495	6.495	142	6.494	6.495				
47	6.496	6.497	95	6.496	6.496	143	6.495	6.495				
48	6.495	6.496	96	6.496	6.496	144	6.495	6.496				

Table 4-2-1-(24)

Pin No			9 8 C-2									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'		
1	6.498	6.496	49	6.499	6.498	97	6.497	6.497	145	6.498	6.497		
2	6.497	6.498	50	6.499	6.498	98	6.498	6.498	146	6.497	6.497		
3	6.497	6.498	51	6.498	6.498	99	6.497	6.498	147	6.498	6.497		
4	6.498	6.497	52	6.498	6.498	100	6.498	6.497	148	6.498	6.497		
5	6.500	6.499	53	6.499	6.497	101	6.498	6.498	149	6.498	6.498		
6	6.498	6.497	54	6.499	6.497	102	6.498	6.498	150	6.498	6.498		
7	6.497	6.498	55	6.498	6.498	103	6.498	6.498	151	6.498	6.499		
8	6.497	6.497	56	6.498	6.498	104	6.497	6.498	152	6.498	6.498		
9	6.499	6.499	57	6.498	6.498	105	6.498	6.498	153	6.499	6.499		
10	6.499	6.499	58	6.498	6.498	106	6.497	6.498	154	6.498	6.499		
11	6.498	6.499	59	6.498	6.498	107	6.498	6.498	155	6.497	6.500		
12	6.498	6.499	60	6.498	6.497	108	6.497	6.498	156	6.498	6.499		
13	6.499	6.498	61	6.498	6.497	109	6.498	6.498	157	6.499	6.499		
14	6.498	6.499	62	6.498	6.497	110	6.498	6.498	158	6.498	6.500		
15	6.499	6.498	63	6.498	6.498	111	6.498	6.498	159	6.498	6.490		
16	6.499	6.499	64	6.498	6.497	112	6.498	6.499	160	6.498	6.499		
17	6.499	6.499	65	6.499	6.498	113	6.497	6.498	161	6.497	6.499		
18	6.499	6.498	66	6.499	6.497	114	6.498	6.498	162	6.499	6.499		
19	6.500	6.498	67	6.499	6.497	115	6.498	6.498	163	6.498	6.499		
20	6.500	6.497	68	6.498	6.497	116	6.498	6.498	164	6.498	6.499		
21	6.499	6.498	69	6.499	6.497	117	6.498	6.498	165	6.498	6.499		
22	6.499	6.498	70	6.499	6.497	118	6.498	6.498	166	6.498	6.499		
23	6.499	6.498	71	6.498	6.498	119	6.498	6.499	167	6.498	6.499		
24	6.498	6.498	72	6.498	6.498	120	6.498	6.498	168	6.498	6.499		
25	6.498	6.497	73	6.498	6.498	121	6.498	6.499	169	6.498	6.499		
26	6.498	6.498	74	6.498	6.498	122	6.498	6.498	170	6.499	6.500		
27	6.498	6.498	75	6.498	6.498	123	6.498	6.498	171	6.499	6.500		
28	6.498	6.498	76	6.498	6.498	124	6.498	6.498	172	6.500	6.501		
29	6.499	6.498	77	6.497	6.498	125	6.498	6.498					
30	6.499	6.498	78	6.497	6.498	126	6.497	6.497					
31	6.498	6.499	79	6.497	6.498	127	6.498	6.497					
32	6.498	6.498	80	6.498	6.498	128	6.497	6.497					
33	6.498	6.498	81	6.497	6.498	129	6.497	6.497					
34	6.498	6.499	82	6.498	6.498	130	6.499	6.497					
35	6.497	6.498	83	6.498	6.498	131	6.498	6.497					
36	6.497	6.498	84	6.498	6.497	132	6.498	6.497					
37	6.497	6.498	85	6.498	6.498	133	6.498	6.497					
38	6.498	6.497	86	6.497	6.497	134	6.498	6.497					
39	6.498	6.498	87	6.498	6.498	135	6.497	6.497					
40	6.498	6.498	88	6.498	6.498	136	6.498	6.497					
41	6.499	6.498	89	6.498	6.498	137	6.498	6.497					
42	6.499	6.498	90	6.498	6.497	138	6.498	6.497					
43	6.498	6.498	91	6.498	6.498	139	6.498	6.497					
44	6.498	6.498	92	6.498	6.498	140	6.498	6.497					
45	6.498	6.498	93	6.498	6.498	141	6.497	6.497					
46	6.498	6.498	94	6.497	6.498	142	6.498	6.497					
47	6.498	6.497	95	6.498	6.497	143	6.497	6.497					
48	6.499	6.498	96	6.498	6.498	144	6.498	6.497					



Table 4-2-1- (25)

Pin No		9 8 C-3									(mm)	
No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	No	X-X'	Y-Y'	
1	6.495	6.500	49	6.497	6.497	97	6.496	6.496	145	6.497	6.495	
2	6.497	6.499	50	6.497	6.496	98	6.496	6.495	146	6.497	6.495	
3	6.497	6.498	51	6.497	6.497	99	6.496	6.495	147	6.496	6.495	
4	6.496	6.498	52	6.497	6.496	100	6.496	6.495	148	6.497	6.495	
5	6.495	6.498	53	6.498	6.497	101	6.496	6.495	149	6.497	6.495	
6	6.495	6.497	54	6.497	6.497	102	6.496	6.495	150	6.496	6.495	
7	6.495	6.497	55	6.497	6.496	103	6.496	6.495	151	6.496	6.495	
8	6.495	6.496	56	6.497	6.496	104	6.496	6.495	152	6.497	6.495	
9	6.499	6.497	57	6.497	6.496	105	6.496	6.495	153	6.495	6.495	
10	6.498	6.497	58	6.497	6.497	106	6.496	6.495	154	6.496	6.495	
11	6.498	6.497	59	6.497	6.497	107	6.496	6.495	155	6.496	6.495	
12	6.497	6.498	60	6.498	6.497	108	6.496	6.495	156	6.496	6.495	
13	6.496	6.497	61	6.496	6.497	109	6.496	6.495	157	6.496	6.495	
14	6.498	6.496	62	6.496	6.497	110	6.496	6.495	158	6.496	6.496	
15	6.498	6.497	63	6.498	6.496	111	6.495	6.495	159	6.496	6.495	
16	6.498	6.496	64	6.498	6.496	112	6.496	6.495	160	6.497	6.495	
17	6.497	6.496	65	6.496	6.496	113	6.495	6.495	161	6.496	6.496	
18	6.497	6.496	66	6.496	6.496	114	6.495	6.495	162	6.497	6.496	
19	6.496	6.496	67	6.496	6.496	115	6.495	6.495	163	6.497	6.495	
20	6.496	6.497	68	6.496	6.496	116	6.496	6.495	164	6.497	6.495	
21	6.497	6.497	69	6.496	6.496	117	6.496	6.495	165	6.498	6.496	
22	6.496	6.497	70	6.496	6.496	118	6.495	6.495	166	6.498	6.495	
23	6.497	6.497	71	6.496	6.496	119	6.495	6.496	167	6.499	6.495	
24	6.496	6.497	72	6.496	6.496	120	6.496	6.496	168	6.500	6.496	
25	6.497	6.497	73	6.495	6.496	121	6.495	6.496	169	6.499	6.497	
26	6.497	6.497	74	6.495	6.496	122	6.496	6.496	170	6.500	6.497	
27	6.496	6.497	75	6.495	6.496	123	6.496	6.496	171	6.500	6.497	
28	6.497	6.497	76	6.495	6.496	124	6.496	6.496	172	6.500	6.498	
29	6.498	6.496	77	6.495	6.496	125	6.495	6.496				
30	6.498	6.497	78	6.495	6.495	126	6.496	6.495				
31	6.498	6.496	79	6.495	6.495	127	6.496	6.496				
32	6.498	6.495	80	6.496	6.495	128	6.496	6.495				
33	6.498	6.495	81	6.495	6.496	129	6.498	6.496				
34	6.497	6.497	82	6.495	6.496	130	6.497	6.496				
35	6.497	6.496	83	6.495	6.496	131	6.497	6.495				
36	6.497	6.497	84	6.496	6.496	132	6.498	6.495				
37	6.497	6.497	85	6.496	6.496	133	6.498	6.495				
38	6.497	6.498	86	6.496	6.495	134	6.497	6.495				
39	6.497	6.497	87	6.496	6.495	135	6.497	6.495				
40	6.497	6.497	88	6.496	6.495	136	6.496	6.495				
41	6.496	6.497	89	6.496	6.495	137	6.498	6.495				
42	6.497	6.497	90	6.496	6.494	138	6.498	6.495				
43	6.496	6.497	91	6.496	6.495	139	6.497	6.495				
44	6.496	6.496	92	6.495	6.495	140	6.498	6.494				
45	6.497	6.496	93	6.496	6.495	141	6.497	6.495				
46	6.496	6.496	94	6.496	6.495	142	6.497	6.495				
47	6.496	6.497	95	6.496	6.495	143	6.497	6.495				
48	6.496	6.496	96	6.496	6.495	144	6.497	6.495				

Table 4-2-2 Dimension and weight of fuel pin

N841-80-20

Lower end plug													Upper end plug		
1st	1	2	3	4	5	6	7	8	9	10	11	12	2nd	Length	Weight
Wrapping wire pitch													mm	g	
Pin No.	1	2	3	4	5	6	7	8	9	10	11	12			1793±15
84 K-1	146	286	432	583	724	872	1016	1165	1311	1461	1605	1751	1793.02	405.16	
84 K-2	153	297.5	441	584	728	871	1014.5	1158.5	1308	1457	1614	1751	1793.04	405.34	
84 K-3	145	289	432	576	718.5	867	1015	1159	1304	1450	1602	1751	1792.96	407.56	
84 S-1	157	301	443.5	586.5	729.5	876	1018	1164	1307.5	1449	1596	1751	1793.00	406.23	
84 S-2	148	292	435.5	579	722	866	1011	1157.5	1307	1458.5	1610	1751	1793.02	405.90	
88 K-1	148	293.5	436.5	579	725.5	868	1011.5	1159	1305.5	1451	1609.5	1751	1793.14	407.53	
88 K-2	144	285.5	430	579	727	869.5	1014.5	1161.5	1305	1458	1599	1751	1793.02	406.43	
88 K-3	147	286.5	436	579	721	869	1012	1159	1305	1454	1602	1751	1793.02	405.59	
88 K-4	149	294	437	580	726	875.5	1017	1162.5	1305	1451	1607	1751	1793.00	406.56	
88 S-1	155	300.5	442	585	729	872	1015.5	1161	1305	1451	1607	1751	1793.04	406.75	
88 S-2	152	295.5	439	583	726	869	1012	1158	1302.5	1447	1606.5	1751	1793.04	405.75	
88 S-3	147	289.5	443.5	577	721.5	865	1013.5	1157	1303	1451	1606.5	1751	1793.00	405.89	
88 S-4	154	298	441.5	585	728.5	870.5	1015	1158	1303	1451	1605	1751	1792.94	405.48	
88 C-1	153	297.5	440	584	727	871	1014.5	1159.5	1304	1448	1610	1751	1793.04	407.42	
94 K-1	148	293	436	578.5	724	866.5	1010.5	1157	1303	1453	1606	1751	1792.92	420.20	
94 S-1	145.5	286	429.5	573.5	733	876.5	1024	1166.5	1313	1462.5	1612	1751	1792.96	418.70	
94 S-2	147	290.5	435	578	723	869	1014	1160.5	1306	1451	1609	1751	1792.96	419.61	
94 C-1	146	290	434.5	579.5	723.5	872	1016	1162	1307	1462.5	1607.5	1751	1793.04	421.07	
94 C-2	146	285	432	575	718	872	1012	1165	1303	1454	1599	1751	1793.00	420.61	
98 K-1	154	297.5	441	585.5	727.5	869	1015	1159	1301.5	1449	1603	1751	1793.10	419.08	
98 K-2	141	284.5	427.5	574.5	720	869	1013	1158.5	1302	1453.5	1605	1751	1793.08	419.53	
98 S-1	144.5	288	433	577.5	725	872.5	1017.5	1162	1305	1456	1607	1751	1793.06	418.40	
98 C-1	148	292.5	436	579	723	866	1010	1158	1304	1451.5	1606	1751	1793.00	419.48	
98 C-2	143	287	433	577	723	872.5	1011.5	1162	1306	1453.5	1611	1751	1793.06	419.30	
98 C-3	150.5	294	439.5	582	724	868.5	1012.5	1158	1305	1457.5	1609	1751	1793.06	419.30	

TABLE 4-4-1 Fuelpin inspection results

Item Spec Pin No.	X-Ray	He leak test	Surface contamination	
	Radiography	(atm·cc/sec)	Loose (dpm)	Fix (dpm)
	No Harmful defects	$< 1 \times 10^{-8}$	$< 10$	$< 1000$
84 K-1	Go	$2.94 \times 10^{-10}$	5	10
84 K-2	Go	"	"	20
84 K-3	Go	"	"	5
84 S-1	Go	"	"	5
84 S-2	Go	"	"	10
88 K-1	Go	"	"	15
88 K-2	Go	"	"	10
88 K-3	Go	"	"	5
88 K-4	Go	"	"	5
88 S-1	Go	"	"	10
88 S-2	Go	"	"	10
88 S-3	Go	"	"	5
88 S-4	Go	"	"	10
88 C-1	Go	"	"	5
94 K-1	Go	"	"	5
94 S-1	Go	"	"	30
94 S-2	Go	"	"	5
94 C-1	Go	"	"	10
94 C-2	Go	"	"	5
98 K-1	Go	"	"	10
98 K-2	Go	"	"	5
98 S-1	Go	"	"	5
98 C-1	Go	"	"	10
98 C-2	Go	"	"	5
98 C-3	Go	"	"	5

Table 5-1 Weight of fuel material

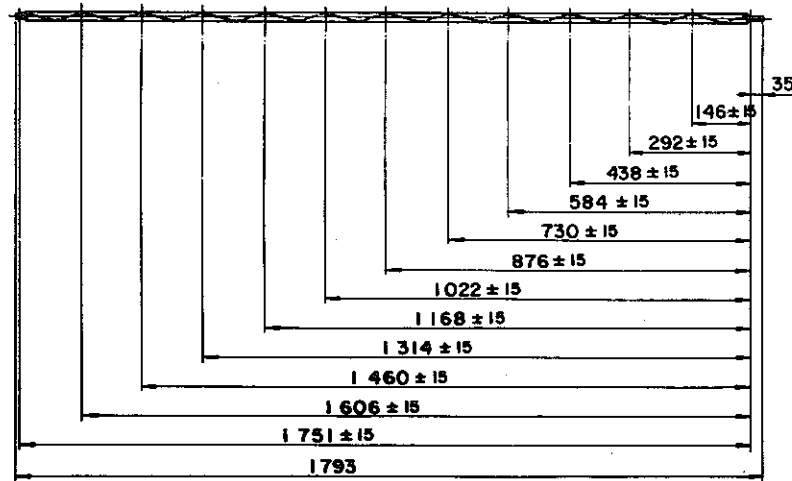
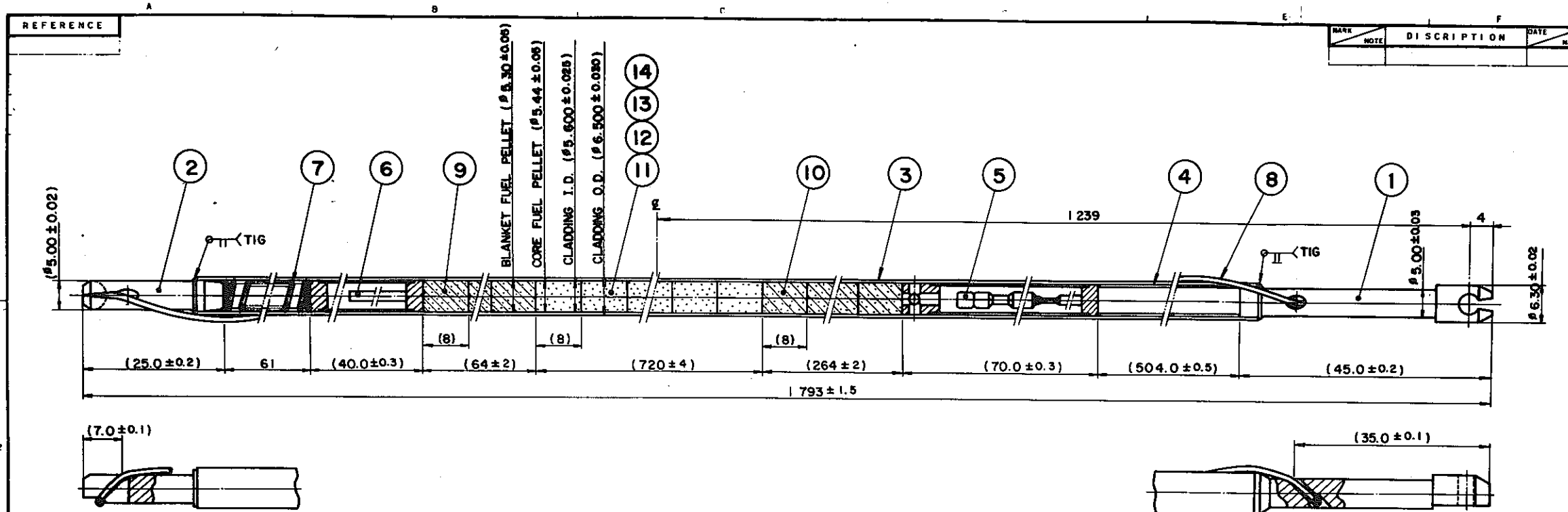
Pin No.	(%TD)	(w/o PuO <sub>2</sub> )	O/M	Lot No	Core fuel pellet						Lower Insulator		Upper Insulator		(L+U) Insulator	
					M. O(g)	PuO <sub>2</sub> (g)	Pu(g)	Pu fiss(g)	N•UO <sub>2</sub> (g)	N•U(g)	N•UO <sub>2</sub> (g)	N•U(g)	N•UO <sub>2</sub> (g)	N•U(g)	N•UO <sub>2</sub> (g)	N•U(g)
84K-1	85	29.78	1955	PX-22	15990	4762	4200	3391	11228	9892	6130	5401	1460	1286	7590	6687
84K-2					16020	4771	4208	3397	11249	9911	6050	5330	1520	1339	7570	6669
84K-3					16030	4774	4210	3400	11256	9917	6060	5339	1480	1304	7540	6643
84S-1					16020	4771	4208	3397	11249	9911	6090	5365	1500	1322	7590	6687
84S-2					16040	4777	4213	3402	11263	9923	6090	5365	1480	1304	7570	6669
A TOTAL					80100	23855	21039	16987	56245	49554	30420	26800	7440	6555	3786	33355
88K-1	(B)85	29.78	199	PX-22	160988	4794	4229	3414	11305	9959	60755	5353	14939	1316	75694	6669
88K-2	85	29.38	198	PX-23	15930	4680	4128	3333	11250	9911	6040	5321	1540	1357	7580	6678
88K-3					15970	4692	4138	3341	11278	9936	6090	5365	1500	1322	7590	6687
88K-4					16100	4730	4172	3368	11370	10017	6050	5330	1510	1330	7560	6660
88S-1					16100	4730	4172	3368	11370	10017	6050	5330	1510	1330	7560	6660
88S-2					16030	4710	4154	3354	11320	9973	6060	5339	1490	1313	7550	6652
88S-3					16000	4701	4146	3348	11299	9955	6060	5339	1490	1313	7550	6652
88S-4					16000	4701	4146	3348	11299	9955	6020	5304	1530	1348	7550	6652
88C-1					16180	4754	4193	3385	11426	10067	6090	5365	1500	1322	7590	6687
C TOTAL	128310	37698	33249	26845	90612	79831	545355	48046	135639	11951	680994	59997				
94K-1	93	26.77	195	PX-15	17490	4682	4130	3334	12808	11284	6060	5339	1450	1277	7510	6616
94S-1					17380	4653	4104	3313	12727	11213	6080	5357	1440	1269	7520	6625
94S-2					17550	4698	4144	3346	12852	11322	6090	5365	1480	1304	7570	6669
94C-1					17460	4674	4123	3329	12786	11264	6090	5365	1500	1322	7590	6687
94C-2					17520	4690	4137	3340	12830	11303	6100	5374	1450	1277	7550	6652
D TOTAL					87400	23397	20638	16662	64003	56386	30420	26800	7320	6449	37740	33249
98K-1	93	26.97	199	PX-14	172439	4651	4102	3312	12593	11095	60655	5344	14595	1286	7525	6630
98K-2					17200	4639	4091	3303	12561	11066	6070	5348	1470	1295	7540	6643
98S-1					17280	4660	4110	3319	12620	11118	6110	5383	1520	1339	7630	6722
98C-1					17180	4633	4087	3300	12547	11054	6060	5339	1440	1269	7500	6608
98C-2					17280	4660	4110	3319	12620	11118	6090	5365	1510	1330	7600	6696
98C-3					17260	4655	4106	3315	12605	11105	6130	5401	1510	1330	7640	6731
E TOTAL					1034439	27898	24606	19868	75546	66556	365255	32180	89095	7849	45435	40030
A+B+C+D+E TOTAL					4153527	117642	103761	83776	297711	262286	151901	133826	372334	32804	1891344	166631

## 6. DRAWINGS

## PHENIX P.N.C.-3 FUEL PIN

## DRAWING LIST

ITEM	DRAWING NO.	NAME	NUMB- ERS	MATERIAL	SEQ.NO.
1	<del>PHENIX-3-1200B</del>	<del>CAPSULE P.N.C.-3 19 ALUMINUM CONDUCTIBLES</del>	<del>19</del>		<del>770167</del>
2	" -1200M	PHENIX P.N.C.-3 FUEL PIN	19		770168
3	" -1201M	LOWER END PLUG	19	SUS 316	770169
4	" -1202M	UPPER END PLUG	19	SUS 316	770170
5	" -1203M	CLADDING	19	SUS 316	770171
6	" -1204M	PLENUM SLEEVE	19	SUS 316	770172
7	" -1205M	CONTAINER OF TAG. GAS CAPSULE	19		770173
8	" -1206M	END PLUG OF CONTAINER (TYPE-1)	57	SUS 316	770174
9	" -1207M	END PLUG OF CONTAINER (TYPE-2)	19	SUS 316	770175
10	" -1208M	CONTAINER TUBE OF TAG. GAS CAPSULE	19	SUS 316	770176
11	" -1210M	CONTAINER OF Sic	19		770177
12	" -1211M	CONTAINER TUBE OF Sic CAPSULE	19	SUS 316	770178
13	" -1213M	SPRING	19	SWP B	770179
14	" -1214M	WRAPPING WIRE	19	SUS 316	770186
15	" -1100M	CORE FUEL COLUMN	19	PUO <sub>2</sub> -UO <sub>2</sub>	770180
16	" -1101-(1)M	CORE FUEL PELLETT (A)	540	"	770181
17	" -1101-(2)M	" (B)	540	"	"
18	" -1101-(3)M	" (C)	360	"	"
19	" -1101-(4)M	CORE FUEL PELLETT (D)	180	PUO <sub>2</sub> -UO <sub>2</sub>	770181
20	" -1102M	UPPER BLANKET FUEL COLUMN	19	NAT.UO <sub>2</sub>	770182
21	" -1103M	LOWER BLANKET FUEL COLUMN	19	NAT.UO <sub>2</sub>	770183
22	" -1104M	AXIAL BLANKET FUEL PELLETT	779	NAT.UO <sub>2</sub>	770184
23	PHENIX-3-1400M	FUEL PIN CONFIGURATION			780125



PRODUCED SIZE AFTER WORKING (10/1)

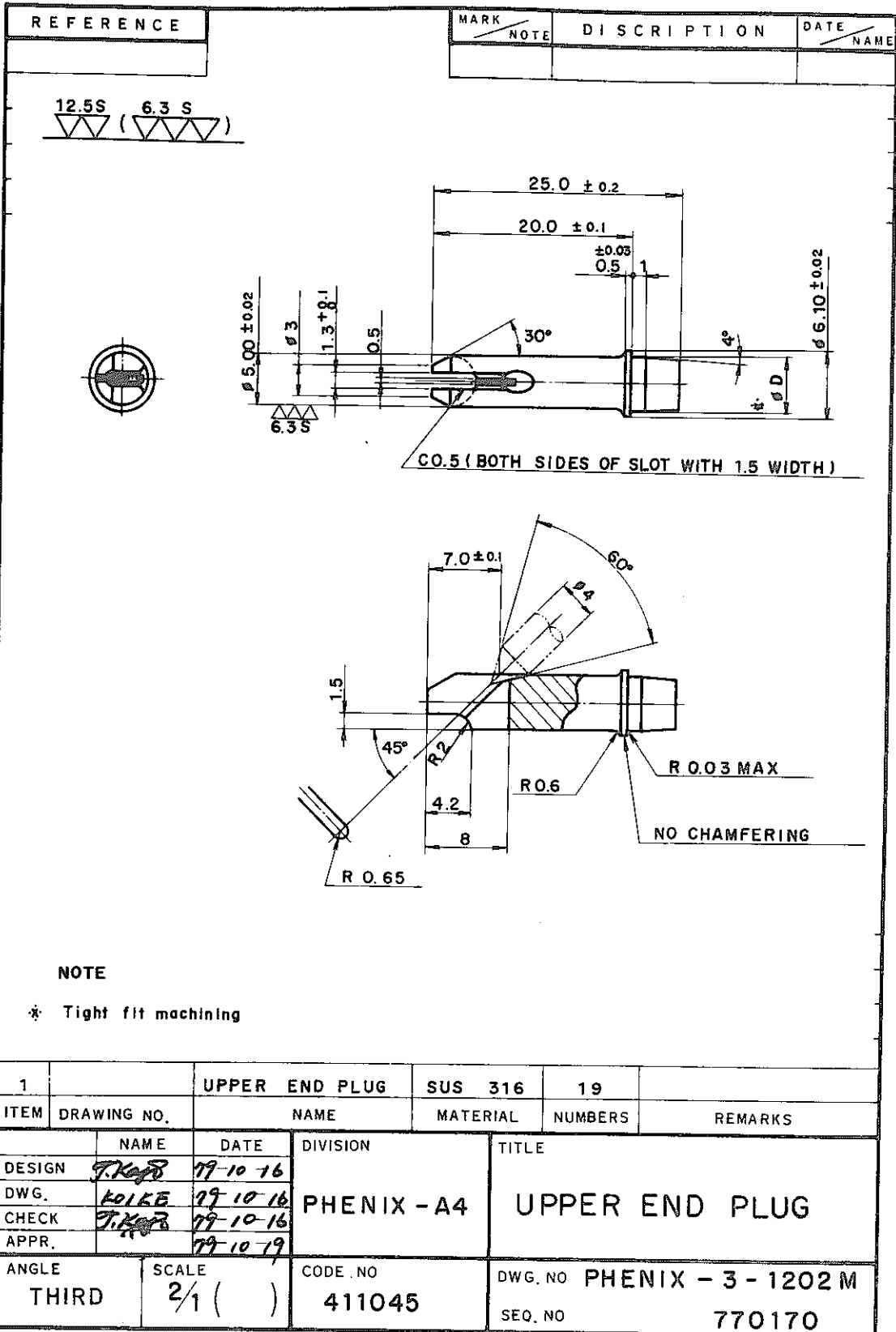
ITEM	DRAWING NO.	NAME	MATERIAL NUMBERS	REMARKS
15		PHENIX-3		
14		-1101-14M CORE FUEL PELLETT (A) PUO <sub>2</sub> -UO <sub>2</sub>		DENSITY 93% T.D. 0/M 1.94
13		-1101-13M CORE FUEL PELLETT (C)		DENSITY 93% T.D. 0/M 1.98
12		-1101-12M CORE FUEL PELLETT (B)		DENSITY 85% T.D. 0/M 1.94
11		-1101-11M CORE FUEL PELLETT (A) PUO <sub>2</sub> -UO <sub>2</sub>		DENSITY 85% T.D. 0/M 1.98
10		-1103 M LOWER BLANKET FUEL PELLETT		NAT. UO <sub>2</sub>
9		-1102 M UPPER BLANKET FUEL PELLETT		NAT. UO <sub>2</sub>
8		-1214 M WRAPPING WIRE		SUS 316
7		-1213 M SPRING		SWP B
6		-1210 M CONTAINER OF SIC		
5		-1205 M CONTAINER OF TAG GAS CAPSULE		
4		-1204 M PLENUM SLEEVE		SUS 316
3		-1203 M CLADDING		
2		-1202 M UPPER END PLUG		
1		PHENIX-3 -1201 M LOWER END PLUG		SUS 316

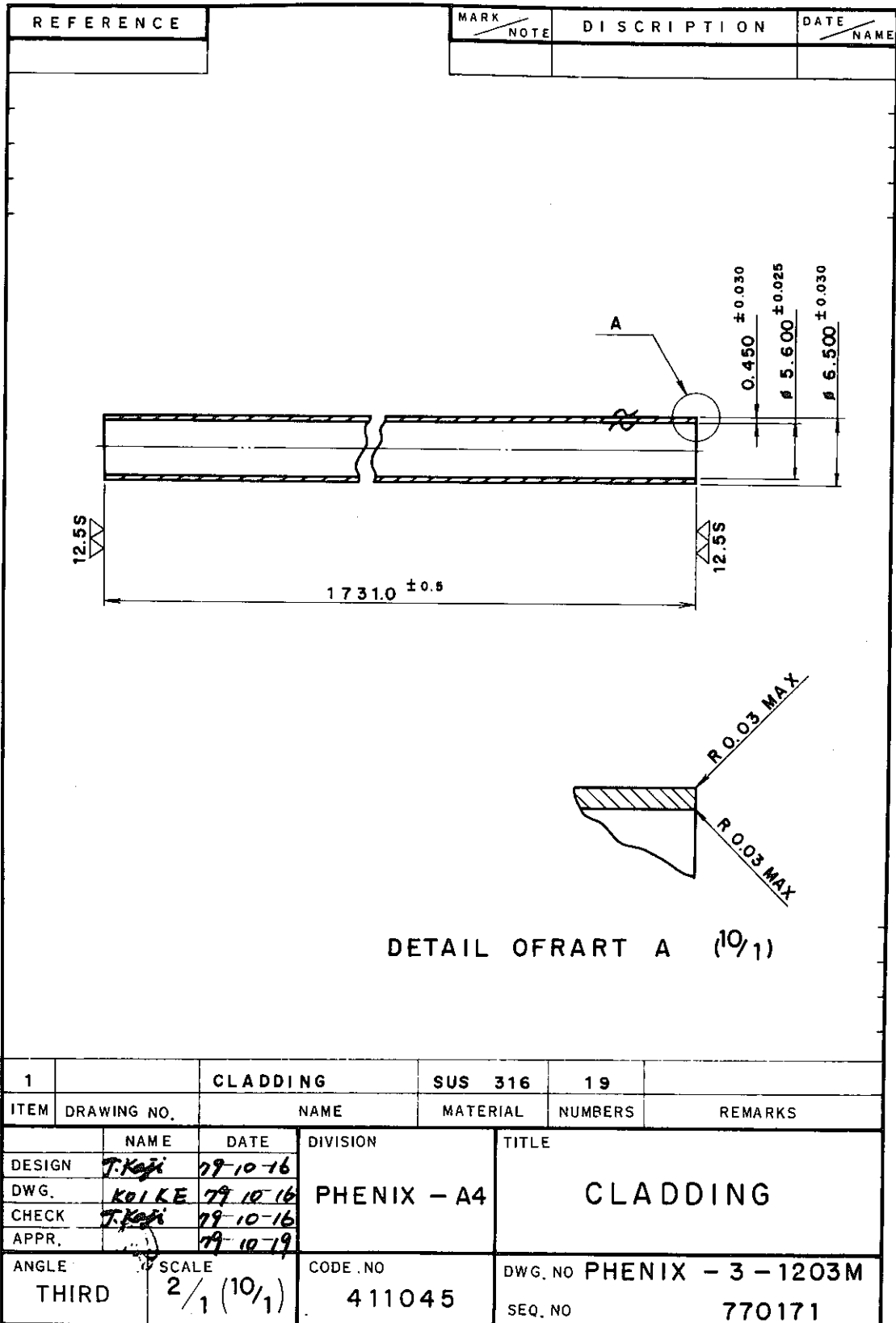
  

DESIGN	DWG.	CHECK	APPR.
NAME	DESIGN	DWG.	CHECK
DATE	77-10-16	77-10-16	77-10-19
DIVISION		TITLE	
PHENIX - A2		PHENIX P.N.C - 3 FUEL PIN	
CODE NO		DWG. NO	
411045		PHENIX-3-1200 M	
		SEQ. NO	
		770168	





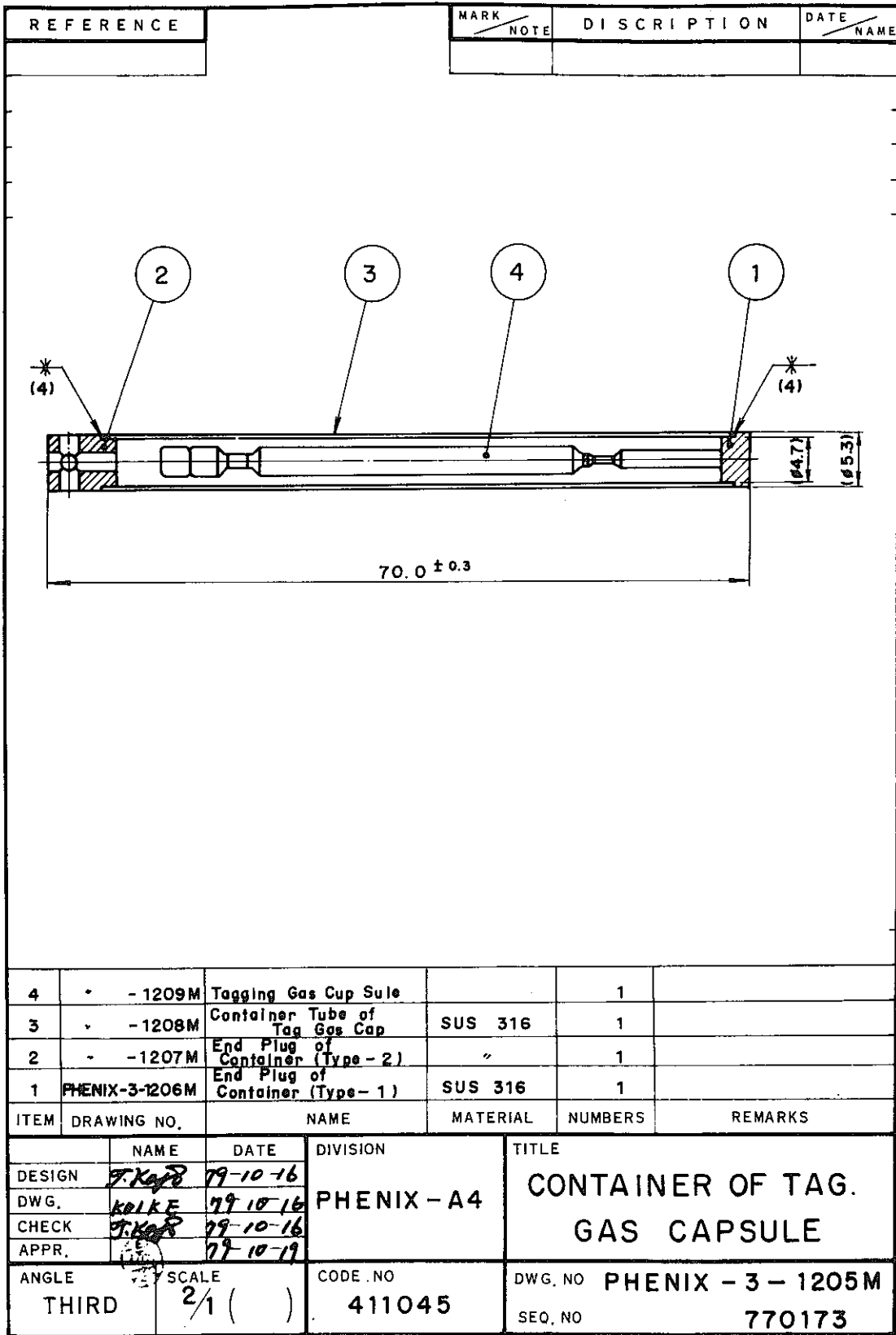




POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE		MARK	DISCRIPTION	DATE	
		NOTE		NAME	
1		PLENUM SLEEVE	SUS 316	19	
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS
DESIGN	<i>J. Keys</i>	<i>79-10-17</i>	PHENIX - A4	TITLE PLENUM SLEEVE	
DWG.	<i>KOLKE</i>	<i>79-10-17</i>			
CHECK	<i>J. Keys</i>	<i>79-10-17</i>			
APPR.	<i>J. Keys</i>	<i>79-10-17</i>			
ANGLE	SCALE	CODE NO	DWG. NO PHENIX-3-1204 M		
THIRD	2/1 ( )	411045	SEQ. NO 770172		

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI



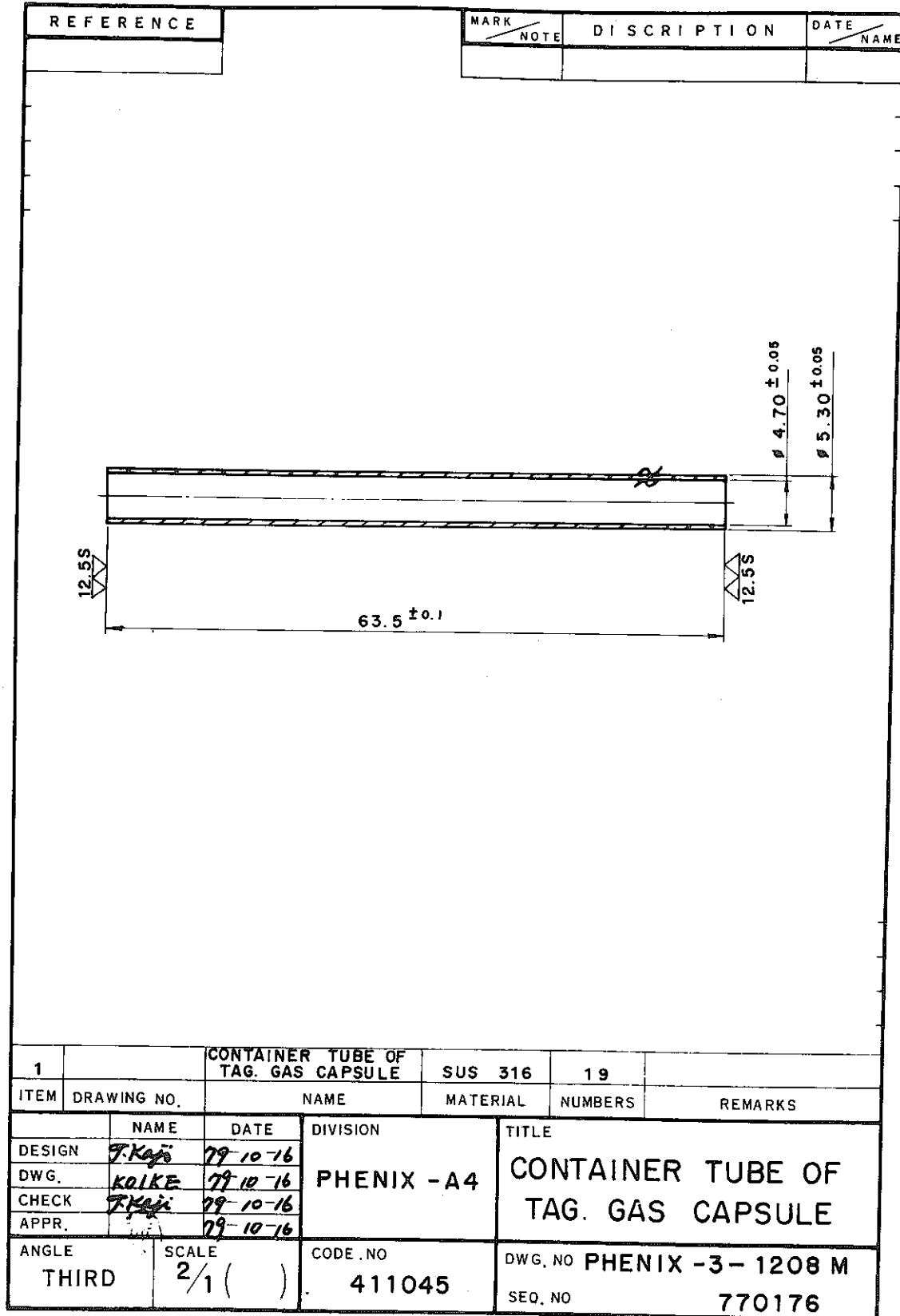
POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK NOTE	DISCRIPTION	DATE NAME		
1		END PLUG OF CONTAINER	SUS 316 57		
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS
DESIGN	<i>TOKAI</i>	<i>79-10-16</i>	PHENIX -A4	END PLUG OF CONTAINER (TYPE - I)	
DWG.	<i>KOLKE</i>	<i>79-10-16</i>			
CHECK	<i>T. KOFU</i>	<i>79-10-16</i>			
APPR.	<i>T. KOFU</i>	<i>79-10-79</i>			
ANGLE	SCALE	CODE .NO	DWG. NO	PHENIX -3- 1206 M	
THIRD	5/1 ( )	411045	SEQ. NO	770174	

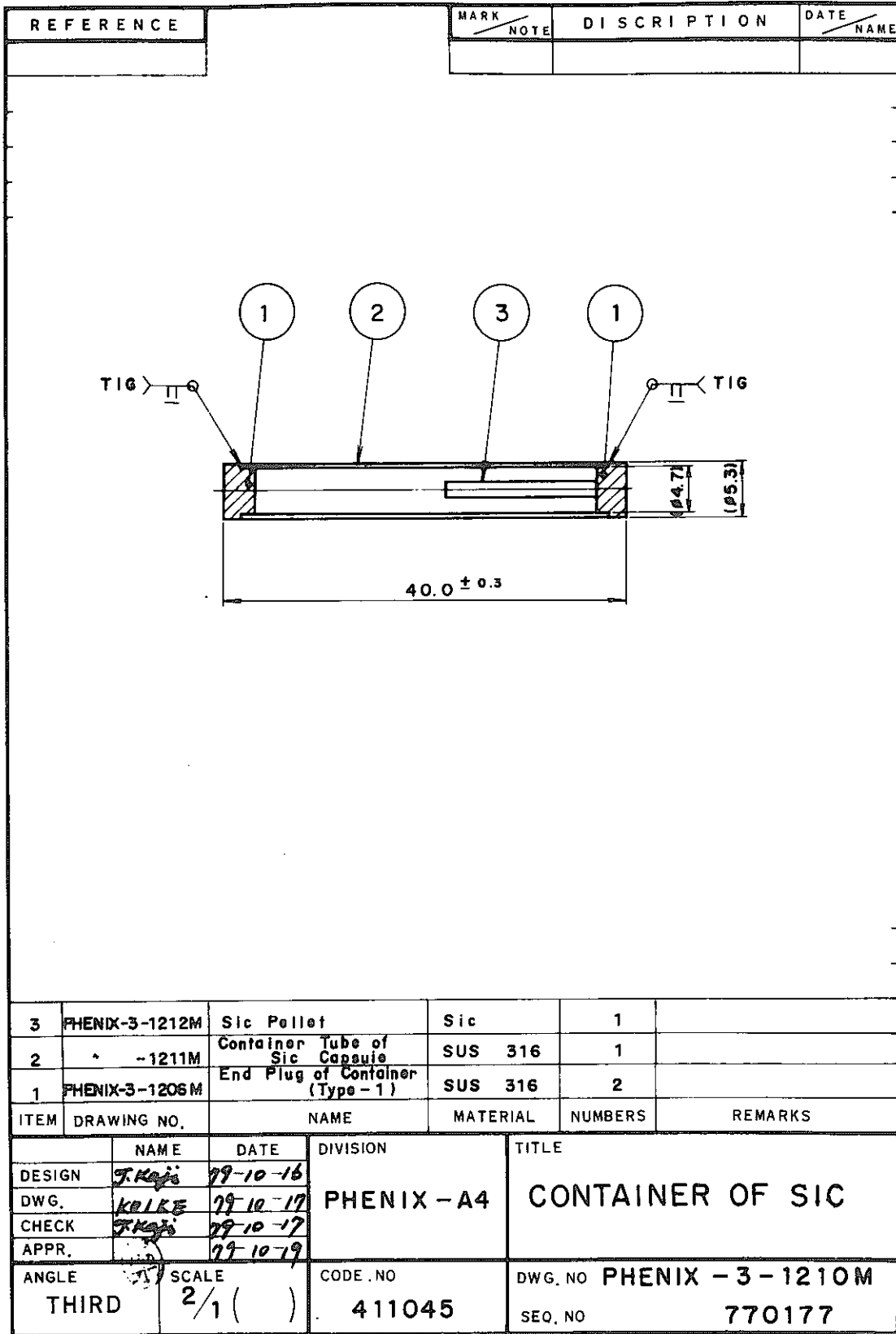
POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK / NOTE	DISCRIPTION	DATE / NAME	
1		END PLUG OF CONTAINER	SUS 316 19	
ITEM	DRAWING NO.	NAME	MATERIAL NUMBERS	REMARKS
DESIGN	NAME	DATE	DIVISION	TITLE
DWG.	<i>T. Kojima</i>	<i>79-10-17</i>	PHENIX - A4	END PLUG OF CONTAINER (TYPE - 2)
CHECK	<i>KAIKE</i>	<i>79-10-17</i>		
APPR.	<i>T. Kojima</i>	<i>79-10-17</i>		
		<i>79-10-19</i>		
ANGLE THIRD	SCALE 5/1 ( )	CODE NO 411045	DWG. NO PHENIX-3-1207M	SEQ. NO 770175

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI



POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI



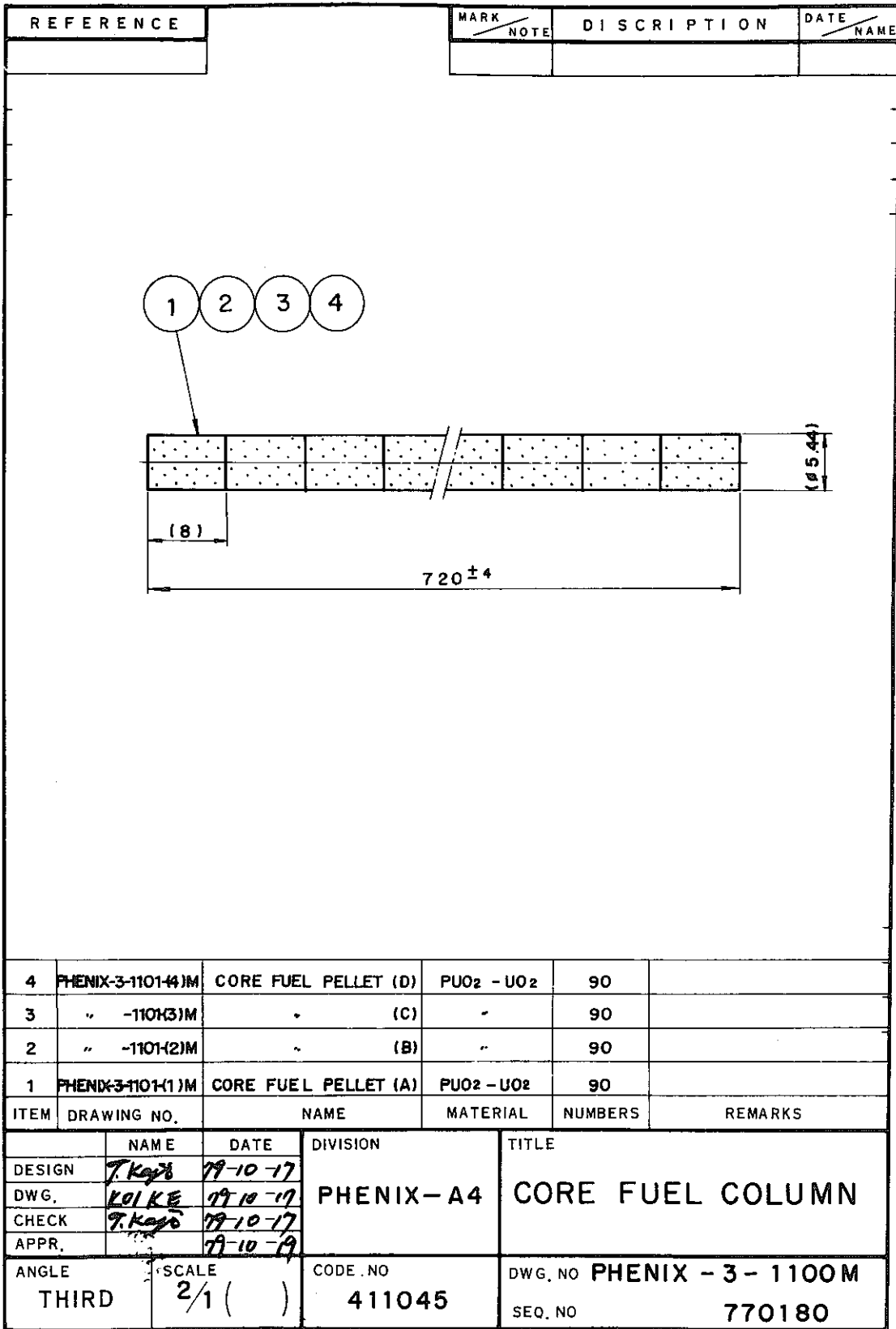
POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI



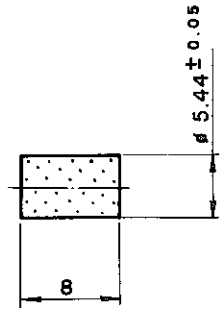
REFERENCE	MARK / NOTE	DISCRIPTION	DATE / NAME		
<p style="text-align: center;">37.0 ± 0.1</p> <p style="text-align: center;">12.5S</p> <p style="text-align: center;">12.5S</p> <p style="text-align: center;">φ 4.70 ± 0.05</p> <p style="text-align: center;">φ 5.30 ± 0.05</p>					
1		CONTAINER TUBE OF SIC CAPSULE	SUS 316 19		
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS
DESIGN	<i>T. Kojima</i>	<i>79-10-16</i>	PHENIX - A 4	TITLE CONTAINER TUBE OF SIC CAPSULE	
DWG.	<i>KOLKE</i>	<i>79-10-16</i>			
CHECK	<i>T. Kojima</i>	<i>79-10-16</i>			
APPR.	<i>T. Kojima</i>	<i>79-10-16</i>			
ANGLE	SCALE	CODE NO	DWG. NO PHENIX-3-1211M		
THIRD	2/1 ( )	411045	SEQ. NO 770178		

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK NOTE	DISCRIPTION	DATE NAME														
<table border="1" style="margin: auto;"> <tr> <td>MATERIAL</td> <td>SWPB</td> </tr> <tr> <td>WIRE DIAMETER</td> <td>∅ 0.800 ± 0.015</td> </tr> <tr> <td>COIL O. D.</td> <td>∅ 5.2 + 0.1 / 0</td> </tr> <tr> <td>TOTAL NUMBER OF TURNS</td> <td>29</td> </tr> <tr> <td>EFFECTIVE NUMBER OF TURNS</td> <td>27</td> </tr> <tr> <td>FREE LENGTH</td> <td>70.0 - 0 / -1.0</td> </tr> <tr> <td>SPRING CONSTANT</td> <td>0.178 kg/mm</td> </tr> </table>		MATERIAL	SWPB	WIRE DIAMETER	∅ 0.800 ± 0.015	COIL O. D.	∅ 5.2 + 0.1 / 0	TOTAL NUMBER OF TURNS	29	EFFECTIVE NUMBER OF TURNS	27	FREE LENGTH	70.0 - 0 / -1.0	SPRING CONSTANT	0.178 kg/mm		
MATERIAL	SWPB																
WIRE DIAMETER	∅ 0.800 ± 0.015																
COIL O. D.	∅ 5.2 + 0.1 / 0																
TOTAL NUMBER OF TURNS	29																
EFFECTIVE NUMBER OF TURNS	27																
FREE LENGTH	70.0 - 0 / -1.0																
SPRING CONSTANT	0.178 kg/mm																
1		Spring	19														
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS												
DESIGN	<i>T.K.A.B.</i>	DATE	DIVISION	TITLE													
DWG.	<i>KOLKE</i>	<i>79-10-16</i>	PHENIX-A4	SPRING													
CHECK	<i>T.K.A.B.</i>	<i>79-10-16</i>															
APPR.	<i>T.K.A.B.</i>	<i>79-10-19</i>															
ANGLE	SCALE	CODE NO.	DWG. NO.	PHENIX-3-1213 M													
THIRD	2/1 ( )	411045	SEQ. NO	770179													



POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK / NOTE	DISCRIPTION	DATE / NAME	
				
4	PHENIX-3-1101(4)M	CORE FUEL PELLETT(D)	PU O <sub>2</sub> - UO <sub>2</sub> 180    93 % T.D.    1.94	
3	" -1101(3)M	" (C)	"    360    93 % T.D.    1.98	
2	" -1101(2)M	" (B)	"    540    85 % T.D.    1.94	
1	PHENIX-3-1101(1)M	CORE FUEL PELLETT(A)	PUO <sub>2</sub> - UO <sub>2</sub> 540    85 % T.D.    1.98	
ITEM	DRAWING NO.	NAME	MATERIAL    NUMBERS    REMARKS    O/M	
DESIGN	NAME	DATE	DIVISION	TITLE
DWG.	7. Kato	19-10-17	PHENIX - A4	CORE FUEL PELLETT
CHECK	KOIKE	19-10-18		
APPR.	7. Kato	19-10-17		
		19-10-17		
ANGLE	SCALE	CODE .NO	DWG. NO	PHENIX - 3 - 1101M
THIRD	2/1 ( )	411045	SEQ. NO	770181

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI <

REFERENCE	MARK NOTE	DISCRIPTION	DATE NAME		
1	PHENIX-3-1104M	AXIAL BLANKET PEL (E)	NAT. UO 2		
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS
DESIGN	NAME	DATE	DIVISION	TITLE	
DWG.	KOIKE	79-10-17	PHENIX - A4	UPPER BLANKET FUEL COLUMN	
CHECK	T. KOIKE	79-10-17			
APPR.		79-10-17			
ANGLE	SCALE	CODE .NO			
THIRD	2/1 ( )	411045	SEQ. NO	770182	

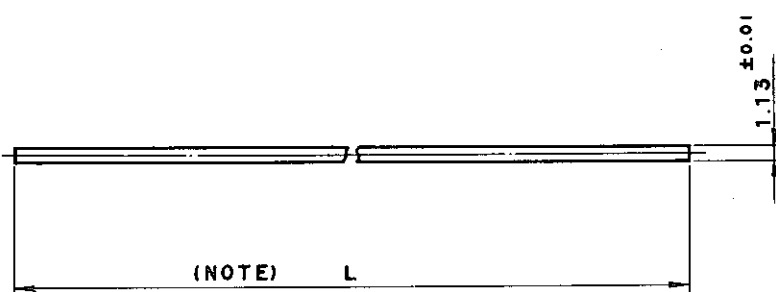
POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK / NOTE	DISCRIPTION	DATE / NAME	
1	PHENIX-3-1104 M	AXIAL BLANKET PELLETT	NAT. UO <sub>2</sub> 33	
ITEM	DRAWING NO.	NAME	MATERIAL NUMBERS	REMARKS
DESIGN	NAME	DATE	DIVISION	TITLE
DWG.	DATE		PHENIX - A4	LOWER BLANKET FUEL COLUMN
CHECK	DATE			
APPR.	DATE		CODE NO	DWG. NO
ANGLE	SCALE		411045	PHENIX - 3 - 1103 M
THIRD	2/1 ( )			SEQ. NO 770183

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

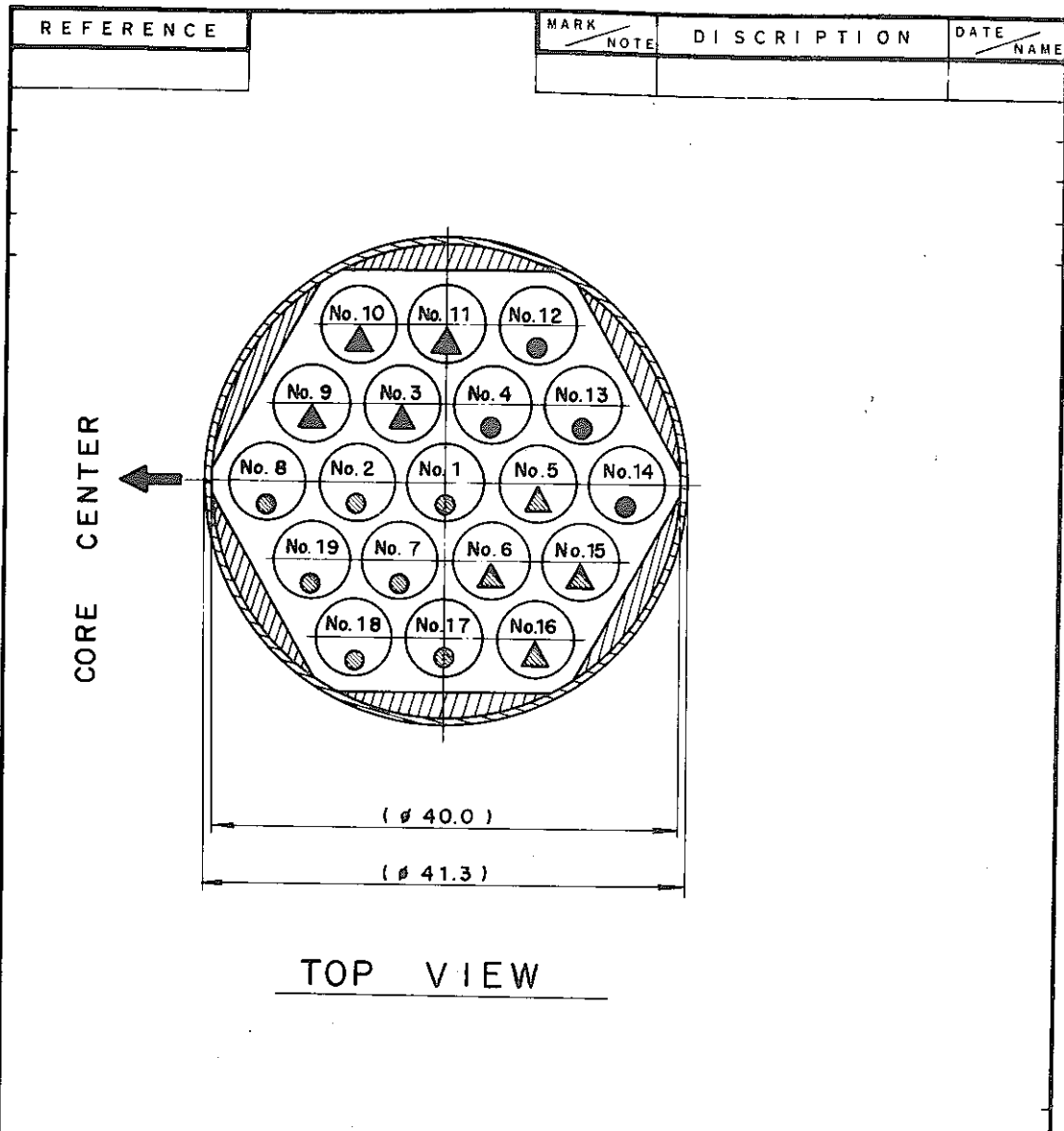
REFERENCE	MARK NOTE	DISCRIPTION	DATE NAME	
1		AXIAL BLANKET FUEL PELLETT	NAT UO <sub>2</sub> 779	
ITEM	DRAWING NO.	NAME	MATERIAL NUMBERS	REMARKS
DESIGN	NAME	DATE	DIVISION	TITLE
DWG.			PHENIX - A4	AXIAL BLANKET FUEL PELLETT
CHECK				
APPR.				
ANGLE	SCALE	CODE .NO		
THIRD	2/1 ( )	411045	PHENIX-3-1104M	
			SEQ. NO	770184

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI

REFERENCE	MARK / NOTE	DISCRIPTION	DATE / NAME		
 <p style="text-align: center;">(NOTE) L</p> <p style="text-align: right; margin-right: 50px;">1.13 ± 0.01</p> <p><b>NOTE</b></p> <p>LENGTH NEEDED FOR WIRE</p>					
1		WRAPPING WIRE	SUS 316 19		
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS
DESIGN	J. KAP	79-10-16	PHENIX - A4	WRAPPING WIRE	
DWG.	KOIKE	79-10-16			
CHECK	J. KAP	79-10-16			
APPR.		79-10-17			
ANGLE	SCALE	CODE NO	DWG. NO	PHENIX - 3 - 1214 M	
THIRD	2/1 ( )	411045	770186		

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI





4	"	FUEL PIN (D)	▲	4	93 % T.D	1.94
3	"	FUEL PIN (C)	▲	4	93 % T.D	1.98
2	"	FUEL PIN (B)	●	4	85 % T.D	1.94
1	PHENIX-3-1200M	FUEL PIN (A)	●	7	85 % T.D	1.98
ITEM	DRAWING NO.	NAME	MATERIAL	NUMBERS	REMARKS	
	NAME	DATE	DIVISION	TITLE		
DESIGN	<i>T.Kajō</i>	79-10-16	PHENIX - A 4	FUEL PIN CONFIGURATION		
DWG.		- -				
CHECK	<i>T.Kajō</i>	79-10-16				
APPR.		79-10-19				
ANGLE	SCALE	CODE .NO	DWG. NO	PHENIX - 3 - 1410M		
THIRD	2/1 ( )	411045	SEQ. NO	770185		

POWER REACTOR AND NUCLEAR FUEL DEVELOPMENT CORPORATION, TOKAI