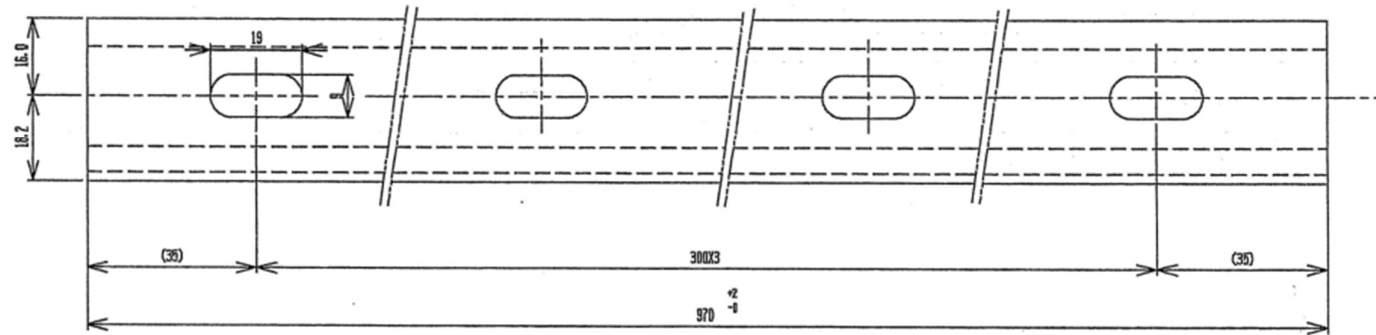
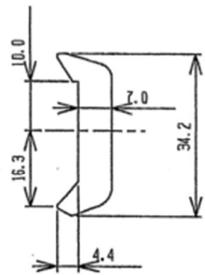


Lampiran 1.

Dokumen Gambar Teknis Aluminium Ear L=970



## Spesifikasi Teknis Aluminium Ear

### 3-2 Aluminum Ear

Aluminum Ear shall be regulated by JIS H 4100. The type is shown in Table 4.

Table 4 Type of Aluminum Ear

	Grade	Class	Symbol
Aluminum Ear	6063	T6	A6063S-T6

#### (1) Chemical composition, Property

The chemical composition of Aluminum Ear is shown in Table 2.

The mechanical and electrical properties are shown in Table 5.

Table 5 Mechanical and Electrical properties of Aluminum Ear

	Tensile strength (N/mm <sup>2</sup> )	Elongation (%)	Conductivity at 20°C (%)
Aluminum Ear	205 ≤	10 ≤	51 ≤

#### (2) Notices

- Aluminum Ear shall be processed into the shape shown in the attached drawings.
- Dimensional tolerances which are not specified on drawing shall be according to JIS H 4100-Clause4.
- No cracks and other harmful defects shall be in Aluminum Ear.

### 4. Surface treatment

The following surface treatment shall be applied to AL-T-BAR and Aluminum Ear in order to prevent galvanic corrosion.

#### 4-1 AL-T-BAR

The primer treatment and urethane painting shall be applied to the contact surface of the contact wire. Paint color shall be matte black.

#### 4-2 Aluminum Ear

Alumite treatment and acrylic painting shall be applied to the surface. Paint color shall be matte black.

### Contoh Dokumen Laporan Pengujian Material Aluminium Ear

Inspection Item	Criteria	Results							
Performance Inspection	The performance shall be within the range of the JIS H 4100.	No.1 OK	By review the test reports of the extrusion manufacture (1sample/1Lot)						
Appearance & surface treatment Inspection	No cracks and other harmful defects	No.1 OK	No.2 OK	No.3 OK	No.4 OK	No.5 OK	No.6 OK	No.7 OK	No.8 OK
Dimension Inspection	The value shall be within the dimensional tolerance in below table	By visual inspection							
		No.1 OK	No.2 OK	No.3 OK	No.4 OK	No.5 OK	No.6 OK	No.7 OK	No.8 OK
		By measurement with vernier caliper, etc.							

#### Dimension inspection result

(Drawing : attached Y143-03-80-001 )

Measured Point	L	A	B	C	D	E	F				
Dimension (mm)	970	34.2	7	16	19	9	300X3 =900				
Tolerance (mm)	+2,-0	±0.45	±0.30	±0.5	±0.5	±0.5	±2				
Measurement (mm)	No.1	971	34.20	7.00	15.9	19.0	8.9	900			
	No.2	971	34.20	7.00	15.9	19.0	8.9	900			
	No.3	971	34.20	7.00	15.9	19.0	8.9	900			
	No.4	971	34.20	7.00	15.9	19.0	8.9	900			
	No.5	971	34.10	7.00	15.9	19.0	9.0	900			
	No.6	971	34.10	7.00	15.8	19.0	8.9	900			
	No.7	971	34.20	7.00	15.9	19.0	8.9	900			
	No.8	971	34.20	7.00	15.9	19.0	8.9	900			

EAR

### CERTIFICATE OF INSPECTION

Date 22. MARCH 2017

Delivery to KANSAI PIPE INDUSTRY CO.,LTD

Order Placed by KANSAI PIPE INDUSTRY CO.,LTD

Work NO	S702933	Drawing NO	A29052
Order NO	10-165-597	Lot NO	S702933-01
Product	ALUMINIUM ALLOY EXTRUDED SHAPE	Length	2950 mm
Specification	ASME SB221-6063-T6	Pieces & Weight	472 Pieces 926.1 kg
User Drawing NO		Surface Inspection	Good
		Dimension Inspection	Good

Chemical Comp.	Si	Fe	Cu	Mn	Mg	Cr	Zn	Ti	Others		Al
									Each	Total	
Specification	0.20 ~ 0.6	0.35 ≤	0.10 ≤	0.10 ≤	0.45 ~ 0.9	0.10 ≤	0.10 ≤	0.10 ≤	0.05 ≤	0.15 ≤	R
TH 3217	0.53	0.18	0.01	0.01	0.63	0.01	0.01	0.01	0.00	0.00	R

Test Item	Tensile Properties			Conductivity
	Tensile Strength N/mm2	Yield Strength N/mm2	Elongation %	
Specification	MIN. 205	MIN. 175	MIN. 10	20°C
	249	227	15.3	55.5

WE HEREBY CERTIFY THAT THE MATERIAL HAS BEEN SAMPLED, TESTED, AND INSPECTED IN ACCORDANCE WITH THE ABOVE SPECIFICATION AND HAS MET THE REQUIREMENTS

338, Hashizume, Yorocho,  
Yoro-gun, Gifu, Japan

**TACHIBANA METAL  
MFG. CO., LTD.**

Quality Assurance Section  
Chief Inspector *H. Watanabe*

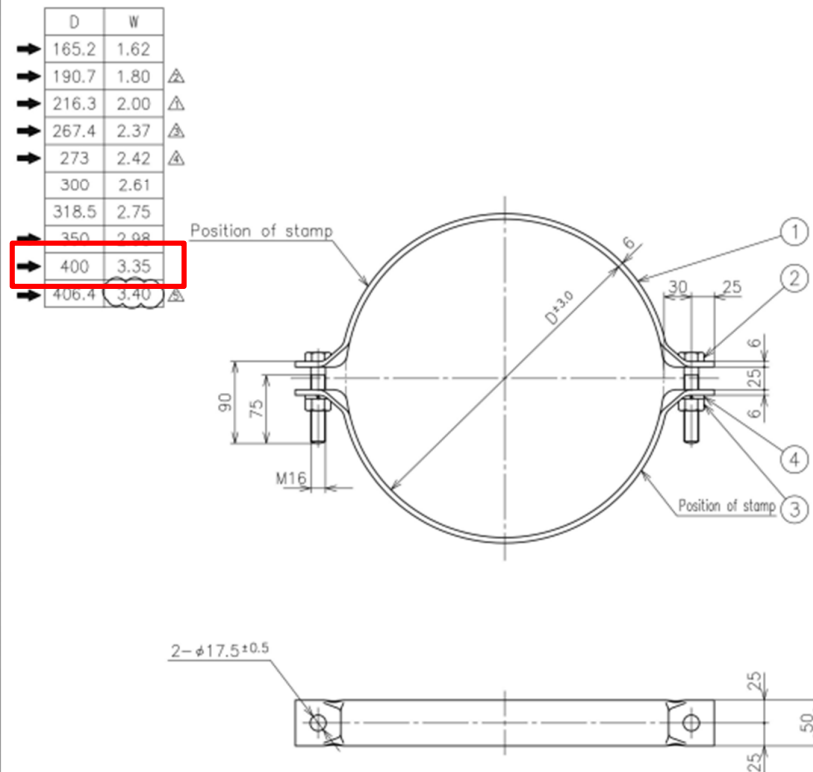
**Foto Collar Stud Bolt for RISS**



## Dokumen Gambar Teknis Pole Band B1 Type Diameter 400

Specification : YT-VV-2131

No	PARTICULARS	Q'ty	MATERIAL	COATING	WEIGHT	DWG. No	DESCRIPTION
1	Body	1s	SS400	HDZ 55	W		FB50×6
2	Hexagon head bolt	2	SS400	HDZ 35	0.38		M16×90×75s
3	Hexagon nut	2	SS400	HDZ 35	0.07		M16 Type1
4	Spring washer	2	SUS304-WPA	—	0.02		For M16



\*Manufacturing company's abbreviation, manufacturing date and diameter shall be stamped on the body.

\*Reference DWG No. is "32110110".

## **Spesifikasi Teknis Pole Band**

### **1. Scope of application**

This standard applies to a pole band (hereinafter referred to as Band) which is manufactured for Jakarta MRT.

### **2. Material**

The material of the band shall be based on a material list in a drawing, so its detail shall follow an applicable JIS.

### **3. Shape and dimension**

The shape and dimension of the band shall follow the drawing. Regarding to a dimensional tolerance of the product, member and material, unless otherwise indicated, it shall be as below.

Fittings which comply with the raw material on site based on SNI shall be provided.

3-1 The shape, dimension and tolerance of the product shall follow a production drawing.

Unless otherwise specified in the production drawing, the tolerance shall be the following

① to ⑤ and table 1.

- |  |   |
|--|---|
| ① Tolerance and angle of plate working | Follow "Very coarse" in JIS B 0405.   |
| ② Tolerance of forging                 | Follow "Normal type" in JIS B 0415 or JIS B 0416.<br>(However, except for a dimensional tolerance of machining part.) |
| ③ Press working                        | Follow the grade C in JIS B 0408.   |
| ④ Shearing work                        | Follow the grade B in JIS B 0410.   |
| ⑤ Gas cutting                          | Follow the grade A in JIS B 0417.   |

<Table 1>

Hole diameter	Under $\phi 20$	$\pm 0.5 \text{ mm}$
	Over $\phi 20$	$\pm 1.0 \text{ mm}$
Related installation pitch of 1 unit	$\pm 1 \text{ mm}$	
Tolerance which over 4,000mm	$\pm 10 \text{ mm}$	

### **4. Processing method**

- 4-1 The material shall not have harmful defects such as cracks and flaws and so on before use.
- 4-2 The cutting surface and hole making section by the shearing work shall not have burrs, so its surface must be smooth. Also, the butts shall be finished.
- 4-3 The slags and burrs on the cutting surface by a laser cutting, plasma cutting and gas cutting shall be removed by a grinder and so on.
- 4-4 The shape and dimension of the welded joint shall be in accordance with the production drawing.
- 4-5 The joint part which is unspecified in the drawing shall be butt welded or fillet welded.
-



- 4-6 The welder shall take a necessary working posture for a welding part. Also, he/she shall have the following qualification at a minimum depending on part of welding work:
- A-2F or N-2F of JIS Z 3801  
(Standard qualification procedure for manual welding technique)
  - SA-2F of JIS Z 3841  
(Standard qualification procedure for semi-automatic welding technique)
- 4-7 The welding seam shall not concentrate on the 1 point too much.
- 4-8 In the case of the seam welds with several layers, the next welding shall be performed after removing all impurities on the previous welding layer.
- 4-9 The welding rod shall be completely dry for its use, so it shall comply with JIS Z 3211 (Covered electrodes for mild steel), JIS Z 3312 (Solid wires for MAG and MIG welding of mild steel, high strength steel and low temperature service steel) or JIS Z 3313 (Flux cored wires for gas shielded and self-shielded metal arc welding of mild steel, high strength steel and low temperature service steel). Also, it shall not use the welding rod which has a contamination, a terrible eccentricity and a deficient coating.
- 4-10 The flow and method of welding shall be tried to be a minimum distortion and residual stress. Also, a bead irregularity shall be finished by a grinder.
- 4-11 Unless otherwise specified in the manufacturing drawing, the leg length of the welding bead shall be 70% of the thinner material which is welded.
- 4-12 Unless absolutely necessary, it shall not be applied, but the working posture of welding shall be basically downward.
- 4-13 If the oil spots, rusts, spatters and slags are adhered to the welding surface, they shall be removed. Also, it shall prevent to apply a spatter shield too much.
- 4-14 In the case of a temperature is under 0 °C in the welding place and also they have a moisture, the welding work shall not be performed.
- 4-15 It shall not have defects such as an undercut, pit and overlap which are harmful in use for welding. Moreover, it shall be corrected when they will be occurred.
- 4-16 All spatters and slags shall be removed after welding.
- 4-17 In the case of it will occur tortions and distortions which are harmful in use, they shall be removed after welding.
- 4-18 It shall be given attention not to occur wrinkles for bending. It also has no harmful defects such as distortions, torsions and cracks in use.
- 4-19 Bending of a hot dip galvanized product shall be basically hot bending. In the case of its bending is compelled to change from the hot bending to a cold bending, it shall need a stress-relief annealing. However, it shall not be applied if an inner radius "R" of bending for a thickness "t" is  $R \geq 2t$  and a heat treatment is considered not to require by a trial manufacture and past record.
- 4-20 In the case of burrs is occurred by a forging and forming of casting, the burrs which have the harmful defects in use and a significant poor appearance shall be removed.
- 4-21 The surface treatment shall follow JIS H 8641 (Hot dip galvanizing), and its coating mass shall be in accordance with the drawing. Moreover, the coating mass shall basically follow an example of application of JIS H 8641 (Hot dip galvanizing).
-

4-22 It shall not have harmful defects such as torsions and distortions and so on in use by the surface treatment. If it happens, it shall be modified.

## 5. Test

### 5-1 Material test

The material test shall be conducted by checking a mill sheet which is issued by a material manufacturer.

### 5-2 Hot dip galvanizing test

The hot dip galvanizing test shall be conducted by checking a certification of inspection (Hot dip galvanizing) which is issued by a galvanizing company that is permitted to indicate the JIS mark.

## 6. Inspection

### 6-1 Appearance inspection

The appearance inspection shall be inspected about the presence of harmful defects such as flaws and cracks in use and an indication by a visual check.

### 6-2 Hot dip galvanizing inspection

The hot dip galvanizing inspection shall be conducted by checking a certification of inspection (Hot dip galvanizing) which is issued by a galvanizing company that is permitted to indicate the JIS mark. Also, a coating thickness inspection shall be conducted appropriately by a coating thickness gauge.

### 6-3 Material inspection

The material inspection shall inspect a content of mill sheet which is drawn up by a material manufacturing company.

### 6-4 Dimensional inspection

The dimensional inspection shall be inspected by a vernier caliper and convex rule and so on, so its dimension shall comply with the provision in section 3.

## 7. Indication

The indication of the product shall follow the production drawing.

## 8. Packing and transportation

The products shall be packed or bundled not to get flaws and deformations. Regarding an export packaging by a wooden box, it shall use the wooden box which is complied with 2A type (Sealed plywood, nailed up type) in the JIS Z 1403 (Wooden framed boxes for packing). Also, wood which is used for the wood box shall comply with the Regulation of wood packaging material in international trade (ISPM No.15).

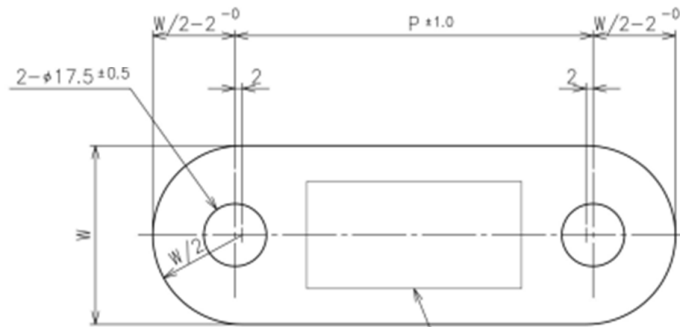


- 4-6 The welder shall take a necessary working posture for a welding part. Also, he/she shall have the following qualification at a minimum depending on part of welding work:
- A-2F or N-2F of JIS Z 3801  
(Standard qualification procedure for manual welding technique)
  - SA-2F of JIS Z 3841  
(Standard qualification procedure for semi-automatic welding technique)
- 4-7 The welding seam shall not concentrate on the 1 point too much.
- 4-8 In the case of the seam welds with several layers, the next welding shall be performed after removing all impurities on the previous welding layer.
- 4-9 The welding rod shall be completely dry for its use, so it shall comply with JIS Z 3211 (Covered electrodes for mild steel), JIS Z 3312 (Solid wires for MAG and MIG welding of mild steel, high strength steel and low temperature service steel) or JIS Z 3313 (Flux cored wires for gas shielded and self-shielded metal arc welding of mild steel, high strength steel and low temperature service steel). Also, it shall not use the welding rod which has a contamination, a terrible eccentricity and a deficient coating.
- 4-10 The flow and method of welding shall be tried to be a minimum distortion and residual stress. Also, a bead irregularity shall be finished by a grinder.
- 4-11 Unless otherwise specified in the manufacturing drawing, the leg length of the welding bead shall be 70% of the thinner material which is welded.
- 4-12 Unless absolutely necessary, it shall not be applied, but the working posture of welding shall be basically downward.
- 4-13 If the oil spots, rusts, spatters and slags are adhered to the welding surface, they shall be removed. Also, it shall prevent to apply a spatter shield too much.
- 4-14 In the case of a temperature is under 0 °C in the welding place and also they have a moisture, the welding work shall not be performed.
- 4-15 It shall not have defects such as an undercut, pit and overlap which are harmful in use for welding. Moreover, it shall be corrected when they will be occurred.
- 4-16 All spatters and slags shall be removed after welding.
- 4-17 In the case of it will occur tortions and distortions which are harmful in use, they shall be removed after welding.
- 4-18 It shall be given attention not to occur wrinkles for bending. It also has no harmful defects such as distortions, torsions and cracks in use.
- 4-19 Bending of a hot dip galvanized product shall be basically hot bending. In the case of its bending is compelled to change from the hot bending to a cold bending, it shall need a stress-relief annealing. However, it shall not be applied if an inner radius "R" of bending for a thickness "t" is  $R \geq 2t$  and a heat treatment is considered not to require by a trial manufacture and past record.
- 4-20 In the case of burrs is occurred by a forging and forming of casting, the burrs which have the harmful defects in use and a significant poor appearance shall be removed.
- 4-21 The surface treatment shall follow JIS H 8641 (Hot dip galvanizing), and its coating mass shall be in accordance with the drawing. Moreover, the coating mass shall basically follow an example of application of JIS H 8641 (Hot dip galvanizing).
-

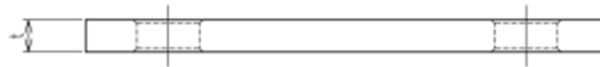
### Dokumen Gambar Teknis Strap Diameter 17.5

No	PARTICULARS	Q'ty	MATERIAL	COATING	WEIGHT	DWG. No	DESCRIPTION
	Body	1	SS400	HDZ 55			

Weight :  $(P + W - 4) \times W \times t \times 7.85 / 1000000$  [kg]



Manufacturing company's abbreviation, manufacturing date and hole pitch shall be stamped at the front.



- \*Dimension W, t and P shall be as per designation.
- \*Manufacturing company's abbreviation, manufacturing date and hole pitch shall be stamped on the body.
- \*Holes shall be rounded off with C1. Periphery shall be finished by grinder lightly.
- \*Reference DWG No. is " 31660010" .

			<b>SCALE</b>	<b>DATE</b>	<b>ITEM</b>
			1:1.5	2016.10.28	Strap
			<b>APPROVED</b>	<b>CHECKED</b>	<b>DRAWN</b>
			Shirafuji	Ishii	Minami
					<b>TYPE</b>
					φ17.5

## **Dokumen Spesifikasi Teknis Strap Diameter 17.5**

### **1. cope of application**

This standard applies to a fitting of overhead contact line (hereinafter referred to as Fitting) and so on which is manufactured for Jakarta MRT.

### **2. Description**

The fitting shall indicate a rod, wire clip, strap and clevis and so on.

### **3. Material**

The material of fitting shall be based on a material list in a drawing, so its detail shall follow an applicable JIS.

### **4. Shape and dimension**

The shape and dimension of fitting shall follow the drawing. Regarding to a dimensional tolerance of product, member and material, unless otherwise indicated, it shall be as below.

Also, in the case of the fitting is JIS standard product, it shall follow the applicable JIS.

Fittings which comply with the raw material on site based on SNI shall be provided.

4-1 The shape, dimension and tolerance of product shall follow a production drawing. Unless otherwise specified in the production drawing, the tolerance shall be the following ① to ⑦ and table 1.

- |  |   |
|--|---|
| ① Tolerance and angle of plate working | Follow "Very coarse" in JIS B 0405.   |
| ② Tolerance of casting                 | Follow a tolerance class "CT10" in JIS B 4030.<br>(However, except for a dimensional tolerance of machining part.)    |
| ③ Tolerance of forging                 | Follow "Normal type" in JIS B 0415 or JIS B 0416.<br>(However, except for a dimensional tolerance of machining part.) |
| ④ Press working                        | Follow the grade C in JIS B 0408.   |
| ⑤ Shearing work                        | Follow the grade B in JIS B 0410.   |
| ⑥ Gas cutting                          | Follow the grade A in JIS B 0417.   |
| ⑦ High frequency bending               | Follow a tolerance which is specified by the bending company.   |

<Table 1>

Hole diameter	Under $\phi 20$	$\pm 0.5 \text{ mm}$
	Over $\phi 20$	$\pm 1.0 \text{ mm}$
	Longer direction of elongate hole	$\pm 1.5 \text{ mm}$
	(The width shall be same as hole)	
Related installation pitch of 1unit	$\pm 1\text{mm}$	
Tolerance which over 4,000mm	$\pm 10\text{mm}$	

## 5. Processing method

- 5-1 The material shall not have harmful defects such as cracks and flaws and so on before use.
  - 5-2 The cutting surface and hole making section by the shearing work shall not have burrs, so its surface must be smooth. Also, the burrs shall be finished.
  - 5-3 The slags and burrs on the cutting surface by a laser cutting, plasma cutting and gas cutting shall be removed by a grinder and so on.
  - 5-4 The shape and dimension of the welded joint shall be in accordance with the production drawing.
  - 5-5 The joint part which is unspecified in the drawing shall be butt welded or fillet welded.
  - 5-6 The welder shall take a necessary working posture for a welding part. Also, he/she shall have the following qualification at a minimum depending on part of welding work:
    - A·2F or N·2F of JIS Z 3801  
(Standard qualification procedure for manual welding technique)
    - SA·2F of JIS Z 3841  
(Standard qualification procedure for semi-automatic welding technique)
  - 5-7 The welding seam shall not concentrate on the 1 point too much.
  - 5-8 In the case of the seam welds with several layers, the next welding shall be performed after removing all impurities on the previous welding layer.
  - 5-9 The welding rod shall be completely dry for its use, so it shall comply with JIS Z 3211 (Covered electrodes for mild steel), JIS Z 3312 (Solid wires for MAG and MIG welding of mild steel, high strength steel and low temperature service steel) or JIS Z 3313 (Flux cored wires for gas shielded and self-shielded metal arc welding of mild steel, high strength steel and low temperature service steel). Also, it shall not use the welding rod which has a contamination, a terrible eccentricity and a deficient coating.
  - 5-10 The flow and method of welding shall be tried to be a minimum distortion and residual stress. Also, a bead irregularity shall be finished by a grinder.
  - 5-11 Unless otherwise specified in the manufacturing drawing, the leg length of the welding bead shall be 70% of the thinner material which is welded.
  - 5-12 Unless absolutely necessary, it shall not be applied, but the working posture of welding shall be basically downward.
  - 5-13 If the oil spots, rusts, spatters and slags are adhered to the welding surface, they shall be removed. Also, it shall prevent to apply a spatter shield too much.
  - 5-14 In the case of a temperature is under 0 °C in the welding place and also they have a moisture, the welding work shall not be performed.
  - 5-15 It shall not have defects such as an undercut, pit and overlap which are harmful in use for welding. Moreover, it shall be corrected when they will be occurred.
  - 5-16 All spatters and slags shall be removed after welding.
  - 5-17 In the case of it will occur tortions and distortions which are harmful in use, they shall be removed after welding.
-



- 5-18 It shall be given attention not to occur wrinkles for bending. It also has no harmful defects such as distortions, torsions and cracks in use.
- 5-19 Bending of a hot dip galvanized product shall be basically hot bending. In the case of its bending is compelled to change from the hot bending to a cold bending, it shall need a stress-relief annealing. However, it shall not be applied if an inner radius "R" of bending for a thickness "t" is  $R \geq 2t$  and a heat treatment is considered not to require by a trial manufacture and past record.
- 5-20 In the case of burrs is occurred by a forging and forming of casting, the burrs which have the harmful defects in use and a significant poor appearance shall be removed.
- 5-21 A proposal of casting method shall be determined after an adequate trial manufacture. It shall not have any defects such as blowholes, sin marks, cracks and orange peel surfaces which are harmful in use.
- 5-22 The casting products shall not have any defects such as blowholes, boiler scales, cracks and orange peel surfaces which are harmful in use.
- 5-23 The surface treatment shall follow JIS H 8641 (Hot dip galvanizing), and its coating mass shall be in accordance with the drawing. Moreover, the coating mass shall basically follow an example of application of JIS H 8641 (Hot dip galvanizing).
- 5-24 It shall not have harmful defects such as torsions and distortions and so on in use by the surface treatment. If it happens, it shall be modified.

## 6. Test

- 6-1 Material test  
The material test shall be conducted by checking a mill sheet which is issued by a material manufacturer.
- 6-2 Hot dip galvanizing test  
The hot dip galvanizing test shall be conducted by checking a certification of inspection (Hot dip galvanizing) which is issued by a galvanizing company that is permitted to indicate the JIS mark.

## 7. Inspection

- 7-1 Appearance inspection  
The appearance inspection shall be inspected about the presence of harmful defects such as flaws and cracks in use and an indication by a visual check.
- 7-2 Hot dip galvanizing inspection  
The hot dip galvanizing inspection shall be conducted by checking a certification of inspection (Hot dip galvanizing) which is issued by a galvanizing company that is permitted to indicate the JIS mark. Also, a coating thickness inspection shall be conducted appropriately by a coating thickness gauge.
- 7-3 Material inspection  
The material inspection shall inspect a content of mill sheet which is drawn up by a material manufacturing company.
- 7-4 Dimensional inspection  
The dimensional inspection shall be inspected by a vernier caliper and convex rule and so on, so its dimension shall comply with the provision in section 4.

## 8. Indication

The indication of the product shall follow the production drawing.

## 9. Packing and transportation

The products shall be packed or bundled not to get flaws and deformations. Regarding an export packaging by a wooden box, it shall use the wooden box which is complied with 2A type (Sealed plywood, nailed up type) in the JIS Z 1403 (Wooden framed boxes for packing). Also, wood which is used for the wood box shall comply with the Regulation of wood packaging material in international trade (ISPM No.15).

# Dokumen Gambar Teknis Thimble

AUG-29-2016	DATE	REV	MARK	DSGN	CKD	APPD
				A		S. KATANIWA
				T. HIGAKI		2/8/2016

DIMENSIONS IN MILLIMETERS

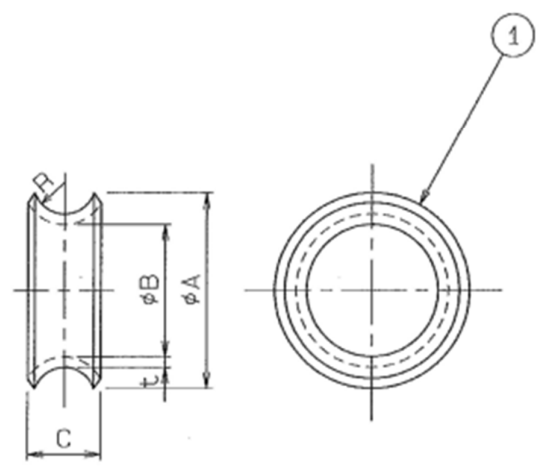



TABLE 1

NO	APPLICABLE WIRE	A	B	t	C	R	ARTICLE
01	Cu22, 38mm <sup>2</sup>	30	18	2	12	5	
02	Cu60mm <sup>2</sup>	37	25	2	14	6	
03	Cu100mm <sup>2</sup>	50	34	3	21	8	
04					18		FOR SUSPENSION INSULATOR 180C

1	BODY	1	COPPER	
NO.	PART NAME	Q'TY	MATERIAL	REMARK

DATE	SEP-09-2013	SCALE	FREE	THIMBLE
DSGN	T. HIGAKI	CHKD	H. IKEMATSU	
DRWN	S. SEKINE	APPD	H. IKEMATSU	CIRCULAR TYPE FOR COPPER WIRE
 SANWA TEKKI CORP. TOKYO, JAPAN				DRG. NO. A04-4E-0002A



CAT. NO.		ITEM NO.	
DATE	REV.	MARK	DSGN
APPD	CKD		

DIMENSIONS IN MILLIMETERS

TABLE 1

NO	MATERIAL
01	COPPER
02	STAINLESS STEEL

1	BODY	1	SEE TABLE 1
NO.	PART NAME	Q'TY	MATERIAL
REMARK			

DATE	MAR-2-2016	SCALE	1: 1	THIMBLE
DSGN	T. HIGAKI	CHKD	<i>R. Suadi</i>	FOR EYE FITTING PULL-OFF FITTING, 22mm <sup>2</sup> ~38mm <sup>2</sup>
DRWN	S. KATANIWA	APPD	<i>R. Suadi</i>	
<b>SANWA TEKKI CORP.</b> TOKYO, JAPAN				DRG. NO. <b>A04-4E-0007</b>

## Dokumen Spesifikasi Teknis Thimble

### Thimble

#### 1. Scope

This specification covers the Thimbles to be used for strain wire of the overhead contact system.

#### 2. Classification

2.1 Classification shall be as shown in Table 1.

Table 1

Classification	Type	Range of Designation	Material	Drawing No.
Thimble for Strain Wire	Round shaped	→ Cu22, 38mm <sup>2</sup>	↓ Copper	A04-4E-0002
		→ Cu60mm <sup>2</sup>		
		→ 100mm <sup>2</sup>		
	Heart shaped	22~38mm <sup>2</sup>	Copper or Stainless Steel	A04-4E-0007

2.2 The thimbles shall be designated by the name, type, range of designation and material.

Example: Thimble, Heart Type, 22~38mm<sup>2</sup>, Copper

#### 3. Material

The material shall conform to JIS H3100 (Copper and copper alloy sheets, plates and strips), JIS H3300 (Copper and copper alloy seamless pipes and tubes) or JIS G4305 (Cold-rolled stainless steel plate, sheet and strip). However, other material shall can be used by the instruction.

#### 4. Shape and Dimension

The shape and dimensions shall conform to attached drawing. The dimensional tolerances in attached drawings, however, shall be +1mm, - 0mm for dimension of 25mm or under and +2mm, - 0mm for dimension exceeding 25mm.

#### 5. Appearance

The surface shall be smooth and shall be free from harmful defects such as chaps, cracks and flaws.

#### 6. Inspection

The inspection shall conform to each of the following requirements.

##### (1) Appearance Inspection

The appearance inspection shall be carried out by the visual inspection and shall conform to the requirements of Clause 5.

##### (2) Shape and Dimensional Inspection

The shape and dimensional inspection shall conform to the requirements of Clause 4.

#### 7. Mark

Company trade mark and range of designation shall be displayed.